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AND

GRICULTURAL GAZETTE.

FOR

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GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE,

For 1844.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Weekly Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 1.—1844. SATURDAY, JANUARY 6. [Price 6d.

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GARDENERS' BENEVOLENT INSTITUTION.

—A General Meeting of the Subscribers to this Charity will be held at the Crown and Anchor Tavern, Strand, on Thursday, the 11th February next, for the purpose of receiving the Accounts of the present year, and electing Officers for the ensuing year Also for the purpose of electing two poor persons of 50 years of age and upwards on the Pension of this Charity The Chair will be taken at 12 o'clock precisely. The Ballot will commence at 1 o'clock, and close at 3 o'clock.

The Subscribers and friends to the Charity will afterwards celebrate their Annual Festival at the Crown and Anchor Tavern.

JOHN NOBLE, Esq., in the Chair.

Stewards.

William Flanagan, Esq.	Hugh Low, Esq.
Robert Fraser, Esq.	John Morris, Esq.
[illegible] Hutchinson, Esq.	George Warde Norman, Esq.
[illegible] Lee, Esq.	Charles Palmer, Esq.
[illegible] Turnbull,	Alexander Shorebrok, Esq.

John Warren.

Dinner on table at a quarter past 5 o'clock. Tickets 15s each, to be had of the Stewards, at the Tavern, and Mr. E. R. Cuttler, Secretary, 97, Farringdon-street.

R. E. Cuttler, Secretary.

FLORICULTURAL SOCIETY OF LONDON.—

The General Annual Meeting for the election of a Committee and Officers for the year 1844, and for the consideration of other matters connected with the above Society, will take place at 3 o'clock on Thursday, the 11th instant, at the Crown and Anchor Tavern, Strand. T. C. Wildman, Hon Sec

IPSWICH CUCUMBER SOCIETY.—Open to all England.

President.

The Right Hon. Lord Rendlesham, M P., Rendlesham Hall.

Vice-Presidents.

Capt. Aldis, Melton Lodge.	Peter R. Long, Esq., Ipswich
Wm. Rodwell, Esq., Ipswich.	Dr. Rash, Ipswich.
Rev. C. Green, Gibton.	W. J. Maggs, Esq., Langham Hall
Dr. Maclean, Colchester.	Wm Green, Esq., Boxford.

P. S. Edwards, Esq., Greenock, Scotland

The Cucumber growers of England are respectfully informed that a Sweepstakes of 1l. each, and a Silver Cup, will be awarded to the best brace of Cucumbers, at the first Show, on Thursday, February 8, 1844, providing the winner is a subscriber to both the other Prizes are offered —Circulars and further particulars may be had on application at 3, Tavern-street, Ipswich.

Thomas Wild, Hon Sec.

MR. TESTIMONIAL. — The Committee for

Promoting this Tribute of Respect to the distinguished, Curator of the Edinburgh Royal Botanic Gardens, beg to state that in consequence of representations from several quarters, they have extended the time for receiving Additional Subscriptions to the 1st of February, by which date they hope that all who wish to join in this object will have communicated their intention to the Treasurer, Mr Wm. Brand, W S , 1, Queen street, Edin., from the number of contributors and amount already received, it is improbable that any further delay will take place , and the Committee would much regret if any friends were overlooked, or should be too late to have their names inserted in the list as finally arranged for publication. Edinburgh, 28th Dec , 1843.

NEW HARDY ANNUAL.

VISCARIA OCULATA—DARK-EYED VISCARIA.

T. and J. BACKHOUSE, Nursery and Seedsmen, York, have the pleasure of offering to the Public the above new and beautiful Annual, which is figured at page 85, (No. 10), of the "Botanical Register," for 1844. The blossoms are of a bright rose colour, with a deep crimson eye, and changing to a pale purple. It flowers very abundantly through the latter part of the summer and autumn. It is a native of Algiers, and may be sown either in the open ground in spring, or raised in pots and planted out.

Packets, 2s. 6d. each, will be sent, on the receipt of a Post-office Order, postage free, to any part of the Kingdom

SPLENDID NEW SEEDLING CINERARIAS.—

[illegible] very choicest sorts of Rose and crimson colours, selected from upwards of [illegible] thousand seedlings of last year, [illegible] with numerous specimens of flowering some of [illegible] immediately healthy, and having [illegible] per dozen, carefully [illegible] Applications [illegible] Post-[illegible] Large [illegible] of [illegible] Bulbs, &c. and [illegible]

FASTOLFF RASPBERRY.



YOUELL and CO. have much pleasure in announcing they have now ready for sending to any part of the United Kingdom, fine Canes of the above highly valuable and much-esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour

IT IS PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, His GRACE THE DUKE OF RUTLAND, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c &c., as well as by the HORTICULTURAL SOCIETY OF LONDON

For further particulars they beg to refer to their Advertisement of the 9th ult Prices as follows —

Packages containing	100 Canes	.	2l. 5s. 0d.
,, ,,	50 ,,	. .	1 5 0
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Package included. The usual discount to the Trade, when not less than 200 are ordered

*** Caution.—Y and Co beg to call the attention of their Friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and cannot be held responsible for its being genuine, unless purchased direct from their Nursery

YOUELL'S TOBOLSK RHUBARB, 12s. per dozen. —For particulars of which see their Advertisement of the 18th November

TWO NEW SEEDLING PICOTEES.—"Lady Alice Peel," 10s 6d, and "Mrs. Benyon," 10s 6d per pair —These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs Youell and Co, for Particulars of which, see their Advertisement in this Paper of the 16th of Sept.

FINEST CARNATIONS and PICOTEES.

YOUELL and CO. beg to refer the readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation

Prices as follows —	£	s.	d.
12 pair of good Show Sorts	1	4	0
12 ditto fine ditto	1	10	0
25 ditto ditto	3	0	0
12 ditto extra fine and very superior ditto	3	10	0
25 ditto ditto ditto	6	0	0

The selection being left to Youell and Co.

FUCHSIAS.

1 dozen of the newest and very best sorts	21s.
1 dozen fine do.	12s.
1 dozen good show varieties	6s.

Sent by post, free, to any part of the United Kingdom.

ARAUCARIA IMBRICATA.

YOUELL and CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms —Fine robust 4-year-old plants, 8 to 9 inches high, 10l per 100, or 30s per dozen —Great Yarmouth Nursery, Jan 4, 1844

THE WALCHEREN CAULIFLOWER.

MESSRS. MARNOCK and MANLEY beg to offer the above valuable article, warranted genuine, at 4s per ounce, sent by post or otherwise, with a Treatise on its management, so that it may be kept in succession, fit for Table, throughout the year. It produces beautiful, large, compact, Lily-white heads, of a most delicious flavour, perfectly hardy, requiring no hand glasses, it not only produces a better quality, but a much larger quantity, on the same space of ground as the old kinds of Cauliflower. It will be quite indispensable both to large and small gardens, for no Gardener, after having once had it *true*, would wish to be without it All kinds of Kitchen Garden, Lawn Grass, choice Imported and other Flower-seeds, warranted to grow freely, and genuine

N B Their Catalogues of Flower seeds, comprising every thing that is new and rare, are ready, and may be had on application.

Nursery, Hackney, Jan 4, 1844

TO GENTLEMEN PLANTING.

J. and J. FAIRBAIRN are induced from the uncertainty upon which they hold the Manor street Nursery (situated contiguous to the Home Nursery, Clapham Rise, where attention will be given to all applications), to effect a Sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy and well-grown stock, consisting of fine large Laurels, twice transplanted, of extra growth, Portugal Laurels, very handsome; Green Hollies, of various sizes; Evergreen Privets, fine Standard and Dwarf Roses in great variety, fine standard flowering Thorns, Almonds, Æsculus, Robinias, and other Ornamental Trees, and Evergreen and flowering Shrubs, with a large stock of fine standard and dwarf, trained and untrained Peaches, Nectarines, Apples, Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled; also, a large assortment of Forest Trees, consisting of Limes, Elms, Birch, Beech, Hornbeam, Spanish and Horse Chesnuts, Mountain Ash, Poplars, and Spruce, and Scotch Firs, also a large number of Gooseberries and Currants, of excellent growth, and of the best varieties in cultivation, to all of which J & J. F. respectfully invite the inspection of Gentlemen and Nurserymen, flattering themselves that the general character of the Stock is such as to ensure unqualified satisfaction, and which they are disposed to offer at very moderate prices for cash.

J. & J. F. respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c., which has lately appeared in the *Gardeners' Chronicle*. (Oct. 21 and 28.)

Nurseries, Clapham, near London, Jan. 5, 1844.

ITALIAN TUBEROSE ROOTS, 3s. per dozen.—R. Hall begs to advise the arrival of his annual importation of the above-named Bulbs, which are this year remarkably fine At his old Italian Warehouse, 3, South Audley-street, Grosvenor-square, facing the Chapel. Maraschino Curaçoa Milk Punch, Old Scotch Brandy, &c. &c., of which lists of prices may be had, postage free.

HYACINTHS AND GROWING STOCK.

HUMPHREYS' COMPOUND, applicable to all Greenhouse Plants, to Hyacinths and other Bulbs, and to promote the germination of Seeds. Sold in bottles 1s. 6d. each, by Flanagan & Son, Mansion-house-street; Warren & Warren, 28, Cornhill; Hurst & McMullen, Leadenhall-street; W. Clark, Bishopsgate-Within, Smith, Islington Nursery; Gaineley and Co., Covent Garden; Batt and Rutley, 412, Strand; William and John Noble, Fleet-street; Smith, Covent-garden; Charlwood, Tavistock-row; W. J. Nutting, 45, Cheapside; G. Lawrence, 16, Piccadilly; John Kennan, Great Russell-street, Covent Garden, Lockhart, 155, Cheapside; Shuttleworth, Pantheon; Minire, Adams, and Nash, 63, Strand; Thatcher and Son, Islington, Thomas Watkinson, Market-place, Manchester, W E Rendle, Plymouth; Dickson & Co., Edinburgh; Pontey, Leeds, Fisher, Holmes, and Co., Sheffield; P. Neilson and Son, Edinburgh; and other leading Seedsmen in town and country Wholesale Agents, Davy, Mackenzie, and Co. 100, Upper-Thames-st., London.

RANUNCULUSES, ANEMONES, CARNATIONS, AURICULAS, and LILIUM LANCIFOLIUM.

H. GROOM, Clapham-rise, near London (removed from Walworth) by Appointment Florist to Her Majesty, begs to remind the Nobility, Gentry, and Amateurs, that this is the best season for obtaining Collections of the above Flowers, and that in consequence of the success he has had in their cultivation this year, he can offer them at the following moderate prices —

		£	s.	d.
100	Ranunculuses, in 100 superb sorts, with names	4	4	0
100	Do. in 100 very fine sorts, do.	2	10	0
	Superfine mixtures from 7s. to 21s. per 100.			
100	Anemones in 100 superfine sorts, with names	2	10	0
100	Do. in 50 do do. do.	2	0	0
	Superfine mixtures 10s. per 100.			
25 pair of Carnations, in 25 superfine sorts, with names		3	10	0
25 pair of Picotees, in 25 do. do. do.		2	10	0
25 Auriculas, in 25 superfine sorts, with names		3	10	0
Lilium lancifolium album, good bulbs, each		0	3	0
,, ,, ,, large bulbs, each		0	10	0
,, ,, punctatum, good bulbs, each		0	7	0
,, ,, ,, large bulbs, each		1	1	0

Catalogues may be had on application.—Jan 5, 1844.

SEEDS, NEW AND TRUE.

MESSRS. SUTTON and SONS respectfully acquaint those readers of the *Gardeners' Chronicle* who have hitherto honoured them with their commands, that their grounds being situated at considerable distances from each other, and in different soils, they are enabled by strict attention to supply GARDEN SEEDS true to their kinds, and supply Seeds which they know to be new, thereby preventing disappointment in their crops. A great saving of expense will also be effected, and the most improved sorts insured, by purchasing either of the undermentioned collections, which are selected according to Messrs. Sutton's actual knowledge of the comparative merits of each kind.

	£	s.	d.
No 1.—*A complete Collection of new Kitchen-garden Seeds, of very best kinds, being one year's supply for a first-rate establishment*	3	3	0
No. 2.—*A Collection containing all the kinds of the above, but in smaller quantities*	2	2	0
No 3.—*A Complete Collection, in quantities suitable for smaller Families*	1	1	0
No. 4.—100 *Ranunculuses, in 10 fine varieties, by name*	1	1	0
50 *ditto in 50 ditto ditto*	0	15	0

N B.—Parcels delivered free of carriage to London, or to any part of the Great Western Railway within 80 miles of London.

For Gardeners and others who would prefer selecting the kinds of seeds themselves, S & Sons have just published their extensive Catalogue of new Kitchen-garden and Flower Seeds, which will be forwarded immediately, post-paid.

*** Where a reference is given payment need not be made for twelve months, which will afford ample opportunity for proving the excellence of the Seeds.—Reading Nursery, Berks, Jan. 6th

TO NOBLEMEN and GENTLEMEN who are PLANTING or IMPROVING THEIR ESTATES, and to NURSERYMEN.

RICHARD MITTON, Nurseryman, Pontefract, Yorkshire, has now growing in his Nurseries (which are very high and bleak, and from which plants generally thrive) to be disposed of at *reduced prices* a large stock of Healthy, well-rooted, and Transplanted Forest Trees, of all sorts and sizes, especially Larches, 2 to 3 and 3 to 4 feet high Evergreens, Flowering Shrubs, Fruit Trees of all the choicest Sorts, Ornamental Trees of every description Prices on application may be had of goods delivered free at those prices at any Railway Station or Canal Warehouse north of Derby or south of Newcastle on-Tyne.—Pontefract, Dec. 20, 1843.

SHILLING'S EARLY GROTTO PEA.

J. and S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Grotto or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and more than double the size of any other Pea in cultivation. It is a dwarf, will stand the winter well, and a good bearer; the pods are full long They would particularly recommend it to Gentlemen and Market Gardeners. Price 3s per quart; 16s. per gallon; 12s. per peck, 30s. per half bushel; 2l. 10s. per bushel. Agents, Messrs. Field and Child, 119, Lower Thames-street, London; Messrs. W. and J Noble, 183, Fleet-street; Mr. Kennan, Great Russell-street, Covent Garden; Messrs. Hurst & McMullen, 61, Leadenhall-street; Messrs. Gray, Apothecaries' Hall; Mr. Hose, Kensington —Northwarnborough Nursery, near Odiham, Hants, Jan 5, 1844

THE BRITISH QUEEN and PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above Two Varieties, the merits of which are thus noticed in the Gardeners' Chronicle. "THE BRITISH QUEEN on Saturday, is the best of all kinds, and will drive Knight's Tall Marrow out of the garden." "THE PRINCE ALBERT, which has been cultivated in the Gardens of the Horticultural Society for the season, produced from it for the table ten days earlier than any other variety grown at the same time." Both Varieties are in packages at 2s. 6d. each, at W. J. C.'s Establishment, Nurseries, or the Bedford Conservatory, Covent Garden.

TO GARDENERS.—**BARNES'** Improved Patent **DUPLEX** or Two Prong Hoe, 3s. 6d. Those who intend to obtain their 3s. 6d. additional by every Journal which does it to be superior to anything hitherto made; cutting both ways; warranted first-rate, and constant throughout the season. It took the first cooling prize at Spratsbury, in 1842. Last season, owing to the carriage and duties, C. B. was unable to show it for competition until all the prize-meal shows were over. As this Harrow has not been exhibited in the London Horticultural Society, purchasers will not be required to pay for it, unless it proves satisfactory. References as to its quality can be given to the most respectable Judges. The principal Amateurs who have seen it have already ordered it for Class-showing, &c. Garnet Rakes, 3l. 3s.; Finger in Rings, 10s. 6d. each. The usual discount to the Trade where the goods are ordered.

The following Nurserymen will be able to supply Plants of it in the spring:—Mr. Keynes, Salisbury; Mr. Catleugh, Chelsea; Mrs. Edwards, York, Mr. Harrison, York, and Messrs. Lord and Holliwell, Beverley.—Hessle Road Nursery, Hull, Jan. 1844

EARLY PEAS, &c.—**HENRY D. CORMACK,** Nurseryman, &c., begs to inform the readers of the *Gardeners' Chronicle* that they can be supplied with the following Early and Portable Varieties, viz.: Cormack's Prince Albert, British Queen, and Early Kent Peas; Taylor's Improved Windsor, and Johnson's Wonderful Bean; Manchester Red and Seymour's White Celery, Walker's Long and Hamilton's Cucumber, &c., with every other variety of Horticultural and Agricultural Seeds, at his Wholesale and Retail Seed-Warehouse, 169, Deansgate, Manchester.

J. C. WAITE, Wholesale Seedsman, London, begs to acquaint the Trade generally that he has made a collection, at very great expense, from the finest Stocks in England and other parts of the world, and can warrant the whole of the Seeds genuine, of the first quality, and the present year's growth. The prices are 20 per cent. lower than at any other house in the trade. Six months' credit allowed where a satisfactory reference is given; 5 per cent. deducted for cash. Catalogues to be had on application at his warehouse, No. 4, Bryer-street-hill, Hatton Garden, London.—Jan. 6, 1844.

ROBERT COOPER begs to inform his Friends and the Public that he has published his Catalogue of Choice Flower-Seeds, &c. for 1844, which he can with confidence recommend, most of them having been grown by himself at his Nursery. Catalogues forwarded by post, on application.—Sion Nursery, Croydon, 1st Jan., 1844.

DOUBLE ITALIAN TUBEROSE ROOTS.—The above have just been received from Italy in a sound and healthy condition, and are warranted double, at A. Corbett's, late Mr. Barnes's, Italian Warehouse, 18, Pall Mall. Price 4s. per dozen. Also a choice collection of Orange and Lemon Plants, &c., ranging from two to six feet high, with strong Grafts and Heads, from 5s. to 25s. each. Catalonian and Arabian Jasmines, &c. Lists with prices per Post, &c.

CABOOL MELON, advertised November 18, is all disposed of. John Ross, Gardener, Holme, Cawdor, N.B.

HARDING, Marchand de Bouquets, No. 1, Cliff-ford street, Bond-street.—Wedding-Baskets promptly executed, Bouquets carefully packed for the country, Glass Flower-tubes for Ladies, and Gentlemen's Fancy Basket Bouquet-holders, Vases, Lace-papers, various Works on the Language of Flowers, &c.

Just published, the Farewell to Scotland, "What though I leave thee, Scotland dear," &c., a National Song, written and set by G. T. Harrison, price 2s., as sung by Mr. W. Harrison, of the Theatre Royal, Drury-lane, with enthusiastic applause, the words by John Gray, with a first-rate Frontispiece of Emigrants leaving Scotland, by the celebrated Harrison.

N.B.—A liberal price will be given for choice Cut Bloom. Orders post-paid.

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30	1 9 6	1 10 4	2 2 2	2 10 6	3 5 9
40	2 1 6	2 14 10	3 6 3	4 2 5	4 18 4
50	3 11 1	4 10 3	4 10 5	5 10 1	7 9 9
60	5 2 11	5 17 4	7 5 9	8 14 3	10 1 7

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On January the 8th, 1844, will be published, handsomely printed in Demy 8vo., Part the First. Price 2s.

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TO CURVATURES OF FERNS.

MR. RAWLINS, Jun., begs to announce that his Descriptive Catalogue of Ferns with some directions for their cultivation, on most ground Pyramidal, Cupical, and Quasquilin form, of which wood-cuts are given, is now ready for delivery, to which is appended a Supplement by Catalogue of Ferns. The Pamphlet will be sent, post-free, for 1s. 6d., on receipt of a paid application. Sold also by Messrs. Longman & Co., and at 6, Great Russell-street, Covent Garden. The Catalogue of Ferns is printed separately, and will be sent to applicants on receipt of a directing stamp.—Hemel Hempstead, Herts, Jan. 4, 1844.

The Gardeners' Chronicle.

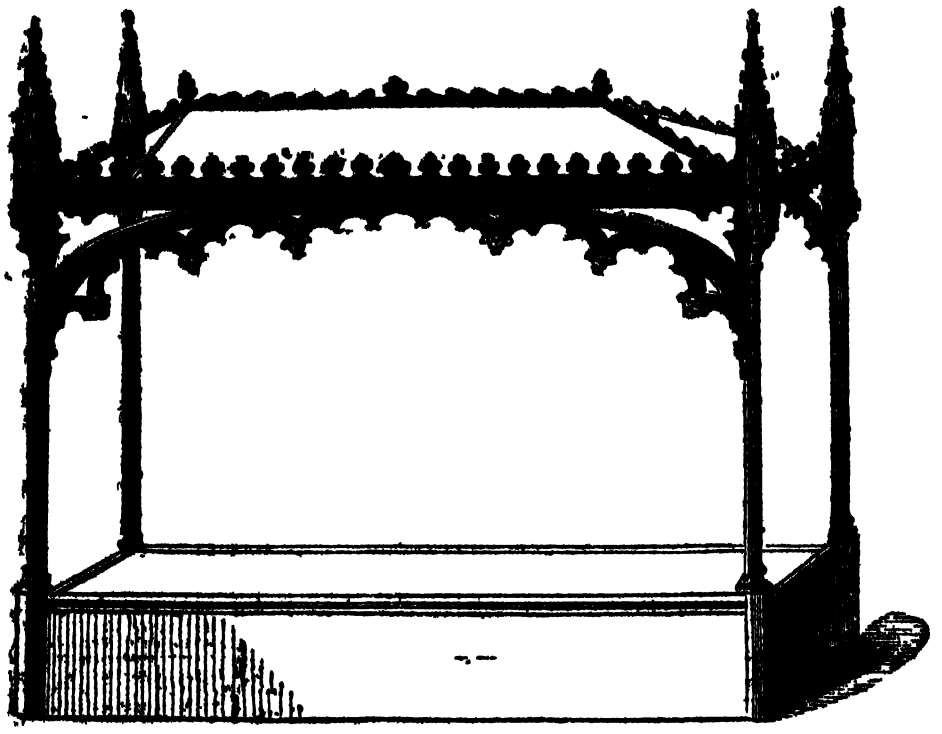
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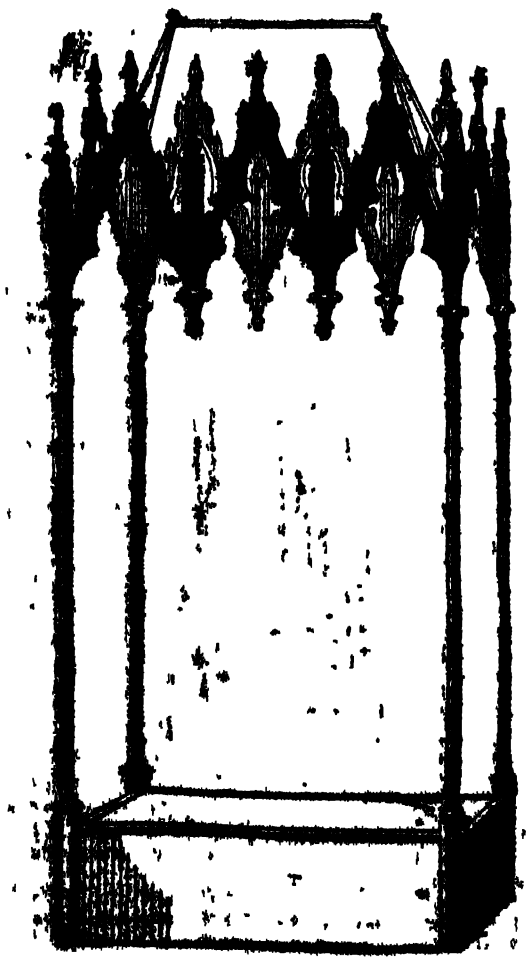
MEETINGS FOR THE TWO FOLLOWING WEEKS.

Tuesday, Jan. 9	Society of Arts	. .	8 P.M.
Thursday, Jan. 11	Horticultural	. .	3 P.M.
"	Linnean	. .	8 P.M.
Wednesday, Jan. 17	Microscopical	. .	8 P.M.

THE subject of WARD'S CASES having been again brought into notice by the Horticultural Society, who have offered certain prizes for cases of that description next year, it seems fashionable to make a few remarks upon them in addition to what has been stated on former occasions.

Mr. Ward's pamphlet* contains, indeed, all the information that can be given; but it is in few hands, and everybody does not understand the principles on which his cases are constructed. It is imagined by uninformed persons that entire exclusion of air is the great object which Mr. Ward sought to secure by his contrivance. But we need hardly tell the reader who knows anything of the atmosphere, that such an effect cannot be attained by a Ward's apparatus: the air finds its way into every place not hermetically sealed, and such contrivances as close-glasing, puttying, and so forth, cannot exclude it. What Mr. Ward sought to gain was uniform moisture and an exclusion of soot; and these he effectually secured. It is the dryness of the air that destroys plants in sitting-rooms and great towns, and not impurities in the gaseous constituents of the atmosphere, the importance of which has been singularly overrated. By inclosing plants in tightly-





glassed cases light is admitted, soot is excluded, and any desired amount of moisture is securable.

There are, however, some practical difficulties in the way of growing plants in close moist cases, which Amateurs unacquainted with the nature of plants are unable to overcome, but which a sensible gardener, who does not belong to the "drowsy" school, would easily remove; and with a view to the accomplishment of this, Ward's Cases were admitted to the Exhibitions of the Horticultural Society. Among these difficulties, the principal is the adjustment of the amount of moisture to which a plant is exposed in one of the cases, to the surrounding heat and to its own proper nature. Another is the prevention of dew upon the inside of the glass, by which the interior is often entirely hidden. These are practical difficulties, that must exercise the ingenuity of cultivators. Upon the former we can give no information, because each species requires a special consideration. As to the deposit of dew upon the glasses we may observe, that since this is owing to the inside of the case being colder than the air that surrounds it, the only course to take is either to warm the internal air by some means, or to open a door in the case for a short time; and as the latter is the most easy, and is quite efficient, it will be the more generally adopted. Opening the door is an advantage rather than a disadvantage to the plants, if not continued too long.

The reason why these ingenious contrivances have not been more generally adopted, is owing, we conceive, partly to the difficulty of managing them and partly to the Ward's cases which are sold in the shops being remarkably ugly. The former difficulty will, we trust, be removed by degrees, when gardeners turn their attention seriously to it. In order to assist in diminishing the opposition which arises out of the unelegant appearance of the cases, we subjoin the accompanying designs, which any ingenious workman can readily execute either in brass, or bronze, or iron. The chapter of the two-thirds standing legs, the other

* On the Growth of Plants in closely-glazed Cases, by N. B. Ward, 8vo., 1842.

IT is of no use now to ask, how many years it takes to procure those GREAT FERNS, in the mere existence of which men would not believe; it is of no use to inquire how much they cost; it is idle to make calculations any longer as to the average number of pounds of fruit which a dozen square yards of Pine-soil will produce, or to assert that 20 Pines, of 3 lbs. each, are just as good as 10, of 6 lbs.—an argument worthy of a market-gardener, and of no one else. The data on which such reasoners have been standing is knocked from under them; for Mr. Barnes, one of the most successful, sensible, and experienced of modern gardeners, has publicly explained his mode of proceeding, and shewn, that with no more expense, trouble, or trouble—on the contrary, with less of all, but with a good deal more skill and common sense, all the incredibilities, which we have been blamed by the stand-still gardeners for making public, are attainable.

He has shown, too, other things. He has not only exposed the folly of the doubters and speculators and cavillers, of whom we have lately heard so much, but he has completely confirmed the justice of our assertions, that we are only on the eve of discovering the true mode of Pine-growing, and that in the cultivation of the Pine we have a most striking illustration at once of the value of charcoal, and of the one-shift system, advocated by Mr. Wood.

Although we do not feel ourselves at all called upon to pay attention to the foolish distinction drawn by uninformed persons between what they are pleased to call theory and practice, yet, on this occasion, it may be as well to remind them that Mr. Barnes, of Bicton, is, in the strictest sense of the word, a practical man—a very sensible one, no doubt; but such an intelligent practical man as you will find many of, all over the country: not, indeed, among those practical men, who, as he says, "lie in bed half the day, and walk about the other half with their hands in their pockets" (p. 696); but a gardener full of zeal and knowledge, who has followed his calling for more than 30 years, self-taught, aware of his own deficiencies, as all men of sense are, no trumpeter of his own merits, great as they are, but hard-headed, hard-headed, earnest, and industrious; relying on his own resources, and not, like the countryman in the fable, crying out to Jupiter to help him out of the heavy road into which he may have driven his cart. In short, he is not one of those fine gentlemen who lay the blame on their men, or anything rather than themselves, for the mischief that arises out of their own incompetence, but exactly what a good gardener always is. Such is the man whose statements respecting the Pine-apple we are now about to quote in favour of our own views of what the system ought to be. The account to which we refer is in the "Gardeners' Magazine," just published, and which we regret to announce the termination. The most essential points appear to be the following, in addition to what *good* Pine-growers already practise.

There is no disrooting. However men could have fancied that the best way of making a Pine plant grow is to cut off its roots, it does, pass our ability to imagine. Mr. Barnes most properly exposes *that* folly.

"I know it is considered by many practical men that the Pine-plant is an annual-rooted plant, and that it requires disrooting in the spring; practice has convinced me of the contrary; but unnatural treatment too often causes it to lose its roots, not only annually but several times in the course of the year. It is stated by others that it is impossible to grow or cultivate fine beautiful fruit in some localities, for the want of proper soil; I am perfectly convinced that the obstacle is not so much the want of proper soil as the want of knowing what proper soil is, how to get it healthy, and how to keep it healthy." In fact disrooting a plant is like drawing a man's teeth in order to make him eat.

Soil, again, has been looked upon as a great question. The French swear by peat, the English by loam, the South Americans by sea-sand. But, says Mr. Barnes, —"Practice and observation have taught me that fine Pine-apple may be produced to very superior perfection in any locality, and that any soil that will produce tolerably good Wheat will grow good Pine-apples, and so will soil that will produce nothing but stunted Furze-bushes, Brambles, and short-starved Heath. The defect is in the means employed in getting it to a healthy pure condition, and keeping it so with heat, light, and water, all pure and acting together. We have no bad soil in this country; it is our ignorance makes us think so. How often do we hear men remark, on observing plants, [illegible] neighbour's opposite to their own, [illegible] convenience, spite, &c., I could grow [illegible] how familiar these remarks are to [illegible] step, constantly, to get the soil which [illegible] gets his from; but without making [illegible] confident there will still be disappointment. [illegible] idea is, that the soil is the stomach of [illegible] without the stomach is in a pure and [illegible]

...ture, and means applied to keep it in that condition, how can we expect vegetation to thrive and continue vigorous and healthy? The soil I have made use of these last three years is *from a hungry situation on a common, where some poor, starved, stunted Furze-bushes grow from 4 in. to 8 in. high*, and some Heath and stunted Brambles here and there; the subsoil a rank red clay; *I do not know where to look for soil that to all appearance is poorer.* My system is to cut the surface about 2in. or 3in. in thickness, with a mattock, in sods, or turfs, as it is termed in some places, with bushes and whatever vegetation there should happen to be growing on it besides, in dry weather in summer; taking it home, and stacking it snugly together, without adding the least particle of manure or anything else whatever. I make use of it *in as rough a state as possible*, Furze bushes and all, without anything whatever being added, only preferring it to lie together a sufficient time to kill the vegetation, that it may not become troublesome by growing amongst the plants, and never by any means making use of it when rotted down, I would sooner use it quite fresh and green. *My reason for using it in a rough state, and without being decayed to any extent, is that the atmosphere, heat, and water, may have an opportunity of acting* in unison with the salts, limes, &c., of the earth, and good drainage and some coarse charcoal on the top supply the means of all acting together in the healthiest manner."

We beg the reader to pay particular attention to these directions, and especially to compare them with what Mr. Wood is always insisting upon, viz, the indispensable necessity of a coarse permeable soil We will also ask him to compare them with the common directions to grow plants in *finely sifted* soil. Comment is at present unnecessary.

We shall resume this subject next week.

ROT IN LARCH.

In the *Chronicle* of the 2d Dec, p. 842, I find Mr. Wighton, in his observations on the rot in Larch, inclined to attribute that disease to an excessive, or over rampant, growth of the plant when young, and not, as is generally supposed, to the nature of the soils in which it grows. If, indeed, Mr. Wighton could prove that the growth of the Larch when young, upon soils where the disease shows itself at an earlier or later period, was invariably of the rapid description he insinuates, or that in such cases it was quicker, or even equal to that of the trees where it perfects its heart-wood, and shows no signs of decay up to an advanced age, then I confess his hypothesis might appear plausible, and to have some foundation in fact. My own experience, however, which extends over a period of nearly 40 years, during which I have been a planter of the Larch to a considerable extent, and upon a variety of soils, leads to a different conclusion, and convinces me that the disease is to be attributed entirely to the nature of the soil in which it grows; but whether to an excess of various constituents in such soils, or to a deficiency of some peculiar quality necessary to give perfect maturity to the wood, that is, bring it to the state known as sound heart-wood, still remains a matter for further investigation; and perhaps is only to be found by a strict chemical analysis of these rot-producing soils.

That the growth of the Larch upon land subject to produce the rot is always of the rapid description assumed by Mr. Wighton is certainly not the case; on the contrary, where the disease appears at an early period, say when the trees are from 12 to 14 years old, their growth is comparatively slow from the time of their being planted; and the unsuitableness of such land for the production of such timber is at once apparent, even upon soils less deleterious, where the disease makes slower progress, and does not show itself prominently till a later period, the annual shoots of the trees when young at seldom equal, either in point of strength or length, to those of healthy Larch in the circumstances antagonist to its habit, where it lives to attain maturity, and produces that rich-looking and valuable timber for which it is celebrated. Neither can I assent to Mr. Wighton's assertion, that the best and most durable Larch wood is that produced by trees of the slowest growth, and upon poor soils, on the contrary, I find that the finest specimens of Larch timber are the produce of trees not only of the largest dimensions, but of such as have grown rapidly, and luxuriantly from their earliest years up to an advanced age. At Dunkeld and other parts of the Scottish Highlands, where the finest Larch timber is produced, it might be supposed from what Mr. Wighton says, that there the trees were of tardy growth; but let any one go and examine the noble Larches which shoot up in towering spires in the deep glens and mountain declivities of that interesting and romantic country, and measuring their age, them say that their growth has been slow, or inferior to that of the Larch in rot-producing soils. Neither can the soil at Dunkeld, and other Highland districts, be deemed of the poor description mentioned by Mr. Wighton; on the contrary, it is in many places deep and good; not that it contains much vegetable matter or manure, but is composed of the disintegrated debris and debris of the older series, which in more respects to the habits of the Larch and others of the Coniferæ forms favourites of a more humid period. In respect to the trees in Tweed, I know that the finest trees producing valuable timber grow upon ground of good quality, provided it be not immediately incumbent on cretaceous or basaltic formation. In a deep dene or glen, where the rock is one of the lower mountain or mountain limestones, many Larches, though not more than 47 years old, have attained a height of 80 feet and upwards, and a circumference of bole, at two feet from the ground, of nearly six feet. Of two trees (by no means the largest in the dene), cut down about a fortnight ago, the length of one was found to be nearly 60 feet—of the other, about 73. The sap-wood was not more than three inches thick, the rest being heart-wood, of a rich colour and excellent quality. When squared and sawn up, planks of 18 feet in length and a foot in width were obtained from the butends. It is almost unnecessary to add, that these trees had grown at a rapid rate from the time they were first planted, much more so than others upon ground where the taint begins to show itself when they reach their 15th or 20th year. In the "History of British Forest Trees," published by J. Van Voorst, an enumeration of the different descriptions of soil in which the Larch is liable to the heart-rot is given, drawn as well from the observations of Mr. Matthew, as from those of the author himself. Upon such it would be in vain to plant the Larch in the expectation of obtaining large and sound timber, nevertheless I still advocate its liberal insertion in plantations upon such soils, as it is, even under these circumstances, the most profitable temporary occupant that can be planted, affording at the various thinnings, a supply of valuable material for minor purposes, provided it be taken down before the disease has advanced too far. In conclusion, I would say, let not the planter (provided his ground be sound, that is suitable to the habit of the tree) be at all alarmed at Mr. Wighton's declaration, that a rapid growth of his Larch is only laying the foundation of useless timber.—*P. J. Selby.*

THE SEEDS OF GARDENING.—No. I.

Of all the systems by which plants are obtained there is none so beautiful or so perfect as their development from seeds; yet, assuredly, none so much neglected, I might say despised, as this primeval plan of propagating. The exquisite delicacy of the workmanship that folds the future plant in the small cell of the seed must be evident to all, the globular form that many seeds take, and the general contour and character of all, show how admirably the seed is adapted to transport the species and secure its welfare.

The extent to which certain valuable plants may be increased by merely depositing seeds in the earth without further care or trouble, is truly marvellous; witness the vast forests of Fir-trees from seeds strewn on the mountain, and the fields of yellow Corn from grain scattered on the fallow ground; and at this season of the year, when the Yew-trees are laden with their rosy fruit—the inglorious prey of the greedy mouse and undomesticated fowl, the unbroken sunbeam, and the hurricane unchecked pass over the treeless strath and lone hill side, where the only shelter is a fox's cave, and the only shadow that of some ruthless crag. And how little of human aid is wanted to enable the Yew, that truly British evergreen tree, to extend itself by thousands in such situations, at no expense save the labour of the patriotic hand that strews the high ground with a basket of Yew-berries! and though years must elapse ere this verdure arise, yet, assuredly, it would come, and that not for a season or an age, but for a thousand years. If your readers would only look over their Yew-trees whilst the twigs are yet laden with their rosy-cupped seeds, requiring no further culture than a clear space of earth as large as the nail of the finger that deposits them, I think many would be induced to remove the beautiful germ of the Yew-tree, with its ruddy chalice, to a spot where it might dwell and become the parent of myriads, to the credit of the hand that gave it place, and the landscape which it and its progeny would adorn.

These, and thousands of other familiar examples, might be mentioned to show the immense importance that a right method of saving, preserving, and distributing seeds would be to mankind in general, and to gardeners in particular, whose livings mainly depend upon plants of which seeds are the primary stock. I flatter myself, therefore, that the time is come when neatness, order, and system, may, and indeed must be, introduced into the seed department of gardening, lest Chaos should come again; for if we average two thousand as the number of species cultivated in a modern garden of moderate extent, and conclude that one-half of these are either produced or producible from seeds, we have a thousand separate moieties of plants in the germ to preserve from injury, arrange in order, and distribute with judgment, in time and place appropriate to their welfare and the wants of a family.

The coatings of most seeds, or, in other words, the inner packing-cases, assigned them by nature, are for the most part air-tight; and we frequently find the germs sealed up as it were in little bags or husks, in a sort of membrane, containing ingredients more or less soluble in water. Hence the necessity of keeping such seeds free from damp till they are wanted to germinate; yet it must equally be borne in mind that excessive dryness proves injurious to the vitality of seeds; for when the oily or glutinous matter in the coating of the seed gets dispersed, or drunk up by heat and dryness, the inclosed germ can no more live in that arid atmosphere, than a plant plucked up by the roots could live exposed to the heat and drought of sun and wind.

Now, although plants might, and indeed often do, endure exposure to the air, &c. in transplanting, and survive the check, yet the infant germ, a slight of its mantle, or of that property which made its coating weather-proof, soon shrivels, and after a time quite perishes, and decomposes in mischance "a day lower." When seeds are quite ripe, they can generally in a greater or less degree as they can be kept perfect; for the germ of ripe seeds being superior to new ones, and such-like theories, are now pretty nearly exploded. Indeed, new seeds are found to resemble new eggs so much, that the systems resorted to by cunning housewives when eggs are cheap, to keep them sound till the price rise, are excellent and simple illustrations of the principles of preserving seeds. Eggs immersed in lime, or smeared with butter, and the cask in which they are packed occasionally turned to keep the yolk from settling, will preserve eggs marketable for many a day.

Now seeds of the Brassica tribe, of which more than one sort can hardly be saved in the same garden unadulterated in any one year, require some pains to preserve them, and a very simple and effectual method of doing this is to rub off their outer coats by giving them a good shaking in a rough woollen bag made slightly greasy with oil of Turnip-seed or suet oil; this operation being to them a regular brushing and polishing, not only preserves the seed, but brightens the sample and makes it more marketable and sleek in the coat, which sleekness, it is well known, is one of the tests of new and fine seeds—the coating of lime by excluding air and preserving uniformity of temperature and dryness, is perhaps the simplest safeguard that could be used in the sound keeping of seeds.—*A. Forsyth, Alton Towers.*

(To be continued.)

DR. THACKERAY'S WELCH PLANTATIONS.

The following authentic account of the places where Dr. Thackeray's plantations have been made will interest every one who has an opportunity of visiting North Wales. We hope to be soon able to lay before our readers a full account of the system of management observed in them. In the meanwhile we may state that nearly 3000 beautiful Oaks of five years' growth have been this autumn transferred from Dr. Thackeray's nurseries to vacancies in the woods, and that all boughs are left in the plantations for the poor, who carry them away.

PLANTATIONS.—Mr. WILSON JONES.

	A.	R.	P.
Denbighshire, 1804 and 1805.			
Bwlchy Parc	1	1	12
Gellygynnan	21	0	36
Merionethshire			
Cwn Caith	10	0	29
Cyfty	7	2	3
Dolfriog	0	2	6
Denbighshire.			
Bwlchy Parc	0	2	29
Brynhelle	9	0	2
Merionethshire.			
Cwn Caith & Dolfriog	9	0	0
Denbighshire, 1806 and 1807			
Craigielo	15	1	10
Cymant	1	2	16
Merionethshire.			
Cwn Caith	40	0	0
Gellyrin	7	0	0
Cyfty	1	2	0
Penylan	1	2	0
Cae Glas	0	1	0
Wennalt	11	2	0
Denbighshire, 1807 and 1808.			
Gellygynnan	26	0	0
Brynconedig	8	0	0
Denbighshire, 1808 and 1809			
Bwlchy Parc	4	0	0
Gellygynnan	3	3	1
Camddwr	0	0	30
Merionethshire.			
Caer Lion	2	0	0
Denbighshire, 1809 and 1810.			
Camddwr	0	0	30
Bwlchy Parc	4	2	0
Gellygynnan	37	3	20
Merionethshire.			
Reval	0	2	0
Caer Lion	2	0	0
Cyfty	2	3	0
Dolfriog	46	3	0
Denbighshire, 1810 and 1811.			
Gellygynnan	28	2	17
Merionethshire.			
Town of Bala	3	3	20
Dolfriog	5	2	0
Cwn Caith	13	1	0
Denbighshire, 1811 and 1812,			
Gellygynnan	3	2	0
Merionethshire, 1812 and 1813.			
Tyddon Bach	1	2	0
Rhydyrafel	2	1	15
Talybont	2	2	0
Denbighshire, 1812 and 1813.			
Bryncoredig	4	2	17
Merionethshire, 1813 and 1814.			
Massey Cairn	1	3	28
Custyllen Bach	2	1	0
* *Flintshire, 1814 and 1815.*			
Nerquis	199	0	32
Denbighshire, 1815 and 1819.			
Bwlchy Parc	76	2	0
Denbighshire, 1826 to 1832.			
* Llanarmon Mn.	143	0	15
Llanarmon Mn.	75	1	12
* *Flintshire, 1834 and 1835.*			
Wern	8	3	24
Comren	11	0	2

Those plantations marked with a * in the counties of Denbigh and Flint, and Wenmait, in Merioneth, belong to Dr. Thackeray.

TURF ROASTING.

About two years ago, when conversing with a cultivator respecting the best compost for China and other Roses in pots, he mentioned that he had found thin parings of turf dried in the sun in summer, so as to kill the roots of the grass, a most excellent compost. I tried to bear this in mind as an excellent hint, but in the hurry of business it escaped my memory till the commencement of this summer of 1843, when, owing to the continual wet weather, I found myself unable to carry out the idea; drying the turves in an oven then occurred to me, but this happened to be inconvenient; a temporary furnace then struck me as being an efficient method, and this I quickly made by placing some loose bricks into three sides of a square about two feet in diameter and 18 inches high, leaving one side open for the admission of fuel: on the bricks I laid a stout piece of sheet-iron, so as to form a kiln, under this I made a brisk fire with wood, and then commenced kiln-drying. My pieces of turf, which were one inch or a little more in thickness, and about a foot in diameter, were suffered to remain in my temporary kiln nearly two hours, during which time they were turned several times: by this operation they were slightly blackened and charred on both sides, and every fibrous root completely killed; the turves were taken hot from the kiln, immediately chopped into pieces, from half an inch to an inch in diameter, mixed with an equal quantity of rotten dung, and used for potting Roses, with pleasing results; for their roots in a very short time pervaded every part of the compost, and the plants assumed a healthy and vigorous aspect; the drainage is also quick and complete, contributing in no small degree to the well-doing of the plants.

I need not point out to the cultivator the advantages of this simple process in destroying grubs, wire-worms, and grub that so often infest the fibrous roots of plants, the method and economy left to being, and the [illegible]

...may be supported with four-inch iron work, say from three to four feet in diameter, the height need not be more than eighteen inches, and bone flat bars of iron may be placed across to support the sheet of iron; this will form a kiln of sufficient size to roast a large quantity of turf. I have reason to believe that turf, even from the most retentive soils, will be rendered by fire-heat thus applied, light and porous, and fit for pot-compost for most plants. —*T. Rivers, Jun.*

BEES.—No. I.

"Bees," says Cobbett, "are of great use in a house, on account of the honey, the wax, and the swarms that they produce; they cost nothing to keep, and want nothing but a little care." If there is anything more profitable to the gardener or cottager, and one to be more easily managed by him than a few swarms of Bees, all that I can say is I have never seen that thing. All men, especially those of narrow incomes, should principally endeavour to gain a knowledge of those things which particularly concern their well-being. The gardener—to whom I address my remarks—cannot, I assert with confidence, dispose of an hour or two a week in a more lucrative way than in managing an apiary. Whilst the gardener is being taught how to make 10*l.* a year on an average of his Bees, the amateur too, I trust, will learn how to obtain a plentiful supply of honey and honeycomb. The only objection that can be raised to the keeping of Bees is that they extract the quintessence of flowers, and thereby impoverish or rather lessen the quantity of butter. I know an old parsimonious farmer who was so fully convinced that Bees impoverished his fields, that he trod to death all that he could put his feet on. However, it is questionable whether Bees do diminish the quantity of butter; indeed, there are only one or two flowers which cows eat that Bees collect honey from. [This old farmer was a monstrous blockhead.]

Though Bees can be managed properly without a knowledge of the conformation of their heads, trunks, and abdomens; yet it is indispensably necessary to know some of their habits, or points connected with their history, which I shall now notice. In almost every hive there are at certain seasons of the year a queen or female, drones, males, and neuters, or Bees without sex. A queen-bee is 14 days in being hatched—takes the drone on from the first to the fifth day after she is hatched—begins to lay on the 10th day from the time she is fecundated—lives four years, generally speaking—and is, as her name implies, monarch of the hive. Neuters, or working Bees, are 21 days in being hatched—do all the drudgery of the hive—are loyal subjects, but have neither an hereditary nor an absolute monarchy—and are miserable, and work but little when they have not a queen either reigning or in embryo. Bees'-eggs are transmutable; that is to say, either females, males, or neuters may be obtained from them at the option of the apiarian.

The Hives.—What I lately said on the superiority of large hives is, I am sure, more than sufficient to induce all bee-masters to keep their Bees in large hives; but as some say that once calling does not always awake sleepy men, and as I am anxious that this small treatise should be complete in itself, I shall here show, in the clearest way possible, that large hives are superior to small ones. Oh that Bee-book authors would use their reasoning powers or try experiments in order to find out how large hives ought to be! No person will ever pretend to say that a Queen-Bee can lay and cause to lay when she likes, or that she has control over the number of her eggs. Very well. Let us show with one or two simple experiments that by keeping Bees in small hives you force them to destroy two thirds of the eggs which queens lay. Select three hives full of combs and Bees, take the queens from two of them, place one above another, shut the mouths of the upper two, which will compel the Bees to pass through holes (six inches in diameter); cut out off the crowns of the middle and undermost hives, and you will find that the combs of the three hives will be as well filled with brood as they were before from the eggs of three queens. An equally decisive experiment is to exchange the queens of a small and a large hive. If a queen be taken from a hive containing 9 superficial feet of comb, and put into one containing 27ft., and the queen of the hive containing 27ft. put into that containing 9ft., you will find that the combs of the large one will be as well filled with brood as they were before the change took place. "According to Huber," says Dr. Bevan, at page 41 of the "Honey Bee," "a queen ordinarily lays about 12,000 eggs in two months, but," continues this celebrated author, "it is not to be supposed that she lays at the rate of 12,000 eggs every two months; she does so at the principal laying, in April and May." If the Bee-master would be at the trouble of putting a swarm or two [illegible], weighing 8lbs. or 9lbs., with a queen that has finished her "principal laying," into a hive containing 24 superficial feet of comb, he would find at the end of [illegible] above 20,000 eggs set. At page 124 he says—"Whatever advantage the putting of two swarms into a hive may give to the family during the first year of its [illegible], it can present none beyond that period; for the [illegible] that were introduced will have paid the debt of nature before its expiration, and are thereby reduced to a level with those that were not doubled." *Dr. Bevan* is wrong here, for a swarm that weighs 8lbs. hatches double the [illegible] that weighs 4lbs., and consequently [illegible] of Bees will live throughout the [illegible] that quantity of eggs in the spring, and [illegible] begins with [illegible] hives [illegible] [illegible] [illegible]

…stalk double-flower, wall coloured, and as perfect as if …ed in July, being the eighth month …ming it has been in bloom in the open air. …the next four months they will be in flower under …, so that there is little difficulty in having them in …ence throughout the whole year.—The following were …ming in the garden of G. Innes, Esq., Bowater Cres…, Woolwich, on the 29th of December, viz.:—

…Scotinus	Vinca variegata
…Weeping Ash	Dwarf Cistus
…Weeping-flowered	Coronilla
…Portugal	Double Furze
…Scotch	Pyrus japonica
…the post	Eccremocarpus scaber
…Mountain	Lophospermum erubescens
…Scarlet	Primroses
…Weeping Birch	Anemones
…fragilis	Pansies
…Siberian	Siberinchium
…Noisette	Isabella gracilis
…Alexandria	Auriculas
…Japanese	Erica herbacea rubra
…Honeysuckle	Erica mediterranea
…Laurel	Balm of Gilead
…Hyacinths	Chrysanthemums
…Roses	Double Feverfew
…Reeds and rushes	Gentiana acaulis
…polyphyllus	Monthly Roses
…Rose	Daphne cneorum
…nigra	White & Single Russian Violets
…tetraphyllum	Hepaticas
…Laurel	Mountain Pink
…Laurel	Conium maculatum, and
…Laurel	Sweet Williams.

Another correspondent informs us that there is at …ndon, the seat of N. Hibbert, Esq., near Watford, …ts, a Camellia of the old double striped variety, having …ir fully expanded blooms, and more ready to open. It …growing on an open wall, and except being situated near …-angle of a wall with a south-west aspect, it has had no …r protection from the frosts that have already visited …t district.——Mr. Ross writes from *Inverness* as fol…:—We were compelled last week to cut the Grass …, which was softer than in September. Cauliflower-…s in front of a wall have been growing rapidly for …t five weeks. The herbaceous plants are springing …. Stocks produced buds to flower this winter. …mpanula is in bloom next the wall. Maurandyas, …, Petunias, are quite green. Rhodochiton is in …r. Cobæa scandens produced shoots two feet long …ly. All the Verbenas that were left out are quite …, and some in flower. The congregation of the …church of Cawdor was sitting in the open air till last …, when they got into a wooden erection, 63 ft. by …. They felt but little colder, as the oldest of them said …never saw such a mild winter.

Foreign Correspondence.

Paris, Dec., 1843.—As the subject of PINE GROWING …s just now to attract much attention in England, …e the result of my observations upon the culture of …in France may be of service to some of your readers, …ularly as I have had the opportunity of seeing the dif…modes of pot and open ground culture upon a large …in all stages and seasons, not only in Paris, Versailles, …ndon, but also in the northern and western depart…. The time was when 11 and 21bs. were considered …good size for a Queen, and 4lbs. for a Providence; but, …to the improvements in science, hot-water, and open …culture, a new era has commenced, and the Pine-…is effecting as great a revolution in his department …the Horticultural amateur has accomplished with Pelar…, Roses, or Dahlias. As the Potager, or King's …Garden, at Versailles, is the largest establishment …kind in this country, and moreover, has the honour …been the first in passing the rubicon of customary …, I cannot do better than detail the mode of cultiva… and varieties most esteemed. This garden was laid …by "Le Quintinie," in the time of Louis XIV., and …nothing was spared to render it a worthy appendage …the palace of Versailles, which was then the residence …the gayest Court in Europe. The present distribution …the fruit-garden retains a great similarity to the plans …Quintinie, in 1681, with the exception of the forcing …ment, which at that time consisted only of a few …s for Melons, Cucumbers, and small Salads. It …not till about the year 1702 that the Pine-apple was …duced into the Potager, and so little was then known …its culture, that no mention is made of any fruit having …been obtained till 30 years after; in fact, this and other …fruits do not appear to have received much atten… until the time of the Empire; since the peace still …greater improvements have been made; many new houses, …specially for Pines, have been erected, and the hot-water …is all but entirely adopted. The honour to which …has attained is more particularly due to M. Massey, …present director of the Royal Gardens, and to the …ener in the forcing department, M. Grison, who …during the last few years, so successfully introduced …ench ground system of culture. The whole of the …ation-pits and fruiting-houses are now heated by hot-…, and has been entirely discarded; all the water-pipes …, some round, others quite, quarters, 5 or 6 …s wide, by 3 deep, like those in use at the Hon. R. …'s, at Roswell; these last are now becoming very general …bottom-heat. In England I believe almost all the …for warming the atmosphere are round—hair, pa…ornary, the greater part are flat and upright, from 6 …to 9 inches high and 4 inch-think; in these the water is …ly circulates quite so freely; and moreover a great …is gained by the comparatively short time in …a sufficient degree of heat may be obtained, the dif…being almost three to four, on the contrary, how…is not quite so rapidly. The pathes, of which I have seen only three different materials, viz. 2d, of a form totally unlike them, must be employed; these are cubical, and the makers with whom I have conversed in Paris appear to think that form are very superior to theirs. The soils used in England and France for Pines are altogether different; in almost every Stoney that I have seen in England, a strong loamy soil was predominant; at Paris, Versailles, and I understand at almost every other place in France, they are now grown in peat; some persons have tried loam and leaf-mould, others loam and peat, or common earth and black sand, but none of these composts have proved satisfactory; nevertheless, many eminent Horticulturists, and among them M. Poiteau, the editor of the "Bon Jardinier," still think that a stronger soil would be better suited to the end in view: not so, however, the actual growers; the universal opinion among them is, that pure peat is for every variety the best adapted to insure a rapid growth, which they consider so essentially necessary to obtain large fruit; and certainly the health and vigour of the plants, and the enormous fruit which has been obtained in this soil would lead you to believe their opinion well founded. The treatment of the plants when young, and indeed throughout all their stages in pots (with the exception of soil), is very much the same as in England; it is therefore to the advantages of the open-ground culture that I would direct the attention of English growers. The suckers are planted in August and September, and remain till May in pits of the lowest temperature, when frames for the summer are prepared of dung and Chesnut or Oak leaves, well mixed and sweetened, of four feet thickness, which is found to retain a steady bottom-heat of 18° to 20° of Réaumur (72° to 75° Fahr.) for a much longer time than from dung alone; upon this is a bed of peat (sometimes mixed with a few decayed leaves and black sand), about eight inches deep, in which the young plants are set at sufficient distance apart to allow for six months' growth. These frames are well protected by straw mats at night, and as the summer advances air is liberally given, and water as occasion may require. Rapid progress under this treatment is soon apparent; here they remain till the end of September or middle of October, when they are once more repotted in 24s or 16s in pure peat, and placed in the winter pits with a bottom-heat of 22° to 25° of Réaumur (82° to 88° Fahr.), while the atmosphere ranges from 15° to 17° (82° to 86° Fahr.) In the following May those which are to fruit in pots are shifted into 16s or 12s, while those for the open ground are planted in the fruiting-houses, the soil of which is pure peat 9 or 10 inches deep; the bottom-heat is now increased to 25°, and the air never below 17° or 18°; in September and October many of the plants are showing fruit, which comes to maturity in time for the Paris season, which commences in December. Such is a brief outline of the open ground system, as practised at Versailles and elsewhere. This treatment has not, however, been found equally advantageous to every kind of fruit; it is only in the Cayenne, Enville, Jamaica, Providence, and one or two other varieties, that the increase of size has been most apparent; very little difference has been perceptible in the size of the Queens (at least at the Potager) and by far the greater number of this kind are still grown in pots. There are at this time some splendid specimens of the larger kinds in the open ground, especially among the Cayenne Lis; some short time ago I noticed two magnificent fruits of this variety on two-year old plants; they were in every respect perfect models of form, and must have weighed, I think, upwards of 12 lbs. each. I measured one, which was 11½ins. long, by 8ins. wide. These are not solitary instances of the advantages of this system, for I have before seen others of equal magnitude and beauty; while fruit of the same variety in pots has not weighed more than 5lbs. or 6lbs.; similar results have attended the Enville and Providence, of which there are some almost, if not quite, as large. These two last have been hitherto extensively grown on account of their weight; but the irregularity of form in the Enville, and secondary quality of the Providence, will now no longer permit them to retain the place they have hitherto done, neither of them being at all comparable, either in form, size, or flavour, to the Cayenne Lis, or Epineux, which are second only in delicacy of aroma to the Queen, and infinitely superior in every other respect, being without dispute the noblest Pines in cultivation. The Queens weigh, on an average, at Versailles about 3lbs., in the open ground; some few have reached 4lbs., or more; but very many have also been less than 2lbs.; those in pots have been somewhat smaller—the difference in size of this kind under the two systems has not varied more than one-fifth; while the Cayenne and Providence have increased more than one-fourth. The number cultivated in this garden is above 2,000; more than two-thirds are Queens; then follow Providence, Cayenne, Enville, and Jamaica. Many others are grown for the sake of variety, such as Antigua, Poli blanc, Moscow, Queen, &c. &c.; but the first-named sorts constitute the grand resources for the Royal family and Court. In a few days I will send another paper on this subject, and also a description of some seedling Pines, which have been lately obtained in Paris and Versailles, as well as of the different boilers now in use.

Societies.

BOTANICAL SOCIETY OF EDINBURGH.

THIS Society held its second meeting for the season on Thursday, the 14th ult.—W. C. Trevelyan, Esq., in the chair. Mr. C. Lennox, Junior, Edinburgh, was elected a Resident Member. A collection of specimens, from Upper Lapland, presented by A. Garrick, Esq., was placed on the table. Professor Graham read the continuation of his botanical tour in the north of Scotland and Jersey, in the course of which he mentioned the various plants observed, as far as peculiar to those districts, or only of rare occurrence in Scotland. He was rather surprised to observe species growing in considerable quantity that have, for the most part, been very sparingly supplied to the Society's —a circumstance which shows the carelessness of Scottish Botanists keeping in view, when making their annual collections, that such species, though not uncommon in them, must be always in demand among their Scotch brethren. The Professor also made some observations on the climate and general aspect of the island of Jersey, in reference to its height above the level of the sea, the nature of its soil, &c., as bearing on the vegetation. At the close of public business the meeting proceeded to the election of office-bearers for the present year, when the following gentlemen were appointed:—viz., President, Professor Graham; Vice-Presidents, Dr. Neill, David Stewart, Esq., W. C. Trevelyan, Esq., and W. H. Lowe, Esq., M.D.—*Edinburgh Evening Post.*

ENTOMOLOGICAL SOCIETY.

Jan. 1.—G. Newport, Esq., in the chair. A new part of the Transactions of this Society was announced, and laid upon the table. A list of officers for the ensuing year was read over. Mr. Ingpen exhibited a birds' nest, apparently belonging to the hedge-sparrow, which had been built during the past month. An extract was read of a letter from Mr. Fortnum, of Adelaide, in South Australia, to the Rev. F. W. Hope. He had obtained a Phasma, with one of its legs broken off, and he had fed it on the leaves of the Gum-tree, and on shedding its skin, in the place of the leg which was broken off a new one, but very small and imperfect, had made its appearance. At the second time of shedding the skin the leg was much larger, till at last, after four sheddings, it assumed a natural size. A remarkable fact in the habits of Phasmides is, that the moment they are out of their old skin they commence eating it. Mr. Fortnum had captured at Adelaide three species of Mantispa, and also of Ascalaphus. He had found no Necrophagi. A communication was read from Dr. Thomas Savage, in which he stated that he had discovered in tropical Africa a new species of Mecycenorhina, very closely allied to M. polyphemus. An extract of a letter from Colonel Hearsey to Mr. Westwood, from central India, was read. He had taken abundance of Diopsæ, the double-headed fly, at different times and in different places. Mr. Westwood described two new species of snored Beetle, for which he proposed the name Ketocerus. They are most nearly allied to the genus Heloc-eanthada. The President referred to Mr. Fortnum's remarks on the reproduction of the legs of Phasmæ. He had found that the Myriapods possessed the same power of reproduction, and he had seen the legs and antennæ of the Julus and Lithobius both reproduced. This reproduction did not take place when the animals had ceased to grow. He did not consider Swammerdam's theory of the developement of one skin or skeleton within another at all borne out by the facts of the case. Mr. Waterhouse thought that the constant reproduction of the parts in Crustaceous animals was accounted for by the fact that they never came to maturity. There was not a period, as in insects, when they ceased to enlarge and throw off their skins. Other remarks were made by Messrs. Yarrell, Marshall, Westwood, and others.

Reviews.

Lessons on Animals, Vegetables, and Minerals. By Mrs. Marcet. 12mo. Longmans.

THIS is a trifle, produced with the skill which its authoress is well known to possess; but only suited to the very youngest of children. It is, in fact, in some measure, an anticipation of the knowledge which the ordinary events of a child's life are sure to produce, unless very extraordinary means of obstructing knowledge are resorted to.

That the admirable arrangements of the creation are far beyond the comprehension of man, is only denied by those who are ignorant of the extent of their own ignorance. Nevertheless, we are no great admirers of the forced construction placed by some people upon very common facts. We should have thought that so clever a person as Mrs. Marcet would be above all *ad captandum* speculations; and yet we are reluctantly obliged to inquire what else is the following:—

"There is an umbrella over the stem of every tree to prevent the rain from wetting it.

"The children laughed and wondered what the teacher meant. He then showed them the print of an Oak, saying, look at the head of this tree; is it not very much like the shape of an umbrella? and it answers the purpose of one completely, for it prevents the trunk of the tree from being wetted. You see how good God was when he made the trees, to give them such a shape that the rain cannot reach the stems to rot them."

Surely we need not add that this is entirely wrong; and that the office of the head of a tree is anything rather than to prevent water falling on the trunk and rotting it. If it were really as Mrs. Marcet states, what would become of all the unfortunate trees grained by the hand of man, handles, with which carpenters and other tradesmen

NOTICES OF NEW PLANTS WHICH ARE …USEFUL OR ORNAMENTAL.

CATTLEYA …

…their … to appearance in their … Sometimes … It is not … another lovely species, which is … These flowers … very large, compared with the size … which also forms a showy ornament, by standing … when the plant is … The sepals and … are of a delicate rosy crimson, which … to several … and the handsome lip is much like that of C. labiata; … the upper part … a beautiful white border, which is the … colour of the plant, and certainly renders it very … Altogether, this is one of the most pleasing of Orchideous … and will retain their remarkable peculiarities. Nothing could be more fascinating in a drawing-room, than a few plants … in full flower, hung from the ceiling; the block of … to which they are fastened being half concealed by moss. … requiring a very high temperature, it is also singularly … for medium object. To grow it nicely, it should be fastened … on a log of wood, and kept in a cool house during the … The cooler part of the Orchideous-house, where it … will get too much moisture, will likewise suit it best in winter. It may be grown in a pot, if desired; but this system is … conformably in accordance with its habits.—*Paxton's Magazine of Botany.*

Tropæolum speciosum. Spiny Tripitilon. (*Herbaceous Perennial.*) Compositæ. Synganesia. Æqualis.—There is a striking … about the vivid blue tint of the blossoms of Tripitilon … which most always render it an object on which it is … to gaze; until the extreme neatness of these flowers, … their copious production in dense heads, is another charac… which adds to its effect. Writing of it in the "Botanical …," Dr. Lindley remarks that "it is a native of Chile, … it appears to be exceedingly common, and is called Semper… on account of the permanence of its deep azure flowers. It … long been known to botanists conversant with the Chilian … as a most desirable species to introduce, and repeated … have been made to acquire it, but in vain, until seeds … into the hands of Mr. Frost, gardener to the Countess of … ville, at Brympton." Mr. Frost has been very successful in … it; but the specimens exhibited by him at the Chiswick … have not been free from that brownness in the lower … and that partially unhealthy aspect, which are too com… to the species. It flowered well last autumn with Mr. Glen… of the Farnham-green Nursery. He writes us respecting … as follows:—"Its scarcity in collections is attributable to … causes; viz., the sparing way in which it has hitherto been … and the want of the true desideratum of culture, and the … difficulty attending its preservation during winter. I per… it by division of the roots. This means of increasing it, … is a very sparing one. It should be divided early in … autumn, that the plants may be established before the damp … It must not from this be inferred that the plant is … tender. On the contrary, it will resist considerable intensity of … without injury. It will produce seeds, although not freely. … plant here has afforded me a little seed; and I have now plants … obtained by both modes of increase. The seeds should be sown … immediately when gathered, in light sandy soil, and placed in a … house. When sufficiently advanced, the plants should be … potted singly in small sixties, and kept in a dry part of the green… house during winter." The great point in growing the plant is … evidently to preserve it from superfluous dampness. To aid in … effecting this, the heath-mould in which it is potted should be … particularly fibrous and open, and have a little turfy loam and … leaf-mould mixed with it, besides a small quantity of broken … sandstone. The three divisions of the pappus of the flower have … originated the generic name, which is from *treis*, three, and … *pilion*, a feather.—*Paxton's Magazine of Botany.*

Achimenes pedunculata. Long peduncled-flowered Achimenes. (*Stove Perennial.*) Gesneraceæ. Didynamia Angiospermia. The soft and exquisite light purple of the blossoms of *A. longiflora*, and the glowing crimsony scarlet of *A. coccinea*, have been a worthy companion in the deep vermilion and orange of *A. pedunculata*, which is likewise a species so peculiar in habit, that it presents a fine change from the others. It was found by Mr. Hartweg, the collector for the Horticultural Society, in the shady woods of Santa Maria, Guatemala, and sent to the Society's garden at the same time as *A. longiflora* and *A. coccinea*. One of its chief recommendations is, that it continues to flower late in the season, specimens were blooming freely in the nursery of Mr. Mountjoy, Ealing, in October last. Being of a strong erect habitude, it grows to the height of eighteen inches or two feet, and bears its handsome blossoms towards the top of the stem, on long axillary peduncles, which have usually two flowers on each. Their colour is a dark vermillion, with a light orange-coloured throat, and dark stripes in it extending nearly across the segments of the limb. Curious little bulb-like tubers are formed on the upper part of the peduncles, along with minute leaves. To have this Achimenes in high perfection, it should be grown rapidly when it begins to start. A warm moist atmosphere will best accomplish that object; and if these conditions be supplied through the medium of bottom-heat, they will be all the more congenial. A moderately rich loamy soil is requisite. Throughout the winter the plant will remain in a state of rest; but it does not lose its stems so early as some of its allies, and consequently requires to be watered with caution in the autumn. We presume that, like the rest of the species, it produces tubers in abundance from its roots, and that by these it may be readily propagated. From the rich colours of its flowers, it offers a good companion to the hybridist for blending with such species as *A. grandiflora* or *rosea*. Indeed, with the former, its pale blossoms would be improved in size; while *A. rosea* would be altogether ameliorated by the intermixture of its hues.—*Paxton's Magazine of Botany.*

Clematis montana. Var. *grandiflora*. Mountain Virgin's Bower. Large-flowered variety. (*Hardy Climber.*) Ranunculaceæ. Polyandria Polygynia.—This handsome variety of the very elegant Chinese mountain flowered in the open ground, in the garden of Mr. Veitch, of Exeter, at the same time with the ordinary form of the plant, of which the blossoms are not half so large. Both are well worth cultivating in gardens where there is a recommendation for climbers. The profusion of large flowers, the delicacy of their colour, and their fragrance, are strong … This species is a native of Northern India; … Hardwicke, Gamble, collected it at Chitkool, in the Valley of … Simla, Himalaya, in April. Mr. Blinkworth gathered it in … Nepaul, where it appears to be prevalent in the Himalayan … mountains, from elevations of from 5,000 to 7,000 feet above the … of the sea. In this country it flowers in early summer, and … ripens seeds in the month of September. In a few years it ought … to become a very general plant, for it strikes readily from cut… and layers.—*Curtis's Botanical Magazine.*

THE NATURALIST'S CORNER.

Tea, Chocolate.—Cocoa-beans, from which chocolate is … prepared in lumps or cakes, or in … to sell in the shops under the name of cocoa, are … from the Theobroma Cacao of botanists. This tree … to the height of 15 or 20 feet. The fruit resembles … in commonly about three inches in … In growth on the outside, and has a yel… The … are … in a pulpy substance, which … to the … The … are … and … and … Four trees … cultivated … money in some parts of America. Chocolate … seems to have been first manufactured in Mexico, and the … Castile ladies *were* for a long time so fond of the beverage, … that it was habitually served to them even in church by … slaves.

74. Malloiæ.—Among the very numerous species of *Malvaceæ*, several are of essential service to man. As … emollients they are well known in medical practice; the Marsh-mallow (*Althæa officinalis*) being one of the most useful among this kind of remedial substances, and a large proportion of the whole order being capable of supplying its place. The hairy covering of the seeds of the various species of *Gossypium* forms the raw cotton, so important to our manufacturers. *Malva tricuspidata* is used by the negroes in the West Indies as a substitute for soap. The seeds of *Hibiscus abelmoschus* are warm and musky, and are employed in perfumery as a substitute for musk; those of *Hibiscus esculentus* form the ochra, so much used in hot countries as a mucilaginous ingredient in soups. A few species are acid, especially *Hibiscus sabdariffa*. Finally, the tenacious fibres procured from the inner bark of many kinds of malvaceous plants, form a good description of cordage. *Hibiscus elatus* and *tiliaceus*, and several kinds of *Sida*, are principally used for this purpose.

Miscellaneous.

Mr. Loudon.—Mr. Loudon's father was a farmer, residing in the neighbourhood of Edinburgh, where he was very highly respected; but Mr. Loudon was born on April 8th, 1783, at Cambuslang, in Lanarkshire, where his mother's only sister resided, herself the mother of the Rev. Dr. Claudius Buchanan, afterwards celebrated for his philanthropic labours in India. Dr. Buchanan was several years older than Mr. Loudon, but there was a singular coincidence in many points of their history. The two sisters were, in both cases, left widows at an early age, with large families, which were brought up by the exertions of the eldest sons; and both mothers had the happiness of seeing their eldest sons become celebrated. Mr. Loudon was brought up as a landscape-gardener, and began to practise in 1808, when he came to England with numerous letters of introduction to some of the first landed proprietors in the kingdom. He afterwards took a large farm in Oxfordshire, where he resided in 1809. In the years 1813-14-15, he made the tour of Northern Europe, traversing Sweden, Russia, Poland, and Austria; in 1819 he travelled through Italy, and in 1828 through France and Germany. Mr. Loudon's career as an author began in 1803, when he was only 20 years old, and it continued with very little interruption during the space of forty years, being only concluded by his death. The first works he published were the following:—"Observations on laying out Public Squares," in 1803, and on "Plantations," in 1804; a "Treatise on Hothouses," in 1805, and on "Country Residences," in 1806, both 4to.; "Hints on the Formation of Gardens," in 1812; and three works on "Hothouses," in 1817 and 1816. In 1822 appeared the first edition of the "Encyclopædia of Gardening;" a work remarkable for the immense mass of useful matter which it contained, and for the then unusual circumstance of a great quantity of woodcuts being mingled with the text: this book obtained an extraordinary sale, and fully established his fame as an author. Soon after was published an anonymous work, written either partly or entirely by Mr. Loudon, called the "Greenhouse Companion;" and shortly afterwards "Observations on laying out Farms," in folio, with his name. In 1824, a second edition of the "Encyclopædia of Gardening" was published, with very great alterations and improvements; and the following year appeared the first edition of the "Encyclopædia of Agriculture." In 1826 the "Gardeners' Magazine was commenced, being the first periodical ever devoted exclusively to Horticultural subjects. The "Magazine of Natural History," also the first of its kind, was begun in 1828. Mr. Loudon was now occupied in the preparation of the "Encyclopædia of Plants, which was published early in 1829, and was speedily followed by the "Hortus Britannicus." In 1830, a second and nearly re-written edition of the "Encyclopædia of Agriculture was published, and this was followed by an entirely re-written edition of the "Encyclopædia of Gardening," in 1831; and the "Encyclopædia of Cottage, Farm, and Villa Architecture," the first he published on his own account, in 1832. This last work was one of the most successful, because it was one of the most useful, he ever wrote, and it is likely long to continue a standard book on the subjects of which it treats. Mr. Loudon now began to prepare his great and ruinous work, the "Arboretum Britannicum," the anxieties attendant on which were, undoubtedly, the primary cause of that decay of constitution which terminated in his death. This work was not, however, completed till 1838, and in the meantime he began the "Architectural Magazine," the first periodical devoted exclusively to architecture. The labour he underwent at this time was almost incredible. He had four periodicals—viz., the "Gardeners'," "Natural History," and "Architectural Magazines," and the "Arboretum Britannicum," which was published in monthly numbers, going on at the same time; and, to produce these at the proper times, he literally worked night and day. Immediately on the completion of the "Arboretum Britannicum," he began the "Suburban Gardener," which was also published in … with the "Hortus Lig… and in 1838 appeared his edition of Repton's "Landscape Gardening." In 1840, he re… the editorship of the "Gardeners' Gazette," which … the … year, and … the "Encyclopædia of Trees and Shrubs." In the same year he completed his "Suburban Horticulturist;" and finally, in 1843, he published his work on "Cottage, Farm, and Villa Architecture," the last separate work he ever wrote. In this list the minor productions of Mr. Loudon's pen have not been omitted; but it may be mentioned, that he contributed to the "Encyclopædia Britannica," and to the "Dictionary of Science;" and that he published numerous supplements, from time to time, to his various works. No man, perhaps, has ever written so much, under such adverse circumstances, as Mr. Loudon. Many years ago, when he came first to England (in 1803), he had a severe attack of inflammatory rheumatism, which disabled him for two years, and ended in an anchylosed knee, and contracted left arm. In the year 1820, whilst writing the "Encyclopædia of Gardening," he had another severe attack of rheumatism; and, the following year, being recommended to go to Brighton to get shampooed at Brighthomat's baths, his right arm was there broken near the shoulder, and it never properly united. Notwithstanding this, he continued to write with his right hand till 1826, when the arm was broken a second time, and he was then obliged to have it amputated; but not before a great breaking up of the frame had commenced, and the thumb and two fingers of the left hand had been rendered useless. He afterwards suffered frequently from ill health, and his constitution was finally undermined by the anxiety attending on that most costly and laborious of all his works, the "Arboretum Britannicum," which has, unfortunately, not yet paid itself. He died at last of disease of the heart, after suffering severely about three months; and he retained all the clearness and energy of his mind to the last. His labours as a landscape-gardener are too numerous to be detailed here, but that which he always considered as the most important, was the laying out of the Arboretum so nobly presented by Joseph Strutt, Esq., to the town of Derby. Never, perhaps, did any man possess more energy and determination than Mr. Loudon; whatever he began he pursued with enthusiasm, and carried out, notwithstanding obstacles that would have discouraged any ordinary person. He was a warm friend, a most kind and affectionate in all his relations of son, husband, father, and brother; and he never hesitated to sacrifice pecuniary considerations to what he considered his duty. That he was always most anxious to promote the welfare of gardeners, the volumes of this Magazine are ample witness; and he laboured not only to improve their professional knowledge, and to increase their domestic comforts, but to raise their moral and intellectual character.—*From the Gardeners' Magazine*—which, we regret to say, has been finally discontinued, after a useful existence of 18 years.

Casalpinia coriacea.—The seeds of a plant … exhibited on the 7th of Dec. at the Royal Society of Horticulture, Paris, under the name of Casalpinia coriacea. … it was an error, for they were the seeds of Cæsalpinia … which are used in America for tanning. I saw the tree … in the hothouses at Neuilly and elsewhere, where the … seeds of this tree grow in the tan-bed. It is a remarkable fact, that the tannic acid produced by tan-bed … this tree to grow, whilst in its fresh state it destroys the … embryo of many vegetables. The tanning principle is … in the sides of the pods and not in the seeds.—*Paxton.*

CALENDAR OF OPERATIONS

For the ensuing Week.

The Gardening Directions in this Paper have … hitherto entrusted annually to some one Gardener … known skill and reputation; and we hope our readers will agree with us in thinking that the manner in which Mr. Paxton, in the first instance, and subsequently Messrs. Whiting and Beaton, fulfilled their task, was worthy of all praise. It has, however, been found that a weekly duty of this nature presses too heavily upon any one diligently engaged in the business of a Gardener; and moreover, no one person, however great his talent, can be supposed to understand all branches of cultivation equally well. We have, therefore, decided upon altering our plan so far as to confide the important duty of conveying … instruction or advice to gardeners all over the United Kingdom, to some of the most intelligent persons of our acquaintance; and by this means we trust to render the Calendar all that it is possible that it should be. We may be expected to state who the authorities are, which we have been so fortunate as to secure. We must, however, decline affording the curious any information on that point, for the following reason. The labour of writing the Calendar is in itself very considerable, when, in addition, the writer is exposed to answer questions, upon all kinds of subjects from various correspondents, the trouble is increased beyond endurance, and, in fact, we do not feel justified in asking any one to be exposed to it. This we conceive sufficiently explains our motive for concealing the names of our Calendar friends.

I.—HOTHOUSES, CONSERVATORIES, &c.

The temperature of the stove should not exceed 80° with fire-heat, and a fall of 10° may be allowed at night in … cold weather. Although all plants now at rest should be kept comparatively dry, they will require to be looked over … to see that they do not suffer for want of water, particularly those nearest the pipes and flues. Orchideæ may be potted up-to-date, or fixed to wire baskets at any time when … can be done in the open air, but they need not be watered … enticed to grow for making them.

Conservatories.—Old-established plant-houses this season will require a … quantity of fire-heat. I have seen Conservatories with … plants that grew very well that did not receive air by the … for months together. In order to keep down damp … in … plants, when … the paths should not be swept when … admitted. Chrysanthemums are often … in … to show the leaves. Very little … will be … now, and that should be … or ten degrees …

(temperature of the house, which has to about 45°. ... The temperature of this house should not be ... above 50° now; the watering ought to be finished ... the day, and the plants should be constantly looked over ... them free from dead leaves, insects, or moldered mould ...

Pits.—A multitude of half-hardy plants may be kept in ... without any manner of artificial heating; but at the ... notwithstanding all care, some of them may be lost; ... however, will occur in the best plant-houses.

Forced Flowers.—As I promised I shall have a good deal to ... under this head. I shall only now remark that where ... forcing are in great request two divisions are necessary ... such kindly plants as do not succeed in a high temper- ... with means for bottom-heat, for Gardenias and ... Almost all plants, however, in forcing, are ... bottom-heat.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

... the late frost and snow, but little can be done here at ... except where alterations are going on, and then the ... of ground for planting may be proceeded with; but it ... desirable to keep the frozen or snow-saturated surface ... of the top, as, if thrown into the bottom of the trenches, it ... remain cold for a long time. Keep the walks and Grass as ... and clean as possible, to compensate a little for the want of ... at this dull season.

Flower Garden.—Beds containing autumn-sown Annuals ... be the better for a few branches of evergreens stuck into ... to shade the plants from bright sunshine after frost, and ... protect them from drying winds. Plants generally in the open ... are tender this season, and must be watched accordingly.

Pits and Frames.—The young stock of plants in these struc- ... are in a growing state, and therefore will require to be ... carefully guarded against frost; but give them all the air and ... possible on fine days, and keep them free from decayed ... and moisture. Where Hydrangeas are required to turn ... the beds in the flower-garden in April and May, they must ... to be put into the forcing-house. Get dung prepared, to form ... propagating bed next month.—*W. P. A.*

III.—FLORISTS' FLOWERS.

As this matter does not press, we defer this part of our Calendar ... the present.

IV.—PINERIES, VINERIES, &c.

Pineries.—In undertaking to write this department of the ... I feel that I can advance little that will be of service to ... who possess the former Numbers of the *Chronicle*, or to ... practical gardeners; but if what I may say from time to ... will be of use to the less experienced, it will afford me ... pleasure. Perhaps there never was a time when more ... was felt in the cultivation of the Pine-apple, than at ..., or when the spirit of competition ran higher among ... generally, than it is likely to do during the coming ... If the fruiting-pit is kept at 60° by night it will be ..., raising it 5° or 10° by day, according to the clearness ... *atmosphere*. Take every favourable opportunity of admit- ..., water sparingly with a fine rose pot; it is scarcely safe ... unless rose at this season. Keep a moist atmosphere, ... remember that steam is never of so great a density as to ... the leaves, and run into the hearts of the plants, or into ... the pot. Maintain a steady heat of 80° in the tan, or ... the Pines are planted out. The young stock should not ... more heat than is sufficient to keep them from going to ... 60° by night is quite high enough during this month. The ... for the young succession plants may be kept about ... a less moist atmosphere during this month, and ... fresh air on all favourable occasions.

Vineries.—Where the Vines are showing, keep a heat of 55° to ... and raise the heat in the morning 5 or 10 degrees. ... sunshine, which can be more safely done ... by a thermometer at the top of the house a little, than ... the Vines are now being started 45° to ... days or a fortnight, and if fermenting ... used it will be beneficial to the ... may the heat is applied be sure to keep a moist ... If any of last year's shoots have been kept of a ... length, endeavour to get all the buds to break ... pruning them so as to place the lowest buds in the ... position for receiving the best supply of the ... Cover the outside borders, if the roots extend into ... with leaves, and of a sufficient thickness to cause ... frost to enter the border.

Peach-house.—If the buds are swelling, 50° by night may ... sprinkle the trees frequently, and protect the ... the effects of frost, which is likely from present ... to be severe. It is an excellent plan to have a ... Peach-trees in pots or tubs for the first early crop. If ... in bloom, it will be well to assist the setting of the ... by means of a camel-hair pencil. Trees in bloom require ... temperature of 57° by night and a rise of 5° or 10° by day ... heat, according to the state of the atmosphere.

Greenhouse.—The directions for the Peach-house will apply to ... If there are some good plants in pots promising to be ..., they may be placed in the Vinery or Peach-house if ... to accommodate them. Put pans under the pots or plunge them ... leaves.

Conservatory.—*Now* is a good time to bring some pots of the ... plants into a pit or frame, where there is the means of ... a gentle heat of 45° to 55°, giving plenty of air when- ... is mild. Stir the surface of the soil in the pots, and ... with some well decayed manure and fragments of ... that the holes in the bottoms of the pots are not ...

Melons.—Those who wish to have ripe Melons in May should ... at once.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

The mild weather, up to the beginning of the year, has afforded ... opportunities for performing all out-door operations. ... ground ought to have been turned up by rough ... or ridging, regulating these operations ... to the atmosphere of the soil, and the nature of pre- ... and succeeding crops. Slugs and snails were ... to cause trouble in this way, but *Jack Frost* will now take care ... for a little, only be careful he is prevented from nibbling up ... Cauliflowers, &c. in a more systematic way. Keep a sharp ... after Cauliflower plants, Autumn-sown Hand-lights, and those in ... as well as Lettuces, Endive, and Radishes, in cold ... protect the latter with straw, or ... with evergreen shrubs, or with ... covered with straw, or ... Protect by thatching any loose litter over ... Asparagus, Seakale, and Rhubarb; and that the three ... may be forced by-and, but they will come in much earlier ... to be treated to a low temperature. If not already ... the earliest opportunity of mild weather to sow the ... of Prussian Beans, choosing for the main crop the established ... and also small quantities of those sorts the superi- ... which are only occasionally tested. Dress Celery from ... which may yet for a considerable time if taken up with ... roots, in rows 18 inches apart, and clean dry earth put ... the rows, so as the hearts do not touch moist earth. ... and defend all stored roots and fruits.

Fruit-trees.—Mild weather for pruning, nailing, and ... It is always advisable to get on forward as possible with ... Standard trees in gardens. Protect young newly-planted ... from frost. The wood of fruit-trees will not be injured ... by frost when in a dormant state, but when in a growing ... the case is different. Protect from frost also Peaches ... and Apricots, and Apricots against which have been unable ... some time ago. The free exposure of these to all rides would ... render them better hardened, and from not being contiguous to ... the wall, they would not be so easily excited, nor in so much ... danger of having their sap-vessels burst by severe frosts. In addition to this, the stems might be bound round, not over ... closely, with hard twisted straw bands, and a little long litter ... thrown over the border to the width of four or five feet. This is a fine opportunity for moving soil, turning composts, and wheeling manure. Do not forget to give a little of the latter as a ... mulching or top-dressing to your Strawberry-beds, if you want to have very superior fruit next season.—*R. J.*

VI.—ARBORICULTURE.

Old Woods.—The felling of timber-trees not designed for peeling the bark should be forwarded at all convenient times. Filling up vacant spaces, when the weather permits, with young plants suitable to the soil, locality, and demand, should be proceeded with.

Coppice.—Put forward the cutting of the undergrowth for cor- ... rods, sheep-hurdles, watling, hop-poles, hoops for barrels, and ... any other purposes required; but if a vigorous aftergrowth is wished, I would prefer leaving such work till February, March, or April, for reasons I may give at a future time. Clear out open drains, and make fresh ones where wanted: this work might be done in frosty weather. Fill up open spaces with young plants suitable to the soil—this should always be attended to.

Young Plantations.—Make new ones. Trench the ground, where a speedy growth is desired for immediate effect, for blinds or shelter, especially when large plants are used. In plantations advanced in growth, begin to thin out some of the supernumerary and inferior kinds when they begin to crowd each other, or, rather, shorten the side-branches of those intended to be taken out, for a few years beforehand.

Hedge-row Trees.—Now is the time to plant properly-prepared plants of select kinds; and as winter and spring is the season for pleaching and regulating hedges, great care should be taken to preserve what young trees there may be of the proper kinds that often naturally spring up in them, and to plant fresh ones where required. Care should be taken not to divest them of all their lateral side-branches—only the largest; and always preserve one upright leader.

Nursery Work.—I intend to confine my remarks chiefly to Nurseries of private individuals.—Make Nurseries where required. Trench the ground for planting out in rows seedling forest-trees, (either raised privately or purchased from public Nurseries,) and for sowing seeds, nuts, or berries of the commonest kinds of plants—such as Hollies, Haws, Acorns, Spanish Chesnuts, Walnuts, and any others desired. Protect young plants from the depredations of hares and rabbits, if you can;—in some future Number I will say how, on a limited scale.—*W. B.*

VII.—COTTAGERS' GARDENS.

The unusual mildness of the season until within the last few days will have enabled the Cottager to be pretty well forward with his operations in the garden, and he will now have little to do in the way of digging, &c. for some time. As we may, however, yet expect to have some severe weather, any plants, such as China Roses, that are rather tender, should be protected, for having been somewhat excited by the late fine weather, frost will have more effect upon them, and might prove very injurious. Any hardy creeper on the cottage, as a Clematis, if not previously done, may now be neatly trained. Plants in pots, such as Pelargoniums or Fuchsias, should have an abundance of air given them every fine day; they should be watered sparingly, and this should always be done at this season in the morning.

Vegetables.—Marshall's dwarf Prolific and Mazagan Beans are the kinds generally used for early crops; the latter is the hardiest, and if not done before this, some may be sown for an early crop as soon as the weather will allow, in shallow drills about 18 inches apart, on a warm border. They may be planted in the row about three inches apart, and covered about two inches deep. On the first fine day a sowing of the Early Frame or Charlton Peas may be made, on a warm sheltered border, which should have been ridged crosswise; draw the drills within three inches of the bottom on the south side of the ridge; this will keep the seeds dry, and prevent them from rotting, as sometimes happens, especially in a retentive or clayey soil. For this crop the seeds should be sown pretty thick, and in case of intense frost they should be protected by Fern or Furze; some of the latter chopped may be put in the drills to prevent the ravages of mice.

Fruit.—Any fruit-trees trained against a wall may now be pruned, have their shoots nailed quite straight, and disposed so as to cover the wall equally. Standards may also now be pruned, taking care to cut out all cross branches. Gooseberries and Currants, if not previously pruned, may now be done, so as to allow the ground to be dug amongst them.

Flowers.—Bulbs, if any, such as Daffodils, Anemones, or Tulips, if not already planted, the earliest opportunity should be embraced for getting them in. Those planted in October will now be above ground; they should be covered with Fern to keep them from frost. Every unsightly object should be removed from the flower-borders, so as to give them a neat appearance.—*Mc. H.*

State of the Weather near London for the week ending Jan. 4, 1844, as observed at the Horticultural Garden, Chiswick.

Dec.	Mean's Age.	Barometer. Mag.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri. 29	8	30.451	30.211	43	37	41.0	S.W.	
Sat. 30	9	30.278	30.126	42	38	40.5	S.W.	.02
Sun. 31	10	29.979	29.664	50	39	42.0	S.W.	.30
Mon. 1	11	29.606	29.361	39	27	33.0	W.	.03
Tues. 2	12	29.630	29.435	37	14	25.5	N.W.	
Wed. 3	13	29.569	29.291	42	32	37.0	W.	.34
Thurs. 4	14	29.788	29.510	51	34	42.5	W.	.05
Average		29.971	29.674	43.7	30.4	37.1		1.04

Dec. 29. Thickly overcast; hazy throughout.
30. Fine; densely clouded; rain at night.
31. Cloudy and fine; equally with rain at night.
Jan. 1. Snow and sleet, commencing half-past 7, continuing till 11, A.M.; sunshine in afternoon; sleet and frosty.
2. Slightly overcast; very clear; severe frost at night.
3. Severe frost; overcast; rain at night.
4. Hazy and mild; evening cloudy, with low fog.
Mean temperature of the week 1° above the average.

Summary of the Weather at Chiswick during the last 10 years, for the ensuing week ending January 13, 1844.

Jan.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.					
						M.		A.		E.	
Sun. 7	37.0	26.6	32.0	4	0.14 in.	1	2	2	2	2	1
Mon. 8	37.0	28.1	32.1	3	0.36	1	3	1	1	3	2
Tues. 9	38.4	21.5	34.5	5	0.38	1	4	1	1	3	1
Wed. 10	40.3	30.3	34.7	7	0.46	1	3	1	1	3	2
Thurs. 11	39.0	29.0	33.5	3	0.28	1	3	1	1	3	2
Fri. 12	41.5	29.4	35.4	7	0.32	1	3	1	1	3	2
Sat. 13	42.8	32.3	37.6	10	0.69	1	4	1	1	3	1

The highest temperature during the above period occurred on the 9th, 1841—thermometer 55°; and the lowest on the 8th, 1981—thermometer 9°.

Notices to Correspondents.

Achimenes grandiflora.—*A Subscriber.*—You could not have adopted a better method to preserve the tubers of your Achimenes grandiflora. When you wish to start them, place them in a moist and warm place, and water.

Ipomœa versicolor.—*Ipomœa versicolor* is a species of purple and another of white. If grown in pots [illegible] ... [illegible] ... [illegible] ...

Shortly will be published,

BRIEF REMARKS on some subjects connected with the CHOICE of WHEAT for SEED; interesting to Farmers, Corn Factors, and Bakers.

By Sir G. S. MACKENZIE, Bart., F.R.SS.L.&E., &c.

Simpkin and Marshall, London; M'Lachlan & Stewart, Edinburgh.

PRACTICAL DIRECTIONS FOR THE CULTIVATION AND GENERAL MANAGEMENT OF COTTAGE ALLOTMENTS, with Plans for laying them out for five years. Also, Hints on Keeping Pigs, on Service, &c.; with a Form of Rules and Agreements By CHARLES LAWRENCE, Esq., of Cirencester. A Third Edition is being printed by Messrs. MANNING and Co., of Ivy-lane, Newgate-street; by whom all orders will be supplied, which may be sent to them before the 12th of January, at 20s. per hundred copies.

The Agricultural Gazette.

SATURDAY, JANUARY 6, 1844.

It is probable that most of our readers have seen the prospectus which has for the last few weeks been published in this and other Papers advertising the addition of an *Agricultural Gazette* to the *Gardeners' Chronicle*. There is, however, a good deal connected with the fact thus advertised that perhaps may not have occurred to some of them, and we propose at present to enlarge upon one of the subjects thus suggested.

The whole business of farming naturally consists of two branches, the one of which refers to the *production* of Vegetables, Wheat, and other Grains, Turnips and other roots, Clovers, Grasses, &c; and the other of which refers to the *conversion* of some of these into animal substances—beef, mutton, bacon, milk, wool, &c. So far from this being merely an ideal division, it is one which, in some parts of the country, actually exists; so that, in such districts, there are two distinct lines of business connected with the land—that of the farmer, who either sells his green crops on the ground, or carries them to his buildings to dispose of them there; and that of the dealer, who purchases these crops and brings his sheep and his cattle on the farm to consume them. The principles upon which these two lines of business depend for their successful prosecution, are, of course, entirely distinct, and so also, when they are separate, are the qualifications required by those who would engage in them.

Now, it is with reference to the first only of these two branches of the business of the farmer that Agriculture can be said to come in contact with Horticulture—it is in the first part of the business only that the principles upon which successful farming depends are the same as those which should regulate the practice of the gardener; and the fact of a Farmers' Paper being established by the conductors of the *Gardeners' Chronicle*—an Agricultural being thus grafted by them upon a Horticultural periodical—may be considered as an intimation of their wish to direct the attention of their readers more particularly to the details of the first branch of farming and to the principles upon which those details depend.

The attention of the Agricultural world has, indeed, been for many years past, so much—and were it not for the writings of the last year or two, we might say so exclusively—directed to questions connected with the breeding and management of live stock, that to bring forward a new periodical in addition to those which still continue to draw attention to this branch of farming would be a superfluous and perhaps an unsuccessful attempt. Our readers must not, however, understand this expression of our opinion to imply that we shall altogether neglect the important branch of farming to which we allude. The conversion of his green crops in the most profitable manner can hardly interests every good farmer to admit of this. A great deal of light, too, has been lately thrown upon this subject by Professor Liebig's exposition of its dependence upon the laws of organic chemistry and animal physiology, and to the practical application of these laws we shall frequently invite the attention of farmers. All that we wish to express is our decided opinion, that, considering the art of *cultivation* as the most important branch of farming, great good would result, could we succeed from the neglect with which comparatively speaking, it has been hitherto treated over large districts in this country.

In connection with this, we wish to impress upon our readers what we are very sure of—that more good will result from an endeavour to concentrate, and apply the knowledge already possessed, and to diffuse more extensively with that amount of practice adopted in this country, under the various circumstances of soil, climate, and markets by which Great Britain is distinguished, than by any attempt to extend our knowledge of abstract truth. Theories of Agriculture, [illegible] we [illegible] to name Liebig, [illegible] Johnston, [illegible] Sir H. Davy, and other [illegible] are [illegible] to-day, consisting as it does of many of the most experienced and successful Farmers in every part of the kingdom, who have given us assurances of their approval and co-operation. And, with them, we invite our agricultural readers to use our columns as the channel for the interchange of opinions on the numerous subjects connected with our common occupation, and through which to publish, for the benefit of all, the results of their agricultural experience.

It is said that the advantage of a Farmers' Club to its members consists in the opportunities which it offers to each, of acquainting himself with the agricultural knowledge and practices of all the others The point of perfection in the course of usefulness on which we shall endeavour to enter will have been then only attained when all our readers shall have been thoroughly brought to consider themselves as the members of one large and active Farmers' Club, ourselves occupying the place of the organs of speech and hearing, through which they may communicate with one another.

To these general observations we have only to add, that the following are the heads under which the matter of the *Agricultural Gazette* will be arranged:—

1. LEADING ARTICLES, which will generally refer to subjects suggested by the time of the year, and the farming operations of the season.

2. ORIGINAL MATTER, in the form of special papers on Agricultural subjects, such as the cultivation of our most important plants, the management adopted in certain branches of farming—the dairy, for instance, the weeds of Agriculture, Agricultural Mechanics, the Agricultural history and present condition of certain districts, and the various sciences, such as Chemistry, Animal and Vegetable Physiology, Geology, &c., on which the success of the farmer's practice depends. Here, too, any translations which it may be deemed advisable to make from foreign works on Agriculture will be placed; and we this day give No. 1 of a series of papers from the chapter on Mineral Manures, in Sprengel's important Work on that subject.

3. HOME CORRESPONDENCE.—This will, we hope, become the most valuable section of the contents of our Paper. The conditions under which farming is carried on in this country are so various, that it is impossible for any *one* system of Agriculture to be of universal application. An Agricultural periodical, to be *generally* useful, must therefore contain information derived from sources widely spread over all parts of the kingdom. We have already received promises of contribution to this section of our Paper from many different quarters; and we doubt not that our readers, seeing its usefulness, will assist in the compilation of this common stock of Agricultural information. We shall, in our next Number, explain more fully our views upon this subject.

4. PROCEEDINGS of the English, Highland, and Irish Agricultural Societies; and of the various County Agricultural Societies, and Farmers' Clubs. We may, however, as well announce at once that we do not propose to report after-dinner speeches, except upon very special occasions.

5. REVIEWS OF AGRICULTURAL WORKS.

6. MISCELLANEOUS notices of events of general Agricultural interest, extracts from works on Farming subjects, &c.

7. NOTICES TO CORRESPONDENTS; a department of the Paper which we shall endeavour to make of real use. We engage that Agricultural queries sent to us shall receive the attention of those competent to answer them.

8. REPORTS OF THE MARKETS.—Under this head, will be given as full a statement as the farmer will in general require for his own guidance; and it will be obtained from unexceptionable authorities, whose names will, we trust, be eventually attached to the several sections of which it will consist. Mark-lane and Smithfield, the Wool-markets of Yorkshire, the Hay, Potato, Butter and Cheese, Hop, and Manure markets, will be fully reported.

So much for the proposed contents of the *Agricultural Gazette*. As to the principles which will guide us in the selection of matter, it will be sufficient to say that ALL PARTY questions are to be excluded, as well as everything at variance with that courtesy which we all owe to each other. In the execution of our task we have no small satisfaction in being able to rely upon the support of some of the most distinguished members of the leading Agricultural Societies, of some of the most eminent scientific men who are now turning their attention to Agriculture, and of many of the best practical farmers, Agricultural engineers, and Agricultural writers of the present day.

In the early part of last year, the Editor of the *Gardeners' Chronicle* alluded to a suggestion which had been thrown out on the importance of experimental co-operation among Agriculturists in the following terms:—"When a philosopher works carefully in his cabinet, acquainted accurately with the nature of all the agents spread before him, and alive to all the disturbing influences that may affect his results, he knows that one experiment is as good as a hundred, and a necessity for repeating it may not be felt; for when natural causes are exactly alike, the same effects must as surely follow them as when figures are dexterously combined by the arithmetician. But the cultivator of the soil is in a wholly different position: he has to deal with materials which, although they are called by the same name, may be really very different in their nature. He knows very little about them; a thousand circumstances unobserved by his untrained eye may exist to disturb his results, and the consequence is, that all his experiments must be varied and repeated till *a series of averages* will form a rough but sufficient check to his conclusions. We may fairly doubt whether the course operations of Gardening and Agriculture will ever bear to be examined in any other way; and if they would bear it, the new results of new practices will certainly fail of carrying conviction to the minds of the mass of the people, unless supported by evidence accumulated upon evidence."

Since the publication of my Letters to the Farmers of Suffolk, I have had an opportunity of conversing with several scientific men on the subject, and they have agreed with me in considering that such a scheme as that which has been suggested, if fairly carried out, would speedily lead to most important results. I have seen, by the local papers, that Mr. Nesbitt has been very effectively inviting some of the Farmers' clubs in Kent to assist in carrying out such a scheme, and he has informed me that several members of those clubs have expressed their readiness to join in any attempt which may be made. I have received a similar assurance from the neighbourhood of Saffron Walden. The Rev. E. Sidney has most intelligently and efficiently been lecturing to the farmers and others, for some time past, in the neighbourhood of Norwich, on scientific subjects bearing upon agriculture; and, from what he tells me, I can feel no doubt that many practical men in that quarter have become capable of fully appreciating, and would be willing to assist in carrying out, a general system of experimental co-operation on the very simple and limited scale proposed. No doubt there are many localities in every county where a similar disposition would be found to prevail. The real difficulty appears to lie in the properly organising some system for the purpose—a difficulty which, the more I think of it, the more I am satisfied is very trifling. I hope, as I may, to find time to occupy these pages with a few remarks upon the subject, suggesting some of those correspondents who may be disposed to discuss it with me, either to state objections or throw out suggestions, as they may see cause in doing so; in short, freely to examine a question which some persons among the best qualified for judging of its merits consider to be one of real importance to the interest of Agriculture. I have promised on this occasion to state the results of an experiment with which I have been favoured by C. Bree, Esq., of Stowmarket; and I hope, it may tend to remove the scepticism of certain persons who as yet have acquired no faith in the advantages to be derived from science, and that it will assist in convincing them how possible it is for a chemical proficient, like Liebig, to make suggestions which are likely to lead to important practical results. Liebig had asserted that certain substances, as sulphuric acid, gypsum, &c., might be serviceably employed in fixing the ammonia which escapes during the putrefaction of animal and vegetable manures. Mr. Bree's experiments were directed to the verification of this assertion, so far as regards liquid manure. He filled, during the months of February and March, 1843, three tubs, A B C, with 50 gallons each of human urine. Into A he poured, at intervals, 20 oz of sulphuric acid; in B he placed 8 lbs of burnt and 15 lbs of unburnt gypsum; the urine in C was allowed to putrify without anything being done to it. In A, decomposition appeared to be completely arrested; in B it was protracted, but ultimately appeared to proceed as though no gypsum had been present.

Six patches of ground were measured out, each containing eight perches, and to these the manure were applied, whilst a seventh patch of 8½ perches was left unmanured for the purpose of obtaining a comparative experiment. These patches were treated in the following manner previously to the seed being sown:—

No. I.	10 gal. of urine	and 20 gal. water	from tub A.
II.	15 "	and 15 " "	(sulp. acid.)
III.	10 "	and 20 " "	from tub B.
IV.	15 "	and 15 " "	(gypsum.)
V.	10 "	and 20 " "	from tub C.
VI.	15 "	and 15 " "	(nothing.)
VII.	No manure applied.		

Each patch was sown on 6th April with 13½ pounds of Barley and Clover. No distinct difference was at first perceivable between the different crops, but the man who sowed the Barley readily pointed out the

best and worst. The Clover was *very strong* where the gypsum was used.

The following were the results obtained:—

No.		Grain.			Straw.
		lbs.	Bush. P.	Qrs	lbs.
I.	10 gals. A. to 20 gals. water	133	2 2	2½	214½
II.	15 ,, A. to 15 ,, ,,	128	2 1	3½	181
III.	20 ,, B. to 10 ,, ,,	109½	2 0	5	146
IV.	15 ,, B. to 15 ,, ,,	108	2 0	2½	159
V.	10 ,, C. to 20 ,, ,,	105	2 0	1	155
VI.	15 ,, C. to 15 ,, ,,	115	2 0	2½	183
VII.	. . . . .	96	1 3	2½	173

From these data Mr. Bree has made the following calculations:—

No.	Per Acre.		Weight per Corn.			
			By Calculation.		By Chondrom.	
	st. lbs.	qr. b. p. qr.	st.	lbs.	st.	lbs.
I.	140 0	13 1 0 2	14	4	15	6
II.	128 12	12 1 1 2	14	13	15	4
III.	126 6	10 3 3 0	14	3	15	8½
IV.	136 4	10 3 0 2	14	5	15	4
V.	130 0	10 1 1 0	14	0	15	4
VI.	164 4	10 3 0 2	15	4	15	4
VII.	137 2	9 2 0 2	14	5	15	4

As I am not acquainted with the Chondrometer, I know not what confidence is to be reposed in this instrument; but Mr. Bree's calculations are somewhat at variance with the results furnished to him (as above) by a practical man who examined his samples by it. It is a little remarkable that No. 3 should beat No. 1, in this description of scrutiny.

So far as they go, these interesting experiments of Mr. Bree afford good evidence for our believing in the importance ascribed to the addition of a little sulphuric acid to liquid manures; but standing alone as they at present do, they afford no data by which we may hope to elicit any very positive information respecting those fundamental *principles* upon which the science of Agriculture must depend. It will need even still closer registration of the actual results obtained, than Mr. Bree has considered to be necessary for the particular object he had in view, before any such applications of these experiments can be made; for in the present instance no account has been kept of the effect produced upon the Clover. If a cow and a horse were fed upon a given quantity of Corn, we must know how much each of them has consumed before we could safely speculate upon the effect which the whole amount had produced upon one of them. Mr. Bree's object, in this instance, has been sufficiently answered by his proving the validity of Liebig's suggestion; and it may be left to parties more directly interested in the improvement of Agriculture to co-operate in a series of experiments, to be devised, for the purpose of ascertaining whatever is really essential to their securing a just economy in practice. It will be necessary to determine to what extent the medicated urine should be diluted, and how often it should be applied, for the purpose of securing the best return at least cost. Time appears to be now an important element which farmers have to secure in these inquiries; for I see that Mr. Brande, in his late lecture to the Royal Agricultural Society, has declared it to be his opinion that the time is now arrived when Chemistry may be made serviceable to Agriculture; and there can be few chemists who are better able to form a judgment on this point than himself. But if the time is arrived, no time should be lost. What a different position will the Agricultural body be placed in at the end of (*x*) years, should the fundamental principles of the theory of Agriculture have become as well established as those of many of the other Industrial Arts—as dycing for instance, and sugar-refining, and brewing, &c.—from that which they must continue to occupy if those principles shall not then have been ascertained!—*J. S. Henslow.*

MANURES.

The labours of those Chemists who have particularly devoted themselves to the Chemistry of Vegetation may be divided into two classes, the theoretical and the practical; the former including inquiries into the higher and more abstruse departments of Organic Chemistry, whilst the latter consists chiefly of investigations into those matters which are most immediately interesting to the farmer; the former seeking to discover the philosophical laws which govern the processes of nature, the latter merely endeavouring to elucidate those laws, as far as may be necessary in order to explain practice, and lead to its improvement. Both these inquiries are of great value, though they have very different objects in view. The philosopher who buries himself in searching out those great laws of the universe, which at once exhibit the wisdom and goodness of the Creator, feels comparatively little interest in the minor details of practical experience; whilst the purely practical man, even if he have the inclination, has not time to follow the more abstruse inquiries of the former; he will naturally ask, what shall I be the better for such knowledge? and how will it benefit me?

Those who would wish to make farmers chemists, propose that which cannot be done, and which, if it could, would do more harm than good. To teach a farmer the theories of chemistry, would be to give him information which it would be totally impossible for him to apply; and on the other hand, to instruct him in what is commonly called practical chemistry would be equally useless, because if he tried to avail himself of such knowledge, he would be more likely to mislead himself, than to profit by his experiments. Farmers are taught how to analyse a soil in a simple and accurate manner, and yet all the information they could derive from such an analysis, would amount to no more than a good ploughman knows after walking across a field; nay, the result of such an analysis would probably be of far less practical value than the ploughman's opinion.

The chemistry which may benefit the farmer is neither philosophical chemistry nor the chemistry of the laboratory, but it is what may be called the chemistry of Nature. Those simple and elementary rules which affect the ordinary operations, either of Nature or art, constantly going on before us. Such knowledge is useful to every one, and, sooner or later, its value will become apparent.

Every farmer is in the habit of using manure of some kind or other; he spreads over his land something which causes the plants to grow more vigorously, and yield him larger crops than he could obtain without it. A variety of different substances are used in different parts of the country to produce this effect; what then is the substance or substances which these different manures contain—and on what does their fertilizing power depend? Setting aside, for the present, the mechanical effects which many manures produce, and which are frequently very important, let us briefly inquire what is the composition of the ordinary kinds of manure. The great bulk of manure consists of decaying vegetable and animal matter, dead plants, and a variety of substances of vegetable origin, which, as they formerly constituted living plants, must necessarily contain those matters which plants require. When these vegetable or animal substances decay, for they are very similar in composition, they are in part dissipated into certain gases; there is left after the escape of these gases a quantity of dark-coloured charry-looking matter, which is comparatively unchangeable, and besides this there remains a small quantity of fixed earthy and saline substances, which all kinds of vegetable or animal matter contain. The chemical elements of ordinary manure are certain compounds of carbon, oxygen, hydrogen, nitrogen, and sulphur, and fixed salts.

The rotting of vegetable substances in manures is just the reverse of what takes place when plants grow, as they are gradually separated again into those very substances from which the plants were originally formed. In consequence of the many abundant sources of those gases, which form part of the food of plants, that exist all over the globe, it follows that the air always contains a small portion of them diffused throughout it, and hence plants can always obtain from it the gaseous substances which they require; nevertheless, as the quantity present in the air is always very small, the addition of manures, which yield more of these gases to growing plants than they could otherwise obtain, is always useful. With regard to the earthy and alkaline salts which plants contain, the case is very different; when we remove a crop, we take away a quantity of these salts, and the soil, of course, then contains less of them than it did before. There are not the same means naturally provided to restore to the soil these salts, as there are to restore to the air those gases which are essential to the growth of plants. It is true that fallowing does, to a certain extent, restore the soil to its original state, but without going into that subject, it is evident that it is even more important to supply saline, than gaseous matter to plants. Both are important elements of manure, but the former is the most important, because the natural means which exist for keeping up a regular supply of them to plants are less complete than those which regulate the formation and distribution of the gases.

The old chemists of by-gone times used to marvel greatly whence animals obtained the earthy substances which constitute their bones; it is now known that all animals which feed on plants obtain the phosphate of lime, which constitutes the greater part of bone, from plants. All plants contain phosphates of lime and magnesia, hence these are important constituents of manure.

The manufacture of pearlash and potash from plants has existed for a very long time. Plants are burnt merely for the sake of their ashes, which being rich in potash are valued as a source of that alkali. All plants contain alkali, either potash or soda; hence salts of these alkalies are constituents of many of the best manures; and the ashes of plants, rich in alkali, have always a beneficial effect when applied to land. The earthy phosphates and alkaline salts are the most important of the saline constituents of manure.

Looking at ordinary manures in a chemical point of view, we may divide them into those which supply the gaseous matters on which plants feed, those which supply alkaline salts and phosphates, and those which supply both at the same time. Farm-yard dung is of the best kind, and therefore it is adapted for all soils; it contains all that plants can want. Soot acts principally from the gaseous matters which it supplies to plants; whilst bones, and more especially burnt bones, may be taken as an example of a manure which supplies earthy phosphates.

Bearing these facts in mind, it becomes of the first importance to inquire what are the cheapest sources of these substances, and how they can be furnished to plants in the most economical and uniform manner.—*E. Solly.*

On the QUANTITY of SEED-WHEAT per Acre.

It is quite necessary for us to be acquainted with the habits of the plants we cultivate, before we can determine upon the degree of closeness with which they should stand together, so that, on soils of various fertility, the greatest crop may be obtained. Ignorance on this point leads to great error, as to the quantity of seed necessary on a certain extent of land. I have seen from three to four bushels of Wheat sown where three or four pecks would have been sufficient; four or five bushels of Barley sown where eight or ten pecks would have sufficed, and from six to seven bushels of Oats where only two or three were required. In this way a loss of a great quantity of seed is sustained by many farmers of the present day.

The crop of Wheat, I think, depends much upon the distance between the plants. In the experiments which I have made, I found that eight grains to a square foot was the quantity of seed which produced the best crop; these were planted three inches apart in rows six inches wide, and they produced from three to five large productive ears each, with scarcely any abortive ones. I found, also, that this quantity of seed yielded 28 to 38 productive ears per square foot, each ear thus having about four square inches to grow in. When more than this number grew on a square foot, some of them were abortive and many of them small; when a smaller number grew on that extent, they were long and coarse, there was a tendency to straggle over the ground, annual seeds sprung up, and the Wheat was more liable to disease, mildew, blight, &c. It may be said that 36 grains, each producing one stalk, might yield the same number of bushels per acre as the 8 grains which produce 36 stalks; but in the one case, each plant has only 4 square inches of ground for its roots to spread in—extending only 1 inch on each side of the plant, while in the other each plant has 18 square inches of ground to supply it with nourishment. In consequence of want of room the plants are unable to throw out offsets in the spring; the leaves being crowded, the straw gets soft and feeble, and ultimately becomes laid, and then yields a crop deficient both in quantity and in quality. Land that is in good condition always produces the best crop when the plants appear thin in spring. I have found a bushel of Wheat to contain 576,000 large healthy grains. This estimate was made from the red-straw-white Wheat, cleaned and prepared for seed, weighing 64 lbs. per bushel. Now, there are 43,560 square ft. in an acre, and multiplying this by 8, we have 348,480 grains, or 2½ pecks of Wheat, as seed sufficient for an acre of land. To this, however, should be added 1 or 1½ peck as the quantity which we may expect to be destroyed by birds, &c. We believe that if farmers were to reduce, on their good land, the quantity of seed Wheat they now use per acre down to 1 bushel, and if they were to dibble this in, their crop would be increased in productiveness.—*John Morton, Chester-hill, Stroud.*

COPROLITES.

Coprolites are supposed to be the fossilised excrements of animals, possibly of antediluvian origin. Many specimens exhibit on their surfaces convoluted marks or impressions, counterpart as it would seem to the internal surface of the intestine, and they are rounded off at the extremities in such a form as shows that they must have been produced in the manner alluded to. But if the external evidence upon this point be strong, that afforded by chemical analysis is conclusive. This reveals to us the fact of their entire coincidence in composition with fæces of animals now living, allowance being made for those changes which the lapse of so many ages must necessarily produce. We have in them the earthy phosphates in much the same proportion as they occur in bones, accompanied sometimes by organic matter, though at other times this seems to be wanting; this depending no doubt on the greater or less exposure to the action of the elements. The same circumstance is noticed with respect to fossilised bones, which, having been protected by a strong envelope from the causes of decay, have their organic matter (gelatine) intact, so that this may even be extracted as from the fresh bone, and soup prepared from these remains of a former world.

Bones, however, of far less antiquity than these, if exposed to the air and the action of moisture soon rot, as the farmer well knows; their gelatine being converted into gaseous compounds of carbon, hydrogen, oxygen, and nitrogen. The bones which are imported from abroad into the ports of London and Hull have lost much of their organic matter, so that their action upon crops must be attributed almost entirely to their phosphate of lime. This view is corroborated by Mr. Hannam's experiments on bones, burnt and unburnt, in which he obtained the same weight (within a fractional quantity) of Turnips from a quarter of each. Thus the opinion of Professor Liebig as to the vast importance of phosphates as a manure for the soil of Great Britain, is borne out by experiment, and it would appear that they are still more essential than even ammonia itself.

Coprolites then, if they could easily be had in sufficient quantities, and could be reduced economically to a fit state for the purposes of the agriculturist, would be to him a treasure indeed. I am sorry to say, however, that with Professors Buckland, Henslow, and others, I fear the sanguine statements on this subject, of the great German chemist, will never be realised.

The specimen upon which I operated was sent me by Mr. Deck, of Cambridge, a very clever geologist and chemist. He exhibited, in conjunction with Prof. Henslow (who read a paper on the subject), a number of Coprolites obtained from the Suffolk crag. They were found embedded in the cliff, at Felixstow, and numbers more were found mixed with the pebbles on the beach, where they had been exposed, as the rounded form bespeaks, to the same rolling process.

The Coprolites are then difficult to be distinguished by their external appearance alone, from the siliceous and other stones with which they are mingled. Of six or seven of these given to me by Coprolites, three

four were pebbles. By attention, however, they may be distinguished, even without breaking, by the pebbles being much softer to the touch than the true Coprolite: the latter, too, is much softer than the former. When broken, however, there can be no mistake, the Coprolites having the texture and colour of broken chocolate, and when rubbed violently they emit a peculiar smell, the intensity of which affords a criterion whereby to judge of the proportion of their organic constituents.

Prof. Henslow informs me that these Coprolites are the excrements of a fish of the shark species. Mr. Deck, in collecting them at Felixstow, found a fossilised bone, originally the internal ear of a whale. It is probable that the fish yielding the fossil excrement served as prey to this monster of the deep. I conclude by giving the analysis of these Coprolites:—

Earthy phosphates	56
Carbonate of lime	15
Matter insoluble in dilute muriatic acid	19
Organic matter and water inseparable at 400°	8
Water	2
	100

—*W. H. Potter, Fore-street, Lambeth.*

AGRICULTURAL EXPERIMENTS.

The argument by induction in favour of any particular manure must rest upon various and multiplied experiments, and those which I am about to detail serve to show into what serious errors we may be led by taking one or two alone for the basis of a general conclusion. Single experiments are only like straws thrown up into the air to show from what quarter the wind blows; they may be of use, to point out the course which should be pursued, but that is all the evidence they afford. It would be dangerous to infer that this or that manure is good or bad, because the one or the other may have succeeded or failed in some solitary trial. Thus, for instance, in the Journal of the Scotch Agricultural Society, Mr. Maclean has recorded the results of 28 trials of different manures as top-dressings upon Grass; two of them were salt and sulphate of ammonia, but with both of them only single experiments were made, and the conclusions to which they lead are directly the reverse of those to which my experience of them conducts me. With him, salt was the most successful of all the manures, and gave the largest increase of Grass; sulphate of ammonia was the least successful, with the exception of the muriate, and gave the smallest increase of Grass. With me, salt is useless, and sulphate of ammonia is very valuable when used in the right proportion. To ignorance of this proportion Mr. Maclean's failure may be ascribed; he used too much; for if I recollect right, he laid it on at the rate of about three cwt. per acre. His muriate of ammonia must have been applied in still greater excess; for there, and there alone, he suffered loss, the Grass being injured by the application. On the other hand, my failure with salt is no argument against its value as a manure in other situations; for it may be accounted for by my proximity to the sea. In any situation where the trees are killed or stunted in their growth by the sea-breeze, as they are here, in a south-west exposure on high ground, it is evident that the atmosphere must sometimes be saturated with muriate of soda, and probably enough of that material is thus conveyed to the grass. We must therefore bear in mind, not only that the failure of solitary experiments is not to be considered conclusive evidence against any new manure, but that even their success is to be distrusted till confirmed by repeated and various experience. Against the latter class of errors, however, I have no great reason to stand upon my guard; for all my single experiments proved signally unsuccessful. They were made with six different manures, and in all of them I have no doubt that the dose was too large. Two of them bear ridiculous names, and are very expensive; but that would be of little consequence if it could be proved that small quantities of them would more than repay the cost.

It will be seen that in two instances the application of the manure was injurious instead of beneficial; in one it was wholly inefficacious, in the rest the amount of loss is obtained by deducting the increased value of the produce from the cost of the manure upon an acre.

	Expense.	Loss.
I. 560 lbs. of urate	£1 0 4	£0 11 3
II. 32½ bushels of Clarke's desiccated compost, with 20 bushels of wood-ashes	3 13 7	2 17 3
III. 40 bushels of Poittevin's manure, No. 28, with 20 bushels of ashes	3 12 1	3 16 1
IV. 280 lbs. of oxygenated alkali, with 20 bushels of ashes	4 5 1	4 9 1
V. 280 lbs. of ammoniated alkali, with 20 bushels of ashes	6 5 4	5 16 10
VI. 28 bushels of Poittevin's, No. 176, with 20 bushels of wood-ashes	1 5 6	106 15 10

In the last instance the absolute neutrality of the application is so extraordinary, that, did I not know the very great care that was taken in conducting the experiments, I should be tempted to suspect that some error had crept into the account. Indeed, complete accuracy in these experiments is of so much importance, that before I proceed with the details of that more instructive series to which I have next to invite attention, I must explain the mode in which they were conducted. The produce per acre was computed from the trial of smaller quantities. A certain length of swathe on each plot of ground to which the manure was applied was measured and weighed both in the state of grass, and after it was made into hay; and this operation was repeated three times, and the mean of the results was then compared with the mean obtained from similar trials on the unmanured land adjoining. In estimating the value of the hay, it was taken at the then market price of 2*l.* 15*s.* per ton. Eleven experiments were tried with nitrate of soda, which in every instance increased the growth of the grass; but in no instance was that increase sufficient to reimburse the cost. The price of the nitrate was 1*l.* per cwt., and the value of the increase being deducted from the expense, gives the following table of loss sustained:—

I. 1 cwt.	£0	2	3
II. 1½ cwt.	0	10	9
III. Do. in another place	0	11	9
IV. Do. do.	0	2	6
V. 1½ cwt.	0	7	6
VI. 1 cwt., 16 bushels of wood-ashes, and 2 of salt	£1	2	11
VII. 240 lbs.	1	11	4

In the two last instances the land was in better condition, and might seem not to want manure at all, for without any it yielded more than two tons of hay per acre. It is to be observed that where the smallest quantity was used, the loss, too, was the smallest; and it is evident that if only a small proportion of manure is needed to supply the grass with the nutriment of that sort which it requires, every addition of it beyond that proportion must be expended in vain, for the action of frequent rains would not allow it to remain in the soil stored up for future use. Perhaps 50 or 60 lbs. would have produced the same effect as a larger quantity, and then there would have been, in the two last instances, a clear profit of about 7 or 8 shillings. The same conclusion is very strikingly indicated by the experiments with sugar scum, an article much used in France in the cultivation of the Vine, and imported for the vineyards at considerable expense. Its cost to me was 1*l.* 5*s.* per ton. The application of it invariably produced a greater quantity of hay, but almost in an inverse proportion to the quantity employed; there can be no doubt, therefore, that it is beneficial as a manure on grass, if only the right proportion can be discovered; but it must be owned that the admixture of a small quantity of wood-ashes in each case keeps its own specific virtue somewhat in the dark. The cost of the wood-ashes is estimated at 4½*d.* per bushel.

	Increased value of Hay.	Gain.	Loss per Acre.
I. 24 cwt. and 8 bushels of ashes	11*s.* 3*d.*	—	£1 6 9
II. 20 cwt. and 8 do.	8 6	—	0 19 6
III. 16 cwt. and 8 do	14 0	—	0 14 0
IV. 12 cwt. and 4 do.	14 0	—	0 2 6
V. 8 cwt. and 4 do.	14 3	—	0 0 3
VI. 8 cwt. and 4 do. in another field	14 3	2*s.* 9*d.*	0 0 0

In the last case the land was poorer than in the preceding, the produce of Hay per acre in the adjoining unmanured part being 1 ton 12 cwt. 34 lbs.; whereas in the other it amounted to 2 tons 3 cwt. There was also a great difference between the 1st and 2nd experiments in the quality of the land. On the first the quantity of hay without the manure was only 15 cwt. 50 lbs., while the other produced without manure 2 tons 6 cwt. 28 lbs. It thus appears that sugar-scum is most effective where manure is most wanted. It is a great mistake, however, to suppose that the more you use the more you will get from it, for the maximum of produce was obtained from the smallest quantity. It remains to be tried whether a still smaller quantity may not produce the same effect; and whether, under any circumstances, it benefits the succeeding crop. At present there is no great encouragement to persevere in its use as a top-dressing for Grass. The experiments with guano were more successful; but though up to a certain point an increased quantity of manure gave an increased quantity of produce, yet they still bring us to the same conclusion, that, as the proverb says, too much of anything is good for nothing. The cost of this manure was 12*s.* per cwt.

	Increased Value of Hay.	Loss.	Gain.
I. 3½ cwt. and 20 bush. of ashes	2*l.* 2*s.* 9*d.*	—	£0 1 4
II. 3½ cwt., 1 year old, and 20 do.	1 11 5	16*s.* 0*d.*	—
III. 3 cwt. and 1 cwt. of nitrate of soda	2 0 4	15 8	—
IV. 2 cwt. and 4 bushels of ashes	3 0 7	—	2 15 1
V. 2 cwt.	1 15 9	—	0 11 9
VI. 1½ cwt.	1 13 9	—	0 12 9
VII. 1½ cwt.	1 4 5	—	0 6 5
VIII. 1 cwt., 6 bushels of salt, and 16 bushels of ashes	0 5 8	18 0	—

In the last instance, it may be that the soil was almost saturated with as much nutriment as the Grass required; for its produce without any manure amounted to 2 tons 7 cwt. 90 lbs., and thus 18*s.* worth of the manure produced no effect at all. The contrary fact will account for the great success of the 4th experiment, for there the weight of hay on the unmanured part was no more than 12 cwt. 34 lbs. From a comparison of the two first it appears that guano loses much of its efficiency by being kept, its volatile parts being dissipated in the air, and that even the best, applied to good land in large quantities, will not yield any adequate return. The weight of hay in this case, without the manure, was 2 tons 1 cwt. 70 lbs. From the experiments upon sulphate of ammonia it is not so easy to deduce any certain conclusions, some of the results being very anomalous. The moistness of the spring was favourable to its action generally; but as it was not all laid on at the same time, the fact of the weather being different at different times may account for some of the variations. The cost was 17*s.* per cwt.

	Increased Value of Hay.	Loss.	Gain.
I. 336 lbs. sown at thrice	2*l.* 0*s.* 3*d.*	10*s.* 8*d.*	—
II. 224 lbs. from the bottom of the cask	2 0 3	—	£0 15 9
III. 224 lbs.	2 18 0	—	1 4 0
IV. 168 lbs. sown at thrice	1 6 0	—	0 0 9
V. 120 lbs. sown at thrice	0 14 4	3 10	—
VI. 120 lbs., and 4 bush. of ashes	2 0 4	—	1 2 11
VII. 80 lbs.	0 11 3	0 11	—
VIII. 73 lbs. and 640 gallons of drainings from the farm-yard	2 3 0	—	1 17 0
IX. 64 lbs., and 4 bush. of ashes	1 14 0	—	1 4 0

It is remarkable that in two out of the only three cases, where the application was made at two different times, loss ensued, and in the third a very insignificant profit. In the other case of failure, the land produced 2 tons, 4 cwt. per acre, without manure. The second and third experiments seem to show that on poor land as much as 2 cwt. may be usefully employed; for in the former case, the unassisted land yielded only 15 cwt. 32 lbs. of hay; and in the latter, 10 cwt. 22 lbs.; but that 3 cwt. is too much is the only inference to be drawn from the first, for there too the natural produce was only 10 cwt. 105 lbs.; in all the rest it exceeded 2 tons. It will also be seen that in the two last experiments, where the quantity used was smallest, the profit was largest. It will be a pleasant doctrine for farmers if it can be proved that the less expense they incur in the use of an artificial manure, the larger profit they will gain; and this rule, it seems, applies equally to a temperate use of their own farmyard manure; for two portions of equally good land being watered with drainings,—the first once, and the second twice—the first gave an increase of the value of 11*s.* 4*d.* above the adjoining land; the second fell below it nearly to the same amount. Some uncertainty, however, attends this experiment, because the liquid may not in both cases have been of equal strength.—*L. Vernon Harcourt, Westdean House.*

(To be continued.)

ON MINERAL & INORGANIC MANURES.—No. I.

By Professor Charles Sprengel.

(Translated from the German.)

It has been previously observed that the substances used for manures are composed of earths, oxides, alkalies, and acids, and that the last mentioned occur always combined with the first into salts.

Although agriculturists make now-a-days far more use of mineral manuring substances than in former times, having become convinced that they take as active a part in the nourishment of plants as organic manures do, still several, which besides those hitherto used may be of avail, have been as yet entirely neglected. The cause of this neglect probably rests on the insufficient knowledge of mineral manures, as most believe that they only act by improving the texture of the soil, or that they promote vegetation merely by dissolving the humus; so fine, that they are only so far useful as they enable plants to a more energetic vegetation. It may, however, be now assumed with certainty, that they are a real food of plants, and as essentially necessary to their constitution as the oxygen, hydrogen, carbon, or nitrogen contained in the organic manures. It is not less true, that in this mistaken view of the action of mineral manures, many real advantages have been hitherto sacrificed, because the culture of plants would have been carried on more effectively, if the principle had been acknowledged that plants have to obtain a necessary quantity of these mineral substances from the soil which are found in them by chemical analysis. Even the phenomenon that on each kind of soil some particular tribe of plants will loose itself spontaneously, ought to have led the farmer to an opinion different from that hitherto entertained. Every soil, for instance, will produce other plants than marl, and this again other than a peaty soil, &c. Thence we may learn that the growing of plants is dependent, generally speaking, on certain mineral substances contained in the soil, and that it is working in opposition to the very nature of crops to plant them in localities, where (according to their chemical constitution) it is impossible for them to grow. We find every day that many wild plants only come up in spots where the soil abounds in potash, or gypsum, common salt, manganese, &c.; and why should we doubt that cultivated plants, also, must find some particular mineral substance abundantly in the soil where they are found to grow luxuriantly? According to the opinion of several Naturalists, carbon, hydrogen, oxygen, and nitrogen alone constitute the proper nourishment of plants, so that if mineral substances occur in them, they are to be considered merely accidental. But with the same plausibility it might be assumed, that nitrogen, &c. are the merely accidental ingredients of plants, and that the minerals are their real nourishment.

Some others assert that plants possess the power of forming the mineral substances which they contain out of carbon, nitrogen, &c., transforming them by their vital powers into mineral substances; and they refer to some experiments made long ago; but, as it can be proved that these have been made very imperfectly, they do not deserve any credit, and though they were worthy of confidence, they do not prove what it is intended they should. Very lately, a believer in this doctrine of the nourishment of plants asked the following questions (*vide* the preface to "Schübler's Agricultural Chemistry," 1838.) "How is it, that after 100 crops reaped on the same soil, there are found in it not only traces, but ½, ¼, and even entire grains (per cent.) of certain salts? or, how is it, that on average calculation, the corn crops of 20 years contain in their grain and straw more phosphate of lime than any soil in the world contains? for phosphate of lime is nowhere an original constituent of the soil." The same author says, further, "If Hermbstädt obtained 936 lbs. of calcined potash, from 2361 lbs. of the common Mugwort, (which he grew on 18,000 square feet of a sandy soil), each cubic foot of the soil must have contained more than 340 grains of potash for the use of the plants. But as this could not be assumed to be the case with the arid sandy soil of Berlin on which Hermbstädt made his experiment, the great amount of potash in the plants is to be ascribed to their luxuriant vegetation, not to the composition of the soil." To this I reply: According to several of my experiments, made with great accuracy, several, even sterile soils, which have never been manured with dung, and where, consequently, the constituent substances were originally inherent in the soil, contain 1—2

per cent. of phosphate of lime. Now, as the Magdeburg acre of land contains 25,920 square feet; as, moreover, the roots of corn penetrate at least one foot in the soil, and as the Rhenish cubic foot of earth weighs (at an average) 100 lbs., the plants of one acre will have 25,920 lbs. of that substance to absorb, though the soil only contained 1 per cent. of the phosphate of lime. But the Wheat crop of one acre of land contains at the utmost only 5 lbs. of phosphate of lime; and consequently the 25,920 lbs. will suffice for 5187 Wheat crops; nay, though the soil contained only $\frac{1}{100}$ per cent., there would be enough of it for 52 Wheat crops. The Barley crop of one acre contains about 6 lbs. of phosphate of lime, and therefore 4320 crops would be nourished by the same amount of phosphate. A crop of Oats, grown on one acre, contains 5 lbs. of phosphate of lime, consequently 5187 crops will find a sufficient amount of the above mineral substance in the soil.

It is true that it cannot be assumed that the corn will be able to abstract from the soil even the least particle of phosphate of lime, still this calculation will fully prove, that the assumption of the author of the above work, viz., that 80 corn crops will abstract from the soil more phosphate of lime than any soil can possess, is utterly unfounded. The same is the case with the potash, which the plants are said to generate in themselves by their luxuriant growth, the most accurate examination of several very sandy soils and subsoils having shown to me, that they often contain $\frac{1}{10}$—$\frac{1}{15}$ per cent. of potash. This potash was not combined with any acid into a soluble salt; on the contrary, it was always combined with silica into a silicate insoluble in water; but as this is gradually dissolved by the carbonic acid contained in rain-water, (carbonate of potash, an easily soluble salt, being formed,) the roots are able to provide themselves constantly with the necessary amount of the alkali. By this wise arrangement of nature, the silicated potass of the subsoil has nourished for thousands of years the deep-rooted plants; and considering the amount contained in the lower strata of soil, there is no doubt of its being yet sufficient for many centuries to come. The roots of Mugwort penetrate four feet deep in the soil; therefore it may on one acre of land draw upon four times 25,920: viz., 103,680 cubic feet, or 10,368,000 lbs. of soil. According to experiment, 100 lbs. of earth contain on an average one-third per cent. of potash; consequently the Mugwort found on the area of one acre of land 20,736 lbs. of potash, from which it might well receive those 936 lbs. or more of carbonate of potash. I may as well mention that I never subjected the subsoil of Berlin to chemical analysis; but I have examined similar soils of the diluvian formation, and have often found more than one-fifth per cent. of potash in them. These calculations, I think, prove that the power which has been attributed to plants of forming substances within themselves, is based on erroneous suppositions. We often do not believe that soils contain the mineral substances which we find in the plants growing on them, and yet an accurate analysis shows afterwards that they are abundant. Still at times the soil contains scarcely a trace of those substances of which the plants are composed; but even in this instance it is not necessary to assume that they are formed by the plants, as we shall see hereafter that the rain conveys annually more than 50 lbs. of earths and salts to the soil of one acre.

(To be continued.)

Home Correspondence.

The Berberry Blight.—It is somewhat remarkable that both persons and plants will get characters frae the world that they dinna deserve. The Berberry, I think, has come in for a sharé o' muckle abuse that it dinna merit. I mind fu' weel when I was a young callant o' wandering frae home ae day, and in my wanderings came upon a large Berberry-bush wi' plenty o' ripe fruit on it; I partook o' the fruit, and also broke off some o' the branches that were well laden, to carry them hame. Before I reached my father's house I was met by an auld woman who was looked up to by her neighbours for her superior knowledge; she saw the fruit I was carrying, and speered gif I had eaten ony o't. "O, ay," says I, "a wamefu' o't." "Weel, weel, my man, ye hae been eating pousin, and ye'll may be no live lang." I canna describe the feeling that came o'er me at sic an announcement; I was instantly placed under medical treatment, and forced to drink wonderfu' draughts o' buttermilk to conteract the evil effects o' the Berberries, besides receiving a lecture about going to the Berberry-bush, as if it had been the fabled fatal Upas-tree; and to this present hour the ideas o' Berberries and buttermilk are often associated in my mind. But as Mr. Wighton wishes to ken the reason why the Berberry is blamed for having an "evil influence upon Corn," perhaps some o' the following statement may satisfy him as a reason why it is blamed. In the "Quarterly Journal o' Agriculture" there is an article "On Wheat, Canker, and Rust or Mildew;" and it is there stated that, "in consequence of the leaves of the common Berberry exhibiting a similar affection to the rust in Corn, farmers, both in England and on the Continent, have concluded that the infection spreads from the bush in the hedge to the Corn in the field; and this notion is sometimes strengthened from the rust appearing in patches and stripes among the Corn, as if it had been carried thither by the wind from the Berberry-bushes." Now there was once a learned gentleman wha had some o' his Peach-trees trained over the tap o' his garden-wall, wi' their points towards the antipodes; he also wrote a treatise "On Blight in Corn;" and appeared to countenance in some degree the popular belief respecting the evil effects o' the Berberry on Corn. He tells about "Mildew Holesby, in Norfolk," what an unco' place it was, where Berberry abounds and Wheat seldom succeeds! and we are informed, in the "Library o' Entertaining Knowledge," vol. ii., "that the fructification of the Berberry is incomplete unless the stamens be irritated by insects, when the filaments suddenly contract in a most remarkable manner towards the germ; the flowers are therefore, by a beautiful arrangement of Nature, peculiarly attractive to insects, and thus the Berberry may become injurious to neighbouring plants." And we are also informed by the Rev. Dr. Singer that the views of Sir Joseph Banks, and of some intelligent practical farmers relative to the evil influence of the Berberis vulgaris, induced the late Admiral Sir William Johnstone Hope to give orders for the total extirpation of the Berberry-bushes which intermixed with thorns in the hedge-rows; and since that was done, and for above 20 years, no such distemper has appeared in the fields. But for a' that, there are some auld farrant chells, if they get a few facts to stand by, they are just as stiff as the facts themsels, and they will not believe in the popular creed, although it should be supported by knighted philosophers or presidents o' the Royal Society, or preached up by reverend divines; and as lang as the twa-celled Puccinia graminis differs frae the pustulated Æcidium berberides they will not believe. De Candolle opposes the notion that the Berberry is injurious to Corn, and says that he should not have agitated the question, had it involved a plant less important than Wheat, or a philosopher less distinguished than Sir Joseph Banks; and Dr. Greville, when speaking of the Berberry Blight in his Scottish "Cryptogamic Flora," says, "This minute gastromycus has given rise to the vulgar opinion that the neighbourhood of Berberry-bushes is extremely detrimental to fields of Wheat. It is well known that the disease called the rust in Corn is highly injurious; but the colour of the rust and that of the present plant constitutes the only similarity between them. They belong, in fact, to two different genera, and of course cannot propagate each other." And gif ony o' the readers o' the *Chronicle*, wha tak an interest in such a subject, should turn to the ninth volume and 327th page o' the "Gardeners' Magazine," they will find "Notes on Mildew, from a Lecture by Professor Lindley;" they will there see figures of the different fungi that will, maybe, convince them sooner than a' that can be said about it for a lang time; and I may just conclude this notice by a quotation frae "Paxton's Horticultural Register" on the same subject, the writer says that "it would be no less rational to maintain that a field of Wheat would spring up if we should sow Berberries, than that the rust growing on these should produce the Corn-rust. Should it be said that it is the difference of the nutriment of the fungus which causes the difference, I should ask whether a difference of soil would produce Rye on Oats when Wheat-seed only had been sown?"—*A Moorland Gardener.*

Experiments with Manures.—Table shewing the quantities and cost per acre of Five different Manures used in a field of Mr. A. Bubb's at Witcombe, in Gloucestershire, and their relative effects on the quantity and quality of a Wheat crop, as compared with that in the same field where no manure was used. The Wheat is valued at 6*s.* a bushel, and the straw at 40*s.* a ton. The proportions of salt and lime were, salt 1, lime 2.

Manure used.	Quantity.	Cost.	Produce.	Value of Produce.	Profit or loss on Manure.	Weight of best Corn.	Weight of Straw.
		£ s. d.		£ s. d.	£ s. d.		
None .	.	.	Best Corn 29 1 0 } Tail ditto 0 1 0 }	10 16 8	.	61¼ p. bush. lbs.	lbs. 3858
Nitrate of Soda . }	1 cwt.	1 2 6	Best Corn 36 0 0 1 0 } Tail ditto 0 1 0 }	10 16 8	Profit. 0 19 8½	61¼	4824
Kiln Dust . }	40 bushels	1 0 0	Best Corn 30 3 0 1 0 } Tail ditto 0 3 0 1 0 }	9 3 6	Loss. 0 14 1½	61¼	4068
Lime and Salt . }	60 bushels	1 5 0	Best Corn 33 0 0 3 0 } Tail ditto 0 1 0 3 0 }	9 13 1½	Loss. 0 10 6½	61¼	4068
Urate .	6½ cwt.	1 19 0	Best Corn 27 3 0 2 0 } Tail ditto 0 3 0 2 0 }	8 7 3½	Loss. 2 13 4½	61	3672
Guano .	2 cwt.	1 6 .	Best Corn 33 0 0 3 0 } Tail ditto 0 3 0 3 0 }	9 13 7½	Loss. 0 10 6½	61	4248

The soil is sandy and of good quality.

Ravages of the Slug on the Wheat Plant.—As the ravages which Slugs make amongst young Wheat renders the adoption of any method likely to destroy them a great boon to the farmer, I may perhaps be allowed to state that the most effectual way, where good stone lime cannot be had, is to scatter a number of Cabbage-leaves over those parts of the field which is worst affected, and let a number of boys or women look over them every fine morning, and pick off what may be attached to each leaf. I dare say the plan is pretty generally known and adopted amongst gardeners, but some farmers may hesitate about it on the score of expense, yet is it not nearly so expensive as many would suppose; and when the land is tolerably good it well repays itself. I may add that slices of Swedish Turnips do as well as Cabbage-leaves, and even the tops may be used also, or anything likely to be attractive to this destructive pest.—*S. N. V.*

Cultivation of Wheat.—The following calculations were made from Wheat grown in the year 1843, on land in my occupation belonging to Sir Oswald Mosley, Bart., situate in the parish of Tutbury, Staffordshire.

Description of Wheat.	Cultivation.	No. of bushels per acre weighing 63 lbs. each.	Weight of Straw per acre.	Average Weight of Corn per Imperial bushel.
			cwt. qrs. lbs.	lbs.
Red	Drilled in	29½	31 2 6	66½
do.	Ploughed in	28½	31 0 23	64
do.	Harrowed in	33⅓	36 3 4	65½
White	Drilled in	29½	29 3 22	64½

—*William Cox.* [It is not stated from what extent of land these calculations were made; but we do not think the differences between the several cases greater than may be accounted for by variety of soil, or than probably would have appeared on the same plots though they had all been cultivated alike.]

Corn Weevil.—A correspondent of the *Chronicle* complains of the depredation committed in his malt stores by the Weevil. About 15 years since Messrs. Fison, of Thetford, suffered greatly by this insect. They destroy the farina, leaving the husk, to all appearance sound, except at that end where it gained admission; after several ineffectual attempts to get rid of them they determined to try fire, which proved perfectly successful. It was applied thus,—a large quantity of furze was procured, the premises were emptied, and they were fired on the floors; plenty of help was provided, so that once kindled it was continually stirred about to prevent the premises taking fire. I have no doubt a better plan would be to fumigate them with sulphur. A dish of charcoal, with one or two pounds of sulphur, and the windows and doors well closed, would be all that is required, and the expense less than half-a-crown.—*James Fison.*

Reviews.

The Economy of Farming; from the German of Prof. Burger. With copious Notes from the Works of Thaer, Sprengel, &c. By E. Goodrich Smith. Wiley and Putnam. 8vo, pp. 132.

THE causes on which any agricultural fact or appearance depends are very many and variable. This renders it difficult for individual farmers, though examining the results of *their own* experiments, to determine what portion of them may be considered as owing to the causes which they had put in action, and how much is due to the natural causes over which they have no control. How much more difficult, then, must it be to determine the real meaning and value to be attached to reports of experiments, when the results, indeed, are given, but only some of the agencies described of which they are the consequences. In fact, in a country like our own, covered by such various soils, and experiencing such variable and various climates, were there not a way of subtracting from the results of agricultural experiments, that portion of them which is owing to the external circumstances of the several cases, reports of such experiments would be valueless, except in the immediate neighbourhood of their trial.

The method alluded to consists in gathering together a great many experiments on one subject, performed under every possible variety of circumstances, and taking their average result. Such an average will, in all probability, be the proper effect of the artificial cause, whatever it may be, that was put in action. For all the variable natural causes, in the comparison of a number of cases in which they pull in opposite directions, will be found to neutralise one another. And thus it is that the remark made by the Hon. and Rev. L. V. Harcourt, in his report of experiments with manures, which will be found in another column, is true of almost every question in farming, that a great number of facts are necessary as the foundation of a conclusive argument on the subject.

These observations are suggested by the perusal of Prof. Burger's work on "the Economy of Farming." We have nowhere seen such a great body of facts collected together, bearing on the subjects treated of. We call them *facts*; they are reports of experiment and observation made in many different quarters; and though individually such reports are to be received with distrust, yet a great number being collected, the average result may reasonably be regarded with confidence.

The subject of this work is necessarily of primary importance to the practical farmer; it is with him the only test which determines the value of any proposed improvement on his practice, however beautiful in other respects the proposal may be, and "the economy of farming" ought therefore to be the object at which all agricultural writers should aim.

The object of the good farmer is to produce order, cleanliness, and fertility, where his unskilful predecessor had left all in confusion, not because these are things desirable in themselves, but because they are means to a profitable end; for as Professor Burger states at the commencement of his work:—

"The object of farming is that of all kinds of business, viz., by means of labour and money, judiciously employed,

to produce gain, or to acquire money:—in other words, for one so to employ his labour and capital as, by the management of his affairs, to secure the highest income."

Professor Burger divides his subject into two branches. The first refers to "the outer household affairs," as, in common with other portions of the work, it has been somewhat too literally translated, and includes within its range all matters connected with labour and manure. The second refers to "the inner household affairs," the Domestic Economy, in fact, of the farm; and under this head are considered the arrangement and distribution of labour, the duties of employer and employed, and the mode of keeping farm accounts.

Every plan or practice suggested or described under these heads is referred to its ultimate expense or profitableness, for the real character it must hold in the eyes of the practical farmer. Thus, to take the subject of manure, after a general statement of what that is which constitutes manure, Professor Burger considers—

1. How much is needed to retain a given extent of land in fertility? And this, being dependent on the character of the soil and that of the crops grown on it, is answered in great detail with reference to both of these particulars.

2. What animals produce the necessary quantity at the cheapest rate? and, as affecting this, the effect of the character of the fodder on that of the manure produced by its consumption is taken into account.

3. What number of animals are thus required?

4. What weight of manure is obtainable from the consumption of a given quantity of a given kind of fodder?

5. What proportion, on a farm, must the production of plants for sale bear to the production of plants for fodder?

6. What rotation of crops must be adopted, in order that, on a given extent of land, the supply of manure from the manure-producing crops may be suited to the wants of the exhausting crops, so that the land be not gradually deteriorated?

The answers to all these questions are illustrated and enforced at great length by the details and results of numerous observations and experiments; and putting out of sight the admirable arrangement of the subject, the "Economy of Farming by Professor Burger" would be a most valuable addition to our agricultural library, were it only on account of the number of facts and experiments recorded in it. Many of these, it should be stated, are introduced in the form of notes, and are extracted from the works of other German writers of high repute.

In conclusion, we extract from the translator's preface the following paragraph, from which the general character of this work may be gathered:

"The great distinction in German Agriculture, compared with our own, is *economy*. The question is not whether a great crop *can* be produced, or a fine story can be told, what large animals can be raised, &c.,—but what is the whole cost, the expenditure of labour, of land, of manure, &c. For this reason computations have been made, and the proportion of all the parts and processes has been fixed. Economy compels them to weigh and measure their fodder. The minutest details have been entered into, the most difficult points examined, and the results brought out."

Miscellaneous.

Improvements in Wigtownshire.—We proceed to give some account of improvements made by Lord Stair, on his Lordship's home farm, Culhorn, Wigtownshire. We call public attention to the subject to show that all circumstances—natural disadvantages, soil, climate, and outlay—being taken into account, the improvements at Culhorn are encouraging and important to the community, and exhibit results interesting and advantageous to the Agricultural world. In calling attention to Lord Stair's improvements on his home farm, all acquainted with Wigtownshire during the last three years, will understand that we circumscribe ourselves to a narrow spot in the wide field of improvements which have been executed at so much expense by his Lordship, by thorough-draining, fencing, &c., since he succeeded to his extensive estates in Wigtownshire. The portion of Lord Stair's home-farm, now alluded to as under improvement, may be stated at 150 acres, composed of the following inclosures:—1st, Borland moss; 2d, Glenhapple; 3d, Fleming Park; and 4th, Craignerks. There was a good deal of work to be done on the farm, first in cutting large channels into which to take the main drains and water from the various fields, grubbing of trees, levelling of old mound fences, repairing of roads, &c. Prior to these operations, the fields alluded to had been grazed with cattle, so far as was safe and practicable. The first field which we shall consider—Borland Moss and Cowpark, 16 acres in extent—was altogether a morass, and part of it had been cut over for peats for the previous 30 years. This was certainly the roughest and most unmanageable of all the fields taken as a whole; but still in a large proportion of the other fields much swampy, and to all appearance worthless, ground presented itself, rendering draining most difficult, and furnishing little available soil even when dry. Good working, top-dressing, and manuring, however, has made a great change even upon this ground. Borland Moss was commenced to be drained in autumn 1840, with drains 15 feet apart, 3½ to 4 feet deep. Wooden soles were used, and a quantity of brushwood covered in above well-burned tiles. The draining completed, next came the paring and levelling of its rugged peat-cut surface. This was partly done with the plough, where the ground admitted of it, and partly with the paring spade; all refuse turf, brambles, and heath being collected in heaps, burnt, and the ashes spread on the surface. The field got dry and was ploughed and sown with oats in spring 1841, yielding that year, though wet and unfavourable, an extremely heavy crop of straw, and, even as regards grain, fully an average crop, of the growth of the district. After harvest the stubble was heavily top-dressed with sand and gravel taken from a bank in the upper side of the field; this was ploughed in and lay till spring, when the ground was well worked, limed at the rate of 90 bushels (price 37*s.* 6*d.*) per acre, and the field was then manured for turnips as follows:—About 10 acres received 30 single cart-loads of good farm-yard dung per acre, sown with Swedish Turnip-seed, the remainder got 15 such cart-loads and 15 bushels of bone-dust per acre, sown with Dale's Hybrid. We saw the crop, which was excellent. Indeed we do not think that a better crop was grown on any soil in the South of Scotland last year. Many of Laing's purple-top Swedes, when cleaned and the top and root cut off, weighed upwards of 15 lbs. weight. This year's crop of oats on the same field was too luxuriant, as a considerable portion lodged with the heavy rains and did not quite fill; but still good judges estimate the gross produce of Borland moss, white crop 1843, at between 50 and 60 bushels per acre, besides a very heavy yield of straw. 2. Next—Glenhapple, containing 56 Scotch acres—commenced also in 1840. More than a third of this was bog and quagmire like Borland moss, and a great part, even where ploughable, soil of a very poor kind. About one-third was thorough drained,—the field was levelled like the first mentioned, and sown with oats in 1841. The crop was very fair in the greater part of the field, but inferior in some thin parts which had formerly been soured with water. In autumn and winter the moorish parts of this division were well top-dressed with gravel and other stuff, and another oat crop taken in 1842, which was excellent, the quality of the oats being upwards of 40 lbs. weight. This field was well worked for turnip-crop 1843, and manured with from 25 to 30 cart-loads of ordinary farm-yard dung, together with 25 bushels of bones, or 3 cwt. of guano per acre. The crop is an excellent one of all kinds, healthy, thick, and will feed well. Third field—Fleming Park—about 37 acres; 20 acres drained, of which 8 acres were very bad moss, white running sand below, and most difficult to drain. Crop of oats 1842, good; and this year, after a proper top-dressing of compost, with lime and ditch-cleanings, this field also yielded a very good crop. Fourth field—Craignerks—38 acres, formerly a wet rushy pasture field, but of very unequal nature and quality—though, on the whole, in better state than the other fields—all thorough-drained, and sown last spring with oats: the crop was a very superior one. In executing the improvements on Culhorn farm, a strict regard was paid to efficiency combined with economy,—every operation was entered upon with the view of obtaining a profitable return for the outlay; and how far this object has been realised, the following abstract statement of expense of improving the four divisions of the farm formerly mentioned,—the aggregate amount of produce of crops 1841-42, and 43,—the actual rent previous to improvement, and the present estimated value of these lands, will sufficiently testify. The expense of improvement will stand thus:—

	£	s.	d.
Draining, say 94 Scots Acres with tiles, from 4 feet to 2½ feet deep, being at the rate of about £7 16*s.* 1*d.* per acre	733	19	3*d*
Expense of sinking the course of the stream for outlet to drains	24	8	6½
Paring and burning, and levelling old fences	61	6	5
Grubbing trees, whins, &c.	62	12	3
Erecting division and road fences	64	19	8
Making roads for use of farm—about	30	0	0½
Total expenditure in permanent improvements	£977	6	2

Crop of last three years stands thus:—1. The oat crop in Borland Moss, and Cowpark, and Glenhapple, in 1841—together, 72 acres—amounted to 244 bolls of 12 Winchester bushels, or at the rate of 40 bushels per acre; weight, 39 to 40 lbs. per bushel. 2. In 1842 about nine acres of Borland Moss and Cowpark were sown with turnips, as previously mentioned, the produce of which amounted to about 40 tons per Scotch acre. The remaining seven acres were planted with potatoes,—produce, 252 bolls of 8 cwt., or at the rate of 576 bushels per acre. This was a very extraordinary crop; and, considering the worthless state of this field prior to improvement (only grazing two cows and their calves, though 16 acres in extent), went far to liquidate the expense of improvement—if, indeed, it did not reimburse the whole. The second crop of oats from Glenhapple, 1842, and first from Fleming Park—together, 93 acres,—amounted to 486 bolls, or at the rate of 62 bushels per acre; weight fully 40 lbs. per bushel, besides 32½ bolls of inferior grain. 3. The turnip crop in Glenhapple Park, 56 acres, this season, 1843, is altogether very superior, and the actual weight of the fourth part of an acre which has been taken up, and cleaned of top and root, amounted to 8½ tons (and the crop is equally good throughout the field), thus giving a produce of 34 tons per acre. The quantity of manure applied to this field, per acre, as noticed in the preceding part of this report, may appear extravagant, but we would beg to explain that the quantities stated were applied only on such parts of the field as had not at any former period been under cultivation,—the other portions of the field receiving, per acre, about 16 cartloads of dung, with 3 cwt. of guano, or 25 bushels of bones. The annual rent realised from these 147 acres of Culhorn farm previous to improvement amounted only to 112*l.*, or, on an average, a fraction more than 15*s.* 2*d.* per acre; and we are sure that in estimating the present value at 30*s.* per acre, notwithstanding the current agricultural depression, we are rather within the mark than otherwise. We make these general remarks merely to show agriculturists what can be done by a judicious outlay of capital on a naturally poor, barren soil; and we hope the time is not distant when the intelligent and enterprising tenants, as well as landlords, of Wigtownshire, will find it their interest to apply their spare capital and well-directed energies to the improvement and better cultivation of their farms—thus rendering themselves the benefactors of the district in which they live, by the additional employment thereby given to the labouring classes, who would consequently be enabled to live better and educate their children. We have been led to notice the improvements on Culhorn farm entirely from their being so conspicuous. But as we have already noticed, these are only a speck in the wide field of agricultural improvement entered upon by Lord Stair. His Lordship has land in fourteen parishes out of the sixteen which compose the entire county; and ever since his accession to these estates, the leading operations of permanent improvement—erecting farm-houses and making fences and drains—have been in rapid progress over the length and breadth of his possessions. There are two extensive tile-works on his Lordship's estates—one at the upper, the other at the lower end of the county, at which there are made annually about fifteen hundred thousand drain-tiles, besides a corresponding quantity of soles. Since spring 1840, there has been made at these works, and used on the estates, the enormous quantity *of three millions one hundred and sixty-four thousand five hundred and twenty-eight drain-tiles*,—these tiles are each fourteen inches in length; and when we apply the foregoing quantity in lineal measurement of drain finished therewith, we bring out a total of upwards of *six hundred and ninety-nine miles of drains*,—besides many miles that have been finished with broken stones previous to the erection of the second tile-work; and all this within the *short space of three-and-a-half years*. Lord Stair has thus not only set an example to his tenantry and the agricultural district at large, by the recent improvements on his home farm, but in the spirit of genuine liberality has kindly placed within the reach of his tenants, great and small, an opportunity of experimenting for themselves. Three experienced drainers have very properly been selected and placed in different quarters to take the entire management of the drainage on the estates—not leaving so important an operation to uncertainty, or to individual caprice or fancy, but securing what is both necessary and prudent, the proper execution of the work. The practice on the Stair estates therefore is, that the proprietor pays the whole expense of the drainage and charges 5 per cent. per annum on the outlay. The great work of a better system of husbandry has thus been laid by Lord Stair for his tenantry; and it is particularly gratifying to see the happy results of such a course in the more extensive green crops now cultivated,—and these certainly of a decidedly superior quality to what could be formerly raised under any management however good. [The Scotch acre alluded to above is ¼ larger than the Imperial acre.]—*Wigtownshire Free Press.*

The Duke of Cleveland on Leases.—At an agricultural meeting the other day, the Duke of Cleveland said, within three miles of the place where he had resided for the last nine years was a place which had long been rented as a rabbit warren; a spirited farmer acquainted with it applied to Sir William Welby, and said if he could have a lease for 14 years that he would break it up and bring the land into cultivation, his rent being allowed to remain at the same amount as that paid by the warrener. This offer was accepted, and the farmer being satisfied that the undertaking would ultimately repay him, entered with spirit upon it. In the fourth or fifth year after the warren was broken up, he (the Duke of Cleveland) saw this farm, and he could testify that it was bearing the best crops in the county; and last year, in the month of July, he again saw it, and would not wish to behold finer crops of Wheat, Barley, and Oats, than those which he witnessed growing upon this very farm. (Applause.) This showed what could be done by a spirited farmer. At the end of four or five years after he entered on the cultivation of this farm, the tenant applied to his landlord to erect suitable buildings upon it. Sir W. Welby observed that the rental was so small, that he could not be expected to incur an outlay of that description. This farmer, however, not having the necessary confidence in a lease of 14 years to induce him to erect the necessary buildings, made an offer, that if his landlord would extend it from 14 to 21 years, he would build himself a complete range of buildings. This was agreed upon, and a better and more perfect set of buildings could not be seen than he had erected. Now, the tenant would no doubt be amply repaid for his outlay; the landlord, although he would have to wait so many years before he took any advantage from the improvement, would ultimately find his farm trebled or quadrupled in value.—*Chester Chronicle.*

The comparative Advantage of Opening Drains with the Spade and Plough.—At the second monthly meeting of the Stirling Agricultural Improvement Club, Mr. Alexander, farmer, Taylorton, read a paper on the above subject, and after a good deal of useful and interesting discussion it was unanimously resolved, "That in general cases the plough is preferable to the spade for opening drains, both as regards expedition and economy." Mr. Alexander stated that with the drain-plough he could drain 40 acres in the almost incredibly short space of four days, and that too with such exactness, that manual labour is scarcely necessary, save for the purpose of placing the tiles in the drains. He stated that the reduced rates at which drains can be opened with the plough, compared with those done with the spade, might be estimated as follows:—An ordinary day's work of both ploughs going at the same time can accomplish 10 Scotch acres; and the

TO THE NOBILITY, GENTRY, NURSERYMEN and GARDENERS.—Important SALE of Hardwick Lodge Stock, near the Shorting Station on the Liverpool and Manchester Railway.—On Monday and Tuesday, the 15th and 16th January, 1844, will be Sold by Auction, by Mr. Thomson, at his the above Gardens, 1,851 Fine Plants, of the best Sorts that are grown for Sale, viz. Flowering Plants, 240 Specimen and 405 Small Plants, particularly calla and geranium, 178 Azalias, from one to five years' old, worthy of notice; a great variety of Roses and Greenhouse Plants, Shady Exotics, Vines, Peaches, and Dwarf Trees, for bedding; Apple, Gooseberry, Currant and other Fruit-trees, &c. &c. Also, three well-bred Milch Cows, Two Mares, Fat and Store Pigs, Sow in pig, Rick of Hay, a great variety of Farming and Gardening Implements, and a Garden Engine, nearly new. Wm. Thomson, who is giving up his residence, respectfully calls the attention of Purchasers to the above Stock, which will be open for inspection on the day of Sale.

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NEW FARMERS' NEWSPAPER.

The time has come when Landlords and Tenants, large Farmers and small, must devote their anxious attention to improved cultivation—when, in the words of Sir Robert Peel, "*All must learn how, in the shortest time and at the least expense, to produce the greatest quantity of food, vegetable or animal, without permanent injury to the land.*" To accomplish this, no means can be so effectual as that which brings the results of Experience and Science before every man, in a cheap form. For this purpose The AGRICULTURAL GAZETTE is to be established.

The Proprietors are aware of the difficulties of dealing with the many details of cultivation without an acquaintance with circumstances, often as varying as places. They condemn the idea of conducting farming operations upon one unvariable plan, and, while they welcome science as the best auxiliary of practice, they regard crude speculations as the most dangerous of delusions. But they also feel that in Agriculture, as in all other arts, there are general principles upon which successful farming must depend, that there are practical errors which no local circumstances can justify; in short, that there is room for improvement even in those branches which are best understood. No one man can be competent to deal with the multifarious questions affecting husbandry, and the duty of the Editor of such a Paper as The AGRICULTURAL GAZETTE is to make known the knowledge of all. It is to practical Farmers that the Proprietors trust for the means of carrying out their views, and not to the talents of any individual. While, therefore, they state that the Editor of The AGRICULTURAL GAZETTE will be a gentleman well acquainted with the best kind of Farming, in which he is actively engaged, they feel it to be of far more importance to announce the promise of assistance received from the landed and farming interest generally, especially of those whose names they are permitted to mention—

The Right Hon. the Earl of Ducie, Vice President of the Royal Agricultural Society of England
Sir Charles Lemon, Bart, M P, one of the Council of the Royal Agricultural Society of England
J. E. Leaington, Esq, M. P.
Dr Bunbury, Professor of Botany, Oxford
James F. W Johnston, Esq Professor of Chemistry, Durham
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Charles Hayward, Esq, Coldgeley, near Gloucester
W. H. Hyett, Esq, Painswick House, one of the Council of the Royal Agricultural Society of England
[illegible] Esq., Richmond Yorkshire
[illegible] Esq, Fordham, Downham Market
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[illegible] Esq., Rothampstead, near St. Alban's
[illegible] Esq, Secretary of Rayleigh Farmers' Club
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W Price Esq, Secretary of the Ross Farmers' Club
R. Aglionby Slaney, Esq, Walford Manor, Shiffnall
S D Stirling, Esq, Glenservie, Falkirk
W S Wingate, Esq, Hamby, Bollingbrooke, Lincolnshire
Mr T Beadel, Secretary of the Braintree Farmers' Club
Mr John Brodie, Haddington
Mr. G. Hope, Fenton Rams, East Lothian.
Mr John Morton, Agent to the Earl of Dunie
Mr. Shoosmith, Folkington, Sussex
&c. &c. &c.

The Function of Agriculture—its Science—Animal and Vegetable Physiology—Improvements in Implements—better modes of Husbandry—results of well-conducted experimental Farming—Reclamation of Waste—Stock—Drainage—Irrigation—Foresting—Road making—Farm Buildings—Labourers—in short, whatever affects the beneficial employment of capital in land—these, and all considerations. Reports will be given of the English, Scotch, and Irish Agricultural Societies—London Market Prices of Corn, Hay, and Cattle, and the Weekly Averages. Replies to Questions connected with the object of the Paper will also be furnished weekly.

Considering the union which exists between Horticulture and Agriculture, it has been thought advisable to make The AGRICULTURAL GAZETTE an addition to the Gardeners' Chronicle, edited by Dr. Lindley, and so extensively known; but that there may be ample room for discussion, that Paper *will be increased one-half in size without additional charge*—thus Twenty-four Columns will be occupied, as at present, by Horticulture, and Twenty-four by the General News of the Week, whilst

Twenty-four Columns will be devoted to Agriculture;

This day, therefore, January 6th, is published, price SIXPENCE, stamped to go free by post, the First Number of

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE:

A Weekly Record of Rural Economy and General News.

THE HORTICULTURAL PART EDITED BY PROFESSOR LINDLEY,

The principle on which the Gardening part of this Paper has been conducted has been to make it a weekly record of everything that bears upon Horticulture, Floriculture, Arboriculture, or Botany, so far, and such Natural History as has a relation to Gardening, with Notices and Criticisms of all works on such subjects. Connected with this part are WEEKLY CALENDARS OF GARDENING OPERATIONS, given in detail and adapted to the objects of persons in every station of life, so that the Cottager with a few rods of ground before his door, the Amateur who has only a Greenhouse, and the Manager of extensive gardens, are alike informed of the routine of operations which the varying seasons render necessary. It moreover contains reports of Horticultural Meetings and Proceedings—Notices of Novelties and Improvements—in short, everything that can tend to advance the profession, benefit the condition of the workman, or contribute to the pleasure of the employer; accompanied with Woodcuts, whenever the matter treated of requires that mode of illustration.

To this Farming, as explained above, will now be added.

Lastly, that description of domestic and political News is introduced which is usually found in a Weekly Newspaper. It is unnecessary to dwell on this head further than to say, that the Proprietors do not range themselves under the banners of any party, their earnest endeavours have been to make The GARDENERS' CHRONICLE a full and comprehensive *Record of Facts* only—a Newspaper in the true sense of the word—leaving the reader to form his own opinions, their object being elucidation of the laws of Nature, not of men. The reader is thus furnished, IN ADDITION TO THE PECULIAR FEATURES OF THE JOURNAL, with such information concerning the events of the day as supersedes the necessity of his providing himself with any other Weekly Paper.

The Proprietors are happy to announce that the following distinguished Botanists, Florists, and Practical Gardeners have already enriched the GARDENERS' CHRONICLE by their communications:—

The Hon and Very Rev. W. Herbert, Dean of Manchester
The Hon. and Rev. Charles Bathurst
Hon. W. Fox Strangways
Sir Oswald Mosley, Bart
Sir W. J. Hooker, Royal Gardens, Kew
Mr. Bowman, Kew
Dr Lankester, F.L.S.
Rev. J. M. Berkeley
J. Bateman, Esq, Knypersley
Mr. W. Billington, Gawsworth
Mr. Ingram, Gardener to Her Majesty
Mr. Paxton, Gardener to the Duke of Devonshire
Mr. Alexander, Gardener to the Duke of Leinster
Mr. Fairgrieve, Gardener to the Duke of Buckingham
Mr. Sinclair, Gardener to the Marquis of Lansdowne
Mr. Elliott, Gardener to the Earl of Fyrconnell

The Hon and Rev. L. Vernon Harcourt
Hon Algernon Herbert
Sir George Mackenzie, Bart,
Sir Charles Wolsey, Bart.
Dr Bevan, Llanferry
Dr Gregory, Aberdeen
Dr Ingram, President of Trinity College, Oxford
Rev J D Reade
Mr Henderson, Gardener to the Earl Fitzwilliam
Mr Frost, Gardener to Lady Grenville
Mr. Heythorn, Gardener to Lord Middleton
Mr. Halliday, late Gardener to Lord Sondes
Mr. Brown, Gardener to Lord Southampton
Mr Errington, Gardener to Sir P Egerton, Bart
Mr. Fortune, Hothouse, Dept., Hort. Garden, Chiswick
Mr. Thompson, Fruit Dept., Hort. Garden, Chiswick

G Bentham, Esq, late Secretary of the Horticultural Society
L. W Dillwyn, Esq, Sketty Hall
J D. Llewelyn, Esq., Penllergare
Mr. Bailey, Gardener to the Archbishop of York
Mr. Mackintosh, Gardener to the Duke of Buccleuch
Mr. Moffat, Gardener to the Duke of Newcastle
Mr Tillery, Gardener to the Duke of Portland
Mr. Cooper, Gardener to the Earl Fitzwilliam
Mr. Bowen, Gardener to the Earl of Lucan
Mr. Forsyth, Gardener to the Earl of Shrewsbury
Mr Buchan, Gardener to Lord Bagot.
Mr. Beeton, Gardener to Sir W Middleton, Bart.
Mr. Scott, Gardener to Sir C Lemon, Bart.
Mr. Whiting, Gardener to E. T. Rice, Esq., M.P.
Mr. James Dennistoun, Gardener, Blair Drummond
Mr. Gordon, Hardy Dept., Horticultural Gardens, Chiswick

OFFICE FOR ADVERTISEMENTS AND COMMUNICATIONS, 3, CHARLES-STREET, COVENT-GARDEN, LONDON.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 2.—1844. SATURDAY, JANUARY 13. [PRICE

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SUPERB NEW DAHLIAS, to be sent out in May, 1844.—LADY GRAY (Harrison's), beautiful rosy lilac, cupped petals, full and rising centre, shows its blooms well above the foliage, good size, much larger and fuller than Miss Abbott, and fit for any stand Gained the first prize at the York grand open show, Sept. 27th; also in the first stands of 12 at Bretton open show; also in the first stands of 6, 12, and 24, at the Bradford open show; and has been admired by all who have seen it Height, 3 to 4 feet. Plants, 12s 6d

LORD HOWDEN (Harrison's), rosy bronze, beautifull, shaded, size and shape of Le Grand Baudin; full and rising centre; shows its blooms well above the foliage. Gained the first-class prize at the Great North of England open Show, also gained the first prize in the shaded or edged class at Bradford open Show, Sept 27th, as well as the premier prize, also in the first stands of 6, 12, and 24 at the same places, and was universally admired Height, 3 to 4 feet 12s 6d

J HARRISON, in offering the above SEEDLING DAHLIAS, respectfully solicits early orders, as the stock is very limited.

York, Jan 9, 1844.

DAHLIAS

J. KEYNES, FLORIST, Salisbury.—"STANDARD OF PERFECTION," (Keynes).—The finest self coloured Dahlia in the world; gained the 1st class prizes at Stonehenge, Windsor, Kingston, Surrey Zoological Gardens, and Crown and Anchor, Stockwell, also the 1st prize specimens at Stonehenge Floricultural Society, Stockwell. "It is as round as any Dahlia in cultivation, as complete an unbroken circle as could be drawn with the compasses, and as globular in front as possible It is symmetrical to a hair, and as double as a Ranunculus. It is so remarkable as to be instantly recognised among a thousand Colour deep crimson It is the flower of the season, and must be had"—*Gardeners' Gazette*, Oct. 14 "The best grown flower we ever saw, without exception, every requisite to meet the taste of a connoisseur being complied with good colour, a honeycomb, regularity of growth and disposition in the leaves, and above all, as complete a rotundity of shape as if it had been cast in a mould."—*Salisbury Herald*, Sept 2nd, 1843. Plants in May, 1844, 10s 6d "Orange Superb," (Dodd's) first rate show flower, 10s. 6d "The specimen sent would grace any stand"—Glenny "Emma Noke," (Bowding's) bluish white, extra fine, indispensable to a first rate stand, 10s 6d Catalogues containing all the fine old varieties and new flowers for the season may be had on application —Salisbury, Jan. 10, 1844

A SUCCESSFUL METHOD OF GROWING THE LISIANTHUS RUSSELLIANUS.

JAMES CUTHILL has printed the whole account of his treatment of the above most splendid plant, which has often been exhibited at Chiswick, Regent-street, and the Royal South London Societies; his largest plant this year having 600 blossoms on it, and gained the Large Silver Medal at the Royal South London Exhibition A packet of seed, with the printed directions, will be sent at the small price of 2s 6d. Also, very healthy plants of the above, from 2s and upwards Also, CUTHILL'S celebrated Early MELON, his Early improved Black Spine CUCUMBER, at 2s 6d each packet, or 6s for the three packets —Florist, Hanmark-hill, Camberwell, London

T. & C. LOCKHART & DUNCAN, SEEDSMEN AND FLORISTS, 195, Cheapside, London, have just published their List of Seeds and Ornamental Greenhouse and Hardy Plants, which they will forward free by Post, on application. They have purchased some very superior Pink Seed of one of the first growers, which they are selling in packets at 2s 6d. and 5s each. As it rarely occurs that it is offered of such quality, and as the Stock is very limited, they respectfully request early orders. If sown in March, Pink Seed flowers the same season. Early Walcheren Broccoli Seed, 4s. per ounce, sent free by Post.

BUSHELL'S Light Seedling Dahlia "EMMA."—Ground roots of this Dahlia to be disposed of for 2l. per root, for cash. Colour, white, tipped with deep cherry, the petal form and centre good; the largest, most constant and free in flowering of any Dahlia yet propagated, and has obtained several prizes. J. B. cut 48 blooms from 14 plants, which were exhibited at one of the Metropolitan Shows, the habit of which Mr. Neville pronounced it to be placed in a stand of 12. "Star Spangled."—Colour purple maroon, fine cupped petal, and fine habit; ground roots, 2l.; pot do., 1l. 5s. J. B. warrants the above Dahlias to give satisfaction, or parcels sent the purchaser [illegible] Hyde-place, Kensington-lane, Bath, 10.

FASTOLFF RASPBERRY.
YOUELL'S TOBOLSK RHUBARB.
TWO SEEDLING PICOTEES.
FINEST CARNATIONS AND PICOTEES.
ARAUCARIA IMBRICATA.

Now ready for sending out, for particulars of which see Advertisement of the 6th inst.

YOUELL & Co, Great Yarmouth Nursery, Jan. 11, 1844

TO GENTLEMEN PLANTING

J. AND J. FAIRBAIRN are induced from the uncertainty upon which they hold the Manor street Nursery (situated contiguous to the Hyde Nursery, Clapham Rise, where attention will be given to all applications), to effect a Sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy and well-grown stock, consisting of fine large Laurels, twice transplanted, of extra growth, Portugal Laurels, very handsome, Green Hollies, of various sizes, Evergreen Privets, fine Standard and Dwarf Roses in great variety, fine standard flowering Thorns, Almonds, Æsculus, Robinias, and other Ornamental Trees, and Evergreen and flowering Shrubs, with a large stock of fine standard and dwarf, trained and untrained Peaches, Nectarines, Apples, Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled; also, a large assortment of Forest Trees, consisting of Lime, Elms, Birch, Beech, Hornbeam, Spanish and Horse Chesnuts, Mountain Ash, Poplars, and Spruce, and Scotch Firs, also a large number of Gooseberries and Currants, of excellent growth, and of the best varieties in cultivation, to all of which J & J F respectfully invite the inspection of Gentlemen and Nurserymen, flattering themselves that the general character of the Stock is such as to ensure unqualified satisfaction, and which they are disposed to offer at very moderate prices for cash.

J & J F respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c, which has lately appeared in the *Gardeners' Chronicle* (Oct. 21 and 28)

Nurseries, Clapham, near London Jan. 5, 1844

ROBERT COOPER begs to inform his Friends and the Public that he has published his CATALOGUE OF CHOICE FLOWER SEEDS, &c &c for 1844, which he can with confidence recommend, most of them having been grown by himself at his Nursery Catalogues forwarded by post, on application —Slon Nursery, Croydon, 1st Jan, 1844

DOUBLE ITALIAN TUBEROSE ROOTS.—The above have just been received from Italy in a sound and healthy condition, and are warranted DOUBLE, at A CORBETT'S, late Mr. Badnock's, Italian Warehouse, 18, Pall Mall. Price 6s. per dozen Also a choice collection of Orange and Lemon Plants, &c, varying from two to six feet high, with strong Globe and Heads, from 5s to 25s each Catalonian and Arabian Jasmines, &c. Lists with prices per Post, &c

SPLENDID NEW DAHLIAS

W. C. DRUMMOND begs leave to offer the two following Seedling Dahlias, raised in 1842 by T M Yeates, Esq, Bathford, in dry roots, and which he can confidently recommend as being first rate Show Flowers Prince of Waterloo, (Drummond); bright shaded red, regularly cupped, fine centre, and great depth of petals; as to a proof of its quality a first prize at Chippenham, placed before Standard of Perfection (Keynes') Lady Antrobus (Sparks'), Lady St Maur (Brown's); and first prize at Bath, the only two places ever showed at Height 4 feet —Per dry root, 2l Plants in May, 10s 6d each Sir H Pottinger (Drummond's), rich plum-colour, fine cupped petals, a good centre, and an excellent Show Flower Height 4 feet —Dry roots, 2l; Plants in May, 10s 6d

W C D will have no objection to make an exchange with anything new and good —Weston road Nursery, Bath, Jan 11, 1844

HOUSAINTE MELON SEED

R. WHITE & Co beg to inform their Friends and the Public, that their new Culinary and Flower seeds are now ready for delivery, and include a few remaining packets of the above splendid variety of Melon from the fruit exhibited by Mr Fleming, at 5s per packet Also, true Walcheren Cauliflower Broccoli at 3s per oz A new and very fine Vegetable Marrow, noticed by DR LINDLEY as being superior to all others together with every other truly desirable kind Kitchen-garden Seeds in collections of all the best kinds, in sufficient quantity for a first rate establishment, sent free to all parts, 2l 2s The same in smaller quantity, 1l 1s Complete collection suitable for smaller families, 1l 1s A fine Collection of Flower Seeds, comprising 60 distinct and choice kinds 1l 1s Orders from unknown correspondents must contain remittance

Poole Nursery Jan 13 1844

E. P. FRANCIS, NURSERYMAN, Hertford, begs leave to recommend to the Nobility, Gentry, and the trade in general, Snow's superb white winter BROCCOLI, in 2s packets, containing half an ounce, which was advertised last season, and will be found to give general satisfaction this winter and the ensuing spring Also, Snow's Hybrid Prolific Green fleah MELON, of most excellent rich sweet flavour, warranted to produce two and three crops in a season, from the same plants, has taken six first prizes at the North Herts and South Beds Horticultural Exhibitions, weight from 2 to 3 lbs, sold in packets, 5s each Also, Snow's Superb Walcheren CAULIFLOWER, which is found to be late and hardy, never runs, and produces beautiful large compact white heads, and is very dwarf Sold in Packets at 2s each, containing half an ounce

E P F. begs also to recommend a very superior kind of Grange's White BROCCOLI, which produces large compact heads in the months of January, February, and March Sold in packets, 2s, containing half an ounce. The above, making four packets, if ordered together, may be had for 10s, at the Hertford Nurseries or of Messrs. NOBLE, Seedsmen, 152, Fleet-street; Messrs J. WARREN & SON London-Bridge, and Mr FLANAGAN, opposite the Mansion House, London.

THE Advertisers have growing at their Nurseries, near Edinburgh, a fine Stock of Transplanted LARCH, from 1 foot to 4 feet high, which will be sold at very reasonable prices. Also, all other descriptions of Transplanted and Seedling FOREST TREES and SHRUBS. The articles will be delivered at London, Hull, and Newcastle, at very low rates of freight.—WILSON, JAMES, and SPARROW, Nurserymen, Edinburgh.

J. KEENAN has now received his entire Collection of New VEGETABLE and FLOWER-SEEDS, which include every Novelty really desirous recently introduced:—

	s.	d.
Fine Early Kent Peas, per quart	1	0
Prince Albert do.	3	6
Racehorse do.	1	0
Early Warwick do.	1	0
Shilling's new Groto do	3	6
Thompson's Early Dwarf ditto	1	6
Stubbs' New Dwarf do	1	6
Groom's Superb ditto	1	6
Knight's Dwarf Green do	1	0
" tall do	1	0
Bishop's Dwarf do	1	0
Nonesuch do	0	9
British Queen do	2	0
Matchless do.	1	6
Sedman's Imperial do	0	9
Reimers ditto	0	9
Early Mazagan Beans	0	8
" Longpod do	0	8
Royal Dwarf do	0	8
Green Genoa do	0	9
Large Windsor do	0	9
Dwarf French, of all sorts	1	0
Mercer's Pearly Cauliflower, per oz	1	0
Walcheren ditto	1	0
Large Asiatic ditto	1	0
Early Horn Carrot, per oz	0	6
Surrey do.	0	4
Altringham, and large White, for Cattle, per lb	1	0
Seymour's New Superb Red and White Celery, per paper	0	6
Myatt's Cape Broccoli, per oz	1	0
Grainge's do.	1	0
And all the other kinds, pd. to	2	0

	s.	d.
Brussels Sprouts, foreign	1	0
Red	1	0
Acme of Perfection Cucumber, finest known, per paper	1	0
Kerrison's, Walker's, and Slon House ditto	1	0
New Cabul Melon, per paper	1	0
Windsor Prize, Slon-House, Greenfield Nutmeg Cantelope, Black Rock, &c. &c.	0	6
New Olive Radish, fit in 18 days in a frame	1	0
Early Salmon and Scarlet do., per quart	0	6
All the best keeping Onions, per oz	0	6
Imported Early Dutch Turnip	0	3
Ash leaf and Early Frame Potatoes, with several good keeping kinds. Very Choicest Grapes (hand-picked), for Lawns; all the most beneficial kinds for laying down Separate or mixed; if mixed, per bushel		
Giant Asparagus and Rhubarb Plants; Mushroom Spawn; Matting and Lining's Evergreen Shrubs; Tuberoses, per dozen		
Anemones, per lb, 4s, per 100		
Lilium lancifolium album, flowering-bulbs, each		

With all the other new kinds.

Dulley's Early Scarlet Admirable Rhubarb; all the new Strawberry Plants, true to their kinds

Hautboys, Pinaster, and Chrysanthemums, named; Rivers' Nectarine, Peaches, Apricots, Plums, and Cherries, trained; Vines, Standard Roses, Evergreen Shrubs, Forest Trees, &c. &c.

Seeds for Distribution to Country at short notice.

Everything new in Flower-seeds, of which Catalogues will be ready.

4, Great Russell-street, Covent Garden.

EARLY PEAS, &c.—HENRY D. CORMACK, SEEDSMAN, &c., begs to inform the readers of the *Gardeners' Chronicle* that they can be supplied with the following Early and Prolific Varieties viz Cormack's Prince Albert, British Queen, and Early Kent Peas; Taylor's Improved Windsor, and Johnson's Wonderful Bean; Manchester Red and Seymour's White Celery, Walker's Long and Hamilton's Cucumber, &c., with every other variety of Horticultural and Agricultural Seeds, at his Wholesale and Retail Seed-Warehouse, 186, Deansgate, Manchester

SHILLING'S EARLY GROTTO PEA

J. AND S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Grotto or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and nearly double the size of any other Pea in cultivation. Quite hardy, will stand the winter well, and a good bearer; the pod large and long They would particularly recommend it to the attention of Market Gardeners Price 3s per quart; 10s per gallon; 17s 6d per peck; 30s per half bushel 2l 10s per bushel Agents—Messrs. BIELD and CHILD 110, Lower Thames-street, London; Messrs. W and J NOBLE, 156, Fleet-street, Mr KEENAN, 6, Great Russell-street, Covent Garden, Messrs HURST and MCMURTRIE, 61 Leadenhall street; Messrs GRAY, ARCHER, and HOGG, Kensington —Northwarnborough Nursery, near Odiham, Hants, Jan 4, 1844

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners' Chronicle* "THE BRITISH QUEEN on light soils, is the best of all kinds and will drive Knight's Tall Marrow out of the garden" "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table few days earlier than any other variety sown at the same time" Both varieties may be had in packages at 2s 6d each at W J C's Wholesale Establishment, Newtons, or the Retail Nursery above, Covent Garden.

THE WALCHEREN CAULIFLOWER.

MESSRS. MARNOCK AND HANLEY beg to offer the above valuable article, warranted genuine, at 1s per ounce; sent by post if otherwise; with a Treatise on its management, so that it may be kept in succession, as for Table, throughout the year It produces beautiful, large, compact, lily-white heads, of a most delicious flavour, perfectly hardy, requiring no hand glasses; it not only produces a better quality, but a much larger quantity, on the same space of ground as the old kinds of Cauliflower. It will be quite indispensable both to large and small gardens, for no Gardener, after having once had it *true*, would wish to be without it. All kinds of Kitchen Garden, Lawn Grass, choice Imported and other Flower-seeds, warranted to grow freely, and genuine.

N B. Their Catalogues of Flower seeds, comprising everything that is new and rare, are ready, and may be had on application.

Nursery, Mossley, Jan. 4, 1844.

I mention this to show that Nature has herself hinted to us the necessity of encasing the seeds that we would preserve.

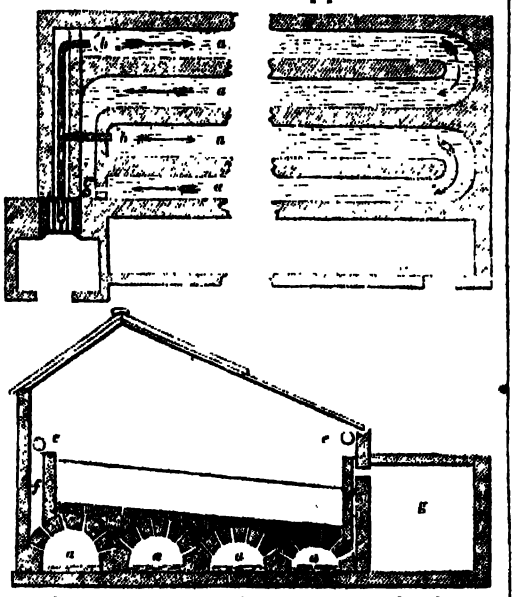
The seeds of Coniferæ, encased in their resinous integuments, are beautiful illustrations of seed-keeping, sound seeds being found in cones attached to the spray on which they grew, three or four years after the blossom that produced them had been dead. The seed-pods of the common Gorse and the Rhododendron are frequently sealed up from the foul weather of winter, and only open to scatter their seeds to the spring sunbeam; the Gorse and Rhododendron are therefore notorious examples of neglected plants, for though some may object to the Yew-tree as being an in-dweller with the grave, and perhaps not free from poison if eaten to excess by men or domestic animals, yet no such excuse can be urged against the Rhododendron, still less against the Gorse, for it is by far the best cover for game of any British plant we possess, and yields a canopy of green and gold to the landscape, food and shelter to the wild-fowl, and forage for cattle; and surely the Rhododendron might stand in all its loveliness. Wherever the wild Heath grows, there, be assured, the soil is suitable, for all Ericaceæ may follow where Calluna has been, as far as soil is concerned; and as a moderate-sized bush of Rhododendron produces at least 1000 perfect seeds annually, wonder not if fair and friendly hands go forth to sow; and thus British moorlands, proverbially brown, may yet, ere an age expire, put on a rosy hue. Nature has taught Rhododendrons to open their blossoms in early summer, to ensure impregnation, and perfect seed, and again to burst their seed-pods in early spring, to secure a favourable seed-time; therefore, if they are once put in possession of our heaths and moorlands, their posterity will be provided for, and Britain's hills adorned; for they will soon propagate themselves by myriads on every moss and moor. They do so here, and at Chatsworth in situations high and bleak, hitherto considered unfavourable to American plants, thereby proving practically the working of the plan I propose—of inoculating, as it were, by patches, the mountain's brow and wide extending moor with seeds of native and exotic evergreens, and thus bringing them piecemeal into ornamental and valuable cultivation, for I am tired of seeing square miles of "the land we live in" yielding only besom-timber.

But I hasten to the main subject, namely, the saving, preserving, and distributing of seeds with some fixed system, and according to some general plan. In the saving of seeds, I would not have gardeners to be seedsmen; yet, to a certain limited extent, is this branch forced upon us, meet it how we may. A drying-room, hot room, or something very nearly resembling a slow Corn-kiln, is essentially necessary in every garden, not only for seeds, but also for all other articles requiring drought, or liable to injury from damp, such as the nets and bunting for wall-trees, and the like; garden-mats, glazed lights, in wet weather, or when washed previous to painting; and last, though not the least necessary, the proper drying of pot-herbs—a process seldom, if ever, properly done. To prove this, it is only necessary to examine English-dried Basil, Mint, Marjoram, or the like, in bundles, leaves, and stems, or perhaps with the leaves wanting, exhibiting only a bundle of dry or mouldy stalks, dusty or damp, as the apartment chanced to be where they were stowed. Compare these, I pray you, with Chinese dried herbs! And be it known, that English herbs will dry as neatly as Chinese tea in a hot room, such as is used here and in many other places for the seasoning of green timber. Camomile flowers and the leaves of pot-herbs may in this manner be dried of a fine green colour in 48 hours; and, if canistered immediately, will keep fresh and fragrant for years. The sun is highly injurious to the drying of herbs, as it bleaches them; and as for using canisters to keep herb-leaves in, I will produce precedents by thousands, for all wise matrons must agree that canisters must be had to preserve the flavour of fine tea, and so of other leaves and flowers; in short the saving of seeds in such a manner as shall preserve in the highest degree their vital energies, requires, in our humid clime, the aid of artificial drought, and when they are dried and dressed bright and clean they must be housed in something impermeable to moisture, in a word they must be kiln-dried to ripen them off, and canistered to keep them. Scarcely any article that we possess, unless it be as obdurate as the nether-millstone, can for any length of time remain unchanged in its nature and consistency, if exposed to the jarring elements that agitate our ever-varying atmosphere: hence the imperative necessity of having seeds, and indeed everything else, isolated from the air itself, as well as the other elements, if we wish to preserve them *in statu quo*, and I have not the least doubt that if seeds were soldered air-tight in cases, after being perfectly ripe and hard dry, and excluded from the ordinary changes on the earth's surface, by being entombed deep in its bowels, they would rise and resume the place and the line of their ancestors if carefully sowed in season time, though they may have reposed a century under ground; for one grand cause of seeds not keeping is their imperfections and encumbrances. Take a powerful microscope and examine seeds six months after harvest, and you will find their coatings clammy from original or occasional damp, and eggs of devouring insects sticking to their husk, ready to begin as soon as it is warm enough to devour the store of the seed on which they have fixed their dwelling.—*A. Forsyth, Alton Towers.*

(*To be continued.*)

TANK HEATING.

The subjoined is a plan of a Pine-pit recently erected at Trentham, in which the tank system of bottom-heating and that of hot-water pipes for top-heat are combined; and for keeping a sufficient and steady heat, with a small consumption of fuel, nothing can be more satisfactory. The pit is 77 feet long, and 12 feet wide inside, and is heated by what is called a saddle-boiler. Under the bed are four tanks, *a a a a*, into which the water is delivered from the boiler, by a four-inch pipe at *b b*, and after pursuing the course indicated by the arrows is again received by another pipe, the end of which is shown at *c*. The advantage of two deliveries is that the water, not having so far to go, does not get so cold before it is returned to the boiler, and the heat is more regular in all parts of the house. The depth of water in the tanks is about 3 inches. The tanks are made of brickwork, coated with Roman cement. They are arched over with brickwork also, which we find cheaper than covering them with slates, and by leaving interstices between the bricks of which the arch is composed, the steam is allowed to escape, and penetrating the stratum of rubble above, to keep the tan in a proper state of moisture. The same boiler also supplies a range of four-inch pipe, which goes round the pit, as shown at *e* in the section. There are cavities in the wall, to permit the steam from below to pass to the top of the pit. The aperture to these can be closed at pleasure, thus insuring a perfect command over the moisture of the atmosphere. *g* is a chamber which formerly contained a flue belonging to the house that occupied the place of the one I am now describing. This chamber has been left with the view of its being useful for filling with hot dung, either for the purpose of assisting to maintain the heat of the house, or for destroying insects, thus anticipating Mr. Beaton's remarks of the week before last. The tanks and pipes cannot both be



worked at the same time, but they are fitted with stop-cocks, so that either can be worked at pleasure; and a few hours in the middle of the day, when the pipes are not wanted, is found amply sufficient to keep up the bottom-heat, as the mass of material, when once heated, retains its heat for a considerable time. I am keeping a register of the heat indicated by the thermometer out-of-doors, in the pit, and in the bed, taken every morning at daybreak—and of the quantity of coals consumed each day; and when the weather is sufficiently severe to test the efficiency of the apparatus, I will send it, if you think it will be interesting to your readers.—*G. Fleming, Trentham.*

THE ACCUMULATIVE SYSTEM OF CULTIVATION.—No. I.

At page 756 of 1843 an instance is given of the benefit of a proper mechanical texture of soil in the cultivation of Schizanthus retusus, and evidence was produced to show that the proportions of material to be employed in potting are, to a great extent, regulated by its property of maintaining a uniform circulation of moisture during the whole growth of a plant, all other conditions being equal. In the same paper mention is also made of the success attending an application of manure (as a substitute for leaf-mould) in a partial state of decomposition, to such plants as are capable of deriving nourishment from nutritive material in a gross form; and the following instance is cited of high culture being attained by a treatment, which, at that period (1832), was deemed impracticable.

Having two store pots of seedling Balsams, which had remained for some time exposed upon the front platform of a greenhouse, and the season (the end of June) being too advanced to obtain seed from them under ordinary management, it occurred to the writer, that having dispensed with the process of shifting in the growth of Schizanthus, the same operation might also be avoided in the present case. To obtain healthy plants for the experiment, they were pricked off singly in 60 sized pots, and placed on the elevated front of a small greenhouse, where, with repeated syringing, and as high a temperature from sun-heat as the situation would admit, a vigorous circulation of sap was obtained. The following compost was used:—finely-pulverised vegetable mould, having the appearance of coarse black garden soil—to which was added an equal portion of half-decomposed, dry, friable manure in flakes, the latter *only* being passed, as far as it could be reduced, through a sieve of little more than two-eighths of an inch in the wire. 12 sized pots were prepared with a bottom-drainage of one large slightly hollow potsherd, or two large flat potsherds, laid over the cavity half way, each upon the other's edge; upon these, as sub-drainage, were added two to three inches of large coarse flakes of similar material (dried by exposure to the air) closely pressed. The plants were potted firmly in this well-incorporated material. An experienced gardener observing the process of potting, remarked that the water would "rue that," meaning that the soil would prove incapable of sustaining the plants against a high temperature, and the variations of atmosphere to which they might be subject.

They were thus placed upon a tile platform and stage of a greenhouse, admitting a tolerable elevation and full exposure to light. There being no front lights, the position was well adapted for close treatment. In this situation they were subjected to as hot and humid an atmosphere as the weather would permit. Great attention was paid to giving air in the fore part of the day, for two, three, or four hours; and equal care was observed throughout the whole period of growth in maintaining a desirable temperature, by closing the house immediately on the indication of a change in the external atmosphere, as the only means of securing the highest possible degree of heat under the most unfavourable influences; and, on all occasions, when the intensity of sunlight would allow it, the house was closed (during the first and intermediate stages of growth), with a temperature varying from 70° to 90°, with requisite waterings and syringings over the whole house. By these means, a uniform and accumulated growth was obtained, to the surprise of those who anticipated opposite results. The emission of roots upon the stems, the uniform bloom, and the exuberant foliage, afforded ample proof that larger proportions of soil might have been applied with equal success. Gardeners inquired how many shifts these plants had received, and when their first growth was made; and when they were told that the position in which the plants then stood was the only one from the first shift, those cultivators could not understand the principles on which the experiment was founded, nor admit the progressive action and power of decomposed vegetable matter, when applied in a modified state, and acted upon by an intense atmospheric and solar agency. In this instance, they could not perceive that, in obtaining a simultaneous and uninterrupted growth, the means employed were equal to the effect; and that, in transferring the plants in a young and excitable state to large masses of soil, that the materials "were of a texture and quality adapted to their growth, and so mechanically arranged as to enable their tender organs to assimilate their food without being exposed to excess of moisture."* In fact, this first attempt to supersede the ordinary operations of shifting by the higher and more powerful agencies of Nature was misunderstood, and that important principle, that "atmospheric and solar agency should be so modified as to balance the power of absorption to which plants are exposed,"† and *vice versâ*, was entirely overlooked. By using portions of soil in a partially dried state, it was rendered applicable to the different stages of growth: 1st, mechanically, by its greater porosity; 2dly, nutritiously, by the gradual decomposition of organic remains in proportion to the power of absorption required for perfect growth. The foregoing instance of cultivation involves the following principles:—

1st.—For the attainment of perfect growth in plants, "it is indispensable that the supply of fluid by the roots should be continued and uninterrupted."‡

2d.—The accumulative vigour of all plants is exactly in proportion to the progressive agency of the cause to which they are first subjected.—*W. Wood.*

BEES.—No. II.

(*Continued from page 5.*)

Almost all the hives that are used about London are wider at the top than at the bottom, in order to prevent the combs from falling down; but if they were an inch or two wider at the bottom than the top or crown, the Bees would gather more honey, the process of taking out the combs would be facilitated, and the hives would not become awry so often. In the centre of the crown of each hive there ought to be a hole six inches in diameter, covered with a movable lid. To this lid a bit of comb (that working Bees are bred in) ought to be sealed, or sealed to a tally, and then pinned to the lid, to induce the Bees to make the combs run from front to back. Four or five sticks or stakes must cross from side to side of the hive, to which the Bees fasten the combs. Where sticks are thus used the Bees have passage-holes or by-ways in every comb at every stick. These by-ways are not in combs when sticks are not used. The door of the hive should be five inches wide, and nearly one inch high. The boards on which hives are placed should not be fastened to single pedestals, but be movable with the hives. That part of the board which projects in front, which the Bees arise off and alight on, ought to be eight inches broad and the same long; for if the Bees are gathering honey fast, coming home heavily loaded, they often miss the alighting-board, if it is small, and do not rise for a considerable space of time. "When a pheasant rises to fly," says Rennie, "it may be observed, first to fill its body with air by taking several deep inspirations, at the same time often rising on tip-toe, hopping a short space, and puffing out and balancing its body to feel whether it be light enough to rise." Though a pigeon does not thus hop previous to taking flight, yet it, like the pheasant, cannot go off at full speed without taking an inspiration or two. Bees, like the pheasant, generally run a short space before they

* "Farmer's Magazine," June. Page 710.
† Chronicles, p. 756.
‡ Hadley's "Principles of Horticulture," 4to.

the; but when the alighting-board is small, the Bees stand, like the pigeon, and take two or three inspirations, and in doing so obstruct the passage. The distance at which hives are placed from the ground, in most cases, is too great; for Bees sometimes miss even large boards, and experience a useful shock when they reach the ground. Hives, then, ought to be placed within six inches of the ground, with an elastic turf under the alighting-board. That Bees are more healthy at a distance from the ground is but an idle dream of philosophers. Each hive ought to be placed on three posts or stones. That rain may run off the alighting-board let the front post be a little lower than the two others.

Though Bees, when placed in a shaded corner, thrive pretty well, yet they thrive better where the sun shines on the apiary the greater part of the day; for Bees, as every good observer must know, fly faster, and are able to carry heavier burdens in sunshiny than in dull and cloudy weather. Hence, where the hives are much shaded, the Bees are apt to come to the ground before they reach them. At any rate, the Apiary should not be so closely encircled by trees as to cause the Bees to rise off the resting-board at an angle of more than 20 degrees. It may be well to remark that the excrement of Bees stains linen, and on account of this a Bee-yard ought not to be in the immediate vicinity of a drying-ground.

The Swarming of Bees.—Let us here see what takes place when Bees swarm. It must be borne in mind that a first swarm does, and a second does not leave the hive from want of room. Sometimes (generally about three days), before a first swarm is thrown, the Bees set one or more eggs in royal cells. It is not correct to say that "the swarm is led off by the queen," for she does not know whither it goes, though she follows, or rather goes with, it. About two-thirds of the Bees and the old queen form the first swarm. Though eggs are set often more and sometimes less than three days before the swarm quits the hive, yet let us suppose that in the royal cells were deposited eggs on the third day previous to swarming, and on the eleventh day after the queen's will be matured. The one that is matured first may be heard calling "off, off," in her cell. Her calling or piping being unanswered, she marches out of her cradle, and commences to call, as "peep, peep," or rather "paar, paar." Another queen is matured, and calls "off, off," which sounds seem to astonish the hatched queen, now monarch of the hive. She runs up and down the hive, crying "paar, paar;" that is, in our language, "Here am I—Where are you? death or victory." Perhaps one or more queens are matured, which call "off, off," in their cells. Having thus called for three nights a second swarm issues; that is to say, nearly the half of the Bees with the hatched queen leave the hive. While the swarm is in the act of leaving the hive, one of the queens bursts the lid of her cell, goes to the outside, runs and flies about the door for the space of a few moments, and then goes into the hive, fully expecting to be "crowned queen over all." If two should have left their cells one is put to death; but if the calling is continued a third swarm will issue on the second or third day after the second swarm issued forth. It is worthy of remark, that two queens go sometimes with the second swarm, but one of course is destroyed. If one queen only is going with the swarm, and sees or is seen by the other queen running about the mouth of the hive, a fatal contest takes place. When the queen of the colony, or swarm, or cast, is killed all the Bees return. If the following day be fine, the queens of both stock and colony come out, generally about 1 o'clock, to be fecundified. The Drones seem to be quite well aware that the young queens are about to appear, for a great part of them fly in front of the hives, "throwing their eyes around," and keeping as watchful as possible. When the queens come out they are pursued by all the Drones that see them, caught in the air, and brought to the ground, where, I believe, a union takes place. Sometimes the queens do not return; whether they fall in water, lose their way home, or mistake the hives, I am unable to say. As soon as the Bees are aware that their queens are duly impregnated, they begin to destroy the Drones. I learn from the "Honey Bee" that Bevan, Huber, Butler, and Reaumur believe, or have believed, "that the destruction of the Drones is effected by the stings of the workers." This is not the case, for the Drones are hungered to death. It is true that the Bees attempt to worry them, but they cannot do it. The Drones are banished from the combs to the boards, where, from want of food, they become so weak that they can scarcely fly. Some are unable to rise off the alighting-board, but the greater part die at a distance from home, being unable to return. On an evening, about a week after the Bees have commenced to haul and maul the Drones, you may destroy almost all the Drones in one general carnage, and thereby promote the welfare of the community. This may be done simply by lifting the hives off the boards on which the Drones are sitting, and killing them with the hand, foot, or another board.—*A. Pettigrew, Wrotham Park, Middlesex.*

(To be continued.)

Home Correspondence.

The Pseud-Acacia.—Admitting, as I readily do, the durable nature of the wood of the Pseud-Acacia, or Locust-tree, and allowing that as a gate or rail-post it may even out-last one made of sound Oak or the heart-wood of the Larch; still I think your correspondent, "A. P., Cheam," estimates its value at much too high a rate, and is giving advice to inexperienced planters, which, if generally followed, they would have reason afterwards deeply to regret; as many of those have had occasion to do who some years ago gave implicit credence to Mr. Cobbett's praises and recommendations of this same tree. As regards the growth of the Locust, which "A. P." describes as being very rapid, I would observe that this precocious growth is restricted to the first 16 or 18 years of its existence, and that afterwards its advance is at a very slow rate; indeed, so much so, that I would venture to predict that the Oaks planted by "A. P." at the same time as his Acacias, though only, as he says, half the size of the latter when twenty years old, will, by the expiration of a like period, be greatly ahead of and nearly double the size of his favourite Locusts, provided his Oaks are fairly dealt with and proper attention be given to their management in regard to thinning, &c. Again, the Acacia, even when full grown, or say when 50 or 60 years old, rarely reaches dimensions to fit it for general building purposes or where a scantling of tolerable size is required. In North America, its native country, in the rich alluvial soils to which it is usually restricted, its average diameter when at maturity seldom exceeds a foot. In this country and climate, even under the most favourable circumstances, it can scarcely be expected that its growth should exceed that of the tree in its native habitats. Besides, though "A. P." would insinuate the contrary, it will only flourish in deep rich soil; and in addition to a rich soil requires from the succulent and spreading nature of its roots, an abundance of room. If inserted in mixed plantations, in spite of its rapid growth for the first few years, it soon gets overtopped, hampered, and destroyed by its neighbours; and this happens before it acquires a size sufficient to make a remunerative return. As an intermediate occupant, therefore, it cannot enter into competition with the Larch, which grows even quicker, requires much less room, with the further advantages of a long and straight stem, and which in point of durability, under similar circumstances, is but little inferior to the Locust itself. Upon clays, cold, wet, and tilly soils, it never reaches a useful size, but in a few years becomes stunted and decays at heart. The brittle nature of its branches is also (though "A. P." seems unwilling to allow it) another great disadvantage under which it labours, as it is almost sure to be much torn and injured by the winds, except in situations well sheltered from their effects: this is against its being planted extensively, even as an ornamental tree, to which, both as regards its elegant foliage and perfumed flowers, it undoubtedly has superior claims. The liking that hares and rabbits have to the bark and young shoots of the Acacia, is also, I may add, another objection to its extensive cultivation; as where they abound it is impossible to save the plants except by some artificial protection, which, under such circumstances, would become a serious inconvenience. The tree-nails adverted to by "A. P.," I may remark, are not ship timbers, but the wooden pins with which the planks are fastened to the frame of the vessel. Those made of the Locust are found to be of first-rate quality, and are imported into England and other parts of Europe in great quantities, and at a moderate rate, from North America.—*P. J. Selby.*

Nuts.—Mr. Borrow, in his "Bible in Spain," mentions a small town near this coast entirely devoted to the cultivation, for exportation, of the Filbert. Are Filberts ever imported from Spain, or is it a mistake of Mr. Borrow's? and is it the large Spanish Nut which is grown in that country, and which is so largely imported into England?—*Totty.* [We believe that there are only two sorts of Nuts imported from Spain; a soft or Spanish Hazel from the neighbourhood of Gijon, and the Barcelona from that of Tarragona. It is probably the latter that Mr. Borrow alludes to.]

Pine Apples.—Mr. Beaton's objections to the plan of planting out Pines, on account of their fruit ripening all at one time, may, I imagine, be easily surmounted. Most gardeners agree that larger and more robust plants can be obtained in a much less time when they are planted out than when they are under pot culture. The plants also are in a more favourable position for assimilating to themselves the food necessary for the production of large fruit. I have no doubt that all apparent obstacles in the way of planting out Pines will by and by disappear. Those who are afraid of the fruit all becoming ripe at one time would do well to lift the fruiting plants from the pit and put them into large pots; they might start them into fruit at any convenient time. Mr. Glendinning says, "by planting out Pines we can have them six feet high, but this is not what we want." If Mr. Glendinning can produce plants six feet high, and otherwise proportionately well grown, and lift them and fruit them in large pots, as above mentioned, they will no doubt mature larger fruit than if they had been subjected all through to the general routine of pot culture. After the plants have fruited they may be turned out of the pots, and planted out into the soil in the bed. Only one sucker should be encouraged, and in 12 months it will be sufficiently strong to be fruited.—*C. Ewing, Bodorgan Hall, Anglesea.*

The Amherstia nobilis.—The plant of this at Chatsworth having excited the interest of some of your correspondents, I inclose an extract from a work published in 1829, describing its situation and appearance when first noticed by an European in 1826. The soil in which I saw it grow is what, in Scotland, would be called a carse. I understood the tree to be confined to the Province of Martaban, and not to exist in any other part of the Birmese dominions. The locality is between the 16° and 17° of north latitude, and about 3° north of the limit within which the Durio and Mangosteen flourish; plants, the successful culture of which would seem, like the Vine and Olive in Europe and Northern Asia, to mark a botanical or at least an agricultural region. My friend Dr. Wallich readily found the two trees which are mentioned in the following extract, but he also discovered other specimens; all, however, within the same province.—*J. Crawfurd.* "At half-past two o'clock, the tide aiding us all the while, we reached Koquin, distant by computation twenty-five miles from Martaban. The scenery in this neighbourhood was grand and beautiful, the banks of the river high, and the country to all appearance peculiarly fertile. Close to the left bank of the river was to be seen a range of mountains, steep, bare, and craggy, rising to the apparent height of 1500 feet. Almost immediately on the right bank, and where the river makes an acute angle, a number of detached conical hills rose almost perpendicularly from the plain; all these last are of a grey compact limestone. We visited the largest, which contains a spacious cave dedicated to the worship of Gautama, and which, besides having its roof rudely but curiously carved, contains several hundred images of that deity; a good number of them of pure white marble from the quarries of Ava. Around the hill is a garden belonging to a neighbouring monastery. The only plant in it which struck us as remarkable, was a tree about twenty feet high, abounding in long and pendulous panicles of rich Geranium-coloured blossoms, and long and elegant lance-shaped leaves; it is of the class and order Diadelphia Decandria, and too beautiful an object to be passed unobserved even by the uninitiated in botany. Handfuls of the flowers as offerings in the cave before the images of Gautama." *

Standard Currant-trees.—As a matter of fancy, I have for some years grown Currants as standards; and observing the constant crop that clusters round the head, and the little room they require, I potted about this time last year several three-year-old trees, and placed them on the back stage of a greenhouse; they bloomed and set their fruit well, and ripened about five or six weeks earlier than the out-door fruit. They were trained with small heads, and with the ripe fruit were remarkably showy. They are very easy to manage. The cuttings should not be shortened back, but disbudded to the top bud, repeating the disbudding till it reaches the required height. A plant three years from the cutting yielded in my greenhouse about three pints of fruit.—*M.*

Ward's Cases.—In your observations on Ward's Cases in a late *Chronicle* you mentioned that one objection to them is the dimness arising from the condensation of the moisture on the inside of the glass. This reminds me of a fact which I once met with in a scientific periodical, where it was stated by a correspondent that, having a window in which a single pane was fixed in a metal frame, the rest of the sash being of wood, he observed in winter, that while all the panes fixed in the wooden sash were frosted, that one surrounded by the metal frame remained clear from dimness. The only satisfactory explanation given referred it to the different conducting powers of the wood, glass, and metal; the latter being a better conductor of heat than the glass, because the channel of transmission, in equalising the temperature outside and inside the window, thus received the deposition of the redundant moisture in preference to the glass which it surrounded; and, in like manner, the glass being a better conductor than the wood, received the deposition of moisture in preference to the latter which surrounded it. The panes fixed in wood became frosted, while that one in metal remained clear and dry. If this solution be correct, it points out a method of obviating the deposit of moisture on the inside of the glass of Ward's Cases, without having occasion for a door or other opening. The instances appear to be analogous. The moisture held in suspension at a higher temperature begins to be deposited as that temperature becomes reduced. If the glass itself be the channel of communication through which the reduction of temperature takes place, the deposit will be on the glass; but if the glass be fixed in a frame of metal, bearing a proper proportion to the extent of glass, the function will be removed from the glass to the metal, and the former will remain dry and clear.—*J. H.*

The Constitutions of Plants.—The popular opinion that plants become naturalized, that is, adapt themselves to our climate, is a great error, and productive of much loss. The Dahlia, Heliotrope, Marvel of Peru, Potatoes, &c., are just as susceptible of frost now as when first introduced. When we hear of plants becoming hardy, as it is termed, it will generally be found that it is our ignorance, in not being sufficiently acquainted with their local habitat, an instance of which may be adduced. The Aucuba japonica, coming from a hot climate, was treated accordingly, by being placed in a stove, forgetting that the altitude of a country has great influence. The winter in Japan is very severe; India in general is very hot in the plains, whilst in the mountainous parts it is very cold: therefore, the Berberis, and other plants introduced from Nepal, are quite hardy. I could give several other instances, but sufficient has been given to enable us to arrive at the conclusion that plants retain their original constitutions unchanged.—*J. R.*

Cut Wood to have Wood.—I have no ordinary satisfaction in acceding to your wishes of laying before you the result of my planting in North Wales, as I am thoroughly persuaded that the mode of pruning which I have adopted has increased the bulk and improved the quality of the trees which have been subjected to annual pruning. I began planting as far back as 1804, in a most mountainous district, and a soil most ungrateful. As soon as the trees were removed from the nursery, I commenced pruning them, cutting two, three, or four branches, which I have continued annually, with a strong knife, close to the stem, beginning invariably at the top of the plant and descending, so as to leave the leader without a rival and balancing the

* "I showed the dry specimens of this plant to my friend Dr. Wallich, on his arrival at Rangoon, about four months afterwards, and he soon ascertained that it constituted a new genus. He afterwards examined it in person on the spot, transferred it to the Botanical Garden at Calcutta, and described it under the name of Amherstia nobilis, in compliment to the Countess of Amherst."—*Crawfurd's Embassy to the Court of Ava*, 1826.

tree as well as I could. My woodman, as well as his assistants, have persevered in this system at all seasons of the year, and the same tree once or oftener in the year, according to circumstances. As compared with others of the same age in similar situations they fully demonstrate the advantages of judicious pruning; for I do believe that more woods and hedge-row trees have been injured by pruning at distant and uncertain periods than by neglect: hence pruning, by superficial observers, has been unreasonably condemned as injurious to the growth of trees. I will call your attention more particularly to the plantations which I made in the year 1814. They have been pruned and thinned annually since that period, by taking off from 3 to 5 branches, as before described, and the result has been that the sap which the cut branches would have exhausted has given vigour and increased strength to the trunk, as is evident from the healthy appearances of the trees as well as their augmented size. I have planted those trees which the soil most loves—Oak, Larch, Ash, Sycamore, and Elm; and I often lament that gentlemen put into the ground plants without any discrimination of kind or size, consulting the nurseryman, whose object is to sell those plants which encumber his grounds. In a late Number you state, "In 26 years, Oaks, Larch, and Ash are to be found 20 feet high:" you should have added—"up to the first branch." Further—"Dr. Thackeray is represented to be continually trimming his trees up by removing the side-branches"—it should have been removing "all large or luxuriant" side-branches.—*W. M. Thackeray, Chester.*

Colour of Carnations affected by Compost.—It has been said that salts of iron tend to heighten the colour of flowers; Johnson's Almanack says, "increase the intensity of red flowers." In describing the Carnations at Messrs. Norman's, last season, the *Chronicle* observes, that Hafton's Patriarch is too thin, but that the colours are "intense." So I found them. My compost consisted of old mould from a vegetable garden, two parts—old horsedung one part, and a little charcoal. I had grown two pairs of this flower the year before, but one was sickly, and the other run—*i. e.*, the red was lost. However, I layered the run pair, and last season the layers bloomed clean and were fine plants. The flowers were evidently attractive, for a florist visited the garden without pausing before them; the white was remarkably clear, and the colours brilliant. Towards the close of the season, I chanced to visit a garden, the situation of which surpasses mine as much as the owner excels me in every quality that can constitute a florist. Here I saw several plants of Patriarch planted in a border of rich reddish-coloured soil (turned up about two years ago), but the white was quite flushed, the colours looked muddled and confused, and my friend said he was greatly disappointed with the flower, and should not grow it any more. The plants were much stronger than mine, which were in 12-sized pots. My compost had laid two winters, and was well blended; the rough stones were riddled out, and the charcoal added at potting. I could not succeed in impregnating Patriarch, although a thin flower. The style is long, thin, and in three divisions. The Pink called Barnet's Conqueror has a similar style. I never could get seed from it, though I had plenty of pollen from different varieties to cross it with, and took care to keep it dry. Bees do not seem to impregnate these flowers. In a garden where several hives were kept in the midst of a large stock of Carnations there was frequently no seed-flowers of Pinks, which were carefully impregnated and marked, produced seed, but no others on the same plant.—*J.*

Planting.—I think your Paper has increased in interest since you have taken up the subject of planting and pruning, and that parties entertaining different views on those subjects have placed them before the public through the medium of your Paper, so as to excite inquiry. So long as such discussions are carried on in the spirit which has at present shown itself, good may be expected to result from them. I have read the papers on the subject of planting and pruning, particularly on the 23d Dec., and I expect much good may result from the various opinions there given, and from the candour of the Editorial passages; but in one of those letters, "Quercus," I think, is advised to see what has occurred in the plantations at Marquis, near Chester. Now the distance from London to Chester being not more than ten hours' travel, I had hoped he would have availed himself of this suggestion, and ascertained by his own inspection the correctness of the statements in regard to these woods, and whether the system pursued there ought to be followed or rejected. I consider the permanent adorning of mountains and valleys with timber an object of such vast importance to the public, that no individual should continue to write for the eye of the public adverse to any system, the value of which, he has an opportunity of examining in person, until he has done so.—*Sub Arbore Felix, County Kerry.*

Excrescences on Timber.—I observe that your correspondent, W. Billington, (p. 909,) calls the attention of the readers of the *Gardeners' Chronicle* to some Oak trees in Pockington Park, near Oswestry, which he says are infested with excrescences of great thickness, and he then goes on to say that it appears that the timber in all such trees is shaky and of little value, and that it is carried at these excrescences by the young shoots apparently growing on dead or decaying timber; and he ends by inquiring into the cause of this. Having paid some attention to these excrescences for some years, I will endeavour to reply to his observations as they arise: first, as to the value; so far are these trees from being worthless that they are ten times as valuable as if they were plain; these excrescences when cut into veneers being most beautifully mottled and figured; and so highly are they valued by those cabinet-makers who can work them, (they are very few,) that I have known a tree of this sort sell for 100*l.* to a Leeds upholsterer. It is true that, owing to their conformation, and the long time required for seasoning all kinds of Oak-timber, they are very difficult to manage; and after having paid attention to the subject for 20 years, I do not know that I am competent to give good advice upon it. The best plan appears to be to let the tree lay in the log at least four or five years before cutting it into planks, and these planks ought to lay for two or three years before being cut into veneers; for if cut into veneers soon after the tree is felled, the shrinking of the wood and the various contortions which its mode of growth has a tendency to give it, pucker and draw, and twist them in so many directions, that the veneer is often shaken to fragments, not because the tree was originally so, but because it has been seasoned improperly. This peculiarity, and the very great difficulty there is in laying the veneers, detract much from the value of curled Oak, but it is (or was, at least some years ago) so fashionable a wood, that a good tree was worth a large sum of money notwithstanding. All curled trees, of whatever kind of wood, are valuable for this reason, if sound, and the curl has nothing to do with unsoundness, *per se*. I have myself some furniture made of the curled Elm, which I consider even more beautiful than the curled Oak, and it does not require half so long a time to get it into season. Whatever may be the cause or cure, it has certainly nothing to do with unsoundness; as I know many trees curled all round, which are growing as vigorously as any of their neighbours, and on felling curled trees I find they have the usual quantity of sap-wood upon them, but quite as much curled as the heart. This is very evident in the Elm, where the heart-wood is a fine brown, whilst the sap is white; and so far is it from being owing to the decay of the tree, that I have trees now growing not thicker than my thumb, in which this peculiarity is very evident. It appears to me that the cause is a tendency which the tree has to throw out roots from every part of its stem; and many kinds of Apples can, for this reason, be grown from cuttings as easily as so many Willows. I think it has little to do with soil, but is a constitutional peculiarity connected with variety; as in raising Crab-stocks for grafting, nurserymen will find individual plants showing this peculiarity, whilst the generality of them, although raised from the seed of the same tree, and growing in the same soil, show no such tendency. Many kinds of English timber trees are more or less affected in this way; those showing it most frequently are the Oak, Elm, Alder, Maple, Yew, Beech, Apple, Cherry, and occasionally the Ash, but I never saw a Pear-tree so affected. The celebrated Cayabuco-wood (Amboyna wood) of the East, is a production of the same kind. Recurring again to value, it is worth while ascertaining whether the twistings and contortions which detract so much from the value and beauty of curled Oak could not be remedied by injecting the tree with some extraneous matter which would fill up the pores, and prevent shrinking. According to the plan of M. Boucherie, mentioned in the *Chronicle*, at p. 911, if this could be accomplished successfully, this curled wood would be extremely valuable, as it far exceeds any other wood in beauty, the curled Elms and Yews being probably in the first class. But this is a matter of opinion, many preferring the Oak, perhaps on account of the extravagant price at which articles of furniture of this wood sell for when well made. A person of my acquaintance contrived to get some wood from one of the old Yews, near Fountains Abbey, which are said to have sheltered the monks before the abbey was built; this tree had been blown down by a strong wind, and proved to be most beautifully curled, but from its great age was too far decayed to be valuable, otherwise than as a relic of old times. In confirmation of what is said at p. 911 about the injury of coal-tar to timber, allow me to add the following fact:—A gentleman in Yorkshire had his trees much damaged by the deer in his park, and to prevent them barking them any more, he had the stems painted with coal-tar—it is true, the deer no longer attacked them, but most of them were killed by the application.—*T. G., Chitheroe.*

Cucumbers.—In reply to "Veritas," I beg to say that the Cucumbers exhibited by me at Regent-street, on the 5th of December last, were both spined, but one was ribbed and the other was smooth. My plants, both last season and also this, were propagated from cuttings; they were taken from one plant true to its kind, and the two plants subjected to experiment were grown in the same sort of soil and received the same treatment as respects heat and moisture. If, therefore, the stimulants used did not cause the difference, to what can it be attributed? "Veritas" says, "I conclude the real cause of the difference was a sporting of the variety." I am aware that Cucumbers have a tendency to sport, but this, in this instance, certainly was not the case. Hydrangea cannot be said to sport, although it is known that three different shades of colour may be produced by cultivating one in Norwood loam, another in a good Hazel loam, and a third in black fen bog, destitute of sand, and watered with a solution of alum and saltpetre. In a similar way are Dahlias, in different localities, affected by different soils.—*James Stewart.*

Canker in Auriculas.—I am sorry that Dr. Horner should think I had not attended to his Treatise on the Auricula. I have read it many times. Two things of importance I found in it: one, the time of potting; the other, the insertion of half-decayed leaves. The latter was not quite new to me. I had often seen Auriculas potted with the decayed leaves, vegetable mould, &c. from old fences; but the florists who used this compost often had unsound plants, arising most likely from bad drainage, or drip, or other causes. My own plants were very healthy, though not luxuriant. They were potted in sandy peat with some cowdung. I have the same Auriculas now that I had nine years ago. Latterly I have made up a compost for them in the month of July or August by stacking sods and loads with layers of long dung. This soon becomes very hot; and when in the course of time it is sufficiently reduced and incorporated, I take two parts of it, one part old cowdung, and half a part sharp white sand. I have used half-decayed Auricula-leaves, rags, and Fern, gathered green and laid in a heap to ferment, and sometimes I have dropped in some Lichens from the rocks and trees, with the black mould adhering to them. Every plant seems to like Fern-leaves and rags. The cankered plants which I had this year were some that I bought in spring, ready potted. On turning them out, I found a want of drainage; in some of them merely a single crock over the hole. Then they had been placed on the ground—worms had entered, and reduced the soil to a mud-paste. I never place my Auriculas on the ground, but I have seen it done by florists of some repute; and they have told me that I starved my plants by shelving them. It is true the soil in their frames was hard-rammed or trodden. I never tried the plan of sawing out the shelves to admit air to the roots, but I once happened to have some pots that were nearly cylindrical, and deep enough to allow of 4 or 5 inches of crocks. However, the plants did not thrive in them. They will grow well enough in square boxes, not too deep. I turned out into a dry poor border an Auricula of the white-edged class about 15 months ago. In winter it was partly covered during rain and frost with a pot; when I took it up, the tap-root was 4 inches long, and quite sound. I had top-dressed this plant on one side with rich compost, and on the other with charcoal earth mixed with old manure; and the fibres on this side were much whiter and healthier-looking than on the other. But charcoal-earth used as topdressing soon becomes mossy. It has been used for many years by some florists in the West Riding for an ingredient in layering, compost, piping, &c., and I believe with advantage.—*R. F.*

Mr. Loudon.—Though I am exceedingly grateful to the writers of the two letters relative to my affairs, which appeared in the *Chronicle* of Dec. 30th, I do not think it would be just to the memory of my late husband to permit the assertion that he left his family in a destitute state, to remain unexplained. He died possessed of the copyrights of 13 works, the profits from which have been so considerable that in little more than five years they have reduced a debt of 10,000*l.* to 2,400*l.* It is true that this latter sum, which is a very large one, is still owing, and that we appear at present to have no means of paying it but by the sacrifice of the copyrights; but should the same kindly feeling be extended to us that was shown to Mr. Loudon during the fortnight before his death, the debt will soon be paid, and the copyrights will remain for the benefit of the family. The appeal addressed by Mr. Loudon to the public appeared December 1st, and between that day and December 14th, the day of his lamented death, books to the amount of upwards of 300*l.*, were most liberally purchased by a number of the nobility and gentry, whose names would have appeared in the *Gardeners' Chronicle* ere this, had it not been for the melancholy event which has taken place. At present I do not know what my friends will consider best to be done; but I can only say that if any plan can be devised by which the public patronage can be obtained so as to enable us to preserve the copyrights alluded to, I shall be most truly thankful.—*J. W. Loudon, Bayswater, Jan. 3, 1844.*

Societies.

AGRICULTURAL SOCIETY OF CALCUTTA.

At the general meeting of the Agricultural Society, 18th October, amongst other proceedings, a memorandum from the overseer of the Society's garden mentioned that about 20,000 Canes, consisting of the Otaheite, Singapore, Bourbon, and China varieties, were ready for cutting; and it was agreed that these Canes should be advertised for distribution at the same charge as that of former years, viz., one anna for each Cane. The secretary mentioned that he had submitted Mr. Scoones's sample of Tea, grown and manufactured at Chittagong, from leaves of Assam plants, to Mr. Charles Terry, and that gentleman had made the following report thereon:—"I have examined the sample of Tea you sent me, the produce of Chittagong. It is a superior Tea in flavour, also in strength, and is of the Pekoe class. Had it been well manufactured, it would command a good price in the English market." A letter from Mr. Stikeman, secretary to the East India and China Association, stated that, by the intervention of Dr. Royle, some nuts of the Cacao had been procured for the Society from the West Indies; and a letter from Capt. Marquard communicated the transfer of the greater portion of the Chocolate-trees in his garden at Chittagong to that of the Society. On the 8th Nov., in consequence of the paucity of applications for Sugar-cane, the charge was reduced to one-half.—*Indian Mail.*

COUNTRY SHOWS.

Ipswich Cucumber Society, Jan. 8.—This was the annual meeting, and on this occasion a very handsome supply of game was sent for dinner by the President, the Right Hon. Lord Rendlesham, M.P. After the usual loyal toasts, the following were some of the Horticultural:—"The health of Lord Rendlesham, P. B. Long, Esq., and the Vice Presidents," &c. &c. "Dr. Lindley, and success to the *Gardeners' Chronicle and Agricultural Gazette.*" "To the memory of the late J. C. Loudon, Esq., (whose zeal and talent as an author, on Gardening and other subjects connected with rural and domestic economy, has justly won the golden opinions of scientific men, both at home and abroad); and may the leaders of the gardening republic hereafter forth prove themselves as worthy of our esteem." "To the Benton, well known from his writings in the Columbian *Gardeners' Chronicle.*" Also "Success to all Cucumber Societies,

and may they soon make known their Show days for 1844." After a discussion on Cucumbers, the new system of cultivating Pines, the sure of scale, and Rendle's Tank system, on which the meeting could not understand how the necessary *top-heat* was produced, the evening was spent in the greatest harmony and conviviality.—*Thomas Wills, Hon. Secretary.*

Limerick Practical Horticultural Society.—On New Year's Day the report of the progress of the Society for the past year was read by G. Bevan, Esq., from which it appeared that nearly 300 prizes in the various classes of Fruit, Flowers, and Vegetables, were distributed to the gardeners who were competitors at the three exhibitions in 1843. The late treasurer, Mr. Bevan, has been obliged, by other avocations, to resign the treasurership and management of the exhibitions, which has been so successfully conducted by him during the past three years. Mr. W. Wilson has been elected in his room.

NOTICES of NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

PHASEOLUS CARACALLA. The Snail-flower. (*Stove Perennial.*) Leguminosæ. Diadelphia Decandria.—None but a Botanist would, at first sight, detect any resemblance between the flowers of this extraordinary plant and those of the common Kidney-bean. And yet they both belong to the same genus. Many curious instances exist in the vegetable kingdom, in which observers have found some real or fancied similarity to objects in the animal world: and the one before us is by no means the least noticeable. In the spiral form of the folded flowers, ere they are expanded, there is assuredly something not unlike the anatomy of the snail. And though the thing with which the flower is thus compared by no means augments its interest, from association, nothing but the figure of the snail, and not its repulsive character, is thought of while we admire this singular and really delightful production. Having been one of the first exotics cultivated in this country, it has lost much of its attraction in modern times. Indeed, it is rarely seen in collections of stove plants: we learn, however, that it has recently acquired the name of Glycine or Wistaria Harrisonii, and in that way is being put forth as a novelty. The species is a deciduous stove-twiner, native of the East Indies, bearing long racemes of large flowers, which are of a purple and yellowish hue. They have a very graceful appearance, depending from the slender branches. The plant can be cultivated with difficulty in a slightly enriched loamy soil; but it is said to be liable to the attacks of the red spider, from which it may be kept free by syringing, and by placing it in a moist atmosphere. It is a good plant for training up the rafters of a house, where its fine racemes of bloom will be shown advantageously. It is a rare and highly ornamental plant, with very fragrant flowers, and of difficult management. In many parts of the south of Europe and the north of Africa it is grown for culinary purposes; the pods, we presume, being the parts used. The Portuguese, who introduced the species from South America, named it Caracalla, in consequence of its hooded flower. It is one of that rare class of plants which combine the ornamental with the curious.—*Paxton's Magazine of Botany.*

TACSONIA PINNATISTIPULA. Mrs. Marryatt's Tacsonia, or Passion-flower. (*Greenhouse Climber.*) Passifloreæ. Monadelphia Pentandria.—This truly handsome plant is not cultivated so much as it deserves to be in the greenhouses and conservatories of this country, considering how long it has existed in our collections, and how readily it may be increased by cuttings. It is a native of Chili, and was introduced by Mrs. Marryatt, of Wimbledon House, about the year 1830. Nor do we think the trial has fairly been made in the open air, to ascertain whether it could not at least be made to flourish during the summer months, by protecting the roots in winter. The native climate of this Passion-flower is not so warm as that of our Passiflora cærulea. With us, in the Royal Botanic Gardens, it is trained to the back-wall of a cool greenhouse, where it flowers in the summer months.—*Curtis's Botanical Magazine.*

ONCIDIUM BICOLOR. Two-coloured Oncidium. (*Stove Epiphyte.*) Orchidaceæ. Gynandria Monandria.—This charming species of Oncidium, one of the rarest of its genus, was obtained by Messrs. Loddiges from the Spanish Main, and is 1243 of their catalogue. It flowered with them in September, 1842. Among other peculiarities of the species may be mentioned its very thin pseudo-bulbs and three-lobed crest of the labellum, the front lobe of which projects forward, while the laterals are at right angles to it and slightly toothed. It has, moreover, a very large lip, which although deep clear yellow on the upper side, is almost white underneath, as also happens in some of the Chive-leaved species. Its nearest affinity is with O. bifolium.—*Botanical Register.*

BOSSIÆA PAUCIFOLIA. Few-leaved Bossiæa. (*Greenhouse Shrub.*) Leguminosæ. Diadelphia Decandria.—This New Holland bush, which has been raised several times from Swan River seeds, is one of those plants whose appearance depends chiefly upon the way in which it is managed. Under ordinary circumstances it is a straggling, naked, inelegant species; but when kept dwarf, and in very good health, it forms a pretty compact bush, gaily sprinkled with yellow and crimson blossoms. It was originally raised from seeds by Robert Mangles, Esq., of Sunning Hill; and in July, 1841, it was named and defined in this work by Mr. Bentham. Afterwards, in December, 1842, it was figured in the "Botanical Magazine" under the name of B. virgata, Sir William Hooker not being aware that it had been already published. It is a greenhouse shrub, and will best succeed if potted in rough peat mixed with a little loam and sand. When potted, the stock should never be immersed in the soil, but rather a little elevated, which will preserve the plant from damping off in winter. In summer an ample supply of water should be given, and air at all times. In winter it should be exposed as much as possible to the light, and always receive air when the weather will permit. Fire heat should never be applied, except to keep off frost. It may be propagated from seeds or cuttings.—*Botanical Register.*

GARDEN MEMORANDA.

Lee Hall, Little Woolton, near Liverpool. — The Orangery at this place contains an excellent collection of the best sorts of the genus Citrus. The greater part of the plants are growing in pits, and furnish a striking example of the superiority of this system over that of growing them in pots or boxes. The golden fruits of this genus, reposing among the lively green leaves that under good cultivation the tribe always carries, has an interesting effect at this time of the year, when there are but few flowers to enliven the Conservatory or other ornamental-plant-houses. Were it only for its beauty, to say nothing of its usefulness, this tribe merits attention. One-half of the back wall of the Orangery is covered by a plant of Peidiem Cattleyanum, bearing excellent fruit; the other half by a plant of the common Shaddock, also bearing some fine fruit. Passing into a Pine stove to the west of the Orangery, the visitor is delighted at the beautiful appearance of the Oranges, Citrons, &c., trained over the back path. A border a little more than a foot in breadth is partitioned off from the back of the bark pit, running its whole length and depth. In this border the Oranges, Citrons, &c., are planted; and in this situation the plants have the advantage of a little bottom-heat, as the partition is but the thickness of a brick set on edge. The branches are trained on a wire trellis over the back path, and bear an abundance of fine fruit every year. At one end of the arch a Shaddock bearing very large fruit is a conspicuous object. The back path of a Pine stove on the east side of the Orangery is covered with Oranges, &c., similar to that in the house already mentioned, and growing with equal luxuriance. Adjoining this stove is a house about 70 feet in length and 24 in breadth, which the gardener, Mr. Piggot, informed me is intended almost entirely for Conservatory climbers. The greater part of them will be planted out in the borders inside the house, and will doubtless have a fine effect. At present the house is principally occupied by Orange-trees, Amaryllidaceæ, and select bulbous plants of various genera. The Greenhouse contains principally a stock of young plants, which are designed to render it gay during summer. In the centre of another range of stoves is a small house devoted to the cultivation of Musa Cavendishii. The central pit is filled with earth, in which the plants are luxuriating. One of these plants is carrying a very large bunch of fruit. Mr. Oakhill, the proprietor, has paid great attention to the culture of all kinds of bulbous plants; and the many fine specimens among them bear ample evidence of good treatment. The Amaryllises at present in flower are chiefly hybrids, between vittata and Johnsonii, some of them exceeding either of their parents in beauty, and all of them very showy. For a Conservatory Amaryllidaceæ possess so many good points in their character that they cannot be too strongly recommended. The greater part of them produce large gorgeous flowers; they are easy to cultivate; may be made, when well managed, to flower at any season; and take up little room. The varieties, by hybridising, may be multiplied almost to infinity. The collection of Orchidaceæ here is but small, Mr. Oakhill having only recently commenced growing them. Numbers have lately been received from the Organ Mountains in Brazil, some of which appear new, but have not yet flowered; amongst them is a pretty little Odontoglossum in flower, which I have not seen elsewhere. A large plant of the old Phaius grandifolius, with 12 or 14 spikes of flowers, and Bletia Shepherdii, with Neottia speciosa and Rodriguezia recurva, are all finely in flower. Ardisia crenulata and Euphorbia jacquiniflora are, as is usually the case when well treated, now very showy; the latter plant occupied a small square pit in the corner of a bark bed, and is thriving well. The Pines, which occupy six of the central pits in the like number of houses, are looking very well and some of them are carrying fine fruit. There are no houses entirely devoted to Vines, they are planted in borders in front of the Pine stoves, and trained up the rafters over the Pines. —*J. W. Jones.*

Miscellaneous.

The Elæagnus reflexa, of Japan.—This plant was introduced from Belgium, into the Garden of Plants, at Paris, in 1837. It flowered for the first time in the open air in 1841, but more abundantly in October, 1842. It is a very branchy shrub, the largest plant of which is now three yards high. The leaves are alternate, and evergreen. The little bunches of flowers are solitary at the axil of the leaves, and there are three or six flowers together in a cluster, which is about half an inch long. This shrub is worthy the attention of Horticulturists, as it can endure the rigour of our winters, notwithstanding that it is always growing. In this it resembles our Alaternuses and Phyllireas; but it is certainly to be preferred on account of its elegant foliage and odoriferous flowers, which are as sweet as those of the Bohemian Olive, but less penetrating. It can be easily propagated by cuttings put under a bell-glass, and kept in a mild, damp atmosphere. Hitherto it has been grown in peat, in a shady situation. It would fruit, perhaps, in a proper soil, if that could be made.—*Rev. Hort.* [This is apparently the Elæagnus parviflora, mentioned at p. and figured in the "Botanic Register" for 1843, tab. 51.]

Poisonous Nature of Hemlock and Oleander.—A case of poisoning with Hemlock (*Conium maculatum*), occurred lately in consequence of the ignorance of a cook-maid, who had mistaken the above plant for Chervil, and as such employed it in a salad, all who partook of which became seriously ill. It may be remarked that the Hemlock would not have produced so bad an effect if it had been employed in soup, or in any preparation requiring fire-heat. The poisonous principles of the Hemlock (*conceine*) is volatile, and disappears by boiling. The cook-maid declared that she had employed this plant some days previously for soup; and she persisted in saying that it was the same as that which caused the illness when used in salad. A few years ago, a child died from having eaten one morning a quantity of Oleander flowers. The child was seized with violent colic, and whilst the cause of its indisposition was unknown, the symptoms soon assumed an alarming character, that of a burning fever, under which the child sunk at the end of two days. With reference to this last case we may mention the following, related by Professor Richard. In 1809, when the French troops were lying before Madrid, some of the soldiers went a marauding, every one bringing back such provisions as could be found. One soldier formed the unfortunate idea of cutting the branches of the Oleander for spits and skewers for the meat when roasting. This tree, it may be observed, is very common in Spain, where it attains considerable dimensions. The wood having been stripped of its bark, and brought in contact with the meat, was productive of most direful consequences, for of twelve soldiers who ate of the roast seven died, and the other five were dangerously ill. An order of the day was issued next morning, interdicting the cutting of the Oleander. This plant belongs to the Apocinaceous family, of which nearly all the plants are deleterious, and contain a white acrid juice, more or less thick, and produce eruptions if applied to the skin. M. Pépin states that during the wars of Italy, an instance of poisoning occurred in consequence of soldiers employing branches of the common Laurel (*Cerasus Laurocerasus*) for roasting their meat.—*Revue Horticole.*||

Experiments on various Flowering Plants, with Guano and Nitrate of Soda. By J. E. TEICHMACHER.—Small parcels of the new manure Guano having been very generally circulated in this vicinity, it is right to put those in possession of it on their guard against using it too freely, many plants in England and some here having been killed for want of proper care in the application of it. Guano is an extremely powerful and warm manure, and if applied in large quantities, or in lumps, destroys the roots. For Pelargoniums, Roses, and all hardy, strong-growing plants, one teaspoonful to a quart of earth, or about 1 part in 100, is sufficient; it should be pulverised and well mixed with the earth in which a plant is to be repotted. When it is not convenient to repot, the earth may be gently stirred on the surface of the pot one or two inches deep, and the Guano pulverised, then mixed in; the plants should be kept well watered. Besides Pelargoniums and Roses, I have tried it on the Myrtaceous family, on Erica, Fuchsias, and Camellias; its effects on these are equally surprising. I have been also trying experiments on various plants with nitrate of soda; in every case I placed two plants, of the same species and of nearly the same size, close together; one of them was watered three times a week with a very weak solution of this salt, the other was under the usual management. The effect of the nitrate of soda has now become very evident, the plants watered with it are larger and earlier in bloom than the others; it appears, however, to me, probable that these effects will be rather evanescent, and the plants will always require this stimulant. I observe in the English publications, that this constant necessity for the stimulant is urged against all these new manures, but surely there is no strength in this argument. All manures become exhausted, and the farmer has always to apply the stimulant of his manure-heap to make his land bear. From some experiments I have made, I think that Guano will prove a manure of much greater permanence than any that is now in use, particularly in soils deficient in phosphate of lime.—*Hovey's Magazine of Horticulture.*

Adulteration of Sugar.—A supply of crushed sugar arrived in Perth, a few days ago, with all the appearance of adulteration. Samples have been submitted to chemical tests, but hitherto, we understand, without detecting the peculiar ingredients of admixture. To appearance it is some mucilage or starchy substance, giving the sugar a peculiar clammy moisture, as well as smell. Suspicions of adulteration have been entertained here for some time, not only in crushed, but in lump sugar. A large quantity of the latter having been dissolved previous to being boiled with fruit for jelly, was found to contain a large portion of glutinous or starchy matter, but the exact ingredient could not be ascertained.—*Perth Courier.* [*We* never saw or heard of such an adulteration of loaf or crushed sugar, and rather doubt it; brown sugar is often, and to a great extent, adulterated with various cheap substances like that described, but we do not understand how loaf-sugar could be so adulterated.]

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

Stoves.—If the paths, stages, plants, &c., are kept clean, and the heating apparatus is in a good working condition, there will be little necessity for giving much air, at this season, to stove plants at rest and in dull weather. Formerly, currents of air were thought so indispensable to plants at all times, that increased fires were made purposely to rise the temperature higher than was necessary, in order to keep up these currents.

Conservatory.—A great step towards the proper management of stove plants in winter was made when those in flower at this season were found to do well enough in a temperature averaging 45° in the conservatory. Euphorbia jacquiniflora is the best stove plant we have for winter, and the flowers are even more brilliant in the conservatory than in the stove. Among the forced flowers the Narcissi, Hyacinths, early Tulips, with some of the different Roses, are now the most prominent; Sweetbrier is always welcome in winter, and no place should be without Mignonette in pots and boxes. Polygala chamæbuxia, a very dwarf old plant, is excellent for forcing, and will keep a long time in flower in any dark corner where little else would thrive; it requires abundance of water.

Greenhouse.—There are frequent failures from careless watering of greenhouse plants in winter, not by too much, but the contrary; the best criterion is to have all the soil in the pot of equal dampness throughout, and something between wet and dry. Keep these and all other plants free from dead leaves and insects, and neatly tied up to stakes, or trained, according to the habit of the plants.

Forcing Pits.—These are now crowded with Roses, Lilacs, both the common and Persian, Sweetbriar, Cinerarias, Hyacinths, Tulips, Narcissi, Jonquils, Anna Boleyn Pinks, Gardenias, Rondeletia speciosa, Franciscea Hopeana and latifolia, Acacia of sorts, Crotalarias, Pelargoniums, Chinese and other Azaleas, with Rhododendrons, Andromedas, &c. These may be syringed once a day, and smoked occasionally, and a temperature of from 55° to 65° should be maintained.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

The remarks of last week in this department are still applicable. As the weather is mild, the planting of shrubs and trees may be proceeded with, as may also the pruning, where pruning is necessary. This is a good time to lay new turf, or repair turf edgings.

Reserve Garden.—All the spare ground in this department, if not already dug, should be laid up into frost-ridges; and where the ground is heavy, a good dressing of leaf-mould and sand, 2 or 3 inches thick, will do much to improve it. Take advantage of frosty weather to get in a quantity of sand to plunge half-hardy plants into when hardening off for the flower garden.

Pits and Frames.—Take advantage of the first leisure hour to "take stock" of the plants for budding out in these structures; and if you have not sufficient stock of some kinds, introduce a few plants into heat to produce cuttings to propagate from.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Directions for the management of this department of Flora's kingdom have been given in various shapes in almost every work on Floriculture that has hitherto been published, so that any one attempting a similar directory may very easily be charged with plagiarism, and accused of re-issuing other Florists' opinions. The writer of the accompanying memoranda will not, however, be deterred from recording his opinions because they may happen to coincide with some other writer's previously published. They will be the result of many years' experience, added to observations made during the current year.

Auriculas require great attention just now. If healthy, they will withstand intense frost with impunity; care must be taken to remove decayed leaves, stripping them downward to avoid wounding the stem. The surface soil should be kept stirred, and the plants be allowed all the air possible; bearing in mind that drip or too much moisture at this season is their bane.

Polyanthuses must have all trusses of flowers removed as they show themselves, if good blooms are to be expected at the proper season of exhibition.

Tulips are peeping. Cover on frosty nights with mats on hoops placed across the bed. If sand is put on them it must be white or Calais sand, as I have known parties who covered with pit sand, impregnated with iron, which had a most deleterious effect on the foliage afterwards.

Carnations must have all air possible; if they are well established, and of a fine glaucous hue they require but little attention in comparison with those that have been potted late. If in frames, bricks ought to be put at each corner, raising the wood-work at least four inches from the ground, to secure good ventilation.

Ranunculus beds, which ought to have been prepared in autumn, may have a dressing of old cow manure and decayed leaves forked slightly in, preparatory to planting in February.

Examine *Pink* beds, and where the pipings have been raised by the frost or worms, they must be carefully fastened.

In bad weather labels ought to be made, handglasses mended, leaden layer pegs straightened, Carnation sticks made, &c.—*W. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—If the bottom-heat falls below 90° in the fruiting-pit, it should be revived by loosening the tan or leaves between the pots with a fork, and adding a few inches of fresh tan. If a stock of leaves have not already been collected, no time should be lost; when it is favourable weather, they should be collected into a heap and covered, so as to keep them dry. A supply of the should always be in readiness, and kept dry. By keeping a supply of everything required in readiness, and in a fit state for use, the plants receive less check at the time of shifting.

Vinery.—In the earliest house, if the principal buds are broken, and showing fruit, let the heat by night be 60°, raising it to 70° or 75° by day, and by sun-heat to 85°. Except in cases where wood is wanting, stop the shoots on which fruit is showing at one joint above the fruit. Rub off all useless shoots as they appear. Proceed gently with the Vines just breaking, taking care not to let the heat exceed 55° by night, until all the principal buds are broken, and keep the shoots always moist.

Peach-house.—From the time the blossoms begin to expand, avoid syringing till the fruit is set. During the time the trees are in bloom, maintain a steady heat of 57° by night, and admit fresh air every day if the weather will admit it. If the sun raises the thermometer as high as 75° with the sashes or ventilators open, it will assist the setting of the fruit.

Fig-house.—Now is a good time to commence forcing the Figs, as they continue bearing from the end of May till September or October; begin with a temperature of from 45° to 50° by night, with a moist atmosphere.

Strawberries.—Besides those recommended to be placed in a forcing-pit last week, it will be well to take some into a cool Vinery or Peach-house, and place them on the shelves or on the floor. They will be coming on to succeed those already in the pits when the latter are removed to swell off their crop on the shelves of the Vinery.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Figs—Should be protected, if not already done. The method most generally practicable is to unnail the trees, tie them closely together, wind a little straw among the branches, and cover neatly with mats. Pruning and nailing may be proceeded with in favourable weather, except in the case of Peaches and Apricots.

Filbert-trees.—Regulate their heads and remove suckers.

Peas and Beans.—Defend forward crops from slugs, by quick lime and coal-ashes, or send a boy to strew tender leaves of Cabbage on the ground, and to examine them every morning. Protect intended crops from mice, by sowing chopped Furze along with them. The awns or chaff of Barley are useful for the same purpose.

Endive and Chicory.—The former may be blanched, and the latter grown and blanched beautifully, in any dark place commanding a temperature of from 50 to 55°.

Potatoes.—Be getting ready some fermenting materials for forwarding the earliest crops in pits or boxes. We have had young ones for some time, obtained from old tubers, placed in alternate layers with earth, in a shed, in the end of August.

Mushroom Beds.—The principal things to be guarded against, (especially with out-door beds) are too much heat and too much wet. Where a constant supply all the year is wanted, a series of slight beds, rapidly succeeding each other, will answer the purpose better than one or two large ones. Horse droppings mixed with a good quantity of litter answer best for shelves, but when many are required it will not do to be very particular in choosing the material, provided it is capable of producing a mild heat, but we must regulate future operations according to the material. We will again advert to this subject.

Asparagus, Seakale, and Rhubarb.—See that beds producing do not get too hot after the late frost. *R. F.*

VI.—ARBORICULTURE

Old Woods.—Continue the felling of trees not required for the bark. When Oak timber is required to endure for "ages to come" it is undoubtedly best to fell it in winter with the bark on, and before the trees begin naturally to decay. Resinous trees, for durability, should be felled just before the buds and leaves expand, when the sap is in motion. Fill up vacant spaces with young plants suitable to the soil, locality, and demand. Take great care to preserve any maiden plants of proper kinds springing up naturally, and let them be properly trained.

Coppice.—Proceed with cutting the undergrowth and poles, for the uses specified last week, and guard against a vigorous after-growth. Continue to clean out and make fresh drains where required; also, clean out old water-courses, and fill up open spaces with young plants suitable to the soil, locality, and demand for the produce; keep this circumstance always in view when planting for Coppice. The Prunus padus, Bird Cherry, or Hagberry of the North of England, is an excellent Coppice-wood for all the purposes of the Hazel; I am surprised it is not cultivated in the midland and southern counties. Defer planting in wet coppice till March or April.

Young Plantations.—Continue here the directions given last week. In thinning young plantations, where they have been planted promiscuously with various kinds of trees, leave them in irregular groups, or masses, either large or small, according to the extent of the plantations, each kind by themselves, as it will be seen about this time which plants thrive best in the different parts.

Hedge-rows.—Continue to plant young trees, and take care of those that have sprung up naturally there, as directed last week. Be sure to have good stocky plants for the purpose; not drawn-up, weak ones, out of the interior of close woods and crowded nurseries, but with plenty of side-branches to balance them. Avoid planting Ash in arable land.

Nursery Work.—Go on with the work specified last week, and in procuring seeds for sowing, and plants for planting out in rows for future use; get some of the Hagberry or Bird Cherry, if you can; it is easily raised by cuttings or layers, as well as seeds; it likes moist ground. It is not only valuable as a Coppice-wood, but very ornamental in hedges or woods. I am strongly of opinion it is a very valuable hard wood when it arrives at a good size, but my experience is not sufficient to speak with confidence to its quality as timber.—*W. B.*

VII.—COTTAGERS' GARDENS.

At this season, when there is little to be done in the way of cropping, everything around the cottage should be made clean and neat; all vegetable refuse may be collected into a heap, to rot for manure—nothing of this kind should be lost. Vacant ground, if any, may be turned up rough, to be fully exposed to the action of the weather; this is especially necessary for strong soils, in order that the frost may separate their parts and render them more friable. When manure is applied, a little at a time, and as often as an opportunity and the nature of the crops will allow, is better than when the ground is over-loaded with dung.

Vegetables.—If a sowing of Peas and Beans have not yet been made, no time should be lost in getting them in while the weather continues favourable.

Fruit.—Continue to prune any fruit-trees if not done last week, taking care, however, to keep the spurs short and close, otherwise they soon become long and give the trees an unsightly appearance.

Flowers.—Remove everything unsightly from the flower-plot. Nothing looks worse than to see decayed stems of plants standing at this season, as is too often the case. Bulbs, if any, that have made their appearance above ground, should be protected in the event of frosty weather, but not unless, as this has a tendency to make them weak and tender.—*Mc. H.*

State of the Weather near London for the week ending Jan. 11, 1844, as observed at the Horticultural Garden, Chiswick.

Jan	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Mean.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Thu. 4	0	29.580	29.214	54	44	49.0	S.W.	.40
Fri. 5	7	29.497	29.139	59	36	44.0	S.W.	
Sun. 7	17	29.656	29.538	42	35	36.5	N.W.	
Mon. 8	18	30.126	29.834	44	34	39.5	N.	
Tues 9	19	30.136	30.093	40	33	36.5	S.E.	.03
Wed. 10	20	30.091	30.109	48	30	39.0	N.	.01
Thurs. 11	21	30.288	30.295	46	30	38.0	S.W.	
Average		29.850	29.804	47.4	35.3	40.3		.49

Jan. 5. Overcast; dense dark clouds and showers; heavy rain at night.
6. Mild and fine throughout; cloudy.
7. Fine; exceedingly clear and fine; clear and frosty at night.
8. Clear and frosty; fine with dusky white clouds; densely clouded at night.
9. Thick haze, cloudy, cold and dry; overcast; small hail; rain.
10. Rain early a.m., hazy and drizzly; exceedingly fine, with sun; overcast.
11. Slightly overcast and damp; fine; hazy clouds; overcast.
Mean temperature of the week 5·8° above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending January 20, 1844.

Jan.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 14	40.7	30 0	35.6	9	0.80 in.	4	3	2	—	2	3	1	3
Mon. 15	39 2	29 6	34.8	7	0.56	2	2	2	1	1	3	4	3
Tues. 16	39.6	30.1	34.9	10	0.36	1	5	3	—	2	4	2	2
Wed. 17	41 3	30 1	35 7	6	0.11	1	4	2	3	1	2	3	2
Thurs. 18	41.3	31.0	36.2	9	0.94	1	3	—	2	2	4	4	1
Fri. 19	40 5	29.0	34.8	9	0.37	2	2	3	—	3	3	3	1
Sat. 20	39 0	30.0	34.8	5	0.65	2	3	4	1	2	2	2	—

The highest temperature during the above period occurred on the 18th, 1834—thermometer 59°; and the lowest on the night of the 19th and morning of the 20th, 1838—thermometer 4½ below zero.

Notices to Correspondents.

MR. PAXTON'S COTTAGER'S CALENDAR.—At the earnest solicitation of many of our Subscribers, we have determined on again reprinting Mr. Paxton's "Cottager's Calendar," in the form of a small volume, for general distribution, price 3*d.* each copy. It may be ordered of all booksellers. Gentlemen wishing to *distribute copies* among their cottage tenantry, may have them *delivered in any part of London*, by remitting a post-office order to this office, at the rate of 5*s.* for every 25 copies.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them:—*J. Paxton, J. Snow, Herts, J. Wighton, C. G. Thompson, A Practical Man, P. Mackenzie, Totty.*

BOOKS.—*A. Z.*—You will not get any good periodical on Gardening generally, with coloured plates, which costs less than 2*s.* a month.—*A. Subscriber.*—There is no book on the diseases of plants. We shall try to supply the deficiency.

CALCEOLARIAS.—*J. B.*—When you mention clay in the centre of your pots, and that you have kept your plants dry, you fully explain the history of your misfortunes. There is a good paper on the management of Calceolarias at p. 341, vol. 1841.

CAMELLIAS.—*E. B. W.*—Both the spotting and yellowness of your leaves, which nevertheless are very healthy, are owing to the action of strong light collected in a focus by some concave panes of glass in your roof. The whiteness found in leaves otherwise is usually owing to a cold wet bottom.

CACTUS SPECIOSISSIMUS.—*A Subscriber.*—The cause of your Cactus becoming discoloured and cankered, is, no doubt, owing to its being kept too cold and damp, as the plant has been kept in a greenhouse, where the temperature varies from 40° to 50°, and where plenty of air has been admitted; the dampness very probably arises from the atmosphere, the plants being otherwise kept almost dry. The disease is not at all infectious; the healthy plants likewise becoming infected, no doubt, is the result of the same cause. The fact of the disease attacking the most healthy branches is perfectly consistent, as they, being more succulent, would be readiest to suffer from dampness. The diseased parts may be cut off, and the plant should be placed in a warmer situation. To make the plant bloom freely, continue to withhold water until March or April, when the blossom-buds will begin to appear; water may then be more liberally supplied.‡

CARROTS.—*Leeds.*—The White Carrot is not, in our opinion, so good for the table as the Red varieties.

CHRYSANTHEMUMS.—*A Waterford Subscriber.*—The kinds to select to save seed from are the semi-double varieties; they should be kept in a dry place, and have their heads preserved from damp. So much having been advanced in our columns respecting root-pruning in former volumes, we are unwilling at present to resume the subject.‡

CUCUMBERS, &c.—*J. Hall.*—One of the best Melons is the Beechwood. There are now so many varieties of Cucumber, that it is difficult to say which is the best; possibly Weedon's "Black Spine" will suit you. The soil best adapted for growing them in is a very rich strong loam. A frame, covered with calico prepared with Whitney's composition, will answer very well for growing Cucumbers in during the summer time, but it is not possible to force them in such a frame.‡

FRUIT-TREES.—*A Subscriber.*—Your Apricot-trees, that have been planted 10 or 11 years, will be most likely brought into a bearing state by taking them up, trenching the border, mixing the soil with chopped turf (if such can be obtained), and then replanting the trees, spreading the roots near the surface. A top-dressing of lime will tend to prevent mildew, often the most formidable of all evils as regards the Apricot-tree.‡

FUCHSIA-SEED.—*A Reader, M.*—You may sow your Fuchsia-seed about the latter end of February or beginning of March; if it is sown sooner without the aid of a greenhouse, the young plants would be likely to damp off. The seed may be sown in pans filled with light sandy loam; if you have a gentle hotbed they might be placed on it; but they should be removed as soon as the seeds begin to germinate, as Fuchsias are rather impatient of artificial heat.‡

GREENHOUSE PLANTS.—*G. F.*—Probably your plants are ill-drained; examine the pots and see to the crocks. Probably the house is too damp, and wants ventilation. Kill the green-fly with gas-water as directed at p. 449 if they are hard-wooded; or with tobacco-smoke if soft plants. The smoke of turf will do no harm, but it is better excluded from your greenhouses.

HEATING.—*Leeds.*—As your tenancy is short, it is not worth while to build brick pits; and, as a make-shift, you had better be satisfied with a common hot-bed.—*M. O. B.*—We see nothing to object to in your plan; but it is unnecessary to provide any means of giving a hotbed dry heat, because it is never required, unless you are going to grow bulbs of some sort in it.—*A Friend.*—We like your plan, and will have it engraved. It is always difficult to find a good boiler for a very little work. Perhaps a very nice boiler, by Burbidge and Healy, with an evaporating top, would be the best and cheapest under your circumstances. We should be tempted to try it.

INSECTS.—*G. S. T.*—The Coccus Vitis only affects the stem and branches of the Vine, and it may be eradicated by stripping off and burning the old bark in the winter, and washing the denuded parts with soap and water, or perhaps lime and water; but if the tortoise-bug give an unsightly appearance to the leaves and fruit, we conclude it must be a species with which we are unacquainted, and will thank our Correspondent to transmit some, per post, in a pill-box, together with an injured leaf or two, directed to Mr. Curtis. *R.*

LARCHES.—*J.* wishes to plant a small belt on a light poor soil on a chalky bottom—would Mr. Prideaux Selby recommend Larch or Beech as most likely to grow up quickly and repay itself?

LEMONS.—*G. F.*—Take your Lemons out of their tubs, shake off all the old soil, and repot them in coarse turfy loam, mixed with one-third charcoal, steeped in guano-water, or strong liquid manure of some sort. Give them plenty of pot-room, cut them in, start them in a good bottom-heat if you can, and they will soon lose their yellow looks. Manure cannot do them any good till they begin to grow.

MUSHROOMS.—Vide Calendar, Jan. 20 of the present year.

NAMES OF FRUIT.—*R. P.*—Your Pear is the Beurré Rance. ‖

NAMES OF PLANTS.—*T. G., Clitheroe.*—The seeds appear to belong to some Asclepiadaceous plant.—*J. L. S.*—As your specimen is not in flower, it is hard to say whether it is Aristea pusilla or not; it probably is.—*Δ.*—Flemingia strobilifera.—*J. M. F.*—Scolopendrium officinarum; not Kennedya at all; uncertain what.—*A. M.*—Barleria flava.

PEAS.—*J. P. S.*—Your Peas may be protected in the event of frosty weather with Spruce branches.‡

PELARGONIUMS.—*Jonathan.*—Your young plants of Pelargoniums in a pit, that are in a growing state and forming flower-buds, may be shifted now; they should not, however, be allowed to become too luxuriant at this season, or they will not stand covering in case of frost. The foliage should be kept as dry as possible, and everything avoided that would tend to create dampness.‡

PINES.—*Philonus.*—Your plants ought to have a bottom-heat of from 80° to 84°, with a top-heat in proportion, when fruiting. Read Mr. Glendinning's Treatise.

PORTABLE HOT-BED.—*G. W.*—This is not made in England, but may be had through the Paris Nurserymen. The account was taken from the "Revue Horticole."

POTATOES.—*T. X.*—A good mealy Potato is the "Bread-fruit." A light rich soil will suit it best. The usual practice of placing the set upon the dung and then covering it in digging, produces the largest, but not the best-flavoured, Potatoes; they will be found drier and more floury if the dung is thoroughly mixed with the soil in digging, and the set simply planted in the furrow. A larger quantity of dung should, however, be put nearer the place which the row is to occupy than over the rest of the ground. The sets may be placed about nine inches apart in the row; the rows should be 20 inches distant, and the depth of the sets about seven inches.‡

RHODODENDRONS, MOSS ROSES, AZALEAS, &c.—*W. R.*—You may easily have these in flower by the end of March, but much depends upon the means you use for forcing such plants; whether you use bottom-heat and a high temperature at top, or merely keep them in a warm greenhouse; about a month (at that season) will be about the time required to bring them into bloom. But you must remember that the slower you force such plants the better; they are particularly apt to flower when first put into the forcing-house. ¶

ROSES.—*S. W.*—Subscription received. Answer next week.

SOIL.—*Leeds.*—The black mould from the heart of old trees would not be injurious to plants, but its advantage to them is uncertain; its action is something like that of finely-sifted peat.

SUGAR-CANE.—*M. D.*—There is no book such as you require, on the cultivation of the Sugar-cane. It must be remembered that Sugar is only one of the substances formed by the Cane, and the quantity which is formed will depend on the general health and vigour of the plant. When the Canes are manured you supply them with what is required by them, in the formation of several other substances besides sugar, and consequently increase the vigour of the plants. The ammonia and earthy phosphates in guano are useful to all crops when applied in proper proportions, particularly on poor soils; they render the plants more vigorous, and consequently increase the formation of gum, sugar, starch, gluten, etc. *E.*

TANK-HEATING.—*Amateur.*—We think we have not expressed any positive opinion that brick and cement tanks would prove too damp for greenhouses; we have only said that we fear they may prove so. If the body of the tank were sunk so low that the top, which is covered with slate or flags, is just level with the floor of the greenhouse, the liability to dampness (which chiefly penetrates through the sides) would, no doubt, be diminished; but then the tank would not give out the same heat to the house as if the sides were raised a foot or so above the level of the floor, as is usually the case: a great part of the heat that radiates from the sides would be absorbed by the floor. It is true, that in tanks the hottest current of water always floats to the top, and no doubt, therefore, the greater portion of heat escapes from the surface of the covering of the tank; nevertheless, by degrees, the water all becomes warm, and then heat will pass through the sides.

MISCELLANEOUS.—*J. J.*—If you will send us a specimen of the substance you call the Star-shot we will endeavour to tell you what it is.—*Mentor.*—To comply with your suggestion would be to extend these notices to a most inconvenient length; we often, indeed, fear already that our readers are weary of them. Besides it would not be worth while, except in special cases, and then we do it as part of our system, if we can find room. The same reason, namely, the inconvenience of letting them occupy more space, prevents our printing them in larger type.—*Ruricola.*—The canker in Cucumbers is produced by cold either at the bottom or top, or both. Mildew is owing to sudden chills and a low temperature. The most useful green-fleshed Melon is the Beechwood. For the manner of dealing with Thrips, see p. 619, 1843.—*Jas. Drummond.*—We should be glad to receive the notices you speak of; and perhaps the matter already printed may be used again.—*R. P.*—We find nothing in your paper of importance enough to publish it.—*Beta.*—The *last edition* of Dr. Lindley's "Theory of Horticulture" was published in 1840.—*A. L.*—Don't you know the husks of Maize when you see them? they are what form the packing of the Orange chests opened in Covent Garden Market.

*** As usual many communications have been received too late for answering this week.

DRAINING.—JOHN DAVIS, Mathematical Instrument Maker, Derby, begs to direct the attention of Agriculturists to a very efficient and simple Level he has just constructed, adapted especially for Draining. The private Farmer or the professional Drainer will alike find in it all that is desired. The Instrument fitted in a case, and sent to any part of the country —the price, 2l. 5s.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK informs Horticulturists generally that the Cisterns, Tanks, Shelves, Stages, Conservatory Tube, Flower-boxes, Edgings for Garden paths, &c., manufactured by him in Slate, may be seen in use at Worton Cottage, upon application to the Gardener (Sundays excepted).

The Agricultural Gazette.

SATURDAY, JANUARY 13, 1844.

WITHIN the last few years, many experiments have been performed on the subject of the SHED-FEEDING OF SHEEP, and their results have been so successful, that on some farms this way of managing the fatting sheep stock is now generally adopted.

Mr. Childers was among the first to direct attention to this subject. He has published the results of his experience in Vol. i., Part 2., of the English Agricultural Society's Journal. It is there stated that two lots, twenty in each, of Leicester wether hogs were selected, as similar in quality as possible. One lot was placed under shelter in a yard, and the other was folded in the field. They received the same kind of food, viz., cut Turnips *ad libitum*, half-a-pound of Linseed-cake, half-a-pint of Barley per sheep per day, a little hay, and a constant supply of salt. At first they consumed nearly the same quantities of food, eating each day about 19 lbs. of Turnips per sheep; but, after the third week, "there was a falling off in the consumption of the hogs in the shed of 3 stone of Turnips a-day," *i. e.*, 2 lbs. apiece; "and in the ninth week there was a falling off of 2 stone more. Of Linseed-cake there was also a falling off of 3 lbs. a-day," *i. e.*, nearly one-third of the quantity given. "The hogs in the field consumed the same quantity of food from first to last.

"The result of the experiment is as follows:—

20 Shed Hogs weighed		Increase.	20 Field Hogs weighed		Increase.
	st. lbs.	st. lbs.	st. lbs.		st. lbs.
January 1st .	183	9 —	184	4	—
February 1st .	205	0 21 11	199	8	15 4
March 1st . .	215	10 10 10	208	2	8 8
April 1st . . .	239	9 23 13	220	12	12 10
Total increase . . .		56 6			36 2

Consequently, the sheep in the shed, though they consumed nearly one-fifth less food, made above one-third greater progress." This result is confirmed by our own experience. Of three lots of sheep, one entirely covered in, another under a shed in the yard, and the third entirely exposed, all of them having one pint of Oats per sheep per diem, the first consumed, on an average, between Nov. 18, 1842, and March 9, 1843, 8 lbs. of cut Turnips and other roots per diem, and increased in live weight during that time 28½ lbs. per sheep; the second consumed 11 lbs. of the same food, and increased 25 lbs. in weight; the third consumed 17 lbs. of cut Turnips, &c. apiece each day, and increased in live weight 23 lbs. during the period. The several lots, it thus appears, did not differ so much in their growth as in the case reported by Mr. Childers, but there was a much greater difference in the quantity of food eaten by them; so great a difference, indeed, that were this result to be generally expected from a similar treatment, which, however, we by no means wish to infer, twice as many sheep might be kept in a fatting condition on the same quantity of food under perfect shelter, as under entire exposure.

We notice this subject now, as it is one to which the attention of the farmer may be usefully directed at the present time of the year.

In exposed situations, during wintry weather, sheep on Turnips do not increase in weight—they often lose, as the experience of many can testify; and if the expense of carting the roots home and the manure back to the land, which is involved in the plan of house-feeding, be balanced by the additional value of the manure so obtained, as it probably is when the field is not very distant, then a saving of food and an increase in the production of mutton is the clear difference between shed-feeding and folding of sheep, in favour of the former. But there may be other differences between the two plans, as in point of healthfulness, &c., and to these we shall hereafter allude; meanwhile we may describe a very cheap and easily-erected form of shed with yard attached, which may be put up in the field, and thus very much reduce the expense of carting. The annexed woodcut is taken from part of a shed now in use containing 200 sheep. The cost of erecting the framework was 10s. per 100 feet in length, and the thatch, which in this case was read from a neighbouring pond, was laid on and tied down by two men in half a day; the labour of erecting 100 feet of shed sufficient for sheltering 100 sheep thus costing 12s. in all. To this must be added the cost of the materials of its construction, viz.:—

	£	s.	d.
100 Larch poles about 12 feet long . . .	—	—	—
6 dozen hurdles for the yards (see woodcut) .	—	—	—
	£—	—	—

These materials will last several years, and they may be taken apart out of the way at spring, and put up again every autumn at a cost of little more than one penny for each sheep to be sheltered by it. No charge is made for straw for thatch; it is the produce of the farm, and returns to the land, as it would were it used otherwise. The mode of erection is this:—Two Larch poles about 12 feet long, and crossing at their extremities, where they are nailed together, are thrust firmly into the ground at a distance of 15 feet; they thus form one with another rather more than a right angle (see Fig. 2).

A series of such couples arranged, as in fig. 1, at distances of 10 feet, form the skeleton of the future roof. A ridge pole is then placed so as to connect these couples; it lies in the forks made by their extremities crossing, and is nailed there. Four other side-pieces parallel to this, the lowest one being placed so far down the couples as to be within the height of a hurdle from the ground, are then nailed on each side, and the skeleton roof is completed. The thatch is now merely *laid on*, and two other poles, (see fig. 1), being laid above it, and tied through the thatch to the couples below it, hold it fast. Hurdles are now placed around and within, so as to form a series of little yards, 10 feet wide by 25 feet in length, of which nine are under the roof, and these being littered with straw are ready for the reception of 10 sheep a-piece. The outside hurdles should be wattled, so as to afford more shelter. The subjoined wood-cut represents one part of the shed completed, and the other part in its skeleton state.

Fig. 1.

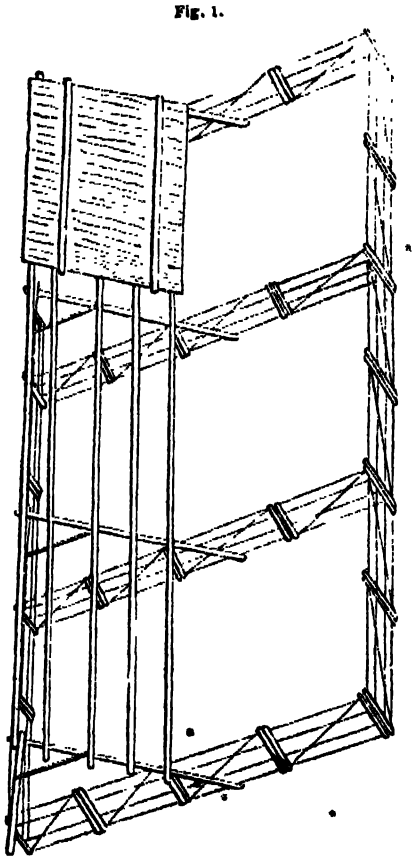
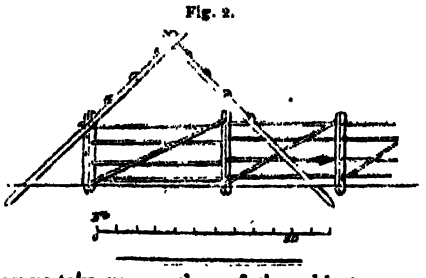


Fig. 2.



LET us take up another of the subjects suggested by the Prospectus of this Paper.

"No one man can be competent to deal with the multifarious questions affecting Husbandry, and the duty of the Editor of such a Paper as the *Agricultural Gazette* is to make known the knowledge of all. It is to practical farmers that the Proprietors trust for the means of carrying out their views, and not to the talents of any individual."

We are anxious to impress upon our readers the importance of a *widely-spread* Agricultural correspondence.

The many natural and other agents which affect the farmer vary, both in quantity and in kind, in the different districts of our country, to such an extent that the argument of any one who reasons merely from what he sees around him is rarely applicable to any other than his own immediate neighbourhood; so that a "Code of Agriculture" of universal application could be compiled only by a company of men, among whom every district of the kingdom should find its representative. Hence it appears to us, that a body of statements, each accompanied by the conditions under which it is correct, such as from a widely-extended system of Agricultural correspondence would ultimately accumulate, is the only source from which *any one* might, without fear, draw information for his own guidance as a farmer.

The produce of the land depends on four things: viz., the character of the soil, the nature of the climate, the skill and judgment of the farmer, and the amount per acre of his invested capital; of all of which it may be said, not only that the kingdom generally contains them in most various degrees, but that a district of only a few square miles cannot be named over which one of them is constant. And, obviously, that which is the best system of management, under one condition of these important agents, is not necessarily the best under any other condition; the same skill and sound judgment on the part of the farmer, which would sanction one mode of farming under one series of circumstances, would approve of another altogether different when those circumstances had changed. Many systems of farming may thus exist in a country, and do exist in this one, each very different from the others, and yet each justified by the circumstances under which it is placed. And the opinions of any Agricultural correspondent, however safely built upon facts, are not necessarily of general application, because that which is fact in his neighbourhood may not be fact elsewhere. Hence the importance—and, indeed, to an Agricultural Journal, aiming at usefulness, the necessity—of having a numerous staff of intelligent and practical correspondents widely spread over the kingdom.

And here, by the way, we may remark that it is a very common practice to compare, or rather to contrast, the farming of certain distinguished districts in the East and North of England, and in Scotland, with that of certain other districts in the South and West of the kingdom; but, though in such comparisons the results of farming may be accurately stated, yet it is manifest that no inference can justly be drawn from them as to the skill of the farmer, unless, at the same time, all that light be thrown on the question which would be afforded by a description of the soil and of the climate, and by a statement of the farming capital invested. So entirely, indeed, does the question—what is good farming depend for its answer upon these three circumstances, that we believe it will be found that the plan of farming which long experience has sanctioned in any district, however bad it may appear to others, is generally justified by the circumstances of the case. And, in saying this, we are quoting the opinion of Mr. Smith, of Deanston, who, perhaps, more than any other, struck boldly out from the beaten path when he commenced farming. Let us not, however, be understood to recommend that, in such districts, the mode of farming should remain unaltered, justified though it may thus be. Its faults may be remedied, and Mr. Smith's example may safely be followed, if the obstacles to improvement be first removed. The texture of a soil, its dependence upon a variable climate, and the amount per acre of the tenant's capital, are, to a great extent, all under control. The last depends, of course, upon the extent of the holdings; and the two former depend greatly upon the wetness of the soil, which may be removed by drainage. And when a farm has been improved in all these particulars, the same sound judgment which was before fearful of changing the mode of its cultivation will now recommend the adoption of another and superior plan. All that we wished to infer was, that a full statement of the Agricultural statistics of the districts referred to would put a stop to many of those comparisons which are drawn between them in order to prove want of skill against the farmers of some of them; for it would show that the differences in their Agriculture are often owing to the peculiar circumstances in which each is placed; and this would be beneficial, for it would tend to remove prejudices and jealousies from between those who, mutual interest certainly says, ought to be none other than good friends.

We hope, therefore, that our readers, in their correspondence with us, and with one another through us, upon the activity and practical nature of which we hang all our hopes of usefulness, will not only state their opinions, but the facts which justify them; and not only the facts, but the circumstances under which they have occurred.

There are many subjects upon which light would be thrown by an accumulated correspondence conducted thus. The differences existing between many districts

of the kingdom, as regards the results of farming, would receive their explanation, and such an explanation, probably, as, if acted upon, would greatly increase the Agricultural produce of the kingdom. The extent and nature of the influence exerted by climate, and by the other agents which affect farmers generally, would also be pointed out. And here we may express our satisfaction at seeing that the English Agricultural Society has offered a premium for the best Essay upon "The Influence of Climate on Agriculture." A detailed and statistical statement upon this subject would be a most valuable guide for—and, as we have already stated, a most useful restraint upon—future Agricultural writers.

We conclude, with the hope that, during the perusal of this article, our readers have kept in view, and self-applied the inference from our remarks, which we again repeat: It is essential to the usefulness of any Agricultural periodical, which is intended, not for local, but for general circulation, that it be supported by a widely-spread correspondence among practical men; it is essential to the usefulness of any such correspondence that it should not only embody facts, but state the circumstances also under which those facts occurred.

CULTIVATION OF ITALIAN RYE-GRASS, AND MODE OF CROPPING A STRONG CLAY FARM.

HAVING grown Italian Rye-Grass extensively and regularly upon different kinds of soil for many years, I am not incompetent to furnish some particulars respecting it, which may be of general utility.

The soils best adapted for it are deep alluvial and strong loams, and it succeeds well upon most descriptions of land. On those, however, which are light or stony, especially if upon Oolite, Chalk, or Limestone, and on any well adapted for the growth of Sainfoin, the crops of Wheat, after Italian Rye-Grass, are frequently defective, which probably might not be the case were the surface skimmed off by an extra share when ploughing the land; but it is not advisable to sow any considerable quantity of such land with Wheat after this Grass.

The produce is usually greater than that from any other description of artificial Grass, and the quality of the food is excellent for all kinds of stock; they prefer it to almost any other pasturage. When the seed is sown with spring Corn, the land should be stocked immediately after harvest, and the produce eaten off closely before November, avoiding treading tenacious soils in wet seasons. Very early in spring, the growth, after such treatment, if the land be in proper condition, is surprisingly rapid, so that those who have a crop of Italian Rye-Grass in their regular rotation of cropping always possess good and abundant keep for sheep after their Turnips are consumed, that being generally the most trying season for breeding and store stock. The produce should be well eaten off within a few weeks, and the land should be without stock for about the same time, alternating in this way during the spring, summer, and autumn. By such treatment, two fields of Italian Rye-Grass (one of the first and the other of the second year) will keep a much greater number of cattle and sheep, and in better condition, than the same quantity of land producing any other artificial Grass of the first and second year. It should never, when pastured, be suffered to run into seed, that being most injurious both to the quality of the produce and to the land also.

When intended to be mown, Italian Rye-Grass should be well eaten off after the preceding harvest, and not stocked in spring. The seed should be ripe when the crop is cut, and it should be taken up into sheaves immediately after the scythe, and set up ten or twelve together until sufficiently dry for being clean threshed. This should be done on a cloth in the field, with flails, or the heaviest and most valuable part of the seed would be lost. It should be put into sacks, carried into a barn and riddled, and spread and turned frequently, until perfectly dry, and should then be winnowed with a gentle blast, by which means the seed is of more than double the value of what is often sold; and with such treatment the produce has averaged more than four quarters per acre, and of the weight of about 10 stones per quarter. Half the quantity of this, that is requisite of foreign (or of ordinary English) seed weighing less than 7 stones per quarter, will yield greater produce. At the time of threshing, the crop should be spread and turned; and when stacked in good condition, it makes nutritious fodder, which is eaten by horses and cattle greedily.

When artificial Grasses or Clovers have failed from drought, or from abundant crops of Corn, they may always be most effectually renewed by sowing Italian Rye-Grass, which is very hardy, on the failing portions of a field after the first rain succeeding harvest; and this is a material advantage, as it insures a regular rotation of crops.

The following is the present state of this farm, with reference to Italian Rye-Grass and the crops succeeding it, the land being a strong loam upon tenacious clay, well underdrained with tiles. Three fields are regularly fallowed yearly after Wheat, well manured, and sown with Swedes or Turnips, the chief part of which are carted off for being consumed in fold-yards, and thus an unusual quantity of most valuable manure is made, both solid and liquid.

One field was sown with an imperial bushel of Italian Rye-Grass, 10 lbs. of white Clover, and 1 lb. of Parsley per acre, along with Barley, last spring, and will be pastured next year.

One field was sown as above, to be mown next year for seed and fodder, and after being manured according to usual practice, it will produce valuable after-math.

One field was sown with 10 lbs. of red Clover, a peck of Italian Rye-Grass, and 1 lb. of Parsley, for mowing for horses and cattle, and the second crop principally for sheep.

One field of Italian Rye-Grass and white Clover, after being pastured one year, remains for second year's pasture.

One field of Italian Rye-Grass and white Clover, after being mown for seed and fodder last year, and the after-math grazed, remains for second year's pasture.

Two fields of Italian Rye-Grass, one having been pastured two years, and the other having been pastured since the crop of seed and fodder in 1842, will soon be ploughed deep, and with a skim-share for Oats.

Two fields which produced Oats last year after Italian Rye-Grass, and one field which was sown with red Clover, and Italian Rye-Grass last year are now growing Wheat.

Three fields, now Swedes and Turnips, will be sown with Barley, Italian Rye-Grass, and Clovers, in spring.

The whole of the above have now a good appearance, and the same system has been practised for several years with increasing advantage.

The arable land of the farm consists of 16 fields as above: viz., two courses of six and one of four in alternate rotation, and the same field is sown with Red Clover, for being mown, only once in 16 years. I also grow Italian Rye-Grass, with white Clover for pasture, and with red Clover for being mown, on two other farms regularly, and have long ceased to sow any other variety of Rye-Grass.

Objections have been made to Italian Rye-Grass besides that mentioned at first, it being alleged that the land, after the succeeding crop of Corn, is frequently foul with Couch and other inferior Grasses; this is the natural result when genuine seed has not been sown, or when the land has not been properly cleansed. My land, after the first and second crops immediately succeeding Italian Rye-Grass, is generally as clean as though the crop had been sown after fallow; and I have never failed of having abundant crops of Corn, and these of good quality, after Italian Rye-Grass. I shall be happy to show my crops to any of your readers, or to give further particulars with reference to this communication.—*John Parkinson, Ley Fields, Newark, Notts.*

AGRICULTURAL EXPERIMENTS.

(*Continued from p. 11*).

Erratum, p. 11, col. *a*, line 21, from the bottom, *for* 166*l.* 15*s.* 10*d.*, *read* 6*l.* 15*s.* 10*d.*

I NOW proceed to describe some experiments upon Corn, which, however, were not of a decisive character, for they were tried either only in single proportions or on different soils, and therefore, though the results are extremely discouraging, it does not follow that the manures are bad and not worth further trial. Other proportions, or, indeed, the same, under other circumstances, may still be found advantageous. The mode in which these results were ascertained was as follows:—six perches of land were selected from each manured portion, and the produce both of Straw and Corn was carefully measured and weighed, and from these data compared with the produce of an unmanured adjoining portion of equal extent; the profit and loss per acre was computed, after deducting the cost of the manure. It is necessary to enter into these minute details, for the purpose of showing what reliance may be placed upon the accuracy of the experiments. One conclusion, at least, may be safely drawn from those experiments, and that is, that in Agriculture, as in all other natural sciences, some phenomena will occur which we must be content not to understand. Accurate analysis, perhaps, might assist in solving the problem, why the same quantities of the same manure applied to similar soils under similar circumstances should produce such very dissimilar effects; but for that purpose the soils must be analysed at the time of sowing, for their constitution will be inevitably changed by the growth of the crop, and by the accidents of cultivation. And on general principles it would be hard to account for the Guano being more beneficial to a more fertile soil, than to one that is less fertile, and harder still to say why, when 3cwt. increases the produce of Corn by four bushels, 2cwt. diminishes it by more than half that amount. Nitrate of soda presents another instance of irregular action, for 1cwt. seems to have injured the crop; less Corn grew where it was used, and much less straw; but when one-fourth more was added the injury was not increased, but the produce was in a remarkable degree; amounting to 8 bushels of Corn and 23 trusses of straw more than on the unmanured part of the same field; the quality of the land, however, was very inferior to that on which the other experiment was tried. Sulphate of ammonia, the only other manure that repaid its cost, exhibited no such anomalies; it is true it was tried in only one proportion on two sorts of Corn, but in both instances a small quantity produced good effects, especially upon the Barley, and better may be anticipated from larger measures of it, for some experiments which I have tried on a smaller scale, for the purpose of testing more accurately the power of the manure, seem to show that when applied to Corn its success is—not as on grass—nearly in an inverse ratio to the quantity employed, but in some proportion to the increase of quantity—not, indeed, in any definite proportion, but so that the increase of produce is on an ascending scale. Three small portions of spring-sown Wheat were watered with a solution of 1 lb. of sulphate of ammonia in 8 gallons of water, which is at the rate of much more than 60 lbs. to the acre. The first was watered once, the second twice, the third three times, with an interval of about 10 days between each watering. It was intended to give additional doses to the remainder, but the Corn grew so rank, that it was feared it would die of plethora, and the thickness of the herbage intercepting the liquid intended for the roots, it began to grow rusty, and the deep green verdure being disfigured with brown spots, it seemed to be a complete failure. Nevertheless, the ears shot up vigorously, and were not laid like some of the adjoining corn by heavy thunder-showers, and at harvest 12 ears being taken from one end of each row, the Wheat they contained was weighed, and the results were as follows:—

Watered once the weight was	.	696 grains.
,, twice ,,	.	1330 ,,
,, thrice ,,	.	1438 ,,

In the first case the average number of stalks upon each root was six; in the others, eight. Compared with the unmanured, a bushel of it would weigh about 1 lb. more. A similar ascending scale of value is more strikingly exemplified in some experiments on Indian Corn. In all of them several of the ears were very defective, and not half clothed with grain. It is, therefore, as in the last instance, not to the positive quantities that I wish to call your attention, but to their relative productiveness, as compared one with another.

| | | |

rtantly, for the ashes will supply them with the mineral substances they want, which the soil does not contain, viz., gypsum, phosphate of lime, potash, common salt, and magnesia. Oats contain more potash than all other Cerealia, and thus we see that they will succeed after a manure of either fresh or even extracted wood-ashes, which latter generally contain a good deal of potash, or at least silicate of potash. Rape is very rich in potash, soda, chlorine, and sulphuric and phosphoric acids, on which account it requires a plentiful supply of good dung, which contains a greater amount of these substances than most of the mineral manures. It is, however, also improved by a simultaneous manure of marl (as shown by every day's experience), by which it appears the more clear, that the dung does not entirely supply its want of mineral substances. Dung will supply Rape abundantly with nitrogen, which this plant is so much in need of, but even this can be effected by some mineral substances, viz., by any of the nitric or ammoniacal salts, as proved to me by experiment. Beech-trees will not succeed in sandy soils, whilst Pine will succeed there very well, and for this reason; the former tree contains much potash, soda, magnesia, &c., substances which therefore are required for its growth; whilst Firs require but very little of these substances, and consequently will succeed in sandy soils, which in the main do not possess these mineral substances to any considerable amount. The Fumitory (Fumaria) contains a great deal of potash, on which account we always find this shallow-rooted plant in localities whose surface is rich in that substance. The Nettle, the Mugwort, Coltsfoot, the Thistle, and the Burr, are also rich in potash, but their roots penetrate deep into the soil, and thus we find them in places where the subsoil contains much potash. The so-called Salt plants, (Salicornia, Salsola, &c.) succeed only in soils superabundantly rich in common salt, and we find in them a greater amount of potash than in any other plants. The Rush (Juncus), appears always in a soil rich in potash and manganese, and it is a proof of its requiring much of these substances for its nourishment, that they enter largely into its chemical composition. The chemical analysis of the Lupine has convinced me that it contains much iron and phosphoric acid, and I find also that it succeeds best in localities whose subsoil is rich in these mineral substances. If we manure a sour moorland with a mixture of sulphate of potash, gypsum, phosphate of lime, and magnesia, common salt and fine quartz gravel—(substances which do not neutralise the acidity of the soil), we shall find that the plants afterwards grown on it will prosper, and this proves that these are the mineral substances which nourish the plants, and we shall also find these substances entering into their chemical composition. If mineral substances acted merely as solvents of the humus, or merely as stimulants of the vegetative process, they would be equally useful to all plants; but the contrary is the fact; gypsum, for instance, will improve Leguminous plants, whilst nitric salts will have no effect at all on them. The above examples, and many others which I could cite, prove, I think, most evidently, that besides carbon, hydrogen, oxygen, and nitrogen, mineral substances also are required for the growth of plants.

The following general remarks are yet to be added, relating to the manuring with mineral substances. Every mineral substance which is contained in a plant is necessary as a manure for that plant, in so far, namely, as it is not contained in the soil in a sufficient quantity. No mineral substance, however, is required by plants in large quantity; and because only a very small quantity is found in some of them, the opinion has arisen that they are but adventitious ingredients, not essential component parts of plants. One of the reasons why the application of mineral substances has not produced the expected result, is, that sufficient notice has not been taken that plants do not require, nay, cannot bear, a large quantity of some mineral substances. If, for instance, a mineral substance is very easily soluble in water, 10 or 15 lbs. per acre more of it than is necessary will produce an unsatisfactory result, as the plants will then be compelled to receive more than they are in need of. On the other hand, mineral substances which are soluble in water with great difficulty may, without danger, be used in greater quantities, if they produce the desired effect. If, therefore, we wish that mineral substances shall act beneficially as a manure, the degree of their solubility in water is especially to be taken notice of. If, moreover, mineral substances are to be useful, it is also always necessary that the soil be not deficient in humic acid, because the latter has not only to act as the transferring medium of mineral substances into the plants, but it is also from it that plants have to obtain the carbon, which (as far as weight is concerned) is always the chief component of plants.

(To be continued.)

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. I.

Every human being is directly or indirectly dependent upon the vegetable world for the food necessary to support life.

The universality of this important fact places Agriculture among the highest of useful sciences, and the influence it exercises over the welfare and happiness of mankind is the result of its paramount necessity.

In a primitive state of nature, a bountiful and all-wise Providence has abundantly supplied every living thing with the means of subsistance. Civilization and its attendant luxuries, and the rapid increase of population, have created more wants among mankind; and hence the necessity for increasing our means of obtaining food—among which the application of Chemistry to Agriculture has in modern days excited considerable attention.

By Agricultural Chemistry is meant—Firstly, The Chemical analysis of soils; by which the elements from which plants derive their means of growth and supporting life may be, so far as the soil is concerned, clearly defined and understood.

Secondly, The chemical constitution of plants; by which correct notions of the adaptation of the soil to the plant may be founded.

Thirdly, The chemical examination of manures, or the food of plants; by which a correct system of their application to the known condition of the soil and the known constitution of the plant may be established, and also the best means of retaining or increasing their fertilising principles.

In the following papers I propose to examine these three heads separately, pointing out, in the most intelligible manner I can, the means by which the farmer can successfully apply chemical principles to the practice of Agriculture.

Part I.—Of the Chemical Analysis of Soils.

There can be no doubt that a knowledge of the chemical constituents of soils is a most important preliminary inquiry in the science of Agriculture. The common division of soils into "light," "heavy," "sandy," &c.—a division based upon the practical knowledge of the farmer—is sufficient for ordinary purposes, but a more exact and intimate examination is necessary for the application of Chemistry. There are degrees in each of these divisions which must necessarily escape the most acute observation, and analysis can alone afford the information necessary to found a system of scientific Agriculture.

I have reason to believe that one of the most serious obstacles to the farmer in entering upon this inquiry is that which is presented to him in the outset, in the difficulties he encounters in gaining a correct chemical knowledge of his soils. I hope to show that this difficulty is more imaginary than real, and that much very valuable information may be obtained without any knowledge of Chemistry whatever, by the mere exercise of ordinary tact and a little extraordinary patience and perseverance.

Sir Humphrey Davy more than 30 years ago, in his admirable work upon Agricultural Chemistry, pointed out how this could be done. Within the last few years, what is called Organic Chemistry, or the analysis of vegetable or animal structure, has made rapid strides in the march of improvement; and hence the more easy application of chemical science to that of Agriculture. But it is erroneous to suppose that it is necessary for the farmer to have an intimate acquaintance with Chemistry; and much difficulty has been raised in making him believe the results of science, from an impression of this kind. The knowledge he requires is the means of applying the discoveries of others to the improvement of his system of farming. The chemist can explain to the farmer, that certain plants require certain food, and although the statement of the chemist is founded upon his knowledge of the ultimate elementary structure of both, it does not follow that it should be necessary for the farmer to undertake the analysis of Wheat or stable manure. He may be taught how to fix ammonia without entering into abstruse detail or discussing difficult problems in a science of acknowledged difficulty.

The inquiries of the chemist render a perfect knowledge of the science necessary; but while he is instituting lengthened analyses in his laboratory, and deducing important truths from them in his study, it is as well that the farmer should be testing the correctness of his inferences by subjecting them to the test of careful, of sound, and useful experiments.

All soils are divisible by a very simple process into three principal parts.

The first contains coarse gravel and sand (generally composed of flint and chalk), and undecomposed vegetable fibre.

The second of fine sand, called by chemists, silex.

The third of a fine powder, called by Sir H. Davy, "impalpable matter," and which generally consists of the following substances, in variable proportion.

Firstly. Aluminous earth; the principle which gives to clay its peculiar character, and upon which its value in making earthenware depends.

Secondly. Decayed vegetable matter, which is known by the term humus. This principle generates an acid termed humic acid, by its union with oxygen; and this acid again unites with lime and other earths, forming what are termed humates.

These humates are very insoluble, but they perform an important purpose in vegetation, by their decomposition setting free the carbon of the humus, which is one of the elements in the food of plants.

Thirdly. Silica, which is an earthy substance, formed by the union of an elementary principle, called Silicon, with oxygen. In its pure form it is known as quartz rock. The difference between the silica of the impalpable matter and the silex, or sand, above mentioned, is simply that the one is crystallised in the form of minute grain or sand, and the other is what is termed amorphous, or uncrystallised.

The same substance frequently occurs in Chemistry under different forms, for the obvious reason (as in the above case) of being more easily appropriated by the roots in the organisation of the fabric of the plant. United with the alkali and potash, silica forms the substance upon which the stiffness and brittleness of the stalks of Corn and other grasses depend. It is from the union of these materials, also, that this well-known substance—glass, is manufactured.

Fourthly. Various salts; of which carbonate of lime (chalk), carbonate of magnesia, muriate of soda (common salt), carbonate of potash or soda, and sulphate of lime (gypsum), are the most frequent.

These ingredients are all of them more or less discovered in plants, in which they perform important purposes in the nutrition of animals that feed upon them. Thus chalk is necessary to form bone; soda and potash, bile; muriate of soda, milk.

Fifthly. Most soils contain animal matter which nourishes the plant; and

Sixthly. A variable proportion of the oxide of iron, which is an essential element in the blood of animals.—*C. R. Bree, Stowmarket.*

(To be continued.)

Home Correspondence.

Leases.—Give to the farmer who has sufficient capital a certain term of interest in the soil which he cultivates, and then he will not only be justified in laying out his capital in its improvement, but he will exert all his energy in increasing its productiveness so as to insure the greatest return to him for his outlay. The length of term to be given should be dependent upon the extent of the improvements which the land requires. When land is let for building on, a term of 60, 80, or 90 years is granted, to indemnify the speculator for the expenses of bricks and mortar, and the risk he is subject to; just so should it be with the farmer. When there are expensive improvements and risk to be sustained; if the land is wet and has to be thoroughly drained, &c.; if the nature of the soil requires to be altered so as permanently to improve its texture; if roads have to be made; if additional buildings for the necessary accommodation of stock to consume the increased produce require to be erected; if foreign manures be required, and a new and more perfect mode of culture be necessary, such a length of lease, according to the peculiar circumstances of the farm, should be granted, as will induce an enterprising tenant to embark his capital in the permanent improvement of the stock.—*J. F.*

Mode of Planting Wheat.—I quite agree with the statement Mr. Morton gave in your last, of the advantage to the Wheat crop of thin and regular sowing. Plants that are put into the ground at equal distances produce a more uniform and a greater crop than when they are planted irregularly. Wheat will yield more if drilled than if sown broad-cast, and more when dibbled than if drilled. No kind of seed which the farmer uses should be planted more than two inches deep. Perhaps one inch is better than two, when the soil is stiff and clayey. The lighter the soil is, the deeper we may plant our seed.—*T. C. M.*

Agricultural Education.—There has been for several years a general opinion expressed that a knowledge of the sciences should be combined with agriculture, and that the practical farmer, by possessing a complete knowledge of all the sciences, bearing either directly or indirectly on his business, would be a much more effective agriculturist both for himself and for the community at large; and by bringing a greater amount of knowledge to bear on all his operations, he would obtain a greater return from his capital employed. It is also generally lamented that the means of acquiring scientific agricultural knowledge are not more generally within the reach of every man who intends to give himself up to an agricultural life. Most farmers, however, think that they themselves can give their sons all the agricultural education that is necessary to make them able to earn a livelihood; and, therefore, though they may have the means of acquiring a knowledge of the sciences which tend to illustrate the phenomena exhibited by nature in their business, it is more than probable that not one in a thousand of the farmers' sons of the present day would be sent to receive the scientific instruction if it cost them but a mere trifle. People must first feel their wants before they can be anxious to go out of their beaten track to get them supplied.—*A Farmer's Son.*

Varieties of Wheat.—The relative value of the several varieties of Wheat, as well as of all other plants which the farmer cultivates, ought to be carefully attended to. There is no doubt but vegetables, like animals, will only and always reproduce their varieties, and therefore the farmer should be as careful in selecting his seed Wheat, &c., as he is in selecting his sheep or stock to breed from. The largest and best grain will produce larger and better grain than the seed taken from smaller grain, the produce of an inferior crop; this is on the principle which we believe to be undeviating in nature, that all things reproduce their kind. Bearded Wheat, or what is called Rivets, is said to be most natural to moist clayey land; and beardless Wheat to dry light land. The white varieties of Wheat form and succeed better in very dry seasons, or on very dry, warm, sandy soils, than the red or brown varieties. The red and brown varieties seem better fitted for tenacious clayey soil than the white varieties are.—*A Practical Farmer.*

Flour of Wheat.—This Table shows the quantity of first, second, and third flour produced from Wheat of various weights per bushel, also the quantity of bran and waste. The numbers of parcels and quantities of each are also given. This is a return from Mr. Mitchel's mills, Cupar, Fifeshire, in July, 1840, the produce of 1839:—

Lots	No. of bush.	Wght. per bush.	Flour. First	Flour. Snds.	Flour. 3rds.	Flour. Total.	Bran	Waste	Total.
		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
4	480	56	—	45.6	—	45.6	9	1.2	56
5	760	56	40	5.5	2.3	47.8	9	1.2	58
6	1400	56	41	5.5	2.2	49	8.8	1.2	59
7	1600	56	42.5	5.5	2	50	8.8	1.2	60
15	2196	61	44	5.2	1.8	51	8.8	1.2	61
7	1088	62	46.5	3.5	1.5	51.5	8.5	1.0	62

Cost of Drain Tiles.—The cost in Lincolnshire of making drain-tiles 13½ inches long, 4½ inches wide, and

6 inches high, outside dimensions when burnt is, for digging, wheeling, turning, and grinding the clay, 3s. per 1000; for moulding, 2s. 6d.; for burning, delivering, and for waste, 3s.; in all 8s. 6d., exclusive of coals and loading. In 1831 one million and a half of these tiles were supplied to one land-owner, who was charged 22s. 6d. per 1000 for them by the maker. When the expense of 1s. for grinding is added to 2s. 6d. for moulding, making in all only 3s. 6d., the slight advantage of machinery now in use to effect these processes will appear. Where its application actually does reduce the cost, it can only be by reducing the 3s. 6d. paid for moulding and grinding, for the other charges remain the same. Few use a bottom or tile sole. There are tile works now constructing where it is proposed to take the clay as soon as dug, at any season of the year, pulverize it without adding water, and mould it into tiles, all by one operation by pressure; and at one quarter of an inch thick the tiles are of sufficient strength; they have inward projections to dispense with the use of tile soles. Pipe tiles, and those of other shapes, as well as sewer tiles, are to be produced of equal comparative strength.—*Anonymous.*

Experiments upon Turnips at Rothamstead, Herts.—Soil, heavy loam. Three previous crops, Wheat, Clover, Wheat without manure. Sown July 24th. Weighed December 19th. Space occupied by each experiment one third of an acre, the weight of Bulbs per acre are given, all dirt, root, and top being completely removed. The Turnips in Nos. 6, 15, 16, 17, 19, and 21, were safe from the fly a week before the others, and maintained a striking superiority over them during the first two months:—

	Tons.	Cwt.	Qrs.
1. Horse dung, 12 Tons	9	9	2
2. No Manure	4	3	3
3. Rape Cake, 14 bushels, 50 lb. per bushel	8	4	3
4. Rape Cake, 12 bushels; Yeast, 2 bushels	8	1	1
5. Yeast, 8 bushels	10	19	2
6. Super Phosphate of Lime, 4 bushels; Phosphate of Ammonia, 12 lb.; Yeast, 4 bushels	11	14	1
7. Phosphate of Ammonia, 56 lb.	6	18	2
8. Super Phosphate of Lime, 4 bushels; Rape Cake, 8 bushels	12	2	2
9. Super Phosphate of Lime, 2 bushels; Rape Cake, 12 bushels	10	8	2
10. Super Phosphate of Lime, 4 bushels; Phosphate of Ammonia, 20 lb.; Rape Cake, 4 bushels	11	7	3
11. 2 bushels Super Phosphate of Lime; Phosphate of Ammonia, 40 lb.; Rape Cake, 2 bushels	10	12	0
12. 2 bushels Super Phosphate of Lime; Phosphate of Ammonia, 10 lb.; Rape Cake, 8 bushels	9	15	0
13. 6 bushels Super Phosphate of Lime; Phosphate of Ammonia, 20 lb., Rape Cake, 6 bushels	11	16	0
14. 3 bushels Super Phosphate of Lime; 2 bushels Phosphate of Magnesia	12	0	1
15. 3 bushels Super Phosphate of Lime; 2 bushels Phosphate of Potash	11	15	0
16. 3 bushels Super Phosphate of Lime; 1 bushel Phosphate Magnesia; 1 bushel Phosphate Potash	11	17	2
17. 3 bushels Super Phosphate of Lime; 1 bushel Phosphate of Potash; 1 bushel Phosphate of Magnesia; 20 lb. Phosphate of Ammonia	12	15	0
18. Super Phosphate of Lime, 6 bushels; Yeast, 6 bushels; Rape Cake, 2 bushels	12	14	3
19. 7 bushels of mixture, composed of 60 parts Super Phosphate of Lime; 40 parts Rape Cake; 4 parts Phosphate of Ammonia	11	19	2
20. Unburnt Bones decomposed by Sulphuric Acid, 7 bushels; Rape Cake, 7 bushels	11	15	0
21. 7 bushels Super Phosphate of Lime	12	3	2

—*J. B. Lawes.*

Lichens eaten by Squirrels.—Perhaps some of the readers of the *Chronicle* are not aware that the squirrel feeds greedily upon Lichens. I was not aware of this until a few days ago, when my attention was attracted by one running up an Arbor vitæ, with a piece of an Oak-branch about a foot long. When it had ascended about half-way up the tree, it began to eat the Lichens from the branch, which was densely crowded with them. I had not stood two minutes when it took fright at me, and dropped the branch. I examined it, when I found about 6 inches in the centre of it quite clear of Lichens, and part of the bark also bit off. The Lichen was the Ramalina fraxinea.—*J. Drummond, Blair-Drummond.*

The Markets.—I am glad to find you resolved to give market prices on good authority. Such a plan deserves every encouragement; for, as they are now published, they are much worse than useless. I cannot, however, compliment you upon the manner in which it was done last week. Nothing can be more absurd than Foreign and English White Clover, 74*s.* to 84*s.* I will defy any one to buy it at that price. I know that some second-rate of last year's was sold to-day at 90*s.*, and some first-rate was sold on Monday at 120*s.* For Trefoil no return is given, though there is plenty of it ranging from 30*s.* to 40*s.* English Red Clover is wrong, too; and you have actually no return for Tares, though plenty are to be bought. However, time will improve, I dare say.—*Peter Schlemihl, Jan.* 10.——Another correspondent complains of the unbusiness-like form in which Wheat is given. "For instance, the price of Wheat from Norfolk, Lincolnshire, &c., is stated at 47*s.* to 54*s.*; but, from the form of the report, it is quite impossible to know whether White or Red Wheat is meant. Of course the value of reports depends entirely upon their accuracy and fulness; and now that your Paper aims at an Agricultural character, accuracy and fulness will be looked for in that department."—[In reply to these criticisms, we can only say that the reports are given on the authority which we quote, and that we have done all that we believe it possible to do to obtain correct returns.]

Management of Manure in Farm-yards.—We have been requested by Mr. Harrison, of Devizes, to publish a letter on the Management of Manures, which he addressed to the Royal Agricultural Societies of England, Scotland, and Ireland, some months ago. It was at that time published in many of the Agricultural papers, and on that account we the less regret our inability from want of room, to insert the whole of it. Mr. Harrison recommends that, instead of allowing the manure to remain on the surface of the yards, it would be better to form it into ricks round the tank, so that it may be supplied with the liquor during the time of making. He recommends that all weeds, cuttings, and parings from roads, deposits in ditches, rubbish from gardens, &c. &c., should be carried home, and be deposited in these manure-ricks, according to the following directions, viz., "A layer of stable-dung, 1 foot thick, salted; a layer of vegetable matter, 6 inches thick, limed; a layer of stable-dung, 1 foot thick, salted; a layer of vegetable matter, 6 inches thick, limed; a layer of stable-dung, 1 foot thick, on the top of this fifth laying; saturate with the liquid from the tank in sufficient quantity to pass through the whole. Begin again, and repeat the layers as before with the dressings, and make the ricks to any size, the larger the better; then cover them up close with long dung or straw (earth would be better) to keep in the ammonia and prevent the rains from penetrating." Mr. Harrison justly remarks, that "A *clean farm* is not to be obtained without attending to the use of manure properly decomposed, and also to that of *liquid* manure, as these take no filth to the land." He states, in conclusion, "*Complicated recommendations* for a general plan to be adopted in the manufacturing of farm-yard manure would, I am convinced, from the experience I have had with Agriculturists, have no general effect." And he says "from experience" what we were at first inclined to doubt, that the plan he has suggested is very plain and simple, so as to be in the power of any one to adopt; and that those who may feel inclined to try it will find their manure doubled by it in value.

Bones.—A few months back I addressed you on the comparative merits of boiled and unboiled bones. In your reply you appeared to give a decided preference to the former, notwithstanding the enormous loss of grease in the process of boiling—say 50 per cent. I have since had a little conversation with a respectable Scotch farmer from Roxburghshire, from whom I elicited some interesting facts bearing on the above subject, although he was not aware at the time what my object was. I inquired if bones were still in great estimation in his neighbourhood? He replied that, for the last three or four years the farmers had neglected them altogether, in consequence of little or no effect being produced by them on the Turnip crop, and that they were now glad to return to the farm-yard for their supply of manure. He further added that, five or six years ago, bones only were used for the Turnip crop, and with the most beneficial results. He could form no idea as to the cause of the change which had taken place, nor could he inform me as to the weight per bushel of the bones now and five years ago; but he told me that on the first occasion of bones being used in his immediate neighbourhood, he uncovered a few yards of the drill line after they had been sown some days, and found them covered with an exudation having the appearance of hoar frost (his own expression), and which was, of course, the essential part, viz., fat and grease. About two years ago, when bones were found not to answer, he examined them, as before, but no "hoar frost" was to be found; the examination was repeated several times, but still no exudation was perceptible—he could not account for it. Now, to me, the reason is very obvious: the first were genuine unboiled bones, full of marrow and grease—hence the appearance of "hoar frost;" the last were boiled and stewed till not a particle of fat or grease was left, and consequently there was no "hoar frost." I am not a learned Chemist, and may be wrong in the conclusion I have drawn; but I am open to conviction, and shall feel much obliged by any information on the subject.—*E. R., Halifax.*

Artificial Manures.—If you would take the trouble to ascertain what the real facts are regarding the many new-fashioned manures which farmers are advised to use, you would be doing us a real service, and also how to tell whether the good ones are adulterated. I have tried my hand a little at these things, but I do not feel at all sure that I have ever got my money's worth back again, to say nothing of profit. However, I do not want to set any body against them; only, I want to learn whether they are good for anything or not, and if so, for what? We farmers have no money to waste in fancies; and although we should be glad enough to get better crops if we could, yet we should be also thankful for advice how to proceed. Now that your Paper is started for our information, you should not lose time in making us acquainted with the *truth* in this matter.—*Timothy Kippax, Farmer.* [We perfectly agree with this correspondent on the importance of the subject he names, and have already taken means to do that which he desires. We shall examine all the manures that are on sale, and state every *fact*, for or against them, that we can collect.]

Clover Dodder.—Having reason to believe that the Dodder found upon Clover raised from Indian seed is not the same as that which has been so destructive of late in the Clover-fields of East-Anglia, I should feel much obliged to those farmers, and others, who may have gathered either of those Dodders if they will send a small portion of the plant to me, by post, directed to "St. John's College, Cambridge." A statement of the person from whom the Clover-seed was obtained, and the date of its purchase, would be a valuable addition to the specimens. If this information is afforded to me, I have reason to hope that I shall be enabled to trace the seeds of the weed to their native country, and point out a mode of avoiding it in future.—*Charles C. Babington.*

Application of Manure to Water Meadows.—The following are some particulars about our crops of Grass in the Holm:—By means of a water-cart we watered the lower Holm with the manure from the cesspools connected with the mill, diluted with two-thirds water. This, with the exception of the banks of the cut and river, was done in March. The upper Holm we manured with Guano at the rate of 3 cwt. to the acre, and it was irrigated previous to the application of the manure, while that manured with the night-soil and urine was irrigated subsequent to manuring. To prevent the water from washing away the manure, it was dammed up and allowed to sink into the land, which it soon did, as the soil is alluvial and sandy. I believe scientific irrigators do not consider this plan so good as allowing it to flow over without stagnating; but this would have wasted our manure, and the plan succeeded so well, that we had an abundant crop by the 1st of June. We did not cut until the 8th, on account of the unfavourable weather before that time; but were then so highly favoured as to harvest the whole (14 acres) in less than a week. We had a crop of sixty cart-loads of about 13 cwt. each. We then immediately irrigated again, and cut our second crop (40 cart-loads of 13 cwt.) in eight weeks from the first cutting. As soon as the second crop was secured, we manured the banks of the cut and all the more impoverished parts of the field with a good coating of dung from the stable-yard and cow-midden, which was overgrown and out of sight in about a fortnight. Our cesspools connected with the mill are now so large and well supplied with valuable manure, that I hope we shall have little or no occasion to use Guano, except upon those parts of the field which we cannot reach with the water-cart. In addition to the urine and night-soil flowing into these cesspools, we turn in the ammoniacal liquor from the gas-works, which we find to be a powerful stimulant; and we fix the ammonia by putting in a daily supply of a sulpho-phosphate of lime (from bones), which some of the manufacturing chemists produce in large quantities and sell at a cheap rate, and which we find far more effectual for the purpose than either gypsum or sulphate of iron, and far less dangerous and less troublesome than sulphuric acid.—*T. G.*

Societies.

HIGHLAND AND AGRICULTURAL SOCIETY.

The monthly meeting in the Museum was held on Wednesday, Jan. 3, under the presidency of the Earl of Roseberry. The first communication was from Dr. Morison, of Banchory Devenick, descriptive of a guard for protecting the piers of bridges over rivers against accidents from floating timber. Sir John Graham Dalyell then described the model of a machine for weighing cattle and sheep and other commodities, constructed by Mr. John Craig, Glasgow. This machine resolves itself into a steelyard. One pound in the scale balances one stone on the platform. Sir George S. Mackenzie exhibited to the meeting a chondrometer, made by Mr. Adie, optician, Edinburgh. Mr. Borthwick, of Crookston, then read a communication from Mr. M'Lean, Braidwood, near Penicuik, in continuation of experiments made by him in 1842 with certain manures. One field of Grass that had been top-dressed with saltpetre, nitrate of soda, salt, soot and earth, ashes and earth, and soot, and intended for Hay, was obliged to be pastured by the dairy stock, along with other pasture lying contiguous. Throughout the season the cows seemed to relish the Grass in all the pasture alike, except that dressed with soot, in which they allowed almost all the Grasses to run to seed, and the Clover did not seem to thrive so well upon it. Another field of inferior soil was top-dressed, an acre to each, with sulphate of ammonia, guano, guano and sand, soot and earth, nitrate of soda, salt, urine, saltpetre, and a portion left without any top-dressing. The Grass was made and cut into Hay, and the general results were, that the portion which had no top-dressing yielded only 3*l.* worth of Hay, at 8*d.* per stone of 22 lbs., whereas each of the other portions yielded nearly double that value, the greatest being derived from the soot and earth, mixed in the proportion of 15 bolls of soot to 10 cart-loads of earth, the Hay after which was worth 6*l.* 2*s.* 8*d.* The crop of Oats this year, after Grass that had been top-dressed with 30 cart-loads of farm-yard dung, was 20 per cent. superior to that on portions top-dressed with 15 cart-loads of farm-yard dung and various sorts of artificial manures, especially where the sulphate of magnesia, carbon, nitrate of soda, sulphate of ammonia, and urine were applied. A description of a model of a single horse cart, constructed by Mr. James Dryden, Builder, Saunders-street, Stockbridge, Edinburgh, was read by Mr. Dewar. The improvement intended to be attained by this model consists in placing the cart with its load upon the axle farther forward or backward than its ordinary position, by means of an adjusting screw worked behind the cart, according as the load is to be drawn up or down hill, so as always to retain the same weight upon the horse's back. A statement as to the mode of erection and tenure of cottages for labourers and tradesmen on Mr. Hope Johnstone's estates of Annandale, by Mr. Charles Stuart, of Hillside, factor on these estates, was read by Sir Charles Gordon. The last two communications were read by Mr. Milne—the one affording a comparative view of the value of moss land in its improved and unimproved state, and experiments made thereon with different manures, by Mr. Carstairs, of Springfield, near Penicuik; and the other detailing experiments with the same class of manures on the farm of Auchencraw Mains, in Berwickshire, by Mr. Edward Makins. Mr. Carstairs states, in regard to the improvement of his moss land, that about 30 years ago, when it consisted of 233 acres, at an elevation of above 800 feet above the sea, it was let for 10*l.* a year, or 9½*d.* per acre, for sheep pasture, and then inhabited by only 5 persons. In 1843, two thirds of that quantity (the remainder being deep flow moss) yielded from 70 to 80 small stacks of Corn,

containing from 5 to 8 bolls each; from 2000 to 3000 stone of irrigated meadow Hay; from 2000 to 3000 stones of Clover Hay; and from 500 to 600 bolls of Potatoes. There are 8 or 10 cattle, 10 horses, old and young, and from 40 to 50 persons living on the land, besides employment being given on it to several labourers. All this has been accomplished by draining the moss with drains at 18 feet apart, 27 acres of which were drained at 9 feet apart; and in order to carry this sort of experiment still further, 1 acre was drained with drains placed only 4½ feet apart, for the crop of Potatoes, on which this season Mr. Cavaniss was offered 20*l.*, but refused it, as he considered the yield to be 50 bolls, the value of which is six times that of the original fee-simple of the ground. His experiments consisted in raising Potatoes on the drained moss with various substances, such as sand, bone-dust, ammoniacal salts, a mixture of bone-dust, ammoniacal salts, and foreign guano, guano and farm-yard dung; the artificial manures cost 5*l.*, and the farm-yard dung 10*l.*, per acre. Of the extraneous substances, the sand yielded the lowest degree of produce, 8 bolls; the guano the highest, namely, 38 bolls, or 7 tons 16 cwt.; while the farm-yard manure yielded 41 bolls, or 8 tons 8 cwt. per acre. Another set of experiments with Potatoes, the manures of which cost 3*l.*, and the farm-yard dung 6*l.* per acre, gave the lowest result on furrow-drained land, inclining to moss, with bone-dust, at 11 bolls, or 2 tons 6 cwt. per acre; and the highest, with farm-dung, 21 bolls, or 4 tons 7 cwt. per acre; but Potatoes planted in the same field ten days earlier yielded with farm-dung 37 bolls, or 7 tons 12 cwt. per acre. The results of experiments in Turnips with the same class of manures gave the lowest return from gypsum, which was 7 tons; and the greatest from farm-yard dung, or 27 tons per acre. The experiments of Mr. Makins were made on Turnips in 1843, on soft, light, hazel-coloured soil, resting on a sandy subsoil, and succeeding a crop of Oats after two years' old lea. The manures employed were guano and farm-yard dung, guano and bones, guano, oil-cake refuse, bones, bones and farm-yard dung, and farm-yard dung. The greatest result, viz., 23 tons 14 cwt., was obtained from guano, at a cost of 3*l.* 18*s.* 1½*d.*, yielding a profit of 3*l.* 4*s.*, 1*d.* per acre, at 6*s.* per ton. The lowest result was given by the farm-yard dung, which, at a cost of 5*l.* 11*s.*, yielded 20 tons, and left a profit of only 9*s.* per acre. The announcement of books and other donations presented to the Society was postponed till next meeting.

Reviews.

Remarks on Lancashire Farming.
By Law. Rawstone, Esq. Longman & Co.

Mr. Rawstone gives a gloomy account of the state of Agriculture in Lancashire.

"The Corn crops look scanty, backward, and half-starved; the grass-land, much of it, as it were, totally abandoned. The whole country seems as if it was running wild with neglect and impoverishment; all attempts at neatness disregarded; no sign of the higher order of cultivation being anywhere visible."

There cannot have been much improvement in a district of which this account is true, since the day when Mr. Dickson reported its condition to the Board of Agriculture in 1815.

This little book, though addressed especially to Lancashire farmers, is capable of being made useful by any of its Agricultural readers.

"The inferiority of Lancashire farming to that of most other parts of the kingdom has not been here dwelt upon for the purpose of raising an invidious comparison, nor of depreciating efforts already laudably made; but rather to spur the country on to a higher range of generous rivalship."

And in order to attain this object, Mr. Rawstone has not only shown up his county, by contrasting it, perhaps too vividly, with other districts; but he states the causes to which the inferiority of its Agriculture is owing, and the methods by which these causes may be removed. All this is exclusively for his neighbours, but the general statement, with which he begins his work, of what it is which constitutes good farming, and the details connected with methods of drainage, and various other branches of cultivation, which he gives us in the course of it, may be made useful by all.

Miscellaneous.

Depth at which Seed should be Planted.—Various experiments have been tried to determine the proper depth at which seeds should be planted. The following result is given by Burger, vol. i., p. 296, with respect to Maize, or Indian Corn:—That which was planted at the depth of

No. 1.	1 inch,	came up in	8½	days.
2.	1½	"	9½	"
3.	2	"	10	
4.	2½	"	11½	
5.	3	"	12	
6.	3½	"	13	
7.	4	"	13½	
8.	4½	"	—	
9.	5	"	—	
10.	5½	"	17½	
11.	6	"	—	

The Nos. 8, 9, 11, were dug up after 22 days, and it was found that No. 6 had an inch more to grow to reach the surface of the earth. Nos. 9 and 11 had just sprouted, but were short, and were three inches below the surface. No. 10 came up in 17½ days, but the tender leaf remained only six days green, and then withered. There is no experiment which shows more clearly the advantage of a shallow planting in a soil not too loose and trodden down like this. The more shallow the seed was covered by the earth, the more rapidly the sprout made its appearance, and the stronger afterwards was the stalk. The deeper the seed lay, the longer it remained before it came to the surface. Four inches was too deep for the Maize, and must also be so for yet smaller grain kernels. It, indeed, came up at that depth, but on the 15th day after it was planted, the experiment being made in the hot time of the year, in June; in the colder season of spring it would have been 18 or 20 days. If the germ-leaves of the seed lie too long under ground they begin to get twisted, and will be bleached and die, as in No. 10, or form weak plants, as in Nos. 7 and 11. Petri cites an experiment made with respect to Rye, in Oct. 1817, with the following results:—

Depth of Seed.	Appeared above ground in	Number of Plants that came up.
½ inch,	11 days,	7-8th
1 "	12 "	all
2 inches,	18 "	7-8th
3 "	20 "	6-8th
4 "	21 "	4 8th
5 "	22 "	3 8th
6 "	23 "	1-8th

The root stalk always forms itself next below the surface of the ground, and if we place the grain deep it must first put out its sprouts to the surface, and form its side-branches in a nearer connexion with the air. We never find that the sucker-roots are ranged from below to above, but the contrary. As a proof of the correctness of this opinion, I will here give the interesting experiment of Ugazy in Andre, Okon, Neuigkeiten (Economical Novelties), July, 1817. He tried 76, between the 5th and 15th of June, 1817, on good soil, where the seed was well ploughed in, with different grains, to ascertain how deep the root-stalk stood in the earth, and what influence the different depths would have on the formation of the stalk. The results are exhibited in the following Table:—

	Number of root-stalks which remained in the earth.				
Name of the kinds of Grain.	At 1 inch.	At 1 to 1 1-2 inches.	At 2 inches.	At 2 to 2 1-2 inch.	Total.
Winter Rye	742	231	32	5	1000
" Wheat	765	215	17	—	—
Summer "	645	304	42	9	—
" Barley	631	317	41	11	—
" Oats	672	241	64	23	—

	Average No. of stalks to a plant.			
Name of the kinds of Grain.	Of the 1st depth.	Of the 2d depth.	Of the 3d depth.	Of the 4th depth.
Winter Rye	2 3-5th	2 1-7th	1	1
" Wheat	3 4-7th	2 1-8th	1	—
Summer "	4 1-6th	2 3-5th	1 1-twelfth	1
" Barley	2 2-5th	1 3-4th	1	1
" Oats	1 1-half	1	1	1

We see here that ¾ to ⅘ of all the plants had their root-stalk only one inch under ground, and that it was just these which produced the most stalks; ⅕ of them had their roots only 1½ inches deep, and only half as many stalks as the first; at two inches deep there were only four in 100, and at 2½ inches deep only nine of 1000, producing only one stalk a-piece, while the first, in Rye and Wheat, produced 2⅗ to 4⅕ stalks. From this it is clear that shallow sowing, if the seed is only so far covered as to sprout, and the germ is protected from immediate contact with the air, is preferable to laying the seed deep, because it springs up quicker, and acquires a stronger growth, and has hardier plants.—*Note to Burger's Economy of Farming.*

Rearing Cattle, with a view to Early Maturity.—The production of beef at the quickest and cheapest rate being the object in view, the first requisite is a stock of cows possessing qualities suitable for this purpose. Accordingly, they should be good milkers—able to keep at the rate of two and a half to three calves each—of a kind known to have a tendency to fatten readily, and to come early to maturity, and of a structure likely to produce a vigorous well grown steer. In other words, they must be good short-horns; only having more regard to their milking properties than is usually done by breeders of bulls. And here it may be well to notice, that it is in general highly inexpedient for the beef grower—the farmer who depends largely on his regular cast of fat cattle—to attempt breeding his own bull. It is only a few individuals in any district who have the taste and skill requisite for this difficult department of the business, not to mention the large capital which must necessarily be invested in it, the precariousness of the return, the greater liability to casualties of such high-bred animals, and the additional expense of their housing and maintenance. On Tweed side, the breeding of bulls is confined to a very limited number of persons, chiefly Northumbrians, who, by devoting their whole attention to this department, are able, from year to year, to furnish a class of bulls which are steadily improving the general breed of the district. The contrary practice is at this moment compromising the character of this valuable breed of cattle in several districts of Scotland into which they have been more recently introduced. Made wiser on this point by experience, the farmer of the Border purchases from some breeder of established reputation a good yearling bull, which he uses for two or three seasons, and then replaces by another in like manner. This bull serves his own cows and those of his hinds, and some of the neighbouring villagers; and thus, though his own stud be limited to six or eight cows, he can select from the progeny of his own bull as many calves as he requires to make up his lot, and has them more uniform in colour and quality than could otherwise be the case. As the male parent, among sheep and cattle, is known to exert by far the greatest influence in giving character to the progeny, and increasingly so in proportion to the purity of his breeding, it is evidently much for the advantage of the beef grower to spare no reasonable trouble and expense in obtaining a bull of thorough purity, and then to select his calves with the most scrupulous attention. From overlooking all this, how often may lots of cattle be seen, on the best of land, too, which can only be fattened at an enormous expense of food and time, and, after all, are so coarse in quality as to realize an inferior price per stone. Occasionally a few beasts of the right sort will be seen in such lots, which, by going ahead of their fellows, to the extent of 4*l.* or 5*l.* a-piece of actual market value, show what might have been done by greater skill or attention on the part of the owner. It is very desirable to have all the cows to calve betwixt 1st February and 1st April. If earlier, they will get almost dry ere the grass comes, and calves later than this will scarcely be fit for sale with the rest of the lot. When a calf is dropt, it is immediately removed from its dam, rubbed dry, with a coarse cloth or wisp of straw, (this being what the cow would do for it with her tongue, if allowed,) and then placed in a crib in the calf-house among dry straw, when it receives a portion of its own mother's first milk, which, being of a purgative quality, is just what is needed by the young animal. For a fortnight, new milk is the only food suitable for it, and of this it should receive a liberal allowance thrice a day; this means should now be used to train it to eat linseed cake and sliced Swedish Turnip; and the readiest way of doing so is to put a bit of cake into its mouth immediately after getting its milk, as it will then suck greedily at anything it can get hold of. By repeating this a few times, and placing a few pieces in its trough, it will usually take to this food freely, and, whenever this is the case, it should have as much as it can eat, that its allowance of milk may be diminished, to meet the necessities of the younger calves which are coming in succession. This is of the greater importance that it is always most desirable to avoid mixing anything with their milk by way of helping the quantity. When a substitute must be resorted to, oatmeal porridge mixed with the new milk is perhaps the best. Sago has of late years been much used for this purpose; but an eminent English veterinary surgeon has recently expressed a very decided opinion that its use impairs the digestive powers of the animal, and predisposes to disease. The sour smell invariably found in a calf-house, where porridge or jelly of any kind is mixed with the milk, is proof sufficient that indigestion is the consequence. An egg put into each calf's allowance, and mixed with the milk by stirring with the hand, is a good help, and never does harm; but, with this exception, it is best to give the milk warm and unadulterated, however small the quantity, and along with this, dry farinaceous food, turnips and hay, *ad libitum*. If more liquid is needed, a pail with water may be put within their reach, as this does not produce the bad effects of mixed milk. Indeed, in this, it is best to keep as closely as possible to the natural arrangement according to which the calf takes its suck—at first frequently, and then at longer intervals as it becomes able to eat of the same food as its dam. The diet of the cows at this season is a matter of great consequence. Swedish Turnips yield the richest milk, but it is too scanty, and calves fed on it are liable to inflammatory attacks. Globe Turnips should, therefore, form their principal food during the spring months. Care must also be taken that they do not get too low in condition in the autumn and winter, and for this end it is well to put them dry at least three months before calving. Some may think this long; but, on a breeding farm, milk is of little value at this season. The cows, when dry, are kept at less expense, and, by this period of rest, their constitution is invigorated, greater justice done to the fœtus, now rapidly advancing to maturity, and so much more milk obtained after calving, when it is really valuable. When the calves are from four to six weeks old, they are removed from their separate cribs to a house where several can be accommodated together, and have room to frisk about. So soon as the feeding-yards are cleared of the fat cattle, the calves are put into the most sheltered one, where they have still more room, and are gradually prepared for being turned to grass; and, when this is done, they are still brought in at night for some time. At six weeks old, the mid-day allowance of milk is discontinued, and at about 14 weeks they are weaned altogether. When this is done, their allowance of linseed cake is increased; and, as they have been trained to its use, they readily eat enough to improve in condition at this crisis, instead of having their growth checked, and acquiring the large belly and unthrifty appearance which used to be considered an unavoidable consequence of weaning. The cake is continued until they have so evidently taken with the grass as to be able to dispense with it. They are not allowed to lie out very late in autumn, but, as the nights begin to lengthen and get chilly, are brought in during the night, and receive a fodderings of tares or clover fogagge. When put on Turnips, the daily allowance of cake (say 1 lb. each) is resumed, and continued steadily through the winter and spring, until they are again turned to grass. This not merely promotes their growth and feeding, but (so far as the experience of five or six years can determine the point) seems a specific against black-leg, which was often so fatal as altogether to deter many farmers from breeding. It may be well to state here distinctly the particular purpose for which cake is given at the different stages of their growth. At first, the object is to accustom them to a wholesome and nutritious diet, which will supplement the milk obtained from any given number of cows, so as to admit of a greater number of calves being reared, and, at the same time, have greater justice done them than could otherwise be practicable. At weaning-time, again, it is given to help the young animal over the transition from milk to Grass alone, without check to growth or loss of condition. During the follow

NEW FARMERS' NEWSPAPER.

The time has come when Landlords and Tenants, large Farmers and small, must devote their [illegible] attention to [illegible] question—when, in the words of Sir Robert Peel, 'All must learn how, in the [illegible] time, and at the least expense, to produce the greatest quantity of food, consistently with [illegible] future to the land.' To accomplish this, no means can be so [illegible] as that which brings the results of Experiments and Science before every man, in a [illegible] for this purpose THE AGRICULTURAL GAZETTE is established.

The Proprietors are aware of the difficulties of dealing with the many details of cultivation, [illegible] in connexion with climate, soil, and [illegible] as varying as places. They condemn the idea of conducting farming operations upon one [illegible] plan; and, while they welcome science in its [illegible] of principle, they [illegible] crude speculations as the most dangerous of delusions. Still, they also feel that in Agriculture, as in all other arts, there are general principles upon which [illegible] must depend, and [illegible] are practical errors which no local circumstances can justify; in short, that there is room for improvement even in those branches which are best understood. To this [illegible] upon the multifarious questions affecting husbandry, and the duty of the Editor of such a Paper as THE AGRICULTURAL GAZETTE is to make known the knowledge of all. [illegible] Farmers that the Proprietors trust for the means of carrying out their views, and not to the talents of any individual. While, therefore, they state that the Editor of THE AGRICULTURAL GAZETTE is a gentleman well acquainted with the best kind of farming, in which he is actively engaged, they feel it to be of far more importance to announce the promise of assistance [illegible] with the landed and farming interest generally, especially of those whose names they are permitted to mention—

The Right Hon. the Earl Spencer, President of the Royal Agricultural Society of England.

The Right Hon the Earl of Ducie, Vice President of the Royal Agricultural Society of England
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&c. &c. &c.

The Practice of Agriculture—its Science—Animal and Vegetable Physiology—Improvements in Implements—better modes of Husbandry—results of well conducted experimental Farming—Growth and Rotation of Crops—Stock—Drainage—Irrigation—Foresting—Road making—Farm-Buildings—Labourers—in short, whatever affects the beneficial employment of capital in land—will form topics of consideration Reports will be given of the English, Scotch, and Irish Agricultural Societies—London Market Prices of Corn, Hay, and Cattle, and the Weekly Averages. Replies to questions connected with the object of the Paper will also be furnished weekly

Considering the union which exists between Horticulture and Agriculture, it has been thought advisable to make THE AGRICULTURAL GAZETTE an addition to the GARDENERS' CHRONICLE, edited by DR LINDLEY, and so extensively known; but that there may be ample room for discussion, that Paper *has been increased one-half in size without additional charge*—thus Twenty-four Columns will be occupied, as at present, by Horticulture, and Twenty-four by the General News of the Week, whilst

Twenty-four Columns will be devoted to Agriculture:

This day, therefore, January 13th, is published, price SIXPENCE, stamped to go free by post, the SECOND NUMBER *of*

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE:

A Weekly Record of Rural Economy and General News.

THE HORTICULTURAL PART EDITED BY PROFESSOR LINDLEY.

THE principle on which the Gardening part of this Paper is conducted is to make it a weekly record of everything that bears upon Horticulture, Floriculture, Arboriculture, or Garden Botany, and such Natural History as has a relation to Gardening, with Notices and Criticisms of all works on such subjects Connected with this part are WEEKLY CALENDARS OF GARDENING OPERATIONS, given in detail, and adapted to the objects of persons in every station of life, so that the Cottager with a few rods of ground before his door, the Amateur who has only greenhouse, and the Manager of extensive gardens, are alike informed of the routine of operations which the varying seasons render necessary. It moreover contains reports of Horticultural Exhibitions and Proceedings—Notices of Novelties and Improvements—in short, everything that can tend to advance the profession, benefit the condition of the workman, or conduce to the pleasure of his employer, accompanied with Woodcuts, whenever the matter treated of requires that mode of illustration.

To this Farming, as explained above, is now added.

Lastly, that description of domestic and political News is introduced which is usually found in a Weekly Newspaper It is unnecessary to dwell on this head further than to say, that the Proprietors do not range themselves under the banners of any party, their earnest endeavours are to make THE GARDENERS' CHRONICLE a full and comprehensive *Record of Facts* only—a NEWSPAPER in the true sense of the word—leaving the reader to form his own opinions; their object being elucidation of the laws of Nature, not of man. The reader is thus furnished, IN ADDITION TO THE PECULIAR FEATURES OF THE JOURNAL, with such information concerning the events of the day as supersedes the necessity of his providing himself with any other Weekly Paper.

The Proprietors are happy to announce that the following distinguished Botanists, Florists, and Practical Gardeners have already enriched the GARDENERS' CHRONICLE by their communications:—

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The Hon and Rev Charles Bathurst
Hon. W Fox Strangways
Sir Oswald Mosley, Bart.
Sir W J. Hooker, Royal Gardens, Kew
Dr. Horner, Hull
Dr. Lancaster, F L.S
Dr. Mall, Canon Mills
Rev. J. M Berkeley
Capt Widdrington
Professor Morren, Liege
J. Bateman, Esq, Kingersley
C Barker, Esq, Birmingham
E. Barnard, Esq, F R S
Mr. W Billington, Oswestry
Mr. Mc Nab, Caledonian Society's Garden
Mr Meehan, Botanic and Zoological Gardens, Leeds
Mr Ingram, Gardener to Her Majesty
Mr. Paxton, Gardener to the Duke of Devonshire
Mr. Alexander, Gardener to the Duke of Leinster
Mr. Ferguson, Gardener to the Duke of Buckingham
Mr. Spencer, Gardener to the Marquis of Lansdowne
Mr. Elliott, Gardener to the Earl of Tyrconnell

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Mr Gordon, Hardy Dept., Horticultural Gardens, Chiswick.
Mr W. P Ayres, Brooklands
Mr. Wells, Gardener to W. Wells, Esq., Redleaf

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

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GARDENERS' BENEVOLENT INSTITUTION.

—At a special General Meeting of the Subscribers to this Institution, held on THURSDAY, Jan. 11, at the Crown and Anchor Tavern, for the special purpose of Electing Two poor persons on the Pension List of this Charity, the following was the result of the Ballot, viz. —

James Anderson	aged 73		174 votes.
Ann Potter		68	140
Elizabeth Collyer		69	30
Samuel Lywood		66	22
John Blaylock		71	16

The Meeting then declared that James Anderson and Ann Potter, having the greatest number of votes, were duly elected Pensioners of this Charity.

Edw. R. Cutler, Sec

TO THE SUBSCRIBERS OF THE GARDENERS' BENEVOLENT INSTITUTION.

ANN POTTER begs to return her grateful thanks to those Friends and Subscribers who so kindly exerted themselves on her behalf on Thursday, January 11th last, and by whose means she has been placed on the list of Pensioners.—Coombe-lane, Kingston, Surrey, January 15th, 1844

GARDENERS' CHRONICLE for Sale.—The first 3 volumes clean and in good condition; volumes 1 and 2 in boards, 2 published. Price 3 guineas.—Apply to Mr. Loadman, Stationer, Kingston New Town

THE LATE Mr. LOUDON.—A Public Meeting of the Friends of the late Mr. Loudon will be held in the large room of the Horticultural Society's Establishment, Regent-street, London, early in February next, to consider the best means of extricating his Widow and Daughter from the difficulties into which they are placed by Mr Loudon's sudden death.

Due notice will be given of the day of meeting, when it is hoped that Gentlemen and gentlemen who patronise Horticulture, and most of Gentlemen and Nurserymen who are within a reasonable distance, will attend.

AT a MEETING of the LINCOLN and LINDSEY AGRICULTURAL ASSOCIATION, held at the City Arms Hotel, Lincoln, on the 8th day of January, 1844, C Chaplin, Esq., in the Chair, The following Resolutions were adopted —

1. That while the tenantry of the country, and others investing their capital in Agriculture, have had their protection greatly reduced by recent Legislative enactments, it is the opinion of this Society that it would be the height of absurdity to countenance any scheme, however plausible, which in effect will tend still more to depreciate the productions of our soil, and thereby spread inevitable ruin throughout the rural districts of the country.

2. We, therefore, desire to reiterate our unalterable conviction that a repeal of the Corn Laws would be highly prejudicial to British Agriculture, and to the nation at large, and that the efforts of the Anti-Corn Law League to bring about this object ought to be vigorously resisted.

3 That the doctrines taught by the emissaries of the League, tending to produce alienation and distrust between landlord and tenant, between the employer and the labourer, are un-Christian, anti-social, and dangerous to the peace of the country; and we the Members of this Association, pledge ourselves to oppose such principles to the utmost of our power, and to this good end we allude for the co-operation of all societies established in this county for a similar object.

4. That a Committee be now appointed to correspond with the other societies in this county formed for a similar purpose, and to adopt such measures as to them shall seem expedient.

5 Resolved.—That a subscription in aid of the object of the Contingent Fund of this County be now entered into, and that the Secretary be requested to write to the principal landed proprietors, requesting their patronage in aid of the same.

6. Resolved.—That these resolutions be published.

(Signed) Charles Chaplin, Chairman.

Resolved.—That the cordial thanks of this meeting be given to the Chairman.

The following Subscriptions have already been received.—

[illegible] M.P.		20	0
[illegible]		10	0
[illegible]		10	0
[illegible]		5	0
[illegible]		5	0
[illegible]		5

TO GENTLEMEN PLANTING.

MESSRS J. FAIRBAIRN are induced from the unusually mild weather which they hold the Management Nursery, Clapton, peculiarly conducive to the Home Nurseries, Clapham Rise, to offer (with the exception will be given to all applications), to select a Sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy gardeners-grown stock, consisting of fine large Laurels, twice transplanted, of strong growth; Portugal Laurels, very handsome; Queen Hollies, of various sizes; Evergreen Privets, fine Standard and Dwarf Roses in great variety; fine standard flowering Thorns, Almonds, Laburnums, Deutzias, and other Ornamental Trees, and Evergreen and flowering shrubs, with a large stock of fine standard and dwarf, trained and unnamed Peaches, Nectarines, Apples, Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled, also, a large assortment of Forest Trees consisting of Limes, Elms, Ashes, Beech, Hornbeam, Spanish and Horse Chestnuts, Mountain Ash, Poplars, and Larches, and Scotch Firs, also a large number of Rhododendrons and Cupressus, of excellent growth and of the finest varieties in cultivation, to all of which J. & J. F. respectfully invites the inspection of Gentlemen and Nurserymen, flattering themselves that the general character of the Stock is such as to afford unqualified satisfaction, and which they are disposed to dispose of very moderate prices for cash

J. & J. F. respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c., which has lately appeared in the *Gardeners' Chronicle* (Oct. 21 and 28)

Nurseries, Clapham, near London Jan. 5, 1844

SPLENDID NEW SEEDLING CINERARIAS.—Fine early flowering strong plants of CINERARIAS, saved from the very choicest sorts of large and crimson colours, selected from between five and six thousand Seedlings of last year. Those purchasing will have an opportunity of flowering some of the choicest sorts in cultivation, remarkably healthy, and having a large stock they can be sold at 2s. and 12s. per dozen, carefully packed for any part of the country. Applications including Post-office orders will be immediately executed. Large bunches of RUSSIAN VIOLETS in full flower, 2s. per package, 6s. and 9s. per dozen.—Direct to MICHAEL BARRON, Seed Cambridge Nurseries.

T. & C. LOCKHART & DUNCAN, SEEDSMEN AND Florists, 155, Cheapside, London, have just published their List of Seeds and Ornamental Greenhouse and Hardy Plants, which they will forward, free by Post, on application. They have purchased some very superior Pink Seed of one of the first growers, which they are selling in packets at 2s. 6d. and 5s. each. As it rarely occurs that it is offered of such quality, and as the Stock is very limited, they respectfully request early orders. Shown in March, Pink Seed flowers the same season. Early Wallflowers Brocatti Seed, 4s. per ounce, sent free by Post.

JOSEPH HAMILTON'S unparalleled successful system of cultivating the FIVE APPLES and CUCUMBER, together with Hints on the VINE, has been long delayed by the printer (will be ready on the 25th inst., positive). Price 6s. London: published by Mr JOSEPH MARSHALL 33, Aldersgate-street, and sold by all other Booksellers; also of Mr THOMAS WILDS, Bookseller, Ipswich, or of the AUTHOR, Thornfield, near Stockport, Lancashire.

MANNOCK AND MANLEY'S CATALOGUE of NEW AND CHOICE FLOWER-SEEDS, with full and particular Directions for the best Modes of Cultivation, with the Varieties on the Waleheren Cauliflower is now ready, and may be had on application.

THE Stock of trained Fruit trees are exceedingly fine, consisting of all the leading varieties of Peaches, Nectarines, Apricots, Plums, &c. Also the following Cherries:—Harrison's Black Heart, Adam's Crown, Waterloo, Knight's Early Florence, Black Eagle, Downton, Late Duke, May Duke, Kentish, Elton Napoleon, Early Purple, Circassian, Kentish, Morello of sorts, &c. Prices may be had on application at their Nursery, Hackney, London.—Jan 17, 1844

EARLY PEAS, &c.—HENRY D. CORMACK, Horticulturist, &c., begs to inform the readers of the *Gardeners' Chronicle* that they can be supplied with the following Early and Prolific Varieties, viz Cormack's Prince Albert, British Queen, and Early Kent Peas; Taylor's Improved Windsor, Mills' Johnson's Wonderful Bean; Manchester Red and Seymour's White Celery, Walker's Long and Hamilton's Cucumber, &c., with every other variety of Horticultural and Agricultural Seeds, at his Wholesale and Retail Seed Warehouse, 166, Deansgate, Manchester

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new varieties, the merits of which are thus noticed in the *Gardeners' Chronicle*: "THE BRITISH QUEEN on light soils, is the best of all kinds and will drive Knight's Tall Marrow out of the garden." "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time." Both varieties may be had in packages at 2s. 6d. each, at W. J. C.'s wholesale Establishment, New Cross, or the Bedford Conservatory, Covent Garden

SHILLING'S EARLY GROTTO PEA

JAMES S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the flavour of Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early and nearly double the size of any other Pea in cultivation. Quite hardy, will stand the winter well, and a good bearer: the pod large and long. They would particularly recommend it to the attention of Market Gardeners. Price 3s. per quart; 10s. per gallon, 17s. 6d. per peck; 35s. per half-bushel; 70s. per bushel. Agents—Messrs. Parry and Lucas, 139 Lower Thames-street, London; Messrs. W. and J. Noble, 154, Fleet street; Mr HANNAH, 4, Great Russell-street, Covent Garden; Messrs. Hugby and Hobbs, 61, Leadenhall-street; Messrs. GRAY, ADAMS, and Sons, Kensington.—Northamptonborough Nursery, near Odiham, Hants, Jan. 4, 1844

HOGNAMES MELON SEED

R. WHITE & Co beg to inform their Friends and the Public, that their new Culinary and Flower seeds are now ready for delivery, and include a few remaining packets of their above splendid variety of Melon, from the fruit exhibited by Mr. Fleming, at 5s. per packet. Also, true Waleheren Cauliflower Broccoli, at 2s. per oz. A new and very fine Vegetable Marrow, noticed by Dr Lindley as being superior to all others; together with every other truly desirable kind. Kitchen-garden Seeds in collections of all the best kinds, in quantities from a one-rate establishment, sent free to all parts, 21s. &c. The same in smaller quantity, at 2s. Complete collection suitable for another families, 11. 1s. A fine Collection of Flower Seeds, containing 50 distinct and choice kinds, 11. 1s. Orders from unknown correspondents must contain remittance.

Poole Nursery, Jan. 12, 1844.

TO FLORISTS, NURSERYMEN, &c.

AUSTIN & SEELEY have now a Quantity of GARDEN ORNAMENTS, which have been discovered by exposure to the London atmosphere, that which they are therefore desirous of selling at a considerable reduction.—New Road, Regent's Park.

DOUBLE ITALIAN TUBEROSE ROOTS.

THE ANNUAL IMPORTATION of these fine FLOWER-ROOTS has just been received by PAMPARINI VALLE, at his old Italian Warehouse, 38, Haymarket.

TO SEEDSMEN AND OTHERS.

FOR ABSOLUTE SALE (in order to clear the stock), in one or more Lots, a Quantity of SEEDS, consisting of Cabbage Coul flower, Broccoli, Radish, Scorzonera, Celery, Cucumber, Best Native, Purple, the Newest Potato, &c. &c. &c.

For particulars apply to Messrs. Thompson & Morris, American Nursery, Leytonstone, N.E. A Discount of 5 per cent. will be allowed to all purchasers above 10*l*

HORTICULTURAL IMPROVEMENT

READ'S PATENT GARDEN SYRINGE, for the invention of which he has been honoured with the Silver Medal of the Royal Horticultural Society, as the best instrument ever offered to their notice. J. R. has so improved the above, by an additional branch, to turn in every direction, so that water may be dispensed into a l pots in Conservatories, in a perpendicular direction, resembling a gentle shower or dowfall, and in any quantity, from a pint to a table spoonful. Likewise, small Machines, Pails, Trucks, and Garden Engines of every description, that will discharge water in a continuous, powerful stream, made on the most improved principle, and may be worked with half the usual labour required for other Engines now in use. The above are the best adapted for destroying insects, which make such deadly havoc on all choice Fruit-trees and Plants in Gardens, &c. which the Patentee, from 21 years' experience in Gardening, and 23 years in Manufacturing and Improving Instruments, can safely warrant. His valves, being solid metal, can never get out of repair. May be seen and proved at the Patentee's, 24, Regent Circus, Piccadilly. N.B.—None are genuine except stamped with the words, "READ'S PATENT."

HORTICULTURAL SOCIETY OF LONDON.—LIST OF PRIZES

OFFERED AT THE EXHIBITIONS IN THE GARDENS, IN 1844.

MEDALS AND REWARDS

The Society distributes the following Medals and Rewards, viz

	value—£	s	d
C The Certificate	0	10	0
SB Silver Banksian Medal	1	0	0
SK Silver Knightian Do.	1	5	0
LS Large Silver Do.	1	15	0
SG Large Silver Gilt Do.	4	0	0
GB Gold Banksian Do	7	0	0
GK Gold Knightian Do	10	0	0
LG Large Gold Do.	20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate. In case an Exhibitor shall receive a First Prize in any one Letter, he shall not be entitled to receive any other Medal in the same Letter, except in *CC*, *DD*, and *EE*

CLASS I.—FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A. Pelargoniums, in collections of 12 new and first rate varieties, cultivated with superior skill, in pots of 24 to a mast. GB—SG—LS—SK.

B Pelargoniums, in collections of 12 varieties, in pots of 12 to a cast. SG—LS—SK

N B. Persons exhibiting in *B* cannot also exhibit in *C*

C Pelargoniums in collections of 6 varieties, in pots of 6 to a cast. LS—SB

D Rhododendrons in pots, not fewer than 6 plants, in 6 varieties. LS—SK—SB

E Roses, in pots; Amateurs to show in collections of 12, Nurserymen in collections of 25, distinct varieties. GB—SG—LS

N B It is the wish of the Society in a future season, to require Roses to be shown exclusively in pots, and not to allow cut specimens to be exhibited at all

F Moss Roses in loose bunches, so as to exhibit, as far as possible the habit of the variety; in 12 varieties. SK—SB—C

G Other Roses exhibited as in the last letter, and in 50 varieties. LS—SK—SB—C.

N B No one who exhibits in this letter can also compete for the following

H Other Roses, exhibited as in the letter *F*, and in 25 varieties. SK—SB—C

N B Highly medals than those here offered for Roses cannot be given by the Judges. And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to be placed on the tables.

I Cape Heaths, in collections of 20 distinct varieties. GB—SG—LS

N.B It is expected that the same plant shall not be exhibited on more than one occasion.

K Cape Heaths, in collections of 6 distinct varieties. SG—LS—SK.

N B No person who shows in *I* will be allowed to exhibit also in *K*.

L Calceolarias, in sixes; in pots of 12 to the cast. LS—SK—SB.

M. Cinerarias, in pans of 24 distinct varieties. LS—SK—SB.

N Pelargoniums, in pans of 24 distinct varieties. LS—SK—SB

O. Pinks, in pans of 24 distinct varieties. SK—SB

CLASS II.—FLOWERS; for which all persons are admitted to equal competition.

P Stove or Greenhouse Plants, in collections of 30 plants. GK—GB—SG—LS.

N.B Heaths, Calceolarias, Fuchsias, Greenhouse Azaleas, Rhododendrons, Orchidaceæ, Cacti, and Pelargoniums, to be excluded from *P*, *Q*, and *R*

Q Stove or Greenhouse plants, in collections of 15 plants. GB—SG—LS

N.B. Persons exhibiting in *P* not to compete in *Q* also

R. Stove or Greenhouse plants, in collections of 6 distinct species. SG—LS—SK.

N B Persons exhibiting in *P* or *Q* will not be allowed to compete in *R* also.

S. Greenhouse Azaleas, in 12 distinct varieties. GB—SG—LS.

T. Greenhouse Azaleas, in 6 distinct varieties. SG—LS.

N B. No one can show in both classes of Azaleas.

U. Stove or Greenhouse climbers, in collections of 6 species. SG—SK.

V Exotic Orchidaceæ, in collections of not fewer than 20 species. LG—GK—GB

N B Exhibitors cannot show in more than one of the classes I, H and K.

W Exotic Orchidaceæ, in collections of not fewer than 6 species. (GK—GB—SG)

X Exotic Orchidaceæ in single specimens. SG—LS—SK.

Y. Plants in glass cases, grown on Mr. Ward's plan. SG—LS—SK

N.B It is highly desirable that these cases be made with a movable door, so as to prevent the condensation of the water on the inner tops of the glass during the time of exhibition

Z. Distinct varieties of Tall Cacti in flower. GB—SG—LS.

N.B. The GB and SG Medals are not to be given if fewer than six varieties are exhibited.

AA. Fuchsias in collections of 12 distinct varieties. LS—SK.

BB. Cinerarias, in pots, in collections of 12 distinct varieties. LS—SK.

CC. Single specimens of such as extremely rare or remarkable species. LS—SK—SB.

N.B. These Medals will be awarded by the distinct Committees, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be considered as such which has been exhibited in the Gardens in a previous season.*

DD. Miscellaneous subjects. SK—SB—C.

N.B. Cockscombs, Heartsease, Hyacinths, and cut flowers, are altogether excluded from this division. Exhibitors under this head will not be thereby entitled to a glass ticket.

EE Bunting Morlds' flowers. SK—SB—C.

N B Every seedling must be shown singly, and must be marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. Polyanthuses are to be shown in pots, and not in a collection. No person will be allowed to exhibit more than two seedlings at each meeting. Exhibitors under this head will not be thereby entitled to a pass ticket.

IN ADDITION to any medals assigned to the classes *F*, *P*, *Q*, and *W*, the SK and SB medals are offered for the two collections in those classes which shall be best adapted by the Exhibitor

N B The Society's officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy of the spelling, and the neatness of the writing.

CLASS III.—FRUIT, for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the market, and private growers, exhibit independently of each other.

N B All Fruit must be FULLY ripe and WELL COLOURED; if the contrary it will be disqualified

FF Miscellaneous collections of Fruit, consisting of at least three different kinds, Peaches and Nectarines being considered as only one kind. GK—GB—LS

N B Cucumbers, Tomatoes, Gourds, and similar Kitchen garden products, are excluded from this letter.

GG Grapes. SG—LS—SK—SB

HH Pine-apples. SG—LS—SK—SB.

II Peaches or Nectarines, in dishes of six specimens. SK—SB.

KK Other kinds of Fruit. SK—SB—C.

JUDGES.—The Judges have the power *of increasing or diminishing* the number and value of the silver medals offered by the Society for particular objects, and also *of conferring* Silver Medals or Certificates in cases not contemplated in these regulations, if they think it necessary to do so.

The Judges are also required to bear in mind that the Society's Medals are offered less for new and curious objects, than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the collector as to reward the skilful Gardener; they are also not to make any award in cases where the objects exhibited do not appear worthy of a Medal; others of a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

Copies of the above list may be obtained at 21, Regent-street, upon application to the Secretary.

NEW WORKS FOR THE USE OF FARMERS.

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JOHN MURRAY, Albemarle Street,

Publisher to the Royal Agricultural Society of England.

On January the 8th, 1844, will be published, handsomely printed in Demy 8vo., Part the First, Price 12s.,

SPECIES FILICUM; or a SYNOPSIS OF ALL KNOWN FERNS. This first part contains Cystopteris, Polypodium in part, and Platyloma to it. By Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.S., &c. &c., Vice President of the Linnean Society, and Director of the Royal Botanic Garden at Kew

*** It is intended to publish Part the Second on the 1st March, 1844.

London: WILLIAM PAMPLIN, 45, Fleet-street, corner of Chancery-lane.

HOOD'S MAGAZINE.—The JANUARY Number was published on the Morning of Saturday, 30th Dec., in time for the Booksellers' monthly parcels to all parts of the Kingdom. Subscribers are requested to give EARLY Orders for the Second Number to their respective Booksellers. All complaints of delay or difficulty in the execution of orders are requested to be addressed to the Office, 1, Adam-st., Adelphi.

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HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the Exhibitions of Flowers and Fruit, in the Society's Garden, in the ensuing summer, will take place on the following days, viz., May 28, June 18, and July 16. In addition to the regulations already announced, it has been resolved that the Judges be instructed, in making their awards, to take into consideration, whether the Plants to be judged have been exhibited previously during the season. Full information concerning these Exhibitions can be obtained upon application at 21, Regent-st.

The Gardeners' Chronicle.

SATURDAY, JANUARY 20, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Jan. 24.	Meteorological	.	8 P.M.
" "	Society of Arts	.	8 P.M.
Friday, Feb. 2	Botanical	.	8 P.M.

THE vegetable kingdom, as well as the animal kingdom, is subject to DISEASE. We need not here define very accurately what disease is. When it occurs in ourselves, we are quite aware that the functions of our frame are not carried on in the usual way. It is the same with plants. When any of the functions by which their structure and reproduction are maintained become deranged, disease is said to be present. Although the diseases of men and animals have been investigated with great care, and animal pathology and morbid anatomy have assumed an importance equal to animal physiology and anatomy, yet the same attention has not been given to the pathology of plants. This cannot arise from the want of facts to investigate, or the small importance of the subject, as every one with a garden is perfectly aware of the frequent occurrence of diseases amongst plants, and their destructive consequences. Of some of these diseases and their depredations we have many scattered notices; but, as yet, no work has appeared on the diseases of plants in the English language. This subject has not, however, been so much neglected on the Continent, especially in Germany, where Wiegmann, Bischoff, Meyen, and others, have produced treatises, more or less perfect, on the pathology of plants. We purpose from time to time to draw attention to this subject in the *Gardeners' Chronicle*, and shall endeavour to furnish our readers, in a form as systematic as we can adopt consistently with the most important facts that have been observed on the diseases of plants, and endeavour to lay down some principles for their cure and prevention. In this work, we hope not only to have the approbation, but the assistance of our readers. Just as in the study of medicine, every well-recorded case is of importance toward establishing the principles of human pathology, so every accurately-observed case of disease in plants will assist us in the work we have before us. As we proceed, we shall endeavour to point out the most important circumstances that should be attended to in the observation and relation of particular instances of disease. Wherever it is practicable, we should always prefer that all accounts of diseases of plants should be accompanied by specimens, which may be sent to our office, Charles-st., Covent Garden.

Before proceeding to any details on particular diseases of plants, we shall make a few remarks on their classification, causes, and treatment; and 1st, of their classification. We may arrange the diseases of plants in several groups, according to their situation and causes. When arranged according to their situation, those are called *general* which attack the whole plant, and those *local* which invade only a part. Such a division is, however, difficult in practice; as the same diseases may be either local or general. A better division of them is founded upon the apparent causes of disease. In this manner, we can divide them into four groups.—1st, Diseases arising from mechanical injuries; 2d, from the growth of parasitic plants; 3d, from a change in the external conditions of life; and 4th, from the influence of poisonous agents. To the first class belong all those diseases which arise from the accidental wounding of plants, the injuring of them by the various species of Mammalia, whether wild or domesticated, birds and reptiles, and the attacks of insects. To some of the diseases thus produced attention has lately been paid in Mr. Curtis's articles on Entomology. Wounds, however, frequently induce diseases, of which we shall have occasion to speak. To the second class belong the diseases produced both by flowering and cryptogamic plants. The former are not numerous, and of these the growth of the Dodder is probably most injurious in this country. The latter constitute a large group, and to them must be referred those destructive and frequently epidemic diseases known by the names of brand, smut, rust, &c. To the third class belong all those diseases which arise from the redundancy or deficiency of the various external agents necessary to the existence of plants, such as the [illegible] of [illegible], heat, air, moisture, &c. [illegible] a large number of diseases [illegible] and local, which generally consist in a deficient or excessive development of the functions of plants, or a change in their chemical character. It is to this class of diseases that we shall first more particularly devote our attention. To the last class belong all those diseases produced in plants by the action of injurious gases in the atmosphere, or of substances in the soil, which being taken up into the plant interfere with its healthy functions.

From the diseases of plants must be distinguished what are called monstrosities; the one may frequently run into the other, and it is not uncommon to find diseased plants exhibiting monstrous parts; but at the same time we do not intend to enter upon the subject of monstrous growths, which belong rather to physiological than to pathological Botany. In our next article we shall make some general remarks on the causes and on the treatment of the diseases of plants.

THE extraordinary mildness of the latter part of the past year has had the effect of throwing most collections of POLYANTHUSES into premature bloom; consequently, the Amateur will experience some disappointment, at the usual time of flowering, from his plants being weakened, unless he has taken the precaution to remove the trusses as they appeared.

Taking into consideration the quantity of seed sown in various parts of the country during the last 20 years, the number of fine varieties at all approaching the standard of perfect roundness, combined with perfect lacing and bright colours, are very few indeed. Still we trust that the impetus given to raising seedlings, from the best flowers only, will extend to "this," one of spring's gayest attendants.

We well recollect the time when Tantarara was most extensively cultivated; and though a coarse flower, it had properties which we should wish to see more strongly apparent in many varieties which have been originated since that period. It was a strong and luxuriant grower, though, from the unfrequency of its appearance, we should imagine it lost to most collections.

Alexander, which we understand was raised from seed by the late James Lee, of Lenton, near Nottingham, and the stock purchased by the late Jno. Pearson, of Chilwell, some 10 years ago, still retains its prominent position, and has taken during that time more first prizes than any other variety in cultivation. Its body-colour is intensely dark, combining with a beautiful lemon eye a corresponding margin of the same lively hue.

In our time we have seen thousands of seedlings bloom from this favourite sort, but none that have yet come under our observation have been so good as the parent, being generally coarse and undecided in character. Had they, however, been crossed with Buck's George the Fourth, we should probably have had a different result, for were we to select a variety to save seed from, the above flower would most certainly have the preference. It may be said the body-colour is of a coarse reddish-brown, and that at times the edge or lace is imperfect; still its habit is good, being a magnificent trusser, joined to one of the most perfect shapes we have; and did it possess the jetty body-colour of Alexander, with the correct lacing and brilliant yellow of Hufton's Lord Ranelift, it would most assuredly come nearly up to our ideas of a perfect flower.

Amongst the few seedlings which have come prominently into notice, and found their way to the south, during the last ten years, are those which have been raised by the late John Hufton, of Shipley, Derbyshire. Taking them altogether, they are certainly of a superior cast. His Lord Ranelift is one of the most robust habit, and increases prodigiously. Its trusses are large, but its flowers individually are below the medium size; still its ground or body-colour is extremely dark, contrasting beautifully with its bright centre and perfect lacing.

Earl Grey (*alias* Clegg's Lord John Russell) is also of the same paternity, and a great favourite. This flower is remarkably neat, and a good and decided variety. Its defect is a slight foxiness or indistinctness where the body-colour breaks off at the centre. That is, however, almost imperceptible, except to the critical gaze of the experienced florist. The lacing is distinct and regular, the flower above the middle size, a fine trusser, and very robust and luxuriant.

Squire Ray (Hufton's) is quite of first-rate character, joining to all the good qualities of the preceding varieties a beautiful trumpet eye, or tube, well filled with thrums; but perhaps the gem of the collection is Hufton's Lord Lincoln, which unfortunately, like too many other good things in the same way, is delicate in its habit. It is of beautiful and perfect shape, with its other properties finely developed. Much confusion has arisen in Derbyshire and the neighbouring districts from the circumstance of a spurious sort having been put into circulation by unprincipled parties. The true one, however, may be readily distinguished by the heart-leaves being invariably small, and at the same time having a darkish diseased appearance. As we intend to resume our observations on the Polyanthus very shortly, we shall close the present remarks by observing, that in the numerous catalogues of this flower which come under our notice, we miss several that some years ago gave us much pleasure in the collection of the late Mr. Thomas Hogg, of Paddington. If our memory does not fail us, they were Pearson's Wooden Walls, remarkable for its fine dark plum-coloured ground; Pearson's Harlequin, with a body-colour of shaded crimson, often coming; the Collier's Princess Royal, with six petals, Pearson's Commander-in-Chief, and Pearson's Competitor.

Should these varieties be lost, and we much fear it to be the case, as from inquiry we find that they are not now grown in the neighbourhood where they were raised, it will be much to be deplored, as they were all of fine habit and of good size, and were certainly decided acquisitions.—*W.*

To the honour of our country it may be said that all CHARITABLE INSTITUTIONS are sure of support if they deserve it, and it is no disgrace to British feeling if in some cases charity is misdirected. Such an army of Hospitals, Almshouses, Asylums, Schools, and Benevolent Societies as are maintained by private assistance in this kingdom is without a parallel elsewhere. We trust that every year their number will be augmented for as wealth increases, so, alas! does destitution; indeed, the one is, we fear, the inevitable result of the other.

If there is any one class of persons more peculiarly an object of compassion than another, it is surely that of aged Gardeners, whose lives have been spent in contributing to the gratification of the wealthy, while their wages have been far too small to enable them to make suitable provision for old age; for it is to be recollected that a gardener is not a mere machine, like some classes of servants, but a man, who, if he is to maintain his station in his profession, must of necessity incur expenses from which the menials of a household are exempt. He must have his books—he must buy the current knowledge of the day—he must visit his neighbours' gardens—he must spend his little earnings in fifty things of which the eye of the public knows nothing, but all which draw heavily upon his very scanty resources; so that when the hour of adversity arrives, as it may to any one, he can have no resource to fall back upon. We therefore conceive that the Gardeners' Benevolent Institution, of which a recent meeting a report is given in another column, most peculiarly claims the sympathy and support of the wealthy classes: we wish we could say that it had received it. Up to the present time, however, it has been mainly carried forward by Nurserymen, or by Gardeners themselves; for the contributions of other persons are too inconsiderable to deserve mention. Let us hope that those to whose comforts gardeners so largely minister, will now step forward and assist the funds as they already contribute to more fashionable charitable endowments. The little stock of about two thousand pounds, which a few poor persons have up to the present time amassed for the best of all purposes, the assistance of respectable old age, is less than is gathered at a single meeting of a fashionable hospital. The least possible move in favour of this charity among the wealthy would at once decuple its resources. Let us then entreat the great and wealthy not to wait to be canvassed, but at once to stretch forth their bountiful hands to the Gardeners' Benevolent Institution, of which none can be more deserving of substantial assistance. We shall be most happy to receive subscriptions and announce them in our columns.

While we say thus much for the English association for the relief of poor *and aged* gardeners, we must by no means omit to notice the existence of a similar institution in Ireland, which we are glad to find from a report before us is moving on satisfactorily, although very slowly. The committee of the Gardeners' and Stewards' Provident Society of Ireland state that it is in "a most prosperous state," and upon reference to the published accounts, it appears that the receipts for the year amount to the sum of *ninety pounds* for all Ireland. If this constitutes prosperity, let the rich Irish Landlords only consider how valuable to such an institution the smallest donation must be, and how easily they may win the gratitude of their fellow-creatures, at an expense, of the occurrence of which, even annually, they cannot by any possibility be conscious.

SEEDS OF GARDENING.—No. III.

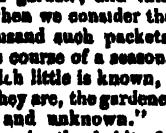
(Continued from page 20.)

From oft-repeated examinations, I can assure you it is difficult to find [illegible] your purest seeds, and still more so to find parcels that are free of filth of every sort. And the more you examine your seeds, the more necessity you will see for picking them all clean, and administering them in such form as neither moth nor mouse can come at them.

But as these remarks will, perhaps, have little weight with an extensive class of your readers, I must reason a little closer, and try to bind it, if possible, to the services of Horticulture by threads drawn from other

…knowledge of art already familiar to the minds of all; but before any improvement is contemplated, let me state the matter as it stands now. The seed-grower harvests the crop, and frequently, for a very sorry remuneration, hands the seeds over to the wholesale seed-dealer, who again hands them to the retailer, and in the stores and granaries of these gentlemen seeds generally get on good. About Christmas or soon after, seeds come into the hands of the users; and now they are placed on shelf and in drawer, in canvas bags or in brown paper, in an atmosphere cold and damp, or dry and musty, just as the shed or garret may chance to be where they are stowed; and the seed-rooms of many of our boasted garden establishments are like the sheds, or more properly shellings, for the workmen and their tools, lamentably mean and ill-arranged as regards furnishing, ventilation, and dryness. I could scarcely find a room in any of them that I am acquainted with fit to keep a bag of seed in; for a seed cabin, or cabinet, should be dry without being hot, and ventilated without being open to wind and weather. This dryness and ventilation seems essential to the welfare of seeds to which the air has access, and cannot be overlooked with impunity in the keeping of loose seeds, of which the following are examples:—An ounce of Broccoli-seeds came to hand (not in a bag) in a square of brown paper, folded twice, turned up at the ends, and marked, in words more or less misspelt, with its quantity and name. This packet, with 11 others, had a brown-paper round them, and a string which turned the dozen out of the seed-shop very decently, but unfortunately only three or four out of the dozen had to be opened at one time, and of these only a small portion, say half, or perhaps only one-fourth, leaving the rest in confusion, unseemly driblets dragged from the jacket pocket of the sower, in untied, ill-folded papers, liable to be upset by the wind, or wetted by the rain, in a basket on the ground, in the open garden, and this confusion is wonderfully increased when we consider that not a dozen, but little short of a thousand such packets go through a gardener's hands in the course of a season, and of these many are novelties, of which little is known, and that little only by a few; yet here they are, the gardener and his novelties, "alike unknowing and unknown." The Horticultural Society has long been in the habit of sending a printed label with the name and properties of the articles pasted on the samples of seeds sent to the Fellows annually. I am glad of this, for it serves as a precursor to a more systematic arrangement; thus far and no farther have we progressed, December, 1843. Now let us proceed anew.

Every packet of seeds that comes into the gardener's hands should be in tin boxes, each box having on the lid the name and date of the sowing of the seeds, and likewise a number or mark of reference to the name of the grower of the seeds; or, which is better still, a seal securing the safety of the package, stamped with a representation of the plant whose seeds are inclosed, and the initials or name of the grower or vendor who guarantees their quality. Such precautions would enable honest men to trace good things to their source, and bad ones to their author, and act upon the hints so gained in buying seeds for the future, and I can see no reason why seed-growers should send out seeds so slovenly to the world as to be liable to mixing and injuries of all kinds, whilst such as Curtis and Harvey send out gunpowder—of less value than garden-seeds—in close tin-cases, well wrapped in paper, and beautifully labelled with letter-press and picture, setting forth the manufacturers' address and specifying the uses and degree of fineness of the inclosed grain. Some foreign growers send Stock-seeds to this country in sealed red leather pouches, so you will perceive that I am only wishing to perfect a system already begun. Supposing, then, the lid of the tin box containing seeds to stand thus—



and the number 2213, to signify in the vendor's book the name of the person that saved the seeds, or else to have his seal; in which latter case his seeds would be encased before he sold them, and sealed to prevent imposture. But this is not all; for around the tin box there must be another label with the names, botanical and popular, of the article inclosed, with its character and uses according to the best practice; this would convey the information home to the user, and as the seed-grower is never loth to tell the seed buyer the good qualities of the plants of which he has the seeds, there can be no difficulty in coming at the kind of information I speak of; and when once written, it can be printed for the veriest trifle now-a-days, and the cost and labour, with tin boxes and printed labels, will not be one whit more than under the present system of packages in canvas and paper for the following reasons.—The boxes in which Walker sends out 500 of his percussion caps came first to my hands as a handy sample-box. I weighed two ounces of Yellow Mustard, and found this small box (which I inclose) to hold it [illegible] the key to our tinman and brazier, Mr. Mellow of Uttoxeter, and he said he could supply such at less than 1d. each. These boxes, therefore, may safely be taken as large enough for single ounces of ordinary seeds. The next tin box that came to my hands was one of Hill and Co.'s Presburgh wine-biscuit-boxes. I found it to contain nearly half-a-pock of Yellow Mustard, and the value of this box is 4d. Here, then, is a quart of seed-containers for 1d., four quarts for 4d. Mr. Hill has, moreover, set forth some useful hints on his biscuit-labels. His says if the [illegible] are kept dry and in their packages, they will retain their delicate uniformity during a long voyage; nor will the change of climate deteriorate them." Mark this; his bread is not mouldy for a year or two, because he packs it properly. Our barks and seeds, if similarly treated, might fare the same.—*A. Forsyth, Albion Towers.*

(To be continued.)

THE ROSE-GARDEN.—No. I.

The best work on the cultivation of the Tree-Rose with which we are acquainted is one published in the year 1830, with the following title

"PRACTICAL INSTRUCTIONS
FOR
THE FORMATION AND CULTURE
OF THE
TREE-ROSE,"
BY INOCULATION AND GRAFT UPON THE WILD BRIAR
Illustrated by Twenty four Woodcuts



"Parva leves capiunt animos"

Notwithstanding its value, this work is scarcely known. Here and there an amateur possesses it, and appreciates its excellence, but by the majority of people it was never heard of. We have now the satisfaction to announce that the copyright has been purchased for the use of this Paper, in which the whole Volume will appear in the course of the year, in a series of weekly articles, with numerous corrections and alterations by the talented Author *A. H. B.*

"*Preface.*—When a traveller gives an account of the country he has been wandering over, he frequently delays writing his description until he has been somewhat accustomed to the place, its manners, customs, and inhabitants; and thus, instead of mentioning what struck him at first sight, and is, in reality, the most amusing and instructive, he publishes his work as a hard outline, deficient in those light shades and fine touches, without which his picture is unequal and incomplete.

"Thus it is with writers upon experimental subjects. They frequently suppose that a certain quantity of technical knowledge is previously in possession of the reader, and omitting some necessary part of their descriptions upon this assumption, the theory to the reader is incomplete, and baffles his endeavours to act upon it.

"With a desire to avoid these errors, the memorandums in the following pages have been noted down from time to time, they are the result of an examination of all the works upon the subject accessible to the Author, during a practice which commenced in perfect ignorance, and ended by almost certain success.

"The great inducement to collect together the following remarks arose from the observation of the frequent failure of common Gardeners, who usually act from practice alone, and therefore do not always vary their operations as often as the changeableness of the year and the nature of the place in reality require.

"A fact aptly illustrated by a failure in eleven cases out of twelve in the first experiment on this subject witnessed by the Author, though the operator was called an experienced hand.

"Be it observed, that while the Author acknowledges himself indebted for much matter, and almost entirely for arrangement, to works published upon the subject, especially to a small pamphlet lately published in France, yet it is upon his own practice and observations that he depends for his assertions, and from his own failures (partial or entire) that he endeavours to point out the deficiencies likely to prevent success, and the means and observations requisite to improve upon it.

"Amongst the amusements of the most refined and elegant minds, those which have some reference to the productions of Nature are perhaps the more satisfactory, both in practice and result.

"Ornamental scenery, the culture of exotics, the laying out of pleasure grounds, &c., are matters which involve a considerable expense, both in commencement and continuance, though perhaps only indulged in to a small extent, but the *gradual* [illegible] improvement of a place, by adding to the number of ornamental shrubs, filling up vacancies, &c., is an amusement, indulged at a less expense, requiring only occasional assistance, a little method, and a few implements for the purpose of propagating the species desired, many of which will bear to be transplanted repeatedly, and, costing little at first, are fit subjects of practical amusement to those who like to have such matters under their own especial eye, and are interested in them in proportion as they themselves can appreciate and attend to them.

"*Introduction.*—Amongst the ornamental shrubs in cultivation, the Rose has long been the favourite, from its shape, permanence, the variety of its species, and the brilliancy of its colour; one thing, however, remained desirable, viz., that the unsightliness, as it were, of the plant should be corrected by its springing like most other ornamental shrubs (which are not feathered to the base) from a single stem. As well as that its height should place it above the other shrubs which (particularly evergreens) would otherwise hide, choke up, and injure the plant.

"The mode adopted to gain this point, which has also added to the beauty and regularity of the plant, as well as to the profusion of its flowers, (though it is said to have injured its durability,) will be treated upon in the following remarks, together with the means of preserving the health and improving the appearance of the tree.

"There appear to be but three reasons for entering into competition with mechanics in any branch of their work: the first, to effect our own purpose, with our own hands, and thus furnish ourselves with occupation and amusement; the second, to avoid the expense attending the labour of others; and the third, and more difficult, to improve upon the manufacture, by dexterity of operation, care in completion, and choice of material.

"I shall endeavour to show that these points may be perfectly obtained: the first, by the insurance of success to the operator from a clear and comprehensive view of the subject; the second, by a diminution of expense; and the third, by an evasion of those deficiencies which are the result of scanty labour and general inattention.

"The usual price of a tree Rose is from 5*s.* to 10*s.* 6*d.*, the materials required to make any quantity are few, of little or no value, and the Stocks* themselves are procurable in any number, at any price, in the country.

"Rose trees, properly treated, rarely perish in a good soil, and when they do, it is in general during the first season, and before any trouble has been bestowed upon the Stocks. As the Stocks will be picked, they will more than equal those in common use, and being subsequently budded upon, according to their size, health, and fitness for the species they are intended to carry, the success will be more complete than when no selection is made in the material, and the cultivation is confined to a demand for particular species, and the labour and time bestowed upon them, limited by a due regard to the per centage they are intended to return.

"The injury from wounds, also, being commensurate with the first planting the Stock in the salesman's nursery, the damage done to it by the time it has become ornamental is frequently irretrievable, and the tree vegetates weakly for a season or two, (especially if small,) and then dies, or is broken off by the wind. This, a careful attention to the following rules will effectually obviate."

(To be continued.)

* The first of these articles is the only one absolutely necessary; the remainder are the operator's [illegible]

[illegible]
Knife
Lancet [illegible] to [illegible]
Pencil
Steel pen and [illegible]
Bottle of water
Piece of lead

LISIANTHUS RUSSELLIANUS.

This fine annual, introduced from Texas in 1835, is still uncultivable in the hands of many good gardeners; yet we occasionally see noble specimens on the exhibition tables near London, a sufficient proof that the plant may be grown well under proper management. Among the most successful cultivators of it is Mr. James Cuthill, florist, Camberwell, who has put into our hands the following account of his mode of treatment.—The best time to sow the seed is in March, and as the seed is extremely small it requires particular care. If deposited in the usual way, upon loose soil, the first watering carries the seed along with it, and hence the failure. Prepare the following compost—half loam, the other half leaf, peat, or bog mould, with a little sand, place plenty of drainings in the bottom of a 48 or 32 pot, fill it with the compost very tight, and on the top place half an inch of sand; damp the sand with water to harden the surface, sow the seed, and sprinkle a very little dry sand on the top. Place a propagating-glass over the pot, or a piece of glass will do, place the pot in a heat of 70° or 80° with a pan under it for future watering, at no time water on the top, the pan ought never to be allowed to get dry. The seedlings will appear in three weeks or more; when about three weeks up, plant them singly in a 60 pot in the above compost, with plenty of drainings in the bottom. Place them again in the back of your Cucumber pit or frame, after this you cannot give them too much water over head and in the pans, and by the autumn, if they have been kept in a good growing heat, they will be fine little bushy plants. Top them at every joint; in September shift them into large sixties, merely to keep their roots in a more intermediate state for the winter; after this all top watering must cease, and a pan must be placed under each pot to receive the watering. As the winter approaches not a drop of water must be allowed to fall on the plant. The drier the top mould, and the leaves and stem, the more certain of preserving the plant. The best place I have found is a one-light pit, heated with a lining of dung from 50° to 60°; air given front and back, so that no damp can fix on the bars and drop on the plants. The second best place is the coldest part of the stove, very near the glass. I have also kept them well in the warmest part of the greenhouse. In all cases water just sufficient to keep the plants from flagging in the winter is dry, once a fortnight; if damp, quite enough

ed in. Towards the end of February place them in a Cucumber pit or frame, in a heat of from 70° to 75°, and when they begin a fresh growth shift them into as large pots as convenient, remembering the larger the pot, the finer the specimen; my largest plant had 600 blossoms on it, and was grown in a No. 8 pot. As the spring advances it is almost impossible to give too much heat and moisture. They are very fond of liquid manure. It is useless to grow a fine plant in any place approaching to dry heat, nor in less than 70° to 80°. I have grown them 6 inches in 7 days. In removing out of the pits, great care must be taken not to allow the sun to shine on them for some days, as the change from a damp close heat to a dry house will be too much for them. By the above treatment they will come into flower about the middle of July, and keep blooming from two to three months.

ENTOMOLOGY.—No. LIII

THE ELM GALL APHIS.—The Plant lice are so familiar to the gardener, that to enlarge upon the mischief occasioned by them is quite unnecessary here He will, however, find in a recent Memoir laid before the Royal Agricultural Society, the serious effects produced by some of the species upon the Turnip and Cabbage crops * The Aphis before us is not one of those which blight the fair prospects of the cultivator, it merely disfigures the trees, and it is doubtful whether it be an inhabitant of this country, as however it affects an English tree, it may have escaped observation, and as the gall or nest is very remarkable, and has never been noticed in any British work, it will prove an interesting addition to our knowledge of this family of insects.

In my rambles about Rome I first observed these excrescences (fig 1), and afterwards in the neighbourhood of Tivoli, I saw them abundant in hedges leading to Adrian's Villa, this was about the middle of June, and they were attached to the long young shoots of the Elms They varied from the size of a Walnut to that of a large Apple, and were produced at the apex of the short lateral twigs, whose growth was thereby checked, the gall being formed at the expense of the leaves. These excrescences are very light, the external surface is exceedingly uneven, leathery, greenish, and not thick; being hollow, with a considerable quantity of fluid inside, and containing at that season multitudes of the Aphides. The fluid, which was perfectly limpid, flowed in great quantities from the galls of the specimens attached to the branches which I cut off, and when the liquid dried it became gummy

The only gall which had previously come under my notice bearing any resemblance to this in its formation, was that of the Aphis Bursaria of Linnæus, which I shall describe and figure in a future Number, but the Cabbage leaves become distorted and crumpled in a similar way by the operations of the Aphis Brassicæ Linn † There seems to be three species of Aphides which affect the Elm trees —one induces the leaves to roll up, another forms a stalked gall beneath the leaf; and a third causes large excrescences to be developed upon the buds. All these have been confounded by Linnæus and Fabricius under the Aphis Ulmi, but it may be fairly presumed that these galls and distortions, varying so greatly from one another, are the productions of as many varieties of the Aphides.



We will now describe the Elm-tree gall Aphis, which has been named by De Geer "Aphis Gallarum Ulmi." The rostrum is scarcely so long as in the genus Cinara; but it appears to be stouter at the base; the winged females are deep black, powdered with white (fig. 2), the antennæ are filiform and short, composed of several joints, elongated at the base, and decreasing in length to the apex; wings four, superior, very large, transparent, with a blackish oval stigma; nervures pallish, forming an ovate marginal cell; the second furcata at the posterior margin, and not resembling the subcostal nervure, the other two oblique; inferior wings much smaller, with a subcostal and two oblique nervures; legs six, not very long but slender; tarsi short, biarticulated, terminated by two minute claws. The apterous females are brownish, the apex of the abdomen a little woolly; the ducts very small, forming tubercles only; legs and antennæ short; some of the adult ones are broad behind, and powdered all over. The pupæ are more elongated, with the rudimentary wings already applied to the base of the abdomen. To complete the metamorphoses there is added the eighth figure, which is one side of the insect is represented in the out; [illegible] four wings and six legs; the thorax has [illegible]

* Vol. iii. p. 49. † Ib., 51.

exhibit the natural size when the wings of the female are expanded, and it is presumed that the males are similar, but I have not met with that sex.

This species is allied to Eriosoma, from which it is readily distinguished by the forked nervure in the superior wings, and forms the transition to the genus Cinara,‡ but the oval stigma is a character not to be found in that group or amongst the Aphides § From its economy I expected to find it closely allied to E Bursaria; but it does not belong to the same group, and it makes the nearest approach to a species with a black stigma, which I find flying about Fir-trees in great abundance, and this may prove to be the A Pini of Fabricius, but as I am unable to determine this from his vague description and confused synonyms, I have called it C stigma Until the Aphides have been more completely investigated by scientific men, we must refer the 'Elm tree gall Aphis" to the genus Cinara, in which, with the C stigma, it will form a section, having a thickened oval costal spot, from its structure we may also learn that this group ought naturally to follow the Eriosomata of Leach, and that the true Aphides should not intervene, as they do in "Curtis's Guide" || The typical Eriosomata were thus characterised by the late Dr. Leach —"Abdomen without tubercles or horns, antennæ short and filiform; body tomentose" He adds—'The Eriosomata form what are called improperly galls on the stalks of trees near their joints, and knobs, which are in fact excrescences caused by the efforts of nature to repair the damage done to the old trees by the perforation of those insects whose bodies are covered with down" As an example of this genus he gives the E Mali, which is the Aphis lanigera of authors, and the American blight of gardeners —*Ruricola*

BEES.—No III.

(*Continued from page 21*)

Though Bees can be easily prevented from swarming, yet it is not profitable to do so indeed all systems that prevent swarming are bad and uneconomical The systems of Dr Bevan and Mr Nutt ought to be eschewed by all means Generally speaking, two swarms ought to be taken from almost every stock hive every year In an extraordinarily rainy year it may be injudicious to take a swarm at all, particularly from those that were very weak in the spring months. The period of the year at which swarming should be prevented will vary according to the season and locality In Middlesex, for instance, hives cease to increase in weight about the beginning of September. Where this is the case no first swarms (whether virgin or not) should be taken later than the middle of July

Swarming is prevented by augmenting the hives, and the most profitable modes of doing it shall be noticed by and by. At present I would chiefly direct attention to the artificial system of swarming, which supersedes the natural system It is thus accomplished —Blow a little smoke from a bit of fustian or corduroy rolled up in the form of a candle (which ought to be used in handling hives) into the hive, place it on the ground inverted, a few yards from the stool—put an empty hive on it, and fasten a cloth round about the hives to keep in the Bees: the hive prepared to receive the swarm must now be placed on the board whence the stock was taken then drum or rap with open hands on the bottom hive for the space of 8 or 10 minutes—untie the cloth, take off the upper hive, and put its crown on the ground Spread the cloth over the combs of the old hive, and now look amongst the Bees which are thus drummed up for the queen As soon as you see her, give the hive a violent shake and tumble the swarm into the struck hive, in the same way in which you would put Peas out of one basket into another. If too many Bees are drummed up put the queen into the struck hive with a spoon, or your hand, in order that she may not be amongst those that are returned to the stock-hives So many Bees as will barely cover the combs ought to be left Place the colony a yard to the right—the stock a yard to the left of the old stool You need not be afraid that the Bees will not hatch queens, and that it requires a greater degree of practical adroitness to accomplish this than you possess All that is necessary is a willing mind. This system has, for more than 30 years, been adopted in one of the largest and most profitably managed Apiaries in the British Empire It is impossible to form an adequate conception of the advantage of the artificial over the natural system. When the artificial system is adopted, no swarms are lost; Bees are prevented from clustering and mispending their time outside, attendance is rendered unnecessary, more second swarms are obtained, and the honey may be taken from the stock on the 21st day from the time the first swarm was taken off, without either Bees or brood being destroyed.

"While I would recommend this system of artificial swarming, I would condemn that system which Dr Bevan has recommended at p. 157 of "The Honey Bee" His system is the following —"Towards noon of a fine day, or almost at any time, if the Bees cluster out much, let a stock-hive be removed to a distance, and a spare hive or box be put in its place, to one box of which is attached a comb containing workers' eggs, or very young larvæ of the same sex, the outhers, or the Bees that are abroad, or both, as the case may be, will then enter the new habitation, cluster round the brood, construct one or more royal cells, inclose one or more eggs, and raise a young sovereign; and thus, if the season be favourable, form a flourishing stock." I doubt very much whether this can be accomplished; for the Bees, if thus dealt with, would raise two or more sovereigns or princesses, and with one thereof send off a colony on the 13th day after the eggs were put—that is, on the 6th day after the princesses are matured. In some cases a swarm may not issue, but even then it would not "form a flourishing stock," for the combs constructed under these circumstances would consist chiefly of drone-cells, the Bees being apt to construct this sort when they have one or more queens in embryo. In taking off second swarms a little caution is necessary, for if the queens should be matured they will burst out of their cells as soon as you begin to rap, and it may happen that all of them go with the swarm; but by taking a swarm off as soon as one queen only is matured, attendance becomes unnecessary, and the queens take the drone, and consequently commence to lay two days sooner.

Some Apiarians think that it is not profitable to take second swarms, but all who keep their Bees in large hives think differently. When you come to know that, if Bees are kept in large hives, every family, in fair weather, before the first swarm is taken off, gathers from two to five pounds of honey every day, you will say with me that artificial swarming is, in a pecuniary point of view, the greatest invention that can be found in the annals of Bee-history; and that it is extreme folly to allow Bees to cluster and squander their time about the door of the hive Lady Apiarians who are unable to take off swarms would do well to employ some person who is able to do so for them, though he charged half-a-crown for the taking off of every first swarm

Second swarms do not leave the hive from want of room; and for this reason, augmenting the hives will not prevent their coming off Cutting out all the princesses but one (when they are in their cells) will prevent a second or third swarm from being thrown, but this cannot be accomplished in every hive To be sure, throwing a swarm of this sort back will cause it not to issue again, at least in 99 cases out of 100 But about the second or third week of July, which is the time to prevent swarming, there are plenty of queens ready, or nearly ready, to burst out of their cells, either in your own or your neighbour's hives. Well, then, whenever you take off a first swarm, about the middle of July or earlier, if you do not want a second swarm, cut out of another hive a cell that contains a queen, and put it in the hive whence the swarm was taken If the queen be matured, take off the lid of the cell and let her run into the hive, but if she is not fully ripe turn up the hive and fix the cell between two combs This is an item in Bee management of first-rate importance, for the queen, thus introduced, will soon begin to lay, whereas, if the Bees had been allowed to rear a queen, there could not have been any eggs laid sooner than the 24th day from the time the swarm was taken off If stock-hives are about 40lbs. weight when the first swarms are taken off, it is advisable to let the Bees rear queens, in order to obtain the honey before the young queens commence to lay The Bees of stocks are put into second swarm size hives, and are termed "turn outs" Sometimes the stocks are kept in a garret, or in some out-of-the-way place without Bees [illegible] September, when they are brought to the Apiary and furnished with Bees —*A. Pettigrew, Wrotham Park, Middlesex.*

(*To be continued.*)

‡ Curtis's Brit Ent., fol. and pl. 178. § Ib., fol. and pl. 277.
|| Vide Zoological Journal, 1840 and 1842.

Home Correspondence.

Pseud-Acacia.—I saw in the *Chronicle*, lately, a communication from Mr P. J. Selby, respecting the Pseud-Acacia, and as I was some years ago interested in shipping I paid much attention to the qualities of the timber of which vessels were constructed; it was at that time the highest recommendation of an American vessel to be built of "live Oak, Locust, and Cedar" The late Mr. Cobbett, who was so energetic in his recommendation of the culture of the above tree, was perhaps not aware of a fact well known to many of the ship builders of New York, viz, that the durable properties of the timber depend very much on the soil and situation where it is grown, and his experience of it was probably derived from his residence on Long Island, a great part of which is well adapted to produce the qualifications which he attributes to it. The situation best calculated to give to this timber the property of durability is the vicinity of the sea, and I believe that Locust timber, grown out of the range of the immediate influence of the sea breezes, will not have the property of durability in the perfection described by Mr. Cobbett. The size to which it attains, and the rapidity of its growth under favourable circumstances, (probably of a rich alluvial soil), I do not think was more exaggerated than was usual in the writings of the above author, who was noted for taking a sanguine view of every subject and for writing in a strong nervous style and to its durability I can bear testimony, from experience of the state of treenails (wooden bolts) which had been upwards of 30 years in a vessel, and which were so sound as to admit of being backed out by means of an iron drift bolt when the vessel was brought under repair From the straightness of its growth in the lengths (15 inches to 3 feet) generally used for treenails, and from its property of splitting truer to a size than most other woods, coupled with its durability, it is a favourite fastening for vessels. The Acacia or the Locust is not singular in its fondness for the neighbourhood of the sea The Live Oak, it is well known, flourishes best—nay, it is seldom seen of any size elsewhere—on the coast of South Carolina and Georgia, and more especially on the small islands which are so numerous along the coast between certain latitudes; in fact, wherever the "Sea Island Cotton" flourishes, the Live Oak is in the greatest perfection.—*Acacia.*

Orchidaceous Plants.—At p. 7 of the *Gardeners' Chronicle* "D. B." states in the Calendar of Operations, that Orchidaceous plants "need not be watered or entoned to grow for a long time." I should like to know how long he means. It is not only a duty incumbent on every gardener to study, as it were, the nature of his plants, but also to become acquainted with the changes of

the seasons to which they are subjected in their native countries, and it is a matter of great importance to know the length of the different seasons suitable for the Orchideæ generally cultivated in our stoves. In Brazil, Mexico, the East Indies, &c. where many of them are found, their season of rest is rarely more than six weeks, when they begin to put forth young shoots; and this, according to the laws of nature, shows that they require what is an early season of growth, in order to have light and heat to mature their pseudo-bulbs after they are of proper size. Therefore, owing to the shortness of our summers, Orchideæ ought to be encouraged to grow early in spring, and receive their season of drought as early in autumn as possible. This I find to be much more advantageous than if they were in a growing state in the month of November, when water must be withheld, to keep the unripened bulbs from damping off. Were I to act according to "D. B.'s" directions, and begin to entice my Orchideæ to grow in the month of May, which I consider to be "a long time," next year I should have young shoots damping off, pseudo-bulbs shrivelling, and the plants one-third less than what they were last year.—*Basilicus Fibræ.*

Destruction of Snails by common Salt.—Having strewed some common salt upon the ground, I placed a number of snails amongst it; all those that came out of their shells and touched the salt, immediately threw out a green-ish globular froth, and in a few minutes were dead. I think this fact may be turned to some account amongst farmers and gardeners.—*J. M. T., Hillsborough.*

Twine for fastening Wall Trees.—In training plants and fruit-trees to the wall I have for some time used twine dipped in linseed oil, and dried, instead of bits of cloth; it is neater, more convenient, and affords no harbour for insects. Drive the nail into the required place, slip a tie with the twine over the head, bring the branch down and secure it with a knot. A tree secured in this manner is capable of being better trained, the branches better secured, and the whole appearance more workmanlike.—*J. C. B., Exon.* [We perfectly agree that twine used for that purpose would have a neat appearance and offer no harbour for insects, but it is objectionable because it is apt to cut the branch, and is on that account very productive of canker; it would also occupy much more time to fasten a tree to a wall with twine than by the common mode of using bits of cloth.]

Paint for Old Walls, &c.—The walls here are very old, and having had trees nailed against them for probably more than a century, they were covered with multitudes of nail-holes, and in those holes, no doubt, were numbers of insects ready to emerge and infest the trees. In spring it occurred to me that a wash for the wall would be of greater service than one for the trees; I therefore prepared a mixture of lime and Roman Cement, in equal quantities, in a fresh state, adding sufficient water to make it of such a consistency that it might be applied with a brush. This paint was put on in a fine day after the trees were pruned, and before they were nailed; this is the time I find most convenient for applying it. A great advantage in using this composition is, that it does no injury to the trees themselves. In order to ascertain this, I selected two young Peach-trees that had been the previous year severely attacked by green-fly, so much so that the trees were nearly dead; these I covered with a thick coating of the mixture, and in the following spring they burst through the paint with more than ordinary vigour. They are now as healthy trees as could be desired. If the walls are very bad, two coats of the mixture would be better than one; and if it is desirable to make it a little darker or lighter, the use of a larger proportion of lime or cement will effect the object. The inventor of the "Metallic Anti-corrosion Black Paint" strongly recommended to me that material for the purpose of painting the walls, adding that the fruit ripened a fortnight earlier on walls so painted. I was much afraid that by exciting the blossoms too early they would be more susceptible of injury by frost; but I have no experience in the matter, and should feel obliged for information respecting its application to walls.—*E. H. Kemp, South Lambeth.* [It does not answer to excite wall-trees unless some efficient protection is at the same time provided. But we doubt the fact of any kind of coloured paint advancing the maturity of fruit a fortnight. The experiment was fairly tried some years ago, and no advantage was discoverable.]

Lonicera Marryatta.—This is one of the best conservatory climbers, it is always graceful, and I never saw an insect infest it. It cares not for shade or sun; at the present time I have one covered with scarlet Pea-flowers, many of which have been expanded for three weeks, and many more buds have yet to open. Tropæolum pentaphyllum is also an excellent plant for the conservatory. Allow me to confirm what Mr. Beaton said about not opening the upper lights of a conservatory. If they are kept close tender climbers will bloom in perfection therein; last year I had Mandevilla suaveolens, Ipomœa Learii, Passiflora alata, in fine blossom during summer and autumn in a close house.—*Flora.*

Rhizomorphus.—The fructose root is found by labourers, trenching ground to a considerable depth; it is frequently encountered with any vegetable growing on the surface. It is not found in any particular soil, nor in the immediate neighbourhood of trees. One of the labourers says he has found it in light sandy soils, but the last root that was dug up in rich loam. The fructose root is not so tough as some that are found, but it always has a dead appearance. Could you kindly afford any information respecting it?—*Rusticus.* [This plant is undoubtedly much more common than Botanists suppose, for close research has produced many specimens which have been under our observation. It is a fungus, called Rhizomorphus medullaris, consisting of a white fibrils very little is known to Botanists.]

Hammond's Cape Broccoli.—A correspondent, "W. N." informs us that, seeing this Broccoli advertised in the *Chronicle* last spring, he purchased two packets of it, and sowed it at three different times; the plants all proved to be tender, although they were stated in the advertisement to be hardy enough to stand the winter. "W. N." imagines that he has not got the right kind. Will some of our readers say whether it stands the winter with them?

Cause of Mildew.—Having seen at p. 823 of the *Chronicle*, remarks by Mr. Wighton on the cause of mildew, I am induced to offer my opinion on the subject. Mr. W. observes,—"Supposing six practical gardeners were asked the reason why their Peach-trees were mildewed, they would most probably all assign it to different causes." He then states the supposed causes, viz.:—"Dry or damp situations, strong or light soils, or a Fungus either on the roots or on the branches." It is true that there is, perhaps, no subject connected with gardening on which the opinions of gardeners are more at variance than that of the cause of mildew. I do not, however, attribute it to any of the above causes. I believe that the Fungus which we call mildew on trees is not the cause but the effect of the disease, and that the disease is occasioned by a sudden transition of temperature. In my practice in Peach-forcing I have had no cause to complain of mildew, when the night temperature was kept in due connection with that of the day; but even under glass, without the application of artificial heat, I have had Peach-trees as much injured by mildew as any that I have ever seen upon the open walls. It must have been observed by every gardener, that the disease is most prevalent in spring and early in summer. At that season it is not uncommon here to have our temperature varying from 30° to 70° in one day. From the effects of low temperature the sap of the tender shoots becomes congealed, and when it becomes suddenly warmer this congelation is too quickly liquefied, and in place of circulating through its regular channels, it bursts forth through the pores of the young shoots and leaves, and the Fungus-like substance immediately follows. If the disease was occasioned by anything but variation of temperature, the result would be the same every year; but this is not the case, for we find trees and other permanent plants, the one year totally escaping the disease and the next almost destroyed by it. This goes far to prove that variation of temperature is the sole cause of the disease. Consequently there can be no preventing it, where there is no control over the temperature. Sulphur is sometimes applied as a remedy, and it kills the Fungus; but this, as above stated, is only the effects of the disease. Some imagine having destroyed this, and soon after perceiving their trees beginning to grow again, that they have effected a cure; whereas, in reality, this new growth is entirely the result of a more genial temperature.—*J. Gavin, Donibristle Park, Fifeshire.*

Societies.

HORTICULTURAL SOCIETY.

Jan. 16.—R. W. Barchard, Esq., in the chair. J. Stewart, Esq., M.P., was elected a fellow of the society. From Mr. W. P. Ayres, gardener to J. Cook, Esq., were two remarkably fine specimens of Epacris nivalis and impressa. Both plants were about 6 feet high and 3 feet in diameter, and were uniformly covered with blossoms. Mr. Ayres states that the treatment which they received during the past season differed much from what is usually considered proper for this tribe of plants. Instead of being grown in an airy greenhouse, they were subjected to a close moist heat of from 60° to 90°, with no more air than was necessary to keep the heat from exceeding what is above stated. After sunset, especially on dewy evenings, air was freely admitted; but the plants were syringed, and the house was closed before the sun came upon it the following morning. The rate of growth was said to be so rapid that to keep the plants from flagging they had to be shaded during bright sun-light. Many who saw them during summer said that they would not set any flower-buds; but the result proves that a fine show of flowers is not incompatible with luxuriant growth, provided the precaution is taken to get the young wood properly matured before winter: a Knightian Medal was awarded for them. Mr. J. Robertson, gardener to Mrs. Lawrence, sent an exceedingly fine specimen of Epidendrum nutans, about 7 feet high and 3 in diameter, bearing nine main-shoots covered with greenish blossoms; this is an old plant, and well known, but it is very rarely seen in such perfection as in the present instance, and is an evidence of what good cultivation and management can effect. There was also from the same collection a pretty plant of the showy Lælia anceps, having long slender flower-stems, on the points of which were situated its bright lilac and purple blossoms; likewise a plant of the scarce Cypripedium barbatum, and one of C. venustum, along with well-grown plants of Phalæ Tankervillia and P. Intermedius. Mr. Robertson also exhibited a pretty plant of Lælia autumnalis, and a well-grown specimen of Centradenia rosea; the latter, from Sierra Leone, is a plant of easy cultivation, and is exceedingly beautiful when covered with brilliant rose-coloured star-like flowers. It has likewise the good property of being a free bloomer. Plants of Batemannia Colleyi, Aspasia epidendroides, and Zygopetalum crinitum from the same collection, were also sent for exhibition; a Knightian Medal was awarded for the three first plants. Mr. E. Plant, gardener to J. H. Schröder, Esq., sent a fine specimen of Coryanthes maculata, having a pendant scape of about one foot and a half long, at the end of which were three fully expanded large, yellow-coloured blooms, beautifully spotted with purple. From Mr. S. Read, gardener to T. J. Lester, Esq., was an exceedingly well-grown specimen of Clerodendron splendens, having fine fragrant scarlet blossoms; this is one of our prettiest winter stove plants, and under good management it is an abundant bloomer; a Banksian Medal was awarded for it. Messrs. Veitch and Son, of Exeter, sent a small plant of a Gaultheria, named ferruginea, having considerable resemblance to G. Shallon; it was imported by Mr. Veitch from the Organ Mountains, through Mr. W. Jobb; the plant exhibited had been standing in a mild pit, and Mr. Veitch states that he has one planted out in the open border, and considers it sufficiently hardy to stand our climate. Mr. R. Ayres, gardener to E. L. Stephens, Esq., of Roehampton Grove, exhibited three sorts of Cucumbers, one of them the "White Spine" was a good fruit considering the season of the year; a certificate was awarded for them. From Mr. Beck of Isleworth, were good specimens of Ashmead's Kernel Apple; this is a very valuable hardy variety; it is much in the way of a Nonpareil, and from its being a great bearer, as well as on account of its general excellence, it is worthy of a place in every cottage-garden. Mr. Buck, of Blackheath-gardens, sent three sorts of seedling Pears, numbered 2, 15, and 18. From G. Crawshay, Esq., of Colney Hatch, were specimens of Black Hamburgh Grapes that were cut on the 15th of January; they were good bunches, with well-swelled berries; and although they had been grown in a Vinery without the aid of fire-heat, they were perfectly ripe and well-flavoured; he also exhibited a bunch of the same sort that was cut on the 4th of December last, and had kept in good condition hung up in a room; the berries were not at all shrivelled nor the stalks decayed. Mr. Crawshay grows his Grapes, as before stated, in a Vinery where no fire-heat is employed, except in very dull damp weather; small fires are occasionally lighted, not to increase the temperature, but merely to dry up the damp; the Vines are allowed to have great ventilation, and from this circumstance the Grapes are well ripened, which is the great secret of their keeping; a certificate was awarded for those cut on the 15th January. J. Moorman, Esq., of Portland Place, Clapham-road, sent a collection of Pears, among which were specimens of Napoleon and Passe Colmar in good condition: a certificate was awarded for them. From the Garden of the Society were flowers of Chimonanthus fragrans and grandiflorus, with a collection of Apples, consisting of Court Penda Plat, Reinette du Canada, Cockle Pippin, Pomme Royale, Boston Russet, and Golden Harvey; the latter is one of the best sorts in cultivation, in richness and delicacy of flavour it is even superior to the Golden Pippin; it is also remarkable for being an excellent Cider Apple. The tree is perfectly hardy; it is a good bearer and worthy of a place in every garden. From the same collection were likewise sent the following Pears, viz.: Easter Beurré and Beurré Rance, the latter were from standards; this Pear, although not so large, is found to be much better flavoured when grown in this way than when trained on a wall, unless a south aspect can be afforded for it. There were also specimens of Winter Crassane, an excellent variety raised by the late Mr. Knight; it not only resembles a Crassane in appearance, but also in flavour. It is a most abundant bearer, and so perfectly hardy that it does not at all require the help of a wall to bring it to perfection.

LINNEAN SOCIETY.

Jan. 16.—Edward Forster, Esq., in the chair. Dr. Thomas Harrison, Dr. Wm. Francis, Dr. Hamilton, Dr. Clement, and John Camplin, Esq., were elected Fellows. A specimen of the flying fish was presented by Mr. Green. Joseph Janson, Esq., presented specimens of the Sphæria Robertsii and of the fruit of Cheirostemon platanoides. An extract of a letter to Dr. Bostock from his son was read, giving a detailed account of a flight of locusts which he had witnessed in India, between Cawnpoor and Agra. The number of locusts was so great that the air became quite darkened. They appeared to be moving at about the rate of four miles an hour, and although the travelling party were moving in an opposite direction they were between two and three hours in passing through them. Professor Edward Forbes read a paper on the Echinidæ of the Ægean sea, of which he had found 12 species when accompanying Captain Graves in H.M.'s ship Beacon. The most remarkable of these were a new Amphidetus, allied to the A. cordatus, and the Echinus monilis, identical with the form of that name found fossil in the tertiary beds of Europe. The species were dredged up from depths varying from one to 100 fathoms. In the description of Amphidetus he gave an account of the spines of that genus, which he had discovered surrounding the ovarian foramina, and which are protected by cysticles formed of regular circles of spines. He gave an account of the habits of Cidaris histrix, which he had taken in 70 fathoms water, and which has the power of climbing up rocks by means of its spines alone, a fact not previously observed. The Echinus lividus is used as an article of food by the Greeks, and is identical with the Irish, which excavates rock-perforates rocks. The paper was illustrated by diagrams, and was read by the Professor himself.

GARDENERS' BENEVOLENT INSTITUTION.

January 11.—John Seagrim, Esq., in the chair. The report of the committee was read, by which it appeared that during the last twelve months 7 new and 4 annual pensioners on the funds, at 20*l.* per annum, had been given; also 17 annuitants, at 10*l.* per annum, had been elected on the list, the election to take place in May next; that four pensioners in 3 years, and two in 2000, resigned their pensions, amounting to 80*l.* per annum, to the Treasurer of the Institution, for the benefit of the funds of the Institution. W. and J. Keith, the Treasurers, in

12th inst. The report was carried unanimously. The meeting proceeded to the election of six pensioners, in room of those who go off by rotation, when the following were proposed and elected, viz.:—Messrs. Isaac Finchman, gardener to the Archbishop of Canterbury; James Thomson, Gentleman, Fanshawe-street; John Henderson, Nursery, Pine Apple-place; Hugh Low, Clapton; John Lee, Hammersmith; and John Murray, Strath Isla Cottage, Bow-road. The meeting then proceeded to the election of two pensioners, Mr. John Henderson in the chair. Messrs. A. Chandler and J. Saugster being scrutineers; when James Anderson, aged 72, and Ann Potter, aged 69, were severally elected. About 60 friends of the Society afterwards dined together, when the Secretary announced the following donations:—Messrs. W. and J. Noble, second donation of 10*l.* 10*s.*; Wrench and Sons, 10*l.* 10*s.*; George W. Norman, Esq., 10*l.* 10*s.*; Finlay Fraser, Esq., 10*l.* 10*s.*; Professor Lindley, 5*l.*, and a number of annual subscriptions and donations, amounting in all to 90*l.*

Rebietos.

Rivers's Descriptive Catalogue of Pears is a list of the varieties cultivated in the author's Nursery at Sawbridgeworth, with a brief account of their qualities, and some very useful practical instructions in root-pruning. Mr. Rivers's collection is one of the best in the country, and contains, what is unusual, all the best varieties grafted on Quince-stocks. There are also many kinds collected by him in France, unmentioned in the Horticultural Society's Catalogue, and said to deserve cultivation. This little pamphlet merits the attention of fruit-growers; we believe it is given to the author's customers.

Species Filicum; being Descriptions of all known Ferns; illustrated with Plates. By Sir W. J. Hooker, K.H. Part I. 8vo. Pamplin.

In these days, when men are beginning to appreciate the importance of Ferns, this book is most welcome. It is not merely the Geologist, who finds their value as a means of identifying the age of the rocks which he has to examine, nor the Botanist who sighs for some efficient means of classifying the heaps of these plants with which his herbarium is loaded, to whom such a work is acceptable. The Gardener who—in a small way by means of Ward's cases, and on a large scale in his damp stoves and greenhouses—is able to perceive the beauty of Ferns, will also think Sir W. Hooker's book a welcome addition to his library; for here he will find his favourites described, their technical characters canvassed, and the rarer species illustrated by excellent drawings on stone. A mere systematical work admits of no extract, we can therefore only recommend this to all who are interested in the matter, as a publication with which they cannot very well dispense. We only wish that we saw a probability of the fossil Ferns being examined critically and incorporated with the modern species.

GARDEN MEMORANDA.

The Fence, Macclesfield.—The Orchidaceous plants here are looking remarkably strong and healthy. The method of supplying moisture, which is described at p. 191 of last year's *Chronicle*, appears to answer the purpose exceedingly well. The plants are neatly arranged in various forms; some are growing in wire baskets and some are on wooden blocks, or rough bark, suspended from the roof; others, of a dwarf habit, are placed in collections upon large pyramidal blocks of wood neatly covered with bark and Moss. The majority of the finest plants, however, are placed upon inverted pots in leaden cisterns from two to three inches deep, which are always full of water. The heating apparatus is so constructed as to fill the house with steam (at any time when wanted) in less than five minutes; so that by this means, along with the vapour that arises from the water in the coolers, a moist growing heat is maintained. The temperature of the house is kept up to 75°, but 65° is considered to be sufficient for the growth of the greater part of Orchidaceous plants, although a few will succeed better in a higher temperature. There is a beautiful plant of Ipomœa Horsfallise trained along the roof; this is now covered with crimson flowers. Besides this, the following plants are now in bloom:—Gongora speciosa and G. maculata; Lælia albida and L. acuminata; also Dendrobium Calceolus, Bessia candata, Zygopetalum intermedium, Sophronitis coccinea, and Odontoglossum pulchellum, &c.—*F. M.*, Jan. 12.

Miscellaneous.

Improvements with regard to inducing Trees to form Roots, so as to render them independent of the Stock.—Mr. Rivers remarks that Pear-trees, more particularly those grafted on Quince and Apple trees, on Doucin and Paradise stocks, derive great benefit when roots are emitted above the graft,—particularly in soils that are unfavourable for the longevity of these trees. It therefore becomes desirable to assist or induce the formation of such roots artificially, as follows:—When a plantation of these trees is made, the graft should be from 2½ to 4½ inches below the surface of the soil. Two or three years after, in autumn, when the sap descends in greatest abundance, which is generally the case in July, the soil is removed, so as to expose the point of junction of the graft and stock, and immediately above this, several portions of the bark are removed, about [illegible] of an inch in width, and from [illegible] perpendicular [illegible] about [illegible] from each other, from [illegible] to [illegible] deep, that [illegible] and their [illegible] should, of course, be previously [illegible] to the [illegible] of the tree, but so that not more than one-fourth of the bark shall be removed. (Hence two incisions nearly half an inch in width, and an inch in length, would be removed at equal distances from a tree 8 inches in circumference.) The wounds must be immediately covered with rich soil. Two quarts of decomposed cow-dung, and six quarts of maiden-loam, well mixed, form a good compost for the roots to strike into in the first instance. It is to be regretted that this mode of invigorating the trees in our gardens and orchards has not been hitherto employed. Some that have struck root naturally from above the graft may be seen growing with remarkable vigour, whilst others adjoining, living only on the stock above which they form excrescences, languish during a short existence. This mode ought to be adopted for all grafted trees destined to live in a light hot soil.‖

Progress of Vegetation in the Spring and Summer of 1843.—M. Pépin remarks in the "Revue Horticole," that the spring of this year has been very favourable for the growth of hardy plants, more especially those growing in calcareous and sandy soils. The trees which had been planted in 1842, and which had suffered much from drought, pushed with great vigour, as did likewise those recently planted. In many instances the straw of Rye was twice the length it usually attains; and the same may be said of the stalks of Beans and haulm of Peas. The common Fox-glove, and the white variety of the same, were among the plants observed by M. Pépin as exhibiting remarkable luxuriance, their stems attaining the height of nearly 10 feet. The rains which fell so abundantly in May and June mainly contributed towards this state of vegetation. But, on the contrary, the cool and humid state of the weather was unfavourable for exotic vegetation, for it was remarked by amateurs and cultivators of ornamental plants, that such as were planted out from under glass, produced, in a lingering manner, very imperfect and badly expanded blooms.‖

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

Stove.—A few plants will now or soon begin to grow in large collections. Some time ago this used to be the first note of preparation for potting, but now few gardeners will pot or shift plants for the next six weeks. A good criterion for the time of spring potting any plant is, when the roots are observed to grow freely. It follows, therefore, that plants which are grown in bottom-heat will require shifting much sooner than those on shelves. Pruning, more or less, is necessary for almost all plants, and the time for this work is regulated by that when the plant is expected to flower. One gardener wishes a plant to flower in May—a second does not wish to have it in flower until July, while a third is endeavouring to keep the same plant from flowering until September. He who flowers his plants nearest their natural time will of course have the most success. Little water should be given during this month, and the house should be kept at a low temperature.

Conservatory.—Orange-trees that have been forced last spring, and kept in-doors all summer, will now begin to grow, and if they are in good condition they will flower freely on the young wood and little side-spurs. In order to get them into regular shapes, the strongest shoots ought to be stopped occasionally with the finger and thumb; not, however, until after the flowering is over. March is time enough to repot established plants of these, but young ones in small pots may be shifted now, and turned into bottom-heat in the forcing-pit. No plant delights in bottom-heat more than the Orange, and few plants which will live over the winter in a low temperature like it, will stand more stove-heat at all times when treated as a stove-plant. Another peculiarity noticed in the Orange is, that it requires less earth to grow in, to produce heavy crops of fruit, than any other plant of the same size; bad drainage and too large a pot would soon injure the best Orange-tree in the country. Avoid as much as possible letting in strong currents of cold air at this season, even when going in or out by the door; but in mild weather you may give air for several hours in the middle of the day. Water early in the day, and keep the plants constantly clean from dust or insects.

Greenhouse.—The grand point to attend to in this house is to keep the plants from growing till as late in the spring as possible; such plants as show a disposition to grow early should be removed to the coldest part of the house, or to cold frames in mild weather—anything rather than an early spring growth, unless for some special purpose. As fires are seldom wanted for drying up the house after this time, as little fire heat as possible should be used, and any covering at hand to throw over the glass in heavy weather will lessen the necessity for strong fires, which, besides the economy of saving coals, is much better for the health of the plants. Pelargoniums and Cinerarias require more heat than the woody greenhouse plants, and are kept in houses by themselves in nurseries and large establishments, but where there is only one house for the whole these may be kept in the warmest end.

Forcing Pits.—Randle's tanks are excellent contrivances for forced flowers; from 70° to 75°, or even 80°, of regular bottom-heat, day and night, may be kept up in the forcing-pits. The surface-heat may be regulated by ventilators, from 65° to 80°; but it may be allowed to rise a little higher by sun-heat; too much heat applied at first is sure to end in disappointment. Roses of all sorts do better when first brought into a temperature of 55°, with a bottom-heat of 75°, and not to pass 60° till all the eyes are fairly started. A dry atmosphere is best for very early forcing; we can always supply moisture as we think necessary. Recently-built pits, and especially where tanks are used, are troublesome for this branch of gardening, owing to the quantity of moisture they produce.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

Where any of the beds in the flower-garden require the soil to be renewed, frosty mornings offer an opportunity of doing the work cleanly and expeditiously. By far too little attention is paid to trenching and draining flower-beds; it is surprising how much better tender plants support the summer drought in beds that have been trenched than in those that have been merely dug.

Reserve Garden.—Any of the annuals that have been injured by the late frosts had better be cleared away, and if the ground between the plants can be stirred up on a dry day with a small hoe it will do them good. Wall-flowers, Sweet Williams, Hollyhocks, and any of the more hardy biennials, may be removed to the flower-borders. Wall-flowers, if for their fragrance only, should be planted abundantly in all gardens.

Pits and Frames.—Where there is the advantage of a little heat a sowing of Ten-week and Intermediate Stocks may be got in; and if strong plants of Calceolaria, Brachycome, &c., &c., are required for bedding out, they also may be sown. Should not another pot or two be sown this week, the most forward of the Verbenas, &c. in stock-pots may be potted off. Give them a little heat afterwards until they make fresh roots.—*W. Pitt.*

III.—FLORISTS' FLOWERS.

Auriculas will sometimes, at this season, show a truss of flowers (as remarked of the Polyanthus last week), which, of course, must be taken off. Should it happen to be what is termed "a heart bloom," some danger of losing the plant (in consequence of the stem decaying and rotting the centre), may take place, unless it is removed in a proper manner. The best way is merely to pluck off the pips without injuring the stem, by which means the danger is often avoided.

Polyanthuses.—Mice will often attack these plants at this time of the year, especially when in frames, and commit such ravages by eating out the hearts, and it will require some vigilance on the part of the grower to prevent them. Snails and slugs are also great pests to both Auriculas and Polyanthuses. A little fresh bran, placed under a flat tile, raised at each corner by small pebbles, I find to be the best trap amongst the many recommended.

Ranunculus growers are beginning to be on the *qui vive*; their necessary additions to the bed bed ought now to be made, by purchase or otherwise. The names of a few excellent varieties will be given next week. Raising these beautiful flowers from seed is much better understood now than formerly, (thanks to Messrs. Tyso, Lightbody, and others), many of the old varieties being eclipsed by superb sorts of their raising.

Carnations.—The purchase of these favourite flowers, if not already done, had better be deferred till planting time.

Tulips must still be assiduously cared for, on frosty nights, by covering as before alluded to. A lattice round the outside of the frame is a great protection, especially when they are further advanced. Last season I was much delighted with a trellis of this description; it was covered with the best varieties of Chinese and Bourbon Roses, thus giving fresh interest to that part of the garden when the Tulips were out of bloom.

Pinks.—We may expect frost and snow, and where gardens are exposed to the incursion of hares and rabbits, Pinks as well as Carnations stand but a poor chance when the ground is covered, as they will scratch away the snow to obtain access to them. A net made of tarred-twine will be found an effectual preventive, when stretched to about seven feet from the bed.—*J. F. M.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Where a regular supply of fruit is required, there will, about this time, be some of the plants in the fruiting state showing, and if the bottom-heat is obtained by hot-water tanks, these may be turned out of their pots and planted carefully in the tan over the tanks, with six or eight inches of soil all round the roots, and put well up about the collar of the plant. If this is carefully done, and the roots of the plants are healthy, the fruit will be finer fruit and stronger suckers. Do not yet increase the heat if you can avoid it. If sometimes is necessary to hasten the fruiting of some of the plants, but in this case, remove those most likely to fruit to another pit, if you can, rather than subject the whole to the high temperature, for the present. Look frequently over the whole of the Pines in pots, to see that none are too dry from the heat of the pipes or flues.

Vinery.—Many will now be about to start their first house of Vines, and it should be well considered, before putting any heating material over the outside border, whether a proper supply can be conveniently obtained to keep the heat regular. It must be cautious to avoid laying on so much fermenting material at first as to cause much heat, and then to let it decline for want of fresh material. On the other hand, where a sufficient quantity is always at command, and the heat is kept regular, by frequent stirring and adding fresh dung as required, it will prove very beneficial to the Vines. If the material over the border can be kept dry it will be better. Where the Vines are showing fruit the shoots demand constant attention; let the leading ones grow until the desired length of rod is obtained; stop all others; tie the fruit bearing spurs down to the wires, right and left of the rafters, to keep the leaves from coming in contact with the glass. Leave only one bunch upon each spur. If the sorts are the Black Hamburgh, White Muscadine, or other hardy kinds, a temperature of 60° by night will be high enough, with a rise of 10° by day. During sunshine admit a small portion of air, when the thermometer reaches 80°, letting it rise to 87° or 90° before it is given.

Peach House.—It may be useful to many to know that applying the pollen to the stigma of the Peach-blossoms here, by means of a camel-hair pencil as recommended in the Calendar of a former Number, has succeeded perfectly, although out of twelve trees only three had the pollen good. Disbudding should commence when the trees are out of bloom, removing a few at intervals of three or four days. It is better not to make the shoots too rank during the summer. Leave those shoots situated at the bottom of last year's wood to keep the bearing-wood regular over the tree. Syringe freely in the morning and evening; and if green fly is observed upon the trees, or in the house on other plants, fumigate with tobacco.

Fig House.—A good way of treating Figs in pots is to plunge them in a row upon the floor of a Fig-house at work, or Vinery, and place leaves and tan round the pots in the form of a ridge. It will produce a mild heat, and keep the roots in a more uniform state, both with regard to moisture and heat, than if exposed to the atmosphere of the house.

Strawberries.—It often occurs, that in attempting to get a very early crop of Strawberries, they are subjected to too much heat, and kept too close, and failure is the consequence. They should be kept cool at first, and have plenty of air daily, except during frost or cutting winds. They should on no account be subjected to the same treatment with regard to heat and air as Vines and Peaches are is often done, till after the fruit is set, when they will do well in the Vinery or Peach house shelves.

Melons.—The plants for the early crop will, with some, be ripe and when about 3 inches high should be potted off into 32-sized pots, one in a pot, and plunged in the bed in the frame near the glass. Sow a few more seeds, in case of failure. Keep up a steady heat of about 70° in the bed by adding fresh linings, or if the heat is supplied by pipes or tanks, which is much better, 60° by night will do, with a rise of 5° to 10° by day. Of course those who have a Vinery at work, or a heated pit for any purpose, will raise their first Melon-plants in these, instead of making either a bed for them or heating the Melon pit, till the plants are fit to turn out.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Gooseberries and Currants, if pruned, may now be washed over with a mixture of cowdung, soot, soot, and lime, mixed with water to the consistence of thick paint.

Plums and Cherries will be benefited by washing with a similar mixture, adding to it, if thought necessary, Tobacco-water and flowers of sulphur.

Planting of Fruit Trees, where it is not finished, should be deferred a month or six week longer; meantime prepare the ground for their reception. In this changeable weather, much care is required for forward vegetable crops.

Sea Kale and Rhubarb will be most economically obtained at this period by taking them up and planting them thickly in a slight hotbed. Fresh plants will be required every season.

Asparagus.—To keep up a succession, fresh beds will require to be started every three weeks. A temperature for the roots of 65° is most desirable. When fresh beds are made and there is danger of over-heating, it is advisable to have some rows of drain-tiles across the bed, by opening the ends of which the superabundant heat will escape. They will also be useful in diffusing the heat of a lining when necessary.

Radish and Horn Carrots.—Slight hotbeds should be got ready for crops to succeed those now coming into use.

Mustard and Cress.—Sow these once a week in a little heat; the soft tan recently be too dry. For all these purposes much fermenting material is necessary, but there is always a quantity of refuse from the flower-garden as well as the kitchen-garden, which instead of being taken to the rot heap, ought to be made available in the frame ground.

Mushrooms.—I am obliged by the statements of "*J. C.*" and a "Mushroom." It is, however, often very difficult to assign a reason for failures. "*J. C.*" states, "that for some time past a kind of fungus matter, having the peculiar appearance of a cobweb, spreads over the bed, and completely rots all the fruit it comes in contact with; and that changing of the soil and the skin of the bed, has been attended with no benefit." Something similar happened here last season. I attributed it to damp, and having swept it clean off the bed, and introduced a stream of air, I saw no more of it. As "*J. C.*'s" beds are out of doors, open hurdles or Fern-stalks put on the beds before they are covered up might be of advantage, especially if on a mild day openings were made in the covering, so as to permit the air to circulate between the hurdles and the bed. As it is likely that "J. C." from being an extensive grower makes his own spawn, it would also be advisable to obtain good spawn from another place, to supersede what he may make in future. A "Mushroom" states that his Mushrooms "appear above the soil, and then die off, turn brown, and that many small worms are in the soil." This failure will sometimes happen from these causes:—Watering the crop overhead and exposing them to a cold atmosphere; using unheated old soil, or that which is stuffed with vegetable and animal matter, worms, &c.; all which prevent the surface of the bed from being solid and smooth; keeping the surface of the bed damp, while it is very dry underneath; and perhaps chiefly from spawning the bed a considerable time before it is earthed up, by which means the spawn is apt to exhaust itself so much on the damp as to prevent it penetrating the soil in a vigorous state.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—In old woods seedling plants of timber-trees often spring up, but are destroyed for want of relieving, by being pressed down by snow, or by being smothered with Ferns or briers; the overgrowth of other plants also renders them of comparatively little value. A person accustomed to such work would be beneficially employed in going through the woods at this season to relieve these from their oppressing neighbours; they might be raised and fastened upright by various simple contrivances, which I cannot at present point out. They should be kept to one leader. If there are two or more leading shoots of nearly equal strength, cut close off, or shorten the least promising one; also shorten some of the lower longest side-branches to about two or three feet from the stem, according to the size of the plant. Thousands of maiden plants might be preserved by this simple and cheap method. I have saved many a plant from destruction by these means; but be sure to reserve as many side branches as possible of a moderate size, till the plants have become *stocky* (strong) and able to support themselves.

Coppice.—Considerable benefit would ensue, and great increase of growth would be derived, by following the directions here, as in Old Woods, viz., by employing a person to go over the Coppice in the winter or spring months, if they have not been done in the summer. Select a proper number of the strongest and best shoots from the stools, seedling plants, or suckers, for future purposes, and shorten the strongest lateral or side-branches of them, or cut any of equal strength with the leader close off, but by no means divest them of the moderately weak laterals; nor would you cut out the weak ones, only prune off their heads to prevent them growing up to injure the reserved poles, rods, &c.

Young Plantations.—When thinning in groups or otherwise, as advised in the last No., and where a permanent undergrowth is desired, as a blind or for shelter, particularly in narrow belts or small plantations, instead of cutting clean out any that are required for the good of the permanent trees, I would only prune off the heads of some of the inferior kinds, cutting them off to a side branch or branches—say from the height of from three to five or six feet, particularly on the side of the plantation most exposed to the wind. Beech and Hornbeam may be so done as they retain their dead leaves in winter; Silver and Spruce Firs also are suitable for this purpose, but not the Scotch Fir, except for the outsides of the plantation. Hollies, if any, should be kept down in like manner, and Whins or Furze when young; afterwards the spade should be employed to destroy the Whins. By this method a permanent undergrowth may be secured for a long time. Where it is not designed for Coppice you need not stop to trim the lower tier of branches off the permanent trees, as recommended by some, at regular intervals; *Nature* will do that as the trees get up; nor need you be afraid of exhaustion of nourishment to the roots, by having a superabundance of them; only give them *light* and *room* in moderate compass, with regulation of branches, and you may safely leave most kinds to Nature for a time.

Hedge-rows and Nursery Work.—There will not be space this week to say much under these heads, or I had intended to describe the means I use with success to preserve young Apple or other trees from the depredations of hares and rabbits. I must defer it to another time, and as the weather continues open they will not do much damage.—*W. B.*

State of the Weather near London for the week ending Jan. 13, 1844, as observed at the Horticultural Garden, Chiswick.

Jan.	Moon's Age	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Su.	27	30.317	29.992	44	33	39.5	S.W.	.76
M.	28	30.312	29.982	44	35	39.5	N.	.03
Tu.	29	30.318	30.116	40	32	36.0	N.E.	.01
W.	30	30.346	30.317	40	30	35.0	N.E.	
Th.	31	30.392	30.152	39	34	36.5	N.E.	
F.	1	30.197	30.109	45	39	42.0	N.	
Sa.	2	30.150	30.150	44	29	41.0	N.W.	
Average		30.262	30.136	42.8	33.1	37.9		.80

Jan. 13. Rainy; constant rain throughout the day and night.
14. Slight drizzle; heavy clouds; equally, and at intervals quite calm, with slight rain at night.
15. Misty and drizzly; fine, with strata of light and dark clouds; densely overcast.
16. Clear and frosty; cloudy and cold; clear and frosty.
17. Hoar frost; fine, with bright sun; densely overcast.
18. Slightly overcast; cloudy; overcast at night.
19. Overcast; cloudy and gentle throughout, densely overcast at night.
Mean temperature of the week 3° below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending January 27, 1844.

Date.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Jan. 21	42.3	26.5	37.3	6	0.24 in.	2	2	1	2	2	5	2	1
22	44.3	31.0	38.7	9	0.37	1	2	2	4	2	6	1	2
23	43.0	32.4	38.7	7	0.16	—	1	3	2	2	6	1	4
24	44.0	32.3	37.9	7	0.25	2	2	2	2	2	6	3	1
25	43.7	33.1	37.4	6	0.26	1	2	1	2	2	5	4	3
26	44.2	32.2	38.6	6	0.24	1	1	1	1	1	7	1	3
27	43.4	32.6	38.1	6	0.21	1	2	1	—	2	6	1	—

The highest temperature during the above period occurred on the 23rd, 1834—thermometer 59°; and the lowest on the 27th, 1837—thermometer 17°.

Notices to Correspondents.

Communications from the following Correspondents are in type, and are only waiting till room can be found for them:—*Dr. Lindley, T. Berry, J. Salisby, W. G., I. W. K., Vitis, J. Bland, Brighton, G. Thompson, Bamboo, A. Dunstan, A Practical Gardener, F. Mackenzie, Or., W. Billington, G. Fleming.*

Hot-water Apparatus.—*E. S. L.*—We believe this to be a very good kind of temporary covering, and one that will with care last a long while.

A great Small Gardener.—There is no cheap machine known of for crushing bones. Your only way is to break them with a sledge-hammer, and dig them into your borders. We have not forgotten our promise about Fig, but it is not easy to find a good one.

Books.—*W. S.*—Newman's "History of British Ferns" will possibly suit you.——*A Friend to the Needy.*—Raddi's book on Brazilian Ferns may be had through the Italian booksellers. No other has been published. The other questions are beyond our limits.

Broccoli.—*W. M. R.*—"Shooting flower" in the Calendar means when the plants begin to show their heads, and therefore your plants that are not likely to do this before April, cannot be safely removed in the way there directed.

Canker in Fruit-trees.—*Abbotsgrange.*—Similar instances of Canker to that exhibited by the shoots of your Pear and Apple-trees are too frequently to be met with. It is the same disease both in the Apple and Pear-tree. Some varieties are more subject to it than others, and in some soils it is induced on almost every variety planted in such. Wood that is produced in cold wet seasons is apt to canker in succeeding years. If it be owing to the variety, this may be easily changed; if the soil be the cause, endeavours must be made to make it better. Lime will probably do good. Shoots produced in a bad summer should be well shortened in.

Conifers.—*A Nurseryman.*—Cones of the Deodar cannot be had in this country at all; they must be procured from the East Indies. So also, in general, must the cones of rare Pines be had from their native countries. The Deodar will take on the Larch; grafting must be performed while the wood is soft.

Conservatories.—*A Subscriber of* 1843.—A conservatory, properly so called, is a place in which plants are preserved during winter without being forced. In such a building the thermometer may fall as low as 35°; but it is better to keep it to 40° as a minimum, if possible. Even a few degrees of actual frost will not harm hard-wooded conservatory plants, but it is better to avoid the risk.

Forced Peaches.—*Inquirer* sends "a few defective blossoms of Peaches and Nectarines, of which he wishes to know the cause, and how to remedy it. The defect consists in a total or partial absence of the female part of fructification. The trees are in a favourable condition as respects strength of wood, which was well ripened. The fruit last season was ripe in June and July. The trees were attended to, by syringing, &c., but the sashes were not completely removed, though plenty of air was given. The border lies low, and cannot be raised, but was defended from wet early in the autumn. It is now defended from cold, and is in a favourable condition as respects moisture. The house is not favourably constructed, but though it requires more care after the crop is more forward, I do not think it could have any influence upon the blossom. The trees have been brought on very gently; the temperature ranging from 45° to 55° at night, according to the weather, and about 10° higher during the day. Some trees in the house have scarcely any defective blossoms, others are quite the reverse; the same treatment has been given to all. The oldest and most valuable tree is the worst, though the blossoms on it are so thin that the greater part of them would be required for a crop. The wood is in a good heavy condition." [We find all the blossoms sent us to be males—a very singular circumstance, for which we are unable to account. Can any of our physiological friends assist us?]

Garden Walls.—*A Subscriber.*—We are not aware of any reason why a wall built in cement should not be as good as one constructed with mortar; especially if copper wire is used for fastening the branches.

Heating.—*Anonymous.*—Hot-water is a much better heating material than hot air in flues. The cheapest boiler you could get would be the best, for all that are now manufactured are sufficiently good for so small a house as yours. If you use pipes employ those four inches in diameter. One row above the other will be enough, and the nearer the floor the better. But you will probably find it worth your while to use iron troughs instead of pipes. We never give prices; for them you must apply to the advertisers, of whom many are to be found in our columns.——*Inquirer.*—It appears that you have 270 feet of four-inch pipes, heated by one small saddle-backed boiler, placed 30 feet from your pits, and communicating with them by means of a main pipe buried in earth. If this is so, your enormous loss of heat and the impossibility of obtaining warmth, with even an expenditure of one ton and a half of coals per week, are accounted for. If the pipe that connects the boiler with the pits were carefully inclosed in a well-constructed tunnel, there would be no great loss of heat. But it is far better that the boiler should join the pits; even then 270 feet of four-inch pipe are more than a small saddle-backed boiler will heat. In all probability, both the boiler and its situation require changing. In such a case you will find the advice of a *skilful* architect by far the cheapest purchase you can make before beginning alterations.

Heraldic Gardening.—*J. D.*—It takes more time than we can possibly spare to answer questions relating to this subject; and moreover, answers are of little use in matters where much depends on climate, soil, and the means at a man's disposal. Nothing, in fact, is more difficult than to do well that which you are required to effect. If we understand you, no flowers will do except what are easily procured, easily propagated, totally hardy, dwarf, and capable of flowering in succession for some time. Your family shield is cut out in Grass, and must be constantly filled, spring, summer, and autumn. The device is 3 bars wavy gules, on a field or, with an escallop argent in the middle of each bar. The following may be kept dwarf by pegging and topping, or are so naturally; but they must be grown in pots, so that they may be planted when in bloom:—

[For the Field Ob.]

Spring.	*Summer.*	*Autumn.*
Yellow Crocus	Dbl. Yellow Wallflower	Œnothera macrocar.
Double Jonquil	Shby. Yel. Calceolaria	Shrubby Calceolaria
Adonis vernalis	Chrysocis crocea	Chrysocis
Alyssum saxatile	Yellow Heartsease	Sphenogyne speciosa

[For the Bar Gules.]

Spring.	*Summer.*	*Autumn.*
Dbl. Red Hepatica	Verbenas	Verbenas
Red Anemone	Frogmore Geraniums	Geraniums
Red Hyacinth	Scarl. Ten-week Stock	Pentst. gentianoides.
Arabis rosea	Clarkia pulchella	Dwarf Fuchsias.

[For the Escallop Argent.]

Spring.	*Summer.*	*Autumn.*
Snowdrops	White Candy Tuft	White Verbenas
White Hyacinths	White Clarkia	White Petunias
White Crocus	White Nemophila	White Œnotheras
Arabis grandiflora	The Queen Verbena	Oxeye Daisy

Hotbeds.—*Suffolk.*—Small as your hotbed is we cannot advise you to heat it with hot water. You will have too much power for a very little work. It is hardly possible to get a boiler small enough not to be too powerful. It will be better to make up a good foundation, three feet high, of old roots and refuse wood, secured by four stout stakes at the angles, and to obtain your heat from hot dung and leaves mixed. For a larger pit your arrangements are good, except that two inches of water-way are not sufficient; four inches would be better.

Insects.—*W. W. E.*—The bodies on the Oak-leaves are Cladapangica, described at p. 32, 1843. The other appearance on the branches of the Fir, produced by an Aphis, has also been mentioned at p. 805, 1843.——*An Inquirer's Constant* will produce in the spring a Beetle called Tentheredo (Cimbicoidea) Liliorum of Linnæus. *R.*——*Northumbrensis* having found specimens of an Aphis amongst the leaves of the Rose fragrans, I conclude that is the insect which causes the stalling of the leaves. If such be the case, fumigating with Tobacco will be the best remedy. *R.*——*L. J. P.*——[illegible] is a Bombyx, whose history begins in the December number, Vol. II. p. 788; but the specimens having been destroyed from not being preserved in a quill, it is impossible to determine the species. We will attend to the suggestions respecting the House-flies.—*R.*

Laburnum.—*Corrup.*—For a narrow belt, upon a chalky soil, &c., the Laburnum cannot recommend the Larch to *J.*, as it is not unfrequently under such circumstances to place him, either by its timber or its ornamental qualities. Beech, a few Oak, and Birch, are more likely to answer his expectations. These must be kept well thinned from an early period of their growth. If the Larch is wanted for shelter, or as a screen, a thick undergrowth of Thorn, Bird-cherry, Holly, Laurels, &c., should be put in at the same time with the Forest trees.

Maclura aurantiaca.—*J. W.*—This plant seldom blooms until it is very old. If it is growing vigorously, stopping the leading shoots in spring, so as to encourage laterals, might possibly induce it to form flower-buds. It succeeds best in a rather poor soil, as where this is rich the plant becomes too luxuriant to bloom freely. Your plant of Camellia japonica, that was in a sickly state from being too long in a drawing-room, but upon being shifted had recovered and made healthy young shoots, is the result of the good treatment you have given it, and is only what might have been expected.

Mildness of the Season.—We thank our correspondents for their continued communications on this subject; but we think it hardly desirable to publish further details at present. Just us see what happens in February.

Myrtles, &c.—*A Reader.*—We are not aware of an easier or better way of cleaning Myrtles and Oleanders of insects, than by washing them with water and a sponge. Camellias may be plentifully supplied with water when they are coming into bloom, if the drainage is perfect; but too much water, as well as too little, will cause the buds to drop; an important drainage is often the cause of the buds dropping. A remedy for the club in Cabbages is given at p. 828 of the vol. for 1843.

Names of Plants.—*S. W.*—Your packet is addressed to the Post-office, Bishops Waltham, you having forgotten to give your address.——*A Young Gardener.*—1, Quercus Ilex; 2, Phillyrea latifolia; 3, Quercus Ballota; 4, Tinus orientalis; 5, Jasminum revolutum; 6, Rhamnus alaternus, gold-blotched; 7, Phillyrea obliqua.——*J. C. L.*—Hexadesmia fasciculata. The plants will be sent when the frosts are over.——*C. D.*—As far as we can guess from the drawings—1, Orobanche cærulea; 2, Lactuca saligna; 3, Azalea procumbens. You will find Koch's "Flora Germanica" an excellent book for European plants. If you cut out the news part of the *Chronicle* you will have the same quantity of matter left as has been hitherto furnished. It is hardly possible for the news-agents to fold it properly. *Everyone should damp it and refold it himself*, when he will find that the pages are very carefully arranged for future binding.——*Orwell Park.*—Your Hippeastra are to all appearance hybrids, for which no recognised names have been given. 1 is nearly the pure pulverulentum; 2 is probably a cross between that species and reticulatum or Johnsoni.——*Wyeside.*—Clavaria muscoides, Hypnum proliferum, Marchantia polymorpha.——*Philanthus.*—Borrera ciliaris.——*A Lady.*—Elymus arenarius.——*E. R.*—Camellia maliflora.

Oaks.—*Acacia.*—It was the Quercus sessiliflora, advertised by Mr. Rogers, of Southampton, that we recommended; at least, we imagine that to be what you are inquiring for.

Passion-flowers.—*J. C.*—The hardiest Passion-flowers are the following—Passiflora cærulea, Colvilii, Mayana, and incarnata—but they are apt to get injured if planted in the open air, even in tolerably mild winters, and particularly if the situation is not a very dry one. They strike readily from the slenderer shoots after Midsummer, if the wood is a little hard. The cuttings should be put into white sand, covered with a bell-glass, and placed where there is a good bottom-heat (either in a dung frame or hot-water pit). When struck they should be potted singly into small pots, and returned for a few days to the frame or pit; afterwards harden them off by degrees.

Payment of Rent.—*Notice to Quit.*—*G. W. T.*—If the premises were let at the rent of 10*l.* a year, and no mention was made as to when the rent should be paid, the landlord cannot demand any part of it till the end of the year. If the tenancy commenced at Midsummer the notice to quit must expire at that time of the year, in the absence of any express stipulation to the contrary, and the notice to quit in March is invalid.

Pelargoniums.—*J. R.*—Two or three of the flowers in your list we have not seen; but the four first put down, although not answering completely to the qualities mentioned, will please, from their novelty and goodness.

Picotees.—*J. C.*—There is no particular names for the hardy border Picotees. They are generally raised from seed, and any florist can furnish the old double kinds of border Carnations. One of the best is Cuthill's Nosegay, or Prince Albert.

Temperature.—*S. A. S.*—The thermometers made by Mr. Newman for registering the temperature in the Horticultural Society's Garden at Chiswick are quite correct. There is frequently as much as 10° difference between the minimum as observed in London and Chiswick at night. On the night of the 2nd, or morning of the 3rd inst., to which you particularly allude, the temperature indicated by thermometers in the Society's Garden and by others in Chiswick was 14°; at Rochester, 18°; at Thwaite, Suffolk, 24°; Walworth, 19°; Brighton, 26°; and at Uckfield, Sussex, 11°; whilst with you, in London, it was 20°.

Miscellaneous.—*Iris.*—We are sorry we cannot help you to get lamp-oil out of paper.——*Priapus.*—The price of flower-pots varies with the makers and local circumstances—as, for example, the distance they have to be carted.——*A Constant Reader's* request is unreasonable. We cannot fill our columns continually with lists of plants which it is desirable to buy. Many such lists have already been given in former Numbers which can be consulted.——*Didymus.*—We always print the Proceedings of the Hot. Society when they are sent us by the Secretary. We cannot obtain them through any other channel.——*O. P. I.*—You may fill your Melon and Cucumber pit up over the flues with rough gravel or brickbats until within two feet of the glass. Over this it will be necessary to put a layer of turf, in order to prevent the soil from getting down among the bricks; this material will answer the purpose better than rough dung, which you are anxious to save, as the dung creates an impure atmosphere, which is apt to injure the plants at this season, when very little fresh air can be admitted. The temperature of the pit may be kept at from 65° to 70°, the front and back part over the flues should be watered, to keep up a moist atmosphere. Spanish Broom may be increased either from seeds or by layers. Your Cacti in a greenhouse should be kept dry until they begin to show their flower-buds, when water may be more liberally supplied. In order to have them in flower by the end of March or the beginning of April, they should be removed early in February to some place where they would have a higher temperature than that of a greenhouse. If your Vines are weak they may be cut down to three eyes; but if strong, leave six or seven, and allow the top shoot to run up the rafters. If the weather keep mild your Verbenas may possibly survive the winter in a bed in the flower-garden; they must be closely covered up in frosty weather, with spruce branches or some other protecting material. The usual way is to strike cuttings of them in autumn, and keep them in a pit or on a shelf in the greenhouse till spring. We have answered these questions, but we cannot be supposed to [illegible] ments of their [illegible]——*W. D.* will find [illegible] making observations given in detail at p. 24, vol. [illegible] gati.——You may now prune any of the evergreens you [illegible] [illegible] [illegible]

[illegible]
AN INQUIRY into the NATURE of the SEVERAL [illegible] of AGRICULTURE. By JOHN LOUDON MACADAM, Esq., F.G.S.E. [illegible] of Agriculture in the University of Edinburgh.
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The Agricultural Gazette.

SATURDAY, JANUARY 20, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Jan. 31 } Agric. Imp. Society of Ireland . 8 P M
Thursday, Feb. 1 }

THE question, What is the PROPER SEED-TIME FOR WHEAT? is one which every district must answer for itself. It is only by experience that the habits of our cultivated plants can be ascertained; and this experience, in reference to Wheat, will doubtless vary with the climate and soil on which it is to be grown. On early soils in high-land districts, an earlier seed time is required than where the soil is early and the climate mild.

An experienced farmer of our acquaintance informs us, and our own experience for the last three or four years bears him out in the assertion, that in the mid-land counties of England, where the soil is dry, it is immaterial with many kinds of Wheat at what period between October and February they are sown. The productiveness, however, of some of the old varieties, which have received one unvarying treatment from time immemorial, would probably suffer were this treatment to be rudely altered. The habits of an autumn-sown variety, such as the Red Lammas for instance, which has hardly ever been sown in spring, must have grown upon it so perfectly, that any abrupt attempt to act in opposition to them would probably prove injurious. But there are some kinds which we have sown indiscriminately, at any time during the period alluded to, and even so late as the month of March, with results evidently unaffected by the variableness of this treatment. We have had from the Hopetoun Wheat, and from a sort named, on account of its peculiarity, the Red-straw White Wheat, a produce per acre from seed sown during every month in winter and spring, varying, from four to six quarters, altogether independently of the time when it was planted.

The proper time for sowing Wheat is thus the subject of a purely practical question, and we are not aware of any doctrine of vegetable physiologists which can assist in its solution. A preference is, however, given by the gentleman to whom we have alluded above, to one period in the season of Wheat sowing, as being the proper seed-time for all varieties, and he gives a very curious reason for his opinion. The period referred to lasts during the few weeks immediately preceding the frosts of winter, and thus, of course, his opinion can only apply to land which is naturally or artificially dry. He considers it right that the Wheat-plant should not appear above ground before winter, but that the seed should be placed in such a position as will enable it to take immediate advantage of the earliest signs of approaching spring. He grounds this opinion, we know not with what justice, upon the analogy existing between plants and animals; knowing well, that if in feeding a bullock the farmer allows its progress to be checked by negligence, or any other cause, he will suffer not only by the loss of all the food necessary to bring it up to the mark again, but also by the diminished aptitude of the animal to fatten, he considers that the early-sown and forward Wheat-plant, when checked by the frost of winter, not only has the organs injured by which it gathers food from air and soil, but that its capability also is diminished of remedying this injury by a future vigorous growth. Whether this idea be corroborated by the doctrines of vegetable physiologists or not, it is one which deserves our attention, for it is the result of a lengthened experience.

In one of his Lectures lately delivered before the English Agricultural Society, Professor Brande informed us that the efficiency of manures is often owing to certain mineral matters, contained in them only in minute quantities. Considering the expenses of carting, &c. which attend the use of our bulky manures, it is worth our while inquiring into this statement, for it is certainly one the truth of which is desirable.

The conclusiveness of an argument often depends upon the preconceptions of the persons to whom it is addressed; and we must therefore first attempt to show, that however unlikely the above statement may be to [illegible] have grown out of dealing with manures by [illegible] it is one which [illegible] proves to be [illegible] [illegible] it has been found that the [illegible] [illegible] perhaps, first [illegible] [illegible] [illegible]

profitable on farms that were difficult of access, and where the land had been completely worn out.

ON THE AGRICULTURAL VALUE OF LAND.

It is the quantity and value of its *free* produce which determines the value of land. We have nothing, however, to do with the latter of these particulars, for those circumstances which affect the demand for, and the price of, Agricultural produce have evidently no connection with facts affecting the amount which the soil is capable of yielding. When speaking, therefore, of the value of land, the quantity and quality only of the free produce it yields is referred to. Free produce is that which remains after the expense of producing has been deducted from the gross produce. The weight of crop which soil of any description is capable of yielding depends upon its capability of supplying food and nourishment in a manner and quantity suited to the nature of the plant cultivated. The degree in which it possesses this property is due, partly to its mineral composition, and partly to the nature and quantity of the animal and vegetable matters it contains; the former being the vehicle of nourishment to the plant, and the latter, together with some of the mineral ingredients, also constituting the nourishment supplied. Now, since the great majority of soils are owing to the disintegration of the rocks on which they rest, that portion of the value of land which depends on the mineral composition of the soil must be due to, and will vary with, the geological character of the district; and since the amount of animal and vegetable matter contained in the soil is chiefly owing to the cultivation it may have received from the farmer, that portion of the value which depends on the quantity of these matters which the soil contains must be due to, and will vary with, the treatment it has received.

Besides these, however, the effects of climate—a third and important item in the account—are to be considered; a difference in climate will make all the difference between a soil of the greatest, and one of the least value, in two cases which are otherwise under precisely similar circumstances; and as a difference in elevation produces such great changes in the climate of even a moderately extensive district, it is of importance, in the valuation of land, to know accurately its level above that of the sea.

If, however, for the present, we put this out of consideration, the value of land may be said to depend on two things—the nature of the rock on which it lies, and the treatment it has received from the farmer. Were it otherwise, and did the value of land depend wholly on its mineral composition, as due to the rock on which it lies, then a geological map of any district, and one on which the extent of the various descriptions of soil occurring in that district were laid down and defined, would consist of exactly the same divisions of the country, and in crossing the line dividing one geological formation from another, we should just be stepping from land of one kind and value, on to land of another kind and value. This, however, is not the case; but it is evident that it will be the more nearly true in the proportion in which land is in its natural state, for the less cultivated any district may be, the less will the value of its land be owing to any treatment good or bad which it may have received, and the more entirely will it be dependent on its mineral composition. In instituting a comparison, therefore, with respect to fertility, between the soils of any two geological formations, it would be incorrect to fix on highly cultivated spots, which owe their value chiefly to the good treatment of the farmer. Commons and waste land, on the contrary, are to be considered as affording almost the only true index of the unassisted fertility of any geological formation.

I.—The value of land depends in a great measure on its mineral composition.

All the mechanical properties of a soil are due to its mineral composition. It is heavy or light, and thus adapted for the growth of one plant or another, according to the prevalence in it of this or that earth. The mechanical properties of a soil are of the greatest importance. The slightest variations in them produce great differences, not only in the value and amount of the crop yielded, but also in the expense and difficulty of cultivation. The greatest care ought, therefore, to be taken to improve their properties. This can be *permanently* effected in two ways. The first of these is by drainage.

If the subsoil consist of sandy and clayey beds alternating with one another, the soil lying on it will be full of springs; if it consist merely of clay, the water falling on it cannot sink, but remains on the surface, where as long as it remains it renders every attempt at cultivation injurious instead of beneficial. In both of these cases the injury done to the land is of two kinds. In the first place, as long as a soil is wet, any treading which it undergoes in cultivation has the effect of kneading it into a mortar, which, on drying, becomes so hard that it will not allow the roots of plants to pierce it. The consequence is that the plant cultivated or the seed sown, after being half drowned or perished in the water, is withered in the sun. In the second place, as long as the soil is wet, the water, filling all the pores of the soil, hinders the admission of air, without which the decomposition of manure in the soil, necessary to the life of the plant, cannot proceed. These two modes, in which land is injured by stagnant water, render any means of depriving it of this water doubly valuable, and hence the immense improvements effected by drainage, especially when assisted by the new soil plough.—*M. S.*

(To be continued.)

AGRICULTURE OF THE ISLE OF MAN.—No. I.

[The subjoined sketch of Manx Agriculture is contributed in the hope that some industrious young farmers of moderate capital may be induced by it to visit the Island; and that, finding their ideas of Colonial emigration a little anticipated, they may be induced to settle there, and enjoy near home, freedom from taxes, poor's rates, and turnpikes, without incurring the hazard of a long voyage in search of it, to uncleared woods, unwatered pastures, and fickle if not sickly climates.]

As might be expected from its geographical and insular position the climate of this island is humid and variable, the extremes of heat and cold are little felt, so that neither is the progress of the plough much impeded by frost, nor the harvest materially injured by parching drought. To the practical farmer it will be hardly necessary to explain that on this account although the "course" of cultivation comprises the regular rotation of green crop and grain crop (of all kinds) yet Nature favours the former rather than the latter, and it is to the perseverance and industry which the Manx farmer bestows on his green crop, that he is indebted, under Providence, to the moderate and varying success which attends his grain harvest.

The island is divided into 17 parishes, all of which touch upon the sea, with the exception of the inland parish of Kirk-Maroun. The regular and, though speculative, yet at times remunerative employment of the Manx fisheries (the most prolific perhaps in the British seas) has for centuries drawn away the lower-born islander from the quiet pursuits of the farm, and that, too, at a time when his attention is the most required—in the hay and corn harvests. The most important operations are therefore confided to the female members of the family (for every father and father's son able to haul a rope or trail a net must needs go a-fishing) and right trustily do the Manx women fulfil their delegated trust; nowhere can be found women of more enduring industry. It may be safely averred that without the hearty and cheerful assistance of the Manx women Potatoes could not be planted nor the grain harvested, although, without doubt, herrings would be caught, and bloaters dried to perfection. It is, indeed, hardly matter of surprise that, with a varying climate, an ill-drained soil, with capital deficient, and energy not superabundant, while as stated in the clause introduced by Bishop Wilson into the Manx Litany, "the blessings of the sea are restored and continued to them" so abundantly, the islanders should prefer the less laborious and more stirring avocations of the ocean, to the steady returns of field-labour. At present, however, a brighter era appears to dawn over the interests of Agriculture in the Isle of Man, and this may be attributed to many causes. Wholesome and necessary laws have rendered the once splendid pursuit of the smuggler profitless and too perilous. The fisheries have been intruded upon by strangers, and the example set by wealthy Manxmen and resident strangers has excited profitable emulation; added to these the adjacent markets of Liverpool and Whitehaven have opened channels for the exportation of produce, and thus increased attention has been directed to the means of raising it, so that Mona promises soon to occupy a prominent place in the statistics of British Agriculture.—*Cultor.*

(To be continued.)

AGRICULTURAL EXPERIMENTS.

(Concluded from p. 26.)

Let me now solicit your attention for a short time to another experiment not unworthy the farmer's notice. I had seen a statement in the "Farmers' Magazine" that tailing Wheat, or Chickenscraps, as the farmers call them, because they are considered fit for nothing but to be food for chickens—being, in fact, the refuse of the Corn, will yet produce as good a crop as the heaviest, fullest seed. This seemed to me the strangest of all paradoxes, and I utterly disbelieved it; but yet I resolved to make the trial, because if it proved as I expected, to be false, it was desirable to undeceive the farmers, who might be deluded by it into the loss of their crops; on the other hand, if it turned out to be true, it would be a fact of vast importance to the country, from the immense saving of breadcorn which would accrue from the adoption of the system. Accordingly a small plot of garden-ground was sown, one half with good Wheat and the other half with tailing or refuse Wheat. Upon my return home after an absence of some weeks in the spring, I was surprised to see the latter covering the ground as thick as Grass in a meadow, but I found upon inquiry that the person who had the charge of the experiment considering the seed good for nothing, and quite despairing of its growth, had sown five or six times as much of it as of the other. As this quite thwarted my design of comparing the produce of both, I directed that half the thick-sown Corn should be hoed out, till the plants were reduced, as nearly as possible, to the same number as occupied a corresponding portion of the good-seed ground. The other half was left to take its chance, except that one row which happened to be above a drain, and consequently in very shallow soil, had the benefit of a watering with sulphate of ammonia. At harvest the first 12 plants in one row of each sort were taken as a sample, and the produce weighed—

	Grains.	Average of Ears per Plant.
I.—12 Plants of good Corn gave in weight	926	6·6
II.—12 do. of tailing Wheat left thick	351	3·8
III.—12 do. over drain, watered with S. A.	438	4·7
IV.—12 do. thinned out to the same number as No. I.	1187	7·2

Upon these experiments I would first remark, that sulphate of ammonia maintains its character of utility by supplying more than sounds for the infelicity of the soil; in the next place, they demonstrate very strikingly the impolicy of sowing Corn too thick where ears are wanted and not herbage. The plants, where too thick, check each other, and are too feeble to form their seed, as every Horticulturist knows. But are we to conclude from the fourth experiment that tailing Wheat is better for seed than that which is plump and heavy? Certainly not. Its superiority can only be attributed to the loosening of the soil by the hoe, and opening it to the fertilising influence of the atmosphere. This strongly recommends, however, the use of the hoe on Wheat in spring; and surely it is a great point gained in agriculture, if it can be proved that the worst seed may be made more productive than the best, if it only has the advantage of superior cultivation.

Before I conclude, I wish to mention the comparative productiveness of four different sorts of Wheat, ascertained on the same scale and in the same way:—

	Grains.	Average of Stalks per Plant.
I.—12 Plants of White Straw Wheat, gave	916	12·4
II.—12 do. of Old fashioned White do.	1432	13
III.—12 do. of Australian Prize do.	1324	18
IV.—12 do. of do., second quality do.	2424	27·2

All these were sown in the autumn, and grew nearly a foot higher than the others which were sown in the spring. Of the first two, which are the common Wheats of the country, and are distinguished by the names they usually bear, it may be observed that the number of their ears is double that of the spring crops; but the weight of the grain they produced is very little more, indeed hardly so much as that from the hoed Wheat; but this is partly to be accounted for by their greater forwardness in ripening, which exposed them more to the depredations of the birds, in spite of all the care that could be taken to protect them; and also partly by their having more small ears of a second growth, which had neither strength nor time to mature their seed. Perhaps in the spring Corn this disposition to late tillering was checked by the use of the hoe. The South Australian Wheat (No. IV.) laboured under greater disadvantages than its English brethren; for it formed its ears seven inches long, a fortnight before any other, and promised to be a finer specimen than any this country can show; but unfortunately it was attacked by the red-gum—a disease well named from the clammy exudation which discolours the ear. The insect which causes it was probably in this instance imported from Australia, for no other Corn was affected by it. If any means can be devised, as I hope they may, to get rid of this pest, the country will be under great obligations to its colony for impressing such a character of fertility upon our Wheat; and if it be true that within certain limits a change of soil and climate is beneficial to the growth of plants, no change can be more complete than by fetching our seed from the antipodes.—*E. Vernon Harcourt.*

ON MINERAL & INORGANIC MANURES.—No. III.

By PROFESSOR CHARLES SPRENGEL.

(Translated from the German.)

Having said thus much of mineral manures in their general bearing, I shall now discuss them separately, and at the same time enumerate their chemical ingredients. It is only by so doing that the way in which they act can be properly described.

1. *Lime.*—Lime, which has now been long used in Agriculture, ranks amongst the most useful of mineral manures although sore mistakes are at times committed in its application. Lime suitable for manure occurs in nature in various states of purity, and also different as to its external qualities; those most used are the varieties which Mineralogists call common compact limestone, shell limestone, rotstone or oolite, stinkstone, and chalk. On the seacoast, burnt shells are very much used as manure, which also consist chiefly of calcareous earth.

In its pure state, lime consists of 56.4 calcareous earth and 43.6 carbonic acid; but in this proportion it is only found in calc-spar (crystallised carbonate of lime) and in some sorts of marble (crystalline granular limestone). Those sorts of lime used for manure contain, besides carbonate of lime, more or less of silica, alumina, oxide of iron and manganese, common salt, magnesia, phosphate of lime, and some other admixtures, which amount at times to 8 or 10 per cent. of the whole. These extraneous admixtures partially explain the very different effects which lime manure will produce. That lime, for instance, which contains much phosphate of lime, will always act more powerfully than that which contains none, for phosphoric acid is an essential ingredient in the food of plants.

Lime is generally burnt before it is used, and thus the whole of the carbonic acid is expelled as gas. When exposed to the air after this, or sprinkled over with water, it becomes converted into an extremely fine powder (it becomes slaked), by which it is made capable of mixing more intimately with the furrow-slice. Quicklime will fix 24¼ per cent. water chemically, but will lose it again in the same proportion, as it attracts carbonic acid from the air. By losing its carbonic acid after burning, it becomes caustic, *i. e.*, it will now affect organic matter with which it may come in contact, decomposing it, and combining chemically with the substances thus generated. By the action of quicklime, organic matter is converted chiefly into humic acid. To this lime bears a strong affinity, and if previously combined with water it will lose it again through the above combination; the new compound, however, will again combine with water.

In its caustic state, lime is soluble in water, but 752 lbs. of water at a temperature of 162 deg. Fahr. are required to dissolve 1 lb. of calcareous earth. The lime-water thus formed possesses alkaline properties, and so also does the earth itself. It is easily soluble in water, if free from carbonic acid, and in this action on the organic matter of the soil it excels. In water, that substance may act upon each other, and lime must be in a liquid state; and this explains why gypsum, when dissolved in water, will have equal effects.

As long as burnt lime remains caustic, it acts on the

soil in the following manner: it decomposes the vegetable matter and the coal of humus, which, there can be little doubt, is contained in all soils; by this operation humic acid is formed, and the mineral substances contained in the vegetable matter, such as potash, soda, alumina, nitrogen, magnesia, lime, &c., are disengaged from their former chemical state of composition. It creates, therefore, as it were, vegetable nourishment, for neither coal of humus nor vegetable matter are soluble in water. With the humic acid thus generated, it combines into humate of lime; but as this substance is soluble in water only with great difficulty, the plants will not be able to take up more than the amount of lime they absolutely need. On account of its affinity to humic acid, lime will also unite with that contained in the soil in a free state, which will thus be rendered nearly insoluble, and this is exactly the contrary of what was formerly believed to be the case. Lime also frees the humic acid of the soil from the alumina, which may be found chemically combined with it, and thus also humate of lime is generated, which affords more nourishment to plants, as humate of alumina is quite insoluble in water. For this purpose, however, a greater quantity of caustic lime will be always required, and thus clayey soils must receive a greater quantity of lime than other sorts of soil, as they generally contain much humate of alumina. Lime, also, most probably decomposes the silicates of potash and soda contained in the soil, combining chemically with the silica and driving off the potash and soda, which then unite again with humic or some other acid. It further enters into combination with the hydrated silica contained in the soil, forming a silicate of lime insoluble in water; and this is beneficial, as crops (especially the Cerealia) might easily obtain through the hydrate too much silica, which would make them difficult of digestion. By this process, however, the plants are at any rate deprived of some part of the silica, which they would otherwise take up. If the soil contains much hydrated silica, the plants will not receive a sufficient quantity of lime, for it will all be employed in decomposing this compound and forming another which, as already said, is insoluble in water; manuring with lime thus often needs to be repeated several times. It is a very important fact, moreover, that lime disposes the protoxide of iron and manganese to attract oxygen from the air, and thus to be converted into oxides, in which latter state they will be useful to the crops, whilst in the former they are often detrimental. We shall find, therefore, that manuring with lime will be especially useful to ferruginous soils.

Hard clayey soils will be much loosened by a strong manuring with lime; in fact they will attain quite another texture, and this is caused by the different extent to which the two earths are distended by the absorption of water. This will be shown more clearly when treating of marl. Most probably lime also disposes the oxygen and nitrogen of the air to form nitric acid, by which nitrate of lime is formed, which is a very powerful manure. In fine, during all the decompositions and combinations which lime undergoes, electricity is developed; and this also will certainly increase the activity of the soil. Caustic lime will also act beneficially in destroying many seeds of weeds, or rather it will cause that if they should germinate they will not come to perfection. It also kills many of the lower orders of insects and worms.

(To be continued.)

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. II.

(Continued from page 27.)

Now the fertility of all soils depends upon the due proportion which they contain of the above principles. It is the object of Agricultural Chemistry to point out where any of them is deficient, and it is the object of the scientific farmer to remedy this deficiency, and to maintain the correct proportion of each by suitable and judicious applications in the form of manures.

To understand this, it is quite clear he must have some knowledge of the chemical constitution of manure as well as of plants. These subjects we shall consider hereafter.

It is also necessary that the farmer should have a standard by which the fertility of a soil, in its natural state, may be considered as a maximum in the due proportions of the above elements; and, secondly, that he should be able, by a simple process, to ascertain these proportions for himself.

Now, with regard to a standard of fertility, I confess we shall have some preliminary difficulty, because it can only be decided by experiments, and of these we have not at present sufficient to form positive conclusions. But if the point be once conceded as important, it will be soon established; for if truth is the object of experiment, I cannot for a moment doubt we shall have many volunteers in the service. All, however, that I consider necessary at present can easily be accomplished.

I propose that a "standard of fertility," which will also be a "standard of quality" of soils, should for the present be founded upon the proportions of "fine sand" and "impalpable matter."

It is the impalpable matter that gives the quality of heaviness or lightness to soils; and it will be easily observed, by looking at the general analysis detailed above, that it contains the principal inorganic and fertilising ingredients in all soils.

While, then, we only [illegible] founded upon this well-known [illegible] soils, we must hope, as Agricultural Chemistry progresses, that experiments are multiplied, for more exact data, and found a perfect standard upon a [illegible] analyses.

In all soils there is a variable amount of moisture, which can only be driven off by heat. This quantity of retaining moisture is greatest in heavy soils, or those in which there is the largest portion of impalpable matter; and the least in light soils, where that proportion is less. Here, then, we have our starting-point dependant upon our standard of fertility; for it is not necessary for me to allude to the important bearing of this quality of soils to its fertility.

In heavy soils, the amount of insensible moisture may be fixed as a maximum at one-eighth of the entire soil; the loose gravel and undecomposed vegetable fibre at one-eighth more.

Thus, if we take 400 grains, we shall have as a maximum in heavy soils 50 grains of moisture, and 50 grains of loose gravel and undecomposed vegetable fibre. It will seldom exceed this proportion, but will frequently be below it. We shall now have 300 grains, which are divisible by a very simple process into two portions, a fine sand and an impalpable powder. The question is now to decide what are the proportions of these two substances—for this will fix the character of the soil. In a heavy tenacious soil which I recently examined, the result was 108 grains of impalpable powder, 187 of fine sand, 54 grains of coarse gravel, 35 grains of moisture, and the rest vegetable and animal matter and loss. This soil the farmer told me would grow good crops of Corn, if he could but "work it;" but the difficulty in doing this was such, that he considered it the worst field on his farm. Now it would not be sound to attempt to establish principles upon a single experiment, but as the result agrees very much with the observations of others, and has been, with little variation, confirmed by other experiments, I am induced to propose one part of impalpable matter in four of the entire soil, to be characteristic of a fair specimen of heavy soil; every five grains above this standard bringing it nearer to absolute clay, and every five grains below approximating it to the standard I propose to fix for,

Light Soils.—In an excellent light soil which I examined, and which will be further alluded to hereafter, I found the following proportions in 400 grains:—

Moisture	21 grains.
Loose gravel	27 "
Fine sand	249 "
Impalpable matter	78 "
Loss	25 "
	400 grains.

* Sir H. Davy, in an excellent Wheat-soil, found three parts in five, fine sand. He does not state the proportion of impalpable matter, but assuming that one part was of moisture and coarse gravel, his analysis would be—

Moisture and coarse sand. Undecomposed fibre and loss	80
Fine sand	240
Impalpable matter	80
	400

Many good fertile light soils, particularly Turnip-lands, have a much less proportion of impalpable matter than stated here; but I think we may fairly take the proportions of 66 impalpable matter to 234 of fine sand, as a standard of a good light soil, being as one in six to the whole soil.

When the proportion is as low as one part of impalpable matter in ten of the entire soil, I should denominate such a soil sandy, the fertility gradually decreasing as the proportion of impalpable matter diminishes, until absolute sterility is arrived at, which, upon the authority of Sir H. Davy, we may fix at 20 in 400 grains, or one in 20 of the entire soil.

My standards would then come in the following order—

Barren; clay	Impalp. matter.	Fine sand.	Coarse gravel and moisture.
Fertile; heavy soils	100 or $\frac{1}{4}$ of the soil	200	100
Fertile; light soils	66 or $\frac{1}{6}$ of the soil	234	100
Fertile; sandy	40 or $\frac{1}{10}$ of the soil	260	100
Barren; sand	20 or $\frac{1}{20}$ of the soil	280	100

Between these standards there will of course be a great many shades of difference, but the character of the soil is easily determined by its approximation to the above figures. Thus, if the amount of impalpable matter in 400 grs. be from 116 to 84 grs., the soils are varieties of heavy soils; if it vary from 82 to 54 grs., they are varieties of light soils; and if it be 50, or 30, or 25, they would be specimens of sandy soils.—*C. R. Bree, Stowmarket.*

(To be continued.)

ON THE APPLICATION OF COPROLITES AS A MANURE.

Mr. Potter has directed attention (*Agricultural Gazette*, p. 10) to some observations I lately laid before the Geological Society on certain nodules, found in the crag formation at Felixton, in Suffolk, and which I have considered to be of coprolitic origin. I believe that this was not before inspected; at least I know that some of our eminent geologists were of opinion that these nodules might be only hardened masses of London clay, which had been rolled into various shapes at the time the crag was deposited, and which had subsequently undergone some alteration in their mineral character. The nature of the evidence upon which I satisfied myself that they were coprolitic need not here be alluded to; but I wish to offer a few remarks upon the probability of their being found useful for agricultural purposes. Liebig has probably allowed his enthusiasm to get the better of his judgment, when, after noticing certain strata containing Coprolites and osseous remains, he concludes his recently-published letters in this words:—"What a curious and interesting subject for contemplation!—In the remains of an extinct *animal* world, England is to find the means of increasing her wealth in agricultural produce as she has already found the great support of her manufacturing industry in fossil fuel—the preserved matter of primeval forests—the remains of a *vegetable* world. May this expectation be realised! and may her excellent population be thus redeemed from poverty and misery!"

Devoutly as we may all desire such a consummation, let us neither too hastily adopt nor yet too hastily reject these speculations of the German chemist. If he is correct in supposing that the phosphate of lime contained in fossil bones and Coprolites can be economically converted to the same purposes as that in recent bones, his observations will be worthy the most serious attention of Agriculturists; but even if his kindest wishes for our national prosperity are not likely to be realised, coprolitic deposits may still turn out to be of great local importance. Mr. Potter's interesting analysis gives as much as 58 per cent. of phosphate of lime in the coprolitic nodules of the crag! It will be a subject for statistical inquiry whether they can be collected and pounded, or otherwise prepared, with sufficient economy to make them serviceable to the Agriculturist. The collecting iron pyrites by hand along our eastern coast is found to pay well; and certainly it appears to me not improbable that it would require much less labour to collect a ton of Coprolites at Felixton than of iron pyrites. I do not understand why Mr. Potter has supposed there is any difficulty in distinguishing them from pebbles by their external appearance alone; a very slightly-practised eye could never make the mistake. The children employed at the Cornish mines to separate the broken fragments of ores into three or four samples have a much more difficult task, which they accomplish with unerring certainty and wonderful rapidity, and a single day's lesson would be sufficient to teach any one to distinguish these nodules from rolled stones. I do not recollect that they are found in any quantity upon the beach; and the impression on my mind is, that they soon disintegrate or decompose when exposed there. The rounded form which many of them present is not due to attrition, as Mr. Potter suggests, but is the shape they have assumed naturally. Very many of them contain evident traces of the dermic apparatus of crustaceans, and in some instances the entire forms of crabs are distinguishable. This may possibly account for the very high proportion of phosphate of lime which Mr. Potter has detected in them, and it may be important to ascertain whether this character uniformly prevails. In considering these bodies as coprolitic, I do not suppose them all to have been the digested materials devoured by sharks, though some of the specimens affect the character of Coprolites from other formations, which have been so esteemed; but the more common character of these Coprolites is to have the material folded longitudinally, in a thickened convolution round an axis which is frequently perforated. The fold in the intestines of sharks and rays is transverse. It may be worthy of inquiry whether some of these nodules may not have resulted from the presence of animal matter which has never been subjected to the digestive process; and, in connection with such inquiry, is the remarkable fact, that numerous traces of Cetaceans are found intermixed with these nodules. Fragments of their bones occur in considerable abundance, and whilst pursuing the investigation, I picked up what appeared to me a much-rolled portion of the tympanic bone of a whale's ear. This awakened attention, and further investigation furnished me with several specimens. I thought I saw sufficient evidence for believing that these ear-bones must have belonged to four, if not five, species of whale, and I sent them to Professor Owen for his better judgment on such points. He has decided that this is the case, and has drawn up specific characters for four species, referring them to individuals of the genus *Balæna*. The specimen which Mr. Deck has since found I have seen, but I believe it belongs to one of the four species named by Professor Owen. It is certainly a very remarkable circumstance that these Fossil remains should be so very abundant just at one spot in the cliffs, and there associated with so large a number of coprolitic nodules. I notice these circumstances a little in detail, in hopes of awakening further attention to the subject. Very possibly there may be other localities in the crag, where Coprolites are equally abundant; and it may afford others, when spending a few weeks on the east coast, as much amusement as I have myself received in working out their history. It is one of the incalculable advantages which a slight knowledge of natural history is always found to confer, that we cannot visit a spot upon the earth's surface without meeting with a sufficiency of occupation for our thoughts in such investigations as these. I heard Felixton so thoroughly condemned as a watering-place, that some persons would not stay there more than a night or two, and yet it is seated in one of the noblest bays in England, with excellent and safe bathing, possessing a maritime Flora of much interest, with a fine denudation of one of the most remarkable of our British strata, and has, moreover, the alluvial soil filled with fragments of Roman pottery mixed with the well-preserved remains of deer, oxen, and every other description of animal, including snails (!) which the Romans had fed on 1400 years ago, intermixed with coins and other objects of antiquarian curiosity. But if these Coprolites are worth thinking about, I do hope that no time will be lost in testing the question of their value as an agricultural manure. It only requires a small outlay of some 20*l.* or so, to have a number of them collected, properly prepared, distributed in small packets to willingly-disposed experimenters, with a schedule of directions for securing comparative results, and then before another year has passed away we may be in a position to say ay or no to Liebig, and bid him try again. May we hope that some one of our Agricultural Societies may consider the question which is to be solved quite as well worthy as

effect as those others upon which public funds are expended. —*F. B. Hensloe.*

Home Correspondence.

Slugs on Wheat.—The method recommended by "S N. V." in the Number of this *Gazette* for January 6, for preventing the ravages of these molinscs, I found in practice in 1814, among the farmers of West Middlesex, who had adopted it from the market gardens nearer the metropolis; but about that time a modification of the process, at once cheaper and more effectual, was discovered, which superseded the old method The improvement consisted in giving these gentry a belly-full of food, relished by them more than the Wheat This was no other than the Turnip-tops, to which, when first used, our slimy friends were supposed to be attracted by the shelter which they afforded in the night, whereas, in reality, they repaired to them for the gratification of their palates The discovery was made by accident—I think upon the farm of Mr. Newman, of Cranford—during a long course of wet weather, which prevented the gathering of the slugs for some days, at the end of which time it was found that they had devoured the traps set for them, and had spared the Wheat. Not liking the expense of collecting the slugs by women and boys, I had tried sprinkling the field with lime or salt, in the night, while the slugs were feeding, but, though thousands were killed, it seemed as if tens of thousands came to the funeral. From the time, however, that I commenced the feeding system I never lost an acre of Wheat from the slug, though the district, in a mild wet autumn, was very liable to their ravages, on Wheat after Clover. In a very bad slug season, I once covered a 15 acre-field so thickly with Turnip leaves that the surface was scarcely visible, and in less than a fortnight all the leaves had disappeared except the stalks, which remained like the tails of the Kilkenny cats, and on which the slugs were hard at work, without having touched the Wheat, when I served them up a second course This, however, will seldom be necessary, if the leaves are applied liberally and early after sowing for in a fortnight or three weeks the plant will in general be too strong to suffer by the bite of the slugs. The feast must, however, be given early, for they commence the attack on the Wheat almost before the plant has shown itself above the surface The process was discovered, as I have said, by accident, but it shows strongly the advantage to the farmer or gardener of studying the habits of all animals that are noxious to him, and of supplying them with food more congenial to their tastes than that which he wishes to preserve from them. This method, or that of setting a thief to catch a thief, by concluding an alliance offensive and defensive with some other tribe of animals, who wage war with our enemies, will often be found cheaper and more efficacious than taking the work of destruction into our own hands. I think it is Kirby and Spence who have said that the more wasps we have in our gardens the fewer flies shall we have in our parlours—the more lady-birds in our greenhouses the fewer aphides on our Rose-trees; and the Hop growers in Kent well know the money-value of a swarm of lady-birds Though not prepared to point out the office performed by slugs in the economy of nature, I have no doubt that an office is assigned to them; for each creature constitutes a link in the great chain of being, dependent upon others which suffer by the diminished numbers of those creatures on which they prey, and which, in their turn, have enemies appointed to keep them within due bounds. The proscription of rooks and sparrows by the collective wisdom of some parishes, in vestry assembled, has been known to have occasioned more loss to the farmer by the ravages of insects than would have paid many times over for the cost of watching his crops against those birds in seedtime and harvest Of rooks I must observe, by the-way, that a solution of corrosive sublimate—used as a steep for seed-Wheat, under proper precautions, and in proper proportions—is not only the best preventive against smut I ever met with (and I have tried several), but will also preserve the Wheat from rooks, who just taste it, shake their heads at it, and go off to some other field till the grain has sprouted, when the services of the bird boy must be put in requisition Unless, however, care be used, there is danger not only of killing the Wheat, but of poisoning all the pigs and poultry in the farm-yard,—their pampered habits having rendered their wits more obtuse than those of the rooks, whose intellects, naturally acute, appear to have been sharpened by poverty and persecution. With care, however, no danger is to be apprehended, I have used the steep for nearly 10 years with complete success; the only loss occasioned by it being about a dozen turnips and two quarters of seed-Wheat, which occurred in the first year. The necessary precautions, and the details of the process, I shall describe on a future occasion —*J. Trimmer.*

Oats.—In 1st Number of your *Gazette* an experiment with manures is detailed in which the one I am chiefly interested in does not appear to have answered so well as others, publication of which is calculated to injure me I inclose you a letter I received from Mr Reeves, Lord Ashburton's agent, in which he has found quite the contrary effect.—*Ed Purser, London Manure Co.*—" Taunton, December 2, 1843 —A farm of Lord Ashburton's having fallen into hand, in the parish of Cotleigh, near Honiton, in Devonshire, in very bad condition, I took possession of it in the month of October, 1842, and, with permission of his Lordship, began to farm it. I commenced with an arable field of six acres, which was very wet, and intended to have been sown with Wheat. I thoroughly drained it with stone, at the depth of three feet, but it was too wet to subsoil. I then divided it into separate portions, and amongst many other artificial manures, I applied the London Manure Company's urate as a top dressing immediately after the Wheat (the Taunton White Wheat) was sown, and harrowed the land twice. Besides the artificial manures, I applied lime and farm yard dung to separate portions of the field. The Wheat on the portion of the land on which the urate was spread, came up with great vigour, and maintained a decided superiority to the whole field during the period of its growth, and yielded ten bushels an acre more than the other parts of the field; and what is very remarkable, there was neither smut nor rust in any part of the Wheat grown on this portion of land, although, on the other parts of the field, both smut and rust were seen The superiority of the Wheat on the portion of the field before mentioned is so notorious, that all the farmers at Cotleigh can testify to it, and marked its progress during its growth, and I shall feel great pleasure in giving further information to any person wishing more particulars on this subject Yours, very faithfully, *J F Reeves*' [We are happy to receive *authenticated* reports of the action of the various manures from any person, and if of sufficient importance shall publish them, whatever their tendency may be, our object being to disseminate truth for the benefit of the farmer]

Malting —Being desirous of ascertaining the quickest mode of causing Barley to sprout sufficiently for the purposes of malting, in order, if possible, to lessen the time usually occupied in that process, I conducted a series of experiments with that view You will be aware that if any material be available for that purpose it must be something soluble in water, and which can thus be applied in the water in which the Barley is steeped in the cistern The different materials I tried as compared with common clean water, were, salt and water, lime water, ley from wood-ashes and one or two more, which, though I registered the experiments very minutely at the time, I do not now remember, for seeing no decided result, I did not retain the papers The objects sought to be achieved, are rapidity of germination, in its first process only, and as large a bulk of material as can be had besides, for if there was a diminution of the article it would cause a loss These two main points must, if accomplished be done by something which will be wholesome in itself, and which will impart no disagreeable flavour to the Barley.—*Cardinal Wolsey* [We should try the effect of moistening Barley with warm water, and then dusting it with *newly slacked lime* It might be tried on a small scale, and the result of experiments on the subject would be useful]

Leases. — Much has been said and written by practical as well as theoretical Agriculturists upon the momentous subject of leases and draining, but, up to the present moment, there does not appear to have been one decisive measure proposed to enable these important objects to be practically applied; and, perhaps, while attempting to recommend, I, as others have done, may fail to succeed however, by the joint efforts of many, difficult objects may be surmounted, and in that hope I will proceed. First,—I would recommend leases to be granted for 21 years, under conditions suited to the nature and situation of the farm, terminable, if required by the occupier, at the expiration of 6 or 12 years the rent being regulated triennially, or otherwise, as may be judged expedient, according to the average price of Corn during the 6 preceding years in the district wherein the parliamentary return is made—observing, that the basis of rent at the commencement of each lease should also be fixed upon the same principle of Corn averages It would be well if farmers in general could be brought to the same arrangement, notwithstanding existing leases. Secondly,—With respect to draining, I would recommend that 10 per cent of the rent should be laid out annually in draining (if the land requires it, and there are few instances where it does not) during the first 6 years, and that at the end of that term the tenant should pay 4 per cent for the outlay as additional rent, by which time the land would in a great measure be made dry, and the occupier, during the remaining period of his lease, would be enabled to realise an increased produce, owing to the transformation of his land from wet to dry, and thus have a more genial atmosphere and earlier harvest insured to him —*An Agriculturist.*

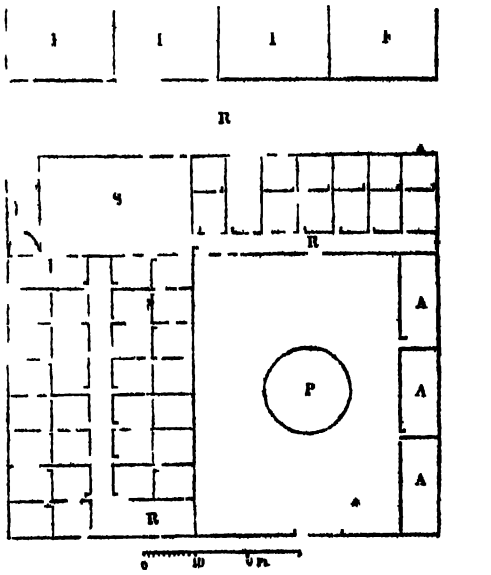
The Berberry Blight —It may not be uninteresting to such of your readers as have paid any attention to the subject of the supposed influence of the Berberry on the production of mildew in Wheat, to learn that some observations on this matter, by very competent persons, are likely to be published by the Royal Society of Lille, of which I have the honour of being a member. A commission was appointed by the Society last summer, consisting of practical men, in conjunction with that excellent cryptogamist, M. Desmazieres, a gentleman who has paid peculiar attention to the parasitic fungi, for the purpose of thoroughly investigating the point; and I understand from M Desmazieres, who joined the commission with an impression that the supposed influence was altogether fabulous, that the result of their inquiries was a complete conviction that a very marked connection did exist between the presence of the Berberry and mildew When the observations are published, I shall have great pleasure in laying a translation of them before your readers I do not offer any opinion on the matter myself, but shall content myself with remarking that, though there is not the slightest reason for supposing that the parasite on Corn is an altered form of that on Berberry, however extraordinary are the changes which take place amongst these minute plants, as, for instance, that of the Uredo-like spots on the leaves of Roses, and Burnat to Aregelia and Nemodechium, there may be some influence exercised either by the exhalations from the leaves and flowers, or by the substance given out by the roots, which may predispose the Wheat plants in their neighbourhood to the attacks of mildew. At any rate, in this, as in other matters, the way to arrive at truth is to keep the mind, if possible, quite free from prejudice, and ready to weigh impartially whatever trustworthy observations may be brought forward.—*M J. Berkeley, King's Cliff.*

The Loss of Manure in Towns —Every shower of rain washes much valuable manure down our public sewers and drains, and thence into the rivers and the sea; and thus while we employ ships in fetching guano many thousands of miles to enrich this country, we will not pick up that which lies under our feet The streets are swept indeed, but little more than the gravel, sand, and litter is saved; the finest and the richest parts are taken away by the rain. There would be no difficulty in forming reservoirs into which all this might flow, and from which it might be transferred to enrich the grounds But it is of the greatest importance in another point of view that towns should be well drained and cleansed, and as a proof of this I make the following extract from a lecture delivered a few days ago on the sanitary condition of this town, by the Rev. J Clay, M.D. He stated the number of deaths in the streets of the town, arranged according to the condition of their drainage, as follows:—

Ages	Good		Moderate		Bad	
	Deaths	p. ct.	Deaths	p. ct	Deaths	p ct.
Under 1 year	2	15 3	188	20 8	250	32 9
Between 1 & 5	26	19 3	286	31 8	310	39.2
Above 5	88	65 2	364	47 9	193	29.5
	135		760		803	

In the best streets the deaths above five were about double those under five, in the moderately-drained streets about equal but in the ill-conditioned parts of the town the deaths under five were two-and-a-half times as numerous as those above. These facts were striking and appalling —*Lancet, Preston*

Plan of Piggery —This piggery is constructed for the purpose of breeding and feeding on a scale to suit a farm of 600 acres of Turnip soil in an inland situation, where convenient markets render the disposal easy both of fat and lean stock The seven sties on the end of the steaming house accommodate a boar and six brood sows, which



are calculated to produce yearly 100 pigs, 60 of which will be fattened from September till April in the 15 sties placed in two rows, which will contain two hogs in each apartment The remainder will be sold as stores. The yearly return will be from 200*l* to 250*l*., according to the price of the produce. The steamed food will consist of Potatoes, meal, and grain to finish, and it will be conveyed to the sties along the paved road in a small four-wheeled waggon. The steamer also cooks Potatoes for work horses, and chaff for milch cows; and thus applies the cost to several purposes, and fully employs a man. The store-pigs are fed in summer with Clovers and Vetches, and in winter with steamed and raw roots. Water is brought to the steaming-house in a pipe from the farm-yards, which are all supplied by ball cocks from elevated casks, fed by a forcing pump, a pipe underneath conveys the water from the Potato-masher to the pond in the store yard, whence it passes to the lower corner of the yard, where it meets with the collected water of the whole area of the piggery, falls through an iron grate into a paved culvert, and is conveyed to the manure pit, to which the liquid of the farmery is collected by a drain along the side of the road. The expense of this piggery will vary from 80*l*. to 100*l*., according as the roof be slate or tiles, and according to the local prices of labour and materials. The steaming-house is covered above for holding meal and grain for steaming, and the roots are laid on the ground-floor, and let in from the carts by a spout-hole in the wall.—*J. H.*

Cultivation of Flax.—By their neglect of the cultivation of Flax the farmers and landowners of this country have sadly overlooked their own interests. Flax is now annually imported in this country to the amount of [illegible] principally, the value of which at a low [illegible] from 4,000,000*l.* and 5,000,000*l.* [illegible] of this raw material is [illegible] Continental neighbours—the Belgian, Dutch, and Belgian,

farmers. I have had seven years' experience as a grower of Flax, and 12 years' practical knowledge as a buyer and agent for several of the largest Flax-spinners in Leeds, Manchester, and Preston; and I am prepared to place before landlords and farmers my views, which, if followed up by them, will soon stop the call for Belgian, French, Dutch, or Riga Flax; and thus we shall keep the 5,000,000*l.* sterling in the hands of our own farmers, instead of sending it abroad. All the difficulties in the way of the culture of Flax may easily be overcome, unless it be the Irish superstition, which imagines that St. Patrick blessed the Shamrock shores and the county of Down, while, although in view of the Lancashire coast, he would not notice it. I am prepared to prove that there is as good soil in Lancashire, and other parts of England, for the cultivation of the Flax-plant, as in Ireland, France, or Holland; and, as I can also prove, that farmers can, by growing Flax, clear greater profits per acre than they can by growing Wheat or Barley. There have been instances of 60*l.* per acre, clear of all expenses, made this year in the north of Ireland by parties who went to work on the Belgian system. Intelligent young farmers have of late years been sent to Belgium and France, and by them, owing to the adoption of an improved management, the quality of British Flax has been greatly improved. The quantity grown in our country has also increased so much, that, at the last meeting of the Society in Ireland for the improvement of Flax Culture, one spinner declared that previously he generally paid 40,000*l.* per annum to the Continental growers for Flax, and that the last year he has not paid 40*s.* I can prove that the small farmers, holders of from 30 to 60 acres of ground, can now make by an acre, or two acres of Flax, what will pay their rent for 30 to 60 acres. This never could be done by six acres of any other kind of grain. This almost new and improved system has so extended itself, that branches of the society for improvement have been established in every direction. In the North, 112,000 acres were sown last year, and the calculation is, that the value of the produce at the low price of 45*l.* per ton would amount to 1,767,150*l.* At the same time, I know that some has been sold so high as 140*l.* per ton, and a great deal at 64*l.* and 100*l.* per ton. I have had many years' experience and know well the processes that the Flax plant must go through before it appears in the beautiful white cambric, damask, or linen—the processes of sowing, weeding, pulling, watering, scutching, hackling, spinning, and weaving. I shall have pleasure in giving you every information in my power on this subject from time to time.—*J. H. Dickson, 8, Manchester Buildings, Whitehall.* [We are sorry that we could not insert the whole of Mr. Dickson's letter. We shall be happy to receive the communications on this subject which he promises.]

Wireworm.—I know not whether it may be generally known that pheasants are destroyers of that mischievous grub, the wire-worm; it may possibly, therefore, be acceptable to some of your agricultural readers to be informed that such is really the fact. A correspondent of the "Sporting Magazine" writes, "that no fewer than 1225 of those destructive larvæ were taken from the crop of a hen pheasant in January last." Consider, that this is only one day's consumption! It thus appears that pheasants are of some benefit to the farmer.—*A Quiet Observer.*

Societies.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

The anniversary general meeting of this Society was held on Jan. 9th, in their Hall, Albyn-place. There was a large attendance of the members. The Right Hon. the Earl of Mansfield, one of the Vice-Presidents in office, took the chair. The first business before the meeting was the balloting for new members, when 38 candidates were unanimously elected. The Duke of Richmond was then re-elected President of the Society for the ensuing year, being his fourth year in office; and the Marquis of Queensberry and the Earl Cathcart were elected Vice-Presidents in room of the Earl of Seafield and Lord Dunfermline, who retire by rotation. Among other matters then submitted to the meeting, the Secretary stated the results of the competition for the premiums in the year just expired. There had been 14 papers sent in, reporting experiments with various special manures, and no class of premiums, in the remembrance of the oldest Director, had given rise to a more satisfactory competition. The first premium of 50*l.* was awarded to Mr. John Hannam, Wetherby, Yorkshire; the second premium of 30*l.* to Mr. Alexander F. Gardiner, overseer to Mr. Fleming of Barrochan; the third premium of 20*l.* was equally divided between Mr. Finnie, Swanston, and Mr. Stevenson, Redside, near North Berwick, these two papers being considered of equal merit. But not satisfied with these awards, the Directors considered the other ten papers of so much value as to induce them to recommend that they also should be printed for the benefit of the public. They therefore proposed that an extra sum of 30*l.* should be appropriated in awards for these papers. The circulation of the "Quarterly Journal of Agriculture," in which the Prize Essays of the Society are published, was stated to amount to 2200. The thanks of the Society having been voted to its office-bearers on the occasion of the late Show at Dundee, arrangements were made for the nomination of a Committee to superintend all the arrangements for the Agricultural Meeting and Show of Live Stock to be held at Glasgow on the 7th, 8th, and 9th August next. The report of the Committee on Cottage Premiums was then read, and it was agreed that [illegible] competed for the premiums [illegible] to the end of March. All cottages [illegible] and on or before 15th [illegible], Chairman of the Committee on the [illegible] report on the state of that establishment, [illegible] continue to be afforded to the public of free admission, [illegible] the numerous and valuable objects which the collection exhibits in its various departments; and a reference to the visitors' book gives satisfactory proof that the privilege of admission is duly appreciated. It has been opened only two years and a-half, and within that time 17,585 have inscribed their names as visitors. Donations of models of implements, seeds, roots, plants, timber, and geological specimens continue to be received and added to the collection. Not the least interesting of these are the samples of agricultural produce from the various Local Associations, thus enabling them to form a comparative estimate of the value of the crops throughout the country. Towards the close of the meeting, Sir John Graham Dalyell stated that he had often wished that some gentleman would devote his attention to the drawing up of a short history of this Society, which had rendered such immense benefit to the country. The first Agricultural Society that ever existed in Scotland he found was instituted in 1723; the next was in 1755; and the present patriotic and powerful Society was begun just 60 years ago. He thought all that was to be desired might be condensed into a brief memoir, which the members might find both agreeable and useful. He had collected various notes on the subject himself, which he would be happy to hand over to any gentleman who would undertake this task. The business being concluded, thanks were voted to the noble Earl in the chair, after which the meeting separated.

AGRICULTURAL SOCIETY OF IRELAND.

The council of this Society held their weekly meeting on Thursday, January 11. A report on the profitable reclamation of waste lands in the King's County was received from W. S. Trench, Esq., of Monaghan. Reports, competing for the Society's gold medal, for the greatest quantity of draining executed in Ireland for the years 1842 and 1843, were also received from several gentlemen. Committees were appointed for their examination. A sub-committee was also appointed to select and report upon the best and most eligible situation for holding the next great cattle show in or near Dublin, on the 14th of August next; and the council then adjourned until Thursday, the 18th instant, at two o'clock.

AGRICULTURAL CHEMISTRY ASSOCIATION.

The Annual General Meeting of the members of this Association was held on Jan. 8th, in the Highland Society's Museum, Lord Melville in the chair. From the Report by the Committee of Management, it appears that the society is rapidly increasing in number; nearly a sufficient sum has been subscribed as the salary for 5 years, of their chemist, Prof. Johnston. The Professor is now resident in Edinburgh, and is amply provided with all the requisite apparatus, and with three able assistants, whom he has engaged at a considerable cost. Two of these are foreigners, and all of them experienced chemists. They have already begun work, and indeed for the last few weeks have been actively engaged not only in answering letters of advice, but in analysing soils sent them from different parts of Scotland, and also from Jamaica and Demerara, by subscribers there, and in examining likewise various marls, and specimens of guano, oil-cake, turnips, &c., which have been forwarded from all quarters of Great Britain and from Ireland. Two important additions have been made to the regulations of the society. By the one, counties subscribing 20*l.* yearly to the Association have the privilege given them of sending a member of Committee of the Board of Management. The other regards a point which was stated at last general meeting to be under consideration, viz., the terms on which local Agricultural Societies should have lectures from Professor Johnston. These have now been fixed at 5*l.* for each lecture, which are not to exceed three in number, besides the travelling expenses of Professor Johnston, and this regulation appears to be giving satisfaction. Already application has been made by various agricultural societies in the counties of Renfrew, Ayr, and Fife, for lectures, and it is understood that the example will soon be followed by others. The state of the funds has improved greatly since last general meeting. Some very handsome contributions have been received. That of the Duke of Northumberland, of 30*l.*, merits especial notice, as an instance of disinterested liberality—since his Grace possesses, it is believed, no property in Scotland. Nor must the conduct of the West Lothian Agricultural Society, in contributing 10*l.*, pass without remark, as it evinces an enlightened zeal in the ranks of our practical agriculturists.

FARMERS' CLUBS.

Maidstone.—The annual report which was read at a late meeting of this club records the resolutions of the club on the various subjects discussed during the past year. Among them the following seem of general importance:—At the March meeting on the subject of feeding off Wheat, it was resolved, "That it is the opinion of the members that no good is derived from feeding off Wheat, but that the treading of Wheat, or rolling it with the clod-crusher on light soils, is considered extremely beneficial, and that good crops have resulted from these operations, by which the wire-worm has been checked, and the soil effectually closed." On October 5th the subject of discussion was the cultivation of Wheat, which resulted in the following resolution:—"That on land where it is practicable, crossing or drilling is always preferable, as two bushels of seed thus used will be found equal to at least two and a half bushels sown broad-cast. Dibbling, when labourers can be got to do it properly, will cause a still greater saving of seed, and give greater employment. That in this district the quantity of seed usually considered necessary is from two bushels to two and a half bushels, according to the interest of the season; but that the system of thin sowing, as recommended in Mr. Davis's recent pamphlet, appears highly deserving of consideration and experimental trial."

Rhins of Galloway.—The first monthly meeting of this Club was held at Stranraer on Friday, 29th Dec. Mr. M'Bryde, the Secretary, delivered an interesting address descriptive of ancient Agriculture, and afterwards opened a discussion on the growth and cultivation of Wheat. A variety of communications upon this subject received by him from farmers in various parts of the kingdom were read to the meeting, from most of which it appeared that Hunter's Wheat was a hardy and profitable variety, and that it was advisable to change the seed every two or three years, taking care always to obtain it from a better and earlier soil and climate.

GEOLOGICAL SOCIETY.

Native Phosphate of Lime.—At the last meeting of this Society, Professor Daubeney read a paper on the occurrence of Native Phosphate of Lime in the province of Estremadura, in Spain. This salt occurs near Guadaloupe, and forms a vein running between the chip slate for about two miles, and is about 20 feet in breadth, and, as far as could be ascertained, 10 feet in thickness. Dr. Daubeney examined this formation with an especial view to ascertain the possibility of its being used in this country as an article of manure. There are, however, great difficulties existing with regard to carriage, which, on account of the unsettled state of the Peninsula, would be serious. If, however, there should at any time be a scarcity of bone manure, it might be brought to this country as a substitute. No experiments have at present been tried with this mineral as a manure, but there can be little doubt that it would act efficiently, where plants require Phosphate of Lime.

Reviews.

Productive Farming; or, A Digest of the Recent Discoveries of Liebig, &c. By Joseph A. Smith, Lecturer on Agricultural Chemistry. Second Edition. Simpkin, Marshall, and Co. 8vo., pp. 179.

It is not to be expected that farmers, as a body, should be capable of applying scientific laws to the improvement of Agriculture. In the process, however, of thus applying those laws they have a very important part to perform. They have not only for the most part to supply the materials, a consideration of which enables the scientific man to suggest improvements in their practice, but they have also to carry out these suggestions into actual trial, and to determine on the farm their real value to the farmer. Their assistance is thus required from first to last in the work of Agricultural improvement, and in order, on the one hand, that they may be able to select and state properly such facts as bear on any subject that may be under consideration; and on the other that they may be able to appreciate the suggestions founded by the scientific man upon these facts, it is of great importance that they should possess a general knowledge of the relations in which farming in its various branches stands to some of the sciences. We are therefore glad to see works of the class to which Mr. Smith's little volume belongs increasing in number.

"This book is a compilation. The object of its compiler has been the simplification of the more strictly scientific and technical writings of the principal Agricultural writers of the present age." So says its Preface. The object of its Author is a good one, and the plan laid down for its attainment has been skilfully executed.

The possibility, and indeed the certainty, that the application of scientific knowledge will eventually simplify and cheapen the farmer's practice, is well illustrated by Mr. Smith in parallel cases drawn from other arts and professions. Thus—

"Calico printers for a long time have used the solid excrements of the cow in order to brighten and fasten colours on cotton cloth. This material appeared quite necessary, and its action was ascribed to some latent principle or material derivable from the living animal. But since the action of cow-dung was known to depend on the *phosphates* contained in it, it has been completely replaced by a more cleanly mixture of certain salts, of which the most prominent is *phosphate of soda*. So, in medicine, for many centuries the mode of action or the active principle of all remedies, was veiled in obscurity. But now these principles have been presented to the world in an extremely active and concentrated form. The extraordinary efficacy of Peruvian Bark in the cure of fever is found to depend on a minute quantity of a crystalline substance, termed *quinine* contained in it. The inhabitants of Savoy are much infested with the disease known amongst us as 'Derbyshire neck.' *They* have springs which are famous for its cure; *we* derive benefit from the use of burnt sponge. Now, burnt sponge contains iodine; and upon examination these springs contain iodine in small quantities."

Apply all this to Agriculture and we may be sure that—"A time will come when fields will be manured with saline solutions, with the ashes of burnt straw, or with salts of phosphoric acid prepared in chemical manufactories, with as much certainty as now, in medicine, iodine cures the 'Derbyshire neck,' or as quinine is substituted for the bulky powdered bark in fever."

The Book of the Farm. By Henry Stephens, Editor of the "Quarterly Journal of Agriculture." Part XVII. William Blackwood and Sons.

A work [illegible] like this the above would not properly designate [illegible] Mr. Stephens goes into such detail on [illegible] subject which he discusses, that he appears

n also at making his "Book of the Farm" suitable as a substitute for a whole Agricultural library. Though eminently a practical treatise on Agriculture, this Work is frequently illustrated by scientific explanations. These are from the pen of Dr. Henry R. Madden, of Penicuik, near Edinburgh. In the present Part, the Author continues and concludes his remarks on the treatment of stock in summer, and takes up the important subject of the woods of Agriculture.

The only fault we have to find with this Work is its prolixity. Notwithstanding that it is specially addressed to Agricultural pupils, and must therefore enter fully into detail, yet it might be advantageously condensed. Mr Stephens is already greatly beyond the original limits laid down as the extent of his work, and as he has not yet got entirely through all the subjects to be treated of in it, if in that which remains he does not adopt a more condensed style, the "Book of the Farm," though certainly complete as a work of reference, will ultimately be very expensive.

Miscellaneous.

Thorough Draining.—You are quite aware that your soil is wet, and your climate is wet, and I am sure that you all must have seen that wherever there is a piece of land drier than another, you find it a fertile soil. That dryness has been affected, in some measure, by nature; but art should follow up what nature has pointed out as advantageous. If we would proceed to do so—if we would actively set to work—I am persuaded that we could soon extend fertility over the whole soil of this splendid country. If landlords and tenants, on an extended scale, would unite their energies, the landlord in assisting the tenant, and the tenant in supporting the landlord, we would soon see the country around us converted into a fertile garden. It is quite clear, from the attention which has been paid to this great meeting of the agricultural interest by extensive land-proprietors, that there is no want of an anxiety for the improvement of Irish agriculture. While this spirit of anxiety exists, the question put by the tenantry is—where are the funds to come from? We see the necessity for improvement; we would wish to have a good system of agricultural affairs; but where are the pecuniary resources? That is the great difficulty; but it is not incapable of being obviated. The improvement should be judiciously and extensively carried on by the landlords themselves. They are possessed of wealth, and they should not be afraid to lay it out on their property. It will not be thrown away. No man can finally be a loser by the improvement of his property. I can speak from experience and from extensive observation; and I know that there are hundreds of landlords in this assembly who can bear me out in the statement—that if money be laid out extensively in thorough-draining, they will not regret the expenditure. The grand secret in thorough-draining is to adopt the more substantial mode instead of the cheaper; and I would take this opportunity of warning both landlords and tenants against the danger of doing the thing superficially. When once effected, the improvement is permanent. It is a lasting good. It should be done in the most permanent manner. You should not, by any means, stint the number of drains, but you should take care to drain the land thoroughly, for I would almost as soon not see the work set on foot at all, if it were not to be fully and satisfactorily completed. There is abundance of skill and knowledge in the country; and if you would take pains to bring that skill and knowledge to bear in a proper manner, I have no doubt the work would be well and permanently accomplished. The depth of the drains is an important point. I certainly am of opinion that the drains should be at least two and a-half feet deep, and then you will have a much more perfect drain than you could possibly have by a shallow drain.—*Mr. Smith, of Deanston, at the recent Meeting of the Irish Agricultural Society.*

Lower Turnip Shear.—I beg to say, that on cutting a quantity of Aberdeen Turnips, which serve as a feed for two heifers, and which weighed without the basket 5 st 4 lbs., this implement performed the work without hurry in one minute and about ten seconds, or rather under. It would take nearly half the time to put them into the basket without cutting. A little boy who assists in my yard supplied them to the machine out of the heap, but I think the person who cuts could do all in one minute and a half at most.—*F. G.—Dublin Farmers' Gazette.*

Notices to Correspondents.

Communications from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them —*J. Snow* and *A. Campbell*.

AGRICULTURAL EDUCATION.—*R P*, *A Subscriber*.—The counties in which a person may best obtain a thorough knowledge of practical farming in every branch are situated on the eastern and northern coasts—any Norfolk, Lincolnshire, and North Scotland.

APPLICATION OF GUANO.—*A Reader*.—From Sprengel's work on Inorganic Manure, which is being published in this Paper, you will understand the action of lime on a soil. It unites with the humic acid, which is one of the forms that decomposing vegetable matter assumes in the soil, and forms with it a compound soluble in water, by which it is conveyed into the plant. When too much lime is added to the land all the available humus is immediately appropriated, and being thus conveyed into the plants, causes them to grow vigorously; but unless manure be soon applied to compensate for this loss of humus, the soil will become exhausted, which is too often the case under the rapacious cultivation of some who have only a yearly interest in the land. The carbonate of lime, as an chalk, acts in a similar way, but more slowly, and therefore more lastingly. We do not think it would be advisable or economical to burn the chalk. Perhaps its efficiency depends in a measure upon its containing phosphoric acid in small quantities, which Professor Sullivan informed us in his late lecture, is an ingredient of some varieties. If so, its value is independent of the influence which a red heat would have on its composition; and it is difficult to account in any other way than this for the benefit which, in the case of chalk, the farmer derives from repeated applications to the surface of his land, of the material dug immediately out from beneath it.

APPLICATION OF GUANO.—*Northumbriensis*.—You had better apply it before the end of April—the earlier the better. If the field is to be fed later than that, apply it as soon as the cattle are shut out.

BOOKS.—*A. N.*—You cannot get all you want in any one book, unless it be an Encyclopædia, and perhaps "Johnston's Encyclopædia of Agriculture" would suit your purpose better than any other. The best treatise on the management of poultry in all its particulars is that by Peter Boswell, Greenlaw, entitled "The Poultry Yard."

CHICKWEED.—*A Subscriber*.—We know of no other plan for destroying this weed than the diligent use of the hoe. If there be a danger with some of your crops of hoeing up the young plants with the weeds when just above ground, sow in the drills with them some Oats; these will spring up first, and show you where the others will come after, so that you may use the hoe between the rows without danger.

DRAINAGE.—*A Subscriber*.—We have seen land, such in its texture as you describe, perfectly drained with stone drains, 8o inches deep, and 16½ feet apart. Their direction was down the greatest descent.

EGYPTIAN PEAS.—*A new Subscriber*.—It is the English variety which is employed. The Messrs. Ransome, of Ipswich, manufacture an efficient corn-crusher. We shall ascertain for you further particulars regarding its use as food for cattle. Lucerne when grown on deep loamy soil may be depended on for feeding stock from May till October.

ITALIAN RYE.—*A.*—We have communicated your desire to Mr. Parkinson. We understand the M. Wurtzel, otherwise suitable as food for milch cows, is not very productive of *richness* in the milk.

LIQUID MANURE.—*A Subscriber*.—Your letter has been received, but we very rarely insert among our Home Correspondence any which merely ask questions. We either answer the questions they contain, or place them in the hands of persons competent to do so; simply publishing the answer. The quantity of sulphuric acid necessary to fix all the ammonia in a given quantity of urine will depend upon the strength of the two liquids—the latter varies considerably in the quantity of ammonia which it contains. As long as any effervescence attends the addition of the acid, you may be sure that ammonia still exists in the urine in a volatile state. This rule will also determine the quantity of muriatic acid to be added when it is used instead of the oil of vitriol. The necessary quantity of sulphuric acid, when the acids are as strong as those usually sold, will be found to be one-third less than that required of muriatic acid. We prefer sulphuric acid as a fixer of ammonia; the sulphate, in all the experiments on the subject that we know, has proved a more powerful fertiliser than the muriate of ammonia. Muriatic is quite as dangerous as sulphuric acid among ignorant workpeople. Unburnt gypsum contains rather less than one-half its weight of sulphuric acid; therefore, if you find that a certain weight of oil of vitriol fixes all the ammonia which it contains, you may be sure that double that weight of "powdered unburnt gypsum" would produce the same effect.

MANURES.—*G. Sherborn*.—The mixture you propose would be suitable, but the quantity you propose to apply to an acre appears to us too large; and do not drill it with the seed, but scatter it broadcast, and harrow it well in before sowing; the young plants will find it out soon enough. For the nature of gas-lime see answer to question on the subject in No. 2 of the *Agricultural Gazette*. Analyses of the matters you refer to are to be found in chemical works.

MANURING GRASS LAND.—*H. Bellaire*.—July or August is the best time for manuring Grass land, to be mown the next year. The autumnal rains wash it into the ground. We shall take the subject up at the proper time.

MASTER AND SERVANT.—*J. J.*—In England, the servant could complain to a justice of the peace, who could, if the servant proved that the *meat* was not of the kind usual and proper in such cases, discharge the servant from the service. The justice, however, could not make any specific order directing the master to supply better meat. The servant could also bring an action for breach of contract. We do not know what provision the Scotch law makes for such cases.

PIGEON DUNG.—*Marcenas*.—Mix this dung with plenty of fresh mould, and it will then remain safely till you are ready to apply it. Powdered gypsum added to the compost would still further hinder the escape of the volatile constituents of this manure.

SALT AND LIME.—*A Subscriber*.—We shall answer your question next week.

SPRD-WHEAT.—*A Subscriber* may sow Wheat now, if his land be dry. We have been sowing during several days of the past week. Red straw White Wheat and Shirreff's White are two excellent varieties, which, as far as our experience goes, are suitable either as winter or spring seed.

TILE MAKING MACHINES.—*S. A.*—Etheridge's machine is preferable to that of the Marquess of Tweeddale.

WASTE OF HOUSES.—*Anonymous*.—You must gather them together and take them to a bone mill. We know of no other way, unless you make a compost with them and ordinary farm-yard dung. Add dilute sulphuric acid, which will probably assist in decomposing them.

*** As usual many communications have been received too late for answering this week.

Markets.

SMITHFIELD, MONDAY, Jan. 15.—Per stone of 8 lbs.

Best Beasts, Herefords, &c.	3s 10 to 4s 2	Best Downs & Half breds	4s 0 to 4s 0
Best Short Horns	3 8 3 10	Best Long woolled	3 10 4 0
Second quality Beasts	3 2 3 6	Lambs and second quality	3 4 3 8
Calves	4 0 4 10	Pigs	3 4 4 4

NEWGATE.—Beasts, 2868; Sheep, 20,000; Calves, 69; Pigs, 280.

There being a larger supply, both of Beef and Mutton, to-day, the trade is heavier. The best quality of Beasts, however, are not at all plentiful, and are readily sold at the above quotations; and in some instances, but very rarely, the choicest things have made 4s 4d. The best Mutton is rather more plentiful to-day than of late, and suffers a decline in price—the most selling Downs not making more than 4s 6d, the same general price being 4s 4d for the very best. Good Calves are scarce, and Lambs are dear. The Pork trade is a little more cheerful.

FRIDAY, JAN. 19.

To-day there is very little alteration from Monday's quotations: Beef is 2 shade lower; Mutton continues about the same. There is a still shorter supply of good Calves, with an advance in price—the very best are readily sold at 4s 8d per stone, and in some few instances rather more than that is obtained. A slight improvement in Pigs.

NEWGATE.—Beasts, 2311; Sheep, 8010; Calves, 167; Pigs, 260.

61, West Smithfield.

POTATOES, Jan 14.

SOUTHWARK WATERSIDE, Jan. 13.—There have been but few arrivals since our last, yet the market continues sufficiently supplied with former arrivals, especially with York Reds; the inferior samples from that country go off heavily, but the best samples from all quarters meet with a ready sale. The weather during the past week continues remarkably fine and open for the season, and the Dutch markets are abundantly supplied with Vegetables selling unusually cheap; notwithstanding which our late quotations have been fully realised.—Prices as annexed:—

York Reds	70s to 80s	Kent and Essex Whites	80s 85s
Perth	60 65	— Middys	60 70
Early Devons	60 70	Wisbeach Kidneys	60 70
Cornish	65 70	— Whites and Blues	60 70
Jersey and Guernsey Blues	60 65	Prince Regents	60 60

SEEDS, FRIDAY, Jan. 19.

Canary	per qr 45s to 50s	Linseed Calcutta, Foreign, &c.	42s to 47s
Carraway	per cwt 30 30	Mustard, White	9 10
Clover, Red, English	84 92	— Brown	6 8
— Foreign	84 92	— Foreign	5 6
— White, English	78 84	Rapeseed, English, per last	24l 25l
— Foreign	72 78	— Foreign, per last	— —
Coriander	9 12	Rapeseed Cake, per ton	5 5
Cumbined	per bush 32 36	Tares, Winter, per bush	3 3
Flax	per qr — —	Trefoil	2 2
— Baltic	per cwt — —	Turnip, Swedish	1 1
— Other, Foreign, per load	36s to 38s	Canary, per bush	4 4

MARK LANE, FRIDAY, JANUARY 19.—The arrivals of English Wheat are quite sufficient, and Monday's carryover would, we should, be fully adequate; from Scotland, no intelligence; but Edinburgh Saturday's prices are depressed. Barley is dull, and the quotations do not give way. Malt dull. Beans unaltered. The Oat Trade continues in its usual quiet, with a fair sale.

Wheat, Essex, Kent, and Suffolk				White	42	52	Red 40 46
—— Norfolk, Lincolnshire, and Yorkshire					42	52	White — —
Oats, Lincolnshire and Yorkshire				Potland	19	23	Feed — —
—— Northumberland and Scotch				Feed	21	25	Potatoe — —
—— Irish				Feed	19	23	Potatoe 23 25
Barley			Malting and Distilling		33	36	Grinding 31 33
Malt, pale, ship					—	—	
—— Scotland and Essex					—	—	
Rye					30	32	
Beans, Tarragon, old and new	32	36		White	33	34	Grinding 31 32
—— Pigeon, Scalegoland	32	36		Winter	32	34	Grinding 31 32
Peas, White	32	36		Maple	37	38	Grey 36 37

IMPERIAL AVERAGES.

Dec.	8	per Quarter	Wheat.	Barley	Oats	Rye.	Beans.	Peas.
—	15		42 5	32 6	18 7	30 10	32 6	32 10
—	22		42 5	32 6	18 7	30 10	32 6	32 10
—	29		42 5	32 6	18 7	30 10	32 6	32 10
Jan	5		42 10	32 7	18 7	30 10	32 6	32 10
	12		42 9	32 7	18 7	30 10	32 6	32 10
6 weeks' Aggregate Aver			42 6	32 6	18 7	30 10	32 6	32 10
Duties on Foreign Grain			20 0	0 0	0 0	10 0	10 0	10 0

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Beans
English	2260	—	2770	1270 Qrs.
Irish	—	—	2450	—
Scotch	—	—	—	—
Foreign	4260	670	210	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	6760 Sks.	9260	12150	6925	2600	—	1260	925
Irish	—	15°4	—	60	67120	—	—	—
Foreign	1852	1400	4704	—	60	—	—	425

HOMEWARD AND LAID.

COVENT GARDEN, Jan. 19.—The Market has been well supplied during the week, but trade is not brisk. Pine Apples are sufficient to meet the demand, they are selling at nearly the same prices as last week. Hothouse Grapes are scarce, but Portugals continue plentiful; they have not advanced since our last report. Apples continue equal to the demand, and are selling at from 3s. 6d. to 10s. per bushel. Among Pears a few of the Passe Colmar are still in the Market; No Pics Meuris is also to be met with, but these are becoming scarce. Oranges are plentiful, and Lemons are sufficient for the demand. Filberts are abundant. Vegetables in general have been pretty liberally supplied during the week. Cabbages are good and plentiful. are likewise Brussels Sprouts and Greens. Broccoli is rather scarce. Seakale and Rhubarb are plentiful, the latter in particular is very good and abundant. Parsley continues to bring nearly the same prices as last week. Asparagus has become rather scarce, it has also advanced in price since our last report. Endive is good and plentiful, and Shallots are abundant. Celery is sufficient to meet the demand, but is rather inferior in quality. Cut flowers are chiefly composed of Erica gracilis and hyemalis, Poinsettia pulcherrima, Bignonia venusta, Correa speciosa, Geneva zebrina, Lily of the Valley, Pelargoniums, Fuchsias, Cineraias, Chrysanthemums, Camellias, Azaleas, and Roses.

FRUITS.

Pine Apple, per lb., 4s to 7s	Red Capsicums, 4s to 6s
Grapes, hothouse, per lb., 8s to 9s	Almonds, per peck, 4s
— Portugal, per lb. 1s to 2s 6d	Sweet Almonds, per lb., 2s 6d to 3s
Apples, dessert, p bush 3s 6d to 10s	Nuts, Spanish, per bushel, 10s
— Kitchen, p bus 2s to 7s	— Brazil, 16s
Pears, per half-sieve, 2s 6d to 10s	— Filbert, 7s to 8s
Oranges, per dozen, 1d to 3s	— Barcelona, 8s to 10s
— per 100, 14s	— Cob, per 100 lbs., 60s to 65s
Lemons, per doz. 6d to 2s	Chestnuts, per peck, 2s to 3s
— per 100, 8s to 14s	Filberts, English, p 100lbs., 60s to 65s
Pomegranates, per doz., 2s to 6s	

VEGETABLES.

Rhubarb, per bundle, 6d to 1s 6d	Onions, Spring 1s 6d to 2s p. bushh.
Broccoli, per bundle, 1s 6d to 2s	— Large, per bushel, 3s to 4s
Brussels Sprouts, per half-sieve, 1s to 2s	— Spanish, per doz., 1s 6d to 2s
Cabbages, per doz., 6d to 1s	— pickling, p half-sieve, 2s 6d to 3s 6d
Asparagus, per 100, 2s 6d to 11s	Shallots, per lb., 3d to 6d
Seakale, per punnet, 6d to 2s	Chilis, per 100, 1s to 2s
French Beans, 2s to 4s per 100	Lettuces, Cabb., p score, 6d to 2s
Autumn Potatoes, 3d to 6d per lb.	— Cos, per score, 6d to 1s
Savoys, per doz. 6d to 1s	Celery, per bun., 6d to 1s
Greens, per doz 2s to 3s 6d	Mushrooms, per pottle, 3d to 1s 3d
Potatoes, per ton, 4l to 10l	Walnuts, per bushel, shelled, 12s to 16s
— per cwt, 2s 6d to 4s	Small Salads, per punnet, 3d to 6d
— per bushel, 1s 6d to 2s 6d	Watercress, per doz sm bun 3d to 6d
— Kidneys, p bush, 3s to 3s 6d	Parsley, per doz bunches, 4s to 6s
Turnips, per 12 bunches, 1s 6d to 2s 6d	Tarragon, Green, per bun 6d to 9d
Horse Radish, per bundle, 1s to 2s	Sadlery, per score, 2d to 3d
Radish, spring, p doz bunds, 1s	Green Mint 4d to 6d per bunch
Carrots, p doz bun, 2s 6d to 3s	Marjoram, green, p doz. bun. 1s 6d to 2s
Spinach, per sieve, 1s 6d to 2s	Chervil, per punnet, 3d to 6d
Leeks, per doz bun. 6d to 1s	Balsafy, per bundle, 1s to 1s 6d
Garlic, per lb 6d to 8d	Scorzonera, per bundle, 1s 6d

HOPS, FRIDAY, Jan 19.

We can quote no alteration in the Hop Market since last week. Prices are fully maintained, and the stock in offer very limited, at the following currency:—

Mid & East Kent Pocks	6l 0s to 10l 10s	Sussex Pockets	4l 0s to 6l 0s
Choice ditto	11 0	Choice ditto	8 10
Weald of Kent Pocks	6 0 6 10	Farnham	9 10 10 10
Choice ditto	7 0		

PATTENDEN & SAXBY, Hop Factors.

HAY, SMITHFIELD, JAN 19.

HAY, 3l 10s to 4l 10s | CLOVER, 3l 10s to 4l 15s | STRAW, 1l 4s to 1l 10s

For Load of 36 Trusses. JOHN CLOWES, Salesman.

WHITECHAPEL, JAN. 19

HAY	3l 10s to 5l	CLOVER	3l 12s to 4l 8s
— fine Upland, 4l 5s to 5l 15s		— fine, 4l 10s to 5l	

STRAW 1l 4s to 1l 10s

Supply short, and trade dull.

WOOL.—BRITISH, FRIDAY, Jan 19.

CONSIDERABLE excitement has existed in our Wool Market during the past week. Those houses who are generally speculative have bought freely at rather advanced rates. For our own part, we see nothing in the reports from the manufacturing districts to lead us to suppose that any material advance in price will be permanently maintained.

	per lb		per lb
Prices Current.			
Long woolled Wethers	1s 0d to 1s 1d	Southdown Hoggrtes	1s 0d to 1s 0d
do Hoggrtes	1 0 1 3	Kent Fleeces	1 1 1 2
Southdown Wthrs & Ewes	0 11½ 1 0		

JAMES PARKER, Wool Broker.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs
Alum, 560s per ton	—	Ashes, pot or pearl, per ton
Blistering Powder, 60s per cwt.	—	Bones, 40s to 50s per ton
Brimstone, 20Os per ton	—	Rape Cake, 10s per ton
Bone-dust, 17s per quarter	45	Soot, 14s per ton
— Middlings, 10s do	45	Sal Ammoniac, 4d per lb
— Meal, 7s per bushel	—	Salt, Agricultural, per bush
Carbonate of Ammonia, 60s per cwt	56	— Lump, 20s per ton
— of Lime, 1l to 1l 5s per cwt	—	— Hide, 40s per ton
— of Soda, 20s to 30s per cwt	—	Saltpetre (Nitrate of Potash) 80s
Chloride of Lime, 30s per cwt	—	Soda (Nitrate of Soda), 60s per cwt
Guano, 10l to 20l per ton, according to quality	—	Sulphate of Ammonia, 60s per cwt
Potter's, 30s per ton	60	Sulphate of Potash, 60s per cwt
Gypsum (Sulphate of Lime), 40s to 50s per ton	60	Sulphate of Soda, 60s per cwt
Humphrey's Compound for Manuring, 1s 6d per bottle	—	Superphosphate of Lime, 60s per cwt
Muriate of Ammonia, 60s per cwt.	—	Wood Ashes, per bushel
— of Potash, 60s per cwt.	—	Wool Rags, 10s per cwt
Nitrate of Soda, 1l 10s to 1l 15s per cwt	—	Woollen Rags, 10s per cwt
Phosphate of Ammonia, 60s per cwt	—	Yeast, 1s per gallon

NEWSPAPER OFFICE, 15, Coventry-street, Haymarket, London.—Established upwards of 40 years.

T. MURIE and SONS, Agents for the supply of the GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE, forward that and all the other London Newspapers in common use (of which may be had on application), with the strictest regularity to all parts of the Kingdom, and to the Colonies, free of postage; and by the Morning Mails if requisite. T. M. and Sons beg to state that they print the entire address of their Customers on the wrapper, when ordered for six months or longer.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 324, HOLBORN.

D. and E. Bailey having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. Bailey also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 324, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. Bailey were the first to introduce metallic curvilinear Sashes to horticulturists, and can refer to the Conservatory erected in the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. Bailey have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Greenhouses or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

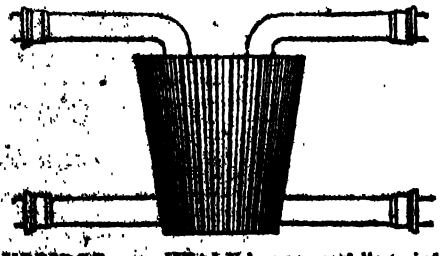
STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks which are ornamental in appearance can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of iron will be found cheaper than of any other material. Mr. Rendle, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

THE CONICAL HOT-WATER BOILERS, invented by J. Reesan, Esq., may be obtained of any size from JOHN SHEWEN, Ironmonger, &c., Sevenoaks, Kent.

J. Shewen having had every opportunity afforded him by an extensive practice to bring this apparatus to perfection, begs to offer it as most efficient and economical: it may be seen at Messrs. Chandler & Sons' Nursery, Vauxhall; Messrs. Loddiges', Hackney; Messrs. Henderson's, Pine Apple-place; Messrs. Veitch and Son's, Exeter; Mr. Pontey's, Plymouth; the Royal Botanical Society's Gardens, Regent's Park; and at the Gardens of the Horticultural Society of London. Considerable improvements have been effected since last season; particulars of which are in course of preparation.

IMPROVED PLAN OF [H]EATING.

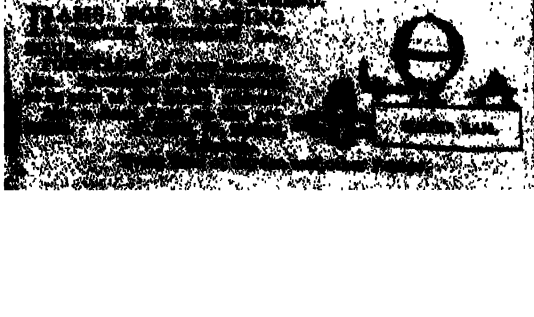
J. WEEKS, Jun., and Co., Gloucester-place, Chelsea, beg to inform their friends in the Gardening Profession, that they will be happy to meet them at their Annual Dinner, on THURSDAY, Feb. 1. Those who will favour them with their company are requested to communicate as soon as possible.



BURBIDGE AND HEALY beg respectfully to inform the Horticultural World, that they are quite ready to supply their new BOILER, of every size: they have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be safely relied upon; they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the rectangular and circular tank, which may be pronounced the perfection of a Tank Apparatus for Horticultural purposes, particularly for Grapery, Pinery, Orchid-house, Melon-pits, &c. &c. The arrangement is such that any gentleman or gardener may have the Tanks fixed under, so as to be put together with the greatest facility by the gardener, first sending a correct plan to the Plant-rooms. A Prospectus may be had detailing the prices, &c.

CHEAP FUEL for GREENHOUSES AND STOVES.

—Coke, the refuse of coal, as used by the Horticultural Society, to be had in large quantities at very reduced prices, at the Phœnix Gas Works, Bankside, Southwark.



GUANO ON SALE BY THE IMPORTERS, JOHN BOYD & Co., Wellington Chambers, London-Bridge, Borough.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. Lawes' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash	. . .	15s. per cwt.
,, Soda	. . .	12s. ,,
,, Magnesia	. . .	5s. ,,
,, Ammonia	. . .	1s. per lb.

GENUINE PERUVIAN & BOLIVIAN GUANO ON SALE, BY THE IMPORTERS, ANTONY GIBBS AND SONS, LONDON; GIBBS, BRIGHT, AND CO., LIVERPOOL AND BRISTOL. 47, Lime-st., Jan. 5, 1844.

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine, as imported.—Apply to Cotesworth, Powell, and Pryor, London; Edwards, Dannon, and Co., Liverpool; or William J. Myers and Co., Liverpool, the Importers.

POTTER'S GUANO.—Sir Robert Peel, the Earl of Zetland, and others, have used POTTER'S MANURE with the greatest success on almost every kind of crop and soil. Testimonials may be obtained by application, per post, at the Works, 28, Upper Fore-street, Lambeth, or of any of Mr. Potter's agents.—See also the Advertisement in this Paper of the 6th Jan., containing some of the Testimonials referred to.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with synopsis of mode of use, on applications to Mark Fothergill, 40, Upper Thames-street, London.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, in the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

Edward Purbrs, Secretary, 40, New Bridge Street.

LIQUID MANURE.

PUMPS of a Superior Construction, fixed and portable, for Liquid Manure. Garden Pumps, Hydraulic ditto, and Pumps for deep wells. Also Pumps for Ships, Barges, Tanners, Soap Boilers, Brewers, &c. Well-Digging and Boring executed. Benjamin Fowler (late George Turner), 69, Dorset-street, Fleet-street.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 8ft. by 3ft. 8in., or thereabouts. Prepared by George Whitney, Chemist, Shrewsbury. Gentlemen, Florists, and Merchants supplied by Mr. W. Bailey, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. Butler and Muckley, Covent Garden, where a sample of prepared calico may be seen; Mr. Watkinson, Market-place, Manchester; Page and Son, Southampton; T. and C. Whalley, Nurserymen, Liverpool.

Agents wanted for London and the country.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

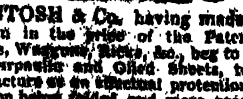


PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient "Protective Material" to Plants, and is now in use at the "Royal Horticultural Society's Gardens, Chiswick." It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade.

Thos. J. Craggon, 8, Ingram-court, Fenchurch-st., London.

SUPERIOR SUBSTITUTE FOR TARPAULIN, &c.



C. MACINTOSH & Co. having made a considerable reduction in the price of the Patent India Rubber Covers for Carts, Waggons, Ricks, &c., beg to call the attention of Users of Tarpaulin and Oiled Sheets, to the superiority of their manufacture as an effectual protection against wet, not liable to crack on being folded, and more economical than any other Waterproof cover.—64, York-street, Manchester, and 46 Cheapside, London.

DRAINING.—James Davis, Mathematical Instrument Maker, Darlington, begs to direct the attention of Agriculturists to every species of Drain Implement he has just constructed, viz., Pipe Moulds for Soles, Pipe Moulds for Collars, Pipe Moulds for Soles and Collars combined, Pipe Moulds for Tiles, Spades, Shovels, Pitchers, Paring Shares, or the pro-[illegible] Drain Tile Moulds, &c. &c. Any of the above can be had in a few days from the receipt of order, at the following prices, or at such other prices as may be desired. The [illegible]

NEW FARMERS' NEWSPAPER.

THE time has come when Landlords and Tenants, large Farmers and small, must devote their anxious attention to improved cultivation—when, in the words of Sir Robert Peel, "*All must learn how, in the shortest time, and at the least expense, to produce the greatest quantity of food, vegetable or animal, without permanent injury to the land.*" To accomplish this, no means can prove effectual as that which brings the results of Experience and Science before every man, in a cheap form. For this purpose THE AGRICULTURAL GAZETTE is established.

The Proprietors are aware of the difficulties of dealing with the many details of cultivation, without an acquaintance with circumstances, often as varying as places. They condemn the idea of conducting farming operations upon one invariable plan; and, while they welcome science as the best auxiliary of practice, they regard crude speculations as the most dangerous of delusions. But, they also feel that in Agriculture, as in all other arts, there are general principles upon which successful farming must depend; that there are practical errors which no local circumstances can justify; in short, that there is room for improvement, even in those branches which are best understood. No one man can be competent to deal with the multifarious questions affecting husbandry, and the duty of the Editor of such a Paper as THE AGRICULTURAL GAZETTE, is to make known the knowledge of all. It is to practical Farmers that the Proprietors trust for the means of carrying out their views, and not to the talents of any individual. While, therefore, they state that the Editor of THE AGRICULTURAL GAZETTE is a gentleman well acquainted with the best kind of Farming, in which he is actively engaged, they feel it to be of far more importance to announce the promise of assistance received from the landed and farming interest generally, especially of those whose names they are permitted to mention:—

The Right. Hon. the Earl Spencer, President of the Royal Agricultural Society of England.

The Right Hon. the Earl of Ducie, Vice-President of the Royal Agricultural Society of England
Sir Charles Lemon, Bart., M.P., F.R.S., one of the Council of the Royal Agricultural Society of England
J. E. Langston, Esq., M.P.
C. Daubeny, M.D., F.R.S., Professor of Botany, Oxford
James F. W. Johnston, Esq., M.A., F.R.S., Professor of Chemistry, Durham
C. R. Ilbo, Esq., Stowmarket
John M'Bryde, Esq., Balker, Ayrshire
T. Caird, Esq., Baldoon, near Wigton
Martin Doyle
R. D. Drewett, Esq., Burpham, Arundel
John Grey, Esq., Dilston, Northumberland
The Rev. L. Vernon Harcourt, Westdean House
Curtis Hayward, Esq., Quedgeley, near Gloucester
W. H. Hyett, Esq., Painswick House, one of the Council of the Royal Agricultural Society of England
R. M. Jacques, Esq., Richmond, Yorkshire
C. P. Kendle, Esq., Fordham, Downham Market
W. Lawrence, Esq., Woodhatch, Reigate
J. B. Lawes, Esq., Rothampstead, near St. Alban's
Jeffery Mayne, Esq., Secretary of the Rayleigh Farmers' Club
M. M. Milburn, Esq., Sec. of the Yorkshire Agricult. Society
J. Parkinson, Esq., Leyfields, Ollerton, Notts
J. P. Pusey, Esq., Secretary of the Winchcombe Farmers' Club
James Smith, Esq., Deanston
William Torr, Esq., Riby, near Caistor
Joseph Yorke, Esq., Tewkesbury
Mr. J. H. Broad, Secretary of St. Columb Farmers' Club
Mr. J. Clarke, Romsey, Hants
Mr. W. Twynam, Whitchurch, Hants.
Mr. S. Collier, Witney Farmers' Club
&c. &c. &c.

Lord Worsley, M.P., Vice-Pres. of the Roy. Agr. Soc. of England
Sir G. Stuart Mackenzie, Bart., F.R.S.
William Miles, Esq., M.P., one of the Council of the Royal Agricultural Society of England
Colonel Le Couteur, Belle Vue, Jersey
Rev. Dr. Buckland, F.R.S., Professor of Mineralogy, Oxford
Lyon Playfair, Ph.D., F.G.S., Consulting Chemist to the Royal Agricultural Society of England
J. Bennett, Esq., President of the Leominster Farmers' Club
John Curtis, Esq., F.L.S.
T. W. Davis, Esq., Secretary of the South Wilts and Warminster Farmers' Club
John Gedney, Esq., President of the Harlestone Farmers' Club, Norfolk
A. Hall, Esq., Secretary of the Chepstow Farmers' Club
C. Herbert, Esq., Powick, near Worcester
G. Legard, Esq., Fangfoss, Pocklington, York
R. W. Moore, Esq., Agent to Earl Radnor
C. Noel, Esq., Kirkby
R. W. Purchas, Esq., Sec., of the Monmouth Farmers' Club
J. A. Ransome, Esq., Ipswich
Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London
L. B. Walrond, Esq., Sec. of the Gloucester Farmers' Club
W. Wickes, Esq., Moorbath House, Bampton, Devon
Mr. R. Beman, Stow-on-the-Wold
Mr. J. Dudgeon, Spylaw, Berwickshire
Mr. W. F. Fardon, Sec. of the Broomsgrove Farmers' Club
Mr. S. Rigg, Wigton, Cumberland
Mr. Thimbleby, Louth
Mr. John Morton, Agent to the Earl of Ducie
Mr. G. Parsons, Agent to Lord Portman
Mr. Shoosmith, Folkington, Sussex
&c. &c. &c.

The Right Hon. Lord Portman, Vice-President of the Royal Agricultural Society of England
Sir John Saunders Sebright, Bart.
J. Walbanke Childers, Esq., M.P., one of the Council of the Royal Agricultural Society of England
Rev. J. S. Henslow, F.L.S., Professor of Botany, Cambridge
David Low, Esq., F.R.S.E., Professor of Agriculture, Edinburgh, one of the Council of the Royal Agric. Soc. of Scotland
Robert Baker, Esq., Writtle, Essex
Robert Black, Esq., Loch Alsh, Ross, N. B.
John Benson, Esq., Agent to the Duke of Bedford
Evan David, Esq., President of the Cardiff Farmers' Club
W. Greer, Esq., Secretary of the Debenham Farmers' Club
W. Parker Hamond, Esq., Pampisford Hall, Cambridge
C. W. Hoskyns, Esq., Wroxhall, near Warwick
J. Hudson, Esq., Castle Acre, near Swaffham, one of the Council of the Royal Agricultural Society of England
Samuel Jonas, Esq., Ickleton, Cambridgeshire, one of the Council of the Royal Agricultural Society of England
W. H. Little, Esq., Llanvair Grange, Abergavenny
Henry R. Madden, Esq., M.D., Penicuick, Edinburgh
J. Mathews, Esq., Secretary of the Hereford Farmers' Club
D. J. Niblett, Esq., Haresfield
R. Parkinson, Esq., Babworth, Retford
W. Price, Esq., Secretary of the Ross Farmers' Club
R. Aglionby Slaney, Esq., Walford Manor, Shiffnall
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S. D. Stirling, Esq., Glenbervie, Falkirk
W. B. Wingate, Esq., Hareby, Bollinghrooke, Lincolnshire
Mr. T. Beadel, Secretary of the Braintree Farmers' Club
Mr. John Brodie, Haddington
Mr. G. Hope, Fenton Barns, East Lothian
Mr. E. Beck, Rougham, Norfolk.
&c. &c. &c.

The Practice of Agriculture—its Science—Animal and Vegetable Physiology—Improvements in Implements—better modes of Husbandry—results of well-conducted experimental Farming—Growth and Rotation of Crops—Stock—Drainage—Irrigation—Foresting—Road-making—Farm-Buildings—Labourers—in short, whatever affects the beneficial employment of capital in land—will form topics of consideration. Reports will be given of the English, Scotch, and Irish Agricultural Societies—London Market Prices of Corn, Hay, and Cattle, and the Weekly Averages. Replies to questions connected with the object of the Paper will also be furnished weekly.

Considering the union which exists between Horticulture and Agriculture, it has been thought advisable to make THE AGRICULTURAL GAZETTE an addition to the GARDENERS' CHRONICLE, edited by DR. LINDLEY, and so extensively known; but that there may be ample room for discussion, that Paper *has been increased one-half in size without additional charge*—thus Twenty four Columns will be occupied, as at present, by Horticulture, and Twenty-four by the General News of the Week, whilst

Twenty-four Columns will be devoted to Agriculture.

This day, therefore, January 20th, is published, price SIXPENCE, stamped to go free by post, the THIRD NUMBER *of*

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE:

A Weekly Record of Rural Economy and General News.

THE HORTICULTURAL PART EDITED BY PROFESSOR LINDLEY.

THE principle on which the Gardening part of this Paper is conducted is to make it a weekly record of everything that bears upon Horticulture, Floriculture, Arboriculture, or Garden Botany, and such Natural History as has a relation to Gardening, with Notices and Criticisms of all works on such subjects. Connected with this part are WEEKLY CALENDARS OF GARDENING OPERATIONS, given in detail, and adapted to the objects of persons in every station of life; so that the Cottager with a few rods of ground before his door, the Amateur who has only a greenhouse, and the Manager of extensive gardens, are alike informed of the routine of operations which the varying seasons render necessary. It moreover contains reports of Horticultural Exhibitions and Proceedings—Notices of Novelties and Improvements—in short, everything that can tend to advance the profession, benefit the condition of the workman, or conduce to the pleasure of his employer; accompanied with Woodcuts, whenever the matter treated of requires that mode of illustration.

To this Farming, as explained above, is now added.

Lastly, that description of domestic and political News is introduced which is usually found in a Weekly Newspaper. It is unnecessary to dwell on this head further than to say that the Proprietors do not range themselves under the banners of any party; their earnest endeavours are to make THE GARDENERS' CHRONICLE a full and comprehensive *Record of Facts* only—a NEWSPAPER in the true sense of the word—leaving the reader to form his own opinions; their object being elucidation of the laws of Nature, not of man. The reader is thus furnished, IN ADDITION TO THE PECULIAR FEATURES OF THE JOURNAL, with such information concerning the events of the day as supersedes the necessity of his providing himself with any other Weekly Paper.

The Proprietors are happy to announce that the following distinguished Botanists, Florists, and Practical Gardeners have already enriched the GARDENERS' CHRONICLE by their communications:—

The Hon. and Very Rev. W. Herbert, Dean of Manchester
The Hon. and Rev. Charles Bathurst
Hon. W. Fox Strangways
Sir Oswald Mosley, Bart.
Sir W. J. Hooker, F.R.S., Royal Gardens, Kew
Dr. Harris
Dr. Horner, Hull
Dr. Lankester, F.L.S.
Dr. Neil, Canon Mills
Rev. J. M. Berkeley
Capt. Widdrington, F.R.S.
Professor Morren, Liege
A. Ainger, Esq.
G. Barker, Esq., Birmingham
E. Barnard, Esq., F.R.S.
J. Bateman, Esq., F.R.S., Kayperaley
Mr. Mc Nab, Caledonian Society's Garden
Mr. Menzies, Botanic and Zoological Gardens, Leeds
Mr. Thomson, Gardener to Her Majesty
Mr. Paxton, Gardener to the Duke of Devonshire
Mr. Alexander, Gardener to the Duke of Leinster
Mr. Ferguson, Gardener to the Duke of Buckingham
Mr. Turner, Gardener to the Marquis of Lansdowne
Mr. Elliott, Gardener to the Earl of Tyrconnell
Mr. Mills, Gardener to the Baroness Rothschild
Mr. Meader, Gardener to Sir W. R. Boughton, Bart.

Hon. Algernon Herbert
Sir George Mackenzie, Bart., F.R.S.
Sir Charles Wolseley, Bart.
Captain Churchill, R.M.
Dr. Bevan, Llanferry
Dr. Gregory, Aberdeen
Dr. Ingram, President of Trinity College, Oxford
Dr. Wilan, Truro
Rev. J. B. Reade
Professor Royle, F.R.S., King's College
Professor Graham, Edinburgh
C. Darwin, Esq.
G. Wailes, Esq., Secretary of the Hort. Soc., Newcastle
Mr. Marnock, Royal Botanic Society, London
Mr. Cameron, Royal Botanic Gardens, Birmingham
Mr. Patterson, Agent to the Duke of Hamilton
Mr. Cole, Gardener to the Duchess Dowager of Bedford
Mr. Henderson, Gardener to the Earl Fitzwilliam
Mr. Frost, Gardener to Lady Grenville
Mr. Haythorn, Gardener to Lord Middleton
Mr. Halliday, late Gardener to Lord Sondes
Mr. Brown, Gardener to Lord Southampton
Mr. Errington, Gardener to Sir P. Egerton, Bart.
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Mr. Thompson, Fruit Dept., Hort. Gardens, Chiswick

Sir James Nasmyth, Bart.
Sir James Macadam
Dr. Hamilton, Plymouth
G. Bentham, Esq., F.L.S., late Secretary of the Hort. Society
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Mr. W. Billington, Oswestry
Mr. Campbell, Botanic Garden, Manchester
Mr. Williamson, Botanic Garden, Sheffield
Mr. Bailey, Gardener to the Archbishop of York
Mr. Mackintosh, Gardener to the Duke of Buccleuch
Mr. Moffat, Gardener to the Duke of Newcastle
Mr. Tillery, Gardener to the Duke of Portland
Mr. Cooper, Gardener to the Earl Fitzwilliam
Mr. Bowers, Gardener to the Earl of Lucan
Mr. Forsyth, Gardener to the Earl of Shrewsbury
Mr. Buchan, Gardener to Lord Bagot
Mr. Stuart, Gardener to Lord Denman
Mr. Beaton, Gardener to Sir W. Middleton, Bart.
Mr. Booth, Gardener to Sir C. Lemon, Bart.
Mr. Whiting, Gardener to R. T. Rope, Esq., M.P.
Mr. W. P. Ayres, Brooklands
Mr. James Drummond, Gardener, Blair Drummond
Mr. Gordon, Hardy Dept., Horticultural Gardens, Chiswick.
Mr. Wells, Gardener to W. Wells, Esq., Redleaf

OFFICE FOR ADVERTISEMENTS AND COMMUNICATIONS, 5, CHARLES-STREET, COVENT-GARDEN, LONDON.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 4.—1844. SATURDAY, JANUARY 27. [PRICE 6d.

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GARDENERS' BENEVOLENT INSTITUTION —At a special General Meeting of the Subscribers to this Institution, held on THURSDAY, Jan 11, at the Crown and Anchor Tavern, for the special purpose of Electing TWO poor persons on the Pension List of this Charity, the following was the result of the Ballot, viz —

JAMES ANDERSON	aged 72		174 votes.
ANN POITER	62		140
ELIZABETH COLLYER	69		30
SAMUEL LAWOOD	65		22
JOHN BLAYLOCK	71		16

The Meeting then declared that JAMES ANDERSON and ANN POTTER, having the greatest number of votes were duly elected Pensioners of this Charity EDW R CUTLER, Sec

THE LATE MR LOUDON —A Public Meeting of the Friends of the late Mr LOUDON will be held in the large room of the Horticultural Society's Establishment, Regent-street, London early in February next, to consider the best means of extricating his Widow and Daughter from the difficulties into which they are placed by Mr LOUDON's sudden death

Notice will be given next week of the day of meeting, when it is hoped that noblemen and gentlemen who patronise Horticulture, and also all Gardeners and Nurserymen who are within a reasonable distance will attend

AT a very numerous MEETING of Tenant Farmers, of the Three Hundreds of Newport, in the County of Buckingham, held at the Swan Hotel, Newport Pagnell on the 10th day of January, 1844, for the purpose of forming an Association for the Protection of Agriculture,

Mr EDMUND GREAVES in the Chair

It was Resolved—First—That this Meeting participates in the now almost universal feeling of abhorrence excited by the false and insidious statements and opinions put forth by the Anti Corn Law League, a conspiracy whose aim is to obtain Free Trade in Corn, but to preserve the protection enjoyed by the manufacturer.

Second—That this Meeting is impressed with the conviction, that the protection afforded to Agriculture by the existing laws is not more than an equivalent for the burdens imposed upon the land—that Free Trade in Corn is a delusion which would reduce to a state of beggary and want all who have invested their capital in farming operations—bring desolation and misery on the Agricultural labourer—prove destructive to the landed interest of the country—materially injure the tradesman and merhanic, and ultimately involve in one common ruin all classes of society, including the blinded advocates of so infatuated a scheme

Third—That this Meeting pledges itself to adopt all constitutional measures for opposing the Anti-Corn Law League, and resisting any attempt to weaken the protection at present extended to Agricultural produce.

Fourth—That a Committee be appointed for carrying into effect the foregoing resolutions and to co operate with any Central Society which may be formed in the County or in London, in such manner as may be considered most beneficial and that such Committee be composed of the gentlemen whose names are attached to the requisition convening this meeting, with power to add to their numbers, five to form a quorum

Fifth—That a subscription be now raised and placed at the disposal of the Committee E GREAVES, Chairman

At a Meeting of the Committee, held at the Swan Hotel, Newport Pagnell, on the 19th of Jan., Mr Greaves in the Chair

It was Ordered—That the Resolutions of the meeting of the 10th instant be advertised.

It was Resolved—That every effort be made by the Committee to increase the funds of the Association, by soliciting subscriptions from the landowners, tenants, tradesmen, and others

That a petition to both Houses of Parliament, founded upon the resolutions of the 10th instant, be drawn up and submitted to the Committee at its next meeting

That W. Powell, of Newport Pagnell, Esq, be requested to accept the office of Honorary Secretary and Treasurer to the Association. E. GREAVES, Chairman

TO GENTLEMEN and AMATEUR FLORISTS.—As the return of spring is fast approaching so is the planting of this beautiful flower the RANUNCULUS A few hundred roots to be parted with (with names), and a single root of the very high coloured purple flower "Gulzos," will be included in each bunch at roots, the time of planting February and March —Apply, pre-paid, to Mr. EVANS, Farnham, Surrey, where may be seen, in the blooming season, in Mr. EVANS's Collection of PELARGONIUMS, some Seedlings and other specimens of this most delightful, still-improving flower.—Farnham, Surrey, Jan. 25.

FASTOLFF RASPBERRY.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN HIS GRACE THE DUKE OF RUTLAND THE MOST NOBLE THE MARQUIS OF AILSA THE EARL OF HARRINGTON THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT TORTON, LORD SONDES &c &c as well as by the HORTICULTURAL SOCIETY OF LONDON

YOUELL AND Co. have much pleasure in announcing they are now supplying fine Canes of the above highly valuable and much esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour.

Those to whom Y and Co sent it last season have expressed their high admiration of its superiority over all other varieties, and has been awarded several prizes at various Horticultural exhibitions during the season As a proof they have not exaggerated its excellent qualities, fruit was submitted to Dr LINDLEY (see *Gardeners' Chronicle* of the 22d July last, page 502), whose opinion of it is as follows —

"FASTOLFF RASPBERRY —We have received from Messrs YOUELL, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find it merits all that has been stated in favour of its excellence The fruit that we have received is very large, obtusely conical, and of rich flavour far exceeding in this respect some other new and large varieties The plants bear abundantly and in long success on"

They also exhibited it on the 1st of August, 1843 before the London Horticultural Society 21, Regent street, to which a prize was awarded It would therefore be unnecessary for YOUELL and Co to recommend it more fully or with greater confidence, to the notice of the public, merely observing that it continues in high perfection throughout the autumnal months, and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post office order), upon the following terms —

Packages containing 100 Canes	£2	5s	0d
Do do 50 do	1	5	0
Do do 25 do	0	14	0

Package included

The usual discount to the Trade when not less than 200 are ordered

*** CAUTION Y and Co beg to call the attention of their friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and can not be held responsible for its being genuine, unless purchased direct from their Nursery

YOUELL'S TOBOLSK RHUBARB, Patronised by Her Most Gracious Majesty the QUEEN, and many of the Nobility, 12s per dozen —For particulars of which see their Advertisement of the 18th November

TWO NEW SEEDLING PICOTEES — "LADY ALICE LEE" 10s 6d, and "MRS BENTON," 21s 6d per pair —These two splendid Picotees were raised by the Rev J Burroughes, of Kingwood Lodge Norfolk, and kindly presented by that gentleman to Messrs YOUELL and Co, for particulars of which see their Advertisement in this Paper of the 16th of Sept

FINEST CARNATIONS AND PICOTEES

YOUELL AND CO beg to refer the readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation

Prices as follows —	£	s	d
12 pair of good show Sorts	1	4	0
12 ditto fine ditto .. .	1	10	0
25 ditto ditto .	3	0	0
12 ditto extra fine and very superior ditto	2	10	0
25 ditto ditto ditto	5	0	0

The selection being left to YOUELL and Co

FUCHSIAS

1 dozen of the newest and very best sorts ..	21s
1 dozen fine ditto	12s
1 dozen good show varieties	6s.

Sent by post, free, to any part of the United Kingdom

ARAUCARIA IMBRICATA.

YOUELL AND CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms —Fine 3 feet 1 year old plants 8 to 9 inches high, 10l per 100, or 30s per dozen —Great Yarmouth Nursery, Jan 21, 1844

FUCHSIA SEED

YOUELL AND CO beg to inform their Friends and the Public they have succeeded in saving a small quantity of the above from the very newest and best varieties, which they offer upon the following terms —

A packet containing 100 seeds	10s		
Do do 50 do	6s		

sent post free on the receipt of a Post office order Directions for sowing, &c will accompany each packet

This will form an admirable opportunity to those who intend competing for Seedling Prizes at the exhibitions of the present year The quantities being very limited, early application will be necessary —Great Yarmouth Nursery, Jan 28, 1844

MARNOCK AND MANLEY'S CATALOGUE of NEW AND CHOICE FLOWER SEEDS, with full and particular Directions for the best Modes of Cultivation, with the Treatise on the Waicheren Cauliflower is now ready, and may be had on application.

Their Stock of trained Fruit trees are exceedingly fine consisting of all the leading varieties of Peaches, Nectarines Apricots, Plums, &c Also the following Cherries —Harrison's Heart, Black Heart, Adam's Crown, Waterloo, Knight's Early Black, Florence, Black Eagle, Downton, Late Duke, May Duke Bigarreau, Elton Napoleon, Early Purple, Circassian Kentish Morello of sorts, &c Prices may be had on application at their Nursery, Hackney, London.—Jan. 25, 1844

RANUNCULUSES ANEMONES, CARNATIONS, AURICULAS, and LILIUM LANCIFOLIUM

H. GROOM, Clapham-rise, near London (removed from Walworth) by appointment FLORIST TO HER MAJESTY, begs to remind the Nobility Gentry, and Amateurs, that this is the best season for obtaining Collections of the above Flowers and that in consequence of the success he had in their cultivation last year, he can offer them at the following moderate prices —

	£	s	d
100 Ranunculuses in 100 superb sorts with names	4	4	0
100 do in 100 very fine sorts, do	2	10	0
Superfine mixtures, from 7s to 21s per 100			
100 Anemones in 100 superfine sorts with names	2	10	0
100 Do in 50 do do do	1	6	0
Superfine mixtures, 10s per 100			
1 pair Carnations, in 25 superfine sorts, with names	10		0
25 pair of Picotees in 25 do do do.	2	10	0
25 Auriculas in 25 superfine sorts, with names	5	15	0
Lilium lancifolium album, good bulbs each	0	5	0
" " large bulbs each	0	10	0
" " punctatum, good bulbs, each	0	7	0
" " large bulbs each	1	1	0

Catalogues may be had on application —Jan , 1844

TO GENTLEMEN PLANTING

J. AND J FAIRBAIRN are induced from the uncertainty upon which they hold the Manor street Nursery (situated contiguous to the Home Nursery, Clapham Rise, where attention will be given to all applications to effect a Sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy and well grown stock, consisting of the large Laurel twice transplanted, of extra growth, Portugal Laurels, very handsome, Green Hollies, of various sizes, Evergreen Privets fine Standard and Dwarf Roses in great variety, fine standard flowering Thorns, Almonds, Æsculus Robinias, and their Ornamental Trees, and Evergreen and flowering Shrubs, with a large stock of fine standard and dwarf, trained and untrained Peaches Nectarines, Apples Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled, also, a large assortment of Forest Trees consisting of Limes, Elms, Birch, Beech Hornbeam, Spanish and Horse Chesnuts, Mountain Ash Poplars, and Spruce, and Scotch Firs, also a large number of Gooseberries and Currants, of excellent growth, and of the best varieties in cultivation, to all of which J & J F. respectfully invite the inspection of Gentlemen and Nurserymen, feeling themselves that the general character of the Stock is such as to ensure unqualified satisfaction, and which they are disposed to offer at very moderate prices for cash

J & J F respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c, which has lately appeared in the *Gardeners' Chronicle* (Oct 21 and 28)

Nurseries, Clapham, near London Jan. 25, 1844

E P FRANCIS, NURSERYMAN, Hertford, begs leave to recommend to the Nobility, Gentry, and the trade in general, three superb white winter BROCCOLI, in 2s packets, containing half an ounce, which was advertised last season, and will be found to give general satisfaction this winter and the ensuing spring Also, Snow's Hybrid Prolific Green-flesh MELON, of most excellent rich sweet flavour, warranted to produce two and three crops in a season, from the same plants, has taken six first prizes at the North Herts and South Beds Horticultural Exhibitions weight from 2 to 3 lbs, sold in packets, 5s each Also, Snow's Superb Walcheren CAULIFLOWER, which is found to be late and hardy, never runs, and produces beautiful large compact white heads, and is very dwarf Sold in Packets at 2s each, containing half an ounce

E P F begs also to recommend a very superior kind of Orange's White BROCCOLI which produces large compact heads in the months of January, February, and March. Sold in packets, 2s, containing half an ounce The above, making four packets, if ordered together, may be had for 10s, at the Hertford Nurseries, or of Messrs NOBLE, Seedsmen 152, Fleet-street; Messrs. J WRENCH & SON London Bridge, and Mr FLANAGAN, opposite the Mansion House London.

HYACINTHS AND GROWING STOCK

HUMPHREYS'S COMPOUND, applicable to all Greenhouse Plants, to Hyacinths and other Bulbs, and to promote the germination of Seeds Sold in bottles 1s 6d. each, by FLANAGAN & SON Mansion house street; WARNER & WARNER, 28, Cornhill; HURST & MCMULLEN, Leadenhall street; W CLARK, Bishopsgate Within, SMITH, Islington Nursery GRIMSLEY and CO, Covent Garden; BATT and RUTLEY, 412, Strand; WILLIAM and JOHN NOBLE, Fleet-street SMITH, Covent garden; CHARLWOOD, Tavistock row; W J NUTTING 46 Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KENNAN Great Russell-street, Covent Garden, LOCKHART, 156, Cheapside; SHEPPARDSON, Pantheon; MINIER, ADAMS, and NASH Strand; TEATHAM, and SON, Islington; THOMAS ARNELL Camden Town; THOMAS WATKINSON, Market-place, Manchester W E RENDALL, Plymouth DICKSON & CO, Edinburgh PENLEY, Leeds; FRASER, HOLMES, and CO, Sheffield P LAWSON and SON, Edinburgh; and other leading SEEDSMEN in town and country. Wholesale Agents, DAVY, MACKELRDO and CO, 100, Upper Thames-st, London

A SUCCESSFUL METHOD OF GROWING THE LISIANTHUS RUSSELLIANUS

JAMES CUTHILL has printed the whole account of his treatment of the above most splendid plant, which has often been exhibited at Chiswick, Regent street, and the Royal South London Gardens; his largest plant this year having 600 blossoms on it and gained the large silver Medal at the Royal South London Exhibition A packet of the printed directions will be sent at the small... very healthy plants of the above, from ... CUTHILL's celebrated Early MELON; ... Spine CUCUMBER, at 2s 6d each ... packets—Florist, Denmark hill, Cam... CUTHILL's BLACK SPINE CUCUMBER ... healthy, to be had during January, ... The true Beechwood MELON, 2... Regent-street Also CUTHILL's ... scented Border CARNATION, rec... the best Border Carnation ever ... 12s per dozen

SEEDS, NEW AND TRUE.

MESSRS. SUTTON AND SONS respectfully acquaint those readers of the *Gardeners' Chronicle* who have not yet hitherto honoured them with their commands, that their grounds being situated at considerable distances from each other, and of different soils, they are enabled, by strict attention, to grow GARDEN SEEDS true to their kinds, and supply Seeds which they know to be new, thereby preventing disappointment in the crops. A great saving of expense will also be effected, and the most improved sorts insured by purchasing either of the undermentioned collections, which are selected according to Messrs. SUTTON'S actual knowledge of the comparative merits of each kind.

	£	s.	d.
No. 1.—*A complete Collection of new Kitchen garden Seeds, of very best kinds, being one year's supply for a first-rate establishment*	3	3	0
No. 2.—*A Collection containing all the kinds as the above, but in smaller quantities*	2	2	0
No. 3.—*A complete Collection, in quantities suitable for smaller Families*	1	1	0
No. 4.—100 *Ranunculuses, in 50 fine varieties, by name*	1	5	0
50 *ditto in 50 do. do.*	0	15	0

N.B.—Parcels delivered free of carriage to London, or to any part of the Great Western Railway within 60 miles of London.

For Gardeners and others who would prefer selecting the sorts of seeds themselves, S. & SONS have just published their annual Catalogue of new Kitchen-garden and Flower Seeds, which will be forwarded immediately, post paid.

*** Where a reference is given payment need not be made for twelve months, which will afford ample opportunity for proving the excellence of the Seeds.—Reading Nursery, Berks, Jan. 2d.

DAHLIAS.

J. KEYNES, FLORIST, Salisbury.—"STANDARD OF PERFECTION," (Keynes).—The finest self-coloured Dahlia in the world! gained the 1st class prizes at Stonehenge, Windsor, Kingston, Surrey Zoological Gardens, and Crown and Anchor, Stockwell; also the 1st prize specimens at Stonehenge Floricultural Society, Stockwell. "It is as round as any Dahlia in cultivation; as complete an unbroken circle as could be drawn with the compasses; and as globular in front as possible. It is symmetrical to a hair, and as double as a Ranunculus. It is so remarkable as to be instantly recognised among a thousand. Colour, deep crimson. It is the flower of the season, and must be had."—*Gardeners' Gazette*, Oct. 14. "The best-grown flower we ever saw, without exception, every requisite to meet the taste of a connoisseur being complied with; good colour, a honeycomb, regularity of growth and disposition in the leaves, and above all, as complete a rotundity of shape as if it had been cast in a mould."—*Salisbury Herald*, Sept. 3, 1843. Plants in May, 1844, 12*s.* 6*d.* "Orange Superb," (Dodd's) first-rate show-flower, 10*s.* 6*d.* "The specimen sent would grace any stand."—Glenny. "Emma Noke," (Dowding's) bluish white, extra fine, indispensable to a first rate stand, 10*s.* 6*d.* Catalogues containing all the fine old varieties and new flowers for the season may be had on application.—Salisbury, Jan. 10, 1844.

DWARF CHERRIES GRAFTED ON THE PRUNUS MAHALEB, or PERFUMED CHERRY.

T. RIVERS, JUN., begs to offer the following sorts of CHERRIES, grafted on the above Stock, Root-pruned, and admirably adapted for potting, for forcing, or for forming Dwarf pyramidal Trees, to be protected by nets, 2*s* 6*d*. each:—

Arch, or Holman's Duke	Early Amber Heart (Rivers's)
May Duke	Florence
Royal Duke	Knight's Early Black
Late Duke	Imperial Morello
Biggareau	Black Tartarian
Black Eagle	Tradescant's Black
Belle de Choisy	Waterloo
Kiton	Werder's Black Heart.

The following Ornamental Standard Trees for Lawns are also offered:—

	s.	d.	each.	s.	d.
American Weeping Willow, 8ft.	5	6	Robinia macrophylla, or grandiflora, 6ft.	3	6
Cytisus elongatus (pendulous), 5ft.	2	6	*Yellow Broom, 5ft.	2	6
Cytisus purpureus (do.), 5ft	2	6	Double Dwarf Almond, 4ft. to 5ft.	2	6
Cytisus purpureus, flora alba, 5ft.	3	6	Siberian Almond, 4ft. to 5ft.	2	6
Cytisus pigricans, 5ft.	3	6	White-flowering Dwarf Almond, 4ft. to 5ft.	2	6
Cytisus falcatus, 5ft.	2	6	Dbld. flowering Peach, 5ft	1	6
Genista anxantica, 5ft.	2	6	Weeping Laburnum, 6ft	2	6
White Portugal Broom, 5ft	2	6	Eagle's claw Maple, 6ft.	1	6
Double Yellow Broom, 5ft	2	6	Lilac, rubra grandiflora fine plants, 6ft.	2	6
Robinia hispida major	3	6	Lilac, Charles X., do., 5ft	2	6

Female Plants (the fruit-bearing plants) of the Shepherdia argentea, or Buffalo Berry, recently imported from America, 2*s.* 6*d.* each. "Its fruit, which is much relished in America, is about the size of the Red Currant, much richer in the taste, and forms one continued cluster on every branch and twig."—*Loudon.*

Carriage of all Packages paid to London.

Those marked * are grafted on the Laburnum.

Bawbridgeworth, Jan. 25, 1844.

ANEMONES AND RANUNCULUSES.—The entire Stock of an Amateur Florist, who has spared no expense in procuring the finest sorts, but whose garden having been sold for building purposes, is compelled to part with them, and offers them on the following terms:—

RANUNCULUSES.

100 Roots, finest sorts, double, named flowers	21*s.*
50 extra extra ditto	15*s.*
100 fine ditto in mixture	8*s.*
100 ditto, second quality	5*s.*
50 Tyso's best semi-double ditto for seed	4*s.*
Packets of 100 seeds saved last year	1*s.* 6*d.*

Any of the above will be sent post paid on receiving a remittance by Post-office order, or letter-stamps to the amount wanted.

ANEMONES.

100 Splendid, named, double flowers	21*s.*
50 extra fine ditto	12*s.*
100 fine ditto in mixture	7*s.*
50 fine scarlet ditto in mixtures	8*s.*
Packets of seeds, each	1*s.*

Apply to S. G. LEES, Wine-merchant, Dundee.

SHOW DAHLIAS.

W. R. WHALES' SEEDLING DAHLIAS for 1844, to be sent out in May, at 10*s.* 6*d.* each.

PARAGON.—A splendid crimson scarlet, of good substance and outline, brilliant contour, and well cupped; an exquisite show variety; warranted to the description given of it; height 3 ft.; splendid habit.

SECOND CRIMSON PERFECTION.—A flower of great substance, nearly 20 petals deep; well cupped, rising centre, constant; first-rate habit; height, 4 ft. Early orders are necessary to procure this variety, being only true ground roots. Price 10*s.* 6*d.*

MARY.—A fancy border variety, white, margined with rose-pink; an abundant bloomer, and constant; occasionally a show flower; shape and habit of Keeling's Prince of Wales; height, 3 ft. Price 5*s.*—Elvet, near Hungerford, Berks, Jan. 25, 1844.

EARLY PEAS, &c.—HENRY D. CORMACK, SURREYMAN, &c., begs to inform the readers of the *Gardeners' Chronicle* that they can be supplied with the following Early and Prolific Varieties, viz.: Cormack's Prince Albert, British Queen and Early Kent Peas; Taylor's Improved Windsor, and Johnson's Wonderful Bean; Manchester Red and Seymour's White Celery; Wilmot's Long and Hamilton's Cucumber, &c., with every other variety of Horticultural and Agricultural Seeds, at his Wholesale and Retail Seed Warehouse, 166, Deansgate, Manchester.

DEATH OF MR. LOUDON.

THE SUDDEN DEATH OF Mr. LOUDON has involved his family in the deepest distress in every sense of the word; for although he laboured almost incessantly, nearly day and night, for the space of forty years, and his works had an extensive sale—yet, from the circumstance of his being an invalid for years, and the expensive nature of the illustrations to his Works, he died considerably indebted to the Printers and Engravers; the greater part of this debt was incurred in producing the most valuable, perhaps, of all Mr. Loudon's Works, namely, the "Arboretum Britannicum" a work which alone is sufficient to stamp his fame as an author.

After much consideration, it was decided that the best means of providing for his family (and a means, too, strictly in keeping with the independent spirit which characterised the life of Mr. Loudon, would be by promoting the sale of his truly valuable Publications. There is a large stock on hand of the following Works, the sale of which would extricate the family from their present embarrassed state, by enabling Mrs. Loudon to discharge the debt, and reserve the copyrights in her own hands as a means of future support; and it is earnestly hoped that every person who respects the memory of the late Mr. Loudon, will exert himself by soliciting his friends to become subscribers for the Publications enumerated below:—

Published in July, 1838, Price 10*l.*, cloth lettered,

THE ARBORETUM ET FRUTICETUM BRITANNICUM;

In Eight volumes: Four of Letterpress illustrated by above 2560 Engravings, and Four of octavo and quarto Plates.

Just published, complete in One Volume, Price 2*l.* 10*s.*, and in Ten Parts at 5*s.* each,

AN ENCYCLOPÆDIA OF TREES AND SHRUBS;

Being the ARBORETUM ET FRUTICETUM BRITANNICUM ABRIDGED: for the Use of Nurserymen, Gardeners, and Foresters.

Published October 1, 1839, in One Volume, octavo, with upwards of 250 Engravings, Price 1*l.* 10*s.*, and 2*l.* 5*s.*, coloured,

REPTON'S LANDSCAPE-GARDENING;

Being the whole Works on Landscape Gardening and Landscape-Architecture of the late HUMPHRY REPTON, Esq.; with a Biographical Notice, and Notes by J. C. LOUDON, F.L.S., &c.

Published August 1, 1838, in One Volume, octavo, numerous Engravings, Price 20*s.*,

THE SUBURBAN GARDENER AND VILLA COMPANION;

Comprising the Choice of a Suburban or Villa Residence, or of a Situation on which to form one; the Arrangement and Furnishing of the House; and the Laying-out, Planting, and general Management of the Garden and Grounds; the whole adapted for Grounds from One Perch to Fifty Acres and upwards in Extent; and intended for the Instruction of those who know little of Gardening and Rural Affairs.

Published November 1, 1842, in One Volume, octavo, with upwards of 300 Engravings, Price 10*s.*

THE SUBURBAN HORTICULTURIST;

Or, an Attempt to teach the Science of Horticulture, and the Management of the Fruit, Kitchen, and Forcing Gardens, to Persons who have had no previous Knowledge or Experience in these Departments.

THE GARDENER'S MAGAZINE;

Any Number or Volume published subsequently to 1834 may be purchased separately. The Second Series, consisting of Six Volumes, from 1835 to 1840 inclusive, for 6*l.* 8*s.* 6*d.*; for 1841, 1*l.* 1*s.* 6*d.*; for 1842, 1*l.* 2*s.*; or the third Series complete in 3 vols., 9*l.*

By a Post Office order being sent to Mrs. Loudon, Bayswater, London, any of Mr. Loudon's works will be forwarded in the monthly parcel of any local Bookseller; or through any Nurseryman or Seedsman in the neighbourhood of London. A list of the subscribers' names will appear weekly in the *Gardeners' Chronicle*.

A Public Meeting for the benevolent purpose of promoting the sale of these works will be held in the rooms of the Horticultural Society, Regent-street, London, by the kind permission of the Council, early in February, (notice of the day and other particulars will be advertized in the *Times*, *Morning Chronicle*, *Athenæum*, and *Gardeners' Chronicle* of next week) when it is hoped all persons taking an interest in Gardening, who are within a reasonable distance, will attend.

On the 1st December, 1843, exactly a fortnight previous to Mr. Loudon's lamented death, he published the following statement:—

"The *Arboretum Britannicum* was got up between the years 1833 and 1838, and published on Mr. Loudon's own account, at an expense of upwards of 10,000*l.*; the greater part of this sum was owing at the completion of the work, but it sold so well, till the late depression of the book trade in 1841, that only about 2,000*l.* of the debt remained to be paid off at the end of that year. It is, however, necessary to observe that this large proportion of the debt was not paid off solely by the produce of the *Arboretum*, but in part by the profits of Mr. Loudon's other literary property, consisting of thirteen different publications, (enumerated below), all of which stand pledged in the hands of his publishers, Messrs. Longman, for the debt on the *Arboretum*. This debt, at the present time, amounts to about 2,400*l.*; and hence, if 350 additional subscribers could be got, the debt would be at once liquidated, the works pledged for it set free, and Mr. Loudon or his family would enjoy the whole produce of his literary property.*

"This Appeal would never have been made, had not Mr. Loudon, who has been an invalid for several years, been lately seized with an inflammation of the lungs, terminating in chronic bronchites, which, even if the disease should be considerably alleviated, will effectually prevent him from any longer pursuing his profession of landscape-gardener, on the produce of which profession, and on the literary labours of Mrs. Loudon, he has entirely depended for his income, since his literary property was pledged for the *Arboretum*. Under these circumstances Mr. Loudon feels himself justified in taking this mode of soliciting additional Subscribers to the *Arboretum*, and in begging his Friends and Patrons throughout the country to assist him in obtaining them.

"The *Arboretum* has been spoken of in the highest terms in all the principal Reviews of Europe, and in the Botanical Periodicals of North America. The *Quarterly Review* says:—

"'This book is one of solid value, worthy of a place in the Library of every landed gentleman, as well as of every student of Botanical, Arboricultural, and Horticultural science . . . Let us warmly congratulate Mr. Loudon on having finished his Herculean task; a task which few men, except himself, would have had the courage to begin, and still fewer the perseverance to complete. The *Arboretum Britannicum* is complete in its kind, and it must become a standard book of reference on all subjects connected with trees.'—Oct. 1838."

The following Ladies, Noblemen, and Gentlemen, who already possess the work, on being applied to, have kindly permitted their names to be published as approving of the *Arboretum*, and of this Address to the Public:—

The Right Honourable LADY ROLLE	The EARL of LOVELACE	Capt. WIDDRINGTON, R.N.
Mrs. LAWRENCE, of Studley Royal	VISCOUNT COMBERMERE	JOSEPH STRUTT, Esq., Derby
The DUKE of NORTHUMBERLAND	The BISHOP of WINCHESTER	GEORGE CRANSTOUN, Esq.
The DUKE of DEVONSHIRE	LORD MONTEAGLE	L. W. DILLWYN, Esq., Sketty Hall
The DUKE of BUCCLEUCH	Sir JOHN TREVELYAN	J. T. BROOKS, Esq., Flitwick House
The DUKE of SUTHERLAND	Sir THOS. DYKE ACKLAND	GREGORY GREGORY, Esq., Harlaxton Manor
The MARQUESS of NORTHAMPTON	Sir H. E. BUNBURY	W. R. BAKER, Esq., Bayfordbury
The EARL of SHREWSBURY	Sir CHARLES LEMON	P. J. SELBY, Esq., Twizell House
The EARL of ESSEX	Sir OSWALD MOSLEY	PROF. HENSLOW
The EARL of ABERDEEN	Sir WILLIAM JARDINE	PROF. LINDLEY
The EARL of HARRINGTON	Sir W. J. HOOKER	PROF. ROYLE
The EARL FITZWILLIAM	The Rev. J. MITFORD	DR. NEILL
The EARL of RADNOR	The Rev. M. J. BERKELEY	
The EARL of RIPON	The Rev. W. T. BREE	

* It may be thought from the well-known extensive sale, for the last 20 years, of Mr. Loudon's Publications that he ought now to be independent: in consequence of too intense application while compiling the *Encyclopædia of Gardening*, Mr. Loudon fell into ill health in 1821, which obliged him ultimately to have his right arm amputated, his left hand being at the same time so much injured as to leave him with only the partial use of two fingers, and his left knee being anchylosed. In consequence of these bodily infirmities, Mr. Loudon has been obliged to keep an amanuensis and a draughtsman for the last twenty years, and also, during the greater part of that time, a servant to act as valet. Had it not been for the expenses thus incurred, and for others arising from the same source, Mr. Loudon might have been now independent, even without his literary property. This explanation is due to those who are ignorant of Mr. Loudon's personal character.

This Appeal has been most liberally responded to, and in consequence of it copies of Mr. Loudon's Works have been sold to the different Ladies, Noblemen, Gentlemen, Nurserymen, and Gardeners, whose names are included in the following list:—The names are given in the order in which the copies were ordered.

ARBORETUM BRITANNICUM.—10*l.*

Joseph Strutt, Esq.; 2d subscription; 10 copies
Mrs. Lawrence, Studley Royal; 2d subscription
The Earl of Radnor
Lord Folkestone
The Proprietors of the *Gardeners' Chronicle*
Messrs. Whitley and Osborn; 2d subscription
Earl Fitzwilliam; 2nd subscription
Thomas Martin, Esq.
Earl Manvers
Lord Viscount Hill
Lord Thurlow
Lord Southampton
Wm. Spence, Esq.; 2nd subscription
Robert Chambers, Esq.
Lord Clinton
George Charlwood, Esq.; 2d subscription
The Marquess of Waterford
J. D. Llewelyn, Esq.
Sir W. J. Hooker
The Duke of Devonshire; 2d subscription
Richard Lowndes, Esq.
Rev. W. Kirby, M.A., Rector of Barham, Suffolk
The Hon. Mrs. Neville Reid
The Hull Subscription Library
The Duke of Northumberland; 2nd sub.; coloured copy

ENCYCLOPÆDIA OF TREES AND SHRUBS.—80*s.*

G. Cranstoun, Esq., Corehouse
Lord Lilford
The Earl of Dartmouth
The Duke of Sutherland
Lord Wenlock
Sir H. E. Bunbury
Lord Viscount Hill
Richard Rathbone, Esq.
Lord Murray
Henry Cheffins, Esq.
Dr. Brown
Edward Solly, Esq.
Charles Stokes, Esq.

THE SUBURBAN GARDENER.—1*l.*

The Marquess of Northampton
The Duke of Sutherland
Dr. Neill
Lord Viscount Sidmouth

THE SUBURBAN HORTICULTURIST.—10*s.*

Earl Fitzwilliam; two copies
Mr. Griffin; five copies
The Rev. M. J. Berkeley
Dr. Neill
The Earl of Derby
Lord Murray

REPTON'S LANDSCAPE-GARDENING, Plain.—80*s.*

Mr. Griffin
Lord Lilford

REPTON'S LANDSCAPE-GARDENING, Coloured.—3*l.* 3*s.*

George Cranstoun, Esq., Corehouse
Thomas Sopwith, Esq.
Lord Harris
Rd. Botanic Society of London
Lord Northampton
Lord Clinton
J. D. Llewelyn, Esq.

ENCYCLOPÆDIA OF COTTAGE ARCHITECTURE.—2*l.* 2*s.*

Mr. Loban, Southampton
The Duke of Sutherland, one copy complete, and the Supplement separately
Sir Oswald Mosley
The Earl of Derby
Lord Monteagle

THE ARCHITECTURAL MAGAZINE.—2*l.* 2*s.*

The Rev. J. S. Henslow

WATERTON'S ESSAYS ON NATURAL HISTORY.—2*l.*

The Rev. J. S. Henslow
The Rev. M. J. Berkeley
Thomas Sopwith, Esq.
Sir Oswald Mosley
The Rev. W. T. Bree
Lord Murray
Henry Cheffins, Esq.

THE GARDENERS' MAGAZINE, 3 vols.—2*l.* 17*s.*

The Royal Botanic Society of London, the Volumes for 1843.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the Exhibitions of Flowers an Fruit, in the Society's Garden, in the ensuing season, will tak place on the following Saturdays, viz., May 18, June 15, and Jul 13. In addition to the regulations already announced, it ha been resolved that the Judges be instructed, in making thei awards, to take into consideration, whether the Plants to b judged have been exhibited previously during the season. Fu information concerning these Exhibitions can be obtained upo application at 21, Regent-st.

IMPROVED PLAN OF [H]EATING.

J. WEEKS, Jun., and Co., Gloucester-place, Chelsea, beg to inform their friends in the Gardening Profession, that they will be happy to meet them at their Annual Dinner, on Thursday, Feb. 1. Those who will favour them with their company are requested to communicate as soon as possible.

The Gardeners' Chronicle.

SATURDAY, JANUARY 27, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Jan. 31	Society of Arts	8 P.M.
Friday, Feb. 2	Botanical	8 P.M.
Monday, Feb. 5	Entomological	8 P.M.
Tuesday, Feb. 6	Linnean	8 P.M.

THE term LANDSCAPE GARDENING has been adopted to designate a profession, the principles of which, though volumes have been written about it, are not fully understood. The purpose of the profession is to assist those who have little or no taste themselves, in so arranging plantations, and shrubberies, conducting roads of approach, forming rides and walks, placing buildings, &c., as to satisfy the taste of others who may have any in such things. This definition, homely as it may appear, is in reality the marrow of the matter, and at once declares that those who may adopt the profession must have the taste required, to such a degree as to induce confidence to be placed in them. Then comes the question—who is to judge of the qualifications of a Landscape Gardener? Of course, persons who have, at the least, as much taste as the professor. Hence, were a nobleman or gentleman admitting himself not to have sufficient taste of his own to enable him to dispense with the help of a Landscape Gardener, to require it, it may be asked—to whom should he apply for guidance to a skilful professor? It is common in requiring the character of a servant to apply to the master whom he had last served. It is evident, however, that in the case of a Landscape Gardener, we should not apply for information to the employer, because he has, by the very act of employment, declared himself unfit to give any opinion. If the nobleman or gentleman be requested to judge for himself by looking at what has been accomplished, this is absurd; because he has confessed himself to have no knowledge of such matters—no taste; and consequently to be unable to judge of any such work. Here, then, is a difficulty somewhat startling. In order, not indeed to get rid of it, which is no easy matter, but to explain its origin, it is necessary to dip a very little way into the philosophy of the thing; and as Nature is always willing to teach and expound everything that may puzzle us, if we ask her to do so in a proper manner, our shortest way to arrive at truth in all cases, is to knock at her door and make known our wants.

Admitted into her presence, and humbly requesting to be let into some of her secrets, she bids us look about us, and observe the emotions which appear to be excited by the same object in different individuals. We stand near an ancient and noble Oak. The first person who passes looks up and says—"That must be a very old tree—it is so very big; I should like to know when and by whom it was planted—some centuries ago, I doubt not." The next person passes on without taking any notice of the tree. The third stops—looks upward and all around, moving from spot to spot, his eyes broadly opened—"Magnificent!" is his exclamation. "What a noble trunk!—worthy to support so noble a head! How gracefully the giant-arms part from the stem—each in itself a tree! How finely the masses of rich foliage, catching the lights and deepening the shadows, wave into the outline! That is indeed a specimen for the painter!" The fourth also stops—looks knowingly—measures the trunk by embracing it, and observes—"Three fathoms round, six feet through, some 20 ft. without a break!—and there—what glorious knee-timber among the branches!—a good many loads, eh!—and bark—let me see,"—and thus he goes on his way, calculating the value of the timber and bark. Now which of these was the man of taste in reference to the tree? The answer to this question will be different from different persons. An antiquarian will vote for the first; an indifferent person for the second; an enthusiast for the third; and a timber merchant for the fourth. To account for this the vulgar say, every one has his own taste: very truly. *De gustibus non disputandum*, says the wiseacre who is not fond of discussion,—and he too speaks truly. Thus we find that no one denies the fact, that the same object excites different emotions in different individuals. It is the same with groups of objects, in respect to their relative positions among themselves and surrounding objects. Now, though we might enter at some length into the philosophy of these things, it would not be suitable to such an article as this. Indeed philosophers are not quite agreed about the causes of differences of taste. We, therefore, refer such of our readers who may feel inclined to study the subject, to two of the most recent works, Sir T. D. Lauder's edition of Price, and Sir G. S. Mackenzie's Review of the Association theory, in which he makes a strong appeal to matter of fact.—*Gr.*

IN our last Number appeared an advertisement announcing the intention, on the part of some friends of the late MR. LOUDON, of calling a public meeting early in February, to consider "the best means of extricating his widow and daughter from the difficulties in which they are placed by his sudden death." This is, we believe, the proper course to take, for the desultory attempts of individuals can never produce the effect which may be anticipated from the operations of a public meeting.

We hope much from this plan, for there is evidently an anxiety among the gardening public to do something substantially useful on the occasion. We have published a few letters on the subject—many more are lying before us; the Members of the Regent's Park Gardeners' Association have had a meeting, for the report of which we regret that we had no room; and Mr. Paxton has issued a circular appealing strongly to the friends of Horticulture for assistance.

As soon as arrangements for the proposed meeting are completed they will be advertised in our columns.

WE do not consider that it will be useless or uninteresting to explain a little in detail some of the prevailing theories and contrivances having regard to the BURNING OF COAL and other similar materials in ordinary furnaces; because, although such knowledge may be of little use in the management of any given apparatus, it may, nevertheless, enable many persons to form a better judgment than they would otherwise arrive at of the various new projects which are perpetually brought forward: at the same time, it must be confessed that the minute display of chemical, down even to atomic illustrations, which are occasionally brought to bear on this subject, and the extreme nicety with which the elements of combustion are proposed to be balanced and adjusted, are somewhat out of place, when it is recollected that these refinements are spoken of in reference to an operation which undergoes immense changes, while the mechanical appliances remain unaltered. The furnaces to which these remarks apply have, among other causes of change, to be fed at long intervals, presenting, at one time, a dense mass of black coal, and at another, a heap of glowing cinders—a change of circumstance, which, independent of changes in the character of the coal and in the state of the air, must cause a very great change in the chemical action of the two periods, and must require equally great modifications in the admission and distribution of air, to render available the extreme accuracy which is professedly aimed at in the previous calculations.

This last remark, it is true, would not apply in full force to those furnaces which have revolving, or rolling, or oscillating, or otherwise movable grates, and which are fed at such short intervals and with such infinitesimal doses, that they may be said to receive a constant stream of coal. These costly and complicated contrivances seem, however, too troublesome or too expensive even for steam-engines, where there is power to work them and constant attendance to keep them in order; they may therefore be safely dismissed as hopelessly inapplicable to horticultural purposes—and without much regret, since they afford no proof that even they overcome the difficulty formerly alluded to, arising from the essential non-inflammability of some portion of the earlier products of distillation; nor do they attempt to meet the second great objection to ordinary furnaces, which will be presently explained, and which, if it exist as asserted, is the largest in pecuniary amount, though it may be the smallest in annoyance. There arises, it is admitted, but little visible smoke from some of these ingeniously-constructed furnaces; but that may be accounted for by the extremely small quantity of fuel supplied at one time. The complete absence of visible smoke is, however, no proof of complete combustion, as it is well known that there may exist a considerable escape of fuel in the form of transparent vapour.

Before, therefore, we quit this part of the subject, it may be stated, that, since it is out of the question to expect complete combustion, or to prevent the escape of very disagreeable matters from the burning of mineral coal, it will always be expedient to keep the chimneys as far removed as possible from an ornamental garden or conservatory, and this may be accomplished in at least two ways, employing either or both. The first method is to convey the smoke-flue from the furnace in an underground channel; and the second is to convey the hot water or steam in a heat-tight tube, which may be either above or below the earth. Either of these means may be used under ordinary circumstances to the extent of an hundred feet, making it therefore easy to remove a chimney two hundred feet from the place where its effects are to be produced.

Even this distance would not, in many instances, sufficiently remove the objectionable matters, and they are besides liable to be returned by the wind: it is still desirable, therefore, as a matter of luxury, as well as one of economy, to consume the coal in the best possible manner, and this will lead us to consider the matter somewhat minutely, as it is only by ascending to first principles that a judgment can be formed of the claims to philosophical accuracy and excellence which are advanced by some of the more recent candidates for public approbation.

The regulated admission of air, which is at present the favourite mode of improving a furnace, will first demand notice, and we cannot enter on this subject without reference to that invention, which has, perhaps, obtained the greatest share of notoriety, and which has elicited very favourable opinions from many persons whose names command respect. The invention we allude to is that which is secured by patent to Mr. Charles Wye Williams, and of which certainly all Horticulturists should avail themselves, if it possess but half the merit ascribed to it; and if it can be obtained on terms commensurate with the comparatively small consumption of fuel required for Horticultural purposes.

The description of this invention we must give in a future paper, together with an abstract of the principles on which it is founded.—*A.*

BEES.—No. IV.

(Continued from page 27.)

I shall now endeavour to ascertain the most profitable mode of augmenting hives. Within 20 miles of London, and, I apprehend, in many other parts of England, honey is seldom used by common trades'-people but as a medicine. In many parts of Scotland it is otherwise used: there, like butter, it is spread on bread and taken at tea. Hence, run-honey is dearer there than here, though honey-comb is not. In Scotland, where honey-comb (in small and neatly-made hives or boxes) is not sold for double the price of run-honey, eking, that is, raising the hives three or four inches with parts of old hives, is the more profitable system; for the Bees have not only more room to work, but also more comb to breed in, than they have when crown boxes are used. But about London, where honey-comb may be, I apprehend, sold for 2*s.* or 2*s.* 6*d.* a pound, the crown-box mode ought to be adopted. Honey, as well as honey-comb, is obtained when small boxes are used. Mr. W. Pettigrew, at Carluke, informs me that he has "taken three small crown-skeps (small neatly-made straw-hives, in which honey-comb looks better, and is more saleable in the Glasgow market, if I don't forget, than in boxes,) from one of my top or first swarms of this year. The first, which contained 9¾lbs. of comb, was sold for 17*s.*; the second, 9 lbs., for 18*s.*; the third, contains 7 lbs., which I have not sold yet: and from the hive on which these were filled I got 37¼lbs. of honey." He did not say how much honey he obtained from the stock, or second swarm; but we here see that he has realised from the produce of one swarm a sum bordering upon, if not above, 4*l.* Where crown-skeps or boxes are used no virgin swarms ought to be taken, even though those swarms (erroneously called *virgin*) may be taken off at or before the beginning of July. In propitious years a second swarm or turn-out will fill a box. Large swarms will fill a box or skep that holds 15 or 20 lbs., without breeding in it; but a box that contains about 10 lbs. of comb is more saleable than a larger one. As soon as a box or skep is put on and pinned to a hive, make the Bees run up into it by blowing smoke into the hive. In order to be able to ascertain when a crown-skep is filled, there ought to be two peep-holes in it. In taking off a crown-skep it is necessary, first, to sever it from the hive with a bit of brass-wire, then raise it with wedges three-eighths of an inch, that the Bees may lick the honey out of the cells that are broken and bruised with the wire. When it has been two or three hours thus raised, it should be removed, and, if the season is not over, another put on. If a lady or gentleman should, about swarming time, send in an order for a box of comb weighing 8 or 10 lbs., put a first swarm into a second swarm-hive, and you will be able to meet the order in a short space of time. But it may be well for those whose hives are at present small to dispense with boxes till their hives are larger.—*A. Pettigrew, Wrotham Park, Middlesex.*

(To be continued.)

BOTTOM-HEATING AND NIGHT-COVERING.

THE matter of night-covering is closely connected with that of Bottom-heating; and it is strange that the great utility of mats on structures such as Pine-pits (possessing a permanent source of Bottom-heat within) has not long since pointed out the much greater necessity for such coverings on structures for very early forcing, that depend for their heat, in many cases, on a considerable surface of parching flues or pipes.

The chief hindrance to the adoption of coverings at certain seasons, and for certain purposes, has been the want of a material at once light, pliable, durable, and economical. Regarding the last, I am sure that the saving of fuel would, under good management, pay for the cost of material; and for the former qualities, I have no doubt that, could the attention of our manufacturers be fairly drawn to the subject, we should not be long without something to the purpose.

I do not mean here to assert that Night-coverings are

necessary to all structures, and at all seasons—by no means; I would merely wish to draw attention to what takes place in an early forcing-house (unprovided with Bottom-heat) on a severe night—say in the middle or end of January, and the case in hand, by way of illustration, an early Vinery, depending entirely on flues or piping. If the atmospheric moisture, which must be provided by some means, could be kept suspended without condensation at the roof, there would be little occasion to care, in my opinion, about the loss of 5 or even 10 degrees of heat, and the 65° or 70°, as recommended by mere prescription, might be allowed to sink quietly to 55° without any injury—nay, with, perhaps, a positive benefit.

But how is this to be accomplished without roof-coverings, with an outside thermometer of, say 20°, and an inside one of 65° or 70°? To maintain these punishing temperatures a very strong fire must be kept up, which, from rapidity of circulation, must force some 20 per cent. of heat out at the chimney-pot, and exercise, by means of scorching flues or pipes, a powerfully extractive process (if I may use such a term) on the leaves.

To be sure, we can provide such an abundant supply of atmospheric moisture as may compensate for the loss; but can it be supposed that continual distillation of this kind can afford as genial an atmosphere as one in which the gases from sweet fermenting materials are kept in suspension, and in which all such distillation is obviated by a night covering?

It may be fairly assumed, I conceive, that in consequence of the great disproportion which light bears to heat in these northern climes as compared with tropical ones, that we are by no means justified in attempting to imitate the extreme points to which vegetation is subjected in those climates. The general consequence is an impure atmosphere, which, in conjunction with the want of light before adverted to, produces many and serious evils; amongst which we may mention, first, long-jointed and of course imperfect wood; and, secondly, a dissipation of vital energies, leading ultimately to abortive results.

I have a Peach-house under my care, the night temperature of which has frequently, about the end of February, when the fruit was as large as Peas, been as low as 40°; and, so far from receiving injury, the fruit has been benefited by it, and, grown under those circumstances, has carried a medal six or seven years successively from the Horticultural Society of London.

As to the mode of obtaining bottom-heat, it appears to me that although the tank-system is destined to supersede the old modes of bottom-heat, (and as a general principle deservedly does so,) yet a little consideration is necessary before those enthusiastically inclined towards the new mode discard entirely the old process of fermenting materials. A question arises about the character of the tank covering with regard to the admission of so much moisture as may be necessary, and no more; and a second, more important still, whether the gases produced by fermenting matter can or ought to be entirely dispensed with.

I presume that the gaseous products of fermenting matter are a very different thing from the mere steam of water, which, although gaseous, is not so rich in constituents. Without chemical knowledge, every gardener knows that what is technically called "a sweet bottom-heat," such as a well-wrought Cucumber frame, is just the sort of place for certain quick-growing plants to make the most rapid advance in; therefore it seems to me to be something more than a mere question of heat and moisture.

The sweet bottom-heat of fermenting materials "well-wrought" approximates the conditions of moist tropical climates, about which I beg to quote Mr. Solly's remarks in "Rural Chemistry," (p. 368) which runs thus:—"In hot moist regions of the tropics, plants grow with far more rapidity, and vegetation is more vigorous, than in temperate regions. In tropical countries decay proceeds far more rapidly than it does in our own country; carbonic acid and ammonia, the food of plants, are produced in greater quantity than here, whilst, from the greater power of the sun, plants are able to assimilate more of those substances than they can in colder countries."

Something, therefore, yet remains to be done before we entirely resign the use of fermenting materials; perhaps the time is not distant when, from repeated analysis and extended physiological knowledge, we shall be able to impregnate the atmosphere of hot-houses with the necessary gases by a regular system.

As to plunging or planting out in a bed of fermenting materials, we acquire still further powers in combatting low temperature, leading ultimately, in-doors, to economy in fuel.

In confirmation of this I need only refer to the "Theory of Horticulture," (p. 105,) where, in a note at the bottom of that page, is fully shown how this principle, which is universal in Nature, or nearly so, acts; and which is amply borne out by facts in every-day practice. The frequent depression of atmospheric temperature out of doors, by winds and otherwise, must very frequently leave the bottom-heat much more than is commonly thought in advance of that of the atmosphere.

Great anxiety is manifested on all sides to obtain clear glass for hot-houses, and very properly; however, not so much pains is taken to keep it clean afterwards.

All pits and frames should be washed at least twice in the year, say February and October, as great benefit will arise therefrom.—*Robert Errington, Oulton.*

SEEDS OF GARDENING.—No. IV.

(*Concluded from p. 35.*)

But I must not on any account dismiss the tin box and the label so lightly, without adverting to its usefulness to lady gardeners, and indeed amateurs in general, who do not get their living by gardening, and are frequently not so familiar with some of its intricacies as (be more experienced veterans in the art; for in this I mean to bring the science, or, in other words, all that is known of gardening, to bear so closely upon the practice, that gardener amateur, or even apprentice, may sow seeds in the right sort of soil at the proper time of the year, and for the proper purpose, since every packet of seeds will be enveloped in the information necessary to rear them; for I have seen cases enough where better might have been expected of persons sowing such as Loasas and Convolvuluses, of very dissimilar habits, in such a way as showed that they thought all Loasas were tall twiners, and all Convolvuluses more or less similar; whilst it is notorious that in both genera there are species that grow only a foot high, mere tiny herbs, whilst others are giant twiners, requiring two or three fathoms of stick or string to support them. When I saw these sowed side by side, I thought, if there had been black letters on the seed-packets setting forth the character of each, things would have been far otherwise, leaving those who erred quite inexcusable.

Those who grow things properly will find the seed-packet cheap enough, and he who sows seeds not knowing what they are, and expects from them what nature never ordained, has "paid too dear for his whistle," and will find that seeds alone are useless and even too expensive, however cheap, without a system to grow them by. But some will, no doubt, ask how this very desirable information respecting all our most interesting garden-seeds is to be obtained? Gardening books abound with such information; but as no living man appears gifted with such extraordinary intellect as to be able to retain it so clearly and fully as to bring it to bear upon his practice at a moment's notice, and amid the bustle and toils of the day, I propose to save racking the brain unnecessarily; and more effectually to serve the purposes of gardening, to digest into the form of a label, and under the head "directions for use"—in plain English, a treatise on the character and culture of the contents of the packet. Mrs. London's "Book of Annuals" would give in simple, popular, and scientific terms the sort of information I speak of for Annuals; and so of other books for the culinary seeds, &c. But for the most part I have another plan, and that is a sure one, to come at the practical points:—the man that grows seeds, first flowers the plant and then fruits it; he, therefore, may know if he pleases more of it than the gardener, who only flowers it. If, therefore, the seed-grower would set forth in writing on the seed-packets the character and culture of them (a theme which must be familiar to him) instead of giving their good properties and details of their uses *viva voce* to the seed-buyer, the chain of information would be complete; it would come direct from the man who perfected the plant, flowered and fruited it, to the man who was about to commence more or less of the same process; and if seedsmen were only to buy seeds from such as knew what the nature and uses of the seeds were that they were selling, we should soon reform our seed-packets, and equal or surpass the men of Birmingham or Manchester in the beauty of our labels and the details of our manufacture; but this is not all in the systematical arrangement of seeds, for if it be necessary for the butler to have bins and a well-furnished pantry appropriate for his business, and the housekeeper to have ranges of shelves and drawers, and other stowage for her paraphernalia, each according to its kind, surely there is something more appropriate for valuable seeds than to be tossed in loose papers in the bottom of an old hamper, which I am sorry to see is too generally their locality. I would therefore arrange them in trays, each tray to be a drawer, and fit into slides forming a nest or chest, the top being a table or counter, the laboratory of the seed department. One tray would hold 200 separate packets of the size of the percussion-cap box, which holds 2 oz.; and this tray would only be 40 inches long and 20 wide: and, mark well, every packet would be open to view, and might be as easily opened and some seeds come at for sowing and the remainder secured as the grocer comes at his Congou Tea for the ready money customer and secures the remainder in his well-ordered canister.

Now, let any one put 200 papers of seeds, untied, in a drawer 40 inches by 20, and let him look them over once or twice to sow small moieties and replace the remainder, and see the result—the working of the medley; and if he has the bump of order in his head at all, he will thank any one to lend him a hand to set his seeds in order. Begging pardon for this lengthy document, which I could not abridge and render the meaning clear, I hope seeds may be respected, saved, preserved, and carefully distributed, and then our waste lands would wear a warm and wealthy aspect when the myriads of seeds of all kinds that are annually wasted should be gathered into barns and put forth to usury in the spring in the bank of Earth.—*A. Forsyth, Alton Towers.*

THE ROSE-GARDEN.—No. II.

(*Continued from page 36.*)

Securing a Supply of Buds.—It is necessary, at the commencement of the following observations, to remind the reader that *ex quovis ligno non fit Mercurius: Anglice,*—Good work will not spring from bad materials. Previous, then, to making any other preparations, it is desirable to secure a supply of buds against the time when they will be used, either by having the plants from which they are to be taken, in the garden of the operator, by promise from that of a friend, or by purchase from a nurseryman who can be relied upon. (It may be as well to remark here, that if either of the latter be the case, it will be well at the time of use to see that the shoots on which the buds are be quite fresh, or, if possible, to cut them on the spot.) If, however, the necessary supply cannot be obtained by any of these means, nothing remains but to buy a few plants for the purpose. In this case, fine ones should be secured, as small weak growers will produce few shoots fit for the purpose. If the plants to give the buds be on their own natural roots, it is necessary to see that they are planted as soon as they have lost their leaves in autumn, in order that they may get well settled before the spring; but if it be desired to secure a good supply, a strong-stemmed standard Rose or two should be purchased at a nursery, and such only chosen as have plenty of young wood, and are in health. By choosing them without reference to shape, and merely on account of the buds they are expected to yield in autumn, those may be obtained which have been rejected for a season or two by other buyers, and are vigorous and well-rooted. They should be planted with good mould round the roots in November, and care taken to remove any leaves there may be on the trees previous to planting. If well staked and trimmed, as subsequently directed, a more regular and certain supply of buds will be procured than in any other way; and, provided the trees be a little favoured, they may get over the injuries inflicted by removing their best shoots, especially if two or three buds be left at the base of each shoot thus removed.

Choice of Stocks.—The proper time to procure stocks is during the month of November; (the period, however, may be delayed until the 1st of February, but it is not desirable to do so, for plants procured and planted in Nov. will be found to produce much finer shoots than those planted later; the shoots upon them are also better placed, two rarely starting from the same eye, but springing from following knots, and are opposed to each other on the stock; and if three shoots push, they are in general from the three upper rings on the stock, and evenly triangular. November plants seem to accumulate their strength, and, as above mentioned, forming their buds at the nearest possible points to the extremity of the stock, start and continue their growth with unabating vigour, and at the end of May an unexperienced eye would at once discern the difference between a body of stocks entered in November and the same quantity placed in the ground in January or February, although an unequal strength in single plants might render the difference not so perceptible.

Four objects are gained by early planting; viz., large shoots—well-placed shoots, with reference to each other, both in proximity and position—the formation of a head as near the extremity of the stock as possible—and, on the whole, a more vigorous plant. Late plants, on the contrary, are uncertain as to the places where they will push; a part of the stock is frequently lost from this circumstance. A greater degree of trouble is incurred in removing useless shoots straggling about the stock: and the shoots which are eventually retained are faulty in one or more of these particulars, viz., of a more uneven growth, much smaller than is desirable in circumference, fewer in number, or backward in their growth.

Stocks, however, procured even so late as the 5th or 6th of April, will occasionally succeed, and nothing more is necessary than to send to the nearest wood-cutter, or the headsman of a farm, and desire them to make a collection either from the woods, or to save a supply when they grub up a hedge: in the former, many single plants will be procured; in the latter, most of those which spring from a clump-root. This latter is a matter of small importance, as the wild stock will flourish with hardly any root, and indeed often strike without a single fibre, although plants with fibrous roots are much to be preferred.

In all probability, following the directions received, all sorts of stocks would be brought as well as heights: although they differ both in size and sorts in different places; the red have the hardest and firmest wood, and have least pith; the smooth green are the easiest to bud on the stem, and the green and brown striped are between the two. Some sorts, as the red, do not take freely; but as budding should be done at a time when success is almost certain, this is a matter of less consequence than the appearance of the future tree; the clean, healthy, sizable stock, therefore, should be chosen without reference to the colour. If, however, there be large choice, the green, green and brown striped, and grey, are questionless the best, the red having a tendency to go off, especially when transplanted.

It is true that the size of the stem will continue to increase after grafting, but not in the same ratio as it would have done with a wild head; the free growers will, of course, increase it much more rapidly than delicate sorts, and if the roots are freed from rotten wood in planting and transplanting, and the shoots above well pruned, there is no fixing the size the stock will attain to.

(*To be continued.*)

ON THE CULTIVATION OF PERSIAN MELONS.

I SEND you a description of the house in which the Persian Melons lately exhibited to the Horticultural Society were grown (see p. 543 and 662). There is nothing novel or remarkable about it, and I should not have thought it sufficiently interesting for the pages of the *Chronicle*, but that I see a great diversity of opinion prevailing as to the best method of affording bottom-heat. One gardener advocates steaming the roots of plants over open troughs of hot water; another prefers a dry heat, obtained by lighting a fire beneath the bed; a third says that the open tank-system will not do for Melons, because the steam reduces the soil to the condition of mud; while a fourth asserts that the soil is then in the very best condition for the growth of these plants.

Amidst so many conflicting theories, all supported by experienced men, who I have no doubt could each in his own way obtain success, I think that descriptions of

structures already in use, and of the measure of success attained by them, may be serviceable in assisting the unpractised in the somewhat difficult task of deciding; and perhaps I may be able to show, that even those who have no means of obtaining bottom-heat need not despair of growing very good Persian Melons without it, provided they do not aim at having them too early.



The house, of which the accompanying cut is a section, was built in the spring of 1842, principally for a Melon-house; but it is found useful in the winter for forcing Pelargoniums, and in the early spring for Strawberries; to both which purposes it is well adapted, on account of its lightness, the trellis being at such times replaced by a portable stage. It is 28 feet long, and 15 feet wide, and is heated by means of a saddle-boiler, with four-inch pipes passing round the outside of the pit. These pipes are fitted with cast-iron troughs, for holding water, to regulate the moisture of the atmosphere. Beneath the pit is an arched chamber, *a*, along the front of which runs the flue, *b*, imparting a very slight degree of heat to the soil above, and also serving to heat a series of arches, *c*, which run along beneath the path, and are entered from a house in front, *d*, and which are used for forcing Rhubarb, &c. in the winter. I may also mention that the house in front is heated by the same boiler.

In the beginning of June, the house was cleared of Strawberries; it then underwent a thorough cleaning. The pit was next filled, by placing first about six inches of decayed dung and leaves, and upon this a compost consisting of one-half surface-soil of a pasture which had lain for twelve months, and one-half a mixture of turf, dung, and brick-rubbish, that had been thrown together for a Vine-border. The depth of the soil was about two feet. The trellis being then fixed, the arrangements were complete. On the 15th of June the plants were turned out, one in each light, and planted about six inches from the front of the pit. They grew most luxuriantly; only two shoots were allowed to go up the trellis beneath each light, and about three Melons were left to swell in the same space. By thus limiting the number of shoots, the leaves had plenty of room to expand, and I think I never saw finer foliage. The number of fruit was twenty-one, and the average weight about eight and a half pounds. The temperature of the house was kept to seventy-two degrees by fire-heat, and the heat of the bed never exceeded seventy-five degrees. As the moisture of the soil and atmosphere is of the greatest importance in bringing to perfection the Persian Melon, I may add, that I never allowed any syringing, or watering with a rose pot; but twice while they were growing the bed received a thorough watering. The depth of the soil, and its being of a nature to retain moisture, precluded the necessity of often watering. The troughs were kept full of water till the fruit began to ripen, when the atmosphere of the house was kept as dry as possible.

Although the soil in this house received a slight degree of heat from the flue beneath, we have Melons growing in two other places, and doing equally well, without bottom-heat at all; and everything has been obtained from a good soil of sufficient depth that could be desired or expected, from either open tanks or closed ones. One of these places is a low pit, where the soil is placed upon the drainage, with the exception of a thin layer (about 6 inches) of decayed leaves. The other place alluded to is a Fig-house, in which the plants grow in pits about 6 feet long and 2 feet wide. The Melon, for which a Banksian Medal was awarded me in August, [a very fine one indeed—*Ed.*] was grown entirely without bottom-heat. I do not mean to infer from this that bottom-heat is useless, on the contrary, for early crops of Melons I consider it indispensable.

The above is an account of the method pursued in this particular case—with what success those who saw the crop growing in July and August can judge. I shall now make a few general remarks on the soil, on watering, and stopping the plants.

It is of importance that the soil be as rough or lumpy as possible for the Melon, as I find that the roots delight to run among and cling to these lumps, as may readily be perceived by taking one of them up, when the roots will be seen spreading in every direction, and protruding through the surface. The compost I prefer, is one-year-old turf from an old pasture, a small portion of rotten dung, and some lumpy marl, with a little charcoal sprinkled among the marl previous to its being added to the compost. It should be 2 feet deep for the plants to root in, and if moderately dry at first, the fibres will be more numerous and healthy. Supposing things in a state of readiness to turn out the plants, they should be planted at the front of the pit, the leading shoot pinched out so as to leave two eyes, and a slight watering given to the plants to settle the soil round them. If the plants will do without water till the fruit is set, so much the better; as by this time the whole mass of compost will be occupied with fibres ready to supply much nourishment to the plants, and it may be imagined what rapid progress the fruit will make after the first thorough watering the compost receives; the water must be of the same temperature as the compost. At this time great attention should be paid to keeping the atmosphere of the house dry; or if the weather be dull, the proper organisation of the leaves will be prevented by the too great quantity of vapour from the newly-watered soil; to prevent this I place dry mats on the surface, and give a little extra air, keeping up the temperature by the hot-water pipes. During sunshine, the mats are removed to allow the surface to become dry again. By the time the fruit is half swelled, water may again be required,—it must be given as before, paying the same attention to the state of the atmosphere. This will probably suffice till the fruit is ripe; but if water should be again required, it should be given at the sides of the bed of soil, where the extremities of the roots will be, and so as to wet the surface as little as possible, as the atmosphere cannot now be kept too dry for the flavour of the fruit. I may here observe, that the best way to give water is to pour it from the spout of a pot without a rose, and as much between the lumps of soil as possible. In very hot weather the red spider will be troublesome, and I find it necessary to puff sulphur and snuff on the under-side of every leaf, which is easily done in our Melon-house, as the trellis is so much above the soil that a boy may get to nearly every leaf without touching them: this plan is much better than steaming and sprinkling for the Persian Melon.

I now come to the management of the shoots and leaves, which is a point of great importance, as, unless the leaves are allowed plenty of room, by retaining but few shoots and are kept green and healthy till the last, the fruit will not be good in flavour. My rule is to allow no more than two shoots to be taken up under each light, and no laterals allowed to grow except those on which the fruit are. When the shoots reach the top of the trellis they are stopped, in order to throw strength into the laterals, on which the young fruit will now be forming. When three of the most promising fruit are set, the rest should be cut away with the laterals, and the plants should be examined daily for some time, to see that not a leaf overlays another, and to pinch all laterals that appear.

The Hoosainee Melon may be known to be about ripe when a sweet juice exudes from the stalk near the fruit, which will generally happen in about thirteen or fourteen weeks from the time of planting out.—*C. Fleming, Trentham Garden.*

Home Correspondence.

Bees and Dutch Clover in New Zealand.—As "R." has applied directly to me respecting the cause which has produced the accession of Dutch Clover recently observed in New Zealand, I will reply to him in the best manner I can. I am inclined to think that the increased produce of Clover has been rather coincident than correlative to the introduction of honey-bees into the Colony, and that it has arisen from some change in the culture of the soil; as such changes are well known to be capable of producing such an effect. If a pasture-field be dressed with soap-maker's waste, or with a compost well imbued with lime, or with lime only, there will be a crop of Dutch Clover, though it had never appeared, or but scantily appeared before. Some attribute this to the land's being placed in a favourable state for the germination of Clover-seed, which had lain dormant in the earth, only awaiting the favourable circumstances referred to, to bring it forth. Others regard it as a parallel case to that afforded by the celebrated Mr. Crosse, who by means of electricity has brought into existence insects previously unknown, and as therefore militating against the doctrine of *omnia ab ovo*. It is a knotty point which I shall not presume to decide, but I hope the remarks I have made may call forth others from some of your intelligent correspondents.—*Edward Bevan, Esgair Evan, Newtown, Montgomeryshire.*

Culture of the Carrot.—Some gardeners imagine that old garden soils are not favourable to the growth of Carrots; but I have produced them in two old gardens, which for years had refused to produce them by the common modes of cultivation. The system I pursue is this: in autumn the ground is trenched to the depth of eighteen inches, in the bottom of each trench a little quick lime is sprinkled and forked up with the bottom; the surface remains quite rough until spring; previous to sowing, a little river-sand or sandy earth is spread over the surface, and dug in as deep as a common spade will do it. I then add a little more quick lime, and rake the surface level; the beds are then formed; drills are drawn in the usual way; the seeds, being mixed with river-sand, are then sown, and covered in with the back of a rake. The width of the drills varies according to the sorts; for small-growing kinds, such as the Early Horn, eight inches is about the width; for the Altringham, ten inches; and for the largest sorts one foot is not too much; and they are thinned out to about the same distances in the drills. Thinning is of the greatest importance: the allowing them to remain too thick is not unfrequently the cause of disease. By the above system, I produced last year on one hundred and twenty square yards nine cwt. of picked roots (varying in length from one foot to eighteen inches), one cwt. of small, and three cwt. of tops, all perfectly free from speck, the sort being the Altringham.—*P. Elliot.*

Cucumbers.—A correspondent, "P. Cope," informs us that at an obscure place in South Salop there was a Cucumber cut on the 3d of December, measuring 13 ins. in length, and 13 in. in diameter. He inquires if any of our correspondents have outdone this.

Oaks.—Seeing that you recommend Quercus sessiliflora, I shall be obliged by your stating under what circumstances, since it is considered very inferior timber. There is not, I believe, a neighbouring woodman here who is not aware of the extreme softness of the Durmast Oak when felled, or of its very fragile character when applied to any of those uses for which the tenacious properties of the Q. pedunculata are esteemed. The knowledge of this by the Commissioners of Woods and Forests induced their sending particular instructions to the late Mr. Turner (their then surveyor of the New Forest plantations), to cultivate only the Quercus pedunculata. These instructions were accompanied by drawings, which are, I believe, kept in the office of the present surveyor, Col. Thornhill, at New Park. My motive for addressing you is the endeavour to prevent any error that may be likely to accrue upon a subject of such importance as the cultivation of the proper sort of Oak for timber. I have for some years directed my own attention to this subject, and I should be very glad to possess any information that you may be able to afford. It is not many days since that the proprietor of an estate in the Forest directed my attention to a large tree of Q. sessiliflora upon his property at Minstead, saying, "There is a Q. sessiliflora, it is very brittle timber." This gentleman is a large possessor in the Forest, and is, perhaps, more conversant than many other persons with this subject. Contiguous to this property, and upon the open Forest, stands a large tree of Ostrya virginica (supposed to have been planted there by Lord Delaware); it has by many persons been considered an Elm, and branches of it in flower have often been shown as such. There are likewise two fine trees of Quercus alba near the same place, but they do not produce Acorns.—*Rufus, Lyndhurst.* [After having occupied so much space formerly with discussions concerning the popular prejudices against *Q. sessiliflora*, we must refer our correspondent to our Volumes for 1841 and 1842, especially the former. This is certain, that the wood of Q. sessiliflora is in no respect inferior to that of Q. pedunculata. Both are affected by soil, and are occasionally of bad quality. The name Durmast Oak is, apparently, applied in the New Forest to different plants, and therefore furnishes no evidence against Q. sessiliflora.]

Piping Carnations.—This has been successfully practised by removing the mould from a Tulip-bed, placing the leaves of the Tulips underneath, and passing the mould through a coarse riddle. The pipings stuck in this mould are covered with a hand-light, exposed fully to the sun; but in hot weather, in the evening, water is poured over the hand-light. It requires an active person to pick out worms and slugs. If the pipings are placed in a box, covered first with a bell-glass, which is to be exchanged for a small hand-glass, or a larger bell, as the pipings begin to grow, the boxes placed on a stage on a N. side of a tree, and the stage resting on feeders filled with lime-water, there is less trouble with insects, and the pipings will grow very well, but not so rapidly nor so strong as in the former method.—*O.*

Mildew.—I wish to add a few facts to those already stated with regard to mildew, and I hope to suggest a remedy. Having in my conservatory, which may vary in temperature from 38 deg. to 70 deg., an Aimée Vibert Rose, a Hymenée, Thé do., and a Microphylla do., extremely subject to the mildew, I began about a year ago to try a remedy which I think I must have met with in the *Gardeners' Chronicle*, viz., to water them with nitre dissolved in water. The effect is, Aimée Vibert is quite cured, and Hymenée, whose wood was almost destroyed by the disease, is totally free, and making beautiful young wood, the Microphylla, though much improved in health, has still a little of it left. I used 1 oz. nitre to 1 gallon of water (the best I could get at a chemist's), and about once in 10 days during the summer, and am just beginning again to do so. I should think if the Peach-trees were well syringed with the solution, taking care there should be enough to water the roots, it would be effectual there also. I tried sulphur without the least effect.—*Omega.*

On Summer-Pruning Fruit-trees.—In summer-pruning, "Tyro" says at p. 5, "We deprive the tree of its digestive organs without at all diminishing the absorption at the roots; the juices consequently not meeting with a proper surface of exposure, which if no summer-pruning had been performed they would have done, are returned to the tree in a crude and unprepared state, the wood thereby is not of a natural texture, and the fruit is deprived of its proper flavour." Many, however, do not so much deserve blame for pruning as for not pruning. The wall-trees in many places grow as they may, and rows of fruit-trees in the quarters of the garden are never pruned during the summer; all are generally left for the winter-pruning. The luxuriant growth of wood in summer robs the fruit of nourishment, and increases the extension of roots to supply the increased extent of branches on the following season. During winter, the knife removes a great portion of the branches, and the equilibrium that Nature has established between them and the roots is partly destroyed, and a luxuriance of fruitless branches continues to be produced on account of the increased powers of the roots. "In summer pruning," it is said, "we deprive the tree of its digestive organs without at all diminishing the absorption at the roots." I imagine that summer-pruning does diminish the absorption at the roots, and that it establishes a uniformity of circulation between roots and branches. There is such a mutual action existing between these, that whatever is done to curtail the one will affect the other; a judicious summer-pruning of crowded and luxuriant young shoots will allow a free circulation of air, and the genial influence of the sun will better mature the wood that remains, it will also moderate the action of the roots, and the reciprocity between them and branches will thereby be better established without the necessity of pruning much in winter. The use of a strong pair of scissors is all that is necessary for pruning fruit-trees in summer, when the wood is soft. By this practice, the juices supplied from the roots and the gases received from the atmosphere will be concentrated in the branches, and better fruit be obtained.—*W. P. Bamboo.*—Another

correspondent writes as follows: "If pruning commenced with the growing-season, and was uniformly carried on, the result would be very different from what arises from the bad practice of allowing a tree at midsummer to present the appearance of an unclipped hedge. The tree might well make a rapid and simultaneous outbreak from all parts; and even, as "Tyro" suggests, if the superfluous wood was left on the tree until the winter pruning, the rapid outbreak in spring, although not to such an extent as it had been in summer, will yet be much greater than is consistent with the permanent well-being or fruitfulness of the tree; for as sure as those strong growths are cut away after having become strong, so sure will the tree make vigorous efforts to replace them, unless the supply from the roots is interrupted. Hence the great good of root-pruning; or, what is perhaps better with young trees during the first three or four years after planting out, when they are so very apt to make strong wood, to lift them and replant them. If pruning begins as soon as shoots appear where they are not wanted, a great deal of wall may be gone over in a short time. The trees by this method will present a neat and healthy appearance; and the young wood, by being freely exposed to the action of sun and air, will be well ripened. Respecting leaves, when they are produced in great quantity they are generally small, and small leaves are by no means so efficient as larger ones are. Take the Vine for example: if the foliage is good, and has been properly exposed to the influence of light, &c., the wood will be strong, the eyes plump, and, under favourable circumstances, a good crop will be produced. Now the reason of all this is very obvious—it is breadth and health of foliage, and not numerical quantity that is requisite to elaborate the juices of a plant; two or three large and healthy leaves are better than a dozen small ones. Physiologists are in error when they forbid us to prune a forest-tree because a few of its leaves would be lost. This remark is equally applicable to fruit-trees; but still I am no advocate for putting the axe and saw mode into general use. Pruning, to be efficacious, whether on fruit or forest-trees, should be performed as soon as the part to be pruned is capable of removal.—*A. Dawson.*

Summer-pruning Fruit-trees.—One or two correspondents in a late *Chronicle* have started the question—how far is summer-pruning desirable? and they appear to say not at all. This is a subject deserving far more attention than it has hitherto received from gardeners generally; and so far as I can judge from my own observations, the summer-pruning of fruit-trees is productive of nothing but leaves to the trees and disappointment to their owners. I have pruned at all times, and, as far as I could understand them, exactly in the way directed by my authorities (books on Horticulture), but I can safely say that I never yet saw a blossom-bud upon the spur left for its production, if the tree was at the same time growing vigorously. It is true that by root-pruning or ringing the bark, I have made these spurs form blossom-buds, but these practices are not always desirable. I fancy, however, that I learnt a good deal on the subject from an itinerant Scotch gardener whom I employed to train and prune my trees some winters ago: his maxims were, "never cut away a twig in the summer that you can, by any possibility, get to the wall; for," says he, "did ye ever see a clipped thorn hedge full o' May-blossom? ye pit the trees quite oot o' temper when ye keep cut, cut, at them a' thro' the summer, an' it's just a battle between ye, whether ye tire o' cutting or they tire o' growing first: his other maxims were—prune freely in the winter; keep your tree well balanced; nail in, at full length, all young shoots intended for bearing; keep up a succession of young shoots to supply the places of those that are worn out and exhausted by bearing, and thin your trees when the growth of them is too luxuriant. I must admit that his fondness for ringing was carried to excess I considered a great excess, for he would ring Plums, Cherries, and Peaches, (despite of the gum), with as little forbearance as he would an old Crab-tree; however, he made the trees produce such crops as had not previously been seen in the neighbourhood. I trust some of your scientific contributors will offer a few remarks on this subject.—*T. G.*

Pruning Forest Trees.—This is a subject in which I am much interested, having inherited an extensive range of plantation and planted many acres myself. Dr. Thackeray states that he commenced on the removal of the trees from the nursery, by cutting two, three, or four branches from his trees, and from some, annually close to the stem, beginning at the top of the plant and descending, balancing the tree as well as he could. He further adds that his woodman and his assistants have persevered in this system at all seasons of the year removing all large important branches from the same tree once or oftener; the result has been that his trees have acquired strength and vigour, as is evident from the healthy appearance of them, as well as their augmented size. If this is the mode in which Dr. T. proceeds, I differ from him very widely. Should I be able to form an Arboricultural Society, Dr. T.'s plantations shall be visited. I hope to do this myself next summer; for my present purpose I will bring to my aid the positive knowledge we possess on this subject; and what could I do more as member of any society than to propose that theoretical disputed points should be referred? Mr. Billington, who had the management of one of the Royal forests in the north of England, now residing near Coventry, has given in a publication some valuable facts, the result of his experiments with Larches; one with the branches entire had increased 2¼ ins. in girth in each year for four years on an average; a second, with branches shortened, 2¼ ins., and another, with branches cut close to the stem, *only* 1¼ *ins.* Again, in another, his 2d division, a tree with branches cut close in four years, had increased 4 ins.; the tree with the branches cut increased 7½ ins. in four years, making one inch in each year more *than the other*, an object well worth attending to. These facts are superior to theory. What, then, is the value of Dr. T.'s universal pruning at all times of the year? Great improvements have taken place in Agriculture in sowing Wheat in drills a good distance apart, saving one-half of the seed, and producing a larger crop. I hope, therefore, that gentlemen will know the great advantage of only allowing a certain number of trees to grow on the ground; as many only as it will support and bring to maturity. An incalculable loss takes place in England by the mismanagement of woodland property. Cut wood and have wood is my motto, after 30 years' experience. I cut away trees where there are too many. I wish to shape my practice in accordance with the laws of nature, and not to set myself in opposition. I expect to find her a kind handmaid if I woo her skilfully, but a very termagant if I resist her. "Quercus" has been attacked, because he has advocated nature, and is advised by one gentleman from the county of Kerry to take a journey to Chester, to ascertain by his own inspection the state of the Nerquis plantations. If Dr. T. would have the goodness to say what is the height of his trees, and at what distance they stand from each other, "Quercus" would then be able to form a better judgment. It often happens that by pruning severely the owner thinks he can keep so many more trees on the ground. Thus, one giant evil produces another, and both end in complete ruin.—*James Hamerton, Hellifield Peel.*

Hammond's Cape Broccoli.—I suspect "W. N." must have received some other kind of Broccoli than Hammond's Cape. With us, at Broadlands, no signs of tenderness are visible, even during sharp frosts; the heads are large, and as close and white as a Cauliflower. It continued in use until a fortnight ago, and if enough had been planted it might have been prolonged until February.—*Samuel Hinman.*

The Fig.—Many papers have appeared from time to time upon the culture, pruning, and management of this plant, but we are still as much in the dark respecting it as we were 30 years ago. It still remains independent of man's control—producing abundantly, or continuing barren, year after year, as though it were the sport of chance, or were governed by influences wholly unknown to science. It seems that there is but one object to be accomplished towards bringing this wayward producer under subjection: it is admitted by all that the only crop of fruit which can be expected to ripen in the open air in England is that which is produced upon the Midsummer shoot of the previous season, upon which the fruit-buds are formed which, if not sufficiently advanced to form the second crop—to fall unripened with the first frost—become the fruit of the following spring. If, therefore, some means could be devised by which, as soon as the Midsummer buds are formed, the further growth of the tree could be checked, it seems reasonable to suppose that we should be able to insure a crop in the next season. Possibly, you may be aware of some experiments having been made with this object. Would taking the tree up, or pruning the roots in autumn, have this effect—or could you suggest any other means by which this object might be attained?—*J. J.* [We are happy to say that one of our correspondents, a first-rate practical man, is preparing a paper on this subject.]

To Destroy the Wireworm.—When I get in my turfy loam, I have a copper of boiling water ready, and as the turf is stacked up, upon every layer of it I pour from the rose of a large watering-pot (holding it down quite close) a good drenching of boiling water; I then add another layer of turf, and so on throughout the whole. It effectually destroys insects of every kind, and materially assists the decomposition of the turf. If the loam remains for a length of time before it is used, when about to pot Carnations, or any flower suffering in an equal degree from the attacks of wireworm, I spread upon some hard ground the compost I have prepared for the purpose, and giving it a good sprinkling of boiling water, I allow it to remain until it is dry.—*Rusticus.*

The Himalayan Funnel.—It has frequently been your business, no less than your pleasure, to discuss the various forms and materials of garden-pots and watering-pots, which, as appurtenances, however humble, to Horticultural pursuits, you seem to have thought invested with as much dignity, derived from usefulness, as entitled them to your attention. On the same principle you will perhaps be disposed to notice a prospectus which I send you, announcing a new chimney-pot, which, as flues and fires are essentially Horticultural, has a fair claim on your consideration. This particular chimney-pot has, however, a double interest; it is no vulgar invention of some subannuated sweep, driven by the relentless humanity of Parliament to seek, as *Punch* has it, consolation in distant *climes*; but it has been imported from the Himalayan Mountains, 28,000 (?) feet above the level of the sea, by an enterprising British officer, who, whatever he may think of fire, is clearly not afraid of smoke. I would be serious on this subject for its own sake as well as its associations. Who, indeed, can contemplate a Himalayan chimney-pot without thinking of a Suttee, or muse upon the circumstances which have carried the mechanic arts to such a height in those benighted regions, without imagining some mysterious connexion between the Brahma of their idolatry and the Bramah of ours? A new Himalayan plant with some unpronounceable name would have been an object of interest; but a Himalayan chimney-pot, the produce of Himalayan intellect, in an opposite to the former as mind is superior to matter. Whether, however, how this may be, the chimney-pot in question is based upon the most recondite principles of science—mechanic, pneumatic, hydraulic, &c. (some great call it so—indeed, it is, and, by no means, least, that it is adapted to a new acquaintance of the Sultan, either suffocated by the fumes of the 68th, 6 and 7 Vic. The happy possessor of this immaculate chimney-pot may bid defiance to the winds; for while, as the proprietor states, with infinite candour, "most other inventions are singularly adapted to increase the evils they profess to remedy," this can never fail. Let the storm blow up or down, or right a-head or round a corner, north or south, or east or west, this universal apparatus turns the blast to its own account, and compels it to aid in the escape of the smoke. Tempests cannot shake it, nor floods overwhelm, nor fire consume it; and it is made of such enduring materials, and in such diversity of shapes, that age cannot wither it, nor *custom* stale its infinite variety. I could say more on this topic, were I not fearful of subjecting you to a claim for the advertisement duty, which it is your duty not to evade; but I have thought it my duty, nevertheless, to prepare your readers for the forthcoming announcement of the Himalayan Chimney-Pot.—*Fumus.*

Budding and Inarching the Vine.—Wishing to increase the number of Muscats of Alexandria and Cannon Hall Grapes, I cut down a few Vines; one-half of them was budded, and the other was inarched. To test the merit of each method fairly, both budding and inarching were done at one period. The result is, that by the former method, bearing wood has been produced nearly double the strength of that by the latter. In budding, the following is the method I pursued:—The old Vines were cut down in the autumn of 1842. They were laid in March, 1843; as soon as they had made shoots a few inches long, two were selected on each Vine, and all the others were taken off. These were tied in, and laterals were pinched regularly off them until May. The young shoots were then about two-thirds up the rafters, and nearly full-grown in thickness at the base, but not ripened or turned brown. At that period the buds taken from young shoots with leaves not larger than two inches in diameter, were put on; the wood was left in the buds; they were inserted in the usual way, and tied firmly with a piece of matting. In the course of ten days or a fortnight they were united, the matting was undone, and the shoots were cut down to the buds; all shoots below the buds were taken off as they made their appearance. After this was done they grew away very strong and rapidly. Some of the buds showed fruit, but this was pinched off. The leaves attached to the buds never flagged.—*W. G.*

The Heckfield Pit.—Some inquiry having been made as to the manner in which this pit (of which an account is given at p. 892 for 1843) is managed, Mr. Berry has been so obliging as to forward us the following statement:—Respecting the mode of getting over the difficulty of the plants subsiding too far from the glass, we endeavour to prevent this evil by filling the pit pretty full, with the stuff put compactly together. The ridge of mould is laid along the back, and the plants are planted along the ridge, within 18 inches of the back wall; they are trained towards the front, sometimes on a trellis, and sometimes without. The plants being placed near the back, the roots are more secure against injury from over heat, whilst ample space of surface is left in front for stirring up, &c.; and, if it is requisite, a few inches of dung are added to the surface before the bed is finally earthed over. The trellis, or rather a small trellis under each light, is formed with two pieces of wood laid across the bed, having notches cut out on the upper edges for the reception of pieces of lath, which are laid in as they are needed; this trellis is supported on four short stakes stuck into the bed. But it may be asked whether a breakage of roots does not take place on the edge of the back flue as the bed subsides? this would certainly take place, but is prevented by a few slates set along the edge of the flue to keep the dung and earth off it. This caution, however, is only required in one of the divisions of our pits, because the cavity in its flue is 5 inches, whilst the cavities in the others are only 2 inches, and that part of the flue on which the dung would rest is sloped off, so as to offer no obstruction. I may observe, that the back lining is the one on which most dependence is placed in keeping up the heat.—*Thos. Berry.*——Another correspondent, Mr. James Selsby, proceeds somewhat differently:—To prevent the Melons from leaving the glass as the litter sinks, I make a false bottom eighteen inches from the glass, consisting of joists let into the front and back wall. The joists are about twelve inches asunder, and upon them are laid hurdles, or if these are not at hand, sticks fit for hurdles placed about two inches apart will answer the purpose; and upon the hurdles, or sticks, must be laid thin turf, such as is cut for lawns, the grass side to be downwards, and the pieces placed close together, so as to keep down the steam which rises into the hollow space from below, and gets through the pinsome holes from the linings. I find this plan answers better than a solid bed.—*James Selsby.*

Foreign Correspondence.

Paris, Dec. 27, 1843.—The observations in my last letter referred exclusively to the cultivation of Vines in the Kitchen Garden of Versailles, but I said nothing about the seedlings, of which there are a great number now coming into fruit. It would be difficult to determine, from the habit of the plants, from what kinds they were obtained. I understand, however, that the whole are from the Bauville, without artificial impregnation; if so, it is a sporting variety, for the greater part are very unlike the parent. Some have compact bunches like Chasselas, others large bunches like the Frankenthal, some like the Bauville form; some like Chasselas, others like Austria's Queen; some the Bauville, with white stalks like Chasselas, and some very large bunches, with smooth leaves,

[illegible] fruits upon the stems [illegible] the [illegible] Pine-apple, but much brighter in colour, and [illegible] above it the earth. Many seedlings have before been raised in these gardens, but none which the [illegible] sufficiently distinct and good to name. I may mention, *en passant*, that the Banana Plants presents, just now, an interesting appearance; it is about 25 feet by 12; if it were planted last year, in the open ground, four suckers, all of which are now in fruit. On one of these I counted nearly 150 pods, which, when ripe, cannot weigh less than 30 or 40 lbs.; the plants have about 2 feet of soil, upon a 3 feet bed of leaves. It is hardly necessary to refer to all the Pineries that I have visited; suffice it to say, the same remarks will apply generally to Meudon and Saponnay, as well as to the growers for the market. In each of these places you find the open-frame culture, not only for young plants, but continued in the after stages, especially for the large kinds.

I have before said that Peat is the principal soil in use, indeed, so general is this, that among the many public and private establishments which I have visited in France, I have never yet seen loam used in any one of them. In one or two you may see a few growing in sandy earth and rotten leaf-mould, and here and there peat and leaf-mould, but pure peat is everywhere to be seen as the favourite soil; this may seem strange to English growers, who have so long been accustomed to such strong soils as the Norwood loam, but, nevertheless, the fact is as I have stated. French growers will not use loam, some have told me that it has been tried upon Camellias and Roses, and that they have died under it, I even know an English gardener living with a lady of title, near Paris, who has adopted the same views, and replanted his Camellias in peat, after a trial of three seasons in loam. I have endeavoured to convince them that their want of success must have arisen from an improper use of loam in a sour state, but all to no purpose, their *amour propre* is as easily wounded in Horticulture as in Politics. They ask, are your Pines more healthy, or your fruit larger, than ours? and without waiting for a reply, tell you that they have seen Mr Wilmot's, Chatsworth, and other gardens in England and Scotland, and are satisfied that their plan is the best, this may be prejudice—perhaps it is so, but I apprehend that both Mr. Glendinning and Mr. Spencer would find some difficulty in combatting such evidences as 10 lb. Pines, which the French growers could produce in its favour.

The establishment of Versailles is, as I have before said, the largest in France, but that of Meudon is also remarkable for excellent culture and the high state of perfection to which this fruit is brought. This is one of the King's private establishments; the Chateau is never occupied by the Royal family, and M. Pelvillain, the chief gardener, is allowed the kitchen garden on his own account. The Pine is his hobby, and he spares no trouble or expense in bringing it to perfection; so ardent is his desire to obtain information, that he is learning the English language for the express purpose of reading our treatises and visiting our country, that he may be able to judge for himself of the advantages or defects of the different modes of treatment. He uses Peat, and also adopts the open ground culture, and certainly it would be difficult to find plants more vigorous, or finer fruit at Christmas, than he produces, it is no unusual thing to see in his houses Providence, Cayenne, and Enviles from 8 to 10 lbs. The Queens, however, are not large, certainly not more than 2 or 3 lbs. on the average, these last he grows principally in pots for the market, the confectioners of Paris seldom buy the larger kinds, they prefer a middle sized Queen to any other; it would, therefore, be useless for him to take any extraordinary trouble in getting this variety very large. He has also raised several seedlings within the last four years, one of them was sent out about two seasons since, it is not, however, considered any great improvement upon the original. I know that many English amateurs and gardeners have from time to time visited Meudon, and they can bear testimony for or against the justice of my remarks.

MM. Goutier of Paris and Truelfaut of Versailles cultivate entirely for market, the former grows almost every variety, but I do not think his fruit so fine as at the before-mentioned places, this, however, may be on account of the little demand for heavy fruits. I have, nevertheless, seen excellent specimens in his houses. Pines are not sold in Paris by weight, and therefore he has no particular inducement to obtain them above the usual size. He has likewise raised a great number of seedlings from the Enville, which bear a striking resemblance to those obtained at Versailles; the same diversity in habit and fruit is apparent, and it is somewhat singular that as many, in both places, should have smooth leaves, because, at the time the seed was perfected, the Cayenne Lis was but little cultivated. At the last Paris show in September, M. Goutier obtained the large silver medal for two of his seedlings, and you will find a description of the fruit in my letter of that period; among other of his seedlings I noticed one having a long Enville-shaped fruit, of a greenish orange colour, weighing about 5 lbs.; another named Prince de Joinville, having large and long fruit of about 7 or 8 lbs.; another with smooth leaves and very long angular fruit, about 12 inches long, weighing, I think, 7 or 8 lbs.; another named Enville Pelvillain, with very large fruit, said to be of a finer flavour than the old variety; there were five or six others with large fruit, all varying more or less in habit or fruit from the parent. Mr. Beaumont limits about 400 Pines annually; all of which, either the production of a few Cayennes and Providences, and Queens; about 100 are planted in the open ground, both are not particularly very marked difference between them and the Queens in pots; the fruit, he says there would be no particular advantage to him in producing large fruit; he finds a ready sale for ordinary sized Queens at 10 and 12 francs, while the larger kinds are seldom asked for. He, however, is decidedly in favour of open frame culture for all varieties of young plants, and for the fruiting of the varieties before mentioned. Such is the result of my observations, and I think it will be conceded by all that French cultivators are entitled to no little credit for the introduction of this system; it is a common saying in this country, "that the French invent, but the English practise and reap the benefit." I doubt not it will so be in this instance, for I feel satisfied that, *malgré* the climate, there will be larger fruit produced under this plan by Messrs. Barnes, Spencer, and others, than has ever been seen here. Not only can England boast of the most skilful practical gardeners, but she enjoys peculiar advantages from the great perfection to which her heating by hot water is now brought, and should Rendle's tank system be found as favourable as he supposes, I shall not be surprised to read before long of prizes being awarded for Pines weighing 12 or 15 lbs. each.

Societies.

MICROSCOPICAL SOCIETY.

Jan. 10.—J H Bowerbank, Esq, in the chair. There being no paper Mr John Quekett, the Secretary, made some observations on the structure of a fossil human bone found in a bog. He stated that many attempts had been made to inject artificially the Haversian canals of bone, but had failed, but in this instance the medullary canal, the Haversian canals, and the osseous corpuscles were beautifully injected. Dr. Goodfellow stated that he had seen preparations of Mr Tooms, in which he had succeeded in injecting artificially the Haversian canals and osseous corpuscles. Mr. Dalrymple said, with regard to the structure of the Haversian canals, he had not only seen vessels running through them, but vessels lining their walls. Mr John Quekett also made some observations on the analogy between the structure of the air bladder of the eel and the lower part of the lung of the Chameleon thus proving the respiratory function of the air-bladder as well as its structural analogy with the lungs. These remarks were illustrated by microscopical specimens.

Reviews.

An Introduction to Practical Organic Chemistry. 12mo. Pickering.

Why this should have been called an introduction to *practical* chemistry we are at a loss to understand for it is anything rather than that. It is, *in fact*, an exposition, in few words, of what the author conceives to be the modern *theory* of organic chemistry, taken from the writings of the more conspicuous of modern investigators. In some respects the author has performed his task with skill, and has made it a real assistance to those who are labouring to infuse some idea of the nature of chemical investigation into the rising generation. In other respects he has been less successful. For example, the questionable, if not fallacious doctrine of root-secretions is now, in 1844, treated as if it were a matter beyond all doubt, and the ten times refuted speculations of geologists as to the presence of enormous Ferns in the beds of coal are regarded as so many facts about which no doubt can be entertained. In another place we are assured that pruning fruit trees make them bear more abundantly, which we believe is the reverse of the fact. Pruning does not produce abundance, but it improves quality.

What we most approve of is the skill shown in demonstrating the truth of the Mosaic history of the creation by the evidence of modern science. "Let us consider," says the author, "the apparent course of creation as these sciences—chemistry and geology—present it. From the seething matter of volcanoes, carbonic acid, combinations of ammonia in a gaseous form, chiefly carbonate of ammonia, and aqueous vapour are evolved, i. e., gases composed respectively of carbon and oxygen and hydrogen and nitrogen, or a combination of both, but none of them capable of maintaining animal life; and steam, which is a compound of oxygen and hydrogen. Plants sprout from the earth, and find nourishment for the most luxurious growth in the gaseous products of the heated mass. The remains of enormous Ferns found among deep beds of coal, showing the latter to be the produce of a former vegetation, prove how immense a portion of vegetable matter was produced from gases which no animal could have breathed. The absorption of carbonic acid, with the consequent return of a large quantity of pure oxygen to the atmosphere; the greater affinity of hydrogen for the oxygen thus presented than for nitrogen, especially when heat acted in the decomposition of ammonia, which would then set free its portion of nitrogen—brought the atmosphere apparently in the course of time to its present composition; and animals then stepped forth upon the earth, to breathe the air, and consume the food already prepared for them. Such is the account which science would give, it differs in nothing from that of Moses."

To our minds nothing can be more satisfactory than this, with the exception of the romance about Ferns, and we accept it as a sufficient atonement for errors on other points.

Miscellaneous.

Mode of ascertaining the Quality of Seeds.—Such seeds as do not naturally require a very long time to germinate, are sometimes readily examined, as regards their goodness, by being placed in hot dung. The following particulars of the mode indicated by General Yconat is recorded in the "Revue Horticole." A pinch of seed is sown in a path, which is plunged in fermenting horse-dung, the seed being covered with nearly half an inch of soil, and over this rather more than an inch of dung.‖

Swan River Vegetation.—Labiatæ, &c.—We have several fine species of Hemiandra, Hemigenia, and Anisandra. There is also a species of Westringia, a Menthoid, nearly allied to Pennyroyal, and several showy plants with a calyx like Scutellaria.—*Drummond, in the Inquirer.*

JANUARY

By the Author of "Rural Sonnets," "Spartacus," "Eugenia," and other Tragedies.

Happy as yon fresh Bays upon his brow,
With full-blown Laurustinus interwov'd;
Ere yet the husbandmen resume the plough,
Or festive days by labour are retriev'd—
Lo! *January* leads the young New Year,
Happy in welcome, and with hope elate,
Tho' round its form cold winds and clouds career,
And barren would appear its first estate.
Now—if the weather freeze, or bind the ground—
Manures are carted and the routes repair'd
In forest-haunts the woodmen's strokes resound
For earliest produce gardens are prepar'd
And here and there just peep above the soil
Signs of the life whereon'th vast Nature a womb doth toil.

T. Jan 2, Inner Temple, Jan 20, 1844.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

This is a good time to remove dormant bulbs and tubers to a forcing pit, such as the many varieties of *Hippeastrum*. If these have been put to rest in their pots it is best not to disturb their roots at present; if they want larger pots shift them when they are in full growth next month. Some of the different Gloxinias and a few of the Achimenes may also be set to growing; these do best potted at the time they are started. Some of the Gloxinias are apt to damp off, if water lodges in the crown of their tubers. Seeds of stove plants or from foreign parts may now be sown in well drained pots in peat and sand, the soil for valuable seeds ought to be prepared after Mr. River's manner, if only to kill eggs of insects seeds of weeds, and to expel dampness. Look over all plants regularly, and let everything be clean about them.

Conservatory.—Where forced flowers are introduced less air should be admitted than for a collection of greenhouse plants. See particularly that Orange trees Nerliums, and other plants are clear of mist before they begin growing, as young wood and foliage are very difficult to clean without injury. Most succulent growing plants being in full growth and bloom, require less water than these in smaller pots in the greenhouse. Rhododendrons and Azaleas are among the finest and easiest plants to force for the conservatory and seeds from forced plants of them grown are always more to be depended on for novelties than those from the open ground.

Greenhouse.—Seeds of Heaths, and of all woody half-hardy plants may now be sown and reared in hot beds or stoves; but it is soon as to sow them where such conveniences are wanting. This is also about the best time to sow Rhododendron and Azalea seed, especially the finer sorts; seedlings of these of last year might now be forced, and afterwards hardened off against next May when they might be planted out in cold frames or sheltered beds. This treatment brings them sooner to a flowering state, they also make finer plants. Keep greenhouse plants from growing yet as much as possible.

Forcing Pits.—Many other plants besides those for flowering might be brought on early growth in these pits. The Paulownia should now be set to growing as a forcing plant; as soon as the blooms are ready to expand the plants should be removed from close heat to a more airy situation for a day or two before they are brought to the conservatory or sitting rooms; syringe them at least once a day, keep the plants free from insects, and introduce as many plants as you can spare for experiment. There are many plants probably that will force well which have not yet been tried.—*D. D.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out door Department.

Never had we such a fine season for out door improvements or alterations; but tender plants are in a very forward state, and it is necessary to keep them securely protected at night, as frost may come upon us when we little expect it. Many plants, such as the Tree Pæony, Magnolia conspicua, and some of the more hardy of the Himalayan Pinuses, are in a very forward state and will require watching, or we may lose a season's growth.

Reserve Garden.—A part of this garden should, in all large establishments be devoted to the rearing of evergreen shrubs, such as Laurel, Rhododendrons, Kalmias, Yews, Laurustinus, &c., which may be propagated at home or bought in from the nurseryman when a year or two old at a very trifling cost. They come in very handy when making improvements, and ensure to grow from being habited to the soil and climate of the place. There are not many places where a few thousands of these might not be planted with great improvement to the grounds.

Pits and Frames.—Protect securely at night, but give all the air possible in the day time. Calceolarias, Heliotropiums, &c., may be potted off preparatory to being hardened for the flower-garden. Should the weather send the men in doors, a few barrow loads of pegs may be cut, of various sizes, ready for pegging down shrubs, Roses, Verbenas, &c. &c. Masons may also be made of various sizes and flower sticks painted, straightened, tied into bundles and laid up to dry.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas may now be top dressed, removing carefully the surface soil, and substituting some two year decayed horse manure and loam soil. Avoid all hot stimulating composts, for though they may increase the size of the flowers for the present season, yet it is "*a food*" so uncongenial with the nature of the plant that the foundation of future disease will be most assuredly laid.

Polyanthuses grown in pots to be kept moderately dry, and a similar top dressing as to the *Auriculas* recommended for the *Auriculas* will be of infinite service to them. They are, however, grown on beds, with a north east aspect with great success. A cool bottom, either natural or artificial is what must be borne in mind, as a *sine qua non* for the perfection of the flower.

Carnations.—Still give all the air possible. If the green-fly begins to be troublesome remove it with a camel-hair brush.

Pinks.—As spring advances the wireworm gets more active and mischievous. If you have reason to suspect that any of these work in your beds cut a P take into quarters inserting a shower of coal place them in various parts just below the soil, and examine them daily. This is an effectual trap.

Tulips.—We have as yet had but little frost or wet to affect the crop. As they advance they will require strict attention to the precautions before directed.

Ranunculuses.—In selecting roots for blooming choose those with a high crown in preference to size. The following are a few that will make an improvement on any collection.—Tyson's Edgar yellow, edged with puce; C star's Apollo crimson self; Mr Welch white, edged with deep pink; Madeline, white, a beautiful rose edge; Bartlett's Charlotte, superbly mottled; and Luther, white, purple edge. The old flowers—Hazara, splendid dark; Socrates, silver; and Le Temeraire pink stripe—still continue the best in their respective classes, most of the new seedlings being clumsy-edged, spotted, or mottled.

Pansies are showing a tendency to bloom, arising from the

plant mild weather. They will be better protected as they are.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—If in looking over the succession plants any are observed to be unsightly, the sooner they are discarded and repotted the better, choosing a mild day for the operations. They will soon begin to make new roots in the fresh soil, and will be re-established before the dark days have much power. Those plants that are in good condition at the present, and not likely to require the soil to be shaken from them, but merely shifted into larger pots, will do better if this is delayed until the beginning of March.

Vinery.—If there is ample means of obtaining a moist atmosphere, it will be necessary to pay some attention to this point during damp close weather; as it is possible to have more than is necessary for the health of the Vine after it is in leaf. Keep watch sticks in the fermenting material upon the borders and examine them frequently to see if the heat is regular; so of heat will be a good medium.

Peach House.—A small portion of air admitted throughout the day, during the blooming of the trees, will prove beneficial. The blooms will be stronger and of a finer colour, and the fruit will set better. Peach trees generally set their fruit best in houses not continuously glazed, and this affords us a lesson.

Fig-House.—As the young Figs begin to swell increase the temperature 5° or 8° in a week, till it reach 60° or 65°, with a rise of 5° to 10° by day, according as there may be sunshine or not.

Cherry House.—From the time the bloom begins to expand do not syringe till the fruit is set; keep a steady heat of 55° by night and 60° by day. Ventilate as directed for the Peach-house.

Strawberries.—See last week's Calendar.

Melons.—Prepare now a bed of well-fermented dung and leaves for planting out soon, using faggots of brush-wood for the first 2 feet in height.—*J. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Trenching.—Prepare the ground for those fruit trees the planting of which could not be effected in the autumn, by thoroughly draining the borders and forming a substratum through which the roots will not easily penetrate. In the absence of paving-stone, tiles, &c., a good substitute may be formed of coarse gravel and finely-sifted quicklime, in the proportion of one of the former to one of the latter, mixed well together with a sufficiency of water, and laid down to the depth of four or five inches. From 15 to 18 inches depth of soil will be sufficient for Peaches and Apricots, much less will do, if the borders are hollowed and cropping dispensed with. No manure ought to be mixed with the soil.

Cucumbers.—Prepare fermenting materials for their growth in frames. Those who wish to have them early will have commenced long ago.

Routine Management.—Dig, ridge, and turn up all empty ground in this favourable weather. Give plenty of air to all advancing crops in frames. Clean and stir the soil among all growing crops in the open garden; remove all decaying leaves, keep the walks and borders in good order, and render the kitchen garden not merely an object of necessity, but of *sight* and interest.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Proceed with the works previously pointed out—such as felling trees not wanted for the bark, planting fresh ones where required, relieving others from the overgrowth of adjoining trees of less value, and training any young promising plants by taking off or shortening any side-branches at some distance from the stem, that are not over large, so as to cause a wound that would not soon heal over. When a young thriving tree is near to one that should be cut down in a few years, much good would result if some of the branches of the tree intended to be removed were shortened in a little, to make room for the branches of the young one.

Coppice.—Such stuff as is not likely to be saleable, namely Hawthorns, Briars, Brambles, Honeysuckles, and things that spring up and injure good wood, should be kept under. Proprietors of woods are not aware of the loss they suffer by not attending to this.

Young Plantations.—In addition to what I advised last week, when thinning and training young plantations, a person with a light ladder and a narrow hand saw, about a foot or 14 inches long, would be beneficially employed by taking close off some or all of the very strongest side-branches. Many that would have been fine trees are entirely ruined by neglecting this until it is too late. This operation would prevent all future suppose of trees.

Hedge Rows.—The same care and attention to dressing hedges previously mentioned should be attended to as respects maiden plants. Continue to plant others where necessary, if you have suitable well-prepared stocky plants. When planting trees in hedge-rows exposed to strong winds give them a little inclination towards that point, and put a firm soil on the opposite side close to the stem.

Nursery Stock.—Proceed with all necessary work in taking up trees for replanting, preparing ground for seeds and plants, and begin planting seedlings and cuttings of larger plants in rows in the ground.—*R. R.*

VII.—COTTAGERS' GARDENS.

As the weather still continues favourable, the cottager, if it is not already done, should proceed with trimming and cleaning out any hedges that are under his care, before the season commences, when other things will occupy all his spare time. An evergreen should always be a leading feature in a cottager's garden, everything that can be done to promote this should be forwarded now, when little else can be performed. Anything that decays unsightly, and that will make manure, should be removed to the rot heap, which should be turned over occasionally and covered with a little soil; this prevents all noxious effluvia from escaping. The soil also mixes among the decaying vegetables, and becomes excellent compost. Soap-suds have a good effect on many kinds of vegetables, and should not be thrown away; they are beneficial on soils where Cabbages are infested with the club, and in some instances have been known to entirely cure that disease.

Vegetables.—A sowing of Radishes may be made on a warm border, but they must be protected from frost by covering the soil with straw. If any digging or trenching yet remains to be done no time should be lost in getting it forwarded while the weather will permit.

Fruit.—In pruning Gooseberry and Currant-bushes care must be taken to thin them well out in the centre, so as to admit plenty of sun and air. The same remark is also applicable to standard Apple trees; the middle of the tree must be kept quite open, taking care that all the branches lead outwards, and preserving a regular distance from each other. Pear trees should also be thinned well out, and the produce will be much better in quality.

Flowers.—Pelargoniums, Fuchsias, &c., in pots, should have as much light and air as possible; they should be sparingly watered, and this ought always to be done in the morning. If they are inclined to grow up tall and slender the points of the shoots may be pinched off by the finger and thumb, and this will induce them to throw out side branches, and make them dwarf and bushy. Anything that is likely to be injured by frost should be carefully watched and protected from it by straw or [illegible].—*Mr. H.*

A Statement of the Weather at Greenwich during the last 12 months, for the corresponding Week ending February 3, 1844.

Jan.	Aver. Minimum Temp.	Aver. Amount Temp.	Mean Temp.	No. of Years in which it Rained	Greatest quantity of Rain	Prevailing Winds
Sun 28	44.1	50.6	47.3	8	0.17 in.	W.
Mon 29	44.0	52.6	48.3	5	0.42	W.
Tues 30	43.0	52.0	47.5	4	0.12	W.
Wed 31	42.6	52.2	47.4	9	0.24	W.
Feb.						
Thurs 1	42.4	53.1	47.8	6	0.39	W.
Fri 2	42.9	52.4	47.1	5	0.75	W.
Sat 3	44.1	52.9	48.6	9	0.62	W.

The highest temperature during the above period occurred on the 30th, 1843—thermometer 58°; and the lowest on the 30th 1839—thermometer 17.

Notices to Correspondents.

MR. PAXTON'S COTTAGER'S CALENDAR.—At the earnest solicitation of many of our Subscribers, we have determined on again reprinting Mr Paxton's "Cottager's Calendar," in the form of a small volume, for general distribution, price 3*d* each copy. It may be ordered of all booksellers. Gentlemen wishing to *distribute copies* among their cottage tenantry, may have them *delivered in any part of London*, by remitting a post-office order to this office, at the rate of 5*s* for every 25 copies.

OUR CORRESPONDENTS will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them:—*Martin Doyle, O., W Billington, J W A., Vita, J Brighton, A Friend to Horticulture, O J L Snow, G Thompson, J Paxton, A Practical Man*, and *P. Mackenzie*.

ANEMONES.—*H B.*—The unusual mildness of the season, together with the close covering applied too early, have caused a premature growth in your roots. On discovering this disaster, the better treatment would have been to have removed the litter by degrees, in order to harden the tender shoots gradually. By their complete exposure, it is probable most of them will perish; a little time will show you whether it will not be better to sacrifice the bloom for this season, in order to strengthen the roots for another year. At present, you must cover the beds with litter at night, and in severe weather; give all the air possible when the weather permits and keep mats in readiness as an additional covering in case of frost.

BOOKS.—*H Y Denny.*—Mr Loudon's contributions to "Brande's Dictionary" cannot be purchased separately. His "suburban Horticulturist" never appeared.—*One* should procure "Parnell's Grasses of Scotland." We are not carpenters, and cannot answer the other question. He who expects to learn to cut wood by books will be very likely to cut his fingers.—*Pruning Knife.*—Mr Loudon's "suburban Horticulturist" probably contains the information you want. Some day, when we have not so many other things to do, we will give a series of articles on the subject. The first principles of pruning will be found in the "Theory of Horticulture," but, we confess, treated too concisely, even as a matter of theory.

CAMELLIAS.—*E R.*—Camellia alba plena and C. fimbriata alba are perhaps the most delicate varieties in cultivation. The reason they are so apt to drop their flower buds is owing to too many being left on the plant. It is not uncommon for some Camellias to produce twice as many flower buds as they have strength to expand, then the consequence is (if not picked off at an early period), they will drop off, and those that remain will very often be deformed or diminished in size. This may also be the reason why your C. eximia has not proved true to its character this season. If we wish good blooms we cannot have many on a plant. Wherefore Camellias' apart is uncertain. It is owing to the presence or absence of colouring matter secreted in the cells of which the petals are composed; but the agents upon which these phenomena depend are unknown. We not unfrequently see on C. Donckelaeri on the same twig one flower pure red and another blotched with white, without any apparent cause.

CHARCOAL.—*J A.*—Add to the soil of your Pelargoniums one quarter of charcoal in coarse pieces. We do not like the fine powder. We have, however, never seen this substance tried on Pelargoniums. If you want to make them grow very large strew the top of the soil with burnt bones, and moisten the bones with oil of vitriol just when they are beginning to grow.

COMMELINA COELESTIS.—*Flora.*—The roots of Commelina coelestis may be planted out into a tolerably rich bed about the middle of April, they may either be taken up in autumn or protected by covering the ground with ashes, leaf mould, or sand; but to take them up is the best way to insure their safety. Pavonia tigridia will succeed planted out in the open border in summer.

FRUIT TREES.—*Banffshire.*—The cheapest and only way of clearing your "Barrie bushes and Apple-trees" of lichen is thoroughly draining your land, which will produce other advantages besides. We do not know what the Corn grub is. The Gooseberry Caterpillar may certainly be killed by White Hellebore powder, *if sit is fresh*. The transformations of the latter are described at p. 518 of 1841.—*Morley.*—Peach, Nectarine, and Apricot trees, round which a trench was made and filled with rotten dung unmixed with soil, will be apt to gum in consequence.

GLOXINIAS.—*M T G.*—These cannot be raised in a greenhouse, as they require a temperature of about 60°, but by starting them about the beginning of March, and growing them in a hot-bed until they show signs of flowering you might perhaps be able to bloom them in a warm corner of a greenhouse during the summer months. While they are in the frame great care is required to keep them from damping off, they must not be overwatered, and air should be regularly given them when the weather will allow.

HEATING.—*Amateur No 1.*—Water will not shrink in gutters, but it wastes by evaporation and insensible leakage. If you don't want to use your pit in winter you may lay your slates on the gutters without bedding them in cement; but if it is to be used for winter purposes the slates must be bedded in either cement or mortar, or the pit will prove too damp.—*Amateur No. 2.*—We see no objection to such a boiler as you mention, but we are unacquainted with it. In consequence of your having mixed up other questions with this, we had overlooked the latter, and must defer answers till next week. Azaleas and Rhododendrons do not like dry banks, they prefer moist situations, they may, however, be made to grow by the use of abundance of cow-dung.—*Suffolk.*—We should say that a pit 3 or 4 sashes long would be the smallest to which any hot-water heating can be advantageously applied. However, if you can adapt an iron saucepan to the gutters in the little pit you wish to build, and don't mind some waste of fuel, you may perhaps get the heat you want without much trouble. Or if you can get an old flued manger with square sides it would be easier to fix the flow and return pipes to it. Or an iron chimney pipe, closed at the end in the fire, and standing upwards into your gutters will do, without any return-pipe at all. Ingenuity will vanquish many difficulties.

TRANSPLANT.—*R. H.*—The orchideous plants in your greenhouse Pleione, Calanthes, &c., are the finest we have seen. They were therefore just figured in the last part of our Botanical Magazine. If their treatment be given in the "Journal of the Royal Agricultural Society," any information regarding them will be very acceptable at this time to Mr. Curtis.—*A Subscriber.*—*C.* 1 is a Millipede, called *Julus terrestris* or an allied species. 2 is the wheat-worm.—the property of increase by division is certainly curious. 3 is the larva-case of a Noctua, but of what species it is impossible to determine without hatching the moth, and the pupa has been killed by pressure; 4, Cercaria (Silcus) lineata is one of the Weevil tribe; 5, pupa of some fly, like Musca domestica, and generated in the dung of animals, or amongst bones. The last animal alluded to by you may be a Leptinus, but without seeing specimens it is not in my power to speak with certainty.—*R.*—If *Lambton* will forward some of the infested seeds and insects to Mr. Curtis, his queries will be answered; but without these materials it is neither possible to investigate this important subject nor to form a correct opinion of the remedies.—*R.*

LILIUM LANCIFOLIUM ALBUM, &c.—*A. B. D.*—I have grown this in the open air for two years, and consider it quite hardy. Last season I had a bed containing about 150 flowering bulbs, which bloomed much better than the common kinds of Lilies; and had it not been for the unfavourable weather of last spring, they would have been excellent, but on this account were comparatively short, and some of the foliage and a few of the flowers were injured, but not so much so as the common Orange Lily. The bulbs lifted quite well both seasons, and did not lose a single root from frost.—*L. lancifolium punctatum* I have not tried in the open air, but no doubt both that and *rubrum* would do equally well. *L. auratum* and *longiflorum* are very much alike in general growth, and the treatment that would suit one will suit the other. They will grow and bloom well in the open air, but the foliage is sometimes damaged by wet and spring frosts; they appear to be hardier than *L. lancifolium album*, and not quite so hardy, but this may arise from their coming above ground earlier in spring. The principal injury is done when the plants first begin to expand their foliage, occasioned by wet lodging between the leaves and becoming frozen, by which their vessels are ruptured, and disease is the consequence. This shows itself in brown blotches on the foliage. A light sandy peat mould is the best soil for these bulbs.—*H. Groom.*

MELONS.—*Rusticola.*—We are at all times willing to answer reasonable questions, or even unreasonable ones, if it is possible; but we cannot print a treatise upon cultivating every sort of plant that our correspondents may inquire about, nor go, in these notices, into long discussions about questionable points of physiology. There are moreover certain things which all men interested in gardening are expected to know, and we can no more undertake to explain such matters than we can teach the A B C of reading. You had better consult some book on the cultivation of the Melon, unless you find an excellent article in to day's Paper sufficient for your purpose. As to the causes or supposed causes of disease, we trust you will get some information upon that point in leading articles during the present year. The mode of destroying Thrips mentioned at p. 649 of our last volume is this: dust the leaves of your Melons over with flowers of sulphur, and let it remain for a few days, then give them a good washing with the syringe.

NAMES OF PLANTS.—*A Rector.*—Epidendrum viscidum.—*F. J.*—Starjelly is probably the Nostoc commune, a gelatinous plant allied to Laver, the green slime of ponds, and similar productions. We *cannot*, however, answer your inquiry positively without seeing the substance.—*A. K.*—Hypnum sericeum, not cupressum. We cannot undertake to occupy ourselves in naming Cryptogamic plants.—*A Constant Reader.*—Erica bicolor.—*W Billington.*—Pyrola rotundifolia.—*G. Thompson.*—1, Geanera Douglasii; 2, 3, 4, Geanera bulbosa.

POTATOES.—*W H* thinks that because gardeners are often blamed for the bad quality of Potatoes which unskilful cooks cannot dress, therefore gardeners ought to be allowed to cook Potatoes themselves. We submit this proposition to the consideration of "W. H.'s" brother gardeners, who would, no doubt, be greatly flattered at being transferred from the garden to the kitchen. It strikes us, however, that it would be better to tell cook not to boil them in too much water, to give them a little salt, and when they are boiled enough to pour off the water, cover them with a cloth, and leave them on the hob to dry a little.

PRESERVING CUT-FLOWERS FRESH.—*A curious Observer* cannot do this beyond a very few days, by any process. To put them in a close tin box cannot have any other effect than that of rotting them. The water that was found when the box was opened resulted from the decay of the specimens.

RATS.—If as *Caledonian* will give us the information he offers we shall be obliged. It is not worth discussing questions of this sort. Facts, and facts alone, are useful.

ROOT-PRUNING.—*A B D.*—This must necessarily answer equally well with all over-luxuriant trees, if not overdone, as is sometimes the case. As for the Fig, in a climate like this, it should be so treated every year or two.

VERMIN.—*Poor Robin.*—Your plants are infested with Green-fly, which you must kill with tobacco smoke. You may also try gas water on those which are hard wooded, in the manner described at p. 445, 1843, but be cautious, for some things will not bear it. Blackbirds are easily caught in rat-traps, baited with Beans or Peas; that is the best mode of destroying them. It is of no use to waste time in popping at them, for they soon get too cunning to be had in that way.

VINERY.—*J J.*—We would try a good top dressing of superphosphate of lime, applied just when the buds are beginning to swell.

VINES.—*John Abel.*—The Muscat Escholata is the same as the White Muscat of Alexandria. The Escholata superba is perhaps the Black Muscat of Alexandria.

MISCELLANEOUS.—*A Correspondent.*—A list of the Horticultural Society may be had upon application to the Secretary.—*A Subscriber.*—You may head down Yews and Hollies now. The difference between Charcoal dust and rough pieces is this, that the latter keeps the soil open, and the former converts it compost—a very important distinction.—*Amateur.*—Epsom Marl will answer your purpose. Moles are only advantageous in compact soil which wants loosening. We do not know what good they can do on light well-drained land.—*A Subscriber.*—In the centre of p. 518 of your conservatory you may plant Lucelia gratissima.—*Anonymous* asks questions which require much time to answer, and therefore he must have patience, till we can find time to consider his inquiries.—*R T B.*—More warmth and less water at the roots will restore your Calceolaria to better health. Look to the drainage.—*W. S. S.*—We fear you have no remedy. At least it is not in London that the remedy can be found. Why not raise your seedlings yourself? It is the only way.—*Jacobite.*—We find a list of plants suitable for a flower-garden, all hardy, and showy, given at p. 613, vol. 1841.?—*Jessica.*—It is.—*Peter.*—We do not know any one who would exchange seeds for your Rhubarb.

*** An untold many communications have been received too late for answering this week.

ERRATA.—In the article on Rose, p. 27, col. 2, instead of "the stock hive," read "the stirred hive"—or hive with which to stir.—In the paper on Colour of Carnations, p. 31, col. 2, for the word of "The flowers were decidedly attractive, for it literally filled the garden without passing before them," read with Florist" &c.

[illegible]. — Price 12s. 6d., Mathematical [illegible] Instrument Makers, Survey Maps to direct the construction of Agricultural Drains to every requisite Level, Plans for laying out Pleasure Grounds, especially for Gardening. The private Gentleman, the Land Steward, and the Agricultural Engineer will alike find in it all that is desired. The Instrument is fitted in a case, and sent to any part of the country, [illegible] price 2l. 2s.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing in a time rapid vegetation in Plants than any substance known. It may be had at Mr. Lawes' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash	. . .	15d. per cwt.
" Soda	. . .	12s. "
" Magnesia	. . .	9d. "
" Ammonia	. . .	1s. per lb.

The Agricultural Gazette.

SATURDAY, JANUARY 27, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Thursday, Feb. 1	Agric. Inq., Society of Ireland	6 p.m.
Wednesday, Feb. 7	Agricultural Society of England, Highland and Agric. Society	
Thursday, Feb 8	Agric. Inq. Soc. of Ireland.	

In the present Number of the "Quarterly Journal of Agriculture" there is an interesting paper by Prof. Johnston on "THE MANURING AND STEEPING OF SEEDS." The facts there recorded, and the manner in which they are shown to be what the known laws of Vegetable Chemistry and Physiology would lead us to expect, combine to render this a subject to which the experimental Agriculturist may usefully direct his attention.

The advantage of steeping seeds in certain chemical solutions seems to have been first pointed out by F. H. Bickes, of Castel, near Mayence. He announced his discovery in a lately-published pamphlet "On the Cultivation of Soil without Manure." Notwithstanding the extravagance indicated in its title, and which characterises it throughout, this publication records some surprising facts and testimonials on this subject; and these have lately been corroborated by the experiments of Mr. Campbell, of Dundee. A letter descriptive of the method of doctoring seeds adopted by the latter gentleman, and of their consequences as exhibited in the growing plants, has just been published in the Transactions of the English and the Highland Agricultural Societies—an extract from it will be found in another column. Mr. Campbell's experiments were performed upon seeds planted in the clay taken from eight feet below the surface of the ground; and though under such unfavourable circumstances, the Wheat plants from them tillered into five or eight stems, while those from unprepared seeds had only two or three stems apiece. *That*, however, which is broadly asserted in the German pamphlet is also hinted at by Mr. Campbell—viz., that steeping seeds in suitable solutions will render all future application of manure unnecessary. This is a statement which no practical farmer can for one moment entertain, and therefore we are glad that it is not necessary to suppose it to be true before we can believe that this process may sometimes be beneficially adopted.

It seems probable, that by some such means as those suggested by Messrs. Campbell and Bickes, the period of germination, which is one full of danger to the young plant, may in many cases be shortened; and this is very desirable, for, owing to the conversion of the starch of the seed into sugar, which is then proceeding, the plant is at that time liable to attacks from all sorts of vermin. In the case of the Turnip, especially, any means which would hurry it through this period into the rough-leaved stage of its growth would be most useful, as it is only when its leaves are still sweet that it is liable to the attacks of the fly.

But from the results of some of Mr. Campbell's experiments we may infer that the influence of his process extends into the future history of the plant much beyond the period of its germination; and it is on this account that we would recommend it now as a suitable subject of experiment for Wheat growers. The mineral ingredients of Wheat amount to about one-fiftieth of its weight; and, from the mere fact of their existence in the seed, it is probable that they exert an important influence over its germination and future growth. Any artificial addition to their quantity—and, by soaking Wheat in certain solutions we can *double* the natural quantity of its mineral constituents—will therefore increase that influence.

The following are the substances which, besides the four elements composing its organic structure, are to be found in Wheat:—soda, potash, lime, magnesia, sulphuric acid, phosphoric acid, silica, alumina, and chlorine.

It would probably not be difficult to dissolve in water such matter in such quantities that the solution should contain in their natural proportions all these mineral substances; so that Wheat, by being steeped in it, would merely increase the *quantity* of its mineral ingredients, without at all disturbing the balance among them which Nature has assigned; and perhaps this would be the best way of proceeding; but as it is interesting to know the individual effects and relative value of different substances we propose to try a series of experiments for this purpose, confining ourselves in each to the application of only one of the salts, in the form of which the above substances must be employed.

For those of our readers who may not yet have got in all their Wheat, for we by no means wish that it should be a mere garden experiment, we shall first state the plan we propose to adopt, and should our example be followed by any one, we shall be happy to report next autumn the results of his experiments, along with those of our own.

It is intended to soak for 48 hours previous to sowing, eight parcels of Wheat—say one bushel apiece—each in a solution, to be obtained by dissolving 5 lbs. of one of the following substances in such a quantity of water as may be necessary thoroughly to cover the seed.

The prices per lb., placed opposite these substances, are such as will be charged by any *wholesale* chemist of whom they may be ordered.

Silicate of soda	0s.	6d. per lb.	Phos. of ammonia	2s	6d per lb.
Nitrate . .	0	3 ,,	Sulphate . .	0	3 ,,
Sulphate of soda	0	3 ,,	Muriate . .	0	3 ,,
Phosphate .	1	6 ,,	Nitrate of Potash	0	4 ,,

The Wheat, after being thus treated, will be hoed in at the rate of two bushels of the dry seed per acre, in drills nine inches wide, and a ridge sown with Wheat in the ordinary way will be left as a standard of comparison between each couple of adjacent plots. The extent of the experiment, for those who may not wish to hazard so extensive a trial, might be reduced one-half without perhaps much impairing the value of its results.

WE have no wish to enter upon the question, WHAT WEEKLY SUM IS A JUST AND SUFFICIENT WAGE FOR AGRICULTURAL LABOURERS? nor shall we attempt to determine whether the consideration of such a question would be practically useful—whether, in fact, the lowness of wages is, in the long run, at all dependent upon the will of the employer; but there is one subject arising out of the relation existing between master and servant which we are anxious should be thoroughly discussed in our columns, and we shall therefore make a few remarks upon it, in order that others may be induced to take the matter up. We allude to the POLICY OF PAYING FOR WORK BY THE PIECE.

This mode of payment might be advantageously adopted more generally, and for many more farm-operations than it now is. During the past year we have paid by the piece for turning dung in the yards, for filling it into carts when ready for spreading on the land, for hoeing Wheat and other grain crops, Turnips, and other roots, &c.; for harvesting Corn, *i. e.*, cutting, tying, and stooking it; for pitching and loading the Corn in the fields on the cart, and pitching it to the builder on the rick in the stack-yard, and for harvesting all sorts of roots, *i. e.*, with respect to Potatoes, for digging and pitting them; and with respect to Turnips, Mangold Wurtzel, and Carrots, for pulling them, cutting off their tops, and loading the roots in one set of carts, and the leaves in another. If we except horse labour, the greater part of the work on the farm was thus paid for by the piece; and there is this advantage in this system, that activity and spirit on the part of the labourer are thus insured by the powerful principle—*self-interest*

It is of importance in certain complicated operations of husbandry, in which it may not be possible to manage it wholly thus, that at any rate *one* of the branches of which it consists should be paid for in this way By so doing—to take the case of the preparation of Turnip-land under drill-husbandry for the seed—the men at the dunghill who are loading the carts, being kept vigorously at work by self-interest, and all the other operations being dependent on them, those who are carting, the men who are spreading the dung in the drills, and even the ploughmen who are opening fresh drills and covering the dung in by splitting the old ones, are forced to proceed with proportional activity—an activity, too, which is not merely the result of necessity, but the consequence in some measure of interest in their fellow-workmen, whose wages depend on their keeping them fully employed. Similar cases to this occur at harvest-time, when those who pitch the corn to the cart and to the rick are paid by the acre of ground cleared, all the others being employed at day-wages; and in November, during root-harvest, when the profitableness of the contract taken by the men in the fields is made to depend a good deal on the activity of the boys with the carts, and of the men at the heaps, who pit the roots and thatch them, all of whom are working at day-wages.

The following are the prices we have paid for the above descriptions of work during the past year. The wages which the men actually made are placed opposite; and we must remark, that before any one can pronounce these wages to be too high, (we are willing to admit the price given was too high in one of the cases,) he must know what sort of men they were who earned them. 2s. 6d. seems a great price for a day's work of an Agricultural labourer, but it was earned by filling 40 cubic yards of manure into carts, which all men could not do:—

	Wages earned per day of 10 hours. Men.	Women.	Boys.
For turning dung and earth compost, 1st time, 3d. to 1d. per yard; for do 2d and 3d time, 2d. per yd.	s. d. 2 0		
For filling wall-made dung into carts, 7s. 6d. per 120 yards	2 6		
For hoeing Wheat, 2s. 6d. to 3s. per acre; for twice hoeing Turnips (singling them, &c.), 8s. to 7s. an acre	—	0 10	6d to 1s6d
For harvesting Wheat (cutting, tying, and stooking), 7s. to 8s. 6d. an acre	2 6—2s.	—	1s to 1s 6d
For pitching and building Corn on the carts in the field, and pitching to the builder on the rick, 1s. 6d. per acre	2 6		
For harvesting roots (pulling, cutting off tops, and filling them into carts)			
Turnips, per acre, 6s.	2 0	0 10	6d to 10d
Swedish Turnips, 8s.	2 2	0 10	6d to 10d
Mangold Wurtzel, 9s. to 10s.	2 6	0 10	6d to 10d
Carrots, 21s.	2 0	0 10	6d to 10d

The price paid for harvesting the Mangold Wurtzel, as proved by the wages earned by the men during a short November's day, is, we think, the only case in which too large a sum was given; though in the absence of knowledge of what sort of workmen the labourers were, those who have been accustomed to paying for work by the piece will be more likely to agree with us in saying so than those who have been hitherto accustomed to pay only day-wages.

There is one advantage in this system of payment for work, viz.—the independent feeling which it imparts to the labourer; he is then no longer *bound* to a master, unless his own agreement be considered in that light; and at the same time his master has, within the limits of that agreement, all the hold upon him which he would have under any other mode of payment.

The above prices are not stated as giving in our judgment the wages which farm-servants ought to earn; these necessarily vary with the capability of the men and the customs of the country. In discussing practical subjects of this kind, we are careful to avoid assuming a dictatorial style, for we are well aware, in the practice of the farmer, how principles which might seem of almost universal applicability are nevertheless entirely at the mercy of the varying circumstances of different districts. We have merely stated our experience in this matter, in the hope that our practical readers will enable us to publish theirs.

We had written thus far, when our attention was directed to a paragraph on this subject in Mr. Pusey's article "On the Agricultural Improvements of Lincolnshire," in the current Number of the English Agricultural Society's Journal It is from the pen of a Lincolnshire Agriculturist, and we quote it entire, as it entirely agrees with our own views of the subject. It will be perceived that the price given for loading manure is greater than that mentioned in the above table. Before, however, any inference can be drawn from this, we must know what sort of stuff the manure was, for it varies much in weight:—

"Whether 'task' work be more in practice in Lincolnshire than elsewhere, I, from my retired habits, know not; but it is a practice highly beneficial, both to the farmer and labourer; the one gets infinitely more work done, and the other more wages and better habits. For instance, in filling the carts with manure by the day, the labourer seldom fills more than eight or nine loads; whereas, for days together, this year, I had 160 loads of manure, each load 14 cubic yards, filled by 10 labourers at 1½*d.* per load, and spread upon the fallows with nine carts, nine horses, and nine of my own men, and generally finished by 2, never later than 3, P.M.—sharp work, of course, that the labourers push everything else on—no creeping; and they thus earn 2*s.* 4*d.* a day, and have ample time to do a little work in their own gardens in the evening."

ON THE AGRICULTURAL VALUE OF LAND.

(*Continued from p* 42)

ALTHOUGH it thus appears that few means of improving the texture of a soil are so efficient as drainage, yet there are cases where the faults in its mechanical properties are of a kind that drainage will not remedy. If a clayey soil have the water removed from it, by which every winter it was worked to a paste, and, therefore, every summer dried to a brick, it will undoubtedly be greatly improved—it will be made more friable: the land, however, will still be clayey. If, again, sandy land be wet, drainage, although it will improve the soil, will not make it heavier, its lightness will still be its fault. The only way to remedy this is, in the one case, to add lime, ashes, and other substances tending to make the land looser; and, in the other, to add clay, marl, and other substances whose tendency is to make the soil heavier

It is found in nature, and is the case in practice, that the more compound a soil is, the more valuable it is; that the fertility of a soil is, in a degree, dependent on the variety of its component parts. This may be because the merely *mechanical* properties of a soil, which consist of a

mixture of many earths, one layer, perhaps, three inches saturated by a mixture of only one or two. But however it is explained, it is a fact which is borne out both by the observations of the geologist and the experience of the farmer. When the soil overlying the junction of two rocks, whose mineral composition is different, appears to be owing to a mixture of the parts of each, it is always found to be more fertile than the soil on either side of it. Thus overlying the mineral composition merely of the one and the other the mineral composition merely of the other. This mixture of soils frequently takes place, especially where the strata of the two adjacent rocks are inclined, and the one thins out over the other. A very marked instance of increased fertility produced in this way occurs near Frampton-on-Severn, Gloucestershire, where the gravel thins out over the clay of the lias. The land on the former of these beds is valued at 25s. per acre; that on the latter, which is of a perfectly opposite character, is valued at 20s. per acre. There is a band about 30 yards wide between the two, where the gravel thins out over the clay, in which the soil is valued at 35s. per acre. These valuations were made by a committee of the farmers of the parish, for the purpose of apportioning a new rate; and the differences in them are evidently owing to a mixture, in the narrow band alluded to, of the clay on its one side with the gravel on the other.

But the advantage of such a mixture is not only attested by the geologist who observes in nature cases in which it is apparent, but it is recognised by the practice of the farmer.

In the fen countries, the soil on the peat is altered and improved by spreading over it the clay on which it lies. When this has been done twice or thrice the value of the soil is greatly increased; instead of being so light as formerly that it was blown about by the wind, it has acquired a firmness fitting it for the growth of Wheat and Beans. This means of improving peaty soils might probably be made use of more generally than it is, for the very formation of peat requires that its subsoil be clayey, or at least that it possess the retentiveness of clay; and the chief fault of peaty soils being lightness, the remedy is thus always at hand.

Another instance occurs of an artificial mixture of soils, and the advantage attending it is attested by the practice of the Norfolk and Suffolk farmer. It is a common practice there to remove the defects of the light sandy soil of the lower member of the plastic clay, by digging pits in the corners of the fields, and fetching thence the clay, and sometimes the chalk marl which occurs at a considerable depth, and spreading it over the surface, at the rate of 100 cubic yards per acre. This, though it is effected at a cost of 6d. a cubic yard, is productive of a most profitable result. The land, as in the case of the peat, acquires a valuable degree of tenacity. In Bedfordshire, also, and over the whole extent of the district on the new red sandstone formation, it is a practice to dig the red marl which lies at no great depth, and spread it over the soil, which is a stiff gravelly clay. The difference here between the substances thus mingled is not so great as in the other cases, but is sufficient to render the operation profitable. There are many other cases in which an advantageous admixture of soils might be effected, and in which the subsoil-plough, which has the effect of gradually mixing the soil with the subsoil, might be used with advantage. In natural cases of mixture, such as those already alluded to, where a rock of one description thins out over one of another kind, a more thorough mixture of the ingredients of each might be effected by this implement to the depth of at least 18 inches. In those cases, again, where the subsoil is composed of beds of different material alternating with one another, a mixture of these could be effected to a similar depth in a similar manner. Thus, one of the members of the old red sandstone series consists in some places of alternating beds of clay and sand; and the soil is sandy or clayey, according as it is above the one or the other. It is full of water, which accumulates in the sandy strata and gets its way to the surface by rising over the edges of the beds of clay. In this case the improvement consequent on the use of the subsoil-plough after drainage would be immense; the surplus water would not only be taken away, but the soil itself would be altered, the sandy and clayey strata would be mingled.

The fertility of an alluvial soil which is formed at the mouths of large rivers by the subsidence of the earthy and vegetable matter carried down by them, is owing not only to the fineness of the particles of which it is composed, but also to the circumstance that it is composed of particles of a variety of rocks—of all those, in fact, through which the bed of the river passes, and is therefore generally a mixture of every variety of earth.

The mineral composition of a soil influences its value also, inasmuch as on it depends, in a great measure, the expense of working it. This, of course, is the case only on arable lands, but there, the labour on a clay soil is immensely greater than the labour on a light sandy soil. And it is evident that though in both cases the amount of grain produce were the same, yet on estimating the expense of labour, the value of the two products would be less in the one case than in the other.—*M.*

(*To be continued.*)

MANX AGRICULTURE.—No. II.

Considering the size of this island, the soil evinces more than might be expected. The soil of the northern extremity is strong and deep, well adapted for Wheat and Beans, and valuable crops of the former are in favourable seasons generally obtained. In this portion, also, a large extent of deep alluvial soil occurs, and excellent marl may be obtained, but the latter is not so much used as it would be under equally favourable circumstances by British farmers. In practice it is not found to act as immediately as elsewhere, if used on the land under which it is found; and not only is it too heavy to bear the expense of land-carriage to distant farms of lighter soil, but the nature of the tenures would for the most part render it illegal to remove it. The soil in the south is very different but hardly less valuable; and as the owners generally farm their own lands every advantage is gained which careful farming, adequate capital, and modern improvements can bestow. In the south are the only lime quarries which exist in the island, and from these kilns excellent lime is procured at a cheap rate—a two-horse cart-load for about 5s. The southern shores are also most prolific in casting up "wrack" or sea-weed, which is drawn away with great avidity and industry. This is generally put upon the Wheat and Oat stubbles during autumn and winter, ploughed in while yet fresh, and without any additional manure the Potatoes are planted in spring. The Potato crops thus managed, are generally good, averaging 30 and often reaching nearly 40 bolls (each boll being 4 cwt.) per acre. The sea-weed is not considered permanent manure, and can seldom be relied upon for more than one crop; it is not, however, an uncommon circumstance for a large farmer in the south to wrack the whole of his Potato land, and be thus enabled to bestow the farm-yard manure upon his Turnip crop. As before stated, the usual rotation of crops adopted is that under the four-course system, breaking up the Grass or Clover leaf or Oats, these being followed by Potatoes, and the Potato land being subsequently limed (by some, when the Potatoes appear in rows above ground, by others after the crop has been removed) for the succeeding Crop of Wheat or Barley, according to the quality of soil, or the speculative spirit of the farmer.

The species of Potato generally planted for the main crop is that called "Cups." It is a prolific and hardy variety, and bears a good character in the Liverpool and Manchester markets. Upon inland farms the most of the yard manure is bestowed upon the Potato crop, so that their Turnips are generally raised upon bone-dust, with or without vegetable ashes. During the last two years large quantities of guano have been imported from Liverpool, and this useful manure, when prudently applied, has been found admirably adapted to the Manx soils. How far it may be trusted for the succeeding crops of grain and Grass seeds is yet, perhaps, hardly ascertained; but there can be little fear of their succeeding if at least one-half of the Turnip crop is consumed on the land. The Barley is generally sown in spring with Grass seeds; Winter Barley is a variety little known or used in this island, although I have no doubt it would succeed, favoured as it would be by our mild seasons. Amongst other fiscal privileges with which the island is endowed, it is most happily free from those oppressive excise laws, which, especially as regards the malt duty, cramp the energies and lessen the profits of the British farmer. Every brewer is, and any farmer may be, his own maltster; and the home market for Barley (although greatly depressed by the recent tariff) is generally steady and fairly remunerative. In the management of the Hay crop the Manx farmer is culpably deficient. The Grass is generally allowed to shed its seed before it is mown, and if not exactly over-made, it is at all events allowed to remain in cock until, by the alternate influence of sun and rain, the nutritious properties have been for the most part wasted away. The lea generally continues two years, being mown one year and grazed the other, when it is broken up to receive the Oat-crop, which recommences the course.

As part of the course of cropping it may be proper to mention (now that increased attention is being invited to the subject in England) that it is generally the custom of the native Manx farmer to raise a small annual crop of Flax, but for domestic purposes only. The value of the seed for cattle feeding, and of the steeping fluid as liquid manure is little known, and perhaps never made use of, indeed the Flax is generally pulled before the seed-pod is ripe. At a former period much attention was paid to this crop, and previous to the decline of the Irish linen trade it was considered remunerative. The deep peaty soils of the "Curragh" land are admirably adapted to its successful cultivation, and if the value of the fibre is in some degree deteriorated by the ripening of the seed-pod, yet that loss would, it is believed, be amply counter-balanced by the value of the boiled seed for cattle-feeding, or of the raw seed for the next sowing.

In continuing this sketch of the Agriculture of the Isle of Man, it will remain to give some account of the live stock bred or imported into the island, of the implements of Agriculture—the average rents of land—the forms of leases—and of prices and quotations of markets, and to notice some peculiarities of tenure which exist.

It will, moreover, be only fair towards the English reader, and in no way unjust towards Manx Institutions, which are not conceived in the spirit of modern English legislation, and indeed are lamentably destitute of the principles of civilization (excepting those of the feudal age), to impart some information respecting insular laws, customs, and privileges, which exist only for the benefit of the natives, and are oftentimes used as cruel engines of oppression and inhospitality towards the stranger who may settle amongst them.—*Cutler.*

(*To be continued.*)

ON MINERALS, INORGANIC MANURES.—No. IV.

By Professor Charles Sprengel.

(*Translated from the German.*)

As lime possesses all the above qualities only in the caustic state, it follows, that in order that the manuring with lime may produce the greatest effect, it should be

are, how to be counteracted. Can its known fluxes, such as coal, &c., in this case produce the effect of magnesia, which does not convey so much magnesia to the plants, containing less of it than the neutral salt. It is also said that the manuring with lime has produced a very beneficial effect on soils which have been applied by the Bicarbonate—which, if confirmed, is to be ascribed to the formation of proto-humate of magnesia.

We shall always find that the manuring with lime will be most useful on those soils which contain but little of it. This is easily explained, as most cultivated plants require much lime for their nourishment. It is true, that a soil on which the burnt lime is of much use may yet contain some lime in its natural state, but the latter will be found to be mostly a silicate, which is of no avail to plants, as it is soluble neither in water, humic nor carbonic acids; or such lime is in the state of a carbonate of lime, which latter, again, decomposes only in a very small degree the coal of humus or the vegetable matter of the soil; the carbonate of lime, moreover, is not soluble in pure water, but solely in such as contains much carbonic acid. In soils after all, which contain close under their surface, chalk or marl, the manuring with lime will be of little or no use at all, which is easily accounted for by the deep-rooted plants (though they be merely weeds) conveying a sufficient quantity from the subsoil into the furrow-slice. It is asserted that the manuring with lime is injurious on fields which slope much towards the north. I confess that I cannot explain this. Perhaps there are other causes which here come into play; still, it would be interesting if those who have made this observation would bring their experience on this subject before the public.

(To be continued.)

ON THE ECONOMY OF STALL FEEDING.

In a lecture on the fattening of cattle, delivered to the Royal Agricultural Society, and reported in the *Gardeners' Chronicle*, I stated that some experiments were then in progress at Whitfield Farm, through the kindness of Lord Ducie, which I believed would confirm some of the theories adduced in that lecture. I now beg to redeem my promise of communicating to the public the results of these experiments. They were carefully superintended by Mr. John Morton, from whom I have received much assistance on this and on many other occasions.

Liebig, in his work on Animal Chemistry, has defined more accurately than any preceding writer the source of animal heat, and the constituents of the food used in its support. He has shown that warmth is an equivalent for food, and that cold, on the other hand, renders necessary a greater supply of food, by carrying off rapidly the heat which its combustion engenders. He has also pointed out that motion is always accompanied by a waste of matter in the body, and it followed naturally from this that an economy of food was necessarily the result of an economy of motion. The experiments of Lord Ducie and Mr. Childers, upon feeding sheep in sheds, afforded a powerful practical illustration of these theories. The warmth communicated by the sheds was equivalent to a certain amount of food, and the deprivation of motion occasioned a diminished waste of the tissues of the body, and, therefore, a corresponding saving of aliment. To illustrate these views more fully the following experiments were instituted on five lots of sheep, each lot consisting of five sheep:—

No. 1 lot was fed out of doors, and was therefore exposed to all the influence of atmospheric changes.

No. 2 lot was kept under an open shed, and therefore was less exposed to the inclemencies of the weather.

No. 3 lot was placed under an open shed, similar to the last lot, but in this case the sheep were kept solitary, *i. e.*, each was confined to a space of 3 ft. by 4 ft.

No. 4 lot was placed under a close shed in the *dark*.

No. 5 lot was kept under a shed like No. 4, except that each sheep was separated, and confined to a space of 3 ft. by 4 feet.

These different lots were allowed 1 pint of Oats for each sheep per diem, but were supplied with as many Swedes as they felt disposed to eat; the weights consumed were accurately determined. The live weights of the sheep were ascertained before the commencement, and at the conclusion of the experiments the results were as follows:—

Lot.	Live Weight, Nov. 15.	Live Weight, Mar. 9.	Increase in Live Weight.	Weight of roots eaten.	Increase in Live Weight for each 100 lbs. of roots eaten.
1	598 lbs.	1078 lbs.	480 lbs.	1912 lbs.	1·2 lbs.
2	584	1098 3-4ths	514 3-4ths	1794	1·6
3	600	1130 1-4th	530 1-4th	1838	1·6
4	592	1129 1-4th	537 1-4th	1695	2·1
5	611	1218	607	2060	2·4

In the consideration of these experiments, we may refer to the "roots" alone, as the quantity of Corn supplied to the sheep was in all cases the same. It will be seen that the first lot, or that which was exposed to the cold, ate about three hundred weight of food consumed by the sheep fed in a dark warm shed. Exposure to cold thus abstracted heat so rapidly from the bodies of the sheep, that a large amount of food was necessary to supply that power to the tissues. That abstraction of food was wholly employed for this purpose, and entirely lost so far as the farmer is concerned, is obvious, for the absolute increase in weight of the first and last lots is nearly equal, although the relative increase for the food consumed is much in favour of the latter. Thus, also, it will be seen that although the second lot of sheep received 3·5 lbs. of roots less than the first, yet that lot received a little more than the first relatively to their consumption of roots. The second lot, consisting of sheep fed in a shed, with shelter, did not require so much food to keep up the animal temperature of their bodies as the exposed sheep. The third two sheep, both lots were similarly situated with regard to exercise. In lots 3 and 5, a diminished space was afforded, but without advantage, probably from disturbing the placid temperament of the animals, as they were observed to fret and lose their appetites when thus separated. The result attending the experiment with the 4th lot is highly interesting. The sheep forming this lot were confined in the dark. In this state there were no inducements for the sheep to move about, or even to remain in a waking state, except when impelled by hunger to eat food. Hence they passed much of their time in sleep. During sleep, the voluntary motions ceased, and there was small waste of the tissues of the animal, which now possessed almost entirely a vegetative life, and increased rapidly in size, with small consumption of food. Although eating considerably less than one-half of the food consumed by those sheep which were exposed to the weather and to the causes of waste produced by voluntary motion, this lot increased nearly as much in absolute weight at a relative economy of food nearly three times as great.

The results of these experiments are very favourable to the views brought forward in the lecture referred to. They will, I trust, confirm, if proof be still requisite, the economy of stall-feeding, and the principles on which this practice depends. I am quite aware that considerable evils have been found to attend the system in certain cases; but in every case which I have examined, the evils seem wholly attributable to the manner in which the system was carried into operation, and not to the system itself. Cattle are confined in sheds built without any regard to ventilation or cleanliness; they become diseased; and stall-feeding is pronounced by the farmer, who thus suffers the effects of his own want of care, to be very injurious, and to be productive of evil consequences to the health of his stock. If cattle are exposed continuously to an impure atmosphere, the tone of their system becomes depressed, and disease follows, sometimes exhibited in the form of diarrhœa, frequently of rot, very often of consumption, or of one or other of the many diseases to which cattle are liable. But none of them are the results of the system, nor have they occurred when due regard has been paid to cleanliness and ventilation. These are points which retard the progress of fattening much more than farmers are generally aware of. Attention to these circumstances would, I feel convinced, render more sure the favourable results which follow from the communication of warmth and the deprivation of excessive motion, and would be further productive of economy in the returns for food supplied.—*Lyon Playfair, Royal Institution, Manchester.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. III.

(Continued from page 43.)

Thus we see how easily, with a little care and attention to experiments, a series of standards of the fertility of soils might be established. The same principle would apply equally to chalky or peaty soils. The amount of carbonate of lime indicating the former, and of vegetable matter the latter. But as the greater experience of others will not fail to suggest them, I refrain from mentioning standards by which the fertility of these soils may be easily fixed. The fertility of all soils is relative. One will produce a good crop of Corn, and a bad one of Turnips, and another *vice versâ*. This difference is almost entirely owing to the disproportion of impalpable matter and siliceous sand, and in many cases it is irremediable, except by a very considerable outlay of capital. Thus, in the heavy soil which I have mentioned above as containing 108 parts of impalpable matter to 187 of sand, to make it a workable soil it would be necessary to reduce the 108 by at least 10 per cent., and raise the proportion of sand as much.

How is this to be done? exclaims the intelligent owner of the soil. Where is the value of a science which describes to me a disease, but fails to suggest a remedy? In answer to these queries I would observe, that the first step towards the cure of a disease is to investigate its nature. If the disease is beyond remedy in its severe forms, it may be quite manageable in its milder stages. So it is with Chemistry as applied to Agriculture. Though it might be impossible in the above case to carry on to the land sufficient sand, to raise the elements of the soil to workable and fertilizing proportions, it would be by no means difficult to do so were the difference less, in districts where the material could be obtained. It is a well-known common practice to carry clay on to light lands where the impalpable matter which contains the aluminous earth is deficient. The utility also of carrying marl on to heavy soils is well known. Now marl, which is an impure carbonate of lime, can only be of use in two ways, either by rendering the texture of the soil looser—an important means of admitting moisture and air into the interior of the land—or it may be useful by absorbing moisture which contains ammonia, and thus indirectly contributing to the support and nourishment of the plant. A small amount only of the carbonate of lime (chalk or marl) is absorbed by the roots of the plants, and the experiments of Chemists have proved that the carbon necessary for the support of plants is derived from the carbonic acid of the atmosphere, and not from inorganic matter in the soil.

On the contrary, silicate of potash or soda is essential to the growth of Corn and Grasses so that, when it is practicable, much greater benefit may be presumed to be derivable from mixing sand instead of chalk with heavy soils. Farmers will sometimes go a long way for chalk, when they could obtain sand much more easily. In Horticul-

ture the use of sand is well known—why not attempt to carry out the principle upon which it is used upon a grand scale? I ought to mention that the whiter the sand the better, as the red sands sometimes contain more oxide of iron than would be useful; but this need not deter any one from trying the experiment, as clay soils are generally deficient in oxide of iron, a small portion of which is necessary to the growth of plants.

The importance, then, of obtaining, by correct analysis, the proportion of sand and impalpable matter is very apparent; and this knowledge may be obtained by very simple means. I will principally confine my observations on this part of the subject in detailing these means. Let Agriculturists only acquire the habit of scientific inquiry, and the more minute processes will become easy and familiar.

I propose then to detail the method of distinguishing the following properties in all soils:—

Firstly—Their retention of moisture.

Secondly—The amount in a given quantity of soil, of coarse sand and undecomposed vegetable fibre.

Thirdly—The proportion of fine sand.

Fourthly—The proportion of impalpable matter.

The apparatus necessary for this analysis are:—

1st. A pair of small scales and weights.
2d. A spirit-lamp.
3d. A glass funnel and filtering paper.
4th. One or two Porcelain crucibles well baked.
5th. An iron stand and glass rod.
6th. A small pestle and mortar.
7th. A graduated half-pint glass measure.
8th. A phial of muriatic acid.

Any Chemist will supply these at a small cost. They might be fitted into a box and sold together. The operator must then proceed as follows:—A portion of the soil to be examined must be taken from a few inches beneath the surface, and exposed to the air in the sun until it becomes sensibly dry. Four hundred grains, or any convenient amount, must be now carefully weighed, and exposed to the heat of the spirit-lamp, a small piece of dry wood or chip being placed at the bottom of the vessel.

With his glass rod the operator must stir the soil about until the chip becomes charred, when the application of heat must be discontinued. The crucible being allowed to cool, the soil is now to be weighed and the loss of weight will indicate the amount of moisture. This is a very important characteristic of soils, as their fertilizing properties are well known to be much influenced by their power of retaining moisture.—*C. R. Bree, Bloomsbury.*

(To be continued.)

Home Correspondence.

Manure Dropped in the Field.—I take the liberty of submitting a few remarks on the national as well as individual advantage that might be derived from fully carrying out a method which I have practised for some years, and which I will call—an economical mode of applying that portion of manure upon a farm which is in a great measure annually lost for want of knowing how to make the most of it. I have read most English writers on the various ways of preparing and applying manures, but among them all I have not seen a single remark on the method which I have for some years put in practice, with much advantage to myself, and which I am quite sure would, if generally adopted, be of great benefit to every occupier of land. It is obvious to every one who knows anything at all of the matter, that in pasture land, where horses or other cattle are kept, the greater part of the dung voided by these animals is entirely lost, so far as the real improvement of the land, or the increase of such herbage as the cattle will eat, are concerned. In the heat of summer it is mostly dropped under trees, and near hedges or plantations, and in the places where the animals resort for shade; and in the latter end of autumn and in winter, in similar places, where they lie the greater part of the night for shelter. It is because of this that the Grass in such situations is very rank and unpalatable; in fact, it is scarcely ever eaten by either cow or horse, but gets trampled upon, so that much herbage is wasted. In meadows, the Grass in such places is generally so very rank, and so much earlier than in other parts of the field, that it gets lodged and spoilt before the rest of the field is ready to be mown. Much the same result will occur if the land be in tillage, as it causes the crops to grow too rank and to lodge, so as to be of little value; hence the richest land becomes of no real value to the occupier. To prevent such waste, I recommend the following simple method, which I know to be beneficial from long experience; it is not theory that I am advocating. In the spring of the year, when the cattle first go out to Grass, and their dung is thin, I generally carry a broad shovel with me when I fetch them in or take them out for milking, and all the dung which after lying down they drop in one heap, I spread out as wide as it will go, so that when covered one superficial foot I make to cover two or three. I thus manure double or treble the space that would be manured if the droppings were left as they fell from the animals; and instead of the herbage on these spots being lost for the season, or rendered so rank that nothing will eat it unless forced by scarcity, it will all along be increased in quantity over a larger surface, and will be beneficially consumed, the land being thus enabled to carry more stock through the season. When the dung is harder or crusted over, it can be spread out with the foot or, in case of slight frost towards the latter end of the year, it can easily be removed to a fresh place, where most wanted, to be there spread out as I have recommended. The dung of horses is of a different nature from that of cows, and sooner loses its fertilizing properties; the heat of the sun soon evaporates its moisture, and insects extract its rich juices, so that in a few days it

becomes like dry chaff, almost useless as a manure. To prevent this, I trust or beat it hard down with a shovel, and if of a large size spread it out a little first; this consolidation prevents the flies from penetrating it for the larvæ, and hinders waste by evaporation. By this method an amount of benefit may be realised from the summer-made manure in the field, nearly equal to what is obtained from cattle fed in the house. After it has lain in that state some time, and after it has enriched the ground and herbage, the hooks generally come—often too soon—for the grubs and earth-worms, and scratch it about, so that without any manual labour we have the benefit of confined turnpiking in very short space of time. But, as I have before said, it often happens that the dung is voided where the herbage is already too luxuriant; in such cases it should be removed entirely to a bare and poorer spot, and spread and compressed as before described. I have observed that horses are more apt than other cattle to drop their dung on long grass and on moist places; wherever this is the case it should be removed to a drier and more barren spot before it does an injury. By constantly following such a practice as this, it is obvious that in the United Kingdom many thousand acres more than those now so treated might be annually enriched, on which, it is evident that much more stock could be kept, and as there would be more manure for the arable land, there would be a great increase of grain and root crops. By taking away the surplus manure from places where it wastes and does injury, those spots become of greater value to the occupier; the herbage would become sweeter for all kinds of stock, and there would only remain the middle of the fields to be manured from the farm-yard or compost-heap. When a field is too rich, as in some instances is the case, it would be advisable to collect the dung of cattle and appropriate it for other purposes, for it is manifest that so much herbage and grain as is annually wasted, from over-luxuriance, is a national as well as individual loss. If noblemen, gentlemen, and landed proprietors could but be induced to adopt in their parks and grounds the practice I have thus recommended, it would soon become generally known, and, if practised systematically by all who have the means, it would soon increase the vegetable productions of the country to a very considerable extent.—*W. Billington, Underhill, Quoxetry, Salop.*

The Rooks.—At a meeting of proprietors, farmers, and others, called by advertisement in the Dumfries newspapers, to consider the most effectual means of putting a stop to the serious injury done to crops, &c. by the increasing number of Crows in this district of the country, various gentlemen stated the cost they were put to in protecting their crops from the ravages of the Crows, and the damage they sustain, notwithstanding all the care and cost they are able to bestow in preventing it. From these statements it appears that many farmers are at the present time paying, and find it necessary at other seasons of the year, particularly during the braiding of Wheat and Potatoes, to pay several persons for herding and keeping off the Crows, and that during several months in the year. That the damage actually sustained, over and above the expense of herding, by the ravages complained of, amounts to upwards of 4000*l.* annually. The meeting unanimously resolved—that while they did not pretend to say whether Crows may be productive of benefit, while kept within proper numbers, by destroying grubs and other insects, they were satisfied that a great excess of numbers at present exists, and that much serious loss and damage is the consequence. And that with a view to remedy this evil they respectfully but very earnestly entreat that those gentlemen who have rookeries upon their estates will either themselves cause the increase of the numbers in their rookeries to be prevented in time to come, by such methods as they may deem most expedient and effectual, or permit the committee named by this meeting to take the necessary measures at the proper seasons.—*Annandale.*

The Markets.—I inclose the return supplied by a widely circulated provincial journal, in which you will see malting Barley quoted at from *33s.* to *37s.*, while in the *Agricultural Gazette* of Saturday last the highest quotation is *32s.* for the same article. The best evidence, however, of the incorrectness of this report, is the fact that the average return of Barley for the week ending the 5th of January is given at *32s. 7d.*, while the highest price quoted in the *Gazette* in its *Mark Lane* report of the 5th, is *32s.*, with this observation annexed—"malting Barley continues in demand at Monday's quotations."—*D.* [In answer to our correspondent, we have only to say that the names of the parties furnishing market-reports are the only sureties we can possibly have for the accuracy of those reports; Messrs. Kingford and Lay are the parties who furnished the report which he has animadverted on, and we doubt not but they would tell us that the various qualities of Barley at the prices they named.]

Berberry Blight.—I beg to thank "A Moorland Gardener" for his interesting account at p. 12 respecting the Berberry blight. His statement contains much both for and against the opinion that Berberry blights Corn. May I be allowed, however, to observe, that perhaps "A. M." was too young at the time he ate "a mouthful of Berberries to notice that the leaves he pulled them from might be infected by two kinds of blight, one a fungi fungus, the other a light mealy one, similar to mildew seen on Hawthorn hedges. If the former opinion has an evil influence on Corn, it is strange why the opinion should be so prevalent amongst farmers all over the country. Lately I had some conversation on the subject with J. Cully, Esq., who stands high as a Norfolk Agriculturist, who informed me that he once had a large Berberry bush in his garden, and when there happened to be Corn in the adjoining field it was always mildewed near the bush, but was not so after the bush was destroyed.—*J. Wighton.*

Means of Improving the Quality of Manure.—Upon extensive farms, which consist almost entirely of arable land, there is necessarily a large portion of the straw that cannot receive much aid from the dung of animals. This is commonly denominated muck, and when applied to the soil proves but a weak manure; consequently, in converting it out, much labour is expended to produce small results. I am myself subject to this difficulty, and wish to devise means for improving the quality of that portion of my muck which cannot be used in the cattle-stalls or sheep-fold. I venture, therefore, to solicit the insertion of this letter in your *Agricultural Gazette* with a view to obtain answers from your correspondents to the following questions:—1st. Supposing the muck were formed into large manure-heaps, and during such formation one of the fertilisers now in use were added thereto—which of them would be most effectual in producing the desired result? 2dly. Whether such a mixture of muck and other matter would be a better application of the ingredients than if the muck were applied to the soil in the usual way by itself, and the fertiliser also by itself, drilled with the seed for the intended crop?—*R. C.* [Instead of answering this letter, as usual, among our "Notices to Correspondents," we insert it here, in order to elicit from our readers statements of *experiments* or *observation* on the important subject to which it refers.]

Experiments with Manures.—[I beg to notice that the lawn on which one experiment was made, has been under the scythe from 14 to 15 years; the soil is of a light sandy nature, over a layer 10 or 12 feet deep, of brown sand, which is superincumbent upon a bed of clay. "It will be seen by our April experiment, that 3½ oz. guano, per yard, produced a greater weight of Grass than that which had 4 oz. per yard; this result rendered it desirable to ascertain whether 3½ oz. per yard was the maximum for land such as this trial was made on. Our committee, who have taken a warm interest in this matter, suggested that another trial should be made: the result is now before you; and though the season was far advanced (21st July and 4th August) and the lawn repeatedly mowed before the manure was applied, the effect of the guano and nitrate on the hungry soil was truly surprising, for during the sultry month of September, the portion done over with guano and nitrate formed a striking contrast in colour and luxuriance to the surrounding sward. This trial showed a gradual increase in the produce up to that which had 7 oz. of guano to the yard; but I found 7 oz. too strong a dressing; it has a tendency when first applied to scorch the sward, and the decrease in weight in the portion done over with 8 oz. results from the latter cause. I mixed the guano with more than double its weight of ashes, which were made from prunings and other refuse on the premises.] The subjoined particulars refer to an experiment which was made on one of the lawns in the Botanic Garden, Manchester, with Guano, Nitrate of Soda, and Granulated Compost, on the 27th April, 1843. The grass was mowed and weighed on the 29th June:—

	Rate per Acre. Produce. Grass.	Manure. Guano.
	tons. cwts. lbs. oz.	cwts. lbs. oz.
The produce of 1 square yard, on which 1 oz. Guano mixed with ashes was spread, weighed 3 lbs.	6 9 72 0	2 78 8
The produce of 1 yard, on which 1½ oz. Guano mixed with ashes was spread, weighed 3 lbs. 2 oz.	6 15 5 0	4 5 12
The produce of 1 yard, on which 2 oz. Guano mixed with ashes was spread, weighed 3 lbs. 11½ oz.	8 0 78 12	5 45 0
The produce of 1 yard, on which 2½ oz. Guano mixed with ashes was spread, weighed 4 lbs. 4 oz.	9 3 74 0	6 24 4
The produce of 1 yard on which 3 oz. Guano mixed with ashes was spread, weighed 4 lbs. 11 oz.	10 2 63 6	6 11 8
The produce of 1 yard, on which 3½ oz. Guano mixed with ashes was spread, weighed 5 lbs. 14 oz.	12 13 99 0	9 50 12
The produce of 1 yard, on which 4 oz. Guano mixed with ashes was spread, weighed 4 lbs. 10 oz.	9 19 92 0	10 90 0
Hay.		
The produce of 21 square yards, on which 30½ oz. Guano mixed with ashes was spread, weighed 69 lbs. 1½ oz. The same, when dry or made hay, 24 lbs. 2 oz.	2 9 60 0	3 102 7
The produce of 21 yards, on which 7½ oz. Nitrate of Soda mixed with ashes was spread, weighed 36 lbs. 6½ oz. The same when made into hay, weighed 17 lbs. 1 oz.	1 15 35 0	0 107 13
		Gran. Compost.
The produce of 21 yards on which 42 oz. Granulated Compost was spread, weighed 42 lbs. 6 oz. The same, when made into hay, 13 lbs. 2½ oz.	1 11 19 0	5 42 12
The produce of 21 yards, without manure, 27 lbs. 14½ oz. The same, when dry, 13 lbs. 6 oz.	1 7 89 0	
	Grass.	Nitrate of Soda.
The produce of 4 yards, on which 1 oz. Nitrate of Soda, mixed with ashes was spread, weighed 16 lbs. 4 oz.	5 10 99 8	6 74 10
The produce of 4 yards, on which 1½ oz. Nitrate of Soda was spread, weighed 11 lbs. 8 oz.	6 6 21 4	1 1 7
The produce of 4 yards, on which 2 oz. Nitrate of Soda mixed with ashes was spread, weighed 14 lbs.	8 2 6 0	1 99 4
Fall of rain in May,	3.10	
do. in June,	1.90	
	5. inches.	

Result of a subsequent trial of Guano and Nitrate of Soda, which was made in the Botanic Garden, Manchester, on the 21st July, 1843. The crop was mowed on the 24th Oct., is dried, and kept in separate lots for the inspection of gentlemen who may feel disposed to examine it:—

	Rate per Acre. Hay.	Guano.
	tons. cwts. lbs. oz.	cwts. lbs. oz.
The produce of 21 square yards, on which 2 oz. Guano per yard mixed with ashes was spread, weighed 8 lbs. 2 oz.	1 10 72 12	2 11 8
The produce of 21 yards, on which 4 oz. Guano per yard was spread, weighed 16 lbs. 13 oz.	3 6 96 6	4 22 0
The produce of 10 yards, on which 4 oz. Guano per yard was spread, weighed 11 lbs. 5 oz.	2 6 99 4	13 66 8
The produce of 10 yards, on which 6 oz. Guano per yard was spread, weighed 11 lbs. 8 oz.	2 9 72 0	13 22 0
The produce of 8 yards, on which 7 oz. Guano per yard was spread, weighed 8 lbs. 11½ oz.	2 13 69 10	13 161 8
The produce of 8 yards, on which 8 oz. Guano per yard was spread, weighed 8 lbs. 11 oz.	2 13 5 11	21 66 0
The produce of 10 yards, without manure, 4 lbs. 11 oz.	1 0 28 12	— — —
		Nitrate of Soda.
The produce of 2 yards, on which 2 oz. Nitrate of Soda per yard was spread, weighed 7 lbs. 2 oz.	2 99 12	5 46 0
The produce of 2 yards, on which 3 oz. per yard Nitrate of Soda was spread, weighed 8 lbs. 4½ oz.	2 9 33 10	6 11 8
The produce of 2 yards, on which 4 oz. Nitrate per yard was spread, weighed 8 lbs. 5 oz.	2 9 109 4	10 90 0
The produce of 2 yards, on which 5 oz. Nitrate of Soda per yard was spread, weighed 8 lbs. 6½ oz.	2 11 106 2	12 56 8
The produce of 2 yards without manure, weighed 15 oz.	1 0 28 12	— — —
The following trial was made on the 4th August with a new description of Guano, from the Cape of Good Hope, which was reported to contain 40 per cent. of animal matter; the Grass was cut on the 24th Oct.:—		African Guano.
The produce of 2 yards, on which 1 oz. Cape Guano per yard was spread, weighed 1 lb. 2½ oz.	1 4 110 2	2 78 8
The produce of 2 yards, on which 2 oz. Cape Guano per yard was spread, weighed 1 lb. 5½ oz.	1 9 3 14	5 45 0
The produce of 2 yards, on which 3 oz. Cape Guano per yard was spread, weighed 1 lb. 9 oz.	1 12 46 0	8 11 8
The produce of 2 yards, on which 4 oz. Cape Guano per yard was spread, weighed 1 lb. 12 oz.	1 17 91 0	10 90 0
The produce of 2 yards, on which 5 oz. Cape Guano per yard was spread, weighed 1 lb. 14 oz.	2 0 57 8	13 56 8
The produce of 2 yards without manure, 12 oz.	1 12 46 0	— — —
Rain in Aug.	2.60	
do. Sept.	.20	
do. Oct.	8.00	
	10.80	

—*Alex. Campbell, Botanic Garden, Manchester, Dec. 15, 1843.*

Salt.—Some time ago there was published "An Address to the Landed Interest on the Important Discovery of the Decomposition of Salt for the purposes of Manure, by Henry Kemp." In that address we are told that "The multiplied varieties of the culinary and flower-garden have also borne witness to the general efficacy of prepared salt, and though I am aware that the superior culture usually bestowed on these departments hinders them from offering so unequivocal a test as fields that are worn and exhausted by Corn, yet the superior health and vigour of everything to which it was applied in the garden afforded the strongest evidence for concluding that its agency may be as universal as dung, or any other great assistant of vegetation." In another place it is said, "The Salt produces one-third more of Corn than the best dung, and its cost is only about 10*s.* per imperial acre," but how to decompose the Salt appears to have been a secret. Has that secret been revealed yet? In those instructive articles in the 1st vol. of the *Chronicle*, named "Rural Chemistry," we are informed how Salt can be decomposed, how to convert it into a sulphate, and from that into a carbonate. Has Mr. Kemp any other method of decomposing Salt? Perhaps it may not be uninteresting to ask if the word Salt in the Bible has always a reference to common salt—the muriate of soda. We are informed that the term Salt was originally employed to denote common salt, but was afterwards generalised by chemists and employed by them in a very extensive and not very definite sense. They understood by it any body that is rapid, easily melted, soluble in water, and not combustible, so that it represented a class of substances midway between earths and water. We are also told that the carbonate of soda is found in Syria and other places on the surface of the ground, and that it has often the appearance of a rough dusty powder of a grey colour and alkaline taste. When reading the works of some of our Divines, there are two things we learn; the first is that they fancy themselves very good at explaining a text, however far the explanation be irreconcilable with the context; and the second is, that they endeavour to expound God's Word without knowing a very great deal about His works. When some of them speak about Salt or saltness, it appears to be synonymous with barrenness; and then we are referred to Pliny, Calmet, and Volney, as describing the land about the Dead Sea and other places, as barren from the quantity of salt it contains, and that no bird can fly across the Dead Sea, or animal live in it, and that its waters are bitter to the taste. Some of these statements could be answered with great certainty. In an essay read before the Literary and Philosophical Society of Manchester, January 2, 1838, by Prof. Ransome, of which Society I am a member, that he had kept water for months in an open vessel, and by an occasional addition of rain-water, and with the low evaporating points and fat

bordure towards the south, resembling much a long winding bay on the estuary of a large river, when the tide is out, and the shoals left dry. We descended to the shore by a pass more steep, rugged, and difficult, than is to be found among the Alps, and pitched our tent near the fine large fountain which bursts out upon a narrow terrace, still 400 ft. above the sea. The water of the fountain is beautifully transparent, but its temp. is 81° of Fahr. The whole descent below the fountain was apparently once terraced for gardens, and the ruins of a town are seen on the right. The whole slope is still covered with trees and shrubs of a more southern clime; among them we found the Oshor, the fruit of which corresponds best to the ancient descriptions of the Apples of Sodom. Nothing is needed but tillage to render this a most prolific spot; the soil is rich, the heat great, and water abundant. Of birds we saw many: indeed, at early dawn, the trees and rocks and air were full of the carols of the lark, the cheerful whistle of the quail, the call of the partridge, and the warbling of innumerable songsters; while birds of prey were soaring and screaming in front of the cliffs above." We are informed by an authority which we ought to credit above all others, that "Salt is good;" and it is only when it becomes like what chemists would call *caput mortuum*, that "It is neither fit for the land nor for the dunghill, but men cast it out." But perhaps some of your correspondents could say whether the "salt of the earth" literally means common salt or carbonate of soda.—*Peter Mackenzie.*

Quality of English grown Larch and Scotch Pine Timber.—Some time ago I made some observations in the *Gardeners' Chronicle* upon the quality of Larch timber from the red and pale-blossomed varieties. Last spring an intelligent friend of mine, a worker of timber, at my request marked some trees of each variety, had them felled, worked them up, and found that the variety with red blossoms produced the red Larch timber, by far superior in every respect to the timber from the pale-blossomed variety. Now, as this is a fact, and one of very great importance, it would be advisable for all persons entrusted with the thinning of Larch plantations to notice the colour of the blossoms and to mark the trees, so that those producing the pale blossoms may be taken out and the others reserved for timber. June is the best time to fell resinous trees for durability, my friend—an observing experienced man in such matters—says, just when the sap begins to be fluid, before the first buds and leaves are expanded, as there is more of the resinous fluid afloat, or at least it is more regularly dispersed in the wood. Perhaps some of the intelligent readers of the *Gardeners' Chronicle* will say whether this is the fact. As to quality of the decried home-grown Scotch Fir, there is a beam in a house near my residence which is known to have been in it nearly, if not quite, 100 years, quite sound yet; which Fir was not grown on a high situation, where the timber of the Scotch Fir is considered to be the best, but from a rich plain some miles off, where the owner resides. Were the proper training of our home-grown Pine timber properly understood, there can be no doubt but it would be equal to any foreign. This important subject is not attended to at the present day as it ought to be; but when the popular rage for new manures and agricultural improvement has had its day, this neglected subject may, perhaps, be taken up as a novelty and have its day also. In the meantime, neither the great landed proprietors nor the Government seem to be fully aware of the evils of delay.—*W. Billington.*

Italian Rye Grass.—In answer to the inquiry of your Correspondent "A." as to whether I have ever harvested a crop of Wheat, which immediately succeeded Italian Rye grass upon heavy land, I am enabled to state that, on a heavy loam upon clay subsoil, for several years I have grown Italian Rye-grass with Red Clover for mowing, and that the crops of Wheat which immediately succeeded were invariably regular and good; much better, indeed, than the same kind produced after summer fallow, before it was underdrained. It has frequently happened that in consequence of the failure of the seeds on small portions of the fields, on account of the heavy crops of the Barley sown with them, Italian Rye-grass was sown on such patches after harvest, and the Wheat was then sown there after Italian Rye-grass alone, and there has not been any perceptible difference in the crop of Wheat in those cases. Upon strong land, well under-drained, and in good condition, it is advisable to sow Beans, Peas, or Tares previous to Wheat upon lea pasture, and if such land be in high condition, clean and suitable for Oats, that crop might be taken after lea, and before Wheat; but in all cases it is advantageous to skim-plough the land on breaking up lea, and with such treatment and close drilling, though the subsequent crop may not require hoeing or much weeding, a full and productive crop of Wheat of good quality may be obtained from strong land after Italian Rye-grass.—*John Parkinson, Ley Fields, Newark, Notts.*

Miscellaneous.

Second Report of the Chowbent Farmers' Club. A. Hall, Honorary Secretary.

Pamphlets containing an expression of the opinions of practical men on farming subjects, which must always give works of this class a high character in the eyes of farmers, this tract records an instance in which the usefulness of science to the Agriculturist is apparent. The superiority of one sort of lime as manure over another, both of them being from quarries in the vicinity, was explained by an analysis of specimens undertaken at the instance of a neighbouring Farmers' Club. We extract the following notice of this matter:—

"Chemistry, having several specimens of limestone all made use of in burning lime for manure, one was found to consist of nearly pure carbonate of lime, while the others had a quantity of magnesia in combination, varying from two-fifths to nearly one half the limestone. When it is taken into consideration that magnesian lime is generally acknowledged to be injurious to vegetation, at least in the quantity usually applied to land, the importance of some knowledge of the composition of soils, and the means of ascertaining the difference of substances often used indiscriminately as manure, must be admitted, particularly so when to the casual observer no difference may be apparent.

"Opinions have varied respecting the effects of magnesian lime when applied in moderate quantities, probably from the different kinds of soil on which it has been tried; but all the writers to whom your Committee have had the opportunity of referring, agree in stating that an overdose of this substance will cause a temporary sterility. Dr. Ure says,—'The lime resulting from the calcination of magnesian limestone appears to have an injurious effect on vegetation, unless applied in quantities considerably less than common lime, when it is found to fertilize the soil. After two years its hurtful influence seems to become exhausted, even when used in undue quantity. Great quantities of it are annually brought from Sunderland to Scotland by the Ayrshire farmers, and employed beneficially as a manure in preference to other kinds of lime. It has been unfairly denounced by Mr. Tennent and Sir H. Davy as a sterilizer.'

"Geological writers affirm, that the magnesian limestone is often found beneath a fertile soil, generally of a light description; and this may well be the case, even though a quantity of the finer particles of the stone be blended with the soil; because the magnesia, as a carbonate in the limestone, is in an inactive or harmless state, but when the carbonic acid is expelled by heat the magnesia becomes caustic, and, in quantity, is injurious to vegetation. It is probable that a larger proportion of magnesian lime may be advantageously applied to one soil than another; and the committee are rather of opinion, though without any precise data to come to a positive conclusion, that the greater the quantity of vegetable matter in the soil, the less likely will the application of magnesian lime be to prove injurious. The Committee are rather inclined to go farther, and favour the opinion, that on peaty soils the magnesian lime would be found more fertilizing as a manure than any other kind."

Brief Remarks on some Subjects connected with the Choice of Wheat for Seed; interesting to Farmers, Corn-factors and Bakers. By Sir G. S. Mackenzie, Bart., F.R.SS. L. & E. Maclachlan, Stewart, and Co., Edin., pp. 30.

We have only time at present very shortly to notice this work. It is on a most important subject, and we shall next week direct the particular attention of our readers to it.

The Author shows that most of the external characters, from an examination of which millers are accustomed to estimate the value of samples of Wheat submitted to them, are unworthy of confidence; that they are as likely to mislead, as to guide one to a correct judgment; and that, in fact, the dealings between farmers and Corn-factors have hitherto partaken very much of the character of guess-work. This assertion is founded upon a great many facts and chemical analyses, which are detailed at considerable length, but as we shall refer to these next week, we leave them at present, merely saying that much light is thrown by them upon a subject which has been hitherto neglected, although, as the title of this pamphlet truly tells us, it is one most important and "interesting to farmers, Corn-factors and bakers."

Miscellaneous.

Effects of soaking Seeds in Chemical Solutions.—I steeped the seeds of the various specimens exhibited, in sulphate, nitrate, and muriate of ammonia, in nitrate of soda and potass, and in combinations of these, and in all cases the results were highly favourable. For example, seeds of Wheat steeped in sulphate of ammonia on the 5th of July had by the 10th of August, the last day of the show, tillered into nine, ten, and eleven stems of nearly equal vigour; while seeds of the same sample, unprepared, and sown at the same time, in the same soil, had not tillered into more than two, three, and four stems. I prepared the various mixtures from the above specified salts exactly neutralised, and then added from eight to twelve measures of water. The time of steeping varied from 50 to 94 hours, at a temperature of about 60 deg. Fahrenheit. I found, however, that Barley does not succeed so well if steeped beyond 60 hours. Rye-Grass and other gramineous seeds do with steeping from 16 to 20 hours, and Clovers from 8 to 10, but not more; for, being bi-lobate, they are apt to swell too much and burst. The very superior specimens of tall Oats, averaging 160 grains on each stem, and eight available stems from each seed, were prepared from sulphate of ammonia. The specimens of Barley were prepared from nitrate of ammonia; they had an average of 10 available stems, and each stem an average of 34 grains in the ear. The other specimens of Oats, which were next the most prolific, were from muriate of ammonia, and the preeminent specimens of Oats were from nitrates of soda and potash—strong, numerous in stems, (some having not less than 52), and not so tall as either the preparations from the sulphate or muriate of ammonia.—*Mr. Campbell, Transactions of the Highland Society.*

On Fattening Cattle with Different Kinds of Food.—The cattle were bought at Falkirk, on the 12th of October, and on the 24th were littled and put into separate yards, each of which had ample space and shelter from the weather, by scooped sheds for the several lots which were distributed among them; and conceiving that the object which the Agricultural Society had in view in offering this premium was to find out a substitute for Turnips, each lot of cattle had a mixture of food allowed them, with the exception of lot No. 1, which was altogether fed upon Turnips and Straw, and may on that account be denominated the trial lot; No. 2 had half the quantity or weight of Turnips which was allowed to No. 1, with 30 lbs. of linseed oil-cake, as a substitute for the remainder of the Turnips; No. 3 had the same weight of Turnips which was given to No. 2, and half-ground Corn in the place of the oil-cakes; the fourth lot got offal from a grain whisky distillery, and a portion of ground Beans, which was mixed into their draff every morning. By following out this arrangement we have ascertained the quantity of Turnips saved, the value of the Turnips in feeding by themselves, combined with the other substances, and their value as an auxiliary feeding when used with those richer substances, which, without some coarser food, will neither be an economical nor a beneficial food for cattle. All the lots had fresh straw given to them daily, which was not weighed, and below is a state of the food consumed and the expense incurred in the fattening of each lot:—

LOT NO. 1—FED ON TURNIPS.

		£	s.	d.
Oct. 12,	To price of five cattle	245	0	0
24,	— 10 days keep of ditto on Turnips and Straw, at 8d.	8	6	8
Jan. 1,	To 84 tons white globe Turnips, at 4l. 4d. per ton, since 24th October till this date, being 3cwt. per day	34	3	4
April 7,	To 38 tons, 16 cwt. ruta bags, at 12s. 6d. per ton, since 1st January till this date, being 8 cwt. per day	24	7	6
		£306	16	6

At this date the Judges appointed by the Committee of Management, inspected the cattle, and reported their value to be 420l.

June 7,	To 21 tons, 1 cwt. ruta bags since 7th April till this date, at 12s. 6d.	13	0	6
		£127	3	6

The average expense of the keep of this lot is about 6s. 2d. per week each beast.

LOT NO. 2—FED ON TURNIPS AND OIL-CAKE.

		£	s.	d.
Oct. 12,	To price of five cattle	245	0	0
24,	— 10 days keep on Turnips and Straw, at 8d.	0	6	8
Jan. 1,	To 17 tons white globe Turnips, at 8s. 4d.	7	1	8
April 7,	To 19 tons 8 cwt. ruta bags, at 12s. 6d.	13	0	0
	— 1 ton 18 cwt foreign linseed oil-cake, at 7l. 15s. per ton, since 16th Nov. till this date, being 30lbs per day	14	14	6
		£279	4	4

Estimated value at this date, 32l. 10s.

June 7,	To 10 tons 14½ cwt. ruta bags, at 12s. 6d.	6	14	1
	— 15 cwt. 28 lbs. linseed cakes, at 8l.	5	10	0
		£103	19	1

The average expense of the keep of this lot is about 5s. 6d. per week each beast.

LOT NO. 3—FED ON TURNIPS AND BROWN CORN.

		£	s.	d.
Oct. 12,	To price of five cattle	235	0	0
24,	— 10 days keep on Turnips and Straw, at 8d.	0	6	8
	— 17 tons white globe Turnips, at 8s. 4d.	7	1	8
April 7,	To 19 tons 8 cwt. ruta bags, at 12s. 6d.	13	0	0
	— 1 ton 14 cwt. 90 lbs. of Bean meal, or 62 bushels ground Beans, weighing 32 lbs. per bushel, at 5s.	15	15	0
	To 9 bushels bruised Oats, at 2s. 6d.	1	11	3
		£271	17	6

Estimated value at this date, 77l.

June 14,	To 10 tons 14½ cwt. ruta bags, at 12s. 6d.	6	14	1
	— 1 ton 9 cwt. 180 lbs. Bean meal, or 84 bushels ground Beans, weighing 32 lbs. per bushel at 5s.	15	10	0
		£112	1	6

The average expense of the keep of this lot is about 6s. 7d. per week each beast.

This lot had latterly the rough seed of Oatmeal, at 1½d. per bushel, as a mixture to the Bean meal, which are not charged, being worth the price as manure.

LOT NO. 4—FED ON DISTILLERY GRAINS AND GROUND BEANS.

		£	s.	d.
Oct. 12,	To price of five cattle	255	0	0
24,	— 10 days keep on Turnips and Straw, at 8d.	0	6	8
Nov. 7,	— 2 tons 3 cwt white globe Turnips, at 8s 4d.	1	7	1
April 7,	— 72 quarters draff, at 4s. 6d.	16	4	0
	— 40 puncheons dreg, at 3s. 6d.	7	10	0
	— 1 ton 14 cwt. 62 lb. Bean meal, or 62 bushels ground Beans, weighing 62 lbs. per bushel, at 5s.	15	10	0
		£295	17	9

Estimated value at this date, 81l. 10s.

June 14,	To 27½ quarters draff, at 4s. 6d.	3	8	9
	— 22 puncheons dreg, at 3s 6d.	3	10	0
	— 19 cwt. 104 lbs. Bean meal, or 86 bushels ground Beans, weighing 62 lbs. per bushel, at 5s.	9	9	6
		£316	15	3

The average expense of the keep of this lot, is about 7s. 6d. per week each beast.

At the commencement of these experiments, No. 1, whose feeding was destined to be Turnips alone, that being the kind of food which they were formerly accustomed to, made a more immediate improvement than the cattle of the other lots. Upon the whole, it is evident by these experiments that feeding with Turnips *as an auxiliary* has been the most advantageous mode of using them, for it is apparent that if the cattle of lot No. 1 had only been allowed half the quantity of Turnips which they consumed, and had got oil-cake in lieu of the other half as was given to lot No. 2, the expense of their keeping would have been lessened 4l. 15s., and from superior quality their value would have been increased 10l., making together 14l. 15s.; therefore, by bestowing the remainder of the Turnips, with the addition of oil-cakes, upon other five cattle, the profit upon the Turnips eaten by lot No. 1 would have been 29l. 5s. additional to what it has been. These experiments were carried on for two months after the valuation was made at the show in April; as from an over supply in the market, caused by a scarcity of Turnips, the cattle would not them have paid for their keep; but by

continuing till June I have been simply remunerated for all my outlay and trouble, without taking into account the great advantage of the additional and enriched manure of twenty cattle fattening upon the farm, where ten only could have been kept had Turnips alone been used for that purpose; and to any person at all acquainted with Agriculture it must be evident that one cart load of manure made by cattle thus fed will be at least equal to two if the cattle had got only straw and water. The above experiments, which are corroborated by those conducted last season by Messrs. Andrew Howdon and Alexander Brodie, junior, tend to show that the winter feeding of cattle is more capable of successful extension by those who have a sufficiency of straw, but have not such an abundance of Turnips as to be able to make all their straw into manure by cattle upon full feeding, than was formerly imagined.—*Experiments by Mr Brodie, of Abbey Mains, Haddington*, 1856-7.

Roots of Plants.—In loamy or sandy soils, the roots of trees have been found to penetrate to the depth of 10 or 12 feet; and the roots of the Canada Thistle have been traced 6 or 7 feet below the surface. Wheat, if planted in a mellow rich soil, will strike its roots 3 feet downwards, and elongate much further horizontally. The roots of Oats have been discovered at 18 inches from the stem, and the long thread like roots of grass extend still further. The roots of an Onion are so white, that in black mould they can be readily traced, and in a trenched or spaded soil they have been followed to the depth of two feet. The Potato throws out roots to the distance of 15 or 20 inches; and the tap-rooted plants, Turnips, Beets, Carrots, &c., independent of perpendicular roots, spread their fibres to a distance which equals if it does not exceed the Potato. It is perfectly absurd to expect to succeed with roots of this class, unless the ground is so mellow as to allow them to penetrate and grow freely.—*Chatham Journal.*

Manuring and Steeping of Seeds.—The quantity of inorganic matter contained in the grain of Wheat, Oats, Barley, &c., is comparatively small. But, though small in quantity, this inorganic matter is absolutely essential to the perfect condition of the seed, and to the healthy growth of the plant that springs from it. When seeds are steeped in water, they swell and increase in bulk. They absorb a portion of the water and of any saline substances it may hold in solution. Now, if the small quantity of saline or inorganic matter which exists in seeds does really promote their growth, may not a larger quantity promote it more? May not the growth be more luxuriant if the seed be steeped in water containing saline substances in solution, and be thus made to absorb an additional proportion? It does not appear unreasonable to suppose that a bushel and a half of seed-Wheat may be made to absorb a pound of saline matter. This appears, indeed, to be only a very small quantity, and yet, if absorbed, it would add one half more to that which the seed naturally contains. We cannot pronounce beforehand, with absolute certainty, that by this absorption the growth of the seed would be greatly promoted, though both theory and practice concur in rendering it probable. Thus the experiments of Bickes—whose mode of preparing seeds appears to be a simple steeping in saline solutions—appear decisive in favour of the opinion, that such artificial additions to the saline matter of these do really, in some cases at least, greatly promote the growth of the seeds, and increase the luxuriance and produce of the after crops. Further, we know that some seeds germinate much more readily and certainly than others. We know, also, that the proportion of inorganic matter, or of ash they leave when burned, varies in different samples of seeds of the same kind. That contained by Wheat, for example, is sometimes 2½, sometimes 1½, and sometimes nearly 2 per cent. of its weight. Can this difference in the growth of seed and the difference in the proportion of saline matter have any connection with each other? Do some germinate feebly, do others fail entirely, because they contain too small a proportion of the usual saline constituents of the seed? Would they germinate better if more were by some means given to the seed? The same experiments of Bickes, upon the effect of steeping, seem almost to answer these questions in the affirmative.—*Professor Johnston, in the Journal of Agriculture.*

Notices to Correspondents.

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Communications from the following Correspondents are in type, and are only waiting till room can be found for them—*T. R., Martin Doyle, Fairlaik Clay, M. B. G.*, and *J. Hirets*.

Nitric and Muriatic Acid.—*A Nottinghamshire Subscriber.*—Digest the bones in one half their weight of muriatic acid diluted with an equal weight of water. The application of heat to facilitate the action will not injure it as a manure.

Nitric and Sulphuric Acid.—*A Subscriber's* request has been forwarded to Mr. Lawes.

Experiments on Exciting Farmers.—*An Inquirer.*—It is difficult to discuss such a subject as that you refer to in a manner free from such *party spirit* as must not be allowed in our columns. If, however, we can obtain a true and detailed statement in answer to your question, we shall publish it for you.

Cultivation of Turnips for Seed.—*R. W.* will find information on this subject in p. 16, of the English Agricultural Society's Journal, vol. i. The extract is too long to insert. We believe Smith's Turnip Cutter is as efficient and inexpensive as any of the class.

Books for Land and Manure.—*Agricola.*—Your first letter must have miscarried. We have only received your second; and, in answer to it, we know of no better drill than those made by Mr. Mowbray, of Grantham, Lincolnshire, which manure, destroy them to sow all kinds of seed with manure. Further must be said, but perseverance in destroying their subsequent stinging nettles by cutting out their roots.

Early Potatoes.—*J. M'L., Hillsborough.*—Sibbe's Early, and Prince's Early, are two early varieties suitable for field culture. The Gold-finder is also a good sort.

Gardeners' Chronicle and Agricultural Gazette.—*Upsilon.*—Thanks for your letter. We do not differ much, in our opinion on the subject of it.

Gold of Pleasure.—*E. S. N.*—We have never cultivated this plant, but will gather up for you what we can about it from others.

Grass Seeds.—*J. R.*—In some seasons the Barley is a protection to the young Clovers and Grasses sown with it, and it is very rarely that the injury which it may in some cases may be done by it, is greater than the value of the crop fully compensates for. When the winter is not generally severe it is a good plan to feed young Clover off in Autumn, but this practice is said to be injurious where it is succeeded by sharp frost.

How to Destroy Moss in Grass-land.—*M.*—Measure the land well in autumn with a good dusting of rich, well-made farmyard dung, and feed the Grass off with sheep. This is better than lime. You will see a reason given in "Sprengel on Inorganic Manures, No. III.," *Agricultural Gazette*, why you should mix lime with earth previously to applying it on land which is not very rich in vegetable matter.

Jamaica Agriculture.—*A Jamaica Planter.*—Will you allow us to look at these papers? We should not like to insert articles having no bearing upon *British* farming.

Manures.—*J. B. H.*—It is dangerous to apply guano immediately to a crop. It is better to mix it with ashes or earth before it is spread over Grass. If, however, the labour of carting comes in your way, try sowing it broadcast, as you propose, during wet weather. We do not understand how, in the case of animals chewing the cud, Beans could pass through them whole, especially when they had been previously soaked.—*Trifolii.*—Nothing beats good farmyard dung. Guano is next best, applied at the rate of 3 cwt per acre. Mix it well with soil before applying it.

Manuring Grass Land.—*Medicus Ashburtonienses.*—You had better mix the contents of the pits you allude to with fresh mould, in order to give the matter a form in which you can apply it to your land. It may be applied after the rate of 20 or 30 bushels an acre. The Guano must either be mixed in the same way before spreading over your grass land, or it must be applied during wet weather, 2 cwt. an acre is a sufficient quantity.

Ringing Pigs.—*F.*—Your question, and all others having reference to veterinary art, will be answered shortly.

Salt and Lime.—*A Subscriber.*—Mix 1, or at most 2 cwt., of salt with the quantity of lime you intend to put on an acre, and spread the lime in the usual way. (See "Johnson on Fertilisers.")

We do not know personally of any case in which it has been tried, although there are many published testimonies to its value as manure.

Sawdust as Manure.—*K. B.*—It must either be mixed with farmyard manure, and so used as a compost, or, what would be better where it is produced in such large quantities, it must be burnt, and its ashes used as manure. It would do very well as manure if soaked with urine from the tank.

Sheep-feeding Sheep.—*A Subscriber.*—We have at this moment 200 sheep which have been treated, as described in our Leader No 3, *Agricultural Gazette*, since October last, whose feet have been, and are now perfectly sound. We have others which have become lame since they were brought under shelter, but probably this is owing to a previous tendency to foot-rot. It is a bad plan to tie the sheep up all together, and the manure should be removed from under them periodically—say once a fortnight.

Soils.—*J. Marshall.*—If you are not desirous of an *immediate* answer, we shall endeavour to give you one, perhaps by next *Gazette*, but if you are, you must put the matter in the hands of a Chemist, who will analyse the specimens for you.

Stephens' Book of the Farm.—*A Subscriber.*—The prolixity of certain periodical works, this among the number, is certainly blameworthy. You will see our opinion of it in No. 3, *Agricultural Gazette*.

Swedes for Seed.—*C. W. W.*—You had better break off the sprouts that are appearing now, for if you do not, even though the frost should spare them, they will come to blossom at an unseasonable time.

*** As usual many communications have been received too late for answering this week.

Markets.

SMITHFIELD, Monday, Jan. 26.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 10 to 4s 2	Best Downs & Half-breds	4s 0 to 4s 4
Best Short Horns	3 8 3 10	Best Long woolled	3 8 4 0
Second quality Beasts	3 2 3 6	Prime and second quality	3 4 3 8
Calves	4 4 4 4	Pigs	3 4 4 4

Numbers.—Beasts, 2715; Sheep, 27,120; Calves, 78; Pigs, 290.

Although the numbers are to-day considerably less than last Monday, we cannot observe any improvement in the trade. The demand is very limited—partly accounted for by the large arrivals of packed meat in the dead markets the weather being, on the whole, pretty favourable for it, and being sold at a cheaper rate, the butchers have bought more largely dead, and, consequently, less alive. There is no quotable difference in Beef. An Half bred sheep from Norfolk and Downs from the Western Counties, are now more plentiful, these descriptions of meat are lower. The Longwools keep about the same as of late, the sale of them being much helped by the advance in skins. Good Calves are again dearer, some few superior have realised 4s 6d per 8lbs. Pigs are a heavy trade at the same prices as our last.

FRIDAY, Jan. 26.

The supply to day is small, but fully adequate to the demand. There have been very large arrivals of dead meat from Holland since Monday, which at this time of year has great effect on our market. Beef is fully 2d. per 8lbs lower than on Monday. Mutton keeps about the same price. Good Veal is still dear. There is rather a larger supply of Calves, but many are of inferior quality; the best are still worth full 4s 4d, and something very choice may be quoted at 4s 6d per 8lbs. Pork trade is rather more cheerful, making from 3s 8d to 4s 0d.

Numbers.—Beasts, 680; Sheep, 8180, Calves, 148, Pigs, 240.

61, West Smithfield.

POTATOES, Jan. 22.

Southwark Waterside.—Since our last Report there has been some considerable arrivals, both from Yorkshire and Scotland; and, notwithstanding the former part of the week set in cold and frosty, it was only of short duration, and again became mild and fine. The demand was languid at former quotations, yet, in consequence of the supply from other districts having been very limited, an advance on some of the best samples was asked, but the dealers had no inclination to pay them at the advanced prices. The above some of the quotations may be considered nominal, and especially 70s. for Devonshire and Cornwall Reds.

York Reds	60s to 80s	Kent and Essex Whites	55s
Perth	80	Kidneys	60
Early Devons	80 90	Whitnash Kidneys	70 75
Cornwall	65 70	White and Blues	60 65
Jersey and Guernsey Blues	55	Prince Regents	50

SEEDS, Friday, Jan 26.

Canary	per qr 45s to 50s	Linseed Cakes Foreign, p. ton	10l to 10l 10s
Carraway	per cwt 30 40	Mustard, White	per bush 6s 8s
Clover, Red, English	54 62	— Superfine	6 8
— Foreign	44 54	— Brown	4 5
— White, English	70 84	Rapeseed, English, per last	24l 25l
— Foreign	70 84	Rape Cakes	per ton — —
Cowhaage	12 16	Safflower	— —
Hempseed	per last 24 28	Tares, Eng. winter	per bush 3 3
Linseed	per qr 50 —	— Foreign	2 3
— Baltic	— —	Trefoil	per cwt — —
Cakes, Eng.	per 1000 10l 0s 10l 10	Turnip (no variation for quotation)	

Rapeseed and Lin.

WOOL.—British, Friday, Jan. 26.

A case many sales have been effected in our English Wool Market during the past week at rather improved rates. Although our reports from the manufacturing districts intimate by no means a good trade being done, they state that the prices of manufactured articles have not advanced in equal proportion with that of the raw material.

	per lb		per lb
Leicestershire Wethers	1s 2d to 1s 3d	Southdown Shearlings	1s 4d to 1s 6d
Ewes	1 1	Ewes	1 1 2d
Southdown Wether Hogs	1 4		

Mincing Lane, Friday, January 26.—The arrivals of Wheat since Monday have been moderate, but the Trade on Wednesday and this morning has been dull, and part of the Kent stands are not cleared. Foreign remains very limited inquiry, but holders continue firm in their demands; we have occasional buyers for floating cargoes, and Dantzig 57s. on board; Polish Odessa is generally held at 55s. to 56s., and Dantzig 57s. to 58s. and 62s. according to quality.—Fine Malting Barley finds buyers at our quotations of Monday last, but inferior qualities are the turn cheaper.—In Beans and Peas we observe no alteration.—The supply of Oats is considerable, and the sale difficult at late prices.

British, per Imperial Quarter.

Wheat, Essex, Kent, and Suffolk	White	44	54	Red	44	52
—— Norfolk, Lincolnshire, and Yorkshire		42	51	White	—	—
Oats, Lincolnshire and Yorkshire	Potatoe	15	20	Red	15	21
—— Northumberland and Scotch	Feed	—	—	Potatoe	17	22
—— Irish	Feed	12	20	Potatoe	17	22
Barley	Malting and distilling	32	36	Grind.	24	30
Malt, pale, ship		—	—			
—— Scotch and Essex		—	—			
Rye		—	—			
Beans, Mazagan, old and new	32 to 36	Tick	32	34	Harrow	32	36
—— Pigeon, Malignant	36 to 38	Winds.	36	38	Georgeous	36	38
Peas, White	36 to 38	Maple	37	39	Grey	36	37

Imperial Averages.

		Wheat	Barley	Oats	Rye	Beans	Peas
Dec.	19 per Quarter.	50s 5d	32s 5d	19s 6d	30s 5d	32s 5d	32s 5d
—	26	50 3	32 3	19 7	29 9	32 10	32 10
—	29	50 3	32 3	19 7	29 9	32 10	32 10
—	5	49 10	32 7	19 7	29 9	32 10	32 10
Jan	12	50 0	32 7	19 7	29 9	32 10	32 10
—	19	51 0	32 7	19 7	29 9	32 10	32 10
6 weeks' Aggregate Aver.		50 0	32 7	19 7	29 9	32 10	32 10
Duties on Foreign Grain		20 0	9 0	5 0	10 0	10 0	10 0

Arrivals this week.

	Wheat	Barley	Oats	Flour
English	4260	3040	4260	6000 Sks
Irish	—	2810	23480	—
Scotch	—	—	—	—
Foreign	1020	1260	—	—

Arrivals in the River last week.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye	Bns.	Peas
English	6344 Sks.	4314	2020	11020	4260	—	1020	1215
Irish	—	—	2810	—	23480	—	—	—
Foreign	—	2040	2070	—	810	—	—	1260

Rinscoed and Lay.

COVENT GARDEN, Jan. 26.—In consequence of the continued fine weather the market has been well supplied during the week, but trade still remains dull. Fine Apples are getting scarcer; they are selling at nearly the same prices as last week. Hothouse Grapes are very scarce, but Portugals are sufficient for the demand. Among Apples we noticed the Golden Pippin, and good specimens of Blenheim Orange. Samples of Beurré Rance and Easter Beurré Pears, in addition to those mentioned in a previous report, have been brought to the market during the week. A few Sanguine Oranges have made their appearance in the market. Lemons are plentiful, and Filberts are sufficient for the demand. Vegetables generally are abundant. Cabbages are good and plentiful. Brussels Sprouts and Greens are abundant, but Broccoli is rather scarce. Seakale and Rhubarb, of good quality, are sufficient to meet the demand. Parsley is offered at the same prices as last week. Asparagus continues scarce. Endive is plentiful, and Shallots are equal to the demand. Celery is rather inferior in quality. Cut Flowers chiefly consist of Lilies gracilis and hyemalis, Bignonia venusta, Euphorbia jacquiniflora, Azalea indica alba and Smithii, Poinsettia pulcherrima, Pelargoniums, Primulas, Acacias, Camellias, Chrysanthemums, and Roses.

FRUITS.

Pine Apple, per lb	4s to 7s
Grapes, hothouse, per lb	6s to 7s
— Portugal, per lb	1s to 2s
Apples, dessert, p bush	4s to 10s
— Kitchen, p bus	2s to 6s
Pears, per half sieve	4s to 12s
Oranges, per dozen	2d to 4d
— per 100, Tis	—
Lemons, per doz	2d to 3s
— per 100, Is to 14s	
Pomegranates, per doz	2s to 6s
Red Capsicums, 4s to 8s	
Almonds, per peck	6s
Sweet Almonds, per lb	2s 6d to 3s
Nuts, Spanish, per bushel	16s
— Cobs, per 100 lbs	60s to 100s
Chestnuts, per peck	2s to 3s
Walnuts, per bushel, shelled	10s to 20s
Filberts, English, p 100 lbs	60s to 80s

VEGETABLES.

Rhubarb, per bundle	6d to 1s 6d
Broccoli, per bundle	1s 6d to 2s
Brussels Sprouts, per bf. sv.	1s to 2s
Cabbages, per doz	6d to 1s
Red Cabbages, per doz	2s to 4s
Carrots, per bunch	2d to 4d
— per load	30s to 40s
Cauliflowers, per doz	2s to 4s
— per half sieve	1s to 2s
Asparagus, per 100	1s 6d to 2s
Seakale, per punnet	6d to 9d
French Beans, 4s to 6s per 100	
Autumn Potatoes, 8d to 9d per lb.	
Savoys, per doz	6d to 1s
Greens, per doz	2s to 3s 6d
Potatoes, per ton	80s to 90s
— per cwt	5s to 6s
— per bushel	1s 6d to 2s 6d
— Kidney, p bush	2s to 3s 6d
Turnips, per doz bunches	1s 6d to 2s 6d
Horse Radish, per bundle	1s to 2s
Radish, spring, p. doz bunch	1s to 2s
Carrots, p 36 s bun	3s 6d to 5s
Spinach, per sieve	1s 6d to 2s
Leeks, per doz bun	2d to 1s
Garlic, per lb	6d to 8d
Onions, Roman	1s 6d to 2s p. bush.
— Large, per bushel	3s to 5s
— Spanish, per doz	1s 6d to 2s
— pickling, p bush	2s 6d to 3s 6d
Shallots, per lb	3d to 6d
Chilis, per 100	1s to 1s
Lettuce, Cabb., p. score	6d to 1s
— Cos, per score	6d to 1s
Celery, per bun	6d to 8d
Mushrooms, per pottle	2d to 1s 6d
Small Salads, per punnet	2d to 6d
Watercresses, per doz. sm. bun	3d to 6d
Parsley, per doz bunches	2s to 4s
Tarragon, Cresh, per bun	4d to 6d
Endive, per score	2s to 4s
Green Mint, 4d to 6d per bunch	
Marjoram, green, p. doz bun	1s 6d to 2s
Chervil, per punnet	2d to 3d
Balsafy, per bundle	1s to 1s 6d
Scorzonera, per bundle	1s 6d

HOPS, Friday, Jan. 26.

The Hop Market is in a very healthy state, and buyers are offering full 5s per cwt over last week's prices—but holders are expecting a much greater advance, consequently we have scarcely any in offer, as the following currency:—

Mid & East Kent Pocks	4l 5s to 10l 10s	Sussex Pockets	3l 0s to 6l 6s
Choice ditto	11 0	Choice ditto	6 12
Weald of Kent Pocks	3 0 6 12	Farnham	8 9 10 10
Choice ditto	7 0		

Provisions & Sons, Hop-Factors.

HAY.—Cumberland Hay Market, Jan. 26.

Meadow Hay	3l 15s to 4l 15s	Clover	4l 10s to 5l
— inferior	3l 10s to 3l 15s	— inferior	4l 0s to 4l 5s
Straw	1l 5s to 1l 15s		

Joshua Hanson, Hay Salesman.

Whitechapel, Jan. 26.

Hay	3l 10s to 4l	Clover	4l 5s to 4l 15s
— fine Upland	3l 5s to 3l 15s	— fine	4l 10s to 5l 0s
Straw	1l 5s to 1l 15s		

Very little sale of Hay on the above quotations. Supply of Clover short, but trade brisk.

PRINCIPAL MANURES.

	Weights per bush., about lbs		Weights per bush., about lbs
Ashes, pots per ton	—	Rape, 40s to 50s per qr.	—
Bleaching Powder, 6½ per cwt.	—	Rape Cakes, per ton	—
Bones, dust, per ton	4	Rape Dust, per ton	42
— Half inch, 16s ditto	40	Salt Ammoniac, 10s per cwt.	—
— Calcined, 8s per cwt	60	Salt, Agricultural, 2½ per ton	42
Carbonate of Ammonia, 40s per cwt	56	— clean, 40s per ton	56
— of Lime, 1s to 1s 6d per cwt	—	— Ride, 2½ per ton	60
— of Soda, 20s to 30s per cwt	—	Saltpetre (Nitrate of Potash) 40s per cwt., duty paid	—
Chloride of Lime, 30s per cwt.	—	Sulphate of Potash, in powder, 40s per cwt.	—
Guano, 10l to 11l per ton	60	Soda Ash, 10s per ton	—
— Peter's, 10l per ton	60	Soda Ash, 10s per cwt.	60
Gypsum (Sulphate of Lime), Stucco	—	Sulphate of Ammonia, 18l to — per ton	60
— to use per cwt.	—	— of Copper, 1½ per cwt	—
Hungerford's Compound (the Hyacinths), 1s 6d per bottle	—	— of Magnesia (Impure) 10s per cwt.	60
Marigin of Ammonia, 1½ per cwt.	—	— of Potash (Impure) 10s per cwt.	60
— Lime, 40s to 4l	70	— of Soda (Impure) 10s per cwt.	60
Muriate of Soda, varies in its qr per cwt. from	56	Superphosphate of Lime, 10s to 12s per cwt.	60
— Potash, 10s per cwt	60	— of Potash, 10s per cwt.	60
Phosphate of Lime, 10s to 12s per cwt	60	— of Soda, 10s per cwt.	60
— Burnt, 10s per cwt	60	Sulphuric Acid, Leather maker, 90 per lb.	—
— of Ammonia, 10s per cwt	60	— Chemical maker, per lb.	—
— of Potash, 10s per cwt	60	— Farmer, 10s per cwt.	60
— of Soda, 10s per cwt.	60	Wheat Dust, 40s per ton	56
Rape, 40s per qr.	—	White Dust, 40s per ton	56

Repository of Industrial Manures, 49 & 50 Mark Lane.

DANE GROVE NURSERY, STOWMARKET, SUFFOLK.

SAMUEL GERLING, ENGLISH AND FOREIGN DAHLIA dealer, submits the following choice and DARLING DAHLIAS to his numerous Friends for 1844, some of which can be had early in May; they are all faithfully described, and early orders are respectfully solicited, as the stock of some of them is very limited. General Catalogues of DAHLIAS, GERANIUMS, PANSIES, FUCHSIAS, and VERBENAS, can shortly be had, on prepaid application

BEAUTY OF SUFFOLK (Dane's) —Bronzy purple, of superior form and excellent habit; a constant and extra second rate show-flower; seedling raised at Ipswich and Stowmarket. Height 4 feet.—Price 7s 6d.

DERMONDERY BEE (Faberon's).—A crimson purple, of excellent form and fine general habit, well cupped alike petals; would well crown one of the best Self Dahlias in cultivation.—4 ft.—10s 6d.

MODEL (Bowen's).—Dark purple, of first rate form, has taken first prizes at the Metropolitan and other shows, and pronounced a first-class flower 4 ft.—10s 6d.

NOMPAREIL (Paceton's).—Ruby scarlet, of first rate form, habit excellent, free bloomer; pronounced by the Horticultural Society of London, and at the Slough exhibition, to be a first-class flower The stock of this beautiful Dahlia is small, and unless it breaks well will be held in another year No allowance on this variety unless six plants are ordered Blenny's opinion of this Dahlia is, that well grown it will be a prizeman. 4 ft.—10s 6d.

ORANGE PERFECTION (Bowen's).—Of good form and habit, an extra second-rate show-flower, rather low in the centre, but sometimes well up, when it will beat all the orange class 4 to 5 ft.—7s 6d

RED ROVER (Gerling's).—Of good general properties and extra fine habit; colour fine red, and useful for showing. 4 to 5 ft.—7s 6d

TALMA (Gerling's) —Purplish rose of superior form and habit, little short of first-rate; rising centre and very constant 4 ft.—7s 6d.

SIR JOHN STEWART RICHARDSON (Union, in which S G has a share), which is one of the most popular Dahlias of the season. No allowance on this variety unless 12 plants are ordered 4 ft.—10s 6d

FANCY DAHLIAS.

CORNELIA (Gerling's).—Purple, tipped with white; of good habit and very distinct. 4 ft.—5s

GARLAND (Gerling's) —With three colours—crimson, sulphur, and brown tip; of good form and habit 3 ft.—5s

MADAME MIELLEZ (Gerling's).—Rose-lilac, tipped or striped with white, a distinct variety, of good habit 3 to 4 ft.—5s

MADAME DE BERGHE (Gerling's).—White edged with pink a distinct and beautiful variety. 3 ft.—5s.

MADAME CHAUVIERE (Gerling's) —Light crimson tipped with pure white, very constant, good shape, and one of the finest border Dahlias in cultivation 4 ft.—5s

VILLAGE MAID (Gerling's) —Colours white and purple distinctly and beautifully tipped; good habit and superior border variety 3 to 4 ft.—5s —Stowmarket, Jan 19 1844

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners Chronicle*, "THE BRITISH QUEEN on light soils, is the best of all kinds, and will drive Knight's Tall Marrow out of the garden" "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time" Both varieties may be had in packages at 2s 6d each, at W J C 's wholesale Establishment, Newcross or the Bedford Conservatory Covent Garden

WILLING'S EARLY GROTTO PEA

J AND S SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Grotto or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and nearly double the size of any other Pea in cultivation Quite hardy will stand the winter well, and a good bearer, the pod large and long They would particularly recommend it to the attention of Market Gardeners Price 2s per quart, 10s per gallon 17s 6d per peck; 30s per half-bushel; 2l 10s per bushel Agents:—Messrs. FIELD and CHILD, 119 Lower Thames street, London Messrs W. and J NORRIS, 152, Fleet street; Mr KERNAN, 4 Great Russell-street, Covent Garden; Messrs HOGGE and McMULLEN, 61 Leadenhall street; Messrs GRAY, ADAMS, and HOGG, Kensington; Mr. T. D WATKINSON, Market place, Manchester —Northwarnborough Nursery, near Odiham Hants

TO FLORISTS, NURSERYMEN, &c

AUSTIN & SHELLEY have now a Quantity of GARDEN ORNAMENTS, which have been discoloured by exposure to the London atmosphere, and which they are therefore desirous of selling at a considerable reduction.—New Road, Regent's Park.

TO CULTIVATORS OF PEARS.

T. RIVERS, Jun, begs to announce that his Descriptive Catalogue of Pears, with some directions for their Culture, as root-pruned Pyramidal, Conical, and Quenouille trees of which wood-cuts are given, is now ready for delivery, to which is appended a Supplement to Catalogue of Fruits The Pamphlet will be sent, post-free, for 1s 6d, on receipt of a paid application. Sold also by Messrs LONGMAN and Co, and at 4, Great Russell-street, Covent Garden. The Catalogue of Pears is printed separately, and will be sent to applicants on receipt of a two penny stamp.—Sawbridgeworth, Herts, Jan 4, 1844

SEED TRADE—NO MONOPOLY.

J. C. WAITE, WHOLESALE SEEDSMAN, 1 & 2, Eyre street hill, Hatton Garden, London, most respectfully solicits the attention of the Country Trade to his prices of Seeds recently advertised in the *Chronicle*, and to remind them that everything is quoted very much below the *London Agreed List* All articles sold at his Establishment are of superior Quality, and genuine Stock—Bills to be had on application.

WARNER AND WARNER, SEEDSMEN, 22, Cornhill, London, beg respectfully to refer their Friends to the *Gardeners' Chronicle* for January, for their Advertisement of New and Select VEGETABLE and FLOWER SEEDS

BOTANY.—TO NOBLEMEN, GENTLEMEN, & AMATEURS

TO BE SOLD, Specimens of the SOUTH AUSTRALIAN FLORA, just imported, consisting of an Herbarium containing about 250 varieties; together with fresh Seeds of each kind, accurately labelled with its Botanical name, colour, time of flowering, soil, situation, and habit. Price 12 Guineas, to be had of Messrs. G. and C. LODDIGES and DUNCAN, Florists, 158, Cheapside.

TO GENTLEMEN AND OTHERS ENGAGED IN PLANTING

MESSRS. CRITCHLOW, and MORRIS are instructed by the Proprietors to submit to public competition, in consequence of the expiration of lease, on MONDAY, MARCH 4, 1844, and following days, at 11 o'clock, THE STOCK OF OAK and other TIMBER TREES and PLANTING, near the Great West Road, Hounslow, the Young, healthy, and well-grown Specimens of Evergreens, Thorn Hedge Plants, of every description, Variegated Hollies, Yews, Laurels, Laurustinus, Cedars, and Cork trees, Larch, Scots, and other Firs, Spruce, Weymouth Pine, Cupressus and Retinospora, Deciduous and Flowering Shrubs, Standard Horse Chestnuts, Mountain Sorrow, Acacia, Laburnum, P. aucuparia, and other trees, &c. &c. These Catalogues have been prepared for the Nobility and Gentry of the Vicinity, and may be had at the Auction Mart; at the Crown Inn, Hounslow; at the Offices, Hounslow Manors, Isleworth.

LARCHES.—The Subscribers have still a Large Quantity of fine Transplanted LARCHES of sizes which they are selling at very low prices.—WM PAINE BANT and SONS, Bungay.

THE undermentioned, with a select Assortment of FLOWER and other GARDEN SEEDS, may be had now, as annually received from the respective growers, at moderate prices, from THOS D WATKINSON, ORIGINAL SEED ESTABLISHMENT, 6, Market-place, Manchester:—New Early Dwarf Thompsonian Pea, a prolific bearer, halling's New Early Gotto; Prince Albert; Knight's Marrow, &c True Johnson's Wonderful Beans; Large Improved Windsor Myatt's Prize called Parsley, True Waicheren Cauliflower Brocoli; Cuthill's Long Black Spine and Manchester Improved Long Prune Cucumber; Whyte's extra fine Dwarf Red Beet; True Altringham Carrot; and superior Yellow Garden Turnip, Ashlea ed forcing Kidneys and other Early Potatoes, Swan Neck Red and Pink, Lancashire Giant, Solid, and Seymour's Superior White Celery; Tobacco Paper; Mushroom Spawn, &c. &c. Catalogues on application.

Agent for Whitney's Waterproof Composition and Humphrey's Compound. May's Select Fancy and Hollyhock Seed, in packets at 2s 6d and 5s each.

WANTED, a large Quantity of YEW and PRIVET for Underwood in Plantations. Parties having the above to dispose of, are requested to state the height, age, and price per Thousand, delivered at Derby—Burton upon-Trent, Bretby Gardens Address post-paid, to Mr PATTERSON, Bretby Gardens, Ashby-de la Zouch, Derbyshire.

WARWICKSHIRE ASSOCIATION FOR THE PROTECTION OF AGRICULTURE.

AT a numerous MEETING, convened by Requisition, and held by adjournment (from the WARWICK ARMS HOTEL) at the COUNTY HALL, WARWICK, on WEDNESDAY, JANUARY the 24th, 1844 the Right Hon LORD BROOKE in the chair, the following Resolutions were unanimously carried:

1st —Proposed by E B GRANVILLE, Esq, and seconded by G N NEWDEGATE, Esq, M.P.—"That it is the firm and decided conviction of this Meeting that a Repeal of the Corn Laws would be highly prejudicial, not only to British Agriculture, but to the nation at large, would impolitically diminish the income of the Land-owners, unjustifiably annihilate the capital of the Tenant Farmers, cruelly reduce the wages of the labourers below the means of sustenance, and consequently impair, if not destroy, Home Consumption, that great source of demand for the labour and industry of the people in all their branches"

2d —Proposed by the Rev J C ROBBINS, and seconded by E B KING, Esq —"That all efforts to effect a *violation of the protective principle*, under existing circumstances, not only as regards Agriculture, but our National Industry in general, ought to be vigorously opposed."

3rd —Proposed by Sir J MORDAUNT, Bart, M P, and seconded by Mr C LUCY,—"That the doctrines of the Anti Corn-Law League, tending to produce jealousy and devil feeling amongst the several classes of the community, and having ulterior mischievous objects in view, are dangerous to the prosperity and peace of the country, and ought to be exposed and resisted"

4th —Proposed by Mr CHAPMAN, and seconded by Mr WARRINGTON,—"That the Committee of the Association be requested to correspond with other Societies, formed for a similar purpose, and to adopt such measures as to them shall seem expedient, in effectually exposing and vigorously arresting the progress of the pernicious principles and objects of the Anti Corn-Law League

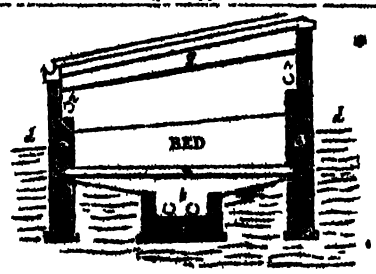
5th —Proposed by Mr HOUGHTON, and seconded by Mr LISTER, —"That the Warwickshire Association having been mainly supported by the Farmers, it is recommended that all classes dependent on the productive industry of the county be invited to co-operate, and that in furtherance of this purpose, donations be received by the Secretaries from all persons disposed to forward the object of this Meeting"

6th —Proposed by H C WISE, Esq, and seconded by Mr HEMMING, —"That the foregoing Resolutions be printed, circulated, and advertised in such manner as the Committee may approve"

The noble Lord having left the chair a vote of thanks to him was proposed by Sir JOHN MORDAUNT, Bart M P, seconded and carried by acclamation, for his Lordship's able and impartial conduct as President of the Meeting

READLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO, 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose These tanks which are ornamental in appearance can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of iron will be found cheaper than of any other material Mr. READLE of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S and Co



J WEEKS & Co., ARCHITECTS, HORTICULTURAL BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, Gloucester place, Kingsland road, Chelsea.

BURRIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon they have put up one at the Horticultural Gardens, where E and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of iron Tank, which combines the qualities of the round pipe and Hotwater tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Orchards, Euphyte-houses, Melonhills, &c. The arrangements is such that any gentleman or gardener may have the Whole Constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 150, Fleet-street. A Prospectus may be had detailing the prices, &c.

GUANO ON SALE BY THE IMPORTERS, JOHN GIBBS & SON, Wellington Chambers, London Bridge, Borough.

CHEAP FUEL FOR HOTHOUSES AND STOVES.

—Coke, the same as used by the Horticultural Society, to be had in large quantities at very reduced prices, at the Phœnix Gas Works, Bankside, or Greenwich

GENUINE PERUVIAN & BOLIVIAN GUANO ON SALE, BY THE IMPORTERS, ANTONY GIBBS AND SONS, LONDON; GIBBS, BRIGHT, AND CO, LIVERPOOL AND BRISTOL, 47, Lime-st., Jan 25, 1844

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported.—Apply to Cornewall, Powell, and Payne, London; Edwards Dawson, and Co., Liverpool; or William J Myers and Co, Liverpool, the Importers

POTTER'S GUANO.—Sir Robert Peel, the Earl of Ellesmere, and others, have used POTTER'S MANURE with the greatest success on almost every kind of crop and soil. Testimonials may be obtained by application, per post, at the Works, 28, Upper Fore-street, Lambeth, or of any of Mr. Potter's agents.—See also the Advertisement in this Paper of the 6th Jan., containing Copies of the Testimonials referred to

GUANO, PERUVIAN, &c —The above Manures, also Potter's Guano, Nitrate of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with synopsis of mode of use, on application to MARK FOTHERGILL, 40, Upper Thames-street, London

GUANO.—The Subscribers will bring in a cargo this MANURE to Berwick-upon-Tweed, in all February and March, direct from Valparaiso.

Haddington, Jan 22 1844, BAIRD & Sons.

Note —As this will be one of the *very few* cargoes from the Pacific, whose charterparties will admit of their discharging on this coast, BAIRD and SON would recommend intending purchasers to apply for what they may require as early as possible.

THE CURATE of the LONDON MANURE COMPANY, at per Ton It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By producing a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops The Curate may be sown broadcast, or which is preferable, by the drill, at the rate of from two to three acres, and it is desirable it should not be placed more than two inches below the surface As a top-dressing for Wheat the Curate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and testimonials will be forwarded on application. Genuine Peruvian Guano, Phosphate and Sulphate of Ammonia, Gypsum and every other artificial Manure

EDWARD PURKIS, Secretary, 40, New Bridge Street.

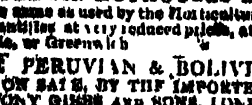
GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c, impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it

Noblemen, Gentlemen, and Gardeners will, by using this composition have the only effectual protection for their Fruit from during the blooming season it is a certain defence from frost, sleet, wind, and blight; its transparency admits the grateful beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using

Sold in Bottles, with directions for use, pints, 2s 6d, quarts, 4s 6d each One pint is sufficient to coat four Frames twice over, each frame to be 6ft. by 3ft 3in., or thereabouts Prepared by GEORGE WHITNEY, Chemist, Shrewsbury Seedsmen, Florists, and Merchants supplied by Mr W BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents —Messrs. BUTLER and MACKLEY, Covent Garden, where a sample of prepared calico may be seen, Mr WATERHOUSE, Market place, Manchester, PACE and SON, Southampton; T and C WHALLEY, Nurserymen, Liverpool

Agents wanted for London and the country

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings, its advantages are—Lightness, Durability, and Economy Being a non-conductor it has been proved an efficient "Protective Material" to Plants, and is now in use at the "Royal Horticultural Society's Gardens Chiswick" It can be had of any length, 28 inches wide, at 1d. per foot, super. A discount to the Trade

THOS J LAMBOURN, 8, Ingram court Fenchurch st., London.

DISEASED AND HEALTHY LIVES ASSURED

MEDICAL, INVALID, and GENERAL LIFE OFFICE, 24 Pall Mall, London Capital 300 000l —This Office is provided with very accurately constructed Tables, by which it can Assure Diseased Lives on Equitable Terms. Increased Annuities granted on *unsound* Lives, the amount varying with the particular disease Members of Consumptive Families Assured at Equitable Rates Loans granted upon personal security

I C F NELSON, Actuary.

CLOSE OF HOLIDAYS.

NOW THAT THE SEASON of Annual Festivity is about to terminate, and the respective Boarding Schools be reinstated by the busy throng of useful aspirants, the personal comfort and attractions of whom become naturally associated with friends and relatives of great solicitude, ROWLAND'S MACASSAR OIL, for accelerating the growth, and for preserving and beautifying the hair; ROWLAND'S KALYDOR, for preserving the skin and complexion, and removing cutaneous eruptions; and ROWLANDS ODONTO for beautifying the Teeth and preserving the gums, are unanimously considered indispensable in the requisite accomplishments of the fashionable Reputation)

The August Patronage conceded by our Gracious Queen, and the several Sovereigns of Europe, together with the Beauties which adorn the circles of Princely and Regal Magnificence and the confirmation by experience of the infallible efficacy of *these grateful preserving Specifics*, have characterised them with perfection and given them a celebrity unparalleled.

NOTICE —It is necessary on purchasing either article to see that the word "ROWLANDS" is on the Wrapper. For the Protection of the Public from fraud and imposition, the Honourable Commissioners of Her Majesty's Stamps have authorised the Proprietors to have their names engraved on the Government Stamp, thus —"A. ROWLAND and SON, 20, Hatton-garden," which is affixed to the Kalydor and Odonto. Be sure to ask for "ROWLANDS'S" Articles

Sold by the Proprietors and by all Chemists and Perfumers.

*** All others are FRAUDULENT COUNTERFEITS!!

NEW FARMERS' NEWSPAPER.

The time has [illegible] when [illegible] must [illegible] in [illegible] of Sir Robert Peel, [illegible] must [illegible] for [illegible] the [illegible] this, no means can be so effectual in that [illegible] as [illegible] AGRICULTURAL GAZETTE has been established.

The Proprietors [illegible] with the many details of [illegible] to [illegible], they welcome [illegible] the idea of abolishing [illegible], in all [illegible] these are general principles [illegible] on the [illegible] opinions which [illegible] Such [illegible] in [illegible] and [illegible] which [illegible] in THE AGRICULTURAL GAZETTE, is to make [illegible] the knowledge of all. It is [illegible] that the Proprietors [illegible] the system of dividing [illegible] and by the talents of any individual. While, therefore, they [illegible] the Editor of THE AGRICULTURAL GAZETTE [illegible] to a gentleman with [illegible] they [illegible] to be entirely [illegible], they feel it to be of far more [illegible] from the [illegible] and [illegible] possibly [illegible] of those [illegible] to publishing:—

The Right Hon. the Earl Stanhope, President of the Royal Agricultural Society of England.

The Most Hon. the Marquis of Downshire, Vice-President of the Royal Agricultural Society of England

The Right Hon. Lord Wharncliffe, M.P., one of the Council of the Royal Agricultural Society of England

The Right Hon. Lord Yarborough, Vice-President of the Royal Agricultural Society of England

Lord Worsley, M.P., Vice-President of the Royal Agricultural Society of England

Sir G. Thomas Mackenzie, Bart., F.R.S.

William Miles, Esq., M.P., one of the Council of the Royal Agricultural Society of England

Colonel Le Couteur, Isle of Jersey

Rev. Dr. Buckland, F.R.S., Professor of Mineralogy, Oxford

Lyon Playfair, Esq., F.R.S., Consulting Chemist to the Royal Agricultural Society of England

J. Benyon, Esq., President of the Leicester Farmers' Club

Rev. J. M. Rodwell, Kilve, Bath

John Curtis, Esq., F.L.S.

T. W. Davis, Esq., Secretary of the South Wilts and Warminster Farmers' Club

John Godwin, Esq., President of the Hurstcross Farmers' Club, Norfolk

A. Hill, Esq., Secretary of the Sedgefield Farmers' Club

C. Herbert, Esq., Powick, near Worcester

Samuel Jones, Esq., Leighton, Montgomeryshire, one of the Council of the Royal Agricultural Society of England

G. Legard, Esq., Ganton, Rushington, York

E. W. Moore, Esq., Agent to Earl Radnor

C. Noel, Esq., Exeter

Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London

L. H. Walrond, Esq., Hon. Sec. of the Gloucester Farmers' Club;

W. Winkes, Esq., Knowstone, Exeter, Hampton, Devon

Mr. R. Beeton, Worcester

Mr. J. Dudgeon, Seghow, Sussex

Mr. W. F. Purdon, Sec. of the Knaresborough Farmers' Club

Mr. John Morton, Agent to the Earl of Dudley

Mr. G. Parsons, Agent to Lord Feversham

Mr. Palmbleby, Louth

Mr. Shoesmith, Folkington, Sussex

&c. &c. &c.

The Right Hon. Lord Berners, Vice-President of the Royal Agricultural Society of England

Sir John Hamilton, Bart.

J. Whitaker Ellis, Esq., M.P., one of the Council of the Royal Agricultural Society of England

Rev. J. B. Hensleur, F.L.S., Professor of Botany, Cambridge

David Low, Esq., F.R.S.E., Professor of Agriculture, Edinburgh, and one of the Council of the Royal Agricultural Society of England

Robert Baker, Esq., Wrotham, Kent

John Benyon, Esq., Aston-le-Walls, Northamptonshire

Robert Binks, Esq., Bath Place, Bath

Evan David, Esq., President of the Cardiff Farmers' Club

W. Grey, Esq., Secretary of the Chesterton Farmers' Club

W. Parker Mantell, Esq., Shottesbrook Hall, Maidenhead

C. W. Hoskyns, Esq., Wormsley, near Hereford

J. Hudson, Esq., Castle Acre, near Swaffham, one of the Council of the Royal Agricultural Society of England

W. H. Little, Esq., Chevrell Grange, Aylesbury

Henry R. Madden, Esq., M.D., Penicuik, Edinburgh

J. Mathews, Esq., Secretary of the Hampton Farmers' Club

R. J. Mileham, Esq., Stowmarket

H. Parkinson, Esq., Ashworth, Rochdale

W. Price, Esq., Secretary of the Eton Farmers' Club

R. W. Purefoy, Esq., Hon. Sec. of the Shenstone Farmers' Club

R. A. Sandeman, Esq., Strathtyrum

T. A. Scrimgeour, Esq., Dundee

H. Aglionby Slaney, Esq., Walford Manor, Shiffnall, Salop

Frederick J. Solly, Esq., Twickenham House

J. H. Stirling, Esq., Glenarvey, Falkirk

W. H. Wingfield, Esq., Tarvey, Kidderminster, Lincolnshire

Mr. T. Beedell, Secretary of the Bradwell Farmers' Club

Mr. R. Bent, Rowsham, Marlow

Mr. John Brodie, Hullington

Mr. G. Hope, Norton Barnet, East Lothian

&c. &c. &c.

&c. &c. &c.

&c. &c. &c.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 5.—1844. SATURDAY, FEBRUARY 3. [Price 6d.

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GEOLOGY.—PROFESSOR WEBSTER, F.G.S., will commence his Lectures on Monday, 5th February. The Course will consist of 30 Lectures, and will be divided into three parts.

1.—The description of such simple minerals as enter essentially into the composition of rocks.

2.—Geology, properly so called, or the characters and superposition of the strata composing the crust of the globe, together with an account of the various phenomena exhibited by them.

3.—The application of the above subjects to the useful arts.

Lectures on Monday, Wednesday, and Friday, at a quarter past 12 o'clock. Fee 3*l*. The course is open to Gentlemen who do not attend any other class in the College.

P. E. Carey, Dean of the Faculty of Arts and Laws.
Charles C. Atkinson, Secretary to the Council.

University College, London, January 26, 1844.

CAMDEN CLUB, now forming at No. 12, Waterloo-place.—These premises so desirably situate, and expressly fitted up for a Club-house, with all the appointments ready for immediate occupation, have been obtained for the New Club.

TERMS OF ADMISSION.

Town Members' entrance . £10 10 0 Annual . £7 7 0
Country Members' entrance 5 5 0 Annual . 5 5 0

It is proposed to introduce a new principle into the constitution of the Club with regard to Town Members, by which a Member retiring shall have a rateable proportion of his entrance fee returned to him, according to the number of years he may have been a Member.

Prospectus containing full particulars of this new regulation may be had of the Secretary, at No. 12, Waterloo-place, where the Provisional Committee meet daily to receive applications from gentlemen desirous of becoming Members.

London, February 1, 1844.

THE LATE Mr. LOUDON.—A Public Meeting of the Friends of the late Mr. Loudon will be held in the large room of the Horticultural Society's Establishment, Regent-street, London, on Saturday, Feb. 17, at Two o'clock precisely, to consider the best means of extricating his Widow and Daughter from the difficulties into which they are placed by Mr. Loudon's sudden death.

It is hoped that noblemen and gentlemen who patronise Horticulture, and also all Gardeners and Nurserymen who are within a reasonable distance, will attend.

DEATH OF Mr. LOUDON.—The following Subscribers to the Works of the late Mr. Loudon have been obtained since the publication of the Address in the *Gardeners' Chronicle* of Saturday last.

ARBORETUM BRITANNICUM.—16*l*.

C. Wentworth Dilke, Esq.
Joseph Knight, Esq.
Mr. Carter.
Mortimer Ricardo, Esq.
Lord Dillon.
Messrs. Henderson & Co.
Joseph Paxton, Esq., second subscription.
R. Trevor Clarke, Esq., Welton Place, Daventry

ENCYCLOPÆDIA OF TREES AND SHRUBS.—30*s*.

Mr. W. H. Baxter.
Messrs. Henderson & Co.
Joseph Paxton, Esq., 2 copies.
Mr. Jos. Whalley, Liverpool.
Mr. J. Henderson, Milton, Peterborough.

THE SUBURBAN GARDENER.—1*l*.

Joseph Knight, Esq.; 2 copies.
Joseph Paxton, Esq.
Mr. John Whitwell, Peterborough.

THE SUBURBAN HORTICULTURIST.—16*s*.

Mrs. Ames.
Mr. David Cameron; 4 copies.
T. R. G. Bridgyll, Esq., Coniscead Priory.
Joseph Paxton, Esq.

* REPTON'S LANDSCAPE GARDENING, Plain.—30*s*.

Messrs. Henderson and Co.; 2 copies.
Joseph Paxton, Esq.; 2 copies.
Joseph Knight, Esq.; 2 copies.

REPTON'S LANDSCAPE GARDENING, Coloured.—66*s*.

W. Evans, Esq., M.P., Allestree Hall.

ENCYCLOPÆDIA OF COTTAGE ARCHITECTURE.—2*l*. 2*s*.

Joseph Paxton, Esq.

WATERTON'S ESSAYS ON NATURAL HISTORY.—5*s*.

The Rev. A. G. Hildyard.

THE GARDENERS' MAGAZINE, 9 Vols.—9*l*. 17*s*.

Mr. David Cameron, the vol. for 1838.

Miss Horrocks, Dunchattan; works to the value of 2*l*. 10*s*.

ORANGE AND LEMON TREES, from 8*s*. to 25*s*.

DOUBLE ITALIAN TUBEROSE ROOTS, 3*s*. per dozen.—R. Hall begs to advise the arrival of his Annual Importation of the above-named Trees and Bulbs, which are this year remarkably fine, at his Foreign Warehouse, 52, South Audley-street, Grosvenor-square—facing the Chapel.

DWARF CHERRIES GRAFTED ON THE PRUNUS MAHALEB, OR PERFUMED CHERRY.

T. RIVERS, Jun., begs to offer the following sorts of CHERRIES, grafted on the above Stock, Root-pruned, and admirably adapted for potting, for forcing, or for forming Dwarf prolific Trees, to be protected by nets, 2*s*. 6*d*. each:—

Arch, or Holman's Duke
May Duke
Royal Duke
Late Duke
Biggarens
Black Eagle
Belle de Choisy
Elton
Early Amber Heart (Rivers's)
Florence
Knight's Early Black
Imperial Morello
Black Tartarian
Tradescant's Black
Waterloo
Werder's Black Heart.

The following Ornamental Standard Trees for Lawns are also offered:—

	each.		each.
American Weeping Willow, 8ft.	*s. d.* 5 6	Robinia macrophylla, or grandiflora, 6ft.	*s. d.* 3 6
*Cytisus elongatus (pendulous), 5ft.	2 6	*Yellow Broom, 5ft.	2 6
*Cytisus purpureus(do.), 5ft	2 6	Double Dwarf Almond, 4ft. to 5ft.	2 6
*Cytisus purpureus, double alba, 5ft.	2 6	Siberian Almond, 4ft. to 5ft.	2 6
*Cytisus nigricans, 5ft.	2 6	White-flowering Dwarf Almond, 4ft. to 5ft.	2 6
*Cytisus falcatus, 5ft.	2 6	Dble. flowering Peach, 5ft	1 6
*Genista anxantica, 5ft.	2 6	Weeping Laburnum, 6ft	2 6
*White Portugal Broom, 5ft	2 6	Eagle's-claw Maple, 6ft.	1 6
*Double Yellow Broom, 5ft	2 6	Lilac, rubra grandiflora fine plants, 6ft.	2 6
Robinia hispida major largest Rose Acacia, 6ft	2 6	Lilac, Charles X., do., 5ft	2 6

Female Plants (the fruit bearing plants), of the Shepherdia argentea, or Buffalo Berry, recently imported from America, 2*s*. 6*d*. each. "Its fruit, which is much relished in America, is about the size of the Red Currant, much richer to the taste, and forms one continued cluster on every branch and twig."—*London.*

Carriage of all Packages paid to London.

Those marked * are grafted on the Laburnum.

Sawbridgeworth, Jan. 31, 1844.

OLIVER'S "YOUNG HEIR" DAHLIA for 1844, to be sent out the last week in April, at 7*s*. 6*d*. each.

E. OLIVER begs respectfully to call the attention of Dahlia-growers to the above Seedling, which gained Prizes at the following places:—Felton open Show, best Seedling, Sept. 27, 1842; also an extra prize, August 31, 1843—nine blooms: Alnwick, August 29, in the first stand of 12; also the premier prize of any colour; also the best Seedling—five blooms. Colour, rosy crimson; the petal, form, and centre first-rate; constant and free bloomer; height, from 3 to 4 feet.

A few ground-roots to dispose of, at 3*l*. each. E. O. has no objection to take one-half of the amount in plants of anything new and good.—Ellington House, Whittingham, Northumberland.

GEO. CROFT, Forbury, Reading, begs to call particular attention to his Seedling Verbena "ADONIS"—a light crimson, with large lemon-coloured eye. This is particularly recommended to Noblemen and Gentlemen's Gardeners for planting out in beds, as nothing can excel in beauty a bed of this splendid Flower. Plants in April, 3*s*. 6*d*.

Likewise to his Seedling Fuchsia "UNIQUE"—tube and sepals smooth; sepals expand well; corolla, rosy purple: the plant is of beautiful habit, and if the Public can judge, then this is one of the loveliest Fuchsias sent out. Plants in April, 7*s*. 6*d*.

DAHLIAS.

J. KEYNES, Florist, Salisbury.—"Standard of Perfection," (Keynes).—The finest self-coloured Dahlia in the world! gained the 1st class prizes at Stonehenge, Windsor, Kingston, Surrey Zoological Gardens, and Crown and Anchor, Stockwell; also the 1st prize specimens at Stonehenge Floricultural Society, Stockwell. "It is as round as any Dahlia in cultivation; as complete an unbroken circle as could be drawn with the compasses; and as globular in front as possible. It is symmetrical to a hair, and as double as a Ranunculus. It is so remarkable as to be instantly recognised among a thousand. Colour, deep crimson. It is the flower of the season, and must be had."—*Gardeners' Gazette*, Oct. 14. "The best-grown flower we ever saw, without exception, every requisite to meet the taste of a connoisseur being complied with; good colour, a honeycomb, regularity of growth and disposition in the leaves, and above all, as complete a rotundity of shape as if it had been cast in a mould."—*Salisbury Herald*, Sept. 9, 1843. Plants in May, 1844, 10*s*. 6*d*. "Orange Superb," (Dodd's) first-rate show-flower, 10*s*. 6*d*. "The specimen sent would grace any stand."—Glenny. "Emma Noke," (Dowding's) bluish white, extra fine, indispensable to a first-rate stand, 10*s*. 6*d*. Catalogues containing all the fine old varieties and new flowers for the season may be had on application.—Salisbury, Jan. 30, 1844.

NEW EARLY POTATO.

HURST AND McMULLEN beg to inform the Public they have this season purchased of Mr. Soden, his entire stock of that splendid new Early Potato, *Soden's Early Oxford*. This superior variety has taken the *First* Prize at all the *three Shows at Oxford and other places*, and is allowed to be the earliest and best in cultivation. Sold at 4*s*. per peck, *bag included*. In another column will be found a List of choice Vegetable Seeds.

6, Leadenhall-street, Feb 1, 1844.

JOHN MILLER, surviving Partner of the late firm of Sweets and Miller, Nursery and Seedsmen, Bristol, begs respectfully to inform Nurserymen, the Trade, and his Friends in general, that he has commenced business as Auctioneer and Valuer of Horticultural and Agricultural Stock, &c., and hopes by strict attention to the interest of his employers, to merit their support. Letters addressed to John Miller, Portland House, Kingsdown, Bristol, will meet with immediate attention.—Bristol, January 31, 1844.

NEW HARDY ANNUAL.

VISCARIA OCULATA—DARK-EYED VISCARIA.

T. AND J. BACKHOUSE, Nursery and Seedsmen, York, have the pleasure of offering to the Public the above new and beautiful Annual, which is figured at page 52, (No. 10), of the "Botanical Register" for 1843. The blossoms are of a bright rose colour, with a deep crimson eye, and changing to a pale purple. It flowers very abundantly through the greater part of the summer and autumn. It is a native of Algiers and may be sown either in the open ground in spring, or raised in pots and planted out.

Packets, 2*s*. 6*d*. each, will be sent, on the receipt of a Post-office order, postage free, to any part of the Kingdom.

FINE HYBRIDIZED FUCHSIA SEED.

W. MILLER begs to inform his Friends that he has spared no pains in selecting the best kinds of Fuchsia for hybridising, and now has a few packets of the seeds to dispose of, in packets containing 100 seeds, 7*s*. 6*d*.; 50 seeds, 4*s*. Fine Verbena seed, in packets at 2*s*. 6*d*. and 5*s*. each, with directions for sowing. W. M.'s extensive list of Fuchsias, Verbenas, Pelargoniums, &c. &c. may be had on application, containing a full description of his new productions, by Dodd, Lemaire, &c.—Fuchsia "Constellation;" "Perseus" "Punctata;" Verbena "Blue Queen" and "Zenobia." W. M. has fine plants of his new "Fire Ball" Geranium, at 5*s*. each. The above will be sent post free to any part of the United Kingdom.—Providence Nursery, Ramsgate, Jan. 31, 1844.

DANE CROFT NURSERY, STOWMARKET, SUFFOLK.

SAMUEL GIRLING, English and Foreign DAHLIA AGENT, submits the following choice SELECTION of DAHLIAS to his numerous Friends for 1844, plants of which may be had early in May; they are all faithfully described, and early orders are respectfully solicited, as the stock of some of sorts is very limited. General Catalogues of DAHLIAS, GERANIUMS, PANSIES, FUCHSIAS, and VERBENAS, can shortly be had, on prepaid application.

BEAUTY OF SUFFOLK (Bass's).—Bronzy purple, of superior form and excellent habit; a constant and extra show-flower; seedling prizes at Ipswich and Stowmarket. Height 4 feet.—Price 7*s*. 6*d*.

BERMONDSEY BEE (Pascoe's).—A crimson purple, of excellent form and fine general habit, well cupped, and when well grown one of the best Half Dahlias in cultivation.—4 ft.—10*s*. 6*d*.

MODEL (Bourn's).—Dark purple, of first-rate form; has taken first prizes at the Metropolitan and other shows, and pronounced a first-class flower. 4 ft.—10*s*. 6*d*.

NONPAREIL (Pascoe's).—Ruby scarlet, of first-rate form, habit excellent, free bloomer, pronounced by the Horticultural Society of London, and at the Slough exhibition, to be a first-class flower. The stock of this beautiful Dahlia is limited, and unless it breaks well will be lost in another year. No allowance on this variety unless six plants are ordered. Glenny's opinion of this Dahlia is, that well grown it will be a trimmer. 4 ft.—10*s*. 6*d*.

ORANGE PERFECTION (Bourn's).—Of good form and colour, an extra second-rate show-flower, rather low in the centre, but sometimes well up, when it will beat all the Orange varieties. 4 to 5 ft.—7*s*. 6*d*.

RED ROVER (Girling's).—Of good general properties and extra fine habit; colour fine red, and useful for standards. 4 to 5 ft.—7*s*. 6*d*.

TALMA (Girling's).—Purplish rose, of superior form and little short of first-rate; rising centre and very constant. 4 ft.—7*s*. 6*d*.

SIR JOHN STEWART RICHARDSON (Union, in which Girling has a share), which is one of the most popular Dahlias of the season. No allowance on this variety unless 12 plants are ordered. 4 ft.—10*s*. 6*d*.

FANCY DAHLIAS.

CORNELIA (Girling's).—Purple, tipped with white; of good habit and very distinct. 4 ft.—5*s*.

GARLAND (Girling's).—With three colours—cream, sulphur, and brown tip; of good form and habit. 5 ft.—5*s*.

MADAME MIELLEZ (Girling's).—Rose-lilac, tipped or striped with white; a distinct variety, of good habit. 3 to 4 ft.—5*s*.

MADAME DE BERGHE (Girling's).—White edged with pink; a distinct and beautiful variety. 3 ft.—5*s*.

MADAME CHAUVIERE (Girling's).—Light crimson tipped with pure white; very constant, good shape, and one of the finest border Dahlias in cultivation. 4 ft.—5*s*.

VILLAGE MAID (Girling's).—Colours white and purple, distinctly and beautifully tipped; good habit, and superior border variety. 3 to 4 ft.—5*s*.—Stowmarket, Jan. 31, 1844.

BUSHELL'S Light Seedling Dahlia "EMMA."—Plants in May, 10*s*. 6*d*. Colour white, tipped with deep cherry; the petals, form, and centre, good; the largest, most constant, and free in flowering of any Dahlia yet propagated, and has obtained several prizes. "Pet Rival" Plants in May, 5*s*. Colour, purple maroon; fine cupped petal and free bloomer; exhibited in several winning stands last season. Kensington Nurs. Plants in May, 5*s*.; most constant Rose grown. To be had of Messrs. Ansell, Camden Town; S. Girling, Stowmarket; F. and A. Smith, Hackney; and J. Bushell, 13, Hall-place, Kensington-lane.

HYACINTHS AND GROWING STOCK.

HUMPHREYS'S COMPOUND, applicable to all Greenhouse Plants, to Hyacinths and other Bulbs, and to promote the germination of Seeds. Sold in bottles 1*s*. 6*d*. each, by Flanagan and Son, Mansion-house-street; Hurst and McMullen, Leadenhall-street; W. Glass, Bishopsgate-Within; Smith, Islington Nursery; Garraway and Co., Covent Garden; Batt and Rumsey, 41*a*, Strand; William and John Noble, Fleet-street; Sayer, Covent-garden; Charlwood, Tavistock-row; W. J. Nutting, 21, Cheapside; G. Lawrence, 18, Piccadilly; John Keenan, Great Russell-street, Covent Garden; Lockhart, 155, Cheapside; Shrivenewood, Pantheon; Miner, Adams, and Naab, 68, Strand; Twaites and Son, Islington; Thomas Ansell, Camden Town; Thomas Watkinson, Market-place, Manchester; W. E. Rundle, Plymouth; Dickson & Co., Edinburgh; Fowler, Lewis, Fiehn, Holmes, and Co., Sheffield; P. Lawson and Son, Edinburgh; and other leading Seedsmen in town and country. Wholesale Agents, Davy, Mackenrodt, and Co., 109, Upper Thames-st., London.

MARNOCK AND MANLEY'S CATALOGUE of NEW AND CHOICE FLOWER-SEEDS, and Particular Directions for the best Modes of Cultivation, with the Treatise on the Winter-hardy Cauliflower is now ready, and may be had on application.

Their Stock of trained Fruit-trees are exceedingly fine, consisting of all the leading varieties of Peaches, Nectarines, Apricots, Plums, &c. Also the following Cherries:—Harrison's Heart, Black Heart, Adam's Crown, Waterloo, Knight's Early Black, Florence, Black Eagle, Downton, Late Duke, May Duke, Bigarreau, Elton Napoleon, Early Purple, Circassian, Kentish, Morello of sorts, &c. Prices may be had on application at their Nursery, Hackney, London.—Jan. 31, 1844.

FASTOLFF RASPBERRY.



YOUELL AND Co. have much pleasure in announcing they have now ready for sending to any part of the United Kingdom, fine Canes of the above highly valuable and much-esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour.

IT IS PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, THE MOST NOBLE THE MARQUIS OF AILSA, HIS GRACE THE DUKE OF RUTLAND, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

For further particulars they beg to refer to their Advertisement of the 27th of January: Prices as follows:—

Packages containing			£	s.	d.
100 Canes	.	.	1	0	0
Do. 50 do.	.	.	0	5	0
Do. 25 do.	.	.	0	14	0

Package included.

The usual discount to the Trade, when not less than 200 are ordered.

*** CAUTION.—Y. and Co. beg to call the attention of their Friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and cannot be held responsible for its being genuine, unless purchased direct from their Nursery.

YOUELL'S TOBOLSK RHUBARB, Patronised by Her Most Gracious MAJESTY the QUEEN, and many of the Nobility, 12s. per dozen.—For particulars of which see their Advertisement of the 18th November.

TWO NEW SEEDLING PICOTEES.—"LADY ALICE PEEL," 10s. 6d., and "MRS. BENTON," 10s. 6d. per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs. YOUELL and Co., for particulars of which see their Advertisement in this Paper of the 10th of Sept.

FINEST CARNATIONS AND PICOTEES.

YOUELL AND CO. beg to refer the readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows:—

	£	s.	d.
12 pair of good Show Sorts	1	4	0
12 ditto fine ditto	1	10	0
25 ditto ditto	3	0	0
12 ditto extra fine and very superior ditto ..	2	10	0
25 ditto ditto ditto ..	5	0	0

The selection being left to YOUELL and Co.

FUCHSIAS.

1 dozen of the newest and very best sorts ..	21s.
1 dozen fine ditto	12s.
1 dozen good show varieties	8s.

Sent by post, free, to any part of the United Kingdom.

ARAUCARIA IMBRICATA.

YOUELL AND CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year-old plants, 8 to 9 inches high, 10s. per 100, or 20s. per dozen.—Great Yarmouth Nursery, Feb. 1, 1844.

FUCHSIA SEED.

YOUELL AND CO. beg to inform their Friends and the Public they have succeeded in saving a small quantity of the above from the very newest and best varieties, which they offer upon the following terms:—

A packet containing	100 seeds	10s.
Do.	50 do.	6s.

Sent post free on the receipt of a Post-office order. Directions for sowing, &c. will accompany each packet.

This will form an admirable opportunity to those who intend competing for Seedling Prizes at the exhibitions of the present year. The quantities being very limited, early application will be necessary.—Great Yarmouth Nursery, Feb. 1, 1844.

GAINES'S NEW AND FIRST-RATE PELARGONIUMS now ready for delivery in strong, healthy Plants. The following are a few selected:—Gaines's Elegans novus, King of Bedders, Acklam, Lady Prudhoe, Saxon King, Excelsa, Beauty Supreme, Mogul, Edith, Countess of Zetland, Cotherstone, Egbert. A list of Pelargoniums, Pansies, Calceolarias, Fuchsias, Verbenas, Auriculas, Cinerarias, Chrysanthemums, Dahlias, &c., which contains many new Seedlings of first-rate qualities; plants in May, 10s. 6d.; also a few roots of his Seedling Dahlias PRINCESS ALICE and TWICKENHAM RIVAL are still to be disposed of at the Nursery, Surrey-lane, Battersea.

FLORISTS' FLOWERS.—As the season for planting Ranunculuses is now on, J. and W. PINLAYSON, Florists, Paisley, respectfully intimate to the admirers of that beautiful flower and to Florists in general, that they have at present an excellent stock of their Splendid New Varieties, which they now offer for sale at greatly reduced prices, viz.—

		£	s.	d.
50 superfine sorts, one root of each		3	0	0
50 " " one pair of each		5	5	0

Many of these have been sold at 5s. to 10s. 6d. per root, and their superiority over the old sorts is always apparent at competitions, where they invariably carried off the prizes. Also a Splendid Collection of Auriculas, comprising most of the leading sorts in the country, with many new and rare varieties. Also Polyanthuses, Pinks, Pansies, Carnations, Dahlias, Tulips, Phloxes, Antirrhinums, Herbaceous plants, &c. &c. Catalogues may be had on application, post paid. A remittance or reference will be required from unknown correspondents.

TO GENTLEMEN PLANTING.

J. AND J. FAIRBAIRN are induced from the uncertainty upon which they hold the Manor-street Nursery (situated contiguous to the Home Nursery, Clapham Rise, where attention will be given to all applications), to effect a Sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy and well-grown stock, consisting of fine large Laurels, twice transplanted, of extra growth; Portugal Laurels, very handsome; Green Hollies, of various sizes; Evergreen Privets, fine Standard and Dwarf Roses in great variety, fine standard fencing Thorns, Almonds, Æsculus, Robinias, and other Ornamental Trees, and Evergreen and flowering Shrubs, with a large stock of fine standard and dwarf, trained and untrained Peaches, Nectarines, Apples, Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled; also, a large assortment of Forest Trees, consisting of Limes, Elms, Birch, Beech, Hornbeam, Spanish and Horse Chesnuts, Mountain Ash, Poplars, and Spruce, and Scotch Firs, also a large number of Gooseberries and Currants, of excellent growth, and of the best varieties in cultivation, to all of which J. & J. F. respectfully invite the inspection of Gentlemen and Nurserymen, flattering themselves that the general character of the Stock is such as to ensure unqualified satisfaction, and which they are disposed to offer at very moderate prices for cash.

J. & J. F. respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c., which has lately appeared in the *Gardeners' Chronicle*. (Oct. 21 and 28.)

Nurseries, Clapham, near London, Jan. 31, 1844.

SPLENDID NEW SEEDLING CINERARIAS.—Fine early-flowering strong plants of CINERARIAS, saved from the very choicest sorts of blue and crimson colours, selected from between five and six thousand Seedlings of last year. Those purchasing will have an opportunity of flowering some of the choicest sorts in cultivation, remarkably healthy, and having a large stock they can be sold at 2s. and 1s. per dozen, carefully packed for any part of the country. Applications including Post-office orders will be immediately executed. Large bunches of RUSSIAN VIOLETS in full flower, fit for potting, 6s. and 9s. per doz.—Direct to MICHAEL BARNES, Sen., Cambridge Nursery.

TO GENTLEMEN and AMATEUR FLORISTS.—As the return of spring is fast approaching, so is the planting of that beautiful flower the RANUNCULUS. A few hundred roots to be parted with (with names), and a single root of the very high-coloured purple flower "Quixos," will be included in each hundred roots; the time of planting, February and March. Apply, pre-paid, to Mr. EVANS, Farnham, Surrey, where may be seen, in the blooming season, in Mr. EVANS's Collection of PELARGONIUMS, the Seedlings, and other specimens of this most delightful, still improving flower.—Farnham, Surrey, Jan. 31.

J. KERNAN has now received his entire Collection of New VEGETABLE and FLOWER-SEEDS, which includes every Novelty really desirous, recently introduced:—

	s.	d.
Fine Early Kent Peas, per quart	1	0
Prince Albert do.	3	6
Racehorse do.	1	0
Early Warwick do.	1	0
Shilling's new Grotto do.	3	0
Thompson's Early Dwarf ditto	1	6
Stubbs' New Dwarf do.	1	6
Groom's Superb ditto	1	0
Knight's Dwarf Green do.	1	0
" tall do.	1	0
Victoria Marrow	1	0
Bishop's Dwarf do.	1	0
Nonesuch do.	0	9
British Queen do.	3	6
Matchless do.	1	0
Bedman's Imperial do.	0	9
Scimetar ditto	0	9
Early Mazagan Beans	0	6
" Longpod do.	0	8
Royal Dwarf do.	0	8
Green Genoa do.	0	9
Large Windsor do.	0	9
Dwarf French, of all sorts	1	0
Mercer's Pearly Cauliflower per oz.	1	0
Walcheren ditto	1	0
Large Asiatic ditto	1	0
Early Horn Carrot, per oz.	0	4
Surrey do.	0	4
Altringham, and large White, for Cattle, per lb.	1	0
Seymour's New Superb Red and White Celery, per paper	0	6
Myatt's Cape Broccoli, per oz.	1	0
Grainge's do.	1	0
And all the other kinds, " 9d. to	1	0
Brussels Sprouts, foreign seed	1	0
Acme of Perfection Cucumber, finest known, per paper	1	0
Kerrison's, Walker's, and Sion House ditto	1	0
New Cabul Melon, per paper	1	0
Windsor Prize, Sion-House, Greenflesh, Netted Cantalonpe, Black Rock, &c. &c.	0	6
New Olive Radish, fit in 18 days in a frame	1	0
Early Salmon and Scarlet do., per quart	2	0
All the best keeping Onions, per oz.	0	6
Imported Early Dutch Turnip	0	3
Ash-leaf and Early Frame Potatoes, with several good-keeping kinds; Very Choicest Grasses (hand-picked), for Lawns; all the most beneficial kinds for laying down. Separate or mixed; if mixed, per bushel	10	0
Tuberoses, per dozen	4	0
Anemones, per lb., 5s. to	20	0
Lilium lancifolium album, flowering-bulbs, each	3	6
Lilium speciosum, strong, true	31	6
" lancifolium punctata	7	6
" superbum, flowering	2	6
" eximium	1	0
Giant Asparagus, 2 yrs., per 100	6	0
" Sea Kale	10	0
Mushroom Spawn, per bushel	0	0
Skirving and Laing Swede Turnips	1	6

With all the other new kinds.

Dulley's Early Scarlet Admirable Rhubarb; all the new Strawberry Plants, true to their kinds.

Heartsease, Picotees, and Carnations, named; Rivers' New Edition of the Rose Amateurs' Guide, 6s.

Rivers' Catalogue of Fruits, with directions for Culture, by foot-pruning, 1s 6d.

Paxton's Cottagers' Calendar, 3d., which Ladies and Gentlemen should present to Cottagers.

Seeds for Distribution to Cottagers at cost price.

Seed of Dwarf Furze and Broom; Seedling Barberries for Underwood. Spring Tares.

Everything new in Flower-seeds, of which Catalogues will soon be ready.—4, Great Russell-street, Covent Garden.

RANUNCULUSES, ANEMONES, CARNATIONS, AURICULAS and LILIUM LANCIFOLIUM.

H. GROOM, Clapham-rise, near London (removed from Walworth), by appointment FLORIST TO HER MAJESTY, begs to remind the Nobility, Gentry, and Amateurs, that this is the best season for obtaining Collections of the above Flowers, and that in consequence of the success he had in their cultivation last year, he can offer them at the following moderate prices:—

	£	s.	d.
100 Ranunculuses in 100 superb sorts with names	4	4	0
100 do. in 100 very fine sorts, do.	2	10	0
Superfine mixtures, from 7s. to 21s. per 100.			
100 Anemones in 100 superfine sorts, with names	2	10	0
100 Do. in 50 do. do.	2	0	0
Superfine mixtures, 10s per 100.			
25 pair of Carnations, in 25 superfine sorts, with names	3	10	0
25 pair of Picotees, in 25 do. do. do.	2	10	0
25 Auriculas, in 25 superfine sorts, with names	3	13	6
Lilium lancifolium album, good bulbs, each	0	3	6
" " " large bulbs, each	0	10	6
" " punctatum, good bulbs, each	0	7	6
" " " large bulbs, each	1	1	0

Catalogues may be had on application.—Jan., 1844.

ANEMONES AND RANUNCULUSES.—The entire Stock of an Amateur Florist, who has spared no expense in procuring the finest sorts, but whose garden having been sold for building purposes, is compelled to part with them, and offers them on the following terms:—

RANUNCULUSES

100 Roots, finest sorts, double, named flowers	21s.
50 extra extra ditto	15s.
100 fine ditto in mixture	8s.
100 ditto, second quality	5s.
50 Tyso's best semi-double ditto for seed	4s.
Packets of 300 seeds saved last year	1s. 6d.

Packets of 300 seeds saved last year 1s. 6d.

Any of the above will be sent post paid on receiving a remittance by Post-office order, or letter stamps to the amount wanted.

ANEMONES.

100 Splendid, named, double flowers	21s.
50 extra fine ditto	12s.
100 fine ditto in mixture	7s.
50 fine scarlet ditto in mixtures	8s.
Packets of seeds, each	1s.

Apply to S. G. LAING, Wine-merchant, Dundee.

EARLY PEAS, &c.—HENRY D. CORMACK, EXHIBITOR, &c., begs to inform the readers of the *Gardeners' Chronicle* that they can be supplied with the following Early and Prolific Varieties, viz.: Cormack's Prince Albert, British Queen and Early Kent Peas; Taylor's Improved Windsor, and Johnson's Wonderful Bean; Manchester Red and Seymour's White Celery; Walker's Long and Hamilton's Cucumber, &c., with every other variety of Horticultural and Agricultural Seeds, at his Wholesale and Retail Seed Warehouse, 100, Deansgate, Manchester.

SHILLING'S EARLY GROTTO PEA.

J. AND S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Grotto or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and nearly double the size of any other Pea in cultivation. Quite hardy, will stand the winter well, and a good bearer; the pod large and long. They would particularly recommend it to the attention of Market Gardeners. Price 3s. per quart; 10s. per gallon; 17s. 6d. per peck; 30s. per half-bushel; 2l. 10s. per bushel. Agents:—Messrs. FIELD and CHILD, 119, Lower Thames-street, London; Messrs. W. and J. NOBLE, 152, Fleet street; Mr. KENNAN, 4, Great Russell-street, Covent Garden; Messrs. HURST and McMULLEN, 61, Leadenhall-street; Messrs. GRAY, ADAMS, and HOGG, Kensington; Mr. T. D. WATKINSON, Market-place, Manchester.—Northwarnborough Nursery, near Odiham, Hants.

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners' Chronicle*. "THE BRITISH QUEEN on light soils, is the best of all kinds, and will drive Knight's Tall Marrow out of the garden." "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time." Both varieties may be had in packages at 3s. 6d. each, at W. J. C.'s wholesale Establishment, Newcross, or the Bedford Conservatory, Covent Garden.

THE undermentioned, with a select Assortment of FLOWER and other GARDEN SEEDS, may be had now, as annually received from the respective growers, at moderate prices, from THOS. D. WATKINSON, ORIGINAL SEED ESTABLISHMENT, 6, Market-place, Manchester:—New Early Dwarf Thompsonian Peas, a prolific bearer; Shilling's New Early Grotto; Prince Albert; Knight's Marrow, &c. True Johnson's Wonderful Beans; Large Improved Windsor, Myatt's Treble-curled Parsley; True Walcheren Cauliflower Broccoli; Cuthill's Long Black Spine and Manchester Improved Long Frame Cucumber; Whyte's extra fine Dwarf Red Beet; True Altringham Carrot; and superior Yellow Garden Turnip; Ashleaved forcing Kidneys and other Early Potatoes; Extra fine Red and Pink, Lancashire Giant, Solid, and Seymour's superior White Celery; Tobacco Paper; Mushroom Spawn, &c. &c. Catalogues on application.

Agent for Whitney's Waterproof Composition and Humphrey's Compound. May's Select Pansy and Hollyhock Seed, in packets at 2s 6d. and 5s. each.

R. WHITE & Co.'s Collection of Plants, of which a Catalogue is now in the press and will be ready in about a week, comprises every variety of Geranium, Fuchsia, Verbena, Chrysanthemum, Dahlia, &c. which is worthy of cultivation. The following collections are offered, the selection being left to the purchaser:—

		£	s.	d.
40 first-rate varieties of Geranium		5	0	0
20 " " do.		3	0	0
12 " " New do.		3	0	0
20 " " Fuchsia		1	1	0
40 " " Chrysanthemum		1	1	0
20 " " Verbena, including Seedlings which were submitted to Dr. Lindley for his opinion, and reported to be "all very fine," see *Gardeners' Chronicle*		1	1	0
12 first-rate Dahlias	Alfred	1	1	0
100 fine show do.		2	10	0

The above will be ready for delivery in strong plants the first weeks of April and May; and orders containing remittances will be executed in strict priority. Orders amounting to 5l. will be delivered free.—WANTED, a RESPECTABLE YOUTH as APPRENTICE.—Poole Nursery.

CAMBERWELL.—CAMDEN NURSERY GROUNDS.

MESSRS. ELLIS AND SON will SELL by AUCTION, on the above Premises, near Camden Chapel, Peckham-road, on Tuesday, the 6th of February, and following day at 11, on account of the number of lots, under distress for rent, the entire STOCK, Buildings, and Tools; consisting of two capital Greenhouses, 26 feet in length, heated by hot-water-pipes, forcing pits, Cucumber and hand-lights, Shop fixtures, a case of 150 drawers labelled for seeds, and sundry tools. The stock includes an extensive assortment of standard and wall-fruit trees, a great variety of well-selected Roses, Geraniums, and Greenhouse plants, Picotees, Auriculas, Dahlias, Jessamine, Myrtles, Camellias, American plants, Shrubs, and Evergreens, some good specimens of Ornamental trees, and fine Mulberries, a number of Gooseberry and Currant trees, various seeds, &c. To be viewed three days prior to the sale. Catalogues may be had on the premises; at the Horns, Kennington; of Messrs. Fairbairn, nurserymen, Clapham rise; of Messrs. Forrest and Co. nurserymen, Kensington-road; and of Messrs. ELLIS and SON, auctioneers, 36, Fenchurch-street.

VALUABLE NURSERY STOCK, IVER HEATH, BUCKS.

MESSRS. SEDGWICK AND SON have received instructions to Sell by Auction, on the Premises, near the Crooked Billet, on Iver Heath, on Monday, February 12, at Eleven, in convenient Lots,

About 2000 fine PORTUGAL and other LAURELS from 1 to 8 feet, a very large and choice collection of standard and dwarf Apple, Pear, and Cherry trees; some very handsome Yew plants of good growth, Larch, Spruce, and Scotch Firs; seedling Oak and other Forest trees, plain and variegated Box, Arbutus, Privet, and other Forest trees, plain and variegated Box, Arbutus, Privet, Laburnums, Scarlet Thorn, Lilacs, Roses, &c. &c. &c., in the Nursery adjoining the road leading from Uxbridge to Langley.

May be viewed four days prior to the sale (Sunday excepted), when catalogues may be had at the Crooked Billet, Iver Heath; at the principal Inns in the neighbourhood; at the King's Arms Inn, Oxford Street, London; and of Messrs. SEDGWICK and SON, land and timber surveyors and estate agents, Rickmansworth, Herts.

TO GENTLEMEN AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE and MORRIS are instructed by the Proprietors to submit to public competition, in consequence of the expiration of lease, on MONDAY, MARCH 4, 1844, and following days, at 11 o'Clock, THE STOCK OF ONE OF THE KENSINGTON NURSERIES, next the Great West Road, consisting of large, healthy, and well-grown Specimens of Ornamental Trees and Shrubs, of every description, Variegated and Green Hollies, Evergreen Oaks, and Cork-trees, Large Fan and other Yews, twice-transplanted Common and Portugal Laurels, Arbutus, Alaternus, &c., Hemlock Spruce, Pinus Laricio, P. austriaca, and nigricans, &c. &c. These Grounds have long been celebrated for the Health and Beauty of their Trees and Shrubs, and safety of removal, and well worth the attention of those Gentlemen who intend Planting in the spring. American Nursery, Leytonstone.

In an Advertisement of Messrs. PROTHEROE & MORRIS inserted in this Paper of last week, it is stated that these gentlemen have instructions from the proprietors to offer for sale the stock of "One of the KENSINGTON NURSERIES next the Great West Road." As our Nursery is situated next the Great West Road, and a great part of it is in the parish of Kensington, it is known to many of our customers by the name of "The Kensington Nursery," and the names of the proprietors not being given in the Advertisement, they may naturally suppose that it is our stock which is to be sold. We therefore inform them that such is not the case, but that we are prepared, as usual, to execute their esteemed orders, which shall be attended to with the greatest possible care and promptitude.—GRAY, ADAMS, and HOGG. Brompton Park, Kensington Road, Feb. 1844.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the Exhibitions of Flowers and Fruit, in the Society's Garden, in the ensuing season, will take place on the following Saturdays, viz., May 18, June 15, and July 13. In addition to the regulations already announced, it has been resolved that the Judges be instructed, in making their awards, to take into consideration, whether the Plants to be judged have been exhibited previously during the season. Full information concerning these Exhibitions can be obtained upon application at 21, Regent-st.

GARDENERS' CHRONICLE.—Wanted a clean and perfect Copy of the 1st and 2d vols. of the *Gardeners' Chronicle*; any one having the same to dispose of (or a complete set) will receive immediate attention on stating price, &c. to Mr. W. T. JACKSON, Bookseller, Bury St. Edmunds.

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg respectfully to refer their Friends to "Harrison's Floricultural Cabinet" for February, for their Advertisement of New and Select VEGETABLE and FLOWER SEEDS. Catalogues may be had on application. POTTER'S CELEBRATED LIQUID GUANO, in quart bottles, at 1s. 6d. each.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 3, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Monday, Feb. 5 ..	Entomological	8 P.M.
Tuesday, Feb. 6	Linnean	8 P.M.
Wednesday, Feb. 7	Society of Arts	8 P.M.
Thursday, Feb. 15	Microscopical	7 P.M.

THE causes of the DISEASES OF PLANTS, like those of animals, may be divided into the *predisposing* and *exciting*. To the predisposing causes must be referred all those peculiarities in the structure and growth of a plant that would render it more liable to be attacked by disease than other individuals. Thus it is found that many varieties and species of plants, from primitive constitution and other causes, are more liable to certain diseases than others. These causes, then, which are frequently most obscure, are predisposing. They should not, however, be lost sight of, as it is an important fact to know that particular varieties or species are most subject to disease. The exciting causes of disease in plants are the increase, decrease, or alteration of the various external agents by which their life is maintained; these agents are light, heat, electricity, air, water, and the soil. It is through their action that the functions of life are carried on, and the plant grows and continues its species. In a state of nature the constitution of plants is adapted to the distribution of these agents on the globe, so that disease is not often met with in those which are wild; but when plants become cultivated, their natural relation to these agents is disturbed; and, like civilised man and domesticated animals, they become the subjects of disease. This does not, however, arise from any positive necessity, but from our ignorance of the precise circumstances by which health may be secured.

In endeavouring to estimate the influence of these agents on the production of disease, it should not be forgotten that diseases may arise from a complication of causes, and not simply from the too great or too little influence of one of the agents. Thus the deprivation of heat may act on plants growing on a bad soil when it would not on those growing on a good one. This will explain many apparent anomalies in the prevalence of epidemic diseases in plants, and will also point out the importance, in reporting cases of diseases in plants, of recording *all the circumstances in the history and position of the plant that can affect its structure or functions.*

The influence of *light* is very great on the healthy growth of plants; it acts as a stimulant, and by its agency the peculiar secretions of plants are almost entirely developed. When deprived of it, what is called *blanching* takes place. This is a disease of the plant, though purposely had recourse to in many gardening operations. Its effect is constantly produced to a greater or less extent on plants grown in this country which are natives of tropical climates, and it often lays the foundation of other diseases. Disease may also occur from excess of light, where plants growing naturally in dark shady situations are exposed to its influence.

Temperature has a more obvious influence on the health of plants than light. The diseases produced by a low temperature are very numerous, and there is no agent that plants will bear the diminution of so little as heat. Much depends on the circumstances of the plants. After the buds have expanded, the parts of the plant appear to bear cold better, the older they are. Frosts often deprive the stamens and pistils of flowers of their functions, and unfruitfulness is the result; leaves are spotted, and canker of the stem and branches are often produced by it. Plants never get inured to cold, for their structure does not appear to possess the adaptability of animals; and consequently, when brought from climates where the average temperature is higher than our own, they are sure, at one time or another, to suffer. Excess of heat frequently produces disease, although its consequences are very slight compared with those of cold. Sudden changes from hot to cold affect the secretions of plants, and to this cause honey-dew is almost frequently to be attributed.

A due supply of *water* in the form of vapour in the atmosphere, and liquid in the soil, is necessary to most plants; but when either in too large or too small quantities, it is the cause of disease. Anasarca, or dropsy, occurs where there is too much moisture in the air; and the excessive development of hairs on particular parts of the plant is a consequence of dry air. When in too large quantities in the soil, canker, a premature falling of the leaves, and other diseases, are the consequence. Withering, and also a falling off of the leaves, is the consequence of too little water.

What influence the composition of the *soil* has on particular diseases of plants we are not in a position to state. Matters which are in excess in the soil are frequently taken up by plants and thrown out again as excretions on the surface. Thus, an excess of salt is often got rid of in the form of an excretion on the leaves by plants growing on the sea-shore. The want of particular ingredients will, it is well known, prevent plants from growing; but what the diseases are they suffer from is at present but little known.

Through the medium of the soil and air, various poisonous agents are introduced to plants. From this cause arise important effects requiring investigation. The precise influence of carburetted hydrogen, chlorine, sulphurous acid, and the gases in the air, is not known; and in the neighbourhood of towns a variety of injurious ingredients get into the soil which are destructive to vegetation.

To the influence of each of the above agents in producing disease we might have devoted a separate article, but our object has been to point out what are the causes of diseases rather than to give any lengthened account of them, in order that our readers may at once begin to co-operate with us in investigating the diseases of plants. When we proceed to describe particularly each disease, we shall have frequent occasion to refer at length to the causes of the departure from health in plants.

With regard to the treatment of diseases of plants, we shall have abundant reason to see that prevention is better than cure. Nevertheless, a knowledge of the causes of disease will frequently enable us, by removing them, to cure them; and this is more particularly the case with shrubs and trees. No treatment, however, can hold out any chance of success that is not founded upon a knowledge of the functions obstructed in diseased parts, and the causes which have contributed to such obstruction. We shall be glad of any communications on the subject of the treatment of diseases of plants, and hope our correspondents will remember that unsuccessful cases are equally valuable with successful ones.—*L. E.*

MOST heavy-land farmers know the value of PARING and BURNING their land. Experience has shown that no operation is to be compared to this for improving the fertility of soil. Gardeners, however, have been but little accustomed to practise it, and usually resort to other means, which, if as effectual, are far more expensive; for burning clay, if properly conducted, has the great merit of costing nothing beyond a little labour.

Why burnt clay should be better than that sort of soil in its ordinary condition, is sufficiently obvious. Its texture is changed. In its natural state it is so adhesive, that air cannot get into it, nor water out of it. It also offers great mechanical opposition to the passage of roots through its viscid mass, and hence it is exclusively inhabited by a coarse and worthless vegetation. Burning changes all this; the particles of clay lose their adhesiveness, and this alone gives a new character to the soil, which offers freedom to the entrance of air and exit of water, and which crumbles readily away beneath the advancing roots of a soft and succulent race of plants.

Such changes are in themselves most important; but this is not all the difference between burnt and unburnt clay. The roots of plants, which were before unable to decay, are reduced by fire to their saline constituents, and so enrich the land. And, moreover, the burnt particles of clay acquire the power of absorbing ammonia from the air, and holding it within their pores till showers fall and wash it into the land, where it immediately acts as a nourishing food to the crops.

The employment of burnt clay in gardens has, perhaps, been neglected in consequence of a supposed difficulty in conducting the operation. In our volume for 1843 we gave an account of a simple method by which large masses of clay may be set on fire for farming purposes; and we now publish the following excellent practical letter from Mr. W. Paul, of Cheshunt, in which his mode of proceeding and the results of it are explained.

It has been the custom here for some years, in spring, when the operations of pruning, &c. are ended, instead of suffering the rough branches to lie about, presenting an untidy appearance, to collect them in a heap, and build a wall of turf round them in a semicircular form about three feet high. They are then set fire to, and when about half burnt down, such weeds and other rubbish as collect in every garden, and will not readily decompose, are thrown on the top, and earth is gradually cast up as the fire breaks through.

During the first two or three days no ordinary care is requisite to keep the pile on fire, but after this, if the fire is not allowed to break through and thus expend itself, it will certainly spread through the whole heap, and almost any amount of soil may be burnt by still adding to the top. The soil we burn is the stiffest loam that can be found within our limits, and is rather of a clayey nature; also turf from the sides of ditches and ponds, in itself naturally sour and full of rank weeds.

The clay thus burnt has been found beneficial in every instance. In black garden-mould, where Peach-trees were disposed to sucker and canker, despite of animal manures and drainage, two or three annual dressings of burnt earth appear so to have altered the soil that they now grow clean, vigorous and healthy, are free from suckers, and produce roots completely matted with fibre. The like success has attended its application to other fruit-trees.

During the summer of 1842, six beds of Tea-scented Roses growing in an alluvial loam (the adjacent fields are of the same soil, and grow large crops of Wheat and Potatoes, but the particles of soil run together after rain, and present a smooth cemented surface) were manured with the following substances, viz., 1, bone-dust; 2, burnt earth; 3, nitrate of soda; 4, guano; 5, pigeon-dung; and 6, decomposed stable-manure. The guano produced the earliest visible effects, causing a vigorous growth, which continued through the season; the flowers, however, were not so abundant, and the shoots did not ripen well, and were consequently much cut with the frost. The bed manured with burnt earth next forced itself into notice; the plants kept up a steadier rate of growth, producing abundance of clean, well-formed blossoms; the wood ripened well, and sustained no injury during winter. The results of the other manures were not remarkable—acting as gentle stimulants, the nitrate of soda and bone-dust least visibly so—although they were applied in the quantities usually recommended by the vendors.

From the fact of the beds of Roses being all planted at the same date, and their progress being carefully watched, I would suggest the application of burnt earth as an excellent manure for Roses in adhesive soils, as well as for fruit-trees where disposed to canker. Whether it acted by furthering drainage, or by opening the soil to the fertilizing influences of the atmosphere, or by fixing the ammonia conveyed to the soil by rain, I do not pretend to say, but its value is sufficiently apparent. I believe it is considered that the vegetable matter contained in soils is destroyed by the act of burning; and I do not think the remains of the materials used in combustion could exercise any extended influence, as the quantity compared with the earth burned is so small, and the earth comes from the heap burnt red and hard, and a great portion quite free from the remains of the substances used in ignition.

Our readers will remember Mr. Rivers's advice about roasting turf, of the use of which this is a confirmation. It is perhaps as well to add, that burning is more injurious than advantageous to light soil.

THE ROSE GARDEN.—No. III.

(*Continued from page* 53.)

The following, which was taken from the side of a road from whence it was observed, may be considered as an extraordinary specimen for height, shape, health, size, and vigour.

The stem perfectly straight, with 36 branches upon it, many of which had side-shoots upon them; but as one-half of these were cut off in removing the head, and the remainder were close below them, the stock itself being very close-jointed, and the lower branches small, they formed little or no objection to the stem when removed.

When replanted, the height of the shoot was five feet one inch from the ground; it then divided itself into four branches, which were left for budding upon. The circumference at the base being four inches and a quarter, the centre three inches and a quarter, and at five feet one inch from the ground, two inches nine-sixteenths, the base being the largest part of the plant, which diminished gradually to the top.

The species was the green and brown, or grey striped, the prickles similar to those of the Eglantine in regularity; the wood so clean, that there was not a speck upon it, and the whole appearance that of an extremely healthy and vigorous plant of three seasons; its strongest shoots the autumnals of the present year, and near the top of the head; evidently showing that the sap was not likely to desert the stock and escape in suckers the next year. The root was, however, large, and furnished with but two or three fibres, which were found quite sufficient to maintain the plant in full vigour when moved. The branches left for working were not, however, fit for the purpose for want of a sufficient flow of sap, and were removed in the winter; but had they been taken off in the first instance, young wood would undoubtedly have been formed fit for use. From two feet six to three feet high to the first branch, and one inch three-quarters in circumference, may be considered a good size (very much above the average) for plants at their best, viz., either as ripened suckers of the current, or seasoned ones of the preceding, year.

The French Stocks are considered far superior to the English, and in consequence, when worked, afford an article of much commerce between the two countries; in France more trouble is bestowed upon worked Roses, as well as a more practical degree of knowledge. A large quantity of Stocks are placed in pots, and plunged for working, by which the roots are probably multiplied, (a circumstance in general the case in confined spaces, by which nature makes up to a certain degree for extent,) and

the branches are seldom mangled after having been worked. The climate alone, however, would be sufficient to account for a material difference between the produce of the two countries.

It is worth the while of an Amateur to observe an importation of unpotted French Rose trees on their arrival. If the lot be a picked one, he would hardly recognise the plants to be of the same species as those upon which he had been accustomed to operate, or believe the head produced upon them to be the growth of a single year. If, however, he is tempted to buy, not only the heads and stems must be taken into consideration, but the roots also—the French are in the habit of budding in hedges, and of removing the plant from thence for sale. If several suckers have arisen from the same root, and all but one be cut away, it is evident that the stem so left will receive the nourishment of the whole root; and if a bud be placed on such stem it will form a complete head in one season; yet when the plant is removed, the root will be found far too large, woody, and unsupplied with fibres for transplantation in its present shape, and when reduced and removed, its vitality may be destroyed, and must be injured, and it is not therefore likely to maintain the head it carries during the present year, in vigorous health through the next.

The largest Stocks are those which have an oval fruit, (they are called indiscriminately, Dog Roses, Buckbriars, Hangbriars, &c. by the countrymen, though the varieties are endless); with these, if the height be proportioned to the size, no support is necessary even when the tree is complete, unless the head be very large; but as different Roses require different Stocks, this advantage with some species of Rose cannot be obtained.

The produce of one hedge will be found to differ from that of another most materially, both as to size, height, woodiness, colour, mode of growth, &c.: some being covered with prickles like the Eglantine, some with prickles more dispersed, some have the bushy growth of the common China, shooting apparently from one joint just below the soil; others with a confused root like the small species of Lilac; some travelling over space after space by means of suckers; some with compact, others with straggling heads; some places appear to produce nothing but inferior stocks; others none but the tallest and stoutest.

The small green round-berried stocks are least able to resist the frost; they are, in consequence, planted double the height required, left to grow as they please, and budded a foot from the ground in the stem instead of the shoot, which the thinness and flexibility of the bark renders extremely easy, being thus suited for pots, &c.

Youth, as above stated, is not a matter to be insisted upon, but as all young plants of the wild Rose will generally be found to possess the most fibrous roots, they are in consequence more likely to maintain their power of free growth when transplanted than old ones.

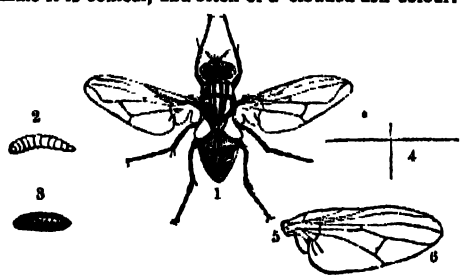
(To be continued.)

ENTOMOLOGY.

The House Flies.—Amongst domestic plagues flies are generally included. Few persons know from whence they come, or are aware that there are numerous species which inhabit our dwellings; some a good deal resemble each other, it is true, whilst a few are so very dissimilar, that, even to the indifferent observer, there is such a marked disproportion in size, that the smaller ones are at once pronounced to be the young of the larger individuals. In our days, when Natural Science has arrived at such a degree of perfection as it had never previously attained—when every year, indeed, every week, brings forth works of amusement and instruction adapted to every age, as well as for every class of society—when we have such popular volumes as Kirby and Spence's "Introduction to Entomology," "Penny Magazines," and equally cheap Cyclopædias—it seems incredible, to those who have a taste for scientific pursuits, that any one in England should not be better informed concerning the works of the Creation which daily surround us, than to suppose that flies vary in size according to their age, and that consequently the large and small are the old and young of the same species. To assist in dissipating such errors, and to establish truth in their stead, being our great aim, we will introduce the history of the House-fly. There are fifty, perhaps a hundred, different sorts of flies and gnats which annually visit our apartments: I mean regular domestics, for if casual visitors be included the numbers will be quadrupled. Amongst the former are the Green-bottle flies, the Blue-bottle or Flesh-fly, and another very like it called the Larder-fly, bouncing against the windows; then there is the biting House-fly, which interrupts our reveries by stinging the legs and ancles, also the lesser and larger House-flies, alighting on our food and soiling the furniture.

Their economy and transformation being similar, we need only give the history of the last at present. The House-fly, like most other insects, lays eggs, and probably a considerable number; these are deposited in hot and moist dunghills, and probably in putrifying vegetables and refuse in gardens, muck-bins, and similar situations, and hatching into minute maggots of a dirty white and yellow colour, they feed until they arrive at the size of fig. 2, and greatly resemble the gentles which are used for bait in fishing, and which are generally the maggots of the Blue-bottle fly—except that they are totally destitute of the fleshy tubercles which those larvæ have the power of protruding from their bodies to aid their locomotion. When fat and full-fed, they lie dormant a few hours, during which time the skin hardens and becomes an oval cylindrical horny case, of a chesnut or rusty brown colour (fig. 3); and in this the two-winged flies, called Diptera, differ, perhaps, from all the other orders of insects, which cast their skins when they become chrysalides. In this quiescent state they remain from a few days to as many weeks, according to the temperature, many of them, no doubt, sleeping through the winter. Whilst in this state of repose, the recent maggot is undergoing a wonderful transformation within his own skin, which at last opens at one end by a little circular lid, and out creeps the House-fly with its body and six legs, as large as they are at any subsequent period of its life—indeed, the abdomen is often larger, as it is filled with a fluid, which is afterwards discharged; but without this the wings would not expand: for when the fly issues from his tomb, the only part which has to grow is the wings; these are two little crumpled moist objects on each side of its body, like two pockets; its first object, therefore, is, before they dry, to crawl up a wall or straw, when the fluid gravitates or is forced into the nervures or delicate veins of the wings, which expands all the wrinkles, for they are not folds, and at last these organs are stretched out and covered with a delicate transparent but iridescent membrane, and then the little animal is ready for flight.

It is now time to describe the Housefly, which is magnified (fig. 1), the cross lines showing its natural dimensions when the wings are expanded. It is one of the few insects which still bears the name assigned to it by Linnæus, who called it Musca domestica; it is clothed with black hairs and bristles; the antennæ are black, with feathered setæ; the eyes are remote, particularly in the females, and are of a dull or brownish red; the space between them is black, but the face is satiny yellowish white, and a similar line surrounds the eyes; the thorax is bright grey, with four blackish longitudinal lines; the abdomen cinereous or clouded ochreous, with a blackish line down the back, and smaller elongated spots on each side, varying with the light; the belly is ochreous, base of the wings yellowish; the six legs are long, slender, and blackish. The abdomen of the male is of a transparent ochre on the sides, and the apex is rounded; but in the female it is conical, and often of a clouded ash-colour.



A very accurate observer, Mr. R. H. Lewis, says—that this and some other flies "were common in the ship from England to Van Diemen's Land, breeding in the rotten Potatoes, &c. No wonder, therefore, that this fly is so much diffused; and it will probably be difficult to fix its original country. I can state from personal observation that the Musca domestica of Canada, the United States, Cape of Good Hope, and Hobart Town (where they are very numerous), are identically one and the same species with that of England; and from the facility with which it propagates, I think it probable that it is to be found in every part of the world. * To the same genus belongs Musca Cæsar Linn., the Green-bottle fly, † and the Musca vomitoria Linn., the Blue-bottle or Flesh-fly; but another, exceedingly like it, the Larder-fly, is associated with another genus, and is named Anthomyia lardaria; the nervures of the wings are different, as shown in fig. 5, those at fig. 6 being parallel; whereas, in the true Musca, fig. 1, the cells are closed, or nearly so, by oblique nervures. The Lesser house-fly is now a member of the genus Anthomyia also, and is the M. canicularis Linn.; it is very like M. domestica in colour and markings. The biting Housefly, although so like the darker female of M. domestica, is far removed from it, by the structure of its mouth, which is horny and formed for piercing; it is named Stomoxys calcitrans. ‡ —*Ruricola.*

FAMILIAR BOTANY.

Morphology.

"You see one pervading idea, worked out in every portion; no one thing appearing as an after-thought, though perhaps not introduced till a period long subsequent to the first foundation. The true spirit of Gothic architecture is that of living vegetation: it is the expansion of the vitality of the germ; and, where this vitality exists, each addition harmonises as naturally with the portion upon which it is based, as the leaf does when it springs out of the branch, and as the flower does when it blooms amongst the verdure. However the building may spread and fructify, it is still one organic whole; and this is truly a transcendent excellence, which no other production of human art ever acquired."

Thus speaks a clever modern writer, when describing the Cathedral of Cologne; few consider with what truth and justice, as regards the beautiful simile derived from the vegetable world. Let me endeavour to illustrate the Author's meaning, and work out at length an idea rich in admirable truths, pregnant with the true philosophy of Natural History, and having a direct, though perhaps not apparent, relation to some of the commonest facts of Gardening.

In modern times there has sprung up a branch of science named *Morphology*, so called from two Greek words signifying *a talk about form*, the object of which is to show that in all the works of the creation the plan of structure is extremely simple, although the object constructed may be very complicated; that things, the most unlike, owe their want of likeness to peculiar combinations of things similar, or even identical, and not in their original nature distinct; and, in short, that the multitudinous forms with which all nature teems, are so many evidences of the most amazing skill applied by an allwise Creator to the construction of living matter out of a few general and simple parts.

The Mineralogist shows that chalk, Carrara marble, and Iceland spar—peculiar combinations of a kind of air called carbonic acid, and of lime—are the same thing with their particles in different states of cohesion; and that charcoal and the diamond, flint, rock-crystal, the amethyst, and opal, stand in a similar relation to each other. The Chemist finds gum, starch and sugar to be mere compounds of charcoal and water; four so-called elements to be the basis of all the various forms of vegetation; and possibly two elements, each an impalpable air, to constitute all matter. In like manner, in the vegetable kingdom, experience teaches us that, putting aside the common nature of the ultimate elements of matter, all the various organs which decorate a plant, however dissimilar they may be, and notwithstanding the various uses for which they are destined, are in reality mere variations of one common organ, expanded and united in different ways, and appearing under a multitude of distinct forms. All branches of science which treat of these singular facts may be termed Morphology, but that word is chiefly used in speaking of plants and animals.

Among plants those truths are exemplified in so extraordinary a manner, as to have excited doubts in some persons as to their existence. It has seemed to some minds so inconceivable that the scarlet blossom of the Lily should be composed of the same parts as the green foliage that stands below it, or that the succulent fruit of the Peach should be one of the thin leaves of the Peach-tree folded up and altered, that, without attempting to examine the facts on which the doctrines of Morphology depend, they have rashly accused its advocates of Atheism, and proclaimed one of the most wonderful manifestations of Divine power and contrivance with which man is acquainted, a sign of materialism, and a badge of infidelity. If I did not know how often clamour beats down truth, for a time at least, and what influence is exercised over the thoughtless by strong assertion, when it is not contradicted, I should probably have left a demonstration of the facts of Morphology to some other pen; but it seems due to the readers of this Paper to put them in possession of the evidence, and to dispose of the many foolish notions that are prevalent, on the subject. I shall therefore endeavour, during the present season, to bring forward, at short intervals, a complete series of illustrations of the manner in which morphologists support their case. In the meanwhile it may be stated, for the satisfaction of the feeble-minded, that, Linnæus was one of the fathers of these opinions, and no one ever accused that great man of Atheism or infidelity.

It is surprising that those who are shocked at the idea of a leaf being converted into a fruit should never have considered some very common facts with which they can hardly be unacquainted. The following passage from the writings of a modern Swedish authoress may be recommended to their attention until we can resume the subject:—

"The flower appears to us at first as a seed, then a sprout; the sprout becomes a bud, and now the flower unfolds itself. Similar changes are shown us by other objects in nature. See, yonder creeps the despised crawling caterpillar. The hour comes, and the feebleness of death falls upon him; he gathers himself up and weaves the cocoon; this web forms his shroud, while the organs of his new being are already inclosed within him; now the rings appear, the inner powers are struggling now; the change goes forward and decay appears; his ten feet remain upon the old skin, and the new creature lies with its limbs yet unformed. By degrees these come forth in order, but the creature does not awake till all is perfect; now he presses towards the light, and the last change is quickly made. A few minutes and the tender wings become ten times larger than when beneath the death-shroud; they are gifted with an elastic strength, and glitter in every ray of the sun. His whole being is changed; instead of the Grass and leaves for which he was before created, he now sips nectar-dew from the golden cups. Who would perceive in the form of the caterpillar the future butterfly? Who would recognise in both one and the same creature, if observation did not teach it us? And both existences are only one life, and the two beings are one and the same earth, in which the organic circle constantly repeats itself."

What is there in the transformation of a leaf into a flower or fruit more remarkable than this?—*R. E.*

BEES.—No. V.

(Continued from p. 51.)

The Feeding of Bees.—Some springs are so very rainy that Bees cannot gather enough to keep themselves; sometimes rainy weather immediately ensues after swarming; and sometimes a rainy summer hinders Bees from laying in a sufficient store of provisions to keep them alive till spring: on such occasions feeding becomes necessary. The best thing to feed Bees with is loaf-sugar and water, at the rate of a pound of sugar to a pint of water, slightly boiled. Raw sugar and water produces diarrhœa, and is often used in spring; indeed, I have used it in autumn, and saw no bad effects resulting therefrom. Foreign (Russian and Prussian) honey has been used. One gentleman, who had used honey from Dantsic, told me that if it was given to Bees in an unadulterated state (that is, not mixed with sugar), it would poison them; and another told me that his father fed his Bees with Russian honey, and that it was good and safe enough for such a purpose; but I myself never saw it used. Bees will even eat treacle and boiled

* Ent. Trans., v. i. p. lxxx. † Curtis's Brit. Ent., fol. and pl. 349. ‡ Ib., fol. 66d.

Potatoes, if soaked in sugar and water; but I recommend nothing but loaf or refined sugar and water. When I say that it is better than anything else, I of course exclude British honey. Some Bee-keepers use porter or ale instead of water, which is more expensive and no better. Some may object to loaf-sugar because it is dearer than raw; but let me say that it is nearly as cheap, for less serves Bees. Five pounds of honey collected from the flowers of White or Dutch Clover last nearly, if not quite, as long as 7lbs. collected from the blossoms of Heather or Ling—or, as it is sometimes called, Heath. There are various systems of feeding. I will not offer an objection to any; but I would recommend the following:—Turn up the hive, place it against your thigh or your knee, and pour the liquid first on the one side of the combs, and then on the other. If the combs are held at an angle of 45°, the liquid runs into the cells before it reaches the crown of the hive. The Bees soon lick the liquid off themselves. Both in a profitable and speedy point of view this system, I think, surpasses any other for autumn feeding; for one man, in one day, could give 50 hives 5 lbs. each; that is to say, five or six doses. If Bees are fed every day they do not lay by much; it causes them to fly about a great deal; hence it is dangerous to feed in cold weather. Where time is no object, tin troughs and cisterns ought to be used in spring. In feeding swarms that have not worked their combs down to the boards, soup or broth-plates are used. A few straws are cut and placed on the sugar and water, to facilitate its being taken up, and to prevent the Bees from drowning themselves therein. The Bees form or make ladders of themselves, which reach from the body of the swarms to the centre of the plates. These ladders save many Bees the trouble of going round about by the sides of their hives. It is advisable to feed young swarms in rainy weather, whether they are needful or not, for Bees, at the swarming season, make combs very fast from sugar or treacle, wax being a secretion of Bees and not of plants. If young swarms are not attended to during unfavourable weather, their numbers decrease instead of increase, because they have scarcely any comb to breed in.

Upon the immuring of Bees in winter I did not intend to offer a remark; but I wrote to Carluke in order to learn if any one there had buried his Bees in winter; at the same time I desired the person whom I wrote to, to bury two of his hives or stocks—one without food and another with a sufficient quantity to keep the Bees alive. In answer to my letter, my correspondent informs me that "no one here has tried the burying system, and I dare say never shall; for a man in Cambusnethan (the adjoining parish) buried one with as much honey in it as would have kept the Bees alive above ground till the spring: when he took it out all the honey was eaten and the Bees were dead." This quotation teaches us that Bees live under the ground when they have food, but die when they have none—and that they eat more under than above the ground. The first and second of these are in accordance with common sense, and the last with philosophy. If Bees live under the ground without food during the months of October, November, December, and January, it is but fair to infer that they will live four weeks in summer likewise! We are open to conviction; but it will be a hard matter to make us believe this.—*A. Pettigrew, Wrotham Park, Middlesex.*

(*To be continued.*)

DURABILITY OF OAK TIMBER, FELLED WITH THE BARK ON IN WINTER.

"I send you two specimens of Oak bark, with their dates, taken from beams in old buildings, lately taken down in this neighbourhood, which prove beyond doubt that winter is the best time for felling Oak timber, when durability is required.

No. 1 was taken from a beam in an old house in Llanymynech, in the county of Salop; the date cut in a stones on which one end of it rested is 1316, which, subtracted from 1843, makes its age 527 years. The timber under the bark is quite hard and sound, as may be imagined from the state of the bark, which appears as sound, fresh, and heavy, as if it had been there only a short time; the beam had been covered over thickly with lath and plaster. No. 2 was obtained from a beam in an old building in Oswestry that was taken down; the date 1035 was cut in the timber in two or three places; this, subtracted from 1843, makes its age 808 years. The bark was quite fresh and sound, and the timber under it was the same; the ends of the beams, having been over a doorway, and exposed to the weather, were decaying; but the other parts were sound.

This incontestably proves that Oak timber is most durable when felled with the bark on: whether our forefathers knew this by experience, or merely did so by chance, the bark at those times being possibly of little or no value, is more than I can affirm. The fact of its durability when found in this way has been further confirmed by the evidence of persons who have had much experience in working up timber from old buildings. At another place, near Oswestry, was Oak timber found with bark on, nearly 900 years old. It was reported to be quite sound by the person who worked it up for fresh purposes.

There was lately sold, in a neighbouring Welsh county, to a Dock Company at Liverpool, two Oak trees, to be felled with the bark on, in winter, purposely for gates to docks, for 6*s.* 6*d.* per foot; one tree contained 120 feet, and the other 125 feet of timber.

I am informed that coach-makers, who require hard, durable timber, purchase it while standing, and have it felled in winter, sacrificing the value of the bark. The white or sap-wood of the Oak will begin to decay in a very short time when pelled and felled in spring, whereas it has been proved by experience that it is hard and sound when felled with the bark on, in winter.

From these facts there appears little, if any doubt, that Oak timber felled with the bark on is the most durable. —*W. Billington.*

[The specimens sent by Mr. B. are perfectly sound, and appear to belong to trees that have never been even squared.]

Home Correspondence.

Border Carnations and Picotees.—For Carnations I would recommend Hoyle's Duke of Leeds, and Ely's Dragoon, S. B.; Gregory's Alfred, and Ely's Duke of Bedford, C. B.; Ely's Bright Venus, and Orson's Rob Roy, S. F.; Ely's Lady Ely, Hogg's Lady Stanley, Chadwick's Lucette, R. F.; Elliot's British Queen, P. F. Hoyle's Duke of Leeds, when run, is more admired by ladies here than when clean—the petals are apparently thicker and more velvetty in the run-flowers, and their colour very rich and dark. Is this alteration in substance of petal owing to the effect of light? This flower is increased readily by pipings. I have observed that pipings of it in a glass with others are often the first rooted. Dragoon is easily piped, but layers of it will flag unless immediately placed in the shade. Duke of Bedford and Bright Venus seldom run with me; the other sorts will, but in a border this is no objection. They are all good growers, easily propagated, and their price does not exceed, on the average, one shilling per pair. Maud's Rowton, scarlet flake, when run, is a beautiful object in the border; in the clear flowers the white is not good. Ely's Tree Carnation, scarlet flake, throws up a tall flower-stalk, from the sides of which spring numerous shoots, all which can be piped. The calyx is often "Wheat-ear." I have seen this variety look very interesting and showy when blooming in a greenhouse in winter. The following Picotees are suitable for a border. Red—Ely's Criterion, Hardy's Royal Briton, Woolard's Miss Bacon, Hirst's Admiral Sotheron, Banton's Mazeppa. Purple—Lee's Lady Wildman, Pullen's Incomparable, and Lady Peel, Birtle's Lady Fair, Kirtland's Victoria, Jackson's Delight. Rose—Giddin's Hemingford Beauty, Syke's Eliza, Wilson's Fanny Irby. Yellow—Martin's Victoria, Hamburg Yellow. All these are cheap, showy, and readily increased.—*O.*

Pits.—Our correspondent "Economist," who some time ago requested Mr. Paxton's opinion respecting the most economical mode of constructing a range of pits for general purposes, such as for growing Pines, Cucumbers, Melons, &c., also Pelargoniums, Fuchsias, Calceolarias, Heaths, and other greenhouse-plants, is answered in the following:—



Fig. 1.—Longitudinal Section.

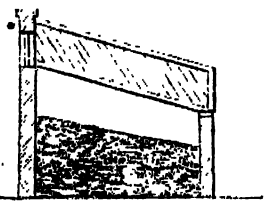


Fig. 2.—Transverse Section.—Scale ½ of an inch to a foot.

"The best method of building pits is to construct them of nine-inch brick on bed, and the best mode of heating them is by Rogers' Conical Boiler. In the present case, "Economist" may build a pit 78 feet long inside and 7 feet wide. Cover the pit with a ridge and furrow roof, making the space from the ground in front of the pit to the valley-rafter 3 feet 6 inches, and the back wall below the rafter 5 feet 6 inches—see section across the pit, *fig.* 2. Divide the whole length into four compartments for growing the different sorts of plants, by 4½ inch brick-on-bed walls. Divide the whole length of the ridge and furrow-roof into 12 bays, having a ventilator in the angle of each pediment, as at *d d*, *fig.* 1. Now, to get to the plants, each light is hinged at the valley-rafter, and fastened with a thumb-button at the ridge-rafter. By referring to *fig.* 1, it will be seen that the light or frame leaves the ridge-rafter at *a* in the direction of *b*, and lies flat upon the next light at *c*. Each light may be opened in this way, so that a workman may get to any part of the pit."—*Joseph Paxton.*

Charcoal.—Last year I potted two standard Hydrangeas in 16 sized pots, with two-thirds turfy loam, and one-third sifted charcoal; the drainage, which was three inches deep, I formed of coarse pieces of charcoal: when the plants bloomed, I found the colour of the flowers to be a beautiful bright blue, and so they continued to flower the whole of the season. Every plant seems to delight in charcoal; since I have laid charcoal merely on the surface of the mould, round the stems of many of my large Orange and Lemon trees, the alteration has been very striking; the foliage assuming a dark rich hue, and the plants being altogether most luxuriant. It is my opinion that large beds of blue Hydrangeas might be easily obtained by the above treatment.—*J. L. Snow, Swinton Gardens.*

Charcoal.—In the Forest of Dean I observed that the Charcoal "hearths or floors" soon became spontaneously covered with seedling Willows, of a very vigorous growth. These seedlings made their appearance in about a year after the fires, and I do not recollect any other kind of seed germinating there except the Willows. Some time ago I saw in the *Chronicle* observations on a kind of shale as a manure. Now in this forest is a kind of blue shale over the stratum of coal, this after being exposed to the atmosphere for some time crumbles down like shell marl. Mounds round some old coal-pits composed of this material were planted with Oaks, which became the most vigorous of any in the forest, and were covered with healthy dark-green shining leaves. The coal shale is a valuable manure and would be useful to farmers, particularly upon light sandy heath and bog soils, and in localities where it abounds the proprietors of coal-works might profit by it.—*W. Billington, Oswestry, Salop.*

Curl in Potatoes.—Mr. Barnes, at p. 424 of the "Gardeners' Magazine," mentions that the disease known by the name of "curl" is chiefly occasioned by the use of seed Potatoes not fully ripened. Mr. Dixon has made the same observation in his treatise on that disease. This, however, will not suffice to account for it: for how is it that the "curl" does not affect Potatoes on some particular soils, even when little attention has been paid to the quality of the seed; while on other soils it attacks them, however well ripened the seed-Potatoes might have been? The former happens in moorland districts; the latter on light rich soil near Edinburgh. In order to prevent "curl," I have known gardeners at the latter place procure seed from their friends in the Moorlands. If they did not continue to do this, the "curl" would appear the second or third year. This supports the opinion that the disease is occasioned in some measure by the richness of the soil, or rather by its having been long under cultivation. It has been imagined to be owing to the tubers decaying in the soil; but this does not explain why some soils affect them and not others. Decayed tops make a good and useful manure for a succeeding crop of the same kind; why then should decayed roots be prejudicial? Mr. Barnes speaks of "curl" being caused by the over-ripeness of seed-Potatoes, and yet says that—"all Potatoes that are meant for seed should be ripe and hardened by the sun and air." He further observes that "all kinds of seed may be over-ripe—that is, lose a considerable quantity of its properties." He complains of the plan of planting Potatoes late, without stating what has generally led to it. He must be aware that when the late kinds of Potatoes are planted early, for instance, about the latter part of May, or 1st of June, especially on light land, they are apt to make what is called a second growth. To prevent this, the Norfolk farmers defer planting their Potatoes until the 1st of June, in order that the tubers may not be prematurely ripened by the Midsummer drought; otherwise they would send forth many more little Potatoes, to the serious injury of the main crop. In this case the first-formed Potatoes are hard and fibrous, and the small ones produced from them, and attached to them by shoots, are small, and fit only for pigs.—*J. Wighton, Cossey Gardens.*

Pine Apples.—Although I have not been engaged in Pine growing for nearly five years, I am much interested in the culture of that delicious fruit. Mr. Murray says that he "adopts the large-shift system to a much greater extent than is recommended by Mr. Glendinning, and proposes to carry it still farther next year." In a leader it is stated "that this is a certain precursor of getting rid of potting altogether." I quite agree with this remark, and have little doubt but that the natural system, (as it may be termed,) in time, will be generally practised. I am the more satisfied of this from having had some experience in the growing of Pines without pots for several years, and shall here give you a short account of my proceedings and success. About ten years ago my employer caused two Pine-houses to be built; the pit for the Pines was about two feet deep, with a hot-air chamber below heated by a flue. Being fully aware that a dry heat would not answer, I had large pans placed along the top of the flue to be kept filled with water, and had also water dashed along the floor of the chamber every morning. There were ventilators from the outside to admit cold air into the lower part of the chamber, and also ventilators in front and back of the pit, connected with the hot-air chamber, so as to admit the hot air into the house when required. In March I prepared my bed for the Pines and turned out one-year-old plants; they had been growing the first 5 months without pots in an old Pine pit; they were afterwards potted into rather a large shift, where they remained until I turned them out into the new pit in March following. They grew very strong, and a few began to show fruit about the middle of May, and continued doing so up to the middle of July, when all had shown fruit; they swelled off very well, and produced fruit from 3lbs. to 5 lbs. avoirdupois; they chiefly consisted of the Queen, Globe, Enville, Jamaica, Otaheite, and Montserrat. I continued the same plan the year following and with the same success, with the exception of a few of the Providence that I planted amongst them; these did not fruit until the succeeding year, when they produced fruit double the size of the others. After this I was determined to try the natural system entirely in one of the houses. In March I planted strong suckers of the above-mentioned Pines, alternately with the Providence, the former to be fruited off the second year. I cleared the plants away as they ripened, to make room for the Providence, which require a year longer to produce fine fruit. I succeeded in this equally well; the smaller sorts fruited the second year and were cleared away; the Providence grew very strong and began to show fruit about the beginning of April. The third year, when I left my situation, I was informed that they produced very fine fruit, weighing from 8 lbs. to 11 lbs. From the experience I have had of this system I have not the least doubt of its success; and had I to grow Pines again, I have so high an opinion of it that I should never grow a Pine in a pot. Many Pine-growers imagine that there is a difficulty in getting them to fruit, but I found

none, no more than in the pot-culture. It is attended with little trouble; the saving of labour is very great, and there is also a saving in pots. From the time the suckers were planted to the time the fruit was cut the plants were never lifted, but a few of the lower leaves were removed and a little of the top soil was taken away and filled up again with fresh soil; this was done about March and again in September. Between these times I loosened the surface-soil occasionally.—*R. M., a Landscape Gardener.*

The Love Bird.—A correspondent wishes to be informed if the Love-bird (Agapornis pullaria) has been known to breed in this country; as, he says, a few years since three eggs were laid by a cage bird belonging to a lady at Cambridge who had kept these birds for a considerable period.

Larch Trees.—My attention has been called to a proposition which your correspondent, Mr. W. Billington, states interrogatively as to the propriety of felling Larch and other resinous trees in the early part of summer, on the ground that at that period "there is more of the resinous fluid afloat, or at least it is more regularly dispersed in the wood." I have frequently heard this idea broached, and am glad of an opportunity of contradicting it from experiment, as I have always done from theory, it being at variance with all correct principles. Every physiologist must be aware that the "resinous fluid" is a product of the plant itself, after the elaboration of the sap in the leaf, and, owing its existence to that elaboration, can only be met with in a descending or half-deposited state. We know that the first sap which rises in the returning summer unites with a portion of this deposit, causing the germination of the earliest buds; but in so doing, it only dilutes, not increases, the quantity of the last year's manufacture, so to call it; and by so doing only loads the timber with a quantity of water, the gradual evaporation of which after the timber is felled produces sun-cracks, and an evident predisposition to decay. If your correspondent will try the experiment, he will soon be satisfied of the error of this notion—which has become almost a popular one—that resinous trees should be felled in summer. Let a few Larch be cut down in March, and an equal weight cut in the following June or July (and it is by this that I have proved it), and let them be weighed against each other again, after lying in the timber-yard a twelvemonth; he will find that the summer-felled trees have lost weight against the others to a very considerable degree, besides the cracking and warping exhibited by all summer-felled timber. In fact, the sooner this opinion is exploded the better; for it arises from an entire want of acquaintance with the distinction between the rising sap, which (for our purposes at least) is little else than water; and the elaborated juice, or cambium, of the plant, which is, of course, most plentiful in the stem just at or before the fall of the leaf, and most effectually consolidated and dispersed in the timber in the winter. With regard to the latter part of the proposition, that it is at that period, viz., in June, "more regularly dispersed in the wood," the supposition is purely conjectural and empirical. Nothing can be more perfect or more equable than the disposition of its elaborated juice, which the plant itself has made; and the rising sap rather disturbs and deranges this disposition; of course, for an obvious and active purpose; which, however, being unfulfilled at the time of felling the tree, it lies in a state of arrested vegetable energy, so to speak, extremely favourable to early decay. Whilst I am on this subject, I am anxious to say one word on the pruning of resinous trees, about which such conflicting opinions are observed in the works on Arboriculture; some advising the excision of the bottom tier of lateral branches each year, but the generality forbidding all pruning whatever, and advocating their being allowed to prune each other by proximity. Like the umpire in the Fable of the Camsleon, I am obliged to say, "both are wrong." If one tier be taken off each year, it will be sometimes too much, sometimes too little, according to the growth and peculiarity of each tree; if they be allowed to prune each other, they leave dead snags sticking out in the stem, which the descending sap is obliged to surround, but which if cut off close to the stem it would have overlapped, and preserved from decay; and completing the annularity of that year's layer of new wood, would have made the timber stronger and more regular. Pruning is a matter not of rigid rules, but of principle. Let the pruner look at the internode above and below the branch in question; if the one below is considerably larger in girth than the one above, then the branch may come away with advantage, provided the plant be vigorous; and in the following year he will find the proportion between those two internodes of the stem more equable. If the two, or even three, bottom tiers have a disproportionately thin internode above them, and the stem be large and tolerably even in size between and below them, then those two or three tiers may all come away. But if the stem preserve a very regular proportion all the way up, then the tiers should only be taken off one by one, beginning at the bottom, as they begin to cease growing. If one branch of a tier, whether high or low in the tree, be exuberant, let a part of it be taken off. The best time to prune the resinous trees is either in October—with the view of the wound being covered by the turpentine before the frosts come,—or in March after they are gone, and a month or six weeks before the spring sap begins to rise, that the surface of the wound may have time to harden so as to destroy the elasticity of the mouths of the sap-vessels, and prevent the escape of the rising sap.—*C. Wren Hoskyns, Wroxhall.*

Domestic Yeast.—Persons who are in the habit of making their own bread can easily manufacture their own yeast by attending to the following directions. Boil one pound of good flour, a quarter of a pound of brown sugar, and a little salt, in two gallons of water for an hour when milk-warm bottle it and cork it close, and it will be fit for use in 24 hours. One pound of this yeast will make 18 lbs. of bread.—*J. Mc I., Hillsborough.*

Rats.—The great increase of rats in the present day is partly owing to trapping the domestic cat close to the labourer's cottage. I am, myself, no very great friend to the feline race; indeed, at one time, no animal ever raised the bristles of my temper half so frequently as poor puss; but since I began to place cheap netting over my newly-sown flower-beds, Tom and I have been on pretty good terms. Nevertheless, villages are ransacked, and in whichever direction you ride the sixpenny prize is too frequently exposed upon some wall or paling. Here we see the pied, the sable, the tortoiseshell, and the old maid's tabby, arranged as trophies of victory. What a deprivation must it be to the cottager on his return home from labour to miss the greeting of puss! how annoyed must he feel at no longer hearing his favourite purring round his legs! Many of our peasantry (thanks to an increasing love of gardening, and less frequent calls upon John Barleycorn) are now enabled to keep a pig; such at least was the case in the neighbourhood in which I sojourned during the past summer. The sty soon becomes infested with the above-mentioned vermin, which partake of the food given to the grunters, and if not destroyed they soon betake themselves to the hedges and ditch-banks in large hordes. We now see fields completely overrun by rats, and burrowed more like the works of rabbits than those whiskered gentry. The sportsman will doubtless argue that the cat, if once given to ramble, kills a large quantity of game; but I much doubt if the cat really destroys game equal to the rat, particularly in the breeding season; for the latter not only feeds upon the young birds, but also on the eggs of partridges and pheasants. These observations have been elicited by seeing several accounts in the *Chronicle* of the damage occasioned by rats; such statements at first appear almost incredible, but unfortunately there can be no doubt of their truth. I myself saw, only a few months back, hundreds of rats slaughtered in one field alone.—*A Quiet Observer.*

Polyanthus.—I found seedlings from Alexander very variable and uncertain. Those from Lord Rancliff generally resembled the parent, and there were many pretty varieties, but with small flowers. Those from Tantarara were like the parent. From Collier's Princess Royal I had round flowers with many petals; but by far the best were raised from fine-eyed seedlings, impregnated with Buck's George IV., Rancliff, or other good sorts. Among these I had varieties of all shades; and latterly I have saved seed from the fine-eyed ones only—propagating the best for that purpose, and nipping off the flowers from the named sorts when I have got their pollen. Loudon and others have said that this plant is much hardier than the Auricula: the very contrary is the fact; for in 1838 I saw both in a frame—of which many squares were out: the Auriculas all survived, and seemed little worse; the Polyanthuses were all killed. Over-potting is very bad for them; a little heat in early spring seems to help them to root; they should have timely attention in autumn to get them established early, and a situation kept regularly moist by shade and shelter from all drying winds.—*O.*

Dutch Clover.—The sudden appearance of Clover in pastures after some particular top-dressing, or in certain moors after the ling has been burnt, has often excited the surprise of observers, though perhaps without inducing them to make any accurate investigation of the circumstances under which it is produced; and it is probable that, in some cases, there has not been an acute discrimination of species. Observations by some competent person on this point would certainly not be without interest, and might lead to more important results than might at first be anticipated, both in a scientific and economical point of view. A still more curious and inexplicable instance of the sudden occurrence of a large natural crop of White Clover is that which so commonly takes place when large districts, as on the Lincolnshire coast, are rescued from the sea by embankments, and fertilized by the admission of the tide after the embankment has been completed, until the tract of country is in a proper state for cultivation. Some one conveniently situated for such observations, with a very slender botanical knowledge, but with a turn for patient and accurate investigation, would, by commencing from the moment of the final exclusion of the tide, most probably be able to clear up this very perplexing matter. As regards the appearance of Clover in pasture lands, there is by no means the same difficulty; for, not only will the seeds lie dormant for years where they are out of the influence of air from the presence of a thick vegetation above them, but it is very probable that in certain cases they may be propagated by the little tubers which are so general on the roots of Clovers, Vetches, and many other leguminous plants. These, indeed, in general appear to be mere reservoirs of nutritive matter, for they often run through their phases of developement very rapidly; but in other cases it is far from improbable that, when they are not demanded by the exigencies of the plant, they may be capable of reproducing it, as we know that such bodies may lie dormant for years. Everyone must have observed, after the periodical felling of woods, what a quantity of herbaceous plants appear, of which there has not been a trace for years, merely from the clearing of the surface of the soil from its thick coat of underwood. And this is not only the case with plants which spring from seed, but with others; as Orchidaceæ, which spring more generally from tubers. In certain woods which abound with the Fly Orchis, just after the periodical felling, not a trace is to be found for years after the underwood has once re-established itself. A very curious instance of the appearance of a plant hitherto unknown in the neighbourhood has lately fallen within my observation. An old tree was felled in a wild part of Rockingham Forest, and in the centre of the old stock, a single individual of Cynoglossum sylvaticum appeared, a plant which I have never before observed in this district, though acquainted with it from my infancy. A large crop has sprung up from this individual, and it is probable that it is now completely established. These and many other curious facts of a similar nature may occasionally excite our surprise; but it seems most unnecessary to have recourse to any notions so wild as those of spontaneous generation. The circumstance of the appearance of a species of Acarus during the course of certain chemical experiments instituted by Mr. Crosse, was laid before the French Academy, and they were, I believe, unanimously considered quite unworthy of attention as connected with the question of spontaneous generation. In the instances which have given rise to the present observations, there ought to be some pretence at investigation before explanations of such a nature be adverted to. For my own part, I should not think the appearance of a flock of sheep by spontaneous generation in the Lincolnshire marshes a matter at all more marvellous than that of a crop of Clover springing up without any pre-existent germs, for the adaptation of the several organs to the purposes for which the object was created does not show the wisdom and power of the Creator less in one case than the other.—*M. T. Berkeley.*

Gold of Pleasure.—An oil is expressed from the seeds. In France, brooms somewhat resembling our carpet-brooms, are made of the dry plant after the seeds have been threshed out.—*M. T. B.*

Ash-leaved Kidney Potatoes.—I bastard trench a piece of rich light sandy ground, about 18 ins. deep, and break it well with a spade. At the bottom of each trench is spread some half-decomposed horse-dung, about four inches deep, and on this I plant the sets whole, cutting a small piece of the narrow end off, as I consider it is useless, and placing them upright, the ground is planted as the trenching proceeds; the tubers are laid in lines fully nine inches deep and nine inches apart in the rows, which are 18 inches from each other. I cover the surface of the ground for about three inches deep with dung, similar to that which is put into the trench. They receive one moulding up when the Potatoes are about six inches high; a little damaged salt is mixed with the soil, which causes the Potatoes to be well flavoured. By adopting this plan an excellent crop may be produced early in June if the tubers are planted between the 25th and 30th of January. In taking up the crop select the best ripened ones, and let them be thoroughly dried in the sun until they become shrivelled; these will always come earliest. —*Anonymous.*

Reviews.

The Botany of the Voyage of H.M.S. Sulphur. Edited by R. B. Hinds, Esq.; the Botanical descriptions by George Bentham, Esq. 4to. Part I. Smith, Elder, and Co.

The voyage of the Sulphur occupied a period of six years, during which time the south-east of South America, the whole of the west coast of that continent, some of the islands in the Indian Archipelago, and eventually the coast of China were visited. Mr. Hinds, who was the surgeon of the expedition, was a zealous naturalist, and lost no opportunity of forming collections, especially in Conchology and Botany. His Herbarium was placed in the hands of Mr. Bentham, and the new plants which it contained are to be published in the present work, under the authority of the Lords of the Admiralty, the Botanical descriptions being written by Mr. Bentham, and the general observations by Mr. Hinds, whose attention was particularly turned, during the whole voyage, to Botanical geography.

The Number before us contains the commencement of the Californian Flora, and is illustrated by 10 lithographic plates of remarkable plants of merit. Mr. Hinds gives a graphic account of the general nature of the vegetation, and especially of the Russian settlement of Sitka, which we must extract.

"The number of rainy days in the year is very great, and at Sitka only 37 really fine clear days were recorded throughout this period. At this Russian settlement some extended observations gave the mean temperature of the year as 45° 5′, and the range from 2° 3′ to 81° 9′. The whole country is bold and mountainous, intersected by deep and moist valleys, and is everywhere covered by a gloomy forest of Spruce. These vast forests offer a scene which powerfully arrests attention. The trees are often of enormous dimensions; stretching upwards, with scarcely a branch, to where the eye almost fails to follow them, with enormous trunks, very deceptive till brought within the scope of our experience by means of the tape-line; beneath, a most luxuriant undergrowth everywhere abounds, and has an exuberance and charm about it which is rarely supposed to be possible beyond the tropics. But over these the influence of the moist climate is unceasing. It most probably hurries through a rapid existence the more lowly shrubs, and its effect on the trees is very marked. None are seen to attain any great age, that is, none have that appearance; but when the vigour of life is past, they rapidly yield to the constant influence of the moist atmosphere, soil, and investment of Mosses and Lichens, and soon fall to the ground, which in some places they occupy in great numbers. But as is everywhere observable where the climate is uniform, the variety in species is not great; and some will occur with multitudes of individuals covering a very large space.

The account of Upper California is not less interesting.

"It was late in the autumn of 1837, when an expedition up the Rio Sacramento penetrated from San Fran-

class some distance into the interior. The country exhibited a vast plain, rich in a deep soil, and subject to periodical submersion. Occasional clumps of fine Oaks and Planes imparted an appearance of park-land. They were already shedding their leaves; a small Grape was very abundant on the banks, and we sometimes obtained a dessert from the fruit of a Juglans. We had scarcely returned, when a storm covered the maritime range of hills with snow; and this set the final seal on the year's vegetation. On quitting the coast for the interior, we exchanged the evergreen Oaks for deciduous species. The latter grow to fine trees, with wood of great specific gravity. But the natives have a very pernicious practice of lighting their fires at the bases; and as they naturally select the largest, it was really a sorrowful sight to behold numbers of the finest trees thus prematurely and wantonly destroyed. And it is not a country where wood is superabundant; for no sooner is the Oregon crossed than the Spruce forests disappear, and the prevailing trees are Oaks, which towards the South become gradually less abundant."

From this account it will be at once perceived that Mr. Hinds' work is worthy the support which it receives from the British Government. We trust that the same liberal assistance will be granted to Dr. Joseph Hooker and his ample materials for an account of the Botany of the late antarctic voyage of the Erebus.

It was very laudable in this officer to take upon himself duties to which he was not liable, and the Botanical world owes him a debt of gratitude for his meritorious exertions. The public, however, has a right to expect that those collections of plants which were formed at the public expense, and which are now supposed to be buried in the British Museum, should be also made use of. We trust that the Lords of the Admiralty will take measures to rescue them from their lurking-place, and cause them to be placed in the hands of Mr. Bentham, than whom it is impossible to find a Botanist better qualified for their examination. The collections to which we allude were formed by Mr. Barclay, and we believe Mr. Sinclair also, the former of whom was sent out at the public expense and the forming such collections was part of his duty.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

STATICE BYTHOPHYLLA. Rasp-leaved Shrubby Sea Lavender. (*Hardy Greenhouse Plant.*) Plumbagineæ. Pentandria Pentagynia.—This is a very beautiful species of Statice, and easily cultivated as a hardy greenhouse plant; but of its history I regret to say I can get no satisfactory information. The Royal Gardens at Kew are indebted for the possession of it to Mr. Low, of Clapton; and it exists in several gardens under the name of S. Dicksoniana. Mr. Mackay, of Dublin, informs me that he raised it from South African seeds, given him by Mr. Harvey, and that he understood it to have come from Port Natal. But I find nothing of the kind among my own specimens from that part of the country, and although Mr. Harvey is aware that he brought to Mr. Mackay seed from the Cape of Good Hope, he had no reason to suppose that the collection contained any from so distant a region as Port Natal. Respecting its native country and introduction we must still remain in doubt; but there can be no question about the beauty of the species, or its merits as a standard plant for cultivation.—*Curtis's Botanical Magazine.*

LUPINUS ARVENSIS. Field Peruvian Lupine. (*Half-hardy Biennial.*) Leguminosæ. Diadelphia Decandria.—This is a gay little plant, forming one more addition to the large genus Lupinus. The flowers are rich bright lilac, enlivened by a yellow spot. In number the leaflets vary from 5 to 9. The seeds, by which Lupines may be distinguished more accurately than by the ordinary marks employed by Botanists, are oblong, smooth, and mottled with grey of different tints. It is a half-hardy biennial, growing from one to two feet high, and flowering a great part of the summer and autumn. Like other Lupines it requires a strong rich soil; and, although a half-shrubby biennial, is best treated as an annual. The seeds should be sown about the beginning of March, in pans filled with a loamy soil, and when large enough should be potted, placing three plants in a small pot; afterwards, when the danger of the late spring-frosts is over, they may be planted out in the open border. The seeds may also be sown in the open border about the middle of April, but then the plants flower much later, and are never so fine as when treated as above stated. It was found growing in corn fields near Loxa, in Peru, by Mr. Hartweg, and flowered in the garden of the Horticultural Society in the course of last autumn.—*Botanical Repaster.*

TURNÆA LOBATA. Lobed Turnæa. (*Stove Perennial.*) Meliaceæ. Monœcephia Decandria.—This very rare Stove-plant flowered at Chiswick House last July. His Grace the Duke of Devonshire received it from Mr. Whitfield, who collected it in Sierra Leone. The flowers have much the appearance of those of the Orange, but have no smell. The nearest affinity of this plant is evidently with the T. heterophylla of Smith, a species from the same country, and apparently very like it. But Mr. Bennett, in his revision of the genus in Horsfield's "Plantæ Javanicæ," p. 164, places T. heterophylla in a section, having from two to twenty cells to the ovary; this, however, has most certainly only five cells with two ovules in each.—*Botanical Register.*

GARDEN MEMORANDA.

Royal Botanic Garden, Regent's Park.—Several structures for plants have lately been erected here. A span-roofed house about 42 feet long and 16 wide has recently been put up; this is in two divisions, one of which is chiefly devoted to the culture of Orchidaceæ, the other is filled with Ferns. Several species of the former were in bloom; among them was a conspicuous and well-grown specimen of Phaius grandiflorus, and a plant of the pretty purple-flowered Bletia verecunda; Sobralia sessilis was just coming into bloom, being the fourth time of flowering this season. In this house was the old Stanhopea grandiflora, producing a fine spike of flowers; this, as well as several other plants, was growing in a basket that tapered to a point at the bottom, something like an inverted cone. These baskets are made of pieces of Hazel fastened round a common centre at the bottom, and radiate outward towards the top. The principal advantages of this shape are, that the flower-stems of Stanhopeas and others that bloom in the same way readily pass through to the outside, and any drip, being always from the point of the basket, can be easily prevented from falling on other plants. A specimen of the larger variety of Maxillaria aromatica was particularly remarkable, on account of its bright orange flowers and agreeable fragrance. Here was also a case filled with plants that had lately been imported from Jamaica. Among them was said to be a species of Ipomœa, resembling in appearance I. Horsfalliæ, which we were informed grows abundantly in the woods in Jamaica. There was also in the same case a Podocarpus, a tree remarkable for the beauty of its wood. This house is heated by hot water in iron pipes. Near it were several ranges of pits; one of them, heated by hot water, was filled with Greenhouse plants, among which were good specimens of Heaths and Epacrises. Passing through a second span-roofed house, 64 feet long and 16 wide, which was filled with half-hardy plants for bedding out in spring, we entered an old stove near it, which contained a few Cacti, and a collection of other plants, along with two bulbs of Ornithogalum revolutum, being part of a large importation of Cape bulbs. In the American garden was a bed of Andromeda floribunda, covered with flower-buds; this about April and May will be a sheet of white bloom. Here were also several plants of Rhododendron Russellianum; this scarlet variety is perfectly hardy; but they had mats thrown round them to preserve their foliage: the Rhododendrons are intermixed with Ledums, Vacciniums, Heaths, Andromedas, &c. Extensive additions, Mr. Marnock informed us, are soon to be made to the general collection, and also to the Medical garden.

The Naturalist's Corner.

Virgil on Grafting, &c.—It seems impossible not to observe the beautiful manner in which Virgil has described the ingrafting and inoculating of trees, in his Second Georgic. The variety of expression which he has used in speaking of the different sorts of ingrafted trees, and the various epithets he bestows on them, render the passage exceedingly delightful. The Arbute is distinguished by its ruggedness; the Plane by its barren shade; and the Pear by its snowy blossoms. It would have become a prose writer simply to have said, that any scion may be ingrafted on any stock; but a poet must add beauty to his instructions, and convey the plainest precepts in the most agreeable manner. Thus, Virgil, after he has said that Walnuts are ingrafted on Arbutes, Apples on Planes, and Beeches on Chesnuts, adorns the wild Ash with the fine blossoms of the Pear; and, instead of barely telling us that Oaks may be ingrafted on Elms, he represents the swine crunching Acorns under Elms, than which nothing can be more poetical. At the close of the passage, he gives life and sense to his ingrafted trees, making them wonder at the unknown leaves and fruits with which they are loaded.—*Professor Martyn.* [All this may be very well for a poet, but it would have been none the worse if there had been a little common sense it it.]

Manchineel.—The fruit and the juice of this tree (*Hippomane mancinella*) are exceedingly acrid, and the latter was at one time made use of by the French colonists in America, for the purpose of inflicting a most barbarous torture upon their slaves. The scourges with which they lashed those unfortunate creatures were prepared by being steeped in the juice of Manchineel, and thus every blow inflicted caused the same agony as if the scourge had been red-hot iron.

Miscellaneous.

New Foreign Works on Botany, &c.—Link: Jahresbericht über die Arbeiten für Physiologische Botanik im jahre 1841, 8vo, pp. 78.——Link: Vorlesungen über die Kräuterkunde, für Freunde der Wissenschaft, der Natur und der Gärten, vol. 1. 8vo, pp. 184, with 2 copper-plates.——Link: Anatomia Plantarum, Icombus illustrata fasc. 1, 4to, pp. 11, with 12 lithographic plates.——Verhandlungen des vereins zur Beförderung des Gartenbaues in den Königlich Preussischen Staaten, vol. xvii. part 1, 4to, pp. 168, with a coloured plate.——Link: Ausgewählte anatomisch-botanische abbildungen, part 4, folio, pp. 10, with 8 lithographic plates.——Trinius and Ruppreeht: Species Graminum stipaceorum, 4to, pp. 189.

Condensation of Carbonic Acid by Charcoal.—The cells of wood-charcoal have a diameter of about $\frac{1}{24}$th of an inch, and if a cubic inch consisted entirely of cells, their united surface would amount to 100 square feet. By experiment it can be shown that the cells constitute $\frac{3}{4}$ths of the whole cubic contents of the charcoal; and allowing for the space occupied by the charcoal, the actual surface of the cells will be about 75 square feet. When charcoal is plunged into carbonic acid gas, it absorbs into its cells no less than 56 times their cubic contents at the ordinary temperature and pressure, and consequently the gas is condensed to 56 atmospheres. But according to the experiments of Addami, carbonic acid liquefies under a pressure of 36.7 atmospheres, and we are hence compelled to conclude that above one-third of the carbonic acid which is condensed on the walls of the cells is in the liquid state.—*Mitscherlich, in Polytechnic Magazine.*

Elm-trees upon the Boulevards of Paris.—For many years these beautiful trees have been suffering, and it was supposed that this was owing to the attacks of the Scolytus destructor. There is, however, now some reason to suppose that it has arisen from the too great proximity of gas-pipes. On opening one of these, it gave out an exceedingly offensive smell; and plants of Wheat, Barley, &c. planted in the soil surrounding the pipe, soon ceased to grow. The roots of the trees in the soil were blackened, and gave out the odour of the gas, which was very offensive.—*Bot. Zeit.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

Any new plant that flowers in winter is double valuable. Clerodendron splendens, Centradenia rosea, and Manettia bicolor are of this class; the Manettia requires less heat than the other two; they will do well in an intermediate stove, and flower freely in a conservatory with 45° of heat. Dendrobiums that have had their shoots well ripened last autumn will soon be beginning to bloom; some of them might now be forced, and others removed to a cool place, and kept dry, in order to prolong their flowering season. Maxillaria aromatica ought to be grown largely for forcing; it is one of the easiest to cultivate. A few Stanhopeas might also now be forced. All of these plants that have been kept dry through the winter should be plunged in tepid water, to soak the moss or peat, &c. in which they are grown, preparatory to regular watering. It is yet too soon to encourage plants in general to grow; many would be benefited by a layer of fresh soil or top-dressing; give large portions of air on fine sunny days.

Conservatory.—Established plants here should about this time have the mould well stirred on the top of the pots. The surface of the border should now be removed altogether, the soil stirred with a fork a few inches deep, and a layer of fresh earth laid on; more air should be given for the first week after this operation, to sweeten the house. Fast-growing climbers that exhaust the soil in a few years, and become stunted, ought to be transplanted now into fresh soil. Ipomœa Learii always flowers best when young in fresh soils.

Greenhouse.—As large portions of air are admitted, more attention to watering is necessary; many greenhouse plants would be much benefited if they could now be turned out into cold pits where frost could be kept from them; our long nights are not favourable to very early spring growth; indeed, nothing can be more injurious to many woody plants than to allow or encourage them to grow early; soft-wooded plants that are annually cut down or close-pruned do not suffer so much from growing out of season.

Forcing-Pits.—There is a good deal of room for speculating on the causes which render plants liable to the attacks of insects. In the forcing-pits we see hardy plants infested on which an insect is never seen in the open air. Moist heat being essential for these pits, less watering is needed; over-watering is a great cause of failure in hardy plants, and a dry atmosphere and sudden changes are nearly as bad. Primulas, Auriculas, Anemones, Pæonies, and almost all plants that flower in April, May, and June out of doors, will force and flower two months earlier if not put into too much heat at first. The whole race of papilionaceous plants will force with less risk than other tribes. It is a good rule to submit all spare ornamental plants to winter or spring forcing.—*H. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

In gardens where the ground was thrown up rough in the autumn, it will by this time be pretty well mellowed; and therefore, as the weather is dry, it would not be amiss to dig the beds over again, so as to bring some more of the soil under the direct action of the atmosphere. Where the ground is poor, enrich it by adding some fresh compost, such as leaf soil, peat, and loam, mixed together, but avoid fresh stimulating manures, or you will have strong rampant plants at the expense of a fine show of flowers.

Shrubberies.—If other work has been got pretty forward for the spring, a few days or weeks might be advantageously spent in regulating the shrubs, such as tyeing misshapen plants into good forms, pegging down branches to get the naked ground covered, and planting a few evergreen trailing plants where such are necessary. Examine your landscape scenery, and see whether, by taking down a tree here and there, or lopping a few branches, you cannot let in a distant object or two that may be worth seeing.

Pits and Frames.—Scarlet and other Pelargoniums planted out in pits for the winter may be potted, and placed in a little heat. The first opportunity, make up a gentle dung-bed for a propagating frame, so as to get to work in earnest, and without any further delay.—*W. P. A.*

III.—FLORISTS' FLOWERS.

The weather is extremely trying to Pansies, Auriculas, Polyanthuses, &c. &c., as this season they will not be so well able to withstand severe cold, not having been inured to it by previous frosts. Florists' flowers grown on beds, such as Pinks, Pansies, &c. &c., may be most advantageously sheltered, by the insertion of small branches of Spruce Fir, about nine or ten inches in length, which not only allow a free circulation of air, so essentially necessary to the well-being of those plants, but at the same time protect them from cutting frosty winds, which all florists know (to their cost) are so highly detrimental.

Tulips.—Attend to the directions previously given; whilst this weather continues, they are going on as well as they can do.

Polyanthuses.—Last week we observed that these plants did best on beds. We have also bloomed them exceedingly fine, by growing them in quart pots, which were placed within others of double size, the space between the two pots being filled with damp Moss, thus keeping the roots secure from those occasional droughts, so encouraging to the red spider, which may truly be said to be the greatest pest these plants have to contend with.

Carnations.—As the time is rapidly drawing on for potting out, look well to your compost heaps; turn them often, and particularly in frosts. Examine your turfy loam, break all the lumps with the back of the spade, and (though not made in vain), destroy without mercy every wireworm you see. It is bad economy to be negligent in paying attention to your soil, as a single insect of this description will often destroy Carnations to a serious amount if overlooked. Should a frost ensue, gather cow-manure from the pastures, pile it in heaps, to decompose; and, in fact, all vegetable refuse ought to be collected whenever opportunity offers.

Dahlias are now being forced, to obtain early cuttings where a large stock is wanted.—*J. F. B.*

IV.—PINERIES, VINERIES, &c.

Pinery.—The temperature of the tanning-pit should from this time be raised one or two degrees a-week till it is 70° by night and 75° by day, increasing the humidity of the atmosphere proportionately. Be particular to have the bottom heat between 80° and 85°. Plants that are now showing fruit, and that are to remain in pots, will be benefited by having some pieces of fibry turf placed in contact with their roots on the surface within the pots, and well up round the collar of the plants, first removing any of the bottom leaves that may be fading, and a little of the old soil. In repotting any of the succession plants that have lost their roots from too much moisture, or other cause, use the soil in a rough fibry state, and as free from sourness as possible. The linings of the pits heated by means of fermenting material will require strict attention now. Keep them dry, and be prepared always with plenty of covering for the roof of your pits, to obviate the injury from sudden decrease of temperature.

Vinery.—During the time the Vines are in bloom, avoid syringing, except on the stem, which should be kept moist. Tye in the shoots as they advance, allowing room for them to swell and stop the laterals. Endeavour to keep the covering upon the border quite dry, as nothing can be more injurious than to have the roots chilled by drenching cold rains. It is now time to shut up the second house; see that the lights are in a clean state, and the house, generally, in perfect order. The Vines in the late house should be pruned, if not already done; any fruit that yet remains should be hung up in a dry cool room.

Peach-house.—During the mild weather we have hitherto had the trees in the succession-house will have been advancing without fire-heat; and it is now time to make slight fires; when the temperature falls below 45°, syringe frequently. Continue to thin the shoots on the trees in the first house; and now when the fruit is set, use the syringe freely.

Fig-house.—Keep a moist, genial atmosphere, and syringe with soap-suds twice a week, to destroy any insects that may be about the buds.

Melons.—As there are many amateurs and gardeners who have

not the advantage of a pit for growing their Melons, the following way of forming a bed may be new to some, and will be found a much better one than making it wholly of dung, as it will not sink so much, nor take so strong a lining to keep up the heat. Mark off the size of the bed on the ground one foot longer and wider than the frame; then build up to this size, with faggots of stout brushwood, to the height of two feet; then lay a row of faggots, 18 inches in diameter, along the back, *front*, and ends, for the frame to rest upon, placing them close and firm, leaving the interior space to be filled up with fermented dung and leaves as a foundation for the soil. The latter should be two feet in depth at least.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Rotation of Cropping.—It is now necessary to determine what the different quarters of the garden shall be filled with during the season. Though one vegetable may be grown on the same ground for years, yet such a method induces a greater expense for manure and labour than when a regular system of rotation is adopted, as the culture of one vegetable often prepares the soil for the growth of another. The chief rule to be observed with all annual vegetables, is never to have two crops of the same class directly following each other. Though excellent plans of rotation may be laid down, yet the period that will *elapse* before the ground is again occupied by a similar crop will depend upon the wants of the establishment and the quantity of ground at the disposal of the gardener. Those who require to have several crops on the ground at the same time, will find that Celery gives a good preparation for Carrots, Turnips, Parsneps, Onions, and early Cauliflowers, or for Peas, with Potatoes and Winter Greens, or Broccoli between the rows. Autumn-sown Onions may be succeeded by Spinach, Lettuce, &c., and early Cauliflower by autumn Onions. Spring-sown Onions will be advantageously succeeded by Cabbages in beds, with Scarlet Runners between; and if the Cabbages stand all summer and next winter, the ground will come in, in the spring, along with Broccoli-ground, for Celery, Potatoes, and Peas, the early Potatoes being planted in the trenches, and the Peas sown on the ridges.

Peas and Beans.—Sow a quantity in a little heat in pots, or on turf, to turn out in the middle of March.

Radishes, Carrots, &c., may be sown on a warm border, and covered up with litter. The weather is now so very changeable, that instead of planting or sowing much, it will be more advisable to get all the ground at liberty in good order by frequent digging, ridging, &c.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Under this head proceed with the works as directed in previous Numbers.

Coppice.—Refer to the directions of last month, and perform all necessary works in due time.

Young Plantations.—Attend to training, relieving, and thinning, as directed last month, from the second or third year after planting till the trees attain the height of 15 or 20 feet. Many people imagine that after the trees are planted they require no more attention for several years, but this is a great error.

Hedge-rows.—As many persons will now be putting their fences in order, and planting trees in hedges, some would, perhaps, like to know what kinds should be preferred; but this depends entirely upon the soil and locality—those kinds that would succeed in one place might not do so in another. In sheltered situations and in dry soils, the Walnut, the Locust-tree, the Gean or Wild Cherry, the Hagberry or Bird Cherry, and Mountain Ash will do well; but the Oak and Spanish Chesnut require a good soil. The Scotch Fir and the Larch thrive on high situations; the roots of these run near the surface, and are injurious to arable lands. Compact upright-growing Elms answer for hedge-rows, but not the forked Wych or Scotch Elm, yet even that might answer, if properly trained. Ash should only be planted in pasture or meadow land.

Nursery Work.—Having previously alluded to the injury done to young trees in nurseries and plantations by hares and rabbits, the following is a simple and cheap method I have used for several years to save young Apple and Locust trees from them, but this process will not answer in extensive plantations:—I make a mixture of cloacine (fresh night-soil), rather in a liquid state, but if that cannot conveniently be got, fresh thin cow-dung, soot, sifted coal or wood-ashes, diluted with strong soap-suds to the consistence of yeast, may be smeared over the stems and branches, as high as the hares or rabbits can reach, with a brush made of Ling (Heath) thrums, or Wheat-straw with the ears on. This should be applied early in November, or before severe weather sets in; it should be laid on pretty thick, once or twice, on a dry day. It will secure them for one winter. No danger arises from it, and it will wear off in spring. Many choice shrubs and flowers might be preserved by sprinkling them thickly over with this mixture early in winter.—*W. B.*

VII.—COTTAGERS' GARDENS.

As the weather within the last few days has been very changeable, the cottager should pay particular attention to protecting everything that is likely to be injured by frost. When the nights are sharp and cold, all the plants should be drawn back from the window, or set down on the floor of the room. Pelargoniums, owing to the late mild weather, will now be handsome bushy plants, if they have been well treated, and must be carefully watched; if they incline to grow up weak and slender, the points of the shoots may be nipped off; they should be watered sparingly and allowed to have plenty of air every fine day. Daphne odora rubra makes an excellent window plant, and may be made to bloom freely at this season if it is treated as follows. A plant of it, I am informed, was potted last spring in coarse rich loam and charcoal; about the beginning of June it was turned out, in the pot, into a shady border until it had finished its growth. In the middle of August it was put, still in the pot, into a border due south where the wood got well ripened; it was taken up in November and placed in a window. It is now looking very healthy and has 11 bunches of flowers on it. This plant is grafted, like a standard Rose, about 14 inches high.

Vegetables.—If not done last week, a sowing of Radishes may be made on a warm border if the weather is favourable; but the beds must be carefully covered in severe weather, as directed in last week's Calendar. Vacant grounds, if any, may be dug, and everything that will forward the spring work should now be done before that busy time arrives.

Fruit.—If any fruit-trees still remain not pruned, it is not yet too late to perform that operation, taking care to keep the branches thin and regular.

Flowers.—This changeable weather is very unfavourable to flowers, and they will require much attention. If severe frost sets in, China Roses, &c. trained on the cottage should have some protection, for being in a forward state, they will be injured by it. Spring-flowers, as Anemones, Tulips, &c., if any, must also be looked after, and protected with fern or straw.—*Mall.*

State of the Weather near London for the week ending Feb. 1, 1844, as observed at the Horticultural Garden, Chiswick.

Jan.	Moon's Age	Barometer. Mean.	Mean.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri. 26	7	29.899	29.925	48	57	32.2	N.W.	.07
Sat. 27	☽	30.249	30.154	30	50	44.5	S.W.	.02
Sun. 28	9	29.980	29.873	34	52	43.0	W.	
Mon. 29	10	29.827	29.746	34	44	40.0	S.W.	
Tues. 30	11	29.844	29.676	31	37	41.5	W.	.03
Wed. 31	12	29.911	29.769	41	49	45.5	N.W.	.13
Feb.								
Thurs. 1	13	30.010	29.900	39	50	39.5	N.W.	
Average		30.010	29.893	44.1	51.4	39.8		.28

Jan. 26. Fine; clear and fine; slight frost at night.
27. Cloudy; slight rain; clouds and fine.
28. Rain; clear, with few white clouds; cloudy and fine.
29. Clear; very fine; overcast; heavy rain at night.
30. Clear and fine; brisk wind, with whitish clouds; showery.
31. Brisk wind, with small hail; snowy showers, set W, sleet and rain.

Feb. 1. Sharp frost; very clear, dry, and fine throughout. frosty.
Mean temperature of the week 1° above the average.

State of the Weather at Chiswick during the last 13 years, for the ensuing Week ending February 10, 1844.

Feb	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. 1 P.M.	7 A.M.	7 P.M.	9 P.M.	11 P.M.	1 A.M.	3 A.M.	5 A.M.
Sun. 4	43.8	33.6	38.6	9	0.30 in.	1	4	2	—	5	5	3	—
Mon. 5	49.4	37.6	37.4	6	0.50	2	3	2	1	2	2	2	2
Tues. 6	44.8	38.9	38.9	10	.25	1	1	3	3	4	3	2	1
Wed. 7	47.0	41.3	41.3	10	.39	—	1	2	—	3	6	3	2
Thurs. 8	46.1	40.0	40.0	11	.67	1	2	2	—	4	2	1	1
Fri. 9	46.3	40.2	40.2	6	.20	—	2	1	1	1	3	2	2
Sat. 10	46.0	39.5	39.5	8	.98	2	3	1	1	4	3	1	1

The highest temperature during the above period occurred on the 10th, 1831.—thermometer 65°; and the lowest on the 8th, 1839.—thermometer 19°.

Notices to Correspondents.

OUR CORRESPONDENTS will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them:—*A Practical Man, P. Mackenzie, J. Wighton, O., M Power, H. Groom, A Friend to Floriculture, Nemo, J. M'I., M. T. B., J. W., J. L. Snow, G. Thompson, I. W. K., Vitis, W. Billington,* and *Martin Doyle.*

AMPHICOME ARGUTA, &c.—*A. Scot.*—This may be potted in loam and peat mixed with a little sand; Astelma Stschelina will succeed in turfy peat, mixed with sand; both of these are greenhouse plants, and will flourish in a temperature from 40° to 50° in winter; but Cypripedium venustum and Gesnera faucialis require a temperature of about 65° at that season, and therefore cannot be grown among greenhouse plants.‡

ASPARAGUS.—*A Reader.*—You may apply during the ensuing spring to Asparagus-beds in a bad condition, both salt and the mud you mention from a pond formed by farm-yard drains and house-sewers. ‡

AURICULAS.—*A Novice.*—Top-dress with leaf-mould, cow-dung, and sand, equal parts. Try one or two with superphosphate of lime instead.

AZALEAS.—*An Amateur.*—The following are 12 distinct handsome hardy hybrid Azaleas, viz.:—eximia, luteo rubicunda, coccinea nobilis, Gloria Mundi, incarnata maxima, regalis, amabilis, Govenia, thyrsiflora, Aurora, dulcedo, blandina.¶

BOOKS.—*An Old Subscriber.*—"Mackintosh's Practical Gardener."——*W. J.*—"Glendenning on the Pine," and the last No. of the "Gardeners' Magazine."——*S. N.*—The "Theory of Horticulture."——*A Novice.*—"Turner's Chemistry." You should read Sprengel's papers, as translated in our columns. Lime drives off ammonia.——*W. E. C.*—You should apply to Mr. Sowerby. We do not know.

CELERY.—*Moderator.*—In order to get this early, without much risk of the plants running to seed, it should be sown in shallow pans about the beginning of March, and placed in heat until it forms its first leaves, when it should be pricked out into a cold frame, and remain there until May, when it may be finally transplanted into the open ground.‡

COPPICE.—*A. C. P.*—You may plant any time up to the end of February. The best time is in the autumn. The better the soil is prepared, the faster the trees will grow; but single trenching, if the drainage is good, is enough. Without perfect drainage, it is useless to plant anything better than Alders and Willows. No manure is required; but if you could pare and burn the whole field in the course of next summer, you would gain much more than you would lose by waiting one season. Oak, Ash, Hazel, and Bird-cherries, are what you must chiefly rely upon.

CHRYSANTHEMUMS.—*An Amateur.*—The following are good kinds, viz.:—formosum, Duc de Canegliano, Therese, Eclipse, Beauty, Grand Napoleon, Princess Maria, Minerva, Goliath, Vesta, Queen, lucidum.¶

FOSSIL FERNS.—*C. R. Bree.*—The belief in the existence of gigantic fossil Ferns in the coal measures is founded upon the existence there of Sigillariæ, an extinct form of vegetation of considerable size, which Adolphe Brongniart has referred to Ferns. But this has long ago been shown, in the "Fossil Flora," to be a conclusion entirely unsupported by evidence. It is true that the ingenious French Botanist has attempted to prove his case by a long and elaborate argument; but if such reasoning as he employs in doing so is to be admitted, then anything may be proved. In fact, we believe that Adolphe Brongniart has himself changed his opinion, and admitted his error. It is true that a few fragments of real Tree Ferns are found in the coal measures, and have been distinguished by Lindley under the name of Caulopteris, but there is nothing gigantic about them; they are, in fact, exceedingly like Tree Ferns now inhabiting the tropics.

FRUIT-TREES.—*A Subscriber.*—The ground which you have allotted for a small orchard, 30 yards square, will contain, at 6 yards apart, 10 Apple trees, 10 Pear, and 5 Plum-trees. They may consist of the following varieties:—*Apples*—Ribstone Pippin, Blenheim Pippin, Claygate Pearmain, Dutch Mignonne, Golden Reinette, Stormer Pippin, Court-pendu Plat, Alfriston, Wormsley Pippin, and Dumelow's Seedling. *Pears*—Marie Louise, Bacon's Incomparable, Beurré Diel, Knight's Monarch, 2 Glout Morceau, 2 Passe Colmar, 2 Beurré Rance. *Plums*—Royal Hâtive, Orleans, Green Gage, Purple Gage, and Washington. ‖

GREENHOUSE CLIMBERS.—*S. H.*—The following are suitable for covering the back wall of a greenhouse 30 feet long and 10 feet high, viz., Clematis azurea grandiflora, C. Sieboldii, Cobæa scandens, Maurandya Barclayana and Kennedya Marryattæ.‡

HARDY PLANTS.—*L. M. C.*—The following plants are suitable for an open border, and may be easily obtained, viz.:—Pæonia Moutan, white, 3 feet high, flowers in March and April; Thermopsis fabacea, yellow, 2 ft., flowers in May and June. The following 12 flower in October and November:—*Red:* Betonica serotina, 1 ft.; Eupatorium trifoliatum, 2 ft.; Aster Novæ Angliæ ruber, 3 ft. *White:* Gnaphalium margaritaceum, 1 ft.; Aster diffusus, 2 ft.; Aster lævis, 3 ft. *Blue:* Statice Gmelini, 1 ft.; Stenactis speciosa, 2 ft.; Aster Novæ Angliæ, 3 ft. *Yellow:* Rudbeckia hirta, 1 ft.; Gaillardia aristata, 2 ft.; Pascalia glauca, 3 ft. August and September—*Yellow:*—Gnaphalium arenarium, 1 ft. The kinds of Perennial Aster that flower up to Christmas are handsome; but they are generally injured by frost, and become unsightly before that time. Iberis semperflorens is quite hardy and handsome; it does not flower all the year round. Saxifraga ligulata flowers in May; its blossoms are nearly white, with a slight shade of pink; it grows about a foot high, but is not a hardy perennial. Helleborus orientalis keeps in bloom from December to February; Anemone hortensis flowers in May; Arabis rosea will bloom early in January; Andromeda floribunda puts forth its pretty white blossoms in March and April; Lathyrus magellanicus has blue flowers; being rather tender it succeeds best when treated as an annual. There are some Narcissi that flower in September: N. viridiflorus. ¶

HEATHS.—*An Amateur.*—The following are 12 distinct hardy Cape Heaths, for flowering during the summer months, and they may be easily procured, viz.:—Bowieana, white; grandiflora, yellow; ventricosa, pink; echiiflora, purple; Beaumontiana, blush; mamula, pink; cerinthoides, scarlet; ampullacea, aristata, dark, crimson, and pink; aggregata, purple; viridiflora, green; and physodes, white.¶

HIBISCUS.—*J. W.*—Your seedling plants of Hibiscus, that have lost their leaves from damp and the effects of green-fly combined, may be cut down and placed in heat; they will start away again from the root. They are not difficult to raise from seed; but many of them are stove plants, and require a higher temperature than that of a greenhouse. Your Carnation layers may be separated from the parent plants in March ‡

LEUCATHEA FORMOSA.—*F. K.*—This plant was introduced in 1821. It is a native of the Himalayan Mountains, and is handsome, but its flowers are not very conspicuous. It is perfectly hardy, and forms good cover for game, as pheasants are fond of its berries. ‡

MANURES.—*A Subscriber* may use guano at the rate of 1lb. to 4 gallons of water for watering Pines and other plants. Coarse charcoal mixed with the soil has a beneficial effect on Pines and greenhouse plants.‡

MELONS, &c.—*L. B. V.*—You cannot grow Vines and Melons with advantage in the same house, when the Melons are to be trained on a trellis under the lower lights and the Vines over the upper ones; but Musas and other tropical fruits that will bear a uniform temperature, and that you wish to grow, will succeed very well on the back part of the house, where there is a stage 3 feet wide with a tank under it. When the Melons have done bearing, their place may be filled by Cucumbers during winter. In the same house you may also force Kidney Beans.‡

NAMES OF PLANTS.—*Calos.*—Your Syrian plant is some kind of Cyclamen which we do not recognise. Keep it in a greenhouse, while in flower, at this time of the year, and place it out of doors in a warm sunny place during summer. Bring it back into the greenhouse when the rain and cold of autumn commence. Few directions have yet been given for pruning, except incidentally. Some very good ones are to be found in the "Cottage Gardens" of 1841, especially Nos. 42 and following.——*A Botanist.*—Hypnum rutabulum; pray do not ask us to name Cryptogamic plants having no relation to gardening.——*Tregye.*—The yellow variety of Maxillaria variabilis.—*E. M.*—Æschynanthus grandiflorus.——*D. W.*—The Cashew Nut.——*Lepus.*—Your seeds certainly belong to Smyrnium olusatrum; but whether it is palatable to rabbits we do not know. Most likely. It is an old-fashioned potherb.

THE OLIVE.—*J. N. V.*—The seed of this plant will not keep, and therefore cannot be sent to great distances. It varies in quality, but not so much as Apples. The best of the cultivated kinds are those of the north of Italy; the worst the Spanish. The wild Olive is very inferior, and of little value. The only certain way of sending Olive-trees to the most distant colonies is in Ward's cases, in which they will travel for six or seven months without care and without injury. They may be had of Messrs. Loddiges. The finest trees are said to be those which grow in moist rich soils, but the best oil is reputed to come from the warmer chalky districts. In the Olive countries the tree is propagated by truncheons chopped off the stools, with a few roots adhering. It may also be increased readily by layers. Such plants are said to fruit in two or three years. We do not know how long seedlings are before they bear, but probably several years.

ORANGE-TREES.—*A. Z.*—Your Orange-trees may be repotted in March. A rough soil, consisting of two thirds sandy loam and one of fibrous peat, will suit them best. The pots should be well drained, and charcoal, or if that cannot be procured, brick-rubbish may be freely mixed with the soil. Orange-trees should be placed out of doors during summer and autumn, when they require no further care than to attend to them with water. In winter, when in doors, they may be managed like other greenhouse plants. They like the very strongest manure.‡

ORANGE-TUBS.—*A Subscriber.*—To paint the inside of these with pitch (not coal-tar) is not injurious to the plants, and it renders the tubs more durable than they would be without it.‡

PSEUD-ACACIA.—*D. C. L.*—This will bear cutting down very well, and throws out a quantity of brushwood where it is cut; but it will not form a thick strong underwood capable of keeping trespassers out of plantations.‡

TRANSPARENT CALICO.—*Subscriber.*—Just tack your calico to your frame before you apply the composition; when it is dry it will become slack. Then unfasten it, strain it tight, and secure it. Most likely it will want a second coat of composition. We have no idea that the substance you mention is so good as Whitney's, which is the most transparent that we have seen.

VINES.—*A. B. C.*—When the fruit is cut, the Vines in your late Vinery should be pruned immediately, and successively as the crop on each Vine is cleared off. Having Pine-apples and Vines in the same house, you cannot do justice to both, and obtain a late crop of Grapes, without the means of turning out the Vines, which you say you have not. If the sashes were made to slide there would be no difficulty; for the lower ones could be drawn up so far as to admit of the Vines being taken outside, and the space at bottom could then be closed by Whitney's prepared calico.‖

MISCELLANEOUS.—*B. F. K.*—Onopordum acanthium is mentioned by Sir W. Hooker as the Scotch Thistle; but we have always supposed it to be Cnicus lanceolatus.——*A. V.*—Twopence each paper.——*Alpha* is answered by Mr. Fleming's paper in last week's *Chronicle.* The Cabul Melons are generally excellent, but no doubt some of the varieties cultivated in Afghanistan are inferior.——*T. W.*—Your questions cannot possibly be answered in a newspaper. We advise you to consult Mr. Glendinning, of Turnham Green, whose opinion you may take with confidence.——*Inquirer.*—There are many substances which cannot be converted into a gaseous form by any known force, such as several of the metals. Nevertheless, it is not improbable that all matter has a gaseous origin; and Professor Lowe, in his late work on the simple bodies of Chemistry, supposes that the only elements of matter may be oxygen and hydrogen.——*A. Y. C.*—Much obliged, but have bought as many Numbers as we want at present.——*J. D.*—Your seedling Azalea has fine flowers, but far too much like other pink ones.——*A Subscriber.*—The kitchen-garden at Kew, or that part containing the Pineries and Forcing-houses, is never open to the public. ‡——*H. C.*—Bricks are conductors of heat, but very bad ones, if compared with metals; the difference between them and gold is as about 10 and 1000.——*B. B.*—We do not know how the French stain their boards so as to make them look dark; but a strong infusion of galls washed over wood that had been previously moistened with sulphate of iron would produce a very dark colour.——*Y. E.*—Those who tell you that it is pedantic to call uncommon plants by their botanical names are themselves the pedants. A large part of our wild plants, and most exotics, have no recognised English names, but are sometimes called one way and sometimes another. Their botanical names are the only ones that are stable. It would be pedantic, no doubt, to call the Hawthorn, Crataegus oxyacantha, and to give Latin names to very common plants in *common conversation*; but with this exception, there is no more pedantry in the matter than in saying Birmingham instead of Brummagem. Those who cry out at Botanical names are they who are ignorant of them, and would have every one else like themselves. You know the *fox*, when his tail was cut off, tried to persuade his brother foxes that tails were out of fashion, and only stumps the mode.——*M. D.*—An article on the Mistletoe will appear in our columns soon. ‡——*A Lady.*—The Beech wood is an excellent Melon; seeds of it may be procured from any respectable seedsman. ‡——*Micklewell.*—Notice concerning subscriptions for Mrs. London will be given in due time. The Lily with purple-backed petals is japonicum.——*A Constant Reader.*—Sorry we cannot answer your question, but you must be so obliging as say to *what* mode of heating you refer? Give us page, &c., and we shall know how to reply. Leaves should be moist, not wet, when they are thrown in a heap to ferment. If mixed with hot dung they moderate its action.——*A Subscriber.*—We cannot tell. You should ask Mr. Groom himself.

*** As usual many communications have been received too late for answering this week.

LARCH PLANTS. — One and two years' transplanted; of good size and quality. On Sale by DICKSON and TURNBULL, Nurserymen, Brechin, N. B.—Will be sold cheap, and freight paid to London.—Brechin, Feb. 1, 1844.

LARCHES.—The Subscribers have still a Large Quantity of fine Transplanted LARCHES of sizes which they are selling at very low prices.—WM. URQUHART and SONS, Dundee.

MIXED GRASS SEEDS, FOR PERMANENT PASTURE AND LAWNS.

ROGER SMITHE, of Eastling, Faversham, Kent, has for sale the above Seed at 8s. per bushel, three bushels per acre, containing all the best sorts, with a good proportion of the Clovers and Trefoils properly mixed for the generality of land. Persons are requested to name the soil as the mixture will be regulated by that. Also all other Seeds proportionably low. These will be sent to any part of the Kingdom.

The Agricultural Gazette.

SATURDAY, FEBRUARY 3, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Feb. 7 . { Agricultural Society of England. Highland and Agric. Society.
Thursday, Feb. 8 . Agric. Imp. Soc. of Ireland.
Wednesday, Feb. 14 . Agricultural Society of England.
Thursday, Feb. 15 . Agric. Imp. Society of Ireland.

"THE PROFITS OF FARMING, whether the land be pasture or arable, and the tenant be a feeder of stock or a tiller of the ground, may be increased in two ways.

"The stock-farmer knows very well that the return he obtains from his cattle depends not only on the kind of food given to them and the manner in which it is supplied, but also on the feeding properties of the breed to which they belong; and he increases his chance of profit as much when, on purchasing from the breeder, he selects with judgment, as when he adopts an improved mode of feeding.

"The intelligent farmer of arable land, again, expects a greater crop the more he has been able to improve the texture of the soil, and the better the nature and state of the manure which it contains. He expects it, because he knows that it depends on the nature of the food given to the plants, and the manner in which they are provided with a constant supply of it. The crop does not, however, depend wholly on this; for as two beasts fed in exactly the same manner may not be equally profitable, owing to a difference between them regarding the quantity and the quality of the meat they afford, so two different kinds of Wheat, though sown on land precisely similar, may give unequal returns, owing to a difference between them regarding the quantity and quality of the flour they afford. Hence the importance, too often overlooked by farmers, not only of preparing the land for the crop in a good and sufficient manner, but also of selecting that kind of seed which experience has pointed out as being most valuable and productive."

We quote the above from an article by Mr. Morton in the first part of the first volume of the English Agricultural Society's Journal. The parallel between the circumstances affecting the stock farmer and those affecting the corn farmer is true, even when carried into detail. The quality of that which is reared by the one, upon which (if we put out of sight the kind and quantity of food supplied by him) his profits depend, is made up of the same elements as that of the articles reared by the other. An aptitude to fatten—*i. e.*, a capability of producing a large quantity of beef or mutton from the consumption of a given weight and kind of food—and the quality of the beef or mutton so produced, *i. e.*, the price per pound they will command in the market, are the two circumstances which determine, in the eye of the stock farmer, the value, to feed, of any breed of cattle or sheep. And, taking the instance of the Wheat-crop, the corn-farmer, on the other hand, in selecting any variety for cultivation, must not only take into account its productiveness, but also its quality in the eye of the baker.

Little attention has hitherto been applied to that branch of cultivation which refers to the selection of seeds. The branch of farming which constitutes the business of the stock-farmer has received much more attention and more patronage from the noblemen and landowners of the country than the mere art of cultivation; and the consequence is, that the breeding and feeding of stock is generally well understood and skilfully practised, while large districts are still badly farmed. We are therefore glad to see the announcement of a work, by one of the body we allude to, on this comparatively neglected subject.*

This work is addressed to farmers and bakers. For the benefit of the former, it was necessary to ascertain the extent of the difference existing between several varieties of Wheat, and the degree in which this difference is affected by the circumstances of cultivation, &c.; for the latter it was important to know how far the criterions by which they at present judge of the value of samples submitted to them, are trustworthy. These two subjects are both considered, and the questions arising out of each are answered in detail, and at the close of "the remarks," the importance is insisted on of our great Agricultural Societies taking up this and other questions in a manner which alone can ensure their perfect solution, by establishing experimental farms.

The general character of this work is well indicated by the following extracts:—

"The first object I had in view on entering into the present inquiry, was to ascertain whether, under the same circumstances, in reference to soil and climate, different varieties of Wheat were, chemically, differently constituted. This I have ascertained to be the fact, by having had nine varieties which grew together on the same spot chemically examined, viz., the first five in the tables, and the four mentioned in page 9. With respect to Nos. 7 and 8, they are the same variety, the one sown after Potatoes being the richest in gluten and sugar, that sown after pasture-grass the poorest. This result proves what might have been expected from the statement of Liebig, respecting the advantage of stirring and exposing the soil. Long before Liebig had published his works, I had observed the advantages of the stirring which the land receives for the Potato and Turnip crops; and such of my tenants as have followed my advice to make either of these the first crop taken from new land, have found it better than taking Oats, according to the old custom. Liebig has informed us how stirring the earth renders it more productive.

"The next object I had in view was to ascertain whether external appearance and the weight of a given bulk were sufficient to indicate the actual value of Wheat to the baker and starchmaker."

These objects were attained, the first, as stated in the extract, by a chemical examination of certain varieties which had been grown under similar circumstances, and the second by submitting these very samples to the inspection of Corn-factors and obtaining from them opinions of their value. The results of this inquiry are given in the following Table:—

CHEMICAL ANALYSIS OF EIGHT VARIETIES OF WHEAT.

Wheats.	Gluten*	Starch and Gum.	Sugar.	Bran.	Water.	
1.	17·70	66·80	3·50	2·3	10·00	Pale Red Cape Wheat, 63 lbs.
2.	10·19	69·94	2·77	2·57	14·6	Duck's Bill Wheat, 63 lbs.
3.	20·8	56·8	5·0	2·8	14·6	Black-Jointed Tremaine Wheat, 62 lbs.
4.	16·90	66.20	4·50	1·9	10·50	Grano Duro, of which Macaroni is made, 63½ lbs.
5.	20·60	53·04	3·70	2·0	10·60	Grano Tenero St. Brigida, 63 lbs.
6.	15·60	70·25	3·25	1·6	10·30	From Port Adelaide, South Australia, 65 lbs.
7.	17·8	60·0	4·6	3·9	13·6	Red Wheat, sown after Potatoes, 65 lbs.
8.	16·2	60·9	4·2	4·0	14.7	The same after Lea, 65 lbs.

* This Gluten includes all the nitrogenous products of the Wheat.

"The first five were grown on the same spot, all circumstances of soil and climate being the same. Also other four sorts which were examined solely with the view to compare the weight per bushel with the quantity of gluten. The first weighed 64 lbs., and contained, 15·86; the second 61 lbs., and contained 14·64, showing a difference in 3 lbs. per bushel of 1·22 per cent. The third weighed 61 lbs., and contained 9·8; and the fourth, 65 lbs., and contained 10·3; showing a difference in 4 lbs. per bushel of 0·5. It is seen by the tables, that, in equal weight, there is difference of proportion among all the ingredients, so that weight indicates nothing in reference to proportions."

The Wheats referred to in the following Table are the same as those mentioned in the one above, and while the extraordinary difference between the figures affixed to some of these varieties shows how little "judgment from external characters may be relied on, in reference to the opinions of different individuals," a consideration of these figures with reference to the composition (see 1st Table) of the Wheats, of which they are the prices, demonstrates still more clearly, of how little value the various appearances are, by which Wheat has hitherto been judged of. It must be recollected that the proportion of gluten in Wheat is a main element in its value; the more of this substance flour contains, the more nutritious is the bread, and the more perfect is the operation of baking.

Wheats.	Prices by three Corn Factors.			Prices by three Bakers.			
	s.	s.	s.	s. d.	s. d.	s. d.	
1.	50	50	52 0	52 6	48 0	52 0	Pale Red Cape Wheat, 63 lbs.
2.	53	52	53 6	53 6	52 6	53 0	Duck's Bill Wheat, 63 lbs.
3.	46	46	48 0	51 0	50 0	46 0	Black-jointed Tremaine Wheat, 62 lbs.
4.	42	42	40 0	50 0	*	*	Grano Duro, of which Macaroni is made, 63½ lbs.
5.	40	45	42 0	48 0	*	45 0	Grano Tenero St. Brigida, 63 lbs.
6.	55	56	57 0	55 0	56 0	51 6	From Port Adelaide, South Australia, 66 lbs.
7.	51	50	52 0	49 6	52 0	50 0	Red Wheat, sown after Potatoes, 65 lbs.
8.	50	50	50 0	49 6	48 0	50 0	The same after Lea, 65 lbs.

* These Wheats being new to them they could not fix a value.

"Had the Wheats been mixed samples, a variation in the values might not have excited much surprise; but in the present case the samples were each of one sort, and unmixed; so that there could be no distraction to the eye, every one of the grains in each sample being exactly alike."

Here we see samples 3 and 5, of the same weight per bushel as No. 2, and containing more than double its quantity of gluten, yet valued at 6*s.* and 9*s.* less per quarter. If the quantity of gluten contained in Wheat be the true criterion of its value as food, then the above tables clearly show that the guides, now made use of by millers and bakers in valuing Wheat are not trustworthy.

Most of the Wheats mentioned by Sir G. Mackenzie appear from their names to be foreign, but the great differences which he shows to exist among them seem, from Colonel le Couteur's Paper on this subject in vol. i. of the English Agricultural Society's Journal, to be equally apparent in varieties now commonly cultivated. This is seen in the account given of the quantity of bread made from equal weights of the flour of several kinds of Wheat. To whichever component part of the flour the absorption of water in the preliminary processes of baking is owing, the fact that different quantities are absorbed by different varieties shows that the proportion these component parts bear to one another in those varieties is variable; thus:—

9 lbs. of flour of Bellevue Talavera Wheat made 11 lbs. of bread.
9 lbs. of flour of Whitington White Wheat made 11½ lbs. of bread.
9 lbs. of flour of Jersey Dantzic Wheat made 12½ lbs. of bread.
9 lbs. of flour of White Downy Wheat made 12¼ lbs. of bread.

It appears, then, from the extracts we have made from Sir G. Mackenzie's valuable Pamphlet, that great differences do exist amongst varieties of Wheat, as regards the quality of their flour, and that no external indication is known by which these differences may be estimated.

ON THE AGRICULTURAL VALUE OF LAND.

(Continued from page 58.)

II. The value of land depends in great measure on the cultivation it has received.

The cultivation of land may be divided into three distinct branches, in each of which it influences the fertility of the soil.

1st—In the application of manures.

2d—In the pulverisation given to the soil by Agricultural implements.

3d—In the nature of the crops cultivated, and the manner in which these are made to succeed one another.

1st—The texture of a soil, though mainly dependant on its mineral composition, and therefore to be permanently improved only by an alteration in its mineral composition, depends, partially, and may, in some degree, be altered and improved by the cultivation it receives. The addition of some kinds of manure to a tenacious soil tends to make it looser, and will improve its texture, but the effect is not permanent, for the manure added becomes decomposed and its effects disappear if a fresh quantity be not applied. Manure, however, does not in general act as a means of improving the texture of the soil, but as a source whence the plants growing on it derive their nourishment.

From the researches of physiologists it appears that plants are incapable of making use of anything insoluble. The roots, through which all nourishment derived from the soil must pass, are terminated by a membranous substance termed a spongiole, which is so fine that nothing in mere mechanical suspension in water, can pass through it. Only those substances, therefore, which are at present soluble, or become so by exposure to the weather, are useful as manures; substances incapable of solution by ordinary natural agents may frequently, indeed, be made use of with advantage to alter and improve the texture of the soil, but they are useless as sources of nourishment to vegetation. The fact that the value of manure depends so much on its solubility seems to be generally neglected amongst farmers. Dung-heaps are often seen placed on some piece of waste land near the farm buildings, and are there suffered to dwindle away during a course of years, that they may be the more thoroughly rotted. One half, at least, of the weight of the manure is thus lost, and this is by far the most valuable half. The rain has carried away to some neighbouring brook all that was soluble in it, and the gases evolved during its decomposition have been given off to the air. The remainder is carried to the pasture lands, but in its then condition it can do them but little good. In some cases, however, the dung-heaps are managed a little better; clay or mould, or the scrapings off the roads being mingled with the manure, tend to retain the liquid and gaseous portions which would otherwise be lost. It is made in yards, where it lies during the summer and autumn, and after being cast up into heaps during winter is carried out to the Turnip-land, where it receives one or more turnings before being spread over the land. Here also, however, the rain is suffered to wash away to the horse-pool or elsewhere the soluble, and therefore the most valuable, part of the dung. Of farm-yard manure generally the two most valuable parts, the washings of the manure, and the urine of the cattle and horses, are lost: these might be collected in tanks in the yards, and being carted out over the arable or pasture land, or being spread over the dung when it was dry, would be found of the greatest value to the farmer.

The following Table gives the result of an experiment re-

* Brief Remarks on some Subjects connected with the Choice of Wheat for Seed, interesting to Farmers, Agriculturists, and Bakers. By Sir G. S. Mackenzie, Bart., F.R.S., L. and E., &c. Simpkin and Marshall, London.

garding the use of dung-water as a manure; it was applied in much too small a quantity.

Barley sown	Barley	Straw	In-crease	In-crease.	Val of man.	Cost	Pro-fit.	Loss	Soil.
Dung-water 300 galls. per acre.	s. c. q.	ct qr lb.	s. c. q.	ct qr lb.	s. d.	s.	s. d.	s. d.	
	43 0 6	27 3 12	2 2 0	2 3 9	11 10	2	9 10		
Saltpetre 1 cwt.	45 2 0	32 3 19	4 4 0	7 3 12	25 10	28	——	2	Stone Brash.
Nitrat. soda 1 cwt.	51 2 1	35 2 24	10 4 1	10 2 21	52 10	20	32 10		
Crop without manure	40 6 0	25 0 0							

A proper attention to the preparation of manure, and to the application of it in kind and quantity suited to the nature of the plant cultivated, would be influential in increasing the fertility of the soil.

2d—The stirrings given to land during its cultivation influence its fertility in two ways: by assisting the decomposition of the manure in the soil, and by giving a depth of loose land in which the roots of the plant may spread. In both of these, the depths of the stirrings and the fineness to which the mould is reduced by them are of the greatest importance. In the state in which manure is generally applied to land, it is useless, it is only after undergoing a process of fermentation in the soil that it becomes a source of nourishment. The products of that fermentation are soluble, and therefore admit of being taken up by the roots of plants. The presence of air is necessary for fermentation, and therefore land is in a proper condition only when in such a state of looseness that air has free access to every part of it. The proper degree of looseness varies, of course, with the plant cultivated. Thus in the case of the Swedish Turnip, which requires large and constant supplies of nourishment, the land should be as loose as possible, not only that the root may be able to increase in bulk, but also that the manure in the soil may rapidly undergo fermentation, while in the case of the Bean, or of Wheat, the nature of the plant requires a considerable degree of firmness. A degree of looseness in the soil and subsoil doubles the resources of the land. It is not liable to injury under extraordinary circumstances, as in the cases of extreme drought, or of extreme wetness. The roots of the plants, in the one case, stretch far downwards beyond the drying influence of the sun and air, whence they can supply the plants with moisture; while in places where the subsoil has been left firm and unstirred, the plants are withered for want of it. In the other case, if the stirring of the subsoil has been effected after a thorough drainage of the land, the plant is uninjured by the rain which, stagnant on land not thus treated, destroys the vegetation covering it. —*M.S.*

(To be continued.)

IN WHAT CONSISTS THE FERTILISING QUALITIES OF BONES?

While every farmer occupying a sandy or peaty soil will acknowledge the incalculable value of bones as a manure, scarcely two practical agriculturists or chemists will agree as to what portion of the bones it is which furnishes the fertilising principle. Sufficient facts, however, seem now collected by the former class of persons, and sufficient analyses made by the latter, to furnish data to enable us to decide this not unimportant question; for it is only by ascertaining the precise fertilising principle of bones, that we can certainly calculate when certain soils are in need of a dressing of them, and when they are an injudicious application.

As regards the practical results of their application, we may safely lay down the ascertained facts, that they are most useful to peats and sands, and least useful to tenacious soils. It is likewise established that they are, of all crops, most useful to Turnips, and succeed when applied alone, in producing many tons per acre, on land which without manure would not mature a single plant.

It is settled, too, according to the authority of Fourcroy and Vauquelin, that bones consist of

Decomposable animal matter	51· Parts.
Phosphate of lime	37·7
Carbonate of lime	10·
Phosphate of magnesia	1·3
	100

Now the question arises, is it the mineral or gaseous principles to which their value is to be referred, seeing they contain these in nearly equal proportions?

To begin with the mineral. Many writers contend that this is the element to which bones owe their value. The Highland Society of Scotland offered the gold medal for the best essay on the subject of the fertilising qualities of bones as compared with farm-yard manure, and the prize was awarded to Dr. Madden, who gave it as his opinion, that the value of bones was principally due to the phosphates which they contain. His calculations, however, have been proved to be fallacious, and are known to be quite erroneous in principle, though at the time they were thought by some to have settled the question.

Now, admitting that about six cwt. of bones is the average application to an acre of land, something like 2½ cwt. of phosphate of lime will be applied to the soil; on the other hand, calculating twenty tons as an ordinary dressing of fold-yard manure for Turnips, and calculating it to contain, on the very lowest average, three per cent. of phosphate of lime, we shall have no less than twelve cwt. of phosphate of lime supplied by it to the crop. If it were the phosphate of lime to which the whole of the credit were due, how does it happen that bones are peculiarly beneficial to Turnips, which, compared with many other plants, contain but a small comparative per centage of it, and why is it not equally efficacious on clay soils, where there is so constant a drainage of their phosphates by taking away the Wheat? and why is it so useful on peaty ground, which generally abounds in phosphates? To show that we have not over-rated the phosphates in farm-yard manure, under ordinary circumstances, we may just refer to Liebig, who gives horses' dung as containing 5 per cent. of phosphate of lime, cows' dung 10 per cent., and straw varying from 7 to 16 per cent.

As regards the very small quantity of phosphate of magnesia, the above remarks apply in greater degree.

Is it, then, the spinal matter—consisting principally of gelatine, but also containing some fat, oil, and cartilage, to which bones owe their value? Gelatine, according to Gay, Lussac, and Thouard, consists of the following proportions of—

Carbon	47·88 Parts.
Oxygen	27·207
Hydrogen	7·014
Azote	16 998

It would therefore appear that bones contain about 8 per cent. of azote, and to this we submit, nearly the whole of their fertilising qualities owe their existence. Azote is the principal feature in all powerful or concentrated manures—the base, so to speak (if the term may be allowed in this sense) of all the forms of the nitrates, and the compounds of ammonia—two forms of gas by the quantity of which, as by a standard, nearly all manures may be reckoned in value, because crops supplied with a full quantity of azotised manure invariably excel in luxuriance, being thereby enabled to assimilate a greater quantity of their other constituents.

The great value of bones, moreover, above many other azotised manures, consists in its having its peculiar elements in a state of considerable fixity. While the nitrates require only solution in the soil to set free their azote with great rapidity, and while the various forms of ammonia are even still more volatile, the gelatine in bones requires to be fermented, and to undergo a process of decomposition anything but rapid, before the azote will be given off; and when it is so given off, it is in a way so gradual, as to be in strict applicability to the wants of the plants.

It has been asked, with some degree of confidence, if the bones owe their utility to the gelatine, how does it happen that burnt bones are also in some cases decidedly advantageous applications as manure? The experimenters, however, did not say how they were burnt. If they were burnt to whiteness, so as to crumble to powder, doubtless they would be deprived of the whole of their azotised matter; and if these were equally useful with unburnt bones, doubtless practice would decide against our theory. But if the bones were but partially burnt, only to blackness, or burnt in a confined position, the azote would not be dissipated in any great quantity, but only made more volatile, and therefore likely to produce an equal, if not greater effect upon the crops, though they would not be of such permanent value. For if the burning did partially carbonise the bones, the carbon would take up the ammonia, for which it has considerable affinity, and give it off only on the application of excessive moisture. Bones thus burnt may therefore have even a more apparent influence on the first crop, and in its early stages, than unburnt bones; but this rather confirms than invalidates the opinions stated above.—*W. E. N.*

ON MINERAL & INORGANIC MANURES.—No. V.

By Professor Charles Sprengel.

(Translated from the German.)

As it is useful, for reasons which every one may easily guess, that lime should be intimately mixed with the furrow-slice, it is generally brought on the fields during a summer fallow, after which the land is planted in the autumn with winter crops, Wheat, for instance, Rye, winter Barley, Spelt, Rape, &c. The use of lime on fallows is the more necessary, the greater the number of the crops that have been taken off the land. Lime, however, is also very often used for summer crops, viz., for Beans, Vetches, and Peas, which plants require much lime, and are therefore much benefited by it. The Peas grown after being manured with lime have the property of boiling better, and of being nicer to the taste than those grown after dung; the same is the case with Peas grown after the application of marl. We may assume that this property is derived from the nature of its component parts, and limed or marled Peas will probably contain more starch than dunged Peas, the latter on the other hand more *legumen*. Lime, moreover, is useful with other crops also, in producing more starch, whilst dung will promote the formation of nitrogenous substances, such as the legumen in Peas, which does not become soft after boiling; whilst starch, on the other hand, swells and softens the other component parts. This subject being interesting as respects the physiology of plants, shall be more closely adverted to.

If a Potato crop is manured with lime, the roots become not only much more mealy, but more savoury; because lime will not only neutralise the acid of the tuber, but may even form some saccharine matter in them. Again, it is not advisable to manure Flax with lime, to which it will impart a less tenacious and coarser fibre. In Belgium, where they know more about the growing of Flax than anywhere else, it is only after a lapse of seven years subsequent to the application of lime, that it is ever planted on the same field. Still less is the growth of Buckwheat improved by lime, although its ripening may be accelerated thereby. I have found by experiment that 300 lbs. of lime per acre will cause it to ripen eight or ten days sooner than usual, which will be of importance in soils where Buckwheat grows too luxuriantly, or where it continually flowers without forming any grain. Rape will grow exceedingly well after a joint manure of lime and dung, but in this case, only the half of the usual quantity of lime is to be used; and it will also be best that the lime should be well harrowed in, which will prevent it coming into close contact with the dung, which is important for reasons previously stated. All sorts of Cerealia manured with lime will be conspicuous for their grain having very thin husks, and being very heavy and mealy, but there will be less straw than after dung, and it will scarcely ever be laid down. After manuring with lime, the stubbles are generally so clear of grass that they will afford but a poor pasture for sheep, on which account lime manure has often been rejected, but without sufficient ground.

It is to be regretted that the present high price of burnt lime often prevents its application on a large scale, but wherever this does not hinder it, the application of lime should not be neglected, as all fodder, as well as straw grown on it, will be nutritious and wholesome. We have stated so many advantages to be derived from it, that lime must reach a very high price indeed, before its use will cease to be advantageous.

Respecting the quantity of lime which is to be put on a certain area, it is to be observed, that sandy soils require much less than heavy ones, 300 lbs. per acre is generally sufficient for sandy soils, whilst stiff clayey soils will bear 5000 lbs. In England, where burnt lime, on account of the cheapness of fuel (coals), is not dear, even 10,000 lbs. are applied to an acre. Marshy soils generally require a large quantity of lime, still the effect is not always favourable, as this sort of soil is not only deficient in lime, but also in many other mineral substances, which are absolutely necessary for the growth of plants, as potash, silica, gypsum, &c. The application of lime will produce the greatest effect on marsh land, which is very natural, as it will find there much of the coal of humus ready for decomposition, and it will also be beneficial by changing the protoxides of iron and manganese, which are very abundant in such soils, into perfect oxides; the former being very noxious, the latter advantageous to vegetation. It kills also all insects, which are plentiful in new marshes, and increases thereby the amount of manure. On account of all these reasons a heavy liming will be required, and according as the soil is loamy, clayey, or sandy, 1000 to 1500 lbs. per acre are to be used. A soil which has entirely run wild and has been exhausted, requires also a strong lime manuring, but it must be soon followed by dung, else the ground will become absolutely useless. It may be put down as a general rule, that the amount of lime must be the greater the more clayey the soil is, the more iron it contains, and the more carboniferous and resinous the humus contained in it is. In fine, lime will act beneficially only where the soil has been previously well drained, which may be caused by the lime forming, in that case, with the sand a sort of mortar, which being insoluble in water, can produce no effect.

In some countries, lime is also used along with wood-ashes, which, as can be easily understood, must produce a very beneficial effect, for wood-ashes contain all the mineral substances necessary for the nourishment of plants, as we shall hereafter see. For this purpose, the lime is placed in a heap, sprinkled over with a little water, and immediately covered with a thin stratum of ashes; the lime gradually slakes, swells, and becomes visible in some spots, after which the heap is stirred through, sprinkled with water, and again covered with ashes, and after the lime has again become inflated, the whole is stirred and worked up. This sprinkling with water, covering with ashes, and working up, is repeated until all lumps of lime have disappeared, and the whole presents a homogeneous pulveriform mass. That such a mixture of lime and wood-ashes will be more active than pure lime, may be expected, because besides caustic lime, it contains also caustic potash (which latter has been formed by the action of the lime upon the carbonate of potash of the ashes), and which affects the vegetable remains and the coal of humus more powerfully than caustic lime, and produces from it humic acid after the lapse of a few hours. If the wood-ashes contain also sulphate of lime (as is the case at times), gypsum also will be produced. In order that the caustic potash thus obtained may not attract the carbonic acid of the air and become mild, the mixture is to be used as soon as possible, but always merely on fields which are not yet sown, else the alkali would act very detrimentally upon the plants. At times, instead of wood-ashes, peat-ashes are used, in which case, however, no such useful mixture will be obtained, as the peat-ashes are always deficient in carbonate of potash. Peat-ashes (as we shall see hereafter) act merely by their containing gypsum, common salt, phosphate of lime, and magnesia; at times, also, by an admixture of sulphate of potash.

(To be continued.)

CULTURE OF THE LAND FOR WHEAT.

When land is ploughed only to the depth of 3 or 4 inches, the active soil is so very limited, that the least change in the weather is injurious to the plants growing on it. The manure which is always applied to the Wheat crop under this system of shallow ploughing forms a layer near the surface; the roots of the plant ramify only through the furrow-slice in which the dung is placed, and consequently the plant has but little hold of the ground. It is thus that in severe weather in spring, the plant gets "thrown out," as it is termed, by the frost. The roots having spread out horizontally near the surface are easily exposed to the weather, and whether it be mild or frosty, dry or damp, are entirely under its influence: in a dry season the shallow soil and the manure in it become parched and inactive; in wet weather the roots having but little hold of the ground, a soaking rain and a little wind loosen the plant and it is blown out. Wheat sown on a deeply-cultivated soil, exerts the whole of its energy, at first, in the

production of roots. These strike deeply in the soil, filling the whole of it, with their minute fibres. The plants may appear thin during winter and in spring—those which turn out the best crops often have this appearance then—but, whenever genial weather comes, the organs of the leaf being highly excited, are prepared for vigorous and luxuriant growth; and a wide field having been laid under contribution for the purpose, the roots easily provide the nourishment required to support them under it. If a plant in such a condition be pulled up,—if the soil be deep, it will be found to have sent out its roots as minute fibres, 18 or 20 inches from it, in all directions; it is evident that no variations of weather can affect it, situated thus; it draws its nourishment from sources beyond the influence of the variableness of external agents. Thus deep cultivation, by encouraging depth of rooting, *indirectly* effects for the plant a comparative independence of the weather; but it has a *direct* influence in the same direction, for if the weather be wet a great depth of soil readily absorbs the water and conveys it down to the drains; and if it be dry it retains for a longer time a sufficiency of moisture. Of two crops of Corn, equally luxuriant in their growth, that is not so liable to lodge which is grown on the deeper soil, for its growth has been more gradual and natural, and less the result of artificial excitement. The manure in the shallow soil has not had its rankness rectified by mixture with a great mass of earth, and Wheat grown upon it will spring up rapidly but without rigidity; and though it may at one stage of its growth look more luxuriantly, it will at another yield less abundantly than a neighbouring crop which has throughout grown slower and generally promised less. Of course it must be understood that deep cultivation can be safely entered upon only on soils that are naturally or artificially dry. And now a few words as to the depth at which Wheat ought to be planted. We think this has not yet been satisfactorily determined. Nature ought to be our guide in things of Nature; she always drops her seed on the surface; and when it is necessary that any particular seed should get deeper than its natural gravitation would enable it, she provides them with means for the purpose. Thus the Barley and Wild Oat have awns, or beards, by which every motion of the seed pushes it forward; such a seed, lying on the ground, assisted by the wind, very soon wriggles itself beneath the surface. We think, therefore, that the nearer the surface a seed is planted the better, provided it be placed deep enough to protect it from its enemies, the birds, &c. This conclusion at which we arrive is strengthened in reference to Wheat by another circumstance; for, if a Wheat-plant be observed in spring, it will be seen that at whatever depth the seed was originally planted, the lateral roots which it has sent out to supply it with nourishment are always sent out from it at a point not far below the surface, certainly not more than one inch below it.—*John Morton, Chester-hill, Stroud.*

ON GORSE, AS A WINTER FOOD FOR HORSES.

In these times, when the diminished prices of Agricultural produce demand a rigid application of a judicious economy to every expense of cultivation, there is none which requires closer attention than that large item of expenditure—the keep of horses; and yet, because it is not actually paid in hard cash, farmers are in general very careless about it.

The Harleston Farmers' Club have shown in a strong light the necessity of attention to this important point, in the fact, that, when a discussion was raised upon it in the Club, it appeared that a body of excellent managers, in one of the best-cultivated counties in England, upon the same description of soil, and using the same breed of cart-horses, differed in their estimates of the cost of maintaining them by as much as fifty per cent.!

In a recent Number of the "Journal of the Agricultural Society," the experienced Mr. Rodwell has shown at how cheap a rate horses may be kept in the summer by means of that invaluable plant, Lucerne, upon soils, and, it should be added, under a climate, adapted to its growth; for I believe it is a plant which has not been found to thrive in the north of England.

Mr. Rodwell describes the soil on which he cultivated Lucerne with so much success, as a sand upon a subsoil of dry sandy loam. I have always understood that it requires the presence of a considerable quantity of lime. In Kent, it flourishes in deep light soils abounding in calcareous matter, and resting on the chalk. From the geological relations of Mr. Rodwell's land, I should conclude that it likewise contains a considerable proportion of calcareous matter, derived from the subjacent chalk. This view is confirmed by a reference to Dr. Daubeny's table of the constituents of crops, founded on analyses, which, if not all that could be desired in point of accuracy, may be regarded as a good first approximation, and the best guide which we at present possess in these matters. It appears from that table that the quantity of lime contained in a given weight of Lucerne is much greater than that contained in the same weight of red Clover. Of the last, 100,000 lbs. contain 584 lbs. of lime; while the same weight of Lucerne contains as much as 1304 lbs. I have seen Lucerne grow very well for a number of years on the non-calcareous soils of Middlesex, which were prepared for it by a dressing of lime or chalk.

There is another plant to which I wish to draw attention, as a food for horses in the winter, which flourishes most on sandy and gravelly soils—it is not necessary that they should be calcareous—but which is hardy and indigenous, and not very limited in its range either of soil or climate in Great Britain and Ireland. This is the Ulex Europæus, the common Furze, Whins, or Gorse.

Botanists make three varieties, or sub-species; two of them, U. Europæus and U. nanus, or dwarf Furze, may be seen on every common; the latter is the most abundant, the former is that best adapted for the food of horses and other cattle, and is the only one of the two worthy of cultivation. It is distinguished from the dwarf Gorse by its more vigorous and bushy growth, rising to the height of from 2 to 5 feet, as well as by the greater succulency of its young shoots. The U. nanus does not attain half this size, and is minuter in all its parts.

A third sub-species, or variety, is the U. strictus of Mackay's catalogue of Irish plants. It was discovered by Mr. J. White, in the park of the Marquis of Londonderry, in the county of Down, and is now well known in our gardens as Irish Gorse. It rarely flowers, but is readily propagated by cuttings. It is easily distinguished from U. Europæus by its smaller size, its dense and compact, rather formal mode of growth, and its upright branches, which are so soft and succulent that sheep and cattle are extremely fond of them; and Mr. Murray, of the Glasgow Botanical Garden, strongly recommends its cultivation for early spring feed. The species, however, which is actually cultivated in some districts for fodder is the U. Europæus.

The Gorse is not indigenous to Sweden, and Linnæus is said to have fallen on his knees in a transport of delight, when he first beheld a large extent of Heath glowing with its vegetable gold. Such a prospect, in the spring, is one of the most exhilirating which I know. Goldsmith has done homage to its beauty; but in his

"blossomed furze, *unprofitably* gay"

has greatly maligned its utility; for a more valuable plant, as a food for horses and milch-kine*, does not exist—to say nothing of its use for fuel, the only purpose for which it is cultivated in the south of England, except as a cover for foxes and game.

In the northern parts of the island, and in Wales, its value as food for horses has long been known; and during the Peninsular campaign, when our cavalry were suffering from want of fodder, some of the troopers who came from those districts cut and bruised for their horses the Gorse, with which the wastes of the country abounded; and the animals were found to thrive so much upon it, that the practice was generally adopted in the Army during the rest of the campaign. In consequence of hearing of this fact, my father proposed to sow a few acres of the poorest part of a farm which he then held with Gorse, as a winter-food for the horses; but my prejudices were against the plan, and I had sufficient influence to prevent its adoption. It was only subsequent experience of its use in Wales which convinced me of its value as a winter-food for horses. I have heard, that when properly bruised, it is equally good for cows, and produces very sweet butter; but on this point I do not speak from experience.—*J. Trimmer.*

(To be continued.)

* It has only recently been applied to the latter purpose. At Birmingham, I have been told that a dairy of 200 cows is fed exclusively with it in the winter.

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. IV.

(Continued from page 37.)

The next part of the process consists, after bruising the soil gently in the mortar, to pass it through a fine sieve which will retain a Mustard-seed. What remains in the sieve must be carefully weighed and noted down under the head of "coarse sand and undecomposed vegetable fibre."

The powder which passed through the sieve must now be placed in a clean porcelain crucible, boiled for five minutes with about two ounces of distilled water, being stirred during the process with a glass rod, so as completely to divide the particles of soil.

While hot, the contents must be quickly poured into a small narrow glass vessel (a half-pint glass measure will do very well).

In about one or two minutes the contents of the vessel will be found to have divided into two portions; the fine sand will, by its weight, have fallen to the bottom, while the impalpable matter remains dissolved in the water. This supernatant liquid must be carefully poured off into another vessel. If any of the sand has passed with the solution, which is generally the case, it will speedily sink to the bottom, when it can be removed by repeating the process of pouring off.

The vessels containing the sand must now be washed with cold water, and the contents brought into one vessel, at the same time carefully place the solution of impalpable matter on one side, for further operation presently.

It is not possible by this single operation to separate the sand from the powder completely. A little practice and tact will, however, enable any one to separate the two completely, by washing the sand frequently with cold water. This is done by adding a small quantity of distilled water, and shaking the vessel quickly, and at the proper moment pouring off the washing. The water thus used must be added to the solution containing the powder. When the washings remain clear after agitation with the sand, the operation need not be repeated, as it is now free from impalpable matter.

The sand thus separated must now be carefully dried in a clean porcelain crucible, over a spirit-lamp, and then weighed, and the amount noted down as "Fine Sand."

The process of washing and separating the sand from impalpable matter is most difficult with heavy soils; it is not at all so with light specimens.

The next part of the process is very simple. The solution of impalpable matter must be poured into a glass funnel, previously charged with a filtering paper, which has its weight marked upon it. The powder thus collected must be carefully dried, and its weight, after deducting that of the filter, noted down as "Impalpable Matter."

The amount of carbonate of lime in any soil is easily obtained, as follows:—

The coarse sand sometimes contains small lumps of chalk, but unless the soil is "chalky," the amount is inconsiderable in this part of the analysis. There will be no chalk found in the "Fine Sand." It must be sought for in the impalpable matter.

For this purpose, take 50 grains, and dissolve it in a solution of nuriatic acid and water (about half a dram of acid to a dram and a half of water), and set the solution aside for two or three hours. Then add an ounce more water, pass it through a marked filter, and dry as above. The loss in grains, after deducting the weight of the filter, will give the amount of carbonates (which are generally chalk) in the 50 grains operated upon, from which its proportion to the whole soil can easily be calculated.

The process of drying alluded to above is best done by a sand or water bath; where these cannot be obtained, it must be done in the porcelain crucible; but great care is necessary, in thus conducting the process, to prevent the contents from being charred by applying too much heat.

The animal or vegetable matter in the soil can be easily known by exposing a given quantity of the impalpable matter, say 50 grains, to a red heat in a Hessian crucible. The loss will give the requisite result. The oxide of iron and gypsum require a more complicated analysis, which can be found in chemical works.

For all ordinary purposes, however, the analysis has been now carried far enough. The information thus gained is extremely interesting to the farmer. A little practice will render the operations perfectly easy; no chemical knowledge is requisite. A determination to avail himself of the knowledge thus to be obtained, a tolerable share of patience, and the exercise of ordinary tact, will be all sufficient. The method is similar to that described by Sir H. Davy.

The paper of the late lamented Mr. Rham upon the same subject, in the "Agricultural Journal," is well worthy of perusal. My principal objection to it is the indefinite application of the terms clay and humus.

The table of M. Thaer is still more ambiguous. The term clay is incomprehensible as an element of Chemical analysis. The less "impalpable matter" in a soil, the more sand will be found, and *vice versâ*. Clay is, in fact, "impalpable matter," and water with an excess of aluminous earth.

By the simple process I have described, then, the farmer will obtain in a very short time the following information about his soils:—

1st, Amount of moisture, showing the capabilities of the soil in retaining or parting with this important element.

2d, The amount of coarse sand, gravel, or undecomposed vegetable fibre.

3d, Fine sand, without which no soil is fertile.

4th, Impalpable matter, which is of the utmost importance, not only as containing the principal inorganic elements in the food of plants, but as having a most important bearing upon the fertility of soils, in the proportions in which it exists to that of the sand.—*C. R. Rree, Stowmarket.*

(To be continued.)

Home Correspondence.

Shed-Feeding Sheep.—My attention has been given to the Leading Article in your publication on the 13th inst., in which the subject of Shed-feeding sheep has a prominent place. I am not at all surprised that Mr. Childers has ascertained by actual experiment that "the sheep in the shed, though they consumed nearly one-fifth less food, made above one-third greater progress" than those which had been folded in the field. Shelter and warmth to all animals when fattening are most essentially important, and I have no doubt that the farmers who fold their sheep on open Turnip-fields in cold wet weather lose considerably by doing so, and would find their advantage (without our dwelling on the cruelty of the prevailing contrary system) in providing such cheap and easily-formed shelter as you have recommended. It is not long since I have seen sheep in the south of Scotland, during the most penetrating rain and snow storms, up to their knees in the mire of a clay field, which was almost bare of Turnips, and without the possibility of obtaining greater shelter than the wet ditch of a leafless hedge three feet high afforded them; there they lay cowering from the pitiless blast in misery, from day to day. And this was the systematic treatment pursued there towards store-sheep, with hardly an exception. The loss sustained in the comparative waste of manure, and in the condition of the sheep, by not taking to them Hay and Turnips, in covered sheds with yards during the severity of weather, is inconceivably great. But "the opinions of any agricultural correspondent, however safely built upon facts, are not (as you have judiciously stated) necessarily of general application, because that which is fact in his neighbourhood may not be fact elsewhere." What may be the best treatment for Leicester Hogs put up to fatten in a district where Turnips constitute the principal winter and spring food, may be totally inapplicable to other varieties of the species, under other circumstances of age, habits, soil, and climate, even within the limits of the same county or province. There are many breeds of sheep, for instance, which require, from their nature and peculiar habits, a constant liberty of range and free ventilation, and many localities in which they would nearly starve if they were restricted from roaming about, without any other means of obtaining shelter than the lea side of a hill or furze-bank, or stone wall. I shall suppose the case of the

blackfaced or Cheviot sheep; these, if confined in warm houses, would be injured in health, and after a few generations, rendered so delicate by the natural transmission of new habits, and even of physical conformation, as to be unfit for their native pastures. Those nomadic tribes accustomed to brave the wintry blast, and scrape up their scanty food from under a covering of snow, would become diseased, or perhaps die of *ennui*, if confined in close sheds and fed luxuriously. The Cheviot sheep farmer well knows that the healthy condition of his flock is preserved by their being kept out on the hills as long as a blade of grass can be cropped from the ground, and he is unwilling to divide among them even a few plaid-fulls of the bog hay which has been cut and stacked for them near the stells, as long as they can procure any food for themselves, lest they should become indolent and lose the robust vigour which active exercise imparts to them. But some shelter is necessary for the mountain sheep, of which countless thousands have at different periods perished from the want of it. Until stells were built to save them from snow-drifts, there often was no chance of saving them from being smothered in heavy snow-storms, but mere rain, or even cold wind, unaccompanied by much snow, are not dreaded if their range permits them to obtain the shelter of a hollow, or even of a hill-side on which the wind does not blow: necessity alone causes them to enter any of the numerous stells, which the good sense and humanity of the late Lord Napier, and other land-proprietors in Scotland have so liberally built, where the eddying winds are least likely to affect them. Sheep, like those in the hill districts, would feel a sense of suffocation if they were inclosed in a covered shed within a close country; and I think that all flocks, except the individuals of them which are actually fattening, enjoy more health in the open air, but with liberty to rest under some natural shelter, or such artificial shelter as consists with their liberty of movements, from wind or rain than if housed. For ewes in young, air and exercise and perfect freedom seem to be most necessary; but whether near the mountain or in the inclosed vale, an hospital should be provided for the sick, a small park for the tups, an inclosure for lambing and feeding-sheds, such as those represented in your plate to some extent. In short, the principle of affording shelter to sheep is most just and necessary; though confinement in sheds is unsuited to the nature and condition of the hardy varieties, which depend on their fleecy great coats for warmth, and which, if shut up in a warm place in their dripping raiment, would emit morbific evaporations. High-bred Leicesters, or other lowland sheep of the same indolent habits (comparatively with the mountain tribes) are only suited by their nature to lowland districts, where hedge-rows and plantations usually afford sufficient shelter, except in extremely severe weather; and therefore, except for the purpose of accelerating the process of fattening or sheltering flocks of sheep where there is not sufficient Grass-land for their keep, as in many of the purely tillage farms of Great Britain, thatched sheds may be altogether dispensed with. You perceive, Sir, that my exceptions in favour of your system are few, and only such as any practical sheep-farmer would admit to be reasonable.—*Martin Doyle.*

Shed feeding of Sheep.—I am perfectly satisfied of the fact, so fully proved by Mr. Childers' valuable experiments, and dwelt upon in a late Number of your Paper, that sheep fed in sheds will produce much more mutton in proportion to the quantity of food they consume, than others allowed to go at large in the open field, exposed to all the variety of weather, and induced to take much more exercise. I have tried such experiments myself, and occasionally with much success; frequently, however, the whole advantage has been thrown away at the end, by the sheep being attacked—as they are very apt to be when confined for a length of time upon litter, which will hold a good deal of moisture, though often renewed—by a disease in the feet of so painful a nature, as to cause them to lose more flesh before it can be cured than they will recover in a month afterwards. The disease is the same, though I think more virulent, owing, perhaps, to the higher feeding to which the animal has been subjected, as that known by the name of foot-rot, or foot-halt, common to sheep fed in rich pastures, and in damp seasons. This circumstance is a great objection to the mode of feeding sheep in my case, and it may be presumed to be so in others; and it is desirable to know both how the evil may be prevented and cured.—*John Grey, Dilston.*

Sprengel on Inorganic Manures.—As your Paper is not intended for Chemists, it is requisite that the facts which it professes to give should be accurate and clearly expressed. The translation of Sprengel's lecture on Mineral Manures in your last No. (Jan. 20) is, I fear, wanting in both these essentials. Take the following specimens:—"By the action of quicklime, organic matter is converted chiefly into humic acid. To this, lime bears a strong affinity, and if previously combined with water it will lose it again through the above combination; the new compound, however, will again combine with water." Now to say that lime bears a strong affinity to humic acid, means, if it means anything, that it bears a strong resemblance to it, and no doubt it would be so understood by nine-out of every ten of your readers. The sentence might, perhaps, have been more intelligible thus:—"By the action of quicklime, organic matter is converted chiefly into humic acid, with which the lime then enters into combination, forming a humate of lime, it having a strong affinity for that acid." The next paragraph is full of inaccuracies. We are told that caustic lime is soluble in water, "but 752 lbs. of water at 168° Fahr. are required to dissolve 1 lb. of calcareous earth." Now, according to Dalton, 750 parts of water at 60° are necessary to dissolve 1 pint of lime, and, which is a remarkable fact, the hotter the water the less lime it will dissolve; so that at 212°, 1280 pints of water are requisite. But why take the temperature 168°? What the farmer is chiefly concerned in is the solubility of lime at an ordinary temperature, 60°. And why use the words "calcareous earth?" by which he evidently means pure lime, though most people would think he meant limestone, or earth containing a quantity of carbonate of lime. He goes on;—"It (lime) is easily soluble in water if free from carbonic acid, and to this its action on the organic matter of the soil is owing!! In order that substances may act upon each other, one at least must be in a liquid state, and this explains why caustic lime dissolved in water will injure vegetation." Is a farmer to understand, then, that a heap of quicklime thrown on a grassplot would not kill the grass, but that watering it with lime-water would? The truth, probably, is, that quicklime destroys vegetable matter, (*i.e.*, causes the element to form new combinations), owing to its affinity for water and acids, and therefore, when mixed with vegetable matter it converts the oxygen, hydrogen, and carbon chiefly into water and humic acid. —*Crito.* [Probably the error of naming 160° as the temperature at which 1 of lime is soluble in 752 of water, was owing to the figures in the original being mistaken for centigrade degrees, and so reduced to those of Fahrenheit's scale.]

Experiments with Various Top-Dressings.—The following experiments were tried upon a mixture of equal parts of brick-clay and sand. The clay was dug from 20 feet below the surface, and clean white sand was intimately mixed with it, and the whole was put into beds upon a surface of white clay, each partition being carefully divided. Barley was sown on the 5th of March, and the top-dressings were applied on the 15th of April, as per Table, to each partition,—with the intention of its being in a manner a key to experiments with the same kinds of manure, sown, in the same proportions, in the field, in square rods and chains. The object of these experiments was to ascertain whether certain salts, &c. were mere stimulants or manures. There being no animal or vegetable matter in the mixed brick-earth and sand in the beds, if any effect resulted from these applications, the manures must be of a positive character; but a perusal of the following will give an idea of their relative effects, both upon the pure earth and upon the arable land:—

Manures.	Quantity, at the Rate of per Acre.	Value of Samples, from the Artificial Soil, per Quarter in the Market.	From the Natural Soil. Calculated Produce per Acre. Good Corn.	Off-Corn.	Value of the Sample per Q. in the Market.
	lbs.		qrs. bsh.	qrs. bsh.	
Nitrate of Soda	160	23s.	7 4	2 6	27s.
Saltpetre	160	34	7 4	— 1	35
Carbonate of Ammonia	160	35	5 5	— 3	—
Muriate of Ammonia	160	35	6 2	— 3	35
Guano	3 cwt.	—	6 2	— 4	35
	bush.				
Kiln-dust	40	32	5 7½	— —	—
Pale Malt-dust	40	35	6 2	— —	—
High-dried do.	40	35	5 5	— —	—
Wood-ashes from Kiln	40	—	5 0	— —	—
	cub yds.				
Red-burnt Earth	80	28	— —	— —	—
Black-burnt do.	80	35	— —	— —	—
Earth without dressing	—	32	5 0	— 4	35

It will be seen from the above that the results were similar, both as regards the bed of brick-clay and upon the field. The sample of the produce from the saltpetre upon the field was superior to any of the others, having less proportion of offal. The produce of the nitrate of soda was very inferior, with an enormous proportion of off-corn; this proves, so far as we can judge from so small an experiment, that it is unfit for Barley on clay-lands. The superior produce from the pale malt-dust, in comparison with high-dried or kiln-dust, justifies the idea that a large proportion of its manuring qualities are carried off by the application of too much heat. The superiority of the produce of black-burnt earth over the red is worthy of notice, as it was undoubtedly upon account of preserving its charcoal; ashes, containing much charcoal, from paring and burning the surface only, are in all cases superior to the red or mere burnt earth, it being destitute of charcoal. If means could be adopted for burning in a temporary furnace covered with a sheet-iron, in the same manner as it is prepared here in making pot-mould, by merely scorching the turf from which a rich compost is made for strong-feeding plants, it would open a new field for the employment of our labouring poor. I am convinced in the common manner of burning, too much heat in the fires is required to allow the charcoal of the plants to be preserved. Considerable caution is necessary in the application of saline manures; the evil effect of nitrate of soda is visible for several years in the working of heavy clays; but saltpetre is less so than the nitrate, as is muriate of ammonia less so even than saltpetre, and it likewise produces a kinder growth than either, being more like pale malt-dust in its effect. I am informed it may be purchased at the wholesale houses at the same price as saltpetre. There is certainly an imitation of Nature in the application of saline manures, or how is it that the fens of Lincolnshire, the hundreds of Essex, the Channel Islands, and the flats of Holland, are so much superior in fertility to soils of the same mechanical texture in the interior of the country at a distance from the sea?—or that animals fatten so much quicker upon the alluvial lands reclaimed from the sea?—or that they pine and die in the interior of America if salt is not often given them?—or that Sea-weed, where it can be procured, is a universally powerful manure? It is not a solitary experiment, either upon a large or small scale, but a multiplicity instituted upon various soils, and in various seasons, the climate, in respect to distance from the sea, altitude, &c., being taken into account, which alone can inform us of the truth in these matters.—*John Rivers, Sawbridgeworth, Herts.*

Tests for Manures.—The season is now approaching when artificial manures will be applied to the land; and I think you cannot render a better service to the Agricultural portion of your readers than by pointing out a mode by which the purity of each kind may be sufficiently ascertained by the farmer for practical purposes. It is a matter of the highest importance to the welfare of Agriculture that the general use of artificial manures applicable by the drill should not be impeded by the frauds which are continually practised by dishonest dealers. I feel persuaded that the produce of the land may be immeasurably increased, and at a much less cost than at present, by the use of the manure-drill and horse-hoe; we need hear no more of worn-out soils; and the cleanliness of cultivation resulting from their use will, if not entirely supersede the necessity for fallowing, at least materially prolong the interval. Farm-yard manure, though undoubtedly containing all the necessary food of plants, also contains the seeds of all pernicious weeds, under circumstances most favourable to their germination. By great expense in preparation, and submitting to great loss of manure in the process of fermentation, such manure may be delivered on the land free from the seeds of weeds, but the cost much exceeds what most people imagine, and what the same degree of fertility may be produced for by means of artificial manures applied by the drill. A very great advantage arising from the use of the latter is, that on heavy land they may be applied at the most favourable moment without the expensive, long, and injurious process of kneading it by the haulage of farm-yard manure in damp weather, thereby producing not unfrequently sterility rather than fertility. I am well aware that the efficiency of artificial manures containing only two elements can only be reasonably calculated upon after an accurate analysis of the soil to which it is proposed to apply them, and that much disappointment has arisen from the want of such caution; but I am anxious that my brother farmers who intend to purchase artificial manures shall have the means of testing by a simple process whether they receive what is proposed to be sent them or something wholly different.—*A Farmer.* [We have some matter in preparation with reference to this certainly very important subject, and no time will be lost in publishing it. But the task is one of great difficulty and in part insurmountable; for who is to be alive to the ever-varying devices of fraud, where there is a desire to practise it. Moreover, it is not even easy to give plain and simple rules which farmers can employ. We gave formerly a ready and simple test for common salt in nitrate of soda; but we never heard of any one making use of it. So long as farmers will attempt to buy manures *cheaper than they can be made*, frauds will be practised. Dishonest men are always to be found ready to cheat under the pretence of selling cheap, especially when it is so easy to lay the failure of such agents as manures at the door of Chemistry. If a fair price is paid, and only venders of known respectability employed, there will be no fraud.]

Phosphoric Manure.—I have received two or three letters requesting me to state in your Paper the composition of the phosphoric salts used in the experiments upon Turnips. The following is the composition:—The phosphate of potash, soda, and magnesia, weighed about 80 lbs. per bushel, and contained about 50 to 60 per cent. of the pure salts, the residue being sulphate of lime. The phosphate of ammonia was in crystals, and pure. The superphosphate of lime weighed 75 lbs. per bushel, and consisted entirely of superphosphate and sulphate of lime, and no free sulphuric acid. In my experiments on unburnt bones given last week, it is important to remark that the bones were quite pure, reduced by grinding to a powder, and sifted through a muslin sieve. This accounts for the action of sulphuric acid not being so much superior. Repeated experiments with the bone-dust of commerce have satisfied me that on my soil it is quite useless. —*J. B. Lawes.*

Sea-weed as Manure.—I beg to inform your correspondent "M.T.," in reply to his inquiry in your last *Gazette*, that I do not live near enough to the sea to avail myself of the weed as a manure, but I have conversed with farmers who are in the habit of using it, and their account is, that for a single crop it answers well, but that it seems to melt away in the earth. Nevertheless, the repeated use of it must, in the end, materially affect the staple of the soil; for, besides a great multitude of animalcules and small crustacea always entangled in it, a considerable quantity of inorganic substances must be thus accumulated, for it contains potash, soda, sulphur, lime, and magnesia; from this last, indeed, there may be some danger, if carried to excess; for every pint of sea-water contains about 40 grains of magnesian salts, and this earth in large quantities is known to be injurious. The Sea-weed is seldom carted before decomposition has begun, because the quantity of water which it contains when fresh adds so much both to its weight and bulk; and before that process begins it would be useless.—*L. Vernon Harcourt.*

Societies.

AGRICULTURAL SOCIETY OF IRELAND.

At the Council Meeting, on Thursday, January 25th, the Secretary laid on the table the list of Members of the

Society for 1843, and also a copy of a circular letter, to be addressed to the Secretaries of the different local Farming Societies now in connexion with the central one, and amounting to one hundred in number, calling on them to furnish the names of such Members as were common to both bodies, and also to inform the Council how they proposed to qualify for the Society's premiums this current year, pursuant to the resolution to that effect, which was passed at the last general Meeting of the Society; namely, That each local Society, to entitle it to the premiums of the Central one, should have five of its Members at least, also annual Members of the other Society, or that a sum equivalent to five annual subscriptions of one pound each should be contributed by the Members of the Local body, to the Central Society each year. The Secretary stated, that the beneficial effects of that resolution were already most sensibly felt. Many of the proprietors in the different local societies, from which, hitherto, only one pound, and sometimes no subscription at all, was received, have begun to look up, in order to qualify the local society in time for receiving the premiums of the central body this year. Upon the motion of Mr. William Blacker, it was resolved, that the noble Chairman of the council, the Marquess of Downshire, be requested to communicate with the council of the Royal Agricultural Society of England, and of the Highland Society of Scotland, upon the subject of establishing a uniform system of weights and measures throughout the United Kingdom, for the sale of all agricultural produce. The Secretary having brought forward the voluminous reports upon thorough-draining, from the different proprietors in Ireland, who were competitors for the Societies' gold medal, it was suggested by Mr. Blacker, and agreed to, that the Secretary be directed to write to the different competitors to ascertain from them the beneficial effects that have hitherto arisen from any previous experiments made by them in that department, or from any other experiments in draining, instituted by them previous to those in question. These reports were prepared with the greatest accuracy, and framed as they were from undertakings commenced upon an extensive scale, in different parts of the country, afforded some of the best and most valuable information, not only upon the subject of thorough-draining in general, but also upon the price of labour and other statistical information in various parts of the country. A letter was also read from the Marquess of Downshire, chairman of the council, stating his regret that the city of Kilkenny was not fixed upon for holding the next great annual meeting and cattle show of the Society, and expressing a hope that it was not too late to reconsider the matter. Letters were also read from Professor Kane, inclosing some copies of the paper on the growth and cultivation of Flax, read at a late meeting of the Royal Irish Academy. Letters and reports were also read from the Agricultural Society lately established in Jamaica, seeking for the co-operation and correspondence of the Central Society.

Miscellaneous.

Scottish Agricultural Chemistry Association.—The objects of this association have now been fully and positively defined in consequence of the success of the subscriptions necessary for carrying their views into effect; and as its operations are on the very eve of actively commencing, through the instrumentality of their able and distinguished chemist, Professor Johnston, we think it is full time to submit, for the information of our readers, the following statement of the chief objects of the Agricultural Chemistry Association—the duties of the chemist—and the privileges of subscribers:—*Objects of the Association.*—1. The diffusion of existing information, theoretical and practical, by means of occasional verbal expositions, addresses, and correspondence; and 2. The enlargement of our present knowledge, by experimental investigations of practical Agriculturists in the field, and of the Chemist in the laboratory. *Duties of the Chemist.*—The Chemist will be expected to assist in suggesting such series of experiments as are most likely to promote the objects of the association,—to consider and explain theoretically the results obtained—and to point out how they may be best turned to account by the practical farmer. Before commencing the analysis of any substance submitted to him, the chemist may require a statement of the precise object which is proposed to be attained by it. He shall be bound to give only such an analysis as is adapted to the particular practical object for which it is required, and he will apprize the party of the charge to be made for it. The Chemist will have his laboratory in Edinburgh, but during a portion of the year he shall visit different parts of Scotland, on invitations, and at times approved of by the committee. A short journal must be kept by the Chemist of his proceedings, whether in Edinburgh or in the country, a record kept of all the analyses he makes and of any reports he may draw up—all of which, as well as the correspondence on the business of the association, must be patent to the committee of management. All applications for analysis or advice, are to be addressed to the Chemist. *Scale of charges.*—1. Testing saline manures, (such as gypsum, nitrate of soda, sulphate of soda, guano, bone-dust, rape-dust, &c.,) for adulterations, for each sample, 3*s*. 2. Examining limestones, marls, shell-sands, &c., to ascertain the proportion of lime, and the presence of magnesia and alumina, 5*s*. 3. Ascertaining the proportion also of the latter, or of any other ingredients, for each ingredient 2*s*. 6*d*. extra. 4. Examining a soil, or the ashes of a plant, to determine the proportion of one ingredient, 5*s*. The proportion of every other ingredient to be charged 2*s*. 6*d*. additional for each. 5. Examining, with a view to its commercial and Agricultural value, any artificial mixed manure (such as manufactured Guano, humus, animalised carbon, patent manures, &c.), 6*s*. 6. Examining the products of vegetation, to determine, for example, the quantity of water, or of starch, or of sugar, in Potatoes or Turnips; or of oil or gluten in wheaten flour, from 2*s*. 6*d*. to 5*s*. 7. Letters asking advice, unless accompanying, and in reference exclusively to substances transmitted for analysis, to inclose 2*s*. 6*d*. 8. No sample to be sent for analysis without the fee being inclosed with it. *Privileges of Subscribers.*—1. Every landed proprietor who pays 1*l*. yearly, and every tenant farming other persons' land, who pays 10*s*. yearly, shall, on subscribing their names, or authorising their names to be inscribed in a book to be kept for that purpose, be entitled to the services of the Chemist on the terms before mentioned. 2. Every 10*s*. subscribed by a tenant, or 20*s*. by a proprietor, will entitle to two analyses yearly on the above terms, and all beyond that number to be charged one-half more. To the numbers of letters of advice, it appears unnecessary at first to prescribe any limits or check beyond the small charge above stated. 3. The Directors of the Highland and Agricultural Society shall be entitled to publish exclusively, in their Transactions, the reports made to the general meetings of the subscribers, as well as such chemical analyses as in the opinion of the committee are deserving of publication. 4. Every Agricultural Society, by paying to the funds of the Association 5*l*. yearly, shall be entitled to one lecture from the Chemist; by paying 10*l*., two lectures; and by paying 15*l*. three lectures;—and such Society shall have the right to prescribe the particular subject of each lecture, as well as to have these lectures delivered either separately or together.—*The Fife Sentinel.*

The Nature of Soils.—"The study of the soils and of the rocks that lie beneath them has led geologists to conclude that the loose materials of which the soil is composed are derived from the solid rocks that lie beneath them—that there was a time when these rocks were everywhere on the surface; but that gradually, by the operation of the rains and other natural causes, these rocks have been worn down and disintegrated, till what had been solid rock became the loose materials which form the soil. These rocks are essentially of three kinds—limestone, sandstone, and clay or slate, the latter in various degrees of hardness; so that if you want to know the kind of soil in any given district, you have only to inquire into the nature of the rocks which form the substratum of that district. But, besides this, the physical examination of the soil tells a good deal of its nature. For instance, if you were to take a quantity of soil of a given weight, and pour water over it in a vessel, then allow a minute or two for the heavy particles to subside, and pour off the water with the lighter particles floating in it into another vessel, and repeat this till all the lighter particles were carried away, then again dry the heavy materials and weigh them a second time—the difference between the first and second weight of the soil would give the amount of the fertilising matter contained in the soil; for all the vegetable or fertilising substances would be carried off in the water, leaving the inorganic and unfertilising substances behind. Exactly the same result would be arrived at by heating a quantity of soil of given weight in an oven or other place—the vegetable matter would be burnt out, and the difference between the first weight and that of the residuum would be the amount of fertilising substances in the soil. These are rude chemical tests, but when you examine the soil by more refined analysis, you discover that there are eleven substances, every one of which are necessary for the growth of vegetation." This the Professor said he would dwell upon more particularly in his next lecture. He then referred to the subsoil and that part of the soil to which the vegetables did not usually penetrate. "Every farmer knows that a few years after he has limed the surface of his fields, the presence of the lime becomes gradually less and less, till it altogether disappears. Now, it happens that this lime is to be found sunk into the subsoil. So it often happens that the very substances of which the upper soil is most deficient are to be found in the subsoil. The cause of this might be easily explained, for when you consider the action of the rains, &c., you see that their tendency is to carry fertilising substances from the surface down to the subsoil. It becomes, therefore, a matter of importance to know whether it would be advisable to bring up the subsoil to the surface and mix the two together. This is not in every case advisable. For instance, here is a section of a soil 18 inches deep, which I have received from a place in Renfrewshire, the surface of which contains a certain quantity of fertilising substances, while the subsoil contains only half the quantity. It is clearly unadvisable, therefore, in this case, to do more than, by draining, to open up the soil, and let the roots of the plant draw from the subsoil that nourishment which it is capable of affording."—*Lecture at Edinburgh on the 10th January by Professor Johnston.*

Wasteful Management of Manure.—Some idea of this may be gained by analogy. Let us imagine that a farmer keeps three teams of horses, who consume, say two quarters of Oats per week. Let the farmer give one quarter each week to the horses, and dispose of the other quarter as follows:—There may possibly be some ruts in the road leading to and from his farm-yard; let him pour as many as possible of the Oats into every one of the horse-holes and ruts of this road, beginning at the gate of the yard, and proceeding to the nearest turnpike-road. There may seem much trouble in all this, but nothing valuable can ever be gained or done without trouble, and this experiment will probably always be conclusive. Some farm-yards are nicely drained, and very frequently the drains run into the horse-pond. Let the farmer insist on one of his labourers (who may possibly have some prejudice against it) pouring a good drill of Oats into every drain that leads out of the yard till it arrives at the pond, where he may throw in a bushel or so, and if the drain terminates, as drains sometimes do, on a hard road, let him leave a small heap of Oats in every black puddle. When he shall have done this, let him cause some of the Oats to be scattered in every direction round his stable, and take every possible precaution so that the birds of the air, the mice and rats of the field, the fishes of the ponds, and the creeping things of the earth, may come in for a share of the Oats. The farmer's neighbours may call him mad, but let him not mind this. Ulysses was formerly called mad for sowing salt, but now, many people sow salt who are considered sensible, and even clever. Let the enterprising improver keep perseveringly on with this practice for—say three weeks. On or about this period, the ribs of each of his three teams, when in single harness, will probably form a very respectable representation of a park paling. At this point it is time to pause, and seriously ask himself the question, whether it is wise for a man actually to facilitate the waste and destruction of produce which it has cost him much money to gain, and the economical management of which will produce more money. That which we have imagined it possible for a farmer to do with his horse-food, is not a whit more unwise than the practice of some slovenly farmers with respect to their Manures. What Oats are to his horses,—Manure, and especially the liquid and gaseous portions of Manure, are to his fields. Every atom of earth which comes into contact with his dung, preserves for it some of its fertilising virtues, yet he accumulates it in unpaved yards. Every breath of air that passes over it becomes the vehicle for carrying the volatile gases, in which plants delight, from the farmer's dung-yard to everybody else's field; yet he keeps it for a year uncovered with mould. Every drop of rain which falls from the heavens dissolves some of its most valuable portions, and conveys it into the horse-pond, or some of the neighbouring ditches; yet the good man never dreams of sinking a tank, in order to preserve a substance every pound of which Liebig tells us will suffice to grow a pound of Wheat. Nothing can show more clearly than this national waste, the necessity of men being made acquainted with the laws of Nature, which can never be transgressed with impunity, which combine to ruin every man who regards them not; whilst there is not one law amongst them which, if understood, may not be made the ready and willing instrument of his will.—*Maidstone Gazette.*

Importance of Co-operation between the Farmer and Chemist.—We believe that by far the greatest obstacle to the advancement of scientific Agriculture hitherto, has been the want of co-operation between the farmer and the chemist. Each has tried to move forward alone, and thus each has been led astray. We may not inaptly apply to them the well-known story of the lame and the blind, neither of whom alone could proceed with safety, but when united arm-in-arm, the defects of each were fully compensated for by the superior advantages of the other. Thus the farmer, from his knowledge of practice, is enabled to progress in any given direction, but, from his want of acquaintance with the fundamental principles of his art, may be justly considered blind; whereas the chemist, however clearly he may see the end to be attained, makes but a very lame progression, owing to his ignorance of practice. Let the two but consent to become mutually dependent, and, proceeding arm-in-arm, the assured step of the well-practised farmer will be guided in the right way by the clear-sighted knowledge of the enlightened chemist.—*Dr. Madden, on the Advantages of Extended Chemical Analysis to Agriculture.*

Ewes and Lambs.—A difficulty is sometimes experienced in making ewes own their lambs, and oftener, perhaps, when cases of twin lambs occur than at other times. Those who desire to rear all their lambs may find a benefit in sprinkling a little fine salt over the disowned ones. This will usually attract the mother, and when once the operation of licking has been performed, there is seldom any danger of desertion. A friend assures us he has practised this method with decided success, and no injury to the lambs may be apprehended from the application. Sheep, when about to lamb, should be moved and disturbed as little as possible, as all such disturbances, especially with young or wild ewes, greatly increase the probability of their forsaking their young.—*Ayrshire Agriculturist.*

Preparation of Stiff land for Turnips.—Every Agriculturist is aware of the difficulty, and, in some seasons, of the almost utter impossibility, of reducing strong adhesive clay soils to a state fit for sowing Turnips. A field on this farm, allotted for Turnips for the present season, is exactly of the description of the soil here referred to, and with the view of surmounting the difficulty experienced in preparing such a soil, Mr. Richardson directed that it should undergo a thorough autumn tillage. It was accordingly ploughed from stubble betwixt the 3d and 7th of October. Betwixt the 10th and 13th of the same month the drill's were opened, and farm-yard dung driven from the close, applied to it, at the rate of about 18 tons per Scotch acre, and the whole covered up. In this state it lay till the usual period of sowing in May, when the whole was found to be in a highly pulverised state, equal to the finest garden mould—only covered with a large crop of surface weeds, an article abundantly prolific on this farm. To remove the surface-weeds the drills were lightly harrowed, and a potato-grubber passed between them, and any soil that had thus been brought down was laid up by a double-moulded plough, and the seeds. Purple top Swedes, sown on the 11th of May. The result of this experiment seems clearly to indicate that in a similar way soils of even the most stubborn nature may be prepared for Turnips, and

though it is not pretended that there is anything novel or particular in this mode of tillage, yet as it is not generally practised, it may be of use to keep it before the public. When the crop began to be lifted, a friend suggested the idea of having a part of the field measured and the crop weighed, which was accordingly carefully done, and though this season has generally been considered not the most favourable to the growth of Turnips, yet the result in this case was found to be at the rate of 28 tons 18 cwt. of cleared bulbs per Scotch acre. The same variety of Turnips was grown on another field of this farm, but here the soil was a light loam on a gravelly bottom. This field received an equal quantity of the same sort of manure laid on the stubble, and ploughed in betwixt the 10th and 17th October last, and cross-ploughed and prepared for seed in the last week of April and 1st of May, and sown on the 22d May. A similar space of this field was measured and the crop carefully weighed, giving at the rate of 24 tons 5 cwt. of cleared bulbs per Scotch acre. If the additional produce be the result of the different period of tillage in the former case, and there is no reason to doubt that it is, this is another reason why the practice should be brought into public notice.—*Alexander Ross, Farm Overseer, N. Berwick Abbey.—Kelso Warder.*

Gluten in Grain.—The quantity of gluten in Wheat, Rye, and Barley, is very different; and they contain nitrogen in varying proportions. Even in samples of the same seed the quantity varies; and why? Evidently because one variety has been better fed with its own appropriate fertiliser, than another which has been reared on a soil less accurately adapted by artificial means for its growth. French Wheat contains 12 per cent. of gluten; Bavarian, 24 per cent. Sir H. Davey obtained 19 per cent. from winter, and 24 from summer Wheat; from Sicilian 21, from Barbary Wheat 19 per cent. Such great differences must be owing to some cause; and this we find in the different methods of cultivation. An increase of animal manure gives rise not only to an increase in the number of seeds, but also to a remarkable difference in the proportion of gluten which those seeds contain. Among manures of animal origin there is great diversity. Cow-dung contains but a small proportion of nitrogen. One hundred parts of Wheat, grown on a soil to which this material was applied, afforded only 11 parts of gluten, and 64 of starch; while the same quantity of Wheat, grown on a soil fertilised with human urine, yielded 35 per cent. of gluten, and, of course, a smaller proportion of less valuable ingredients.—*Smith's Productive Farming.*

Notices to Correspondents.

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Agricultural Machines.—*Nemo.*—We shall, in the course of this year, publish a series of articles on this subject in the *Gazette*, which we shall endeavour to make *practically* useful to our readers.

Bone-dust.—*A. H.*—Apply from 2 to 3 qrs. per acre. Bone-dust acts more powerfully on light than on clayey soils.

Buckwheat.—*H.*—Light soil suits this plant; sow it after the rate of 1½ bushel per acre, broadcast, at any time between the beginning of May and Midsummer.

Books.—*J. S.*—Griesenthwaite's "Theory of Agriculture" is a good work on the general subject of Agricultural Chemistry. The article by the late Rev. W. L. Rham, on the "Analysis of Soils," in the 1st vol. of the English Agricultural Society's Journal will teach you how to execute a rough analysis. The "Elements of Chemical Analysis," by E. A. Parnell, Esq., is the most complete work on the subject we know, but it requires a practical knowledge of Chemistry before it can be made use of.

Clover Lea.—*Jack Spratt.*—Sow Italian Rye-grass in the blanks early in March, during wet weather, and rake or harrow it in.

Effect of Winds on Vegetation.—*J. Russell.*—There is no doubt that the shaking and stirring of plants by winds benefits them when it is not too violent, but the cases of fertility in upland districts which you may have noticed, cannot be attributed to this, as they are decidedly exceptions to the general rule. The lateness of the crops at the gateways of fields is owing to the trampling of the land there. If any of the facts on which you base the opinions you allude to have any useful bearing on Agriculture we shall be glad to publish them.

Feed for Young Cattle.—*A Subscriber.*—Your best plan will be to give them 4 lbs. of oil-cake a-piece daily, and Straw *ad lib.* The oil-cake will cost you 1*s.* 9*d.* a week.

Geological Map.—*A Notts Farmer* will find the Geological Map of England, by G. B. Greenough, Esq., sold at the Geological Society's rooms, Somerset House, to be the best published "on a large scale." Maps of particular districts are to be had, but there is no *series* of county geological maps published. This desideratum is being supplied by the maps of the Ordnance Geological survey now proceeding.

Grasses for Cover.—*H.*—Messrs. Lawson and Sons recommend for cover Aira cæspitosa, Arrhenatherum avenaceum, Brachypodium sylvaticum, and Bromus giganteus, with some others of less importance. To these we should add more of the coarse hedges, such as Carex pendula, acuta, paniculata, and lævigata. —*J. L.*

Horse-crushing Machines.—*J. T. Nicol, M.D.*—See article on Corne in this and next Numbers of the *Gazette*. We shall take up this subject in the course of our articles on Agricultural Mechanics.

Inorganic Constituents of Onion-tribe.—T. *Price.*—We have not been able to meet with an analysis of the Onion.

Mange.—*Trefoil.*—This is an extremely infectious disease, and consists essentially in the presence of an infinite number of minute insects, invisible to the naked eye, which pierce the skin, and thus produce the well-known irritation. Its cure is effected by totally destroying these insects, which can be done by the application of several drugs; but from the circumstance of the bodies of horses and cattle being covered with hair, and occupying so large an extent of surface, it often happens, that while the infection is removed from nine-tenths of the body, one-tenth may continue diseased, and re-infect the whole, or where a number are affected, those convalescent may again receive the complaint, either from those only partially cured, or from contact with the stalls or mangers against which the animals may have previously rubbed. All these liabilities must be guarded against in accomplishing a cure. The animal should be first well washed with soap and water, and when dry, the following application should be thoroughly rubbed in, either with the hand or a brush, over every part of the body. This should be repeated every alternate day two or three times, and then the animal should be again well washed, and examined, and if necessary, the process repeated. Amongst a very numerous class of prophylactics which the writer has employed with success, the old remedy, sulphur, stands first, and the following combination he considers the best:—Sulphur powdered, 1 lb.; white Hellebore, 1 oz.; oil of tar, ½ lb.; Linseed Oil, sufficient to make a semi-fluid mixture, or liniment. The mangers, racks, stalls, &c., should be washed from time to time with warm water, and afterwards with a solution of chloride of lime, or white ash.—*W. C. S.*

Manures.—*A Constant Reader.*—Cover up your minced horse-flesh, a most valuable manure, with plenty of fresh mould, and wait till it has rotted, and then mix it all up together before you apply it to the land. Your fresh-grubbed wood-land is surely full of vegetable matter already. Your best plan is to plant it to Potatoes in spring, and then sow Wheat in autumn. Ammoniacal liquor should not be applied so very long before the land is to be grubbed up. You had better wait till a week or a fortnight before planting the ground. The bones referred to in the Leader, No. 3, *Agricultural Gazette*, were, we believe, boiled bones.

Markets.—*W. R.*—The report of the wool market by Mr. Perrin does not refer to the London market exclusively, but to the general state of the British wool trade. Can you suggest one or two markets for feeding stock the report of which would be *generally* useful?

Nitrate of Soda.—*Omega.*—Scatter it in wet weather broadcast; that will do as well as dissolving it; but whichever way you do, you may apply from 1 cwt. to 2 cwt per acre.

Operation on the Snouts of Pigs.—*F.*—There are two tendons which, with their parent muscles, elevate the snout, and endow it with the power of rooting up the earth. These tendons may be divided about an inch-and-a-half from the nose. A portion of each should be excised, and the wound kept open a while by means of a little tow; a simple division of these would answer no end, as they would soon unite again: but by cutting out a portion, their power would, to a certain extent, be destroyed. The operation is, however, by no means customary in these parts, and I cannot speak from experience of its practical benefit, but am inclined to doubt its superiority to the old practice of ringing.—*W. C. S.*

Potatoes.—*Economist.*—Philipp's Purple will answer your purpose as well as any other. All Potatoes are the better of steaming. The Mangold Wurtzel Potato is very moist, and of bad quality, though it is a large bearer.

Rats.—*Nemo.*—Try smearing their holes, and the passages they frequent, with some arsenical ointment. They are very cleanly animals, and if they rub themselves against any of the greasy ointment, they will lick themselves clean.

Refuse Lime from Gas-works.—*Amicus.*—Make it into a compost with mud, earth, &c., in the proportion of one of the former to six of the latter, and turn frequently so as to expose it as much as possible to the air. Apply at the rate of 12 to 20 cart-loads an acre. The above figures are quite arbitrary; a smaller quantity of earth to mix it with might do equally well. Do not apply it close to the seed or growing-plant.

Salt.—*N. H. Grillon* wishes to be informed whence Mr. Mackenzie has quoted the words printed in a late No., in inverted commas, "salt of the earth."

Sainfoin.—*G. D. V.*—Sainfoin may be sown with a crop, as Clover or Grass. Sow four bushels of it per acre, in the end of March. Barley is the best crop to sow it with. It likes a calcareous rocky soil, and probably would not flourish on a deep sandy loam.

Steeping Seeds.—*T. Price.*—See Leader, No. 4, *Agricultural Gazette*.

Sulphuric Acid and Bones.—*Anonymous.*—Superphosphate of lime is prepared by submitting dry bones to the action of three-fourths their weight of sulphuric acid, which has been previously diluted with its weight of water. It is obtained in the form of a solution, and must be thrown upon dry earth, or sawdust, or something of the kind, in order to carry it to the field. Sulphuric acid is sold at from 1½d. to 2d. per lb. by wholesale manufacturing chemists. We have written to Mr. Campbell for an answer to your question.

Task-work.—*A Subscriber.*—The dung was measured before turning. 5*s.* or 6*s.* a week, with some cider, a quart or so per diem is the average wage of the labourer in this neighbourhood; but this is of little importance in estimating the proper payment to be made, as may be illustrated by the answer which the story tells us a labourer once made to a farmer, who asked the wages he was willing to be hired at: "Why, master, I've got a shilling stroke, an eighteenpenny stroke, and a two shilling stroke; and you may have just which you've a mind to."

*** As usual, many communications have been received too late for answering this week.

Markets.

SMITHFIELD, Monday, Jan. 29.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3*s* 10 to 4*s* 2	Best Downs & Half-breds	4*s* 0 to 4*s* 4
Best Short Horns	3 6 3 10	Best Long-wools	3 10 4 2
Second quality Beasts	3 2 3 6	Ewes and second quality	3 4 3 8
Calves	4 6 5 4	Pigs	3 4 4 4

Numbers.—Beasts, 2744; Sheep, 26,170; Calves, 83; Pigs, 270.

The supply continuing moderate, there is a brisk trade to-day, but very little alteration in prices. The best Scots, Herefords, &c. were readily sold at fully last week's prices, but the Short-horns were heavy on hand, barely maintaining our last quotations. In Sheep, the Long-wools were in demand at a slight advance, owing to the continued improvement in coarse wools; other qualities remain about the same. Veal is still dear. Pork is very heavy trade.

FRIDAY, Feb. 2.

Our supply to-day is rather larger than last Friday, and the roughness of the weather has caused a slack attendance of buyers. Beef is a little lower, say 2*d.* per 8 lbs. Mutton is about the same as Monday. Veal is quite as dear; indeed, in some instances the very best have realised 5*s.* 6*d.* per 8 lbs. Pork is a little more in demand.

Numbers.—Beasts, 658; Sheep, 2280; Calves, 134; Pigs, 290.

41, West Smithfield

POTATOES.—Southwark Waterside, Jan. 29.

Having had during the past week a continuance of fine weather, which has brought the Turnip-tops into the Green Market earlier and more abundant than usual, and consequently arrested the improvement in the demand for Potatoes, though holders of Scotch Reds have increased their pretensions; yet where it was necessary to clear vessels owing on demurrage, no advance whatever could be obtained on last week's price. We have quoted 70*s.* for Perth and Devonshire Reds, as that price has been generally asked, but can only be regarded as nominal.

York Reds	0*s* to 80*s*	Kent and Essex Whites	50*s* 55*s*
Perth	65 70	— — Kidneys	— 65
Early Devons	65 70	Wisbeach Kidneys	— 65
Cornwall	65 70	— White and Blue	50 55
Jersey and Guernsey Blues	60 —	Prince Regents	55 65

The supply during the past week has been limited; but these, with former arrivals, have been fully sufficient for the present demand.

SEEDS, Friday, Feb. 2.

Canary	per qr 48*s* to 52*s*	Linseed Cakes, Foreign, p. ton	6*l* to 7*l* 10*s*
Carraway	per cwt 32 40	Mustard, White - p. bush.	5*s* 6*s*
Clover, Red, English	64 76	— Superfine	6 8
— — Foreign	64 76	— Brown	14 16
— White, English	84 105	Rapeseed, English, per last	24*l* 28*l*
— — Foreign	84 103	Rape Cakes - per ton	— —
Coriander	12 16	Rainstalk	— —
Hempseed - per last	36 38	Tares, Eng. winter p. bush.	3 5
Linseed - per qr	— —	— Foreign	3 5
— Baltic	— —	Trefoil - per cwt	— —
— Cakes, Eng. per 1000	10*l* 5*s* 10*l* 10	Turnip (too variable for quotation).	

Kinnersley and Lee.

WOOL.—British, Friday, Feb. 2.

We cannot report any alteration in our English Wool Market during the past week. Things continue firm. The first of the series of Colonial Wool Sales was held last evening at the Hall of Commerce; the attendance of buyers was large.

Prices Current.

	per lb.				per lb.	
Long-wooled Wethers	1*s* 0½	to	1*s* 1½	Southdown Hoggetts	1*s* 1*d*	to 1*s* 3½
&c. Hoggetts	1 1		1 3	Kent Fleeces	1 1	1 3½
Southdown Fleeces	1 0		1 1			

James Perrin, Wool Broker.

MARK LANE, Friday, February 2.—The arrivals of Corn since Monday have been small, which is in some measure attributable to the stormy state of the weather; the few samples of English Wheat fresh up have been disposed of at fully Monday's prices. The inquiry for free Foreign Wheat is limited, but in some instances the finest qualities realise a trifling advance. We have not heard of any transactions in bonded to-day.—Barley meets a steady sale at our quotations.—In Beans and Peas we observe no alteration.—Oats are held firmly by the Factors at late prices, with which the buyers are unwilling to comply.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk	White	44	54	Red	44 52
—— Norfolk, Lincolnshire, and Yorkshire		42	44	White	— —
Oats, Lincolnshire and Yorkshire	Polands	15	25	Feed	16 24
—— Northumberland and Scotch	Feed	—	—	Potato	17 25
—— Irish	Feed	16	22	Potato	16 24
Barley, Malting and distilling 28 to 32	Chevalier	32	36	Grind.	24 30
Malt, pale, ship		—	—		
—— Hertford and Essex		—	—		
Rye		—	—		
Beans, Mazagan, old and new 18 to 19	Tick	22	31	Harrow	28 29
—— Pigeon, Heligoland 18 to 20	Winds.	30	32	Hoggeddo	29
Peas, White 30 to 34	Maple	27	29	Grey	26 27

IMPERIAL AVERAGES.

Dec. 22 per Quarter.	Wheat. 49*s* 9*d*	Barley. 33*s* 1*d*	Oats. 18*s* 7*d*	Rye. 28*s* 9*d*	Beans. 30*s* 10*d*	Peas. 31*s* 6*d*
— 29	49 9	32 2	18 5	31 4	30 1	31 6
— 5	49 10	32 7	18 8	30 8	29 5	30 7
Jan. 12	50 9	33 0	18 9	33 5	29 8	31 9
— 19	51 8	33 7	18 8	31 7	29 6	29 8
— 26	52 3	33 8	19 0	32 4	29 6	29 10
6 weeks' Aggregate Aver.	50 9	33 10	18 8	31 6	29 10	30 10
Duties on Foreign Grain	20 0	6 0	8 0	10 6	11 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	2580	2270	3740	2420 Sks
Irish	—	—	7640	—
Scotch	—	—	—	—
Foreign	1360	770	—	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	7351 Sks. — Bels.	9429	2691	10726	2916	—	2125	1148
Irish	— — —	—	14	54123	—	—	—	—
Foreign	— — —	1930	1930	—	118	—	—	—

Kinnersley and Lee.

COVENT GARDEN, Feb. 2.—Notwithstanding the great change that has taken place in the weather, the market has been tolerably well supplied during the week, and little alteration has taken place in the Prices of most articles; but trade is not brisk. Pine Apples continue scarce, and have advanced a little in price since our last report; they are rather small, and consist principally of Queens. No hothouse Grapes are now to be found in the market, but Portugals continue sufficient for the demand. The supply of good dessert Pears is rather on the decrease; good specimens of Beurré Rance and Easter Beurré have, however, been brought to the market, and are offered at nearly the same prices as last week. The prices of Apples are also nearly the same as those quoted in our last report. Tangerine Oranges continue to be brought to the market. Lemons are plentiful, and Filberts are sufficient for the demand. Among Vegetables, Cabbages are good and plentiful, Brussels Sprouts and Greens are also abundant; but Broccoli still continues scarce. The supply of Lettuces and Endive is pretty good. Scalade and Rhubarb are sufficient for the demand; Shallots and Onions are good and plentiful. Asparagus is rather scarce. Celery is sufficient to meet the demand, but is rather inferior in quality. Among Cut Flowers we noticed Erica gracilis and hyemalis, Cypripedium insigne, Euphorbia splendens, Lachenalia tricolor, Combretum purpureum, Bignonia venusta, Cinerarias, Acacias, Primulas, Tulips, Hyacinths, and Fuchsias, Pelargoniums and Roses.

FRUITS.

Pine Apple, per lb. 4*s* to 8*s*	Almonds, per peck, 8*s*
Grapes, Portugal, per lb. 1*s* to 2*s* 6*d*	Sweet Almonds, per lb., 2*s* 6*d* to 3*s*
Apples, dessert, p. bush. 4*s* to 10*s*	Nuts, Spanish, per bushel, 16*s*
— Kitchen, p. bus. 3*s* to 6*s*	— Brazil, 16*s*
Pears, per half-sieve, 4*s* to 12*s*	— Hazel, 2*s* to 4*s*
Oranges, per dozen, 10*d* to 2*s*	— Barcelona, 20*s* to 28*s*
— per 100, 14*s*	— Cob, per 100 lbs., 80*s* to 100*s*
Lemons, per doz. 2*d* to 3*s*	Chesnuts, per peck, 3*s* to 6*s*
— per 100, 5*s* to 14*s*	Walnuts, per bushel, shelled, 16*s* to 20*s*
Red Capsicums, 4*s* to 8*s*	Filberts, English, p 100 lbs., 30*s* to 35*s*,

VEGETABLES.

Rhubarb, per bundle, 6*d* to 1*s* 6*d*	Garlic, per lb. 4*d* to 6*d*
Broccoli, per bundle, 1*s* 6*d* to 3*s*	Onions, Spring 1*s* 6*d* to 3*s* p. bush.
Brussels Sprouts, per hf.-sv., 1*s* to 2*s*	— Large, per bushel, 3*s* to 6*s*
Cabbages, per doz., 6*d* to 1*s*	— Spanish, per doz., 1*s* 6*d* to 3*s*
Red Cabbages, per doz. 3*s* to 3*s*	— pickling, p. hf.-sv., 3*s* 6*d* to 4*s* 6*d*
Sorrel, 3*d* to 1*s* per half-sieve	Shallots, per lb., 6*d* to 9*d*
Asparagus, per 100, 2*s* 6*d* to 11*s*	Chilis, per 100, 1*s* to 2*s*
Sea-kale, per punnet, 6*d* to 9*s*	Lettuce, Cabb., p. score, 6*d* to 1*s*
French Beans, 3*s* to 4*s* per 100	— Cos, per score, 6*d* to 1*s*
Autumn Potatoes, 3*d* to 6*d* per lb.	Celery, per bun., 6*d* to 2*s*
Savoys, per doz. 6*d* to 1*s*	Mushrooms, per pottle, 6*d* to 1*s* 6*d*
Greens, per doz. 2*s* to 3*s* 6*d*	Small Salads, per punnet, 3*d* to 6*d*
Potatoes, per ton, 80*s* to 110*s*	Watercress, per doz. bun. 2*d* to 6*d*
— per cwt., 2*s* 6*d* to 3*s*	Parsley, per doz. bunches, 3*s* to 4*s*
— per bushel, 1*s* 6*d* to 2*s* 6*d*	Tarragon, Green, per bun. 6*d* to 9*d*
— Kidney, p. bush., 2*s* to 2*s* 6*d*	Endive, per score, 1*d* to 2*s*
Turnips, per doz. bunches, 1*s* 6*d* to 3*s* 6*d*	Green Mint, 4*d* to 6*d* per bunch
Horse Radish, per bundle, 1*s* to 1*s* 6*s*	Marjoram, green, p. doz. bun. 1*s* 6*d* to 2*s*
Radish, spring, p. doz. bunch, 1*s* to 2*s*	Chervil, per punnet, 6*d* to 9*d*
Carrots, p. doz. bun., 2*s* 6*d* to 3*s*	Salsafy, per bundle, 1*s* to 1*s* 6*d*
Spinach, per sieve, 1*s* 6*d* to 2*s*	Scorzonera, per bundle, 1*s* 6*d*
Leeks, per doz. bun., 9*d* to 1*s*	

HOPS, Friday, Feb. 2.

There is no alteration in the Hop Market since last week. Prices are fully maintained, and the supply very limited.

Mid & East Kent Pocks.	8*l* 0*s* to 10*l* 10*s*	Sussex Pockets	6*l* 0*s* to 6*l* 6*s*
Choice ditto	11 0	Choice ditto	6 15
Weald of Kent Pocks	6 0 6 15	Farnham	9 9 10 10
Choice ditto	7 0		

Pattenden & Smith, Hop Factors.

HAY.—Smithfield, Feb. 2.

Hay	3*l* 10*s* to 3*l* 16*s*	Clover	4*l* to 5*l*
		Straw	1*l* 5*s* to 1*l* 10*s*

Per Load of 36 Trusses. Jesse Cooper, Salesman.

Whitechapel, Feb. 2.

Hay	3*l* 10*s* to 3*l*	Clover	4*l* 0*s* to 4*l* 16*s*
— fine Upland,	3*l* 5*s* to 3*l* 12*s*	— fine,	5*l* to 5*l* 5*s*
		Straw,	1*l* 4*s* to 1*l* 10*s*

Very dull sale of Hay.

Cumberland Market, Feb. 2.

Meadow Hay	3*l* 10*s* to 3*l* 15*s*	Clover	4*l* 15*s* to 5*l*
— inferior	3*l* 12*s* to 3*l* 18*s*	— inferior	4*l* to 4*l* 10*s*
		Straw	1*l* 5*s* to 1*l* 12*s*

Good supply. Trade very dull for inferior Hay.

Joshua Banks, Hay Salesman

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 24*l* per ton	—	Rape, 40*s* to 44*s* per ton	—
Bleaching Powder, 6*l* per cwt.	—	Rape Cake, 11*l* per ton	45
Brimstone, 20*l* per ton	—	— Dust, 11*l* per ton	45
Bone-dust, 17*s* per quarter	45	Sal Ammoniac, 1*l* per cwt.	—
— Half-inch, 16*l* ditto	60	Salt, Agricultural, 3*l* per ton	56
— Calcined, 1*l* per cwt	—	— clean, 10*s* per ton	56
Carbonate of Ammonia, 6*l* per cwt	24	— Hide, 21*s* per ton	56
— of Lime, 1*s* to 1*s* 6*d* per cwt	—	Saltpetre (Nitrate of Potash) 2*l* 5*s*	
— of Soda, 6*l* to 8*l* per cwt	—	per cwt., dusty paid	80
Chloride of Lime, 3*l* per cwt	—	Silicate of Potash, in powder, 6*l*	
Cinders, 10*l* to 11*l* per ton	80	per cwt.	—
Guano, 20*l* to 22*l* p.bush.,not to exam.	24	Soap Ashes, 10*s* per ton	—
— Potter's, 8*l* to 9*l* per ton	80	Soda Ash, 14*s* to 16*s* per cwt.	56
Gypsum (Sulphate of Lime), 27*s* 6*d*		Sulphate of Ammonia, 20*l* to	
to 30*s* per ton	24	25*l* per ton	70
Hunnybrew's Compound for Nyanzima, 1*s* 6*d* per bottle	—	— of Copper, 25*l* per cwt.	—
Muriate of Ammonia, 6*l* per cwt.	70	— of Magnesia (impure)	
— Lime, 3*s* to 3*s*	70	10*s* p. cwt.	56
Nitrate of Soda, 14*l* 5*l* to 15*l* 5*l*		— of Magnesia (pure crys.)	
per cwt., dusty paid	80	12*s* p. cwt.	56
Phosphate of Lime, 10*s* to 14*s* p. cwt	80	— of Potash, 14*l* per cwt.	—
— — Super, 12*l* per cwt.	80	— of Soda, 3*l* 5*l* per cwt.	—
— of Ammonia, in crystals		Sulphur, 14*l* per cwt.	—
2*s* 6*d* per lb.	—	Sulphuric acid, London made, 5*l*	
— — — in fine pow-		per dz.	—
der, 3*l* 5*s*, per cwt.	80	Tobacco Dust, 60*s* per ton	—
		Willey Dust, 60*s* per ton	—

Expenses of shipping about 2*s* to 7*s* per ton, according to quantity.

Mark Portsmouth.

HURST & M'MULLEN, SEEDSMEN and FLORISTS, 6, Leadenhall-street, beg respectfully, at the present season, to invite the attention of the public to their extensive and well-selected Stock of GARDEN SEEDS, comprising every new and choice variety worthy of cultivation. They annex the names of a few varieties deserving particular notice, for present use, and beg to say their List of NEW AND CHOICE FLOWER-SEEDS, of which they possess an unrivalled collection, will appear at the usual time in "Harrison's Floricultural Cabinet" for March, and in the *Gardeners' Chronicle* of the 2d of March.

CHOICE VEGETABLE SEEDS.

		s.	d.
Cormack's Prince Albert Pea, in quart packets, true from the raiser	per packet	3	6
Shilling's new Early Grotto Pea	per quart	3	0
New Early Kent do.	,,	1	0
Thompson's new Early Dwarf do.	,,	1	0
Flack's Victory do.	,,	1	0
Victoria (new branching) do.	,,	1	0
Ward's Incomparable, splendid new late Pea	,,	3	0
Cormack's British Queen Pea, in quart packets, true from the raiser	per packet	3	0
New Monstrous Windsor Beans, very superior, p.qt.		0	9
Walcheren Superb Broccoli	per packet	1	0
Hammond's new white Cape do.	,,	1	0
Chappell's Cream do.	,, 6d. to	1	0
Chappell's White do.	,, 6d. to	1	0
Lake's superb New White do.	,, 6d. to	1	0
Danser's Pink Cape do.	,, 6d. to	1	0
New White Victoria do.	,, 6d. to	1	0
Handsworth Superb do.	,, 6d. to	1	0
Howden's Purple (splendid) do.	,, 6d. to	1	0
Imported Brussels Sprouts	,,	0	6
Cattell's superb blood-red Beet	,,	0	6
Walcheren Cauliflower (true and splendid)	,,	1	0
Fine Asiatic do.	,,	1	0

SUPERIOR FRAME CUCUMBERS.

Elphinstone's Prince Albert	per packet	2	0
Warwickshire Hero	,,	1	0
Spink's Imperial	,,	1	0
Improved Sion House	,,	1	0
Cherry's Goliah	,,	1	0
Victory of Suffolk	,,	1	0
Cuthill's new Black Spine	,,	1	0
Patrick's fine Long	,,	1	0
May's Prince of Wales	,,	1	0
Man of Kent	,,	1	0
Stockwood fine Ridge Cucumber	,,	0	6

MELONS.

Hoosainee	per packet	1	0
Windsor Prize	,,	1	0
William the Fourth	,,	1	0
Netted Scarlet Flesh	,,	1	0
Cuthill's new Green Flesh	,,	1	0
Malta Green Flesh	,,	1	0
and many other excellent varieties.			
New Ice Cos Lettuce	per packet	6d. to 1	0
Paris Green Cos do. (fine)	,,	6d. to 1	0
Snow's fine Cos do.	,,	6d. to 1	0
Wood's Hardy Bath Cos do. (requires no tying)		6d. to 1	0
Victoria Cabbage Lettuce	per packet	6d. to 1	0
New German do. do.	,,	6d. to 1	0
Couve Tronchouda (delicious winter vegetable)		6d. per packet.	
Roberts' Prince Albert Cabbage		6d.	,,
Early Dwarf Nonsuch	,,	6d.	,,
Early Sprotboro	,,	6d.	,,
Early Hope (Improved)	,,	6d.	,,
Scarlet Studley Carrot		6d.	,,
James's New Scarlet Carrot		6d.	,,
Extra fine Early Horn	,,	6d.	,,
Seymour's Superb White Celery		6d.	,,
New Matchless Red	,,	6d.	,,
Law's Giant White	,,	6d.	,,
Manchester Red	,,	6d.	,,
Myatt's splendid new Garnishing Parsley		6d.	,,
New White Globe Onion		6d.	,,
True Silver-skinned	,,	6d.	,,
Fine Snowball Turnip		6d.	,,
Early Yellow Malta Turnip		6d.	,,
Wood's superfine Frame Radish		6d.	,,
New French Olive-shaped	,,	6d.	,,
Fine Flanders Spinach		1s.	per quart.
Alpine Strawberry		6d.	per packet.
Soden's Early Oxford Potatoes (the earliest known)		3s. 6d.	per peck.
Martin's Early Globe Potatoes		2s.	,,

A choice selection of Pot Roots of all the best varieties of Dahlias in cultivation, from 1s. to 2s. 6d. each.
Lilium lancifolium album, 4s. each.
Double Tiger Tuberoses, 4s. per doz.
Tigridia pavonia, 3s. per doz.
Fine Double Anemones, 10s. per lb.
Single Do. 4s. per lb.
Splendid mixed Ranunculus, 3s. to 8s. per 100.
Myatt's Victoria Rhubarbs (true from the raiser), 1s. 3d. each.
Marshall's Early Scarlet Rhubarbs, 9d. each.
Lancashire Gooseberries, in fine variety, 8s. per doz.
Grape Currants, 6s. per doz.
Mixed Grasses for Lawns and Pastures, of the very finest quality. Selections of Seeds carefully assorted and packed for all climates.
Standard and Dwarf Roses, in fine variety.
Metallic Wire and Labels, Garden Tools, Knives, &c. &c.
Agents for the Sale of Humphreys's Compound.

HURST and M'MULLEN beg to thank their Friends for the kind and encouraging patronage they have received, and to assure them that all commands shall have careful and prompt attention. —Wholesale and Retail Seed Establishment, 6, Leadenhall-street; Warehouse, 19, Vine-street, Minories.

JAMES DICKSON & SONS, NURSERY SEEDSMEN and FLORISTS, in returning their sincere thanks for the liberal patronage they have hitherto enjoyed from the Nobility, Gentry, and Public at large, both in this Country, England, and Ireland, beg respectfully to intimate that they have received their Full Supply of SEEDS, in fine condition, for SPRING SOWING, of first-rate quality.

From the arrangements they have recently made with some of the first Growers, their Customers may depend on receiving Fresh Seeds of all descriptions, carefully selected for J. D. & S.'s Sales.

J. D. & Sons beg to call the attention of their Friends to their Stock of EVERGREENS, FRUIT and FOREST TREES, in their Nurseries of Inverleith and Broughton Park, which will be found equal in quality and extent to any in Scotland.

J. D. & Sons beg further respectfully to intimate that they have considerably extended the Floral Branch of their Business; and they assure their numerous Customers and the Public at large that no pains or expense will be spared by which the efficiency of every department of the concern shall be secured, so as to ensure a first-rate article at the lowest figure.

Catalogues of every article connected with their trade have just been published, and can be forwarded, per post, on the receipt of postage stamps to the amount of sixpence.

N.B.—Noblemen and Gentlemen provided with experienced GARDENERS, LAND STEWARDS, and WOOD FOREMEN, whose character and abilities may be depended on.—23, SOUTH HANOVER-STREET, Edinburgh, January 31, 1844.

SEED TRADE—NO MONOPOLY.

J. G. WAITE, WHOLESALE SEEDSMAN, 1 & 4, Eyre Street-hill, Hatton Garden, London, most respectfully solicits the attention of the Country Trade to his prices of SEEDS recently advertised in the *Chronicle*, and to remind them that everything is quoted very much below the *London Agreed List*. All articles sold at his Establishment are of superior Quality, and genuine Stock-lists to be had on application.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks which are ornamental in appearance can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

THE CONICAL HOT-WATER BOILERS, invented by J. ROGERS, Esq., may be obtained of any size from JOHN SHEWEN, Ironmonger, &c., Sevenoaks, Kent.

J. SHEWEN having had every opportunity afforded him by an extensive practice to bring this apparatus to perfection, begs to offer it as most efficient and economical: it may be seen at Messrs. Chandler & Sons' Nursery, Vauxhall; Messrs. Loddiges', Hackney; Messrs. Henderson's, Pine Apple-place; Messrs. Veitch and Son's, Exeter; Mr. Pontey's, Plymouth; the Royal Botanical Society's Gardens, Regent's Park; and at the Gardens of the Horticultural Society of London. Considerable improvements have been effected since last season; particulars of which are in course of preparation.

CHEAP FUEL FOR HOTHOUSES AND STOVES. —Coke, the same as used by the Horticultural Society, to be had in large quantities, at very reduced prices, at the Phœnix Gas Works, Bankside, or Greenwich.

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BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement, may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melon-pits, &c. &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

GUANO.—The Subscribers will bring in a cargo of this MANURE to Berwick-upon-Tweed, in all February and March, direct from Valparaiso.
Haddington, Jan. 22, 1844. BANKS & SON.
Note.—As this will be one of the very few cargoes from the Pacific, whose charterparties will admit of their discharging on this coast, BANKS and SON would recommend intending purchasers to apply for what they may require as early as possible.

POTTER'S GUANO.—Sir Robert Peel, the Earl of Zetland, and others, have used POTTER'S MANURE with the greatest success on almost every kind of crop and soil. Testimonials may be obtained by application, per post, at the Works, 28, Upper Fore-street, Lambeth, or of any of Mr. POTTER'S agents.—See also the Advertisement in this Paper of the 6th Jan., containing some of the Testimonials referred to.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.
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TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash		18s. per cwt.
,, Soda		12s. ,,
,, Magnesia		9s. ,,
,, Ammonia		1s. per lb.

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported,—Apply to COPESWORTH, POWELL, and PAYNE, London; EDWARDS, DANSON, and Co., Liverpool; or WILLIAM J. MYERS and Co., Liverpool, the Importers.

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TO AGRICULTURISTS.—IMPORTANT DISCOVERY.
"Quid faciat lætas segetes"—VIRGIL.

THE CORN-PRODUCING LIQUIDS.—"One of the most extraordinary exhibitions in the yard (at the late Agricultural Show, Dundee), was that presented by Mr. JAMES CAMPBELL, of the Dundee public seminaries. It consisted of magnificent plants of Oats and Barley, grown from seed which had undergone a certain chemical preparation, and without the aid of any manure whatever.

"Such a mode of culture is at variance with all practical experience; but Mr CAMPBELL declares that his prepared seeds, which have produced these strong, healthy plants, were sown by him on land which, to his certain knowledge, had had no manure of any kind for eleven years; and he declared himself quite ready to verify his statement by experiment, and said he was willing, at any time, to impregnate with his chemical preparations the seed which any member of the Society should send to him for that purpose, so as to enable gentlemen to satisfy themselves fully as to the efficacy of this wonderful mode of culture."—*Journal of Agriculture, October*, 1843.

In this discovery is actually realised that boast of science, which some years ago prophetically asserted, that the time would soon come when one might carry in his pocket matter sufficient to manure an acre of land.

After impregnation with these liquids, the seed possesses within itself elements which not only afford additional nourishment to the grain during the progress of germination, but communicate to the expanding vessels of the plant an aptitude to absorb food, both from the soil and the atmosphere.

Of one specimen of Oats exhibited, the average produce of 32 seeds was 1600 grains from each, or a total of 52,800 grains, weighing 46 lbs. per bushel.

The produce of Barley was an average of upwards of 500 grains from each seed sown; and of Wheat sown on 5th July, and taken up on 8th August, to be exhibited, the result was, that while the unprepared seeds gave plants with two, three, and four stems only, the impregnated grain yielded plants with nine, ten, and eleven stems.

The material for these liquids, at the following prices, may be had of the following Agents.

Wheat	material for one gallon	2s.	6d.
Barley	do.	2	9
Oats and Grasses	do.	1	6
Beans and Peas	do.	2	6
Turnip and Rape-seed	do.	2	6

Agents:—Messrs. GEORGE GIBBS & Co., Down-street, Piccadilly, London; JAMES HADEN, Ironmonger, Warminster, Wilts; JOHN CAMPBELL, 5, Mersey-street, Liverpool; E. R. CROUCH, Newcastle-on-Tyne; SAMUEL WALDIE, Carlisle; W. W. FYFE *Agriculturist* Office, Berwick; Messrs. P. LAWSON & SON, Edinburgh; DRYSDALE & Co., Glasgow; DRUMMOND & SON, Stirling; and DICKSON & TURNBULL, Perth.

One third, or even one-half less grain, is required for seed than is commonly used; and twelve gallons will impregnate eight bushels of grain; for the operation may be repeated in the residual liquid with additional measures of grain, as not more than one-tenth is absorbed in each operation.

Particular printed instructions for using the liquids will accompany invoices. No order under 20 gallons will be supplied.
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Difference in favour of Potter's Guano		10	cwt.

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Works, 28, Upper Fore-street, Lambeth.

For further testimonials see this Paper of the 6th Jan., 1844.

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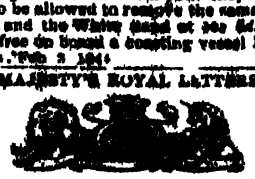
Noblemen, Gentlemen, and Gardeners will, by using this composition have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 8ft. by 3 ft. 3 in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.
Agents wanted for London and the country.

HEATH-SOIL.—Numerous gentlemen, visitors, at Bournemouth, having applied to R. Waters & Colefor supplies of the fine Heath Peat Soil which abounds in that locality, they beg to inform them that they have now made arrangements to be allowed to remove the same, and can consequently offer it and the Whitey Sand at 20s 6d. per cargo load-head, delivered free on board a coasting vessel here

Poole Nursery, Feb 3 1844

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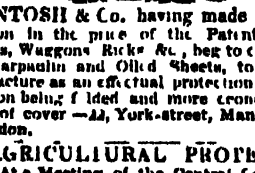


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ESSEX AGRICULTURAL PROTECTION SOCIETY.—At a Meeting of the Central Committee at the Saracen's Head, Chelmsford, on the 26th January, Mr Robert Baker, Chairman, the following Resolutions were agreed to —

That it is the opinion of this Committee that the great demonstration of feeling on behalf of protection to Agriculture originating in the Chelmsford Meeting, and since followed up by most of the counties of England holds forth a reasonable prospect that the great object in view may be accomplished without (at all events in the present stage recommending the preparation of petitions to Parliament

That this Committee at present entertain no intention of employing lecturers throughout the county as advocates on its behalf. Chelmsford, Jan 26 1844 H T Biddell Sec

SPALDING ASSOCIATION for the PROTECTION of AGRICULTURE.—At a Meeting of the Members of the above Society, and of other parties interested in the Protection of Agriculture, held, pursuant to advertisement, at the Town Hall, Spalding, on Jan 24, Robert Everard Esq, in the Chair, the following Resolutions were unanimously adopted —

1. Resolved, That it is the bounden duty of all parties in any way dependent upon the prosperity of British Agriculture, to oppose to the utmost the efforts of the Anti Corn-Law League, engaged as the members of that League are in an unconstitutional conspiracy, adverse alike to the Agricultural interest generally, and to the stability of the most valued institutions of the country

2 Resolved, That the protection afforded by the present Corn Law is barely sufficient to keep up the progressive improvements in Agriculture, and that if the efforts for extended improvement cease, as must be the case if protection were withdrawn, the increasing population of this country would be dependent for support on the production of foreign countries.

3. Resolved, That the evils of a free trade in Corn are generally considered only through the medium of the low prices which would result from the withdrawal of protection, but this meeting considers that free trade would induce such a superabundant importation of foreign corn that the home grown product would not at all times find a market at any price, and that the having to wait for a market for British grown Corn would more than any other cause, occasion the poorer tracts of land to be altogether thrown out of cultivation, and the labouring classes employed thereon to lose their only means of support

4. Resolved therefore, That this Meeting do pledge themselves not only not to give their support to any Government or party which shall, either directly or indirectly, attempt to deprive the Agricultural classes of any portion of the protection afforded by the present Corn law, but that they will by every constitutional means oppose any proposed diminution of such protection

5 Resolved, That a Petition to Parliament against any further alteration in the Corn laws be prepared, and that copies thereof be sent to some influential person in each of the neighbouring parishes for the signatures of the landed proprietors, occupiers labourers, and other parties dependant upon Agriculture, and that such petitions be transmitted to the Members for this division for presentation in the House of Common

6 Resolved also, That it is highly expedient that this Association be extended for the general protection of British Agriculture, and to co operate with any societies of a similar character, or with any central or general association in this county in opposing the exertions of the Anti Corn Law League, and that a subscription be opened to enable such Association to act as the exigency of circumstances may require

Resolved also, That the above Resolutions be advertised

Robert Everard, Chairman

Mr Everard having vacated the chair, it was Resolved that thanks be given to him for his able conduct of the proceedings

THE DUBLIN UNIVERSITY MAGAZINE, for February, price 2s 6d, contains L'Irlande Apocryphe—The Mishaps of Master Lattat Nabhim, during a Short Protracted Visit to the Sister Island Chaps I to IV Leaves of Gerald Griffin—Stray Leaflets from the German Oak Fifth Drift An Ecclesiastical Legislature. No II Convocation—Berranger and his Songs By William Dowe—The Present State Influence and Prospects of Art—A Bevy of Little Books Etiquette for Ladies Etiquette for Gentlemen, the Art of Conversation Whist, its History and Practice, &c —Arrah Neil or the Times of Old By G P R James, Esq Chaps XVI to XVII—Legendes of Eastern Travel Life on the Nile, Songs of the Nile Memphis—Gossip among the Infernals—A Chapter on Grandmothers By a Country Cousin—Babel By Mrs James Gray —Chips from my Library Table From Burke of "Otho" to XIV. Price 1s Carleton's Irish Tales. No. XV, with two Illustrations Price 1s

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[illegible]one more adapted to stimulate the [illegible]ist not be published"—*Bath and* [illegible]

[illegible]rn, successors to John Harris, [illegible] St Paul's Church-yard.

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Pietas Domestica, by the Hon. and Rev S Best

Reading Book for Female Schools

Trego's Geography of Pennsylvania

Kuhner's Elementary Grammar of Greek Language

Memoir and Correspondence of Mrs Grant, of Laggan.

St. Patrick's Purgatory, by T. Wright

Mrs. Howitt's Translations of Fredrika Bremer.

The Alleyn Papers, Edited by J P Collier The new Work printed for the Shakespeare Society.

Selecta e Poetis Latinis

Scott's Cataract, &c

Eagle Cliff

Selection from Hebrew Writers.

Observations of a Young Person in Paris.

The Ayrshire Wreath for 1844.

The Patriarch, by the Rev. Richard Gascoyne

The Power of Association, by the Rev J T Campbell

Sabbath Evenings, by the Rev D Kelly

Dialogues Metaphysical, by J Forrest.

Questions and Answers illustrative of Church Catechism

Willich's Tithe Commutation Tables for 1844

Speed's Land Measurer's Ready Reckoner.

Wright's Stutterer's Friend

Foster's Penmanship

"OUR WEEKLY GOSSIP"—The Book Subscription for the British and Foreign Institute—Inauguration of the Statue of Molière, at Paris—The Milanese Scientific Meeting—Dr. Swiney and his bequests—Destruction by Fire of King William's College, Isle of Man—Sir Hudson Lowe's MSS; Letter from Mr Hudson Lowe—The School of Design and Female Wood Engraving—Mr Evans's Organo-Harmonico—Madame Catalani alive—Foreign Gossip, &c.

REPORTS of the Learned Societies —The Geological (meeting of the 17th)—Geographical (Lieut Christopher's Explorations on the North east Coast of Africa)—Royal (Mr. Faraday's Examination of Luminous Water)—Asiatic—Horticultural—Linnean—Microscopical—Zoological—British Architects—Royal Institution (Mr Faraday on Nature of Matter).

FINE ARTS.—Death of Henry Perronet Briggs, R.A.—The Cambridge Statues; letter from Mr. Brandon

MUSIC.—Concerts and Gossip.

THEATRES.—Haymarket (Merry Wives of Windsor)—Drury Lane (Richard the Third)—St. James's Theatre (French Plays).

MISCELLANEA.—Paris Academy of Sciences—Condorcet—Skeletons—Periodical Literature in Sweden—Remains—New Explosive Power.

Order of any Newsvender or Bookseller.

Printed by Messrs Bradbury and Evans, Lombard-street, Fleet-street: in the Precinct of Whitefriars, in the City of London, and Published by them at the Office, 4, Crane-court, Cavendy Garden, in the County of Middlesex, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, February 3, 1844.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6.—1844. SATURDAY, FEBRUARY 10. [Price 6d.

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THE LATE Mr. LOUDON.—A Public Meeting of the Friends of the late Mr. Loudon will be held in the large room of the Horticultural Society's Establishment, Regent street, London, on Saturday, Feb. 17, at two o'clock precisely, to consider the best means of extricating his Widow and Daughter from the difficulties into which they are placed by Mr. Loudon's sudden death.

It is hoped that noblemen and gentlemen who patronise Horticulture, and also all Gardeners and Nurserymen who are within a reasonable distance, will attend

RESIDENCE, WANTED to RENT, placed in a park or parklike grounds. Must contain good entertaining rooms, five or six best bedchambers, with all suitable offices for not an extensive establishment, and if with a farm of 20 acres, would be desirable Would be taken on lease, and the occupant prove an unusually advantageous tenant. Full particulars and terms to be addressed to Messrs Hendee, Land Agents, 10, New Bond-street, opposite the Clarendon

E. P. FRANCIS, Nurseryman, Hertford, begs leave to recommend to the Nobility, Gentry, and the Trade in general, Snow's superb white winter BROCCOLI, in 2s. packets, containing half an ounce, which was advertised last season, and will be found to give general satisfaction this winter and the ensuing spring. Also Snow's Hybrid Prolific Green-flesh MELON, of most excellent rich sweet flavour, warranted to produce two and three crops in a season, from the same plants, has taken six first prizes at the North Herts and South Beds Horticultural Exhibitions, weight from 2 to 3 lbs, sold in packets, 2s each Also, Snow's Superb Walcheren CAULIFLOWER, which is found to be late and hardy, never runs, and produces beautiful large compact white heads, and is very dwarf. Sold in packets, 2s each, containing half an ounce.

E. P. F. begs also to recommend a very superior kind of Grange's White BROCCOLI, which produces large compact heads in the months of January, February, and March Sold in packets, 2s., containing half an ounce. The above, making four packets, if ordered together, may be had for 10s, at the Hertford Nurseries, or of Messrs Noble, Seedsmen, 153, Fleet-street, Messrs J. Warren & Son, London Bridge, and Mr. Flanagan, opposite the Mansion House, London

KENSINGTON NURSERIES.

RICHARD FORREST and Co. beg leave respectfully to direct attention to their GENERAL NURSERY STOCK, which was never finer than this season, especially the extensive and correctly named Collection of FRUIT-TREES — See Advertisement for Nov. and Dec 1843, of this Journal.

In consequence of the Lease of one of their Nurseries expiring, and being required for other purposes, R. F & Co. deem it necessary to assure their Customers everywhere that it will not occasion the slightest interruption in their business The Shop, Warehouses, &c. will remain undisturbed, and the ample provision which has been made in the adjoining Nurseries for this little change will insure the same supply, and attention to all the Customers, which they have uniformly experienced To those who have visited the Nurseries recently, these observations are perhaps unnecessary; but to those who have not had an opportunity of witnessing the improvement of their Stock, R F & Co consider this slight notice necessary to counteract any prejudice that might be raised in the minds of their numerous friends throughout these kingdoms and elsewhere.

NEW SEEDLING FUCHSIA "SIDMOUTHII" will be ready to send out in May next; price 10s 6d each, carriage free.—This magnificent variety was raised last year by Mr. Bartlett, Nurseryman, Sidmouth It may be considered the finest hybrid extant. The flowers are large and colour brilliant, is a strong grower and prolific bloomer, with fine foliage. A specimen flower was sent to the Editor of the *Gardeners' Chronicle* last October, who spoke so high in its praise that anything further is superfluous, beyond its character as above Visitors to Sidmouth will be gratified by viewing Mr. B.'s Collection of this lovely and graceful flower; having a mode of treatment peculiarly his own.

†,* To secure fine plants early orders are desirable.

SEEDS AND DAHLIAS.

LOUIS VAN HOUTTE, Gendt, Nurseryman and Gardener to the King of Belgium, begs to inform the Trade that his Price-current, 1844, 1s, 1t, and 1u, are sent out, containing the SEEDS and the DAHLIAS, and may be obtained by application to Mr. Geo. Rehan, Crutched Friars, London (if by letter post-paid).

FASTOLFF RASPBERRY.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, THE MOST NOBLE THE MARQUIS OF ALBA, THE EARL OF HARRINGTON THE EARL OF LIVERPOOL THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD BONDES, &c &c; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL and Co. have much pleasure in announcing they are now supplying fine Canes of the above highly valuable and much esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour

Those to whom Y and Co sent it last season have expressed their high admiration of its superiority over all other varieties, and has been awarded several prizes at various Horticultural exhibitions during the season As a proof they have not exaggerated its excellent qualities, fruit was submitted to Dr Lindley, (see *Gardeners' Chronicle* of the 22d July last, page 502), whose opinion of it is as follows —

"Fastolff Raspberry.—We have received from Messrs Youell, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find it merits all that has been stated in favour of its excellence The fruit that we have received is very large, obtusely conical, and of rich flavour, far exceeding in this respect some other new and large varieties The plants bear abundantly and in long succession"

They also exhibited it on the 1st of August, 1843, before the London Horticultural Society, 21, Regent street, to which a prize was awarded It would therefore be unnecessary for Youell and Co to recommend it more fully, or with greater confidence, to the notice of the public, merely observing, that it continues in high perfection throughout the autumnal months, and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post office order), upon the following terms —

	£	s	d.
Packages containing 100 Canes	2	5s	0d.
Do do 50 do.	1	5	0
Do. do 25 do	0	14	0

Package included.

The usual discount to the Trade, when not less than 200 are ordered

†,* Caution —Y. and Co beg to call the attention of their friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and cannot be held responsible for its being genuine, unless purchased direct from their Nursery

YOUELL'S TOBOLSK RHUBARB, Patronised by Her Most Gracious Majesty the Queen, and many of the Nobility, 12s per dozen.—For particulars of which see their Advertisement of the 18th November

TWO NEW SEEDLING PICOTEES.— "Lady Alice Peel," 10s 6d, and "Mrs Benyon," 10s 6d per pair —These two splendid Picotees were raised by the Rev J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs Youell and Co, for particulars of which see their Advertisement in this Paper of the 16th of Sept

FINEST CARNATIONS and PICOTEES

YOUELL and CO. beg to refer the readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly-esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation

Prices as follows —	£	s	d
12 pair of good Show Sorts .	1	4	0
12 ditto fine ditto ..	1	10	0
25 ditto ditto	3	0	0
12 ditto extra fine and very superior ditto	2	10	0
25 ditto ditto ditto .	5	0	0

The selection being left to Youell and Co.

FUCHSIAS.

1 doren of the newest and very best sorts .. 21s
1 dozen fine ditto .. 12s.
1 dozen good show varieties 8s.

Sent by post, free, to any part of the United Kingdom.

ARAUCARIA IMBRICATA.

YOUELL and CO, possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms —Fine robust 4 year old plants, 8 to 9 inches high, 10s. per 100, or 30s per dozen —Great Yarmouth Nursery, Feb 6, 1844

TO NURSERYMEN, &c, &c.

JOHN BETHAM, CUSTOM-HOUSE and GENERAL FORWARDING AGENT, begs to inform the above, that he continues to receive and forward consignments of Plants and Seeds with strict attention, despatch, and moderate charges. Every information given as to the arrival and departure of vessels to or from Hamburgh, Rotterdam, Ostend, Antwerp, Calais, Havre, or Boulogne, also the United States, Scotland, &c, &c

Address, Cox & Hammonds' Quay, Lower Thames street.

London, February, 1844.

NEW DAHLIA, "SYRED'S HERO OF MAIDA" Colour, bright orange; well cupped, and very constant, strong robust habit, adapted for a back-row flower; and where colour is predominant in class showing it is superior to any orange yet out. Having been raised by an Amateur it was only exhibited for competition at Hammersmith, where it obtained the first Seedling prize, and at Stockwell Seedling Show, where it also obtained a prize.

Daniel Syred, Nurseryman, Bloomfield road, Maida-hill, Paddington, having purchased the stock of the above fine Dahlia, he has a few ground-roots left to spare, at 2l. each, and strong pot roots at 1l. 10s. each. Plants 1st May, 10s. 6d. each. The usual discount to the Trade. No objection to exchange roots or plants for any approved variety.—London, Feb. 1, 1844.

GENUINE BEECHWOOD MELON SEED.

R. GLENDINNING respectfully begs to inform the Cultivators of the MELON that he has had presented to him by Sir John S Sebright, Bart, Seeds of the *true* variety of his delicious MELON; for besides being one of the very best sorts known, it is of easy cultivation and a good bearer. This opportunity will enable gentlemen to procure it *quite genuine*, which is rarely the case, as the following note will testify —

"Beechwood, Feb 5, 1844.

"Sir,—I send you a small parcel of the Beechwood Melon Seed None that I have seen exhibited under that name, nor any that I have seen grown from Seed that has been bought, are of the true sort but have obviously been intermixed with other varieties I have grown no other for many years

"Your obedient servant,

"To Mr Glendinning "J. S. Sebright."

R G has also a few Seeds of the true SION FREE BEARING CUCUMBER, a splendid variety which has been nearly lost.

Packets of the above sent by post free.

Beechwood Melon, per packet . . . 3s.
Sion Free bearing Cucumber, per packet . 1s.

R G's Kitchen garden and Flower Seeds have been selected with great care, and embrace all the new and good kinds.

Chiswick Nurseries, near London, Feb 6, 1844

A SUCCESSFUL METHOD OF GROWING LISIANTHUS RUSSELLIANUS.

J CUTHILL has printed the whole account of his treatment of the above Plant It is said by Dr Lindley in the *Gardeners' Chronicle*, that he (J. Cuthill) is the most successful grower of it round London From its noble and splendid appearance, it must become as generally grown as any other tribe of plants. His large Plant this year had 600 blossoms on it, and gained the Large Silver Medal at the Royal South London Exhibition; and at the same show, eight more Plants, with nearly 2,000 blossoms, gained an Extra Prize. The Printed Directions and a Packet of Seed will be sent out at the moderate price of 2s 6d, also plants of the above, from 2s. to 4s each; they can be sent in little bulk until the end of this month, when they will begin to grow.

Cuthill's Celebrated Early Melon.—J C assures those Gardeners who have not grown it, that it is one of the most Early and Prolific ever known, his Early Black Spine Cucumber, the true Beechwood Melon, as exhibited before Dr. Lindley at Regent-street—the single packets 2s 6d. each, or 4s, for the four.

A Lad about 17 years' old wanted, board and lodging, with 2s per week, will be given, a small premium required.

Orders payable on Camberwell Post office. — Direct, Mr. Cuthill, Florist, Denmark hill, Camberwell.

, Fine Cucumber plants at any time

TWO ARAUCARIA EXCELSA and one A. CUNNINGHAMI, in pots, 9 ft high, well furnished and as handsome as ever were seen, to be sold a bargain, for want of room.

Also Araucaria imbricata, 6 to 9 in, 3s to 7s. 6d., Plants excelsa, 18s per doz., P. deodara, 10s. 6d each; P. Lambertiana, 10s 6d each; P Cleraldiana, 5s. each, P. Glabra, 3 to 4 ft., 7s 6d; P Morinda, 2 ft., 5s., smaller, 2s 6d.; Abies canadensis, 4 ft, and very handsome, 7s 6d; Cupressus torulosa, 2 ft., 3s.; Juniperus thurifera, 2 ft., 7s 6d.; J recurva, 1½ to 2 ft., 2s. 6d. to 5s., Juniperus, a new species from Nepal, 21s.

A large assortment of Epacris and Heaths now ready for the one shift system, 9s per doz.

To be had of Mabbock and Manley, Nurserymen, Hackney.

P S —Their Walcheren Cauliflower is peculiarly their own (no connection with any other house), and should now be down for the first crop —Catalogues of new and choice Flower-seeds, with the best modes of cultivation, to be had on application.

Hackney, Feb 7, 1844.

HYACINTHS AND GROWING STOCK.

HUMPHREYS'S COMPOUND, applicable to all Greenhouse Plants, to Hyacinths and other Bulbs, and to promote the germination of Seeds. Sold in bottles 1s 6d each, by Flanagan and Son, Mansion house-street; Warner and Warner, Cornhill, Hurst & McMullen, Leadenhall-st., W. Clark, Bishopsgate-within; Smith, Islington Nursery, Grimaldi and Co, Covent Garden; Batt and Rutley, 412, Strand; William and John Noble, Fleet-street, Smith, Covent-garden; Charlwood, Ivinstock row; W. J Nutting, 46, Cheapside; G. Lawrence, 18, Piccadilly; John Keenan, Great Russell-street, Covent Garden, Lockhart, 156, Cheapside, Shuttleworth, Pantheon, Minier, Adams, and Nash, 63, Strand, Thatcher and Son, Islington; J Fraser, Clarendon-terrace, Camberwell; Thomas Ansell, Camden Town, Thomas Watkinson, Market-place, Manchester, W E Rendle, Plymouth, Dickson & Co Edinburgh, Fowler, Leeds Fisher, Holmes, and Co, Sheffield, P Lawson and Son, Edinburgh; J Thorne, Shepton Mallet, and other leading Seedsmen in town and country Wholesale Agents Davy, Mackenzie, and Co, 100 Upper Thames st, London

ORANGE and LEMON TREES, from 8s. to 25s. DOUBLE ITALIAN TUBEROSE ROOTS, 2s per dozen.—R. Hall begs to advise the arrival of his Annual Importation of the above named Trees and Bulbs, which are this year remarkably fine, at his Foreign Warehouse, 63, South Audley-street, Grosvenor square—facing the Chapel

BUSHELL'S Light Seedling Dahlia "EMMA."—Plants in May, 12s 6d Colour white, tipped with deep cherry; the petals, form, and centre, good; the largest, most constant, and free in flowering of any Dahlia yet propagated, and has obtained several prizes. "Pet Rival" Plants in May, 5s. Colour, purple maroon fine cupped petal and free bloomer; exhibited in several winning stands last season. Kennington Rose, Plants in May, 2s, most constant Rose grown. To be had of Messrs Ansell, Camden Town, S. Girling, Stowmarket; F. and A Bulpin, Hackney; and J. Bushell, 28, Hall-place, Kennington lane

LARGE PLANTS. — One and two years' transplanted of good size and quality, Dickson and Turnbull, Nurserymen, [illegible] cheap; and freight paid to London. [illegible]

FRUIT-TREES.—Just arr[illegible] Currant Trees, the fruit [illegible] favoured, 6s. 6d. per dozen. Alas[illegible] berry, 12s. per dozen.—H. C Co[illegible]

J. WHITE & Co.'s Collection of Plants, of which a Catalogue is now in the press and will be ready in about a week, comprises every variety of Geranium, Fuchsia, Verbena, Chrysanthemum, Dahlia, &c. which is worthy of cultivation. The following collections are offered, the selection being left to the purchaser:—

		£	s.	d.
40 first-rate varieties of Geraniums		5	0	0
20 " " do.		2	0	0
12 " " New do.		1	0	0
20 " " Fuchsias		1	1	0
40 " " Chrysanthemums		1	1	0
20 " " Verbenas, including Seedlings which were submitted to Dr. Lindley for his opinion, and reported to be "all very fine," see *Gardeners' Chronicle*, Sept. 30th and Oct. 7th "*Alfred*: All your Seedling Verbenas were good flowers"		1	1	0
12 first-rate Dahlias		1	1	0
100 fine show do.		2	10	0

The above will be ready for delivery in strong plants the first weeks of April and May; and orders containing remittances will be executed in strict priority. Orders amounting to 5*l.* will be delivered free.

Agents for the sale of STEVENSON'S Conical Boiler, Tank, &c., which may be seen at work, and can be supplied at Manufacturers' prices. Also WHITNEY'S Composition Substitute for Glass.—Ponte Nursery.

RANUNCULUSES, ANEMONES, CARNATIONS, AURICULAS and LILIUM LANCIFOLIUM.

H. GROOM, Clapham-rise, near London (removed from Walworth), by appointment FLORIST TO HER MAJESTY, begs to remind the Nobility, Gentry, and Amateurs, that this is the best season for obtaining Collections of the above Flowers, and that in consequence of the success he had in their cultivation last year, he can offer them at the following moderate prices:—

		£	s.	d.
100 Ranunculuses in 100 superb sorts with names		4	4	0
100 do. in 100 very fine sorts, do		2	10	0
Superfine mixtures, from 7*s.* to 21*s.* per 100.				
100 Anemones in 100 superfine sorts, with names		2	10	0
100 Do. in 50 do. do. do.		1	0	0
Superfine mixtures, 10*s.* per 100.				
25 pair of Carnations, in 25 superfine sorts, with names		3	10	0
25 pair of Picotees, in 25 do. do. do.		2	10	0
25 Auriculas, in 25 superfine sorts, with names		2	12	6
Lilium lanciolilium album, good bulbs, each		0	3	6
" " " large bulbs, each		0	10	6
" " punctatum, good bulbs, each		0	7	6
" " " large bulbs, each		1	1	0

Extensive may be had on application.—Jan., 1844.

GEO. CROFT, Forbury, Reading, begs to call particular attention to his Seedling Verbena "ADONIS"—a bright crimson, with large lemon-coloured eye. This is particularly recommended to Noblemen and Gentlemen's Gardeners for planting out in beds, as nothing can excel in beauty a bed of this splendid Flower. Plants in April, 2*s.* 6*d.*

Likewise to his Seedling Fuchsia "UNIQUE"—tube and sepals smooth; sepals expand well; corolla, rosy purple the plant is of beautiful habit and if the Public can judge, then this is one of the loveliest Fuchsias sent out. Plants in April 7*s.* 6*d.*

SHILLING'S EARLY GROTTO PEA.

J. AND S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Scotch or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and nearly double the size of any other Pea in cultivation. Quite hardy, will stand the winter well, and a good bearer; the pod large and long. They would particularly recommend it to the attention of Market Gardeners. Price 2*s.* per quart, 10*s.* per gallon, 17*s.* 6*d.* per peck; 30*s.* per half-bushel, 2*l.* 10*s.* per bushel. Agents.—Messrs. PERRY and CHARD, 119, Lower Thames-street, London, Messrs. W. and J. NOBLE, 183, Fleet street; Mr. KERNAN, 4, Great Russell-street, Covent Garden; Messrs. HURST and CHAMBERLAIN, 31, Leadenhall-street; Messrs GRAY, ADAMS, and HOGG, Kensington, Mr. T. D. WARTHWSON, Market place, Manchester.—Northwarnborough Nursery, near Odiham, Hants.

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners' Chronicle*. "THE BRITISH QUEEN on light soils, is the best of all kinds, and will drive Knight's Tall Marrow out of the garden." "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time." Both varieties may be had in packages at 2*s.* 6*d.* each, at W. J. C.'s wholesale Establishment, Newerne, or the Bedford Conservatory Covent Garden.

EARLY PEAS, &c.—HENRY D. CORMACK, Gentleman, &c., begs to inform the readers of the *Gardeners' Chronicle* that they can be supplied with the following Early and Prolific Varieties, viz. Cormack's Prince Albert, British Queen and Early Kent Peas; Taylor's Improved Windsor, and Johnson's Wonderful Bean; Manchester Red and Seymour's White Celery; Walker's Long and Hamilton's Cucumber, &c., with every other variety of Horticultural and Agricultural Seeds, at his Wholesale and Retail Seed Warehouse, 100, Deansgate, Manchester.

FINE HYBRIDIZED FUCHSIA SEED.

W. MILLER begs to inform his Friends that he has spared no pains in selecting the best kinds of Fuchsia for hybridizing, and now has a few packets of fine seeds to dispose of, in packets containing 100 seeds, 7*s.* 6*d*; 50 seeds, 4*s.* Fine Verbena seed, in packets at 2*s.* 6*d.* and 5*s.* each, with directions for sowing. W. M.'s extensive list of Fuchsias, Verbenas, Pelargoniums, &c., &c. can be had on application, containing a full description of his new productions, by Dr. LINDLEY, viz.—Fuchsia "Constellatum;" Petunia "Punctata," Verbenas "Blue Queen" and "Zenana." W. M. has fine plants of his name "Fire Ball" Geranium, at 5*s.* each. The above will be sent post free to any part of the United Kingdom.—Providence Nursery, Ramsgate, Feb. 10, 1844.

CHOICE PANSY SEED.

J. FRYER begs to offer the above at 2*s.* 6*d.*, 5*s.*, and 10*s.* per packet, saved from his superb Collection, which contains the finest varieties in cultivation. Strong healthy plants are now ready for delivery, and Catalogues will be forwarded on application.

THUNBERGIA FRYERII.

Seeds of the above beautiful New Variety of Thunbergia, which was mentioned by Dr. LINDLEY in last year's *Chronicle*, and is figured in the Florist's Journal for Dec. last, at 2*s.* 6*d.* and 5*s.* per packet.

NEW FUCHSIAS.

One dozen good Show Varieties, 7*s.* 6*d*; one dozen very superior, &c. &c.

VERBENAS.

One dozen good Show Varieties, 4*s*, one dozen very superior, &c. &c.

CARNATIONS AND PICOTEES.

One dozen pair of good Show Varieties, 18*s*, one dozen pair of superior do. &c. Good healthy plants of any of the above will be sent by Post free, on the receipt of a Post-office order.—Fuchsia Nursery, Camberwell, London, Feb. 9, 1844.

DEATH OF MR. LOUDON.

THE SUDDEN DEATH OF Mr. LOUDON has involved his family in the deepest distress in every sense of the word, for although he laboured most incessantly, nearly day and night, for the space of forty years, and his works had an extensive sale, yet, from the circumstance of his being an invalid for years, and the expensive nature of the illustrations to his Works, he died comparatively indebted to the Printers and Engravers; the greater part of this debt was incurred in producing the most valuable, perhaps, of all Mr. Loudon's Works, namely, the "Arboretum Britannicum," a work which alone is sufficient to stamp his fame as unrivalled.

After much consideration, it was decided that the best means of providing for his family and a means, also, strictly in keeping with the independent spirit which characterised the life of *Mr. Loudon*, would be by promoting the sale of his truly valuable Publications. There is a large stock on hand of the following Works, the sale of which would extricate the family from their present embarrassed state, by enabling Mrs. Loudon to discharge the debt, and reserve the copyrights in her own hands as a means of future support; and it is earnestly hoped that every person who respects the memory of the late Mr. Loudon, will exert himself by soliciting Subscribers to become subscribers for the Publications enumerated below:—

Published in July, 1838, Price 10*l*., cloth lettered,

THE ARBORETUM ET FRUTICETUM BRITANNICUM;

In Eight Volumes. Four of Letterpress illustrated by above 2500 Engravings, and Four of octavo and quarto Plates.

Just published, complete in One Volume, Price 2*l.* 10*s.*, and in Ten Parts at 5*s.* each,

AN ENCYCLOPÆDIA OF TREES AND SHRUBS;

Being the ARBORETUM ET FRUTICETUM BRITANNICUM ABRIDGED, for the Use of Nurserymen, Gardeners, and Foresters.

Published October 1, 1839, in One Volume, octavo, with upwards of 350 Engravings, Price 1*l.* 10*s.*, and 2*l.* 5*s.*, coloured,

REPTON'S LANDSCAPE-GARDENING;

Being the whole Works on Landscape-Gardening and Landscape-Architecture of the late HUMPHRY REPTON, Esq.; with a Biographical Notice, and Notes by J. C. LOUDON, F.L.S., &c.

Published August 1, 1838, in One Volume, octavo, numerous Engravings, Price 28*s.*,

THE SUBURBAN GARDENER AND VILLA COMPANION;

Comprising the Choice of a Suburban or Villa Residence, or of a Situation on which to form one; the Arrangement and Furnishing of the House; and the Laying out, Planting, and general Management of the Garden and Grounds; the whole adapted for Grounds from One Perch to Fifty Acres and upwards in Extent; and intended for the Instruction of those who know little of Gardening and Rural Affairs.

Published November 1, 1842, in One Volume, octavo, with upwards of 300 Engravings, Price 16*s.*

THE SUBURBAN HORTICULTURIST;

Or, an Attempt to teach the Science of Horticulture, and the Management of the Fruit, Kitchen, and Forcing Gardens, to Persons who have had no previous Knowledge or Experience in these Departments.

THE GARDENER'S MAGAZINE;

Any Number or Volume published subsequently to 1834 may be purchased separately. The Second Series, consisting of Six Volumes, from 1835 to 1840 inclusive, for 6*l.* 6*s.* 6*d.*; for 1841, 1*l.* 1*s.* 6*d.*; for 1842, 1*l.* 2*s.*; and for 1843, 1*l.* 5*s.*; or the third series complete in 9 vols., 9*l.*

By a Post Office order being sent to Mrs. Loudon, Bayswater, London, any of Mr. Loudon's works will be forwarded in the monthly parcel of any local Bookseller; or through any Nurseryman or Seedsman in the neighbourhood of London. A list of the subscribers' names will appear weekly in the *Gardeners' Chronicle*.

A Public Meeting for the benevolent purpose of promoting the sale of these works will be held in the rooms of the Horticultural Society, Regent-street, London, by the kind permission of the Council, on SATURDAY next, the 17th, at two o'clock precisely, when it is hoped all persons taking an interest in Gardening, who are within a reasonable distance, will attend.

On the 1st December, 1843, exactly a fortnight previous to Mr. Loudon's lamented death, he published the following statement:—

"The *Arboretum Britannicum* was got up between the years 1831 and 1838, and published on Mr. Loudon's own account, at an expense of upwards of 10,000*l*., the greater part of this sum was owing at the completion of the work, but it sold so well, till the late depression of the book trade in 1841, that only about 2,500*l* of the debt remained to be paid off at the end of that year. It is, however, necessary to observe that this large proportion of the debt was not paid off solely by the produce of the *Arboretum*, but in part by the profits of Mr. Loudon's other literary property, consisting of thirteen different publications, all of which stand pledged in the hands of his publishers, Messrs Longman, for the debt due to others on the *Arboretum*. This debt, at the present time, amounts to about 2,400*l*., and hence, if 250 additional Subscribers could be got the debt would be at once liquidated, the works pledged for it set free, and Mr. Loudon or his family would enjoy the whole produce of his literary property."

"This Appeal would never have been made, had not Mr. Loudon, who has been an invalid for several years, been lately seized with an inflammation of the lungs, terminating in chronic bronchites, which, even if the disease should be considerably alleviated, will effectually prevent him from any longer pursuing his profession of landscape-gardener, on the produce of which profession, and on the literary labours of Mrs Loudon, he has entirely depended for his income, since his literary property was pledged for the *Arboretum*. Under these circumstances Mr. Loudon feels himself justified in taking this mode of soliciting additional Subscribers to the *Arboretum*, and in begging his Friends and Patrons throughout the country to assist him in obtaining them.

"The *Arboretum* has been spoken of in the highest terms in all the principal Reviews of Europe, and in the Botanical Periodicals of North America. The *Quarterly Review* says:—

"'This book is one of solid value, worthy of a place in the Library of every landed gentleman, as well as of every student of Botanical, Arboricultural, and Horticultural science . . . Let us warmly congratulate Mr. Loudon on having finished his Herculean task; a task which few men, except himself, would have had the courage to begin, and still fewer the perseverance to complete. The *Arboretum Britannicum* is complete in its kind, and it must become a standard book of reference on all subjects connected with trees.'—Oct. 1838."

The following Ladies, Noblemen, and Gentlemen, who already possess the work, on being applied to, have kindly permitted their names to be published as approving of the *Arboretum*, and of this Address to the Public:—

* It may be thought from the well known extensive sale, for the last 20 years, of Mr. LOUDON'S Publications that he ought now to be independent in consequence of too intense application while compiling the *Encyclopædia of Gardening*, Mr. Loudon fell into ill health in 1821, which obliged him ultimately to have his right arm amputated, his left hand being at the same time so much injured as to leave him with only the partial use of two fingers, and his left knee being much loosed. In consequence of these bodily infirmities, Mr. Loudon has been obliged to keep an amanuensis and a draughtsman for the last twenty years, and also, during the greater part of that time, a servant to act as valet. Had it not been for the expenses thus incurred, and for others arising from the same source, Mr. Loudon might have been now independent, even without his literary property. This explanation is due to those who are ignorant of Mr. LOUDON'S personal character.

The following Subscribers to the Works of the late Mr. LOUDON have been obtained since making up the Subscription List which appeared in the *Gardeners' Chronicle* of Saturday last:—

ARBORETUM BRITANNICUM.—10*l*.

Henry Alexander Brown, Esq. London	John Perceval, Esq., Woodlands, Ryde
P. Chalmers, Esq., Auldbar	The Earl of Burlington
Thomas Lombe Taylor, Esqs, Starston	Joseph Ablett, Esq., Llanbedi Hall
Earl Fortescue	

ENCYCLOPÆDIA OF TREES AND SHRUBS.—50*s*.

Joseph Hume, Esq, M.P.	Mr. Hopwood, Bayswater
Wm Hewetson, Esq, Knightsbridge	Lord De Tabley
Lady Webster	Lord Viscount Canning
Lord Howden	Mr. John Lamb, Markeaton, Derby
The Rev. E. Trollope, Leasingham	Mr. Wheeler, Warminster

THE SUBURBAN GARDENER.—1*l*.

John Baring, Esq, Oakwood	H. P. Cotton, Esq., Holland House, Margate
Messrs Rattle and Brine, Bath	
Mr. Hopgood, Bayswater	

THE SUBURBAN HORTICULTURIST.—16*s*.

Mr. Frederick Ashby, Staines	Alexander Rowland, Esq., Lewisham
Mr W. E. Rundle, Plymouth	Mr. Hopgood, Bayswater
Wm Hewetson, Esq., Knightsbridge	Mr. C. Hale Jessop, Cheltenham

REPTON'S LANDSCAPE-GARDENING, Plain.—30*s*.

Wm. Hewetson, Esq., Knightsbridge	Messrs. Garaway, Mayes and Co., Bristol
P. Chalmers, Esq, Auldbar	Mr. C. Hale Jessop, Cheltenham

REPTON'S LANDSCAPE-GARDENING, Coloured.—60*s*.

Messrs. Rattle & Brine, Bath	Mr. Wheeler, Warminster
Professor Daubeny, Oxford	

WATERTON'S ESSAYS ON NATURAL HISTORY.—8*s*.

John Baring, Esq., Oakwood	Alex. Rowland, Esq., Lewisham

THE GARDENERS' MAGAZINE, 9 Vols.—2*l.* 17*s*.

Mr. John Lamb, Markeaton, Derby; the Vol. for 1843.

TO GENTLEMEN AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE and MORRIS are instructed by the Proprietors to submit to public competition, in consequence of the expiration of lease, on MONDAY, MARCH 4, 1844, and following days, at 11 o'Clock, THE STOCK OF ONE OF THE KENSINGTON NURSERIES, near the Great West Road, consisting of large, healthy, and well-grown Specimens of Ornamental Trees and Shrubs, of every description, Variegated and Green Hollies, Evergreen Oaks, and Cork trees, Large Fan and other Yews, twice transplanted Common and Portugal Laurels, Arbutus, Alaternus, &c., Hemlock Spruce, Pinus Laricio, P. austriaca, and nigricans, &c. &c. These Grounds have long been celebrated for the Health and Beauty of their Trees and Shrubs, and safety of removal, and well worth the attention of those Gentlemen who intend Planting in the spring. American Nursery, Leytonstone.

THE KENSINGTON NURSERIES AND THE BROMPTON PARK NURSERY, KENSINGTON GORE, having been so long and distinctively known by their respective names, in these Kingdoms, that we hardly thought it possible that one could be taken for the other; our reason for advertising as we did was in contradistinction from the other extensive and well-stocked Nurseries in the possession of Messrs. FORREST & Co. The one in question being the smallest of their Nurseries, and as the lease expires shortly, it is expected that a great part will go for building purposes. This is the cause of the Sale. Messrs. PROTHEROE and MORRIS hope this explanation will allay the fears of Messrs. GRAY, ADAMS, and HOGG.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will submit to public competition at the Auction Mart, Bartholomew Lane, on THURSDAY, February 29th, 1844, at 12 o'Clock, about THREE HUNDRED DOUBLE CAMELLIAS, consisting of the best varieties, beautifully furnished with bloom buds. Also a fine assortment of STANDARD and DWARF ROSES, choice DAHLEAS in dry roots, &c.

May be viewed the morning of Sale; Catalogues may be had at the Mart; of the Auctioneers, American Nursery, Leytonstone.

VALUABLE NURSERY STOCK, IVER HEATH, BUCKS.

MESSRS. SEDGWICK AND SON have received Instructions to Sell by Auction, on the Premises, near the Crooked Billet, on Iver Heath, on Monday, February 12, at Eleven, in convenient Lots,

About 2000 fine PORTUGAL and other LAURELS from 1 to 8 feet, a very large and choice collection of standard and dwarf Apple, Pear, and Cherry trees; some very handsome New plants of good growth, Larch, Spruce, and Scotch Firs; seedling Oak and other Forest trees, plain and variegated Box, Arbutus, Privet, Laburnums, Scarlet Thorn, Lilacs, Roses, &c. &c. &c., in the Nursery adjoining the road leading from Uxbridge to Slough.

May be viewed four days prior to the sale (Sunday excepted), when catalogues may be had at the Crooked Billet, Iver Heath; at the principal Inns in the neighbourhood; at the King's Arms Inn, Oxford-street, London; and of Messrs. Snowdon and Sapland and timber surveyors and estate agents, Richmond-worth.

FUCHSIAS, VERBENAS, PETUNIAS, AND ANAGALLIS.

YOUELL & Co. beg to announce that their Catalogue of the above, with prices, will appear in the *Gardeners' Chronicle* of next week. It will be found to contain every novelty and variety worthy of cultivation, and is particularly recommended to those selecting for the ensuing season.—Great Yarmouth Nursery, Feb. 8, 1844.

LENDLE'S TANK SYSTEM of HEATING.—Second Edition.—A few copies only remain unsold in the hands of the Publishers and Author.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 10, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Feb. 14	Society of Arts	.	8 P.M.
Thursday, Feb. 15	Linnæan	.	7 P.M.
Tuesday, Feb. 20	Horticultural	.	2 P.M.
	Linnæan	.	8 P.M.

THERE is considerable difficulty to be overcome in any attempt to teach LANDSCAPE GARDENING as an art; because it is scarcely a thing to be taught, in the common acceptation of the term, but rather a thing to be sought for and brought out. There must be an inward impulse in the pupil; a quick perception of form, colour, and relative position; of magnitude; and of the harmony of things in general; and all this is no less necessary in the teacher. Besides, according to our idea, Landscape Gardening is not a thing to be taught, even to those possessing the necessary talent, without a direct appeal to Nature.

A certain amount of materials is given to be worked upon, and the question is how to make the most of it. But unless the materials be present to our senses, it is impossible to point out the various means by which they may be made available to the utmost extent. We have the dead flat—the undulating surface—the hilly, the mountainous, and rocky country, and endless mixtures and modifications of these, and of land and water. We have not merely one window to look from, but many, having various aspects; and innumerable points of view out of doors, to consider. The matter which requires the greatest skill is to contrive to make one thing serve many purposes—one tree or bush to fall in with advantage to many points of view. It will be asked who is to judge of the propriety of arrangements suggested by a teacher? How is a pupil to know and feel that his master has good taste? It is obvious that the arrangements, when made, indicate the taste of only one individual in the first instance, and that the result of his labour can be valued only by those who are similarly constituted by Nature; so that it is possible the pupil may despise the taste of his master, justly or unjustly. Fortunately, those who have no generality of taste, so to speak, learning from others that such and such things are admired, get into a habit of taking for granted that all similar, or nearly similar things are to be admired; that every domain belonging to a Peer or wealthy Commoner must be magnificent; that wherever big trees stand—wherever there is water, still or noisy—wherever rocks and hills—extasy ought to be expressed; and thus the multitude comes to believe itself pleased and delighted, and the owner of the fine things chuckles at the thought of his being lord over all.

We have seen (according to our own notions) very good artificial landscapes made out of indifferent subjects, and tolerable subjects made hideous by attempts at embellishment. We have seen admirable subjects spoiled, others rendered splendid. Though we have had to deal with some of the best subjects in Nature, and found our work admired (whether the admiration was real or feigned matters not), we are not so conceited, nor so ignorant of the constitution of human nature, as to set our taste up as a standard. We have often had to revise our own work, and to make corrections and additions; and some painful necessity has occurred to us in our time (which has not been very short)—such as that of felling a fine tree, because, though, while young, it performed an important part, it had grown too large for its station in the landscape.

We have said enough, perhaps, to show that what is called Landscape-Gardening cannot be taught in the closet; and, though rules have been laid down on paper, that they cannot be applied with any degree of certainty. *Poeta nascitur, non fit.* So must it be with a landscape-gardener. We do not affirm that the profession is not needed; it is a useful one, provided he that practises the art has a love for it. It requires more various talent than almost any other profession; and were we to appeal to a Phrenologist, he would probably enumerate more than half-a-dozen faculties which would have to be in a state of strength and activity. A young person inclined to follow this profession should be taken to see Nature in all her aspects; and from her he should take all his lessons; for this reason, that the Creator has adapted Nature to make agreeable impressions on our faculties, as well as to excite some emotions which warn us of danger, and others which rouse wonder, awe, and gratitude to their Author. He should draw well, so as to be able to accumulate examples, which he may transfer, as his judgment may direct, to any portion of country he may be called upon to adorn. It is a duty to the public to be performed by every proprietor of land who is conscious he does not possess talent for rendering a district agreeable to the eye, to look out for some one who does possess it, and whose assistance he should require. We can only advise those who have country residences and good talent to look well about them, and to direct operations themselves. Unhappily, we cannot exhort against self-conceit, which is too often present, and in the way of talent. Happily, we have in our country the display of a vast amount of fine taste. Good examples are so numerous in every style, that no one need travel far to find them. One thing, however, has often annoyed us—viz., the shutting out of beautiful views by plantations along the highways: there should be an Act of Parliament against this.

Architecture is, in an intimate degree, connected with Landscape-Gardening. Into this department, however, we do not wish to venture far. We may remark that style should be adapted to situation, and also to what is sadly neglected—to time. It is surely incorrect to associate our peaceful days with strong towers and battlements—with the appearance of defences against weapons no longer in use, and which the meanest of the modern implements of war could prostrate in a moment. Still more preposterous is it to connect such things with modern windows, and every means of easy access. Modern architecture has run wild in attempting to mix different styles, and to accommodate them to each other. Fancy has extended her skill to the abodes of the brute creation, and rendered them as classical as those of men. Not having been rich enough to build more than a cottage on a large scale, we felt, on approaching our rather pretty domain with a stranger, somewhat queer when he asked, "Are these your stables?" Not a word was said of the fine landscape that burst upon his view. Nevertheless, our friend got reconciled to the accommodation afforded to him in the supposed stables; and so we had to thank him for giving us an additional example of variety in human idea and human perception. We decline going farther into this part of the subject, which looks too like a labyrinth; and we have no desire to be the cause of our kind readers losing themselves.—*G.*

How best to PRESERVE THE VITALITY OF SEEDS in long sea-voyages is one of those problems which experience alone can solve, but which is of such very great importance that it has already received some attention at our hands (p. 787, for 1843). Lately, a new idea has occurred to Mr. James M'Gall, a young man who was sent out to the Bermudas a few years ago as gardener, and who is now in the employment of Colonel Reid, the Governor, to whom we are indebted for his observations.

In the Bermudas there are sudden and violent changes of climate, caused by the dry winds of the north shifting to hot southerly winds, bringing an atmosphere loaded with moisture. In consequence of this there is a great difficulty in preserving seeds, which, although they spring luxuriantly before the middle of summer, immediately afterwards lose their germinating power.

Bottles carefully sealed, and thick brown-paper packages are generally employed for their preservation, and are kept in a cool and well-aired room. But although this preserves them very well from insects, yet the advantage does not appear to extend further. In the beginning of May last, Mr. M'Gall was induced, from the evenness of the temperature there, to put a bottle of Onion-seed, carefully sealed, which had arrived at Bermuda from Madeira in the beginning of February, into the bottom of a cistern of rain-water five feet below the surface of the earth. The cistern was cased with Roman cement, and had a free circulation of air above the cement, about seven feet from the bottom. On the 1st of November, about the usual time of sowing, this bottle was taken out and its contents sown, together with those of four other bottles of the same package, which had been kept in a cool warehouse during the summer, and of three others. In all cases the seed came up more or less; that in some of the bottles to the extent of about a fifth part, others of about a tenth, but in some scarcely at all. The seed, however, which had been kept under water came up regularly, and four or five days sooner than the others; the plants were strong, and not more than a fifth part of the seed failed. The seed in three of the bottles looked pale when opened, and several seeds were chipped or broken; the fourth bottle, in comparison with that taken out of the water, seemed equally fresh, though very few seeds sprung. It is no doubt possible that some of the seed was not good when first imported; but be that as it may, the seed kept under water came up as quickly as new seed.

This is a new, and we think an important fact; because, if further experiments confirm Mr. M'Gall's experience, it may possibly be found that the best plan for seeds on board ships bound to distant countries, is, as Col. Reid has suggested to us, in bottles plunged in ships' tanks, where they may be exposed to a more uniform temperature than can be otherwise secured.

We throw this out for the consideration of the importers of seeds.

BEES.—No. VI.

(*Continued from p. 69.*)

The Pasturage of Bees, and the Transporting of them to it.—Some counties abound in honey more than others. The three counties, Lanark, Ayr, and Middlesex, in which we have lived, are "flowing with honey." Other counties may be compared with these. Bees will thrive where most of the following plants are found:—Sallows, Gooseberries, Plums, Apples, Pears, Planes, Limes, Furze, Broom, Field Mustard (Sinapis arvensis), common Bird's-foot Trefoil (Lotus corniculatus), greater Bird's-foot Trefoil (Lotus major), Beans, Dutch (white) Clover, Ling (Calluna vulgaris), and Devil's-bit Scabious (Scabiosa succisa). There are many more honey-producing plants, but they are either not native, or not allowed to flower extensively in the counties which are mentioned above. If honey-plants do not grow in the immediate vicinity of an Apiary, the Bees therein will not—cannot, gather much honey, for they have not only a greater distance to fly, but are sometimes on their journey overtaken and destroyed by sudden showers. In many parts of Scotland, and I dare say of England too, Bees are transported from one pasturage to another. This cannot be too highly recommended, and I think I cannot do better than mention how, when, and whither, the Bees at Carluke are removed. Carluke is situated three miles north of the Clyde, which runs through the centre, and drains the greater part of Lanarkshire. About three miles to the north-east of the village there is a large track of land densely covered with Ling, or Heather, as it is there called. About the 1st of March the stock-hives are removed on very light hand-barrows to the banks of the Clyde, which abound with Sallows, Gooseberries, Plums, &c. At the swarming season many are taken back to Carluke, and from the 1st to 12th of August all are removed to the Heather. In removing Bees it is necessary to ventilate the hives by raising them off the boards with thin wedges or penny-pieces, and by placing hair-combs or pieces of perforated tin on their mouths. Those Bee-keepers who say that ventilation is necessary at any other time do not know much about the habits of the Honey-bee. Wm. Rettie grew's best top swarms gathered, as we have heard, 50 lbs. each in the month of August last year; that is to say, while they were on the Heather. In answer to a question, he says—"I do not believe that they would have gathered 20 lbs. if they had not been taken to the Heather." And in a letter of Sept. 12, 1843, he says—"A friend has a hive, that gathered 15lbs. on the 5th, 6th, and 7th of this months and during the last seven days one belonging to another person gathered about 28 lbs. or 30 lbs." None of mine have gathered so much—only one has gathered 22 lbs. during the same time. The honey is now mostly collected from the Blueheads (Devil's-bit), which are not very plentiful where my hives are; but I will remove a few of them on the first opportunity. The month of August this year was unfavourable here; but I never saw Bees collecting honey in quantity so far in September before this year." In unpropitious or rainy seasons, hilly and exposed pastures are best for Bees—there they will collect honey; whereas, if placed in a valley or sheltered situation, they eat what they have collected, or what is given to them. It may be interesting to gardeners to know that flowers give or contain the greatest quantity of honey when the wind blows from any point between south and west inclusive. This will not appear strange to those who have paid attention to what is said in the third chapter of the second Book of "Lindley's Theory of Horticulture."*—*A. Pettigrew, Wrotham Park, Middlesex.*

(*To be continued.*)

A KNOWLEDGE OF PRINCIPLES ESSENTIAL TO THE BEST CULTIVATION.—No. I.

As the cultivation of plants in pots admits but a limited amount of material for their growth, it may be inferred that any system involving such a restriction, and consequent exposure to extreme fluctuations of temperature, can only be productive of a partial effect, compared with their condition in a state of nature. At p. 876, 1843, it is stated that "Nature has given plants the power (under favourable circumstances) of producing from the bosom of each leaf a branch, which is capable of being rendered subservient to the formation of bloom; and that the proportion of bloom will, as a general rule, be in proportion to the multiplication of such branches, subject to their being produced within a given period prior to the season of bloom, and being duly exposed to the agencies which are essential to maturity of growth."

Assuming the correctness of these conditions, the following inferences are drawn:—

1st, That perfect cultivation necessarily involves the greatest extent and vigour of growth of which plants are capable;

2dly, That such a growth is the only test of their average proportions in a state of fertility;

3dly, That maturity of growth [illegible] be antecedent to, or uniform with, [illegible]

* Though this book cannot well be recommended, yet it is scarcely to be [illegible] journeymen gardeners. To such it is [illegible] on gardening in the English language [illegible] work will induce many young men

The absence of fertility in plants, generally, may be attributed to an imperfect application of the agencies (whether in excess or deficiency) which are essential to its formation. The following case will illustrate this:—Two years ago the writer forwarded a duplicate of the beautiful Leonotis Leonurus to an eminent cultivator, and in the autumn the same cultivator thus writes:—"I have Leonotis in splendid growth, and also Fuchsia corymbiflora, the latter 10 feet high, but without any appearance of bloom on either; what is the cause?" The reply was—"Both are attributable to one cause, viz., an undue excitement, either by organic or atmospheric stimulants, thereby causing an excess of growth beyond the season of bloom."

What Dr. Johnson has well observed in respect to human nature, that it "is everywhere made to furnish the machinery which may work most effectually upon itself," may be equally applied to plants,—that they, too, (when understood in the relation which their organic structure bears to the agencies which sustain them,) best afford the knowledge which may most effectually be rendered subservient to their perfect culture.

In accordance with these views, a principle is given at p. 787, 1843, as follows: An accurate acquaintance with the physiological or organic structure of plants is of essential importance to a knowledge of the nature, extent, and application of the agencies which sustain them.

Every fact, whether derived from observation, analogy, or practice, favours this conclusion. If our present knowledge has put us in possession of the means of approaching more perfect growth in any department of Gardening, it only remains that the conditions which operate upon the productive organs of plants throughout their respective stages of growth should be duly applied, to render such growth subservient to its ultimate object of fertility.

As "every leaf-bud has its own distinct system of life and growth," and also, as every plant is individually "a collection of a great number of distinct identical systems of life,"* it follows that a system of cultivation is perfect, in proportion to its capability of causing a development of the greatest number of leaf-buds into branches, and *vice versâ*.

Again, by the laws which govern the productive organs of plants, "all flower-buds are analogous to leaf-buds," and "whatever are the laws of the arrangement of branches, with respect to each other, the same will be the laws of the arrangement of flowers, with respect to each other"†; therefore it may be inferred that as the formation of leaf-buds is a predisposing cause to the production of flower-buds, the most perfect system of cultivation will be that which produces the greatest number of systems of life (in the highest vigour), by the production of leaf-buds, subservient to the formation of bloom.

One of the most common errors as regards the formation of bloom in plants, is a notion that they must be necessarily restricted in the proportion of soil, or size of the pot in which they are grown; this mistake is founded on a forgetfulness of the various abilities of cultivators, the skill of whom may so far differ that in one case a plant may be so treated as to require the space of a 16-sized pot, while, by inferior management in other hands, a similar plant might not occupy more than a 32. A plant in a 16 or 12 pot may be as effectually restricted (as regards the unfolding its bloom) as another in a 48, if the growth, in both cases, be produced by a given period prior to the season of bloom.—*William Wood, Pine-Apple Place.*

(To be continued.)

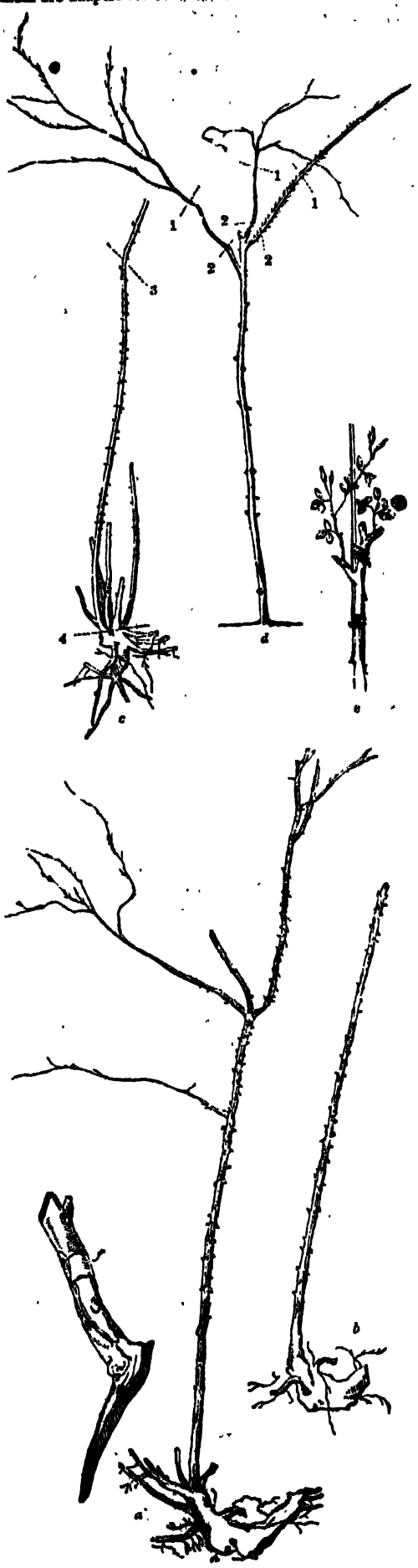
THE ROSE GARDEN.—No. IV.

(Continued from page 68.)

The most promising plant to be taken for budding upon, provided size can be obtained, is a well-ripened and woody sucker of the present year, whose root will almost always admit of being trimmed and placed within a plunged pot, for the purpose of avoiding a check on the subsequent removal of the plant when become ornamental. Next to this (if not equal to it), a plant of the preceding year is to be preferred for the same reasons and with the same advantages. For free growers, however, stocks of the 2d or 3d year should be preferred, as less likely to be cut off by frost, and being also more capable of self-support. There seems a question, also, if these be not more vigorous, care being taken when worked that the buds entered are neither sluggish nor delicate in their habit of growth; such buds should invariably be entered upon young and succulent stocks.

In choosing young and rather slight stems, care should be taken to select such plants as are woody, and tolerably able to support themselves and defy the frost; these should be sought amongst the shoots of grey, brown and green, or rather grey and green striped, which eventually run to a large size, and are particularly clean and healthy in appearance; and green suckers from them may be readily obtained of good size, and of the height of ten or twelve feet. Without this precaution there is some danger of an unexperienced person mistaking the small for the large sorts, and the quantity of pith some of the former contain, render them liable to rot down, on accidental exposure of wounds, &c., and their general want of vigour makes the possession of them undesirable.

There are two varieties of the Wild Rose most peculiarly under working, both suffruticose or half-shrubby, and both slight in the stem; the one grows upon a most prolific root, which throws up innumerable suckers, looking almost like a tuft of Rushes, and as far as the number of plants to be obtained by the division of one stool may go, a most desirable prize to the collector; the other similar in colour and pithiness; but whereas the first is dwarf and bushy, the second produces few suckers and climbs to the height of 20 ft. or more, but neither of them are adapted for standards.



c A stock of the Wild Briar as brought from the hedge.

b The same stem, the roots and head having been trimmed for planting.

c Another plant, with younger and more vigorous roots; the dotted line indicating the passage of the saw in the removal of superfluous wood.

d The stock B., with the shoots made during the summer, and the buds entered in August.

A plant is not to be rejected on account of its age, as unconnected with its appearance, youth being by no means a sine qua non in the collection of stocks. A sucker just ripe and a plant in its third season frequently proving equally vigorous after transplantation; but one thing must be attended to, viz., that the stocks be free from side shoots, the removal of which mangle the stem and spoil the appearance of the future tree; but if these be unavoidable, care should be taken to remove the branch desired, by a clean cut quite to its base.

1. The branches shortened in November.

2. The branches cut back to the sap-buds in spring.

e The same plant the succeeding summer; one bud having failed, the branch has been cut away, and the other buds are figured as flowering.

f A side-shoot of the Wild Briar, with an inserted bud, previous to its opening; the sap-bud above it being on the eve of bursting.

The Wild Rose displays so much variety in its mode of growth, colour of bark, shape of stem, formation of root, &c., that any attempt to convey an adequate idea of these by figuring, would alter the nature and intention of this work entirely. The accompanying engraving will give a distinct idea of the plant in its progressive stages; the frontispiece being intended to represent its completion.

FAMILIAR BOTANY.

Morphology.—No. II.

Ὅθεν τῶν φύλλων μεταγραμματισμοὶ καὶ ἕτερον πάντα· ἴσως γὰρ τὰ μὲν πρότερον, ἕτερα τυχηρὰ φυόμενα τῶν ἀεὶ, ἕτερον ἀπεργαστικὸν ἦν, καθάπερ ἀνθέων ἐστὶ φύσις. τούτων δὲ ΟΥΤΡΑΔΙΟΝ ΤΟ ΑΠΑΟΥΝ Η ΤΟ ΠΟΑΤΕΛΕΣ. ΑΣΘΕΝΗΣ ΔΕ Η ΑΡΧΗ.—*Theophrastus de Causis Plantarum* II. 2.

Principium florum et foliorum idem est.—Linnæus.

When the Greek philosopher declared that nature always proceeds from imperfection to perfection, he is thought to have distinctly announced the principles upon which Morphology depends. There is not, however, such further evidence in what remains of the works of Aristotle, as entirely justifies our admitting more than the existence in his mind of some perception of its truths. It is his pupil, Theophrastus, who has distinctly shown in the words above quoted, that by him, at least, the order of formation in plants was clearly appreciated, and that complicated forms are in all cases, and of necessity, the result of simple forms. "The common transformations of leaves and other things is manifest. In the Croton leaf, for instance, some which grow round in the beginning, afterwards become angular, as if completing themselves. For simplicity is easier than what is complicated. THE BEGINNING IS STRENGTHLESS." To be sure it is. Infancy is weak, whether in the structure of the globe, or the organs of plants, or the fabric of man. It was only as strength was gained, and power acquired, that gaseous emanations were consolidated into rocks in the creation of this planet. It was only as the climate of our earth became fully adjusted that the simple forms of plants and animals were increased by the addition of mammals, trees, and highest beings. The insect is still feeble in the grub, the bird in the egg, the quadruped in the fœtus, and the plant in its seed. All by degrees clothe themselves with organs, having a common origin, but mere attempts at structure in the beginning; and all, by gradual changes of the elemental forms of organisation, rise into perfection. In every case *the beginning is strengthless.*

The high philosophy of the Greeks expired with their so-called liberty, and fell into a slumber of nearly 2000 years. It was not till the sixteenth century that the great views of the school of Aristotle met with men capable of comprehending them, and more than two centuries again elapsed ere their doctrines began to assume a definite form. In 1583 Cæsalpinus, an Italian Botanist, spoke of the origin of the parts of plants, and alluded obscurely to the common origin of them all; but it was reserved for Linnæus to give life and reality to the far-seeing doctrines of the Greeks. In the year 1759, he maintained that all the organs of plants are of the nature of leaves, and that the various floral organs are only so many *anticipations of foliage*; that is to say, leaves that have not time enough to grow into their proper form. The year after he published his famous "Prolepsis Plantarum," in which he explains his theory in ample detail. Let us see what he says:—

"As soon as leaves have expanded themselves in spring, a bud is observable in the axil of each. This bud swells as the year advances, and in time becomes manifestly composed of little scales: in the autumn the leaves fall off, but the bud remains; and in the succeeding spring swells, disengages itself from its envelopes, and becomes lengthened: when its outer scales have dried up and fallen off, the inner ones are expanded into leaves (like the wings of a butterfly emerging from its pupa), which separate from each other by means of a gradual extension of the young branch, and presently each new leaf is found to contain in its bosom a little scaly bud, which, in the following season, will also be developed as a branch, with other leaves and other buds. Now, when I see a tree adorned with leaves, and in the bosom of those leaves provided with its little buds, it is natural to inquire, of what do these buds consist? Do they consist of the rudiments of leaves with their gemmules, the latter of other leaves and buds, and so on to infinity, or, at least, as far as the extension of the plant is likely to proceed? Nature organises living beings out of such minute particles, and even from fluids themselves, that the best eye may in vain seek to penetrate far into her mysteries."

"If a plant, which has flowered and fruited for many successive years in a pot, is transferred to a rich soil and warmer station, it breaks forth into branches instead of flowers. Hence it appears that branches and leaves can be produced from the provision made for flowers, provided circumstances are favourable to their development."

"As to *buds*, 'the bulbs of Hyacinths and Ornithogalums afford good evidence of their nature. Both bulbs and buds are winter coverings of plants, with this difference, that bulbs are the bases of leaves of the previous year, while buds are the rudiments of leaves of a coming year. Wherever bulbs grow, there are formed the persistent bases of leaves, within which young leaves are to be developed: within these latter leaves repose the buds or rudiments of future plants, exactly the same as the buds of trees. These buds consist of the rudiments of leaves of the succeeding year; small indeed, but containing in their axils other

* "Principles of Horticulture," p. 112, 113.

† Lindley's "Principles of Botany."

rudiments of a like nature. Now, if it happens that such a plant flowers, the bud, which would otherwise have produced leaves the year after, is converted into a scape a year earlier; whence it comes to pass that the rudimentary leaves lying in the bud lose a part of their nutriment, in consequence of the sap being drawn off to the fructification: wherefore those leaves continue small, assume a different structure, easily wither, and are called by botanists bracts. Thus bracts are nothing but leaves which would have been developed another year if the plant had not flowered.'

"As to the *calyx*. 'That the calyx is only the approximated leaves of a plant, is apparent from several instances. The calyxes of Pyrus and Mespilus are often expanded into perfect leaves; the Rose offers a similar instance of the change. The leaves of Mesembryanthemum barbatum are supplied with a most curious apparatus of hairs; and the calyx consists of five pieces, in all respects similar to the leaves of the stem. The calycine leaves, indeed, are often very small, juiceless, and different from those of the stem, as if scales of buds previous to their developement; but that they still are nothing but leaves of the same nature as those of the stem, must be concluded from this, that when plants, Rosa and Geum rivale for example, become, in consequence of excessive nutriment, proliferous, the calycine leaves, which before were small and dry, expand into leaves in size, colour, figure, texture, and substance, exactly like those of the stem. Hence it is not to be doubted that the calyx and the leaves of the stem were in the beginning alike.'

"As to the *petals*. 'It is often very difficult to distinguish them from the calyx. The white corolla of Helleborus niger, after flowering, assumes the green appearance of the calyx. In luxuriant flowers of Rosa and Geum, the corolla sometimes becomes wholly green, and assumes the foliaceous nature of the calyx. As the calyx is nothing but leaves, and as each leaf contains in its axil the rudiment of a plant consisting of the rudiments of leaves of a future year, it follows that the petals are of necessity the rudiment immediately within the calycine leaves; the petals, therefore, would have been leaves another year, if flowers had not been produced.'

"As to the *stamens*. 'From double flowers it is apparent that stamens do change into petals and petals into calyx. This is so well known that it need not be insisted on. Now, as from the axil of every leaf arises the rudiment of a plant, and from the axil of the calyx are produced the petals, which are nothing but more tender leaves, and as these petals must have, like other leaves, the rudiments of leaves in their axils, it follows that stamens are so, for they can be transmuted into petals, as the petals can into the leaves of the calyx.'

As to the *pistil*. The evidence of this being also reducible to leaves, is taken from a change observed in the flowers of Cardnus heterophyllus and tataricus, in which the style was changed into two green leaves like bracts, and from the common conversion of the pistil into leaves in proliferous individuals of the Rose, the Anemone, and others.

This is enough to show in what way the great Linnæus regarded this curious question. I shall next explain how others have improved upon his views.—*R. E.*

THE MISTLETOE.

In the days of the Druids, this parasitical plant was supposed to have its attachment principally to the Oak-tree. The Celtic priests regarded it with extreme veneration, and collected it for charms, and cures, and religious ceremonies, with solemn formalities; but with them it owed all its supposed mystic influences to its connexion with the sacred Oak.

I am led, however, to imagine, from recent inquiries and some personal observation, that we do not know the true Mistletoe of Celtic superstition, and therefore that Pliny, the naturalist, though he was contemporary with the Druids, may have in some way mistaken the plant. He probably took his report on trust. It may not have been a production of his climate, he may have had no opportunity of observing it himself. We know that most of the names given by him and Theophrastus have been rejected by modern botanists, or have been applied to other plants; as the Daphne, which was the Laurel of the Greeks, is not our Laurel. Virgil speaks of the *Viscum*, which we suppose to be the Viscum album—

> Quale solet sylvis brumali frigore viscum
> Fronde virere novâ, quod non sua seminat arbos,
> Et croceo fœtu teretes circumdare truncos;

but without any direct allusion in those lines to the Oak or any particular tree as its nurse, though he certainly refers to the Ilex in the course of his metaphor, a few lines further.

M. Bataille, the Curator of the Botanical Garden at Avranches, in the Department of La Manche, Normandy, has favoured me with some interesting notes on the subject, which have led me to examine Oak forests, and various plantations in that district, the examination of which tends to corroborate his remarks. He asserts that in all his botanical researches throughout the arrondissement, he has never seen the Mistletoe growing from the Oak, nor been able to discover that any other person had seen it on that tree, though it is common on the Apple-tree, the Hawthorn, and many other of those trees on which the thrush (which is believed to be the agent of propagating the plant) had voided the undigested berries of the Viscum album on which it had been feeding. Thus, by a beautiful provision of the Creator, that matter which otherwise would fall barren to the earth and perish there from want of the peculiar element which had been placed in the bark of certain trees for the development and nurture of the vital principle within it, is rendered serviceable. The consideration of the extent of injury which this parasite occasions to the trees which it tends to exhaust, is beside the question under consideration. But we may conclude with Sir John Colbatch, "that this beautiful plant has some important properties, and that it has been designed for further and more important purposes than to feed thrushes, or to be hung up surreptitiously in houses to drive away evil spirits."

The Druids occupied the forests in Normandy and Brittany: if, then, the Mistletoe with which we are now so familiar, and which is naturally growing at this day on the Acacia, the Hawthorn, and the Poplar, in the botanical garden which is under the care of M. Bataille, be the same as that which the Druids venerated, and which is believed to have been the companion of the Oak, how does it happen that the one has since repudiated the other?

M. Bataille states that after consulting the works of many of those botanists who have given the description of the plants of France, he has found that the authority of Duhamel alone is urged to prove that the Mistletoe may be brought to grow indiscriminately on any of the indigenous trees of the country and on many exotics, in opposition to which Thuillier,* who describes this ligneous parasite accurately, says, that it is found on almost all trees except the Oak.†

M. Bataille planted an Apple-tree among the Honeysuckle tribe in the Avranches garden, and in the part of the tree where Mistletoe would be most likely to establish itself, he inserted in the bark some of its berries; these germinated, the radicles stretched out and fastened upon the bark, on which they continued firmly imbedded during the summer and winter without farther apparent progress. It was not until the succeeding spring that they gave any signs of life, in throwing out a few little branches furnished with the elements of leaves.

M. Bataille has repeated experiments of the same kind with Oak, but unsuccessfully. However, he is about to renew them, in the expectation of ascertaining whether it has much disposition to nourish the Viscum album or not. —*Martin Doyle.*

* Author of La Flore Parisienne.

† There is a branch of Oak with the Mistletoe around it preserved in the Museum of Paris: it was not considered a rare production for it a law to forbid not its being so preserved.—M. D.

Home Correspondence.

Burnt Clay.—I can fully confirm the statement of Mr. W. Paul, of Cheshunt, which appeared in the last week's *Gardeners' Chronicle*, as to the good effects produced in gardens, where the soil is strong, by the use of burnt clay or marl mixed with the ashes of vegetables and the charred branches of trees. I have had for some time past several of these burning heaps in the environs of my garden, which produce us in succession a very valuable manure; they are easily kept in a state of combustion, and all the care they require is, to cover and surround them occasionally with fresh clay or marl, that they may not burst out into an open flame. My gardener sowed two beds of Onion-seeds of the Globe, James's Keeping, and Strasburg sorts, mixed together, about the 10th of March last, with 1 lb. of seed to each bed. The beds were each of them 18 yards by 12 yards, and one of them was manured with good stable-dung; the other by this mixture of burnt clay and vegetable ashes. The produce of the first did not exceed five bushels of an inferior size, the greater part having been destroyed by the larva of the Onion-fly; whilst that of the latter was 20 bushels of Onions, as large as those imported from Portugal. Another remarkable circumstance is, that the former have not kept well; but the latter are as sound as possible, not a single bulb in the strings showing the least appearance of decay. The same burnt mixture has been applied with equal success in my fruit-garden. I had observed a great decrease in my crop of Apricots for several years past, and upon a careful investigation as to the cause, my gardener and I agreed that it must be owing to the tenacity of the border; we therefore had the old soil removed, and a quantity of this burnt mixture with a little fresh loam substituted for it. My gardener planted the border so renewed with runners of Keen's Seedlings, in rows; they became strong plants by June, when they flowered and produced an abundant crop, and all my Apricot-trees were covered during the summer with well-ripened fruit. I am so fully persuaded of the excellence of this kind of manure, that I intend to adopt it generally on my farm. It will there have a double advantage; for I shall be enabled to save the farm-yard dung for composts, and I shall have the gratification of seeing my hedges neatly trimmed and my ditches well cleared out. Our stiff soils will be also rendered more friable, and will not suffer as they now do from the retention of wet on the surface.—*Oswald Mosley, Rolleston Hall, near Burton-on-Trent.*

Durability of Oak cut in Winter.—We have a saying in Surrey, that the sap of winter-fallen Oak is as hard as the heart of that which is thrown in the spring. There may be a little exaggeration in this saying, but it serves to show the common impression of the comparative durability.—*A. C. P.*

Raising Seedling Picotees.—Wood's Col. Steel, red Picotee—from three seedlings out of this flower, three red Picotees were produced, one of which was just admissible on a stage. From Hufton's Isabella—I had about thirty plants, many of them were very large and showy, both red and purple Picotees, were well-formed, and made handsome border-flowers; but they were either serrated in a slight degree, or somewhat horned. Lee's Cleopatra—from forty plants of this none were good. From Ely's Criterion, red Picotee, were seven plants, one very capital red Picotee, not single red ditto, one dark self, and four rose pink bizarres. From Ely's Grace Darling, purple Picotee, were also seven plants; one excellent, one middling, three with round useless pods, purple Picotees with light edges, two died. Same sort sowed in November produced sixty plants, but none good. From Sharp's Nymph of the Nore, red Picotee, I had two plants; one was a self, the other a red Picotee, with the narrow petals of the parent; otherwise, first-rate. From Hufton's Nebemiah, I raised three plants, viz., two purple Picotees, of which one was tolerable, and one purple self.—*O.*

Cucumbers.—The accumulation of steam in Cucumber-frames about this season is often injurious to the plants. To obviate this I caused a bed to be made of well-prepared horse-dung and Oak-leaves, for a two-light frame, having a partition in the middle, and forming, as it were, two single-light boxes. Each was subjected to the same treatment with regard to fermenting materials; the bed was raised high in order that a good front lining might be applied, the end and back were well thatched with straw to keep out frost, wind, &c. The bed being made, and the boxes placed on it, the seeds were sown in one of them; when these began to vegetate, I found it necessary to supply a lining, and at the same time I introduced a tin pipe, six feet long, and two inches in diameter, placing it longitudinally, but in a sloping direction, in the front of the frame, with the lower end protruding through the lining, near the ground, and the upper entering the bottom of the frame, thus causing a draft of air through the pipe into the frame, the effect of which was not only to raise the thermometer 10° or 12°, but to expel the damp and dry the soil, so that after the plants were potted, I found it necessary, notwithstanding the very cold damp weather, to water daily; and in about three weeks I had a good stock of strong healthy plants. With a view to test the advantages of this treatment, some of the plants were placed in the adjoining frame, which was prepared in the same way as the one they were raised in, with the exception of the air-pipe. Having a good stock of plants, three pots of the best were selected; but although the frame was previously replenished with a lining, and every care taken to preserve them, at the end of a week they perished for want of heat. I then introduced an air-pipe into this frame also, and planted more plants, which flourished through the season with the best results; thus proving to my satisfaction the utility of air-pipes. Much, I imagine, may be effected by this mode of heating, not only in growing Cucumbers, but other plants, where there is a good supply of fermenting materials.—*M. Power.*

Cause of Hardiness.—The difference between hardy and tender plants arises from their capability of taking up chemical substances, alkalies, acids, or earths, by which the juices are kept in a more or less fluid state. In tender plants they become thickened, and are not capable of passing up the vessels at a comparatively mild temperature, and if the temperature is reduced the plant dies, in consequence of the juices becoming congealed. In hardy plants these remain fluid at a very low temperature; if they were to become frozen they would expand and burst the vessels, and death would be the consequence. Plants the most succulent, and apparently very tender, stand severe frost (Scilla Sibirica for instance), while trees, to appearance quite hardy, are destroyed by it. The hardiness of a plant does not depend upon woody fibre, as death in all cases proceeds from the juice expanding and forcing the bark from the wood. Perhaps this notice will lead the Chemist to analyse the juices of hardy and tender plants with a view to determine their different properties, in order to ascertain if it is possible to render plants hardier by giving them substances which will keep their juices fluid, and make them less liable to the effects of frost. In acclimatizing plants, little alteration has taken place in the constitution of any particular species or variety, beyond the capability of its taking up more of the substance, whatever it may be, which renders the juices thinner, and makes them susceptible of the action of frost. Can there be any latent caloric in substances taken up by plants which is afterwards given out to them?—*H. Groom.*

Slugs.—I have a few Cauliflower plants which were much eaten by slugs. I put a small one-light frame over them to protect them from frost—any access from without seemed improbable; nevertheless, when I searched I found a great many slugs; whenever I lifted up some pots of Strawberries within the frame, I always found two or three large ones. I conclude that they have been for some time buried some depth beneath the surface, and perhaps their habit is to lie deeper than is generally supposed.—*J. W., Peterborough.* [Pretty strong gas-water applied to ground infested with slugs at their feeding time kills them effectually.]

Digging Vine Borders.—In many places Vine borders are dug, and an early crop of Cauliflowers taken from them, or they are planted with annuals and greenhouse plants. This is a practice which every gardener should condemn, for it cuts all the roots near the surface, which is a serious injury to the Vine; as the surface-roots are capable of receiving more nutriment from dung laid on the border than those at a greater depth, and in proportion as the surface-roots are destroyed or damaged will the crop be scanty.—*J. W. K.*

Mr. Loudon.—As I find that a passage in the Advertisement on our behalf, which appeared in the *Gardeners' Chronicle* of Jan. 27, has led to an erroneous impression with regard to Messrs. Longman, I shall feel very much obliged by your allowing me to make the following statement. The fact is, that though all the works, which were poor Mr. Loudon's own property, do "stand pledged" in the hands of Messrs. Longman to defray the debt on the Arboretum, &c., those gentlemen hold the books solely as trustees, to receive their proceeds,

sent to pay the amount in equal shares to the printers, engravers, and wood-engravers, who are the creditors to whom my late husband was so largely indebted. I am most anxious to make this statement, as I have experienced the greatest kindness from Messrs. Longman, who have done everything in their power to alleviate the painful circumstances in which I have been placed.—*J. W. Loudon, Bayswater, Feb. 7, 1844.*

Mrs. Loudon.—It gave me much pleasure to see in the last *Chronicle* that the meeting in behalf of Mrs. Loudon, kindly permitted by the Horticultural Society to take place in their rooms, was finally fixed for Saturday, the 17th inst., when I trust some effectual means will be adopted to relieve Mrs. Loudon and family from the present position their affairs assume, and enable them to reap unalloyed the benefits arising from the late Mr. Loudon's works, to which Mrs. Loudon's own talented assistance so justly entitles her. For such a man as Mr. Loudon, after a long life of incessant mental toil for the benefit of mankind, to die so poorly remunerated, is painful to contemplate; especially when we reflect that his embarrassments were occasioned by the immense outlay necessary to produce that valuable and herculean work, the "Arboretum et Fruticetum Britannicum," which must be acknowledged, considering the bodily disadvantages under which for many years Mr. Loudon unfortunately laboured, to be unequalled in the annals of authorship and indefatigable perseverance. To immediately release this distinguished man's family from embarrassment is a debt the horticultural world owe to his memory; his name must ever be associated with the brightest era in Gardening, for to him we are principally indebted for having raised Horticulture from a state of ignorance and empiricism to the rank it now holds amongst other scientific professions. I sincerely hope the purpose for which this meeting is to be held may prove as successful as the most sanguine friends to its laudable object could desire; and I trust that all who take an interest in its furtherance will attend, if possible, and likewise use their personal influence with their friends. It gives me much satisfaction to be enabled to state that a meeting for the same purpose will be held in Edinburgh after the London one, under the kind auspices of Dr. Patrick Neill and other influential gentlemen.—*Joseph Paxton.*

Lemons.—"M. B." forwards a Lemon that was gathered 3d Sept., and the same day put into the box in which it now is (with another which has been taken out); it is now five months since it was closed up. "M. B." preserved two Lemons in the same way for six months, having put them in the 1st of March, 1843, and not opening the box till the 1st of the following September: they were both as perfect as the one sent. [This was a fine specimen, not at all shrivelled, but perfectly plump and sound; and the simple way in which it has been preserved (being buried in fine soil and earth in a small box), is deserving the notice of those who may have more Lemons ripe at one time than they can use.]

Schizopetalon Revili.—This plant has a beautiful appearance in the open border during the summer months. The seed should be sown in the month of April, in pans, in a mixture of peat and loam; then place the pans in a hot-bed, frame, or pit, until the plants are fit for potting off. The seed should be sown very thin, if not, the weaker portion of the plants will rot off, for want of air and room to their stalks, as they grow with their foliage prostrate. As soon as the plants are large enough for potting off, fill a quantity of pots with a mixture of leaf-mould, loam, and sand, then place a plant in each pot, and give a little water. Afterwards remove them into the frame or pit; when they have got established in their pots, they may be removed to a cold frame, or greenhouse. In June they may be placed in the open air, and regularly watered during the summer. Towards the end of October remove them to a frame, to protect them from frost. In May or June following they may be planted out where required. As soon as frost is apprehended, take up the plants, with a ball of earth attached to the roots, repot them, and place them in the greenhouse, or frame, till again required.—*J. McI., Hillsborough.*

Societies.

LINNEAN SOCIETY.

Tuesday, Feb. 6, 1844.—Robert Brown, Esq., in the chair. Professor Agassiz, of Neufchatel, and Dr. Schleiden, of Berlin, were proposed as foreign Fellows of the society. Mr. Winterbottom exhibited specimens of Trichomanes speciosum, which he had gathered in company with Mr. Babington, at Brandon, Mountain Dingle, and Waterville, Inverary, in Ireland; also specimens of Spiranthes gemmipara, which he and Mr. Babington had found in considerable numbers at Castletown, Bearhaven, in Ireland. Mr. Anderson exhibited specimens of Brexia intifolia in blossom. A paper was read from Mr. Curtis, on two species of Hymenopterous insects. The first belonged to the family Tenthredinidæ, or Saw-flies, and constituted a new genus, which Mr. Curtis proposed to call Dielocerus. This insect was from the collection of Lord Gedesloh, and had been taken by Mr. Ellis in the Brazils; hence he called the species D. Ellisii. This insect is chiefly remarkable for its larva forming for themselves a cocoon in pomegranates, a fact that has not hitherto been observed amongst insects. The cocoon was exhibited, was oblong and about the size and form of a Jargonelle Pear. The material consisted of a tunic of woolly substance, well adapted to keep off the influence of water as well as to resist the attacks of the Lepidopterides. In the inside the cocoon consisted of about 30 cells, having a close resemblance to those of the common wasp and bee, but nothing like so great a regularity in form, but about the same size. The second insect described was a species of wasp, which Mr. Curtis proposed to call Vespa brevicornis. This insect built a remarkable nest, which had also been brought from the Brazils by Mr. Ellis. This nest was exhibited, and is about eight inches in length, and 15 inches in circumference. It has a conical form, and is suspended from the branch of a tree by its apex. The texture of the nest is very hard, resembling an earthenware vessel, and very different from that of other wasps. At the base there is a small opening not allowing the passage of more than one insect at a time. The nest had not been opened, and as it was so closely made, it was impossible to ascertain the structure of its interior. Mr. Ross exhibited specimens of optical glasses, with indications of a vegetable growth between them. It was the opinion of Naturalists present that the appearances found on the glass were due to the growth of a fungus belonging to the genus Torula.

IPSWICH CUCUMBER SOCIETY.

"The first brace, exhibited by E. Leathes, Esq., an Amateur, commanded universal admiration; but not entering for the sweepstakes, Mr. Latter won the second prize of the Society and a sweepstakes of 4*l.*,—he exhibited eight brace, from 12 to 17 inches long. Mr. Geo. Mills's were the longest, but in other points did not answer to the Society's standard. The exhibitors and their friends afterwards dined together, and spent a most agreeable evening. Mr. Wild, the secretary, stated that he should never be satisfied till he could produce a competition of ALL the Cucumber growers in England, and would at the next meeting propose "That all winners of First Prizes in England should be allowed to exhibit free of all expense," to a class established for that purpose.

The Judges' description of the PRIZE Specimens exhibited February 8th, 1844.

No.	Names.	Prize.	Sect.	Mode of Growth.	Length.	Form	Size.	Colour.	Neck.	Spine.	Rib.	Bloom	Bloom	General Appearance.
10	* E. Leathes, Esq., Newmarket, near Lavenham, Suffolk.	1st Pr. £ 3 0 0	Brownton Hybrid.	Wild's Improved Fit.	13½ in.	Straight	½ inch.	Dk. Green	Short and Thick.	Dk.	Slight	Very	Perfect	Long and Slender.
19	Mr. T. Latter, Gr. to Capt. Aplin, Melton Lodge, Suffolk.	2nd Pr. £ 2 0 0 and Sweepstakes 4 0 0	Latter's Victory of England.	Do.	14	Straight	½ do.	Dk. Green	Slender	Do.	Do.	Do.	Do.	Do.
15	E. Leathes, Esq., Newmarket, near Lavenham, Suffolk.	1st Pr. £ 2 10 0	Brownton Hybrid.	Hot Water Fit.	15½ in.	Straight	½ inch.	Dk. Green	Short and Thick.	Dk.	Slight	Very	Perfect	Very handsome.
11	* Mr. Samuel, Gr. to Wm. Bance, Esq., M.P. Stradsett Pk. Norfolk	4th Pr. £ 1 0 0	Ringleader.	Hot Water Fit.	13	Straight	½ do.	Lt. Green	Short.	Do.	Slight	None	Perfect	Good Small Fruit.
13	Mr. G. Mills, Gr. to the Baroness Rothschild, Gunnersbury Park, Middlesex.	3rd Pr. £ 1 10 0	Brownton Hybrid	Wild's Improved Fit.	14	Straight	1 to 1½	Lt. Green	Short Long	Do.	Smooth	Very Little	None	Glossy.
16	* Mr. G. Mills, Gr. to the Baroness Rothschild, Gunnersbury Park, Middlesex.	1 to 4	Brownton Hybrid	Hot Water Fit.	15	Straight	½ do.	Dk. Green	Slender	Do.	Do.	Do.	Do.	Long and Slender.
12	* Mr. T. Ivery, Gr. to J. Custance, Esq., Stowlangtoft Hall, Suffolk.	5th Pr. £ 0 15 0	Hybrid.	Hot Water Fit.	9 & 10	Straight	½ do.	Lt. Green	Short.	Do.	Do.	Do.	Do.	Middling.
14	Mr. D. Cattermole, Gr. to Mr Wood, Bromford.	6th Pr. £ 0 15 0	Hybrid.	Hot Water Fit.	10	Ditto.	½ do.	Lt. Green	Short.	Do.	Do.	Do.	Do.	Middling.
17	* Mr. Samuel, Gr. to Wm. Bance, Esq., M.P. Stradsett Pk. Norfolk	7th Pr. £ 0 10 0	Ringleader.	Ayres' system.	12½	Not quite Straight	½ do.	Lt. Green	Short.	Do.	Slight	None	Perfect	Middling.

* Subscribers to the "Sweepstakes."

Judges—Edward Beck, M.D., Ipswich; Samuel Girling, Stowmarket; William Goldring, Hadleigh; Thomas Wild, Hon. Sec.

Reviews.

The Year-Book of Facts. 8vo. Bogue.

This is, as usual, a rich storehouse of information concerning the discoveries in science during the past year. In addition to its usual contents, the volume now before us has a portrait of Professor Liebig. We have only room for a few extracts.

"*The Lactoscope.*—M. Donné has introduced 'A new instrument designed to indicate the proportion of cream contained in milk,' to which he has given the name of Lactoscope. The principle of the instrument is based on the inherent property of milk, which derives its opacity from the globules of fatty matter it contains, in being more opaque as the cream is more abundant. The construction is so arranged that the degree of opacity may be examined in layers of various thicknesses. The milk is placed between two parallel plates of glass, the distance between which can be varied at pleasure, and the flame of a taper is employed as a test; a graduated circle indicates the thickness of the layer of milk, and a corresponding table of reference gives the amount of cream. The sensibility of the instrument is such as to indicate dilution with one-twentieth the bulk of water. Upwards of ten years since was invented a cream gauge, for the same purpose as M. Donné's Lactoscope: it is a graduated glass tube, and has, we believe, been found very useful."

"*Mastership of Grapes.*—M. Payen has read to the Academy of Sciences, at Paris, the report of the commission on a memoir by M. Cezar Lecaze-Tassin, who sought by direct experiment to solve the question—what influence had the leaves of the Vine in relation to the development and maturity of the Grapes? The following results exhibit an explanation of the difficulty of cultivating the Vine in latitudes where temperature may be suitable, but where the atmosphere is frequently foggy. The total suppression of the leaves prevents the development and the maturity of the Grapes. The partial suppression of these organs in the spring provokes the appearance of axiliary buds, which replace the leaves taken away; later, when the buds can no longer be produced, this suppression arrests the development of the kernels, diminishes the quantity of the flesh, retards the maturity and injures the elaboration of the saccharine principle. Want of evaporation, and privation of the solar rays, enervate the organs of fructification. Superabundance of water, and consequently defective evaporation, in a luminous atmosphere, incites a luxuriant vegetation of leaves, but checks the elaboration of the juices, which remain acid and unsavoury: maturation is not accomplished. Finally, in a warm atmosphere, moist and dull, the leaves may increase greatly; but the juices are insipid, scarce, and the embryo is not formed.—*Lit. Gaz.*"

"*Zinc Milk Vessels Poisonous.*—The following extract will show the danger and the folly of the practice of keeping milk in zinc bowls—a custom which has lately become very prevalent: these articles being sold with the recommendation of a larger quantity of cream being produced, owing to the galvanic action. 'I would scarcely have believed (says L. Elanes, of Berlin) that zinc vessels would again have come into use for alimentary purposes, as Vauquelin, 40 years ago, proved that such were certain, after a short time, to hold a certain quantity of zinc in solution. I have found by experiment that a solution of sugar which had stood only a few hours in the summer in a zinc vessel, contained a considerable amount of zinc salts. It has often been stated that the cream will separate more easily from milk, if the latter be kept for a short time in a zinc vessel. As, however, it is known that milk will turn acid much sooner than a solution of sugar, it is the more to be apprehended that some zinc will be dissolved, and such zinc will be the more noxious, as it is well known that even a small amount of zinc will cause spasmodic vomiting.'—*Pharm. Jour.*"

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

EUONYMUS JAPONICUS. Japan Euonymus. (*Hardy Evergreen Shrub.*) Celastraceæ. Tetr.-Pent.-Hexandria Monogynia.—In all respects this corresponds with the account given by Thunberg, of the Ion Curroggi, or black shore-tree, of the Japanese, even to the sporting into a silver blotched variety, also in our gardens. He says it is in Japan a bush about as high as a man. With us it is not as yet higher than three or four feet, but it has all the appearance of becoming much larger. Although no beauty is to be found in its flowers, this plant is of the same kind of value as the common Laurel, Phyllirea, and Alaternus, being a hardy evergreen shrub, with much the appearance of a small-leaved Orange. It is true that in very severe winters it is liable to be killed to the ground, but so are the Bay, the Ilex, and others; it however springs up again and rapidly forms a nice bush. When older it will probably become more hardy. It is easily increased from cuttings of the half-ripened wood, placed under a hand-glass or in a close frame, and shaded in summer. It flowers in July and August, but has not as yet produced fruit. There are two varieties, one with silver striped, the other with gold-striped leaves; but the latter is very subject to run back to the green-leaved, while the silver striped hardly ever changes. It is called in many places, "Chinese Box," the name it bore when first introduced from Belgium.—*Botanical Register.*

LYCASTE SKINNERI. Mr. Skinner's Lycaste. (*Stove Epiphyte.*) Orchidaceæ. Gynandria Monandria.—This plant is generally called Maxillaria skinneri, but it is now classed by Dr. Lindley among the species of Lycaste. L. Skinneri is happily designated by Mr. Bateman as the *facile princeps* of all known Maxillariæ. "It has at length," says that gentleman, writing in the Miscellany of the "Botanical Register" for 1843, "flowered in the collection of the Rev. John Clowes, with a vigour and beauty that could not be exceeded in its native haunts. The flowers actually measure upwards of six inches across, from the tips of the lateral sepals, while the latter are nearly an inch and a half wide in the broadest part. The colours of the flowers are peculiarly delicate, the sepals being pure white, faintly tinged with crimson at the base; the petals are of a more rosy hue, while the lip is almost covered with spots and streaks of the most brilliant carmine. The column, again, is pure white at the apex, and mottled with crimson spots at the base, while a number of woolly hairs are scattered on its underside. The habit of the plant is stately, and its growth free and vigorous, more nearly resembling Lycaste Deppii, than any other species." To this good description it is unnecessary to add more, than that there appears to be two or three varieties of the plant, differing slightly in the size and colouring of their flowers. The one now described was flowered in the excellent collection of Mrs. Wray, of Oakfield, Cheltenham, and is among the best we have seen. An excellent variety bloomed, moreover, about three months back with F. Cox, Esq., of Stockwell. Mrs. Wray's plant flowered in November last. The species has been brought to this country in great numbers by G. U. Skinner, Esq., after whom Mr. Bateman has named it. Its native place is Guatemala; and Mr. Brewster, the gardener to Mrs. Wray, informs us that Mr. Skinner found it growing on rocky and mossy banks, in very moist places. Mr. Brewster, who has been particularly successful in cultivating it, grows it in an open basket filled with moss and leaf-mould, in a temperature ranging from 55° to 70°. No doubt much of its luxuriance is due to the use of leaf-mould, which is likely to prove a valuable medium for many Orchidaceous plants. It should be kept freely moistened in summer, on account of its vigorous habits; but a cool, dryish atmosphere is indispensable during winter.—*Paxton's Magazine of Botany.*

GARDEN MEMORANDA.

Horticultural Society's Gardens, Chiswick.—Many alterations and improvements have lately taken place here, and others are still in progress. The old unsightly flues in the wooden Vinery have been taken down, and cast-iron tanks put up by Burbidge and Healy in their stead; these are 16 inches wide and 6 deep, with a division along the middle to separate the flow and return. The tanks consist of several boxes, 6 feet long, joined together by hollow screws, and are elevated a little

above the floor of the house by brick supports. The sashes are also of this construction, with small circular openings for evaporation, having lids that can be either shut or opened, as required. The house is about 37 feet long and 12 wide; the boiler, one of Burbidge and Healy's, seems to be a very efficient one; the furnace-doors being made to slide horizontally, can be shut perfectly close, and are not liable to get out of order, as generally happens with those that are hinged. The top of the boiler is a shallow basin, 18 inches in diameter; this is intended to hold water, in order to keep up a moist atmosphere if the boiler be introduced inside; but in this case it was not so situated, and was filled with sand, which being an excellent non-conductor, prevents the heat from escaping. This apparatus has not been yet in use, but it promises to answer admirably; and, running along in the Vinery near the front wall, it occupies little room, and has a neat appearance. The curvilinear Vinery is now also heated by hot water. This has been effected by converting the smoke-flues into hot-water gutters, rendered water-tight by cement, and covered with tiles. The boiler (by Weeks, sen.) which heats this is likewise intended to heat three ranges of pits, each 35 feet long; two of them, for Melons, are already nearly finished, in one of which cement gutters covered with tiles are used, the other is furnished with cast-iron tanks; these are to be cased, both sides and top, with porous earthenware material, made to fit, so as to give out moisture, and prevent the roots from coming in contact with the iron, which would burn and destroy them. The tanks are 8 ins. wide and 5 deep; the flow and return being about 3 ft. apart. These pits being upwards of 12ft. distant from the boiler the pipes between the latter and the troughs are bedded in coal-ashes, about 7 or 8 inches below the surface of the ground. By means of stoppers, each pit separately, or all of them, including the Vinery, may be worked as required. A more efficient means of ventilation has also been afforded for the curvilinear Vinery; this has been effected without disturbing the iron-work or glass, by enlarging the openings at top, so as to communicate with a frame-work covered with zinc, and having vertical shutters in front, turning on pivot-ends so as to open or shut easily up or down, by means of a cord fastened to the upper side of the shutters. The border outside is covered with Croggon's asphalte material, in order to keep the roots of the Vines from being chilled by the snows and cold rains of spring. Having no unsightly appearance, this material is well adapted for Amateurs who grow Vines in greenhouses near or in connection with a sitting-room. The house formerly employed as a Pine-stove has lately undergone great alterations and improvements, and is now an excellent house for Orchidaceæ and other stove-plants. Both back and front walls have been raised five or six courses of bricks higher, in order to admit of a passage being made round the front of the bed. The house is 50 ft. long, and 18 ft. wide, with a bed in the centre for the plants. Hot-water gutters, having a flow and return, covered with tiles, run along the bottom of the bed, the space above them being filled with brick-rubbish, over which the pots sit. These gutters keep up a steady heat in the bed of 80°; they are supplied from an iron cistern, in which the flow-pipe terminates at the further end of the house from the boiler. Between the passage and front wall is a slate shelf 2ft. wide, with an edge 1½ in. deep, for placing plants on. About the middle of the house, against the front wall, is placed a large slate cistern, in which the rain water from the roof is collected. In this, from the pipes passing below it, the water is kept in good condition for watering the plants. Several of these were in bloom. Begonia manicata was here producing a fine panicle of pretty delicate rose-coloured flowers. A small plant of Dendrobium moniliforme was also remarkable for its pretty purple and white blossoms, which contrasted well with the showy Gesnera zebrina that was standing near it. Near this house is a range of pits, forming three sides of a square; these have been recently heated by hot-water gutters by one of Barton and Jarvis's double drum boilers. This boiler answers the purpose of heating very well; but the tanks, being covered with tiles, emit too much moisture during dull weather, in winter, for cuttings and flower-garden plants, with which these pits are filled. The plants in the Orchidaceous house are considerably improved, and have a very healthy appearance; a good specimen of Dendrobium nobile, with several other plants, was coming into bloom. Many specimens are growing on charred blocks, and show, from their fine healthy dark green foliage, that they like their situation, the charcoal no doubt having a beneficial effect upon them. Several Ixoras in the next house were growing in soil mixed freely with superphosphate of lime; this has not been long enough applied to thoroughly prove its effects; but the plants appeared to be in perfect health and doing well. This substance, unlike some of the other artificial manures, is perfectly harmless, and may be used with advantage in the cultivation of most plants. In the curvilinear stove a large plant of Lælia superbiens is throwing up a strong flower-stem about 2½ feet long, and will soon be in bloom. Here was also a plant of Xylophylla latifolia, about 6 feet high, completely covered with small pale yellow flowers; this plant had been potted in June, chiefly in charcoal mixed with peat, and a little loam, which, besides having a beneficial effect on its growth, has dispersed it to bloom freely. There was also in this house a fine specimen of Euphorbia speciosa, fully 5 feet in height and 6 in diameter, producing a multitude of showy blossoms. In front of this stove is a range of pits that were altered some time ago and heated by Gaston and Arnold's horizontal cylinder boiler, which, on account of being set with too small a space for the smoke, chokes up with soot when coals are used either separately or mixed with coke, and does not work well. In the large conservatory, a fine bush of Templetonia glauca, covered with bloom, is very conspicuous, and here Lucculia gratissima, which is usually treated as a stove-plant, is very healthy, and flowering profusely in a temperature from 40° to 50°. In the open grounds at this season there is little novelty to notice, except some rock-work constructed with rustic terraces in a corner of the arboretum, near the large iron tent, which is to be planted with hardy Ferns, for which the situation, being immediately behind a south wall, and shaded in summer by trees, is well adapted.

The Naturalist's Corner.

Remedy of the Citron against Poison.—Athenæus relates a remarkable story of the use of Citrons against poison, which he had from a friend of his, who was governor of Egypt. This governor had condemned two malefactors to death by the bite of serpents. As they were led to execution, a person taking compassion on them gave them a Citron to eat. The consequence of this was, that though they were exposed to the bite of the most venomous serpents, they received no injury. The governor being surprised at this extraordinary event, inquired of the soldier who had guarded them, what they had ate or drank that day; and being informed that they had only eaten a Citron, he ordered that the next day one of them should eat a Citron and the other not. He who had not tasted the Citron died presently after he was bitten; the other remained unhurt.

Ulva palustris.—It is not certain, observes Professor Martyn, what plant is the *Ulva* of the ancients. He himself interprets it in Virgil's Georgics as *Sedge*, which is a general name for large weeds that grow in marshes and near the banks of rivers. Most writers, says the Professor, suppose the *Ulva* to be much like the *Alga*, or *Sea-wrack*, and that they differ chiefly in this: that the *Alga* grows in salt water, and the *Ulva* in fresh. But he goes on to mention one thing as certain—namely, that there is no fresh-water plant which resembles the Sea-wrack; and agrees at the same time with what the ancients have said of their *Ulva*. Cæsalpinus supposes, and not without reason, that the *Ulva* is the same with the *Typha*, which we call *Cat's-tail*, or *Reed-mace*. It is a very common weed in this country, and also in Italy, among stagnant waters; it grows to a considerable height, and bears a head at the top of the stalk, which, when ripe, affords a great deal of down. In the Third Georgic it is called a marshy plant, and in the Eighth Eclogue it is described as growing near a rivulet. In the Second Æneid, Sinon mentions his lying hid amongst the *Ulva*, in a muddy lake. The Cat's-tail grows only where there is mud, and is tall enough to conceal any person. In the Sixth Æneid, again, it is represented as growing by a muddy river's side, and the colour is said to be glaucous, or bluish-green, which agrees also with the Cat's-tail. Ovid makes frequent mention of the *Ulva* as a marshy plant. In the fourth book of his Metamorphoses, a pool is described as being remarkably clear, by the negative quality of not having any *Ulva* in it; in the Sixth Book it is called "delightful to the marshes." We find it mentioned also as a water-plant in the Eighth Book, in which Ovid speaks also of a bed being made of the *Ulva*. This agrees with what Matthiolus tells us, that the poorer people in Italy make their beds of the down of the Cat's-tail instead of feathers; and the same Author informs us that there is hardly a standing water in Italy which does not abound with Cat's-tail.

Miscellaneous.

Remarkable Sport of a Currant-tree.—A Red Currant-tree, which had been planted about 10 years, produced this season, at the top of one of the branches, 5 white berries; and lower, on the same branch, was one half red and half white among others entirely red.—*Revue Horticole.*‖

University of Erlangen.—At the recent jubilee of this University, Robert Brown was elected an Honorary Doctor of Medicine; and the Baron Delessert was made a Doctor of Philosophy.—*Bot. Zeit.*

Preservation of Plant Supports.—In 1840, at the suggestion of the Professor of Chemistry at the Museum, I had the points of a number of stakes of Fir wood done over with Seyssel asphalte. These stakes were placed in a soil constantly moist. At the present time (Sept., 1843), they are still as sound as they were at the first hour. The asphalte was laid on very hot with a brush, the wood having been previously heated. It was laid on to the thickness of 1-12th of an inch, by repeated applications. The last coat was smoothed over with a wooden spatula. The bark should be taken off the lower end of the stakes; and the coating should extend three inches above the surface of the soil.—*M. Neumann, in Revue Horticole for Sept.*, 1843.‖

Effects of Frost on the Roots of the Elm.—According to some experiments respecting the sensibility of the roots of trees exposed above ground to the frost during winter, and replanted in spring, it was found that the Elm was most affected. This fact has been again confirmed by new observations made by M. Pépin, who states that although the temperature was only—5° centigrade, or 9° Fah. below freezing, the effect on these trees was very evident. In the winter of 1842-3, he exposed equally the species of Elm; when about to be planted he found their roots all more or less injured by the frost: they were black; and some were entering into a state of decomposition. The roots were carefully dressed in with the knife, even to the quick, but, notwithstanding, three species died, namely, *U. campestris*, *canadensis*, and *rubra*; the other species are in a languishing condition, although the spring was very favourable for transplanting trees. What is very remarkable, the roots of the Jujube, Pistachio, Pallurus, Adelia, Gleditschia, and other exotic trees, together with some from the south of France, have not been injured by frost, although equally exposed with the Elms.—*Revue Horticole for Sept.*, 1843.‖

The Royal Agricultural and Horticultural Society of Ghent—has fixed its second quinquennial exhibition for Sunday the 10th March next, at which gold and silver medals will be awarded to the most successful competitors. The highest prize is a medal worth 150 francs, or 6*l*. The award of the Judges will be made on the Saturday. At two o'clock on Sunday will be a banquet at which the Judges, winners, and members of the Society, will participate. The exhibition will commence on Sunday at 11 A.M., and close on Wednesday at 5 P.M.

The Weather.—Notwithstanding the cold weather that has now prevailed for some days, we have a specimen of an Ash-tree, almost in leaf, from Gwrych Castle, the seat of J. H. B. Hesketh, Esq., near Abergele, on the coast of North Wales.

Adulteration of Tea.—On Monday, Mr. Warrington read before the Chemical Society an interesting paper on the Adulteration of Tea, which brought to light some very startling facts. The Author having lately had occasion to examine some samples of Green Tea, discovered that it had been coloured with Prussian blue. This led him to examine a number of samples of genuine Chinese Green Tea, the result of which showed that the Tea in China is frequently thus adulterated: Tea of inferior quality and bad colour being powdered over with Kaolin and Prussian blue, so as to make it resemble the finest Green Tea. Mr. W. has likewise detected, by the aid of the microscope, a number of other leaves mixed with those of the Tea plant, in samples of Tea from China.

A New Berry.—A few evenings since, at a small party in Gardiners' Lane, where, of course, not one of the company had any knowledge of Horticulture, the mention of the Service Berry (or Sorb) gave rise to a discussion as to what sort of berry it was. One person thought it was either the lip or haw; another that it was a species of "Cranberry;" a third that it grew on the Elder tree—nobody appeared to have had any acquaintance with the fruit; till at last an old half-pay officer guessed—and was held to have solved the riddle—that it was a sort of berry you got in the Service, commonly called a bullet.—*Hood's Magazine.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

As the season advances, give more air to the houses. See that suitable composts are ready under cover for potting and sowing seeds. Some of the hard-wooded plants may now be propagated by cuttings, where a gentle bottom-heat can be kept up. As charcoal is now allowed by all to be of use to plants, endeavour to get a supply of it at hand for mixing with the soil before the potting season arrives. Do not increase the temperature yet, and take care that all the plants are clean, and free from insects.

Conservatory.—The early-forced bulbs will now be out of bloom, and should be removed to some sheltered place, in order to ripen their foliage, where frost is excluded, and other plants may be introduced from the forcing-houses. Hibiscus, Clerodendrons, Justicias, and other half-stove plants which flower in the conservatory, may be pruned, and some of them placed in a higher temperature; but they should not be potted until they begin to grow freely. A few Nerriums and Hydrangeas may be also forced into early growth for this house. A gentle heat would now benefit the Chinese Azaleas for early flowering.

Greenhouse.—Continue to give as much air to this house daily as the state of the weather will admit of, and see that all the plants are watered regularly; the great object is to keep these plants from growing early.

Forcing-pits.—Continue to introduce fresh supplies of plants as the former ones are removed to the conservatory: also other plants from which you wish to obtain an early crop of cuttings, such as Salvia splendens, to come in early in the autumn. Common plants that do not promise much bloom should be at once discarded to make room for others; failures of this nature always occur more or less in early forcing.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department

After the late frost and snow the ground will not be in a working state for some days to come. The directions of last week may be attended to in the shrubberies, and in the flower-garden Roses may be pruned and deciduous climbers regulated and tied or nailed properly. I am not an advocate for close spurring, but prefer cutting out the old wood and replacing it by young shoots every season.

Pits and Frames.—Here, if the number of plants required for bedding out is considerable, there will be plenty of employment for all hands. The whole of the autumn-propagated plants must be potted off without delay, so as to get them well rooted, and turned out into sand in temporary pits by the 1st of April, and so as to set the pots at liberty for a second lot of plants, which should now be coming forward in the propagating frame. It is of no use to plant Verbenas, &c. for beds a foot or two apart, as the experience of the last three summers proves that unless we plant en masse at once, the flower-garden will present only sulky borders until August or September; therefore, where we wanted one plant in past years we shall in future require four or five, and consequently a corresponding provision must be made. Hydrangeas introduced into the forcing-house in January will now require to have their side shoots removed, to give strength to the leader. These shoots must be used for propagating, to provide plants for another season. Sweet Peas, if wanted to bloom early, must be sown in pots in heat, for transplanting; indeed, a general assortment of the best annuals must now be sown in pots for the spring and early summer decoration of the flower-garden.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Should frost and snow continue, it will leave the Florist little to do out of doors.

Tulips ought to be out of harm's way.

Pinks, if defended in the manner recommended in a previous Calendar, may bid defiance to hares and rabbits.

Ranunculus-beds will be all the better for frost and snow. The final arrangement of the roots for planting may now be made, keeping all flat-crowned ones for the side-bud.

Auriculas, though occasionally covered, as the trusses are rising in the hearts, ought to have air whenever practicable—withdrawing or tilting the frame-lights in the middle of the day, if only for half an hour.

Carnations may remain *in statu quo*. My own frames have had a current of air passing under them during the whole of the frost

shading being closed at top to prevent the ingress of snow or rain. The Gardener may employ his leisure time in manufacturing and furnishing Dahlia shades, making small three-cornered paper bags for ripening off Tulips and Ranunculus roots next season, painting or otherwise marking zinc labels, and attaching metallic wire to them for Dahlias, Roses, &c. &c.

Turn compost heaps whenever the tops are frozen.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Look frequently to the state of the soil in those pots situated near the pipes or flues, and apply the waterings only in such quantities as to prevent an injurious state of dryness, and sprinkle the tan whenever it becomes too dry. Endeavour rather to keep the atmosphere of the fruiting-pit constantly in a genial moist state, than to have it very full of steam at one time and dry at another. Choose mild open weather for shifting the succulent plants. Fines suffer much from being taken out of the pits in cold or windy weather.

Vinery.—After the Grapes have been set six or eight days, commence thinning the bunches; in the performance of which, use something with a smooth surface to steady the bunch, in preference to handling them. I need hardly say that the outside berries, if equally promising, should be saved See that the bunches is not crowded, or too close to the glass, and do not let the Vines exhaust their strength in producing long laterals.

French House.—In the house started in November, the thinning of the shoots should now be finished. Reserve those side-shoots produced at the base of last year's wood, and tie them in when a foot inches in length. If the fruit has set thick upon the trees, thin them, leaving the most promising fruit that are well situated for swelling. The last few days have been unusually favourable for the Peaches; and from the progress they have made, we can afford to use them more gently with regard to fire heat, should very cold nights ensue. Nothing is more injurious to them than over-heating the pipes or flues.

Fig-house.—The glass being usually kept upon the Fig house during the winter, the soil will be dry for a considerable depth. Previous to watering the border, spread about three inches of chopped turf over it. The turf will keep the water from running to the lowest point, and will invigorate the plants. Let the water be in a tepid state.

Cherry-house.—The Cherries that are set should have the blossoms removed by means of the syringe, using a fine rose. Admit air daily, if possible, and keep the atmosphere in a soft genial state. No insects should be allowed to exist here.

Strawberries.—The most forward plants will now demand more attention. Remove all runners as they appear, and sprinkle the plants twice a day in fine weather.

Melons.—When the plants are in the rough leaf, it is time to prepare for turning them out. If the frame culture is to be followed, lay thick turves round the inside against the row of faggots on which the frame rests (see last week's Calendar), pressing it close, so as to prevent rank steam from entering. Lay, also, a layer of turves on the dung and leaves, then raise a mound of well-decayed turfy-loam under the centre of each light, within a foot of the glass. Apply a lining of previously fermented dung to raise a heat of 60° or 70°.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Fruit and Store Room.—Examine all fruit and roots, protect them from frost, and see that seeds are not injured by damp.

Cucumbers.—The materials will now be ready for forming a bed. If the matter consists chiefly of dung, excellent directions will be found in the forcing Calendar of last week, as recommended for the Melon. If the greater part of the material consist of leaves, many faggots will not be necessary; but drain-tiles passing through the bed as recommended for Asparagus, &c., will answer better. In such a case the bed will require to be rather better than 3ft. in depth at this season, and if there is a sufficiency of material to make it long and wide enough to admit a space of 18 ins. round the outside of the frame, and if the sides and ends of the bed are defended by wattled hurdles, a steady heat will be generated, and linings will not be seen wanted.

Rhubarb and Rhubarb.—If these were protected as recommended in the beginning of the year, and are now covered with pots or boxes, very little heat will be necessary to bring them forward.

Carrots, Radishes, Asparagus, Potatoes, Sea-kale, and Cauliflower, in pits and frames, will have required considerable protection. Where litter is scarce, it should be frequently shaken up in keen frosty weather.

All ground Operations having been suspended for a short time, a good opportunity has been furnished for forwarding in-door work, such as tying mats, preparing stakes, cutting labels, making straw covers, mending nets, cutting shreds, &c. It is miserable policy to keep men out-of-doors in unfavourable weather.—*R. F.*

VI.—AGRICULTURE.

Odd Weeds.—Continue the works, where not finished, as formerly directed, such as felling timber-trees, relieving young plants and trees from the overgrowth of others, clearing out drains and ditches, repairing fences, and planting young trees where there are vacancies.

Coppice.—The directions given last month should be made use of at all convenient times, until the works for the season are completed; and they should be skilfully and properly executed, particularly with respect to the training, and regulating those for poles, rods, &c. likely to be saleable, and keeping all other useless stuff down, so as not to injure them.

Young Plantations.—Bear in mind what has been previously recommended, viz., the importance of training and thinning of young plantations. About the second or third year after a plan tation has been planted, begin to train the young trees, as many kinds, such as Oak and Spanish Chesnuts, often get stunted and bushy-headed, and are sometimes years before they make a start to grow. In consequence of this, the less valuable trees grab the lead, overtop, and smother them, arising from not cutting some shoots clean out and shortening others, so as to make the tree form a good leader. Some of the very strongest lower-side branches, if pruning has been neglected, should also be taken off.

Hedge Rows.—The directions given last week should be kept in mind and followed up until the work is completed for the season.

Nursery Work.—As the weather is unfit for planting, or sowing seeds of forest-trees, shrubs, &c. for underwood, trenching, digging, and preparing the ground for them should be forwarded when the weather permits. Young trees planted out in rows should be trained, as they often get stunted and bushy-headed, similar to what I have just described in young plantations, and the same process of training recommended there, after the second or third year should also be adopted and followed up here. I much fear the means of accelerating the growth of timber and coppice wood will make little progress until there is an Arboricultural Society established, with plantations for the purpose of experiment in order to show the effects of training, &c.—*W. B.*

State of the Weather near London for the week ending Feb 6, 1841, as observed at the Horticultural Garden, Chiswick.

Feb.	Mean's Barometer		Range of Temperature			Wind	Rain.
	At 9.	Mean.	Min.	Max	Mean.		
Mon. 8	29.461	29.462	39	28	33.5	S.	.25
Tues. 9	29.642	29.914	40	28	34.0	W.	
Wed. 10	29.827	29.827	40	25	32.5	S.	.16
Thur. 11	29.685	29.602	40	19	29.5	N.W.	
Fri. 12	29.560	29.630	42	22	32.5	W.	.09
Sat. 13	29.377	29.177	41	31	36.0	W.	.19
Sun. 14	29.271	29.260	41	27	33.0	W.	.03
Average		29.591	29.541	41.7	30.0	32.0	.69

Feb. 8. Heavy fall of snow, commencing 6 a.m., depth in course of the day 4 inches; frosty at night.
9. Frosty; clear, with bright sun; snow-thaw 3; sharp frost at night.
10. Clear, in local showers; snow-thaw 3; sharp frost at night.
11. Frosty; clear, with bright sun; snow-thaw 3 past 7 a.m.; densely overcast, and raining heavily at night.
12. Frosty; clear and fine; sharp frost.
13. Frosty; clear and fine; overcast.
14. Rain, with slight sun; slightly overcast; heavy rain in the evening.

Mean temperature of the week 3° below the average.

State of the Weather at Chiswick during the last 15 years, for the ensuing Week ending February 13, 1841.

Feb.	Aver. Highest Temp.	Aver. Lowest Temp	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.						
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 14	41.4	25.5	33.4	10	0.34 in.	2	—	—	2	2	2	2
Mon 15	42.7	29.5	36.0	10	0.61	2	2	—	1	2	2	1
Tues 16	44.4	32.6	38.5	8	.05	1	2	1	1	2	2	2
Wed. 17	45.8	31.2	38.5	5	.20	1	2	1	2	2	2	1
Thur 18	44.5	32.2	38.3	6	.12	1	2	1	2	2	2	1
Fri 19	46.0	34.2	40.1	8	.05	2	2	1	2	—	2	1
Sat 20	45.2	31.3	38.3	9	.22	2	—	1	2	—	2	1

The highest temperature during the above period occurred on the 16th, 1841, and 16th and 17th, 1827—thermometer 55°, and the lowest on the 15th, 1838—thermometer 16°.

Notices to Correspondents.

MR. PAXTON'S COTTAGER'S CALENDAR.—At the earnest solicitation of many of our Subscribers, we have determined on again reprinting Mr. Paxton's "Cottager's Calendar," in the form of a small volume, for general distribution, price 3*d.* each copy. It may be ordered of all booksellers. Gentlemen wishing to *distribute copies* among their cottage tenantry, may have them *delivered in any part of London*, by remitting a post office order to this office, at the rate of 25*s.* for every 25 copies.

OUR CORRESPONDENTS will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them—*O., Vitis, W Billington, R. Errington, J. L. Snow, G. Thompson, J Wighton A Practical Man, Peter Mackenzie, Nemo, J M'I., A Friend to Floriculture, A Bee Preserver, C. A Lloyd, Philo Sylva, A. F., R. P. N., Herbert, Sussex, R. Dixon,* and *I. W. K.*

BLACKENING GARDEN WALLS.—*D. M. C.*—We retain our opinion. The experiment was fairly tried in the garden of the Horticultural Society, some years since, and the blackened walls still remain there, with the trees upon them. No advantage has been discovered. If you have any *facts* in favour of the practice, and will give us your address, we will, however, publish them with pleasure

CACTI.—*M. D.*—Possibly your fruit is ripe; if so, it will be soft and tender, although green. Probably, however, it wants more heat. In any case, you must wait till it shows signs of some change of colour before you gather it. When mature, rub it in water till it is freed from the pulp, and sow it thinly on the surface of any soil kept rather dry, and placed in a Cucumber-bed. Young plants will soon appear, and grow rapidly, if kept warm and damp, and fully exposed to light, but not to wet.

COPPICE.—*A C. P.*—If you have any considerable quantity of planting to do, you will easily ascertain the lowest price of trees per 1000 by advertising for tenders The best size for planting is from 1½ to 2 feet high. We will answer your question as to distance next week.

CORRESPONDENTS.—*P.*—Much obliged, but the article does not suit our columns. No man ought to write on landscape-gardening who has not experienced the advantage of an education at least good enough to enable him to write good English. You seem to mistake groundwork for landscape-gardening.

FERNS.—*Arran.*—Remove ferns now, but not much later.

FIRE.—*Clericus*—Very small quantities of nitrate of soda will set these plants growing, but it must be applied cautiously The best way is to water them with it three or four times when they are beginning to grow. One ounce in two or three gallons of water is plenty. Mind, however, that your nitrate is not adulterated with common salt

GREENHOUSE PLANTS.—*Omega*—Cut them down at any time when at rest, unless hard-wooded, and then at the time when their buds are just beginning to swell. Dissolve half an ounce of nitrate of soda in a gallon of water Potter's guano and the super phosphate of lime are both unrivalled as manures.

HEATING.—*H. I.*—Very good tanks may be made of slate, even as large as you want. Others are made of iron, and answer perfectly You will find persons to supply either by consulting our advertising columns——*S M B*—No doubt your heat is all absorbed by the material that rests on the tank If you have not left the sides of the tank uncovered, which you should have done next the outside walls of your house, you must now make chimneys from the surface of the tank, opening into the house Common chimney pots will do——*G L H.*—Open brick gutters are not used at the Horticultural Garden.——*M. D.*—You must get an iron pipe that has been cast close at one end. It is to be had at all the places where iron pipes are sold

ISABELIA—*A Subscriber.*—We recommend you to cut off the infested excrescences, which contain the embryo aphides, to scrape away the earth from the base of the trunks, where, probably, many more are lodged; and before the mild weather arrives to brush and wash the trunks well with either gas-water, lime and water, soot and oil, or train oil alone no part of an infested tree must escape, viz., of the trunk or the larger branches. The operation must be performed before the buds burst, and the trees ought to be carefully looked over occasionally in the spring and autumn, when the washing must be repeated if there be the least symptom of a cottony nature. *R.*

IVY.—*C. Bt.*—The little stem-roots of the Ivy appear to serve a double purpose, that of holding branches to the body over which they creep, and of feeding them. The latter, however, takes place in only a small degree; most likely because the bodies to which they are attached are incapable of yielding much food We cannot, however, entertain a doubt that they are true roots in an abortive state. Whether or not they will extend and grow like true roots when placed in the earth, or whether they are paralysed organs, we do not certainly know. But the mischief done by Ivy to the mud walls of cottages and to ruinous brickwork, which is overset by the roots of the branches, renders the former the more probable.

LAWNS.—*W. B*—These may be either turfed now or sown with grass-seeds in March or beginning of April

NAMES OF PLANTS.—*A Reader.*—Maxillaria punctata.——*W. Gardner.*—Maxillaria Barringtoniæ——*M.*—Dillwynia ericifolia——*Amateur*—We do not know such a plant as the Pine Myrtle, nor do we recognise its seeds. No doubt, however, you may raise it in a hotbed and preserve it afterwards as a greenhouse plant by very ordinary management

PEARS.—*Non sum qualis Eram.*—Such will also apply to the Winter Bon Chrétien Pear. The Glout Morceau is far preferable for your lofty gable facing the south; if your nurseryman has it not, he certainly can procure it.

PERENNIAL FLOWER-SEEDS.—*A Reader.*—These may be sown in March, in pots or shallow pans, in a soil composed of peat-loam and sand. They should be covered deep or shallow, according as the seeds are large or small; the larger ones should seldom be deeper than half-an-inch, while those that are small may be only lightly covered. If a slight bottom-heat can be afforded them, it will make them germinate more rapidly.

PLANTS.—*C. B—l.*—The following are 24 hardy greenhouse plants, of dwarf habit, that bloom freely, which are suitable for planting in a bed in the house, viz:—Acacia armata, Choisya ternata, Correa speciosa, Cytisus racemosus, Daphne indica, Diosma ericoides, Epacris grandiflora, Erica hyemalis, Eriostemon buxifolium, Genista canariensis, Hedychium coronarium, Hoya carnosa, Jasminum revolutum, Leschenaultia formosa, Myrtus communis, Pittosporum Tobira, Polygala oppositifolia, Sparmannia africana, Tetratheca ericifolia, and Westringia rosmarinifolia.

RHODODENDRONS.—*H. Weeks.*—The following are tolerably hardy, and may be grown either out of doors or in a greenhouse; but when grown in the latter, the flowers come much more perfect; they are free-blooming, and may be easily procured by their names. Ponticum, scarlet; Lowii, pale straw, with brown; tigrinum, pale rose, with dark brown; Nobleanum, dark red; splendidum (Cunningham's), white; atrosanguineum, scarlet; multimaculatum, pale rose, spotted; arboreum roseum, bright rose; Victoria, deep red; venustum, pink; augustum, pale flesh, spotted; pulcherrimum, scarlet; grandiflorum (Cunningham's), pale flesh; macranthum, rose; Knightii, scarlet, and Carnarvonianum, bright rose.

ROSES.—*C. B——t.*—The following are 24 Tea-scented or other Roses which are suitable for growing in a Greenhouse, being planted out in the beds, viz.:—Emilie Courtier, rose large; Barbot, yellow edged with pink; Caroline, blush with pink centre; Comte de Paris, blush; Elise Sauvage, pale orange; Julie Mansais, white; Adam, bright rose; Bouquet de Flore, carmine; Ceres, rose; Madame Aude, rosy pink; Prosperine crimson; Hamon, pink and buff; Armosa, light pink; Theodore, pale yellow; Calimene, blush; Queen of Bourbons, buff; Gombault, pink with buff centre; Augustine Lelieur, deep rose; Duchesse de Mecklenburg, straw-coloured, very large; Devonensis, yellow; Aurore pale buff; Hardy, bright rose; Belle Helene, blush; and Jaune panaché, pale yellow and rose. The reason why many Roses of the above kinds do not fully expand their flowers, is chiefly owing to want of heat.

STAR JELLY.—*J. J.*—Your question was answered at p. 56 in the Number for 27th Jan.

TIMBER.—*E. H. Lloyd.*—We will make inquiries.

TULIPS.—*Inexperiens.*—The plan you mention for the protection of a Tulip bed is, perhaps, the nearest to our view of the subject, but a temporary protection for winter, is, we think, preferable to any that we have hitherto seen designed to answer the purpose of both, especially for a bed of moderate size. Drive a strong stake, 18 in. or 2 feet long, close to the inner edge of the frame board (which inclosures your bed) at each end, and a similar parallel one in the centre of the bed. Then nail a strong lath, or 1½ inch deal, upon the three stakes, extending the required length; procure strong wooden hoops, and drive one at each end opposite each stake, fixing each in the centre to the top of the stake, placing a small wedge at the base of each to admit a packing needle between each hoop and the board. Each end of the bed may then be faced outwardly with a portion of garden-mat sown round the edge of the hoop—thus each end will appear a neat fixture for the winter season. According to the distance of the hoops, if wide, slender cord may be run continuously round them to give additional firmness. The remaining mats should then be prepared by sowing two or four together, edge to edge, and thus placed in their intended position over the hoops; when the required number is thus placed, a strong strip of cloth listing should be fitted to the strip of wood along the centre, outwardly, and the mats nailed to the latter. Being fixed to the centre, they are rendered equally secure by (their ends resting upon the broad wooden frame, or otherwise upon the ground) a strong iron rod or wooden wedge resting upon them the entire length The covering can thus be rolled back to the centre on either side without inconvenience; or the latter, which too often attends a loose covering. Thus far for the winter. For the summer protection, bent iron hoops are perhaps the best, being portable. The boarded sides should be sufficiently strong to admit each hoop to be screwed on by an iron plate at the base The side and centre rods should be so massy as to give firmness to the whole structure. They might either pass through holes or rest upon hooks; they may also serve for effect as well as for use. The covering, if of strong material, may be tied to the rods. Such a plan, we think, (where means will admit,) is the most economical, because the most lasting.—*W. W.*

VERBENAS.—*Arran.*—If the seed is sown on a hot-bed in March, and planted out in May, they will flower in the autumn.

MISCELLANEOUS.—*Plymouth.*—Your letter having inadvertently was not answered last week. We would help you with pleasure if we could alter our arrangements, but that is impossible. Where men cannot afford to purchase the *Gardeners' Chronicle*, and wish to do so, it is to be hoped that their masters will procure it for them, especially if, for the sake of his Agriculture, it now passes, as you say, from the house to the farm, and not to the garden. However, these are private arrangements with which we cannot interfere.——*P. H. B.*—As far as we at present know, Whitney's Composition is the best that has been prepared for rendering calico transparent; but we do not know how far its durability can be relied upon, nor are we sure how far it is economical. You can, however, easily get a bottle and try the experiment. We hear a good account of a composition described at p. 139, 1843. You will find Mr. Whitney's agents named in our advertising columns.——*R. E.*—We never heard of the Carolina Gurken Cucumber. The prickly fruit sometimes seen in pickles, is the young of Cucumis prophetarum, but it is not a good thing.——*Fidfager.* Sand is used in gardening merely as a means of mechanically improving soil; and therefore any well-washed *fine* sand that is not coloured by iron will do. Your question about your cellars is one for a builder. We should suppose that a good bed of concrete, well made, would be the most advisable substance to employ, provided the arches will bear its weight, and in that case earth may be laid on it, and fruit-trees can be planted thereon.——*R J.*—It is impossible to answer your question. One family of 25 persons will waste or consume twice as much as another, and one garden will be twice as productive as another The common rule of ¼ acre for four persons exclusive of servants is not enough. Land is of little value in the country, and it is better to have too much than too little. The right way to determine a point of this sort, is to ascertain how many Cucumbers, Peas, Beans, Lettuces, and so on, the family is expected to consume, and then to provide land accordingly. Always grow Potatoes in the field.——*Laddie.*—You are right in having broken up the bottom of your pent-beds, and wrong in having made them 4ft. deep. A foot and-a-half of soil is sufficient for American Plants. If the soil is likely to burn or dry up, give it a good dressing of cowdung.——*Olim.*—Plant Dianthus deltoideus or cæsius. We will try and find a receipt for fumigation against next week.——*Tyro.*—The South Carolina Potato is the tuber of Convolvulus Batatas, and can only be grown in this country in a warm Cucumber frame. It takes up a good deal of room. Plant it without clothing.——*E. T.*—Cut your Hollies down about half way, as soon as you see them begin to swell their buds in the spring.——*A Subscriber.*—We regret to say we know no more about the yeast than we have published.——*M. G.*—No doubt flowers will travel well in tin boxes for a fortnight or so: but we call that space of time "a few days." The answer to which your remarks apply was to a complaint that flowers could not be preserved for many months!——*M. W. C. L. D.*—We are unable to find room for your remarks, which can do no good, for who does not know the importance of employing that time? Want of money, or want of inclination, are the obstacles, and a panegyric on *Lord B.*, whom we know to deserve all you say, will not remove them.——*Arran.*—Your Amaryllis longifolia wants heat and water when growing. It is half deciduous.——*D. S. W.*—A paper on Gladioli will be published very soon.——*X.*—Get an engagement in some French garden before you start. If you do not you will have to return. But you are better at home; for what can an English gardener learn of the French, except in trifles? English gardeners are as superior to most French as she is to her.——*A. B.*—The Newspaper cannot be sent by post unless the stamp happens to be on that part of it, which is without the case.——*J. Sterling.*—We do not know.——*P. T.*—We believe near Manchester.——*S. P.*—We cannot recommend Tradescantia. Chinese Primroses may be had of most nurserymen in Manchester.

**** As usual, many communications have been received during the week for answering this week.

ALTERATION of the TIME of holding MONMOUTH SPRING FAIR.—The inconveniences of holding the Spring Fair on the 15th of April having been felt, in consequence of several other Fairs in the neighbourhood being held about the same time, the subject has been taken into consideration, and a representation made to the Mayor and Town-Council of the Borough, who have decided that, in future, the MONMOUTH SPRING FAIR shall be holden on the Wednesday next after the 15th of February.

Notice is hereby given, that the MONMOUTH SPRING FAIR will this Year and in Future be Holden on the WEDNESDAY Next, after the 15th of FEBRUARY.

By Order of the Town-Council.

Dated this 27th day Jan., 1844.

The Agricultural Gazette.

SATURDAY, FEBRUARY 10, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Feb. 14 . Agricultural Society of England.
Thursday, Feb. 15 . Agric. Imp. Society of Ireland.

Wednesday, Feb. 21 . Agricultural Society of England.
Thursday, Feb. 22 . Agric. Imp. Society of Ireland.

THE economy of any practice is to be ascertained by a comparison of its cost with the nature and quantity of its result. This is sufficiently obvious. The actual sum of money spent may be large, but it may be *profitably* spent for all that; and if so, though a heavy, it must be considered an economical, outlay.

In estimating the economy of certain branches of farm management one is apt to overlook this, and to condemn an expensive outlay before ascertaining the returns from it. This remark is, at any rate, applicable to the question we often hear discussed at Farmers' Clubs—WHAT IS THE BEST WAY OF KEEPING FARM-HORSES? In attempting to answer this question it is certainly not right to keep one's eye resting only on the cost incurred, that of food—oats, hay, roots—and that of attendance, &c.; we ought, indeed, to look at the sum to which these amount in a given time, but only in order to compare it with the quantity of work which has been accomplished by means of that outlay within that time. If we wish to ascertain whether our plan of keeping farm-horses is economical, we must inquire, not how many bushels of oats are eaten per week, but how much per acre, over the extent ploughed in one week, does the weekly expense amount to. If on any number of farms, of similar soils, which are cultivated alike, the management of the farm-horses be different, then that mode is best the expense of which, whatever it amounts to *per horse*, is least *per acre*. This is the test to which the various ways of keeping farm-horses must be brought.

We propose to consider this important subject at considerable length. It is believed that the expenses connected with it are greater than many farmers think. Indeed, notable differences, which we shall hereafter notice, have occurred among members of certain farmers' clubs, in their estimates of the sum to which they amount per acre. Our present object, however, is to determine the suitableness of the test to which we have referred. When on two farms of similar soils we compare the sums per acre to which the expense of horse-keep on those farms amount, we must remember that it is only in cases where *the cultivation is similar*, that these sums are to be considered as such a test; and not only must the cultivation be similar—not only must the work to be done be the same—but the machines employed in doing it must be similar; for it is evident that two farmers who adopt the same management in their stables, may differ much in their expenses there, if the one uses on his farm cumbrous ploughs and heavy waggons, while the other employs light ploughs and carts; for the former will require more horses to work these implements than the latter.

The importance of good machines on a farm in diminishing various items of expenditure, that of horse-keep among others, will be considered in the course of our articles on Agricultural Mechanics; we only refer to it now, because, before we can admit evidence on our present subject, we must consider to what extent it may be influenced in this way.

The two classes of implements we intend to take up are the cart, waggon, &c., and the plough in its various forms. With regard to the former, the following is extracted from Mr. Pusey's article on Lincolnshire Farming in the English Agricultural Society's Journal.

"*Relative Use of Carts and Waggons.*—The Lincolnshire waggons are very ponderous masses of timber. In the north, light one-horse carts only are used; and here, as the question of carts or waggons is an important one, I will mention an experiment lately made at my request by three Berkshire farmers living near Farringdon. Mr. Edmunds, who has lately introduced one-horse carts, and Mr. Druces, who employs the light Berkshire waggon, agreed to compare the quantity of Wheat carried by them from two fields of similar crop, along the same kind of road, to their homesteads. The result appears in the following table:—

	Driving lads.	Time. H. M.	Distance in Furlongs.	Horses.	Acres of Wheat cleared.
Mr. Druces' 3 waggons	3	4 30	8	7	5
Mr. Edmunds' 4 carts	3	4 0	8	4	5

* This crop carried with waggons was a little thinner upon the land than the other, but not so much as to make much difference in the trial. It was necessary, also, to try the one-horse system in the other branch of farm-carriage, the carting of dung. This was done by Mr. Harris, of Higton. One day he led the dung with his own three-horse carts; the next day he led it to the same field with the one-horse carts of Mr. Edmunds. The strength employed was as follows:—

	Carts.	Driving lads.	Horses.
Three-horse carts	4	3	10
One-horse-carts	5	4	5

"Though the horses on the first day doubled those on the second in number, Mr. Harris carried nearly or quite as much dung on the second day as on the first. These two trials seem decisive in favour of one-horse carts, which are used not in the north alone, but in Bedfordshire and neighbouring districts; and as a cart with a movable harvest-rail may be bought for 13*l*., I have now no longer any doubt that, unless on very deep land, if a farmer will part with all his waggons and heavy dung-carts, buying a complete set of light one-horse carts in their room, he will be quickly repaid by the large immediate saving in horse-keep."

Here we see that it takes twice the number of horses to perform the same work with waggons as with carts. Obviously, the total expense of horse-keep incurred by a Berkshire farmer who uses waggons, might be much greater than that incurred by a Scotch farmer occupying the same number of acres of a similar soil, who employs carts, without there being necessarily greater economy in the stables of the latter; and the importance thus appears of considering these points before receiving evidence upon the various ways of keeping farm-horses.

But this difference not only exists between carts and waggons,—almost as much appears in the trials which have been made between one-horse and three-horse carts. Thus, an article by the late T. J. L. Baker, Esq., in the 1st vol. of the English Agricultural Society's Journal contains the following passage:

"Two heaps of stone, of 32 tons each, were landed from a barge; they were to be taken to the same place, about a mile and a quarter off. A farmer began the first with two large carts and three horses, one cart was being loaded while the other was moving, and the horses were taken off and put on at every load. Finding that he could not do it in the day, he gave over at the end of about six hours, and set to again the next morning. * * * Their work was completed at 11 loads (which of course is nearly three tons to each load, or one ton to each horse), in nine hours and fifty minutes. I began the other heap with three small one-horse carts, and completed it in one day at 21 loads (being nearly a ton and a half to each horse), in six hours and one minute; which was a saving of about three hours and a quarter on nine hours and fifty minutes, or rather more than one third. In this I had three decided advantages—first, the saving of time by trotting back; secondly, the rest that each of my horses got in his turn while his cart was being loaded; and thirdly, the ease with which my carts were loaded in consequence of being lower."

From this account we may infer that a great saving in horse-keep was effected by Mr. Baker by the use of one-horse carts, because fewer horses were required to do the same work in the same time than were needed by the neighbouring farmer with his three-horse carts. It should be stated, that there was some difference here in the breed of horses employed, but that could not account for all the difference in the work performed by them.

Guided by these two cases, we shall be prepared, at a future opportunity, to look somewhat narrowly into the evidence on the subject of *true economy in horse-keep*. Before doing this, however, we have to consider in a similar way the bearing upon this subject, of the variety which exists in the form of the plough. This we hope to take up in our next *Gazette*.

ON THE AGRICULTURAL VALUE OF LAND.

(Continued from page 74.)

3. The way in which the nature of the crops cultivated, and the mode in which they are made to succeed one another, influences the fertility of the soil, is a point which has been much discussed; that it does possess this influence is very evident, from the wretchedly poor state in which some farms are to be seen on which no attention is paid to it, Corn crops being taken off the same land during many successive years; and from the good state of cultivation, on the other hand, to be seen on farms, where a proper rotation of crops is adopted. It is, indeed, an acknowledged fact, that a crop of any kind will exhaust the land it is raised on, and, that if taken off the same land for many successive years, it will, at length, tire it out altogether. Some, however, possess this property in a greater degree than others. Seed-bearing crops, for instance, exhaust the land more than green crops, and a fact arises from this, which seems to have been forgotten by some farmers, namely, that if weeds be allowed to seed, the farmer suffers, not only by their increase in the following years, for "one year's seeding gives seven years' weeding," but also by the exhaustion of his land which they occasion.

It is also an acknowledged fact, that while, generally speaking, Corn crops thrive after green crops, each Corn crop has its particular green crop, after which it thrives best: thus, Barley succeeds Turnips, Oats succeed Grass, and Wheat, Potatoes or Beans; and 1, Wheat; 2, Turnips; 3, Barley; 4, Seeds; 5, Oats; 6, Potatoes, constitute a very good six years' rotation. De Candolle's excrementitious theory was framed to account for this curious preference, which certain crops have for the land off which certain other crops had just been raised. It is supposed that plants exuded at their roots those portions of the descending sap which were not fitted for their own growth, and that, while this excrementitious matter was poison to *them*, it was nourishing food for another class of plants: hence the propriety of making the one kind of plant succeed the other. Another theory supposes that each class of plants, taking from the soil one particular substance necessary for its growth, will die after having at the end of a course of years thoroughly exhausted the soil of that substance; but that for the growth of another class of plants which does not require that substance, the soil is as well adapted as ever. Neither of these theories explain the fact which often occurs, that land, after a course of cross-cropping with only one kind of plant, as the Teasel or Wheat, often becomes so worn out, that it will not yield a good crop of any other plant whatever. This, and many other objections, depending chiefly on the minuteness of the experiments brought forward in proof of either theory, have been urged by practical men against them; and it has been stated that the advantage of a rotation of crops is owing more to differences in the nature and in the cultivation of the crops which succeed each other than to any alleged habit of plants generally,—the account of which depends for its truth on the accuracy of a series of the most delicate experiments. Thus, during the growth of the Wheat crop, the land receives one kind of cultivation, and favours the growth of one kind of weeds; during that of the Turnip crop, the land receives another kind of cultivation, and thus another class of weeds will spring up, if any are allowed to appear. The propriety, then, of alternating these crops is evident. Whether, however, the explanation of the necessity of a rotation of crop be successful or not, that such a necessity exists is established; and the farmer, with reason, acts upon the fact at once, and does not wait till a sufficient reason be given for it.

It has been seen, then, that the fertility of land depends on its mineral composition and on its cultivation. It has been seen that, under the first, the soil may be improved by drainage and by the admixture of mineral substances, any alteration of this kind which it undergoes being permanent; that under the second it may be improved by a proper attention to the management and application of manures—to the looseness and depth of the soil—to the adoption of a suitable rotation of crops; and that any alteration produced by these means is not permanent, but that any departure from the established rules of good cultivation is followed by an immediate decrease of the fertility of the land.

From what has been said it will appear that a knowledge of many of the sciences may be made available by the Agriculturist in the improvement of his land. Chemistry will point out to him where its fault lies, and Geology will often show him where to look for its remedy. Both, if he make use of them, will assist in improving his practice; and in all his experiments, by explaining to him the success of this or the failure of that, will render his business a source of much pleasure as well as profit. Experience, indeed, may, in the end, lead to the same results, and teach the same lessons as a knowledge of these sciences; but the lessons of the one are but imperfectly learned at the end of a long series of years, during which they have to contend with prejudice and custom, and everything tending to subvert or distort the truth; while those taught by the others are learned, and may be made use of at once.—*M. S.*

ON THE WEEDS INFESTING FLAX FIELDS.

As it seems probable that the culture of Flax will be considerably extended in this country within the next few years, it is desirable that attention should be drawn to the prevalence of certain weeds in that crop. Several weeds of a large size are constantly found amongst Flax, which, as they flower sooner than the time for pulling the Flax, may easily be removed by the hand; and as their seeds are introduced into the soil, intermixed with the seeds of the crop, it is of much consequence that the plant should be removed from such crops of Flax as are intended to afford seed for future cultivation.

There is, however, a weed of a far more destructive character, which it is much less easy to destroy, since it can scarcely be removed by hand without very great injury to the crop; and as, at the same time, it is of a very destructive character, it has long appeared to me to be deserving of considerable attention. Accordingly, I have endeavoured, in different ways, to call the attention of Flax cultivators to it.

The weed to which I refer is the Flax Dodder, which I have seen destroying very considerable portions of the Flax crop in England, Scotland, and Ireland. It is a plant which germinates in the ground, and sends up a slender threadlike stem, which, twisting itself about, soon touches one of the stems of the Flax amongst which it is growing. As soon as this takes place, the Dodder twists itself round the Flax, and throws out from the side next to its victim several small processes which penetrate the outer coat or cuticle of the Flax, and act as suckers, by which the parasitical Dodder appropriates to its own use the sap which has been prepared in the Flax, upon which the growth of the Flax depends. The Dodder then separates itself from the ground, and relies solely upon the Flax for its nourishment, producing long slender leafless stems, which attach themselves to each stem of Flax that comes in their way. Thus large masses of the crop are matted together, and so much weakened as to become almost useless. This plant

particular great quantities of seed which is usually threshed with the Flax-seed, and sown again with it in the succeeding year.

Several years since I took considerable trouble to ascertain if all foreign Flax-seed was mixed with that of the Dodder, and was led to the conclusion that the American Flax-seed is nearly free from this pest, and that that from Russia, and especially Odessa, is peculiarly infested with it. As this is a subject of much importance, I trust that the cultivators of Flax will turn their attention to it.—*Charles C. Babington, St. John's College, Cambridge.*

ON MINERAL & INORGANIC MANURES.—No. VI.

By Professor Charles Sprengel.

(*Translated from the German.*)

The duration of the action of lime manure depends, first, on the quantity used, and on several other circumstances, to be alluded to. If the amount of lime is calculated of which the soil is deprived by one harvest, it will be found that 500 lbs. per acre should be sufficient for many years; still the plants cannot absorb all the lime which has been brought on a field, because they do not penetrate with their roots every particle of earth; and a great part of the lime is also nearly lost to the plants by its combining with the hydrated silica contained in the soil, forming a compound insoluble in water. Another portion is dissolved by the rain and snow-water, so much, viz., as has combined with humic and carbonic acids into salts, which are soluble in water. The silicated lime, it is true, is again in its turn decomposed by the carbonic and humic acids of the soil, whereby humate and carbonate of lime will be formed; but this always takes place so slowly, that the plants cannot derive much benefit from it. These processes, therefore, fully explain why the manuring with lime needs to be repeated, and why its effect, although (by using large quantities) it may last 25 or 30 years, will not last with small ones more than 6 or 7 years. It is, moreover, to be considered that the salts, which are produced in the soil by manuring with lime, are generally difficultly soluble in water, and consequently that the soil must contain a considerable quantity of them, if they are to improve the growth of plants or aid their nourishment.

The ways in which lime is used as manure are different. Generally, small heaps are formed of it on a field previously ploughed; these heaps are covered very closely with a layer of earth, two or three inches thick, and the lime has to remain in that state until it has become slaked. These heaps are afterwards well worked up with the soil above and beneath; the lime is carefully spread, then harrowed and ploughed under about two inches deep; the land is then harrowed; then another ploughing, somewhat deeper than the first, is performed; and the whole operation is concluded by harrowing. Although this process is very simple, and requires little manual labour, it is not to be doubted that it is still imperfect. In the first place, as the heap soon becomes cracked by the swelling of the lime, it will not be protected by the earth from the influence of the atmospheric air, which will cause it to lose its caustic property; and consequently, when subsequently mixed with the soil, it will not act so powerfully on the organic matter and the coal of humus contained in it.

Another way of using lime is to throw it, at some short distance from the fields, into one or more large heaps, and to pour so much water upon it as entirely to slake it, and convert it at once into a powder. Three pounds of burnt lime will require for that purpose one pound of water; i. e., the two combine chemically in that proportion, and become converted into a dry, very fine powder. On the other hand, not too much water is to be taken, else a pap will be produced, which cannot be spread about, and which when dry will form a hard mortar. If some lumps of lime should not have been slaked, they are to be thrown aside, when the limedust is conveyed on the fields, and these again sprinkled over with water, and if they should not then fall to pieces, they are either not pure lime, or have not been sufficiently burnt, which can be easily ascertained by trying them with a little acid. The main object, after the lime has become slaked, is to spread it as soon as possible over the field, and to proceed with it as stated before; because everything depends on the lime coming in as caustic a state as possible on the ground, in order to accomplish what we expect.

The third method of manuring with lime is the following:—It is placed in conical heaps in alternate layers with vegetable mould, taking three or four parts of earth to one of lime, over which the necessary quantity of water is afterwards poured; the heap is then well covered either with turf or straw, over which some earth is to be thrown, and the whole left quiet for three or four weeks. Afterwards, the lime, which by this time has been converted into powder, and the vegetable mould are well worked up, and then carried on the field. There is no doubt that this method, provided earth be at hand, is to be preferred to any other, as all lime which has not combined with humic acid will remain caustic, and will act in the heap very powerfully on the coal of humus. The greatest amount of labour it occasions is fully repaid by the produce obtained, as a considerable quantity of humate of lime is produced, which, as we shall see hereafter, is a superior manure. Vegetable mould, however, is not to be had everywhere.

In some countries the slaked lime-powder is strewed over the clover-stubble, it is then shallow ploughed, and before Rye or Wheat is sown, the field is harrowed and ploughed several times. But it is not advisable, on any account, to strew the lime-powder over growing crops, because as it is soluble in water it easily corrodes the plants. It may, however, be used in that way on meadows on which much moss is growing, as it destroys those plants, and after it has united with the humic acid of the soil it will elicit Clover and sweet grasses.

It is also a general rule, never to manure with lime in wet weather, for it will then combine with the sand of the soil into mortar. If, however, the lime is once well mixed up with the soil, rainy weather is desirable, as it then soon becomes dissolved and thoroughly well mixed with the whole of the furrow-slice, and then acts strongly on humus, the organic matter, worms, &c. Lime is burnt in kilns variously constructed; wood, peat, brown or common coal being used as fuel. The chief point in the operation is not to expose it too soon to a great heat, and to supply the fuel uniformly. To let it cool before it is thoroughly burnt is always very injurious. If wood is used, the ashes obtained will yield a manure superior to the lime itself.

(*To be continued.*)

ON THE DESIRABLENESS OF EXPERIMENTAL FARMS.

It may reasonably be asked, what is the practical benefit likely to arise from the publication of experiments of which the results are not only various, but often contradictory, and which are, therefore, more likely to render the farmer sceptical as to any good that is to be derived from the use of the new manures, than to aid him in the choice of that best suited to his own case, or to teach him to calculate upon the result from any fixed principle by which he may judge of its applicability to his peculiar soil and situation. Professor Johnston, of the Durham University, remarks, in his clever and interesting lectures on Agricultural Chemistry, after giving a detail of many experiments with Nitrates, p. 491: "We are obviously in want of better and more numerous observations, especially in regard to Turnips. The above discordances will either vanish when we obtain a larger collection of results, or they will find an explanation in the more accurate observations we may expect to obtain in regard to the climate, soil, and geological portion of the locality in which the experiments are made." He then goes on to urge upon those practical men who are really desirous of promoting the vastly important work of Agricultural improvement, to be more minute, exact, and accurate, in the details of their experiments in these respects. These, doubtless, are objects of most desirable attainment, and I fully concur with Mr. Johnston in his wish and opinion on the subject; and I gladly avail myself of this opportunity to express my gratitude to him for the benefit he has conferred on Agriculture, by proving, like other philosophical men who are engaged in the same good work, its connection with, and dependence upon, those principles of science, without which its practice can never be subjected to fixed laws, or be secured against doubtful and unsatisfactory consequences. But if he entertains the hope that such information as he desires, involving the necessity in the party giving it, of scientific knowledge, acute observation, and philosophic research, is to be obtained from the practical farmer, I think I can safely forewarn him of his disappointment. The farmer, as such, is the least likely of all men to pursue such experiments to an impartial and accurate conclusion. His practice is founded upon the custom of his vicinity and his own observation and experience, but he is generally ignorant of the efficacy of chemical agents and too often prejudiced against any innovation of ancient habits—and were his knowledge and acquirements equal to the task, the time and attention necessary to conduct with due vigilance and accuracy such details and experiments are not at the command of the industrious, persevering, rent-paying farmer. He must secure his crop of Hay when the sun shines, instead of occupying himself with the minute investigation and comparative weight of one plot that had been manured with this, and another with that ingredient. He must attend a distant market at the time when, from the state of the weather or some other cause, some other experiment would have been most accurately tested, and the opportunity being lost, probably renders all the care previously bestowed upon it of no avail. Many other reasons might be adduced to prove that it would be visionary to expect such results from the mere farmer, and if by accident one should be found with taste, habits, and inclination for such pursuits, it might not be venturing a very rash conjecture to suggest that he would not be the first to attend the summons on the rent-day. But then there are other practical Agriculturists besides the rent-paying farmers. Where are the patriotic and science-loving owners of many broad acres—the amateur Cincinnati of our Agricultural day, who so zealously and so laudably bestow their time, attention, and means, in aiding the advancement of the most important national work of Agricultural improvement? That there are many such I gladly admit, and their exertions entitle them to the nation's esteem and gratitude—but it is not the business or the duty of any individual to subject himself to the labour and incur the responsibility of making experiments for the Agricultural world, through all the range of Agricultural science. He may so employ himself for his own information or amusement, and he may give the results the chance of publicity, but still there might be wanting that minute and rigorous investigation of all the qualities peculiar to the soil and situation, and that small yet influential variation in either, which may cause a certain kind of manure to be more or less applicable, or not at all so, to the object in view. This can only be discovered by a close chemical analysis of the soil as well as the manure, by which to ascertain, in what property necessary to its fertility the one is deficient, and which the other is calculated to supply. The farmer knows by experience that he cannot grow the same kind of crop in succession on the same land without a great falling off in produce, and that even with good management, his land, in time, become unproductive of certain crops when repeated at too short intervals—but it is for the chemical investigator to explain, of what peculiar property such crops have exhausted it, and what particular kind of manure is best calculated for its restoration, as well as to determine what preference certain classes of plants have for one kind of manure over others. An extensive course of experiments, well conducted under the direction of capable and scientific men, and their results published in a systematic manner, would afford to the farmer a dictionary of Agriculture by which he would know what effects to expect from the application of certain kinds of manure to certain descriptions of soil and crops, without working in the dark and trying for himself hap-hazard experiments too often ending in disappointment. But the question will be asked, how is this most desirable object to be attained? I confess that it seems to me to be quite within the reach of those zealous and influential gentlemen who have already effected so much in the establishment of an institution as yet so young, but still so wealthy and prosperous as the Royal English Agricultural Society. The undertaking would doubtless be attended with trouble and labour to those who should engage in it, and what public and useful work is exempt from them? but I cannot anticipate any insuperable difficulties, nor conceive of any object more worthy their attention and the appropriation of a part of their ample funds and resources than the establishment of one farm at least for the purpose of conducting experiments in Agriculture upon scientific principles, and on an extensive scale; such experiments to be conducted, as a matter of necessity, by some one or more persons thoroughly conversant with Chemistry, Geology, Botany, and the other branches of science bearing upon that object, and solely responsible, under the direction of a committee of management, for the truth and accuracy of their details and results. To enter into any particulars of the arrangements of such an institution would be premature at the present time. Certain examples of the kind do exist on the Continent of Europe, but they are in many respects defective, and capable of much improvement. This subject has been ably treated in an excellent article in the Journal of the English Agricultural Society, by Professor Daubeny, which it may be hoped will attract the attention it merits. If, in addition to an experimental farm founded by the English Agricultural Society, the National Societies of Scotland and Ireland would also follow its example, and if a regular interchange of communication were maintained between the scientific men at the head of each establishment, under some previously-arranged plan for conducting similar experiments; the variety of climate which the several institutions would necessarily embrace, and the variety of soil which natural circumstances, aided by a little care in the selection, must also afford, would give them ample means of detecting the latent influences which the variations of soil and climate are found to exercise on the vegetable and animal worlds. A summary and digest of their combined transactions, judiciously prepared for publication, would present to the public such a compendium of Agricultural knowledge, based upon scientific principles and reduced to practice, as it has never yet possessed, nor is ever likely to possess, but through some combination of elements equally extensive and equally powerful for good, as that which I have enumerated, and would add more to our information on this all-important subject in the ensuing ten years than is likely to be done by a century of unassisted and casual observation.—*Extracted, by permission, from a published "Account of Experiments, &c.," by John Grey, Esq., Dilston.*

ON GORSE, AS A WINTER FOOD FOR HORSES.

(*Continued from page 78.*)

Though almost every farmer in that part of Wales with which I am acquainted feeds his horses with Gorse if it grows naturally on any part of his land, a very small portion of them take the trouble of cultivating it for that purpose, except upon the tops of their fence-banks, for which use a considerable quantity of seed is imported from Ireland, the price fluctuating from 6*d.* to 1*s.* per lb. If any person cultivates it for sale, they prefer purchasing the crop of him at the rate of 20*l.* an acre, to the necessary outlay of capital, in raising a perennial supply of fodder, which occupies the soil for two or three years before it comes to its full value. At my suggestion, the managers of the Nantlle Railway sowed it upon the embankments of that work, with the double object of preventing slips and producing some return. The annual sale after the third year produced 100*l.*, and the rate, per acre, at which the better portions of the crop sold was what I have stated above. The purchasers were the small farmers, employed in carrying copper and slate from the mines and quarries in the vicinity. While staying in Norfolk, during a very dry summer, in which the Hay crops were greatly deficient, I proposed to a farmer, who was anticipating a want of fodder for his horses during the ensuing winter, to use for this purpose the Gorse which was growing in sufficient abundance on the fences of his farm and on the waste ground of the lanes surrounding it. I succeeded in convincing him of the value of it, but the prejudice of his men prevented his adopting the suggestion, and he preferred purchasing Hay at a high price. When land already under arable culture is intended to be laid down with Gorse, many of Otter's pipes taken with it, but they should be sown thin, or they will injure the young plants. The usual allowance of Gorse seed is from 12 to 15 lb. per acre. If intended to be sown upon rough land under pasture, the soil should be pared and burned, and a crop of Oats may be taken the first year, under the precautions I have mentioned. Should the land with this treatment be such that a heavy

crop of Oats may be expected, it will be better to delay the cutting of the Gorse for a year, and to take a second crop of Oats with it. The Gorse may either be sown broadcast or in drills; if the latter plan be adopted, the drills should be about a foot asunder. In the spring of the second year, a dressing of peat-ashes is found very beneficial; and it will be necessary to free the plant from coarse Grass and weeds, which would smother it during the summer. The same process will be occasionally advisable in after years, and, therefore, drills are to be preferred. It should also be defended from the bite of sheep and the trampling of cattle. It will hardly be worth cutting the following winter, but in the year after that, it will be nearly in full perfection, and will afford a supply from October to the end of April. The parts of the plant used are the succulent shoots of the preceding summer. It is not the general practice to cut it every year, but only every alternate year. In this case some of the woody portions of the plant are unavoidably mixed with the green shoots, and require to be separated from them. On the Nantlle Railway the Gorse was cut every year, for five or six years in succession, without any apparent diminution of produce, till towards the close of that period. When the crop begins to exhibit such indications, a year's rest will probably set it to rights again.

In Wales, the Gorse was formerly prepared for the horses either by pounding it by hand with a wooden mallet, or by means of a number of wooden stamps, set in motion by a water-wheel. Cast-iron gorse machines are now very generally substituted for these. They consist of a wooden trough, like that of a chaff-cutter, in which the shoots of the Gorse are laid, mixed with a little hay and straw, and the mixture is brought forward by means of two fluted cast-iron rollers, to meet an iron cylinder armed with knives, spirally disposed around it. Notwithstanding the spines of the Gorse, which are not destroyed by the process, horses delight in the food, and thrive upon it. They ought not to have much Corn with it, as it is rather heating in its nature. A riding mare belonging to Mr. S. Holland, of Plas Penrhyn, though in constant work, was always ready to throw up her heels and run away with him, her food consisting, during the winter, of only a bushel of Oats per week and as much Gorse as she would eat, having about a third of its weight of hay cut with it.

The cost of such a machine used to be about five pounds. It may be worked either by hand, or by a small water-wheel where there is a rill of water at command. For cows, it is necessary that the Gorse should be pounded to a pulp, to get rid of the spines, and a good machine for effecting this is a desideratum. Should any reader of this Journal, having a quantity of Gorse growing on the wastes around him, be disposed to try it as a winter food for his horses, and should he wish to purchase such a machine, I am sure that if he puts himself in communication either with Mr. William Turner, merchant, Caernarvon, Mr. Owen Jones, land-agent, of the same town, or Messrs. S. Holland, jun., and Co., slate quarry proprietors, Portmadoc, any of those gentlemen will have pleasure in procuring it and forwarding it by some of the numerous slate vessels which sail from the ports of that district to all parts of Great Britain and Ireland.

Were I wishing to introduce the use of Gorse as a food for horses belonging to me, knowing the prejudices of the men against any new kind of fodder, I should in the first instance confine the use of it to my own riding horse, satisfied that from seeing its effects, and the avidity with which it was eaten, they would soon, of their own accord, request a supply for the cattle under their care.—*J. Trimmer.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. V.

PART II.—*On the Chemical Constitution of Plants—as compared with that of the Soil—and the Necessity of adapting the Cultivation of the One to the known Composition of the Other.*

ALL living beings, animal or vegetable, have their life supported, their waste restored, and their maturity perfected by means of food, which possesses a chemical composition similar to their own.

In animals this food is obtained and digested by a peculiar series of organs, with which they are, according to their several habits, specially provided. They are termed organs of prehension (laying hold of food), mastication, deglutition, and digestion. Plants are the organizers or manufacturers of food for animals, and in them a simpler, but not less beautiful, system is provided. The Physiologist sees with exquisite pleasure, in the roots of plants, with their delicate spongioles or terminal suckers, which instinctively appropriate that part of the soil which is their natural food, and in the leaves with their respiratory system of cells, the rudimentary type of that higher organic system which in the animal creation obtains the most perfect development.

But the simplest, as well as the highest and most complex organization is equally destined to perform distinct and appropriate functions in the scale of living beings. If a plant and an animal that feeds upon it are taken into the laboratory of the chemist, their ultimate constituents will be found identical. And yet what a difference to the mental observer exists between the two! and how much greater still, appears the difference in their food! Yet, in reality, they are essentially the same.

The terms unorganized and organized matter explain the real difference in the food of each. The plant lives upon the elements of organic matter, and thus becomes an organic being. The animal lives upon the plant which its organic digestive and assimilative system converts into the muscle and bone, and the skin, hair, or feathers with which its body is covered.

But the ultimate analysis of bone and muscle, and plants, is identical. The plant deposits in the cells of its habitable structure certain mineral substances. The animal converts the lime or iron thus stored up into bone, or the colouring matter of blood! and thus plants become not only the organisers of animal food, but the depositories of principles essential to the perfect development of the animal.

Now, from these observations the reflecting observer will be convinced of the truth of the following propositions:—

1.—That a knowledge of the chemical composition of plants will enable us at once to select for them appropriate food; and

2.—That knowing the nature of the soil, and understanding the chemical composition of the plants he wishes to grow, the scientific farmer can, by increasing the quantity of appropriate food, increase to a certainty the weight or measure of his crop.

Theoretically, a grain of Wheat or Barley, a Mangold Wurtzel, a Turnip, or a Potato, can be increased in bulk as easily as an ox can be fattened in its stall. But the food appropriate for the tuber may not be, and indeed is not, that which is proper for the grain. The former contains more starch than albumen; the latter more albumen than starch. Is it not obvious then that the manure must be selected in accordance with the known composition of the crop, and still more in accordance with the known condition of the soil. I am the more anxious to dwell upon this point, because mistakes are daily committed, and Agricultural chemistry is brought into disrepute by the consequent failure of the experiment, which is made without regard to the very first principles that science professes to teach.

Plants, then, are the organizers of food for animals. To support animal life two kinds of food are indispensable—

1.—That which contains azote or nitrogen, and hence is called azotized food.

2.—That which does not contain azote, and is called non-azotized food.

The tissues of all plants, the stalks, leaves, roots, &c., are composed of non-azotized matter; they, therefore, must be fed with manure of a similar nature. But all plants upon which animals feed contain azotized matter, which is deposited in the cellular structure of the plant, more particularly of the seed, as in Wheat, Barley, Oats, Beans, Peas, &c. Now this azotized matter does not exist as a constituent of the soil; it must be added to it by the farmer. Thus, when a farmer spreads his field with the manure formed by his cattle in the straw-yard he supplies non-azotized food (the straw), for the production of the tissues of the plant—and azotized food (the urine); which after decomposing, the plant will organize and deposit in the cells of its structure—in the form of gluten, vegetable albumen, fibrine, legumen, &c., &c. The dung is principally useful in supplying the plant with phosphates, of which we shall speak hereafter.

In addition to the organic matter taken up by the roots in the form of non-azotized and azotized materials, there are certain inorganic substances also taken up, either to perfect the fabric of the plant, or with the ulterior design of being appropriated by the animal which feeds upon it. These inorganic matters are also deposited in the cellular structure of the plant.—*C. B. Bree, Stowmarket.*

(To be continued.)

Home Correspondence.

Effects of Drainage.—Observing in a late Number of your journal an account of the improvements in draining upon the estates of Lord Stair, I beg to state an instance of a farmer of my acquaintance, who has far exceeded the cases adduced on that nobleman's estates. Mr. Robert Ferguson, of Muirhouselaw, tenant to John Ord, Esq., a few years since entered upon a lease of 21 years for the above farm, a cold wet soil, which, though of considerable extent, seldom produced more than 20 to 25 diminutive stacks of corn, and other produce in proportion. During the first three years of the lease, Mr. Ferguson opened and laid in 120 miles of drains, all filled with stones taken from a quarry and broken small; a more expensive process than tile-draining, but at the same time greatly superior as regards efficiency. The expense of opening the drains was borne by the proprietor; and the expense of quarrying the stones, breaking, and filling the drains, was borne by the spirited tenant; and what has been the result,—the stackyard, instead of being only in part filled with a scanty produce, as formerly, is now quite insufficient to contain the crop, as Mr. F. is now able, on an average, to set up from 75 to 80 large handsome stacks of corn; hay, turnips, and other produce being in proportion. Let landlords give leases and encouragement to their tenants, that the soil may be put in a condition to bring forth abundant crops. We hear daily from those who are indisposed to lose sight of a shilling of their capital, that farming is an unprofitable occupation: I say to them, look at the example set them by the case now mentioned—and go and do likewise.—*W. D.*

Remarkable Case of a Cow that was swollen with Eating a Quantity of Swedish Turnip-tops.—The owner of the cow was alarmed by finding her swelled to an immense size, but waited till the beast was falling down before he applied any remedy; he then tapped her in the left loin, about two inches from the last rib, making an opening of about three inches, from which, by introducing his finger and thumb, he drew out about three quarters of a cwt. of undigested leaves, which, with the discharge of wind, rushing out as it did with great violence, was evidently a great and immediate relief to the animal. In few hours after, a plaster of pitch was placed over the wound, a dose of salts and, what is here called, Irish slate, was given daily with her own milk for a few days, and the cow is now, two months after the circumstance, as well as ever.—*E. C.*

Coprolites.—Professor Henslow, in his communication on Coprolites, in your last Number, expresses his surprise that I should, in my letter to you on the same subject, have supposed there might be some difficulty in distinguishing, by the external appearance, the true Coprolites from the pebbles, with which they certainly are sometimes associated. He adds, "a very slightly-practised eye could never make the mistake,"—and yet, Sir, the very specimens which I examined (and nearly half of which were but pebbles), were all exhibited on the table of the Geological Society as true Coprolites, and no one doubted but that they were so. From this fact, I think it may be inferred that, in some cases at least, the difficulty I allude to might exist. With respect to attrition accounting entirely for their rounded form, I did not intend giving that as my opinion, but that it has something to do with it is evident, from their being found on the beach associated with pebbles harder than themselves, in which situations, and in such company, it must infallibly happen that, moved by the ebbing and flowing of the tides, asperities must be the consequence.—*W. H. Potter.*

Zinc Vessels for the Dairy.—I have read a statement quoted from high authority that milk kept in zinc vessels is likely in summer, even within a very few hours, to become deleterious, by dissolving and holding in solution portions of the zinc. If this be so, the fact should be generally made known; for the substitution of zinc for leaden vessels has of late become frequent with dairymen on account of the less cost of the former, and their supposed quality of causing the separation of a greater proportion of cream. If any of your chemical friends can throw any light upon this subject, I, for one, shall be much obliged.—*A Dairyman, Aylesbury.*

Time of Manuring Grass-Land.—What is the best time of the year for applying farm-yard manure to Grass-land? there is a great variety of opinion, as well as practice, in this neighbourhood. Most people here seem to prefer putting it on in the spring, the objection to which is, that should the spring prove a dry one, the manure gets its goodness dried out of it, does very little good to the crop, and is a great annoyance in hay-time; others apply it late in the Autumn (after they have eaten off their after-grass), and then vegetation being dormant, the best of the manure is washed away and carried off by the drains without being of any service whatever. Here, with the help of irrigation and stimulants, I am able to get two crops of hay in the year, and my plan is, to put in the manure from the farm-yard as soon as the second crop is cleared, say in the middle of August; if, however, the weather should be dry at the time, it is not spread, but left in the heaps until the rains set in, when it is immediately spread, and at that time vegetation is so vigorous, that it is out of sight in a very short time. It appears to do so much more good that I think even when only one crop is obtained it is better to lose the after-grass (or the pasturage of it) rather than lose almost all the benefit of your manure; and so great is the difference produced between manuring in August and October, that here the former was grown over, and out of sight in a fortnight, while the latter is still as visible as on the day it was applied, and the stimulus it has given to vegetation is scarcely perceptible. It is much to be wished that some of our expert operators would turn their attention to hybridizing some of the Cerealia. I think that spring Wheat may be crossed with some of the more valuable kinds, and, if so, there is great reason to hope for early and good varieties.—*T. G.*

Large tracts of improvable land in various parts of England lie waste, only awaiting the application of skill, capital, and labour, to give an ample return for such expenditure. We have modern companies formed, and forming, for great efforts. Capital is abundant, and combined endeavour, the feature of our day. Could not a company be established for the cultivation of these waste portions of our island? "A National Agricultural Company," enlisting public confidence by the integrity of its directors and the cordial co-operation of our wealthy and enlightened nobles and commoners, would be most useful and profitable; and I scarcely need point to the gratitude and blessings which would be elicted from labourers, by such an undertaking wisely and judiciously conducted. Small landed proprietors, also, would cordially support such an endeavour to redeem the waste lands of England from the useless condition in which they at present lie.—*M.*

Bones.—In your *Agricultural Gazette* of the 13th inst. there is an article signed "E. R., Halifax," on the subject of boiled or unboiled bones, and in it he states "he had had a conversation with a respectable Scotch farmer in Roxburghshire, and having inquired of him if bones were still in great estimation in his neighbourhood, he replied, that for the last three or four years the farmers had neglected them altogether." I beg leave to state that your correspondent has been in this respect misinformed. I am a seller of bone-dust, and can prove during the last three or four years I have sold in the counties of Roxburghshire and Berwickshire a very large quantity. And I may add, with the exception of guano, that easily-adulterated manure being in some instances tried as an experiment, bones will be held in as great estimation as ever they were. —*Patrick Clay, Berwick.*

Destroying Thistles by Salt.—If a small quantity of common salt, say about a tea-spoonful, is taken between the fingers and thumb and placed on the centre of the Thistle, in a day or two it will turn black, and in the course of nine or ten days the root and every part of the plant will be destroyed. This is a cheap and certain method of destroying Thistles on land. One person will

as or many as five or six will set up in the usual way. The salt should be applied before the Thistles have attained a large size, and great care must be taken that it is not dropped amongst the Grass or other herbage, as it will destroy it also.—*J. M. T., Hillsborough, Ireland.*

Manure.—Besides giving a list of manures appropriate to each description of plants, it might be possible to establish the quantity requisite for each. Thus, supposing a plant grown in an inferior soil, a good plant of Wheat is found to contain certain ingredients in certain quantities, while on the soil in question it is found to contain only so much of some of them. Might not the soil be analysed, and such a proportion of suitable manure be added to it, so guided thus, we may assume to be required? If this could be done, each field in a farm, when analysed, might be registered, and thus there would be a ready and accurate means of knowing how to prepare a particular field for a particular crop. Something of this kind is already done by almost all farmers, but not upon sufficiently scientific principles. We know that this is also done, in a measure, by draining, by ploughing, by exposure of the soil either to heat or frost, and by various other means, which will all readily present themselves to the mind of a practical man. If I am correct in my theory, I should think that when a superabundance of any ingredient existed, which was not suitable to a particular crop, it might be temporarily neutralised by a manure of a suitable kind.—*M. B. G.* [We refer our correspondent to Dr. Daubeny's lecture on the application of science to Agriculture, in the 3d vol. of the "English Agricultural Society's Journal."]

Experiments on Manures.—I beg to forward you the results of an experiment made by myself, on a small scale, with some of the more simple fertilizing agents. The ground I had to work upon was in the corner of a field of very poor, sandy loam, with a mixture of cold clay. Eight perches, manured with 8 bushels of soot, produced of Carrots, 12 cwt.; 8 perches, manured with the scrapings of a wood-yard into which pigs and geese occasionally intrude, but which consisted mainly of well-decomposed sticks and leaves, and which was spread on the surface to the depth of 4 inches, produced of the same crop, 14 cwt. The same quantity of land, manured with 8 bushels of lime, 8 cwt.; 4 perches, dressed with the leaf-manure 6 inches thick, of Beet-root, 5 cwt.; while the same quantity of land, without manure, gave only 2 cwt. In reference to Beet-root, I may be permitted to remark, that it was proved here by experiment on the milch cows that those fed on this vegetable gave much better cream, and in larger quantity, than those fed on Hay, Turnips, Carrots, or Parsnips; and it has often been matter of surprise to me that the above-named root is not extensively cultivated by Agriculturists, since it contains abundance of saccharine and other nutritious matter, is eaten by all animals with avidity, and is of most easy cultivation.—*J. L. Knox, Swinton Gardens.*

Berberry Blight.—The mealy blight observed by your correspondent on the Berberry, is, Erysiphe penicillata, a very curious object under the microscope. In its early stage of growth, like other species of the genus, it has been described as an Oidium. The mildew on Peach-trees is, I believe, the same species with that which grows on Rose-trees, but it is very rarely perfected; though I have gathered full-grown specimens of Erysiphe pannosa late in the autumn on Peach twigs. This fungus is far more distantly related to the mildew of Wheat than the rust-coloured Berberry blight; therefore, if there is any connection between the two diseases, it must be one of a more remote nature. It is not, however, probable that it has anything to do with the question; for other plants, when covered with a species of Erysiphe, have never been observed to be injured.—*M. J. Berkeley.*

Flavour of Butter.—At this season of the year at least one-half of the butter made in the Agricultural counties is rendered disgusting to many, and more or less offensive to all palates, by the flavour of Turnips. The following is an old-fashioned but complete "antidote to the flavour imparted by Turnips to milk, cream, and butter." Make the strongest infusion of nitre, by pounding it in a mortar, and pouring boiling water upon it. Let a dessert-spoonful of this solution for every two gallons of milk be stirred up in the warm milk as soon as it is brought in, and all flavour of Turnips will be removed.—*A Wrauleydale Dairyman.*

Manure dropped in the Field.—Mr. Billington's remarks on this subject in your last Paper are very judicious; but the system he proposes, in my opinion, scarcely goes far enough, and appears chiefly adapted to small farms; besides that, his plan of spreading the droppings every day is liable to the objection that the action of the sun and wind will cause the evaporation of much of their richness, before the land can be benefited by it. I shall now proceed to detail a system I have pursued during four years with the greatest success, with manure dropped in the field. On one hundred acres of pasture-land, stocked with about sixty head of cattle, an old man and a boy collect all the manure dropped, and wheel it into heaps in convenient parts of the fields, where it is mixed with an equal quantity of soil (scourings of ditches, road-scrapings, or any other refuse, will do for this purpose), and every morning each heap is covered with soil to keep in all the moisture; the man and boy also take up all thistles and other weeds, and repair any fences that may be broken by the cattle. These heaps are laid on the poorest parts of the fields in winter time, at the rate of five tons per acre—this measure being so rich that if more is applied, it causes the grass to become so rank during the following summer, that the cattle will not touch it. The manure is carefully spread, and early in spring the land both harrowed and rolled. The results of this system are: 1st, all coarse tufts of Grass gradually disappear, and the Grass near the hedges becomes as sweet and palatable to the cattle as that in any other part of the fields; 2d, the land carries more stock; 3d, all weeds are eradicated, and their place supplied by good herbage. This year 18 acres have been manured with the droppings collected on the 100 acres mentioned above. The expense is as follows:—

	£	s.	d.
Wages of an old man and boy from May 16th, to Nov. 16th, (26 weeks); the man 9s., the boy 4s. 6d. per week—13s. 6d.	17	11	0
90 tons of good manure, sufficient to manure 18 acres at 6s.	27	0	0
Gain	£9	9	0

The practice of gathering and heaping the manure dropped in the fields has been long known to the Leicestershire and Northamptonshire graziers, from whom I borrowed the plan, merely adding the soil which, in my opinion, is a great improvement. So convinced am I of the great benefit derived from this practice, that it is my intention to adopt it on the whole of my grass-land, and I confidently recommend it to the notice of my brother farmers. —*R. F. S., Yorkshire.*

Gluten in Grain.—You quote from "Smith's Productive Farming" on this subject. It is true that the mode of cultivation may and does give rise, in some degree, to the different quantities of gluten in Wheat, Rye, and Barley; but from the article you quote it may be inferred that this is the primary, if not the only cause, which is not the fact. Climate is the principal cause of the difference of quantity of gluten in Wheat, as may be proved, if not by theory, by observation. We all know that for making biscuits Wheat is required with but a small proportion of gluten; thus we find Scotland produces flour famous for biscuits; and Naples produces flour famous for maccaroni, which requires a preponderance of gluten, and this flour contains so much gluten that bread from it is not good; hence the invention of maccaroni by the natives as a substitute for the bread of colder climates. I am aware that this observation does not accord with Sir Humphry Davy's statement of quantities of gluten in Wheat grown in different countries; thus he gives—

French Wheat	12 per cent. of gluten.
Bavarian Wheat	24 per cent. "
English Summer Wheat	24 per cent. "
Do. Winter do.	19 per cent. "
Sicilian	21 per cent. "
Barbary	19 per cent. "

In all the above examples the climate where the Wheat was grown should be ascertained; for example, to talk of French Wheat is an indefinite mode of speaking; it is French whether grown in the north or south, which possess vastly different climates, and a similar observation may be made on the other examples, for in every country climate depends on altitude, therefore the above examples say but little towards the establishment of any theory; but I believe it may be established by observation as a general rule that the cold climates produce the smaller quantity of gluten in Wheat, and the warmer the greater quantity.—*J. G.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY Council was held at the Society's House in Hanover-square on Wednesday last, the 7th of Feb.; present, the Right Hon. Earl Spencer, President, in the chair; his Royal Highness the Duke of Cambridge, his Grace the Duke of Richmond, Viscount Torrington, Hon. Robert Henry Clive, M.P.; Hon. Captain Spencer, Col. Austen, T. Raymond Barker, Esq., Samuel Bennett, Esq., W. R. Brown, Esq., French Burke, Esq., Colonel Challoner, F. Clifford Cherry, Esq., H. C. Compton, Esq., M.P.; Layton Cooke, Esq.; J. Evelyn Denison, Esq., M.P.; Humphrey Gibbs, Esq.; B. Brandreth Gibbs, Esq.; Stephen Grantham, Esq.; W. Goodenough Hayter, Esq., M.P.; W. Fisher Hobbs, Esq.; John Hudson, Esq.; W. H. Hyett, Esq.; John Kinder, Esq.; Fielder King, Esq.; William Miles, Esq., M.P.; Philip Pusey, Esq., M.P.; Francis Pym, Esq.; Professor Sewell; William Shaw, Esq.; J. Villiers Shelley, Esq.; and H. S. Thompson, Esq.

The minutes of the former monthly and special councils having been read, G. J. Bosanquet, Esq., of Broxbourn Bury, near Hoddesdon, Hertfordshire, was elected a Governor, and the following gentlemen Members of the Society:—

Kerrick, Edward, Arnolds, near Dorking, Surrey
Wray, John, 6, Suffolk-place, Pall Mall, East
Langdale, Marmaduke R., Mountfield, near Tonbridge Wells
Spurgin, Dr., Orplands, near Bradwell, Essex
Rogers, Langdon M., E.I.C. Service, Fitzroy Cottage, Highgate
Hankin, W., Heller's place, Bentworth, near Alton, Hants.
Meggison, George, 61, Cannon-street, City
White, James, Governland Farm, Isle of Wight

The names of candidates for election at the next meeting, amounting to 91 in number, were then read, together with the names of the members on whose proposition they were respectively nominated to the Council for admission into the Society.

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, presented to the Council the monthly report on the state of the funds of the Society, from which it appeared, that on the 31st of January the current cash-balance in the hands of Messrs. Drummond, the Society's bankers, amounted to 1,870*l.*, and the stock invested in the names of the trustees of the Society to 7,700*l.* The Report also announced the extensive distribution of the Cottage Tracts on Gardening and Cookery, among Agricultural labourers, through the medium of Members of the Society; the addition of Mr. Brandreth Gibbs and Mr. W. R. Browne to the House Committee; and the reception of a communication from the Certifying Barrister of Friendly Societies, informing the Council that the Society had been included in the list of Institutions entitled to exemption from county, borough, parochial, and other local rates on land and buildings.

CONDITIONS ON RESIGNATION.—The chairman of the Finance Committee then called the attention of the Council to the following paragraph in conclusion of the report:—"The Committee have had submitted to them the list of members expressing their desire to withdraw from the Society; many of whose letters contain simply an expression of such desire, while others assign reasons for their so doing, at variance with the fundamental rules of the Society. The Committee feel it their duty to recommend to the Council the acceptance of such resignations, upon the payment of the subscriptions due; but submit to the council that they cannot recognise such reasons as grounds for their withdrawal." The question was then put from the Chair, and the whole of the Report was unanimously confirmed by the Council.

SOUTHAMPTON MEETING.—Communications were received, and referred to the General Southampton Committee, from Mr. Mayes, the chairman of the Local Committee of the Corporation, expressing the readiness of the authorities at Southampton to co-operate with the Society in the preparations for the meeting; from Colonel Le Couteur, president of the Jersey, and Mr. Dobrée, president of the Guernsey, Agricultural Society, explanatory of conditions connected with the exhibition of cattle of the Channel Islands' breed; and from Mr. Matcham, agent of the South-Western Railway, offering to contract for the conveyance of all goods and implements, from the terminus of the Railway to the Show-Yard. Mr. Cuthbert Johnson presented to the Council the draft of a bill "to authorise the Society to inclose common or other open lands for the purposes of Show-Yards; to protect their property, and to suspend during a certain period the privileges of those who possess rights of common, and other claims to the land which may be from time to time occupied by the Society." The Council resolved, that their best thanks should be returned to Mr. Cuthbert Johnson, for this instance of his attention to the interests of the Society; but that having the assurance of unanimous votes of the commoners at two public meetings, convened by the Mayor, at Southampton, for the consideration of the question, and a full confidence in the cordial feeling manifested towards the Society in the promotion of its object at the ensuing meeting in July, by the inhabitants of that town and neighbourhood, they think the measure proposed would in every point of view be inexpedient.

ENTRY FOR EXHIBITION.—Mr. Raymond Barker, as Chairman of the Special Committee, appointed by the Council to inquire into the case of the parties charged with an attempt at the Derby Meeting to effect the entry of a churn by improper means after the date of entry had expired, and who had consequently been declared disqualified for future exhibition submitted to the Council the result of their inquiry. The report stated the explanation offered personally by the representative of the parties in question before the Committee, and concluded with the following paragraphs:—"Under all the circumstances, the Committee regret that they cannot find sufficient cause to recommend to the Council any alteration in their decision made on the 4th of August, 1843. The Committee are further of opinion that no by-law on the subject referred to them need be introduced, inasmuch as they conceive that whenever a case of fraud or gross impropriety is satisfactorily made out, the Society would, as a matter of course, without the authority of any by-law, visit such offence with its highest displeasure, and so far as it has authority, with punishment."

WEST INDIAN AGRICULTURE.—A letter was read from the Rev. Dr. Stewart, Hon. Secretary of the Jamaica Agricultural Society, requesting the favour of communication with the Society in reference to the common objects of Agricultural interest in England and the West Indian Colonies respectively; and this request being referred to the Journal Committee, the General Agricultural Association of Jamaica was declared a corresponding institution, and the Journals of the Society ordered for the Jamaica Association accordingly.

LIBRARY AND MUSEUM.—Mr. John Robert Hall, of Grove-end Road, St. John's Wood, offered to place at the disposal of the Society, at a valuation, the agricultural library of his brother, the late Mr. Webb Hall, of Bristol, originally formed by Mr. Arthur Young for the Board of Agriculture, and bestowed, on the discontinuance of that Board, on Mr. Webb Hall, their Secretary, in compensation for the loss of office he thereby sustained. This offer was referred by the Council to the consideration of the Journal Committee. Mr. Jardine, as executor of the late Rev. W. L. Rham, presented to the Society a Flemish plough, imported as a gift to the Society by Mr. Rham, and at present lying at the Custom-house. This present was accepted, with the best thanks of the Council. A letter was read from Mr. Agnew, of Manchester, expressing his hope to be able to present to the Society the large painting of the Society's trial of Implements at their country meeting, and which had been painted for him at an expense of 1000 guineas. The Duke of Richmond presented, on the part of Mr. Lewis, a map of Southampton, on a large scale; Mr. Layton Cooke, a copy of his work on the Value of Landed Property (illustrated by diagrams); and the Yorkshire Society a copy of the last part of their Transactions; for which, and numerous other presents, the best thanks of the Council were ordered. The Council decided that Dr. Playfair, as Consulting Chemist to the Society, should be requested to analyse, under the direction of the Journal Committee, the specimen of marl transmitted to the

Farmer as retarding, when present, the operation of marle-dust as a manure for land. The Council then adjourned to Wednesday next, the 14th of February.

FARMERS' CLUB.

Chepstow, Feb. 3.—The first monthly meeting of this club took place on Monday the 29th ult. The subject for discussion, "the best method of summer-feeding farm-horses," was introduced by Mr. J. Sandford, of Mountain, who read a paper from which we extract the following:—"The best and cheapest method of keeping farm-horses through the summer is to feed them on Lucerne. You will be enabled to cut the Lucerne three or four times through the summer; so that I think two acres of land of middling quality will be sufficient to keep four horses five months in the summer; and I should give the Lucerne to the horses out of doors; I mean in cribs in a fold-yard where there is a shed, instead of in the stable; this being, I think, more healthy for the horses, and it is less trouble also. I prefer Lucerne to any other summer food, knowing it is quite as good, or better keep than Vetches; and it is also much cheaper, and when you have once got a fair plant of Lucerne, it is much more sure than Vetches, the winter or slug sometimes destroying the Vetch-crop, but not the Lucerne. Lucerne will last in the same land 20 years in as great vigour as ever, mowing three and sometimes four times in a season. Its cheapness will be evident from the following calculation:—Take four acres of middling land for Vetches, which I consider equal to keep four horses five months. Now I shall charge two of these acres at half the full rent, &c., because the Vetches will be off in time to sow Turnips, and the other two acres I shall charge at the full rate, being too late to sow Turnips; and I shall take two acres of Lucerne, which I consider equal to keep four horses five months, the same quality of land, and at the same price per acre:

Two acres for Vetches, including rent, tithes, and taxes, at 30s. per acre	£3	0	0
Two ditto ditto cleared for Turnips	1	10	0
Seed for four acres, 10 bushels at 7s.	3	10	0
Sowing and harrowing four acres at 5s.	1	0	0
Cutting four acres	0	8	0
	9	8	0
Per horse for five months	£2	7	0

Two acres Lucerne, including rent, tithes, and taxes	£3	0	0
Cutting three times, 2s. per acre	0	12	0
Allowance for seed per year	0	4	0
	3	16	0
Per horse for five months	£0	19	0"

The discussion then turned on the best manner of cultivating Lucerne. Mr. John Sandford and myself advocated the broadcast system, one of our reasons being that we consider hoeing likely to injure the crown of the root, which in this plant spreads considerably after the first year, and sends up shoots all round; and provided the land is quite clean when the Lucerne is sown, we think that it is likely to thrive better for any little surface grass that may come among the plants, as this tends to keep the ground cooler, which we consider preferable to exposing the surface of the soil to the hot summer sun. Several of the members stated they had tried manure on Lucerne without any apparent effect. I manured two ridges with guano last summer, at the rate of two cwt. to the acre, but there was no visible effect produced on the Lucerne plant.—*A. Hall.*

Reviews.

Advice as to the proper Management of your Farms. Dublin: N. Clarke, Printer, 50, Great Britain-street.

This is a handbill which has been printed for circulation among the small farmers of Ireland.

The writer of this paper opens his subject thus:—"The manner in which you manage your farms at present is so bad that the land is not improved, and the rent is paid with difficulty. It is generally this,—you manure for a crop of Potatoes, then take as many Corn-crops as the land will bear, and then let it out to rest."

He then states that in Scotland and England this system has been generally abandoned, and it has been found possible to keep the ground constantly giving crops, and yet improving by growing Corn and green-crops alternately, the latter being manured. Food, he further states, is economized and manure saved by the practice of house-feeding. "With proper management two acres ought to feed three cows all the year round," and "the produce of butter alone ought to pay your rent, and leave the Pigs, Corn, and Potatoes for your own consumption."

Four different courses of cropping are then suggested, varying according to the size of the farm.

On a very small farm the course recommended is,—1st year, Potatoes in drills, with Cabbages planted between in June; 2d year, Oats laid down with Clover; 3d year, Clover, for soiling; 4th year, Oats, followed by Rape, and Vetches followed by Turnips. On a farm of six acres the course is to be a little varied; and on a larger farm a seven-course system is recommended for adoption. Valuable advice follows on the preservation of every description of solid and liquid manure produced, and on the use of bone-dust and lime, the application of the former of which, it appears, would cost the Irish farmer 5*l.* per acre.

Lastly, we have instructions for the cultivation of Potatoes, Mangold-Wurtzel, Turnips, Rape, Cabbages, Wheat, Oats, Barley, Red Clover, and Vetches.

Without a practical knowledge of the soil and climate of Ireland, of the system of culture generally adopted by the small farmers, and of their circumstances, it would be rash to offer an unqualified opinion on the advice given to them in this paper. Still we can scarcely err in acknowledging that the system it recommends, in its general principles, may be applied to a considerable variety of soils, and is one of the best that a small farmer could pursue.

The grand feature of the system is the growth of green and Corn crops alternately, so that an abundant stock may be carried, and a good supply of manure produced on the land. The principle of the alternate system is recognised as sound by the best farmers of England, but it is far from being generally adopted. There are districts which produce comparatively little but Corn, and in which the soil is said, probably with reason, to be too stiff for the growth of Turnips. Many such soils would be greatly altered in their texture and converted into friable loams, by thorough drainage and deep perfect cultivation. We cannot hope, however, to see them thus improved without great additional capital being applied to them, and this additional capital will not be applied without good security for a return. It is astonishing how much capital might be applied with advantage to a small quantity of land, if there were a certainty that the cultivator would reap the full fruits of his capital and industry; and we do not believe that the practice of Agriculture will be much further improved in this country till measures of some kind are adopted to give full scope for the employment of capital, knowledge, and industry in the thorough cultivation of land. Theoretical knowledge of Agriculture may be increased, but how is the farmer to apply his knowledge without the requisite means and the requisite security?

Those in the situation of the small Irish farmer, holding but a few acres of land, are, perhaps, the most likely to improve it in a high degree, if placed in a right position. Their land should be thoroughly drained; they should adopt some such system of cropping as that recommended in the paper before us, and they should cultivate their soil thoroughly by the spade or fork. What business has a plough on a farm of six or seven acres? However desirable or necessary this implement may be on a large scale, it must be generally acknowledged that it is an imperfect machine, and that although, like other machinery, it will enable a man to accomplish more work in a given time than the simpler tool, it will not enable him to perform that work better or even equally well. A soil which has been thoroughly worked to a depth of 12 or 14 inches with the spade is in a state to which repeated ploughings would not bring it, even if the subsoil-plough were used, while the expense of cultivating land with the plough and subsoil-plough to a good depth is little, if at all less than would be incurred by manual labour.

The writer of the paper before us recommends that Rape be sown in June, and transplanted after the Corn-crop, to afford food for winter and spring. I have never tried this plan, but I have transplanted Swede Turnips to follow Vetches, and I think the practice in some cases a good one. A small seed-bed will supply plants for an acre. The seed should be sown in the spring thickly, and the Turnips transplanted when about the size of young Cabbage-plants, care being taken that the root is put into the ground straight, and not bent at the tip. If this precaution is not observed, the growth of the root will generally be much impeded, or altogether stopped. The chief advantages of this practice are, that the ground is not required till much later for the crop, and all risk of serious injury from the fly is obviated. With respect to Rape, the following circumstance may be mentioned:—A small patch of Rape was sown, for an experiment, about the latter end of September, 1842. It went to seed in the spring, but about the end of March the first crop was consumed. Liquid manure was then applied, and the ground was loosened between the rows; and about the latter end of May another good crop was taken. The ground was shortly afterwards broken up. This experiment indicates that Rape would be valuable as an early crop for cows or sheep. Although light, it occupies the ground at a season when it can be best spared. It would probably not be desirable, however, to take more than a first cutting in March.

Although bone-dust is undoubtedly a powerful manure, and may be a desirable application to some land, yet for farmers who have plenty of manure from their stock, as those following the proposed system would, the expediency of applying it at an expense of 5*l.* per acre must be very doubtful.

The cutting of Potato-sets is alluded to. Ought Potatoes to be cut, or planted whole? Has this question ever been definitively set at rest? The results of an experiment which was performed in our neighbourhood favoured the practice of planting whole, but no safe conclusion can be grounded in Agriculture upon a single experiment, and that, too, on a very small scale. We should like to see the relation between the size and state of the Potato-set, and the vigour of the future plant accurately determined.

A brief summary has now been given of the contents of this valuable paper; the leading principles of the system of culture it recommends have been pointed out, and a few remarks suggested by some of its details have been offered. It is well worthy of being circulated among the small farmers of Ireland, and of England also. If there is one point in which the advice is defective, it is in the omission of a recommendation to cultivate the ground with men and spades, or forks, rather than with horses and ploughs.—*H. F. F.*

Miscellaneous.

Mode in which Manures act.—It has been most satisfactorily proved that there are at least two distinct ways in which manures may produce crops. 1st. It may itself yield the elements of the crops, and hence, in this instance, the crop is merely the manure in a different form. Or, 2d. It may enable the crops to obtain their elementary ingredients with greater facility from the soil, in which case, of course, the increased crop, though produced through the agency of the manure, is really obtained at the expense of the soil.—*Dr. Madden on the Advantages of Extended Chemical Analysis to Agriculture.*

Recipe for Wounds, &c.—I can with the greatest confidence recommend the following recipe for cuts, galls, and broken knees, Compound Tincture of Benzoin, Tincture of Myrrh, each one ounce, Nitrous Acid two drachms—mix in a bottle for use. Apply with feather or syringe if the wound be deep.—*H. F. Odlum.*—*Dublin Farmer's Gazette.*

Application of Manure to Turnips.—The following Table shows the result of an experiment, alluded to in a former report, in growing Swedish Turnips with four different kinds of manure, which was this season made by Mr. Grieve, the intelligent land-steward of Mrs. Ferguson of Dirleton, and on whose perfect accuracy every confidence may be placed. The Turnips were sown on the 20th of May, and lifted and weighed on the 27th November last. The field on which they were grown had, until lately, been time immemorial in Grass, the soil being a dry friable loam. The value of the different manures speaks for itself; but it should be noticed that where the guano was used the Turnips seemed to braird more rapidly, were earlier ready for the hoe, and kept ahead of the others to the end, as if they had been sown at least a fortnight sooner.

Kinds and Quantities of Manures used per acre.	Price of Manure per acre.	Weight of Turnips, without roots or tops.			Weight of roots and tops.			Weight of rotten Turnips.			Weight of Total Produce per acre.		
	£ s.	Tons.	Cwts.	lbs.	Tons.	Cwts.	lbs.	Tons.	Cwts.	lbs.	Tons.	Cwts.	lbs.
Guano, 5 cwts.	2 15	29	17	13	6	12½	11	1	13	17	38	12	13
Farm dung, 12 carts	3 12	25	7	0	6	15	0	2	12	13	34	14	27
Bones, 25½ bushels	3 3	25	12½	0	6	12	14	2	14	22	37	6	6
Rape dust, 12 cwts.	3 0	29	19½	23	5	9	0	2	8½	0	30	17½	0

—*Scotsman.*

Notices to Correspondents.

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Communications from the following Correspondents are in type, and are only waiting till room can be found for them:—*A Subscriber, A Perthshire Farmer, T. E., G., J. Caird, E. M., A Surrey Farmer, Yeoman,* and *A. Hall.*

Agricultural Chemistry.—*T. Butler.*—Analyses of soils are rarely useful, unless they enter so perfectly into detail, and therefore require such skill, as entails great expense upon the operation. It is very questionable, we think, whether gentlemen, though of known ability, would obtain sufficient practice in this way to justify them in devoting their whole time to Agricultural chemists.

Agricultural Gazette.—*Bungay.*—Send us a post-office order for 6*s.* 6*d.*, and we will take care that you are supplied at that price.

Application of Lime.—*An Amateur Farmer.*—You are right in not applying lime at present to the land under the circumstances which you describe. But you have, we think, trenched your land rather too boldly. You should have kept the top soil uppermost. However, the 60 yards of manure per acre will probably give you a good crop of Oats and Grass.

Burthens on Land.—*An Inquirer.*—We cannot obtain for you the actual sum per acre to which these on an average amount in England and Scotland; but the advantage which Scotch farmers possess over English in this respect, probably does not lie in their average payment as rent, being less for similar land. The amount of poor's-rate, road and church-rates, &c., as well as the annual sum paid to the landlord, are all taken into account by the English farmer before he enters on his farm, and they must, therefore, all be considered as rent, and this rent will be found generally to be proportioned *alike* in England and Scotland, under similar circumstances, to the quality of land. But the advantage possessed by the Scotch over the English farmer lies in his rent being generally variable according to the price of produce; while of that paid by the English farmer, the landlord's portion is almost universally a fixed money-payment; while of the rest, which is sometimes the larger half, the greater part—that paid to the poor—varies *inversely* as the price of produce, being greatest in amount when Corn is lowest. You were right, when speaking of the burthens on the English farmer, as compared with those on the Scotch, in calling them "vexatious" rather than heavy.

Drainage.—*James Denham.*—Please to give the address of the party who would give the required information.——*A New Subscriber.*—We are aware of no work exclusively upon the drainage of high lands. On drainage in general, see a pamphlet by Mr. Smith, of Deanston, and an Essay in the present Number of the English Agricultural Society's Journal. We should be glad to publish a statement specifying the character of the land, that of the limestone, &c., and the amount of benefit derived from the practice of manuring your vale lands with crushed limestone. We never heard of the practice before, with a compact limestone. We doubt whether, where coal is so near, burning lime is not the cheapest method of reducing it to powder. Low's "Elements of Practical Agriculture" is one of the best general treatises on the subject. Those you allude to are, however, both valuable works.

Dressing for Mossy Land.—*H. W. B.*—If you have not good farm-yard manure apply lime. The rushes will gradually disappear if the land is efficiently drained. If, instead of burning the refuse bark of the tan-yard, you were to soak it with liquid manure, you would obtain a valuable compost.

Gas-water.—*Wem.*—Soak the tan with gas-water, and turn it frequently. The addition of sulphuric acid to the water will form in it the sulphate of ammonia. We do not know how this is manufactured on the large scale, but will endeavour to ascertain for you.

Gold of Pleasure.—*Anonymous.*—"Almost all Cruciferous plants yield more or less of oil. One of these, Camelina sativa, cultivated Camelina (Gold of Pleasure), is a plant produced in various parts of Germany and Italy for this purpose. This plant is an annual, and is raised with facility. It grows spontaneously over a great part of Europe, and is a frequent weed amongst Flax. It grows best on light, sandy soils, and in the south of Europe two crops of it can be procured within the year. The oil it produces is said to be fine in quality, retaining a good flavour, and in burning it does not

produce any disagreeable odour. In the south of Europe it is sown in April or May, and is sometimes ready in less than three months, so that it is one of the quickest-growing of the oleaginous plants. The seeds are sown thin, and the plants hoed, if too thick. It is pulled or cut, and laid in a covered place, to complete the ripening and drying of the seeds. These being then freed from the stalks, by beating, are winnowed, dried, and buttered."—*Professor Low's Elements of Practical Agriculture.*

Onion.—*J. D. N.*—Old bushes must be cut or burnt down, and the young sprouts used as food.

Guano for Potatoes.—*H. T. H.*—See our answer to *A Young Rural*. If your land is in anything like good condition, you may expect a good crop of Oats after the Potatoes; but you should aim to get your crops, and especially your grain-crops, to depend a good deal upon the general condition of the land, rather than upon the particular manuring of the year.

Manganic Constituents of the Onion Tribe.—*T. Price.*—We have been informed, since last week, of an analysis of the Onion performed by Fourcroy and Vauquelin. A large quantity of uncrystallisable sugar was found in recent Onion juice, together with mucilage and the phosphate and nitrate of lime.

Liquid Manure.—*S. L. B.*—Apply liquid manure to Grass in April, and to growing crops of roots or Corn in the early stages of their growth.

Steeping Barley.—*J. B. N.* recommends the trial of chloride of lime in solution, as a steep for barley, to force on the sprouting. It would have this effect, but we doubt whether it would not at the same time injure the Malt.

Manures.—*Villager.*—Nothing is better than good and well-made farm-yard manure; apply it at the rate of 20 cubic yards an acre, plough or dig it in.——*Carlingill.*—Differences in the effects which follow apparently similar applications cannot be accounted for except by one who knows accurately the composition of the soils on which they were made, &c. The immediate contact of lime will injure the action of the guano by so much as that action depends upon the presence of salts of ammonia, for lime will displace ammonia from any of its salts and volatilise it. And to this probably the difference between you and your neighbours in your experience of guano is owing. We believe urate is made by soaking gypsum in the water of the stables and feeding-stalls.——*A Young Rural.*—Shavings, &c., are hardly worth going for; they may, however, be usefully applied in strong land. They are not worth more than 1*s.* per cart-load. Tanners' bark, when burnt, makes good wood-ashes, and it is then fit to mix with guano for a Potato-crop; but we should prefer soaking the rotten tan with liquid manure, and then mixing 3 cwt. of guano with 10 cart-loads of it as a manuring, in the ordinary way per acre, for Potatoes. 6*d.* per bushel is a fair price for soot, and the same for wood-ashes. Two of soil and one of guano would make a good mixture, but try rotten bark soaked with urine, instead of earth. You should have applied your guano to the Turnips before the Barley, and these should have been eaten off with sheep; you would then have been sure both of Barley and seeds. As it is, if your land is in good order, you may depend upon the guano for the seeds. We shall give an account of the cultivation of the Parsnep before the season for sowing it.

Manure.—*C. C. R.*—We are much obliged by your anxiety to get us right on this subject—correctness in market reports is of first importance to an Agricultural paper; but to show you that genuine accuracy in the actual prices quoted is not of so much importance as accuracy in describing the general state of the markets, as to whether prices are falling or rising, we may mention that within the past fortnight we have sold nearly 100 quarters of good white Wheat, averaging 61 lbs. a bushel, at 45*s.* This is 100 miles from London, and probably the majority of our readers are at a still greater distance, where prices, though they may rise and fall with those of Mark-lane, as they do here, are even less likely to resemble them in actual amount. Do not infer from these remarks that we are not fully anxious to report the Markets correctly. We cannot suppose that Messrs. Kingford and Lay would append their names to an inaccurate statement; mistakes may, however, have been accidentally made in it, and we shall communicate with those gentlemen on the subject. With regard to the publication of a Farming Calendar, we shall endeavour to supply its place, this year, at any rate, by making our Leader have a general bearing upon the operations of the season.

Mineral Manures.—*John W. Lloyd.*—We have seen your analysis before, published in the *Derbyshire Courier*. If you were to take a specimen of any ordinary soil, you would find on analysis that it contained all the ingredients mentioned as existing in your rock, and the most valuable of those ingredients in larger quantity. Is the soil above this rock extraordinarily fertile? It must be so, if your theory is correct. Our opinion is, that your land would not benefit much by an application of it, though ground to a powder. We shall return to this subject at greater length hereafter.

Plaster for Ploughing in as Manure.—*L. Stephenson.*—We can recommend nothing better for this purpose than the common Tare or Vetch. It is commonly used in this way here, by poor people, as a substitute for manure in their gardens. They obtain seed from those who have been accustomed to sow it early in autumn. You had better obtain some which has thus acquired hardiness and a habit of early growth; and, if you sow early, you may dig or plough it in by the 1st of May.

Potatoes.—*J. H. H.*—Farm-yard manure is most likely to be the best application, because it is the most compound of any. An analysis of the soil is not likely to be sufficiently delicate to point out the deficiency. If the land is tired of Potatoes, you should grow other crops on it for a while. The tubers contain in 100,000 parts, 290 of potash, 234 of soda, 33 of lime, 32 of magnesia, 5 of alumina, 2½ of iron, 9½ of silica, 54 of sulphuric and 40 of phosphoric acids, 15½ of chlorine, 37 of azote, and 20,035 of water and carbon (Sprengel). We do not know any analysis of the leaves.

Salt and Bugs.—*A Subscriber.*—The usefulness of salt as a manure depends on your soil being destitute of it. If you are in an inland situation, 1 cwt. per acre may be beneficially applied. Try it mixed with the manure in your compost heap. 20 or 40 bushels of soot per acre is the usual application. Crosskill's clodcrusher is stated by some of the writers in the current No. of the "English Agricultural Society's Journal," to prevent the ravages of the wireworm; we have no experience on this subject ourselves. No previous steeping of seeds will ensure the safety of the plant.

Turpentine Bugs.—*Rusticus.*—See answer to your question above. It will answer very well to soak earth, sawdust, refuse bark of the tan-yard, &c., with the solution of superphosphate of lime.——*Gentleman Farmer.*—We hope to hear from Mr. Campbell on this subject shortly, and will then answer you fully. Meanwhile, we think Oats should be soaked as long as Wheat, Turnip-seed as long as Clover, Mangold-Wurtzel 24 hours; Beans, Peas, and Tares, at least 48 hours; but you can try this in a wine-glass yourself some days before you sow in the field, stopping the soaking when the seed begins to swell. 200 lbs. of Wheat will take up 3 or 4 lbs. of any salt in a sufficiently strong solution. A bushel of Wheat, weighing 60 lbs., will only take up 2 or 3 lbs. In order, however, to be sure that you have enough, take 5 lbs. of the salt, and dissolve it in such a quantity of water as will perfectly cover the seed, and then place the bushel of seed in it. The "exact neutralization" of the acid, by adding to it a carbonate of any alkali, takes place, when, without an excess of the carbonate, the acid no longer reddens a piece of litmus paper. The substance in solution thus formed is then a neutral salt. You had better sow as soon as possible after steeping the seed; if dried again, as it will need to be if you drill the seed, it must be by the simple action of sun and air, lest it can be hoed in though wet. Clay land will not be ready for some time, and as the Wheat will be sown in spring, we shall use one bushel in the half an acre of ground. Had it been done in autumn, 1½ bushels per acre would have been plenty. We shall adopt your suggestion about the mineral constituents of plants.

Subsoiling.—*A. W.*—You were right in subsoiling light gravelly Turnip land; you will probably be benefited by it, in the greater depth of active soil you will thus ultimately obtain, and in the greater independence of dry weather which you have thus obtained for plants growing on it. Guano will likely suit your land, and perhaps your best way will be to sow 2 cwt. of it per acre over the growing Wheat, just before you hoe it in spring; but on a light soil you ought to make enough manure on your own farm, without going elsewhere for it. Bog-earth will act both chemically and mechanically in retaining the volatile ingredients of your manure. The addition of salt will not impair this action, and it may perhaps be useful on its own account, being alone its efficiency as a fixer of ammonia. For answer about the steeping of seeds, see above on that subject.

Sulphuric Acid.—Bones.—*White.*—We informed an anonymous correspondent last week that sulphuric acid costs from 1½*d.* to 2*d.* per lb. We have since been informed that it may be obtained in any quantity from Gibbs' Chemical Works, Bristol, at 1*d.* per lb. To any weight of bone-dust add three-fourths that weight of sulphuric acid diluted with its weight of water; let the two act on one another for a day, and then mix it all up together with a lot of dry earth, and apply at the rate of about four bushels of the bone-dust per acre. A simple way of estimating the proportion in which the chief elements of the soil stand to one another is to be found in Mr. Rham's paper on the subject, in the English Agricultural Society's Journal, from which we extract the following:—"Take a glass tube 2 of an inch in internal diameter, and 3 feet long; fit a cork into one end, and set it upright; fill it half full of pure water; take nearly as much water as has been poured into the tube, and mix with it the portion of soil which is to be examined, in quantity not more than will occupy 6 inches of the tube, and let it stand in a corner of a room, or support it upright in any way. In half an hour it may be examined. The earths will have been deposited according to the size and specific gravity of their particles. The portion still suspended in the water may be allowed to settle; and there will appear in the tube layers of sand, clay, and humus, which may be measured by a scale, and thus their proportions nearly ascertained." Manures cannot be analysed in this simple manner, but means will shortly be published for detecting adulterations in many of them.

Taste of Turnips in Butter.—*A Ross-shire Lady.*—See a paragraph on this subject in our Home Correspondence. If saltpetre will not effect the desired object—many say that it will—there is no remedy but altering the food given to the cows. Mangold Wurtzel will not affect the taste of the butter.

Weeds.—*S. K.*—We are not aware of any publication on this subject by Dr. Daubeny or Professor Henslow. A series of articles on the Weeds of Agriculture will shortly appear in our columns. Try sowing 1 cwt. of salt per acre over your Grass land. The constituents of guano very much in quantity in different specimens. The first analysis of it was by Klaproth. He found it to consist of—

Urate of ammonia	16 per cent.
Phosphate of lime	10
Oxalate of lime	12.75
Silica	4
Common salt	0. 5
Sand	28
Water and combustible matter	28.75
	100

"The word 'guano' is Peruvian, meaning dung. It is pronounced *Huano* by the Peruvians, which the Spaniards, according to the genius of their language, spell 'guano.'" You had better make a compost with the gas-water, as already described in this Paper. The refuse bark of the tan-yard will do very well to soak with it.

Weight of Crops.—*M.*—Twenty tons of Swedish Turnips and ten tons of Potatoes may be considered good average crops in any of the best counties in England. We have known of 30 tons of the former, and 18 tons of the latter produced per acre under field-culture.

Miscellaneous.—*Bridport.*—The volume for 1843 may be had, price 8*s.*, in boards.

*** As usual, many communications have been received too late for answering this week.

Markets.

SMITHFIELD, Monday, Feb. 5.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	10	to 4s	2	Best Downs & Half-breds	4s	0 to 4s 6
Best Short Horns	3	6	3	10	Best Long-wools	4	0 4 2
Second quality *Beasts*	3	0	3	4	Ewes and second quality	3	6 3 8
Calves	4	6	5	4	Pigs	3	8 4 4

On the whole, our trade to day has an improved aspect; there is, however, much disappointment in the Beast market, the moderate supply leading us to expect an advance in price, which could not be generally realised. Our best qualities found ready purchasers, at perhaps a shade beyond last week's statement, but nothing quotable; the Short-horns and second qualities were a heavy trade at former rates. Calves remain steady. Small Porkers of good quality are a little better sale.

Numbers.—Beasts, 2705; Sheep, 24,400; Calves, 65; Pigs, 280.

FRIDAY, Feb. 9.

There is but little variation to-day from our Monday's report. The supply is short, and everything finds a cheerful trade at about the same rates, with the exception of Veal. The late high prices of this article have had the effect of increasing the supply, and also of decreasing the consumption; these circumstances have caused a slack demand and reduction in price, the very best Calves not making any more than 5*s.* per 8 lbs., and many of good useful quality are sold at considerably less money. Monday and to-day we have noticed several short Sheep, but as the present prices of Mutton are mainly attributable to the advance in wool, they are a heavy trade. The weather is much too cold for short Sheep.

Numbers.—Beasts, 638; Sheep, 2800; Calves, 164; Pigs, 220.

41, West Smithfield

POTATOES.—Southwark Waterside, Feb. 5.

The supply during the past week has been moderate, but fully equal to the demand. The first two days having been extraordinarily fine caused a great depression in our market, and several consignats of cargoes that have been some time in the market went off heavily, and the annexed prices were barely maintained. The last four days have been frosty, attended with snow, but the change of weather has not at present increased the demand, the tendency having been rather downwards than otherwise; but a continuance of cold weather must check vegetation, and would, consequently, increase the demand for Potatoes.

York Reds	-	-	-	60s to 80s	Kent and Essex Whites	-	80s 85s
Perth	-	-	-	65 —	— Kidneys	-	65 —
Early Devons	-	-	-	65 70	Wisbeach Kidneys	-	65 —
Cornwall	-	-	-	65 70	— Whites and Blues	-	55 —
Jersey and Guernsey Blues				60 —	Prince Regents	-	55 65

SEEDS, Friday, Feb. 9.

Canary	-	per qr	54s to 58s		Linseed Cakes, Foreign, p. ton	8l to 9l 10s	
Carraway	-	per cwt	56 60		Mustard, White - p. bush.	6s	6s
Clover, Red, English	-	64 76			— Superfine „ -	6	8
— — Foreign	-	64 66			— Brown „ -	14	15
— White, English	-	90 105			Rapeseed, English, per last	29l	30l
— — Foreign	-	85 105			Rape Cakes - per ton	—	—
Coriander -	-	15 18			Rainfoin - -	—	—
Hempseed -	-	per qr	34 36		Tares, Essex, winter p. bush.	2	5
Linseed -	-	per qr	— —		— Foreign -	2	5
— Baltic -	-	— —			Trefoil - - per cwt	—	—
— Cakes, Eng. per 1000 10l 5s			10l 10		Turnip (too variable for quotation).		

Sainsbury and Lay.

WOOL.—Brittish, Friday, Feb. 9.

Our English Wool Market continues steady. There is evidently a disposition on the part of our large consumers to abstain from buying for the present, unless they can do so at the present rates. Our Colonial Wool Sales closed on Wednesday evening as advertised rather on the preceding sales.

Prices Current.

	per lb.				per lb.	
Long-wooled Wethers	1s 1d	to 1s 2d	Southdown Hoggets	1s	1d to 1s 2d
Do. Ewes	1 1d	1 2d	Kent Fleeces	1 1	1 2
Southdown Fleeces	1 0d	1 2d			

James Bennet, Wool Broker.

MARK LANE, Friday, February 9.—We have been scantily supplied with English Wheat during the week, and the few samples at market this morning obtained the extreme rates of Monday. Free Foreign is held at rather more money, but scarcely any business has been transacted in it. There continues to be buyers of Bonded Wheat, floating cargoes, and for shipment, at the full prices hitherto paid.—In Barley, Beans, and Peas we observe no alteration.—Oats are a very slow sale, and the turn cheaper.

BRITISH, PER IMPERIAL QUARTER.					s.	d.
Wheat, Essex, Kent, and Suffolk				White	44	54
—— Norfolk, Lincolnshire, and Yorkshire					47	53
Oats, Lincolnshire and Yorkshire				Polands	19	25
—— Northumberland and Scotch				Feed	—	—
— Irish				Feed	16	22
Barley, Malting and distilling			32 to 35	Chevalier	36	37
Malt, pale, ship					—	—
—— Hertford and Essex					—	—
Rye					—	—
Beans, Mazagan, old and new			32 to 33	Tick	32	34
—— Pigeon, Heligoland			33 to 36	Winds.	33	36
Peas, White			30 to 32	Maple	37	39

IMPERIAL AVERAGES.												
				Wheat.		Barley.		Oats.		Rye.	Beans.	Peas.
Dec.	29	per Quarter.		43s 6d		28s 3d		18s 6d		31s 4d	32s 1d	33s 7d
Jan.	5	"		43 10		29 7		18 8		30 8	33 7	33 7
—	12	"		39 9		28 9		18 8		29 6	33 2	33 10
—	19	"		41 8		29 7		18 8		31 7	33 8	33 10
—	26	"		42 3		29 8		19 0		32 4	34 0	34 0
Feb.	2	"		43 2		29 11		19 11		32 10	35 5	35 6
6 weeks' Aggregate Aver.				41 9		28 9		18 8		30 9	33 6	33 10
Duties on Foreign Grain				19 6		5 0		5 0		10 6	11 0	11 0

ARRIVALS THIS WEEK.				
	Wheat.	Barley.	Oats.	Flour.
English	3010	6330	2220	2910 Sks.
Irish	—	280	1470	—
Scotch	—	—	—	—
Foreign	—	—	—	—

Kinnerson and Lay.

COVENT GARDEN, Feb. 9.—Notwithstanding the extremely changeable state of the weather during the week, the market has been, generally speaking, well supplied; but trade still continues dull. There is a slight alteration in the price of Pine-Apples, which consist principally of Queens and Black Jamaicas. Grapes are offered at nearly the same prices as last week. Good dessert Pears still continue scarce; but Apples are sufficient for the demand; they have rather advanced in price since our last report. A good many foreign ones have appeared in the market during the week. Oranges are good and plentiful; they have diminished a little in price, being offered at from 6*d.* to 1*s.* 6*d.* per dozen. Lemons are plentiful, and are also a little reduced in price since our last report. Chesnuts are selling at from 3*s.* to 6*s.* per peck. The severe frosts have been rather unfavourable to the more tender kinds of vegetable. Broccoli, however, is sufficient for the demand. French Beans are slightly advanced in price; they are offered at from 3*s.* to 4*s.* 6*d.* per 100. Cabbages and Brussels Sprouts are abundant; Greens bring from 2*s.* to 4*s.* 6*d.* per dozen. Celery has a little advanced in price, as has also Endive; the latter is offered at from 1*s.* to 2*s.* 6*d.* per score. Seakale is good in quality, but is rather scarce. Asparagus is sufficient to meet the demand. Lettuces are selling at nearly the same prices as last week. A few good Cucumbers have been brought to the market during the week; they are offered at from 6*s.* to 9*s.* each. Cut flowers chiefly consist of Erica transparens and arborea, Euphorbia jacquiniflora, Lachenalia tricolor, Bignonia venusta, Acachlanthus grandiflorus, Cypripedium venustum, Acacias, Azaleas, Rhododendrons, Camellias, Tulips, Pelargoniums, Cinerarias, Primulas, and Roses.

FRUITS.

Pine Apple, per lb., 1*s.* to 12*s.*
Grapes, Portugal, per lb. 1*s.* to 2*s.* 6*d.*
Apples, dessert, p. bush. 8*s.* to 20*s.*
— Kitchen, p. bus. 4*s.* to 7*s.* 6*d.*
Pears, per half-sieve, 4*s.* to 12*s.*
Oranges, per dozen, 6*d.* to 1*s.* 6*d.*
— per 100, 14*s.*
Lemons, per doz. 1*s.* to 2*s.*
— per 100, 5*s.* to 12*s.*
Red Capsicums, 4*s.* to 6*s.*
Almonds, per peck, 6*s.*
Sweet Almonds, per lb., 2*s.* 6*d.* to 3*s.*
Nuts, Spanish, per bushel, 15*s.*
— Brazil, 16*s.*
— Filbert, 2*s.* to 4*s.*
— Barcelona, 20*s.* to 28*s.*
— Cob, per 100 lbs., 60*s.* to 100*s.*
Chesnuts, per peck, 3*s.* to 6*s.*
Walnuts, per bushel, shelled, 12*s.* to 16*s.*
Filberts, English, p. 100 lbs., 60*s.* to 65*s.*

VEGETABLES.

Rhubarb, per bundle, 6*d.* to 1*s.* 6*d.*
Broccoli, per bundle, 1*s.* 6*d.* to 3*s.*
Brussels' Sprouts, per half-sieve, 1*s.* to 2*s.*
Cabbages, per doz., 6*d.* to 1*s.*
Red Cabbages, per doz. 2*s.* to 3*s.*
Sorrel, 3*d.* to 1*s.* per half-sieve
Asparagus, per 100, 2*s.* 6*d.* to 11*s.*
Seakale, per punnet, 6*d.* to 8*s.*
French Beans, 3*s.* to 4*s.* 6*d.* per 100
Autumn Potatoes, 3*d.* to 6*d.* per lb.
Savoys, per doz. 6*d.* to 1*s.*
Greens, per doz. 3*s.* to 4*s.* 6*d.*
Potatoes, per ton, 80*s.* to 100*s.*
— per cwt., 3*s.* 6*d.* to 5*s.*
— per bushel, 1*s.* 6*d.* to 2*s.* 6*d.*
— Kidney, p. bush., 2*s.* to 3*s.* 6*d.*
Turnips, per doz. bunches, 1*s.* 6*d.* to 3*s.* 6*d.*
Horse Radish, per bundle, 1*s.* to 3*s.*
Radish, spring, p. doz. bunches, 1*s.* to 3*s.*
Carrots, p. doz. bun., 2*s.* 6*d.* to 3*s.*
Spinach, per sieve, 1*s.* 6*d.* to 3*s.*
Leeks, per doz. bun., 2*s.* to 3*s.*
Garlic, per lb. 6*d.* to 8*d.*
Onions, Spring, 1*s.* 6*d.* to 2*s.* p. bush.
— Large, per bushel, 3*s.* to 4*s.*
— Spanish, per doz., 1*s.* to 4*s.*
— pickling, p. hf.-sv., 3*s.* 6*d.* to 4*s.*
Shallots, per lb., 6*d.* to 9*d.*
Chills, per 100, 1*s.* to 2*s.*
Lettuce, Cabb., p. score, 6*d.* to 1*s.*
— Cos, per score, 6*d.* to 1*s.*
Celery, per bun., 2*d.* to 3*s.* 6*d.*
Mushrooms, per pottle, 2*d.* to 1*s.* 6*d.*
Small Salads, per punnet, 6*d.* to 2*s.*
Watercresses, per doz. bun. 3*d.* to 6*d.*
Parsley, per doz. bunches, 2*s.* to 4*s.*
Tarragon, Green, per bun. 6*d.* to 1*s.*
Radilye, per score, 1*s.* to 2*s.* 6*d.*
Green Mint, 4*d.* to 6*d.* per bunch
Marjoram, green, p. doz. bun. 1*s.* 6*d.* to 3*s.*
Cheryll, per punnet, 6*d.* to 8*d.*
Salsafy, per bundle, 1*s.* to 1*s.* 6*d.*
Scorzonera, per bundle, 1*s.* 6*d.*

HOPS, Friday, Feb. 9.

The Hop Market for some days past has been more quiet, but prices remain firm, as holders feel satisfied that, with the unusual small stock on hand, the least speculative demand or unfavourable symptom in coming crops would cause a very considerable advance on the present currency.

Mid & East Kent Pocks.	3l 0s to 10l 10s	Sussex Pockets	- 0l 0s to 0l 0s
Choice ditto -	11 0	Choice ditto	- 0 12
Weald of Kent Pocks	6 0 6 15	Farnham	- 0 0 10 10
Choice ditto -	7 0		

Fattorini & Sons, Hop-Factors.

HAY.

Smithfield, Feb. 9.

Hay - 2l 14s to 3l 14s | Clover 3l 12s to 4l 5s | Straw - 1l 8s to 1l 10s
Per Load of 36 Trusses.

John Cossins, Salesman.

Whitechapel, Feb. 9.

Hay - 2l 10s to 3l | Clover 3l 4s to 4l 15s | Straw, 1l 4s to 1l 16s
— Inc Upland, 2l 5s to 3l 12s | — Inf. 3l to 3l 8s
Dull trade at the above prices.

Cumberland Market, Feb. 9.

Meadow Hay 2l 15s to 3l 10s | Clover 3l to 3l 8s | Straw 1l 8s to 1l 16s
— Inferior 2l 0s to 2l 5s | — Inferior 2l to 2l 10s

Joseph Banks, Hay Salesman.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs
Alum, 240s per ton - -	—	Rape, 56s to 60s per ton - - —
Blacking Powder, 20s per cwt. - -	—	Rape Cake, 112s per ton - - —
Brimstone, 200s per ton - -	—	— Dust, 112s per ton - - —
Bone-dust, 17s per quarter - -	44	Sal Ammoniac, 5d. per cwt. - - 80
— Half-inch, 10s ditto - -	42	Salt, Agricultural, 42s per ton - 50
— Calcined, 8s per cwt - -	—	— clean, 20s per ton - - 20
Carbonate of Ammonia, 6d. per cwt	84	— Hide, 21s per ton - - 50
— of Lime, 1s to 1s 6d per cwt	—	Saltpetre (Nitrate of Potash) 5d per cwt., duty paid - - 100
— of Soda, 2s to 2s 6d per cwt	—	Silicate of Potash, its powder, 28s per cwt - - - - —
Chloride of Lime, 2s. per cwt - -	—	Soap Ashes, 1s. to 1s. per cwt. - 60
Grease, 10s to 11s per ton - -	—	Soda Ash, 2s to 10s per cwt. - 56
Guano, 80s to 120s per ton, one to equal	60	Sulphate of Ammonia, 20s to 25s per ton - - - - 70
Epsom's, 60s per ton - -	60	— of Copper, 20s to 28s p. cwt. —
Gypsum (Sulphate of Lime), 67s 6d to 85s per ton - - - -	84	— of Magnesia, 14s to 18s p. cwt. —
Humphreys's Compound for Manufactus, 1s 6d per bottle - -	—	— of Magnesia (pure crystal) 18s p. cwt. - - - - —
Muriate of Ammonia, 40s per cwt.	70	— of Potash, 14s per cwt. - 56
— Lime, 2s. to 4s - -	70	— of Soda, 2s per cwt. - - —
Nitrate of Soda, 32s to 16s 6d per cwt., duty paid - - -	60	Sulphur, 14s per cwt. - - 60
Phosphate of Lime 14s to 16s p. cwt.	60	Sulphuric Acid, London made, 4½ oz. to the oz. - - - - —
— — Super, 12s per cwt.	60	— — Common made, 1d. per lb. —
— of Ammonia, in crystals 2s 6d per lb - - -	—	Whiting (Chalk) 30s to 32s per ton - - - - —
— — in fine powder, 6s per cwt.	60	

Expense of shipping about 2s to 7s per ton, according to quantity.

Kinnerson and Lay.

CAMBERWELL.—CAMDEN NURSERY GROUNDS.

MESSRS. ELLIS AND SON will SELL by AUCTION, on the above Premises, near Camden Chapel, Peckham-road, on Tuesday, the 13th of February, and following day at 11, on account of the number of lots, under distress for rent, the entire STOCK, Buildings, and Tools; consisting of two capital Greenhouses, 26 feet in length, heated by hot-water-pipes. Forcing pits, Cucumber and hand-lights, Shop fixtures, a case of 180 drawers labelled for seeds, and sundry tools. The stock includes an extensive assortment of standard and wall-fruit trees, a great variety of well-selected Roses, Geraniums, and Greenhouse plants, Fuchsias, Auriculas, Dahlias, Ipomœas, Myrtles, Camellias, American plants, Shrubs, and Evergreens, some good specimens of Ornamental trees, and fine Mulberries, a number of Gooseberry and Currant trees, various seeds, &c. To be viewed three days prior to the sale. Catalogues may be had on the premises; at the Horns, Kennington; of Messrs. Fairbairn, auctioneers, Clapham Rise; of Messrs. Forrest and Co. nurserymen, Kensington-road; and of Messrs. ELLIS and SON, auctioneers, 26, Fenchurch-street.

TO BE SOLD, about 2000 clean, robust, well-grown Succession QUEEN PINE PLANTS, from 2s. 6d., 3s. 6d., to 5s. per plant; those at 5s. will fruit this autumn, delivered free in London. Gentlemen in want of such will find this an advantageous opportunity of supplying themselves. Application to be made to Mr. RENMAN, Gentleman, 4, Great Russell-street, Covent-garden, or by card, at the Growers', Forest-hill, London.

NATURAL GRASSES, Separate or mixed.—Poa trivialis, P. pratensis, P. memoralis, P. fertilis, P. angustifolia, Festuca pratensis, F. duriuscula, F. ovina, F. rubra, F. elatior fertilis, F. gigantea, F. loliacea, Agrostis stolonifera, A. palustris, Dactylis glomerata, Cynosurus cristatus, Alopecurus pratensis, Anthoxanthum odoratum, Avena flavescens, A. pratensis, A. pubescens, Phleum pratense, Lolium perenne, L. perenne Russellianum.

The above, together with Perennial Clovers and other ARTIFICIAL and NATURAL GRASSES, may be had separate by name, or will be supplied in mixtures of such sorts, and in such proportions, as to suit the soil and situation for which they may be required. The cost of the seeds, this season, is from 30s. to 34s. per acre.

Messrs. SUTTON and SONS have for many years supplied Noblemen and Gentlemen with GRASS SEEDS for laying down permanent Pastures and mending old ones, and have the privilege of referring to estates in many parts of England, where the Proprietors have expressed themselves desirous of recommending Messrs. SUTTON'S Seeds.

The FINEST SORTS for LAWNS, mixed, Warranted free from Weeds, 4s. per Gal.; 30s. per Bush.—Reading Nursery, Berkshire.

MIXED GRASS SEEDS, FOR PERMANENT PASTURE AND LAWNS.

ROGER SMITHE, of Eastling, Faversham, Kent, has for Sale the above Seed at 8s. per bushel, three bushels per acre, containing all the best sorts, with a good proportion of the Clovers and Trefoils properly mixed for the generality of land. Persons are requested to name the soil, as the mixture will be regulated by that. Also all other Seeds proportionably low. These will be sent to any part of the Kingdom.

GARDEN VEGETABLE SEEDS.—A Selection of the best and most-approved kinds, in secure packages, for 40s., 20s., and 10s. each; sent carriage free to any part. Parties are at liberty to name distinctly what sorts they require.—Direct to J. and H. BROWN, Albion Nursery, Stoke Newington, London. A post-office order or reference is required. Superior Melon and Cucumber Seeds, 1s. 6d. per packet.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

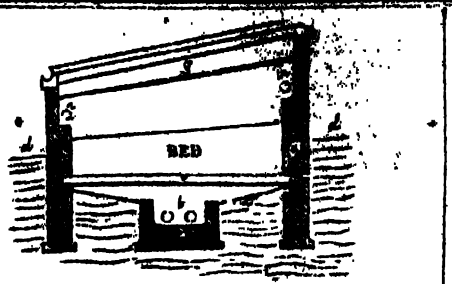
D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

GENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be patiently relied upon: they have put up one at the Horticultural Gardens, where it and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the conical pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melon-pits, &c. &c. The arrangement is such that any gentleman or gardener may have the whole constructed, so as to be put together with the greatest facility by the purchaser, first sending a correct plan to the Establishment. A Prospectus may be had [illegible]



J. WEEKS & Co., ARCHITECTS, HORTICULTURAL BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, Gloucester place, King's-road, Chelsea.

GUANO ON SALE BY THE IMPORTERS,
JOHN BOYD & Co.,
Wellington Chambers, London Bridge, Borough.

GENUINE PERUVIAN & BOLIVIAN GUANO ON SALE, BY THE IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
GIBBS, BRIGHT, AND CO., LIVERPOOL AND BRISTOL.
47, Lime-st., Jan. 31, 1844.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with synopsis of mode of use, on applications to MARK FOTHERGILL, 40, Upper Thames-street, London.

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported.—Apply to COTESWORTH, POWELL, and PRYOR, London; EDWARDS, DANSON, and Co., Liverpool; or WILLIAM J. MYERS and Co., Liverpool, the Importers.

MANURE FOR GRASS, &c.—POTTER'S GUANO.
Testimonial of Lord Zetland, Dec. 2, 1842.

POTTER'S GUANO, 2 cwt. per acre, yielded of *Hay*	2 tons	8 cwt.
Peruvian Guano, 2 cwt. per acre, yielded of *Hay*	1 ,,	18 ,,
Difference in favour of Potter's Guano		10 cwt.

BEAUTIFUL FLOWERS.—POTTER'S CONCENTRATED LIQUID GUANO, in quart bottles, 1s. 9d. each, at the principal Chemists and Seedsmen in town and country.

"I used POTTER'S GUANO on my Pansies; they were *much larger* than I ever had them before, and remained in full blow longer than I ever recollect. JOHN RITSON, Sunderland."

"POTTER'S GUANO will convert your desert into a paradise."—Professor LINDLEY, in *Gardeners' Chronicle*, 1843, p. 560.

Works, 28, Upper Fore-street, Lambeth.

For further testimonials see this Paper of the 6th Jan., 1844.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash	. . .	15s. per cwt.
,, Soda	. . .	12s. ,,
,, Magnesia	. . .	5s. ,,
,, Ammonia	. . .	1s. per lb.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 5ft. by 2ft. 3in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and Son, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

Agents wanted for London and the country.

NETTING, BUNTING, and SCRIMS, for EFFECTUALLY PRESERVING the BLOSSOM of FRUIT-TREES from FROST, in convenient quantities and at small cost, at BENJAMIN EDGINGTON'S Marquee and Rick Cloth Manufactory, No. 2, Duke-street, Southwark; and 293, Piccadilly, London.

"We understand from some of our friendly horticultural acquaintance, that wherever Bunting Screens have been employed, the wall-fruit has set in the finest manner, hence we again recommend this fabric in preference to any other."—*Bell's New Weekly Messenger.*

N.B. Some of the canvas used at the Smithfield Club Cattle Show to be sold as second hand, at moderate price, suitable for Rick Cloths, &c.

HEATH-SOIL.—Numerous Gentlemen, visitors at Bournemouth, having applied to R. WHITE & Co. for supplies of the Fine Heath Peat Soil which abounds in that locality, they beg to inform them that they have now made arrangements to be allowed to remove the same, and can consequently offer it and the White Sand at 10s. 6d. per sugar hogshead delivered free on board a coasting vessel here.

Poole Nursery, Feb. 10, 1844.

Just ready, price 1d.

PRACTICAL HINTS to Practical Men, on NEW and OLD MANURES, by JOHN DODDRIDGE HUMPHREYS, Esq., author of the Electro-Physiology of Man, &c., &c. Full information is here given as to the advantages of the New Manure called HUMPHREY'S FARMER'S COMPOUND, which is not subject like the Guano to be washed out of the soil, but unites the progressive action of the natural with the highest fertilising powers of the best chemical agents. Wholesale Agents, DAVY, MACMURDO, and Co., 100, Upper Thames-street, London.

LONGMAN, BROWN, GREEN, and LONGMANS.

SCREENS for PROTECTING TREES in Blossom and Fruit from injuries by Wasps and Flies, and for shading Hothouses and Conservatories, Pines and Melons, Tulip-beds, &c., &c.

N. HULME, Paradise-Green, Knutsford, Cheshire, manufactures the following Articles:—Canvas Netting, of three different textures, at 1d.; of a stronger Quality, at 2d.; and of Yarn doubled, at 3d. per square yard. Woollen Netting of different sorts, at 5d., 7d., and 10d. per square yard. The above articles are made from one to four yards in width, as may suit the purchasers.—N. H. has for many years had the honour to supply the Nobility, Gentry, and others, in various parts of the Kingdom with the above articles, and has had the happiness to give general satisfaction.

N.B.—Patterns, with the prices annexed, sent (if desired), to any persons wishing to become purchasers. In case of Orders to the amount of five pounds or upwards, carriage by canal or railway will be paid to London, or any place not more distant.

MARDER'S GRAFTING COMPOSITION.—From the expansive and adhesive properties of this Paste, it neither retards the progress of the swelling, nor admits the air, moisture, or frost in the process of healing the Graft, thereby insuring a remedy against failures so prevalent from the adoption of the present imperfect, dirty, and troublesome mode. Sample pots, with directions, at 1s. 6d. and 2s. 6d., sufficient for 100 and 200 Grafts, may be had of the wholesale Agent, Mr. RIPLEY, Hooker's-court, Nicholas-lane, London; VARWELL & SON, Exeter, and of the Proprietor, Lyme Regis. Six small or four large pots will be forwarded to any part of the Kingdom free of carriage, on receipt of a Post-office order to Mr. RIPLEY, or to the Proprietor.

PROFITABLE MANUFACTURE FOR LANDS, &c.

THE PATENTEE of a Clean and Excellent PREPARATION for Fields and Garden Crops, is ready to grant LICENCES, and to supply Skilful Workmen; also ample Instructions for Manufacture and Use. Seedsmen and others connected with Farmers may thus realise a good income from small Capital, without risk; Landlords could soon make their lands fertile.

TERMS.—A Premium of Two to Three Hundred Pounds, according to the extent of district exclusively secured. Undoubted reference will be given.

Address, post-paid, To Chymists—care of Mr. ARNOLD, 12, Curzon-street, May-fair, London.

GRAINS TO LET.—Three Nails of Grains per week to Let, about 12 quarters each Malt. Hay, Straw, Chaff, &c., would be taken in exchange.—Apply to Messrs. STAUNTON'S, No. 9, Strand.

CUCUMBER and MELON BOXES and LIGHTS.—For Sale, one, two, and three-light BOXES and LIGHTS, of all sizes, ready for immediate use, warranted of the best materials, packed and sent to all parts of the Kingdom; two-light Boxes and Lights complete from 1l. 5s. Garden Lights made, glazed, and painted, from 1s. per foot. Sashes and Frames made, glazed, and hung complete, 1s. 8d. per foot.—At JAMES WATES' Sash Manufactory, 9, Clarement-place, Old Kent-road.

*** References given.

On January the 8th, 1844, will be published, handsomely printed in Demy 8vo., Part the First, Price 12s.,

SPECIES FILICUM; OR A SYNOPSIS OF ALL KNOWN FERNS. This first Part contains the ENUMERATION of POLYPODIACEÆ in part, and PLATES 1. to XX. By Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.S., &c., &c., Vice President of the Linnean Society, and Director of the Royal Botanic Garden at Kew.

*** It is intended to publish Part the Second on the 1st March, 1844.

London: WILLIAM PAMPLIN, 45, Frith-street, Soho-square.

CURTIS'S BOTANICAL MAGAZINE.—Just published, price 3s. 6d. coloured, No. 208 of the NEW SERIES of this interesting and scientific work, edited by Sir William Jackson Hooker. It contains beautifully coloured figures of Cereus Extensus—Dracæna Poly bulbon—Ipomœa crassipes—Erica Stanoniana—Tetranema Mexicanum—Scaphyglottis violacea. The above work has been published monthly, without any intermission, for the last fifty-eight years, and stands unrivalled by any other botanical publication in beauty and extent. The whole or any part of the work from its commencement may be had of Mr. SAMUEL CURTIS, at the Botanical Magazine Warehouse, Glasshouse-wood, near Braintree, Essex.

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Mr. Ayres' opinion, see *Gardeners' Chronicle*, Nov. 25, 1843.

Mr. G Glenny's opinion, see *Gardeners' Gazette*, Oct 21, 1843, to correspondent, W J E—Fuchsia,—"Pink sepals, rich purple corolla, long footstalk If the habit of the plant be as good as the flower, it is an acquisition.'

The habit of this plant is very compact, and of a beautiful rich green glossy foliage, and with its rich pink tube, sepals, and blue purple velvet corolla, forms a lovely object

EMPEROR OF CHINA.—This is a fine flowe raised by the same person as Kentish Bride, and submitted to Professor Lindley at the same time. Price 5*s* "No 1, which is smaller to No 2, and having a stout tube. This is a fine flower, with less blue in the corolla."—Professor Lindley.

PRINCE OF WALES.—This also was raised by H. Busby, and submitted to Professor Lindley with two others. *An immense Bloomer*. Price 5*s* "No. 3 is a stout flower of a good colour, with long sepals, which expand freely and expose the corolla, which is of a rosy purple."—Professor Lindley.

*** The Collection, Two Guineas and a half. A remittance from unknown Correspondents. The usual allowance to the Trade where two or more plants are taken.

Bower Nursery, Maidstone, *Feb. 1st*, 1844

GAINES'S NEW AND FIRST-RATE PELARGONIUMS now ready for delivery, in strong, healthy Plants. The following are a few selected:—Gaines's Elegans nova, King of Beauties, Ackbar, Lady Prudhoe, Saxon King, Excelsa, Beauty Supreme, Mogul, Edith, Countess of Zetland, Cotherstone, Egbert. A list of Pelargoniums, Pansies, Calceolarias, Fuchsias, Verbenas, Auriculas, Cinerarias, Chrysanthemums, Dahlias, &c., which contains many new Seedlings of first-rate qualities; plants in May, 10*s*. 6*d*.; also a few roots of his Seedling Dahlias Princess Alice and Twickenham Rival are still to be disposed of at the Nursery, Surrey-lane, Battersea.

H. MAJOR, Knosthorpe, near Leeds, begs to say that a descriptive List of his New Shrubby CALCEOLARIAS, together with a select List of PANSIES and DAHLIAS, is now ready, and may be had on postpaid application. Mr. M. offers the whole on terms worthy the notice of his friends.

A few packets of select Pansy Seed, saved from sorts possessing well-marked eyes, may be had at 2*s*. 6*d*. per packet. Small packets of very select Calceolaria Seed, saved from Mr. M.'s own seedlings, 2*s*. 6*d*. per packet.

DANE CROFT NURSERY, STOWMARKET, SUFFOLK.

SAMUEL GIRLING, English and Foreign Florists, in returning their sincere thanks for the liberal patronage they have hitherto enjoyed from the Nobility, Gentry, and Public at large, both in this Country, England, and Ireland, beg respectfully to intimate that they have received their Full Supply of SEEDS, in fine condition, for SPRING SOWING, of first rate quality.

From the arrangements they have recently made with some of the first Growers, their Customers may depend on receiving Fresh Seeds of all descriptions, carefully selected for J. D. and Sons' Sales.

J. D. & Sons beg to call the attention of their Friends to their Stock of EVERGREENS, FRUIT and FOREST TREES, in their Nurseries of Inverleith and Broughton Park, which will be found equal in quality and extent to any in Scotland.

J. D. & Sons beg further respectfully to intimate that they have considerably extended the Floral Branch of their Business, and they assure their numerous Customers and the Public at large that no pains or expense will be spared by which the efficiency of every department of the concern shall be secured, so as to ensure a first-rate article at the lowest figure.

Catalogues of every article connected with their trade have just been published, and can be forwarded, per post, on the receipt of postage stamps to the amount of sixpence.

N.B.—Noblemen and Gentlemen provided with experienced Gardeners, Land Stewards, and Wood Foresters, whose character and abilities may be depended on.—82, South Hanover Street, Edinburgh, February 16, 1844

GENUINE BEECHWOOD MELON SEED.

R. GLENDINNING respectfully begs to inform the Cultivators of the MELON that he has had presented to him by Sir John S. Sebright, Bart, Seeds of the true variety of his delicious MELON, for besides being one of the very best sorts known, it is of easy cultivation and a good bearer. This opportunity will enable gentlemen to procure it *quite genuine*, which is rarely the case, as the following note will testify.—

"Beechwood, Feb. 5, 1844.

"Sir,—I send you a small parcel of the Beechwood Melon Seed. None that I have seen exhibited under that name, nor any that I have seen grown from seed that has been bought, are of the true sort, but have obviously been intermixed with other varieties. I have grown no other for many years.

"Your obedient servant,

"To Mr. Glendinning "J. S. Sebright."

R. G. has also a few seeds of the true SION FREE-BEARING CUCUMBER, a splendid variety which has been nearly lost.

Packets of the above sent by post free.

Beechwood Melon, per packet . . . . 5*s*.
Sion Tree bearing Cucumber, per packet . 5*s*.

R. G.'s Kitchen garden and Flower-Seeds have been selected with great care, and embrace all the new and good kinds.

Chiswick Nursery, near London, Feb. 16, 1844.

JOHN MILLER, surviving Partner of the late firm of Swinney & Miller, Nursery and Seedsmen, Bristol, begs respectfully to [illegible] Nurserymen, the Trade, and his Friends in general, that he has commenced business as Auctioneer and Valuer of Horticultural and Agricultural Stock, &c., and hopes by strict attention to the interest of his employers, to merit their support. Letters addressed to John Miller, Portland House, Kingsdown, Bristol, will meet with immediate attention.—Bristol, February 16, 1844.

TO GENTLEMEN PLANTING.

J. AND J. FAIRBAIRN are induced from the uncertainty upon which they hold the Manor-street Nursery (situated contiguous to the Rhine Nursery, Clapham Rise, where attention will be given to all applications), to effect a sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy and well-grown stock, consisting of fine large Laurels, twice transplanted, of extra growth; Portugal Laurels, very handsome; Silver Hollies, of various sizes; Evergreen Privets, fine Standard and Dwarf Roses in great variety, fine standard flowering Thorns, Almonds, Æsculus, Robinias, and other Ornamental Trees, and Evergreen and flowering Shrubs, with a large stock of fine standard and dwarf, trained and unclipped Peaches, Nectarines, Apples, Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled; also, a large assortment of Forest Trees, consisting of Limes, Elms, Birch, Beech, Hornbeam, Spanish and Horse Chesnuts, Mountain Ash, Poplars, and Spruce, and Scotch Firs, also a large number of Gooseberries and Currants, of excellent growth, and of the best varieties in cultivation, to all of which J. & J. F. respectfully invite the inspection of Gentlemen and Nurserymen, flattering themselves that the general character of the stock is such as to ensure unqualified satisfaction, and which they are disposed to offer at very moderate prices for cash.

J. & J. F. respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c., which appeared in the *Gardeners' Chronicle*, Oct. 21 and 28.

Nurseries, Clapham, near London Feb. 15, 1844

NEW HARDY ANNUAL

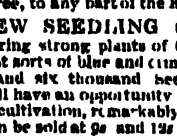
VISCARIA OCULATA—DARK-EYED VISCARIA.

T. AND J. BACKHOUSE, NURSERY AND SEEDSMEN, York, have the pleasure of offering to the Public the above new and beautiful Annual, which is figured at page 51, (No. 10), of the 'Botanical Register' for 1843. The blossoms are of a bright rose colour, with a deep crimson eye, and change to a pale purple. It flowers very abundantly through the greater part of the summer and autumn. It is a native of Algiers and may be sown either in the open ground in spring, or raised on pots and planted out.

Packets, 2s 6d each, will be sent, on the receipt of a Post office order, postage free, to any part of the Kingdom.

SPLENDID NEW SEEDLING CINERARIAS.—Fine early-flowering strong plants of CINERARIAS, saved from the very choicest sorts of blue and crimson colours, selected from between five and six thousand seedlings of last year. Those purchasing will have an opportunity of flowering some of the choicest sorts in cultivation, remarkably healthy, and having a large stock they can be sold at 9s and 12s per dozen, carefully packed for any part of the country. Applications including Post office orders will be immediately executed. Large bunches of SIBERIAN VIOLETS in full flower fit for potting, 6s and 9s per doz.—Direct to MICHAEL BREWER, Sen., Cambridge Nursery.

GREAT YARMOUTH NURSERY, NORFOLK.—1844.



PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS MAJESTY THE KING OF THE BELGIANS, and NURSERYMEN and FLORISTS by Special Appointment to HER MAJESTY THE QUEEN DOWAGER.

A SELECT CATALOGUE of the Newest and very best varieties of FUCHSIAS, VERBENAS, PETUNIAS, and ANAGALLIS, offered by YOUELL & Co.

YOUELL & Co., in submitting their Catalogue of Fuchsias for 1844, take the present opportunity of drawing the attention of admirers of the above elegant tribe of Plants, to their select and superb Collection. They have spared no expense in forming a Selection of such as are really good, to the exclusion of many that are mere nominal varieties; and they would refer to the numerous testimonials of success which attended their mode of selection last season, collections for Amateurs, for competition at the various Horticultural Exhibitions throughout the Kingdom.

YOUELL and Co. being the parties who first sent out per post, with safety, these tribes of Plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a post-office order), to any part of the United Kingdom, upon the following terms —

12 Extra Fine Vars.	12s	the Selection left to YOUELL & Co.
12 Ditto do.	21s	the Selection left to the Purchaser
30 Fine Varieties	40s	the Selection left to YOUELL & Co.
50 Extra Fine ditto	60s	the Selection left to the Purchaser

[With the exception of those marked thus *]

The Plants will be strong and healthy, and ready for delivery by the latter end of March, with the exception of those marked thus* (which will be ready in April), thus ensuring to the Purchaser fine Plants for competition in the ensuing season. Many of the Varieties can be supplied now.

NEW AND SPLENDID SEEDLING FUCHSIAS

* "FUCHSIA LOWRYANA." This brilliant Fuchsia, the entire Stock of which is in the possession of YOUELL and Co., is now for the first time offered to the notice of the Public.

Its exceeding large Tube and Sepals are of the most vivid Vermilion and excessively expansive, surpassing in brilliancy any variety that has yet been raised. It was exhibited at the London Horticultural Society's Meeting, Regent Street, and greatly admired, and was pronounced by all who saw YOUELL and Co.'s specimen plant, to be the most dazzling object of this tribe they ever witnessed. The foliage and habit exceedingly fine, a most abundant bloomer, and will be found a desideratum to every collection. Plants will be ready for delivery by the first week in April, at 7s 6d per plant. Usual discount to the trade, when not less than six plants are ordered.

YOUELL & CO., in calling the notice of Amateurs and others to the following seedling Fuchsias, raised in their Nursery, beg to state, that in the summer of 1843 they have paid very great attention to hybridising the best varieties in cultivation, from which they succeeded in raising upwards of 3000 plants, to the flowering of which one house was entirely devoted last year. And although many varieties, possessing superior claims to the attention of those cultivating this elegant tribe, were submitted for the opinion of D. Lowry, and most favourably noticed, yet Youell and Co. feel that in making a selection of the following six varieties, to which a most accurate description is affixed, will prove not only satisfactory to the purchaser, but to themselves.

These will be ready for delivery in April next, and as the stock is very limited early orders are solicited.

* "QUEEN VICTORIA." Tube and sepals smooth, of a bright vermillion; corolla stout, long of a fine purple rose-colour, forming a grand contrast, and of fine texture. Price 7s 6d. per plant.

* "PRINCE OF WALES." Tube and sepals rosy vermillion, the latter tipped with green, expanding well, and showing a fine corolla of rich rich purple. Price 7s 6d per plant.

* "PRINCESS ROYAL." Tube and sepals bright red; corolla large and exceedingly bright in colour. Price 5s. per plant.

* "MARCHIONESS OF NORMANBY." This is a large and showy flower, increasing four inches from the commencement of the pod to the termination of the pistil; tube and sepals scarlet; corolla stout, having a tinge of purple on it. 7s. 6d. per plant.

* "LADY ADELA PAUL." A flower of good form and substance; fine rosy red tube and sepals, the latter terminating in a decided green; corolla very large and stout, of a beautiful crimson purple. Price 5s. per plant.

* "LADY WATERMAN." Tube and sepals smooth, of a rosy vermilion, the latter turn up and expose the whole of the corolla, which is stout, and of a fine purple crimson. Price 5s. per plant.

When the six are ordered, they will be charged 1l. 11s. 6d. the set.

FUCHSIAS.

	per pair.	s.	d.
Fuchsia affinis, or radicans		1	0
,, arborea		1	0
,, aurantia		1	6
,, Aurora		1	6
Alata (Smith's)		2	6
Belladitoliata, Bolliana, or Rosea alba		1	0
Balloonii		1	6
Bicolor		1	6
Bruceana		1	0
Blanda		2	0
Brockmanii		2	0
*Beauty (Youell's), fine		3	6
Britannia (Smith's)		2	6
Cormackii		2	6
Curtisii		1	6
Compacta		1	0
Cooperi		1	6
Carnea		1	0
Chandlerii		1	0
Conspicua		1	0
,, arborea		1	6
Corymbiflora		1	0
*Countess of Tyrconnel (Youell's), fine		3	6
*Countess of Zetland (Youell's), fine		1	6
*Conservative (Youell's), fine		3	6
Cooperii		1	6
Champion (Smith's)		1	0
*Constellation (Miller's), to be sent out this season, late		12	6
*Candidate (Girling's) in May		5	0
Dalstonii		1	0
Dicksonii		2	6
Delicata		2	0
Duchess of Gloucester (Standish's)		2	0
Defiance (Smith's)		3	0
Elegans superba		1	6
Excelsa		1	6
Eximia		1	0
Eppsii		2	6
Fructum		1	6
Elegans		1	0
Enchantress		1	0
Enchantress (Harrison's)		2	0
Exoniensis		3	6
*Exquisite (Youell's), fine		4	0
Eclipse (Smith's)		2	0
Floribunda Standish)		1	0
Formosa elegans		1	0
Fulgens multiflora		1	0
Floribunda magna		1	0
Gem		2	0
Globosa variegata		2	0
Grandis		1	0
Hebe (Standish)		2	0
Hero of Suffolk (Girling's) in May		7	6
Ivoryana		2	0
Insignis		1	0
King		2	0
Lancii		2	6
Longiflora hybrida		1	6
*Lady Rae Reid (Youell's) fine		3	6
*Lady Soudes (Youell's) fine		3	6
Magnifica		1	0
*Marchioness of Ormonde (Youell's), fine		3	6
*Madonna (Youell's), fine		3	6
Majestica (Smith's)		3	0
Moneypennii		1	0
Magnificent		2	0
Nobilissima (Smith's)		3	6
Pendula (Young's)		1	6
Pulcherrima		2	0
Princeps		1	0
*Prince Albert (Youell's) fine		3	6
Paragon (Smith's)		2	6
*Queen Victoria (Smith's) expect to be sent out this season.		21	0
Queen, quite new, very beautiful, and not yet out. Tube and Sepals large and stout, of pure white, and Corolla dark crimson, plants in April, each		10	6
Racemiflora		0	6
Racemosa		2	0
Racemiflora elegans		1	0
Robusta (Smith's)		7	0
Rogersiana		2	6
Ricartonii		1	0
Smithii		1	0
Splendida		1	0
Standishii		1	0
Splendens (Humboldt)		1	0
Splendens (Kyle's)		1	0
Salmonia		1	6
Stewartia		1	0
Sanguinea		1	6
Styloxa elegans		1	6
,, maxima		1	6
,, pulchella		1	6
St. Clare		2	6
*Sylph Youell's), fine		3	6
Stanwelliana		2	6
Transparens		2	0
*Tagliani (Youell's), fine		3	6
Thompsonia superba		1	0
Tomarilli		1	0
Triumphans		1	0
Toddiana		2	6
Tricolor		1	0
Victory (Smith's)		3	6
Venus Victrix		1	0
Victoria		2	0
Youellii		1	0

[With every other new variety worthy of cultivation, that may be advertised by other parties after the publication of this list.]

YOUELL & Co are preparing a short Treatise upon their successful mode of Cultivating the Fuchsia, and will be presented *Gratis* to Purchasers.

VERBENAS

* "MONARCH," (Youell's). Is a delicate creamy white, surpassing in its size and fragrance every other variety, the tufts of bloom measuring from 14 to 16 inches diameter, and will be sure to give satisfaction. Price 5s per plant.

* "BRILLIANT," (Youell's). This fine variety is of the most vivid scarlet, equal in this respect to "Melindris," the bloom, however, is three times the size, and very fragrant, and will prove most desirable in any collection. Price 3s 6d per plant.

* "PEPOAS," (Youell's). Is a most interesting variety, being a delicate lilac, with a distinct white eye, flower large and fragrant. Price 3s 6d per plant.

* "SURPRISE," (Youell's). Can be recommended, being a variety completely novel, and one that must be cultivated in every collection, the colour being of the richest rosy crimson, or ruby, producing tufts of flowers of 3½ inches in diameter, and delightfully fragrant. Price 1s per plant.

The above four varieties have been selected from upwards of two thousand seedlings, and may be confidently relied upon as possessing superior claims and will be sure to give satisfaction, will be ready to send out in April next, (post free). If the four varieties are taken, they will be charged 15s the set.

Amethystina	2s	6d	
Arraultina superba	1	0	
Baikerii, extra fine	1	6	
Barnesii	1	0	
* Beauty	2	0	
* Blue Queen, Miller's)	5	0	
* Boule de Feu	2	0	
* Bridesmaid	2	0	
Edmondii	1	0	
Emperor	1	6	
Favorite	1	6	
Formosa elegans, (Croft's)	1	6	
,, beautiful plut, with white eye	1	6	
* Fortune Teller	2	0	
Grandis	1	6	
Groomiana	1	0	
Hendersonna	1	0	
Hislopiana	1	0	
Incisa	0s	6d	
,, major	1	0	
Lucoma	1	0	
* Longiflora (Girling's)	2	0	
Melindris major	0	6	
* Minstrel Boy	2	0	
Picta	0	0	
Princess Royal, (Youell's) the best white out	1	6	
* Rendwn	2	0	
Sanguinea	1	0	
Splendens	1	0	
Striata coccinea, extra fine	1	0	
Tenuroides Rosea, do.	2	6	
Tweediana	0	6	
Victory	1	0	
Vivid	1	0	
* Zeuxes (Miller's)	3	6	

To be sent out in April next, per post free, at the following prices, viz —

12 Extra fine Varieties, 6s the selection left to Youell and Co.
12 Ditto ,, 10s the selection left to the Purchaser

[With the exception of those marked thus *]

Any other Variety worthy of collection that may appear after the publication of this Catalogue, can be supplied at the advertised prices.

PETUNIAS.

Beauty	1s	0d	Magnifiora	2s	6d	
Bicolor	1	0	Medora	1	0	
Gem	1	0	Punctata (Miller's) in April	7	6	
Grandis	1	0	Rosea alba	1	0	
Lady Peel	1	0				
Marmora Rosea	1	0				

With every other variety, worthy of cultivation, that may be advertised by other Parties.

Anagallis carnea grandiflora	1s.	6d.	A. carnea grandiflora	1s.	6d.
A. Brewerii	1	6	A. ultimiflora	1	0
			A. speciosa	1	0

The above can be sent free of Postage to any part of the United Kingdom.

N.B.—Foreign Orders promptly executed, and packed [illegible] by parties of many years' experience, thus ensuring their safe transmission.

For Particulars of YOUELL'S CELEBRATED "RASTOLIF RASPBERRY," patronised by Her Most Gracious MAJESTY THE QUEEN, and mentioned in Advertisement of the 10th inst. Also

YOUELL'S TOBOLSK RHUBARB, TWO SPLENDID SEEDLING PICOTEES, FINEST CARNATIONS AND PICOTEES,

All of which are now ready for sending out.

ARAUCARIA IMBRICATA.

YOUELL AND CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms —Fine robust 4 year-old plants, 9 to 10 inches high, 10s. per 100, or 20s per dozen.

Fine Plants of CEDRUS DEODARA 2 ft. to 2ft. 6 ins., 10s. 6d. each.

FUCHSIA SEED.

YOUELL AND CO. beg to inform their Friends and the Public they have succeeded in saving a small quantity of the above from the very newest and best varieties, which they offer upon the following terms; —

A packet containing 100 seeds	10s.	
Do. do.	50 do.	5s.

Sent Post Free on the receipt of a Post office order. Directions for sowing, &c will accompany each packet.

This will form an admirable opportunity to those who intend competing for Seedling Prizes at the exhibitions of the present year. The quantities being very limited, early application will be necessary.—Great Yarmouth Nursery, Feb 6, 1844.

JOHN HANCOCK AND SON, NURSERYMEN, Durham, beg to call the attention of their friends to the following, of which they can supply plants of fine quality: —

"FUCHSIA LOWRYII," which they sent out in a very limited number in the autumn, in consequence of not being able to supply the orders received. They beg to submit the following extract, abridged from the Gardening article of the *Sunderland Times* newspaper —

"We have seen Fuchsia Lowryii a few days ago, and were much struck with the beauty of its general habit, profusion, rich, and elegant blooms. If it has one property more to be commended than another, it is its very bright colours, which are as rich as it is possible to conceive, and very vivid. Its foliage resembles Globosa, only prettier; it blooms freely on small plants distinct from the foliage. The flowers are much larger than any of the older varieties, the tube and sepals are of a fine clear crimson; which open freely, and reflex so as to display the whole of the large corolla, which is of a very bright dark blue, tinged towards the bottom to a deep purple; it cannot fail to be a general favourite with the admirers of the Fuchsia."

J. H. & Son feel confident that this will prove one of the finest varieties ever sent out. Strong Plants will be sent by post at 7s 6d each, carefully packed in tin cases.

FUCHSIAS Brockmanii, Balloonifiora, Cormackii, Champion (Smith's), Britannia (Smith's), Defiance (Smith's), Exoniensis, Eppsii, Deanniana, Fairy Queen, Gem (Ivery's), Ivoryana, Lancii, majestica multiflora (Knight's), multiflora coccinea (Knight's), majestica (Smith's), nobilissima (Smith's), Paragon (Smith's), Rogersiana, St Clare, Stanwelliana, Swalesii, Toddiana. Fine strong healthy Plants will be ready by 1st March, and can be sent by post if the plants are not required to be too large.

GERANIUMS —Constellation (Garth's), Count D'Orsay (Wilson's), Duchess of Sutherland (Gaines'), Lady Webster (Deverell's), Northern Beauty (Hancock's, fine), Nestor (Foster's), Oberon (Hodges'), Prince of Wales (Gaines'), Sir R. Peel (Foster's), Sunrise Lyne's), Beauty of Essex (Wilson's), at 10s, 6d. each; Rising Sun, Queen of the Fairies, Wonder (Garth's), Vanguard (Gaines'), at 9s each. Fine plants of the above, at 2l. 10s. per doz. Anna (Wilson), Alice Gray (Wilson's), Camilla (Wilson's), Duchess of Kent (Gaines'), Enchantress (Wilson's), Evadne (Garth's, Flash (Garth's), Grand Monarch, Gipsy (Foster's), Glory of Jersey, Jubilee (Garth's), Lady C. Shepherd, Madame (Lumsden's), Medora (Foster's), Prince of Waterloo, Princess Sophia Matilda, Van Amburgh (Wilson's), Witch (Garth's). Very strong and healthy plants at 30s per dozen.

Geranium alba, 3s. 6d.; Manettia bicolor (fine); Syphocampilus betulifolia, 2s 6d., Hedge[illegible]s. 6d.; with many other new Greenhouse Plants.

GENERAL DESCRIPTIVE CATALOGUES of Geraniums, Camellias, Fuchsias, Pansies, Verbenas, Cinerarias, Greenhouse and Herbaceous Plants, may be had, on application, by sending two postage-stamps. Their Catalogue of New FLOWER SEEDS, &c., is also ready.

A remittance or references from unknown correspondents will oblige.—West Nurseries, Durham, Feb. 12, 1844.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to Public Competition at the Auction Mart, Bartholomew-lane, on THURSDAY, Feb 29, 1844, and following day, at 12 o'Clock, about 400 DOUBLE CAMELLIAS, consisting of all the leading varieties, beautifully furnished with bloom-buds; also a fine assortment of STANDARD and DWARF ROSES, AMERICAN PLANTS, DAHLIAS in dry roots, &c May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

*** The Camellias will be sold on Thursday, 29th.

TO GENTLEMEN AND OTHERS ENGAGED IN PLANTING

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietors to submit to public competition, in consequence of the expiration of Lease, on Monday, March 4th, 1844, and following days, at 11 o'clock, the Stock of ONE OF THE KENSINGTON NURSERIES, next the Great Western Road, consisting of large, healthy, and well-grown specimens of Ornamental Trees and Shrubs of every description. Variegated and Green Hollies, Evergreen Oaks, and Cork Trees. Large Fan and other Yews, twice transplanted; Common and Portugal Laurels, Arbutus, Alaternus, &c.; Hemlock Spruce, Pinus Laricio, Austriaca, and Nigricans, &c. &c. These grounds have long been celebrated for the health and beauty of their Trees and Shrubs, and safety of removal, and well worth the attention of those gentlemen who intend planting in the spring. May be viewed prior to Sale. Catalogues one shilling each, returnable to purchasers, may be had on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

FOR SALE.—Three pairs of SILVER PHEASANTS, last year's Birds (cheap). Apply to W. LAVE, Post Office, Andover.

TO GARDENERS, NURSERYMEN, and Others.

TO BE SOLD.—Four Acres of excellent Land in the best condition, with Stock, Greenhouses, Frames, Implements, &c. A commodious Dwelling House, with a good connexion of long standing. Can have four Acres more adjoining, if required, with immediate possession. For every particular apply by letter, to JAMES BLACK, 18, Charles-street, Kensington-square.

GRAINS TO LET.—Three Nells of Grains per week to Let, about 12 quarters each Nell. Hay, Straw, Corn, &c., would be taken in exchange.—Apply to Messrs. STAUNTON, No. 9, Strand.

AMERICAN FOREST SEEDS.—Messrs. Edmund Peirasse & Co., 3, London-street, Fenchurch-street, beg to inform Gardeners and Nurserymen that they have just received a large assortment of all the usual varieties of the above, which they are selling at low prices. The Seeds have been selected with great care by a gentleman long accustomed to supply the trade.

Circulars with a list of the varieties can be had on application as above.

THE LATE Mr. LOUDON.—A Public Meeting of the Friends of the late Mr. Loudon will be held in the large room of the Horticultural Society's Establishment, Regent-street, London, THIS DAY, Feb. 17, at Two o'clock precisely, to consider the best means of extricating his Widow and Daughter from the difficulties into which they are placed by Mr. Loudon's sudden death.

It is hoped that noblemen and gentlemen who patronise Horticulture, and also all Gardeners and Nurserymen who are within a reasonable distance, will attend.

NEW FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.

WM. MILLER'S LIST appears in this day's Paper, offering his extensive Collections of the above Plants at very low prices:—as 12 distinct Sorts of choice Fuchsias, for 7s. 6d.; 12 fine distinct Varieties of Verbenas, 2s. 6d.; Anagallis, mixed Sorts, 4s. per dozen, &c. &c. &c. All sent post-free.

Providence Nursery, Ramsgate.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 7, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Tuesday, Feb. 20	Horticultural	. .	2 P.M.
	Linnean	. .	8 P.M.
Wednesday, Feb. 21	Society of Arts	. .	8 P.M.
Friday, March 1	Botanical	. . .	8 P.M.

Mr. Williams is, doubtless, entitled to the credit of having taken great pains to explain in a popular manner, and with reference to the actual ordinary proceedings of everyday business, the nature and proportions of the different materials which find their way into a furnace, and particularly for impressing on the consumers of coal the distinction which exists between the earlier and later periods of the act of combustion, or rather of the act of destruction; for the first step is obviously, as indeed it has been always called, a process of distillation, in which heat, so far from being liberated, is rapidly absorbed from that portion of the fuel which is in a more advanced stage of decomposition. This distinction creates the first difficulty which Mr. Williams proposes to meet; but there is a second, and perhaps greater difficulty, arising from the liability of the coal to form carbonic oxide instead of carbonic acid, a change which renders a given portion of carbon less effective as a producer of heat, in the proportion of 1 to 2.

Both these points have long been well understood by chemists, and in some measure by practical furnace-builders; numerous attempts have been made to diminish the unfavourable circumstances, and to substitute a better state of things; but hitherto without any decided success.

The importance of the first question—that which relates to consuming the volatile products, may be judged of, when it is remembered that each ton of coal produces from 8,000 to 9,000 cubic feet of common illuminating gas; the heating powers of which must be immense, if brought properly into action.

Great, however, as this is, it sinks into insignificance when compared with the possibility of forming carbonic oxide in large quantities. The published analyses of coal are too discordant to furnish materials for accurate inference on this subject; but there is no question that the carbon which does *not* accompany the volatile products—that portion which remains after the hydrogen has taken with it so much as serves to render it luminous—or, in other words, that portion which is represented by the coke in a common gas-retort, is the main constituent of the coal for producing heat. If, therefore, this principal ingredient be consumed in the formation of carbonic oxide, instead of carbonic acid—the former converting only half the oxygen which the latter requires—the loss, as before stated, is one-half of the total heating effects in so much of the carbon as is thus disposed of.

There is a third question which is sometimes raised, and which may be of considerable consequence, though there are no decisive experiments on the subject. It is stated that if the hydrogen be not consumed by the proper admixture of oxygen, it will have a tendency to combine with some of the nitrogen liberated from that portion of air acted on by the carbon, and the resulting compound would of course be ammonia, which is supposed (we know not how truly), to be positively injurious, independent of the negative evil of having lost the unburnt hydrogen.

This is not, perhaps, of much importance, because the hydrogen is worth turning to account, for the first reason; and if this be accomplished, the third point falls to the ground.

The action to which coal is subjected in a furnace, then, may be thus briefly described: The fresh fuel is, in the first instance, heated at the expense of the heat already existing in the furnace; it is then put into a state of distillation, occasioning a still greater expenditure of heat, inasmuch as this process demands all the so-called latent caloric for the purpose of volatilising the hydrogen; and although it is possible that this expenditure may be repaid, if care be taken to assure the combustion of these volatile matters before they are out of reach, there remains still the difficulty before alluded to, of a very different, and, indeed, almost opposite state of circumstances at different periods in the same furnace.

This is the point at which all the inventors start. Some (but these are a minority) propose an apparatus capable of being modified by hand, so as to be adapted to the different stages of fresh, half-burnt, and incandescent fuel. To do this effectually, however, requires more skill and more attention than can be reasonably expected. We must look, therefore, for a furnace which shall be the best for an average state of things, and submit to a little loss at the extreme periods.

To begin with carburetted hydrogen. It is certain that, in order to consume it advantageously, an adequate supply of unvitiated atmospheric air must be supplied to it. Some have contended that this may be done by freely supplying air at the ash-pit, so that more shall pass through the fire-bars than the carbon will take up, and they presume that the remainder will go to combine its oxygen with the hydrogen. Others have supposed that if the door above the fuel have an opening, air may there be admitted in proper quantities, and passing unaltered *over* the fire, will burn the rising hydrogen. A third class requires that the air destined to burn the hydrogen shall never pass within the sphere of the influence of the burning coals, but shall be admitted behind or beyond the fire. Finally, Mr. Williams says that it is not enough to admit the air at this place; the air must be split into small streams to secure its rapid and intimate mixture with the hydrogen, or else combustion will not take place.

Whether it be true that no air will pass through the burning coal (retaining its oxygen), however freely it be supplied, we cannot pretend to say; nor can we assert that it will be sufficient to introduce it in front, but *over* the fire, as secondly proposed. Neither are we disposed to deny that there may be a decided advantage in breaking up the admitted current into a number of small streams, presenting, it must be allowed, a greater quantity of surface to the act of combination than would be afforded by suffering the air to enter at one large aperture. We think, indeed, that, with reference to the place of admission chosen by Mr. Williams, this division is good; for although we cannot agree with his reasonings upon the subject, we think that this arrangement gives the inflammable gases a better chance of being burnt before they leave the furnace, or its immediate neighbourhood.

Mr. Williams's arguments for thus minutely dividing the currents of air we must consider on a future occasion.—*A.*

In speaking of the particular Diseases of Plants, we are not prepared to give a classification of them according to the principles on which systems of Nosology are ordinarily constructed. We shall, however, be obliged frequently to make use of terms which are employed to designate the diseases of animals; but we must warn our readers against supposing that there is any similarity between many of the diseases of plants and animals which have a common name. The important part which the blood-vessels and nerves play in the economy of animals must always produce a great distinction between their disturbed functions and those of the vegetable kingdom. At the same time, we must draw attention to the important fact, that *the tissues of both animals and plants originate in the cell*, and that probably no disease takes place either in the one or the other without one or more of the cells of which they are composed being more or less altered in structure.

The medical man divides diseases into *functional* and *organic*; and under the former head places all those diseases in which he cannot detect an alteration in the structure of the diseased organ; but this arises from his want of the power of observing the minute changes of structure on which the diseased function depends. There is no such thing as function independent of structure, and there is no evidence to prove that a function can be deranged whilst the structure is quite perfect. From the simple forms which the tissues of plants assume, we can much more easily detect slight alterations in their structure than can be done with those of animals. We shall therefore assume that there is no such thing as functional disease in vegetables, and that when disease occurs amongst them, it depends on altered structure, however little this alteration may be observed.

In the great majority of the diseases of plants, a change of structure may be easily seen, and in no case more evidently than in that form which we shall call *gangrene*. This is a term used in animal pathology to indicate the first stage of mortification or death of a part, and may be appropriately applied to the same occurrence amongst vegetables. Gangrene is most frequently met with in the leaves, fruits, and stems of plants, and of these parts, those which are most succulent are most liable to its attacks. It is divided by German writers into *moist* and *dry* gangrene; the moist occurring in the succulent parts of plants, and the dry attacking the woody parts, as the stem, of shrubs and trees. In this country all the forms of gangrene are frequently called *canker*; but this term is more especially confined to a peculiar disease of the bark and stem of Apple and Pear-trees, to which alone we think it ought to be applied, and on which we shall hereafter have occasion to make some remarks.

We shall speak first of Moist Gangrene, as we have recently had some inquiries made concerning its attacks. Of the families in which this disease occurs, it is probably most frequent in the Cactaceæ and Mesembryaceæ; it is, however, not uncommon in the Cucumber and Melon and other fruits, and attacks the Balsam and other succulent plants. On its occurrence in a plant, as in the species of Cactus, the stem is found in different parts to have spots of varying size, which at first have a darker green colour than the surrounding parts. The centre of these gradually changes colour, becoming first yellowish and then of a dark brown or black colour; whilst the circumference of the spot goes on increasing till it embraces the whole of the stem, the same changes of colour being observed. At first the affected parts appear slightly swelled; but they at length contract, and the epidermis bursts, and from the opening thus formed, a dark fluid oozes, which has a fetid, disagreeable odour. If allowed to go on, the disease spreads to the whole plant, the tissues become rapidly disorganised, and an almost entire decomposition of them ensues. On examining under the microscope the tissues of a plant thus affected, before its organisation was destroyed, we found that the greatest difference that existed between the sound and the diseased parts was in the colour of the cells. The diseased cells were much darker in colour, arising from containing in their interior a number of dark granules. They were most abundant near and in the bark, indicating that the disease commenced at this part. They were also more evident in the sounder parts around the hardened masses which are so common in the tissue of Cactaceæ. The fluid which oozed from the diseased parts was filled with irregular-shaped dark granules, of the same size as the regular transparent granules of the fluid of the healthy tissue. In some specimens of the Cactus speciosissimus attacked with gangrene, which we recently examined, we found in the diseased fluid a number of animalcules, apparently belonging to the genus Vibrio. Their body was cylindrical, tapering at both ends, and having the movements of a minute Gordius. We can draw no conclusions from this observation in a single case, but it is interesting in connection with the fact that an animalcule belonging to the genus Vibrio produces the disease known by the name of "cockle" in Wheat.

With regard to the causes of this disease, both cold and moisture will produce it. Succulent plants are susceptible of the action of cold, and if this is long continued the processes of life are no longer carried on, and the laws of chemical action begin to prevail, and the consequence is the departure of vitality and the appearance of this disease. Moisture, either in the soil or in the atmosphere, in too great quantities, will bring on gangrene, and more especially when combined with a low temperature. A too great quantity of water in the tissue, which may occur either from there being too great a supply to the root, or too little facility for getting rid of it by exhalation, will deprive the plant of vital power, and expose it to the destruction of its tissues, from the prevalence of the laws of chemical action.

Such being the cause of this disease, the treatment must always be directed to the immediate removal of them. The diseased parts should be cut away, and every precaution taken to insure a proper amount of temperature, a drier atmosphere, and drier soil. But it should be remembered that these are only relative terms, and that what may be an excess of cold or moisture for one plant, so as to produce gangrene, may be for another plant of the same genus only that which it requires for the performance of its healthy functions.—*L. E.*

BEES.—No. VII.

(Concluded from p. 83.)

The Destroying of Bees and the Uniting of Swarms.—The time of taking or harvesting honey depends upon the locality, the state of the weather, and the lateness of the season. The proper time is when the Bees begin to eat more than they gather; and this, generally speaking, takes place about the 1st of September. In ordinary fine seasons your second swarms and turn-outs will weigh from 30 to 50 lbs. From these you should select some for stocks, the first swarms being generally too heavy. Choose those that have bred well in July and August, that are full of combs which consist of worker-cells. If you should select a first swarm for a stock, be sure that its queen is not three years old. If it is old kill it, and put a young one in its place; for you will, by allowing a queen to die a natural death, incur the loss of about 1*l.*, that is, if your hives are large. If you should select a second swarm or turn-out, that has an unprolific or an untimely-impregnated queen, destroy her, and put a whole swarm with a good queen into the hive. The uniting of swarms is a very simple concern. After having drummed the Bees out of one hive into an empty one, invert the hive into which they are to be put, and throw them *en*

access into it, sprinkling a little sugar and water over them previous to placing it on the board. This is an infallible way of uniting swarms. The proper time to do it is about sunset. But be sure never to do anything with Bees when you are perspiring, the odour of perspiration being peculiarly offensive to them.

Almost everybody knows how to kill Bees. A pit is dug, one edge of which is undermined, in order that the ignited rag, previously dipped in melted brimstone, may not be extinguished when the Bees begin to fall; the hive is placed over the pit, and the soil is thrown round it to keep in the smoke. Some people seem to think that it is cruel to kill Bees in this manner, but I contend that it is as cruel to kill a bullock to get beef, or knock a calf on the head to get milk, as it is to kill Bees to obtain honey.

The taking of Honey and Wax.—Various systems are adopted to take honey from the combs. Some cut the comb piecemeal, and put it into a bag, which is hung up before the fire; some take the lids off the cells, and cause the honey to run through a cloth; and some squeeze the honey out of the comb with the hand. The last is the most speedy way—one man being able to take from hives, squeeze, and run through a bag, 150 lbs. in one day. That the combs may not contain brood when you take the honey, it is advisable, in many cases, to kill the queens three weeks before you massacre the Bees. Swarms will probably issue on or about the 18th day from that on which the queens were killed, but let them go—they are valueless—the season is over. Wax is made like dripping. The combs are boiled in water till all the wax is on the top, when it is ladled into a bag, which is placed on a board in a large tub, and then pressed hard with a small wooden roller. It is boiled again in clean water and put in milk-pans, where it congeals and forms cakes. The boiling wax may also be run through a hair sieve.

The Enemies and Diseases of Bees.—Bees themselves are their greatest enemies; they are very apt, particularly in the month of September, to rob one another. In the month of September, a mouth-piece, that is, a bit of wood with a hole therein large enough to allow the Bees to drag out their dead, and small enough to keep out mice, which are also enemies, should be fixed in the door of every hive. The entrance to the castle is therewith more easily guarded. Still, if one hive be invaded by the Bees of another hive belonging to yourself, the invaders ought to be removed to a distance for a week or two; but if the invaders do not belong to yourself the invaded hive ought to be removed. There are only two diseases of Bees that merit notice in a concise article like this. One of these is caused by back-gone broods, the other by watery honey. The limits which circumscribe my remarks forbid my enlarging on them. Bees never thrive well where there is a back-gone brood; indeed, its unpleasant odour sometimes causes the Bees to leave the hive. In rainy or dull summers Bees are apt to collect honey before the flowers are quite dry. In winter this honey becomes sour and poisons them. I knew a man who gave 20*l.* for 20 stock-hives in autumn. Before the spring following they all died but three, one of which was in an unhealthy condition. Notwithstanding this great misfortune, he realised 20*l.* from the produce of the three during the first year, and it is thought increased his stock of hives a little. Sugar and water are the best remedy. In autumn, straw covers should be put on hives, to protect them against the inclemency of the weather. When snow is on the ground the doors of hives ought to be kept shut; the Bees being apt to come out when the snow is melting, into which they fall and die.—*A. Pettigrew, Wrotham Park, Middlesex.*

THE SPRING MANAGEMENT OF HALF-HARDY PLANTS INTENDED FOR MASSES OR GENERAL DECORATION.

It so happens with the majority of gardeners as well as amateurs, that, through a deficiency of glass, one frame or pit must play in its season many parts. Now, it is very necessary to know how to economise in these matters. It is comparatively easy to produce everything in its season in first-rate establishments, where, instead of there being a want of glass, there is a pit or pits always at liberty. But to make a little glass go a long way, and in some degree to endeavour to compete with more complete establishments, requires considerable knowledge of first principles, and a clever application of them. At this season, those who are placed in the last predicament, are sometimes puzzled to know how to discharge the winter tenantry of frames, wanted for early Cucumbers, Melons, Potatoes, Carrots, &c., with as little injury as possible to these delicate tribes. I will, therefore, detail my mode of accomplishing this, which I have found very successful:—In the first place, a most material point is to take care that the various cuttings, &c. intended for flower-garden decoration are struck early and well established in their store-pots before the winter sets in, as in the event of their being propagated late, they will require to be watered late in the season; and here lays one of the prime secrets in the affair.

Flower-garden stuff of the above description I take care to get into their store-pots by the beginning of September: my mode of potting stores is this:—After a few very rough crocks in the bottom, I place a layer of clean riddled rough old tan to within four inches of the top of the pot; the stores are placed immediately on the tan, and the pots are filled up with a compost, of which one-half is strong or stiff loam in a rough state. Now, this stiff loam is well known to be very retentive of moisture; and when the stores lay hold of this soil firmly, there will be no occasion for watering; they will stand any amount of drought all the winter in very low temperature. The plants may root, shape, flag a little at times, but this is in favour of the whole process. Under these circumstances I always withstand the temptation of watering. Here, then, is a principle of acclimatising, and abundance of air at all times, excepting during hard frosts, is all that is wanted; only keep to these principles, and frost will have less effect. In the first or second week of February, I begin to prepare for removing them; and the first thing to be done is to inure the plants for a week or so, previously to a lower temperature, viz., to a little frost; this is done by refraining from night coverings on evenings which promise a small amount of frost; for, by this time, if they have not been petted, they will endure a little frost, observing that when the weather is very hard, viz., sunny days with intense frost at night, not to uncover in the day; do not let them see the sun by any means; let them remain at rest. The same principle applies to Lettuce, Cauliflower, &c., of course in frames.

This preparation completed, I throw out a trench on the north side of a wall, before my Morello Cherries: the trench is from 2 to 3 feet deep, and 3 feet wide at bottom, sloping to 3 feet 9 inches at top; the plants are lowered into the bottom of the trench about the second week of February, or perhaps the third, according as the frames are wanted—observing to take out some of the very tender kinds, or those liable to canker, as also any kinds from which it may be necessary to propagate; the latter being placed in heat to excite young wood for cuttings, and the former set on shelves in a cool greenhouse or Peach-house.

These cool pits have straw mats for covers, which are made by me from old hacked-out lights, by merely placing new and good straw transversely across the bars, and then tyeing down three laths or strips of wood longitudinally, from one extremity of the sash to the other; these hold the straw firmly in its place. This kind of straw hurdle is very economical and efficient, as two men can make a dozen in a day, and they do to cover Lettuce, Salads, &c., at various periods of the year.

The only management the plants require in their new habitation is to keep the straw hurdles closed down for a couple of days at first, or partially tilted, and to let them occasionally remain on through very cutting winds, observing to close them down always at night, unless in very mild weather.

Towards the end of February they may receive their first watering, taking care to give it but sparingly, and very seldom, until they begin to grow, when they may be potted off singly for masses. It is astonishing to witness the progress they make after coming from these cold pits, and getting into warmer habitations, as they never obtain a glimpse of sunshine in the cold pits.

Much mischief arises to various plants in frames from sudden vicissitudes of weather, especially that of warm sunny days during intense frost. I make it a rule with plants that will stand a little frost, such as Cauliflowers, Lettuces, &c., to get them frozen tolerably hard whenever frost occurs, after they have become hardened (say through December and January), and then to cover them up close with straw, which I never remove while I can keep them frozen; indeed it must not be removed suddenly when a thaw takes place Darkness has no prejudicial effect on them while they can be kept frozen. I have had them in this state for three weeks at a time, with no injury therefrom.—*Robert Errington.* [Excellent advice.]

A KNOWLEDGE OF PRINCIPLES ESSENTIAL TO THE BEST CULTIVATION.—No. II.

(*Continued from page 84.*)

In the process of shifting, whether it be a single and accumulative one or repeated shiftings, it should be remembered that the amount of soil to which any plant is subjected should in all cases bear a strict proportion to the intervening period between the process of shifting and the season of bloom. For instance, Fuchsia tricolor is well known, beyond most varieties, by its premature disposition to form flower-buds, consequently (unless it manifests an exuberant primary growth) it should be excited earlier than others, in order to secure a longer period of growth previous to its season of flowering. A second instance occurs in Fuchsia conspicua arborea (of a noble and distinct habit), much larger in its growth, and later in the formation of its bloom, but not less certain and profuse when its maturity is attained. Thus, two extremely opposite-habited plants are equally fertile under their essential conditions of growth, and hence the error of applying one rule to both.

Other instances might be adduced to show that the most luxuriant growth, of which some plants are capable, is the only direct and certain mode of attaining fertility—as, for instance:—Costus Nepaulensis, and Acacia Kermesina, (the former with white blossoms, enveloped with crimson sheathes; the latter with an elongating spike of elegant crimson tassel-like flowers) both beautiful stove plants, totally dissimilar in structure as well as in the soils essential for their growth, but each requiring a luxuriant annual development of growth to ensure a perfect bloom.

Many objections will, doubtless, be made to an exuberant growth, as being unfavourable to fertility. Other conditions being favourable, I would still urge that the highest capability of plants is generally involved in their most extensive and luxuriant form of growth. An objector would add, "restrict the proportions and cramp the energies of a plant, and I am sure to obtain a certain extent of bloom." I would rather say, where the highest effects are sought for, "provide the means for its perfect growth prior to the season of bloom; encourage Nature to mature its legitimate proportions, and you will ensure a uniform and perfect result."

Apart from the highest known vigour of any given plant, it appears impossible to ascertain what are its capabilities of fertility. I would say to a cultivator, shew me what you deem the most perfect extent of growth in any given plant, and I will define the average excellencies of the same under every other condition of growth. Can there exist any doubt that if the knowledge of any tribe of plants, say Heaths, Pelargoniums, or Pine-apples, should lead to a larger and more perfect growth, that such an advancement will not lead to the attainment of a greater extent of perfect bloom and larger fruit?—Verily not. As every plant is capable of a certain extent of growth under the most favourable circumstances, it may be assumed, that a system of cultivation, equal to a perfect growth, is essential, and antecedent to a perfect development of bloom.

That there should often exist a striking difference in the application of principles to the operations of art, is far from surprising, when the differences connected with professional experience are duly considered, as well as the counteracting influences which a defective education often exerts over men's capacity or taste. How often have early impressions formed habits of preference, until tyrannical custom has become confirmed prejudice. How often have facts proved impotent, until reason has asserted its right to question the opinions of others, and to ascertain the truths upon which such opinions are founded.

These remarks have, in part, been suggested by those of a Correspondent at p. 892 (1843) where an objection is made to the principle that is involved in that mode of cultivation which says, that "plants the most difficult to rear should be removed at once from the cutting or seed-pot to the one in which they are to be exhibited as specimens." To all such criticisms I answer that I have no objection to the method which the correspondent alluded to prefers in his own case, namely, to "have a plant thoroughly established in a small pot before it be removed to a larger one," provided that such a rule is not substituted for the principle upon which my statement is founded, and upon the correct application of which the highest effects of cultivation depend. I will even add that a gardener may be justified in giving a second shift prior to the final one, if such a process is more compatible with his skill, or with the means at his disposal for maintaining a course of treatment sufficient to produce the requisite effect. But any rule which seeks by a repetition of causes for an effect which Nature would produce by the immediate application of one, I do not consider entitled to the name of a principle—which is a fundamental law of Nature. If, for instance, one gardener considers the establishment of a plant in a small 60 of essential importance previous to its removal to a 16 or 12, another may insist upon a further shift to a large 60 or 48 before removal to a 12 or 8, and thus each would claim for his rule an importance which can only be conceded to a principle.

Principles are to be learned, not improved. Their apparent impracticability and variance with general practice in no respect lessens their value, which is determined by their truth, and not (necessarily) by their application. —*William Wood, Pine-Apple Place.*

(*To be continued.*)

FAMILIAR BOTANY.

Morphology.—No. III.

"Le Sphinx n'est plus assis sur le seuil de notre temple!
Pour jamais les secrets s'ouvrent à tous les yeux."

Although sound physiology refuses to sanction, in their full extent, the views entertained by Linnæus, and notwithstanding that it teaches us to know that the process of anticipation is imaginary, yet it is impossible not to admire the farsightedness of that great man, which enabled him to perceive the general nature of the great truths with which the Morphologist is now familiar. His contemporaries, however, in general were so wholly destitute of a philosophical spirit, that they were unable to appreciate the value of his speculations. For them a flower was a flower, a fruit a fruit, and a leaf a leaf. They were contented with the barren knowledge that such organs existed, and it did not enter the imagination of the dull school which Linnæus founded to inquire on what plan they were constructed or by what means the wondrous variety, so eminently conspicuous in the vegetable kingdom, was provided. Occupied with counting the stamens and pistils of a flower, they never considered the general laws of organisation worthy of their study. There was, however, one great exception.

Dr. Caspar Frederick Wolff, a Prussian physician, and one of the Professors in the University of St. Petersburgh, described, in the year 1768,* the manner in which the parts of plants are formed out of leaves, with so much accuracy that modern investigations have done little more than confirm his views. "A man," said Wolff, "must be very dull who cannot perceive that in some plants the calyx is but slightly different from the leaves, and is in fact nothing more than a collection of many small and imperfect leaves. Many of those annual plants which have composite flowers show this very clearly, for you have in those instances leaves becoming smaller and more imperfect as they rise up the stem, until at last those which are highest of all become extremely small, are closely clustered together, constitute the segments of the calyx, and in their mass form, in fact, the calyx itself. The seed-vessel in like manner is plainly formed of leaves, with this difference only, that the leaves which are merely collected together to form a calyx, are in the seed-vessel glued together. This is proved not only by the capsules of many plants which, when they are ripe, split into the

* Novi Commentarii Academiæ Scientiarum Imperialis Petropolitanæ, vol. xii., p. 403.

leaves, or parts, out of which they are compounded, but by the actual structure and external appearance of those parts. So, again, seeds, although at first sight they seem to be so different from leaves, are really true leaves glued together; for the seed-lobes into which they split are but representations of leaves, although indeed imperfect, shapeless, small, thick, hard, dry, and colourless. If you doubt it, only observe how those lobes, when the seed is committed to the earth, by degrees expand into a perfect green succulent foliage. As for the corolla and stamens, that they are only modified leaves is made manifest by many observations. We often see the divisions of the calyx change into petals, and these, in like manner, alter into a calyx; and here, as the calyx is manifestly composed of leaves, and the petals are of the nature of a calyx, it is clear that the petals are also modified leaves. In like manner, we see in polyandrous plants stamens degenerate into petals, and so form double flowers, and then again petals return to stamens: a sufficient proof that stamens also are of the nature of leaves. In short, in plants, wonderfully and admirably as their parts are constructed, all things considered, I can recognise nothing except leaves and stem (for the root belongs to the stem)." And further on, he declares, that his observations have convinced him that "As the force of vegetation diminishes various changes are brought about, and that all the modifications of leaves consist merely in a deficiency of perfection (*in defectu perfectionis*)."

In the year 1790, the poet Goëthe, knowing nothing of the writings of Wolff, but acquainted with the speculations of Linnæus, published his Inquiry into the Metamorphosis of Plants* in the form of a pamphlet of 86 pages, in which he demonstrated, in considerable detail, the truth of most of Wolff's views, and finally laid the solid foundations of what is now called Vegetable Morphology. But at the time when his doctrines were promulgated, Goëthe, like Linnæus and Wolff, found the world too much occupied with the surface of things to trouble itself with inquiries the end and aim of which it was unable to comprehend; and it was in fact full 30 years after the appearance of the last-mentioned work that the science of Morphology became fully established. Since that time it has made such progress that it is, I think, impossible now to name a Botanist of any eminence who entertains a doubt upon the subject; which is justly regarded as one of the clearest manifestations of the power of Him "which doeth great things past finding out; yea, and wondrous without number."—*R. E.*

* Versuch die Metamorphose der Pflanzen zu erklären, Gotha, 1790.

THE ROSE-GARDEN.—No. V.

(*Continued from page 84.*)

Sorts of Stocks for Different Roses.—Different Roses require different stocks. A tree that of itself would make a yard of wood in a season, is confined and injured in its operations, by having, perhaps, a single bud upon it of some rare and tender sort of Rose, which makes but feeble and delicate shoots. If left to itself under such circumstances, the extra sap would find a speedy mode of escape, by sending forth innumerable shoots from below the bud, and the bud would soon have but a bare subsistence. Roses which are free growers, such as the Noisette, &c. will generally be found to succeed better upon the wild stock than others, their habits of growth being more assimilated. The Wild Briars grow very late in the year, perhaps more so than almost any other wild plant; and the free-growing bud avails itself of, instead of checking, this propensity, and draws up the whole sap the standard can produce; thus keeping up the full activity of the tree, thriving and recovering a stagnant stem better, and being less encumbered with suckers than delicate sorts. Comparatively speaking, the White Moss, on the contrary, can hardly be kept alive when grafted upon the Briar.

Again, if a free-growing bud, such as the Noisette, Greville, &c. were put upon a small stock, the bud would entirely drink up the sap of the stock; and, instead of making a fine bushy head, would either grow in one long shoot, or, at all events, make a small and mean head, in comparison to what it would have done upon a larger stem. Stocks, therefore, should be chosen with reference to the purposes they are intended to be put to; the bringer being desired to cut them above the first fork (both in order that the whole stem may be preserved, and that the strength of shoot they are likely individually to produce the succeeding summer, may in some degree be judged of from the quantity of head to be cut off, and its clean and healthy appearance); it should be remembered that stocks being so very easy to procure, none but the very straightest and best should be chosen; and the rejected ones may be planted in some out-of-the-way place, to be used in case they should be wanted. About a third more stocks should be chosen than are absolutely wanted, and the others may be laid in the ground, as a *corps de reserve*; they will most likely be worked in the season, and without costing any trouble, except as to budding, according to their health and strength; the advantage of a supply of different heights, sizes, and sorts will be obtained.

When the stocks are taken up, they should be kept as short a time as possible out of the ground, as the air injures the root. This is of the greatest importance, as the strength of the expected shoots will mainly depend upon it; but if they have been weakened by lying out of the ground, they will regain a portion of their strength by being much shortened in the stem; for the roots of all trees being proportioned to the trunk they have to maintain, it is evident that an injury to the one should be followed by a reduction of the other; and thus, to a certain extent, the more head removed in the autumn, the freer supply of new wood will be produced in the spring.

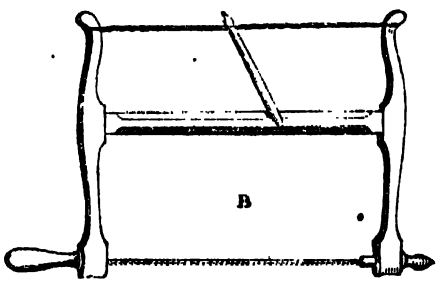
If it be desired to keep stocks some time before planting, they must, like all other trees, have their roots covered with mould, which is technically called, laying in the heels. When stocks are sent any distance, a puddle of clay and water should be made, and the stocks dipped in it, so as to form a coating to defend them from the wind; and then, being packed up in an old bass-mat, they will carry without injury.

The trimming of the stocks is next to be considered; first, as to the requisite height; secondly, as to the mode. The heights most desirable are, four feet, three feet, two feet six inches, two feet, one foot six inches, one foot.

The manner is, by a clean slanting cut, at about an angle of fifty degrees, the upper part of the remaining stock being a quarter of an inch above a bud. If the bud be not enough marked to show its position, let the lower part of the slant be that distance above the ring denoting where the bud is to spring from, and the extra plant can be afterwards removed. The object of cutting so near to a bud is, that when the first shoot starts, the bark may begin to form over the wound; but if there is any distance between the wound and the base of the new shoot, this will not be the case, and the dead wood will gradually eat into the stock. If, therefore, the excision is not made in such way that the stock may begin to be covered the first year, it will be better to leave a few inches (viz., as much as is between the bud cut off, and that desired to produce the new shoot,) that the tender shoots which spring from the inserted buds may be tied to it, delaying its removal till the graft has become strong enough to heal the wound when inflicted. This will in general be about eighteen months after budding, when care must be taken to cut close to the base of the shoot, which enables the rising sap to cover the wound more easily. In all cases the wound should be covered with either the undermentioned mixture immediately, and a small piece of grafting clay, or, at least, a little mould should be rubbed upon it.



Trimming the root is a matter, if possible, of even more consequence, because but one more opportunity will be afforded of reviewing this part of the work, and perhaps none of retrieving mistakes. The longevity of the plant depending mainly upon the roots, it is necessary to shorten all those which are long and thick, and to remove heavy lumps and clumps of unserviceable wood, leaving, as nearly as possible, only such parts as are furnished with small fibres and roots. This will afford an opportunity of planting the stocks with greater care; and of forcing them to make fresh shoots, (which, in good ground, they will be sure to do,) and thus continue to improve. The roots, however, requiring the *same attention* as the branches, for a closer investigation of the subject, see *Transplanting*. It is, therefore, only necessary to add here, that attention must be paid to these points; and for the greater convenience of cutting the roots which are sometimes twisted and in cramped positions, it will be desirable to borrow a carpenter's small saw, of this shape, as well as a hand-saw, and thus



every facility being afforded in cutting the roots exactly as they may require, the work will be much expedited, as well as improved; but it must be remembered, that wherever a saw is used, either to root or branch, the surface left must be smoothed over with a knife.

Having finished these operations, and ascertained the heights desirable for the stocks, this is the proper time for shortening them, previous to planting in rows for budding upon.

Mixture to heal Wounds, and Mode of Application.—Five-eighths of black pitch, one-eighth of resin, one-eighth of tallow, one-eighth bees'-wax:—or, half bees'-wax, half pitch:—or, one pound of white Burgundy pitch, a quarter of a pound of black pitch, a quarter

(*To be continued.*)

Home Correspondence.

Farming and Gardening.—About here, there is a strong prevailing prejudice expressed in the term "that good gardeners make bad farmers." Why this idea should exist I cannot discover, unless the pursuit of Horticulture is supposed to absorb the attention so much as to cause the farm to be neglected, (which can only refer to enthusiasts or mere florists,) as the numberless phenomena to be observed in garden cultivation, and which may escape the notice of the farmer, might be generalised by an intelligent mind, and frequently applied with advantage to the larger business of the field. It is true that there is scarcely a farm-house without its garden, but when it is a large and ornamental one, in nine cases out of ten it owes its beauty and utility to the care of the lady and not to the master, who, if a money-getting man, grudges the land and perhaps the labour, and sometimes even the manure necessary to provide the kitchen with Cabbages, Peas, or Potatoes, and particularly whenas the mistress also thinks more of feeding calves, churning, or brewing, than of ornamenting her table with a bouquet. We may be sure if an early dish of Peas is forthcoming, a fine head of Celery, or a large bunch of Grapes, that the lady has extended her cares to the garden. I know of only two instances in this neighbourhood where farmers make the garden an object of attention; they have each a collection of plants, an abundance of good vegetables, and excellent fruit all the year round; nor are they behind any of their neighbours in the management of their farms, the land is drained, the fences well kept, and they take prizes at the Agricultural shows. In all the other instances of a tolerable garden to a farm-house within the range of my observation, the lady of the house directs the "rotation of crops," preserves the seeds and bulbs, and takes jealous care of the fruit; purchases the plants, and distributes the flowers. Whether this cheerful and necessary appendage to a farm be "kept up" by the farmer or his wife, may not signify much to the supply of Horticultural products for the house; but it does signify greatly that the man should be interested, if he only wishes to avail himself of the information conveyed by the *Agricultural Gazette*. All cultivation on a small scale is *gardening*, such as experimenting on manures, reproducing small parcels of picked seed, examining the relations of certain soils and vegetables, and acquiring a knowledge of the pernicious or useful properties of the different families of plants (as of the Flax Dodder last week). A farmer, adapting himself to the necessities of the times, must become more and more familiarised with gardening operations, and this extending to a habit will also induce a spirit of inquiry, and he will reconcile himself to become in theory, as he already is in practice, a botanist, a chemist, a geologist, and a gardener. —*J. W., Peterborough.*

Gas Tar.—I have tried this substance repeatedly for some years upon fruit-trees in my nursery, and in all cases it has answered the purpose of keeping off hares and rabbits, and instead of being injurious, I imagine the trees are benefited by its application: the only thing necessary to be observed is, that it must be applied when the trees are in a dormant state—say from November to March; if done at any other season it is certain death. My attention was first directed to the use of gas tar by Mr. Elliot, woodman to the Earl of Carlisle, at Castle Howard, where forest planting is done annually to a great extent, and where game is so numerous that it is necessary to apply gas tar to every tree that is planted. At this place it has always answered the purpose of keeping the hares off, and does no injury to the trees.—*William May, Hope Nursery, Leeming-lane, Bedale, Yorkshire.*

Greenhouses and Engine-houses.—A correspondent suggests that engine-houses are well calculated for greenhouse plants, as they are well lighted and heated by the sun and engine, and the work-people have no access to the room. He informs us that Messrs. Wrigley, of Cobster Hill, Oldham, have, in an engine-house connected with their cotton-mills, several Orange-trees in good health, producing moderately-sized fruit.

Cucumbers.—We last week gave a report of the Cucumber exhibition at Ipswich. Since that time we have seen the prize fruit of Mr. Leathes and Capt. Aplin; and we feel bound to state that they appear to us to realise all that can be accomplished by Cucumber-growers. We seldom see such fruit about London *at this time of the year.*

A Natural Mode of Destroying Insects.—During the present severe weather my gardener caught half a dozen of the Blue Titmice (Parus cæruleus), only one of which I succeeded in placing in my greenhouse, with the intention of hereafter setting it at liberty. No sooner had I turned it amongst the plants than it commenced assiduously to clear them of insects; and to my surprise and gratification, I have observed that many which I could not properly cleanse myself, particularly Cinerarias, have been completely freed from these unwelcome visitants; nor has, so far as I could observe—and I carefully examined one or two of the plants—the slightest injury been sustained; and I have enjoyed the greatest amusement in being a spectator of my little captive's labours.—Oleas.

Pruning Forest Trees.—If I were assured by Mr. Hamerton that he had ever seen five acres of plantations or one hundred trees on hedgerows pruned for five years in succession, his objections to pruning might have some weight; but in the absence of this proof I must be allowed to maintain my opinion of the advantages of judicious annual pruning, founded on the experience of 30 years. The plantations at Nerquis have been inspected by numerous individuals of the highest respectability, who bear testimony to their flourishing condition. Mr. H. should also not forget that the land thus planted cost only 1*l.* per acre at a time when property of this [illegible] was more sought after, and that its high situation, [illegible] feet above the sea,) soil, and cold climate, are adverse to the growth of trees. By reference to the *Gardeners' Chronicle* of Sept. 16th and 30th, Mr. H. will find [illegible]h at the bottom, and at seven feet in height, and also the height of clean straight timber, without a branch. The popular feeling against pruning has its origin in the wretched manner in which ignorant planters at uncertain intervals mangle their trees with hatchets.—*Philo-Sylva, Northampton.*

Pruning Forest Trees.—This subject is one which it is impossible to urge too much upon planters, as involving consequences of the utmost importance to the successful issue of much of the extensive planting which now exists over the whole country. I can speak with great confidence of the certain approval which the mode of pruning

as pointed out by Dr. Thackeray must gain for itself, if only fairly and properly tried. The result of it, as Dr. Thackeray states, is "that the sap, which the cut branches would have exhausted, gives vigour and increased strength to the trunk." And why is this the case? Because the sap which nourishes the tree is not only equalised where the trunk most requires it for the production of timber, but the sap so produced is of the most healthy and nourishing description; since the never-failing result of the principle of pruning rightly practised, is to send out leaves from the lateral branches, and these, too, of a fine, full, healthy kind, and in which of course the sap is elaborated.—*R. P. N., Hallyburton.*

How Bees collect Pollen.—Many are unacquainted with the use of the balls of pollen seen on the legs of Bees, as well as ignorant of the way in which they are collected. Reaumur and Buffon, for instance, considered them the elements from which Bees formed wax; this remains uncontradicted in a work by the latter even as late as the year 1821. Another author states that "she (the bee) gathers pollen from flowers with her mouth into round, balls; she sticks these pellets into two hollows, which are on the outside of the same joint on her hinder legs." Bees store up pollen solely as a provision for their brood. Wax is secreted through the segments under their bodies, but it is doubtful how they come by it previous to that singular process. As Bees frequent plants abounding with wax, I imagine that they collect it from them in the same way as the Wasp does its materials from decayed wood, or the Aphis, which produces the glutinous substance sometimes called honey-dew, that differs but little from the saccharine juice the insect had previously sucked from the tree or plant it infested. Some considered Bees' wax to be a "concreted animal soil." Amongst those who held this opinion may be ranked an excellent apiarian, Bonear, who was perhaps as nearly right as some scientific men, when he observed that Bees might produce wax in a similar way as that produced in his own ears. It is worthy of remark that Bees have produced wax when fed on honey and sugar—hence arises the belief that Bees form wax from these substances. But in such cases it is difficult to say what store of wax Bees might have in themselves before confinement. The balls on Bees' legs are accumulated by the insect putting one of its fore feet, which serves as a kind of brush, into a flower and then placing it between a series of strong curved hairs on its hinder legs, where the pollen adheres and forms the little balls. A superficial observer might suppose that Bees collected pollen by "rolling themselves in flowers," in a Hollyhock, for instance, for in such flowers, abounding as they do with pollen, they cannot avoid being dusted with it. "Mealy Bees" may be seen entering and issuing from the hive; the pollen that happens to fall from them when depositing their loads discolours the combs. The colour of pollen depends on the colour of it in the flowers the Bees frequent. Some writers say that Bees collect the greater part of their pollen in the morning, but as dry weather is most favourable for that purpose I imagine that a little farther in the day is more suitable for gathering it, as well as honey; both are alike essential to the prosperity of the colony. Much pollen or Bee-bread being often found in tenantless hives is no proof to the contrary. Bees live on honey, their larvæ upon Bee-bread, as already noticed, and they come more slowly into existence, as the former falls short, owing to want of attendance and lower temperature, occasioned by the Bees dying off. These remarks account for Bee-hives being deserted whilst they contained abundance of pollen in good preservation. —*J. Wighton.*

Feeding Bees.—A Correspondent recommends feeding Bees with loaf-sugar, as moist sugar produces diarrhœa. He is quite correct as to the danger of diarrhœa being produced by moist sugar, particularly by the coarser sorts, and as a preventive I would recommend a small lump of common salt being placed upon the board close to the entrance of each hive. This the Bees are fond of, and it has proved with me a certain cure for diarrhœa. About three years since my Bees were attacked in a most alarming way by that disease, and before I was aware of it I had lost nearly two-thirds of every hive. I then ordered my gardener to place the salt as before mentioned, and, after one or two days, I did not lose another Bee. —*A. F.*

Potatoes.—The subject of Potatoes failing in coming up after planting, is attributed by some to their being planted in one soil for a number of years. They say that the Potatoes gradually deteriorate, and lose their vegetative principle; but this does not always occur. I have planted one sort, known by the name of the Bread fruit, for the long period of twelve or fourteen years, and they are not in the slightest degree altered, either in size, crop, or flavour; they are of a dry and mealy nature. There has not come under my notice one root that was diseased. I fully agree with Mr. Wighton, that the late sorts of Potatoes should not be planted until the latter end of May, or the first week in June.—*Herbert, Sussex.*

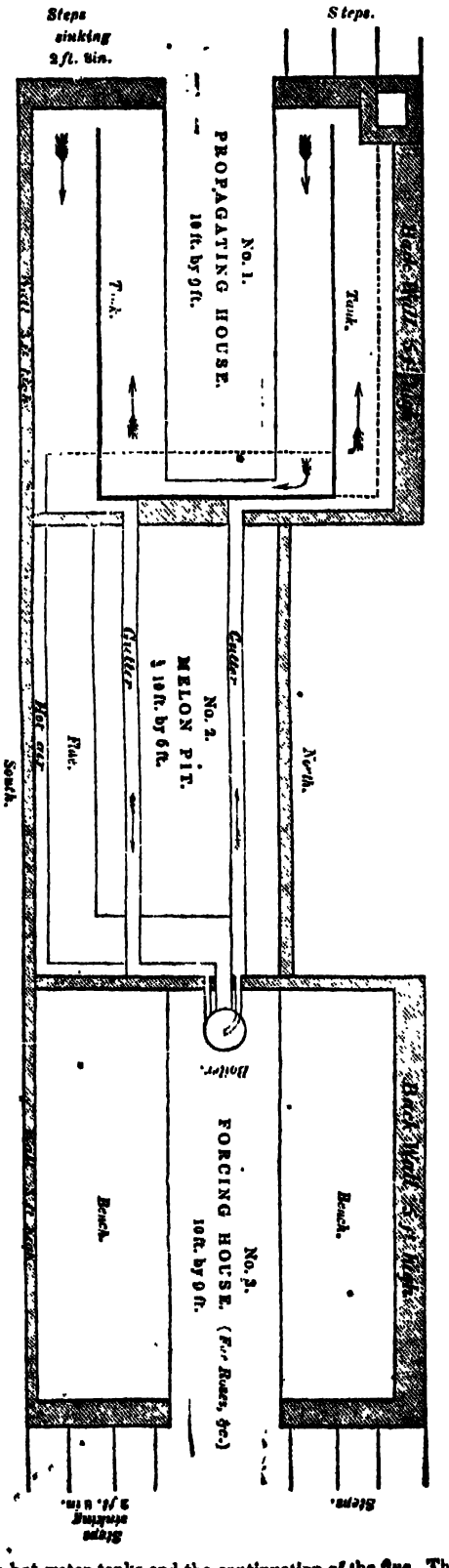
Campanula pyramidalis.—I either sow the seeds, or put cuttings from the old roots in leaf-mould and sandy peat; as soon as they are strong enough I put them off into 60 sized pots, regularly shifting them into larger sizes as the plants require them; when they have gained a little strength, I give them a rich loamy soil, well incorporated with a small proportion of bonedust; and at intervals supply them liberally with manure water. I do not find them flower vigorously under two or three years, but at that age I have had plants of both varieties, nine feet high and covered with bloom.—*J. L. Snow, Swinton Gardens.*

Large Pine apples.—In your accounts of large Pines, allow me to state that you have overlooked my father, who grew three large ones when living at Rheola, with John Edwards, Esq., Neath Vale, Glamorganshire, and which are noticed in the 1st part of the "Gardeners' Magazine," at page 453, in the year 1826. The dimensions and weight were as follows:—

July 18, 1824—One New White Providence, 11 lbs. 12 oz.
April 7, 1826—One do., circumference 21 ins., height 10½ ins., 4 gill suckers, weight 11 lbs. 14 oz.
April 10, 1826—One do., circumference 26 ins., height 12 ins., 4 gill suckers, weight 14 lbs. 12 oz.

The last two were taken from the mother plant, March 29th, 1825, and left four plants as good as those the fruit was cut from. The largest was presented to his Majesty George the Fourth.—*Richard Dixon, Dolancothe.* [We remember these Pines; but what is a Providence, *with four gill suckers*, weighing 14 lbs. 12 oz., as compared with a Queen weighing 6 lbs. 11 oz., and with no gill suckers. The Pine in question was, however, an enormous one certainly.]

Pits.—The accompanying is a plan for pits which I am about to build. My object is to have three distinct compartments of different characters, and to heat No. 3 with the radiated heat from the boiler; the Melon pit with hot-water gutters and a flue; and in No. 1, I intend having



two hot-water tanks and the continuation of the flue. This arrangement, I imagine, will be found exceedingly useful to amateurs, with small gardens like myself, and one that will require as trifling an expenditure for fuel as possible. I should have made my end pits at least 12 feet long, and the centre one 20 feet, but I am confined for space.—*A Friend to Floriculture.*

Vegetable Refuse for Melons.—Mr. Torbron states, that, when gardener to the late Mr. Knight, he prepared a bed of Oak-leaves for Melons, 5 feet high at the back, with a proper slope to the south. On this was placed a frame having 4 sashes, each 6 feet long; it was sufficiently deep to hold 15 or 18 inches of soil, allowing head-room for the plants. The soil was obtained from a meadow, which had been rendered fertile by being flooded from a river, and was mixed with vegetable ashes in the proportion of about 1 part in 30. The plants, which were of a kind then in repute, called the Salonica, were ridged out early in March, and a genial heat was maintained by means of linings. They were watered with water mixed with pigeon-dung. The fruit ripened in due time, and many of them weighed between 6 and 7 lbs. each. Mr. Knight observed that, previous to that time, he had never known one of the same kind to weigh more than from 2 to 3 lbs. One of the Rock Melon, treated in the same way, was also equally good.

Season for Repotting Plants.—Examining some greenhouse plants lately, I found that they had all made quantities of roots round the ball of the plant, and from the circumstance of these having evidently been formed after the plant had ceased growing, it occurred to me that autumn would be a better time for shifting plants than spring. It is clear that these fibres had been made when the plant was in a dormant state, and it is certain that unless they are supplied with fresh soil, the plant will not be able in the following season fully to develop its parts. The practice of spring shifting is attended with danger of breaking these newly-formed roots, and this gives a check to the plants. Plants in general should be shifted during their season of rest, for it is then they make the feeders that supply them with nourishment in the spring, when they begin to grow. Peach-trees and Vines clearly prove the assertion to be correct, for when they are forced without having had a due season of rest, the result is always unfavourable; this arises from their not having had time to form new fibres. When leaves begin to fall off, plants commence to form young rootlets, which absorb nourishment, and from these, on the first excitement of the plant, the sap ascends; fresh roots are afterwards made to keep up a supply through the season. It is necessary to keep these roots as dry as possible in winter, in order to preserve them from rotting, for if they perish the effects will soon be seen on the plants. This is an objection which many have to shifting greenhouse plants in the autumn; but if water is given with caution and the pots well drained, there is no danger to be apprehended.—*J. W. K.* [This statement is open to very considerable doubt.]

Incombustible Thatch.—It has been proved by repeated experiments, that straw saturated with a solution of lime, or common whitewash, is incombustible. This fact is of great importance to the rural population, especially as thatch is thus not only rendered fire-proof but more durable.—*J. Mc I., Hillsborough.*

Melons.—As some gardeners are anxious to grow Melons early, I beg to state that after having tried the Kew Cantaloupe and Carton's Early Cantaloupe, I find Cuthill's Early Scarlet to be earlier than either. I cut one of these here on 13th April, and another on the 27th of the same month; the latter weighed 1 lb. 15 oz., and was exhibited by H. Villebois, Esq., at the Regent-street rooms in May, 1842. I also cut the same kind of Melon last year in the second week in May, and the plants promise to do equally well this season.—*C. M'Gregor, Marham Garden.*

Edgings.—Amongst the different edgings recommended I have not seen the common Heath noticed; in a dry peat soil this is a very neat and convenient edging, and is especially useful when Box will not grow well; it has been introduced with peat with success in the gardens of the Speaker at Heckfield Lodge.—*Totty.*

Potatoes.—In accordance with the directions given in the *Chronicle*, I tried the possibility of procuring fresh Potatoes in the open air in the months of March and April. In this I was so successful, that, from tubers planted in July last, I had good dishes of new Potatoes on Christmas day, and up to the first week in February. Of these, I sent three-quarters of a peck to Norwich market, expecting a high price would be given for such rarities, but, to my disappointment, I was informed that "Sprout Potatoes would not sell!" it was said, they were of too dark a colour to be new Potatoes. How is this to be remedied? they are fair as May roots, when properly boiled.—*M. G.* [Will any of our correspondents answer this?]

Icehouses.—As there was much discussion on the different kinds of Icehouses last year, ask your correspondents to give us their experience as to any they constructed. I thatched a large mass of ice in a sloping bank and well drained it; but either from the soil being damp, or from some undiscovered defect in the thatching, it was all melted in the early part of May. We have had no account of what success your readers had in the cultivation of the Courge courcelle.—*Totty.*

Societies.

ENTOMOLOGICAL SOCIETY.

Monday, Feb. 5.—H. Newport, Esq., President, in the chair. Messrs. Spence, J. E. Gray, Yarrell, and Waterhouse, were announced as having been elected Vice-Presidents, and Mr. Newport re-elected as President. Mr. Rich exhibited several species of the large Beetles of the genus Goliathus: amongst them were G. Druræi, G. polyphemus, and others. Mr. Bond exhibited a specimen of Pontia Rapæ, which was taken alive during the past month. Mr. Doubleday exhibited several Lepidopterous insects from Mr. Barnes' collection of North American insects, and pointed out the identity of several forms with British species, and others closely resembling British forms, although specifically distinct. The President exhibited a living specimen of Hypæna rostralis, which he had kept in his possession since September last, and which during that period had had no food. M. Des Vignes described

several species of Lipterous insects in the late Mr. Barnes' collection, which were indigenous to Great Britain. A paper was read from Professor Erichsen, of Berlin, describing several species of the genus Paradiseus, belonging to the Lamellicorn group of Beetles. A letter was read from Dr. Savage, giving an account of some Goliath Beetles, which he had collected: amongst these were two pairs of the G. quadrimaculata, and a specimen which Dr. Harris had pronounced a new species, closely resembling G. polyphemus. A description of some species of Leucanidæ was also read from M. Guerin Menéville. The Secretary read a letter from Mr. Melley, in which that gentleman had made some inquiries with respect to the insects that attacked the excrement of domestic animals that was used as a manure. He wished to know what species of insects attacked the excrement. Whether their attacks were prevented by spreading it immediately, and whether any advantage was gained by placing the excrement in water and then spreading it, and with regard to insects that attacked the roots of plants, whether they could be destroyed by irrigating the crops which they attacked. Mr. Westwood said that, in reply to this letter, he had stated that the species of insects which attacked the excrement of animals belonged to the families Geotrupidæ, Staphylinidæ, and Sphæridæ; that it was probable they consumed but little of the manuring principles of the excrement, and that irrigation would probably fail to affect insects that attacked the roots of plants. A long discussion followed, in which Messrs. J. E. Gray, Walton, Marshall, Westwood, Waterhouse, and the President, took part, from which it appeared that insects might consume those principles of excrementitious matter, which were of importance to plants, as food; that, as long as insects were destroyed in the larva state, this was of little importance, but that if allowed to attain their perfect state, the manuring power of the excrement would be reduced; and that the best way of preventing the attacks of insects was as quickly as possible to collect the excrement of animals into heaps, as insects only attacked the surface. Mr. Waterhouse remarked, with regard to applying water for the purpose of destroying insects, that this would be more effectual in the perfect and larva state of the insect than in the pupa state, and thus the season at which water was employed would be of great importance. The President announced that the Rev. Mr. Hope had offered two prizes of five pounds each for the two best papers—the one on vesicatory insects, and the other on a subject not yet named.

Reviews.

An Inquiry into the Nature of the Simple Bodies of Chemistry. By David Low, Professor of Agriculture in the University of Edinburgh. 8vo. 1844.

The science of Chemistry is generally considered to be purely experimental, because though every new fact adds to our store of knowledge, and brings us nearer to the comprehension of those forces which regulate the transformation of matter, yet it is wholly impossible to argue from the known to the unknown; *à priori* reasoning has no weight with the Chemist, and though theory may be useful to guide him in experiments, it must never be permitted to bias him in the conclusions he draws from facts. The work of Professor Low is an attempt to establish a new chemical theory, "that all so-called simple bodies are compounds of oxygen and hydrogen;" but it is unsupported by experimental evidence of any kind. Chemists are in the habit of terming those forms of matter which they are unable to resolve into simpler substances, *elements*; and the term is correct, inasmuch as they are the elements of other substances. But it certainly does not follow that they are not compounds themselves. Nevertheless, so long as we do not know of what they are composed, or how to prove that they are compounds—in short, until we have experimental evidence of such being the case, we are not justified in regarding them as compounds, even though we may think it very probable that they are. Professor Low's arguments are ingenious, but they are those of a metaphysician, and not of a Chemist. He has followed out in part the views of Dr. S. Brown, with regard to the possible existence of the same kind of matter in different forms, and possessed of different properties. Much more must be done in Chemistry before such generalisations can be usefully made. It would be easy even now to make many theories as to the possible composition of the so-called simple bodies quite as satisfactory as that of Mr. Low, but we doubt whether it would at all advance the science. Facts, not theories, are wanted; and if we do form theories, they must be founded on facts; whereas the speculations of Professor Low are founded wholly on theoretical views.

Miscellaneous.

The Franconia Raspberry—its Hardiness, and its Value as a Forcing Variety. By A.—This shrub has been cultivated at Salem, in America, for several years: the first winter they were covered; the second year one half of the plants only were protected. Those left exposed to the winter bore as well, if not better, than the protected ones, and appeared in perfect health the summer following. This year the bed contains about one thousand stems, after pruning out; every one in sound condition, and wholly exposed to the winter, which has been a very trying one. Other beds, in different locations, were left unprotected the past winter, and have proved perfectly hardy. If it is unnecessary to protect them, there is a saving to labour in spring and autumn, seasons of the year when gardeners are very busy. Any one in the country cultivating them by thousands, can the next winter leave a part, in an exposed situation, unprotected, and prove the thing. It may be that the protection afforded by houses in the city may be sufficient, and the plant be killed in the open field. They also force well. I tried a few pots of them in the greenhouse, last winter, with different treatment. The result was in favour of those grown in the greatest heat, with a dry atmosphere, and watered with carbonate of ammonia, in the proportion of three hundred parts water to one of ammonia; next, those watered with liquid manure; and last, those watered, simply, which were nearly a total failure, the fruit not swelling off. They were taken up with a ball of earth, before severe frost, and all put in same sized pots, with as much rich soil as could be added.—*Hovey's Magazine of Horticulture.*

China.—Advices have been received from Mr. Fortune, engaged in collecting seeds for the Horticultural Society in China, dated Chusan, Nov. 12. He describes the whole coast of China to the northward as consisting of bare rugged rock, barren sand, and burnt gravelly clay, but with beautiful plants here and there. He had met with very bad weather in his passage to Amoy, but had had an opportunity of exploring the islands of Koo-long-soo and Amoy. On the voyage thence to Chusan, the vessel encountered heavy gales in the Formosa Channel, and was twice driven back, once to Chinchen, and once to Chameo; this, however, gave him the opportunity of landing at those places, and exploring the country for several miles inland. On no occasion had he met with serious obstacles to penetrating the country, but, on the contrary, found the natives particularly civil, much more so than on the coast further south and at Canton. Mr. Fortune had fallen in with hills covered with Azaleas, and with several other good things, seeds of which, in very small quantities, were inclosed in his letters. In particular, he had met with a very beautiful Buddlea, with rich purple flowers, arranged in clusters like a Lilac; and a very fine Campanulaceous plant, with flowers as large as those of Lisianthus Russellianus. What he had seen of China gave him great hopes of fully realising the anticipations of the Society. He was about to proceed to Shang-Hai and Ning-po.

New Zealand Resin.—Dr. R. D. Thomson has published an account of the resinous exudation of the Cowdie Pine, from which it may be inferred that it deserves attention as an article of import. It is a very hard transparent substance, in the state in which it arrives in England, and has long ago appeared to us likely to prove valuable as an ingredient in varnishes; but it was found difficult to dissolve it. Dr. Thomson has, however, ascertained that it may be dissolved in hot *absolute* alcohol and in oil of turpentine.

Mexican Poison, Guaco.—Dr. Uslar, of Oajaca, in Mexico, states in a letter that he has investigated the nature of the celebrated Mexican poison, Guaco. He speaks of its medicinal properties as powerful, and hopes European physicians will investigate its powers. He is of opinion that the plant which produces the poison is a species of Convolvulus, and not the Mikania Guaco, as is usually supposed. He doubts altogether the active properties of the Mikania, which also accords with Hancock's opinion.—*Bot. Zeit.*

Lemons—Himalayan method of Keeping.—"Five dozen Lemons were bought in the bazaar (Srinagur) for about fourpence; six of them, taken indiscriminately from the basket, weighed about five pounds. It is customary to pluck the fruit when it has attained its full growth but is not quite ripe. It is then buried in deep holes in the ground, lining the pits and covering the fruit with dry leaves. In this situation it attains maturity, and if not bruised in packing, retains its form and freshness for a considerable period. I saw some disinterred, after they had been buried for three months, and they were in the most perfect preservation."—*Moorcroft's Travels*, vol. i. p. 55.

CALENDAR OF OPERATIONS

For the ensuing Week

I.—HOTHOUSES, CONSERVATORIES, &c.

Many plants will soon be fit for repotting. When plants are removed to a higher temperature, examine their roots, and see if they are healthy, and if not, shake the old soil from them, and repot them in fresh soil into smaller pots; this is a good mode for preparing plants for the one-shift system, which may be adopted as soon as the roots begin to spread on the outside of the new soil. The one shift should never be adopted until you are satisfied that the roots are in a healthy state and beginning to grow. There is no time when a low night temperature is more necessary than during the next six weeks, as plants are now more easily excited than at any other period.

Conservatory.—Orange-trees, if now removed to an early Vinery or stove, and kept in doors all summer, will come into flower next Christmas with very little forcing. Camellias that have not formed flower-buds may also be introduced into heat in succession from this time; some of them may be expected to flower about the middle of next September. I had some treated thus last year, and they began to flower at that time. Plants of the Fuchsia corymbiflora which were cut back last autumn to the ripened wood, and preserved in any outhouse through the winter, will flower in May if they are now removed to a Vinery or forcing-house. The night temperature of the Conservatory should now be lower than through the winter, say about 40°, in order that the plants may be started away slowly at first; this should be attended to now by all who regard the proper cultivation of their plants.

Greenhouse.—If you guard against frost, there is no danger of this house getting too low in temperature, and air should be freely admitted every fine day, in order to keep the plants from growing too rapidly at this season. Owing to a drier atmosphere being thus produced, the plants in this house will require constant attention with regard to watering.

Forcing pits.—That variety of the common Lilac called Charles the Tenth is the best of them for forcing, as it retains its high colour better than the Old Purple one; and if it was grafted on the Persian Lilac it would check its vigorous habit, and render it more manageable as a pot plant. Has the Double Sloe been submitted to forcing by any one? It would make a good contrast with such plants as the Double Dwarf Almond and the Double Chinese Almond, the Rhodora, &c., all of them flowering before their leaves appear. About the same treatment as that for forcing Peach-trees will suit them; and, being naturally early bloomers, they are good plants for forcing. A steady bottom-heat, a moist atmosphere, and attention to cleanliness, are the chief requisites in early forcing flowers.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

As soon as the ground is a little dried it will be a good plan to have all the vacant beds in the flower-garden forked over, so as to get the soil properly pulverised prior to planting out the autumn-sown annuals. Preparation must also be made for a general sowing of the more hardy kinds, such as Larkspurs, Godetias, Clarkias, Nemophilas, &c., which should be got in the first day the ground is sufficiently dry to admit of sowing them. Proceed with the pruning of Shrubs and common Roses, but leave the more tender kinds until you are sure they will not be injured by frost. The most tender of the Chinese varieties, that were covered in autumn with leaves are in excellent condition, and I expect to carry them through the winter without losing a twig.

Reserve Garden.—See that the plants in this department are not thrown out of the ground by the late frost. If they are loose fasten them. Proceed with planting out biennials as soon as the ground is in a fit state, and prepare a little ground in a warm corner for sowing Stocks and some of the best of the annuals for transplanting.

Pits and Frames.—Here there will be no want of work for the next three months. Some of the Stocks and other annuals sown some weeks back will require potting off, putting 3 or 4 plants in a pot. Put off Verbenas, &c., put in cuttings of all kinds which you are deficient in. Divide and make root-cuttings of Bouvardia triphylla and angustifolia, and get the plants forward and strong for planting out. Put Salvia patens into heat to produce cuttings, and see that everything is in order for the spring, which will soon be upon us.—*W. P. A.*

III.—FLORISTS' FLOWERS.

As a matter of course all Floricultural Calendars must to a certain extent be acted on only as the weather is favourable for the operations there detailed as necessary. During spring and summer, the experienced Florist finds it comparatively easy to point out the previous week what is requisite to be done the ensuing one. But at this uncertain season we must be guided by circumstances. Whilst writing, the frost appears to be rapidly disappearing, it will therefore cause the Florist to be on the alert, and if the weather continues mild, draw the lights completely off the Auricula frames during the day, examine the plants minutely, and see that all is going on well. Should any mild rain fall during the week, they will be benefited by a good sprinkling "*in the middle of the day*;" when the lights are drawn on till them, so that the grass may get as dry as possible before night.

Carnations.—The same observations will apply to these flowers and carefully remove all spotted or diseased leaves.

Tulips.—Still cover with sand as they appear.

Ranunculuses.—Should the beds get sufficiently dry, they should immediately be planted; we usually plant two very large beds, one in about ten days or a fortnight after the other; this gives a competing Florist a better chance, besides prolonging the season of bloom in his garden.

Dahlias.—Still strike cuttings in moist heat as they get long enough.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Where Pines are extensively grown, it would be inconvenient to examine and repot them a few at a time, as they want it; and as the plunging material will now require some addition to keep the bottom-heat to between 80° and 85°, it will be better to have a general arrangement of the whole stock of successions in pots whenever the weather is favourable. Those Plants intended for fruiting in the autumn should be carefully examined, and if the roots are not healthy, or the soil has become close, a partial or entire removal of both, as may appear requisite, should take place. In repotting, the size of pot must be determined by the sort of Pine and condition of the plant. The Montserrat, Jamaica, and some others, make fewer roots than the strong-growing Providence, Enville, and Queen, and consequently require less pot-room. If it is intended to plant them out as soon as it is ascertained that the fruit is formed, smaller pots may be used than if the plants had to mature their fruit in them. In potting, use some Moss over the drainage, and sprinkle a handful of soot over the Moss, to keep out worms. Those of the younger successions that are in good condition at the root should have a good shift, as they will fill a large pot by Midsummer, and the less they have to be shifted, the fewer checks they receive. If the heat in the bed at a foot from the surface is about 80°, do not use much fresh material, as the heat from the sun will soon begin to act upon the bed, and it will be better to have to add a little more round the outside pots in a month hence if necessary than to run any risk of injuring the roots by an over-degree of bottom-heat.

Vinery.—From the time the fruit-bearing shoots are far enough advanced to be stopped, the temperature should be fully 75° by fire heat during the day, letting it fall towards evening, and keeping it as low as 60° during the greater part of the night. This treatment of the Vines should be strictly observed, as they will be more healthy from it, and the crop about as early as if a higher night temperature were kept, and it will be found more economical. The Vines grown in Pine-stoves, and indeed in Vineries also, will be benefited by tying Moss round the old wood, as it will keep them moist and cool, and the sap-vessels expand better than when exposed to dry heat.

Peach-house.—Where the fruit is swelling, the night temperature should be about 60°, and 65° to 75° during the day, by fire-heat. Give air when the sun raises the thermometer to 80°. Careful attention to temperature and syringing will, in most cases, keep down insects; but where this fails, fumigating should be had recourse to. The most effectual way of destroying green-fly by fumigating is to fill the houses moderately on two successive evenings.

Cherry-house.—If the Cherries have set numerously, and are so far advanced as to show which are the most promising fruit, thin out the smallest. Weak liquid manure may now be given with advantage to the plants in pots.

Melons.—For a moderate-sized frame, one plant under the centre of each light is sufficient; but if two are preferred, plant them 15 inches apart lengthways of the frame. In preparing for planting out Melons in pits of a good width, it is better to put the plants within 12 inches of the front-wall, and train them on a trellis towards the back, 2 feet from the glass. Fill the pit to within 3 feet of where you intend the surface of the mould to be with tan or leaves in a fresh state, then lay 6 inches of decayed leaves and dung upon it; then form a ridge along the front of turfy loam, with a portion of burnt marl and charcoal for turning out the plants upon, leaving the remaining space to be filled up at intervals. The plants, when turned out, should be 2 feet from the glass.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Grafting.—Where there are inferior sorts of Apples and Pears, or too many of one sort, procure scions of superior varieties, and keep them till wanted in a cool situation.

Cucumbers.—Sow seeds, or procure a few plants from those who force early. A Cucumber that grows quickly, fruits plentifully, and eats crisp, is to be preferred, where exhibition is not an object. The temperature should range from 65° to 75°, allowing 5° more for sun-heat. If the condensed water on the sashbars is of a pure colour there will be no danger from rank steam.

Celery and Cauliflowers.—Sow in a slight hotbed; the latter to succeed those sown in the autumn. A pot of Celery may be put into the Cucumber frame, as a little will require to be sown thus early if fine heads are expected in September.

Potatoes.—Plant in frames, and forward tubers by putting them in any warm place, for planting under straw covers and hurdles.

Peas and Beans.—A sowing of these will require to be made as soon as the weather will admit.

Hyacinths and Gloxinia, if not done in the autumn, should now be planted the first opportunity, digging the ground deeply, making it fine and just fastening the bulbs on the surface.

Cabbage.—Where there are not plenty of autumn-sown ones, now sow on the warmest border you have, or in a carrot-frame.

Onions and Carrots.—The ground intended for these cannot be too often turned after sharp frosty mornings.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Attend to former directions respecting the work that is necessary to be performed. It would show care, and add much to the beauty of trees if all rotten branches and split boughs were removed, and evergreen shrubs planted under the trees; young Firs, such as Silver, Spruce, and Hemlock-leaved Spruce, *to be headed off at a proper height, might also* be planted as underwood; this may be done by having a cart filled with good rich compost, mixed with leaf-mould to put over the roots when planting. By this means most kinds would succeed, and render the woods much more cheerful in winter.

Coppice.—Forward all necessary works when the weather permits. Having omitted formerly to mention the distances from each other at which Coppice-wood should be planted, I would recommend planting them at about four feet apart each way, as it will be advisable to have plenty of stools to choose from, as some will grow faster than others, and some may fail. In forming a new Coppice, I would prefer planting in masses, each kind by themselves, according to the soil and locality. They would have a better appearance, and it would prevent some kinds from overgrowing others and injuring them, besides it would be more convenient, when cutting, to have each kind separate. I also omitted to mention Birch, and some kinds of Willows, as being very profitable and useful copse-wood, along with Oak, Ash, Hagberry, or Bird Cherry and Hazel, as being the most useful. I may also venture to recommend the Locust-tree in favourable localities. The Hazel might be mixed with tall-growing trees, to draw them up to a greater length.

Young Plantations.—Too much care and attention cannot be bestowed upon these during the early periods of their growth, for all their future value depends upon this. A few trees will naturally take the right way, having a proper proportion and equality of side-branches, with only one leader, but for one of these there are scores that require timely and skilful training to keep them in right order.

Hedge Rows.—It is much to be regretted that there is so little attention paid to the proper training of trees in hedge-rows, which might be made useful and ornamental if a little care was bestowed upon them.

Nursery Work.—As the weather continues unfavourable for many operations in this department, all works that can be forwarded with advantage should be proceeded with, to be ready for the more active operations of planting and sowing, when the weather becomes more favourable.—*W. B.*

State of the Weather near London for the week ending Feb 15, 1844, as observed at the Horticultural Garden, Chiswick.

Feb.	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri. 9	9	29.185	29.164	44	32	39.0	W.	.06
Sat. 10	21	29.339	29.417	43	31	37.0	N.	
Sun. 11	○	29.587	29.704	39	30	34.5	N.	.01
Mon. 12	93	29.966	29.974	39	32	35.5	N.W.	
Tues. 13	24	30.020	30.073	32	23	27.5	W.	
Wed. 14	25	30.022	29.995	42	32	37.0	S.W.	
Thurs. 15	26	29.917	29.919	49	37	38.0	S.W.	.02
Average		29.637	29.780	41.7	32.1	34.6		.09

Feb. 9. Frosty; slightly clouded; densely overcast; rain.
10. Cloudy and cold throughout.
11. Slight shower of small hail; clear and fine; frosty.
12. Uniformly overcast; clear and fine; dense fog, with frost at night.
13. Frosty, with dense fog; hazy and cold; frosty, with fog at night.
14. Foggy; thickly encrusted hoar frost; clearing; densely overcast.
15. Slightly overcast and fine; cloudy; rain in the evening.
Mean temperature of the week 5° below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending February 21, 1844.

Feb.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. %							
Sun. 18	42.8	31.5	37.7	8	0.30 In.	3	1	3	—	2	3	5	1
Mon. 19	44.3	31.6	38.2	8	0.64	4	—	2	4	1	4	3	1
Tues. 20	45.0	32.6	39.3	11	0.51	1	2	3	2	2	5	—	
Wed. 21	46.7	33.0	39.8	10	0.20	2	5	2	3	—	2	6	—
Thur. 22	45.7	34.0	40.1	7	0.29	3	4	3	—	1	3	6	—
Fri. 23	46.0	33.0	39.4	6	0.33	1	2	5	1	—	5	2	3
Sat. 24	46.5	34.7	40.6	9	0.20	—	1	4	2	4	—	2	3

The highest temperature during the above period occurred on the 30th and 31st, 1841—thermometer 58°; and the lowest on the 9th, 1840—thermom. 19°.

Notices to Correspondents.

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Communications from the following Correspondents are in type, and are only waiting till room can be found for them:—*M. G., J. B. K. L., Nemo, J. Wighton, A Practical Man, Peter Mackenzie, Martin Doyle, A Bee Preserver, C. A. A. Lloyd, G. Thompson, W Billington, O., Vitis, Q., J. Spencer, R. Erring. Sen., Gr., J. M. L.*

Agrostis Spriatus.—*Proteus.*—This plant is a native of Brazil, and produces its pretty bell-shaped flowers, of a bright yellow strongly veined with scarlet, for ten months in the year. It likes a moderate supply of water when growing. The temperature for it may be that of the open air in summer—about 75°, at most. The kind of soil to grow it in is not important, but it must be allowed to have plenty of pot-room for its roots, or it loses its leaves at bottom, and becomes naked and unsightly.‡

Charring.—*O.*—Soda put on a hotbed, and sticks inside it, may be greatly reduced, but cannot be considered charred by any such operation.

Deodars.—*Georgn.*—Place cuttings of the half-ripened wood with the points cut off, under a handglass, in a very little bottom-heat, and they will strike root.

Emigration.—*A Poor Cabbage* will do better here in a comfortable place than in the United States or anywhere else. We do not admire the land of repudiation, and cannot recommend any one to go to a place where swindling is the national characteristic. If *Cabbage* is in such a state of fermentation that he cannot remain as he is, then he had better try Canada or New Zealand, provided he has some money, some patience, and a great deal of energy. Any place, however, is better than one where you have a large garden, 1400 pots, 140 succession Pines, 120 fruiters, Peach-house, Vinery, pleasure-ground, and kitchen-garden, with only one man, who is often absent six weeks at a time. If there is such a place, we can only say that the master ought to be his own slave; and if gardeners would take our advice he should be so.

Exhibitions.—*An Exhibitor.*—It is rather a nice point whether Clematis Sieboldii and azurea grandiflora can be called greenhouse climbers or not. They are certainly hardy, but they thrive much better in a greenhouse than out of it. You had better inquire of the secretary what the practice is of the Society where you propose to exhibit.

Florists' Flowers.—*Warwickshire.*—Your Chinese Primrose looks like a half-bleached variety of the dark-red notched kind. The specimens are much withered; possibly as there are very few varieties at present of this plant, that you have sent may be worth keeping.

Pharmaceutical Journal.—*Oliver.*—Your question should have been addressed to the "Pharmaceutical Journal." According to the archives of Pharmacy, a sweet fumigating inflammable fluid is prepared by mixing together 48 oz. spirits of wine, 4 oz. Tinct. Benzoin, the like quantity of Tinct. of Vanilla, of Acetic Ether, and Oil of Bergamot, each 1 oz.; 2 oz. Oil of Cedar, ½ oz. of Tincture of Musk and of Peruvian Balsam; Oil of Mace, Oil of Cloves, and Oil of Cassia, each ¼ an oz. We cannot again answer such questions as this, which have nothing to do with the subject of our Paper.

Gherkins.—*J. B. K. L.*—The little prickly Russian Gherkin is often used in pickles, and it is always distributed by the Horticultural Society; but, from the description given by a late correspondent, we suppose that he meant the Cucumis prophetarum, a bad material for such purposes. C. Anguria is also used in the same way, but is equally objectionable.

Heaths.—*Dianthus.*—These are best struck early in autumn, but they will do now. Put them in silver sand under a bell-glass, and wipe it out every morning and evening. We never saw cuttings of forced Pinks used, and should doubt whether the practice is worth attempting.

Hawker's Licence.—*W. K. I.*—Garden seeds cannot be carried about the country and sold from door to door without a hawker's licence. Every hawker, pedlar, &c., must pay a duty of 4*l.* for each year; and if he travel with any horse, ass, mule, or other beast drawing burthen, the additional sum of 4*l.* yearly for each such beast.

Holly-berries.—*A Subscriber.*—Of your Holly-berries that were mixed with sand and buried this winter in the ground, if sown in March, a few may come up during the summer; but they will not grow, generally, before next season.‡

Insects.—*A Subscriber's* Scales from the Peach-tree appear to be the Coccus pateliformis—*Gard. Chron.*, vol. iii., p. 517; the smaller ones running about are the young of the same, but it is very probable that a smaller *species* may also infest the Peach-tree. *R.*——*O.*—We doubt whether guano sprinkled among compost will kill wireworm.——*J. D.*—No. 1 is closely allied to the Coccus Testudo, of Curtis, and thus are probably identical; 2, is a Lepisma, but I neither know the species, nor can I say upon what it feeds; 3, is Aspidiotus Bromeliæ, of Curtis; 4, is a young Helix; 6, the leaf has probably been punctured by an exotic Thrips. The box No. 5 was crushed and empty. Pill-boxes, unless cut down and well made, will not bear the pressure by post, and the stamping at once destroys them. If a pill-box be cut down to the depth of half an inch, and a slice of cork of the same thickness, but very much smaller, as the cork of a vial, be stuck in the centre with sealing-wax or a wafer, the lid and bottom will not sink in, and there will generally be plenty of room left round the cork for specimens; for the same reasons nothing can be worse adapted for transmitting fragile or living objects than lucifer-boxes, which are often employed. For small insects the barrel of an old pen or a quill stopped at both ends with cork, is an admirable protection per post. As the period is now approaching when we expect to be favoured with numerous specimens both from the Gardener and Farmer, we hope our recommendations will be adopted, that specimens may arrive safe, and enable us to give satisfactory answers.—*R.*

Lawns.—*F. R. S.*—A good kind of Grass for improving a lawn is Crested Dogstail; it may be sown in March. The common practice is to bush-harrow the lawn in order to stir up the soil a little for the seed, which should be sown broad-cast when the ground is damp, passing a garden roller over it when the ground becomes sufficiently dry.‡

Luculia gratissima.—*Rhodon.*—This is an excellent Conservatory plant, but we never saw it tried in a window; it succeeds well in a mixture of turfy loam and peat. It may be propagated by cuttings, which require bottom-heat.——*W. C.*—It is not a climber, but a beautiful greenhouse shrub, with large fragrant blossoms, having some resemblance to those of a Hydrangea.‡

Manures.—*Ignoramus.*—Charcoal seems useful for everything; the softer it is the better. We know nothing of the action of Potter's liquid guano; but his common guano is no very good that it is worth trying the other. Nothing that we have seen acts on Pelargoniums like superphosphate of lime.——*O.*—We never heard of Rushes being used as manure for Auriculas. Bran, soaked with soapsuds, which has lain two years or nearly, although not reduced to a soil, is fit for use. Kill the small dingy-coloured worms, by moistening it with boiling water.——*A Lady.*—Nitrate of soda is no doubt useful to greenhouse plants if mixed in the water used in watering them. The weaker the solution the better. Instead of 2oz. to 6 gallons of water we should only use half as much, or even half that, and trust to the quantity that will be given by slow degrees. A much better material is Potter's guano or superphosphate of lime. If you love your plants they will take it kindly of you to give them some.

Morphology.—*E. B.*—We are much obliged for your very sensible letter; but we make a point of not coming into contact with such people as those to whom you allude. It is true that the criticism is "a production which for egotism, ignorance of the subject-matter in dispute (!), and illiberality, cannot be paralleled in the whole range of English literature," and for that very reason it is beneath even contempt.

Names of Plants.—*Cork.*—If you will again refer to p. 71, you will see that the account of Statice rytidophylla is a mere extract from the "Botanical Magazine," with which we have nothing to do. Your leaf is surely not it, but seems to be S. oleifolia, or some such species. S. Dicksoni, or Dickensoni, is in the way of S. arborea, and is the same as S. rytidophylla.——*O. B.*—1. Cineraria Tussilaginis var.; 2. Erica gracilis; 3. Indeterminable; 4. Ditto: perhaps Bignonia pandorea; 5. Lavandula dentata; 6. Indeterminable. Plants out of flower cannot often be named with any accuracy.——Δ.—One of your Begonias is coccinea, the other has no good flowers, and we do not recognise it; the plant called Hibbertia is Pomaderris elliptica.——*W. M.*—Your Gesnera, which looks like a cross between G. Douglasii and bulbosa, is handsome and new to us.——*S. H.*—1, Carex fulva; 2, Scirpus sylvaticus; 4, Blechnum boreale; 5, Asplenium ruta-muraria; 6, A. adiantum nigrum; 7, Polypodium vulgare. ‡——*Tropical.*—Next week.

Oaks.—*Crustyman.*—There is no good reason to suppose that Wainscot Oak is produced by the Quercus Cerris. It is probably the wood of Q. sessiliflora run up in the close forests of the Continent.

Peach-trees.—*A New Subscriber.*—Your Royal George Peach-tree has been planted in soil too highly manured. You must manage it in summer in such a way as to have no occasion to cut out over-luxuriant shoots in winter. Much cutting will increase the tendency it has to gum and canker. Withhold manure from the border till such time at least as the tree begins to bear.‖

Pea.—*A Subscriber.*—The Pea you sent of the variety which grows with you to the height of 9 ft., and which you say is the best tasted of any you have ever met with, continuing in eating when other Peas are hard, is Knight's Tall Marrow.‖

Pears.—*J. W. T.*—On your three worthless Pear-trees on a north wall, you may graft for fruit to come in between January and March, Hacon's Incomparable, Ne Plus Meuris, and March Bergamot; but early varieties are more appropriate than late for such a situation. Grafts from the garden of the Horticultural Society cannot be obtained except by Fellows of the Society.‖

Pine-apples.—*X. Y. Z.*—We do not advise you, as a novice in Pine-growing, to attempt them out of pots. Try that way first, and when you have become acquainted with their pot management, then turn them into a bed of earth, warmed by hot-water gutters. Soil is of less consequence than good management. See what is said on this subject at p. 19, of the present volume.——*J. B. K. L.*—The instance you mention is noticed to-day. It, however, was not a Queen Pine, but a Providence, which is a very different thing.

Pits.—*An Irish Economist.*—Mr. Paxton's plan of a pit is only for its construction and not for heating it. It need not be heated at all, or it may be warmed in 20 different ways. Our columns have, of late, been occupied by descriptions of heating, all of which are, no doubt, more or less good. Will none of them suit you? We fear clay pipes will not answer. Some say they do, but in our experience they do not. We cannot give plans of boilers; that is the business of those who sell them. Rogers's conical boiler is a truncated hollow cone.

Polyanthus.—*O.*—The florists who use for these flowers the soil in which Cowslips grow, do so upon the supposition that plants know better than we do what they like; and no doubt florists are right. The Polyanthus and Cowslip have exactly the same habit and constitution.

Potatoes.—*Argles.*—Lime is a good manure for Potatoes. If you can get lime-rubbish, so much the better. We should give the land a good dressing—say 20 loads an acre of lime now, and stable-dung at the time of planting. You would no doubt, however, find your account in using a few bushels of Potter's guano instead of lime. It costs more, but produces more! and then you may sell the stable-dung.——*Ignoramus.*—Nothing will make Potatoes mealy that are grown in the shade. They *must* have light, and plenty too, if they are to be of good quality.

Potted Plants.—*O.*—When pots are lined with moss the young roots are entangled in it, and hold the soil together, so that shifting may be easily accomplished. Or, if sphagnum moss is employed, it keeps the soil damp. Half-decayed woollen rags would probably be useful in potting, but we never saw them tried.

Pruning Forest-trees.—*Dendrophilus* will appear shortly. We have already so fully and repeatedly expressed our own opinion on this subject that we cannot undertake to renew it again speedily. Col. Greenwood's new book will, however, probably lead to some discussion.

Raspberry.—*T. P.*—We will inquire.

Stakes.—*Midland County.*—Point and char your Larch poles, by all means, before you drive them. But did you not see what was said in our last Number about Seyssel asphalte for this purpose? There is no object in putting them in round. If driven close together, and secured by a lath nailed to the top, they make the best of all hare-proof fences.

Sugar-bakers' Scum.—*Opus.*—We regret to be unable to give you any information concerning the action of this substance. It is reported to render Grass very rank, which is quite in its favour; and it is said to be good for Turnips; but we can get no satisfactory intelligence upon the subject. Our correspondents would much oblige us if they could furnish some information respecting it.

Timber.—*E. H. L.*—Larch-poles, of 6 inches average diameter at the largest end, are worth about 2*s.* 6*d.* each in London, Good Oak is worth from 5*d.* to 7*d.* a foot superficial in the inch, which must be what your sawyer means, and not 4*d.* a foot for the ¼ inch. English Oak is worth from 6*l.* to 8*l.* per load, according to quality. We will take measures in a week or two to publish the London prices of English timber, and continue to do so from time to time.

Vines.—*G. M.*—Having two small Vineries to furnish with 7 plants each, you may plant in the early one, 3 Black Hamburgh, 2 Royal Muscadine, 1 White Sweetwater, 1 Black Prince; in the late house, Black Hamburgh, 2 Charlesworth Tokay, Muscat of Alexandria, 3 St. Peters. For fruiting in pots, Black Hamburgh and Royal Muscadine. ‖——*A. B.*—It will be advisable to manure your Vine-border with superphosphate of lime. Let the roots be kept dry in winter, but moist in the growing season; the reverse of this is most probably the cause of failure as regards your crops of fruit. If in consequence of its being situated near the house, you prefer having the border neat and rather gay during the summer, you must select such plants as will neither root deeply nor overspread the surface, and they should be thinly planted.‖——*Emily.*—A fall of 18 inches on a width of 4½ feet will be quite enough for your verandah, especially as you intend to have it glazed with British sheet-glass; and if you do so, there will be very little risk of damage from hail storms. Vines will succeed if planted to grow up the supports in front, and trained under the glass. For this situation, the Black Hamburgh and the Royal Muscadine are most suitable varieties.‖

Vines in Pots.—*Peter C.*—Vines for early forcing may be coiled once round with some advantage, because a store of perfectly-elaborated juices is contained in the mature wood; which will prove useful in forming leaves in the first instance. But it must be borne in mind, that if a great length of wood is coiled in the pot, a large portion of the returning sap from the recently-formed leaves is appropriated by such great bulk of wood, and the latter gains an accession of tissue from that which would otherwise have gone to the formation of fresh roots. The Canes should be potted in January, and brought gradually forward, so as to break the buds before March, when sufficient light will be obtained for the expanding foliage; after which there will be a long enough season to prepare them for fruiting next summer.‖

Whitney's Transparent Fluid.—*X. Z.*—The following is Mr. Whitney's answer to your inquiry:—"The calculations I made, and which I still adhere to, was on *glazed calico*, which I have found to take as nearly the quantity specified as possible; but I find that different materials require larger quantities of the composition to render them waterproof. Book muslin takes considerably more than glazed calico, as all the compartments of that thin fabric must be filled up. Very thick calico without glaze also takes more to saturate it, for which reason I have particularly recommended that parties should use glazed calico, and apply the composition on the side *not* glazed. Your correspondent must have omitted to read the directions, or he would then see that the composition is to be put on *hot*. I have no doubt, however, that when his calico is dry it will be perfectly impervious to moisture, and I should be inclined to let it stand the summer, and give it a coat in autumn, if to remain out all the winter."

Miscellaneous.—*T. S.*—We know of no proportion for mixing oil, &c. for white paint; your own observation will tell you when it is of a proper consistence. If yours rubs off like whitewash, it may be because you use bad oil; but it is more likely to arise from using bad white-lead, which is often adulterated with common whitening. Get good materials, of respectable people, who do not profess to sell cheaper than they can buy, and your paint will be as good as your neighbours'.——*J. B.*—You may plant a Pyracantha, or a Chimonanthus, or a common Laurel, or an Alaternus, or a Phyllirea. We should plant the first. Violet-seeds cannot be readily bought. Why not get the wild sorts out of the woods? none are sweeter. They may be planted now, and will blossom soon; but we doubt if they will succeed. Better try Periwinkle and Lilies-of-the-Valley.——*Uckfield.*—We are in possession of an answer to your question from "O." that will be forwarded to you upon your giving us your real name and address.‡——*R. L.*—Address, "The principal Superintendent of the Gardens, Hampton Court."——*Eats.*—A book is at the office for "Eats."——*Alpha* will find directions for the management of the Tuberose given at p. 149, 1843. ‡——*Theta.*—We do not know where seeds of the Sirdar Melon may be had. Your letter is sent to Mr. Fleming. ‡——*A Constant Reader.*—The term struck hive in the article on Bees was misprinted for stitched hive, or the hive with sticks in it. Your other questions will be answered by Mr. Pettigrew himself, to whom your letter is sent. ‡

Erratum.—Feb. 3, p. 70, Polyanthus—for "pin-eyed" read "pin-eyed."

*** As usual many communications have been received too late for answering this week.

EXAMPLE FARM.

WANTED, to Rent on Lease, for a term of not less than 21 Years, to enter at Lady-day, a Commodious Dwelling-house, and about 120 acres of Arable Land, for the purpose of forming it into an EXAMPLE FARM. It must be near to a Railway station, and within 50 miles of London; on the greensand formation, under the chalk, or on the London clay or plastic clay above the chalk.—Apply to Mr. Morton, Chesterhill, Stroud.

AGRICULTURAL SCHOOL.

MESSRS. NESBIT'S ACADEMY, 38, KENNINGTON LANE, LAMBETH, near London.—"From Chemistry alone further progress in Agriculture is to be expected."—Liebig. In this school, in addition to the general routine studies, every facility is afforded for the acquisition of a sound knowledge of Chemistry. The pupils are *practically* taught in the laboratories, the methods of analysing the various earths, soils, manures, &c.; and likewise the means of detecting the substances abstracted from the land by different crops. Land Surveying is also taught practically, as well as theoretically. A copy of a lecture on Agricultural Chemistry, delivered by Mr. J. C. Nesbit to the Maidstone Farmers' Club; and the terms of the school, which vary from 40 guin. to 70 guineas per annum, may be had on application, either personally or by letter.—Mr. Nesbit's Works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, Education, &c., may be had of all booksellers.—References: Dr. D. B. Reid, F.R.S.E., &c., Author of "Elements of Practical Chemistry," &c., St. James' Park, Westminster; G. F. Richardson, Esq., F.G.S., Author of "Geology for Beginners," &c., British Museum, London; W. and J. Gibbs, Esqrs., Civil Engineers, Devonshire St., Portland Place, London: Rev. T. Duffe, Carlisle Episcopal Chapel, Lambeth; R. Greenhill, Esq., Ashford, Kent; and C. G. Whittaker, Esq., Barming, near Maidstone Kent.

The Agricultural Gazette.

SATURDAY, FEBRUARY 17, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Feb. 21 . Agricultural Society of England.
Thursday, Feb. 22 . Agric. Imp. Society of Ireland.
Wednesday, Feb. 28 . Agricultural Society of England.
Thursday, Feb. 29 . Agric. Imp. Society of Ireland.

FARMERS' CLUBS.

Feb. 20 { Chepstow. / Fairford. / Hadleigh.
March 1 { Wrexham. / Debenham.
Feb. 29 Richmondshire.
March 8 { Cullumpton. / Cardiff. / Gloster.

In continuing the observations we commenced last week, our object is, as it was then, to ascertain THE CHEAPEST WAY OF KEEPING FARM-HORSES; and we are now inquiring into the amount of labour involved in the use of various implements, merely because it is necessary to ascertain how far this affects the evidence offered by many, as to the sum total of the expense connected with horse-labour. It is necessary to know what portion of this sum may be owing to other points of farm management—to the adoption of particular implements, for instance—before we can determine what the tendency of this evidence is. The remark we made in our last *Gazette*, that the total expense of horse-keep incurred by the Berkshire farmer who uses waggons, might be much greater than that incurred by the Scotch farmer occupying the same number of acres of a similar soil, who uses carts, without there being necessarily greater economy in the stables of the latter, was not intended to justify the former in his practice; it was brought forward merely to show, as we have just said, to what an extent the expenses under this head depend on particulars not immediately connected with it; and we shall find that the form of the plough is one of the most influential of these particulars; that the difference in the power required for the performance of a certain amount of work with the cart and the waggon, is not greater than that in the power required to plough a certain extent of land with the various forms of the implement employed in different districts for the purpose.

We do not intend entering now on the subject of wheel and swing ploughs, either as to the quality of the work done by them, or as to the power required to draw them; it is sufficient for our purpose to show that, let the cause be what it may, there is a great difference in the force required to draw different ploughs, when opening furrows of the same dimensions in the same kind of soil. Mr. Pusey, who first directed attention to this subject, detailed the results of his experiments in the English Agricultural Society's Journal, and from his paper we have compiled the following table:—

POWER REQUIRED TO OPEN A FURROW FIVE INCHES DEEP AND NINE INCHES WIDE.

Name of Plough.	Sandy Loam.	Blue Clay. *	Loamy Sand.	Strong Loam.	Moory Soil.	Average.
	st.	st.	st.	st.	st.	st.
Ferguson's Improved Scotch Swing Plough	19	50	19	35	23	29
Clark's Improved Scotch Swing Plough	20	52	17	33	23	29
Kerr's Improved Berkshire, one-wheel	14	43	12	23	16	21½
Ransome's F.P. two-wheels	14	44	12	33	14	23½
Do. do. Swing	18	44	16	30	21	26
King's Swing	18	48	15	27	19	25
Do. one-wheel	17	43	17	30	18	25
Rutland, Ransome's, N.L., two-wheels	17	50	16	36	21	28
Old Berkshire Wheel Plough	20	52	21	36	25	31½
Hillman Plough, two wheels	18					

* The furrow in this case was six inches deep on one side, but the furrow-slice was thrown downwards.

Here we see a great difference in the power required to draw these ploughs—such a difference, in fact, as would force the farmer who employed the one of greatest draught, to keep three horses for every two that were kept by the farmer who used that of least draught.

Mr. Pusey's experiments drew much attention to this subject, and many trials of ploughs have been made since those which he has recorded; the following results of some, which were superintended by the Ipswich and other farmers' clubs, are extracted from the "Farmers' Magazine."

Swing plough—the furrow 9 inches wide by 7 inches deep, down the field, and 9 inches wide by 6 inches deep, up.

Name of Plough.	Maker.	Draught down.	Draught up.
Swing plough, S. R. .	Ransome	20 stone	22 stone
Do. do. F. F. .	Do.	24 ,,	
Do. do. F. S. .	Do.	25 ,,	25 ,,
Palmer's patent W. H. .	Wood	28 ,,	26 ,,
Wooden plough . . .	Meadows	32 ,,	
Essex swing	Ransome	38 ,,	32 ,,

Here the difference in the power required to work the several ploughs is still greater than in the former instance. There cannot be a doubt that many farmers are, from this cause, unwillingly incurring greatly more expense in the cultivation of their land than others, who are careful to select easily-worked implements. The expense of cultivation in many districts is now, also, much diminished by the employment of scarifiers and cultivators in place of the plough; for the extent of land which can be *cultivated* in the course of the day is four times as much as can be *ploughed* in the same time by the same force.

Now, take all this into consideration, and compare two farmers: take the case of one who *carts* his manure to the field, and his produce from it—who, in preparing for Wheat or Barley, the land off which he has just harvested his Potatoes, Swedes, Turnips, &c., instead of ploughing it at the rate of one, or perhaps only ¾ of an acre a day, merely stirs the land with a scarifier or cultivator, which, with the same force, can be done at the rate of four or five acres a day—who, when he does plough, as in preparing the land for fallow crops, &c., uses an implement of the best sort, one combining lightness of draught with efficiency as a plough; and compare this case with that of another who carries his manure out and his crops home in waggons—who uses no cultivator, and ploughs his land with one of the heavy implements named in the above Table. Why, if the latter cultivates his land as well as the former, he requires nearly double the horse-power to enable him to do so; and no straining of economy in the stable will enable him to keep this greater number of horses at the same expense. Indeed, the former may be as economical in the stable as his neighbour, and then what a difference will their respective modes of management make in the accounts which they will render of the expense per acre at which they cultivate their land! Certainly, we shall have closely to examine the evidence on record, of the sum per acre to which the expense of horse-keep amounts on a farm, before, from a comparison of it with the modes of stable-management adopted by the several witnesses, we can determine what true economy in the matter is.

And here we must be allowed a digression, in order to point out the great national importance of this subject. The expense of horse-labour, putting its results out of sight, is a dead loss to the country,—as much so as if its money value were exported; and, in fact, taking its results into consideration, they are obtained in a manner as injurious to the interests of the British labourer, as if the work had been done by a sufficient number of the labourers of any other nation imported for the purpose. We are not, however, here advocating the performance of all Agricultural operations by the hand; it is the interest of the farmer to get his work done in the cheapest manner, whatever be the agent he employs; and as long as the land may be cultivated and crop harvested cheaper by horse-labour than in any other manner, so long will it be unwise to adopt any other plan; but the very statement we have made, when we consider the vast expense thus incurred by the farming interest, shows of how great importance any means are by which its amount may be diminished. We extract the following from a published Lecture, delivered by Mr. Hyett, of Painswick, before the Gloucester Farmers' Club:—

"Some of the very latest improvements, effected by the application of scientific principles, have been mathematically * proved to be the saving in tractive power of one horse in three as applied to the plough; and presuming, as seems more than probable, that equal economy is effected by the use of light carts instead of waggons, and the new cultivators instead of the old scufflers and drags, let us calculate what that saving is. It has been computed in districts where improved implements are used, that two horses are required for every 50 acres of arable land. If the inferior implements were employed, three would be necessary. Take the average value of a cart-horse at 15*l.*, and his annual keep at 36*l.* 10*s.*, or 2*s.* a day. Sir J. Sinclair, in his 'Scottish Husbandry,' gives the annual keep for each horse, averaged for eleven districts in Scotland, as only 28*l.*, or 1*s.* 6½*d.* a day, but the cost of shoeing and gearing, &c. does not seem to be included. Mr. Curtis Hayward, in the Paper which he read to this Club, calculated it, including all these extra expenses, to be with us 2*s.* 6*d.* a day; so I cannot be far wrong in taking the mean, or 2*s.* a day. Suppose a farmer, with 100 acres of arable land on his farm, with unimproved implements, using six—with improved, only four horses; the saving in the first cost of the two extra horses would be 30*l.*, that in their annual keep, 73*l.*, or 14*s.* 7*d.* per acre—a sum, perhaps, nearly equal to half of the average rent of arable land in England.

"To understand how vast the benefit which the country in general might derive from the universal use of these improved implements, let us extend the same calculation to the whole arable land of the country, which I believe I am under the mark in setting at 12,250,000 acres for England and Wales, which at

Three horses for every 50 acres, give	.	735,000 horses
At two ditto ditto	only	490,000 ,,
The number of horses saved being	. .	245,000
Their cost at 15*l.* apiece would be	.	3,675,000*l.*
And their annual keep	. . .	2,942,500*l.*"

* The dynamometer, as affording the measure of the draft of horses, is itself no small debt to science; and perfected as it now is at the Uley Works, by the ingenious adaptation of self-registering machinery, it promises to the farmer information as accurate as it must be valuable.

EXPERIMENTS WITH NITRATE OF SODA, &c.

[We have received the following valuable paper from Mr. Grey, of Dilston. It was written by him in 1841, and being read at the meeting of the Highland Society at Berwick, was printed in the newspaper reports of the time.]

On the 28th April, 1840, I sowed upon each alternate ridge of a plot of land consisting of four acres, of good gravelly loam, which had lain three years in grass and was thickly covered with plants, nitrate of soda at the rate of 1 cwt. per acre, having ascertained the exact contents of each ridge and divided the nitrate accurately into the right proportions. To some of the alternate ridges I applied gypsum at the rate of 10 bushels per acre. To one ridge I applied both the nitrate and gypsum, upon the principle of "the more good things the better;" but the result, in this case, proved the maxim fallacious. And three ridges were left without any application whatever. The Grass to which the nitrate was applied assumed in a few days a darker colour than the other, rose quickly above it in height, came earlier into seed, and was sooner fit for cutting. The plot was all mowed and made into Hay at the same time, great attention being paid to keep the produce of each of the ridges intended for the experiment distinct. The following is the weight of Hay produced by each plot, and at this time the aftermath of those ridges to which the nitrate was applied is obviously better than the others:—

Nature of Manure Applied.	Produce per Acre, calculated from that of 112 square yards.
No manure	2 tons 81 stones
10 bushels of gypsum per acre . .	2 ,, 91 ,,
1 cwt. of nitrate of soda . . .	3 ,, 146 ,,
10 bsh. of gypsum and 1 cwt. nit. of soda	3 ,, 125 ,,

The cost of the nitrate on the ground was 22*s.* per cwt., and the increased value of Hay per acre, as it stood in the fields, would be from 4*l.* to 5*l.*

From the many experiments which have been made, and which have all proved more or less beneficial, no doubt can be entertained that nitrate of soda is generally efficacious in the production of Grass; but several experiments may yet be necessary to ascertain on which description of soil and to what class of plants it is most so, and at what particular stage of their growth it is to be applied with the greatest benefit. I am inclined to think, from the little experience I have had in the matter, as well as from the consideration that it does not act through the medium of the soil, as a manure, but rather as a stimulus to the plants, that it ought not to be sown upon the Grass until it has risen considerably from the ground and the blades are sufficiently evolved to derive all possible benefit.

I applied nitrate of soda to a row of Potatoes, at an early period of their growth. The tops soon showed the effect, and far outstripped the adjoining rows in growth; but when the Potatoes were taken up the produce of that row was found to be less than that of the others, both in weight and measure.

The first action of the Potato plant is to throw out its top. The roots make their growth at a later period. It seems in this instance that the stimulus of the nitrate had expended itself in the earlier process, and that the roots, instead of being benefited, had suffered by the application—probably from the greater shade and weight of top.

I applied nitrate and gypsum also to alternate ridges of different kinds of grain and at various stages of its growth, but the quantity of rain that fell in this part of the country, both previous to and during the time of harvest, had the effect of producing so much straw, and of laying the corn so flat, that it was found difficult to cut the plots so as to keep the produce of each perfectly distinct, and was also in other respects so unfavourable to the experiment that I cannot reckon upon the result being very correct and satisfactory. In one case where the Barley was very bulky, and in consequence much lodged, the grass seeds were found to be weak and worse than in any other part of the field; but in another instance the reverse of this was the case. The crop was a thin one of winter

Wheat, on poor clay land. Four ridges were sown with nitrate when the Wheat was about a foot high; little effect was perceptible during its growth, save in a darker shade which it assumed, as is common to all crops where nitrate is applied; and on being cut those ridges produced no few sheaves more than the others, that I was not induced to keep their produce separate; but in the spring of the following year, the new grasses upon them were found to be much better than upon any others in the field. The pasture was heavily stocked with ewes and lambs, and eaten bare, the sheep giving those ridges the preference. When the lambs were weaned, the pasture was cleared of stock for a fortnight, when the same thing was repeated; the grass on those ridges again took considerably the lead of all the rest, and was again preferred by the sheep when they returned to it. This was a result which I had not anticipated, and proves either that the effect of the nitrate continued in operation during the following season, or that its effect in the first year upon the grass was such as to nourish and strengthen the plants so much as to cause them to stand better through the winter, and to shoot out much more vigorously in the spring. The latter is, I think, the more reasonable conjecture.

In the beginning of May last, (1841,) I applied nitrate of soda and a mixture of nitrate and manganese to equal quantities of grass of the first year's seeds, intended for mowing, leaving a portion without any dressing. The land was well covered with plants of red and white Clover and Rye Grass, but not of first-rate quality. Both portions to which the dressings were applied soon assumed a dark appearance and a rapid growth; the difference was perceptible at any distance from which the field was visible. The different portions were cut, and the produce of each carefully kept distinct and weighed when made into hay and put up in pikes, of which the following is the result:—

Description of dressing.	No. 1. Nitrate of soda, 1 cwt.	No. 2. Manganese and nitrat. of soda, equal quantities, 1½ cwt.	No. 3. No dressing.
Weight of Hay per acre.	3 tons 88 st.	3 tons 21 st.	2 tons 37 st.
Value of Hay on each acre, at 3l. per ton	£ s. d. 10 18 0	£ s. d. 9 7 10½	£ s. d. 6 13 10½
Cost of each top-dressing per acre	1 6 0	1 1 0	0 0 0
Value of Hay per acre, deducting expense of top-dressings	9 7 0	8 6 10½	6 13 10½

When the aftermath had begun to shoot up, I applied the same dressing as above, and also a mixture of guano and soil to portions of the land which were left without anything before. The effect as to colour and growth was the same as in the previous experiment, from the nitrate and manganese. That from the guano was less apparent and slower, but still the growth was greater than where nothing was applied to the grass. One thing was very obvious, that the stock when put into the field gave a great preference to the portions which had received the saline dressings over that to which guano had been applied, as well as to that which had nothing.—*John Grey, Dilton House.*

(To be continued.)

REPORT OF DR. VON MARTIUS ON GUANO.

In answer to the summons of the general committee, I have the honour to submit the following report upon the nature of guano, upon its history, and also its utility as a manure in Bavaria. Guano is the excrement of various sea-birds, as the cormorants, flamingoes, cranes, &c., and is found on many little islands off the coast of Peru, situated between 13° and 21° south latitude. Its quantity is so great that it is obtained by means of mining operations. The word guano belongs to the old Peruvian or Quichua language, and signifies muck, or dung. It is pronounced Huana by the Peruvians, which the Spaniards, according to the genius of their language, spell guano. This substance was known to the inhabitants of Peru as a valuable manure long before the possession of their country by the Spaniards; and the success of the culture of the barren sandy tracts of land along the coast depended in a great measure on the use of this substance, so favourable to vegetation.

The use of guano as a manure was first mentioned by Inca Garcilasso de la Vega, a Spaniard who wrote on Peru as early as 1723, in a work entitled "Commentarios Reales." "On the sea-coast," says he, "between Arequipa and Tarapaca, in a tract of land more than two leagues in length, they have no other kind of manure than that afforded by sea-birds, which dwell in countless numbers on the sea-coast. They lay their eggs on certain islands along the coast, and the quantity of excrement they leave there is astonishingly great. At a distance *the masses of excrement look like the tops of a range of hills.* At the time the Incas governed Peru the birds were preserved with great care. The punishment of death was decreed against those who landed on the island during breeding-time, or frightened the birds, or at any time destroyed them. Each island was a distinct province, or, when large, was divided into several provinces, over each of which an overseer was appointed by the Incas, whose care it was to see that every district had its due proportion, and no one defrauded his neighbour of the universally-needed manure."

Frezier, who travelled in Peru in 1712 to 1714, mentions having seen in the port of Arica, and in the island of Iquique, the guano dug up by Negroes. About the same time Feuillé also speaks of the pestilential exhalations from the guano islands, and of the ships (*Guaneros*) employed along the coast for its exportation. Ulloa, also, later reported on it in his great work upon Peru. Alexander von Humboldt was the first who brought specimens of guano to Europe, which was in 1804. He sent specimens for examination to Vauquelin, Fourcroy, and Klaproth*, and spoke of it himself in the following manner:—"The guano is deposited in layers 50 or 60 feet thick on the granite of many of the South-sea Islands, off the coast of Peru. During 300 years the coast-birds have only deposited guano a few lines in thickness. This shews how great must have been the number of birds, and how many centuries must have passed over in order to form the present guano-beds."

Humboldt put the question to Klaproth as to whether the guano had been deposited on the present islands, or had been thrown up by some convulsion of nature. Although at first sight the simplest explanation appears to be that it was deposited by birds in its present position, yet an objection occurs from the fact that neighbouring islands present no guano. But this objection may be overruled by the well-known fact that birds return always to the same places to nidify, and an analogous phenomenon takes place in those islands which are exclusively sought by turtles for the purpose of laying their eggs. But be this as it will, the guano exists in such quantities as to give it the importance of a geological formation, and in this respect is the counterpart of those formations which owe their existence to animals, as those formed by species of recent infusoria.

The guano layers, according to the length of time they have been deposited, have undergone many changes. Here and there they are covered with siliceous sand, and have thus been protected from the influence of the weather. In other places, on the other hand, they are open and exposed to the action of light, air, and water, which have effected in them many decompositions. Such changes are indicated in most cases by an ochre-yellow guano, resembling Spanish snuff, the colour changing according to the greater or lesser amount of decomposition. Fresh guano is of a white colour, but that which is dug up has a bright or ochre-yellow, brown, or red colour. The chemical composition of guano is very various; and this point should be attended to where large quantities are bought, as some sorts are worth nothing like so much as others.

(To be continued.)

* For the results of the examination of these chemists see "Memoires de l'Institut," tom. vi.; and Klaproth's "Beitrage," vol. vi.

ON MINERAL AND INORGANIC MANURES.

No. VII.

By Professor Charles Sprengel.

2. *Chalk.*—Chalk is one of the most recent lime formations; and although it consists chiefly of carbonate of lime (lime and acid combined in the same proportion as in the limestones), it contains always more extraneous admixtures than the solid limestone,—so much so, that it often passes into marl. To these admixtures—clay, silica, magnesia, phosphate of lime, common salt, &c.,—its value as a manuring substance is chiefly owing. If it contains much clay, like marl, it will fall to pieces if lying in the open air, as the marl does; if it contains much silica it must be burnt first like the lime, else it will not fall to pieces; but in burning it, too much heat is to be avoided, else a silicate of lime will be produced. At times chalk is so earthy, that it can be easily broken in pieces, and then it may be used without being burnt. In this case, however, it will never manure so well as if it had been burnt, as it will be deficient in caustic properties, and must then be used in large quantities, in order to produce any striking result. If earthy chalk be burnt, large lumps of it are first baked, and then placed in kilns constructed for that purpose. Whenever fuel is not too expensive, it will always be best to use chalk in a burnt state, especially if a ferruginous, sour, clayey, or peaty soil is to be acted upon. It is true, a clayey soil may be also improved mechanically by unburnt chalk, but then it must not be too stony, and large quantities must be used.

If chalk is burnt, its effects are similar to that of lime; if unburnt, it acts like marl, of which we shall speak presently. Of burnt chalk no more is required, per acre, than of burnt lime; of unburnt, however, the quantity is to be as great, or even greater, than of those marls which are richest in lime. It must be taken into account whether chalk is earthy or stony; because, as the latter acts but very gradually, a much greater quantity will be required. In meagre, light soils, however, neither earthy nor stony chalk will act beneficially, which might naturally be expected, as these soils are deficient in most substances which plants require for nourishment, and such chalk does not convey to the ground any of those substances except lime. I once saw earthy chalk used with great confidence on a clayey soil not deficient in humus, but the result was so much less than was expected, that the experiment was never repeated.

3. *Marl*—which has been used from time immemorial as a manure, is a compound of clay and carbonate of lime. Still, however, chemical analysis proves that most sorts of marl contain more or less of carbonate of magnesia, gypsum, common salt, silicate of potash, silicate of soda, manganese, quartz, and some other substances. These must not be left unnoticed, because we shall see presently that it is on these very substances, hitherto not duly taken into account, that the value of marl depends. According to its predominant constituents, it bears the name of lime, magnesia, clay, and sand-marl.

A characteristic criterion of marl is, that being exposed to air it will fall in pieces, which is caused by the various degrees in which its component parts attract water; and as different degrees of expansion are thereby produced, it is obvious, that on becoming successively wet and dry, these parts will separate from each other.

There are earthy and stony marls. The former is mostly found in the diluvial formation, and owes its origin to a most diversified composition of mineral substances (*vide* my treatise on soils). Some distinguish also a shell-marl, which is mostly composed of decomposed *molusca*, and is to be found mostly in low grounds under a marshy soil, consequently where, most probably, fresh-water lakes existed at a former period. Under this name, also, may be considered that calcareous earth which near the sea-coast underlies marshy localities.

It is by the carbonate of lime and magnesia contained in marl that the effervescence is caused which takes place when mineral acids are poured on it, as by these, carbonic acid is driven off, and escapes in the form of gas. Its colour, at times green, blue, violet, yellow, red, or brown, is owing to both oxides of iron (protoxide and oxide), and if the colour of marl be grey, black, or blackish-brown, it is owing mostly to an admixture of coal, bitumen, or humus. The value of marl, however, as a manure can never be arrived at, either from its colours or the degree of its effervescence with an acid, or by any other external criterion; this can only be done by chemical analysis, because, at times, it is owing to the presence in it of substances existing in very small quantities, and not discernible by outward appearance. It is with marl as with all other manures, it is useful only when it contains substances in which the soil is deficient. If, for instance, the soil does not contain enough gypsum, but, with this exception, if it contain all other mineral substances in such proportions as are required for the nourishment of plants, for such a soil, we say,—a marl which contains no gypsum has little or no value. If, on the contrary, a marl contains but little gypsum, it will improve a soil which is entirely deficient of that mineral, even if it contained so little carbonate of lime, that it could hardly claim the name of marl at all. It is the general opinion that that marl is best which contains most carbonate of lime; but this is fully contradicted by experience, although it cannot be gainsaid, that this is one of the most effective and powerful of its ingredients. That sort of marl, therefore, which may be very valuable for one sort of soil, is valueless for another; for the chemical constitution of the soil must always be taken into account. It may be generally assumed, that that sort of marl will be best which contains all the substances required for the nourishment of plants in a due proportion, as in this case, even if the soil to be manured should possess some other nutritive substance, it will be improved by the other component parts of the marl. Silica, however, may be excluded from this calculation, as most soils, moors and marshes excepted, contain a sufficient quantity of it. A marl which consists merely of carbonate of lime and clay possesses but four substances which improve vegetation; whilst a marl, which, besides these two component parts, contains also gypsum, common salt, silicate of potash, phosphate of lime, saltpetre, manganese, and magnesia, will yield to the plants twelve different nourishing substances. It is obvious that a marl which contains many nutritive substances of plants must be preferable to one which possesses but few. If, therefore, any marl contains all the mineral substances which the plants require for nourishment, it may be used to advantage on all sorts of soils; but if, on the contrary, it contains only 4, 5, 6, or 7, it will act beneficially only on such soils as are deficient in those ingredients which it contains. An absolutely and a relatively good marl may thus be distinguished, the former being met with but very rarely in nature, the latter most abundantly.

(To be continued.)

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. VI.

(Continued from page 91.)

I will now proceed to treat separately of the two classes of chemical constituents in all plants—Organic and Inorganic, the elements of which must in some form or other be supplied to the plant.

1.—Of Organic Principles:—

A—Non-Azotized.

Represented by
- *A* Sugar
- *B* Starch
- *C* Gum

} Saccharine group.

- *D* Oil
- *E* Fat
- *F* Wax

} Oleaginous group.

B—Azotized.

Represented by
- *G* Vegetable Fibrine
- *H* —— Albumen
- *I* —— Casein

} Albuminous group.

2.—Inorganic Principles:—

Are principally
- Lime
- Silicon
- Muriate of Soda (Salt)
- Carbonate of Potash or Magnesia
- Phosphorus
- Sulphur
- Iron,

and the ultimate chemical composition of the above will be seen at a glance of the following table. Those who wish for further information will readily find it by reference to Turner, or any other elementary work on Chemistry.

		Organic Principles. Oxygen.	Nitrogen.	Carbon.	Hydrogen.
Non Azotized.	Sugar	51	—	42	7 = 100
	Starch	49	—	43	8 = 100
	Oil, fat, &c.	9½	—	79	11½ = 100
Azotized.	Albumen, Fibrine, Casein	22	16.	55	7 = 100

The difference in chemical composition of the azotized group is so slight, that I have classed them together as identical, which they are, according to the testimony of

Liebig. Under the head of oxygen, also, in the same group, a slight proportion of sulphur and phosphorus is included. I have taken round numbers to avoid the inconvenience of decimals.

Of the Inorganic Principles; iron, sulphur, phosphorus, and silicon, are elementary. Muriate of soda, or, more properly speaking, chloride of sodium, consists of two elementary principles, chlorine and sodium; and the salts of potash, or magnesia, consist of carbonic acid and the oxides of potassium and magnesium.

With the exception of gelatine, which is produced by the metamorphosis of albumen, the above are also the constituents of all animal structure. The world of vegetable and animal life is, in reality, resolvable into the following elements:—

Oxygen
Hydrogen
Carbon
Nitrogen;

with deposits in cellular structure of one or more salts of the following:—

Calcium or Magnesium
Sodium or Potassium
Phosphorus
Iron
Silicon

These elements, moulded into being by the hand of Creative Wisdom, and endowed with the mysterious and incomprehensible principle of life, become converted into the endless races of animals—immense forests—the deep water of the sea, or the atmosphere that supports and retains the vitality of living beings.

Now, I do not consider that much knowledge will be gained by the Agricultural student of chemistry, by confusing himself with minute descriptions or details of particular analysis; instead, therefore, of a great array of figures, which nobody can understand but chemists themselves, I shall content myself by making some simple observations separately upon each of the constituents of plants.

Of the Saccharine Groups: Sugar, Starch, Gum.—There are two varieties of sugar, one derived from the cane, called CANE SUGAR; the other produced by the transposition of the elements of starch in ripening fruits, called GRAPE SUGAR. It is the latter of these, as an element of food and a constituent of plants, which I shall consider here.

If you cut an unripe Apple or raw Potato, and rub the cut surface upon a grater, a solution of very fine flour of pure starch will be obtained. In the unripe Grape, in Turnips, Mangold Wurtzel, the grain of Wheat, Barley, or Oats, Beans, Peas, &c., it is very abundant. In the process of ripening fruit, which we well know requires heat, this starch is converted into sugar by a simple transposition of elements, which a reference to the composition of the substances will show (*vide* table). This change also takes place in the process of malting, the success of which operation depends upon the existence of the principle of life in the seed. Now this vital principle, of the nature of which we know nothing, and very probably never shall, is, from the commencement to the end of life, constantly effecting the most profound chemical changes in the living body. In the instance before us, chemical action is induced to convert the starch into food for the embryo plant. During the change, a reference to the table will show that carbonic acid is constantly set free. Now this carbonic acid nourishes the embryo plant, precisely in the same way as the carbonic acid, which results from the decomposition of humus, nourishes it in a future state of its existence. But the maltster wants all the sugar he can get in his malt. When, therefore, the experienced maltster finds by the length of the germ or root that the ever-acting chemist, life, has changed the whole of the starch in the seed into sugar, he destroys the life of the embryo by heat. If he did not do this at the proper time, his malt would be spoiled, for the growing plant requires food, and quickly appropriates the sugar to its own use. As an instance of the transposition of chemical elements, let us pursue this digression a little further; when the malt comes into the hands of the brewer, his object is to obtain an *alcoholic* solution, called beer. He first dissolves all the sugar in the malt by boiling, after which his object is simply to convert the sugar into alcohol; in equivalents the following is the composition of alcohol and Grape sugar:—

	Carbon.	Hydrogen.	Oxygen.
Alcohol	4	6	2
Sugar	12	14	14

By chemical calculations, which would be out of place here, it can be proved that the results of the change in the sugar is alcohol, carbonic acid, and water; the carbonic acid being given off during the change or fermentation, and the water serving as a solvent for the alcohol.

Now this fermentation is produced by the action of life. Yeast is a plant of a low organisation, and is constituted of a number of small spherical cells united together in a line. Each of these cells contains many germs, which, by the constantly-repeated deaths and bursting of the parent cells, become free, and form full-grown cells themselves. In this manner the yeast-plant rapidly grows throughout the cask of sweet-wort, and produces the change of sugar into alcohol, with the constant escape of carbonic acid from the surface, which is called "the working of the beer." The importance, then, of sugar existing in plants, either as a distinct compound, or by its elements in the form of starch, will be apparent.

Starch, or principles similar to it, exists in all plants connected with Agriculture. It is an essential ingredient in the food of animals, because it is absolutely necessary to support the functions of respiration and animal heat. It is a valuable principle to the farmer, for it is necessary in fact to produce fat; and it is equally essential to the reproduction of the crop, for without it seed would not germinate.

Gum is found in the bark and wood of all plants. It is well known in its simple form as gum arabic, and it is highly nutritious both to man and animals. Six ounces of gum arabic have been found sufficient to support an adult man or woman for twenty-four hours. This, however, could not continue long, as the want of azotised food would prove fatal to the experimenter. The same remark applies to sugar and starch; they are highly nutritious as supporters of respiration, but alone are incapable of supporting animal life. Woody fibre, which is very nearly the same in chemical composition in all plants; in the Turnip-top, or the ship's mast; is represented by the Saccharine group *. It is, in fact, very easily converted into sugar; 100 parts of linen rags will yield 114 of sugar, when treated with sulphuric acid.

As I have not attempted a chemical dissertation upon the different parts of the plant, I have said nothing about the sap. I may observe, however, that the ascending sap is nearly similar in all plants, but that important changes take place during its circulation in the leaves. Much interesting and valuable information on this point, written with peculiar clearness, may be found in Professor Henslow's Letters to the Farmers of Suffolk, or Dr. Carpenter's Popular Cyclopædia, vol. Vegetable Physiology and Botany—a very excellent and cheap publication.—*C. R. Bree, Stowmarket.*

(To be continued.)

Home Correspondence.

Superphosphate of Lime.—The following is the best process for forming superphosphate of lime and other salts of phosphoric acid. I give the process that I used before I possessed appropriate machinery for mixing the acid with the bones. By means of this machinery I am capable of greatly reducing the quantity of water which is otherwise necessary to effect the complete decomposition of the phosphate of lime. Calcined bones are to be reduced by grinding to a very fine powder, and placed in an iron pan with an equal weight of water (a cast-iron trough, such as are sold for holding water for cattle will do); a man with a spade must mix the bone with the water until every portion is wet: while the man is stirring an assistant empties at once into the pan sulphuric acid, 60 parts by weight to every 100 parts of bone; the acid is poured in at once, and not in a thin stream, as commonly recommended; the stirring is continued for about three minutes and the material is then thrown out. With four common farm-labourers and two pans, I have mixed two tons in one day, the larger the heap that is made the more perfect the decomposition, as the heap remains intensely hot for a long time. It is necessary to spread the superphosphate out to the air for a few days, that it may become dry. The great mechanical difficulty of reducing unburnt bones to a very fine powder renders the formation of superphosphate of lime from them very difficult, but common bone-dust in a pure state (that which is sold contains about one-third of lime) may be decomposed by boiling it in a leaden pan with half its weight of sulphuric acid and twice its weight of water, which may afterwards be dried up with sawdust or clay-ashes.—*J. B. Lawes.*

In what do the Fertilising Qualities of Bones consist?—There seems still to be some doubt in the minds of some of your readers whether the phospate of lime, or the gelatine, is the fertilising substance in the bone? I would suggest the following experiment, which I have tried myself, and which has satisfied me that the animal matter in the bone merely acts by yielding, by slow decomposition, phosphate of lime in a state capable of being assimilated by plants; and to the phosphate of lime bring in a similar state in guano, and not to the ammonia contained in it, may be attributed the powerful effects of this valuable manure. To every 100 parts of large bones add 400 parts of water and 100 parts of muriatic acid, let it stand for four or five days, and then drain off the liquid, and add the same quantity of fresh water and acid four times; by this means the whole of the phosphate of lime will be dissolved in the liquid, and the bones will retain their original form; they must be repeatedly washed until the water ceases to taste acid, then dry them in an oven, and rub them to powder. Evaporate the whole of the liquid in which the mineral matter of the bone was dissolved until nothing but a dry paste remains; heat this to redness, rub it to a fine powder, and convert it into superphosphate of lime in the manner already described. Let two equal quantities of ground be sown with Turnips, strain the seed and one of these two manures together, and the result will satisfy the most sceptical. I have lately seen a large quantity of Swedes growing upon the light sands of Norfolk, in which four bushels of my superphosphate of lime per acre were used, and the crops were excellent,—the superphosphate was formed from calcined bones which did not contain one-half per cent. of carbon.—*J. B. Lawes.*

A Word in Favour of the Rooks.—Having observed in the 4th Number of the *Agricultural Gazette* that a meeting had been held in the town of Dumfries, Scotland, for the partial destruction of the rooks in that district, we beg leave to offer a few remarks in their favour. These birds certainly eat grain and Potatoes, but it is much to be questioned whether, when following the sower in the field, they are not more intent upon the larvæ of numerous insects, which the operation of ploughing and harrowing brings to the surface, than upon the grain which is scattered amongst them. The crops of these birds, at the period under consideration, will be found to be more abundantly stored with worms and various insects, both in their larva and perfect state, than with grain; and what they do eat would not be the tenth of what would be consumed by the insects which they destroy. We find the following in behalf of the rooks in the "American Farmer." "Every crow requires at least one pound of food a week, and nine tenths of their food consists of worms and insects; 100 crows, then, in one season, destroy 4,780 lbs. of worms and insects." From this fact some idea may be formed of the benefit of this much persecuted bird. Were it not for these useful birds our fields would soon swarm with the larvæ of insects, which would, if left to have their own way, let neither man, bird, or beast reap the fruits of the earth. If we look to those countries where these useful birds are persecuted, we shall find that the formidable cockchafer (Melolontha vulgaris) and other destructive insects, destroy nearly the whole of our field and orchard crops; while in those places where these useful birds are allowed to remain unmolested, the ravages of these destructive insects are unknown. Natural instinct seems to direct the rook to this species of food, while man is unconscious of the circumstance. Thus we often see flocks of these birds busily employed in grass-land and meadows, picking up food which is not visible on the surface. From observation we can assert that their employment in such cases is in perforating the surface-sward with their bills to search for the larvæ of different insects, which are, at the same time, actively devouring the roots of the grass. Even while engaged in this important service, the husbandman in nine cases out of ten drives them away. In this district the rooks migrate as soon as the operation of sowing is finished, taking with them their young, spending the most of the summer on large heaths and moors but scantily supplied with food. They again return to us towards autumn to destroy the perfect insects, many of which begin at this time to deposit their eggs. At this period rooks do infinite good, as for each insect they destroy they are the means of destroying many. It has been observed that the sole employment of the rooks for three months in spring is to search for this kind of food, and the havoc a numerous flock makes amongst these destructive insects must be very great.—*J. Mc I., Hillsborough.*

Preservation of Root Crops.—The usual method of storing Swedes, either by earthing up in the field or covering in pits, is liable to objections. Having preserved Carrots by cutting off the upper part as well as the green top, and letting them remain earthed up in the ground where they grew, I have this season been induced to try the same method upon a small patch of Swedes. If covered in the field they sprout, and otherwise lose much of their nutritive properties; if put into pits the fermentation which takes place is still more injurious in this way. By letting them remain in the ground, preventing germination and covering the top with mould, I believe we shall best succeed in preserving their enriching properties uninjured. The process of cutting off the top may be done with a hoe, but it requires a deep cut beyond the germinating circle, and all that is cut off should be taken to the sheep-fold, so as not to waste a leaf. The earthing up is a very easy process—supposing the Turnips drilled, as the double mould board plough drawn between the rows is sufficient.—*S. C.*

Another New Manure.—I send you a specimen of the dung of Bats, received from Jamaica. It is found in considerable quantity in the Caves near Dry Harbour, and in the Guy's Hill District, in the parish of St. Ann, in that island. The following analysis is by F. J. Fleming, Esq., a Member of the St. Ann's Agricultural Society:—

500 *Grains of the Matter appear to be composed of*

Water of Absorption	116
Uncombined Phosphoric Acid	4
Oxide of Iron	3
Phosphate of Lime	181
Carbonate of Lime	16
Animal and Vegetable Matter, giving out a fœtid gas by combustion	99
Matter indestructible by Heat	81
Grains	500

This substance, which is of a dark or chocolate colour, is expected to prove a highly valuable manure; it had been tried by covering it with earth in the cane-hole; but a writer in the *Jamaica Times* suggests that it should be used broadcast, being previously mixed with wood-ashes or powdered charcoal.—*T. E.*

Bones.—The supply of Bones for crushing is not now so plentiful as formerly. There are large quantities of the bones of the small Whales, which are killed in hundreds at a time, lying on the sea-beaches of Orkney, Shetland, and the Faroe islands, and which probably may be had for the trouble of collecting. It may be well for those concerned in crushing bones for manure to look to these quarters; and also to induce Whale fishers, who go to the Greenland seas, to save as great an amount of the skeletons as possible, to be brought home; or to have them towed on shore, to be sent for afterwards. The Seal fishery might also supply a very large store.—*G.*

Steeping Seeds.—It may not be uninteresting to know that the practice of steeping seeds, recently brought under the notice of the Highland Society by Mr. Campbell, of Dundee, was tried 150 years ago, as appears from the subjoined extract from the "Farmers' Magazine" for December, 1810. The experiment there mentioned seems to have been even more successful than those of Mr. Campbell. To him, however, the farmer's thanks are due for reopening the subject, at a time when the attention of eminent scientific men is so much directed to making their discoveries available for the purposes of Agriculture:—"Charles Miller, son of the celebrated botanist, published

* Starch, sugar of milk, woody fibre, cane-sugar, and grape-sugar, all contain the same quantity of carbon, united with different quantities of oxygen and hydrogen, in the proportions to form water.—*Turner's Elements*, p. 921.

a recipe for fertilising seed, and tried it on Wheat, by mixing lime, nitre, and pigeon's dung in water, and therein steeping the seed. The produce of some of these grains is stated at 60, 70, and 80 stems; many of the ears six inches long had 60 corns each, and none less than 40. This experiment was made in 1692 (see "Everard's Essays and Experiments"); yet I do not find the idea acted upon. I incline to think it founded on nature, and worthy of serious investigation. We are careful to fertilise the soil—why not the seed?"—*James Caird, Balloon, Wigtown.*

Cheap Method of Bruising small Quantities of Bones.—In your third Number, under "Notices to Correspondents," I observe "*Waste of Bones*—There is no cheap machine that we know of for crushing bones," &c. This induces me to send you the following cheap method which I tried last year with good effect:—Strew them on a hard road with a quantity of burnt soil near your fold-yard, where you are going to cart out manure or soil, so that the wheels may pass over them. Rake them occasionally to those tracks over which the wheels run; the burnt soil will absorb the oily matter expressed. Gather them up at night and pass them through a riddle, and what will not go through put down again the next day on the road with more burnt soil. It should be a fine day.—*F. M.*

Loss of Crop by Exposure of the Manure to the Action of the Weather.—On the 28th of April, 1843, in planting Potatoes we spread the manure for 19 ridges, but we could only complete 12 before night came on, and the following morning being rainy we could not proceed; the 30th was Sunday (a sunny day), and on Monday morning we finished the remaining seven rows. The 12 rows first planted came up a week before the others, and distinctly kept the lead throughout their growth, so much so, indeed, that if we had not noted the circumstance at the time, we should have been at a loss to account for the great difference between the two plots, both manure and sets being alike for each. On the 27th October we raised the crop, and the seven exposed rows yielded less in weight by 5st. 3lbs. per row than the other 12 rows—the length of the rows was 75 yards, thus showing a lighter crop by 3¼ tons to the acre; the Potatoes too were scabbed and inferior in quality. The manure was night-soil and ashes, with Epsom salts. My attention was drawn to the effect of the weather upon exposed manure by a former article in the *Chronicle*, and there certainly is not a more important matter connected with improvement in farming than the economical treatment of manure.—*A Subscriber.*

Draining Materials.—Living in a part of the country where tiles are dear, and having plantations of Scotch Fir to thin, I thought of trying some of the thinnings as a substitute. I took some of the worst growers, from 12 to 20 feet long, and averaging 4 to 5 inches diameter, and I cut them lengthwise with the saw, and laid them at the bottom of the drain, turning the convex sides inwards, which then touched each other along the centre. The flat sides were then placed close against the banks, and being covered with Heath the drains were filled up in the ordinary way. Semicircular stuff thus placed of course leaves a hollow space both above and below; and while the under one here answers to the tile-tube, the upper far surpasses in efficiency the few small holes pierced in the tile for the percolation of the top water into it, the flat sides pressed against the bank giving it a tendency to run to the centre, and at the same time preventing the soil from falling in upon it. This plan was tried on a flat meadow, so wet as not to admit of a man's weight without 'podging,' as it is called. In less than a month after drainage this meadow would bear cattle upon it, and young Clover began to spring all over the field. This success makes me doubt whether this is not a more efficient mode of draining than that with tiles, carrying off the water quicker, and not being so liable to break in its course by the pressure of weights passing over the drains; and the wood, I apprehend, so excluded from air, will last a number of years, especially if cut when the sap is in it.—*A Surrey Farmer.*

Nitrate of Soda.—In November, 1842, a field of six acres was sown with Wheat. Soil, a strong clay; the previous crop, Beans. I think it was owing to the abundance of rain in the spring of 1843, that the plant assumed a sickly appearance. Wishing, if possible, to recover it, I applied, in May, as a top-dressing, 2 cwt. of nitrate of soda per acre, to half the field. To the other half I applied guano, allowing the same quantity per acre. In a few days the Wheat on the land on which the nitrate of soda was sown was visibly altered, and soon had quite a healthy and rank appearance. That to which the guano was applied did not improve at all, and at the time it was harvested had its original unhealthy and stunted appearance. The straw of the plant to which the nitrate was applied stood on an average seven inches higher than that in the other part of the field, the grains were likewise considerably larger, and the ears better filled. This fact I mention to show that as a top-dressing for Wheat, I did not find guano answer; but when hoed, harrowed, or drilled in, I understand from those who have tried the experiment, its effects are highly beneficial.—*Yeoman.*

Liming Land with a Northern Aspect.—In the translation from Professor Sprengel's account of lime, published in your Paper of the 27th ult., is the following observation:—"It is asserted that the manuring with lime is injurious on fields that slope much towards the north," &c. It is evident to those who have been in the habit of liming for Wheat, that the plant does not look so thriving in the winter as on unlimed ground, but from the end of March, or at least when the weather begins to improve, and the sun gains more power, the crop manured with lime gradually takes the lead, and keeps it till harvest. Lime certainly is a good conductor of heat, as is proved by the rapidity with which a heap of mortar freezes when exposed to a low temperature. This may in some measure account for lime not being so beneficial on land much exposed to the north, because such a situation is not only much exposed, but it is also nearly deprived of the rays of the sun in the short days during the winter months. I am convinced of the benefit of lime as a manure for Wheat, and should not hesitate to use it in moderate quantities with a northern aspect, but in that case I should recommend the lime to be laid on early in the summer, before the first ploughing. By this means all the advantage of the manure would be obtained and the injurious effects avoided.—*A. Hall, Chepstow.*

Means of improving the Quality of Manure.—My experience and observation have taught me that great care should be taken of the liquid manure, and that well-constructed tanks should be formed conveniently to receive it as it flows from the cow-houses, from which it should be pumped and carried back to the yard to saturate the dung-hill, this being of great advantage in assisting decomposition. The midden-stance would require a very small inclination towards the tanks, so that the surplus sap, after saturation, may return. The urine requires to be diluted with an equal quantity of water, to enable it to retain its ammonia. Each addition to the manure-heap should be regularly spread, with a small quantity of sulphuric acid or gypsum strewed over the surface to prevent the escape of ammonia. A large quantity of straw may, by this process, be converted into excellent manure, when mixed with the dung from the cow-houses and stables; but I quite disapprove of the frequent turnings in many places given to manure, which causes it to lose much of its fertilising property. I would advise "R. C." to sow a little of the approved mineral manures along with his crops, rather than mix them in his muck. Now that there is a spirit of inquiry amongst our Agricultural population, I hope a judicious plan will soon be adopted of collecting and manufacturing the cloacine and manures of our large towns, to admit of their being transported to a distance. In many towns the common sewers run into rivers, the matter they contain being thus entirely lost. But if the authorities would take up the subject, a plan might be devised to retain the sediment, and have it formed into a transportable manure. It would become an important branch of industry, and save many thousands to the United Kingdom now paid for foreign manures—*A Perthshire Farmer.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

At a weekly council, held at the Society's House, in Hanover-square, on Wednesday last, the 14th of Feb.: present—his Grace the Duke of Richmond, K.G., in the chair; Earl of March, Thomas Raymond Barker, Esq., F. Burke, Esq., F. C. Cherry, Esq., A. E. Fuller, Esq., M.P.; H. Gibbs, Esq., B. Gibbs, Esq., L. Rogers, Esq., Professor Sewell, H. S. Thompson, Esq., and George Wilbraham, Esq., William Holbeck, Esq., of Farnborough, near Banbury, Oxfordshire, and Henry Hoghton, Esq., of Bold, near Warrington, Lancashire, were elected Governors, and the following gentlemen Members of the Society:—

Whittam, James Sibley, Mayor of Coventry
Mundy, Chas. John Henry, Mavis-Enderby, near Spilsby, Linc.
Randall, Robert, Flamstead House, Redbourne, Herts
Lysons, the Rev. Samuel, Hempsted-court, near Gloucester
Child, Thomas, Mickelham Priory, Hartshorne, Sussex
Carnegie, the Hon. J. J., Fair Oaks, near Petersfield
King, John, The Grove, Exton, Alton, Hants
Strode, Jas. Cranborne, Brighton
Warde, Charles, Squerries, near Westerham, Kent
Beevor, Henry, Barnby Moor, East Retford, Notts
Rickaby, John, Ulrome House, Bridlington, Yorks.
Eddison, William, Huddersfield, Yorks.
Gibbons, William, Foxgrove-farm, Beckenham, Kent
Dandridge, Daniel, East Hendred, near Abingdon
Alston, Wm. Chas., Elmdon Hall, near Birmingham
Vivian, Edward, Torquay, Devon
Williams, Captain, Torquay, Devon
Elliott, Jonathan, Sonning, near Reading, Berks
Pelly, Richard Wilson, Upton, Essex
Webb, William, Haselor, near Tamworth, Staffs.
Pain, John, Houghton, near Stockbridge, Hants.
Dolphin, John, Hunter House, Edmondsbyres, Durham
Boddam, Joseph, Newton-Stanhope, Weardale, Durham
Grosvenor, The Earl, Grosvenor-square, London
Roach, John, Perreton, Newport, Isle of Wight
Brook, James, Park Farm, Brading, Newport, Isle of Wight
Wavell, William, Lake, Newport, Isle of Wight
Sclater, Wm. Lutley, Hoddington House, Odiham, Hants
Atkinson, Joseph, Grazing-nook, Bedale, Yorkshire
De Berg, M., Secretary to the Russian Embassy in London, 30, Dover-street
Pope, John Allen, Clifton Farm, near Yeovil, Somerset
Johnson, Francis Dixon, Aykley Heads, Durham
Wilkinson, Percival Spearman, Mount Oswald, Durham
Cooper, Wm. W., Barningham Park, Ixworth, Suffolk
Courtney, Thomas, Stratton, Andover-road, Whitchurch, Hants
Bailey, Frederick, Mitcheldever, Andover-rd., Whitchurch, Hants
Shearer, Bettesworth Pitt, Swammire House, Bishop's Waltham, Hants
Hornby, Rev. Robert, Walton-le-dale, Preston, Lancashire
Birchall, Thomas, Ribbleton Hall, Preston, Lancashire
Knollys, Colonel, Blount's Court, Henley-on-Thames
Darnel, Thomas Smith, St. Neot's, Huntingdonshire
Smith, Charles H., Gwconlluynwyth, near Swansea, S.W.
Delfarins, M., Guernsey
Roe, Freeman, 70, Strand
Tredwell, John Clark, Oddington Grange, Bicester, Oxfordshire
Cracroft, Colonel, Hackthorn, near Lincoln
Thew, Edward, Lesbury House, near Alnwick, Northumberland
Linn, William, Broomhill Tile Works, Felton, Northumberland
Warry, Elias Taylor, Lyndhurst, Hants
Watts, Robert, Battle, Sussex
Langdon, Augustus, Cold Harbour, near Tonbridge, Kent
Carlich, Thomas, Chill Lodge, Tunstall, Newcastle, Staffordsh.
Williams, Thomas, Brecon, S.W.
Tilly, Harry Tobias, Tremough, near Penryn, Cornwall
Greaves, James, Redelive, near Buckingham
Smith, Chas. Robert, Collingbourne-Ducis, near Marlborough
Mitten, Leonard Pitt, Collinbourne, near Fovant, Wilts
Mason, Richard, Rowad, near Leominster, Herefordshire
Fowler, Marshall, Preston Hall, near Stockton-on-Tees, Durham.
Shrimpton, John, Easton, near Winchester
Davies, James, The Green, Aberystwyth, S. Wales
Dixon, Thos. John, Holton, near Caistor, Linc.
Molyneux, Jas. More, Loseley Park, near Guilford, Surrey
Shuter, T. Allen, Hooley House, Coulsdon, near Croydon, Surrey
Braudrane, John B., Beckenham, Kent
Bigg, John, Stanstead-Abbot's, near Hoddesdon, Herts
Hole, James, Knowle House, Dunster, Somerset
Hunt, John, Shirley, near Southampton
Cole, Thos. Henry, The Green, Wick, near Bath
Broderip, Edmund, Manor House, Cossington, near Bridgewater
Williams, G. M., Brocklesby, Great Limber, Linc.
Rawlins, George, Lee House, Romsey, Hants.
Wedlake, Mrs., Hornchurch, Essex
Whitaker, William, The Ash, Etwall, near Derby
Butler, John, Caerleon, Newport, Monmouthshire
Empson, Henry, West Ravendale, Binbrook, Spital, Linc.
Hutton, Thomas, Upton-Gray, Odiham, Hants.
Cock, William, Courtledge, Appledare, Tenterden, Kent
Sykes, Edmund, Mansfield Woodhouse, Notts.
Wooldridge, Henry, Meer-Stoke, Bishop's-Waltham, Hants.
Wooldridge, Jas. Wm., Webb's Lane, Wickham, Hants.
Cunynghame, John, Hensol, Castle Douglas, N.B.
Parkins, Edward, Chesfield Lodge, Stevenage, Herts.
Hart, Thomas, Wing, near Leighton-Buzzard, Beds.
Piper, John D., Colne-Engain, Halsted, Essex
Dixon, Thomas, Darlington, Durham
Coles, Lieut.-Col., Woodcote, Alresford, Hants
Rowland, William, Ramsbury, Hungerford, Berks
Bennett, Absolam, Mertyn-hall, Holywell, Flintshire

Mr. Langdale presented a new variety of Prolific Dwarf Pea; Mr. Wood, a specimen of Alexandrian Lupine; the Duke of Richmond, the second report of the Morayshire Farmers' Club, on the result obtained in the application of bones and sulphuric acid employed as a manure; Mr. Fleetwood, samples of the fibres of Sunflower stalks; Messrs. Kerr and Green, details on the sizes and prices of their iron-grated tile-ends, for preventing the entrance of vermin into drains; Mr. Baines, a communication on the modes of preserving milk; Mr. Stronge, a case of protracted gestation in a cow; Mr. Bellairs and Mr. Cochrane, papers on the economical collection of manures; Mr. Blurton, on his invention of a metallic churn; Mr. Charnock, papers relating to the Yorkshire Drainage Society; and Mr. Meyer, on the destruction of insects injurious to Agricultural crops. The Council then adjourned, over Ash Wednesday, to meet again on the 28th of Feb.

HIGHLAND AND AGRICULTURAL SOCIETY.

A monthly meeting of this Society was held on Feb. 7, in the Museum—Lord Rosebery in the chair. The first paper read was a report of analysis made of the ashes of peat from Berkshire, and from Kinblethmont, the seat of Mr. Lindsay Carnegie, in Forfarshire. Mr. Carnegie having tried, as a manure, the ash obtained from his own peat by burning, and finding it to produce none of the good effects attributed to the peat-ash of Berkshire, but on the contrary, to act as a poison to plants, Mr. Colvill undertook the analysis of the ash of both descriptions of peat, in order to detect any appreciable difference in their constituents, and this report is the result of his investigation: the elements of both ashes were found to be nearly alike, but the Kinblethmont ash contained sulphur and phosphorus in combination with iron, which the other did not, and which combination seemed to have produced the poisonous effects upon the plants observed by Mr. Carnegie. Besides this communication, a letter was read from Mr. Carnegie, descriptive of an experiment made by him with a manure denominated, by Mr. Colvill a double ammoniated magnesian salt, which is stated by Liebig to be an essential constituent of the Potato. The experiment was tried in the garden, and the result was as follows:—1 drill 30 feet long by 27 inches wide, with 2½ pints gave 4 stones 7 lbs., or 14 tons 6 cwt. per acre; the same extent, with 2 pints and 20 loads of dung per acre gave 4 stones 7 lbs., or 14 tons 6 cwt. per acre: with 2 pints only, it gave 4 stones 11 lbs., or 15 tons 4½ cwt. per acre; while without manure it gave 2 stones 4 lbs., or 7 tons 7 cwt. per acre. This substance is prepared by dissolving bones in muriatic acid, adding Epsom salts, and precipitating with excess of gas-liquor. Lord Strathmore then read a paper, in which, after noticing the neglect of peat-ashes, he described their value and utility as manure. It appeared from his Lordship's statement that the quantity, and most probably the quality, of peat-ashes, depend on the mode in which the peat is calcined. When peat is burned in the open air, a small quantity only of ash is obtained, some of the valuable properties of which are moreover suffered to be dissipated; but when the better sort of peat, which is that found at some distance below the surface, is cast at the proper season, dried, and burned in a kiln covered at the top, with a quick draught, the ash is greater in quantity and superior in quality, and the process is attended with little cost. When from 20 to 30 bushels of ashes obtained in this manner are spread upon an acre of green sward, they will produce as much herbage as a corresponding quantity of soot, at one-sixth the cost; and when such ashes are mixed with lime or fine sand, they are not only a superior top-dressing for upland or other meadows, and for Red Clover without Rye-grass, but they also prove a valuable manure for Carrots, Parsnips, or Mangold Wurtzel, on strong soil; his Lordship stated that one ton of peat, burned in a close kiln, would yield 14 bushels of ash. A communication from Mrs. Davies Gilbert of Eastbourne, Sussex, on the allotment system, was then read, in which she proves that in her system of allotting land five acres suffice for the support of one family. The last paper, which was read by Mr. J. Hall Maxwell, related to experiments with special manures, conducted by the land-steward of Mr. Fleming, of Barrochan. It formed the report for which the second premium of 30*l.* was awarded to the essay-competition of last year. We can only notice a few of the more important conclusions at which the author arrived. He found that the nitrate of soda and potash, when applied by themselves, or in mixture, are beneficial to Potatoes and hay; but when applied to grain crops, especially singly, they are positively

injurious in a moist climate, as, though the growth of straw is greatly increased by them, the sample of grain becomes lighter and otherwise deteriorated. He considers it probable that the silicate of potash would counteract this effect. Common salt, at a distance from the sea, is advantageous to grain crops as respects colour and plumpness, and also to Grass and hay, although it does not cause a rush of growth like the nitrates. Soot differs little from nitrates in its effects on Grass intended for hay, but the dealer in hay gives less price for hay raised by soot. Sulphate and muriate of ammonia have the same effect as the nitrates. Sulphate of soda and magnesia act differently, and will not pay in most cases when applied by themselves to Potatoes or grain, but they do well when mixed with the nitrates. Guano may be successfully applied to every species of crop in the field or garden, and it always proves a most powerful auxiliary to farm-yard dung.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the meeting of the Council on the 8th inst., the Secretary presented a return of the receipts and expenditure incurred at the late Cattle show at Belfast, whereby it appeared that the sum of 1762*l.* had been received by the sale of tickets to the entertainments, entrance to the show-yard, and fees upon the entry of stock, &c., and that a sum of 1593*l.* had been subscribed in different counties in the province of Ulster for the purpose, making a total of 3355*l.* received upon that occasion. It appeared also that the sum of 2954*l.* had been expended in the erection of the pavilion and show-yard, giving the entertainments, and in all the other incidental expenses, including a net sum of 500*l.* paid to the central society towards the payment of premiums, leaving a balance of 401*l.* in favour of the local committee, after defraying all the expenses of that great meeting. The Secretary stated that he had addressed a circular to the different members of the council, to the effect, that inasmuch as Mr. Hill, the owner of the prize Bull "Eden," at the cattle show at Belfast, had declined to comply with the proposal of the council for a re-adjudication, upon the terms long since communicated to him, the opinion of the full council should be taken as to what proceedings should be next adopted, for the purpose of bringing the matter to a final close; and that a special meeting of the council should be summoned for Thursday the 15th of February next, to take the subject into consideration. A letter was read from the Earl of Listowel, stating his conviction that the cause of Agriculture can in no way be so well promoted as by the employment of intelligent and competent Agriculturists upon private estates. A letter was read from Sir Richard O'Donnell, Bart., stating that it was his intention to place a premium of 12*l.*, or a gold medal or a piece of plate of that value, at the disposal of the Society, "for the landlord in Ireland who shall have thorough-drained on the farms of his tenants, or induced his tenants so to do, the greatest quantity of land, not less than 100 statute acres, upon Mr. Smith of Deanston's principles, in the years 1843 and 1844." Letters were read from the secretaries of various local societies, sending in the names of a sufficient number of members to the central society, to qualify them for the society's premiums this year.

FARMERS' CLUBS.

Bromsgrove.—At a meeting of this Club, held in the Town Hall, Bromsgrove, on January 30th, the Report for the year 1843 was read, from which it appears, that at the formation of the Club on the 20th June, 16 members were enrolled, but that the number has increased to 58. The objects proposed in its establishment were the diffusion of information on Agricultural subjects, and the promotion of Agricultural improvement. For the fulfilment of these objects, a meeting is held each month, at which some subject connected with Agriculture, is brought forward for consideration; elementary lectures on subjects connected with the theory and practice of Agriculture are occasionally delivered; and the surplus funds of the Club are applied to the purchase of books for the formation of an Agricultural Library. At the first meeting an introductory lecture was delivered by Mr. H. F. Fardon, "on the Advantages of Association for the improvement of Agriculture," in which the history of English agriculture was briefly given, its present importance enforced by reference to statistics, the duty and interest of nations and of individuals with respect to its improvement examined, the possibility of improvement urged, and the means of improvement inquired into; these are a remunerative price of produce, such equitable and proper arrangements between Landlord and Tenant as shall induce the latter to cultivate the ground in the best possible manner for the interests of both; and lastly, skill and knowledge in the farmer, to be communicated by proper education, and promoted by association. At the next meeting "the advantages of lime as a fertiliser of land" were considered. All plants grown by farmers contain lime in a greater or less degree, which they must absorb from the soil. In a caustic state lime combines with acids in the soil, and some of the compounds thus formed are serviceable as food to plants. It also decomposes certain noxious compounds of iron, &c., which frequently exist in the soil, but it differs in its action according to the state in which it is applied. It hastens the decomposition of vegetable and animal matter, and thus has a tendency to exhaust the soil of these ingredients.

Two lots of Potatoes were exhibited at the meeting by Mr. Elliot, each containing the produce of six roots. They were grown near together under similar circumstances, each receiving a dressing of farm-yard manure. When up and weighed, a small portion of carbonate of soda was sown between the ridges of one lot, at the rate of 150 lbs. per acre. The lot undressed with soda weighed 2 lbs. 2 oz.; that which received soda weighed 4 lbs. 6 oz. The subject of Seed Wheat, and the best method of pickling and planting the seed, afforded matter for discussion at several subsequent meetings, at which it was resolved, "That there is an adaptation in different varieties of Wheat to different soils; and that the practice of annually changing the seed from one soil to another is a good one; and that arsenic, sulphate of copper (blue vitriol), and salt, have been used with much success in the pickling of Wheat for the prevention of smut." A Paper on "Wheat Sowing" was communicated at one of the meetings by Mr. Richard Smith, of Upper Hall, near Droitwich. On strong clay soils, that moulder and heave after hard frosts, he approved of sowing broadcast and ploughing in from 2½ to 3 bushels per acre, the land being previously fallowed, because greater space is thus afforded for the roots. More seed, however, is thus required, and the crop cannot be so well cleaned. By drilling again, the seed is deposited at an equal depth, but the plants are crowded and the water is retained in the narrow channels made by the drill-share, particularly on strong soils and where the drilling is done lengthwise of the ridges. Mr. Smith recommends Lord Western's system of drilling, which is to have the heel of the common drill-share made four inches in width to scatter the seed that width in the row; a space of nine inches is left between the rows for tillage. Dibbling is the most perfect system, and will probably spread and become universal as population increases. All these remarks suppose the ground in a good state of cultivation, for if it is wet, foul, or poor, Wheat cannot be grown without loss.

Arrangements are about to be made by this club for the delivery of elementary lectures to the members, and the formation of a library has been commenced, and it is hoped that a lecture will shortly be delivered by Mr. Smith, of Deanston. It is also intended to institute a ploughing match. The report, of which the above is an abstract, having been read, Mr. Wright read a paper "On the Utility of Leases," advocating well-adjusted leases on Corn-rents. In arranging these rents, the price of Corn should be calculated on an average of a certain number of years. The rent of a particular year should not be founded merely on the prices of that year; otherwise, the tenant may have the highest rent to pay when he has the least produce. A resolution was adopted by the club, expressive of their opinion, that the only sound system for tenancy of land is on the principle of leases for 7, 14, and 21 years on Corn-rents.—*H. F. Fardon, Sec.*

West Firle.—At the annual meeting of this Society on Jan. 31st, the report for the past year was read. At the meeting, which took place on the 11th of September, the subject discussed was, "The advantages of drawing off Turnips, or feeding them on the ground." The chair was taken by John Ellman, Esq., president, who opened the evening's conversation by giving his views upon the subject, and upon this the resolution of the evening was chiefly founded, viz., "That no general rule can be laid down as to feeding Turnips on the ground, or drawing them off to be consumed in sheds or yards. That on dry light soils where sheep can feed them, treading is advantageous; but on more tenacious soils the Barley crop is frequently injured by the treading of sheep—still there can be no doubt, that in fattening sheep, one acre of Turnips will produce much more mutton when consumed in warm yards and sheds, than when fed on the open ground."

Miscellaneous.

Specific Manures are frequently capable of adding one or two substances only to the soil. It is evidently, therefore, of primary importance to ascertain, in the first place, whether the soil really requires the substance; for it is impossible that any specific can be valuable when applied to soil already abundantly supplied with the very substance it is intended thus to add to the land; in this instance, there must result either no effect or an injurious one, and in consequence, in both instances, disappointment. Let us take an example: nitrate of soda has been much and deservedly praised as a manure, and it has almost universally been declared to be equal to, and to act in a similar manner with nitrate of potash (saltpetre), in which case it would have the advantage of greater cheapness to recommend it. But in the above statement it is quite forgotten that the manure acts in two distinct ways: 1st, as a nitrate; 2d, as containing soda. Now, as regards the first action, viz., as a nitrate, these two salts can replace each other without the least difference in their action; but as respects the second mode of action, viz., the supplying the plant with soda, it is clear that they differ as distinctly as saltpetre does from common salt; and practice has proved this, for in more than one instance a considerable difference has been shown in the result obtained by the two manures. Thus, Prof. Johnston mentions the following result of an experiment at Erskine, near Glasgow, in 1841, upon Hay, with the two nitrates, in two different fields—the one being a light soil, the other a clay. In the light soil the nitrate of soda produced 3 cwt. more Hay per acre than the saltpetre, whereas, on the clay, the saltpetre exceeded the nitrate of soda by ¾ cwt. nearly; and it is well worthy of remark, that common salt, another compound of soda, was also employed in both cases, but yielded exactly 5 cwt. more upon the sand than on the clay; thus proving, we think, as well as a chemical analysis of the soil could have done, that the clay soil contained naturally more soda than the sand, and likewise probably that the sand was richer in potash. A similar case is likewise mentioned by Dr. Daubeny, of Oxford, where the nitrate of potash exceeded the nitrate of soda upon Wheat by upwards of 4 bushels per acre, and in which case the nitrate of soda produced no effect whatever; in fact, an equal portion of soil, without any top-dressing, produced 24 lbs. more grain than that upon which the nitrate of soda was used.—*Dr. Madden, on the Advantages of Extended Chemical Analysis to Agriculture.*

Improved Modern Husbandry compared with the Old System.—I. *Old System.*—Statement, showing the expense of the cultivation, together with the return from, an acre (Scotch) of cold, stiff soil, with a hard retentive subsoil, before improvement by draining, &c.; lease for 18 years; rent 25*s.* per acre.

Expense of a Six Years' Rotation.

	£	s.	d.
60 bolls lime, at 10*d.* per boll	2	10	0
Carting and spreading	1	10	0
First crop,—ploughing, seed, and harrowing	1	12	0
Second ditto ditto	1	15	0
Grass seeds and harrowing	0	10	0
Rent for six years, at 25*s.*	7	10	0
	£15	13	0

Return of a Six Years' Rotation.

	£	s.	d.
1st, 5 quarters Oats (with Straw)	5	0	0
2d, 5 ditto (ditto)	6	0	0
3d, 85 stones Hay, at 3*l.* per 100 stones	2	11	0
4th, pasture, at 20*s.*	1	0	0
5th, ditto ,,	1	0	0
6th, ditto ,,	1	0	0
	£17	11	0

The same repeated till the end of the lease, the land getting worse instead of improving.

Statement showing the expense of improvement, cultivation, and return from an acre of the same land, during a lease of 18 years; rent the same.

Expense of the first Six Years.

	£	s.	d.
Draining with tiles at 15 feet interval, 25 inches deep; tiles, 21*s.* per thousand	7	0	0
Lime, carting and spreading	4	0	0
Ploughing, harrowing, and seed	1	18	0
Second crop—ploughing, harrowing, and seed	1	16	0
	£14	14	0

Expense of Green Crop, viz.—

	£	s.	d.
Subsoil and other ploughings	4	0	0
Grubbing, horse-hoeing, and weeding	1	10	0
Dung, 10*l.*; lime, 1*l.* 5*s.*	11	5	0
	£16	15	0
Ploughing for Wheat and seed	2	6	0
Grass seeds, harrowing and rolling	1	5	0
Rent for six years, at 25*s.*	7	10	0
Interest on expense for draining for five years, at 5 per cent. per annum	3	15	0
	£44	5	0

Return of the first Six Years.

	£	s.	d.
1st, 8 quarters Oats (with straw)	10	0	0
2d, 8 ditto (ditto)	10	0	0
3d, Potatoes, 1-3d; Turnips, 2-8ds, at per acre	11	0	0
4th, 4 quarters Wheat, at 60*s.*	12	0	0
5th, 150 stones hay, at 3*l.*; foggage, 5*s.*	4	15	0
6th, Pasture, at per acre	2	0	0
	£49	15	0

Expense of the second Six Years.

	£	s.	d.
1st, Ploughing, harrowing, and seed	1	12	0
2d, Ditto, ditto, ditto	1	10	0
3d, Green crop without subsoil-ploughing	12	0	0
4th, Ploughing for Wheat and seed	2	4	0
5th, Grass seeds, harrowing and rolling	1	5	0
Rent for six years, at 25*s.*	7	10	0
Interest on draining, six years	2	2	0
	£28	3	0

Return of the second Six Years.

	£	s.	d.
1st, 9 quarters Oats (with Straw)	11	5	0
2d, 9 ditto ditto	11	5	0
3d, Green crop—at least	12	0	0
4th, 5 quarters Wheat, at 60*s.*	15	0	0
5th, 200 stones Hay, at 3*l.*; foggage, 5*s.*	6	5	0
6th, Pasture, at per acre	2	00	0
	£57	15	0

The expense and return of the third six years will be much the same as that of the second.

ABSTRACT I.—*Unimproved Land.*

	£	s.	d.
Expense during a lease of 18 years	46	19	0
Return ditto ditto	52	13	0
Profit per acre during the whole lease	5	14	0

II.—*Improved Land.*

	£	s.	d.
Expense of the first six years	44	5	0
Ditto second ditto	28	3	0
Ditto third ditto	28	3	0
	£100	11	0
Return of the first six years	49	15	0
Ditto second ditto	57	15	0
Ditto third ditto	57	15	0
	£165	5	0
Profit per acre during the whole lease	64	14	0

The above system of cropping is not one to be generally recommended; it is merely adopted as the basis of the above calculation because it is generally followed.—*Statement made by Mr. Smith of Deanston, at Bristol.*

Guano Contract.—The following is an extract from a translation of the Guano contract, to which much attention has of late been directed:—Art. 1. The company (Messrs. Quiros, Allier, and Co.; Gibbs, Crawley, and Co.; and Puimiroll and Co.,) has the exclusive privilege of exporting abroad the guano of the islands and other places where it is produced, as discovered, or to be discovered, for the period of four years, obligatory upon all the contracting parties from the present date. Art. 2. The quantity of 20,000 tons is assigned for the extraction of each year of the four years expressed in the preceding article, with the privilege of exporting the following year that which shall not have been exported in the year to which it corresponds; but, at all events, 80,000 tons shall be exported in the four years. Art. 5.—The state places for its capital in the company the guano at the value of 30 dollars the ton. Art. 6. The contractors place for their capital their industry and labour, and shall advance for account of the association all the expenses of getting the guano, loading, insurance, freightage, commission of shipping and of sale, and other expenses caused by the business as well in Peru as in the markets of consumption. Art. 7. From the produce of sales of the guano are to be deducted the costs, freights, insurances,

expenses, &c., and the capital assigned of 30 dollars per ton, and the result will give the amount of profit or loss, which is to be divided in the manner following: three-fourth parts for the State, and one-fourth part for the contractors. Art. 15. For the present the extraction of guano is alone permitted in the Island of the North (*Isla del Norte*), in those of Chincha. Art. 22. The exportation of guano being, according to the first article of this contract, the exclusive privilege of this company, the Supreme Government binds itself not in any case to dispose of any quantity whatever, whether in the shape of recompense, sale, gift, or in whatever mode; nor to permit its exportation by any person not of the association during the four years applicable to the contract.

Notices to Correspondents.

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Account Book.—*A Subscriber and Farmer.*—If you or the publishers will send or lend us a copy of the Work referred to, we shall be happy to give an opinion of it.

Beans.—*A Yorkshire Subscriber.*—You might with advantage mix guano with the dung before putting it in the drills, at the rate of two cwt. to such a quantity as you intend to put on an acre.

Best way of applying Soluble Salts to Land.—*An Amateur.*—Dissolve them in water. The least quantity which will dissolve the weight of salt you wish to apply to an acre, will do equally well with any larger quantity, provided you can spread it uniformly over that extent of land. If your water-cart will, when in ordinary work, spread so many gallons per acre, then your plan is, to dissolve in that number of gallons the quantity of the salt which you wish to apply per acre. These salts may be advantageously applied now. You had better give your heifers some Swedes or M. Wurzel along with the Hay.

Books.—*North Cheam.*—Low's "Elements of Practical Agriculture" is the best work on Farming in our language. Cuthbert Johnson's "Encyclopædia of Agriculture" is one of the best of its class.

Breed of Pigs.—*S. Frocklor.*—We do not know the Rudgewick breed of pigs, but perhaps some of our readers, seeing this notice, may be able to inform you through us whereabout "in Surrey or Sussex" they are to be obtained.

Burnett's Antiseptic Solution.—*A Subscriber.*—We do not know it.

Dibbling Oats.—*L. T.*—We never heard of Oats being dibbled. What is true of Wheat on this subject must, however, be true also of Oats; the only question is whether the less value of seed saved will more than pay the same additional cost of this mode of sowing.

Essay on Drainage.—*E. Barnard.*—Mr. Arkell's Prize Essay is not published in a separate form.

Fatting Oxen.—*Gorge.*—If you intend giving your cattle *all* these things, let them have, say, 2 lbs. of oil-cake, 5 lbs. of Barley-meal, and 5 lbs. of Hay-chaff, with Swedes *ad lib.* Mr. Warners, of Walsingham, Norfolk, is the person to apply to on a subject like this; he manufactures a composition for fattening cattle, by which it is said that beef may be grown more cheaply than by any of the ordinary methods of feeding. Foreign oil-cake is quoted at per ton, and not at per 1000 cakes, because the size of the cakes differs very much. You will find a plan of a piggery at No. 3 of the *Agricultural Gazette*, reference to the letters on which having then been accidentally omitted we now supply. F, F, F, F, farmyard; R, R, R, roads; A, A, A, shed, with yard in front for store-pigs; T, tank for drainage of sties, yard, and sheds; S, steaming-room; the double row of sties below the steaming-room are for the fatting pigs, two being fed in each; and the single row at one end of the steaming-room are for a boar and six brood sows.

Gas-Lime.—*A. B.* will find information on this point if he looks over this section of this and previous Nos. of the *Gazette*.

Gas-water.—*Wem.*—The salts of ammonia in gas-water will differ with different qualities of coals used for making the gas. In some cases the liquor contains much sulphate and but little carbonate; whereas in others the latter predominates, and when this is the case, and gypsum is at hand, the sulphate of ammonia may be produced by its agency (the mineral being added in powder to the liquid); but the addition of sulphuric acid is the best and certain road to the formation of this salt, in whatever state the ammonia exists. Boil to a pellicle and crystallise.

Glossary of Scientific Terms.—*Literalis.*—If we understand you right, this is what you want. We shall take the subject up in some future Number of our Paper.

Gorse.—*Charles Etheredge.*—Information on this subject has been published in this and last Paper. We hope to be still more explicit on the points you refer to shortly. Mr. Ransome has a Gorse-crusher, and a Chaff-cutter applicable to the cutting of Gorse may be had at Utley Iron Works, Gloucestershire.——*Tuesday.*—Furze grows in nature on "wettish clay land," perhaps because it has been eradicated from all the better description of land. It prefers a dry loamy sand.

Horse-ponds.—*J. R.*—Undoubtedly, cattle should be supplied with *clean* water. We shall endeavour to obtain for you a statement of the *medicinal* properties of that which we often see in horseponds, discoloured by the runnings from the stable, cow-houses, &c.

Lime.—*Creta-cremenla.*—You state the results of an experiment which was favourable to the plan you propose, facts, such as you detail, are safe as guides, though present theory may not explain them. In applying lime to your meadow-land, make a compost of it when caustic, with a lot of vegetable mould, and let it remain till it slakes. You may apply so much per acre of the compost as contain, say 100 bushels of lime, early in spring on your grass-land, and it may also be applied with advantage to your arable land. Clays generally require a greater dressing of lime than light soils.

Liquid Manure.—*C. E. F.*—Your tank might be 6 feet deep and 9 in diameter, flagged or paved at bottom, and with ordinary stone and mortar walls. It is certainly worth your while to adopt means of this kind to save the liquid manure.

Manures.—*Economist.*—Cloacine should be mixed with black turf-ashes and dry earth, and after a while you will be able to drill it.——*Constant Reader.*—Horse-flesh must be greatly more valuable than woollen rags as manure, but *how much* more so we do not know. Bones are generally spread or drilled by themselves without mixture. Sulphuric acid would not reduce large bones to a pulp (see article on this subject in our Home Correspondence). We shall answer your question about tithe-charge next week.——*W. H. B.*—Substances employed to mix with artificial or condensed manures are of two kinds: viz., such as are intended merely to dilute them as it were, so that by their addition, there being a larger bulk to apply to the land, we may be able to do so more uniformly; and such as really increase the value of the manures they are mixed with. The sand you propose to mix with the guano may belong either to one or other of these two classes: if it be ordinary sea-sand, it is of the first kind, and earth from the surface of the field would answer your purpose much better; but if it be such as is found on the northern coasts of Cornwall, 6s or 7s per cent. of which is carbonate of lime, the sand itself being chiefly comminuted sea-shells, then it belongs to the second class, and may be usefully employed as you propose, especially if the land you are about to manure be deficient in calcareous matter. In the latter case you may advantageously apply six or eight cart-loads of this sand per acre, and you will have to mix your 2 or 3 cwt. of guano through it all.

Management of Grass-Land.—*Warrington.*—We always feed our young seeds down close in autumn with sheep, and consider the manuring they thus receive does them good; and probably this management would suit permanent pasture also.

Marl.—*J. Yorke.*—Your specimen will probably be valuable as a top-dressing for land deficient in calcareous matter. It appears to be almost wholly carbonate of lime; but you will find, by reading Sprengel's articles in this Paper, that the value of marl frequently depends on the existence in it of matter, whose presence can only be detected by a tedious analytic process.

Market for Feeding Stock.—*J. Clark.*—Romford-market, in Essex, is one of the best in England for stock; during the autumn and spring months great numbers are offered weekly for sale, and are mostly purchased for fattening.

Moss-land.—*A Town Farmer.*—Judging merely from the information you give, we advise you to pare and burn this land; break it up, take a crop of Turnips off it, working the land well during their growth, and lay it down to Grass along with the succeeding crop of Barley. It is no good trying to *tear* the Moss out.

Peas.—*Gwyn.*—Peas prefer light soils, but they may be grown on stiff soils, like the Bean; if, after ploughing, your land gets well frozen, then it will harrow down well, and you may drill the seed in with the Suffolk drill, in rows, say, 9 inches apart.

Potatoes.—*A Constant Subscriber.*—Place the dung in the rows, and if it is well rotted, you may use the horse-hoe to mix it with the bottom earth of the furrow. Plant the Potatoes in the loosened earth, and then hoe or plough the drills down to cover them. It will take about seven sacks of Potatoes to plant an acre.

Quantity of Guano per Acre.—*Tuesday.*—In ordinary cases, 3 cwt. per acre. Mix it thoroughly with the soil before sowing. The quantity required depends upon the present condition of the land.

Soils.—*J. Marshall.*—If your soil is similar in character to the specimen No. 1, the clay, then we doubt not that it would be greatly improved by a dressing of No. 2, the calcareous sand you sent. The clay, No. 1, is not a marl; it contains hardly any lime, and would do very well to make tiles and bricks of. No. 2 contains at least 30 per cent. of lime; and rather than send 12 miles for lime, you had better try a good dressing of this which is at hand. If you resolve to do this, please to let us know the result of the application. As for the sulphureous smell you speak of, the cause might be ascertained by an accurate analysis of the material from which it arises; *i. e.*, if you are not mistaken in its existence.

Steeping of Seeds.—*Gentleman Farmer.*—Mr. Campbell informs us that "after steeping the proper time, the grain is to be taken out and spread to dry under a current of atmospheric air (not by heating). The time of steeping for Wheat may extend to 84 or 90 hours; for Oats, 68 to 72 hours; for Barley, from 58 to 60 hours; for Grass-seeds, from 14 to 16 hours; for Rye, 70 hours; for Beans and Peas, from 18 to 20 hours; for Turnips and Rape-seed, from 10 to 12 hours. The grain must not be kept in a wet state after being taken out of the liquid; but the drying must commence immediately. When sown, much less seed must be used than is commonly done, as the plants tiller into numerous stems."——*Oakley.*—The Leading Article in No. 4, and Mr. Campbell's answers above, will probably serve your purpose. We doubt if soaking Potatoes would be beneficial. The experiment had better be tried now with one in a flower-pot; see if it sprouts vigorously there, before trying the plan in the field.

Stall-feeding.—*G. C.*—Next week.

Stall-feeding Oxen.—*W. T.*—In East Lothian it is generally considered better to adopt the system of hamels, as they are termed, *i.e.*, to place fatting oxen two and two in small yards, each with a shed, rather than tie them up singly in a feeding-house. By this means, in addition to the greater comfort of the animals, and the consequent greater rapidity of fattening, the farmer is enabled to get his straw trod into dung more rapidly.

Swedes on Clay-land.—*H. S.*—We suppose the land is dry. Cultivate it and manure it in autumn, and leave it rough for the winter's frost. Scarify and stir it 4 or 5 ins. deep in spring, as often as it is necessary to bring it to a tilth; beat it up towards the end of May in drills 26 ins. wide, and sow.

Task work.—*Midland County.*—We shall endeavour to put your plan in execution.

Toll Exemption.—*E. A. P.*—We think the decision of the Borough Magistrates was wrong. The exemptions in the Acts are to be construed liberally in favour of Agriculture; and without resorting to a forced construction, we think the peat under the circumstances described would be exempt under either of the terms, "soil" or "manure."

Trench Ploughing.—*A Subscriber.*—It is rarely advisable to plough below the full depth of the active soil. Your best plan, if your land is well drained, is to subsoil-plough it once every fourth year, and by and by the soil will become mellow to a great depth, and then you may trench plough it with advantage. Your suggestion with regard to an article on manure shall be attended to.

*** As usual, many communications have been received too late for answering this week.

Markets.

SMITHFIELD, Monday, Feb. 12.—Per stone of 8 lbs.

	s. d.	s. d.		s. d.	s. d.
Best Scots, Herefords, &c.	3 10	4 2	Best Downs & Half-breds	4 2	4 6
Best Short Horns	3 6	3 10	Best Long-wools	4 0	4 4
Second quality Beasts	3 0	3 4	Ewes and second quality	3 6	3 10
Calves	4 0	4 10	Pigs	3 0	4 4

Numbers.—Beasts, 2760; Sheep, 23,630; Calves, 64; Pigs, 270.

Although the supply of Beasts continues very moderate, trade is heavy at our late quotations, in consequence of the large arrivals and dull sale at the dead markets. Mutton is again in less quantity, and a brisk demand at an advance of full 2d per 8 lbs. on heavy woolled Sheep; but the best Downs do not make a proportionable progress, there being much greater numbers of them and of Half-breds from Norfolk, than of other kinds, and it is only in very selling ones that our highest quotation is realised. Veal is a heavy trade, at a reduction of fully 2d per 8 lbs. Pork remains steady.

FRIDAY, Feb. 16.

We have to-day a very heavy trade in all kinds of stock, at reduced prices. A large supply of Beef and Mutton, on seasonable weather, and very depressed state of the dead markets, have combined to produce this effect with regard to those articles. The best Beef cannot be quoted at more than 3s 8d to 4s, the best Downs, &c., 4s to 4s 6d; and other qualities suffer in the same proportion. Calves are not quite so plentiful, but we cannot quote any advance, it being difficult to make 5s per 8 lbs of anything.

Numbers.—Beasts, 3360; Sheep, 20,950; Calves, 100; Pigs, 310.

41, West Smithfield

POTATOES.—Southwark Waterside, Feb. 12.

During the early part of the past week our market was depressed, and there was but little demand, except for the best samples; other lots moved heavily, at terms of this day week. The demand for Early Devons has been very limited, the trade is gone off them very considerably, and 70s must still be regarded as nominal. The last two or three days the holders of the best Scotch Reds have been asking 70s, but few sales have been effected at that price; yet should we have a continuance of cold weather, it is expected that the annexed prices will be maintained.

York Reds	- - -	60s to 70s	Kent and Essex Whites	- -	55s —
Perth	- - -	65 70	— —	Kidneys -	65 70s
Early Devons	- - -	65 70	Wisbeach Kidneys	- -	65 —
Late Devons	- - -	70 —	— Blues	- -	55 —
Cornwall	- - -	65 70	— Whites	- -	50 55
Jersey and Guernsey Blues		60 —	Prince Regents	- -	60 70

There have been several arrivals from Yorkshire, Scotland, Devonshire, and the Channel Islands, and since Saturday last; these, in addition to those we have on hand, will be rather a liberal supply.

WOOL.—British, Friday, Feb. 16.

The Market continues in the same state as reported last week. With the exception of Kent Fleeces, no alteration has taken place in prices.

	per lb.			per lb.	
Long-woolled Wethers	1s 1d	to 1s 3d	Southdown Hoggits	1s 1½	to 1s 3½
Do. Hoggits	1 1½	1 3½	Kent Fleeces	1 6½	1 8½
Southdown Fleeces	1 4½	1 6½			

James Fraser, Wool Broker.

SEEDS, Friday, Feb. 16.

Canary	per qr	36s to 38s	Linseed Cakes, Foreign, p. ton	8l to 9l 10s	
Carraway	per cwt	56 60	Mustard, White - p. bush.	6s	6s
Clover, Red, English	64	70	— Superfine „	6	6
— Foreign	64	72	— Brown „	14	16
— White, English	94	105	Rapeseed, English, per last	24l	28l
— — Foreign	86	105	Rape Cakes - per ton	—	—
Coriander - -	12	16	Saintoin - - -	—	—
Hempseed - per last	24	26	Tares, Essex, winter p. bush.	3	4
Linseed - per qr	—	—	— Foreign - -	3	3
— Baltic - -	—	—	Trefoil - - per cwt	—	—
— Cakes, Eng. per 1000	10l 5s	10l 10	Turnip (too variable for quotation).		

Kingsford and Lay.

MARK LANE, Friday, February 16.—The Market has been scantily supplied with English Wheat since Monday, which sold at the full prices of that day. Free Foreign is held for an advance, which renders the transactions limited; there is not much doing in Bonded, but the few sales effected have been at prices rather exceeding the late rates.—Fine Malting Barley is more in request, but we cannot alter our quotations.—Beans and Peas remain without alteration.—Oats are fully as dear, but business is not extensive.

BRITISH, PER IMPERIAL QUARTER.	s.	d.		s.	d.
Wheat, Essex, Kent, and Suffolk	White	46	57	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire		50	57	White	—	—
Oats, Lincolnshire and Yorkshire	Polands	15	25	Feed	16	24
—— Northumberland and Scotch	Feed	—	—	Potato	17	25
Irish	Feed	16	23	Potato	18	24
Barley, Malting and distilling	28 to 33	Chevalier	33	37	Grind.	24	30
Malt, pale, ship							
—— Hertford and Essex							
Rye							
Beans, Mazagan, old and new	29 to 29	Tick	29	31	Harrow	28	32
—— Pigeon, Heligoland	28 to 30	Winds.	30	32	Longpod	28	30
Peas, White	30 to 32	Maple	27	29	Grey	26	27

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 5 per Quarter.	49s 10d	28s 7d	18s 5d	30s 2d	29s 5d	30s 7d
— 12	50 9	28 0	18 2	32 5	29 6	31 0
— 19	51 8	28 7	18 9	31 7	29 6	30 2
— 26	52 5	28 3	19 0	32 4	29 6	30 10
Feb. 2	52 6	28 2	18 11	33 10	29 6	30 6
— 9	53 7	28 1	19 1	33 9	29 10	30 6
6 weeks' Aggregate Aver.	51 7	28 2	18 10	32 6	29 7	30 4
Duties on Foreign Grain	19 0	5 0	8 0	10 6	11 6	15 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	4640	3110	4630	3066 Sks
Irish	—	800	1090	—
Scotch	—	—	—	—
Foreign	4220	1280	—	—

Kingsford and Lay.

COVENT GARDEN, Feb. 16.—The supplies of most kinds of Fruit and Vegetables, during the week, have been tolerably good, and trade continues much the same as in our last report. Pine Apples are selling at nearly the same prices as last week, and little alteration has taken place in those of Grapes. Good dessert Pears continue to get scarce; Beurre Rance do not ripen well this season and are very liable to decay. English-grown kitchen and dessert Apples are rather scarce, and are advanced a little in price; but foreign ones, consisting principally of common sorts, are abundantly supplied. Oranges are offered at nearly the same prices as last week. Lemons bring from 6s. to 14s. per 100. Chesnuts are offered at nearly the same prices as in our last report. Among Vegetables, Cabbages are scarce; Brussels Sprouts are selling at from 1s. 6d. to 3s. 6d. per half-sieve. Broccoli continues scarce. French Beans are much the same as in our last report, as are likewise Greens. Celery has a little advanced in price during the week, as has also Endive, the latter is selling at from 1s. 6d. to 3s. per score. Seakale is good and sufficient for the demand. Asparagus is offered at from 2s. to 10s. per 100. Lettuces are selling at nearly the same prices as last week. Cucumbers bring from 4s. to 8s. each. A few of the Early Horn Carrot are offered at from 4d. to 8d. per bunch. Cut flowers chiefly consist of Erica gracilis, Burchellia capensis, Epiphyllum truncatum, Leschenaltia tricolor, Æschinanthus grandiflorus, Azaleas, Acacias, Rhododendrons, Camellias, Cinerarias, Tulips, Primulas, and Roses.

FRUITS.

Pine Apple, per lb., 2s to 12s	Almonds, per peck, 6s to 7s
Grapes, Portugal, per lb. 1s to 2s 6d	Sweet Almonds, per lb., 2s 6d to 3s
Apples, dessert, p. bush. 6s to 35s	Nuts, Spanish, per bushel, 16s to 18s
„ Kitchen, p bus. 2s 6d to 5s	— Brasil, 10s
Pears, per half-sieve, 4s to 12s	— Barel, 7s to 8s
Oranges, per dozen, 2d to 3s	— Barcelona, 26s to 28s
— per 100, 24s	— Cob, per 100 lbs., 80s to 100s
Lemons, per doz. 1s to 2s	Chesnuts, per peck, 3s to 6s
— per 100, 6s to 14s	Filberts, English, p 100 lbs., 60s to 65s

VEGETABLES.

Rhubarb, per bundle, 6d to 1s 6d	Leeks, per doz. bun., 2d to 1s
Broccoli, per bundle, 1s to 3s	Garlic, per lb. 4d to 6d
Brussels Sprouts, p. sv., 1s 6d to 3s 6d	Onions, 2d to 4d per bunch
Cabbages, per doz., 6d to 1s	— Large, per bushel, 2s to 3s
Red Cabbages, per doz. 2s to 6s	— Spanish, per doz., 1s to 4s
Sorrel, 1s 2s to 6d per half sieve	— pickling, p. ht.-sv., 3s to 4s
Asparagus, per 100, 2s to 10s	Shallots, per lb., 4d to 6d
Seakale, per punnet, 6d to 8d	Chilis, per 100, 1s to 2s
French Beans, 2s to 4s per 100	Lettuce, Cab., p. score, 6d to 1s
Autumn Potatoes, 2d to 6d per lb.	— Cos, per score, 6d to 1s
Savoys, per doz. 6d to 1s 6d	Celery, per bun., 6d to 9s
Greens, per doz. 3s to 6s 6d	Mushrooms, per pottle, 1s to 2s
Potatoes, per ton, 80s to 90s	Small Salads, per punnet, 2d to 3d
— per cwt., 2s 6d to 4s	Watercress, per doz. sm. bun. 3d to 6d
— per bushel, 1s 6d to 2s 6d	Parsley, per doz. bunches, 2s to 3s
— Kidney, p. bush., 2s to 3s 6d	Tarragon, Green, per bun. 4d to 6d
Turnips, per doz. bunches, 1s 6d to 2s 6d	Endive, per score, 1s 6d to 3s
Horse Radish, per bundle, 1s to 6s	Green Mint, 4d to 6d per bunch
Radish, p. doz. bands, 1s to 2s	Marjoram, green, p. doz. bun. 1s 6d to 2s
Carrots, p. doz. bun. 2s 6d to 5s	Chervil, per punnet, 1s 6d
— Early Horn, 4d to 6d p. bunch	Salsafy, per bundle, 1s to 1s 6d
Cucumbers, 4s to 8s each	Scorzonera, per bundle, 1s to 1s 6d
Spinach, per sieve, 2s 6d to 3s	

HOPS, Friday, Feb. 16.

The Hop Market continues firm, and last week's prices are fully supported.

Mid & East Kent Pocks.	6l 6s to 10l 10s	Sussex Pockets	6l 6s to 6l 8s
Choice ditto - -	11 0	Choice ditto - -	6 15 —
Weald of Kent Pocks	6 6 6 15	Farnham - - -	9 9 10 10
Choice ditto - -	7 0		

Patterson & Smith, Hop-Factors.

HAY.—Per Load of 36 Trusses.

Smithfield, Feb. 16.

Prime Upland Hay	3l 6s to 3l 14s	Clover	4l 0s to 5l 5s
— Inferior	2l 10s to 3l 0s	Straw	1l 5s to 1l 10s

John Cooper, Salesman.

Whitechapel, Feb. 16.

Hay	3l 10s to 3l	Clover	4l 5s to 4l 15s
— Fine Upland,	3l 5s to 3l 15s	— fine,	4l 18s to 5l 5s
Straw, 1l 5s to 1l 10s			

Cumberland Market, Feb. 16.

Meadow Hay	3l 10s to 3l 15s	Clover	4l 15s to 5l
— Inferior	2l 15s to 3l 10s	— Infer.	4l 5s to 4l 10s
Straw	1l 5s to 1l 10s		

Trade very dull. Joshua Bagas, Hay Salesman.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 24s per ton	— —	Bags, 30s to — per ton	— —
Bleaching Powder, 8s per cwt.	— —	Rape Cake, 10s per ton	— —
Brimstone, 30s per ton	— —	— Dust, 13s per ton	40
Bone-dust, 17s per quarter	42	Sal Ammoniac, 50s per cwt.	— —
— Half-inch, 18s ditto	45	Salt, Agricultural, 3s per ton	30
— Calcined, 9s per cwt.	— —	— clean, 20s per ton	30
Carbonate of Ammonia, 65s per cwt	84	— Hide, 9s per ton	24
— of Lime, 1s to 2s per cwt	— —	Saltpetre (Nitrate of Potash) 28s	
— of Soda, 30s to 35s per cwt	— —	per cwt. duty paid	80
Chloride of Lime, 20s per cwt	— —	Silicate of Potash, in powder, 63s	
Gravel, —s to 11s per ton	— —	per cwt.	— —
Guano, 200s to 230s p. ton, ave. to quan.	80	Soap Ashes, 10s to — s per ton	— —
— Peter's, 60s per ton	60	Soda Ash, 14s to — s per cwt.	65
Gypsum (Sulphate of Lime), 20s 6d to 25s per ton	84	Sulphate of Ammonia, 22s to 24s per ton	70
Humphreys's Compound for Hyacinths, 1s 6d per bottle	— —	— of Copper, 25s to 40s p cwt.	—
Muriate of Ammonia, 24s per cwt.	70	— of Magnesia (Imp.) 10s p cwt.	65
— Lime, 5s to 6s	70	— of Magnesia (pure crystal.) 12s p. cwt.	60
Nitrate of Soda, 14s 6d to 16s 6d per cwt., duty paid	80	— of Potash, 14s per cwt.	— —
Phosphate of Lime—s to 14s p. cwt	60	— of Soda, 5s 6d per cwt.	— —
— — Super, 18s per cwt.	60	Scotch, 24s per cwt.	60
— of Ammonia, in crystals 3s 3d per lb.	— —	Sulphur, 14s per cwt.	— —
— — — in fine powder, 24s to 28s per cwt.	60	Sulphuric acid, London made, 1½d per lb.	— —
		— Country made, 1d per lb.	— —
		Whiting, 6s per ton	— —

Expenses of shipping about 4s to 7s per ton, according to quantity.

Mark Fortnum.

RANUNCULUSES.

J. SUTTON AND SONS beg to offer the following:—

50	choice Sorts, by name, a pair of each	£1	5 0
50	do. one root of each	0	15 0
25	do. a pair of each	0	13 6
25	do. one root of each	0	8 6
Double Italian Tuberoses, per dozen		0	4 0
Ferraria, or Tigridia pavonia, very strong Roots, per dozen		0	2 6

NEW FLOWER SEEDS.

75	most showy hardy Sorts (selected)	£1	0 0
50	do.	0	15 0
25	do.	0	7 6

KITCHEN GARDEN SEEDS.

Messrs. SUTTON and SONS respectfully solicit and recommend attention to the Collections of NEW KITCHEN GARDEN SEEDS which were advertised by them in the *Gardeners' Chronicle* of Dec. 30th and Jan. 6th. The Seeds are safely packed for conveyance to any distance, as they receive many Orders from Scotland and Ireland.

N.B.—Parcels delivered free to any of the Railway or Packet Offices in London, or to any part of the Great Western Railway, within 70 miles of London.

Catalogues may be had *gratis* at the Seed-shop, Nos. 7 and 8, Market-place, Reading, Berks.

KENSINGTON NURSERIES.

RICHARD FORREST AND Co. beg leave respectfully to direct attention to their GENERAL NURSERY STOCK, which was never finer than this season, especially the extensive and correctly-named Collection of FRUIT-TREES.—See Advertisement for Nov. and Dec. 1843, of this Journal.

In consequence of the Lease of one of their Nurseries expiring, and being required for other purposes, R. F. & Co. deem it necessary to assure their Customers everywhere that it will not occasion the slightest interruption in their business. The Shop, Warehouses, &c. will remain undisturbed, and the ample provision which has been made in the adjoining Nurseries for this little change will insure the same supply, and attention to all the Customers, which they have uniformly experienced. To those who have visited the Nurseries recently, these observations are perhaps unnecessary; but to those who have not had an opportunity of witnessing the improvement of their Stock, R. F. & Co. consider this slight notice necessary to counteract any prejudice that might be raised in the minds of their numerous friends throughout these kingdoms and elsewhere.

TO GARDENERS AND BOTANISTS, &c.—As young Gardeners have often great difficulty in getting their specimens of the beautiful tribe of MOSSES correctly named, the Advertiser offers to assist them in the following manner:—If 20 of such will send their names and addresses as subscribers to the amount of 7*s.* 6*d.* each, before March 10th, he will prepare 20 packets of Mosses, each containing 100 correctly named species, which will be sent, Post free, one to each subscriber, in April. A selection of examples of HEPATICÆ, LICHENS, FUNGI, ALGÆ, and ZOOPHYTES, will be added to increase the usefulness of each packet. The money to be sent by Post-office order.—Address, W. GARDINER, 40, Overgate, Dundee. The offer not to be repeated if unfavourably received.

W. G. has also prepared a few 5*s.* packets, including 60 species of SCOTTISH ALPINE MOSSES, LICHENS, and HEPATICÆ; a few 5*s.* packets of 30 named ZOOPHYTES or ANIMAL PLANTS; and a few 5*s.* packets containing selections of ZOOPHYTES, ALGÆ, and ALPINE MOSSES, LICHENS, and HEPATICÆ. Can be sent by Post. Early application necessary.

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners' Chronicle*. "THE BRITISH QUEEN on light soils, is the best of all kinds, and will drive Knight's Tall Marrow out of the garden." "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time." Both varieties may be had in packages at 3*s.* 6*d.* each, at W. J. C.'s wholesale Establishment, Newcross, or the Bedford Conservatory, Covent Garden.

SHILLING'S EARLY GROTTO PEA.

J. AND S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Grotto or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and nearly double the size of any other Pea in cultivation. Quite hardy, will stand the winter well, and a good bearer; the pod large and long. They would particularly recommend it to the attention of Market Gardeners. Price 3*s.* per quart; 10*s.* per gallon; 17*s.* 6*d.* per peck; 30*s.* per half-bushel; 2*l.* 10*s.* per bushel. Agents:—Messrs. FIELD and CHILD, 119, Lower Thames-street, London; Messrs. W. and J. NOBLE, 152, Fleet street; Mr. KERNAN, 4, Great Russell-street, Covent Garden; Messrs. HURST and McMULLEN, 61, Leadenhall-street; Messrs. GRAY, ADAMS, and HOGG, Kensington; Mr. T. D. WATKINSON, Market-place, Manchester.—Northwarnborough Nursery, near Odiham, Hants.

GENUINE PERUVIAN & BOLIVIAN GUANO
ON SALE, BY THE IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
GIBBS, BRIGHT, AND CO., LIVERPOOL AND BRISTOL.
47, Lime-st., Jan. 31, 1844.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with synopsis of mode of use, on applications to MARK FOTHERGILL, 40, Upper Thames-street, London.

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported,—Apply to COPESWORTH, POWELL, and PEVOR, London; EDWARDS, DANSON, and Co., Liverpool; or WILLIAM J. MYERS and Co., Liverpool, the Importers.

MANURE FOR GRASS, &c.—POTTER'S GUANO.
Testimonial of Lord Zetland, Dec. 2, 1842.

POTTER'S GUANO, 2 cwt. per acre, yielded of *Hay*	2 tons	8 cwt.
Peruvian Guano, 2 cwt. per acre, yielded of *Hay*	1 "	18 "
Difference in favour of Potter's Guano		10 cwt.

BEAUTIFUL FLOWERS. — POTTER'S CONCENTRATED LIQUID GUANO, in quart bottles, 1*s.* 9*d.* each, at the principal Chemists and Seedsmen in town and country.

"I used POTTER'S GUANO on my Pansies; they were *much larger* than I ever had them before, and remained in full blow longer than I ever recollect. JOHN RITSON, Sunderland."

"POTTER'S GUANO will convert your desert into a paradise."—Professor LINDLEY, in *Gardeners' Chronicle*, 1843, p. 560.

Works, 28, Upper Fore-street, Lambeth.

For further testimonials see this Paper of the 6th Jan., 1844.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7*s.* per cwt.

Phosphate of Potash		15*s.* per cwt.
" Soda		12*s.* "
" Magnesia		9*s.* "
" Ammonia		1*s.* per lb.

GUANO.—Having made arrangements with Messrs. WM. JOS. MYERS and Co., of Liverpool, for a Cargo of this Manure direct from Peru, the Subscribers will bring the same into Berwick-upon-Tweed in all February and March.

Haddington, Feb. 9, 1844. BANKS and SON.

Note.—As this will be one of the very few cargoes from the Pacific, whose charterparties will admit of their discharging on this coast, BANKS and SON would recommend intending purchasers to apply for what they may require as early as possible.

TO AGRICULTURISTS.—IMPORTANT DISCOVERY.
"Quid faciat lætas segetes"—VIRGIL.

THE CORN-PRODUCING LIQUIDS.—"One of the most extraordinary exhibitions in the yard (at the late Agricultural Show, Dundee), was that presented by Mr. JAMES CAMPBELL, of the Dundee public seminaries. It consisted of magnificent plants of Oats and Barley, grown from seed which had undergone a certain chemical preparation, and without the aid of any manure whatever.

"Such a mode of culture is at variance with all practical experience; but Mr. CAMPBELL declares that his prepared seeds, which have produced these strong, healthy plants, were sown by him on land which, to his certain knowledge, had had no manure of any kind for eleven years; and he declared himself quite ready to verify his statement by experiment, and said he was willing, at any time, to impregnate with his chemical preparations the seed which any member of the Society should send to him for that purpose, so as to enable gentlemen to satisfy themselves fully as to the efficacy of this wonderful mode of culture."—*Journal of Agriculture, October*, 1843.

In this discovery is actually realised that boast of science, which some years ago prophetically asserted, that the time would soon come when one might carry in his pocket matter sufficient to manure an acre of land.

After impregnation with these liquids, the seed possesses within itself elements which not only afford additional nourishment to the grain during the progress of germination, but communicate to the expanding vessels of the plant an aptitude to absorb food, both from the soil and the atmosphere.

Of one specimen of Oats exhibited, the average produce of 33 seeds was 1600 grains from each, or a total of 52,800 grains, weighing 48 lbs. per bushel.

The produce of Barley was an average of upwards of 500 grains from each seed sown; and of Wheat sown on 5th July, and taken up on 8th August, to be exhibited, the result was, that while the unprepared seeds gave plants with two, three, and four stems only, the impregnated grain yielded plants with nine, ten, and eleven stems.

The material for these liquids, at the following prices, may be had of the following Agents.

Wheat	material for one gallon	2*s.* 6*d.*
Barley	do.	2 0
Oats and Grasses	do.	1 6
Beans and Peas	do.	2 0
Turnip and Rape-seed	do.	2 6

Agents.—Messrs. GEORGE GIBBS & Co., Down-street, Piccadilly, London; JAMES HADEN, Ironmonger, Warminster, Wilts; JOHN CAMPBELL, 5, Mersey-street, Liverpool; E. R. CROUCH, Newcastle-on-Tyne; SAMUEL WALDIE, Carlisle; W. W. EYRE *Agricultural* Office, Berwick; Messrs. P. LAWSON & SON, Edinburgh; DRYSDALE & Co., Glasgow; DRUMMOND & SON, Stirling; and DICKSON & TURNBULL, Perth.

One third, or even one-half less grain, is required for seed than is commonly used; and twelve gallons will impregnate eight bushels of grain; for the operation may be repeated in the residual liquid with additional measures of grain, as not more than one tenth is absorbed in each operation.

Particular printed instructions for using the liquids will accompany invoices. No order under 20 gallons will be supplied.

1, Dudhope-street, Dundee.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have not fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

LIQUID MANURE.

PUMPS of a Superior Construction, fixed and portable, for Liquid Manure. Garden Pumps, Hydraulic ditto, and Pumps for deep wells. Also Pumps for Ships, Barges, Tanners, Soap boilers, Brewers, &c. Well Digging and Boring executed. BENJAMIN FOWLER (late George Turner), 63, Dorset street, Fleet-street.

THE URATE of the LONDON MANURE COMPANY, 5*l.* per Ton. It is with the greatest satisfaction after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

NETTING, BUNTING, and SCRIMS, for EFFECTUALLY PRESERVING the BLOSSOM of FRUIT-TREES from FROST, in convenient quantities and at small cost, at BENJAMIN EDGINGTON'S Marquee and Rick Cloth Manufactory, No. 2, Duke street, Southwark; and 209, Piccadilly, London.

"We understand from some of our friendly horticultural acquaintance, that wherever Bunting Screens have been employed, the wall-fruit has set in the finest manner, hence we again recommend this fabric in preference to any other."—*Bell's New Weekly Messenger.*

N.B. Some of the canvas used at the Smithfield Club Cattle Show to be sold as second hand, at moderate price, suitable for Rick Cloths, &c.

Just ready, price 1*s.*

PRACTICAL HINTS to Practical Men, on NEW and OLD MANURES, by JOHN DODDRIDGE HUMPHREYS, Esq., author of the Electro-Physiology of Man, &c., &c. Full information is here given as to the advantages of the New Manure called HUMPHREY'S FARMER'S COMPOUND, which is not subject like the Guano to be washed out of the soil, but unites the progressive action of the natural with the highest fertilising powers of the best chemical agents. Wholesale Agents, DAVY, MACKRODDO, and Co., 100, Upper Thames-street, London.

LONGMAN, BROWN, GREEN, and LONGMANS.

TO COLONISTS, AGRICULTURISTS, &c.—Mrs. MARY WEDLAKE, widow of the late Mr. THOMAS WEDLAKE, of the Original Iron-foundry and Agricultural Implement Manufactory, established forty years, at Hornchurch, near Romford, Essex, and of 118, Fenchurch-street, London, begs to inform the friends of her late Husband that she continues to Manufacture all kinds of Agricultural Implements, for the invention of which he was so often honoured with the medals of the Royal Society of Agriculture, and which obtained for him so high a distinction among the Farmers of England and British Colonists. Being assisted by men of talent in the Manufacture of these articles, she is in hopes of deserving the high repute this Establishment has so long enjoyed, and now solicits respectfully a continuance of the patronage of the numerous friends of her late husband. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, 118, Fenchurch-street, viz.—

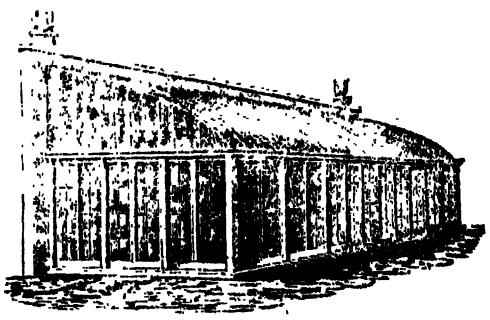
Patent Hay-making Machines	Subsoil Ploughs
Winnowing Machines	Horse-power and Hand-thrashing Machines
Dressing Machines	Patent Horse Rakes
Patent Chaff-cutting Machines	Scarifiers
Oil-cake Crushers	Drills of all kinds
Double-action Turnip Cutters	Park Fencings, Hurdles
Flour Mills	Furnace Bars
Bean Mills	Cast Iron Horse Racks
Railway Wheels, Vacuum Pumps	Kitchen Ranges
Patent Essex Ploughs, 30 different sorts	Stoves, Fenders

*** Castings to any pattern.

☞ *For a more detailed List, see Johnson and Shaw's "Farmers' Almanack" for* 1844.

Please to be particular in the address, MARY WEDLAKE, 118, Fenchurch-street, London: or, Original Iron Foundry, Hornchurch, Essex.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c. &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL-ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices, in consequence of the present depressed state of the Iron Trade.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public, or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS' BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatuses for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale. For the convenience of those who wish to fix their own Apparatus, they have affixed the following low prices:—

	£	*s.*	*d.*
Cottam's Patent Boiler, 18 inch	2	15	0
Rogers' Boiler, small size	1	17	0

Larger in proportion.

Hot-water Pipe, at 2, 3, and 4 inches, at reduced prices.

GARDEN ROLLERS 18 inches long, 34*s.*; 20, 44*s.*; 22, 50*s.*; 24 inches, 60*s.*; 26, 75*s.*; 28, 84*s.*; 30, 105*s.* each.

CAST-IRON RICK-STANDS, 2 feet six inches high, 5*s.* 9*d.* each.

Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases and Pedestals in great variety, and every description of Horticultural Articles, Agricultural Implements, and Furnishing Ironmongery; Dr. Arnott's Stoves, Anglo-Belgian Cooking Stoves, Broiling Stoves. The above low prices being on account of the depression in the Iron Trade, are subject to future alterations.

STRONG IRON HURDLES, 3 ft. high out of the ground, 6 ft. long, with five horizontal bars, weighing about 36 lbs., 3*s.* 6*d.* each.

Light Cattle Hurdles, 3 ft. 6 in. high, weighing	42 lbs.,	4	0 "
Strong do. do.	do. 45 lbs.,	4	4 "
Ox Hurdles, 4 feet high,	do. 60 lbs.,	5	6 "

BEST WIRE, for STRAINED WIRE FENCING, at 9*s.* per bundle of 150 yards each. Uprights for ditto, 7*d.* each. The Improved continued, and every other kind of Fencing, Fancy Wirework, &c.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 3*s.* 6*d.*; 20 inches, 4*s.* 6*d.*; 22 inches, 5*s.* 6*d.* each.

CAST-IRON FLOWER-STAKES, 4 ft. four out of the ground, 7*s.*; 5 ft. 9*s.*; 6 ft. 11*s.*; 7 ft. 13*s.*; 8 ft. 20*s.* per dozen.

SHOW-ROOMS at the Manufactory, No. 2, WINSLEY-STREET, where every information may be obtained.

The TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

In small 8vo, Second Edition, price 3*s.* 6*d.*

PRODUCTIVE FARMING; or, a FAMILIAR DIGEST of the Recent DISCOVERIES of LIEBIG, DAVY, and other celebrated writers on VEGETABLE CHEMISTRY; showing how the results of English Tillage might be greatly augmented. By JOSEPH A. SMITH.

In small 8vo, price 5*s.*,

A SUMMER AT PORT PHILLIP; including the latest information regarding that Colony. By the Hon. R. DUNDAS MURRAY.

W. TAIT, Edinburgh; SIMPKIN, MARSHALL, and Co., London.

RELATION OF LANDLORD AND TENANT.

Just published, in one Volume, Royal Octavo, price two Guineas,

THE VALUE OF LANDED PROPERTY, demonstrated by practical Deductions and Illustrations, tending especially to facilitate the Valuation of Estates, as applicable to the purposes of Agriculture, in which is defined the Equitable Rent of the different descriptions of Land, and also the share of the Agricultural Products that constitutes the occupier's Profit. By LAYTON COOKE, Land Agent and Surveyor. Published by the Author, No. 7, John-street, Adelphi, London.

AGRICULTURE.—A Gentleman occupying a Farm of 600 acres, of various descriptions of soil, pleasantly situated in the highly cultivated county of Norfolk, and within five miles distance of three of its market Towns, is desirous of taking one or two YOUNG MEN, to learn the practice of Agriculture. The parties would in all respects be treated as members of the family, and would have the opportunity of regularly attending Norwich market (decidedly the largest and most celebrated provincial stock market in England,) and also the advantage of becoming acquainted with the most approved specimens of Agricultural Implements and Machinery. References given and required. Address, J. D., Post Office, Norwich.

FLORIST TO HER MAJESTY THE QUEEN.

WILLIAM MILLER, Florist, Nursery, Bayswater, Kent, begs to thank his numerous Customers and Friends for the great Patronage bestowed upon him last season, and at the same time to inform them that his List contains some of the greatest novelties ever offered to the Public, for which he solicits early orders, viz.:—FUCHSIAS, VERBENAS, PETUNIAS, &c., &c., for the Spring of 1844.

FUCHSIAS.

"Fuchsia Consolation.—This large and desirable variety was raised in the Providence Nursery, and is one of the finest ever produced. For description of this extra brilliant variety see Dr. Lindley's opinion, which will be found in the *Gardeners' Chronicle* of September 9th, page 633, under the signature, W. Miller. "Your hybrid, between fulgens and corymbiflora, is a very handsome flower, seed-pod small, tube long and slender, gradually increasing in size till the diameter is a quarter of an inch; the tube is a delicate pink colour, having sepals of a greenish principles, forming a strong contrast to the bright and red corolla seen between them; the flower altogether is 3½ inches in length, and the buds are very handsome as they approach maturity; it flowers in a large broad bunch, which is divided into branches, containing altogether 150 flowers."

It was also submitted to the Editor of the "Floricultural Cabinet," whose opinion will be found in Number 128, under the signature, W. M. "Your Fuchsia is a very fine one, and deserves cultivation in every situation." To be Figured in Spring.

Also noticed in the *Northern Times*, as the "Gem of 1844."

Plants to be had at 12s. 6d. each, with the usual allowance to the Trade, when not less than six Plants are ordered at one time.

	s.	d.
Alba Rosea	2	6
Alata, Smith's	2	6
Aurantia, Smith's	1	6
Arborea grandiflora, May's	1	0
Admirabilis	1	0
Alice Maud Mary, Bell's	2	6
Arasa	1	0
Aurora, Standish's	1	6
*Augusta, Rickard's	5	6
*Bridegroom, Epps's	5	0
British Queen	1	0
Beauty, Standish's	2	6
Britannia, Smith's	2	6
Brewsterii	1	6
Blanche	1	6
Brockmanii	2	0
Balloonii, May's	2	0
*Candidata, Gicling's	5	0
Cornwallii	2	6
Chandlerii	1	0
Cruegiana	1	0
Cordifolia	0	6
Coccinea	1	0
Conspicua	1	0
*Duke of Wellington, Epps's	5	0
Duchess of Gloucester	2	0
Delicata, Smith's	2	6
Denisii	1	0
Dominiana	1	0
Devisii	1	0
Dubiosa	1	0
Decora	2	6
*Espartaro, Epps'	7	6
Eclipse, Smith's	2	6
Eppsii	2	6
Enchantress, Harrison's	2	6
" Standish's	7	6
" Wood's	2	6
Elfida fasciculata	1	6
Emilie, Standish	1	6
Elegans, "	1	0
Erecta, "	1	6
Exoniensis, Pince's	3	6
*Emperor of China, Busby	5	0
Frostii, Lane's	2	6
Floribunda, Standish's	1	0
" Dixon's	1	0
" magna, May's	1	0
Formosa, Harrison's	3	6
Flora	1	0
Florida	1	0
Fulgens	0	6
" longiflora	1	6
" multiflora	1	0
" superb	1	6
Fairy	1	0
Formosa elegans	1	0
Fairy Queen, Bell's	3	6
*Florence, Epps's	5	0
*Globosa coccinea	3	6
Grandiflora elegans	1	6
Gigantea	1	0
Gem	1	0
" Ivery's	2	6
Grenvillii, Lane's	2	0
*Gigantea, Smith's	10	6
Hebe, Standish's	2	0
Hoopvertii	1	0
*Hero of Suffolk, Girling's	7	6
Iveryana	2	6
Inflata arborea, Dean's	1	6
" fulgida, May's	1	6
Isabella	1	0
*Kentish Bride, Busby	7	6
King, Youell's	1	6
*Kentish Hero, Bell's	5	0
Longiflora	1	0
" hybrida, Standish's	1	6
Londonii	1	6
Lanei	2	6
Lowryii	3	6
*Maria, Epps	5	0
Magician, Bell's	2	0
Magnificent, do.	2	0
Majestica multiflora, Knight's	2	0
Multiflora coccinea	1	0
———	1	0
Mangiesii, Standish's	1	6
Majestica, Smith's	3	6
Maxima splendens	2	0
Moneypennii	1	0
Magnifica	1	0
Meteor	1	6
Nobilissima, Smith's	3	6
Nobilis, Dean's	2	6
Pyramidalis, Wheeler's	2	6
*Prince of Wales, Epps'	5	0
Prince Albert, Brown's	2	6
Pulchella	1	0
Princess of Wales, Bell's	3	6
Pulcherrima, Harrison's	2	6
Principe	1	0
Ramonis	1	0
Saragon, Smith's	2	6
Princess Royal, Bell's	3	6
*Queen Victoria, Smith's		
Racemiflora	0	6
— elegans	1	6
— — Dean's	1	6
Racemosa	2	6
Rosea alba	1	0
Recurva, Dean's	2	6
Rodulphus, Bell's	2	6
Rogersiana	2	6
*Sidmouthii Bartlett's	10	6
Stanwelliana	2	6
Splendens	1	0
— Kyle's	1	0
Salmonia	1	6
Spectabilis, Harrison's	1	6
Stylosa elegans	1	6
St. Clare, Youell's	1	6
Serratifolia	2	6
*Superb, Matlock's	7	6
Triumphant	1	0
Toddiana	2	6
Transparens, Youell's	2	6
Tricolor	1	6
Towardii	1	0
Usherii	1	0
*Unique, Croft's	7	6
Variegata	1	6
Vernalis	1	6
Venus victrix	1	0
Victory, Smith's	3	6
Venusta, Harrison's	1	0
Woodsii	1	0
*Winsorii, Bell's	5	0
Youellii	0	6
Alba Rosea	1s.	0d.
Atro-sanguinea	1	0
Arriana	0	6
Aurora, Henderson's	0	6
Ami Jane	1	0
Amythestina, Girling's	1	0
Adom's, Croft's	1	6
Boule de Feu, Girling's	2	0
Brinsmaid, do.	2	0
Beauty,	2	0
Bride	1	0
Benistii	1	0
Burleyana	1	0
Conspicua	0	6
Chalmerii	1	0
Cærulea	2	0
Carneus	1	0
Charlwoodii	6	0
Delicata	1	0
Duke of Cornwall, Knight's	2	6
Davisonii	1	0
Eximia	1	0
Elfordiensis	0	6
Fulgida	1	0
French White, Harrison's	1	6
Fair Maid, do.	1	6
Formosa	1	0
Formosa elegans, Croft's	1	6
Formosissima	1	0
Fortune-teller, Girling's	2	0
Fanny Elssler	1	0
Grenvillii	1	0
Groomiana	1	0
Hendersonia	0	6
Howardiana, Low's	1	6
Incisa	0	6
Incisa coccinea	1	0
Intermedia, var. of Teucroides	0	6
Ignea	0	6
Joan of Arc	1	0
King	1	0
Laconii	1	0
Longiflora, Girling's	2	0
Leonora	1	0
Lilacina, Hailey's	1s.	0d.
Maxima	1	0
Majestica	1	0
Morlock's Superb	1	0
Mellodia major	0	6
Minstrel Boy, Girling's	2	0
Neptune	1	0
Nelli	0	6
Ovid	1	0
Odorata, Harrison's	1	6
" rosea	1	0
" alba	1	6
Ramicosa	1	6
Purpurea, Harrison's	1	6
Pontevil	1	6
Prince of Wales, Wood's	1	6
" Knight's	0	6
Pulchella carnea	1	0
Princess Royal, Youell's	2	0
" Henderson's	1	0
Queen	0	6
Ruby	0	6
Rosy Queen, Hailey's	1	6
Rosea alba, do.	1	0
Rosa rubra, Harrison's	1	6
Renown	2	0
Stewartii	1	0
Splendens	1	0
Speciosa, Kyles'	1	6
Sulphurea	0	6
Teucroides	0	6
" carnea	1	0
Triumphant	1	6
Thompsonia	0	6
Tweediana	0	6
" multiflora	1	6
" picta (extra fine)	2	0
" magniflora	1	0
" superb	1	0
Turchiana	1	6
Vangendii	0	6
Variegata	1	0
Violacea	1	0
White Perfection, Girling's	2	0
Westongii	0	6

Plants of the above to be sent out in April, at the following prices, post free to any part of the United Kingdom, or Pots carriage paid to London, viz.:—

12 fine varieties, 7s. 6d.; 12 extra fine do., 15s.; the selection left to Mr. Miller.
12 Extra Fine do., 21s.; the selection left to the purchaser.
50 Fine Varieties, 42s.; the selection left to Mr. Miller.
50 Extra Fine do, 63s.; the selection left to the purchaser.
100 Fine Varieties, 84s.; the selection left to Mr. Miller.
100 Extra Fine do., 105s.; the selection left to the purchaser.
[Except those marked thus*]

SPLENDID SEEDLING VERBENAS.

W. M. has two distinct and beautiful varieties to offer, feeling confident of their giving entire satisfaction. The one named "Lady Queen," has been submitted to Dr. Lindley, whose opinion will be found in the *Gardeners' Chronicle*, page 721, as follows:—"W. R., Your Sweet-scented Seedling, No. 105, is the best we have seen of its Colour—Bright Blue Lilac; the flower is large, smooth, and glossy, and perfectly free from crumple."—Plants in April, 5s. each, with the usual allowance to the Trade, when three or more are ordered at once.

The other, named "Zenens," is a beautiful rosy Vermillion, with large White Eye; this variety has also been submitted to Dr. Lindley, whose opinion will be found in the *Chronicle*, page 691.—"J. Miller, your Seedling named 'Zenens' is large and very brilliant.". Plants 2s. 6d. each, with the usual allowance to the Trade, when three or more are ordered at once. Figured, to appear in the *Florists' Journal*, for March.

Alice Gray	1s. 6
Arethusa	1 0
Beauty	1 0
Bicolor	1 0
Conspicua	1 6
Diadem	1 6
Dwarf Pencilled	1 6
Enchantress	1 6
Gem	1 0
Grandis	1 6
Heldida	1 6
Highclare	1 0
Lady Sale	1s. 0d.
Magician	1 6
Magna Rosea	1 0
Medora	1 0
Othello	1 6
Picta	1 6
Psyche	1 0
Rook's Nest	1 0
Rosea alba	1 0
Sir Robert Sale	1 6
Stricta	1 6
Unique	1 6

W. M. can also supply all the new varieties of Fuchsias, Verbenas, Pelargoniums, Petunias, &c. &c. &c., to be sent out by other raisers at their advertised prices. Mixed Anagallis Plants for bedding, 4s. per doz. Also every article in the Trade at very low prices.

A few strong plants of his new Scarlet Geranium "Fireball," 5s. each.—allowance on three plants.

N.B.—Hybrid Pelargonium Seeds, saved from the very best sorts, 50 seeds, 5s.; 100 seeds, 10s. Fine hybrid Fuchsia Seed, 100 seeds, 7s. 6d.; 50 seeds, 4s. Fuchsia corymbiflora seed, 1s. per packet. Verbena Seed, from best varieties, 2s. 6d. per packet. Heartsease, from choicest named varieties, 2s. 6d. per packet. Carnation, from stage flowers, 2s. 6d. per packet. Calceolaria, from extra fine varieties (Shrubby and Herbaceous), 2s. 6d. per packet.—A remittance expected from unknown correspondents.

*** All Orders will be sent, packed in strong tin cases, Post-free where practicable to go by Post, or in pots by Coach and Railway, carriage paid to London.

YORKSHIRE LAND-DRAINING ASSOCIATION.

—Capital 500,000*l.*, in Stock of 25*l.*—Deposit, Five per Cent.

PATRONS—The Right Hon. Lord Viscount Morpeth.
The Right Hon. Lord Beaumont. Sir William M. Milner, Bart.
Edward Stillingfleet Cayley, Esq., M.P.

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Draining Engineer.—James Smith, Esq. (Deanston).
Secretary.—John H. Charnock, Esq., Wakefield.

This Association is formed for the purpose of affording to the Agricultural Interest, by means of its collective capital, the funds necessary for the *thorough Draining of Land:* and of executing and superintending the execution of the works required for this purpose on the most economical and effective principles; repayment of the money advanced to be made, with interest, by such equitable half-yearly instalments, as in the several cases may be determined.

Among the various objects to which of late years collective capital has been more or less successfully applied, it is not a little surprising that the one which, of all others, offers the most certain and profitable return, with the soundest security, should have hitherto been almost disregarded. The time, however, has arrived, when an urgent desire for Agricultural improvement on the one hand, and a dearth of safe and profitable investment for superabundant capital on the other, renders such an Association highly desirable to both the Landed and Monied Interest, whilst to the community generally an almost incalculable advantage will be secured by a proportionate increase of labour and food.

The Principles upon which such an application of Capital may be securely based, have been already recognised by the Legislature in the Act of 3d and 4th Victoria, cap. 55, passed for the purpose of enabling the owners of settled estates to defray the expense of draining the same by way of mortgage, and to charge all or any part of the lands so drained, or other lands held therewith, with the payment, to any person or persons willing to advance the same, of the amount of the money which may have been expended, together with interest thereon, by equal yearly instalments of not less than twelve, nor more than eighteen; such instalments to be diminished or increased according to the greater or less improvement shown to have been made by such draining. Or the parties may charge the said lands with a rent-charge for any such period as aforesaid. The Preamble of this Act expresses so clearly the objects of this Association, and at the same time shows the importance attached by the Legislature to the subject, that it is here extracted:—"Whereas much of the land in England and Ireland would be rendered permanently more productive by improved draining, and nevertheless, by reason of the great expense thereof, Proprietors having a limited interest in such land are often unable to execute such draining; and whereas it is expedient, as well for the more abundant production of food, for the increased employment of Farming Labourers, and the extended investment of Capital in the permanent improvement of the soil, that such Proprietors should be relieved from the disability, due regard being had to the interests of those entitled in remainder."

The object of the present undertaking is to avail itself of the provisions of this Act, so far as they apply, and by offering an ample and easily-accessible capital, to induce the parties contemplated therein to seek the benefit of its provisions; and, at the same time to afford to the Agricultural Interest generally, on equitable terms, and on the same principle as that on which the act proceeds, the requisite means for thoroughly draining their land.

The Capital to be 500,000*l.*, in stock of 25*l.*, with a deposit of 5 per cent. on its allotment; the amount and time of the calls to be regulated by the demand, as it arises, for the beneficial employment of the money, and so that no one call exceeds 10 per cent., with a notice of not less than two months for each payment.

The management to be under an effective Committee, elected by and from the Subscribers, with the most efficient Staff that can be selected for practical and scientific skill in their several departments.

The head office to be in York, with Agencies in other towns of the county and elsewhere, as the demand for the assistance of the Association may require, and as it may be found advantageous to extend the sphere of its action.

The Meetings of the Committee of Management to be held Monthly, or oftener if necessary, and of the General Subscribers Annually, to receive the Report of the Committee, pass the Accounts, and transact other general business.

Interest after such a rate as the Committee of Management may see reason to recommend, to be allowed half-yearly on the Capital paid up, so soon as the returns on the money expended will permit; together with such further division of profits as, on a General Settlement to be made every four years, the affairs of the Undertaking will justify.

The Accounts to be balanced annually, prior to the General Meeting, and audited by competent parties duly elected.

The Association will, if thought necessary, apply for Letters Patent, and also for an Act of Incorporation, should it be subsequently found expedient to do so, in obtaining which it is probable no impediment will arise.

Viewing the prospects of the Farming Interest with reference to the effect which may result from the late or any future relaxation of the protective duties on Agricultural produce, and considering that the issue must, in some degree, be experimental, the position of the Agricultural Community seems emphatically to call for the most active promotion of every practical improvement, which, by securing an increase of production, may tend to counterbalance the depression consequent upon any reduction in prices. That the operation of this Association will greatly contribute to this end, can scarcely be questioned, one common interest inducing both Owners and Occupiers to avail themselves of the means thus offered; securing to the former the permanent improvement of their estates, and to the latter an immediate return considerably exceeding any charge which the cost of the works may for a time entail. Great advantage will be also secured in having the draining performed under the direction of the Association, which, in order to guarantee the most effective execution of the works, will in all cases avail itself of the first practical and scientific talent.

With reference to the security to be taken for advances made by the Association, it is of the utmost importance both to the undertaking and also to those who seek its assistance, that they should be effected at the least possible expense which prudence will justify. There is little doubt but that an Act of Parliament will be passed in the ensuing Session, amending the present Drainage Act, and affording increased facilities to all parties interested in the subject, by means of which it is expected a very concise yet effective charge may be created at a moderate expense. In the meantime, the Association will, in the case of settled estates, deal entirely with the Landlord, and under the protection afforded by the present Drainage Act. In other cases the Association proposes to take a simple charge on the Estate or the Bond, or joint Promissory Note of the person draining with one or more sufficient sureties, and in all instances where practicable to have the Owner a party whose interest it will be to co-operate with his Tenant in placing the Association in a secure position. And in those districts where the system of *full valuation* prevails, safety will be doubly ensured, from the practice of valuing the residuary proportion of the cost to the on-coming party.

At a meeting of the Council of the YORKSHIRE AGRICULTURAL SOCIETY, held in York on the 20th of December, 1843, a resolution was passed approving generally of the objects of this Association; and at the monthly meeting of the Wakefield Farmers' Club, held on Jan 5, 1844, a resolution approving of the principle and objects of the Association was unanimously adopted.

At the meeting of the Royal Agricultural Society of England, at Liverpool in July, 1841, Lord Stanley remarked that, "There was no bank in the whole country—no commercial speculation—no investment so safe, so pure and profitable, as that in which even borrowed capital may be engaged, by investing it under the ground of your own soil." And in reference to this Association, his Lordship in a letter to the Committee says—"I am fully satisfied of the benefits which such an Association is capable of conferring on the country if confined to its legitimate object—the lending of Capital on the security of an investment in draining; and I think it very probable that many Landed Proprietors would avail themselves of the facilities afforded by an institution lending money on land, repayable by instalments—a condition, on which few private parties are willing to lend."

Bearing in mind, then, the important objects of the Association, and the perfect security with which its operations can be conducted, at a comparatively trifling expense (no large expenditure for previous outfit being required), it may be reasonably expected that the return of the Capital embarked will be such as to insure the support of prudent and *permanent* Investors, thereby divesting it of that speculative character which has stigmatised so many modern projects, and which it is the especial desire of the Committee to avoid.

Applications for Prospectuses, &c., to be addressed to the Solicitors, Messrs. Blanchard, Richardson, and Gutch, York; or, to J. H. Charnock, Esq., the Secretary, Wakefield.

Printed by Messrs. Shaporry and Evans, Bouverie-street, Fleet-street in the Precinct of Whitefriars, in the City of London, and Published by them at the Gardeners' Chronicle Office, Covent Garden, in the County of Middlesex, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, February 17, 1844.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 8.—1844. SATURDAY, FEBRUARY 24. [Price 6d.

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IPSWICH HORTICULTURAL AGENCY OFFICE for the sale of NEW AND RARE SEEDS, &c. &c.

LATTER'S VICTORY OF ENGLAND is sold out. The raiser will use the best means of preserving the pure Stock of this celebrated Cucumber.

HAMILTON'S TREATISE ON THE CULTURE OF PINES, GRAPES, and CUCUMBERS, in the same House, by which system the Cucumbers will pay all the expenses of growing, (in addition to a crop of grapes,) 300 lbs. of splendid Pine-apples annually from the same Plants. T. Wild is promised the first supply, and hopes to have the pleasure of forwarding a copy, postage free, to Subscribers, on Tuesday next; this unexpected delay is entirely the printer's fault. 6s. per copy.

West India Giant PEA—very prolific; and although the size and shape of Tick Beans, most delicious flavour: 1s. 6d. a quart.

RENDLE'S TANK SYSTEM OF COMMUNICATING BOTTOM-HEAT, 2s. 6d. per copy.

A few first-rate Scarlet and Green MELON SEEDS, 1s. per packet. A very small quantity of Latter's unrivalled Coxcomb, Balsam, and Germ. ASTER SEED, 6d. per packet.

On receipt of post-office order for any of the above, they will be forwarded immediately, free of postage. An extra quantity of Peas will be enclosed to pay carriage.—Thomas Wild, 3, Tavern Street, Ipswich.

GENUINE BEECHWOOD MELON SEED.

R. GLENDINNING respectfully begs to inform the Cultivators of the MELON that he has had presented to him by Sir John G. Shelley, Bart., Seeds of the *true* variety of this delicious MELON; for besides being one of the very best sorts known, it is of easy cultivation and a good bearer. This opportunity will enable Gentlemen to procure it *quite genuine*, which is rarely the case, as the following note will testify:—

"Beechwood, Feb. 5, 1844.

"Sir,—I send you a small parcel of the Beechwood Melon Seed. None that I have seen exhibited under that name, nor any that I have seen grown from Seed that has been bought, are of the true sort, but have obviously been intermixed with other varieties. I have grown no other for many years.

"Your obedient servant,

"To Mr. Glendinning. J. S. Sebright."

R. G. has also a few Seeds of the true SION FREE-BEARING CUCUMBER, a splendid variety which has been nearly lost.

Packets of the above sent by post free.

Beechwood Melon per packet . . . . 5s.

Sion Free-bearing Cucumber, per packet . 5s.

R. G.'s Kitchen-garden and Flower-seeds have been selected with great care, and embrace all the new and good kinds.

Chiswick Nursery, near London, Feb. 16, 1844.

JOHN HANCOCK and SON, Nurserymen, Durham, beg to direct attention to their Advertisement of FUCHSIA LOWRYII, NEW FUCHSIAS, GERANIUMS, &c., inserted in last week's *Chronicle*.

Fuchsias.—Fine strong healthy plants of the following will be ready by the 1st of March, and can be sent by Post at 20s. per dozen, if the Plants are not required to be too large:—Brockmanii, Ballooniflora, Cormackii, Champion (Smith's), Britannia (Smith's), Defiance (Smith's), Exoniensis, Eppsii, Dennisiana, Fairy Queen, Gem (Ivery's), Iveryana, Lanell, majestica multiflora (Knight's), multiflora coccinea (Knight's), majestica (Smith's), nobilissima (Smith's), Paragon (Smith's), Rogersiana, St. Clare, Stanwelliana, Swalesii, and Toddiana.

General Descriptive Catalogues of Plants may be had on application, by sending two postage stamps.—Wear Nurseries, Durham.

NEW AND SUPERB FUCHSIAS, VERBENAS, PETUNIAS, CINERARIAS, and other Plants adapted for Bedding.

WM. WOOD and SON, of Maresfield, have the pleasure to apprise their numerous Friends that a Catalogue of the above, including a Supplementary List of New and Choice Greenhouse and Herbaceous Plants, Camellias, &c. &c. is now in course of preparation, and may be had Gratis on application in March, and which will be found to contain every new and desirable variety. A Select List of entirely new and superb Roses will be added.

W. W. & Son will undertake to supply orders to any extent for the above-named collection of Plants, to be sent out early in May.

N.B.—Agents by appointment for Warrner's Chemical Transparent Waterproof Composition, sold in bottles, with directions for use—Pints, 2s. 6d., Quarts, 4s. 6d. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

JOHN CATTELL, Seed and Nurseryman, Westerham, Kent, begs to call the attention of the Public to his Superior Stock of Seeds, Trees, and Plants, separate Catalogues of which are now ready. Standard and Dwarf ROSES remarkably fine. Bedded plants of the newest and best sorts of Strawberries. A good stock of the New Improved Autumn Raspberry, "Rodger's Victoria," warranted true at 3s. 6d. per dozen, 25s. per 100. A few good plants of Veronica speciosa. Seeds carefully packed for exportation.

J. C. is in want of a few hundreds of seedling Azalea pontica, single stemmed plants, about the size of a common pen-quill, a plant or two of which, as sample, may be forwarded, with price and quantity per Post.

CROSS-LANES NURSERY, near BEDALE, YORKSHIRE.

W. JACKSON and Co., in returning their sincere thanks to the Nobility, Gentry, and Public for their liberal patronage, beg to announce that they can still supply the following of first-rate quality, which will be forwarded with the utmost despatch to any part of the kingdom. Delivery at the railway gratis.

100 select showy Herbaceous Plants, in 50 named sorts, for 25s.
100 Dwarf Roses, in 50 named sorts, for 20s.
100 Do. in 100 named, very fine sorts, for 50s
100 Do. in 100 do., extra fine sorts for 75s.
50 Standard Roses, in 50 splendid varieties, including the fine Hybrid Perpetuals, for 80s.

A Large Stock of fine transplanted English Oaks of all sizes.

Catalogues may be had on application, inclosing two postage stamps. A remittance or reference from unknown correspondents is respectfully solicited.—Feb. 20th, 1844.

FASTOLFF RASPBERRY.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, THE MOST NOBLE THE MARQUIS OF AILSA, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL and Co. have much pleasure in announcing they are now supplying fine Canes of the above highly-valuable and much-esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour.

Those to whom Y. and Co. sent it last season have expressed their high admiration of its superiority over all other varieties, and has been awarded several prizes at various Horticultural exhibitions during the season. As a proof they have not exaggerated its excellent qualities, fruit was submitted to Dr. Lindley, (see *Gardeners' Chronicle* of the 22d July last, page 502), whose opinion of it is as follows:—

"Fastolff Raspberry.—We have received from Messrs. Youell, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find it merits all that has been stated in favour of its excellence. The fruit that we have received is very large, obtusely conical, and of rich flavour, far exceeding in this respect some other new and large varieties. The plants bear abundantly and in long succession."

They also exhibited it on the 1st of August, 1843, before the London Horticultural Society, 21, Regent-street, to which a prize was awarded. It would therefore be unnecessary for Youell and Co. to recommend it more fully, or with greater confidence, to the notice of the public, merely observing, that it continues in high perfection throughout the autumnal months, and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties.

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post-office order), upon the following terms:—

Packages containing 100 Canes		£2	5s. 0d.
Do.	do. 50 do.	1	5 0
Do.	do. 25 do.	0	14 0

Package included.

The usual discount to the Trade, when not less than 200 are ordered.

*** Caution.—Y. and Co. beg to call the attention of their Friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and cannot be held responsible for its being genuine unless purchased direct from their Nursery.

YOUELL'S TOBOLSK RHUBARB, Patronised by Her Most Gracious Majesty the Queen, and many of the Nobility, 12s. per dozen. For particulars of which see their Advertisement of the 18th November.

TWO NEW SEEDLING PICOTEES.—"Lady Alice Peel," 10s. 6d., and "Mrs. Benyon," 10s. 6d. per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs. Youell and Co., for particulars of which see their Advertisement in this Paper of the 16th of Sept.

FINEST CARNATIONS and PICOTEES.

YOUELL and Co. beg to refer the readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly-esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows:—

		£	s.	d.
12 pair of good Show Sorts		1	4	0
12 ditto fine	ditto	1	10	0
25 ditto	ditto	2	0	0
12 ditto extra fine and very superior	ditto	2	10	0
25 ditto	ditto	5	0	0

The selection being left to Youell and Co.

ARAUCARIA IMBRICATA.

YOUELL and CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year-old plants, 6 to 12 inches high, 16s. per 100, or 30s. per dozen.

Fine Plants of CEDRUS DEODARA, 2ft. to 2ft. 6 ins., 10s. 6d. each.

Great Yarmouth Nursery, Feb. 22, 1844.

RANUNCULUSES.—The season for planting this beautiful Flower having arrived, MESSRS. TYSO & SON, Wallingford, respectfully announce that they can supply from their collection of *Seven Hundred Varieties*, strong roots of most of *the leading Show-flowers*. Priced Catalogues will be sent prepaid to applicants forwarding two Postage labels.

DAHLIAS.

J. KEYNES, Florist, Salisbury.—"Standard of Perfection." (Keynes).—The finest self-coloured Dahlia in the world! gained the 1st class prizes at Stonehenge, Windsor, Kingston, Surrey Zoological Gardens, and Crown and Anchor, Stockwell; also the 1st prize specimens at Stonehenge Floricultural Society, Stockwell. "It is as round as any Dahlia in cultivation; as complete an unbroken circle as could be drawn with the compasses; and as globular in front as possible. It is symmetrical to a hair, and as double as a Ranunculus. It is so remarkable as to be instantly recognised among a thousand. Colour, deep crimson. It is the flower of the season, and must be had."—*Gardeners' Gazette*, Oct. 14. "The best-grown flower we ever saw, without exception, every requisite to meet the taste of a connoisseur being complied with; good colour, a handy-comb, regularity of growth and disposition in the leaves, and above all, as complete a rotundity of shape as if it had been cast in a mould."—*Salisbury Herald*, Sept. 2, 1843. Plants in May, 1844, 10s. 6d. "Orange Superb," (Dodd's) first-rate show-flower, 10s. 6d. "The specimen sent would grace any stand."—Glenny. "Emma Noke," (Dowding's) bluish white, extra fine, indispensable to a first-rate stand, 10s. 6d. Catalogues containing all the fine old varieties and new flowers for the season may be had on application.—Salisbury, Jan. 31, 1844.

LARCHES, transplanted of Sizes, are still on Sale at very low prices, by Wm. Urquhart & Sons, Dundee.

WILLIAM MASTERS begs to call the attention of the Nobility, Gentry, &c., to his newly and well-assorted COLLECTION OF GARDEN AND FLOWER SEEDS, which, being principally grown under his immediate inspection, he can particularly recommend.

100 papers finest Annual Flower Seeds		£1	1s. 0d.
50	do. do.	12	6
25	do. do.	6	6

[If the selection is left to W. M.]

Forwarded by Post without additional charge.—POTTER'S ARTIFICIAL GUANO and CONCENTRATED LIQUID GUANO.

Exotic Nursery, Canterbury, Feb. 1844.

NEW AND SUPERB COLLECTION OF SEEDLING FUCHSIAS.

W. J. EPPS begs to announce that he purposes sending out, on the first week in March, Ten Magnificent Seedling Fuchsias, which have merited high opinions from the most distinguished judges of the day. They are very distinct, and possess the finest properties of any Fuchsias yet known.

BRIDEGROOM (Epps').—A fine flower, of great size and splendour, light pink tube, sepals very smooth and rich, beautifully tipped with green, corolla very large, of a deep vermilion colour, very like Chandleri, but twice the size; of a splendid erect habit, and a very free bloomer.—(This was submitted to the Editor of the *Florist's Journal* in November last. See Answers to Correspondents.) Price 5s.

ESPARTERO (Epps').—This flower is of large size, tube long, bright scarlet, short sepals, expanding well, and exhibiting an extraordinary large deep rich rosy-purple corolla, immense bloomer, and a very distinct variety.—(See Mr. Ayres' opinion, *Gardeners' Chronicle, Nov. 25, 1843*, on the article of Fuchsias). Price 7s. 6d.

KENTISH HERO.—*A fine flower*, of a beautiful vermilion red tube, and sepals well expanded, exhibiting a splendid pure-purple corolla of great substance, very distinct; fine compact habit. Price 5s.

DUKE OF WELLINGTON.—*An immense flower*, of great substance, very rich rosy pink tube, and sepals beautifully smooth and slightly tipped with green, very large corolla, of a rich rosy crimson, sepals expand well, almost reflex; fine free habit. Price 5s.

WINSERII.—(Professor Lindley's opinion, see *Gardeners' Chronicle, Aug. 5, 1843*, to Correspondent, *J. W., Tenterden.*) Price 5s.

"No. 1, tube long and smooth, of a rosy crimson, sepals open very wide, with the points slightly tipped with green, corolla short, of a rosy vermilion colour; *a fine variety.*"—Professor Lindley.

MARIA.—"No. 3, tube and sepals rose-coloured and smooth, corolla large, of a fine bright blue purple; *an elegant variety.*"—Professor Lindley. Price 5s.

FLORENCE.—"No. 6, tube smooth, sepals spreading, rosy in colour, with the points slightly tipped with green, corolla rosy-purple; *very pretty flower.*"—Professor Lindley. Price 5s.

"All these seedlings are good in form, bright in colour, and smooth in texture."—Professor Lindley.

KENTISH BRIDE.—This magnificent flower was raised by H. Busby, gardener to T. L. Hodges, Esq., Hemsted, Kent, and has merited the high opinion of Professor Lindley, Editor of the *Gardeners' Chronicle*; Mr. G. Glenny, Editor of the *Gardeners' Gazette*; and Mr. Ayres, the able writer on the Amateur's Garden. Price 7s. 6d.

Professor Lindley's opinion, see *Gardeners' Chron.*, July, 8, 1843, to correspondent, *H. B.*—"Your best Seedling Fuchsia is No. 4. This is a beautiful variety, seed-vessels bright green, tube and sepals bright rosy scarlet, corolla large, of a bright violet-purple. It is a well-proportioned flower."

Mr. Ayres' opinion, see *Gardeners' Chronicle*, Nov. 25, 1843.

Mr. G. Glenny's opinion, see *Gardeners' Gazette*, Oct. 21, 1843, to correspondent, *W. J. E.—Fuchsia*,—"Pink sepals, rich purple corolla, long footstalk. If the habit of the plant be as good as the flower, it is an acquisition."

The habit of this plant is very compact, and of a beautiful rich green glossy foliage, and with its rich pink tube, sepals, and blue purple velvet corolla, forms a lovely object.

EMPEROR OF CHINA.—This is a fine flower raised by the same person as Kentish Bride, and submitted to Professor Lindley at the same time. Price 5s. "No 1, which is similar to No. 2, and having a stout tube. This is a fine flower, with less blue in the corolla."—Professor Lindley.

PRINCE OF WALES.—This also was raised by H. Busby, and submitted to Professor Lindley with two others. *An immense Bloomer.* Price 5s. "No. 3 is a stout flower of a good colour, with long sepals, which expand freely and expose the corolla, which is of a rosy purple."—Professor Lindley.

*** The Collection, Two Guineas and a half. A remittance from unknown Correspondents. The usual allowance to the Trade where two or more plants are taken.—Bowes Nursery, Maidstone, Feb. 22, 1844.

SEED TRADE.—NO MONOPOLY!

J. G. WAITE, in returning thanks for the very liberal support he has received from the Country Trade, begs to assure them that the report so freely circulated by the London Seedsmen as to his being unacquainted with the Seed business is untrue, he having been engaged therein for 14 years as grower and dealer, although he never solicited country orders until this season.

J. G. W. begs to submit a Catalogue of Seeds, &c., which are of first-rate quality; and all orders shall have careful and immediate attention:—

	s.	d.
Waite's Queen of Dwarf Peas . per quart	2	0
[A splendid new variety, growing only one foot high, producing a larger pod than any of the same habit; the seed is quite distinct from all others, and larger than any dwarf Pea in cultivation. The stock is limited to a few quarts.]		
Cormack's Prince Albert Pea . . per bushel	6	0
Shilling's New Grotto do. . . per quart	2	6
New Mammoth do. ,,	3	6
Dwarf Blue Victory, p. bus.	15	0
Early double blossom Frame do. . p. bus.	14	0
Dwarf blue Scimitar do. ,,	10	0
Tall and dwarf Knight's do. . . . p. bus.	14	0
Spanish & Bishop's dwarf do. . . . p. bus.	12	0
Blue Prussian do. ,,	7	0
Victoria do. . ,,	10	0
Bedman's Imperial do. ,,	18	0
Early Warwick do. ,,	9	0
Early Racehorse do. ,,	10	0
Dwarf Marrow do. ,,	10	0
Green do. do. . ,,	10	0
Woodford's Green Marrow do. . . . p. bus.	18	0
Mixed Sweet do. ,,	60	0
Scarlet do. do. ,,	60	0
Painted Lady do. do. ,,	60	0
Black do. do. . ,,	60	0
Purple do. do. . ,,	60	0
Mixed do. do. . ,,	60	0
Waite's New Early Long-pod Bean . p. bus.	18	0
,, ,, Mammoth Windsor do. . p. qt.	1	0
Taylor's large do. do., p. bus.	6	0
Early Longpod do. ,,	5	0
Green Longpod do. ,,	6	6
Waite's dwarf blood-red Beet . . . p. lb.	2	0
White do. . . . ,,	1	6
Purze do. . . ,,	1	0
Walcheren Broccoli, p. oz.	2	0
Chappel's Cream do. p. lb.	7	0
,, White do. ,,	10	0
Orange's Early do. do. ,,	6	0
Early White Cape do. ,,	6	0
Brimstone do. . ,,	3	0
Large late White do. ,,	3	0
Late Purple do. . ,,	3	0
Early Purple Cape do. ,,	4	0
,, ,, Sprouting do. . . p. lb.	2	0
Fine Southampton do. ,,	4	0
Fine Malta do. ,,	3	0
Dwarf Siberian do. ,,	3	6
Imported Brussels Sprouts, p. lb.	2	0
Superfine early dwarf Cabbage . . p. lb.	1	9
Large and dwarf York do. . . . p. lb.	1	9
Nonpareil do. . ,,	1	9
Emperor do. . ,,	1	9
Early Battersea do. . ,,	1	9
New Hope do. . ,,	1	9
Penton do. . . ,,	2	0
Sugar-loaf do. . ,,	1	9
Red Dutch do. . ,,	1	9
Drumhead or Scotch do. ,,	1	9
Dark-green Colewort do. ,,	1	6
New Incomparable do. ,,	3	0
[This excels all others.]		
Dwarf Green curled Kale, p. lb.	1	3
Red Giant Celery . ,,	1	6
White do. do. . ,,	1	6
Early Scarlet Horn Carrot . . . p. cwt.	62	0
Long Red Surrey do. ,,	60	0
Fine selected Altringham do. . . . p. cwt.	62	0
Large green-top white do. . . . p. cwt.	42	0
Fine Early Cauliflower, p. lb.	6	6
Large Asiatic do. . ,,	7	0
,, German do. . ,,	7	0

	s.	d.
Fine Stockwood Cucumber . p. lb.	14	0
Long Prickly do. . p. lb.	7	0
Man of Kent do., p. pkt. 6d. to	1	0
Victory of Suffolk do. . . p. pkt. 6d. to	1	0
Sion House do. ,, 6d. to	1	0
Walker's Prizedighter do. . . p. pkt. 6d. to	1	0
May's Prince of Wales do. . . p. pkt. 6d. to	1	0
Melons, choice vars., p. pkt.	0	6
Mustard & Cress, p. bus.	12	0
Round Spinach . ,,	10	0
Prickly do. . . ,,	8	0
Flanders do. . . ,,	9	0
Green curled Endive, p. lb.	4	0
White do. do. ,,	4	0
Superior broad-flag Leek ,,	2	0
True London do. ,,	1	6
Brown Dutch Lettuce ,,	2	0
Improved White Cos do. ,,	5	0
True Paris do. do. ,,	6	0
,, Bath do. do. ,,	5	0
Drumhead Cabbage do. ,,	5	6
Hammersmith Hardy do. ,,	3	0
Brighton Cos do. p. lb.	5	0
Egyptian do. do. ,,	4	6
Green do. do. ,,	5	0
Berlin Cabbage do. ,,	5	0
Saxony do. do. ,,	4	0
Tennis-ball do. . ,,	5	0
Improved Long Red Mangold Wurtzel, per cwt.	50	0
Red Globe do. . ,,	60	0
Yellow do. do. . ,,	63	0
New White Globe Onion per lb.	5	0
White Spanish do. ,,	3	6
True Deptford do. ,,	3	0
James' Long-keeping do.	4	0
Brown Globe do. ,,	3	0
Silver-skinned do. ,,	5	0
Strasburg do. . ,,	3	0
Blood-red do. . ,,	3	0
Tripoli do. . . ,,	5	6
Welch do. . . ,,	2	0
Hollow-crown Parsnep, per cwt.	60	0
Extra treble-curled Parsley . per bus.	21	0
Early Frame Radish	27	0
,, Scarlet short top do.	26	0
White Turnip do. . ,,	29	0
Scarlet do. do. . . ,,	40	0
Large Dromhead Savoy, per lb.	1	6
Scakale . per quart	1	6
Salsafy . . per lb.	4	0
Scorzonera . ,,	4	0
Winter Savory . ,,	3	6
Thyme . ,,	4	0
Knotted Marjoram ,,	6	0
Basils . . ,,	6	0
Imported Early Dutch Turnips . . per cwt.	70	0
Early Snowball ,,	70	0
Laing's Improved Swede do. . . ,,	65	0
Skirving's Liverpool do do.	60	0
Purple top, do. do. ,,	45	0
Green do. do. ,,	45	0
Dale's hybrid do. ,,	63	0
White Globe do. ,,	65	0
Red Round do . ,,	63	0
Green do. do. ,,	60	0
White do. do. ,,	60	0
Lucerne (fine) ,,	64	0
Mignonette ,, 8l.	8	0
Fine Selected Grass seed for Lawns per bush.	10	0
Fine Mixed do. for pasture . per bush.	7	0
New Early Prolific Potatoes . . per peck	4	0
Ash-leaved Kidney do. per bush.	6	0
Early Frame do. ,,	6	0
Russian Mats per doz.	12	0
Giant Asparagus Plants, per hundred	3	0
Scakale do. ,,	5	0
Myatt's Victoria Rhubarb . . each	1	0
Early Scarlet do. ,,	0	6
Mushroom Spawn p. bus.	3	0

16 Distinct varieties fine double Balsams . . 5s. 0d.
16 ,, ,, Prize German Asters . . 5 0
8 Superior ,, Zeunia elegans . . 2 6
60 Very fine varieties Hardy Annuals . . . 10 0

J. G. W. has lately received a large freight of very superior Ribbon Onion, which he offers at 1s. 10d. per lb. Samples may be had by sending a letter inclosing two postage stamps, which will allow purchasers an opportunity of proving the stock before it is wanted for autumn sowing.

J. G. WAITE'S priced Catalogue of Flower Seeds is now ready, and may be had on application at his Establishments, Nos. 1 & 4, Eyre-street-hill, Hatton-garden, London.

N.B. A remittance or reference in London is required previous to opening an account.

R. WHITE & Co.'s Collection of Plants, of which a Catalogue is now ready, comprise every variety of Geranium, Fuchsia, Verbena, Chrysanthemum, Dahlia, &c. which is worthy of cultivation. The following collections are offered, the selection being left to the purchaser:—

			£	s.	d.
40 first-rate varieties of	Geranium	. . .	5	0	0
20 ,, ,,	do.	. . .	3	0	0
12 ,, ,,	New do.	. . .	2	0	0
20 ,, ,,	Fuchsia .	. . .	1	1	0
40 ,, ,,	Chrysanthemum	. .	1	1	0
20 ,, ,,	Verbena, including Seedlings which were submitted to Dr. Lindley for his opinion, and reported to be "all very fine," see *Gardeners' Chronicle*, Sept. 30th and Oct. 7th: "*Alfred*; All your Seedling Verbenas are good flowers."	. . .	1	1	0
12 first-rate Dahlias		. . .	1	1	0
100 fine show do.		. . .	3	10	0

The above will be ready for delivery in strong plants the first weeks of April and May; and orders containing remittances will be executed in strict priority. Orders amounting to 5l. will be delivered free.

Agents for the sale of STEPHENSON'S Conical Boiler, Tank, &c., which may be seen at work, and can be supplied at Manufacturers' prices. Also WHITNEY'S Composition Substitute for Glass.—Poole Nursery.

FLOWER SEEDS—36 Packets, 10s.; 18 ditto 5s., forwarded, postage free, to any part.—Apply to Mr. JOHN BROWN, Albion Nursery, Stoke Newington, London. Any preferred species may be specified in the order. Payment by Post-office order or stamps.

J. H. B. has on sale an extensive collection of the most approved Plants for greenhouses and conservatories. Parties building large or small greenhouses can be well supplied.

HURST & M'MULLEN, SEEDSMEN and FLORISTS, 6, Leadenhall-street, beg respectfully at the present season to invite the attention of the public to their extensive and well-selected Stock of GARDEN SEEDS, comprising every new and choice variety worthy of cultivation. They annex the names of a few varieties deserving particular notice, for present use, and beg to say their List of NEW AND CHOICE FLOWER-SEEDS, of which they possess an unrivalled collection, will appear at the usual time in "Harrison's Floricultural Cabinet" for March, and in the *Gardeners' Chronicle* of the 2d March.

CHOICE VEGETABLE SEEDS.

Cormack's Prince Albert Peas, in quart packets, true from the raiser .	per packet	3s. 6d.
Shilling's New Early Grotto Pea	per quart	3 0
New Early Kent do. . . .	,,	1 0
Thompson's New Early Dwarf do.	,,	1 0
Flack's Victory do. . .	,,	1 0
Victoria (new branching) do. .	,,	1 0
Ward's Incomparable, splendid new late Pea		3 0
Cormack's British Queen Pea, in quart packets, true from the raiser .	per packet	3 0
New Monstrous Windsor Beans, very superior,	p. qt.	0 9
Walcheren Superb Broccoli .	per packet	1 0
Hammond's New White Cape do.	,,	1 0
Chappell's Cream do. . .	,,	6d. to 1 0
Chappell's White do . .	,,	6d. to 1 0
Lake's superb New White do. .	,,	6d. to 1 0
Danser's Pink Cape do. .	,,	6d. to 1 0
New White Victoria do. .	,,	6d. to 1 0
Handsworth's Superb do. .	,,	6d. to 1 0
Howden's Purple (splendid) do. .	,,	6d to 1 0
Imported Brussels Sprouts .	,,	0 6
New Cabbaging Green Borecole .	per packet	0 6
Cattell's superb Blood-red Beet .	,,	0 6
Walcheren Cauliflower (true and splendid)	,,	1 0
Fine Asiatic do. . . .	,,	1 0

SUPERIOR FRAME CUCUMBERS.

Elphinstone's Prince Albert .	per packet	2 0
Warwickshire Hero . . .	,,	1 0
Spink's Imperial . . .	,,	1 0
Improved Sion House . .	,,	1 0
Cherry's Goliah . . .	,,	1 0
Victory of Suffolk . . .	,,	1 0
Cuthill's New Black Spine .	,,	1 0
Patrick's fine Long . .	,,	1 0
May's Prince of Wales . .	,,	1 0
Man of Kent	,,	1 0
Stockwood fine Ridge Cucumber .	,,	0 6

MELONS.

Beechwood Melon (new)	per packet	2 0
Housanee	,,	1 0
Windsor Prize	,,	1 0
William the Fourth . .	,,	1 0
Netted Scarlet Flesh . .	,,	1 0
Cuthill's New Green Flesh .	,,	1 0
Malta Green Flesh . .	,,	1 0

and many other excellent varieties.

New Ice Cos Lettuce . .	per packet	6d. to 1 0
Paris Green Cos do. (fine) .	,,	6d. to 1 0
Snow's fine Cos do. . .	,,	6d. to 1 0
Wood's Hardy Bath Cos do. (requires no tying)		6d. to 1 0
Victoria Cabbage Lettuce .	per packet	6d. to 1 0
New German do. do. . .	,,	6d. to 1 0
Couve Tronchonda (delicious winter vegetable)		6d. per packet.
Roberts' Prince Albert Cabbage . .		6d. ,,
Early Dwarf Nonsuch . . .		6d. ,,
Early Sprotboro		6d. ,,
Early Hope (Improved) . . .		6d. ,,
Scarlet Studley Carrot . . .		6d. ,,
James's New Scarlet Carrot . .		6d. ,,
Extra fine Early Horn . . .		6d. ,,
Seymour's Superb White Celery . .		6d. ,,
New Matchless Red		6d. ,,
Law's Giant White		6d. ,,
Manchester Red		6d. ,,
Myatt's splendid new Garnishing Parsley .		6d. ,,
New White Globe Onion . . .		6d. ,,
True Silver-skinned		6d. ,,
Fine Snowball Turnip		6d. ,,
Early Yellow Malta Turnip . . .		6d. ,,
Wood's Superfine Frame Radish . .		6d. ,,
New French Olive-shaped ,, . . .		6d. ,,
Fine Flanders Spinach		1s. per quart.
Alpine Strawberry		6d. per packet.
Martin's Early Globe Potatoes . .		2s. per peck

A choice selection of Pot Roots of all the best varieties of Dahlias in cultivation, from 1s. to 2s. 6d. each.
Lilium lancifolium album, 4s. each.
Double Italian Tuberoses, 4s. per doz.
Tigridia pavonia, 3s. per doz.
Fine Double Anemones, 10s. per lb.
Single do. 4s. per lb.
Splendid mixed Ranunculus, 5s. to 8s. per 100.
Myatt's Victoria Rhubarbs (true from the raiser), 1s. 3d. each.
Marshall's Early Scarlet Rhubarbs, 9d. each.
Lancashire Gooseberries, in fine variety, 8s. per doz.
Grape Currants, 6s. per doz.
Mixed Grasses for Lawns and Pastures, of the very finest quality.
Selections of seeds carefully assorted and packed for all climates.
Standard and Dwarf Roses, in fine variety.
Metallic Wire and Labels, Garden Tools, Knives, &c. &c.
Agents for the sale of Humphreys's Compound.

HURST and M'MULLEN beg to thank their Friends for the kind and encouraging patronage they have received, and to assure them that all commands shall have careful and prompt attention.—Wholesale and Retail Seed Establishment, 6, Leadenhall-street; Warehouse, 15, Vine-street, Minories.

LAWN GRASS SEED.—Mixtures of the finest kinds of GRASSES and CLOVER, warranted to produce a fine Sward (allowing two quarts to the square rod), 14s. per bushel. Seat carriage paid to London, in not less quantity than half a bushel. Mixtures for Lawns intended to be fed, 10s. per bushel.
JOHN RIVERS, Sawbridgeworth, Herts.

BUSHELL'S Light Seedling Dahlia "EMMA."—Plants in May, 10s. 6d. Colour white, tipped with deep cherry; the petals, form, and centre, good; the largest, most constant, and free in flowering of any Dahlia yet propagated, and has obtained several prizes. "Pet Rival" Plants in May, 5s. Colour, purple maroon; fine cupped petal and free bloomer; exhibited in several winning stands last season. Kennington Rose, Plants in May, 5s.; most constant Rose grown. To be had of Messrs. ANGELL, Camden Town; B. GIBLING, Bloomsbury; F. and A. SMITH, Hackney; and J. BUSHELL, 12, Hall-place, Kennington-lane.

NEW SEEDLING FUCHSIA "SIDMOUTHII" will be ready to send out in May next; price 10s. 6d. each, carriage free.—This magnificent variety was raised last year by Mr. BARTLETT, Nurseryman, Sidmouth. It may be considered the finest hybrid extant. The flowers are large and colour brilliant, is a strong grower and prolific bloomer, with fine foliage. A specimen flower was sent to the Editor of the *Gardeners' Chronicle* last October, who spoke so high in its praise that anything further is superfluous, beyond its character as above. Visitors to Sidmouth will be gratified by viewing Mr. B.'s Collection of this lovely and graceful flower; having a mode of treatment peculiarly his own.

*** To secure fine plants early orders are desirable.

RANUNCULUSES, ANEMONES, CARNATIONS, AURICULAS and LILIUM LANCIFOLIUM.

H. GROOM, Clapham-rise, near London (removed from Walworth), by appointment FLORIST TO HER MAJESTY, begs to remind the Nobility, Gentry, and Amateurs, that this is the best season for obtaining Collections of the above Flowers, and that in consequence of the success he had in their cultivation last year, he can offer them at the following moderate prices:—

	£	s.	d.
100 Ranunculuses in 100 superb sorts, with names .	1	4	0
100 do. in 100 very fine sorts do. .	2	10	0
Superfine mixtures, from 7s. to 21s. per 100.			
100 Anemones in 100 superfine sorts, with names .	2	10	0
100 Do. in 50 do. do. do. .	2	0	0
Superfine mixtures, 10s. per 100.			
25 pair of Carnations, in 25 superfine sorts, with names	2	0	0
25 pair of Picotees, in 25 do. do. do.	2	10	0
25 Auriculas, in 25 superfine sorts, with names .	2	12	6
25 Geraniums, in 25 superfine sorts, with names .	2	10	0
Lilium lancifolium album, good bulbs, each . .	0	2	6
,, ,, ,, large bulbs, each . .	0	10	6
,, ,, punctatum, good bulbs, each	0	7	6
,, ,, ,, large bulbs, each	1	1	0

Catalogues may be had on application.—Feb., 1844.

ORANGE AND LEMON TREES, from 8s. to 25s. DOUBLE ITALIAN TUBEROSE ROOTS, 3s. per dozen.—R. HALL begs to advise the arrival of his Annual Importation of the above-named Trees and Bulbs, which are this year remarkably fine, at his Foreign Warehouse, 63, South Audley-street, Grosvenor-square—facing the Chapel.

TO GENTLEMEN PLANTING.

J. AND J. FAIRBAIRN are induced from the uncertainty upon which they hold the Manor-street Nursery (situated contiguous to the Home Nursery, Clapham Rise, where attention will be given to all applications), to effect a Sale of the Stock at as early a period as possible, consequently beg to solicit the attention of Gentlemen and the trade to the large and remarkably healthy and well-grown stock, consisting of fine large Laurels, twice transplanted, of extra growth; Portugal Laurels, very handsome; Green Hollies, of various sizes; Evergreen Privets, fine Standard and Dwarf Roses in great variety, fine standard flowering Thorns, Almonds, Æsculus, Robinias, and other Ornamental Trees, and Evergreen and flowering Shrubs, with a large stock of fine standard and dwarf, trained and untrained Peaches, Nectarines, Apples, Pears, Plums, and Cherries, of the most approved kinds, and of growth rarely equalled; also, a large assortment of Forest Trees, consisting of Limes, Elms, Birch, Beech, Hornbeam, Spanish and Horse Chesnuts, Mountain Ash, Poplars, and Spruce, and Scotch Firs; also a large number of Gooseberries and Currants, of excellent growth, and of the best varieties in cultivation, to all of which J. & J. F. respectfully invite the inspection of Gentlemen and Nurserymen, flattering themselves that the general character of the Stock is such as to ensure unqualified satisfaction, and which they are disposed to offer at very moderate prices for cash.

J. & J. F. respectfully beg to call the attention of Gentlemen to their advertisement of Heaths, &c., which appeared in the *Gardeners' Chronicle*, Oct. 21 and 28.

Nurseries, Clapham, near London, Feb. 16, 1844.

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners' Chronicle*. "THE BRITISH QUEEN on light soils, is the best of all kinds, and will drive Knight's Tall Marrow out of the garden." "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time." Both varieties may be had in packages at 3s. 6d. each, at W. J. C.'s wholesale Establishment, Newcross, or the Bedford Conservatory, Covent Garden.

THE KENSINGTON NURSERIES.

THE LEASE of one of these Nurseries expires shortly, and the Ground being required for building purposes, Messrs. PROTHEROE AND MORRIS are instructed to offer to public competition the invaluable Stock on the smallest of these Nurseries, in the occupation of Messrs. FORREST and Co., and the Stock being far superior to any within a considerable distance, will afford Gentlemen, Noblemen, and others engaged in planting, a fine opportunity to supply themselves, not likely soon to recur. The sale is on the 4th March, and following days, and includes ornamental Trees and Shrubs of every description, variegated and Green Hollies, Evergreen Oaks, and Cork Trees, large Fan and other Yews, twice transplanted Common and Portugal Laurels, Arbutus alaternus, Hemlock, Spruce, &c. May be viewed prior to sale. Catalogues 1s. each, returnable to purchasers, may be had on the premises, of the principal Seedsmen, and of the Auctioneers.—American Nursery, Leytonstone.

TO AMATEUR FLORISTS.

TO LET, at a low Rent, a SMALL HOUSE, with a VERY LARGE GARDEN, Greenhouse, and Pit. Inquire at No. 1, Mapp's Row, Stepney Green.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to Public Competition at the Auction Mart, Bartholomew-lane, on THURSDAY, Feb. 29, 1844, and following day, at 12 o'Clock, about 200 DOUBLE CAMELLIAS, consisting of all the leading varieties, beautifully furnished with bloom-buds; also a fine assortment of STANDARD and DWARF ROSES, AMERICAN PLANTS, DAHLIAS in dry roots, &c. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

*** The Camellias will be sold on Thursday, 29th.

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.
FOR 1844.

YOUELL AND CO. beg to refer the Readers of the *Gardener's Chronicle* to their Catalogue of the above, which appeared in this paper of last week, and will be found to contain such varieties only as are worthy of cultivation.—Great Yarmouth Nursery, Feb. 22, 1844.

WILLIAM MASTERS begs most respectfully to inform the Nobility and Gentry of the United Kingdom that he unites the Professions of LANDSCAPE-GARDENER and NURSERYMAN, and this enables him to offer an extensive Collection of Coniferæ Plant, as well as of the Hardy Ornamental Trees and Shrubs cultivated in Britain, at very moderate prices. W. M. also possesses a numerous Assortment of Hothouse and Greenhouse Plants, many of the rarer species of Orchidaceæ, several new hybrid Crinums, Rhododendrons, Azalea indica, Camellias, Succulents, Pelargoniums, &c. &c.—Exotic Nursery, Canterbury, Feb., 1844.

CHEAPER THAN EVER!

W. MILLER begs to inform his numerous Friends that he offers the following Beautiful Plants cheaper than last season, viz.,

12 Fine new distinct Fuchsias for .....7s. 6d.
12 Splendid Verbenas 3 6
12 Anagallis, fine sort.....4 0
Petunia Punctata, per Plant 7 6

See Mr. M.'s extensive List in last week's *Chronicle*, containing every new variety.—Providence Nursery, Ramsgate.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 24, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Feb. 28	Society of Arts	. .	8 P.M.
Friday, March 1	Botanical	. .	3 P.M.
Monday, March 4	Entomological	. .	8 P.M.
Tuesday, March 5	Horticultural	. .	3 P.M.
	Linnean	. .	8 P.M.

In pursuing the subject of LANDSCAPE GARDENING, and attempting in a plain manner to make principles easily understood, we cannot too often repeat that we must look to Nature as our instructress. Not only, however, must we look to external, but to internal nature; that is, into our own mental constitution. It may not have occurred to some, that science, as well as art, is necessary to the exercise of Landscape-Gardening; and few, probably, have imagined that geology can aid us in tracing to their origin the most sublime spectacles which Nature presents to our view. A brief appeal to that science will not appear either uninteresting or useless.

Very little observation and inquiry is needed to satisfy us that the abode of man, this fair world, was made in all respects fit for his residence before he was called into existence. Geologists have observed the effects of the various revolutions which this globe has undergone—that destruction and renewal have been never-ceasing operations—that they are the very basis of creative design; and, when investigated, they appear to be the sources of all our enjoyment—startling as to some the remark may seem. We are taught by geology that what are called strata and rock were all originally deposited in conformity with the curvature of the earth. These have, at different periods, been invaded and broken up by rocky matter in a state of fusion; and finally, it appears, from the extremely disturbed state of the entire crust of the globe, and the elevation of igneous rocks, that a tremendous force acting from below upwards has dislocated the whole, so that immense masses have been erected into the forms of mountains and hills, while others have sunk into the abysses left by the escape of the expansive fluid, which was most probably steam. The bottom of the ocean is as uneven as the surface of the earth; and islands and volcanoes testify what has been done, and by what agency.

Here, then, we find destruction to be the origin of all that is admirable in Landscape, so far as the unevenness of the surface is concerned. To this destruction we owe the stupendous, ragged, and snow-capped mountain, the overhanging precipice, the lake, the valley, and the river. The elevation of the land causes water to flow, and its disturbance has caused the necessity for its being precipitated in the form of falls and cascades, producing many of the most sublime and beautiful spectacles which Nature offers to our contemplation.

It is, indeed, at first view, a strange coalition; nevertheless, without destruction, there could be neither sublimity nor beauty. The association is unavoidable, and fatal to the ideal theory of Taste. To sublimity and beauty destruction has been, and is still, and will be while the world lasts, the servant of all-work; for we find it above us, in the thunder—beneath us, in the earthquake: on every side, in the tempestuous wind, and in the raging billows. Nor do we find it alone in the terrible of Nature's powers. In our quiet and peaceful domestic concerns destruction steers his unregarded course. The hand of the artisan is for ever at work, destroying a part of his materials to render the remainder useful or ornamental. The powers of fire and of water are called upon to clothe us. Destruction gives us food and light; and from the rough block of stone fashions the statue and the temple. Wonderful! that the faculties of man should have been created to derive enjoyment from the effects of what he dreads and shrinks from! To him an All-wise Intelligence has extended blessings which unlimited benevolence had designed. Man, while uninformed, does shrink from destruction, and knows that it awaits himself: but means are placed within his reach, if he would but look for them, by which, freed from all risk, he might go on his way rejoicing, till, reaching the appointed goal, he lays himself down in peace, and resigns his spirit to Him who gave it. Yet, how blind is man! The indulgence by one man of that curiosity which is implanted in him by the Creator himself, is by another scouted as vain philosophy! If one man attempts to turn to a new page of Nature's book, and dares to announce discovered truth, another speedily comes forth to condemn even the opening of the book at all; and because truth oversets his prejudices and his dogmas, instead of casting them away, he grasps them the closer, and shouts aloud, in destructive spirit—Infidel! Atheist!

We beg pardon of the reader; we were nearly leaving our theme behind us, and plunging into a region where we have no present business.

It is obvious that the last great breaking up of the globe took place before man appeared upon it. He was formed to enjoy the existing order of things—what Nature presented in all her aspects, and adapted as his race multiplied, to prefer the regions of perpetual ice, or the heat of the equator. Animal and vegetable life were constituted for every climate—for every scene. The surface of the globe having been fixed, after a convulsion of a magnitude that may have changed its axis, (for we may trace the progress of the rushing of waters which would certainly follow such an event,) we find that, in the destruction of a former surface, provision was made for the formation of soil on the new one. Abundance of loose matter was deposited, and in it vegetation commenced, scanty at first. Plants drawing much of their sustenance from the atmosphere, lived and died after rendering gaseous matter solid; and thus the soil became gradually enriched, and in the course of advancement towards fitness to receive greater variety, others we may suppose were supplied, till, at last, the earth being covered by objects, some of the most delicate beauty, some of stately magnificence, animal life at length appeared, and all was prepared for the being who was to enter on the splendid stage to admire and to adore.—*G.*

WE are assured that many admirers of the POLYANTHUS flower are unsuccessful in its management, simply because they do not study the habits of the plant. It is next to impossible to grow it in a warm sunny situation; it may be done in early spring, but after blooming time it is extremely susceptible of drought, and exposure to a July sun lays it open to the attack of red spiders, which is often fatal to it. The *habitat* of its relation will give some idea in what manner it ought to be treated. The "Pale-faced Primrose" affects sunny banks, it is true, flowering at a season when other vegetation has made but little progress. But who sees Primroses after their blooms have passed away? Sheltered and hidden from the summer heat by the rank vegetation which usually springs up around them, retiring, as it were, beneath the friendly shade of Briars and overhanging bushes, they escape the attacks of those maladies to which their tribe are subject when exposed. This, then, proves that Polyanthuses may be grown to advantage in borders fully exposed to the sun, provided, after a certain period, they are artificially shaded. We have seen them grown and flowered most beautifully by simply having a moveable shade placed on the north side of the bed in the winter and early spring months, and removed to the south side when the sun became too powerful. The situation where we grow a choice collection, is under a bank running due north and south; the bank is crowned with a thick hedge, and the subsoil is a strong retentive clay; on the east, the border is overhung with Plum and other fruit-trees. As a matter of course, till the trees are in full foliage, the plants get the genial rays of the morning sun, which in their early growth is so essentially necessary; and when they most need shelter, these trees, thickly covered with verdure, give them the requisite protection, thus in a great measure imitating their natural habits.

A suitable situation is, we are convinced, half the battle for the successful cultivation of Polyanthuses. Often has it been our lot to witness the vain attempts of people to grow them. They were unremitting in their attention, and their composts were after the most approved receipts; still, all efforts appeared to be attended with a sort of fatality, for after the plants had flowered they began to assume a sickly hue, and eventually became diseased and curled, arising from improper exposure and the subsoil being of too porous a nature.

These details may appear uncalled for to our more practised Floricultural friends, but we are sure that simplicity of description, joined to the repudiation of all quackery, will do more to create a taste for these "gaily-laced" flowers, than the most elaborate and highly-coloured delineations.

We lately noticed a few of the leading varieties which had at various times come under our observation, and to those who may not be conversant with the properties required to constitute a good Polyanthus, or show-flower, we will for their especial benefit and information endeavour to describe them.

The plant itself ought to be in fine robust health, the leaves of a dark-green colour, the rib up the centre of each being clean and semi-transparent. The stem, rising stoutly from the heart, should bear its truss of flowers erect, without being "drawn" or requiring support to enable it to stand. The pips or flowers ought to be in number from five to fifteen, forming a head slightly convex. Superficial observers would suppose that the flower was composed of five distinct leaves or petals. The corolla, however, is monopetalous, with five deep segments, thus forming five apparent petals. We have seen diagrams at various times representing the flower as having six segments; but this is unusual; when it does happen the blooms have a crowded frilled appearance wholly at variance with the flat even character, which is one of the requisites desired by the best cultivators. The centre of the flower must be of a fine clear yellow, more or less intense, without those shades or streaks of reddish brown, observable in some seedlings, and which is very apparent in both the Cowslip and Primrose. The tube is best when surrounded by a slight collar, having, as it is technically termed, "a trumpet eye," conspicuous in the old variety "Tantarara." Some sorts are destitute of such distinction, but this "moulding" as it may be styled, gives a decided finish to that part of the flower. It is also requisite that the thrums or stamens fill the tube, concealing the stigma. This is a point of great importance, as however good its other properties may be, a show-flower in which the stigma prominently occupies the centre—when it is termed "Pin-eyed"—is considered worthless. The segments of the corolla must not cut farther than the body colour or dark ground of the petals; should this be the case the yellow centre has a cracked unsightly appearance, which is often the defect in an old flower styled "The Yorkshire Regent." The ground-colour ought to bear a fair proportion to the eye; in some it is too small, take for instance Lakin's George Canning, alias Clegg's Lord Crewe, in which the yellow is out of proportion. As for shape, the petals, if possible, ought to form as near as may be a perfect circle: those varieties making the greatest approach to this desideratum, of course are best; each petal being margined with a clear yellow lace, similar in colour to the eye, which also strikes from the circumference to the centre through the middle of each. In some cases this lace is neat and even, as in Crowshaw's Invincible, Hufton's Squire Ray, and Cox's Regent; in others, broad and often coarse, as Nicholson's Gold Lace, and Hudson's Morning Star. There is yet another property we would allude to before closing these remarks—it is indispensable that the colours should retain their brilliancy to the last, or in other words "die well." The lace or edge of some varieties is apt to fade, and become of a different shade to the eye of the flower, even when in a state of apparent freshness; this is a serious drawback on the other good qualities, and we are sorry to record that those two fine flowers, Fletcher's Defiance and Nicholson's Bang Europe, are liable to this objection.—*W.*

IT will be seen by an Advertisement in another column, that the Meeting held last Saturday on behalf of the late Mr. Loudon's family, promises to produce all the advantages that were anticipated from it. The names of a large number of noblemen and gentlemen were mentioned as having already become purchasers of Mr. Loudon's works, and among them those of Prince Albert, the Dukes of Devonshire, Northumberland, Sutherland, and Leinster; the Marquesses of Northampton and Waterford; the Earls of Auckland, Fitzwilliam, Burlington, Radnor, Derby, Fortescue, Mexborough, and Aboyne, with a large number of other noblemen and gentlemen.

A money subscription was also opened, with the names of His Grace the Duke of Devonshire, President of the Horticultural Society, for 25*l.*; J. Cook, Esq., of Brookland, for 20*l.*; Mr. Paxton, for 10*l.*, &c.; and a Committee was appointed to carry into effect the resolutions of the Meeting. We trust that the example of London will be followed by Edinburgh and Dublin. It gives us great pleasure to add, that the sum subscribed, either in money or purchases of books, since the subject was first mentioned in the *Gardeners' Chronicle*, now amounts to £614 11*s.* 6*d.*

RANUNCULUSES.

THE following notes were taken from the private memorandum book of an extensive and successful cultivator of that neat and beautiful Florists' Flower, the Ranunculus, and as the observations were penned in the sunny hours of June, while the ardent admirers of this flower were encircling their respective beds, eagerly investigating,

comparing, scrutinising, condemning, or approving the varieties as they unfolded to their view, and all the notes were originally taken for private guidance, and not for publication, they may be presumed, afford some information respecting the merits of the sorts described.

CLASS I.—SELF.

Œil Noir, very fine, dark rich colour.—Nestor, extra fine dark, (one of the best of its class).—Fete Nocturne, rich purple, fine.—Duke of Bedford, large fine formal crimson.—Gibbs's Eliza, very fine straw, extra form, super variety.—Cootar's Apollo, very fine dark; rather coarse in petal.—Tyso's Laureate, very fine, pure yellow.—Comtesse Plaisance, very fine yellow, good form.—Les Vos, dark purple, very fine.—Rosa Montana, superior bright rosy crimson, excellent form.—Tyso's Nivis, fine white.—Cootar's Tippoo Saib, rich, dark.—Condorcet, fine puce purple.—Bouquet Nopparell, dark olive, very fine.

CLASS II.

Flavimorus, cream with purple edge, very fine.—Tyso's Victoria, clear white with crimson edge, very fine.—Aust's Henritella, white, crimson-edged, good shape, very fine.—Horatio, yellow-edged, fine, free bloomer, not quite a pure ground.—Tyso's Herbert, yellow with red edge, very fine.—Temeraire, white, red-striped, (one of the best of its class).—Lightbody's William Penn, white with purple edge, very fine, strongly marked, ground colour seldom pure.—Melange des Beautés, red and yellow-striped, (an excellent old flower, merits well known).—Tyso's Alexis, yellow-spotted, extra fine, good form.—Tyso's Attractor, white, with purple edge, large, very fine.—Kilgour's Queen Victoria, cream, crimson-edged, large, and extra fine.—Cootar's Coronation, buff, pink mottled, very fine.—Grand Monarque, yellow-edged, fine petals, rather loose.—Aust's Nonsuch, white, purple-edged, distinct, very fine.—Tyso's Felix, buff, with distinct spot, extra fine.—Lightbody's No Mistake, cream, purple-edged, strong marking, very fine.—Dr. Franklin, fine clear white, with purple edge, very fine.—Tyso's Edgar, yellow, coffee-edged, excellent form, extra fine.—Quintin Durward, yellow-edged, very fine colours, rather thin.—Tyso's Delectus, yellow, red-edged, very fine.—Lightbody's Rob Roy, cream, crimson edge, very fine.—Imbert, yellow, with faint brown spot, very good.—Tysos Flaminius, yellow, with dark spot, extra (one of the best of its class).—Herald, white, crimson-edged, very fine, excellent shape, high crown.—Tyso's Creon, buff, dark edging, very fine.—Glacia, yellow-mottled, large and very fine.—Paxos, white, with deep purple edge, extra fine.—Biddal's Duke of Wellington, yellow, delicate-edged, very fine.—Macrobius, white-spotted, very fine.—Lightbody's Endymion, white, with delicate rose-edging, very good.—Tyso's Premium, white, purple spot, very fine, high crown.—Aust's Queen Victoria, white, with delicate edging, very fine.—Saladin, fine yellow, with faint spot.—Sophia, or Ma Délice, cream, with rose edge, very good.—Tyso's Vendôme, cream, with dark purple edge, extra fine, rather sportive.—Waterstone's Epirus, yellow-spotted, very fine.

The 50 sorts above enumerated are selected for their quality, without respect to their age or novelty, and they will be found worthy of a place in the collections of cultivators for competition.—*W. J.*

A KNOWLEDGE OF PRINCIPLES ESSENTIAL TO THE BEST CULTIVATION.—No. II.

(*Continued from page* 100.)

An ancient philosopher * on leaving Athens for exile (for advocating the unity of the Deity) exclaimed, "There is a straight road to heaven from every country;" so also is there a straight road to truth from every principle in Nature. It has been already stated, that "every operation in Art is limited in its effect in proportion as it diverges from the line of agency which Nature has prescribed for the same end;" † and such I consider is the result of every process in shifting which seeks to attain the highest effects by a succession of causes, each of which is destructive of an ultimate effect in the one which succeeds it.‡

As it is "the elementary condition of an organised being that favours the mature development of its parts," § so is that development rendered less perfect by every process which retards the operation of its elements; and in every argument to prove that a non-disturbance of functional organs (such as roots, &c.) is essential to perfect and mature growth, we must, consistently with such reasoning, attach an equal, if not stronger importance to such non-disturbance during the earlier stages of growth; because every plant is subject to the law of causal agency throughout its period of life. In short, if the process of shifting prevent plants from appropriating the same amount of atmospheric and solar agency which they appropriated prior to the operation, then such a process (whether considered in a physiological or practical point of view) is an evil, great in proportion to the frequency of its recurrence; and that which is an evil in part is an evil in the whole, as the whole exists but in its parts.

Such conclusions appear to me to be necessarily deduced from the true principles of cultivation, and by such I shall abide until reasons are adduced to show that to produce and maintain a perfect development of the organs of plants "a continued and uninterrupted supply of fluid from the roots" is not indispensable. To hold other opinions would be to abandon the conviction resulting from 15 years' practice, and to forget the experience of my whole professional life.

And in what does the evidence of the truth of these principles consist? It may be asked. In the highest effects of cultivation at the present period is the reply; and without presumption, it may be added, that the highest capabilities of nature are based upon the application of those principles. A good illustration of this is to be found in a leading article at p. 391 (1843), where the rapid and perfect attainment of timber by using *buds*, instead of seedlings (or transplanted plants) is adverted to, and furnishes conclusive evidence of the superiority of a progressive and accumulative system of cultivating over all others. It also strikingly confirms the truth that "a constant and uninterrupted supply of fluid from the roots is indispensable" to perfect growth.

The same principle was insisted on in a previous paper, by showing that the only natural mode of perpetuating the primary vigour of plants, is by reproduction *from* seed. In like manner that mode of culture which approximates the nearest to this will be productive of the highest vigour and most perfect proportions. Hence it follows that the several organs of a seed, a bud, a cutting, and a layer, are each possessed of a principle of vitality, varying in power from a seed downwards.

Admitting the correctness of these views, it follows, that since the most valuable results may be attained, by continuing the progressive development of a plant from its rudimentary condition as a seed, such will be the proportionate success attending the imitation of that process in Horticulture.

It has been wisely remarked, that "there is nothing in religion contrary to right reason," and it is equally true that there is nothing in nature contrary to first principles. Much of the difficulty and loss attending their application has arisen from a misapprehension and forgetfulness of the requisite conditions. Men are seldom wise in the exercise of a new power; disappointment is the inevitable result of an injudicious application of powerful agencies, which also meet the counter influence of successful, but inferior modes of culture. For example: the proprietor of an extensive establishment lost many plants; on inquiry, it was found that the person in charge of them had, in the process of potting, omitted bottom drainage, with the exception of a single potsherd. Many persons would, perhaps, have inferred that the deficiency of bottom drainage was the sole cause, but a better informed cultivator would have withheld an opinion until he had ascertained that no modification or judicious arrangement of the soil could have been made equal to the preservation of the plants. Those who doubt the possibility of dispensing with bottom drainage, may be reminded of the increasing evidence in favour of prepared vegetable matter being rendered subservient to valuable purposes; and further, that one of the most extensive establishments in the world has, in the general cultivation of Heaths, for a long time discontinued lower drainage by potsherds, with the exception of a single one over the hole, and this practice is attended in ten thousand instances with uniform success. These facts are not now quoted either in commendation or disapproval of the custom, but to show that there are modes of culture which hitherto have not been satisfactorily explained. Until this is done, first-rate gardening must be content, as the proverb says, to "make haste slowly."

All improvement is a victory won by struggles, and signalised by conflicts with opposing principles. Hitherto we gardeners have been dealing with only the fragments of a system of cultivation, and not with it as a whole. We have been more restricted by general rules, which are limited in their effects, than guided by principles which are perfect in their application. A principle bears the same relation to truth, that a seed does to a plant, the former being a perfect and necessary condition of nature, the latter a perfect and necessary condition of a vegetable. —*William Wood, Pine Apple Place.*

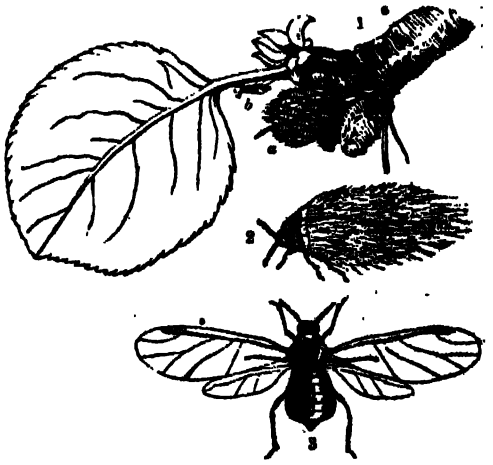
* Anaxagorus. † *Chronicle*, p. 734. ‡ Ibid., p. 734.

ENTOMOLOGY.—No. LV.

THE AMERICAN BLIGHT.—*(Eriosoma lanigera.)*—Such numerous complaints reach us regarding this pest of the orchard, and so many inquiries are made concerning its economy, that it seems advisable to relate its history, and this is the more necessary, since other species are often mistaken for it, leading to great errors and even mischief to proprietors. Many persons have imagined that the Aphides forming the galls on the Poplars and other trees, are the same as the American Blight, and to prove how essential it is to be well acquainted with these subjects, we will quote Mr. Spence's observations in the "Monthly Magazine," where he says:—"In consequence of the ignorance of the orchard proprietors at Evesham, they cut down all the Poplars in that neighbourhood, seeing that they were inhabited by a cottony Aphis, supposing it was the same as the one infesting the Apple-trees, whereas had they been better informed they might have saved their Poplars, for the insects upon them, of this family, never do the slightest injury to the Apple or any Orchard-tree."

Early in the spring we may find, on close inspection, a cottony appearance in the chinks of the excrescences found on the twigs of Apple-trees (fig. 1, *a*), and by the time the leaves are expanded the crevices in the back often exhibit the same appearance, and this white slimy substance becomes at last so abundant that threads are drawn out by the wind, very probably containing the embryo young, which soon people the adjoining trees; such, however, is not always the mode by which the disease is communicated. On examining one of these cottony masses, a number of the wingless females will be found, generally closely packed over one another (*a*), their heads being concealed, and smaller ones are running about; the old sluggish females (fig. 2) are of a reddish or plum-colour, with two short six-jointed antennæ and six legs, but nearly the whole of the body is clothed with long white filaments, I believe of a resinous substance, which project far beyond the apex of the abdomen. These females, like all the Aphides, are furnished with a proboscis, which in this instance is tolerably long and stout, and being insinuated through the tender bark it sucks like a syphon, by which the sap is conveyed into their soft and expansive bodies. By exudation, and possibly the natural evacuations of the animals, they are plentifully surrounded with a reddish liquor, forming globules, and by repeating the animals the same-coloured fluid is reproduced from their bodies.

It is often asked, how the American blight is conveyed to localities where it had been previously unknown, or had been eradicated for a long succession of years? conceiving, as many do, that it is entirely a wingless insect. This pest is no doubt frequently introduced with a young tree, which, however clean it may appear to the careless observer, may contain the latent germs of disease; but there are other causes—I had repeatedly examined Apple-trees, in order to find winged Eriosoma, and after many attempts I discovered them in July and August, in the nests with the wingless females and in considerable abundance. I have little doubt that later in the season winged females may be produced, since such is the case with most of the plant-lice, and if my conjectures be well founded, their appearance in fresh localities is at once explained. The winged males (fig. 3) are pale-green, the head and eyes are black, and the back of the thorax is pitchy, often powdered over with white, becoming cottony on the abdomen, which is broad, the apex pointed; the tubes are wanting, which has led to its separation, with some others, from Aphis, under the generic name of Eriosoma, woolly body; the wings are transparent and iridescent, the superior are very long and ample, with a green stigma, one large marginal cell, a furcate nervure near the tip, the basal branch not reaching the subcostal nervure, and there are two transverse ones approaching each other at their origin, but remote at the outer margin; the inferior wings are small, with a subcostal nervure, sinuated towards the apex, and two oblique nervures on the disc; the antennæ and legs are pale greenish-ochre, rather short and slender, the former are filiform and composed of seven joints, the third elongated; the hinder legs are not elongated, and the tarsi have two joints and are terminated by minute claws; *a* and *b* show the natural sizes of the sexes, and I find the absence of the abdominal tubes, and not the simple apical nervure, is the best characteristic of Eriosoma. I, therefore, expect the Elm-tree gall Aphis will be included in that group and not in Cinara.



It is said that the females begin to lay their eggs in the middle of August, previous to which period I suspect they are viviparous; they are deposited in the crevices of the bark or in the excrescences, and I suppose remain until the spring before they hatch; but it has been asserted that they are breeding throughout the winter, and Salisbury, who seemed to be well acquainted with their economy, states that the young Aphides may be found at all seasons amongst the roots of the Apple-trees. The American Blight loves sheltered spots, and increases most rapidly in valleys and on dry soils, and is said to be much less frequent on strong cold clayey lands. The Codlin and Sweet Apple-trees are its favourite haunts, and it will not, I have heard, attack the Crofton Pippin or Wheeler's Russet. Can this be owing to the smoothness of the bark?

To free the roots they should be partially exposed to the frost and cold, and the application of night-soil and the ammoniacal draining of stables will effectually remedy the evil in that direction. About the end of February the trunks and large branches should be well scraped, the excrescences cut off, and the whole be well scrubbed with soap-suds, after which the same parts may be washed over with a good coating of lime and water, until there is a regular white deposit upon them; when this has been done with attention, and repeated where the slightest re-appearance of the Blight has been detected, I have never known the process fail. Those who prefer it may use Tobacco-water, oil and soot, clay and water, or gas-tar; soap-lees, and oil of turpentine, in proportions of three to one, or one part of vitriol to seven parts of water, have also been strongly recommended as washes; but the great secret in curing this disease is to penetrate every crevice with the brush, and to repeat the application two or three times if necessary,—by perseverance the enemy must be defeated.—*Rusticola.*

THE ROSE GARDEN.—No. VI.

(*Continued from p.* 101.)

[By an oversight a part of this paper was printed last week. It is now repeated.]

Mixture to heal Wounds, and mode of Application.—Five-eighths of black pitch, one-eighth of resin, one-eighth of tallow, one-eighth bees'-wax:—or, half bees'-wax, half pitch:—or, one pound of white Burgundy pitch, a quarter

of a pound of loaf sugar, a quarter of a pound of treacle, a quarter of a pound of bees'-wax, two ounces of allspice, one ounce of pounded ginger, half an ounce of saltpetre. Either of these mixtures may be warmed in a small pipkin, upon a moderate fire, and left to melt for three-quarters of an hour. When it is well melted, but not too hot, the extreme point of each stock should be dipped in it, so as to leave the thickness of two or three sheets of paper of mixture at the end; or if the stocks be planted, it may be laid on with a brush.

Planting Out.—The stocks being collected, should be laid even according to their several heights on the ground, a trench dug, and a row of the tallest stems placed in it, and in front of that another row of the next size, until all are planted out—care being taken to leave sufficient room between each line for the operator to pass in and out without much difficulty; the earth may then be trodden down, and the plants attached to each other line by line, with a long osier or hazel, in the same manner as the top bar of an iron railing connects the uprights, and they will then be preserved from injury by the wind. The earth in which the stems are placed should have been previously well manured, and time given to permit it to be completely absorbed and amalgamated with the soil.

Shoots.—Stocks planted in November begin to push in the March following; those much later entered, viz., after February, are delayed three weeks or a month. At the time the buds begin to appear it is necessary to look over the stems, from time to time, leaving only those buds which are to be worked, as too many would spoil the appearance of the plant, from starting too low down the stem. The desirable number is one or two to a weak plant—three, four, or even five, to a strong one. If two, they should be opposed to each other; if three, they should form a triangle; if four or five, they should be as nearly as possible equidistant from each other, like the points of a spur-rowel, and all the shoots should be full, free, vigorous, and as near the top of the stem as possible—the lowest being not more than three inches under the upper one; thus a proper shaped head will be formed at once. The remainder of the buds should be rubbed off as they appear, and before they have started above half an inch; and all suckers should be eradicated the moment they are seen.

The reasons for permitting two, three, or more shoots to push, are obvious. First, they make a handsome plant by so doing at an earlier period; secondly, the plant itself occupies less room from its head being rounder; and thirdly, as gusts of wind, slugs, snails, deficiency of sap, with a variety of other causes, frequently destroy a bud after it has taken, if one shoot only were permitted to grow and be worked, many plants would lose a season from accident, whereas it sometimes happens that two out of three buds of delicate sorts will go off, and the third remain vigorous. If a single bud carries the whole strength of the tree, it will also frequently make such a shoot the first year, as shall become so woody at the bottom as to induce the operator to allow it to run too far from the graft, and thus make his plant of a different height to what he intended. This, however, is less likely to occur in England than in France, where the growth of the Rose is much more rapid, and may be obviated by stopping the bud when an inch long, by nipping off the top, which will cause three or four eyes to break, and form a head at once.

(To be continued.)

FAMILIAR BOTANY.

Morphology.—No. IV.

It would be unjust to Goethe, and to his fame as a poet, if his own poetical but truthful view of the phenomena of vegetable development were withheld; and therefore, before proceeding further, I would beg to quote the following passages from Mrs. Austin's literal version of his famous "Metamorphose der Pflanzen:"—

Mark now the progress—how by degrees the plant
step-wise led up, forms itself to blossom and to fruit.
Out of the seed it unfolds itself, soon as the earth
softly lets it forth into life, out of her fructifying lap;
and to the attraction of light, the holy, the eternally moving
commends the tenderest structure of budding leaves.
Simple slept in the seed the (germinating) power; an incipient
foretype
lay enfolded within itself, compressed within the husk,
root, and leaf, and bud; only half formed and colourless;
then does the dry kernel protect the silent life;
it shoots, striving upwards, trusting itself to the gentle moisture,
and soon rears itself out of surrounding night.
But simple remains the form in its earliest appearance,
still thus, even among plants, is infancy distinguished.
Quickly, then, a successive impulse, arising, repeats
joint upon joint, built up, over the primitive type.
Not indeed always the same; for manifold shoots forth,
fashioned out, as thou seest, leaf succeeding to leaf;
more enlarged, more indented, more distinct in points and in
parts,
which formerly slept scarce shaped, in the lowermost organ.
And so attains it, at first, its highest destined completion,
which, in many a tribe, awakens thy mind to amazement.
Variously ribbed and jagged, on the juicy exuberant surface
free and infinite seems the impulse which causes the growth.
But now, Nature, with powerful hand, suddenly checks the for-
mation,
and gently diverts it towards a higher perfection. [rows,
In slenderer streams now leads she the sap, the vessels she nar-
and quickly the structure betrays the more delicate workings.
The vigorous contracting force of the branches softly relaxes,
and the frame of the stem takes a more perfect consistence.
Loathed, however, and rapid, up darts the slenderer flower-stalk,
and a wonderful picture attracts the observer's eye.
Round in a circle now range themselves, counted or countless,
the lesser leaves, each next to one like it,
The sheltering calyx, pressed round a centre, unfolds,
and, to finish the work, puts forth the gay coloured crown.
And now Nature blooms, in her highest fullest magnificence,
and leads on limb the daughters, upreared in beautiful union.
Wear thy wonder is now, oh, on the flower-stalk, the silver
waves above the slender framework of changing leaves.
But this glorious show is the herald of new generations,
Yes, the gay coloured leaf binds the all-powerful hand.
Gentle now it shrinks in, the most delicate figure,
then on each side strive forward, towards their destined union,
quickly shoot they together, the adhering budding couples,
as in members around the holy altar are ranged.
Myrrhen hovers near, and exquisite odours
stream around, with sweet all-quickening power.
Now, commingled together, swell countless choirs of hymns
of the swelling buds, in the lap of the bountiful mothers,
And here Nature wields the ring of her eternal powers.
but a new one instantly collects itself on the former,
that the chain may be lengthened out through all time,
and that the Whole may have life, as well as each several
Being.

I wish I had the skill to give the beautiful thoughts of the poet in a language more worthy of his genius.—*E. E.*

Home Correspondence.

Pruning Forest Trees.—The subject of pruning is one that deserves much attention from those interested in the management of plantations. Opinions are so divided with regard to its utility or hurtfulness, that it is of great importance that the true theory should be arrived at, and I shall, therefore, in the following observations, endeavour to contribute my quota towards the furtherance of that object. The motives for pruning are, I conceive, twofold:—First and chiefly, to obtain a tall, straight, well-proportioned, bole or trunk, free from knots and snags; and secondly and secondarily, to admit light and air more effectually to the lower branches of the tree pruned, and of surrounding trees, and to prevent the meeting and interference of these lower branches. This latter object is much assisted, and, perhaps, in some degree superseded, by that most indispensable process in Arboriculture, thinning. The question which, when answered, will decide the efficiency or injuriousness of pruning, appears to me to be—"Does the lopping off of a branch increase or retard the general growth of a tree?" To furnish a satisfactory reply to this question is by no means an easy matter, but I shall endeavour to elucidate it somewhat, by adducing a few facts bearing upon the point. The general principles of vegetable physiology are now sufficiently ascertained, and those that relate to the growth of trees are as follows:—The sap is absorbed by the roots, ascends the stem, traverses the branches, is elaborated in the leaves, and descends again towards the root, depositing a new layer of wood, and also the peculiar secretions of the species. If, then, we deprive a tree of one of its boughs, do we not take from it a number of its digestive organs, its leaves? and do we not thereby impair its growth, at least its increase in thickness? A branch, inasmuch as it bears leaves, is a means of productiveness, and not of waste, to a tree; I should, therefore, be inclined to answer in the affirmative, and to say that pruning, to any extent at a time, must be injurious, at least as far as regards increase in diameter. Let us mark the operations of unassisted nature. A single tree, if left unpruned, and allowed to extend its branches on every side, soon acquires a thick massy trunk, and large boughs, but does not increase much in height. On the other hand, when the trees of a plantation are allowed to remain so close together as to prune themselves, so to speak (and I may mention that plantations of Scotch Fir are generally treated in this way in this part of the country), they shoot up well in height but are slender, and of small diameter. Thus we see that a tree suffered to extend itself laterally will increase chiefly in thickness, and that one which is not permitted to do so will increase most in length. There is one point connected with pruning which I do not think has yet been satisfactorily determined. It is this—"Does a tree absorb the same quantity of sap from the ground when deprived of several of its branches, as it did while they formed integral parts of it?" The elucidation of this question would throw some light on the effects of the operation of pruning. Upon the whole, gradual and cautious pruning seems to be necessary to the obtaining of a lengthy, straight, and smooth stem, avoiding, however, the lopping off of any large limb, except in the case of a fork; and I should be inclined to say that such a system of pruning, combined with careful and judicious thinning, will form the best mode of managing wood to advantage. —*Dendrophilus, Roxburghshire.*

Icehouses.—I beg to offer a plan for keeping ice, that has come under my own experience. Having no properly constructed ice-house, I converted to the purpose a building formerly used as a mushroom-house, which is in a dry and shady situation. The first consideration was, how to get a drainage for the water without admitting the outward air. For this purpose I dug, or rather subsoiled the flooring, a foot or more in depth (the deeper the better), leaving it as loose and friable as possible; upon that was placed a layer of sticks and faggots, upon that again was put another layer of straw, lining the sides of the building with straw, so as to prevent the ice from coming in contact with the brick wall. The ice was then carted in and broken quite small, with wooden beaters; when full the door was shut close, and all admission of outward air was prevented as much as possible by straw, &c. In this way, and at the expense of a few pounds, I have preserved ice for 12 and 18 months. I may observe, an ice-house will be more likely to succeed *above* ground than *under*, and when free from the damp and drippings of trees. Ice will not melt in the hottest sun half so soon as in a close and damp cellar. Put a lump of ice into cold water, and one of the same size before a hot fire, and the former will dissolve in half the time that the latter will. The bed for the ice should be 3 feet above the level of the ground, and this bed should consist of faggots, or something that will admit the drippings to be drained instantly off. This is the way they have ice-houses under the burning sun of Virginia, and there they keep their fish and meat as fresh and sweet as in winter, when neither will keep 12 hours, though let down to the depth of 100 feet in a well.—A Virginian, with some poles and straw, will construct an ice-house for 10 dollars, as good. If not better, than those which cost one man of taste as many scores of pounds.—*A. E. W. Delaunay.*

Qualities of Plants.—Will plants imbibe anything prejudicial, or otherwise, if the matter contained in the soil exists in a superabundant quantity in lieu of their proper aliment—or are they sometimes driven, like animals, from necessity, to make use of unwholesome food which alters the constituents of their bodies? All roots, fruits, &c. have their own peculiar uniform taste; such as a Parsnip like a Parsnip, &c., but they differ occasionally in a remarkable degree. *Grapes* (of Pokay) on slate had a peculiar delicious rich flavour. *Parsnips* (Berlin) on sandy soil were very sweet-flavoured and highly esteemed. *Potatoes* (Penzance, Cornwall) grown on a gravelly soil, and manured with sea-weed were excellent, and tasted like new flour. *Celery* (Sandwich) produced in deep sand impregnated with salt, was very different from that grown elsewhere. *Carrots* (Sandy, in Beds) on deep warm sand with chalk bottom, were very sugary. *Strawberries* (Huntingdon) raised in rich moist loam had a most nauseous flavour; and *Jerusalem Artichokes* (Huntingdon) on the same kind of soil had a watery earthy taste. These have been brought prominently under my notice, but other plants, trees, &c. are likewise affected by the soil in which they grow. Firs, &c. grown on wet land are valueless for timber through being deficient of some particular substance, and having too much of something injurious to them.—*Nemo.* [Plants are unable to reject the fluid matters that are presented to their roots, and consequently, where such matters unsuitable to them exist in land, they and their products are necessarily affected.]

Durability of Oak Timber felled in Winter.—I have been again to see the beam No. 1, from which the bark came, as stated in a former Number. The numerals are thus:—1035, old-fashioned figures; the initials R. M. were evidently cut in the wood at the same period, being of the same breadth and form; the date 1035 is cut in two beams out of the same old building, which beams, as well as No. 1, had been squared previously to being used, as the bark taken off was in the hollows where the squaring did not reach. A timber-merchant and builder is now working up much of this old timber a second time to make ornamental woodwork in a church now rebuilding. It is as hard and sound as ever, and much of the Oak-wood mentioned before near Oswestry, proved by dates to have been upwards of 800 years in use, was used again in building a new church in lieu of the old-fashioned wood-framed house. Here is a proof of Oak-timber, felled with the bark on, having been upwards of 800 years in use, re-used, to endure how much longer I cannot tell; but it has been put in a new house, and to adorn the inside of a new Church. The same builder has very lately taken a piece of Oak-bark, quite fresh and sound, from a beam, proved by date to have been in use 300 years. These facts, I should think, would set the question at rest as to which is the best season to fell Oak, when durability is required. I believe I could procure the piece with the numerals and initials on, should any one wish to possess such a curiosity, by paying a trifle to the owner for carriage, package, &c.; but as it is now exposed to all weathers, it will soon go to decay.—*W. Billington, Oswestry, Salop.*

Fastolff Raspberry.—The history of this excellent variety is as follows:—It was discovered 24 or 25 years since, in the garden of Colonel Lucas, of Filby House, near Yarmouth, Norfolk (now the property of the Rev. Gibson Lucas), growing close beside an old Laurel hedge, which has been since removed. The fruit being found to possess most of the excellent qualities Messrs. Youell and Co. describe, Col. Lucas's gardener took great pains to propagate and increase it, and eventually its superiority was so manifest that he ceased to cultivate any but it and the double-bearing variety, which this is not. By degrees, through Col. Lucas's kindness in allowing canes of it to be given away, it became almost the only Raspberry cultivated in the village of Filby, and from thence crept into most of the gardens both of the gentry and cottagers in the neighbourhood. About a year ago, Messrs. Youell and Co. commenced advertising it under the name of the Fastolff, from the circumstance of the Fastolff family having some centuries since possessed and lived at Caistor Castle, now an old ruin in the village of that name adjoining Filby.—*Fair Play.* [The remainder of this letter is an advertisement. The only thing which interests the public is the fact above mentioned.]

Hampton Court.—I take it for granted that your Paper is the legitimate medium through which to advocate the rights as well as to record the professional practices of gardeners; and I therefore beg to complain, on behalf of those of my brethren more immediately concerned, of the prevailing practice of keeping open the *gardens* and palace of Hampton Court to the ungodly portion of the public on the Sabbath-day. I say ungodly, feeling assured that no man that either fears or loves God will so spend the day which He has commanded to be kept holy. I am no bigot, and detest all attempts to enforce any kind of religious observances by dint of any mere authority, either spiritual or temporal; at the same time I think it a great hardship on the respected gardener at Hampton Court and those employed under him to be deprived of the invaluable privilege of the Sabbath-day, and not only deprived but harassed the whole of that, more than any other day in the week, for the gratification of a host of profane Sabbath-breakers, who have no fear of God before their eyes. It is a hardship in my opinion to which no gardener ought to be subjected, and if you could be instrumental in any way in getting the nuisance abated, you

merit the additional thanks of all good men. I am now speaking for the gardeners only, but as I fear your Paper is not the proper medium, I abstain from tracing the evil through other matters, else I might point to many others who are subjected to like annoyance with the gardeners. Even the worship in the Palace chapel is interrupted by snoring, ignorant, and irreligious intruders. I might also allude to the incongruity of a palace and gardens belonging to her Majesty, the recognised head of our "*truly Apostolic and purely Spiritual Church*," being turned into a scene of revelry and profanity on the Sabbath-day. I might inquire, are not Dr. Howley, Archbishop of Canterbury, and the Bishop of London, privy councillors and keepers of the Royal conscience? Why do they not raise their voices against such enormities, and procure the shutting of the gates on the Sabbath-day, that those within may enjoy the Sabbath; I plead for the gardeners—my brethren of the blue apron, and say it is a shame, a scandal, and a hardship (to say nothing of the sin), to deprive them of their Sabbath of rest in the manner now prevalent!—Q.

Sugar Refiners' Refuse.—There are some notes on Sugar Refuse in Malcolm's "Surrey" (vol. ii., p. 109.) He says that it is a very powerful manure, and good and permanent if well spread; if badly spread, and the lumps not broken up, it burns the Grass. "Upon arable land it is thought not to answer." W. Coles, Esq., has used large quantities for three or four years past; he uses it mixed with road-sand—about three loads of road-drift to one of scum, and from 20 to 30 loads of this mixture applied per acre. It costs 4*s.* per load. The Hay crop increased nearly fourfold. This in 1805.—*E.*

New Zealand.—In the *Chronicle* of September, 1843, are statements relative to New Zealand being a desirable colony for emigrants. The inclosed extract of a letter from a relative of mine, written about the same date, and after the late unfortunate collision with the natives, is confirmatory of your opinion. "This country possesses many advantages and good qualities, viz., salubrious and pleasant climate, varied and beautiful scenery, no fall of the leaf, the woods green all the year round, fertile land that will yield two crops in the year, that is will produce in all seasons, and also possessing many sources of wealth not yet properly acted upon, all the benefits of which we shall in due time enjoy. I have seen many scenes here which reminded me of the Highlands of Scotland. Port Nicholson is not unlike the upper end of the Cromarty Frith, but much prettier. I have no doubt that by-and-bye, when things are properly settled, this will be a most desirable country for any one desirous of emigrating, particularly Agriculturists. At present the districts available are generally difficult and expensive to clear, and would not suit a poor man unless he worked hard himself; but when the native question is settled, fertile districts that are known will be thrown open. I should advise any one intending to purchase land to bring out their money and see what they can buy, instead of playing at 'hide hooky' with their all perhaps. For my own part I continue to like the country and climate well."—*J. S., Wellington, New Zealand, September* 15, 1843.

Feeding of Bees.—It will be recollected that the spring months of last year were wet and cold, and continued so up to swarming time; during that period I fed successively my stocks and swarms. I likewise did the same in October, and I have not lost a single stock; on the contrary, they are very quiet, and have plenty of food. The Bees kept more in the hive during the mild weather in December and January than ever I remember them to have done, arising, no doubt, from their having been fed. I was induced to try this plan through reading "Milton's Practical Bee-keeper," a work which all who keep Bees should possess, and follow its directions, for by so doing many Bees' lives would be saved. I agree with the author, that more depends upon the food than the size, shape, or material of which hives are composed. As the season is approaching when Bees may require feeding, those who are inclined to pursue this plan, will soon have an opportunity, and I doubt not that they will reap an equal advantage.—*A Bee Preserver.*

Management of Bees.—Rule 1. Never kill your Bees. Rule 2. Never allow your Bees to swarm. Place an old stock of Bees on the middle of a board large enough to contain three hives, and on each side of the old stock place a wooden hive, nine inches high, and 11 square inside; or a straw hive with a wooden top. The boards forming the wooden hives should not be less than 1½ inch thick. On the top of each of the side hives there should be a hole two inches in diameter, with a plate of zinc to slide over it, or a cork to fit it. Over the hole, in the inside of the hive, should be fixed another plate of zinc, pierced with pin-holes all over it. These small holes are for the purpose of ventilating the side-hives, thereby preventing the Queen from laying her eggs in them. Should the Bees fill the holes, they must be re-opened. The board on which the hives are placed should be so prepared with passages that the three hives may be united or disunited at pleasure by means of slides made of zinc. As soon as the Bees are likely to swarm, open the passage between the middle hive and one at the side, and force the Bees to pass through the latter by stopping up the mouth of the former. When the Bees have filled one side-hive with honey, let them into the other side-hive, and remove the first, now fit for use, by stopping its communication with the middle hive. Slide some sheet-iron under it, and remove it to another part of the garden in the heat of the day, and the Bees will readily return to the parent stock. The honey will be found quite free from larvæ and farina, if the ventilation has been properly attended to.—*C. A. A. Lloyd.*

Bees.—As I perceive by a recent communication from Dr. Bevan, that he has removed from Llanelwy to Montgomeryshire, I am curious to know what arrangements he found necessary for the conveyance of his hives of Bees from one place to the other. If he would be so kind as to afford this information, he would gratify *C. L.* P.S.—Have any tidings been received of the fate of Mr. Cotton's Bees, for whose transport to New Zealand he made such elaborate preparation?—*C. L.*

Societies.

HORTICULTURAL SOCIETY.

Feb. 20.—Sir C. Lemon, Bart., M.P., in the chair. H. Warre, Esq., was elected a Fellow of the Society. From Mr. J. Brewster, gr. to Mrs. Wray, of Cheltenham, was a plant of Lælia superbiens, having a spike about 5½ inches long, of pretty purple blossoms, which, although truly beautiful, were not so well coloured as could have been wished; but it frequently happens that Orchidaceous plants fail to produce their first flowers well, and very possibly this may improve in course of cultivation. This plant, the honour of first flowering which belongs to Mrs. Wray, and which has created so much interest, is a native of Guatemala, where it was first discovered by Mr. Skinner—the finest specimens being in ravines, and growing out of the fissures of rocks sheltered from north-west winds. Some of the plants have bulbs 22 inches high, and flower-stems four yards long having 22 flowers. Mr. Hartweg, who also met with it in abundance in the neighbourhood of Chantla, where it is planted by the Indians in front of their doors and exists in immense quantities, says that the length of the stem, being four yards, is uncommon, and that the average number of flowers in clusters is from seven to fifteen. A strong plant of this is also in flower in the garden of the Society, growing on a block, where it succeeds well. According to Mr. Skinner, it thrives best in a temperature from 55° to 65°. Mr. Brewster also sent cut flowers of Phycella ignea a Chilian bulb, having beautiful bright-red flowers; this is not hardy, but might possibly be made to succeed in a dry border, if planted out at an early period, and protected by sand being laid over the surface of the ground, the great fault of bulbs from that quarter being their making an attempt to grow during our winter. From the same collection was also a Cryptandra, having a fragrance somewhat resembling that of a Hawthorn; a large Silver Medal was awarded for the Lælia superbiens. Mr. J. Robertson, gr. to Mrs. Lawrence, sent Phaius Wallichii, in good condition, having large brown and white blossoms; Oncidium Cavendishianum, that has kept in bloom nearly five weeks; Hippeastrum sulicum, with large red flowers; a variety of Cyrtochilum maculatum, and a large plant of Cymbidium aloifolium. From the same collection were likewise Oncidium reflexum, a Maxillaria, with a pale-coloured blossom; well-grown plants of Dendrobium Wallichii, and D. pulchellum, the latter twining gracefully over a globular trellis, filled with Moss. There was also Bletia havanensis, with pretty purple blossoms, and a well-grown plant of the brilliant scarlet-flowered Centradenia roses, which has the good property of being a very profuse bloomer. Mr. Robertson also sent Begonia manicata, a plant of recent introduction, with pretty flesh-coloured blossoms. This plant, on account of its long white hairs under the leaves, and large brilliant manicate scales, has a curious appearance. Oncidium longifolium was also in the same collection, and a beautiful plant of Epacris variabilis, completely covered with blossom; a Knightian Medal was awarded for the three last. From Mr. Kennington, gr. to F. G. Cox, Esq., of Stockwell, was the rare Phalænopsis amabilis, on a block, having very conspicuous large snow-white blossoms. From the same were also Huntleya violacea, Cyrtochilum maculatum, a pretty plant of Phaius intermedius, Bletia Tankervillii, and Brassavola nodosa, with small white and green flowers; a Banksian Medal was awarded for the Phalænopsis amabilis. Mr. Gaines, of Battersea, sent for exhibition seven varieties of Camellias. From Mr. W. Scott, gr. to C. Barclay, Esq., was a cut specimen of a flower from a bulb sent from Peru by Mr. Hartweg, having a stem about three feet high, with curious green and red blossoms; a Certificate was awarded. From Mr. J. Wells, gr. to W. Wells, Esq., were cut flowers of Camellias, and a fine plant of an Enkianthus, quite covered with pretty flesh-coloured bell-shaped flowers, having considerable resemblance to the old E. quinqueflorus. Mr. Fortune found these shrubs growing in abundance on the mountains of Hong-Kong; a Banksian Medal was awarded for the Enkianthus. Mr. J. Plant, gr. to J. H. Schroder, Esq., of Brixton, sent a very large specimen of Epidendrum odoratissimum, having a fine panicle of dingy yellow blossoms; a Certificate was awarded. From Mr. Henderson, of Pine-apple-place, was a beautiful small plant of Epacris impressa alba, the pretty Erica mutabilis, remarkable for its long season of flowering; Begonia manicata, B. coccinea, with brilliant scarlet flowers, a beautiful plant of Dendrobium nobile, completely covered with blossoms, and a specimen of Franciscea latifolia, which besides possessing the agreeable fragrance of F. Hopeana, is a free grower; a Banksian Medal was awarded for the two last. Mr. Ayres, gr. to J. Cook, Esq., sent two seedling Cinerarias, one being a bright blue, and the other a purple. From J. Allnutt, Esq., was an excellent specimen in a large pot, of the double white Primula, the leaves of which being of a bright green, were perfectly free from spot, and the flowers were beautifully white; a Certificate was awarded. W. Jackson, Esq., of Salcombe, Kingsbridge, Devon, sent specimens of the Seville Orange, Malta Sweet Orange, Shaddock, and Lemons, that had been grown on an east wall, protected only by a glass frame in winter; they were large, well-coloured fruit; a Certificate was awarded for them. From J. Mouncer, Esq., were nine sorts of Pears, including Fondante Colmar, Ne plus Meuris, Jean de Witte, Merveille d'Hiver, Beurré d'Aremberg, Gloat Morceau, Beurré Rance, Beurré Beurré, and Winter Nelis, all in excellent condition; a Certificate was awarded for them. Dr. Henderson sent an English specimen of Tuck's Cap Gourd for exhibition. From the garden of the Society were Dendrobium nobile and cucullatum, Epidendrum cochleatum, Oncidium cucullatum, a pretty plant of Phaius grandiflorus; Spiranthes cernua, sent by Mr. Hartweg, and a species of Stenomesson from the same; also plants of Epacris nivalis, E. campanulata alba, and a striking Epacris, with two pretty plants of the double pink Primula sinensis that were raised from cuttings struck late in autumn. The soil in which they are growing is mixed with superphosphate of lime, which seems to be more beneficial to plants than any substance of a similar nature yet discovered. There were also flowers of Chimonanthus fragrans, grandiflorus, and parviflorus. Cuttings of the following fruit-trees from the garden were also distributed, viz., Werder's Early Heart Cherry, a very fine large black heart-shaped Cherry, which ripens much earlier than the May Duke. It was received from the Continent, and, according to Baron Truchsess, was originally obtained from the Royal Prussian gardens so long back as 1794; yet it is scarcely in cultivation in this country, where it was not known until introduced by the Society. Along with this was also distributed the Early Purple Guigne, Ickworth Imperatrice Plum, and Royale Hâtive Plum; the latter is exceedingly rich, resembling in appearance the Reine Claude Violette; but it ripens earlier and the shoots are very downy, whereas those of the R. C. Violette are quite smooth.

LINNEAN SOCIETY.

Feb. 20.—The Bishop of Norwich in the chair. A collection of specimens of dried fruits were exhibited, presented to the Society by Dr. Boott. A paper was read on Asiphonia, a new genus of plants belonging to the family Aceraceæ, by W. Griffiths, Esq. A description of the genus and of the species A. piperiformis was read. This plant, besides the structure of its flowers, which are remarkable, presents some peculiarities in its stem. The pith is very large, and the wood is disposed in a wedge-shaped manner, with large medullary rays interposed. A second paper was read from Mr. Griffiths on Hydnora, a genus belonging to the natural order Cytinaceæ. The species examined was the H. Africana, which the author had received from Mr. Harvey, from the Cape of Good Hope. Although this plant had been described by Brown, and figured by Bauer, the author had ventured on another description. The plant is parasitic, mostly on Euphorbiaceæ. The anthers had been described as multilocular, but such a view he did not consider consistent with their structure. The pistillum is altogether one of the most remarkable in the vegetable kingdom. The stigma has a peculiar stellate arrangement, similar to Papaver and Nymphæa. It was looked upon as multicarpellary, but the author was inclined to think the whole pistillum was formed from a single leaf. The placentæ were not, as described by Endlicher, parietal, but were free and pendulous, with their whole surface covered with ovules. This would form a fact opposed to Schleiden's placentary hypothesis. Meyer had supposed that the ovarium was composed of three parts. The two papers were illustrated by drawings.

BOTANICAL SOCIETY OF LONDON.

Nov. 17, 1843.—The President in the Chair. Dr. Bromfield presented a species of Calamintha, new to the British Flora, discovered by him in the Isle of Wight. Read, "Notes of a Botanical Excursion in Warwickshire, Worcestershire, Wales, and Ireland," by Mr. S. P. Woodward.

Reviews.

Mrs. Loudon's Glimpses of Nature (Grant and Griffith) is an account of the natural and other curiosities observed by the authoress during a visit to the Isle of Wight. It contains much agreeable information concerning the plants, shells, birds, and insects; the houses, streets, men, and places, that were met with; and we recommend it to the favour of those who are going to the Isle of Wight, as a useful "handbook" for their children.

The Tree-Lifter; or, a new Method of Transplanting Forest Trees. By Colonel George Greenwood. 8vo. Longmans.

If this book were the production of a person whose life was known to have been spent in researches into Vegetable Physiology, we should give him credit for the justness of some of his views, blame him for his crotchets, and censure him for his want of acquaintance with the works of modern writers. If it were the work of a logician we should cavil at his argumentation, and quarrel with his *non sequiturs*. But the child of an officer of the Household Brigade, who has had other duties to attend to than those of reading the works of Vegetable Physiologists, or studying Archbishop Whately, may claim to be measured by no other standard than that of utility and good sense. Thus measured, Col. Greenwood's book is much above the standard.

It may be looked at in two points of view,—the practical and the physiological.

The practical part consists, firstly, of directions for employing a new kind of plant-lifter, which is so simple, "that a day labourer may use it, and plant daily a tree of from 25 ft. to 30 ft. high;" for the construction and application of which we refer to the work itself. Secondly, of instructions for pruning fruit-trees, which we are happy to

and, in all essential respects, similar to those which have been constantly advocated in this Journal; and thirdly, of directions for transplanting, in which there is much excellent advice; but also several things in which we cannot concur. The gallant author's opinion concerning the action of roots, appears to us more especially a mistake, as we hope to show on another occasion.

In the physiological division of his book Col. Greenwood discusses the function of leaves and roots, most justly objects to the opinion that leaves are essentially organs for absorbing moisture, as Bonnet and Liebig have asserted, demonstrates as others have done before him, the error of supposing that sap rises only by the sapwood of trees, and cleverly disposes of the new exploded doctrine of root-secretions. We must quote his remarks upon the latter subject.

"I should doubt the supposed excretion from the roots of substances unnecessary to the growth of the tree. If this were so, the roots would soon be surrounded with such substances, and would be incapable of absorbing nutriment. In chalk districts eternal woods are found composed of nothing but Beech; in other soils of nothing but Oak. The oldest Vineyards and the oldest Hop-gardens are the best. (I say nothing of old meadows, since trees are in question.) In all these cases, if the roots excreted substances unfit for nourishing the plants, the whole soil would have become saturated with them. Land-plants grown in water are always unhealthy. Under these circumstances, may not colouring matter, or other substances supposed to be excretion, be the result of disease and decay, or partial maceration of the roots. There is no discoloration of the water in which the seedlings of forest-trees are made to grow.

"I imagine that the roots of trees, in absorbing the moisture with which they come in contact, give off the unnecessary parts of this by transpiration in the air. I do not perceive what should cause roots to transpire when surrounded by moisture, or if they do, they must return like the dog to his vomit, and again absorb their own transpirations."

This kind of argument, added to the experimental denial given to the statements of Macaire, which, however, Professor Liebig regarded as *necessarily as well as experimentally true!* must we think put an end, in this country at least, to all speculations upon the subject.

Colonel Greenwood considers the worst time to transplant a tree to be when it is shooting, and the best time to be as soon as possible after it has shot; *that is, as soon as it has formed its winter bud:*—

"This will differ in different trees. Some are fit to transplant in June, or even in May. The best months for transplanting the generality of English trees with the ball of earth, are July, August, and September; for though the upward growth has then ceased, the growth in diameter, and the downward growth, that is, the elongation of the roots, is in the fullest tide."

This is to a certain extent our own view of the question (see Theory of Hort., chap. 16), although our reasons are different; but we cannot go to the same length as Colonel Greenwood, in the absence of evidence, which he does not give. For we cannot regard as evidence the statement that he has transplanted trees of about 25 feet in height in *every* month of the year without a single failure, and without the plants feeling their removal. We have no doubt of the fact; Colonel Greenwood's assertion is sufficient; and, in the absence of his assertion, we should think it probable. But what we want to know, and what we do not find mentioned, is under what exact circumstances these trees were removed; how long they lived, and what sort of growth they made the following year,—very material points for consideration.

These, however, and some other questions, we reserve for future discussion. In the meanwhile, we cannot but express our regret that more men, with the clear views of Colonel Greenwood, and the same habit of thinking for themselves, do not apply to the study of a subject so useful as Vegetable Physiology, so capable of conveying exquisite pleasure, and which is, to use his own forcible language, of "the first importance to the existence of man and the honour of his Creator."

Miscellaneous.

The Gladiolus.—The Gladiolus communis, a native of the south of Europe, is very generally known, and is to be found in the most humble cottage-garden. Such is, likewise, the case almost with the G. byzantinus, introduced two centuries ago, from the environs of Constantinople. These two species have afforded a great number of varieties of different shades, such as white, rose-colour, orange and vermilion, purple and lilac. Their varieties are all of easy cultivation, and will endure the winter in the open ground provided they are in light and rather dry soil. They require a change of soil and situation every two or three years: for experience proves that by this treatment the number and size of the flowers are increased, and their colours become brighter and more distinct. Towards the middle of the last century, new species of Gladiolus began to be introduced from the Cape; but their merits were not such as to render their cultivation general; and few of them are now to be met with, except in large collections and botanic gardens. The object of the present communication is to point out more especially those varieties of Gladiolus which, instead of being consigned to oblivion or only noticed by the amateur with indifference, merit, on the contrary, his care and attention. They are Belgian productions, resulting from judicious crossing. By this means various new varieties have been obtained which surpass the finest we hitherto possessed of the genus, mainly the G. cardinalis and floribundus, introduced from the Cape in 1788 and 1789, and the G. ramosus. The G. psittacinus, perroquet, or Duchesi, was introduced after this period. It was brought from Java, in 1823 or 1824, in a Dutch vessel, to Rotterdam, and having been obtained by Dr. Desl. of Brussels, it flowered with him for the first time, and was accordingly named after him by Horticulturists. In addition to Gladiolus Colvilli, pulcherrimus, ramosissimus, and a great number of other very fine varieties with which the Horticulturists of Haarlem have enriched the trade, the formosissimus deserves particular notice, as being the finest we have seen in flower in 1842. This variety unites the habit and abundant flowering of the ramosus with the colour of the cardinalis, though scarcely so brilliant. All these varieties have a family resemblance to the ramosus, floribundus, and cardinalis. They are not, however, to be compared with the brilliant novelties obtained at the Duc d'Aremberg's seat, at Enghien. Beddinghaus, a young man of good intelligence and education, and in every respect capable of directing such an establishment as that at Enghien, fertilised the G. psittacinus with the floribundus, the ramosus, and the cardinalis. This crossing was made in the summer of 1837, a season favourable for such operations. Seeds were ripened, and from a sowing of these the G. gandavensis was raised. M. Louis Van Houtte having obtained this variety, thus announced it in his catalogue for 1841:—"I have the stock of this Gladiolus, with the exception of two bulbs possessed by one of my brothers. At the moment I write all Ghent comes to admire it. In stateliness and colour it exceeds all we have seen amongst the Gladioli. Its dimensions surpass those of G. ramosus; its majestic flowers, to the number of 18 or 20, are of the most charming vermilion; their inferior petals, adorned with chrome, amaranth, and brown, are again relieved by anthers of an azure hue, which descends to the centre of the flower." This description, doubtless made in a moment of admiration and enthusiasm, is, however, little exaggerated. If properly cultivated, the plant will produce flowers corresponding with the above description. Many other varieties, from the same sowing, much surpass even the G. gandavensis. Several of these have already appeared in the catalogue of M. Jacob Makoy, of Liége, for 1842. Others are not yet in the trade. The names of the former are Baron de Pronay, De Candollii, Grétry, Herberti, Lowii, Pfeiferii, Reine des Belges, Salmianus, Schwarzenbergianus, splendidus, and Sternii. With regard to their culture, it may be stated that they succeed very well in the open air, planted in leaf-mould. They are taken up towards the end of September, after their stems are completely withered. The offsets and bulbs are preserved during winter in a dry place, protected from frost. They are replanted in the open ground in the beginning of April.—*J. de Jonghe, in Revue Horticole for Sept.*, 1843. ‖

The New Indian Black Dye.—Some weeks since we stated that a new black dye had been discovered in the Shan country, and that a small sample of it had been sent over to this country to the Society of Arts. A report on this new dye, recently laid before that Society by Mr. Edward Solly, appears to bear out the previous statement, by showing that it is really a black vegetable dye.* The quantity sent was too small for any detailed chemical analysis to be made, but its leading chemical properties have been ascertained. Mr. Solly describes the colour as being insoluble in water and all ordinary solvents; but, deoxidised by sulphate of iron and lime, it becomes soluble, like indigo. The colour likewise resembles indigo, in being destructible by chlorine, but differs from it in not subliming like that substance. Careful experiments were made in the hope of purifying it by sublimation, but without success, as the dye was decomposed; but no sublimate could be obtained. When heated, the dye does not melt or soften, but burns with a bright clear flame, emitting a strong and disagreeable odour; hence it plainly differs from the black resinous matters obtained from the Melanorrhœa, and similar trees. The quantity of ash which is left after burning is so small, that it is evident that the dye is a pure organic substance, and that the colour is quite independent of iron or any other inorganic matter. Mr. Solly concludes from his experiments, that it is a new colour possessed of very useful properties, and considers that it is likely to prove a highly valuable dye stuff, if it can be procured in large quantity.

Large Trees.—Measure, &c. of four trees, standing and growing at Nettlecombe, property of Sir John Trevelyan, Bart., January, 1840: *Elm Tree.*—813 ft., or 20 ton 13 ft., is 40 ft. to the fork; a branch at 50 ft. high is 9ft. in circumference; extreme height of tree 100 ft. At 4 ft. from the ground is 17 ft. in circumference. *Oak Tree.*—603 ft., or 15 tons, 3 ft.; its extreme height 80 ft.; at 4 ft. from the ground is 16 ft. 6 in. in circumference. *Beech Tree.*—709 ft., or 17 ton, 29 ft.; its extreme height 100ft., at 4 ft. from the ground is 18 ft. in circumference. *Chesnut Tree.*—373 ft., or 9 tons, 13 ft.; its height 60ft.; at 4 ft. from the ground it is 17 ft. 4 in. in circumference.—*An Elm* at this place, planted about 1770, contains 480 ft.; that is 300 ft. in the trunk, and 180 ft. the top and branches. From the ground to the fork it measures 32 ft., and at 16 ft. high is 12 ft. 4 in. in circumference. The top or principal branch, contains 60 ft. of timber; another branch contains 30 ft., and three other branches 20 ft. each; other branches from 3 ft. to 13 ft. each; other branches not reckoned in the above, but containing about 40 ft., were broken off by the wind in 1843. —*Jas. Babbage.*

Grafting Pelaryoniums.—M. D. Mêline, of the botanic garden, at Dijon, has been very successful in grafting numerous varieties of Pelargoniums on the same plant. This was done in order to possess many varieties in small space. The mode of cleft-grafting was adopted, the parts tied together being of equal thickness, bound with wool, and shaded under glass for a week. On one plant 10 grafts were found all well united in the course of 15 days. A Pelargonium elegans was selected for the stock on account of its vigorous growth. The grafts were put on in 1837; and in 1842 they were still in a thriving condition, their junction with the stock being then scarcely perceptible.—*Revue Horticole for Sept.*, 1843. ‖ [The same thing has been done in this country by Mr. Ansell.]

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

Where large collections of house-plants are cultivated, repotting takes place every month in the year; but from this time till August is the principal period for this work in a general way. Many plants may now be safely repotted; early in spring the rule of seeing the roots growing freely is the best guide for beginners. Many plants will begin to grow at the top before their roots are in action; yet they do not require to be re-potted; they are either too much confined, or under a higher temperature than they require at this time. Orchidaceæ from the more temperate regions are often much injured by a high temperature when they begin to grow. The heat of the stoves should not exceed 60° by night; indeed 55° is sufficient till all the plants are in full growth.

Conservatory.—Epacrises, Heaths, and others of the more hardy plants in or coming into flower, should be kept near the sources of ventilation; white Roses and other forced flowers fresh from the forcing-pits require the warmest part of the house, and ought to be kept free from currents of cold air at first. This is a good time to take memoranda of the best varieties of forced bulbs, especially Hyacinths and Tulips. The nights are still too long to allow any syringing in the afternoons; but such plants as are not in flower, and all vacant spaces in the house, should be sprinkled two or three times a week, and this should be performed early in the day.

Greenhouse.—The plants here may now have a slight syringing in the afternoon, and air may be freely admitted on all fine nights. Some young plants may want repotting. If some are growing freely at the top, and the roots not in action, the house is too hot for them, and you must remove such plants to a cooler place. Attend to neatness in all the houses, and make it a rule never to pass a pot plant through your hands without removing all yellow or injured leaves, if there are any on it; also insects, or weeds growing in the pot.

Forcing-pit.—This is a good time for propagating many plants by cuttings, by grafting, and by seeds; and the forcing-pits are the best places for this work. Seedlings already up ought to be potted off as soon as they can be safely handled. Foreign seeds had better be sown in 32-pots, putting four or more kinds into one pot, and placing labels in the middle facing the different seeds. Less water will thus be needed than if each kind was sown in a small pot; and the less water given to doubtful seeds the better chance they will have to germinate. Let every shelf and corner of these useful pits be filled with plants as others in flower are removed from them.—*D. B.*

III.—FLORISTS' FLOWERS.

Auriculas may be kept moderately moist. If not top-dressed as before directed, let them be done immediately. We are trying Potter's Liquid Guano as a stimulant, and shall report the result.

Polyanthuses.—Look well, after the late severe weather. As spring advances, the snails get proportionably troublesome; diligence must be used in trapping them.

Ranunculuses.—Plant without delay. Seed must also be sown—though I prefer autumnal sowing, where there is an opportunity of protecting during winter. Frames covered with calico prepared with Whitney's or some other similar composition, will, I doubt not, afford great facilities in the way of preservation in severe weather. The compost necessary is leaf-mould and loam, equal parts, which has been previously exposed to the action of heat, to destroy insects, eggs, &c., contained therein. Beds about 18 inches by 12, and 6 deep, are most convenient. Fill with compost, and water it well; sow the next day, cover with very fine soil, *lightly*, for if too deep the seed will not appear. After sowing, it must be protected from heavy rains and frost; a cold frame is perhaps the best situation.

Carnations.—Should any soil have lodged in the axils of the leaves it is imperatively necessary that it should be removed; a quill, with the feather stripped off on one side, and cut half off on the other, makes a simple but effectual brush to perform this operation, and by timely looking through the stock disease may be prevented. Planting time is now rapidly drawing on; exhibitors who have not strengthened their weak or deficient classes in the autumn should now look out for the sorts wanted, if they mean to get first prizes or silver cups.

Pinks.—We should much like to see these highly fragrant flowers more extensively cultivated; beds may yet be planted, but the flowers do not usually last so well as those planted in September.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—If in arranging the Pines, the plants for fruiting during May and June, can be put into a separate pit or compartment, they may be kept at a temperature of 60° by night, and 70° by day, which will be sufficient for the present. Be careful that the bottom-heat does not exceed 85°, lest they start into fruit too soon. Syringe the plants now in fruit, shutting up with sun-heat, which you may do with a temperature of 85° to 90°. Shake the plants lately potted, the larger successions when at 80° of sun-heat, and the young at 70°, till they have made a fresh start. A moist atmosphere will now be indispensable. Crowns and suckers growing in the tan should now be potted if strong; but if weak, and you want to keep them, let them remain in the tan a few months longer.

Vinery.—The Grapes on the Vines started in November will now require their final thinning, if not already done, this them well that the berries may be fine, and ripen regular. It is difficult to give directions as to the number of branches to be left to each rafter, as the sort of Vine, age, condition as to healthiness and vigour, require to be taken into consideration. A moderately good crop for early-forced Vines, would be about 12 or 16 good bunches to a rafter of 15 feet. Where the Muscat of Alexandria and other good keeping sorts of Grapes, are in a house by themselves, and the house not used for Pines, it would improve them in flavour, and they would be in a better condition for keeping through the next winter, if they were started earlier than the late-house generally is. I would recommend starting them now, and give them plenty of time to ripen. Where they are grown over Pines, keep them cool till they break by the natural heat of the atmosphere, when they will bear, with less injury, the heat necessary for the Pines.

Peach house.—Peach-trees require a great deal of water during their season of growth, and particularly while the fruit is swelling, apply it in a tepid state. In regulating the young shoots, do not get into the common error of laying in too many. Stop those shoots that are growing too strong, when about six inches in length, and repeat this frequently through the season, that the weaker shoots may be benefited by it.

Fig-house.—If any of the trees have failed to produce fruit in the early house, and the cause appears to be an over-vigorous state of the tree, which is very often the case, root prune them now, and you may have a good crop in the autumn. No plant does better from root-pruning than the Fig, and the operation may be performed at any season, if dull weather is chosen. The shoots will be shorter, and better ripened after it, and a crop is almost certain.

Strawberries.—The plants in pits and frames may be removed to the shelves, near the glass in a Vinery or Peach-house,

taken up the fruit is set, and their places filled with successive plants. Place pans under the pots on shelves, as they suffer much if allowed to become dry.

Melons.—Those who have pits should grow the Persian and the new Cabul Melons, as they are very superior in flavour, and bear freely. They should be planted out in front of the pit, and need not be stopped like other Melon plants; train the leading shoot up under the centre of the lights, and the laterals from each side at right angles.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Fruit-trees, Currants, &c.—Take every favourable opportunity to finish pruning, nailing, and washing or painting, all sorts, with the exception of Peaches and Apricots.

Onions.—If a quantity of the autumn-sown are transplanted properly, better bulbs will be procured than from those left where sown: where there is a deficiency of these, sow in a slight hotbed, more especially where young Onions are in demand for salads.

Potatoes.—Throw up some ground in ridges in a warm situation, two feet apart, to be ready for planting when fine dry weather sets in. The Ash-leaved Kidney is the most general favourite. To keep it healthy and vigorous, expose a quantity of the tubers from an early crop before they are ripe, to the sun and weather, until they become quite green, and there will be no complaint of weakness, curl, &c. Failures often proceed from the tubers being too ripe, and from being heated in pits, &c.

Mushrooms.—Attend to beds in a bearing state. Allow no spawn to run into the covering material, or along the surface of the bed. If, from examination, you find the bed getting dry, pour water into holes made every eight inches with a small pointed stick; though you may have plenty of spawn in the centre of the bed, yet if it is too dry, or has to come through a considerable thickness of material which is too wet, you will obtain but few Mushrooms. In making fresh beds, if you find the material too wet, before inserting the spawn, wrap each piece in a handful of dry litter. If you are fortunate enough to get the material too dry at this season, after inserting the spawn, slightly damp the bed and cover with a coating of cow-dung quite wet. The principle aimed at in both cases is similar—the insuring a fit material for the spawn to work in, and the surrounding that material with a rich moist substance, to give the Mushrooms flesh and consistence.

Routine.—Turn up all spare ground, protect frames and pits as heretofore.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—The works previously recommended should be proceeded with at all convenient times.

Coppice.—In some Coppices there are very old stools, from 1 to 2 or 3 feet high, from previous cutting. It would be of very great benefit to cut such stools off close by the surface with a saw or axe, making the cut with a gentle slope upwards, from one or both sides, according to the size of the stool. I have seen neglected Coppices wonderfully improved by this method.

Young Plantations.—Continue to proceed with thinning and training the young trees, filling up vacancies with young plants where any have failed, and planting Evergreens and some other things, such as Beech or Hornbeam, which retain their leaves through the winter, to be headed off, and kept as shrubs, in Plantations where a permanent undergrowth is required, and not designed for Coppice. Repair the fences, and proceed with all other necessary work; go over Plantations made in the autumn, and firm the soil about all small plants that have been lifted up by frost or loosened by wind. Do this as soon as the danger of severe frost is over, performing the operation when the ground is moderately dry, before drying winds prevail or the sun becomes powerful.

Hedge rows.—The making and repairing of fences and planting trees should be completed as soon as possible. But hedges, like most trees and shrubs, make more vigorous shoots if they are not after the sap is fairly in motion.

Nursery Work.—All young plants, either in the seed-beds or in rows, that are to be removed this season for planting out permanently, or to be placed in rows for future planting, should be taken up and laid in by the heels in well pulverised soil before the sap gets in motion. Proceed with all possible haste to finish all planting for this season, especially in dry ground and early localities; in cold wet bleak situations there need be no great hurry, for plants generally succeed better in such situations when they are planted after the frosty weather is over. About this time also, any cuttings or seedlings, that were planted in autumn or early in winter, having been upheaved by the frost, should be pressed down and made fast before the sun gets powerful. In dry ground and warm situations Acorns should be sown, if not done in the autumn; also other nuts, kernels, stones, berries, and seeds of the hardiest kinds. You may still plant cuttings of some free-growing kinds that can be increased by this method: but it would have been better to have had this done in autumn.—*W. B.*

VII.—COTTAGERS' GARDENS.

Pelargoniums that are growing rapidly may now be repotted; the tops of the young shoots should be pinched off, to induce them to throw out laterals, so as to render them dwarf and bushy. Old pots of Musk may also be knocked out, and repotted in fresh soil, using rich, rather stiff loam for the purpose; a few of the old roots that will be found on the outside of the old ball should be placed regularly over the surface of the pot, and covered about half-an-inch deep, leaving room for water, which must be given freely when the plants begin to grow. If a few forward patches of Crocuses, Van Thol Tulips, or Anemones, in the border, are taken up about this time and carefully potted, without much disturbing the roots, they will flower beautifully, and make the window gay with showy blossoms. Hyacinths in glasses will now be showing flower, and must be carefully attended to during this changeable weather. Instead of growing them in glasses from the beginning, I would prefer raising them in pots in the usual way until the flowers begin to show colour, when the bulb may be gently shaken from the soil; the roots, being washed in lukewarm water, may be placed in glasses filled with water of the same temperature. By this method I have seen them flower as strong and well as if they had never been moved, and it prevents the flowers from being drawn, the bulbs from rotting, or the roots decaying, as often happens when they are grown in water from the commencement.

Vegetables.—As soon as the weather is favourable, a small sowing of Peas and Beans may be made; and as the busy season is at hand, everything that can now be done should be got forward against that time. Ground intended for Onions and Carrots may be pointed over, and well-broken; alterations and improvements (if any) around the cottage should be proceeded with.

Fruit.—If any fruit-trees remain to be pruned, they should be finished now; the Grape Vine *especially*, if not cut in autumn, must be delayed.

Flowers.—When the weather will permit, sowings of various kinds may be planted, such as Box, Thrift, Daisies, London Pride, or Gentianella. But while it continues cold, care must be taken of anything liable to be injured by frost.—*M. H.*

State of the Weather near London for the week ending Feb. 22, 1844, as observed at the Horticultural Garden, Chiswick.

Feb.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Wed.	14	29.171	29.146	49	30	39.5	W.	
Thur.	15	29.146	29.093	50	26	43.0	S.W.	
Fri.	16	29.094	29.051	49	38	44.0	S.	.05
Sat.	17	29.020	29.020	50	39	44.5	S.W.	.03
Sun.	18	29.292	29.245	49	39	44.0	N.W.	
Mon.	19	29.292	29.292	49	30	39.5	S.E.	.14
Tues.	20	29.292	29.292	49	29	39.5	E.	.02
Average		29.197	29.153	49.5	32.5	37.6		.24

Feb. 16. Clear and frosty; very fine; clear, with slight frost
17. Lightly overcast; cloudy; clear and fine
18. Overcast; cloudy, with brisk south wind; rain at night
19. Clear; densely clouded; rain; fine; clear and windy
20. Clear and frosty; fine; clear and frosty at night
21. Hoar frost; sharp frost; clear; rain; hazy, with rain at night
22. Rain and sharp during the forenoon; overcast; very clear and frosty

Mean temperature of the week, 14 deg. below the average

State of the Weather at Chiswick during the last 15 years, for the ensuing Week ending March 2, 1844.

Feb.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. M.	A.	M.	A.	M.	A.	M.
Sun. 25	47.5	33.4	40.4	10	0.38 in.	1	2	—	4	2	—	1
Mon. 26	46.7	33.5	41.1	11	0.40	1	3	4	1	2	1	5
Tues. 27	47.6	32.0	42.4	11	0.40	1	4	2	—	4	4	2
Wed. 28	48.5	30.2	42.4	7	0.84	—	5	2	—	2	3	4
Thur. 29	48.8	34.0	39.7	6	0.90	1	1	1	—	—	—	—
Fri. 1	47.6	27.4	42.6	8	0.82	—	4	1	—	4	3	1
Sat. 2	48.2	30.2	44.9	6	0.45	2	1	3	—	1	6	4

The highest temperature during the above period occurred on the 27th Feb, 1838—thermometer 60°; and the lowest on the 1st March, 1843—thermom. 13°

Notices to Correspondents.

MR. PAXTON'S COTTAGER'S CALENDAR.—At the earnest solicitation of many of our Subscribers, we have determined on again reprinting Mr. Paxton's "Cottager's Calendar," in the form of a small volume, for general distribution, price 3*d.* each copy. It may be ordered of all booksellers. Gentlemen wishing to *distribute copies* among their cottage tenantry, may have them *delivered in any part of London*, by remitting a post-office order to this office, at the rate of 25*s.* for every 25 copies.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them:—*J. L. Snow, A Subscriber, W. B. Booth, O., Vitis, J. Wighton, A Practical Man, Peter Mackenzie, G. Thompson, W. Billington, M. G., J. B. K. L., R. Errington, Gr., J. M'L., M. J. Berkeley.*

OUR CORRESPONDENTS will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

A CORRESPONDENT apologises for asking his questions in so brief a form as to approach a tone of impudence, and says that it is only in order to save us the trouble of reading what is needless. We can assure him that we are much obliged to him, and heartily pray that others would follow his example.

BOOKS.—*H.C.M.*—The article Botany, published by the Society for the Diffusion of Useful Knowledge, will not cost more than the sum you name.——*Amateur.*—Lindley's Theory of Horticulture.——*Subscriber.*—Loudon's Suburban Horticulturist.——*Ophilus.*—Rogers' Vegetable Cultivator is a useful book. Loudon's Suburban Horticulturist furnishes a full account of vegetables and their cultivation.‡——[=]—Rogers' Vegetable Cultivator and Loudon's Suburban Gardener.‡

CAPE HEATHS.—*W. I.*—All Ericas are pretty; the following are good, and may be easily procured; viz. Hartnelli, pink; Aristata major, red; Acuminata longiflora, purple; Tenuiflora, white, with pink shade; Inflata, white; Archeriana, scarlet; Depressa, yellow; Elegans, light-purple; Cavendishii, yellow; Mutabilis, light purple; Retorta major, pink; Lamberti rosea, flesh coloured; Hyemalis, purple, tipped with white; Tricolor, red; Linnæoides superba, purple, with white tip, and all the varieties of Ventricosa. ‡

CATERPILLARS.—*Carmel.*—The most effectual mode of preventing the ravages of the large caterpillar which attacks Apple-trees is to cut off those twigs on which the eggs can be seen in winter in broad rings. Such as escape observation at this period may be detected when the brood is hatched, and before the insects begin to scatter over the tree. Whilst in groups, and when so high as to be difficult to reach, some find it best actually to shoot them, charging with gunpowder only. But if your pest is the small green caterpillar, which rolls itself up in the leaves, picking would be an endless task. Syringing with ammoniacal liquor diluted with ten parts of water will be proper to apply occasionally with an engine or a syringe. It will do the trees good, besides being repulsive to insects, to many kinds of which, in certain stages of their existence, it will certainly prove destructive. ‖

CLIMBERS.—*W. J.*—We recommend you to plant the following against your wall: Wistaria sinensis, Clematis azurea grandiflora, C. Sieboldii, and C. Viticella; Jasminum revolutum, Magnolia grandiflora and conspicua; Bignonia radicans, and Caprifolium gratum. We cannot name seeds, and we never give prices, which is the business of advertisers.‡

CONVOLVULUS TRICHOCHUDA.—*F. D.*—This is an open Cabbage which has been introduced many years ago into English gardens from Portugal, and which has been found to be an excellent vegetable. It has a short stem and close leaves, with very thick ribs. It is not hardy; its seeds may be sown with advantage in March, or if sown in August, the plants should be transplanted into a frame in September and treated during the winter like Cauliflower plants. ‡

CRICKET-GROUND.—*A Cricketer.*—Fill up the cracks in your ground with fine soil well mixed with one-sixth of guano; and a week after rain has fallen on it, sow Crested Dogstail and Sheeps' Fescue grasses in equal quantities. If the grass is in bad order, a topdressing of soil as aforesaid will do it much good. Do not use hay-seeds, because they bring weeds.

CUCUMBERS.—*A. Z.*—A description of Mr. Mills' Cucumber-pit is given in his treatise on the Cucumber, &c., and we have no right to publish it. Two good Cucumbers for a frame are the Southgate and Syon House; the former is excellent for early use. Two others may be Mills' Frame and Allen's Victory of Suffolk.‡——*Ophilus.*—The Early Frame or the Early Southgate are suitable kinds to begin operations for a frame with. An account of Convolvulus Trichochuda is given above. ‡

DOMESTIC YEAST.—*J. D.*—We gave the receipt at p. 70, on the authority of the correspondent at Hillsborough. We, however, like you, cannot discover that the preparation has any of the properties of yeast. A ready means of making yeast would be extremely useful.

FRUIT-TREES.—*Ellesmere.*—In order to prevent your Fruit trees from running so much to wood, you may, as you propose, root-prune them by cutting a trench 18 inches wide, about four and a half or five feet from the wall, down to the gravel, which is nearly two feet deep from the surface of the ground, smoothing the mutilated ends of the roots with a sharp knife. This trench may be then filled up again with fresh soil from an old dry pasture. This operation will check the over-luxuriance of the trees, and tend to the formation of flower-buds. The ground should never be dug within at least four feet of the stem; but the surface of the soil should be frequently broken with a fork, and, therefore, your plan of spreading gravel four inches deep along the surface of the border will not answer. The distance of four feet from the wall is too small a space to confine the roots of fruit-trees of any size in; they should at least have six feet of a border.‡——*Carmel.*—Root-pruning need not be repeated during three years at least. Autumn is the best time to perform the operation. Guano may be applied to fruit-trees at the rate of 4 cwt. per acre; and best in a liquid state, early in spring. ‖

FUCHSIAS.—*A Subscriber, Milton,*—Epp's Scottish Bride and Bridegroom, Standish's Colossus and Attractor, Miller's Constellation, Smith's Queen Victoria, robusta, reflexa, splendens, Paragon, Formosa elegans, Conspicua arborea, and Venus victrix. Turfy peat, loam with a little leaf-mould and a small quantity of silver sand is the proper compost for Fuchsias. We have not heard of charcoal being tried, but we have no doubt of its agreeing with this tribe.*

HEATING.—*A Novice.*—A stove is useless for the purpose you describe. It will be much better to build a flue at once; but nothing will really answer your purpose as a substitute for stable-litter, except hot-water gutters. An Arnott stove will be expensive, and will not be of service in your case.——*Horndean.*—There is no object in "bringing steam" nearer its work." Once admitted into the atmosphere of the Vinery, it will diffuse itself abundantly, if there is a sufficient supply, as seems to be the case, in your apparatus; 6-inch pipes are substantially large to attain it by. ‖ Make the gutters of inches deep and place 4 inches of cross-timbers upon them, in which plunge your propagating-pots.——*R. J. N.*—The Apes, buried in sand and filled in at the sides, will give the most steady bottom durable heat to sawdust, which, however, is a very bad material, and far inferior to common cinders, but it will probably prove too dry. From 70° to 80° is the best temperature of the plunging material in a hot-bed; but it is needlessly high for Roses, which will not bear 80° for any length without running into weak wood; for them 60° is sufficient, and such air-heat as we find on an average in a warm dry spring day. Roses are ruined by excessive stimulus, where forced. ‡ ‖

HEDGES.—*Mainyfield.*—Of your young hedge there should not be more of the young wood cut the first season than what is supposed the frost would destroy during winter. The same method should be followed the second year also, excepting perhaps some of the strongest shoots, which may be lopped to the level of the others. By the time the hedge is three years old, it may be dressed on the sides, so as to make it straight, but nothing more should be taken off the top shoots until it has arrived at the permanent height. You may cut your Beech-hedge now; the height may be about 3½ feet.‡

INSECTS.—*J. F. B.*—We are unable to advise you regarding the Peach-trees, as it is impossible to ascertain from your communication what insect it is that does the mischief; but if you will transmit us specimens with the buds or leaves, as soon as the trees are attacked, we may be able to suggest a remedy. *R.*

LILIES.—*J. M.*—The real Lilium lancifolium is not known to be in Europe; of L. speciosum there are several varieties, one of which is called Eximium. The L. lancifolium of gardens is the same as L. speciosum. You had better write to *Mr. Towers*; we cannot find room for your observations.

MANURES.—*A Beginner.*—Sulphate of ammonia is employed as a topdressing for grass land in March, at the rate of 2 or 3 cwt. per acre.——*J. P.*—We never saw woollen rags used for Potatoes, but presume they are chopped into pieces about an inch square.——*Ophilus.*—We should try Potter's guano for both garden and meadow.——*A Subscriber.*—Soot is a good material in its way, but either superphosphate of lime or Potter's guano, or Peruvian guano, are a thousand times better.——*Tyro.*—Either Potter's or Peruvian guano will answer your purpose. Use them dissolved in water.——*Winton.*—Give a wine-glassful of superphosphate of lime to each pot in which your Pelargoniums are to flower. Apply it as a topdressing only.

MEALY BUG.—*A Subscriber.*—In order to destroy this, when the leaves are fallen, carefully rub off from your Vines all the rough exterior bark, using a stiff brush where required to get into the angles of the branches. Then wash the Vine with strong soap-suds; or if you do not mind appearances, you may cover them with whitewash, which will do as well. This operation will remove the greater part, if not the whole of the insects which may remain on your Vines.‡

MELONS.—A correspondent inquires which is the best Melon for preserving? Will any of our readers oblige us with an answer? ‡

NAMES OF FRUITS.—*C. H. C.*—No. 1, Catillac; 221, Bergamotte de Hollande; 155, Gilogil; 224, Virgouleuse; 276, Echasserie.‡

NAMES OF PLANTS.—*Tropical.*—4. Hedysarum mutans. 7 and 8. Species of Eugenia. 9. Some Convolvulaceous plant. We regret our inability to give you further information; but it is impossible to name tropical, or indeed most plants, when only in leaf, without an amount of inquiry which we are sure you would not wish us to undertake.

ONIONS.—*A Subscriber.*—Guano is an excellent manure for Onions. To your bed 20 yards long and 4 feet wide, you may apply 25 lbs., being about at the rate of 4 cwt. to an acre, which is quite sufficient for garden purposes. It being of a hot burning nature, must be well mixed with six or seven times its bulk of good light soil. The Onions may be sown in drills about nine or ten inches apart, drawn lengthwise in the bed. In this way they are more easily kept clean than when they are sown broadcast.‡——*Mairyfield.*—Presuming that your ground has been rough dug in autumn, and duly exposed to the action of the weather when it is sufficiently dry, you may point over the surface slightly with a spade, breaking it small as you proceed. Sow in drills, as directed above, on the first fine day after the beginning of March, if the ground is in a fit state for the reception of the seed. ‡

PELARGONIUMS.—*A Beginner.*—These may be shifted now with advantage. A mixture of two parts turfy loam to one of well-decomposed cow-manure, not less than three years old, with a small portion of silver sand, will be found a suitable compost for blooming them in.‡

PRUNING.—*Semuralicus.* — Prune Common Laurels, and all those which are rather tender, just when the buds are swelling in spring. Such as are quite hardy may be pruned at any time during winter.

RASPBERRY.—*T. P.*—We are unable to find anywhere an analysis of the ashes of this plant.

SALT OF THE EARTH.—I beg to inform "N. H. Gritton" that the words, "Salt of the Earth" were quoted from a sermon, an old sermon, but a famous sermon—the Sermon on the Mount. *P. M.*

THE OLIVE.—*F. W. C.*—See p. 84, 1843. It is absurd to suppose that a tree can improve the soil in which it grows. The efflorescence seems to be nitrate of lime.

VINES.—*R. W.*—The check which takes place at the extremities of your Vine shoots after the latter have grown from 6 to 12 feet in length, is probably occasioned by a want of sufficient moisture at the roots. ‖——*A Subscriber.*—Having commenced forcing your Vines at the temperature of 50°, increase to 60°, and when the leaves expand, 65° to 70°; when setting, 75° to 80° will not be too much. ‖

MISCELLANEOUS.—*A. B.*—There is but one variety of Camellia reticulata. But that is apt to have white leaves without getting out of health. Warmth prevents it. *C.*—Loudon is right. But Deodars do not require a moist subsoil. Cedars will succeed better in a soil less dry, even with a subsoil of clayey loam. The Araucaria imbricata seems to like light land. We doubt if it will succeed in clay or damp places. The tops and sides of hills are its favourite haunts. It is an ugly tree when old. You will find your question about other Firs answered in former papers on Coniferæ in this Journal. P. Pallasiana is the same as P. Taurica. We doubt whether you can get any except grafted plants of P. Sabiniana and Coulteri. We cannot answer the question about Plane mills, and never give prices. *An Amateur Florist.*—We never recommend nurserymen.‡ *A Young Gardener* will find excellent information on the night temperature of Vineries given at p. 459, 1842. Pine.—No evergreen grows faster than Furze or Broom; or, if you want a tree, than the Common Laurel. The Huntingdon Elm is one of the fastest growers, but the Cæruleon Willow beats it, and so does Sir Charles Wager's Maple. Acer macrophyllum is quite hardy; it grows about as fast as the latter. The fastest growing Pine is the Laricio.——*Tyro.*—The black Spanish Onion. Use for them charcoal and superphosphate of lime.——*Z.*—We do not understand your objection. We use less small type than ever. Any *fine* sand that is free from iron or salt will do; coarse sand is thought not to answer the purpose. We believe common coke, which contains much sulphur, is injurious to copper boilers.——[=]—A span-roofed house or pit running north and south is suitable for a propagating-house. ‡——*Alpha.*—Aponogeton distachyon is, or was, naturalised in the water in the Botanic Garden, Edinburgh, but we have not seen it here in the south.——*A Subscriber.*—No. 1 is out of print; it may be had by applying at the publishing-office. *J. W. J.*—Answered p. 104.‖——*Mr. Pearson.*—The Pine Fern ceased about five years back.

*** As usual, many communications have been crowded out this week.

BALSAMS.—In *Mr. Cameron's* advertisement last week, for *Standard and Dwarf Pansies* read *Standard and Dwarf Roses.*

EXAMPLE FARM.

WANTED, to Rent on Lease, for a term of not less than 21 Years, to enter on, Lady-day, a Commodious Dwelling-house, and about 100 acres of Arable Land, for the purpose of forming it into an EXAMPLE FARM. It must be near to a Railway station, and within 50 miles of London; on the Greensand formation, under the chalk, or on the London clay or Plastic clay above the chalk.—Apply to Mr. Mowton, Chesterhill, Morpeth.

AGRICULTURE.—A Gentleman occupying a Farm of 300 acres, of various descriptions of soil, pleasantly situated in the highly cultivated county of Norfolk, and within five miles distance of three of its thriving Towns, is desirous of taking one or two YOUNG MEN, to learn the practice of Agriculture. The parties would in all respects be treated as members of the family, and would have the opportunity of regularly attending Norwich market (decidedly the largest and most celebrated provincial stock market in England,) and also the advantage of becoming acquainted with the most approved specimens of Agricultural Implements and Machinery. References given and required. Address, J. B., Post Office, Norwich.

The Agricultural Gazette.

SATURDAY, FEBRUARY 24, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Feb. 28 . Agricultural Society of England.
Thursday, Feb. 29 . Agric. Imp. Society of Ireland.
Wednesday, Mar. 6 . Agricultural Society of England. Highland and Agric. Society.
Thursday, Mar. 7 . Agric. Imp. Society of Ireland.

FARMERS' CLUBS.

Feb. 28	Chepstow. Fairford.	Feb 27	Bromsgrove.
		Feb. 29	Richmondshire.
March 1	Hadleigh. Wrentham. Debenham.	March 5	Cullompton. Cardiff Gloster.
March 4	W. Market. Yeaford. Wenlock. West Hereford.	March 5	Framlingham. Rayleigh. Collingham.
		March 6	Harleston.

THE present is THE PROPER SEASON FOR PLANTING BEANS. There are many ways of cultivating this plant. The seed is by some sown broadcast; by others it is hoed in or drilled, and by many it is dibbled. During the growth of the plant the land is in some districts flat-hoed merely; in others, it is horse-hoed and cultivated as when carrying a fallow-crop, and in many instances it is neglected altogether; and this variety of management is equally conspicuous in the treatment of the crop at harvest. We have seen Beans, sown broadcast upon land which had just been ploughed, present on coming up all the appearance of having been drilled; and in this case, the furrows being about 10 inches wide, the advantages in the cleaning of the land, which are afforded by narrow drilling, were cheaply obtained. The regular distribution, however, of the seed, with all the advantages following from it to the crop and to the land, which are obtained by drilling, hoeing, and dibbling, render these plans in every case preferable to that of sowing Beans broadcast.

The first of these methods is the cheapest. Beans are drilled in at all distances from 10 to 26 inches. In the former case, the land can only be cleaned by hand-hoeing—in the latter, it can be cultivated in every respect as during a fallow-crop; and in cases where the Bean-crop is made preparatory for that of Wheat, this is an especial advantage. In the latter case, which is general in Scotland, the land is manured in drills 27 inches wide, the seed having been previously sown in them by a hand-barrow used for the purpose; the ridges are then split by the double mould-board plough, the seed and the dung being thus covered together. Before the plants are up, the land is harrowed, the ridges formed by the double mould-board plough being thus in a measure obliterated. The plants, when up, are pared, *i. e.* a small plough is sent down each side of the row, throwing the earth from it into the intervals between the rows. These intervals are horse-hoed and hand-hoed, and after a while the double mould-board plough is again put in requisition—the plants are earthed up and left till harvest time. In drilling Beans, four or five bushels are sown per acre. In some districts Beans are drilled by the Bean-barrow in a simpler manner than that just described, this implement being sent down every third furrow as the ploughs are at work in the field. The furrow slices being 10 inches wide, it is evident the plants will come up in rows 30 inches wide.

The operation of hoeing in Beans costs about 6*s.*, and requires four bushels of seed, per acre. The seed is planted across the ridges in rows, about nine inches apart; the labourer, in the act of making each trench with his hoe fills the one already made, in which he has scattered a quantity of seed. Beans are dibbled in two ways; in the one, the unharrowed furrow slice is the labourer's guide, and two or three seeds are put into each of the holes, which are made about 10 inches asunder in the alternate furrows; in the other, the land is harrowed down, and two lines are employed as a guide for the labourer. These lines are placed about 18 inches apart, generally across the ridges, and the labourer facing them, manages both at once. He makes in succession four holes about 10 inches asunder, in the near row, putting about a couple of Beans into each as it is made, and after doing the same in the far row, he moves sidewards up the line, and repeats the operation. The holes are filled in by a subsequent harrowing. Two, or at the most, three bushels of seed are thus planted, and about 5*s.* an acre are paid for the work. Formerly, the operation used frequently to be paid for by the bushel sown, the sum being 20*d.* or so, but this unreasonable method of payment is being dropped now—it acted as a premium upon carelessness and dishonesty.

The Bean prefers land such as that affected by Wheat—a stiff loam suits it well. Many kinds of Bean are sown, but they are all, botanically speaking, varieties of one species. The Mazagan, long-podded, and Heligoland, are among the rarer kinds cultivated in fields; the most common being the Horse and the Tick Bean, of which the latter is the more prolific and superior in quality, and the former the more hardy.*

THE following are remarks upon the subject of SPADE-HUSBANDRY, by the late Rev. W. L. Rham, who contributed so many valuable articles on Agricultural subjects to the *Gardeners' Chronicle*. We insert them here, because, without determining whether or not in some cases *the farmer* can profitably cultivate land wholly by manual labour, there cannot be a doubt that he would be greatly benefited by a more frequent use of the spade, not as a substitute for the plough, but as an assistant to it; and the following remarks are well calculated to recommend such an employment of manual labour:—

At times such as that which, we hope, has now passed, when there is a stagnation in trade, and when men able and willing to work cannot find sufficient employment to maintain themselves and their families, there is an outcry raised against all those contrivances by which manual labour is diminished. Spade-husbandry is naturally looked to as a palliative, if not a remedy; and many calculations are made to prove, that by substituting the spade for the plough, the produce of the land will be so much increased, as fully to repay the expense of the additional labour. There is no denying the truth of many of these calculations, and if we have any doubts, we need only some fine day take the steamer to Antwerp, go down the Scheldt to Tanisse, or any village in the Waes country, and judge with our eyes of the success of Spade-husbandry. We may return within the week perfectly convinced, however incredulous we were before. The Spade-husbandry there enables an active industrious man to cultivate from six to ten acres of light land; to pay a high rent for it; to maintain his family comfortably, and often to lay by a sum of money to set up a son with, or give a portion to a daughter, if not to buy a piece of land for his own occupation and that of his children after him.

This is a pleasing picture and a true one; why not, then, introduce it in England? To a certain extent it might answer; a hard-working, sober, industrious family, where every individual from the old grandmother to the child, just out of its infancy, contributes something in the shape of labour to the common stock—where they are content to live on coarse bread and skim-milk, or butter-milk soup, where the men are at work before the sun is risen, and after the evening twilight; such a family might live on the produce of a few acres of land, and be happy and contented; but would this suit the English labourer? Ten hours' work is a long day for him; he is accustomed to have some bacon at least with his white bread, and a pint of ale is no extravagance after the day's work is over. His wife has her children to nurse and attend to. His boys and girls go to school to fit them for something better than mere daily labour. In short, he lives like a gentleman when compared to the foreign labourer. Do we regret this, or find fault? Certainly not. Would that every labourer could always command these comforts, besides that of a clean neat cottage and well-kept garden! Spade-husbandry—that is, digging the land instead of ploughing it—will not afford this; but it may be accomplished by the union of machines to abridge labour, and the application of a better system of tillage, in which much more manual labour is employed. Instead of wearing out the strength of a man by making him turn up a hard and compact soil, why not do this by the brute force of horses or oxen while the man is set to work where his dexterity and ingenuity may be exercised, and where he can do what neither horses nor implements can do so well. We do not allude to draining, however useful and profitable an operation on all stiff cold soils; for, in time, it is to be hoped all wet soils will have been laid dry, and little labour will be required to keep the old drains in order; but when the land has been ploughed once, or oftener, is it already in the best state for cherishing the seed and nursing the young plant? If it has been richly manured, is it so free from all useless weeds that the crop will suffer no diminution from their presence? Or is it imagined that in the large fields of the farmer there is no use for constant manual labour when it has been ploughed, cross-ploughed, subsoil-ploughed, scarified, rolled, and harrowed, and after the seed has been sown or drilled regularly? If so, we will invite the most experienced farmer to walk over his own fields, to see the state of the surface, to examine the depth at which one seed has been harrowed in, while another is scarcely covered with earth, so that the first bird which passes by readily discovers and preys upon it. We will take him along the furrows which separate the lands, or stitches, as they are called. If the soil is heavy, how many clods are lying there which will impede the course of the waters in heavy rains; if it is loose, how many places are there where the soil has slipped more or less, leaving some *of* the seed bare which it should have covered! How much attention and light labour might be applied here, which would suit women and children, without fatiguing them!

There is the operation of dibbling the seed in one season, of hoeing the crops in another, of forking-up land which has been ploughed, to break the clods, to let out the small seeds imprisoned in them, to destroy those which have just sprung up; in short, to make a field resemble a garden. If it be objected, that the crops will never repay the outlay, we maintain the contrary. If it has been clearly shown by experience that even the slow and laborious process of digging the ground is fully repaid by the crops, is it not reasonable to expect the same result from a more perfect tillage, attended with less hard labour? There are many examples of crops of more than double the usual average on land treated in every respect as is usual in a farm, except in the greater attention to minutiæ, which are overlooked in a field, but carefully attended to in a garden. Why should not the surface of a field be gently raked when it begins to set after rain, that is, form a crust, so as to impede the growth of the young plant as it rises to the day? Why should the intervals of the stitches not be dug out, like those between seed-beds in a garden, and the earth thrown over the plants to strengthen them by the addition of fresh earth, while the deep intervals collect all the superfluous water, which might chill the roots, if not rot their fibres. Let the common field-seeds be sown carefully in a garden well covered and pressed, or trodden—the surface raked smooth, the paths between the beds kept neatly shovelled out, and who will not expect an extraordinary crop? It is well known that injudicious manuring diminishes the crop, but with improved tillage the crop is always more certain and abundant. The finest and richest soil badly tilled will produce but a moderate crop, while a naturally bad soil may be so improved by judicious tillage as to produce far more abundant crops than the richer. All that is required is a good system; we would not have men harnessed to carts, where brute strength alone is required, to draw a load; but we would set them to such work as requires judgment and dexterity. To what extent this may be applied to the operations of husbandry, experiment and observation alone can teach; but that it may be so, there is every rational probability.

That we may not be supposed to suggest impracticable improvements, let us only consider how many crops are lost, or greatly diminished, in consequence of some circumstances which affected the first shoots, and caused a retarded and consequently weakened growth. How many plants of Wheat are thrown out of the ground on light soils by the frost, which, if the seed had been deposited at a proper depth and firmly trod in, would have produced numerous stems and ears? The attention of a man directed to the state of a field might avert innumerable evils; the first appearance of blight or mildew might be watched, and correctives applied, which strict attention to the appearances would soon discover; the ravages of worms and insects might likewise be arrested as soon as discovered, and a crop, now left to take its chance, might be defended from its enemies and secured from harm. What good gardeners do with respect to fruits and vegetables, by care and attention might be readily extended to the produce of the field, and, doubtless, with the same success. A man with a spade, a hoe, and a rake, cannot fail to find ample and useful occupation in a field at all seasons; and if he is interested in the result, by a premium on any increase of crop beyond the usual average, he will well earn the wages he may receive.

Much useful labour might likewise be applied to increase the produce of the dairy. The stalling of cows at all times of the year is found decidedly more economical than the old practice of letting them roam at liberty in large pastures. Natural and artificial meadows may be cut before the flower of the Grasses expands, and afford excellent and abundant food for the cows; while women and children may be employed in eradicating all plants which are either useless as nourishment, or hurtful to the cows by giving a taste to the milk.

All these are mere suggestions worthy of a trial; but they are not vague and crude fancies, for most of them have some foundation in experience and observation. The principle we contend for is simply this: that, without adding to the more laborious part of the work, many more hands might be employed on a farm, so as amply to repay the cost, by trying to imitate the neatness and perfection of garden cultivation

* See Professor Low's "Elements of Practical Agriculture."

on a larger scale. Much may be learned by watching the cultivation of allotments of land, where these are judiciously let to industrious labourers; after their day's work you may see them carefully examining their little plots of Wheat, or any other produce, with a spud or little hoe—the weeds are picked out before they are well out of the ground—a clod on the surface, if sufficiently dry, is broken by a slight blow with the back of the hoe—a plant which appears rather loosely set in the ground is made firm by a tread of the foot; all this is very slight work, yet at harvest we see crops of seven and eight quarters of Wheat per acre on land which, in the memory of man, never produced half that quantity, and which is by no means abundantly manured. Suppose that a week's work of an able-bodied man in a Wheat-field only ensures an increase of two bushels at harvest, the extra labour and attention will be paid for; but every one knows that the increase of two bushels on every acre will be considered as no great thing in a field of ten acres thus attended to; yet this increase will repay a constant unremitted attention of a man for ten weeks, giving him ample wages.

But what is the farmer the better for this? Much, in every way: his crop has been kept free from weeds; the labour for the subsequent crop is much lighter, and his land is improved in texture by all this careful tillage. If he was in the habit of fallowing his fields to clean them, he may defer this process for a longer time, if not omit it altogether. If he sows Clover or artificial Grasses, the carefully prepared surface insures their growth and saves much seed. The failure of a sowing of Clover is no trifling loss, as we all know, and an improved tillage will decidedly diminish the chances of failure. In short, where there is the wish to do good, while we benefit ourselves, and have the pecuniary means to meet some additional expense, nothing can be more strongly recommended than to apply constant and minute manual labour to the improvement of the soil, and thus to promote the certainty and beauty of the crops.

EXPERIMENTS WITH NITRATE OF SODA, &c.

(*Continued from page 106.*)

I APPLIED the three dressings as above stated, viz., 1 cwt. of nitrate of soda per acre, manganese and nitrate of soda in equal quantities, 1¼ cwt. per acre, and Guano mixed with soil, to rows of Turnips after they had received the second hoeing and begun to spread over the top of the drill. The effect as to the colour and growth of the tops was the same, and in the same proportions as on the Clover-fogg; but the final result of this experiment remains to be proved by the weight of the roots, when taken up, as compared with each other and with rows that had no top-dressing.* I applied the same dressings to Rape, sown upon bone manure, when it was about three inches high, and in this case the nitrate and mixture produced the most decided effect that I had yet seen. Within a month those rows had grown to twice the height of the rest of the field, and were covered closely over the intervals, bearing fully double the weight of produce, although about a week after being applied the leaves were spotted and blistered, probably owing to the nitrate not having been pounded sufficiently small. Those done with guano were better than the part which had nothing, but much inferior to that to which nitrate had been applied. Some sheep were put upon that part of the field on the 24th of August, and in a week had eaten the rows done with nitrate and manganese close to the ground, while those done with guano and left undone were hardly touched, a decided proof that the application of nitrate to such plants has the effect of not only increasing the quantity to a great extent, but of rendering it more palatable to animals, and I doubt not in an equal degree more nutritious. I found nitrate very beneficial to the growth of Tares, and extremely so to six acres of the second year's grass to which I applied it at the rate of 1 cwt. per acre. The effect was greater and more rapid than upon the first year's Clover; probably because being a thicker cover, the whole of the nitrate would be retained by the blades of grass; whereas in the other case, a part would fall upon the ground. This land being in pasture the increased produce could not be brought to the test of actual weight, as in hay, but the stock having been kept off it for a week after sowing the nitrate, it acquired such a growth as, in comparison with other land, to keep nearly double the quantity of sheep, or, at any rate, I am confident at the rate of five per acre instead of three. My experiments upon Corn both last year and this have been unsuccessful. The nitrate stimulated a great growth of straw. In both years a great deal of rain fell just previous to the harvest, in consequence of which those portions have been laid and much injured, producing a great bulk of coarse straw, but little grain. And even in cases where both Barley and Oats seemed in no danger of being too bulky and were not lodged, a second growth was produced, and they are now being cut full of green and immature shoots, while the good grain does not appear to be more in quantity nor so good in quality as that which had no nitrate. A rapid growth of straw with a heavy blade, just before shooting out the ear, is always attended with much risk, and as nitrate produces that effect, if applied to Corn after it has grown 12 or 15 inches from the ground, it must always be attended more or less with danger. And when applied very early, and before the plants cover the ground, it produced, in my case, no effect at all.

With respect to guano, I am sensible that the result of these experiments forms no test of its value as a manure. Being the produce, accumulated for ages on the rocky islands of the Pacific, of sea-fowl, which feed on fish, it contains a large proportion of organic matter of the richest and most stimulating kind, and ought to be applied mixed with ashes, charcoal, or some other substance, as other manures are, to the soil, so as to be accessible by the roots of the plants. I could not, however, procure any at a proper season for using it in that way, and therefore determined to try it as a top-dressing in the same way as the others.

The numerous experiments which I have made with nitrate of soda lead me to the determination in my own practice, to use it as much as possible on grass and green crops, and only on Corn in such situations as run no risk, be the weather what it may, of the crop being lodged from too great a growth of straw. I have satisfied myself that I can obtain the requisite quantity of hay upon two-thirds, or rather less, of the land which I have hitherto assigned to it by the application of nitrate of soda to the grass; so that I have one-third of the land at liberty to feed sheep. I am also satisfied that its application to pasture-land increased the produce at any rate by one-third, and to Rape, in one instance at least, by one-half; the consequence of which must be an extra production, in equal proportions, of mutton and wool, and an additional return of manure from the sheep to the land, which will produce its effect upon the succeeding crops of grain, not by stimulating a rapid growth at any peculiar stage, as nitrate does, but by entering gradually and regularly into the whole process from the germination of the seed onwards to the maturity of the crop.—*John Grey, Dilston House.*

* Dec. 9th, 1851.—The Turnips were pulled this day and carefully cleared of tops and tap-roots, after which they were carefully weighed, under the inspection of Mr. Hunt, and the following Table shows the result:

Top dressings.	Square yards in each Portion.	Weight of Turnips in each Portion.	Weight per acre.
		st. lbs.	tons lbs.
Nitrate of soda	166 4 9ths	117 8	21 58
Manganese & nitrate	166 4 9ths	117 0	21 58
Guano	166 4 9ths	127 6	23 25
Nothing	166 4 9ths	198 10	22 165

The tops were not weighed, as their value is small, and would go a short way in altering the comparative value of the produce; but the drills to which the nitrate, and mixture of nitrate and manganese were applied, showed much more top throughout the season than the others, although in the end the roots weighed less. Whether these roots would have gone on to increase till they had overtaken the others, if they had not been checked by the unusually severe frosts which came on early in November, I do not pretend to say; but the experiment tends to confirm me in the opinion already expressed, that saline manures are more easily and efficaciously applied to green crops, such as Grass, Vetches, and Rape, than to grain or the bulbous-rooted plants. On the contrary, the effect produced by the Guano is very encouraging, especially when it is considered that I did not receive it in time to apply it in the rows, as bone-dust and other manures are applied, and that comparatively but small particles of it could have found access to the plants when scattered along the tops of the drills after the Turnips were first hoed.

N.B.—The Turnips referred to above were all grown upon an ordinary dressing of farm-yard dung.

REPORT OF DR. VON MARTIUS ON GUANO.

(*Continued from page 106.*)

THE first chemical analysis of guano was made by Fourcroy and Vauquelin, from the specimen brought home by Baron von Humboldt. These chemists found that it consisted of at least a fourth part of uric acid, which was in combination with ammonia. They also found oxalic acid in combination with ammonia and potassa, the phosphates of ammonia, of lime, and of potassa and ammonia, and a small quantity of a fatty matter. Soon after this analysis, Klaproth made his known; and then Völkel and Vertels published a very accurate quantitative analysis. It may not be uninteresting to give the results of these analyses.

	Klaproth.	Völkel.	Vertels.
Urate of Ammonia	16	9	3.244
Oxalate of Ammonia	—	10.6	13.351
Oxalate of Lime	12.75	7.	16.360
Phosphate of Ammonia	—	6.	6.450
Phosphate of Ammonia and Magnesia	—	2.6	4.136
Sulphate of Potash	—	5.	4.227
Sulphate of Soda	—	3.8	1.119
Muriate of Ammonia	—	4.2	6 5
Phosphate of Lime	10	14.3	9.940
Phosphate of Soda	—	—	5.231
Muriate of Soda	0.5	—	0.1
Alumina	—	—	0.104
Clay and Sand	22	4.7	—
A waxy resinous substance	—	—	0.6

These analyses show considerable difference, but this may be explained by the varying age, purity, and origin of the guano. It thus appears that amongst animal manures guano clearly claims the first position. It is uncommonly rich in ammoniacal salts, and these salts act very favourably on vegetation. They abstract from the air its carbonic acid, and it is through its means that those various proximate principles are formed, such as starch, mucus, resin, lignin, &c., which constitute the body of the plant. With the exception of the oxalate and the phosphate of lime, nearly all the salts are soluble in water. The urate of ammonia is not so, but then in the atmosphere it undergoes a decomposition, by which carbonate of ammonia is formed, which is equally soluble with the rest of the salts, and is taken up by plants, and contributes very much to their nutrition.

The ease with which these salts are decomposed by the air, and rendered partly volatile, will account for the fact that plants manured with Guano generally present early in the morning, accumulations of dew on the points of their leaves. The Guano absorbs the surrounding air, and also the vapour of water that may be in it, which is especially serviceable to plants, and this is why Guano is so valuable a manure in dry, barren regions.

If we compare Guano with other excrementitious manures, we shall find it far preferable to those afforded by man or the other mammalia, which do not generally contain more than 20 per cent. of matter that can be appropriated by plants as food. It is thus five times better than night-soil, and it is also very superior to the so-called *Poudrette*, which, in the drying, loses, through putrefaction and evaporation, the greater proportion of its ammoniacal elements.

In birds, the excretion both of the kidneys and intestines are contained in the cloaca, and thus it is that the volatile elements of the one get combined with the firmer elements of the other. The Guano is also the better, from the circumstance of its being produced by sea-birds, which live entirely on fish, and eat no vegetable matter. The exposure also of the Guano to the heat of a tropical sun, as soon as deposited, prevents the volatile elements from flying off, by the formation of a hard crust upon its surface. The manure of our dove-cotes suffers a considerable loss by its exposure to the air.

In its action on vegetation, and in its chemical composition, Guano may be compared to the manure of dove-cotes. Davy found in fresh dove-cote manure, twenty-three parts soluble in water, consisting of uric acid, urate of carbonate of ammonia and common salt; but in the dried manure only eight parts in the 100 soluble. Sprengel analysed this manure, six months old, and found 16 per cent. of soluble matter; there was very little uric acid, and a great deal of carbonate, sulphate, and urinate of ammonia, with some common salt and sulphate of potash. The eighty-four parts insoluble in water, consisted of siliceous sand, phosphate of lime and magnesia, and traces of alumina, iron, and oxide of manganese.

(*To be continued.*)

MANX AGRICULTURE.—No III.

(*Continued from page 88.*)

THE spirit of emulation which prevails throughout the United Kingdom, and is extending its beneficial influence under the auspices of Agricultural Societies, has at length winged its way to the Isle of Man; and amongst the benefits which have followed in its train, must be prominently mentioned improvements in live stock, and in Agricultural implements. Owing to the peculiar situation of the island, the Manx herds of cattle are of so mixed a nature as to be almost indescribable. Specimens may be seen of the "Hereford" crossed with the remote "Guernsey," or hardy "Highland;" and of the "Holderness" or "Durham" crossed with the Polls of adjacent Galloway, or the beautiful breed of Ayrshire.

These incongruous mixtures are, however, rapidly declining, and the importation of some highly-bred short-horned bulls and heifers is producing incalculable benefit throughout the length and breadth of the island. Honourable mention must be made of the short-horned herds of Faulder of Ellerslie, Gawne of Kentraugh, Farrant of Jurby, and of the Jeffresons; nor should the pure Ayrshire dairy stock of Mrs. Miller of Ballaconyea be omitted.

The breed of sheep is also rapidly improving, and on the "bleak and barren rock" (as Mona has been ignorantly described) may be seen grazing in health, breed, and beauty, undiminished by importation here, the heavy Cotswold and New Leicester, the beautiful South-down, and the hardy Cheviot; while the active little Manx sheep still retain undisturbed possession of the heathy mountain pastures. With reference to the implements of Agriculture, there is still great need of improvement; for, although the old wooden plough is for the most part superseded by one of iron, and the useful double mould-board is in much request, there is still great lack of those newly-invented instruments, by the use of which culture has been improved, and labour diminished, in England. Much benefit would arise from the more frequent use of scarifiers, couch-rakes, and improved horse-hoes in the tillage of the land; and of drills and dibbling machines for depositing seed corn, the greater part of which are comparatively unknown. Great excuse must, however, be made in this respect, as it would be difficult for the tenant farmer, or even the small Manx freeholder, to encounter single-handed the expense of those mechanical improvements which are so accessible to British farmers. It occurs to the writer that some such plan as the following would be alike practicable and beneficial, and may perhaps be applicable to many districts in England as well as to this island.

Let some portion of the funds of the local Agricultural Societies, or of Farmers' Clubs, be appropriated to the purchase of the more expensive and useful implements. The island might be divided into districts (and the present parochial division would be very convenient), in each of which these implements might be deposited. All subscribers to the Society should have the liberty of using them, and by an amicable arrangement no great clashing of interests need occur. A small sum should be paid for their use, sufficient to repair wear and tear, and to provide new ones. Thus would an Agricultural Society prove itself of real and practical benefit to the Manx farmer.

It has been before stated that the soil of the island is very various, and the rent of land is influenced accordingly, but it will be found to range between 1*l.* and 3*l.* per statute acre. Near the principal towns that maximum is exceeded, as accommodation land is in great demand. There are, however, no other outgoings in respect of rates, taxes, &c., except that, for each cart kept on the farm, a day's labour per annum to the high-road is expected and demanded. Tithes are adjusted as in England, but are short in their form and unintelligible in their language, and

few more stringent clauses are inserted than the reasonable prohibition from selling manure, straw, or meadow-hay—from taking two white or grain crops in succession, and a stipulation on the part of the tenant to leave a proper proportion of the arable land down with grass-seeds at the end of his term.—*Cultor.*

(To be continued.)

ON MINERAL AND INORGANIC MANURES.
No. VIII.

By Professor Charles Sprengel.

Marl is one of those mineral substances which can easily be used as a manure on a large scale, for it is to be found in many localities, generally forming thick strata. The most barren localities are at times most wonderfully improved by it, and this is the more important for the Agriculturist, as it is to be obtained at a trifling expense. The extraordinary effects which the marling of fields has produced have induced some Agriculturists to consider it the *ne plus ultra* of all manures; they thought that it could even supersede dung. There have been put forth several theories as to the mode in which marl acts, but it would lead me too far to state them all, and it would take up still more time to refute them. I shall therefore limit myself to that one which is not only in accordance with the newest doctrines of Chemistry and Vegetable Physiology, but is also confirmed by the experiments which I have made on the manuring properties of the single component parts of marl. I shall leave it with the reader to compare my theory with the older ones; and I do not doubt, that if all be taken into account that I have previously said on the nutritive process of plants, he will find them to be irreconcileable with Nature.

If we leave clay out of the question, which can only improve the mechanical texture of the soil, the chief ingredient of marl, according to weight, is carbonate of lime, which at times amounts to 50 per cent., and more. We shall treat of it first. As lime has a great affinity to humic acid, marl will endeavour to form that acid (provided that it does not already exist), from the vegetable matter and the coal of humus in the soil; but as the lime is already combined with carbonic acid, this will in a great measure prevent it; and then its combination with humic acid is very gradual, and moreover, requires for the operation (what is not to be overlooked), the assistance of the sun's heat. When lime has combined with humic acid in the proportion of 13 to 87, it is soluble in 2000 parts of water, and is then suitable as food for plants. The carbonic acid, on the other hand, which the humic acid has displaced is received by the water, and is also absorbed by the plants. The advantage, however, which the plants derive thereby is not great, as will appear from the following calculation: Suppose 20,000 lbs. of marl, containing 30 per cent. carbonate of lime, were brought on one Magdeburg acre of land, the plants would receive thereby 2640 lbs. of carbonic acid, for 100 lbs. carbonate of lime are composed of 43.6 acid and 56.4 of lime; but it is proved by experiment that a period of 20 years is required for all the carbonate of lime of this quantity of marl to be decomposed by the humic acid and the silica of the soil; and if the quantity of carbonic acid available to the plants amounts annually to 132 lbs., this will amount to an annual supply of only 36 lbs. of carbon. What can this small quantity of carbon avail the crops? One crop of Rye (3000 lbs. of grain and straw) contains more than 1500 lbs. of carbon! If, however, the soil should not contain so much humic acid (22,480 lbs.) as would suffice for the saturation of all the lime communicated to it by the marl, in the state of carbonate, in the assumed case of 20,000 lbs. per acre; then, the lime, leaving the carbonic acid, would unite with the silica of the soil into a silicate of lime—a substance which, being insoluble in water, cannot afford any nourishment to the plants. Still, silicate of lime will always be formed along with humate of lime; partly because lime and humic acid cannot be everywhere in contact throughout the soil, partly because so much humic acid does not at any one time exist in it as is necessary to unite with all the lime. Thus, a great disadvantage results for the plants, and the effects of marl-manure will cease the sooner (at least as far as the action of carbonate of lime is concerned), the more silicate of lime has been formed, which will be chiefly the case in very fine sands. The substance thus formed will, as we have seen before, be again decomposed by the humic and carbonic acids; but this process takes place so slowly, that it will benefit the plants but very little. A larger quantity, however, of silicate of lime may be decomposed by the nitric, chloric, and sulphuric acids, which are annually conveyed by the rain to the soil; and as soluble calcareous salts are thereby formed, it may be said that the plants are thereby supplied with some scanty quantity of lime. The carbonate of lime, again, may also cause the combining of the atmospheric nitrogen and oxygen into nitric acid, which unites then with the lime, and forms lime-saltpetre; still, the quantity of the salt thus formed is probably so small, that the advantage of it to the plant can scarcely be taken into account. The chief effect therefore of the carbonate of lime in marl is, that it combines with the humic acid already existing in the soil into a salt very advantageous to vegetation, and that, on account of its great affinity for that acid, it decomposes the coal of humus and other organic matters of the soil; although this is done in a far less degree than by caustic lime—that, moreover, by this process several other substances of use to plants—as potash, nitrogen, sulphuric acid, &c.—are developed and brought into play, as has been already stated in speaking of lime.

Besides the carbonate of lime, the carbonate of magnesia also is one of the chief components of marl. Its action upon humic acid, vegetable matter, and coal of humus, is similar to that of carbonate of lime, but less powerful, as it does not contain such a strong chemical base as the latter. With humic acid the carbonate of magnesia forms a salt, which is soluble in 160 parts of water, and is useful as food for plants. The effect, therefore, of the carbonate of magnesia contained in the marl must vanish sooner than that of carbonate of lime; the more so, as magnesia will also readily combine with the silica of the soil into a silicate which is insoluble in water. It may therefore sometimes be necessary to repeat a manuring with marl merely on account of the magnesia. The carbonic acid thus expelled by the silica and humic acid is not to be taken into account at all, because if any sort of marl contained even 30 per cent. of carbonate of lime, it scarcely ever contains more than 5 per cent. of carbonate of magnesia. Everything else which has been stated of carbonate of lime refers equally to carbonate of magnesia.

(To be continued.

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. VII.

(Continued from p. 107.)

The Oleaginous Group.

Oil, fat, or wax, are contained in the cellular structure of many plants. The odour of plants depends upon the volatile oil which they contain. The fixed oils, such as olive, rape, and linseed oils, are obtained by crushing the fruit or seeds of the Olive, the Brassica, or the Flax plant. Their use is well known. All plants of the Beet tribe are rich in oil. Wax is not so easily obtained as oil; it may be procured by heat from the Poplar and other plants, and the well known manufacture of this article by bees proves its existence in plants, whence they derive the material.

A substance similar to tallow is yielded by a tree named the Croton Sebiferum, and a tree which abounds on the Malabar Coast, called Piney, bears a pulpy fruit that yields a large quantity of tallow, almost as firm as wax*.

The Oleaginous Group, as is well known, are produced in large abundance by animals. This is effected by the transposition of the elements of food; no food will produce fat that does not contain its elements. The importance of bearing this in mind by those who undertake the fattening of cattle, has been ably shown by Dr. L. Playfair, in the "Agricultural Journal." His lectures upon this subject contain an elaborate view of Liebig's doctrines and discoveries in this important branch of Chemistry.

The designed use of the Oleaginous Elementary Group in plants is evidently the support, the respiration, and animal heat of the animals that live upon the plants which contain them. Fat is not, properly so called, a part of the organism of animals. That portion of this Group which is not required to support respiration is deposited as fat in the cellular structure. *The carnivorous animals deposit no fat.*

The Albuminous Group contains the elements of food which are essential to the formation of muscle. Thus in beef, the fat is produced from the saccharine or oleaginous, and the lean from the albuminous or azotised parts of the food. The albuminous elements of food that exist in plants have an important office to fulfil in the economy of life.

From the first moment of existence to that of death, there is a continual decay of the tissues of the body in all animals. Motion cannot take place without the death of a part of the body. If a finger is moved, or a thought exercised, a particle of matter is destroyed. This can only be restored by the albuminous portion of the food. Its importance thus requires no further comment. Bread is aptly called "the staff of life" It gains its title to this character by containing flour of starch (non-azotised matter), and gluten (azotised matter), in such proportions as are exactly adapted for human food; so that a person who would die if fed upon Potatoes or Rice, or lean beef, alone, would thrive upon bread, which contains a union of the two great divisions of food.

The azotised group of the chemical constituents of plants are represented by three principles contained largely in vegetables; these are modifications of the same principles. They are fibrine, albumen, and casein.

1. *Of fibrine.*—If the juice expressed from a vegetable be allowed to stand, a green deposit will take place. When the colouring matter of this deposit is removed, a grayish-white substance will remain, which is vegetable fibrine. This vegetable fibrine is identical in chemical composition with the lean part of beef when deprived of its colouring matter. It is the principle which restores waste in the animal.

2. *Albumen.*—If we take a Turnip, or Mangold Wurtzel, or Cauliflower—crush it, strain off the juice, and subject this juice to a boiling heat, a congulum will form, which is identical in its nature and chemical constitution with the white of egg.* This is vegetable albumen. It is fibrine in its primitive form; organised by the vital principle it becomes the fibrine of muscle, of beef, mutton, &c. The egg contains albumen and fat, with a little sulphur; and yet, from the egg, a perfect animal is produced with flesh, feathers, beak, claws, and gelatinous bones. The albumen is in this case metamorphosed into fibrine (muscle) by the vital principle. Fibrine is converted into gelatine, whence the bones, beak and claws, feathers, &c. of the perfect bird. Thus we see that in a Turnip or a grain of Wheat we have the elements from which an animal can be formed.*

3. *Casein.*—From Peas and Beans, where it exists in the form of legumen, and from many other plants, a third principle can be obtained. This is Casein, which is identical with the curd of milk, from which cheese is made. Man and other mammalia are supported while young entirely by milk, which fact furnishes the only known instance where animal life is supported by one article of food. Now, in milk there are combined the essential elements of nutrition—sugar, oil (butter), which are non-azotised, and the azotised principle casein (cheese.)

It is impossible to glance at these beautiful facts, dwelt upon by Liebig and others, without being struck with the harmony and perfection evinced in the design of Infinite Wisdom.

Now, it is clear from the above statement, that if the perfect bird can be formed from the albumen and fat of the egg, the plant containing starch and gluten must be formed from matter containing the elements of starch and gluten. The analogy between the chicken and the plant does not cease with the formation of roots in the latter, and the breaking of the shell of the former. If not fed they die. Instinct and human care will support the bird. The vegetable instinct (if I may be allowed the expression), of the roots and leaves of the plants will provide for it nourishment from the air and soil. If this is deficient in the soil, or it is desired to increase the size and weight of the grain, then according to that deficiency or desire, it must be supplied in the form of manure by the ingenuity and wisdom of man.—*C. R. Bree, Stowmarket.*

(To be continued.)

* Carpenter's Popular Cyclopædia of Natural Science.

* Liebig, "Animal Chemistry," p. 46.

Home Correspondence.

Importance of writing Plain English.—Now that your Paper, from its greater scope of objects, is likely to become of more extended circulation, I venture to suggest to you and to your correspondents, that in their communications they should avoid provincial or local terms of description, weight, measure, &c. Every locality has some *patois* of its own, which is of course better understood and much better liked there than elsewhere; but in a publication intended for general use, it is obviously necessary that none but purely English terms should be used. Only fancy what a hodge-podge the *Gardeners' Chronicle and Agricultural Gazette* would be, if each county alone were to send a specimen of its dialect—not to mention that the Welch, Irish, and Highland Scotch, might take it into their pens to address you in their tongue also! With reference to weights too, and measures both superficial and solid, the use of local denominations renders many useful communications only so many puzzles. In the market notes of prices, we have in Ireland, for instance, Wheat per bag of 20 stones, Oats per barrel of 33 stones, Barley per barrel of 36 stones in some places; while in others, the barrels are—of Barley 16 stones, of Oats 20, &c. &c. Then we have the Scotch Bolls, Firlots, &c. &c.; the Welch Peggot, and the Straw-quart. As to the weight of a stone, it varies as much in commerce as it does in geology. There cannot, in fact, be any better way of measuring Corn of all sorts than by the regular avoirdupois scale; all other modes should be abolished, as has been the case with respect to the admeasurement of coal. As to the "Muirland Gardener," who can quote from Dr. Lindley good classical English when he pleases, my sentence on him is, that if he uses any more of his reekie-peekie stuff, his horn spoon be taken from him, and he be obliged to eat his stirabout with a two-pronged fork for a month.—*Woodend.*

Effect of Winds on Vegetation.—In the *Gardeners' Chronicle* of last year, there were extracts of lectures published pointing out the analogies which exist between the process of combustion and the process of digestion in an animal's stomach. I need not say how important the analogies of nature are: they have often pioneered the way to important discoveries in science. Witness some of Sir H. Davy's discoveries. Following these analogies I have long been impressed with the belief that a current of air made to pass over vegetation promotes its vigour, in the same manner as one passing into a fire hastens combustion. Indeed, if plants appropriate a portion of the atmosphere to their sustenance in the same manner as an animal or the fire does, it is difficult to understand how currents of air, of varying density, can pass over them without affecting their health. When the wind blows we experience currents of denser volume than when the atmosphere is perfectly still. Plants, therefore, in the former case have opportunities of appropriating a greater amount of the pabulum they derive from the atmosphere than they have in the latter. These opinions, which I have long entertained, I was desirous of seeing confirmed or confuted by more extended observation, and I took the liberty of addressing a few queries to your paper upon the subject, in the hope that they would elicit some remarks from your readers respecting it. The instances of fertility to which I referred are not in upland districts. We can find exposed situations where the fertility is not impaired by want of climate. There is one within the range of my eye at the present moment; it is an eminence in the midst of a fertile plain, and, certainly, vegetation at this season is much more luxuriant upon its top than it is at the base. The shaking and stirring of plants by wind is an effect which is obvious to every one, but we do not often enough reflect that most of the operations of nature are carried on in secret, and that what we see ought only to be regarded as an indication of what we do not see.—*J. R.* [Luxuriance of vegetation on the summits of eminences greater than that occurring in vales, must generally be owing to a difference in the nature of the soil. If our correspondent would examine geologically the spot he refers to, we think he would find that its greater fertility is owing to a difference of soil, owing to a change in the nature of the subsoil on which it rests.]

The Chief Fertilising Qualities of Bones.—This is a

question of considerable importance to the farmers of the soils to which crushed bones are a fertilising addition, for erroneous views of its mode of action has led, through injudicious modes of application, to much disappointment and loss. That the decomposable animal matters do *not* form the *chief* fertilising ingredient of crushed bones is, I think, indicated in several practical ways. Thus the Cheshire farmers, who use the boiled or steamed bones of the Manchester size-manufacturers very extensively for their pastures, consider that for these the bones are certainly as enriching to the land, when nearly all the size and grease are removed by the process of steaming, as when the bones are in what they denominate "the green," or unboiled state—and the evidence does not conclude here:—the more skilful farmers, who use the crushed bones as an excellent drill manure for Turnips, have long since discovered that the fresh bones are not nearly so powerful as those crushed bones which have been fermented in heaps, either by themselves or with other fertilisers, until in fact the mass is reduced by the putrefactive fermentation nearly to the same appearance as garden mould. By this process it is true that the proportion of carbonate and phosphate of lime remains unaltered in the remains of the bones, but then almost all the purely animal matter is dissipated in the gaseous form. Volumes of ammoniacal matters are evolved, and yet still the farmer finds that the crops of Turnips he can produce with the fermented or nearly-decomposed bones are far superior to those grown with the unfermented. I am not aware of any very valuable experiments with calcined bones, but there are several very recent experiments, to which I need hardly refer your readers, upon the application of sulphuric acid to bones, which clearly support the same conclusion, for from these it appears that the fertilising properties of bones are certainly not impaired by this process, although by the action of the sulphuric acid on the bones, a very considerable chemical action takes place, the animal matters of the bones are decomposed, and a very large portion of their constituents are evolved in the gaseous state. It is very likely, I think, that all the reported advantages of this new mixture of sulphuric acid with bones may be obtained at much less expense to the farmer by mixing a portion of gypsum (sulphate of lime) with well-fermented crushed bones, (?) but still I cannot but consider these experiments as affording additional evidence that it is not the decomposing animal matters of the bones which furnish their chief fertilising properties, but that their agricultural value must be attributed chiefly to the copious presence of the phosphate of lime.—*Cuthbert W. Johnson.*

Shed-feeding of Sheep.—Foot-rot.—When offering a few remarks lately respecting the confinement of sheep in sheds, I felt disposed to introduce something respecting the probability of their becoming affected with the foot-rot from want of the liberty of rambling, but I abstained from doing so from the apprehension that such reference would have been considered hypercritical or visionary by your readers. Yet, as I perceive in your publication of the 3d inst., a coincidence between the notion which then occurred to me, and an alleged fact related by another of your correspondents, in the communication which succeeded mine in the same column, I take the liberty of sending you a few addenda to my former letter, suggested by the information conveyed by Mr. Grey, of Dilston. That gentleman states in substance that he had confined sheep in sheds, and occasionally with successful results; but that the advantages which he derived were overbalanced by a virulent disease in the feet, which was either the foot-rot or some modification of it. Now, sir, the experience of Mr. Grey on this subject goes farther than the point on which it directly and primarily bears, viz., the expediency of feeding sheep in sheds; for it has an important bearing also on the discussions which have taken place respecting the cause of the foot-rot. Warm moisture has been assigned as the origin of that malady, and I venture to say with good reason: moist pasturage in a warm season of the year induces evaporation that becomes noxious to sheep, from the circumstance of their lying with their feet folded under their hearts, in the manner most calculated to produce great heat and moisture, which also affects their bedding in the sheds, and generates, in Mr. Grey's opinion, an ailment similar to, if not identical with, the genuine foot-rot. Inflammation of this nature does not arise (unless infectious matter has been deposited on the pasture-ground by other sheep) in flocks that have a short dry pasturage, and sufficient liberty of range; it is on rank grass in low land, and generally moist pastures, that the foot-rot is found to exist. Sheep that have a considerable way to walk in search of their food escape this affliction, which, like the gout in the human race, is a frequent attendant on a life of sloth and voluptuousness. They may have galled feet from over-travelling, but not the foot-rot, which seems to have been the effect of the increased weight and consequent inactivity of the large varieties. I am aware that a different theory has been adopted by eminent veterinarians respecting the foot-rot—that some high authorities among them attribute it to the deformed structure of the hoof from overgrowth, through want of the friction which rough land supplies to pare it down, or the neglect of the shepherd to trim it with his knife; but I cannot conceive that the distorted form of the hoof occasions the malady in question, which appears, with far more probability, to arise from moisture under the particular combinations calculated to render it the chief agent in developing the ailment. Mr. Grey may perhaps recollect whether those of his sheep which became diseased in the feet had any deformity of structure in the hoof previously to their being confined in the sheds. I fancy that he will not attribute the effects which he witnessed to any preceding want of natural or artificial hoof paring. Neither has repeated experience, nor mine, shed any degree to prove that sheep in actual preparation for the butcher may not be fattened with great advantage on Mr. Childers' system, while they harmonise with the convictions of those sheep farmers who consider that exercise is essential to the health and hardihood of their flocks, and that close confinement in sheds and small yards, in a state of unnatural warmth, and amidst the effluvia which arises from fermenting litter, must be more or less prejudicial to sheep, excepting those which are to be transferred at once from their prisons to the shambles.—*Martin Doyle.*

On Flax Culture.—I had no idea that you would publish any part of my former letter on this subject; and as you have thought proper to publish a part and not the whole, I hope you will now find room for my explanations of assertions, which must, from the amount of profit named as being realised by the culture of the Flax plant, appear to some of the old school of farmers a regular delusion. I beg leave to hand you a pamphlet from the Belfast Flax Society, which, in pages 7 and 16, will corroborate the facts represented by me so far as prices go, and as for the expenses incurred, I venture from my practical experience to lay before your readers the following plain statement:—I have told them 60*l.* per acre can be made by the cultivation of the plant; it is but fair I should show such a result is to be accomplished. The following are the particulars of the expenses of growing an acre of Flax in Ireland, and the profits derived from the same:—

An acre of land, including taxes	£2	5	0
2½ bushels of seed	1	10	0
Ploughing and sowing	0	10	0
Weeding, 12 hands at 8*d.* per day	0	8	0
Pulling, 12 hands at 1*s.* „	0	12	0
Watering, 7 hands at 1*s.* „	0	7	0
Scutching, 70 stone at 10*d.* per stone	2	18	4
Lifting, &c. &c., 10 hands at 1*s.* per day	0	10	0
Carting to mill and market, ½ ton	0	19	8
	10	0	0
Produce according to Mr. Denman's account in page 16	£70	0	0

Thus, Mr. Editor, a profit is shown of 60*l.* These particulars I am prepared to prove, and if any of your readers desire further information, I shall at all times feel pleasure in affording it. As several gentlemen have expressed a wish to obtain a work on the subject, it is my intention to put together such information and instructions on the cultivation of Flax, as may be advisable to follow in order to grow the finer qualities, as I must repeat that it is much to be regretted that our French and Belgium neighbours should take from us five millions of pounds sterling annually for Flax, an article that our farmers can and ought to grow themselves.—*J. H. Dickson.*

Number of Gallons in Tanks of various Forms and Dimensions.—The following is a Table showing the contents in gallons of square-built and of circular tanks of various dimensions:—

THE NUMBER OF GALLONS CONTAINED IN SQUARE-BUILT TANKS.

Length. ft.	Breadth. ft.	When the Depth is 3 feet.	4 feet.	5 feet.	6 feet.	7 feet.	8 feet.	9 feet.	10 feet
6	by 3	336	448	560	672	—	—	—	—
6	„ 4	447	596	745	894	—	—	—	—
6	„ 5	558	744	930	1116	—	—	—	—
6	„ 6	672	896	1120	1344	—	—	—	—
7	„ 4	522	696	870	1044	—	—	—	—
7	„ 5	652	872	1090	1316	1526	—	—	—
7	„ 6	774	1132	1290	1548	1806	—	—	—
7	„ 7	903	1200	1505	1806	2107	—	—	—
8	„ 4	597	796	995	1194	1393	—	—	—
8	„ 5	744	992	1240	1488	1736	1984	—	—
8	„ 6	894	1192	1490	1788	2086	2384	—	—
8	„ 7	1044	1392	1740	2088	2436	2784	—	—
8	„ 8	1194	1592	1990	2388	2786	3184	—	—
9	„ 5	840	1120	1400	1680	1960	2216	—	—
9	„ 6	1008	1444	1680	2016	2364	2688	—	—
9	„ 7	1176	1568	1960	2354	2744	3146	3528	—
9	„ 8	1344	1792	2240	2648	3136	3584	3942	—
9	„ 9	1512	2016	2520	3024	3528	4032	4536	—
10	„ 5	930	1240	1550	1860	2170	2480	2790	—
10	„ 6	1116	1488	1860	2232	2604	2976	3348	3720
10	„ 7	1305	1740	2175	2610	3045	3480	3915	4350
10	„ 8	1491	1988	2485	2982	3479	3976	4473	4970
10	„ 9	1677	2236	2795	3354	3913	4472	5038	5590
10	„ 10	1860	2480	3100	3720	4340	4960	5580	6200
11	„ 6	1233	1644	2055	2466	2877	3288	3699	4110
11	„ 7	1437	1916	2395	2874	3355	3832	4311	4790
11	„ 8	1644	2192	2740	3288	3836	4384	4932	5480
11	„ 9	1848	2464	3080	3696	4312	4928	5544	6160
11	„ 10	2055	2740	3425	4110	4795	5480	6165	6850
11	„ 11	2259	3012	3765	4518	5271	6024	6777	7530
12	„ 6	1344	1792	2240	2688	3136	3584	4032	4480
12	„ 7	1848	2064	2580	3096	3612	4128	4644	5160
12	„ 8	1788	2384	2980	3576	4172	4768	5364	5960
12	„ 9	2016	2688	3360	4032	4704	5376	6048	6720
12	„ 10	2232	2976	3720	4464	5208	5952	6696	7440
12	„ 11	2466	3288	4110	4932	5754	6576	7398	8220
12	„ 12	2688	3584	4480	5376	6272	7168	8064	8960

THE NUMBER OF GALLONS CONTAINED IN ROUND-BUILT TANKS.

Diameter	When the Depth is 3 feet.	4 feet.	5 feet.	6 feet.	7 feet.	8 feet.	9 feet.	10 feet
4 ft.	234	312	390	—	—	—	—	—
5	365	484	605	—	—	—	—	—
6	528	700	875	1050	—	—	—	—
7	720	960	1200	1440	1680	—	—	—
8	931	1244	1555	1866	2177	2488	—	—
9	1188	1480	1975	2370	2765	3960	3555	—
10	1464	1952	2440	2928	3416	3904	4392	4880
11	1776	2368	2960	3552	4144	4736	5328	5920
12	2112	2816	3520	4224	4928	5632	6336	7040

—*M. S.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The Council having referred the communication made to them at their last meeting by his Grace the Duke of Richmond, on the results obtained by the application of sulphuric acid and bones, as a manure for Turnips, to the Journal Committee, Philip Pusey, Esq., M.P., the Chairman of that Committee, has recommended to the Council the publication of the following reports on that subject:—

I.—The Duke of Richmond's Experiments.

Experiments made on Turnips with five different kinds of manure, on the farm of Gordon Castle, in the year 1843. The seed (Dale's Yellow Hybrid) was sown on the 15th of June, and as it was wished to ascertain the result while the Duke was at the Castle, the Turnips, before they came to maturity, were taken up on the 3d of November, and carefully topped and weighed.

1st.—One imperial acre, manured with 8 bushels of bones and 14 cubic yards of farm-yard dung, at an expense of 3*l.*, produced 12 tons.

2d.—One ditto, manured with 2 cwt. 91 lbs. of guano, at an expense of 1*l.* 17*s.* 4*d.*, produced 11 tons 4 cwt.

3d.—One ditto, manured with 16 bushels of bones, at an expense of 1*l.* 16*s.*, produced 11 tons.

4th.—One ditto, manured with 83 lbs. of sulphuric acid and 2 bushels of bone-dust, mixed with 400 gallons of water, at an expense of 11*s.* 6*d.*, produced 12 tons 4 cwt.

5th.—One ditto, manured with 83 lbs. of sulphuric acid, mixed with 8 bushels of bones, and sown with the hand, at an expense of 1*l.* 5*s.*, produced 11 tons.

(Signed) Thomas Bell, Farm Steward.

II.—Dr. Manson's Experiments.

My field of twenty-one acres was last autumn deeply ploughed with three horses out of Oat stubble, it having previously carried a Wheat crop after two years' ley, well manured. In the spring it underwent the usual process of cleaning, and received about the 1st of June, twenty-five quarters of Linksfield lime. Drilling and sowing commenced upon the 10th, allowing four bushels of bones and ninety-six pounds of sulphuric acid, properly diluted with water, to the acre. The manure was prepared by putting into a large vat, placed in a corner of the field to be sown, thirty-two bushels of bone-dust; and for each bushel was added ninety-six pounds of water, and twenty-four of sulphuric acid; there were thus in the vat at once 32 bushels of bones, 384 gallons of water, and 47½ gallons of sulphuric acid. The whole was allowed to lie for a fortnight previous to use, when it was found that the acid had nearly dissolved all the bones. The mixture was then drawn off and added to water, in a large water-cart, in the proportion of one gallon of the mixture to 50 of water, and it was distributed to the drills from three spouts into three drills at a time. The drills were previously slightly harrowed down, and immediately drilled upon receiving the liquid manure. Owing to the great drought which prevailed at the time of sowing, and the very recent liming, very few of the seeds vegetated till after the rain, which fell about a month from the time of sowing. The heavy gale which prevailed about this time cut down the greater part of the early plants, and has thus left the field deficient in some places. I observed that after the field came to be singled, it underwent that process in the order in which it was sown; 13 acres having been sown with farm-yard manure, and the remaining 8 with the bones and sulphuric acid, the plants from the acid keeping the lead of those sown with court manure, and are to-day a heavier crop, though not looking quite so healthy in the blade, owing to their having come earlier to maturity. The expense, 1*l.* per acre, viz., 4 bushels of bones, at 2*s.* 6*d.*, 10*s.*; sulphuric acid, 96lbs. at 1½*d.*, 10*s.* Those laid down with court manure received 20 cart-loads per acre, at 2*s.* 6*d.* per load, 2*l.* 10*s.* Weight, per Imperial acre, as ascertained on 15th November, the date of weighing:—

	Tons	cwt.	lbs.	
Sulphuric acid and bones	12	5	96	per Imperial acre
Court manure	10	17	104	ditto

Spynie, Oct. 20, 1843. (Signed) D. D. Manson.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the Special Meeting of the Council on the 15th inst., a letter was read from Mr. Charles M'Donnell, of Clifden, in the county of Galway, accompanying a specimen of dried Seaweed, pulverised, which he had prepared in great quantities, believing it to be a most valuable manure for raising Turnips and other green crops. Means were then taken for collecting subscriptions in Dublin, &c. towards the expenses to be incurred upon the occasion of the Great Meeting of the Society in Dublin on the 14th and 15th August next. The re-adjudication upon the bulls belonging to Messrs. Grey and Hill, about which a difficulty had arisen since the last General Meeting of the Society, was directed to take place on the 15th of April.

FARMERS' CLUBS.

Ayrshire Agricultural Association.—Professor Johnston delivered a lecture on Agricultural Chemistry to this Association, at Ayr, on the 30th ult., from which we extract the following:—"There are certain substances which are special to certain plants. Some plants require more alumina, potash, magnesia, &c. than others, and it is the key to successful Agriculture to know what particular ingredients in the soil every description of plant requires. A certain soil, for instance, may require more potash, magnesia, &c. for a particular crop, and yet that soil may be capable of yielding a very good crop of something that requires less of these ingredients. If you want to grow *a*, *b*, *c*, you must make the soil perfect in the substances necessary for all; without this it may grow *a* and *b*, but may be defective in that which is necessary for *c*. When you wish it to grow *c*, therefore, you must add what it wants for that purpose. Let me give an illustration of how it may be that a comparatively

fertile soil cannot be brought round by the ordinary application of farm-yard manure; how it may appear that a soil, generally fertile will yet refuse to grow a certain kind of crop, and that although farm-yard manure be applied, still it will not give a very good crop of the particular description of grain wished for. Why is this? The conclusion that we have just come to accounts for it, namely, that the manure does not contain all the substances which the soil wants. This case is exemplified in the Carse of Gowrie. The farmer there manures as usual with farm-yard manure. From the soil manured in this way he may get a good crop of Turnips, but not of Clover. After having let a year run over, he may sow Clover, and the reason of this is, that the substance necessary for growing Clover is not contained in sufficient quantities in the farm-yard dung applied during the first year, and that it is only after a second application that the requisite quantity is obtained. The first quantity of manure that he applies—suppose 40 yards—contains, it may be, a portion, but not a large enough portion, of that substance which is necessary to ensure a good crop of Clover; he is thus debarred from growing Clover for that year, and it is only in the second year—when he has added another 40 yards of manure—that a sufficient quantity of that particular substance is collected. Suppose that this substance may be magnesia or soda, what a large expense does he not incur by adding 80 yards of manure; whereas, had he been aware of the principle upon which the growth of plants depends, he might have attained his object in the first year by giving the land an extra dose of magnesia or soda, at the expense, perhaps, of a few shillings! Thus we come to understand how a knowledge of the principles upon which the cultivation of the soil rests, acts upon the profits of the agriculturist—how his knowledge or ignorance of these principles comes home to his pocket."

Collingham.—The monthly meeting of this club was held on the 6th of Feb., when 35 to 40 members were present. It being the anniversary meeting of this Society, the officers had to be chosen, most of them being re-elected, except the secretary, who resigned. A lecture upon the Making and Repairing of Roads was delivered by Richard Parkinson, Esq., of Knapthorpe, whose thorough knowledge of the subject, obtained by long experience, enabled him to illustrate it in a very satisfactory manner. In his description of the formation of a new road, he commenced by recommending that it should have a close, firm, compact foundation; and that the soil underneath should be well drained, so as at all times to give the road a dry and firm foundation. He then suggested that a layer of Ling, Gorse, or straight Thorns should be laid; and above these a covering of sand free from gravel, and when this was sufficiently rolled by the action of carriage-wheels, he advised the application of the first covering of material, which should be limestone, if it can be had, or otherwise good clean gravel free from boulders, and mixed with a little lime. The road must be kept level with the rake until it is sufficiently firm to receive the second covering of gravel or material, after which less care will be required. The lecturer confined himself chiefly to gravel-roads, that being the most obtainable material in the neighbourhood. The mode of applying the gravel deserves particular notice. The necessity of separating it, by riddles at the time of getting it, into three sizes before it is applied, was urged. The expense of doing so will only be about 2½*d.* per ton; and the advantage of doing so shows itself in the greater ease with which, in roads so made, the surface is kept perfectly level. The coarsest material is laid first, and the finer sorts may be placed above it in layers one inch thick, and in stripes covering about one-third of the width of the road at a time, so that carriages may avoid the gravel, and a pleasant and safe road is then insured at all times of the year.

Halesworth.—At the meeting of this club on Feb. 2, a discussion took place as to "which is the most valuable root, under general circumstances, Beet or Swede Turnip." The gentleman who introduced the subject considered that the crop of Beet averaged several tons per acre more than that of Swedes, and taking this increased weight on light lands at only one-fifth part per acre, the advantage, if the Beet possesses equal fattening qualities with the Swede, must be very great, whilst on the heavy lands there cannot be a doubt of its superiority. Another advantage arose from the greater facility of getting off the Beet crop. Another member considered that a crop of Beet can be more certainly depended upon than a crop of Swedes; and, further, that Beet can be readily kept, and are excellent food throughout the season. It was also stated as the result of experience that the Beet had decidedly the advantage over the Swede, as regards the Barley-crop succeeding them; the same plan being pursued with regard to both, viz., both being got off the land at the same time, and the tops of both being ploughed in. An intelligent butcher gave it as his opinion that the meat was equally good whether the cattle were fed on Beet or Swedes. A gentleman whose opinion carried the greatest conviction—his practical experience and general business habits leaving no doubt of the correctness of his observations—submitted the following experiment, which he had made to ascertain the relative value of the two roots as regards their fattening properties; and stated, also, his belief that on an average land which would produce 25 tons of Beet per acre, would not produce more than 15 tons of Swedes, the lands being manured equally well, and treated alike in every particular. Ten beasts, averaging about 60 stone each, were put upon Beet-root. Each beast consumed about 15½ cwt. of root sliced, and 3½ stone of cake per week; therefore one acre of Beet-root, producing 25 tons, would feed one beast 33½ weeks, allowing in addition 7lbs. of oil-cake per day. Twelve beasts, weighing about 60 stone each, were put upon Swedes, and also [illegible] of Swedes and 5½ stone of oil-cake per week. Eighteen tons of Swedes is supposed to be a fair average crop in this neighbourhood, and such a beast would thus consume that quantity in 20 weeks, with the addition of the 3½ stone of oil-cake per week. It thus appears that assuming the above quantities to be the average produce, an acre of Beet would last a beast 13 weeks longer than an acre of Swedes. The animals appeared to do equally well on either root.

It was resolved, that the opinion of the members present is decidedly in favour of the Beet-root over the Swedish Turnip under general circumstances, its weight per acre of the former, being much greater than that of the latter, and its fattening properties being fully equal in every respect, with this additional advantage, that the Beet is equally valuable as a food throughout the whole season.—*W. Reynolds, Secretary.*

Reviews.

On Thorough Draining, and its Immediate Results to Agriculture; being a Paper read before the Wakefield Farmers' Club. By John H. Charnock, Land-Agent, and Secretary to the Yorkshire Land-Draining Association. Rowland Hurst, printer, Wakefield.

This is a pamphlet which is likely to be practically useful to the farmer and landowner. We extract the following remarks upon the importance of drainage being executed efficiently and permanently, and on the necessity, therefore, of its being done chiefly at the cost of the landowner:—

"If there is one operation more than another in which the maxim that 'what is worth doing, is worth doing *well*,' holds good, it is in draining; *effective* and *permanent* must be your work, or it is comparatively money and labour thrown away. And for this reason, if for no other, should it be done under the superintendence of the landlord; it is in truth an owner's work; it is *principal invested*, and cannot, except by an occupier, be with justice treated as a mere outlay for repair. It is a permanent improvement of the fee, and if *permanently and effectually* done, gives as surely a rental fully commensurate with the outlay. At the same time, however, *rather than farm undrained land*, it is the palpable interest of the occupier himself to undertake the work, and especially if he previously concludes for any certainty of tenure. But the most desirable arrangement is, that owner and occupier should act mutually in the matter, and as the best interests of each are so intimately bound together, they should mutually concur in the execution of the work. And here I may mention the plan which is adopted on the Greenwich Hospital estates in Northumberland, under the superintendence and by the advice of that eminent Agriculturist, Mr. Grey, of Dilston, which I think may be considered as perfectly equitable and unexceptionable in all cases. The rule is this: if the drainage is done during the *first* seven years of the lease, the Hospital pays *one-third of the entire cost*; if during the *second* seven years, *one-half* the cost; and if in the *last* seven years of the term, it pays *two-thirds* of the cost of draining, assuming the lease to be for twenty-one years."

Mr. Charnock gives details of the amount of this cost, and means of diminishing it are pointed out; thus at p. 12 it is stated—

"That a due regard is not usually had in the cutting of the drains, so as to economise the labour consistently with full efficacy of operation. I allude especially to their being cut much wider than is necessary; considering that tiles of a very much smaller* area than are ordinarily used would be fully as effective; at all events, the higher extremity of each drain might be laid with them, and the size be increased in regular gradation as you descend to the outfall. It does not require to have a regular *grave* in your flesh to make it *bleed*—a *simple cut* is enough, and just so with the soil—only divide it ever so little, and *keep the sides of that incision asunder*, the water will flow, without converting your drain into a ditch."

There are some of the Author's suggestions in which, however, we do not acquiesce. Thus, it is recommended that some porous substances, as broken stones, be filled into drains above the tiles. The usefulness of doing this depends on the rain-water, as it falls upon the land, flowing over its surface down the declivity—the sides of a ridge, for instance—till it reaches the drain (which, if this theory be correct, should always be in the furrow), and there sinking through the porous material into the channel. But it should be the aim of the farmer to get rain-water to sink into the land just where it falls, and thus to find its way to the drains underground. Instead of having porous lines through his land every 16 feet, which this mode of draining would give him, it should be his aim to get *the whole* of the land sufficiently porous to a depth of 16 or 18 inches; and, when it is conducted properly, there are very few soils on which the operation of subsoil-ploughing will not produce this porosity. Land in this condition will allow no surface-water to appear; the rain as it falls sinks at once, and finds its way to the drains underground.

We also object to Mr. Charnock's plan of using tiles without soles to support them in the drains. We quote the following from a lecture delivered before the Highland Society of Scotland, by Dr. Madden, of Penicuik, near Edinburgh.

"It is stated by many practical men, in regard to tile-draining, that when the subsoil consists of very stiff clay, the tile-soles may be dispensed with, and as the soles are somewhat costly, the farmers are willing enough to give them up, especially when they find that others have done without them, and yet their drains have continued to run well for some years. If, however, the opinion of a scientific person had been requested, he would at once have stated, that unless the drains rested on the surface of a rock, the tile-soles could in no instance be dispensed with, because, as Prof. Johnston justly remarks, '*There are no clays which do not gradually soften under the united influence of air and running water.* In the course of 10 or 15 years, the stiffest clays will soften and allow the tile to sink, and many very much sooner. The passage for the water is thus gradually narrowed.'"

It is right to say that the tile which Mr. Charnock considers capable of acting alone, is of a peculiar form, the edge on which it rests being widened in order to hinder it from sinking. Although we differ from the author of this pamphlet on these points, yet we cordially recommend his work to our readers. It contains many useful remarks on the practice of drainage, and much sound reasoning upon the effects which would follow its general adoption. We entirely agree with the author in the spirit of his concluding paragraph.

"Agricultural Societies might add materially to their usefulness, and to the general good, by directing their attention somewhat more palpably towards the improvement of the *soil*; bullocks, sheep, and pigs are now all fully up to the mark, let us see if the *land itself* cannot, under the same auspices, be brought into something like a corresponding state."

Mr. Charnock is secretary to the Yorkshire Land-draining Association, which has secured the services of Mr. Smith, of Deanston, as draining engineer. "This Association is formed for the purpose of affording to the Agricultural interest, by means of its collective capital, the funds necessary for the thorough draining of land;" without which these funds cannot be economically and efficiently applied; and now that capital as well as capability of applying it may be had on reasonable terms, there is reason to hope that the work of Agricultural improvement will progress rapidly; and in districts where tenants have a lengthened interest in their farms secured to them by lease, we have no doubt that the facilities afforded by Associations like this will be eagerly taken advantage of.

* "Mr. Thomas Hammond, of Penshurst, now uses no other size for the parallel drains than the *inch tile*, and it may be here stated that the opinion of all the farmers who have used them in the weald is, *that a bore of an inch area is abundantly large.*"—*Report on Drain-Tiles and Drainage, by Mr. Parkes.*"—*Journal of the Royal Agricultural Society of England, Vol.* iv., *Part* ii., *page* 373.

Miscellaneous.

Improved Method of Sowing Wheat.—After the destruction of so much of the young Wheats late in the spring of last year, it occurred to me, that by adopting a different method than what is at present practised in planting the seeds a similar disaster might in future be prevented. My idea was this:—to plough down the seeds, and that in such a way, if possible, as that the braird may come up in rows at equal distances between the drills; and instead of the usual practice of harrowing immediately after sowing, to allow the drills as left by the plough to remain entire throughout the winter and spring. The furrows, or drills, left in this manner, would, I am persuaded, form a shelter to the plants against the frosty winds which generally prove more or less destructive to Wheats in the months of March and April. In the case of drift, which is sometimes hurtful, the drills would retard the snows filling up the openings between them, thus covering up the plants in perfect safety from the changes in the atmosphere. Independent of drift, we have often a course of dry withering weather in spring, with strong sunshine during the day, which, with frosty nights, generally prove very injurious to young Wheats. Against this danger the drills, by the action of the weather, would be continually operating; for, mouldering down they would give, as it were, a constant hoeing to the plant, keeping the tender stem warm and dry.—*Correspondent of Ayrshire Agriculturist.*

Furrow Drainage.—For effectual furrow-drainage, the drains require to be made 30 inches deep, 20 inches broad at the top, and about 5 at the bottom, each drain 6 yards apart. They are to be laid with suitable concrete tiles, either made with moulds or made in the drain, or filled to the depth of 9 to 12 inches with stones, properly prepared, if to be had in the neighbourhood, with suitable soles where required, and these covered with large gravel to the depth of 6 or 8 inches, or some suitable substitute, upon which the soil taken out will then be used for filling up with. The tiles are to be made of Concrete or Hedderwick lime and gravel, mixed up with water to a proper consistency. When the field has been thus prepared, it is then to be worked to the depth of 12 to 15 inches with the subsoil-plough, according to the nature of the soil. A Scottish acre will contain about 900 yards, or 150 roods of six yards each, of drains, and will, therefore, require about 2700 tiles, each 12 inches long. It is understood that a boll of lime, with a proper proportion of gravel, will make about 1000 tiles of that length. The cost of the whole, with soles where required, filling up the drains, cartage, and any other extras, will amount to from 2*l.* 10*s.* to 3*l.* per acre. Mr. Gladstone proposes, that those of his tenants whose farms are under fifty arable acres, should drain and plough in the manner above stated, and in the present season, not less than 2½ acres; about fifty and under one hundred, not less than five acres; and those above one hundred, after the rate of not less than five acres for each hundred acres. In consideration of such work being done effectually and thus completed, to the satisfaction of Mr. Sheriffs, or some other competent judge to be appointed by him, Mr. Gladstone agrees to pay to each of his tenants the sum of 3*l.* per acre, and to charge each of them with interest thereon at

the rate of 4 per cent. per annum, in addition to their rents, from the dates of the payments to the expiration of their leases, and nothing more:—also, in order to encourage his tenants in this undertaking, he engages, in addition, to allow to each, who shall complete the work described within the present season, an abatement of 10 per cent. from their rents from the last crop.—*John Gladstone*, London, 11th March, 1843.

Estimated cost per acre Scottish.

	£	s.	d.
185 roods of drain, at 1½d. per rood of six yards, being the rate paid by R. Barclay Allardace of Ury, Esq.	0	18	9
2200 tiles, supposed to cost equal to 7s. 6d. per 1000	1	9	3
Allowing for soles, where required	0	10	0
For filling up the drains, cartage, and any other extra charges	0	11	0
	£3	9	0

Montrose Review.

Destruction of the Weevil.—A liberal application of strong lime-water, with a brush, to the floors and walls of the granary, will effect its destruction; and a few days afterwards, the floor must be scoured with soap and hot water, or the future corn placed upon it will be injured by the dust of lime.—*Oxford Herald.*

Notices to Correspondents.

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Communications from the following Correspondents are in type, and are only waiting till room can be found for them:—*P., A. C. Herrocastle, J. West, W. Billington, Herbert, M. J. Berkeley.*

Agricultural Architect.—*A Subscriber.*—Mr. Newland, assistant to Professor Low, University, Edinburgh, is the only person we know who devotes himself exclusively to this branch of business.

Agricultural Colleges.—*A Subscriber.*—It is the shame of our country that it contains no public school of Agriculture. There is a Lectureship on Agriculture annexed to the Edinburgh University, and at Abermoyle, in North Ireland, there is a College of Agriculture; but in England there is nothing of the kind. The Fairford Farmers' Club, urged on by Mr. R. J. Brown, of Cirencester, have, however, taken measures, which will, we hope, speedily result in the establishment of some such institution in that neighbourhood.

Analysis of Subsoil.—*Novice.*—Your analysis is inadequate as a guide by which to answer your question. It does not mention lime, although you speak of the presence of chalk. If the land is worn out, try plenty of manure, farmyard dung, or bone-dust, or guano, the first year, and afterwards grow enough green crops, by the consumption of which on the land you may preserve its fertility. You must not trench-plough yet; subsoil-plough it. This can be done by a two-horse implement. For answer about Grasses, next week.

Books.—*G.*—Martin Doyle's "Practical Husbandry," and Professor Low's "Elements of Practical Agriculture."

Bones.—*C. W. K.*—Autumn is the best season to apply lime. Bones form an admirable manure for Turnips on light soil.

Experiments on Manures.—*W. E. Rendle.*—We shall be glad to hear your reports on this subject, but cannot pledge ourselves to publish them all.

Food for Pigs.—*G. C.*—For pigs, Peas, &c. should be ground; for sheep, and all animals chewing the cud, this is not necessary. Your cask above the steam-boiler is as simple an apparatus for steaming food as you can have. There is necessarily a waste of steam; it passes through the Potatoes; and a portion escapes in the best machines of the kind. The want of success attending the application of grain in certain instances must be owing simply to the pre-existence in the land in sufficient quantity of the substances which guano contains.

Frozen Turnips.—*Anglus.*—Ewes with lamb will not injure themselves by eating frozen Turnips.

Guano.—*Vigil.*—Do not mix lime with guano; it will render its ammonia volatile.——*H. C. S.*—We do not know if it has ever been applied in the field in solution; but, unless during wet weather, it is the best way of using it. See third answer in this section of last Paper.——*A. O.*—Mix 3 cwt. per acre well with the soil in the bottom of the drills before you plant Potatoes. This can be done with a horse-hoe.

Hopetoun Oats.—*Gowyn.*—This variety is distinguished by its productiveness, and the quantity and nutritiousness of its straw. Turn your compost repeatedly, and apply to any green crop. If the soil is light, the proposed treatment of it will be beneficial. We prefer bones to the guano under the circumstances.

Italian Rye-Grass.—*C. N. N.*—If your land be in good order you have *a chance* of a crop of Hay from seed sown this spring; but your much better plan would be to plough the stubble immediately, and work the land well this spring, and take a crop of Swedes, or other roots.

Lichens as Manure.—*T. P.*—We know of no instance in which Lichens have been gathered for this purpose.

Liquid Manure.—*G. C.*—The expense of a water-cart is not one of the items to which a plan of saving liquid manure *necessarily* subjects the farmer. Indeed, he hardly needs a tank. If a small cistern be placed to receive the runnings of the stable and cattle-stalls, the water may be baled out of it every other day or so, and thrown over heaps of dung, earth, &c., placed by it for the purpose, and this will preserve it as well, or even better, than if it were accumulated in a large tank, and carted to the field in a water-cart. The best way of using liquid manure is to soak earth and dung with it in this way; there is a difficulty in spreading it uniformly in any other way, especially on sideland ground, with a water-cart. If the volatile ingredients of the liquid manure be fixed by adding sulphuric acid, it may be used at once; if not, let it putrefy before using it. It thus has time to absorb carbonic acid from the air, and in a degree to lose its causticity, but at the same time it loses much ammonia. A good water-cart can be made by attaching to a 100 gallon cask a pipe pierced with holes, to scatter the water; carry it to the field on a frame supported by a pair of cart-wheels.—*K.*—Dig a circular hole, 8 feet deep and 12 feet in diameter, pitch the bottom, and build a stone and lime facing 18 inches thick. Soak your dung-heaps with the water. Pare and burn old Grass land you intend to break up; plough the ashes under, 3 inches deep; harrow; cross plough 6 inches deep, harrow, &c., and take a crop of Turnips. We do not know the Malta Turnip. The Orange Globe is the best.—*M. Wartzel.*

Limestone as Manure.—*Becca.*—If the marls you refer to are those of the new red sandstone formation, which occur in considerable extent around Exeter, then they are very *slightly* calcareous, and they differ materially from the crushed limestone you allude to, inasmuch as that is almost *wholly* calcareous. The value of marl as a topdressing for land often, however, depends on the presence in it of substances occurring in very minute quantities, and not necessarily upon the quantity of the lime which it contains. (See articles on this subject, translated from Sprengel, in this Paper.)

Lucerne.—*G. B. Fortnes.*—Next week.

Mangold Wurtzel.—*Tyro.*—Don't sow till mid-April. We shall refer to this matter before then.

Manures.—*A Subscriber.*—Cut the carcases up into small pieces and bury them in good vegetable-mould; they will ultimately rot and incorporate with the mould, so that you will soon have a homogeneous mass fit for ploughing under as manure. It is always the more profitable plan to pass green food through the stomach of animals, and thus extract those materials in them which are identical with the constituent parts of beef, mutton, &c., *before* ploughing them under as manure. It must be believed that, by this process, they are injured as a manure, though not so much, but that their lessened value is more than made up by the value of beef, mutton, &c., obtained by their consumption.

Marl.—*Agricola.*—Grub up the Heath and burn it; do not burn the peaty earth below it; cart 100 cubic yards per acre on the land, and spread it before winter; plough it under in spring.

Mineral Manure.—*John W. Lloyd.*—You speak of petrified vegetables, as if the applicability of this term to any substance proved it to be a valuable manure. You do not keep in mind that the process of petrifaction entirely changes the nature of any substance that is subjected to it. As each particle of the vegetable which is undergoing petrifaction is washed away, its place is supplied by one of mineral matter, so that ultimately its composition is entirely changed, and according to the nature of this matter, are the properties of the future petrifaction. Flints are in many cases petrified sponges, and, however much sponges, from having once been the tenements of living animals, might be preferable as a manure to merely vegetable matter, no one would ever think of applying pounded flints in this way. The fact of your rock having *once* been a mass of vegetables, therefore proves nothing as to its *present* composition. The only way to ascertain that is by chemical analysis; and we repeat it, the statement you give us on this head is, with but little variation, true of most of the soils in the country. The per centage of magnesia, in one specimen you refer to, is large, but this earth is not always a desirable ingredient in soils. There is no doubt of the fact, with which you appear to be fully impressed, that the fixed ingredients of plants are essential to their luxuriant growth; but when speaking of these in determining on a proper manure for the soil, it is not the silica, nor the alumina, nor the oxide of iron, nor is it always the lime to which we refer; but it is the soda and potash, and phosphoric acid, those substances occurring in small quantities, and of which your analysis makes no mention, that we ought to take care of. We do not know how, from our previous remarks, you could have inferred our opinions as to the suitableness of your land for Peas, Clover, Turnips, &c.; that depends on its texture, &c., and upon the mode in which it is and has been cultivated, with all which particulars we are unacquainted.

Pigeon-Pea.—*A Constant Reader.*—We are informed that Vetches are often called "Pigeon-Peas," and the common Poplar Pea is also called so sometimes. Both of these are occasionally ploughed in green for manure; but we know of no Pea to which the name "Pigeon-Pea" solely appertains, except a tropical plant called by Botanists, Cytisus Cajanus.

Salt and Lime.—*M. D.*—The lime should be *dead* when it is used, *i. e.*, it should be a carbonate. The water of the salt is of little consequence in the process which ensues. The carbonic acid of the carbonate of soda which results is obtained from the lime. At twenty miles from the sea your land should contain salt enough; but try a small experiment on your Grass, and see if it benefits from a salt top-dressing. Thanks for your offer.

Soils.—*J. W. Lloyd.*—The fertility of a soil is better ascertained by comparing its treatment with its produce, than by analysis. Your nodules of limestone are not coprolites; if they occur in plenty, they may be advantageously burnt for lime.

Soot.—Put 30 to 40 bushels on an acre *now*. It does not *require* admixture.

Steeps for Seeds.—*H. B.*—Any direction on this subject must as yet be founded on mere theory. We shall shortly publish articles on the mineral constituents of agricultural plants, and then you can judge in this matter for yourself, for the object of the operation is to increase the quantity of these mineral constituents.

Tacking Sheep and Young Cattle.—*Gowyn.*—4*d.* to 6*d.* per week for your sheep, and 3*s.* 6*d.* to 4*s.* for your cattle, on Swede Turnips.

Tithe Commutation—Apportionment of Rent-charge on Woodland broken up.—*Constant Reader.*—Woodland broken up before the Commutation of the Tithes, will be subject to have a portion of the Rent-charge apportioned upon it.

Tobacco, Wool.—*Anglus.*—The duty on unmanufactured Tobacco, whether from Foreign countries or British possessions, is 3*s.* per lb. We presume that our Correspondent is aware that the growth of Tobacco for sale in this country is prohibited. Wool may be exported on payment of a duty of 1*s.* the cwt.

Wheat-Sowing.—*Wm. Steele.*—You have come to a right determination, we think, in sowing Wheat rather than Barley. Shirreff's White Wheat, known in Scotland by the name *Hopetown*, is one of our best spring Wheats; Red Straw White Wheat is also a good variety. We think Messrs. Barett and Exall, of Reading, manufacture a horse-hoe for Wheat; but we have no experience of it, having always hoed our Wheat crop by hand. The best plan of sowing Clover-seed is by means of the hand broadcast sowing machine, price 4*l.* This scatters the seed over the growing crop of Wheat, and it is covered by a single tine of the harrows across the drills. We shall be very glad to receive from you a report of your experience in transplanting Swedes rather than drilling the seed.——*J. W., Worcester*, will find the work advertised, col. *e*, p. 96.

*** As usual, many communications have been received too late for answering this week.

Markets.

SMITHFIELD, Monday, Feb. 19.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	8	to	4s	0	Best Downs & Half-breds	4s	0 to 4s 6
Best Short Horns	3	4		3	8	Best Long-wools	3	10 4 2
Second quality Beasts	3	0		3	2	Ewes and second quality	3	4 3 8
Calves	4	0		5	0	Pigs	3	8 4 0

Beasts, 2043; Sheep, 22,600; Calves, 58; Pigs, 347.

Our trade to-day exhibits the characteristic dulness of the commencement of Lent. The supply continues short, particularly of Beef, in which article there seemed to be rather a brisk trade in the early part of the day; but there was much difficulty in supporting our highest quotations, and 4s 10d per 8lbs. was the more general price for the very best qualities, and 3s 6d for 8lbs. for the best Short-horns. Mutton is a much heavier sale than of late; the quantity is rather larger, the demand less, owing to the large consumption of fish at this period of the year, and the skins are a little lower. Many of our best Downs made no more than 4s 6d, and the best last description even less than that; the more general price, too, for Long-wools would be 4s per 8lbs., although in both cases some of the most selling realised our highest quotations. In Calves the trade is steady; there is a short supply of the best quality.

Friday, Feb. 23.

As regards prices our trade to-day is a counterpart of Monday's. There is a very slack attendance of buyers, and short as the supply is, there will be a difficulty in making a clearance. There is, perhaps, a slight improvement in the sale of very best Calves—that description being scarce, they readily make 4s per 8lbs.

Beasts, 800; Sheep, 2000; Calves, 98; Pigs, 267.

At, West Smithfield.

POTATOES.—Southwark Waterside, Feb. 19.

Since our last Report the weather has changed from cold and frosty to a spring-like mildness, which in some measure arrested the anticipated improvement; notwithstanding, there was an increased demand for the best samples (Devonshire Reds excepted), and the middling and inferior sorts have been more looked after. Our last quotations have been well supported. The supply during the past week has been moderate.

York Reds	-	-	80s to 90s	
Perth	-	-	60	70
Kidny Devons	-	-	65	70
Late Devons	-	-	70	—
Cornwall	-	-	65	70
Jersey and Guernsey Blues			60	—
Kent and Essex Whites	-		50s	60s
— — Kidneys	-		65	70
Wisbeach Kidneys	-		65	—
— Blues	-		55	—
— Whites	-		50	55
Prince Regents	-		60	70

COVENT GARDEN, Feb. 23.—Notwithstanding the very changeable state of the weather during the week the Market has been pretty well supplied; but trade is not brisk. Fine Apples are more plentiful and are a little reduced in price. Grapes continue to bring nearly the same prices as last week. Good Pears are becoming scarce; a few good specimens of Easter Beurré, and Beurré Rance, are however to be met with in the Market. English grown Apples are scarce; but foreign ones are sufficient for the demand. Oranges and Lemons are very plentiful and good in quality. Chesnuts are offered at nearly the same prices as last week. The supply of most kinds of Vegetables is sufficient to meet the demand. Savoys are plentiful, and are at little reduced in price, being offered at from 9*d.* to 1*s.* 6*d.* per dozen. Brussels Sprouts are sufficient for the demand, as are also Greens; the latter are offered at from 3*s.* to 4*s.* 6*d.* per dozen. Carrots and Turnips are tolerably well supplied, the latter in particular. Broccoli has become very scarce. French Beans are much the same as in our last report. Asparagus is a little reduced in price, as is likewise Seakale; the latter is selling at from 1*s.* to 1*s.* 6*d.* per punnet. Little alteration has taken place in the price of Celery, which is becoming scarce. Endive is selling at from 1*s.* 6*d.* to 2*s.* per score. A small quantity of Spring Radishes has been brought to the market during the week. Cucumbers are a little reduced in price since our last report. Horse Radish is sufficient for the demand. Among Cut Flowers we noticed Combretum purpureum, Euphorbia jacquiniflora, Bauhellia capensis, Æschinanthus grandiflorus, Epiphyllum truncatum, Lachenalia triobior, Cinerarias, Azaleas, Acacias, Camellias, Tulips, Primulas, and Roses.

FRUITS.

Pine Apple, per lb.,	6s	to	10s
Grapes, Portugal, per lb.	1s	to	2s 6d
Apples, doz., p. bush.	2s	to	8s
,, Kitchen, p bus.	4s	6d	to 8s
Pears, per half-sieve,	4s	to	12s
Oranges, per dozen,	9d	to	2s
— per 100,	24s		
Lemons, per doz.	1s	to	2s
— per 100,	6s	to	14s
Almonds, per peck,	6s	to	7s
Sweet Almonds, per lb.,	2s	6d	to 3s
Nuts, Spanish, per bushel,	14s	to	16s
— Brazil,	16s		
— Hazel,	2s	to	4s
— Barcelona,	20s	to	28s
— Cob, per 100lbs.,	80s	to	100s
Chesnuts, per peck,	2s	to	3s
Filberts, English, p 100lbs.,	60s	to	65

VEGETABLES.

Rhubarb, per bundle,	6d	to	1s 3d
Broccoli, per bundle,	1s	to	2s
Brussels Sprouts, p.h.-sv.,	1s	6d	to 2s 6d
Cabbages, per doz.,	2d	to	1s 6d
Red Cabbages per doz.	2s	to	3s
Sorrel, 1s to 1s 6d p. hf.-sv.			
Asparagus, per 100,	2s	to	3s
Seakale, per punnet,	1s	to	2s
French Beans, 2s to 4s per 100			
Autumn Potatoes, 3d to 6d per lb.			
Savoys, per doz.	6d	to	1s 6d
Greens, per doz.	2s	to	4s 6d
Potatoes, per ton,	80s	to	90s
— per cwt.,	2s	6d	to 4s
— per bushel,	1s	6d	to 2s 6d
— Kidney, p. bush.,	2s	to	3s 6d
Turnips, per doz. bunches,	1s	6d	to 2s 6d
Red Beet, per doz.,	6d	to	1s
Horse Radish, per bundle,	1s	to	2s
Radishes, spring,	1s	6d	to 2s p. pun.
Carrots, p. doz. bun.,	2s	6d	to 3s
Cucumbers, 2s to 6s each			
Spinach, per sieve,	2s	6d	to 3s 6d
Leeks, per doz. bun.,	2d	to	1s
Vanelle, per lb.	6d	to	8d
Onions, 2d to 4d p. bch.			
— Large, per bushel,	2s	to	3s
— Spanish, per doz.,	2s	to	4s
— pickling, p. hf.-sv.,	2s	to	6s
Shallots, per lb.,	4d	to	6d
Chilis, per 100,	1s	to	2s
Lettuces, Cabb., p. score,	6d	to	1s
— Cos, per score,	6d	to	1s
Celery, per bun.,	6d	to	2s
Mushrooms, per pottle,	1s	to	2s
Walnuts, per bushel, shelled,	12s	to	16s
Small Salads, per punnet,	3d	to	6d
Watercresses, per doz. sm. bun.	2d	to	6d
Parsley, per doz. bunches,	3s	to	4s
Tarragon, Green, per bun.	4d	to	6d
Endive, per score,	1s	6d	to 2s
Green Mint, 4d to 6d per bunch			
Marjoram, green, p. doz. bun.	1s	6d	to 2s
Chervil, per punnet,	2d	to	3d
Salsafy, per bundle,	1s	to	1s 6d
Scorzonera, per bundle,	1s	to	1s 6d

WOOL.—British, Friday, Feb. 23.

In our English Wool Market we have observed no material alteration from our last Report. Things continue quiet, and consumers of opinion that they are rather flatter. Prices have not at all receded, nor do we think they are likely to do so.

	per lb.					
Long-wooled Wethers	1s	1d	to	1s	2d	
Do. Hoggetts	1	1½		1	2½	
Southdown Fleeces	1	0½		1	1½	
Southdown Hoggetts	1s	1½	to	1s	2½	
Kent Fleeces	1	2½		1	3½	

James Pearson, Wool Broker.

SEEDS, Friday, Feb. 23.

Canary	-	per qr	54s	to	58s	
Carraway	-	per cwt	38		40	
Clover, Red, English	-		64		76	
— — Foreign	-		64		70	
— White, English	-		96		105	
— — Foreign	-		64		105	
Coriander	-	-	12		13	
Hempseed	-	per last	34		36	
Linseed	-	per qr	—		—	
— Baltic	-	-	—		—	
— Cakes, Eng.		per 1000	10l	5s	10l	10
Linseed Cakes, Foreign, p. ton			6l	to	7l	10s
Mustard, White	-	p. bush.	4s		6s	
— Superfine	,,	-	6		8	
— Brown	,,	-	14		16	
Rapeseed, English, per last			24l		28l	
Rape Cakes	-	per ton	—		—	
Saintfoin	-	-	—		—	
Tares, Eng. winter		p. bush.	4		5	
— Foreign	-	-	3		3	
Trefoil	-	per cwt	—		—	
Turnip (too variable for quotation).						

Kingsford and Lee.

MARK LANE, Friday, February 23.—The arrivals of Wheat during the week have been small, and the few parcels of English fresh up this morning realised fully Monday's quotations; business in free Foreign is limited, but holders are very firm; we have not heard of any sales of Bonded, but several parcels of Baltic for Spring shipment have been taken on fully as good terms.—In Barley, Beans, and Peas there is no alteration.—Oats are held firmly, excepting where vessels are on demurrage, in which case rather lower prices are obliged to be accepted.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	- White	46	57	Red -	46 54
—— Norfolk, Lincolnshire, and Yorkshire	-	50	57	White -	— —
Oats, Lincolnshire and Yorkshire	- Potatoes	18	22	Feed	16 24
—— Northumberland and Scotch	- - Feed	—	—	Potato	17 24
—— Irish	Feed	16	22	Potato	18 24
Barley, Malting and distilling	28s to 32s	Chevalier	30	37	Grind. 26 30
Malt, pale, ship	- - - - - -	—	—		
—— Hertford and Essex	- - - - - -	—	—		
Rye	- - - - - -	—	—		
Beans, Mazagan, old and new	28 to 30	Tick	29	31	Harrow 25 28
—— Pigeon, Heligoland	28 to 28	Winds.	30	32	Longpod 29 30
Peas, White	30 to 32	Maple	27	29	Grey 26 27

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan.	12 per Quarter.	50s 9d	32s 0d	18s 9d	35s 5d	32s 8d	31s 0d
—	19 - - -	51 8	33 7	18 9	31 7	29 8	30 3
—	26 - - -	52 8	34 1	19 0	29 6	29 6	30 10
Feb.	2 - - -	52 0	33 3	18 11	33 10	29 5	30 5
—	9 - - -	52 7	33 1	19 1	32 2	30 10	30 6
—	16 - - -	53 0	33 4	19 0	33 5	30 6	31 1
6 weeks' Aggregate Aver.		52 2	33 4	19 0	32 11	29 10	30 9
Duties on Foreign Grain		18 0	5 0	7 0	10 0	11 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	2280	5650	2670	4770 Sks
Irish	—	700	14570	—
Scotch	—	—	—	—
Foreign	600	—	—	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	6037 Sks.	Bels.	4607	6220	3617	2456	—	1617	614
Irish	—	—	—	944	10	21838	—	—	—
Foreign	40	20	2220	1287	—	120	—	—	220

Kingsford and Lee.

HOPS, Friday, Feb. 23.

The Hop Market remains firm at last week's prices.

Mid & East Kent Pockets.	80s	to	105	10s	Sussex Pockets	- - 6l —s to 6l 8s
Choice ditto	-	11		—	Choice ditto	- - 6 12 —
Weald of Kent Pocks.	6	0	6	15	Farnham	- - 9 9 10 10
Choice ditto	-	7	0	— —		

Patterson & Smith, Hop-Factors.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 23.

Prime Upland Hay	—s	to	72s	Clover	- 80s	to 100s
Inferior	-	50	60	Straw	- 28s	to 32s

Trade very heavy. John Cooper, Salesman.

WHITECHAPEL, Feb. 23.

Hay	- -	60s	to 80s	Clover	- 90s	to 98s
— fine	-	82	92	— fine	100	108

Trade very dull as the above quotations.

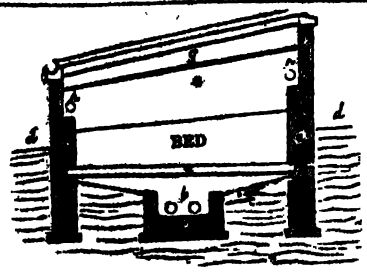
CUMBERLAND MARKET, Feb. 23.

Superior Meadow Hay	70s	to	77s	Superior Clover	100s	to 108s
Inferior	—	60	68	Inferior	80	90

Joshua Banks, Hay Salesman.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.



J. WEEKS & Co., ARCHITECTS, HORTICULTURAL BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, Gloucester-place, King's-road, Chelsea.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c. &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL-ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices, in consequence of the present depressed state of the Iron Trade.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public, or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS' BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale. For the convenience of those who wish to fix their own Apparatus, they have affixed the following low prices:—

	£	s.	d.
Cottam's Patent Boiler, 18 inch . . .	2	15	0
Rogers' Boiler, small size . . .	1	17	0

Larger in proportion.

Hot-water Pipe, at 2, 3, and 4 inches, at reduced prices.

GARDEN ROLLERS 18 inches long, 34s.; 20, 44s.; 22, 50s.; 26 inches, 60s.; 26, 75s.; 29, 84s.; 30, 105s. each.

CAST-IRON RICK-STANDS, 2 feet six inches high, 5s. 9d. each.

Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases and Pedestals in great variety, and every description of Horticultural Articles, Agricultural Implements, and Furnishing Ironmongery; Dr. Arnott's Stoves, Anglo-Belgian Cooking Stoves; Broiling Stoves. The above low prices being on account of the depression in the Iron Trade, are subject to future alterations.

STRONG IRON HURDLES, 3 ft. high out of the ground, 6 ft. long, with five horizontal bars, weighing about 36 lbs., 3s. 6d. each.

Light Cattle Hurdles, 3 ft. 6 in. high, weighing	42 lbs.	4	0 "
Strong do. do.	45 lbs.	4	4 "
Ox Hurdles, 4 feet high, do.	60 lbs.	5	6 "

BEST WIRE, for STRAINED WIRE FENCING, at 9s. per bundle of 150 yards each. Uprights for ditto, 7d. each. The Improved continued, and every kind of Fencing, Fancy Wirework.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 3s. 6d.; 20 inches, 4s. 6d.; 22 inches, 5s. 6d. each.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 7s.; 4 ft. 6, 9s.; 5 ft., 11s.; 6 ft., 15s.; 7 ft., 20s. per dozen.

SHOW-ROOMS at the Manufactory, No. 2, WINSLEY-STREET, where every information may be obtained.

The TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, among other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Heat Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Greenhouses or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

CONICAL HOT-WATER BOILERS, invented by J. ROGERS, Esq., may be obtained of any size from JOHN SHEWEN, Ironmonger, &c., Sevenoaks, Kent.

J. SHEWEN having had every opportunity afforded him by an extensive practice to bring this apparatus to perfection, begs to offer it as most efficient and economical: it may be seen at Messrs. Chandler & Sons' Nursery, Vauxhall; Messrs. Loddiges', Hackney; Messrs. Henderson's, Pine Apple-place; Messrs. Veitch and Son's, Exeter; Mr. Pontey's, Plymouth; the Royal Botanical Society's Gardens, Regent's Park; and at the Gardens of the Horticultural Society of London. Considerable improvements have been effected since last season; particulars of which are in course of preparation.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with synopsis of mode of use, on applications to MARK FOTHERGILL, 40, Upper Thames-street, and 5, Railway Place, Mark-lane, London.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash . . .	15s.	per cwt.
" Soda . . .	12s.	"
" Magnesia . . .	9s.	"
" Ammonia . . .	1s.	per lb.

YORKSHIRE LAND-DRAINING ASSOCIATION.—Capital 500,000*l.*, in Stock of 25*l.*—Deposit, Five per Cent.

PATRONS.—The Right Hon. Lord Viscount Morpeth. The Right Hon. Lord Beaumont. Sir William M. Milner, Bart. Edward Stillingfleet Cayley, Esq., M.P.

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Mr. Caleb Angus, Neswick, Driffield
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With power to add to their number.

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Standing Counsel.—H. Bellenden Ker, Esq., Lincoln's Inn.
Solicitors.—Messrs. Blanchard, Richardson, and Gutch, York.
Draining Engineer.—James Smith, Esq. (Deanston).
Secretary.—John H. Charnock, Esq., Wakefield.

The object of the present undertaking is to avail itself of the provisions of this Act, so far as they apply, and by offering an ample and easily-accessible capital, to induce the parties contemplated therein to seek the benefit of its provisions; and, at the same time to afford to the Agricultural Interest generally, on equitable terms, and on the same principle as that on which the act proceeds, the requisite means for thoroughly draining the land.

The Capital to be 500,000*l.*, in stock of 25*l.*, with a deposit of 5 per cent. on its allotment; the amount and time of the calls to be regulated by the demand, as it arises, for the beneficial employment of the money, and so that no one call exceeds 20 per cent., with a notice of not less than two months for each payment.

The management to be under an effective Committee, elected by and from the Subscribers, with the most efficient Staff that can be selected for practical and scientific skill in their several departments.

The head office to be in York, with Agencies in other towns of the county and elsewhere, as the demand for the assistance of the Association may require, and as it may be found advantageous to extend the sphere of its action.

The Meetings of the Committee of Management to be held Monthly, or oftener if necessary, and of the General Subscribers Annually, to receive the Report of the Committee, pass the Accounts, and transact other general business.

Interest after such a rate as the Committee of Management may see reason to recommend, to be allowed half-yearly on the Capital paid up, so soon as the returns on the money expended will permit; together with such further division of profits as, on a General Settlement to be made every four years, the affairs of the Undertaking will justify.

The Accounts to be balanced annually, prior to the General Meeting, and audited by competent parties duly elected.

At a meeting of the Council of the YORKSHIRE AGRICULTURAL SOCIETY, held in York on the 20th of December, 1843, a resolution was passed approving generally of the objects of this Association; and at the monthly meeting of the Wakefield Farmers' Club, held on Jan 5, 1844, a resolution approving of the principle and objects of the Association was unanimously adopted.

At the meeting of the Royal Agricultural Society of England, at Liverpool in July, 1841, Lord Stanley remarked that, "There was no bank in the whole country—no commercial speculation—no investment so safe, so pure and profitable, as that in which even borrowed capital may be engaged, by investing it under the ground of your own soil." And in reference to this Association, his Lordship in a letter to the Committee says—"I am fully satisfied of the benefits which such an Association is capable of conferring on the country if confined to its legitimate object—the lending of Capital on the security of an investment in draining; and I think it very probable that many Landed Proprietors would avail themselves of the facilities afforded by an Institution lending money on land, repayable by instalments—a condition on which few private parties are willing to lend."

Bearing in mind, then, the important objects of the Association, and the perfect security with which its operations can be conducted, at a comparatively trifling expense (no large expenditure for previous outfit being required), it may be reasonably expected that the return of the Capital embarked will be such as to insure the support of prudent and *permanent* Investors, thereby divesting it of that speculative character which has stigmatised so many modern projects, and which it is the especial desire of the Committee to avoid.

Applications for Prospectuses, &c., to be addressed to the Solicitors, Messrs. BLANCHARD, RICHARDSON, and GUTCH, York; or, to J. H. CHARNOCK, Esq., the Secretary, Wakefield.

GENUINE PERUVIAN & BOLIVIAN GUANO ON SALE, BY THE IMPORTERS, ANTONY GIBBS AND SONS, LONDON; GIBBS, BRIGHT, AND CO., LIVERPOOL AND BRISTOL.
47, Lime-st., Jan. 31. 1844.

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported.—Apply to CORRYWORTH, POWELL, and PRYOR, London; EDWARDS, DAWSON, and Co., Liverpool; or WILLIAM J. MYERS and Co., Liverpool, the Importers.

MANURE FOR GRASS, &c.—POTTER'S GUANO.
Testimonial of Lord Zetland, Dec. 2, 1843.

POTTER'S GUANO, 2 cwt. per acre, yielded of *Hay*	2 tons	8 cwt.
Peruvian Guano, 2 cwt. per acre, yielded of *Hay*	1 "	18 "
Difference in favour of Potter's Guano		10 cwt.

BEAUTIFUL FLOWERS. — POTTER'S CONCENTRATED LIQUID GUANO, in quart bottles, 1s. 9d. each, at the principal Chemists and Seedsmen in town and country.

"I used POTTER'S GUANO on my Pansies; they were *much larger* than I ever had them before, and remained in full blow longer than I ever recollect. JOHN RUTSON, Sunderland."

"POTTER'S GUANO will convert your desert into a paradise."—Professor LINDLEY, in *Gardeners' Chronicle*, 1843, p. 660.

Works, 28, Upper Fore-street, Lambeth.

For further testimonials see this Paper of the 6th Jan., 1844.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 3ft. by 3ft. 3in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

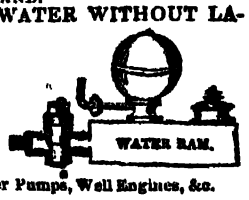
Agents wanted for London and the country.

THE URATE of the LONDON MANURE COMPANY, 5*l.* per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURBEN, Secretary, 40, New Bridge Street.

70, STRAND.

RAMS FOR RAISING WATER WITHOUT LABOUR, WHERE A FALL CAN BE OBTAINED,



FOUNTAINS of every description. Specimens of the Fountain to be seen at the above address.

Also a Ram fixed on the premises. F. ROE, 70, Strand, London.

Every kind of Garden and other Pumps, Well Engines, &c.

GREAT ECONOMY.—Much time and a great deal of labour will be saved by the use of the SUSSEX CHURN. ATTWOOD, WIMBLE, and WARNER, Manufacturers, Lewes. This Churn being made entirely of block tin, the necessary degree of temperature can be given to the cream, by placing it in a pan of cold or hot water, which ensures the butter coming in 10 or 12 minutes at all seasons of the year. The simplicity of its construction, and the facility with which it may be cleaned, are no inconsiderable advantages over those now in common use.

Sizes.	Nos. 00.	0.	1.	2.	3.
Churn	2½ lbs.	4 lbs.	7 lbs.	14 lbs.	28 lbs. of butter.
Price with pans complete,	16s.	20s.	25s.	33s.	40s.

Delivered, carriage paid, to any part of London.

London Agents.—BENHAM, 19, Wigmore-street, Cavendish-square; LIVERMORE, 30, Oxford-street; BAILY, 71, Gracechurch-street; WRIGHT'S Range Warehouse, near the Monument.

Export Agent.—BARNES & Co., 109, Fenchurch-street.

N.B.—To be seen at the Polytechnic, and Adelaide Gallery.

Observe.—The Improved Water Pail, 4s. and 5s. each.

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THE LATE MR. LOUDON.—The following Sub-scribers to the Fund for the assistance of Mrs. Loudon and her children, and the completion of the Arboretum and Gardener's Encyclopædia, have already paid their Subscriptions:—

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R. Lowndes, Esq., a second copy	

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DEATH OF MR. LOUDON.

At a Meeting of the Friends of the late Mr. Loudon, held at 21 Regent Street, for the purpose of considering the best means of extricating his Widow and Daughter from the difficulties in which they are placed by his sudden death,—

Hamp[illegible], Esquire having been called to the Chair, it was Resolved:—

1. That in the opinion of this Meeting, very great services were rendered to Horticulture by the late Mr. Loudon.—2. That the difficulties in which his family is now placed, have arisen from his zeal in the promotion of gardening, and not from personal improvidence.—3. That the Works of Mr. Loudon are themselves of sufficient value to place his family in independent circumstances, provided they can be sold; and it is the opinion of this Meeting, it is most desirable that the friends of Horticulture should exert themselves to effect that end.—4. That since many persons, who already possess Mr. Loudon's Works, are probably desirous of subscribing towards a Fund for the assistance of his family, it is desirable that, in addition, a Subscription List be opened, to which the Friends of Horticulture may be invited to contribute. 5. That a Committee be appointed to receive Subscriptions, and to act otherwise as to them may seem expedient. 6. That the following Gentlemen be requested to act as Members of such Committee, viz.:—

[illegible], Secretary of the Horticultural Society.	James Cook, Esq., Brooklands.
James Maddock, Esq., Secretary of the Royal Agri. Society.	Mr. Mearnock, Royal Botanic Garden, Regent's Park.
William Spence, Esq., Lower Seymour Street.	Mr. Charlwood, 14, Tavistock Row, Covent Garden.
His Grace the Duke of Devonshire's Chatsworth.	Mr. Henderson, Pine Apple Place, Edgeware Road.

With power to add to their number.

The Committee, earnestly endeavouring to carry into effect the foregoing resolutions, respectfully present the following, as a List of the Works of the late Mr. Loudon, the sale of which will best promote their object, viz.:—

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No. 9.—1844. SATURDAY, MARCH 2. [Price 6d.

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Sir John Stewart Richardson (Union, in which S G has a share), which is one of the most popular Dahlias of the season No allowance on this variety unless 12 plants are ordered 4 ft.—10s. 6d

FANCY DAHLIAS

Cornelia (Girling's —Purple, tipped with white, of good habit and very distinct. 4 ft —5s

Garland (Girling's) —With three colours—cream, sulphur, and brown tip, of good form and habit 5 ft.—5s

Madame Miellez (Girling's —Rose lilac, tipped or striped with white, a distinct variety, of good habit. 3 to 4 ft —5s

Madame de Berghe (Girling's) —White edged with pink; a distinct and beautiful variety 3 ft.—5s.

Madame Chauvierre (Girling's).—Light crimson tipped with pure white, very constant, good shape, and one of the finest border Dahlias in cultivation. 4 ft —5s.

Village Maid (Girling's).—Colours white and purple, distinctly and beautifully tipped; good habit, and superior border variety. 3 to 4 ft —5s.—Stowmarket, Feb. 29, 1844.

GAINES'S NEW AND FIRST-RATE PELARGONIUMS now ready for delivery, in strong, healthy Plants. The following are a few selected.—Golden's Elegans nova, King of Beauties, Ackbar, Lady Prudhoe, Queen King, Exodus, Beauty Supreme, Mogul, Edith, Comicide of Retined, Catharstive, Egbert. A list of Pelargoniums, Fuchsias, Calceolarias, Fuchsias, Verbenas, Auriculas, Cinerarias, Chrysanthemums, Dahlias, &c., which contains many new Seedlings of first-rate qualities, plants ready, 10s. 6d.; also a few roots of the Seedling Dahlias Prince and Alice and Twickenham Fairy, are still to be disposed of at the Nursery, Surrey-lane, Battersea.

JOHN MILLER, surviving Partner of the late firm of Sweets and Miller, Nursery and Seedsmen, Bristol, begs respectfully to inform Nurserymen, the Trade, and his Friends in general, that he has commenced business as Auctioneer and Valuer of Horticultural and Agricultural Stock, &c., and hopes by strict attention to the interest of his employers, to merit their support. Letters addressed to John Miller, Portland House, Kingsdown, Bristol, will meet with immediate attention.—Bristol, February 29 1844

WILLIAM MASTERS begs most respectfully to inform the Nobility and Gentry of the United Kingdom that he unites the Professions of LANDSCAPE-GARDENER and NURSERYMAN, and this enables him to offer an extensive Collection of Coniferous Plants, as well as of the Hardy Ornamental Trees and Shrubs cultivated in Britain, at very moderate prices.

W. M also possesses a numerous Assortment of Mexicans and Greenhouse Plants, many of the rarer species of Orchidaceæ, several new hybrid Crinums, Rhododendrons, Azaleas, Indias, Camellias, Succulents, Pelargoniums, &c. &c.—Exotic Nursery, Canterbury, Feb 1844

SLOUGH NURSERY, NEAR WINDSOR.

CHOICE SELECTION OF NEW DAHLIAS, 1844.

THOMAS BROWN directs attention to his beautiful SEEDLINGS, particularly that unrivalled light flower, "Lady Ann Maun," the superiority of which over every other of its class is too well known to need further comment. Strong and healthy plants will be ready for delivery early in May.

Aurantia (Sparry's)—Orange buff; fine form and petal. A very desirable show flower; obtained numerous prizes, 3 ft 10s 6d

Alexandre (Brown's)—Maroon and crimson mottled; full and constant, centre well up, and a very useful show flower; 5 ft. 7 6

Deficient (Brown's)—Cream, veined and tipped with purple petal of fine substance and high quality, very distinct to any in cultivation; 4 ft. 2, 6

Desirable (Brown's)—Shaded buff, quite new in colour; a good show flower; 5 ft. 7 6

Lady St. Maur (Brown's)—White, delicately shaded with violet purple; very deep and full, high centre, forming a beautiful outline; the petals are round, and smooth at the edge; habit of Perpetual Grand; it is decidedly the finest light flower ever offered. It attracted great admiration at Windsor, and was universally acknowledged to be the finest flower in the Exhibition; 4 to 5 ft. 10 6

Nuwits (Brown's)—Bright crimson; a fine open-capped petal, and a good show flower; 4 ft. 7 6

Raphael (Brown's)—Dark maroon, beautifully shaded with light crimson; superior petal, of excellent form; a very novel and striking variety, and will be an acquisition to any stand; 4 ft. 10 6

Rembrandt (Brown's)—Dark purple, very round and double, rising well in the centre, and a constant show flower. It was very successfully exhibited; 3 to 4 ft. . 10 6

Emma Nogs (Dowding's)—Black white, good general form and carries a good useful show flower; 4 ft. . . 12 6

Essex Bride (Turville's)—Delicate peach lilac, of excellent petal and form, 5 ft. . . . . (no discount) 10 6

Lady Antrobus (Sparry's)—White and lilac, mottled; good form, constant, and very useful show flower; 4 ft. 10 6

Nonpareil (Proctor's)—Ruby scarlet, of first-rate properties; extra show flower; 4 ft. . . . . (no discount) 10 6

Standard of Perfection (Keynes')—Crimson; of very superior form; 4 ft. . . . . (no discount) 10 6

Sir J Stewart Richardson (Union)—Brown ruby, great depth, and excellent show flower, 4 ft (no discount) 10 6

T B has also Selections of fine Carnations, Picotees, and all other Florists' Flowers, Plants, Fruit-trees, Shrubs, and general Nursery Stock

A general Catalogue of Dahlias, with a List of Superb New Pansies to be had on application.

TO THE NOBILITY, GENTRY, CLERGY, AMATEURS, AND OTHERS

THE SUBSCRIBER begs to state that he is prepared to supply the undermentioned, viz —

Cineraria, "The Queen of May,"—a beautiful sky-blue, of shrubby compact growth, quite new colour, of fine form and large size, at 5s each.

Cinerarias—12 of the most distinct and approved varieties for 20s.

Fuchsias—25 distinct fine sorts, including his own seedlings, for 20s

Calceolarias—20 distinct and good sorts, of all shades of colour, for 20s

Hollyhocks—fine strong one year old plants from his best selected seed, 20s per 100

Herbaceous Plants of the most showy varieties, correctly named, 100 sorts for 42s

Hardy, Flowering, and Evergreen Shrubs, in 50 sorts, two plants of each, correctly named according to Loudon's "Arboretum Britannicum" 12s per 100 including package.

He will also have to offer in April a new Collection of beautiful Calceolarias, and yet select of a Descriptive Catalogue of which is in preparation and will be forwarded to applicants. These are from his own celebrated Stock, and of the same breed as his Cal. "Lady Constable" so much in repute.

Seeds in packets of Hollyhock, Pansy, Picotee, Calceolaria, and Hybrid Fuchsia at 1s 6d and 2s each

TO THE TRADE, MARKET GARDENERS, AND OTHERS.

he begs to state that he has yet to offer a few thousands of Gooseberries and the large Red Antwerp Raspberries.—The Gooseberries are comprised in upwards of 100 of the most generally useful kinds in cultivation, and the Red Antwerp Raspberry is decidedly the best sort grown, for produce, size, and quality both of which he will offer on very moderate terms, in quantity The plants are young, clean, strong, and healthy, two and three years old.—Also May's new large late red "Victoria Currant," a dish of which was sent to and exhibited in 1842 at the Horticultural Society in Regent-street, London, some of the bunches of which measured 6 inches in length, and individual berries 1½ inch in circumference—15s per dozen New Black Shaw-top Currants, 5s. per doz. The usual allowance to the Trade on the Currants.

Woollen Net for protecting Fruit-trees from frost, of the best material, at 2d. per yd.

Stove and Greenhouse Plants and Florists' Flowers of every description. Forest and Fruit Trees, Garden and Flower Seeds, of all the approved sorts William May.

Hope Nursery, Leeming-lane, near Bedale, Yorkshire.

SELECT LIST OF CHOICE FLOWER-SEEDS, SOLD BY

HURST & M'MULLEN, SEEDSMEN & FLORISTS,

6, Leadenhall-street, London.

Imported German Stocks, in 20 splendid vars., p. collection		6s.	0d.
Ditto	ditto	in 24 ditto	3	6
Ditto	ditto	in 24 ditto	5	0
Ditto	ditto	ditto in 12 ditto	3	0
Hollyhocks (very choice) in 12 named varieties			3	0
Larkspurs (German) in 12 splendid ditto			3	6
Balsams, 12 beautiful double varieties			5	0
Imported Zinnia elegans, 8 fine varieties			3	6
Cockscombs, 6 choice kinds			2	6
Primula sinensis, 6 distinct shades of colour, mixed, p. pckt.			1	6
Lisianthus Russellianus (with Cuthill's Treatise)			2	6
Viscaria oculata (new and beautiful)			2	6

The following may be had at 6d. per packet, except those marked at 1s.:—

Acacia lopantha
Achimenes longiflora, 1s
,, rosea superba, 1s
Alonsoa incisa
,, grandiflora
Alstroemeria, fine mixed
Amaryllis Phillipsii, 1s.
,, coccinea splendens, 1s.
,, azurea grandiflora, 1s.
Anemone vitifolia
,, new Russian
Angelonia Dillenians
Antirrhinum (splendid mixed)
Aquilegia glandulosa
,, new spotted
Argemone grandiflora
,, alba
Aster, German (fine imported), mixed
,, ,, in varieties
,, fine double Turkey
,, nosegay
,, new early blush
,, Anemone-flowered
,, globosus (dwarf)
Auricula, from choicest named flowers, 1s
Balsam, superb mixed double
,, new spotted
,, Camellia-flowered
Bellidiera scandens
Blumenbachia insignis
Brachycome iberidifolia
Browallia grandiflora
Cacalia aurea
Calceolaria, from finest named shrubby varieties, 1s
Calceolaria, herbaceous (very choice), 1s
Calandrina elegans
Calliopsis Drummondii
,, elegans pompre
,, picta
Campanula grandis, 1s
,, lactiflora
,, pyramidalis
,, Lorcii
,, Trachelium
,, stricta
Canna, in variety
Carnation, from stage flowers, 1s
Catananche bicolor
Centaurea Americana
Charonia decussata
Chorizema spectabile, 1s
Chrysocoma aurea
Cineraria (very splendid mixture), 1s
Clarkia alba fimbriata
,, grandiflora
Cleome, in fine sorts
Clerodendron speciosum, 1s
,, squamatum, 1s
Clintonia pulchella
Cobaea scandens, 1s
Cockscomb, crimson giant
,, yellow ditto
,, "new hybrid" — singular colour, 1s
Convolvulus minor, new dark variety
Convolvulus, scarlet
Cosmanthus fimbriatus
Cuphea silenoides
,, lanceolata
Dahlia, warranted from the very finest varieties, 1s
Dahlia scapigera
Datura, of sorts
Daviesia ulicina, 1s
Delphinium elegans
,, junceum
,, fine mixed
Dianthus splendens
,, chinensis, fine mixture
,, japonicus, fine scarlet
Didiscus coeruleus
Digitalis, new spotted
Diplolæna Dampierii, 1s
Dolichos lignosus
Eccremocarpus scaber
Elichrysum, splendid mixed varieties
Erica (new from the Cape), 1s
,, Andromediflora, 1s
Eriostemon buxifolium
Eucharidium Californicum
Euchsia corymbiflora, 1s
,, fulgens, 1s
,, fine mixed, 1s
Gaillardia picta
,, ,, coccinea
,, ,, Richardsonii
Gentiana asclepiadea
Geranium, splendid varieties, mixed, 1s
Gesneria splendens, 1s
Gladiolus hybridus
,, floribundus
Gloxinia, fine mixed, 1s
Goodenia Wildenowii
,, Lehmannii
Heartsease, selected, very choice, 1s
Helichrysum, fine mixed, 1s
Heliotropium, varieties
Hibiscus, in varieties
Hollyhocks (superb mixed)
,, in colours named
Iberis tenuifolia
,, superba
Impatiens tricornis
Impatiens glanduligera
,, biflorus
Ipomœa maxima alba, 1s
,, mauricaule, 1s
,, lutea, 1s
,, dissecta, 1s
,, rubro cærulea, 1s
,, new yellow
,, Quamoclit
,, coccinea
,, nagporensis, 1s
,, hederacea, 1s
Ipomopsis elegans, 1s
,, picta
Isotoma axillaris
Kennedya, choice kinds
,, rubicunda
Lantana Sellowii
Larkspur, German, fine mixed in varieties
,, ,, in varieties very splendid
Lathyrus latifolius rubro
,, grandiflorus
Leptosiphon densiflorum
,, album
Leucœria senecioides
Limnanthus grandiflorus
Linaria nepezii
Lisianthus multicaule alba
Loasa pentlandica, 1s
,, Herbertiana, 1s
,, Placcii, 1s
Lobelia ramosus, splendid
,, erinus
,, gracilis alba
,, heterophylla
Lophospermum erubescens
,, Hendersonii
Lupinus elegans
,, German mixed
,, new var. from Texas, 1s
,, Hartwegii
,, Nanus
Lychnis fulgens, 1s
Martynia fragrans, 1s
Maurandia Barclayana
,, alba, 1s
Mesembryanthemum tricolor
,, ,, alba
Mimulus cardinalis splendens
,, Hudsonia
,, moschatus
,, choice vars. mixed
Nemesia floribunda
Nemophila discoidalis (new), 1s
,, phacelioides
,, cramboides
Nierembergia, fine, mixed
Œnothera Sellowii
,, Drummondii
,, silenoides
Oxalis floribunda
Papaver armeria
,, floribunda
Passiflora incarnata, 1s
Peas, Sweet, New Purple
Pentstemon gentianoides splendens
Pentstemon gent. coccinea
,, ,, campanulata
Petunia, mixed, from named varieties
Petunia, in colours
Phlox Drummondii, in many beautiful shades of colour
Phlox Drummondii, new scarlet, 1s
Phyteuma comosa, 1s
Picotee, fine imported, yellow, 1s
,, from stage flowers, very splendid, 1s
Pimelia Hendersonii, 1s
,, rosea, 1s
,, decussata, 1s
Pink, from superior named varieties, 1s
Pink, new Hybrid Mountain (much admired)
Plagiostemon californicum
Podolobium trilobatum, 1s
,, new imported variety, 1s
Polyanthus, from named flowers, saved by a celebrated grower, 1s
Portulaca Thellusonii
,, splendens
,, Gilesii
Primula sinensis fimbriata
,, ,, alba
,, ,, cortusioides
Ranunculus, saved from a superb collection
Rhodanthe Manglesii
Rhododendron dense, 1s
,, fine mixed
Rhodiola Americana
Rudbeckia laciniata
Salpiglossis, all the best varieties, mixed
Salvia patens, 1s
,, Clusii
,, bicolor
,, hispanicus
Sanvitalia procumbens
Scabious, mixed, German
Schizanthus alba
,, Grahamii
,, Hookerii
,, Priestii
,, retusus
Schizopetalon Walkerii
Schypanthus elegans, 1s

Hurst and M'Mullen's Seed Catalogue continued.

Sherardia californica
Silene speciosa, new and beautiful, 1s
Stachys speciosa
Stocks imported, German, mixed
,, ,, in variety
,, Prince of Wales (new)
,, True Intermedias
,, Victoria
,, fine mixed Queen
,, fine mixed Brompton
Statice sinuata
Thunbergia alata
,, ,, alba
,, aurantiaca
Trachymene cærulea
Trachelium cæruleum
Tropæolum Hookeriana, 1s
,, canariense
,, brachyceras, 1s
,, peregrinum
Verbena, fine, mixed
Viola, Russian
Wallflower, new lilac
,, French striped
,, dwarf, blood-red
Zinnia elegans obscinea.
,, alba
,, rosea
,, grandiflora
,, violacea
,, lutea
,, splendid varieties, mixed

All the common varieties of Flower-seeds not named in the above List may be had in 2d. and 4d. packets. A general Catalogue will be sent with every order, in which each variety will be found described, whether hardy, half-hardy, or tender Annuals, or Perennials.

Fine Giant Asparagus, 3s. per 100.

A choice selection of Pot-roots of all the best varieties of Dahlias in cultivation, from 1s. to 2s. 6d. each.

Splendid Mixed Ranunculus, 4s. to 8s. per 100.

Myatt's Victoria Rhubarbs (true from the raiser), 1s. 3d. each.

Carnations and Picotees, all the most beautiful varieties, 1s. 6d. to 2s. 6d. per pair.

Yellow Picotees, 3s. per pair.

A superior collection of Pansies, comprising all the new and approved varieties, of which priced Catalogues may be had on application.

A constant supply of all the choicest kinds of Phlox, Pentstemons, Œnotheras, Delphiniums, and other favourite Herbaceous Plants will be kept during March and April.

Orders taken for Miller's splendid New Verbenas and Fuchsias, Plates of which may be seen in "Paxton's Magazine" for February and March, or at No. 6, Leadenhall street.

Metallic Wire and Labels, Garden Tools, Knives, &c. &c.

Agents for the sale of Humphrey's Compound.

Wholesale and Retail Seed Establishment, 6, Leadenhall-street;—Warehouse, 19, Vine-street, Minories.

SEED-TRADE—NO MONOPOLY.

J. G. WAITE, 1 and 4, Eyre-street-hill, Hatton-Garden, London, most respectfully begs to acknowledge the handsome support he has received from all parts of the country since his Advertisement in the *Chronicle* of last Saturday, and assures all those who may favour him with Orders that he will continue to pursue the system he has adopted in supplying Genuine Articles at the smallest remunerating profits, without heeding the opposition of Monopolists, or the clamour of parties interested in keeping up high prices.

J. G. W. refers his Lancashire friends to his CATALOGUE OF SEEDS, advertised in the *Preston Guardian* of this day.—March 2nd, 1844.

PASTURE AND LAWN GRASSES of the Finest

Quality, selected for every description of soil, consisting of Poas, Fescues, Cold Grass, Meadow Foxtail, &c., with a moderate supply of Clover, will enable Noblemen and Gentlemen to lay down upon very reasonable terms. Particulars of quantities suitable to various soils to be had, with an estimate of the cost per acre, by application to WARNER and WARNER, Seed-merchants, 28, Cornhill, London. Genuine Italian Rye-Grass, Mangold Wurtzel, and superior selected Turnip-Seeds.

PERENNIAL GRASS SEEDS.

SUTTON AND SONS, having for many years paid particular attention to the collecting of NATURAL GRASSES, and having been employed by most of the Nobility and Gentry of Berkshire, Hampshire, and Oxfordshire, to mix Seeds in proper sorts and proportions to suit the soils on their Estates, both for laying down new Pastures and improving old ones, have great confidence in soliciting orders from the readers of the *Gardeners' Chronicle*, in the more northern parts of the kingdom.

SUTTON and SONS have just published a Descriptive Table of Grasses, with some information which they consider would be acceptable to their Agricultural friends, and which may be had gratis.—The cost of the Seeds is very moderate, as will be seen by a reference to the Table above referred to.

Agents for Potter's Guano.

Reading Seed Warehouse, 7 and 8, Market-pl., Reading, Berks.

FLOWER-SEEDS.—The most Showy & Hardy known

in a Collection of 50 Sorts, with Instructions	£0	12	6
Ditto in 30 ditto	0	7	6
Ditto in 20 ditto	0	5	0

The most Choice Sorts of Tender and Hardy Annuals, including most Superb German Asters, Stocks, Zinnias, Hollyhocks, Nemophylla discoidalis, Viscaria oculata, &c. &c. &c., in 50 Sorts . 1 1 0
Ditto equally choice in 30 Sorts . 0 12 6

Messrs. SUTTON and SONS growing almost every kind of Flower-Seed worthy of recommendation, are enabled to supply their customers with such New Seeds as will not cause the disappointment so often experienced in attempting to produce a constant supply of bloom in the Flower Borders.

N.B. Parcels delivered free to London or sent free by Post.

Agents for Potter's Guano & Whitney's transparent Composition.

Reading Seed Warehouse, 7 and 8, Market-pl., Reading, Berks.

SEEDS.—Belgium Large White Carrot, 1s. per lb.; Mangold Wurtzel, Long Red, Orange Globe, and Red Globe, 1s. per lb. each; Le Couteur's Belle Vue Talavera Wheat, 11s. per bushel; Kintbury Skiuless Barley, 8s. 6d. per bushel; Meadow and Pasture Grass Seeds in Mixtures, suited to soils, &c., at 32s. per acre; Mixed Sorts for improving old Grass Land, 1s. 3d. per lb.; Fine Sorts for forming Lawns, &c., 1s. 4d. per lb. Price Catalogues of Turnips and other Seeds are ready. Kitchen Garden and Flower Seeds.—GEORGE GIBBS AND CO., Seedsmen, &c. to the Agri. Soc., 26, Down-street, Piccadilly.

SHILLING'S EARLY GROTTO PEA.

J. AND S. SHILLING have succeeded in raising the above PEA, the Early Frame Pea, impregnated with the Grotto or Oyster Marrow, which they, with confidence, recommend to the Public generally, being quite as early, and nearly double the size of any other Pea in cultivation. Quite hardy, will stand the winter well, and a good bearer; the pod large and long. They would particularly recommend it to the attention of Market Gardeners. Price 3s. per quart; 10s. per gallon; 17s. 6d. per peck; 30s. per half-bushel; 2l. 10s. per bushel. Agents:—Messrs. FIELD and CHILD, 119, Lower Thames-street, London; Messrs. W. and J. NOBLE, 123, Fleet-street; Mr. KERNAN, 4, Great Russell-street, Covent Garden; Messrs. HURST and MCMULLEN, 61, Leadenhall-street; Messrs. GRAY, ADAMS, and BOND, Kensington; Mr. T. D. WATKINSON, Market-place, Manchester.—Northwarnborough Nursery, near Odiham, Hants.

THE BRITISH QUEEN AND PRINCE ALBERT PEAS.

WM. JNO. CORMACK begs to call the attention of Noblemen, Gentlemen, and others, to the above two new Varieties, the merits of which are thus noticed in the *Gardeners' Chronicle*. "THE BRITISH QUEEN on light soils, is the best of all kinds, and will drive Knight's Tall Marrow out of the gardens." "THE PRINCE ALBERT, which has been cultivated in the Garden of the Horticultural Society during the season, produced Peas fit for the table *ten days earlier* than any other variety sown at the same time." Both varieties may be had in packages at 2s. 6d. each, at W. J. C.'s wholesale Establishment, Newcross, or the Bedford Conservatory, Covent Garden.

A CATALOGUE OF CHOICE DAHLIAS, raised by

W. R. WHALE, Florist, &c. &c., Rose, near Kingsclere, Berks.

Whale's Preceptor, a seedling of 1843; bright crimson scarlet; good substance and outline; beautifully cupped petals; splendid show flower; fine habit; height, 4 ft.	10s. 6d.
Second—Crimson Perfection; of great substance, being 20 petals deep; high rising centre; fit for a back row flower in any stand; good habit; height, 4 ft.	10 6
Third—Mary; white ground, margined with rose-pink; a fancy border variety; constant and abundant bloomer; height, 3 ft.	5 0
Spary's Lady Autrobus; white ground, margined with scarlet lake; beautifully cupped petals; good substance and outline; took numerous prizes; decidedly the best light show flower of the season; height, 3 ft.	10 6
Second—Aurantia, on an orange-buff; decidedly the best flower of its class; took several prizes; height, 4 ft.	10 6
Madeline (Daniel's); a beautiful lilac; good substance; fit for a back row flower constant; height, 4 ft.	10 6
Prince of Waterloo (Drummond's); a shaded red; beautifully cupped petals; fine centre; took the first prize at Chippenham; placed before Keyne's Standard of Perfection, Lady Antrobus, and Brown's Lady St. Maur; first prize at Bath, &c.; height, 4 ft.	10 6
Sir H. Pottinger (Drummond's); dark plum-colour; cupped petals; good centre; a most desirable show flower; height, 4 ft.	10 6
Sir J. B. Richardson, Union; one of the best flowers of the season; height, 4 ft.	10 6
An improvement on the Duchess of Richmond.	
Opher Yellow (Edwards's); fine show flower; height, 4 ft.	10 6
Bermondsey Bee (Proctor's); crimson-purple; fine show flower	10 6
Nonpareil (Proctor's); ruby-scarlet; first-rate	10 6
Talmer (Girling's); purplish-rose; good show flower	7 6
Royal Sovereign (Stanford's); bright-yellow. This flower is little known, and scarcely was shown in Hampshire, Sussex, &c., last season in grand style; height, 4 ft.	5 0
Park Mount Rival; a superb yellow	10 6
Vanquisher (Wood's); shaded maroon; first-rate	10 6
Lady Stanford (Groves's); yellow; fine	7 6
Cheltenham Queen (Hodge's); white; first-rate	7 6

The following Varieties, at 30s. per Dozen.

Antagonist (Bragg's), white
Ashmodeus (Davis's), dark
Beauty of Sussex (Mitchell's), edged
Blanche Shelly (Mitchell's), edg.
Blue Bonnet, brown, self
Colonel Baker (Dodd's), self
Confidine (Cook's), orange
Cornett (Thomson's), dark, self
Dreadnaught, self
Essex Triumph, dark, self
Favourite (Dodd's), light-edged purple
Hero of Stonehenge (Whale's), dark-mulberry
King of the West (Walters's), dark, self
Miranda (Brown's), white-mottled purple
Mrs. J. Richardson (Edwards's), white and purple
Mogul Atwell, self
Paul Pry (Brown's), rose
Perpetual Grand (Brown's), red
Purple Perfection (Mitchell's)
Ashmodeus Rival (Compton's), mottled-rose
Sir R. Sale, self
Sultana (Appleby's), shaded purple
Vivid (Thomson's), scarlet
Virgil, dark, self
Perfection (Keynes's), purple
Venus (Gaine's)
Venus (Atwell's), white
Suffolk Hero, dark, fine
King of Lilacs (Girling's)
Claude Laurain (Harrison's)
Lady of the Manor (Atwell's), light-edged purple
Lady of the Lake (Gaine's)
Sir R. Chester (Stein's), dark, self
Litchfiel, scarlet, large flower
Lady Sale (Edwards's), red
Victory of Sussex (Standford's), dark, fine
Novelty (Whale's), shaded red
Queen of Trumps (Brown's), &c.

The following Good Old Varieties, at 12s. per Dozen.

Admiral Stopford
Andrew Hofer
Admirable
President of the West (Whale's)
Phenomenon, ditto
Attila, ditto
Beauty of the Plain (Spary's)
Mrs. Shelly
Lady Cooper
Maria (Wheeler's)
Competitor (Hodges')
Grand Baudese (Low's)
Conservative, ditto
Bedford Surprise
Lady Murray
Euclid (Ward's)
Eclipse, W.
Eclipse, C.
Tournament, C.
Indispensable, G.
Burnham Hero
Bridesmaid
Maid of Bath
Candidate (Silverlock's)
Duchess Richmond
Lady Harland
Marquis Lansdowne
Metella (Brown's)
Marchioness Exeter
Prince of Wales, D.
Prince of Wales, G.
Pickwick
Princess Royal, H.
Queen, W.
Rival Sussex
Rouge-et-Noir
Sir F. Johnstone
Springfield Rival
Twyford Perfection
Prince Albert, A.
Defiance (Cox's)
Rose Unique (Ansell's), &c. &c. &c.

Robespierre, dark plum-colour, 2s. 6d.

A Good Assortment of Fancy Varieties, at 12s. per Dozen.

Oakley's Surprise, Nihile, &c. &c. &c.

BURBIDGE AND HEALY

beg respectfully to inform the Horticultural world that they are quite *ready* to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

THE KENSINGTON NURSERIES.

THE LEASE of one of these Nurseries expires shortly, and the Ground being required for Building purposes, Messrs. PROTHEROE AND MORRIS are instructed to offer to public competition the invaluable Stock on the smallest of these Nurseries, in the occupation of Messrs. FORBES and Co., and the Stock being far superior to any within a considerable distance, will afford Gentlemen, Noblemen, and others engaged in planting, a fine opportunity to supply themselves, not likely soon to recur. The sale is on the 4th March and following days, and includes ornamental Trees and Shrubs of every description, variegated and Green Hollies, Evergreen Oaks, and Cork Trees, large Fan and other Yews, twice transplanted Common and Portugal Laurels, Arbutus alaternus, Hemlock Spruce, &c. May be viewed prior to sale. Catalogues 1s. each, returnable to purchasers, may be had on the premises, of the principal Seedsmen, and of the Auctioneers.—American Nursery, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to public competition at the Auction Mart, Bartholomew-lane, on Thursday, March 14, 1844, and the following day, at 12 o'clock, about ONE THOUSAND STANDARD ROSES in fine condition, consisting of Bourbons, Hybrids, Perpetuals, Noisettes, &c. Also, a fine assortment of Dahlias in dry roots. May be viewed the morning of sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

THE SEVENTH EDITION of
JOHNSON'S GARDENERS' ALMANACK is just published by the STATIONERS' COMPANY, Price 3d.

WARNER & WARNER, Seedsmen, 28, Cornhill, London, beg to refer their Friends to their new and choice List of Vegetable and Flower Seeds in Harrison's Floricultural Cabinet for this month; and also to inform them a List of the newest and most approved seeds will appear in the *Chronicle* of the 9th March.

N. B.—Catalogues may be had on application.—Agents for POTTER'S LIQUID GRAND, in Quart Bottles, at 1s. 9d. each, with printed Directions.

The Gardeners' Chronicle.

SATURDAY, MARCH 2, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Monday, March 4	Entomological	8 P.M.
Tuesday, March 5	Horticultural	3 P.M.
	Linnean	8 P.M.
Wednesday, March 6	Society of Arts	8 P.M.

A LETTER from a "Manchester Gardener" reminds us that our remarks on PINE GROWING are not yet brought to a conclusion. The object of his inquiry is to ascertain whether the large Pines that have of late excited so much surprise are as well flavoured as smaller ones. The answer to that question is in the affirmative, as far as regards the Pines obtained at Bicton and Longleat. The latter we saw, and it was impossible to conceive Queens more perfect in all respects, fragrance, and therefore flavour, included. We are informed, upon evidence which we cannot question, that the same good qualities existed in the fruit obtained by Mr. W. Barnes; but, as we have repeatedly stated, we have no personal knowledge of the fact. As to other large Pines grown in other places, we have cautiously abstained from alluding to them much, because we understand that in some cases they have *not* proved of good quality. It is sufficient to know that the Queens at Longleat and Bicton were perfect; and on them we rest, and always have rested, our case.

And now a word with regard to the general question. What we have insisted upon is the *possibility* of growing Pines better than they have been ever grown before, unless in a very few exceptional instances; the *probability* of the whole system of cultivating this fruit being affected by the discovery of such a fact; and the *necessity* for those gardeners who fancy that they have arrived at the end of what there is to know bestirring themselves to improve their practice, if they would not be outstripped by better growers. The result has been exactly what we anticipated. Sensible men have betaken themselves to consider how far it is advisable or practicable to follow the advice that has been given. *They* never dreamed of taking to themselves the sharp remarks of ourselves and Mr. Barnes, for they felt that they in no way deserved them—and they were right. But the foolish drones clapped the cap upon their heads, found that it fitted them exactly, and were prodigiously annoyed at discovering that they could not take it off again. We trust they will continue to wear it, as a mark by which their neighbours may know them. We may possibly hereafter offer some other articles of dress for their acceptance.

Two things should, we think, be obvious. The first, that it may not be always as desirable to grow very large Pines, as it is to know how to do it; the second, that no one would expect them of a gardener whose master objects to supplying the necessary means.

What a gardener should do, is to set before his master the relative expense of growing Queens to the weight of 3lbs. or 4lbs., and 6lbs. or 7lbs.; and then to inquire which he prefers. In the majority of cases, he would find his master preferring the smaller size, *if well grown*; because it is only on special occasions that very heavy Pines are really wanted; and always to place on the table a Queen of 6lbs. weight where one of only 3 lbs. is required would be unnecessary waste. There is, however, no family where Pines are cultivated, in which it is not wished to have the largest possible fruit *occasionally*. If it were not so, the Providence and Enville Pine Apples, which have nothing but size to recommend them, would go out of cultivation. Again, the surplus Pines in many gardens are regularly sent to market, and in that case it would have to be ascertained which is the more *profitable*, a crop of very large, or of middle-sized, well-grown Pines. And it is in this way that market-gardeners probably view the question. They grow what best suits the market, and what will produce them the most profit. They may say that they could do better if it were worth while; and perhaps they could.

When, however, we look at the way in which the markets are supplied with Pines, it is impossible to compliment the growers on their skill. Often, indeed, one sees fair fruit; but anything very remarkable is rarely met with; and a large proportion consists of what we should not consider fit for any other purpose than that of the confectioner. This arises from nothing but want of skill on the part of the growers; for most assuredly good management will produce well swelled Queens from 3lbs. to 4lbs. at the same expense as is now incurred in obtaining ill-grown fruit of less than half the weight.

The man who *can* grow a crop of six-pounder Queens could never, under any circumstances, produce such things as we now see in too many places. Pine-growers should imitate the florists; they should place their standard of perfection very high, and should strive to approach it as nearly as they can, without being discouraged if they do not reach it.

WHEN we consider the infinite variety of objects presented to the eye in all the varied scenery to be found on the earth, it becomes clear that man must be endowed with faculties enabling him to derive pleasure from contemplating them. It is not enough that man should perceive there are things present external to himself; he must have power to distinguish one thing from another. Seeing the necessity of this, it is proper to consider what these powers are, before we think of their exercise in the profession we are attempting to illustrate. This is rather an extensive range of subject, but we shall be brief, studying merely to give useful hints, and leaving those who may feel desirous of deeper research, to satisfy themselves by applying to special sources of information.

After the perception of the presence of an object,—its occupation of space—perhaps we regard the secondary one to be its magnitude in comparison to our own dimensions, or to those of other objects. We have, therefore, a faculty to perceive magnitude or size, and a faculty to compare one magnitude with another. The next perception may be that of the boundaries or outline of the object—that is, its form, or shape. Here we speak merely as if the object were flat. When an object is not flat, but a solid, we are enabled to discover the entire form by the assistance of light and its degree of dilution; in ordinary language, shade. Though shade be essentially shadow, it is a useful conventional term to distinguish when it relates to the parts of form which it brings out to the eye; while shadow is employed to denote the effect of interruption of light by an entire mass of matter independently of every part of its form except the outline. The ascertainment of form by the sense of touch we need not consider; for, Landscape Gardening has to do only with perceptions excited through the eye. We have, then, a mental faculty, enabling us to distinguish forms which are of endless variety, made up of lines and surfaces, straight and curved. Outline depends on form; and, therefore, when agreeable outline is required in a landscape, selection is to be made of objects having forms suited to produce it. But it must be observed, care should be taken in selecting forms for an outline, that they are in other respects suitable to the position in which they are to be placed, and not disagreeable in themselves individually. Hence, this faculty of form must be possessed in a high degree by the Landscape Gardener; so that this perception may be quick in regard to the supply of what may be wanting, and to the removal of what is unsuitable. There is, besides, a perception of harmony required—of suitableness—of fitness, independent of simple form. There is, in the combinations of forms that which may be pleasing, and that which may be offensive. Indeed, in this consists the chief power of a Landscape Gardener who is fitted by nature to follow the profession. Metaphysically speaking, it is probable that this perception of harmony may belong to the faculty of form. It may be a faculty independent of it, but it is claimed by others also, and on that account seems to be an adjunct, or even an integral part of each. The phrenological faculty of ideality scarcely seems to embrace it, though it may assist the function; and without further discussion we hold it for the present as belonging to the faculty of form—but not exclusively.

It is obviously necessary to the Landscape Gardener to have an acute perception of the relative position of objects. This is undoubtedly a special faculty, and to it belongs the memory we have for places, and the power of finding our way. In grouping, objects may be placed incongruously in relation to each other, however agreeable their forms may be individually. If we feel pleased with one mode of grouping a certain number of objects, and displeased with another mode, it is obvious we possess a peculiar faculty different from simple comparison—one which enables us to derive satisfaction of a distinct kind from the perception of a particular arrangement.

There is another faculty connected with arrangement, and meriting special attention, and with which we will for the present conclude. We refer to the faculty of Order, or we may, perhaps, rather name it Symmetry. The disposition to keep things in order, that is, in their proper places, is not what is meant; but the arrangement of objects according to size and form. For example, let us take four objects of the same height, and four that are taller. In arranging them we may set down a tall one, then two short ones, next to them two tall ones, then two short ones, and lastly a tall one, lllll; or, two tall ones, four short, and two tall, llssll; or two short, four tall, and two short, ssllls; or one short, two tall, two short, two tall, and one short, slllls; all these are symmetrical. But other arrangements, such as sllslll, llsssl, ssllll, and so on, are not symmetrical. The faculty which leads us to observe symmetry is more necessary in Architecture than in Landscape Gardening; but still it is necessary, if for no other reason, in order to put the practitioner on his guard against stiffness, which is the result of too great a predominance of the faculty. The Landscape Gardener, however, ought to be able to perceive it, to make use of it where it may be proper, and avoid it where it would be absurd. Some of our readers may know the anecdote of a worthy Gardener who had this faculty in a high degree. It happened that the stocks were placed at a corner where one road branched off from another, not far from the residence of the gentleman whom he served. They had long been disused; one morning, for the first time, our gardener saw a man locked into them, rendering the whole thing very conspicuous. Towards evening his master happened to pass that way, and was surprised to see stocks on the other side, and a man in them also. He asked the gardener if he knew the cause of this, when he replied that he had considered it very awkward to have a man in the stocks only on one side, and that he had caused the carpenter to make another, and hired a man to stand in it, for the sake of uniformity.—*G.*

ON THE DISEASES OF PLANTS.

A LARGE class of the diseases which affect plants, and that a very formidable one, both as regards number and their disastrous consequences, is attributable to the attacks of various species of Fungi. To them, no less than to the minuter insects, are due many of the appearances which are known and dreaded by cultivators under the name of Blight, though frequently without the slightest suspicion as to their nature or origin. The noxious parasites themselves are many in number, and various in structure. There is no part or organ which is not, during some period of its growth, subject to their ravages. The leaves, the flowers, the anthers, the germen, the seed, the softer portions of the stem, or even occasionally the woody twigs and smaller branches; the roots, and finally the harder internal tissues, are in their turn affected by some one or more of these enemies, and in many cases totally destroyed by their agency. Nor are their attacks confined, as has been often supposed, to unhealthy organs or individuals, though there may often be a morbid condition of the plant predisposing it to such attacks; for it has been shown that where, under favourable atmospheric conditions, the spores, or reproductive organs of these productions have germinated, they have in many cases a power of establishing themselves upon the most healthy living tissues, and this not only in the vegetable world, where it, perhaps, may not appear surprising, but even in animals in full health and vigour. Mr. Hassall has shown, in a series of papers read before the Microscopical Society of London, and in specimens handed round at one of the meetings of the Linnean Society, that perfectly sound fruits are soon completely destroyed if inoculated with certain species of mould; and these observations have since been extended by him as regards Lettuces, and other vegetables, as were published in Aug., 1843, in the "Annals of Natural History." Effects like these had previously been produced by Messieurs Audouin, Bassi, and Balsamo-Crivelli, especially the former, whose papers in the "Annales des Sciences Naturelles" are well worth attention, by the inoculation of the mould (Botrytis Bassiana), which commits such ravages in silk-worm establishments, both before and after the spinning of the cocoon. And not only were the caterpillars of the silk-moth affected by this inoculation, but those of other moths; and, in some cases, other species of mould were developed from their internal tissue when exposed to the air. A familiar instance of this living death may often be seen in autumn in the case of flies, which, under the attack of some species of Fungus at present imperfectly understood, glue themselves by their proboscis to the ceiling, to leaves, pieces of string, or other objects that fall in their way, and then patiently wait for the consummation of their disease. Dr. Hannoon also, as recorded in "Muller's Archives for Anatomy and Physiology," succeeded in inoculating living salamanders, some of which died in consequence of the development of the mould. As this Fungus is very easily raised in a glass tube without any organic matrix, provided the air within the tube be of the proper degree of moisture, as has been shown by Dr. Montagne, it is not improbable that it would establish itself likewise on vegetables; but I am not aware that any experiments have been made on this point. And this would be the more likely, if, as Dr. Montagne supposes, it may possibly be the same species with Botrytis diffusa, though I am myself inclined to think that the latter species has a far more complicated structure. The subject, indeed, is one which deserves far more attention than it has hitherto received, and which is likely to repay well the labours of any patient and accurate observer; and though the spores of Fungi may not be so injurious as might be supposed from an opinion which I heard maintained by persons of considerable scientific attainments in France some years since, when the influenza, or, as it is called there, *la grippe*, was so prevalent and fatal, that it arose from the multi-

tudes of the spores of Fungi floating in the air, after a great Fungus season, which induced a diseased action of the lungs; still the numerous facts which have been brought forward of the effect which these bodies produce on animal tissues even of the higher tribes, seem at least to intimate that their effects, even as regards the human frame, may be of more importance than is generally suspected.

Their effects on plants are too evident to be denied, however difficult it may be in many cases to understand the phenomena which are presented to our notice. The contemporaneous but independent discoveries, however, of Léveillé and Corda as to the penetration of the mycelium of the Fungi, which produce rust and mildew, into the tissue of the plants, and its presence in those tissues before the actual appearance of the Fungus externally (discoveries which were in part anticipated, perhaps, by Dutrochet in his "Observations on Moulds," and by Balsamo as regards Botrytis nivea, Martius, a species which originates beneath the cuticle of the common Shepherd's-purse, but finds its way through the stomata without bursting the outer integument), have removed some of the difficulties which are connected with the subject, and will doubtless lead to a more accurate knowledge than at present exists respecting it. These phenomena are indeed in some cases so puzzling, that Hartig in the case of those Fungi which prey upon the woody fibre, and Unger as regards those which are more connected with the softer cellular tissues, have considered them, in accordance with the notions so prevalent with German Botanists as to the production of the lower orders of plants and animals, as absolute transformations of such tissues; an opinion exactly parallel to that of Dutrochet on the development of the globules of milk into a mould, and of Balsamo of the transformation of the particles of the fatty substance of caterpillars into the Botrytis.

We shall have occasion hereafter to advert to the opinions of M. Unger, which the discoveries of Corda and Léveillé have shown to have been put forward with a very imperfect knowledge—doubtless from want of a good modern microscope—of the real structure of the productions he was considering. The importance, indeed, of these discoveries cannot well be overrated, not only as regards the questions which arise of a more purely scientific nature, but in all considerations of the mode in which plants are attacked by parasitic Fungi, and the remedies which may be adopted against them. It is far from improbable that Unger may be again induced to take up the subject, and if so, we may be sure that it will not be without some interesting results, for it is very far from being exhausted. Within the last few weeks Dr. Montagne informs me that he has made some observations on the development of the spores, which bid fair to be of much importance. Of these a slight intimation has been given in the article Cryptogamie, published in the last Number of the "Dictionnaire Universel d'Histoire Naturelle." A fuller version will, I doubt not, soon be published.

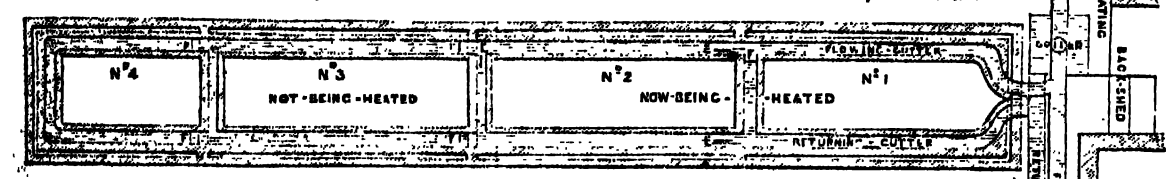
It is proposed, as part of a series of papers on the diseases of plants, to give as far as possible in a popular form, accompanied occasionally by illustrations, an account of those maladies which arise from the influence of Fungi. This will, I hope, prove so far interesting, as to elicit many important observations from practical persons, whose attention perhaps may not have been called closely to the subject, and remove from some minds the prejudices which have so long prevailed respecting the origin of these diseases. I cannot make any pretensions to novelty or original research, but the object in view will be to point attention to such points as may be most likely to instruct and interest.

The most convenient course will be, with a view to avoid unnecessary repetition, to take the noxious Fungi in systematic order, commencing, however, with those which are lowest in the scale, though in this point of view the most important. I shall, however, first state briefly the effect on plants of other cryptogamic productions, which would perhaps not easily be included in any other division of the series; and then, as prefatory to the main subject, give a very concise sketch of that class which is to occupy principally our attention.—*M. J. Berkeley.*

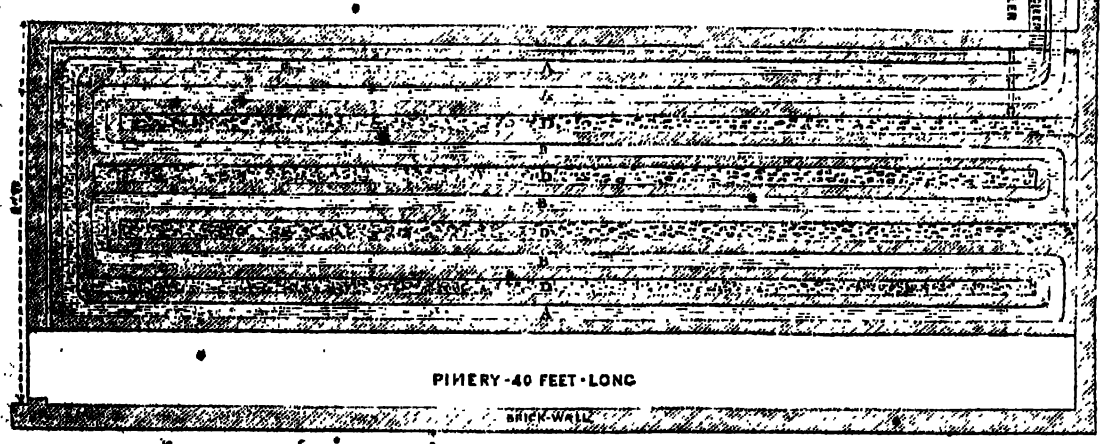
PLAN OF WARMING A PINERY AND PITS, BY HOT WATER FLOWING IN GUTTERS;

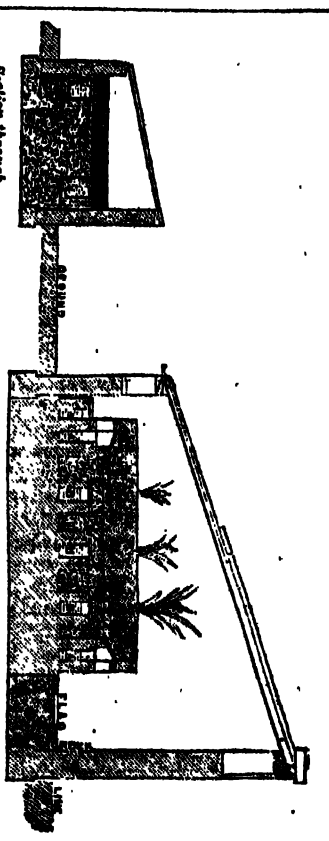
Without any Fermenting Substance being used.

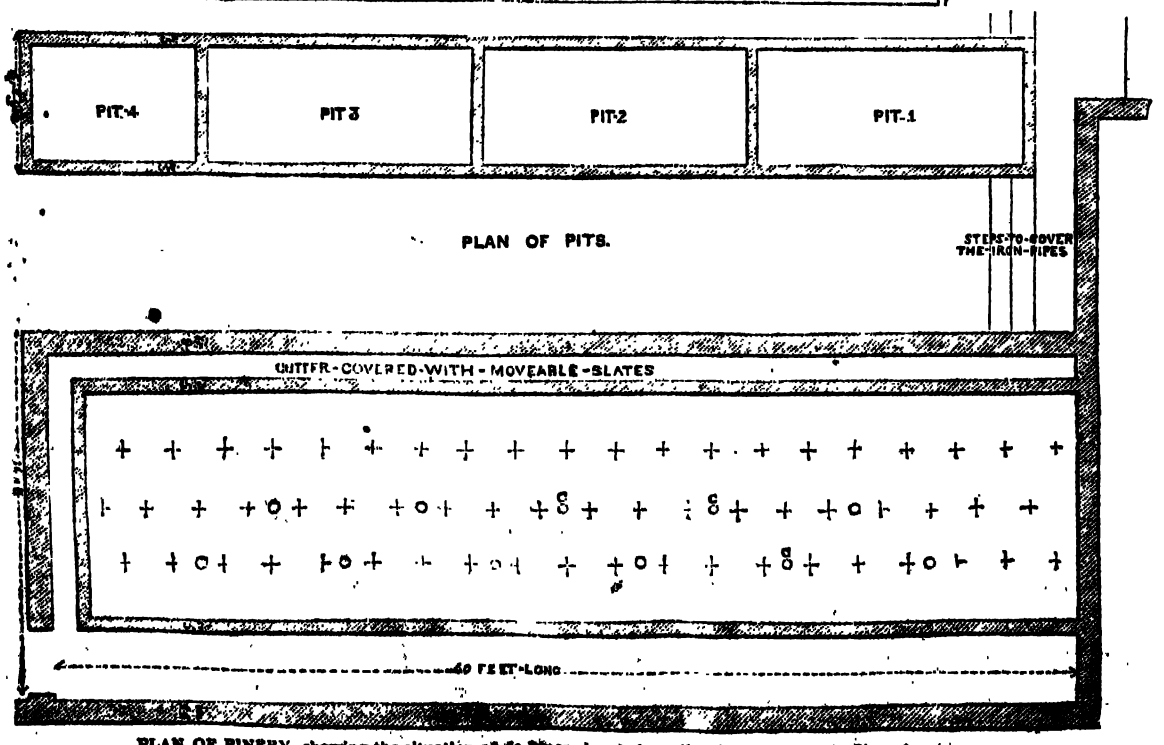
As Executed by Mr. FOSTER, Gardener to the VISCOUNT DOWNE, Benningbrough Hall, near York.



PLAN SHOWING THE GUTTERS IN THE PINERY AND PITS.







PLAN OF PINERY, showing the situation of the Pines placed above the Gutters; also the Plugs for steam.

Explanation of Plan & Section.

AAA Gutters 6 in. wide and 18 in. deep, built of brick lined with Roman cement, to warm the air of the house, also to moisten the atmosphere when required, by removing the slate covers.

BBB Gutters upon which the Pines are planted without pots; they have also 4-in. upright pot-pipes, with movable plugs, for steaming, marked C on the Plan. All the gutters are covered with thin blue slates steam tight. This house having been erected late in the autumn, there is sufficient moisture without removing any slates or plugs.

DDD Concrete, without lime, to allow the heat to pass into the earth above.

EEE Valves to the pits, now open, showing Nos. 1 and 2 being heated.

FFF Valves, now shut, showing Nos. 3 and 4 not being heated.

GG Stones into which the iron pipes are fitted, with flanges, water-tight.

References.—The heat at the roots of the plants 6 inches below the surface of this pit is 92°. The heat of the air of the house from three gutters, without any fire, is from 66° to 69°. Of the Pines placed in the house, some had shown fruit, some were showing, and others not; of those that had shown I never saw any make such progress in the height of the season; those that have shown since planted have come up remarkably strong; those plants that have not shown have made rapid growth, and no doubt will show fruit soon.

FAMILIAR BOTANY.

Morphology.—No. V.

[A kind friend has furnished us with the following, which we think it better to insert before proceeding with *R. E.*'s papers.]

"I FEAR that very few of your readers will be induced to study Mrs. Austin's literal translation of Goethe's 'Metamorphosis,' as it is given by your friend *R. E.*, in last week's *Chronicle*, enough to discover the full meaning of the author, physiological or poetical. Or they will perhaps be inclined to say, with *Mr. Dangle*, in 'The Critic,' that 'the interpreter is the hardest to be understood of the two.' The following attempt to make the translation more readable is at your service. I only hope that as *Mr. R. E.* has *under*-rated his own powers of diction, I may not have *over*-rated mine. I beg to say, in addition, that I have not the original German by me to assist me, and that it is a long time since I read 'The Botanic Garden,' in which I think the same subject is very Goethistically wrought out."—*P. P.*

Mark by what slow degrees, but ceaseless force,
The husky seed unfolds its tender charge
Of leaf and blossom, and enduring fruit,
When urged by earth's all-fructifying juice,
And more attractive light,—life-giving light,
Holy and pure!—Till now, the nascent power,—
Mysterious germination,—slept unseen;
And root, and leaf, and bud enfolded lay
Enshrined within their husky tenement,
(Incipient foretypes of the coming plant,)
In silent life, half formed and colourless;
But soon, replete with earth-giv'n moisture,
It lifts itself above surrounding night,
And breathes the incense of the open day.
Still is its early dawn distinguished
By simple forms; for even plants confess
The Infancy prepared for all things earthly born.
Quickly proceeds the growing impulse then,—
Joint upon joint, and leaf on leaf arise,
In order predetermin'd,—not of chance,
But variously unfolding, points and parts,
And tangled edges,—parts unseen before,
Scarce moulded yet within the parent stem.
So step by step the vegetable wonder draws
Its great completion: ribbed and indented,
On the exuberant stem it stands secure,
And challenges the soul to admiration.
But Nature now with powerful hand arrests
The quick enlargement; gently she leads on;
In smaller channels, and for nobler ends,
Diverts the all-important sap; and now,
The ranker vegetation binding those,
Structures more perfect, more elaborate spring.
Quickly the slender flower-stalk starts to view,
Leafless and bare; save where in subtle shapes
The curious eye detects the tiny forms
That circle round the head, innumerous;—
Leaflets compressed, in sheltering calyx bound,
Each like to each, in stated order set.
The crown unfolds, the calyx gently yields
Its many-coloured charge; and Nature now
Blooms in her gay, magnificent attire;
Ever anew thy admiration moving,
Anlimb on limb upreared, the noble flower
Waves o'er its frame of ever-changing leaves.
But still this glorious show but heralds th
New operations,—with all-powerful hand
The work proceeds: the many-coloured leaf
Retires abashed, and tender forms crowd round.
Affianced couples they, claimants intent
On Hymeneal rites, whose quick'ning powers,
(Delicious odours streaming all around,)
Perfect the destined union. Now compact
Together swell the teeming germs; with fruits
The bounteous mother's well-filled lap o'erflows.
Nature's eternal circle here is closed:
But straight renewed,—another ring succeeds.
Link within link entwined, the chain 's prolonged
Throughout all Time,—to all, and sev'ral given,
Life within life—a Being infinite.—*P. P.*

Home Correspondence.

Heath Edging.—It is observed by Dr. Hooker, in his "British Flora," page 181, that Calluna vulgaris makes an excellent edging to garden-plots, and bears clipping as well as Box. The superiority of Heath as an edging is another confirmed by a recent notice in the *Gardeners' Chronicle*, stating "that Heath-edgings have been successfully introduced into the Speaker's gardens at Heckfield-place." About four years ago edgings were required in the Speaker's gardens, and in the adjacent common a few patches of young Heath were found that had sprung up where the surface of the ground had been pared off a few years before; from these an edging was formed by cutting the surface into narrow strips, about two inches wide and two deep. Those pieces, on being brought to the garden, were laid in a line, and formed the edging at once. The ground was previously prepared for their reception, and some Heath-mould was added to encourage growth. The Heath is cut twice a year, and forms a neat and pretty edging. For this purpose Heath deserves more attention than has hitherto been given to it, and I hope to hear further particulars respecting its utility.—*Thomas Berry.*

Lily of the Field.—I have seen it mentioned in the *Gardener's Chronicle* that most probably the Ixiolirion montanum, which is I believe a beautiful Amaryllis with a pale-blue flower, is the plant alluded to in the New Testament as "the Lily of the Field," surpassing the glory of Solomon when arrayed in all his splendour. I met with a passage the other day, militating against this idea, which I think you may like to have pointed out. The passage I allude to occurs in the 9th of St. Cyril's "Catechetical Lectures" (Oxford ed. in "Library of the Fathers," page 94). The Bishop was pointing out to the catechumens the power of the Almighty as displayed in the things which are seen. "Contemplate," he said, "the spring, and the flowers of all kinds, in all their likeness still diverse from one another; the deep crimson of the Rose, and the exceeding whiteness of the Lily. They come of one and the same rain, one and the same earth; who has distinguished, who has formed them?" &c. Cyril is said to have delivered these Lectures in Jerusalem about A.D. 348, and he was likely therefore to have alluded to the same kind of Lily—one no doubt well known—as that on which our Lord based his remarks. I own I feel some doubt whether the word "whiteness" in the extract is an accurate translation of the original; the Greek word might perhaps only express "paleness," or "clearness;" but as I have not the Greek original to refer to, I cannot satisfy myself on this head.—*F. S.* [All speculations as to what the Lily of the Field may have been, are set at rest by the discovery that our Saviour *must* have referred to the Lilium Chalcedonicum, as is proved at p. 854 for 1842.]

Analysis of the Raspberry.—The following is the analysis of the Raspberry, which I extracted from some work; but the authority I neglected to note down, viz.:—

Silicic Acid	0·25
Phosphate of Lime	3·65
Carbonate of Lime	2·40
Potash	3·24
Soda	0 50
Ox. Manganese	1·00
	14·04

It was stated that the Raspberry most generally springs up where fields had been burnt over, and also by the sides of decomposing stone walls.—*W. P. Keane, Leybourne Grange, Town Malling, Kent.*

Large Pine-Apples.—Respecting the large Pines mentioned at p. 102, in addition to what is there stated, Mr. Dixon wishes us to publish the following, viz.:—"That the gill suckers were heartless, and of very small size; that the weight of the suckers on the one weighing 11 lbs. 15 oz. was 3½ oz.; and that those which grew on the one weighing 14 lbs. 12 oz. were very small and quite heartless."

Melons.—In answer to your correspondent, who asks which is the best Melon for preserving, "M. P." begs to state that she has tried several, and that none answer the purpose so well as the old Rock Melon.——Another correspondent confidently recommends the Yarmouth Prize Melon for preserving, and Mr. Sherwood, of Stamford Hill, states that the best Melon he has ever grown for that purpose is Cuthill's Early Melon. He informs us that it is well flavoured, has very thick flesh, that it is a great bearer, and ripens earlier than any Melon he has tried.

The Gladiolus.—I have read in the *Chronicle* lately an extract from J. de Junghe, in the *Revue Horticole* for Sept. 1813, headed *The Gladiolus*, which contains many inaccuracies. In the first place, Gladiolus communis, which is a native of the south of Europe, is much less common at present in the gardens of England than Byzantinus, being less hardy and liable to perish. That "these two species have afforded a great number of varieties of different colours, such as White, Rose-colour, Orange and Vermilion, Purple and Lilac," is utterly unfounded. There exist no varieties of G. Byzantinus in the gardens. There are several natural varieties of G. communis from different localities in Italy, but they are little known, and afford no great variation of colour, except a whitish one. G. segetum, which has the seed without the winged or foliaceous margin, has a white variety, which M. Bouché makes a distinct species, but to which no native locality is assigned. G. Boucheanus, crispiflorus, caucasicus, and some other natives of Europe and Western Asia, are unknown to M. de Junghe, but do not afford the colours which he mentions. The plants of various and brilliant hues to which he alludes are those which were raised by myself, when I lived at Mitcham, about the year 1810, between G. cardinalis, blandus, angustus, and tristis. The intermixed produce from their seed, which is furnished abundantly, and the produce of similar intermixtures has been obtained by other persons from the same plants since. Other crosses were made about the same time by me at Mitcham, but are less known. The plant named G. floribundus, and so called by most vendors, is totally unlike G. floribundus, which is an old Cape species, figured long ago in the *Bot. Mag.* The published name of the G. floribundus of the shops is G. oppositiflorus. It is a native of Madagascar, and probably of the Natal colony also. It was found to breed readily by intermixture with the Cape mules, and the species from which they were produced, as well as with G. natalensis, otherwise called Psittacinus, or Dahleni. The crosses are as much English as Belgian productions. The G. ramosus of the shops, which varies in colour in different individuals, is a cross between G. oppositifolius and the mules by G. cardinalis and cardinalis itself. It thrives much better in Belgium than with us, because the soil there suits it better. Many such, and some handsomer, with an intermixture of tristis, have been raised and flowered by me, but are very subject to perish in my soil. The Gladiolus, called Gandavensis by Mr. Van Houtte, of which he is stated to possess the whole stock, was raised abundantly by me, being the produce of G. oppositiflorus by Natalensis, but it did not thrive as those raised in Belgium. Some, however, which were raised as early by Mr. Bidwill in this country, and taken by him to Sydney, far exceeded the Belgium plants in growth and vigour, and the roots thereof brought back by him from thence flowered with greater strength than those for which I was indebted to Mr. Van Houtte; some were exactly similar to his plants, and one in particular with a very different posture of flower. I have now seed obtained from his bulbs set last spring in Devonshire, crossed a second time by Natalensis. As yet I have no cross on the correctness of which I can rely between Natalensis and any Cape species or mule; nor between any Cape species and species of the Northern hemisphere. G. Colvilli is one of the best varieties of the crosses of tristis with cardinalis and cardinalis-blandus. The formosissimus mentioned is one of the Cape mules, but inferior to insignis.—*W. Herbert, Manchester.*

Seedling Auriculas.—I took several pots of green-edged Auriculas, and placed them together in a shady place, giving all possible air. As they came into bloom, I pulled off all the flowers from every Self and Alpine. I had seed enough, but among the seedlings only one proved an Auricula, with a gray edge, indeed, but worthless. The rest were all Alpines and Selfs, of better properties than I had met with in seedlings raised from Alpines. Some of them had nine or ten petals.—*O.*

American Bug.—The following is from "Waterton's Essays on Natural History," (3d edit. p. 276). After mentioning several ineffectual applications, such as mercurial preparations, decoction of Walnut-leaves, spirit of turpentine, for destroying the downy white insect or American Bug on Apple-trees, the author says:—"Despairing of success, I was on the point of quitting the field and leaving the Bugs in undisturbed possession of it, when I began to conjecture that I had not gone the right way to work. I reflected that none of my applications could have penetrated sufficiently deep into the curved and knotty sinuosities of the diseased parts, and that on this account there would be a sufficient force of the enemy left alive to recommence its depredations at the first favourable opportunity. Wherefore I concluded that nothing short of the entire destruction of the eggs, the young, and the adult, could save the trees from ultimate ruin. Knowing that the Bug could not exist if totally deprived of air, I resolved to bury it alive, and this I effected by an application, at once the most easy and simple that can be imagined—it costs nothing. I mixed clay with water till it was of a consistency that it could be put on to the injured parts of the tree, either with a mason's trowel or with a painter's brush. I then applied it to the diseased places of the tree, and it soon smothered every bug; a second coat upon the first filled up every crack which showed itself when the clay had become dry, and this resisted for a sufficient length of time the effects both of sun and rain. The sickly parts, now effectually freed from the enemy which had been preying on their vitals, were placed in a state to be cured by the healing process of Nature, and that Nature has done her duty, my Apple-trees amply testify."—*Vertumnus.*

Hampton Court.—In reference to Hampton Court I should be so sorry to see "Q.'s" wishes on the subject realised—not that I think there is the slightest chance of it—that I hope you will allow me to address a few words to your Journal, of which I am a constant reader. Did it ever occur to him that there are thousands of shopkeepers' clerks, men of business and different professions, who are occupied during the whole day for every day of the week? That Sunday is the only day on which they can take a walk with their families, and breathe the fresh air after inhaling the smoky atmosphere of London for six days? Is it ungodly or profane for them to admire the fresh green Grass—the fine old trees—those temples not made by hands—to feel what a beautiful world this is, and bless the God who made it? Does the cheerful voice of the young visitors grate upon his ear, that he calls them profane and a nuisance? I always make a point of going to church on a Sunday; residing in London I have been all my life fond of every plant, from the Oak to the Lichen, and the pleasure I feel in a ramble about the walks of Hampton Court and Bushy Park is no doubt equally felt by hundreds there. I always found I had plenty of time to go to church also, and it certainly never occurred to me that I was a sabbath-breaker. I am sure that her Majesty, who, as "Q." says, is "the head of the truly Apostolic and purely spiritual Church," is well aware that the best way to make her subjects love and fear God, and be dutiful to herself, is to give them the means of innocent amusement, and of cultivating the purest taste—that for Nature—and that they will be encouraged to show their happy faces, free from care for one day in the week, in Hampton Court. As for the respected gardener there, I should doubt much whether he will thank his friend for bringing this forward; he must have known what would be required of him, and of course need not stay there longer than he likes. I fear "Q." is of a sour disposition; I really should be almost afraid of his blighting the plants if he was my gardener.—*Bp.*——A second communication is as follows:—"I regret to observe that your correspondent "Q." should have made such bitter complaints on the practice of opening these gardens to the public on Sundays. I would ask how professional men, tradesmen, assistants in shops, &c., can have a more innocent recreation than enjoying a walk with their families in the Palace gardens after being confined closely to business during the whole week, without any opportunity of breathing fresh air? Is it fair or charitable to style such people a host of ungodly, profane sabbath-breakers? I strongly suspect "Q." to be from the north side of the Tweed, by such a display of the narrow bigoted spirit of Calvin and John Knox. With regard to the gardeners, why cannot they take turns of duty every alternate Sunday, or even every third week? Thus they might attend Divine service without hindrance, and spend the day as they wish."—*C. D.* [Having allowed the letter of "Q." to appear, we cannot refuse insertion to these; but we feel that the subject is not suited to our columns, and therefore we would beg our correspondents not to carry it further.]

Societies.

BOTANICAL SOCIETY OF LONDON.

Nov. 29, 1843.—Seventh Anniversary Meeting. The Treasurer in the Chair. From the Report of the Council it appeared that 13 new members had been elected since the last Anniversary, and that the Society now consisted of 159 members. The Report of the Herbarium Committee was read, and stated that many interesting British plants had been presented, including several species of Carices collected by the late Mr. G. Don, which were

presented by Mr. S. P. Woodward. Specimens of Carex paniculata (Willd.), Bouchaeaia texana (D. C.), Spiranthes gemmipara, Convallaria bifolia, Statice rariflora, and other valuable plants, had been received. Mr. Edwin Lees had presented a collection of British Rubi, comprising nearly all the species. Numerous interesting Irish plants had been received from Mr. Andrews, including many duplicates of Trichomanes speciosum. The plants sent to members in return for their contributions had given much satisfaction, and in nearly every instance the Committee were enabled to send the return parcel within a fortnight after the receipt of the contributors' own parcel. Since the printing of the catalogue of British plants, now used by the members in marking their *desiderata*, several new species have been added to the Flora of this country, which of course do not appear in the catalogue. As far as these novelties can be obtained, the Committee will distribute them through the parcels sent out to contributors, together with any other specimens which may afford the opportunity for correcting errors of nomenclature, or in any way elucidating the Botany of Britain. For the common benefit of members it is particularly requested that contributors will send as many duplicates as they can of all such novelties. Among the specimens now ready for distribution are the following:—A few specimens of Statice rariflora, obtained through the kindness of Mr. Notcutt; an ample supply of the true Crepis biennis, presented by the Rev. A. Bloxam; the true Primula elatior (Jacq.), received from Mr. E. Doubleday, together with the varieties of P. vulgaris, which are often mistaken for the former. The true Eriophorum gracile (Koch.) known to very few English botanists before the summer of 1842; Linaria spartea, naturalised at Walton in Surrey; Bromus commutatus (Schrader), so very frequently misnamed B. arvensis (Lerou); varieties of Betula alba, which are described as species by several botanical authorities; Festuca loliacea passing into F. pratensis. The original labels are carefully preserved, and those which are not required for introduction into the reference Herbarium, along with the specimens will be fastened into a book, as a permanent record of localities. Dr. Ayres has sent a portion of the Flora of Thame, Oxfordshire, and engaged to complete it; and a full set of the flowering plants of Esher, in Surrey, has been collected, and will be sent to the Society as soon as they can be glued down in the manner prescribed by the committee. Other members are collecting the Herbaria of their respective districts, and the committee hope next year to report the addition of several Local Herbaria. The Foreign Plants received far exceeds that of any former year. The Horticultural Society of Cornwall had sent a very large collection of East Indian plants, comprising specimens collected at Madras by Dr. Wight, and at Assam by Major Jenkins. A very large collection of North American plants had been received from Dr. Gavin Watson and Mr. R. Kelvington, and Mr. E. Doubleday had presented 300 species from Ohio. A collection of specimens from Western Australia had been presented by Mr. Turner, and Mr. Gerard had sent valuable plants collected at Sierra Leone. British Ferns have been received from various members, and in every instance where specimens have been received from localities not hitherto recorded in the collection, the most characteristic have been selected, and introduced in accordance with the principle laid down by the committee, of extending the series to every locality that can be obtained for the rare species, and every county or district for the more abundant. It has also been made an object to ascertain the geological range of each, as well as its geographical distribution. The abundant supply of Lastrea cristata, Asplenium lanceolatum, Adiantum capillus, Veneris, and Trichomanes speciosum, has enabled the committee to distribute them to all who applied for specimens. The following Mosses, new to the British Flora, have been presented by Dr. Thomas Taylor. Trichostomum saxatile (Taylor, M.S.), and Bryum recurvifolium (Taylor, M.S.), and the following new species of Hepaticæ, Jungermannia reclusa, fragilifera, germana, and riparia together with authentic specimens of the new Dicranum scoparium, and Dicranum Dillenii. Mr. G. H. K. Thwaites has sent a large collection of Mosses, chiefly collected by him in the neighbourhood of Bristol, including many new species. Dr. Ayres has forwarded specimens of Hysterium rubrum and Peziza caulicola, discovered by him in Oxfordshire. In concluding their Report the committee called upon the members for renewed exertions to make the collection forming by the Society as complete as possible, and to render their Herbarium a permanent standard for the determination of plants; and members and contributors are particularly requested to send monstrosities and any specimens differing from the common form. The reports of the council and Herbarium committee were unanimously adopted; a ballot then took place for the council for the ensuing year, when J. E. Gray, Esq., was re-elected president. John Miers, Esq., J. F. Young, M.D., and A. Henfrey, Esq., were elected new members of the council in the room of C. Francis, Esq., H. A. Messen, M.D., and Adam White, Esq., who retire. Messrs. Reynolds, Daness, and Sansom, were respectively re-elected Treasurer, Secretary, and Librarian.

Dec. 13.—The president nominated Hewett C. Watson, Esq., and John Miers, Esq., vice-presidents.

Reviews.

Upon the Growth of Plants. By Julius Munter. (Botanische Zeitung, 1844.)

The Author of this paper has previously made communications to the "Botanische Zeitung," on the growth of the various parts of plants, and refers to the papers of Schmitz in the "Linnæa," and of Harting in the "Tydschrift voor Natuurlyke Geschiedenis en Physiologie," as contributions to the same subject. Schmitz's paper was on the growth of Fungi, and Harting on the influence of external agents on the growth of plants, such as the time of the day and of the year, the degree of warmth, the dampness and dryness of the atmosphere, and the influence of a quiet or ruffled atmosphere. The author has repeated most of the experiments of Mr. Harting, and in this paper makes remarks upon them in detail, and confirms their general results. He thinks that Harting has not duly estimated the influence of light on the growth of the various parts of plants. He had found, as the result of his own experiments, that a diminution of light had increased the growth of the internodes, as well as of the stem generally, whilst it greatly prejudiced the growth of the leaves.

In the author's previous papers he had given the results of experiments performed in his own room, where consequently the plants were exposed to little climatic change; but in the experiments detailed in this paper they were performed in the open air. The experiments are divided into two series; the first for the purpose of ascertaining the law of the growth of the internodes, the second for obtaining the same law in relation to the leaves of dicotyledonous plants. In order to ascertain the growth of the internodes, an internode was divided into equal parts, and measured at certain intervals. The plants thus experimented on were, the Acer pseudo-platanus, the Vitis vinifera, and Sambucus nigra. The following is an example of these tables. The plant was Vitis vinifera, and the internode was the fifth on a branch of that year's growth, *a* is the basis of the internode, *e* its upper part.

Day.	Weather.	Temperature. Reaumur	a. b.	b. c.	c. d.	d. e.
June 13	Rain.	14·0	6 6‴	6 0‴	6 0‴	6 0‴
June 15	Bright.	15·0	8 0	9 0	9 5	8 5
June 16	Bright.	17·0	9 5	10 0	10 5	10 0
June 17	Bright.	18·0	11 0	12 5	12 5	12 5

From experiments thus performed, he comes to the conclusion that the extension of the internodes goes on at first in all parts, and first ceases at the base, whilst the upper parts still go on lengthening, and that gradually it ceases also in those parts. This remark, however, does not apply to the growth of the internodes of monocotyledonous plants. From other experiments it appeared that light prevents the growth of the internodes, as plants in the shade developed more space in the internodes than in the sunlight.

The experiments upon the leaves of plants were made in the same manner. The petiole, the midrib, and the lateral veins were marked off into equal spaces, and their growth observed from day to day. From experiments made upon the Hazel and the Vine, the author came to the conclusion that the petiole ceased to grow in a centrifugal direction, whilst the midrib and lateral costæ ceased to grow in a centripetal direction. In the simple leaves of the Hazel, the point of the leaf ceased to grow first, then the edge down to the base. The same took place in the lobed leaves of the Vine, the point of the midrib-lobe ceasing to grow first, and so on to the base of the whole leaf. The same results were obtained from experiments on the growth of the leaves of Ampelopsis quinquefolia. It might have been supposed that as pinnated leaves are considered only modifications of lobed leaves, that they would obey the same law of cessation of growth; but from experiments made on the leaves of Rhus typhinum and Fraxinus excelsior, it was found that the midrib of these leaves obeyed the law of the centrifugal cessation of growth, whilst the end and side leaflets ceased to grow centripetally. The paper concludes with a table of experiments on Acacia lophantha in proof of the correctness of these conclusions, and the author promises to pursue the subject further.—*L. E.*

EXTRACTS FROM NOTES OF A VISIT TO EQUATORIAL AMERICA, IN SEARCH OF PLANTS AND SEEDS FOR THE HORTICULTURAL SOCIETY OF LONDON. By Mr. T. HARTWEG.

(From the "Horticultural Transactions," Vol. III., Part [illegible].)

I ARRIVED on the 3d of December, 1836, at [illegible] days' riding, over a country without [illegible] Cruz. Two ravines, brought me to Zaquapan. [illegible] For [illegible] Cruz to Santa Fé, the [illegible] lay over [illegible] three leagues, from Vera side, covered [illegible] by *Convolvulus maritimus*, a large round-[illegible]*antia*, a *Croton*, and, above all, by *Mimosa pudica*. At Santa Fé the vegetation became more luxuriant, and the small shrubs were replaced by stately *Palms*, *Acacias*, several *Scitamineous* plants, and various *climbers*.

ZAQUAPAN is placed at an elevation of about 3000 feet above the level of the sea, on the eastern declivity of the snow-clad Orizaba, which attains the height of more than 17,000 feet; the climate is temperate, and the place surrounded with the richest vegetation I ever saw in Mexico. Upon leaving the savannahs, which are covered with a scanty undergrowth, I entered a forest of *Oaks* (*Quercus Jalapensis*, *H.B.K.*) and there a change took place as if brought on by magic; *Orchideæ*æ, for which I had been on the look out since I left Vera Cruz, and of the finding of which I had given up all hope, considering the elevation I had attained, appeared here in the greatest abundance; the Oaks actually seemed to groan under their weight; *Maxillaria denia* and *tenuifolia*, forming festoons, and hanging gracefully over the branches they were growing on, seemed to strive with the larger species of *Tillandsia* for their existence. It was here I met with the beautiful and new *Cyrtochilum maculatum*, and the varieties of it now become so common. In the ravines or rocks I found *Maxillaria aromatica*, *Epidendrum serratum*, *equitans*, *umbellatum*, *fuscatum*, *cochleatum* (this latter with nearly all its varieties), and *Acropera Loddigesii*. In the more exposed situations, particularly on trees overhanging the perpendicular sides of the ravines, *Stelis ciliaris*, *Dimima polystachya*, *Isochilus linearis*, *Polystachya luteola*, and the little plant that now bears my name (*Hartwegia purpurea*) were common. The first plant of *Brongniartia glauca* I met with was on a *Quercus*, but, in a wood descending to the savannah; but I afterwards found it on Oaks in abundance near this station. To grow this plant, as well as *Hartwegia purpurea* to perfection, I would recommend a temperature of 65—70° of Fahr., and to be kept in the driest part of the stove. The same treatment may be applied to the thick-leaved *Epidendrums* and *Oncidiums*. Near the same locality I found *Berberis trifoliata*, forming a shrub 10 to 12 feet high, and at the time covered with its black berries on spikes more than a foot in length. In the more open places, among Grass, the *Cobadilla* or *Asagræa officinalis* was ripening its seeds on a stem four feet high; the roots, leaves, and particularly the seeds of this plant are used by the muleteers, in a state of fine powder, for killing the maggots in the wounds of their beasts, and occasionally an infusion of it is used in extirpating certain cutaneous which may be found on the heads of the lower class, but its employment is not so general as the occasion for it. The sweep plant, *Agave saponaria*, was found in the same locality, throwing up its flower-stem like a tuberose, to which, in fact, it bears much resemblance. Its thick, fleshy root crushed is a good substitute for soap, and is abundantly used by those who are too poor to buy that article.

[After quitting the city of Mexico] my first excursion was to the Grande, the highest point of the range of mountains of Guanajuato, where I was rewarded with *Garrya oboata*, then in flower, forming a shrub six feet high; I afterwards found it more commonly on the Rufa, a bluff rock a league from Guanajuato. *Arctostaphylos pungens* has also been found in these stations, both in flower and fruit. *Berberis fabiolaris*, forming a shrub 8 to 10 feet high, was covered with flowers, as well as *Ribes campanulatum*. In another excursion I found, both in flower and fruit, a second species of *Garrya* (*G. [illegible]*) forming an evergreen shrub 12 to 15 feet high, with the *Madroño*, or *Arbutus denuiflora*, forming a shrub, or small tree, covered with delicate white flowers. In the more sheltered situations, in the ravines near the town, *Clematis pubescens* was in full flower. *Oaks*, which cover the greater part of the mountains, were in great variety, but the acorns of the preceding year being all dead, I could procure neither seeds nor specimens. Pines were nowhere to be met with.

On the 13th of April I arrived in Lagos from Guanajuato. The only things worthy of notice from this station were *Jatropa longifolia* and *Lælia majalis*; the latter species I found at an elevation of about 6000 feet, growing on Oaks, and producing such a profusion of large pink flowers in May, that even the Mexicans find it attractive, and stick a few plants on the Limes (*Citrus medica*) growing before their houses. Of this I sent an abundant supply of plants, but as it has resisted all attempts at cultivation, I would recommend it to be kept in the driest part of the stove, and to be liberally supplied with water during the summer months only. In fields *Lupinus Hartwegii* was common; this seems to be quite stationary, having nowhere else been met with.

On the 17th of June I arrived at Lagos, where I found the same barrenness during the dry season as at Leon; and after a month's fruitless wandering, I left, on the 18th of July, for Aguas Calientes. Of the more interesting plants found near Lagos I may mention *Milla biflora*, bearing from one to six of its star-like white flowers on one scape; *Bouvea elegans* (*Calopyranum Gerollianum* of *Schiede*), the bruised leaves of which, mixed with a little water, are used occasionally for killing flies; *Zephyranthes sessilis*; *Sprekelia glauca*; and *Habranthus concolor*; the three latter flowering before the leaves appear.

At AGUAS CALIENTES I found a little more occupation, the rains having then set in; but being still dissatisfied with my excursions, I determined at once to leave the high table-land and proceed to Bolanos, where I should have the command of a vegetation from 3000 to more than 8000 feet of elevation. The town of Bolanos, where I arrived on the 4th of October, is situated in a deep ravine, about 3000 feet above the level of the sea, and from its confined situation has a higher temperature than might be supposed. The thermometer ranges from 39° to 85° Fahr. in the month of December, but in May it is from 49° to 98° Fahr., and even as high as 102° in the shade. The atmosphere being very dry is favourable to the growth of *Bromeliaceous* and *Cactaceous* plants, of which latter there is a great variety, especially among *Opuntias* and *Cerei*. Of the latter there are species which rise to the height of 30 or 40 feet, and yield an agreeable fruit of the size of a large walnut, with red or yellow pulp; they are known under the name of *Pitayas*. Here also occurred a species of *Agave*, with leaves six feet long by four inches broad, from which a spirit is distilled known under the name of *Vino Mescal*. When the plants are of a certain size they are taken up, and the stem, which is about 18 inches long, as well as the leaves, is cut off to the base, which gives the trunk a globular appearance. In this state it is roasted, then crushed, and after passing into the vinous fermentation, *Vino Mescal* is distilled from it. This spirit may be compared to weak whisky, but its strong smoky flavour renders it anything but pleasant. The plant I never could see in flower.

Ascending the steep sides of the ravine on the western side, I left the region of *Acacias*, *Bromeliaceæ*, and *arborescent Cerei*, and entered that of *Oaks*. After a four leagues' ride and constant ascent, I arrived at BEBARENA, the *Mining* Company's wood-cutting establishment, situate in the midst of woods at an elevation of more than 8000 feet above the level of the sea. Here I found, surrounded by evergreen *Oaks*, *Pines*, and *Arbutus denuiflora*, the showy *Befaria mexicana*, forming a shrub of about 6 ft. high, and at the time covered with its large white flowers. The pretty little *Mammillaria senilis* I found on rocks in the [illegible] posed situations; its long white spines, which at [illegible] bent backwards, seem to defend it against [illegible] In the more open places *Lupinus leptocarpus* [illegible] *rensis longiflora*, and *gracilis*, *Castilleia imberbis*, *Lamarckia*.

On the [illegible] were common.

[illegible]ary, 1838, I proceeded from Zacatecas over [illegible]igh table-land to SAN LUIS POTOSI, and thence to the Rancho de los Gallitos. Near San Luis Potosi I found *Berberis trifoliata* in great abundance, forming a shrub 4 to 5 feet high; it was then just coming into flower. The Rancho de los Gallitos, on the eastern declivity of the great table-land in a narrow valley, enjoys a delightful temperature, and is surrounded by constant verdure and noble forests of *Oaks*. It was near this station I found the striking *Berberis Hartwegii*, with its long spikes of flowers and pinnate leaves. This desirable species still remaining to be imported, I shall describe its locality particularly, for its seeds will amply remunerate any traveller that may land at Tampico and proceed to San Luis Potosi or Zacatecas. Before reaching the valley of Los Gallitos, on the ascent from Santa Barbara, there is a black rock on the right-hand side of the road, called "El Contentoso," with a small chapel hewn in the rock, and always gaily decorated with flowers and candles by the passers by; this place is held in the deepest reverence by the Indians, from the circumstance of Nuestra Senora de Guadalupe being said to have appeared to several of them; and they cannot pass this place without paying homage to their protectress saint. It was at the foot of this rock that I found *Berberis Hartwegii*.

I now resolved to leave the arid plains in the north and proceed to MONTELIA, the capital of the state of Michoacan. This country about this town, from its broken surface, presents a beautiful vegetation; in the higher parts Pines and Oaks predominate, and the latter are adorned with a great variety of *Epiphytes*. On the western declivity towards the native village of Jorullo, I found *Pinus occarpa* in great abundance, forming a tree 40 to 50 feet high; of this I secured an ample supply of seeds, but from its low situation, I fear it will not withstand our northern winters. The cones of this Pine, after being ripe, will remain on the tree without opening for two or three years, and the seeds in them are equally as sound as on the first once. In the most elevated parts I found the showy *Fuchsia fulgens* in the greatest perfection, and native of *Bignonia radicans*, bearing its bright scarlet flowers on a scape 8 to 9 feet high. In the more shaded places, the pretty little *Hydrocotyle umbrata*, and *Adiantum microphyllum* were met with. In pastures, *Bromus gamboliferus* and *Cynodon dactylon* [illegible]

After a two months' stay in this [illegible] I started for Acapulco, at which place I arrived after a two days' ride across a mountain road, where I observed fine trees of *Pinus Montezumæ*

and pseudostrobus, the former being called "Ocote-chino," because it abounds in abundance of resin, it yields the best "Ocote," or candlewood; it attains the height of 100 feet, and in diameter 4 feet in diameter. *P. pseudostrobus* also grows in the same elevation, and may be easily distinguished at a distance by its long slender branches diverging at a right angle from the main stem, as in the species of the section *Strobus*. Its chief range is about 9000 ft., while that of *P. leiophylla* is a few hundred feet lower. On an excursion to the "Campanario," the highest point of the mountains of Anganguco, I saw some remarkably fine trees of the "Quamel," or *Abies religiosa*, 5 to 6 feet in diameter, and rising to the height of 150 feet. Its chief range is about 9000 feet above the sea; beyond that elevation its place is supplied by *Pinus Hartwegii*, rising to the height of 40 to 50 feet. With the latter I found *Pentstemon frigidum*, the leaves of which are poisonous to cattle, *Microstylis macrostachya* and *Juniperus mexicana*, the latter forming a small straggling shrub a few feet high.

On the 20th of Oct., 1838, I arrived at Real del Monte, after having crossed once more the high table-land of Mexico; but, as usual, without finding much to reward me. The town of Real del Monte, being situated at an elevation of above 9000 feet, is surrounded by high ground, of which the "Sumate," the highest peak, rises to the height of 9500 feet above the level of the sea, the country around being well wooded with a great variety of *Oaks* and *Pines*. On the eastern declivity of the Real del Monte chain of mountains is the deep ravine of Mestitlan, commonly called "Barranca grande," which from its chalky soil is a favourite haunt for *Cactaceæ*. It is the only habitat of *Cereus senilis* that I am acquainted with in Mexico, the largest plants of which, attaining a height of 24 feet, give the scenery a very singular appearance. On another excursion to the natural bridge called "Puente de Dios" I found *Spiræa parvifolia*, *Quercus petiolaris*, *Lindleya mespiloides*, the latter forming a slender shrub 10 to 12 feet high, and the pretty little *Mammillaria Schiedeana*, which seems quite stationary there, having nowhere else been met with.

On the barren hills of Zimapan, *Pinus Llaveana*, forming a tree 15 feet high, was at this time (November) covered with small green cones, which are two years in coming to maturity; *Berberis gracilis*, with its slender stem and red leaf-stalks, and *Berberis pallida*, have been found at this station, as well as near the hot springs of Atotunilco el grande. In the ravine of Encarnacion I found another new species of *Garrya*, *G. macrophylla*, which from its large foliage is by far the handsomest kind; but, unfortunately, the few seeds I found did not grow. *Juglans nigra* was found in the same locality. Near the Company's farm of "Guajolote" I found several sorts of *Pines*, among which *P. patula*, from its smooth slender stem and valuable timber, particularly attracted my attention. Near the small village of Apulco I found *Berberis lanceolata* and *Pinus apulcensis*, and along the road *Cupressus thurifera* forms a stately tree 120 feet high. From this latter station the descent was very rapid to a place called "El Banco," probably so named in allusion to the bank or ledge of rock over which one has to pass at the imminent risk of falling into the ravine below, in order to reach the small village of San Cornelio. The descent to this place is very interesting; at every step there is some change, the noble *Tree fern* (*Cyathea mexicana*) makes its appearance there; *Lopezia hirsuta*, *Alstonia ciliata*, *Lophospermum scandens*, *Cobæa stipularis*, *Gaultheria nitida*, were all in full flower. It was in company with those that I found the noble *Habrothamnus fasciculatus* of *Schlechtendahl*, the seeds of which I was unable to procure; it was a very fine shrub about five feet high. It has since been raised in Belgium, and a fresh specimen in flower, communicated by Mr. Van Houtte, Nurseryman of Ghent, has furnished, with the assistance of one of my dried specimens, the means of preparing a figure of one of the gayest plants of the Mexican Flora. [A most beautiful thing.]

The valley of Oaxaca is between 4000 and 5000 feet above the level of the sea. The greater part being under cultivation, I resolved to visit the well-wooded heights to the east, which are visible from the town. A ride of five miles over a well-cultivated country, varied by a few patches of sugar cane and cochineal plantations, brought me to the entrance of the mountains, which are thinly covered with *Oaks* of a dwarfish growth, intermingled with *Arbutus jalapensis* and *oaxacana*. *Crataegus mexicana*, *Alnus mexicana*. *Mascagnea antirrhiniflora*, and a species of *Salix* grew along the rivulet. About 500 feet higher, at a hut called the Rancho del Estudiante, *Pinus Teocote* and *Leiophylla* appeared in company with *Cercocarpus Fothergilloides*, and *Tilia mexicana*, the latter forming a lofty tree. In shaded places overhanging the rivulet, *Fuchsia arborescens* was flowering profusely, forming a little tree 12 feet high with a stem five inches in diameter; a shrubby *Bocconia* and *Garrya laurifolia* were also met with. At the "Rancho del ojo de agua," the ascent became more steep, the *Oaks* appearing in larger masses and taller trees, and covered with several species of *Tillandsia* and a few *Orchidaceæ*.

Having reached the "Cumbre" or highest point, there were some stragglers of *Pinus Russelliana* or *Devoniana* which in want of cones I could not distinguish, and some stately trees of *Abies religiosa*. The *Oaks* were no longer clothed with *Tillandsias* and *Orchidaceæ*, but their places were occupied by a brown moss hanging gracefully down the branches in threads nearly three feet long, which gives the trees a singular appearance. *Cornus disciflora*, *Ceanothus azureus*, *Rubus trilobus* with its large white flowers, the pretty little *Cuphea pubiflora* and *Melampodium sumichrasti* were found at that station, the elevation of which above the level of the sea, must at least be 8500 feet. In descending gradually towards "La Parada" which is a kind of inn, the woods consist chiefly of *Pinus Teocote* and *Oaks*. On the latter I found *Odontoglossum nebulosum*, *Cattleya citrina*, and several other species. After passing the bridge, "Puente de Gia," where I found *Eschscholtzia scaniosifolia*, and the village of San Juan, the *Oaks* ceased entirely, and were replaced by small *Agaves* and *Bromeliaceæ*. *Orchidaceæ*, although few in number, no longer cling to trees, but seek their nourishment from the ground; an instance of which is *Epidendrum falcatum* with its thick leaves and brittle rhizoma, which was growing most luxuriantly on a heap of loose stones, and perfuming the air towards evening with its large white flowers. After descending from the village of San Juan to the flats of Santa Ana, and following the rivulet as far as the mine of Socorro, I crossed a high ridge, where mining operations are carried on, and arrived at the Hacienda del Carmen, an establishment for reducing the silver ore. Carmen, or Castrejon, as it had formerly been called, is situate in a deep and narrow ravine, the sides of which are well wooded with *Pines* and *Oaks*, the showy *Arctostaphylos nitida*, *Gaultheria hirtiflora*, *Fascicularia caripensis*, *Arbutus jalapensis*, *Lycnia ferruginea* and *Philadelphus mexicanus*. Ascending the steep sides on the right I arrived on the "Monte Pelado" or bald mountain, so called from the upper part being destitute of trees, which gives it a singular appearance compared with the mountain ranges on the opposite side of the ravine. Near "Las Cruces" on the ascent to the Monte Pelado I observed some remarkably fine trees of the *Abies religiosa* and *Pinus Ayacahuite*, the latter measuring three to four feet in diameter. Bordering on the limits of trees I found three plants remarkable for their geographical distribution; they had previously been known from other countries; they are *Chimaphila maculata*, *Pyrola rotundifolia* and *Ilex Aquifolium*, the latter found by Humboldt near Ibarra in the Andes of Quito.

Having well examined the vegetation about Carmen, I ascended the high ground at the back, crossed Llano verde and arrived at the Indian village of Tuneton. The name of Llano verde (green plain) is given to the mountain intervening as far as Tuneton, a distance of eighteen miles, and is derived from a green swampy plain in the middle of the wood, measuring some twenty feet square. The climate of Llano verde is termed by the natives "caliente humido," or warm and damp, the temperature being about 70° Fahr. and particularly adapted to the growth of *Cunilleæ ovalifolia*, which I found there in great abundance. In the more elevated parts *Pinus Ayacahuite*, *Pinus Montezumæ*, several *Leguminosæ*, *Pteris aquilina*, *Asplenium Trichomanes*, *Cheilanthes mexicana*, with both yellow and brown-edged fronds, and *Cystopteris fragilis*, covered the mountain sides, while the rocks, almost inaccessible, except to the mountain goat, were covered with *Echeveria secunda*, *Sedum Cepæa*, *Cotyledon laxa*, *Mammillaria Schiedeana*, and *Cheilanthes myriophylla*, the latter with its bright scarlet flowers, were growing on the summits of the wood. From Tuneton I went over a broken road to Tabaa, where I found *Begonia lævis* and *discolor* in full flower, growing in company with *Magnolia glauca*, the flowers of which are used by the religious Indians in decorating their places of worship. Tabaa, being situate in "tierra caliente," or the warm country, produces some fine *Pine apples*, *Oranges*, *Plantains*, *Sugar-canes*, *Cherimoyers*, and *Coffee*. Descending towards Santa Gertrudis I found a small bean, the seeds of which resemble those of *Abrus precatorius*, and are said to be employed with success against the bite of the little venomous spider called Chintatlahua.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

The time for potting plants has now arrived, and the greatest care is necessary in the selection of proper composts for different families. Good friable loam, fibrous turfy peat, leaf-mould, and sand are the proper materials from which composts for all kinds of plants may easily be made; one-third peat, one-third leaf-mould, and the other third of loam and sand, will make a suitable compost for young plants of nine-tenths of those in cultivation. Older plants will require the proportion of peat lessened, and that of the loam increased; sandy peat alone is used for Heaths, Epacrises, and such like; but the more robust of these and all the Chinese Azaleas, ought to have one-third leaf-mould added to their compost. Two-thirds loam, and one-third leaf-mould, charcoal, and sand, is a good compost for Orange-trees, Neriums, and many other strong woody plants; charcoal and ground bones make the best of drainage for all plants, and a greater quantity of them may be used in that way than of pot-sherds; thus making the drainage more efficient, and yielding a great store of nutriment for the more active roots. The day temperature may now be up to 80° with sun heat, but not above 60° at night. The paths should be sprinkled over occasionally on fine days, and the atmosphere of all the houses should be kept more moist for the future.

Conservatory.—Old-established specimens in this house need not be potted for the next six weeks. Old plants in general, do not require to be so early potted as the young portion of the collection. The varieties of the Chinese Primrose are very useful from September to May, on account of their flowering so early in the autumn; a small quantity of their seeds may now be sown, and three more sowings of them, made in April, May, and June, will carry on the succession. Mr. Latter, the great Cucumber grower, is also an excellent grower of these winter flowers; he uses leaf-mould only, in which they grow and flower better than in any compost; cuttings made now from forced Anne Boleyn Pinks, will be ready to be planted out by the end of April and May; as will also cuttings of other Pinks and Picotees now in forcing. Be careful of Bulbs. When they have done flowering, the best plan is to turn them out of the pots and plant them in a cold frame in any light soil: afterwards they come in useful for spring flowers in the borders. Sitting-rooms are destructive to most plants; endeavour to change the plants in them as often as convenient, and keep up a large stock of those most preferred for this purpose.

Greenhouse.—to on potting the younger portion of these plants, and see that such as are growing too fast are removed to a cool situation.

Forcing-Pits.—Gardenias and young Orange-trees, forced for their blossoms, will now require a strong moist heat of 75°, with a bottom-heat from 80° to 90°. Many of our common border-plants will force from this time, if taken up with balls, potted carefully, and kept in the shade the first week. Common Auriculas and Polyanthuses will answer well in this way; leaf-mould is the best material for them under this treatment. The Evergreen Berberises are good plants for forcing, and they are much sweeter when they are forced. Daphnes do not like leaf-mould so well as poor sandy loam, in which they will force easily; all the herbaceous Paeonies will force in pure sand, or any refuse soil from the potting-bench, and they require no preparation beforehand. Seed-pots should never be exposed to the sun till all the plants are up; many seeds that are difficult to vegetate will come up easily in perfect darkness, but all should receive some bottom-heat.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

In the Flower-garden many of the spring Bulbs will now be showing bloom; it will therefore be necessary, on a dry day, to hoe the beds over, so as to freshen them up, and make them a little neat. After the late frost the lawn should be raked over with the daisy-rake, to clear the grass of worm-casts or stones, and be rolled with a heavy roller at least once a week. Where the grass is coarse it is a good plan to have it mown, cutting it close to the ground at this season, and where the herbage is thin or does not "cut well," a little Dutch Clover-seed should be sown and afterwards thinly covered with some rich soil. To those parts of the lawn which soon burn up in dry weather, apply a dressing of wood-ashes and soot with a little sand, or if more convenient, give a good soaking of liquid manure. Relay or repair Box edgings and Grass verges, so as to have everything ready for trimming the walks, as soon as the weather is favourable.

Rosery.—Most of the hardy Roses being now pruned, the beds may receive their spring dressing. Night-soil is said by Mr. Rivers to be the best manure to use, and if disinfected it is not objectionable, but if not disinfected it will be better to trust to the drainings of the dung hill, or to a dressing of Potter's Guano, superphosphate of lime, or Lance's Carbonated Humus. Plants that were much infested with green-fly last season, may be cleared of the eggs of that or any other insect, by syringing them with water, at the temperature of 150°, or by painting them over with lime, soot, and cow-dung, mixed to the consistency of thick paint with strong soap-suds. This is a certain remedy.

Pits and Frames.—The plants here, which hitherto have been kept quite dry, may now receive a gentle watering on some sunny morning, and be encouraged to grow a little; give plenty of air in the daytime, but cover securely at night. Proceed with the potting of autumn stock plants, and the pricking out of tender annuals, which should always be attended to before they become crowded in the seed-pots, and encourage the plants afterwards in a close gentle heat until they are established in the new soil. Pot Tigridia pavonia and conchiflora in light turfy soil, putting two bulbs into a 48-sized pot, and placing them in a warm frame or forcing house until they begin to grow. Make a sowing in heat of Œnothera macrocarpa and taraxacifolia, two exceedingly useful plants, which flower beautifully in the autumn, if sown at this season. Stop scarlet and other Pelargoniums intended for planting out, so as to make them bushy.—*W. P. A.*

III.—FLORISTS' FLOWERS.

But little progress has been made during the past week in the Florist's department, owing to the extreme variableness of the weather, the very fickleness of which requires renewed vigilance on the amateur's part.

Florists who have not laid in a sufficiency of plants in the autumn are now thinking of purchasing. The following Auriculas are good sorts for competition, and ought to be in every collection. Green-edge:—Page's Champion, Pearson's Banajee, and Obl. Taylor. Gray-edge:—Waterhouse's Conqueror of Europe, Ringleader, and Lovely Anne. White-edge:—Taylor's Glory, Lord of Hallamshire, and Ashworth's Premier. Selfs:—Dixon's Apollo, Barker's Nonsuch, and Metropolitan. All air must be given when possible, but not if the winds are cold; then tilt the lights.

Protecting mats ought to be procured without delay. The following may be relied on as good show-flowers:—Pearson's Alexander, Page's George the Fourth, Bullock's Leader, Mather's Earl Grey, Lord Ranelagh, and Crowshaw's Invincible.

Ranunculuses.—The seed must be kept moderately moist, by dipping a brush in tepid water and, drawing the hand over it, cause the drops to fall lightly, so that the soil covering it may not be displaced.

Carnations.—Make ready for potting, get the compost under cover the first fine dry day, it being very injurious to the layers to pot them in soil that is too wet.

Picks.—Try to grow some of these in large pots, mixing a little rough charcoal with the soil; they will well repay the trouble.

Pansies.—Pinch off the leading shoot, to make your plants "stocky;" it will prevent the mortification of having them broke over, at the surface of the bed. Top-dress with rotten manure. Potter's Guano has been used with success, "but be careful, do not poison your plants with too much of a good thing."—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—There is much difference of opinion about plunging out Pines, and those who would like to convince themselves of the best mode of culture would do well to plant out now, at one end of a pit (heated below by tanks) a few good plants of the Queen and Montserrat, and afterwards to compare the growth of the plants, size and quality of the fruit so treated, with the growth and produce of plants grown in pots in the same pit. I name the Queen and Montserrat for this experiment, as they fruit sooner than many others. The recently potted Pines will require no water for the first few days after potting, unless the soil was dry when used, in which case give a gentle watering. If the watering has to be done from the outside of the pit, choose mild weather for it. Continue to shade during sunshine the plants that were disrooted, using thin bunting or woollen netting.

Vinery.—Vines having their roots inside the house, if the border is the least dry, will require watering; do not be guided by the appearance of the soil on the surface, but examine it nine inches or a foot deep. Add fresh litter to the covering outside, to keep the heat regular. Increase the temperature of the second house to 55° at night, gradually rising, when the buds have all broke and the "shows" have begun to appear.

Peach-house.—Continue the temperature, where the early Peaches are swelling, at 55° or 57° by night during cold nights; they will bear 60° by night during mild weather. Tie in the young shoots nearly parallel with those they proceed from: much of the beauty of a fan-trained Peach-tree depends on the early and careful performance of this. Increase the temperature of the second house gradually to 55° by the time the fruit is fully set.

Cherry-house.—Do not increase the temperature till the fruit begins to ripen, when a few degrees more heat may be maintained. Be careful to use clean soft water in syringing, that the fruit may be perfectly clean when ripe. Attend to watering and keeping the trees free from insects.

Melons.—Much attention will be required to keep the heat in the frames regular; owing to the nature of the heating material, the temperature will vary with the changes of the weather; aim at having 70° of heat by night. Cover with double mats when mild, and keep up the heat during cold or stormy weather by additional covering on the glass and lining. Prevent cold gusts of wind from entering when air is given, by placing slips of bunting or woollen netting over the open space. Stop the plants in frames above the second leaf.—*G. F.*

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending March 9, 1844.

Mar.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 3	50.6	36.1	43.3	9	0.32 In.	2	2	2	1	2	4	1	1
Mon. 4	50.6	34.1	42.0	7	0.25	2	1	1	1	1	3	4	1
Tues. 5	49.3	34.4	41.8	5	0.22	2	2	2	—	2	2	3	2
Wed. 6	48.5	33.2	40.8	6	0.25	1	4	2	1	2	3	2	2
Thur. 7	49.0	34.2	41.6	8	0.10	1	2	2	1	4	2	1	3
Fri. 8	50.5	33.6	42.0	6	0.17	2	3	1	—	1	3	3	3
Sat. 9	50.0	33.1	41.9	4	0.47	1	2	1	2	2	3	3	3

The highest temperature during the above period occurred on the 9th, 1838—thermometer 68°; and the lowest on the 4th, 1840—thermom. 18°.

State of the Weather near London for the week ending Feb. 29, 1844, as observed at the Horticultural Garden, Chiswick.

Feb.	Mean's Age	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri. 23	5	29.915	29.851	50	33	41.5	S.W.	.44
Sat. 24	6	29.614	29.055	53	37	50.0	N.W.	.10
Sun. 25	7	29.478	29.000	51	37	44.0	N.W.	.10
Mon. 26	8	29.982	29.634	49	30	39.0	S.W.	.38
Tues. 27	9	29.647	29.282	50	32	36.0	E.NE.	
Wed. 28	10	29.630	29.490	51	29	40.0	N.W.	.02
Thurs. 29	11	29.595	29.405	53	43	43.0	S.W.	.29
Average		29.810	29.651	49.7	33.4	41.6		1.11

Feb. 23. Clear, with sharp frost; lightly and uniformly overcast; boisterous, with heavy rain in the evening.
24. Clear and foggy; cloudy, clear and frosty; rain.
25. Rain; equally, with showers; slightly clouded and fine.
26. Heavy clouds and showers; barometer exceedingly low: sunshine and showers alternately; half-shower half-past 1; boisterous with rain.
27. Clear and frosty, with very slight sprinkling of snow and hail on ground; clear, cold, and dry.
28. Clear and cold: fine, with sunshine; cloudy and fine.
29. Slight frost; clear and very fine; rain at night
Mean temperature of the week, 0.3 deg. above the average.

Notices to Correspondents.

Gardeners' Chronicle.—The first Number of the present year has been reprinted, and may now be had. The newspaper part has been omitted.

Communications from the following Correspondents are in type, and are only waiting till room can be found for them:—*W. R., J.C.X., E. Bevan, M.D., A. Pettigrew, P. P., W. Billington, M. G., J. B. K. L., J. Wighton, E. J., A Visitor, J. L. Snow, W. B. Booth, A Subscriber, J. Brown, G. Thompson, Vitis, A Practical Man, Peter Mackenzie, Quercus, R. Errington, Gr., J. M'I., J. Spencer.*

Aponogeton distachyon.—*Alpha.*—I have grown this plant for several years in a small pond at Stoke Newington, and have had flowers sometimes within a week of ice being on the surface of the water. It is necessary to plant it below the influence of frost, but not deeper, as, if too deeply planted, it will not be able to reach the surface, on which its long leaves float. It blooms freely here all the winter months in a shallow tank in the greenhouse, where, on account of its fragrance, it is a great favourite. It seeds freely, and every season produces a numerous progeny of self-sown plants.—*J. B.*—It grew and flowered freely from February till June, in an aquarium formed in a sluggish brook, with a calcareous mud-bottom, from about 1834 to 1840 (when the informant quitted the premises) at Stoke Bishop, in Gloucestershire, and since that, in a pond made with plastic clay, with the superior lining of chalky loam, at Ashby, in Hampshire, till devoured by sheep.—*Anon.*

Arnott's Stove, imitated in fire-brick, is set up in a small greenhouse; the fire is regulated by a valve of easy control, and will burn 12 or 14 hours without attention. The only defect in the stove, is the difficulty of finding a cement that will stay in those joints of the brickwork nearest in contact with the fire: these open joints invite a capricious admission of air, destroying the control of the valve, hindering the continuance of the fire, and influencing the degree of heat. Perhaps some of our kind readers can suggest a cement that will help the dilemma of a subscriber.—*P.*

Asphaltic.—*A Subscriber.*—We do not know whether the mixture made of grouting this has been exactly followed, to report on the subject having reached us. But we do know that the application of very strong manure, in the manner described by Captain Chesshill, has been very advantageous. Common Guano, mixed with sea-salt, and applied in a liquid form, has proved most beneficial.

Asphalte.—*Nhel.*—We do not think sea-sand can be employed in making asphalte floorings and paths, because there is no getting it dry, and perfect dryness is indispensable to the success of the operation. One inch thick is not enough. We do not see why lime rubbish should be injurious; we know it, on the contrary, to be advantageous. You may apply gas-water to your Peach-trees safely now.

Books.—*William.*—We agree with you that gardening books are often too dear. Booksellers will allow gardeners some discount for gardening books, if they apply to the publishers of them. We, however, cannot interfere in such matters.——*A Subscriber.*—Your question is quite out of our line. You had better consult the foreman of the nearest brewery.

Brachycome iberidifolia.—*Clericus.*—Seeds of this should be sown in pots or shallow pans filled with light rich soil, and well drained. The pots should be plunged in a gentle hotbed. In order to obtain blooming plants early, the seeds may be sown now; but if that is not an object, a fortnight or three weeks hence will be better; as soon as the young plants are up they should be potted into small pots, and if they are to be kept in a greenhouse, shifted into larger ones as they require it. Those that are to be grown out of doors should be planted out into prepared bed early, say by the end of May, in order that they may perfect their seeds in September or early in October.‡

Bugs.—*J. W. K.*—Would be obliged for information as to the success that has attended the use of Bagster's hives.

Carnations and Picotees.—*A Reader of the Chronicle.*—Neither the aspect nor the opaque roof will suit Carnations and Picotees; they require plenty of light when coming into bloom. We recommend you the following sorts:—*Scarlet Bizarres:* Twitchett's Don John, Martin's Splendid, Headley's Wm. Cobbett, Rainsforth's Gameboy, Roi de Capucin, Ely's Lord Durham. *Crimson Bizarres:* Puxley's Prince Albert, Holmes' Count Paulini, Cartwright's Rainbow, Ely's Duke of Bedford, Strong's Lionsmo, Ely's Lord Milton. *Purple Flakes:* Mansley's Beauty of Woodhouse, Millwood's Premier, Nix's Lady Chetwynde, Strong's Esther, Lascelles' Queen of Sheba, Hogg's Colonel of the Blues. *Scarlet Flakes:* Chadwick's Brilliant, Maud's Rowton, Wigg's Earl of Leicester, Simpson's Marquess of Granby, Willmer's Hero of Middlesex, Gresaly's Mary Anne. *Rose Flakes:* Brooks' Flora's Garland, Wilson's Harriet, Ely's Lady Ely, Willmer's Endymion, Fletcher's Duchess of Devonshire, Sidemouse's Lady Rowley.*

Celeriac.—*P. T. O.*—Should be raised like Celery, and similarly managed, till fit for planting out. It should always be divested of side-slips. It requires rich sandy soil, in which it may be planted out, shallow, in the beginning of June, the plants being 15 inches apart. It must not be earthed up.‖

Cucumbers.—*A Subscriber.*—A thermometer plunged into the mould of the bed, about three inches deep, should indicate 80° of heat, which is a safe temperature for the plants.‡

Datura, &c.—*An Irishman.*—Presuming that your Datura is D. arborea or sanguinea, it requires the following treatment:—Being large plants, growing to the height of 10 or 12 feet, they flourish best when they are planted in the bed of a conservatory; but they will also grow well in large pots. The soil should be a mixture of peat, loam, and sand, with a little leaf-mould. They do not succeed well when planted in leaf-mould alone, which is, no doubt, the cause of your plant becoming sickly. Brachysema latifolium is an abundant bloomer, and grows freely in peat, loam, and sand, with the addition of a little rotten dung. The same kind of soil will also suit Hovea Celsi, which should be kept in a light and airy part of the greenhouse, and potted and watered with care. To render it bushy, the main shoot should be topped when the plant is young, and the young laterals should also be shortened in when they begin to grow, for if this is not attended to the plant is particularly liable to grow up tall and naked at bottom.‡

Dauccus.—*P. T. O.*—A dwarf variety of Fennel. It will grow in any rich light soil. Sow in drills, and blanch the young shoots by earthing up. It will not do *well* without bottom-heat.‖

Fruit-trees.—*Abdulcaymus.*—Your Apples and Pears are for the most part subject to canker. They are old varieties. Your soil has doubtless its share in causing the disease; but you had better get new kinds. If you cannot procure fresh rich loamy soil, the *sward of any soil* will certainly prove beneficial. We would still advise you to cut away all unsound wood. Lime will be best applied, in a quick state, early in spring. It should be spread over the surface of the ground, and dug or forked in so as not to injure the roots.‖

Gold-fish.—*C.*—The Gold-fish is a species of carp, and all these fish deposit their spawn on weeds growing on the shallow sides of ponds most exposed to the influence of the sun. The common-pond weed, the Water Ranunculus, and the coarse Grasses which float on or near the surface, are the most favourable for this purpose. An artificial pond, 30 feet diameter, of an inverted conical form, 4½ feet deep in the centre, and composed of stone and mortar, is most probably too deep at the sides for the spawn to be hatched, even if the weeds above mentioned are in the pond. If the sides are shallow the common Forget-me-not would afford the proper means for the fish to deposit its spawn on the stems; and other plants that are ornamental may be found to answer the purpose; but without a shallow side it is likely that the spawn, by not receiving sufficient warmth, would perish. Fish are male and female. The female deposits the ova or hard roe, and the male then deposits the milt or soft roe on the ova, without which latter process no vitality ensues. Water-lizards might eat some of the spawn, but unless they were in great abundance it is not likely they could destroy the very large quantities of spawn which the female fish in a healthy state usually deposits. *B.* [There is a book by Bocclus "On Fresh-water Fish;" and Mr. Yarrell's "British Fishes" is a classical work.]

Grasses.—*Paris.*—For the purpose of distinguishing Grasses take "Parnell's Grasses of Scotland;" for their qualities, "Sinclair's Hortus Gramineus Woburnensis;" for systematic questions, "Kunth's Enumeratio." They are all cheap books.

Greenhouses.—*A. B.*—Nothing will grow in an old-fashioned hibernatory with an opaque roof and high front sashes; but many things will live in it through winter without growing. For growth, light in abundance is requisite. If you take off the roof and replace it with glass, then Camellias and Orange may succeed in it in the open ground.

Heating.—*Hants.*—We find earthenware pipes break at the joints, and we understand that this always happens; but we are told that if the flaws are made good with cement, they will do very well afterwards. You had better use hot-water gutters, constructed as recommended at p. 699, 1842, and covered with slate.——*H. D.*—No doubt gas had distilled from the coals during the night and had exploded. This is *one* of the nuisances attending smoke flues. We would rather not have a greenhouse at all than heat it by smoke flues.——*Cirrus* will probably find his purpose answered by a plan of a Melon-pit that will be published next week. Cut down your Vines to three eyes, and enrich with bones and good stable-dung; it is immaterial whether they are started in heat or not. Mr. Roberts's directions are very good, and it is a great pity you cannot cover your border with stable-litter. Perhaps you can keep off the cold rain of spring by boards or some kind of contrivance. You can force vegetables and Strawberries in your pit; but it will not suit Greenhouse-plants where the Vines cover the glass.——*J. H.*—When you are afraid of expense it is difficult to do what you want. The best way for you to proceed would be to get a set of Bullivant and Bailey's iron rafters; but if they are too dear, then you must have recourse to hot-water brick-gutters, which will not be dangerous if covered with slate. For the greenhouse and you had better trust to the flue of the fire-place which heats the tanks. We quite agree with you that all the boilers yet manufactured are far too expensive for many little operations. Can't you get an iron saucepan set in brickwork and pierced for a flue and return-pipe? It would do very well.

Hyacinths.—*Amen.*—We cannot explain your case, which, in the way you state it, is unaccountable.

Inscriptions.—*A. O. M.*—We know of no application likely to clear away from the surface of a very old rough-hewn limestone slab the incrustations of Lichen, &c., now rendering illegible a supposed inscription, except the strongest possible solution of caustic potash; and we are not sure that it would succeed. It is, however, worth trying.

Insects.—*Ellesmach.*—As there are many caterpillars which attack fruit-trees when they break into leaf, we cannot tell what species it is that you suffer from, but if you will send us specimens when the larvæ make their appearance we will give you the best information in our power. It may be the caterpillar of the winter-moth, Phalæna (Hybernia) brumata, whose history you will find in vol. i., p. 812, with figures, and the best mode of arresting that pest. *R.*——*A Young Gardener.*—The curious rings of eggs from the branches of fruit-trees will produce the caterpillars of the "Lackey-moth," which spin a web, and are very injurious in orchards and hedges, where they abound to a great extent. See vol. iii., p. 244, under the name of Bombyx Neustria. *R.*——*A Constant Reader.*—Train-oil is an excellent application for your Apple-trees. See last week's *Chronicle*, p. 116. *R.*——The beetles communicated by *Professor Royle* feeding upon Cayenne pepper, are a species of Anobium called Leloderma testacea, which inhabits South America as well as the East Indies. The application of heat, either by baking or immersion in boiling-water, would destroy the insects; and if the bottles be made of cast glass, this process will be attended without loss. The East Indian Wheat has been eaten by a Weevil named Calandra oryzæ, from its depredations on the Rice. It is closely allied to C. granaria; see vol. iii., p. 907. *R.*

Lawns.—*A Novice.*—On 1¼ acre of new lawn you may sow the following grass-seeds, viz., Festuca duriuscula, 4½ lbs.; F. tenuifolia, 3 lbs.; Cynosurus cristatus, 7½ lbs.; Avena flavescens, 1½ lbs.; Lolium perenne, 30 lbs.; Poa nemoralis, 2 lbs.; P. sempervirens, 2 lbs.; P. trivialis, 2½ lbs.; Trifolium repens, 11 lbs.; and T. minus, 3 lbs. This is a sufficient quantity to cover the ground closely in a short time.‡

Larkspurs.—*A Subscriber.*—These will succeed in almost any soil; but a rich friable loam and a situation open to the sun suit them best. They are improved by adding thoroughly rotten manure freely to the soil in which they grow. The seeds of the annual kind do best to be sown in autumn, as when they are sown in spring it is late in the season before they flower. It is probable that your young plants of these are eaten off by slugs, with which you say your soil swarms. These may be effectually destroyed by applying pretty strong gas-water to the ground at their feeding time; but it must be clear of plants.‡

Melons.—*Theta.*—If you will again refer to the article on the Cultivation of the Melon, on January 27th, you will find it there stated that one plant was planted under each light, from which two shoots were trained up the trellis, and about three Melons were allowed to swell off in the same space; that is to say, that the average number of Melons grown on each plant was three. With regard to your second question, the layer of dung and leaves at the bottom was firmly trodden, but the soil was only pressed with the hand round the sides of the pit, and not trodden; because treading makes it liable to crack when it becomes dry, and the roots are thereby severed from the plant. If your soil is light and dry when it is put into the pit, you may tread it with advantage. There are many little matters necessary to be observed in the cultivation of most plants, upon which it is difficult, without going to a great length, to give directions which shall be applicable under all circumstances. It was the Hoosainee Melon which was grown at Trentham last year. The seeds were obtained from a distinguished cultivator six years since, and were, no doubt, true at the time. Since then, notwithstanding the pains that have been taken to prevent it, it is possible that it may have become impregnated with the Ispahan. If it has become so crossed, it is probably not the less valuable on that account. At all events, I consider that the flavour was as good last year as when I first had it; and there was no other kind grown near it last year. I cannot assist you in obtaining the Sirdar Melon, having only now been able—and that through the kindness of a gentleman in Ireland—to obtain two seeds.—*G. F.*

Manures.—*W. T.*—We fear sulphate of soda will not prove a good manure. Experiments are not in favour of it. If used at all it had better be mixed with the dunghill at some such rate as two stone to a ton of the dung. Sulphate of ammonia should be applied in March at the rate of 2 or 3 cwt. per acre. Its effects are very powerful but transient.——*R. H. C.*——Give a wine glass of superphosphate of lime to each plant of Pelargonium when prepared for flowering. Potter's Guano is an invaluable manure. Use it as a top-dressing at the rate of 3 lbs. to a rod.——*Monmouth.*—As gas-water varies in strength, no exact quantity of sulphuric acid will fix the ammonia. Add the acid, a little at a time, till effervescence ceases, and then the fixation will be complete. Experiment serves to show that March is the best time to apply gas-water, &c. to grass-land. Applemust has a bad reputation as a manure, and is only fit to be fermented in a dunghill. No means are known of preventing the death of branches of the Moorpark Apricot.——*T. B. C.*—Guano may be applied before the seed is committed to the ground, but it must be mixed with a large quantity of soil or it will kill the seedlings. The best way of applying it is mixed with water, poured between the rows of plants as soon as they are fairly above ground.

Morphology.—*K.*—Is it fair to criticise "R.E." before he has stated his case? If his arguments can be refuted, we shall be very happy to insert the refutation, when he has closed the subject; but we confidently expect that no sensible and well-informed a man as you are, will be a convert before then.

Names of Fruit.—*S. S. S.*—Your Pear is the Virgouleuse.‖

Names of Plants.—*Silex.*—Mammillaria tenuis.——*C. D.*—The Trymalium is odoratissimum, and is from Swan River. The Epidendrum is very like tonosumum; but if it *really* is from the Organ Mountains it must be new. We cannot, however, take for such a fact the authority which gave you the Cape as the native of the country of the Trymalium. The colour of Centradenia is more or less pink, but the term red is not strictly applicable to it.——*S.*—Erica herbacea.——*C. C.*—1. Some Hedychium. 3. Lotus Jacobæus. Others not in a state for determination.——*J. Mel.*—It is impossible to name a plant from a leaf and a sketch, unless it is something well known. Perhaps it is some Cæsalpinia.——*C. H. N.*—1, some Viburnum, perhaps. Fragments out of leaf and flower cannot be named.¶——*W. S.*—1, some Thuja; and 2, some Juniperus, but they cannot be determined from such fragments; the latter resembles J. phœnicea.——*J. S.*—1, Calceolaria pinnata; 2, Pyrus pinnatifida; 3, Crataegus torminalis. The ignorance of natural history of people who write books of travels is disgraceful. Opobalsamum is produced by Pistacia gileadensis; Nabbutch is a name we don't remember; Valonia is Quercus ægilops; the prickly Oaks are —— anything.——*A Young Gardener.*—Araucaria imbricata, Gaidia serioea.

Pansies with Diseased Leaves.—*C. E.*—You would oblige us by sending more specimens of your Pansy leaves, and say whether the variety from which they are taken is a seedling; and whether the disease is confined to this particular sort, or if others are affected in the same way. What is your compost?*

Picotees.—*A Reader of the Chronicle.*—*Red-edged*—Sharp's Duke of Wellington, Brinkler's Masterpiece, Gidden's Tenier, Sharp's Criterion, Wood's Queen Victoria, Brinkler's Duchess. *Purple-edge*—Dickson's Trio to Cambridge, Sharp's Invincible, Gidden's Miss Hennell, Brinkler's Purple Perfection, Ely's Grace Darling, Mrs. Hemmingway. *Rose and scarlet-edge*—Kirkland's Squire Annesley, Gidden's Queen Victoria, Wilson's Miss Fanny Irby, Garratt's Lady Decre, Beauty of Hemmingford, Sykes's Eliza.*

Pits.—*S.*—We recommend the pit figured in the *Chronicle*, at p. 593, 1843, known by the name of the Heckfield pit, as excellent, when stable manure *must* be used.‡

Polyanthuses.—*An Old Subscriber.*—Pearson's Alexander, Buck's George the Fourth, Cox's Prince Regent, Clegg's Lord Crewe, Hufton's Lord Ranelife and Squire Ray, Ackersley's Jolly Dragoon, Nicholson's Gold Lace and Bang Europe, Fletcher's Defiance, Crownshaw's Invincible, and Clegg's Lord John Russell. We do not recommend particular Nurserymen or Florists.*

Roses.—*R. C. W.*—Your China, Tea-scented, and Bourbon Roses may be pruned when the coverings are removed, cutting well back the strong shoots, and taking out the weak ones entirely; at the same time all dead wood or unsightly stumps should be cut neatly out, leaving the young shoots thin and regular.‡

Seed-saving.—*Expanse.*—We hardly understand your question. If seeds are to be saved quite pure, care must be taken to prevent the flowers being hybridised by those of other varieties of the same species: and this is done by setting the flowers artificially or by covering the blossoms with muslin, while expanded, and until the seed-vessels begin to swell. Some seeds, however, are not very prone to hybridise, especially Celery, Endive, Leek, and Carrot; but Beet, and all the Turnip, Radish, and Cabbage races are sure to do so in the absence of precautions. Once transplanting after the plants are full grown is often enough.

Strawberries.—*C.*—Strong young plants with good balls will fruit this season. Canterbury Bells will not bloom the first year, unless sown very early, nor will plants of Alstrœmeria.‡

The Fastolff Raspberry.—*Fair Play* must excuse us. We have already stated, on his authority, what the history of this variety is, and thus due honour is given to those by whom it was raised. We do not find that Messrs. Youell pretend that they raised it themselves. If other people wish to sell it they must advertise it; if not, why complain? We never insert attacks upon individuals, unless for some very grave reason; and here we see no reason at all. To print an anonymous imputation without finding room for a reply, would be anything but fair play, and our columns are intended for something better than disputes.

Tomatoes.—*P. T. O.*—Should be sown in March, in pots, and placed in gentle heat. The plants should be shifted into larger pots, as they require, till the end of May. They may then be planted out in a warm situation, and kept supported from the ground. When a moderate quantity of fruit has formed, the plants should be stopped, and no more fruit allowed to appear, for in this climate only the earliest formed acquire maturity. Regulate frequently in order that the plants may not be deprived of much foliage at any one dressing.‖

Wheat-splitting.—*Tassel.*—The observations already made upon this subject in our columns have led to some, and we hope to many, such experiments as you propose. It is not worth renewing the subject till the result of those experiments shall be seen.

Yeast.—We have to thank two or three correspondents for communications on this subject, which we shall publish, if they prove useful upon trial.

Miscellaneous.—*A. B. C.*—Seyssel asphalte is made by a company. We do not know what its composition is. You may raise Deodars in the same way as Larch, or in many other ways. See our volume for 1842, p. 159. If you have failed it is probable that your seed was bad.——*A. F.*—Your Evergreen Oak will shoot again if cut down; the operation should be performed as soon as the buds are beginning to swell. It is not *very* unusual for Pear buds to bear fruit the first year after insertion; but it usually spoils the bud.——*H. B. J.*—Plant your Arrow-root in light peat and loam, give it *plenty* of pot-room, plunge it in a bottom-heat of 80° or 85°, and keep it damp while growing, so as to drive off red spider.——*Candlestpulus.*—Your distances are proper for Cedars of Lebanon, but too great for Araucarias, which do not spread very much laterally; ten yards are enough for them.——*Flora.*—Commelina coelestis is the only one of your plants that will flower with any certainty the first season.——*A Gardener.*—Worms may be killed by watering your ground with weak gas-water, or lime-water, or a very weak solution of corrosive sublimate. The kind of Kale known among gardeners by the name of Curled Kale is suitable for a private garden.‡——*W. M.* will find an article on the destruction of rats given in No. 46, 1843. A common way of frightening birds from kitchen-garden crops is to set up sticks having Potatoes stuck full of feathers attached to them by means of a piece of twine, in order that they may be moved by the wind.‡——*A Subscriber* is answered in last week's Paper, p. 129.‡——*A Subscriber* should refer to our columns, where the prices of netting are advertised. We never recommend dealers.‡——*S.*—You may plant your Cape bulbs now, and keep them from frost.‡——*A. W. B.*—Thanks. We will attend to it.——*Hereford's* Letter is sent to Mr. Moorman.——*Anon.*—An Ellis's microscope, with knives, &c., complete, may be had for the sum you mention; and it is the most useful one we know of. The book you inquire about will not be republished in less than a twelvemonth. "Paxton's Botanical Dictionary" does not contain the names of weeds. To purchase the books you name would be of no advantage to Mrs. Loudon.——*J. H.*—We believe Mr. Hope is correct in his statements respecting Gas Tar; but we have not tried it. Its vapour would probably be deleterious to plants in leaf.——*Oudeton's Letter* is sent to the London Committee.——*J. W.*—The wood is impregnated with iron, not copper. The colour is curious. The infiltration seems to have taken place since the wood was separated from the parent tree.——*A., Watford.*—A full Index is always given at the end of each year, as you may see by referring to previous volumes.——*A. P.*—Your Pines are certainly in a woeful state; but it is impossible to say why, without seeing them. It *may* be the iron.——*A Journeyman Gardener.*—Much obliged, but we have no use for the volume.——*M. D. T.*—Pray send your address.

SEEDLING FLORISTS' FLOWERS.

Camellia.—*J. K.*—Your seedling is a promising flower; but having bloomed it under such disadvantages, the probability is that the defects in it may arise from that circumstance, and the flower may be much improved another season, under better treatment. It is of a good size, pleasing colour, the petals well formed, and of good substance, with the centre well filled up; this part of the flower, however, is the distinctive part, from the petals being so much crumpled and imperfectly marked. If better cultivation will not remove this defect, it will be of little use.*

Cineraria.—*M. G.*—As far as we are able to judge from the remains of a single bloom, much mutilated, your seedling promises well; the white is pure, the flower large, and of good substance.*

*** As usual, many communications have been received too late.

Erratum.—In last week's Paper, p. 118, col. 4, line 17 from the bottom, for "crevices in the bank," read "crevices in the bark."

EXAMPLE FARM.

WANTED, to Rent on Lease, for a term of not less than 21 Years, to enter at Lady-day, a Commodious Dwelling-house, and about 120 Acres of Arable Land, for the purpose of forming it into an EXAMPLE FARM. It must be near to a Railway station, and within 40 miles of London; on the greensand formation, under the chalk, or on the London clay or Plastic clay above the chalk.—Apply to Mr. MORTON, Chesterhill, Stroud.

FARMS TO BE LET IN THE ISLE OF WIGHT:—

FORELANDS, at BEMBRIDGE, in the Parish of BRADING;

Containing:—Arable			220a.	2r.	33p.	
Meadow and Pasture	26	1	15	a.	r.	p.
Homestead, &c.	2	0	15—248	3	22	

TAPNEL FARM, in the Parish of THORLEY;

Containing:—Arable	344	1	39			
Meadow and Pasture	73	1	2d			
Down	50	0	29			
Homestead	4	0	6—472	0	24	

CHESSELL, in the Parish of SHALFLEET;

Containing:—Arable	267	1	6			
Meadow	6	2	30			
Pasture	10	0	4			
Down	70	2	23			
Homestead	2	2	22—357	1	14	

BARTON FARM, in the Parish of WHIPPINGHAM;

Containing:—Arable	350	0	12			
Meadow and Pasture	71	2	38			
Homestead	7	2	14—429	1	14	

For Particulars and to treat for Lease apply to Messrs. H. and R. B. SWELL, Newport, Isle of Wight.—Feb. 24, 1844.

The Agricultural Gazette.

SATURDAY, MARCH 2, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Mar. 6	Agricultural Society of England. Highland and Agric. Society.
THURSDAY, Mar. 7	Agric. Imp. Society of Ireland.
WEDNESDAY, Mar. 13	Agricultural Society of England.
THURSDAY, Mar. 14	Agric. Imp. Society of Ireland.

FARMERS' CLUBS.

March 6	Wickham Market. Tenford. Wenlock. West-Hereford.	March 5	Framlingham. Collingham. Rayleigh.
		March 6	Harleston.

WE all know that correct Agriculture presents to our view a series of the most beautiful illustrations of natural laws, and an amateur of the art may well be carried away by enthusiasm while observing how the facts which come under his eye in the field tally with his scientific knowledge previously acquired in the closet; and he may well be excused instead of being ridiculed for the losses which this enthusiasm, when unbridled, entails upon him. But we must endeavour always to keep in mind that Agriculture is a business by which men earn a livelihood; that it ought to be considered only in the matter-of-fact light of a means of investing capital and labour; that *that* only is an improvement in it which increases the profits of this investment. Now, the means of thus improving Agriculture are two-fold, viz., those arising from the existence of defects in modes of producing, whether the produce be vegetable or animal; and those dependent on the state of the market for articles of produce; and these last are often made use of, as, for instance, when a farmer resolves, after a consideration of market prices, to change his rotation of crops, substituting one crop for another, or commencing the cultivation of, to him, an entirely new plant. It is to an instance of the latter kind that we intend at present to refer.

Several of our correspondents have asked from us an account of the CULTURE OF FLAX. This plant is cultivated to a considerable extent in this country; to an extent which, owing to the disinterested labours of Mr. Warner, of Trimingham, Norfolk, and to the labours of a Flax Improvement Society at Belfast, is rapidly increasing. It is chiefly confined to the alluvial districts of England and the rich loamy land of North Ireland, these being the descriptions of soils preferred by the plant. To show the rapidity with which the cultivation of this plant is increasing, we may mention that at the third Annual Meeting of the Society referred to above, Mr. S. R. Mulholland said that "the firm with which he was connected had, on an average of previous years, sent no less a sum than 40,000*l.* annually of ready cash out of the country, for the purchase of Flax; but this year they had not expended abroad as many pence." And to show what extent of land in Ireland bore Flax last year, we may mention that it is estimated that 37,817 hogsheads of Flax-seed of 7 bushels each, were sown last spring in that country, and each hogshead containing seed enough for three acres, we find that 112,000 acres was the extent sown. This would probably yield on an average 6 cwt. per acre, or in all 36,468 tons of scutched Flax, which at 45*l.* per ton amounts in value to 1,640,925*l.* These figures are taken from the published report of the Flax Society of Belfast, a pamphlet[a] which besides containing much valuable statistical information on Flax-culture, is full of useful practical details. We find in the Appendix to this pamphlet that 55,113 tons of Flax were imported, chiefly from Russia, in 1842, and notwithstanding the increased produce of the article at home, it thus appears that there is still ample market for the article, and every prospect of its continuance.

[a] Proceedings of the third General Annual Meeting for the promotion and improvement of the growth of Flax in Ireland, &c. Belfast, F. D. Finlay, Calender-st. pp. 74.

The Flax-plant, as we have said, grows best on loamy clays: the soil on our alluvial deposits may be considered as a correct representative of them. It is cultivated in various ways. In many districts it is grown after Wheat; in others, Potatoes and other roots are the preparatory crop; and in Scotland, it is frequently grown after Oats which have been sown on lea. As we may safely follow the example of the Netherland farmers in allowing the plant to seed, for Belgian Flax obtains the highest price in the market, we must consider Flax as a seed-producing crop, and practical men join in calling it a most scourging one; and, therefore, its place in the rotation should be after a green crop—a manure-producing crop. The best crop to precede it is Grass.

The land should be ploughed before winter, so as to let the furrow-slice be well reduced by the frost, and when harrowed down as fine as possible it is ready in the early part of April to receive the seed. The thicker this is sown, the finer will be the fibre of the flax, but the less will be its quantity, as well as that of its seed. About 2½ bushels is generally considered enough; it is sown broadcast, and harrowed in. That which is procured from Holland is considered to be the best, but Mr. Babington informs us that the only seed free from the seeds of a most destructive weed, the Flax Dodder, is obtained from America (see page 89).

Flax must be carefully weeded when young; this, however, ought not to be a work of much labour, as the land ought to be thoroughly clean upon which it has been sown. "The period of pulling the plant is determined by the principal object in cultivating it: when it is wished to procure the fibre, the plant should be pulled somewhat green; when it is wished to procure the seed, either for sowing again or for crushing for oil, the plant must remain till the seeds are ripe. This will be denoted by the hardened state of the seed-vessels, the yellow colour of the stems, and the falling off of the leaves. When Flax of good quality, but not extreme fineness is wanted, the best period of pulling is just when the plant has attained its maturity, with respect to the formation, but not to the full ripening of the seeds. When it is required for the finest fabrics of all, as for cambrics and muslins, it should be pulled when it begins to flower."

As we have already said, it is the interest of the farmer to save the seed of the Flax, and therefore it should not be pulled till the seed-vessels have become brown. It is not necessary *now* to detail the subsequent management of the Flax crop; those who wish further particulars will find them in Professor Low's work on Agriculture, from which the above extract is taken, and in Martin Doyle's "Practical Husbandry."

We are far from recommending that the growth of Flax be inconsiderately commenced on an extensive scale; but it is not necessary to adopt the high figures, such as those of our correspondent Mr. Dickson, which are true only of rare cases—it is not necessary to adopt such figures as true on an average, in order to see that the cultivation of the Flax-plant may be profitably entered upon on suitable soils.

WHEN speaking some time since of the probable—and, indeed, in reference to the few experiments that have hitherto been made, the actual—influence exerted upon the future history of the plant, by the process of steeping the seed in certain solutions, we might have enlarged upon one point which was passed over hurriedly. It was stated that the effect of such a process would probably show itself in the rapid growth of the plant through the period of its germination, and the earlier stages of its growth, during which it is peculiarly liable to injury. It was also intimated that steeping the seeds of plants might have a direct influence upon their growth up to a period considerably beyond that of germination. Now whatever direct influence it may thus possess, it is evident that if it have any influence at all on the condition of the plant during its early stages, it must indirectly exert great influence much beyond those stages. And here we may leave the individual case, and consider for a while the importance of the general principle—

THE IMPORTANCE TO A PLANT OF A VIGOROUS HABIT OF GROWTH WHEN VERY YOUNG.

We do not now allude to plants cultivated merely for their roots and leaves—these differ from those cultivated for their seed in a very important point. Let us take the Wheat-plant and the Turnip respectively as representatives of these two classes. In the latter case, the efforts of the farmer are all bent upon obtaining size of bulb: this is the one point which is the object of cultivation; and, however backward the plant may be at an early stage of growth, genial weather and good cultivation may start it again, and quite remedy previous bad fortune: its size will increase under such influence; its growth is from the beginning to the end a mere process of accumulation—a mere work of addition. In the case of Wheat, however, there are several parts to be looked to. It is the seed which is here important; and the farmer aims not only at obtaining size but number also. This number depends on two circumstances—the tillering of the plant, which increases the number of ears from each root, and the size of these ears—the number of seeds on each. The former of these particulars, equally with the latter, renders it of great importance that plants should be placed in such circumstances when young as will enable them to grow vigorously; but it is to the latter point especially that we wish to direct attention. We have pulled a Wheat-plant early in April, when barely six inches high, and on dissecting it have laid bare the embryo ear, then hardly the tenth of an inch long, and by the help of a microscope we have counted the buds upon it, at this early period—the buds from which the flowers and the seed are to spring. Now this embryo ear in the month of April appeared to possess about the same number of parts, each in an embryo state, as the average of perfect ears; and though we do not know that the ear of Corn is formed in embryo perfect, so far as *the number* of its parts is concerned, from the first, yet it is extremely unlikely that in this case any addition would have been made to the number of those parts, for that was already as great as is usually observed. How important, then, that during the very early period, when this number admits of increase, the young plant should be in a vigorous condition! No future exertions, seconded though they may be by genial weather, will here remedy a fault occasioned by inattention during the first stages of the plant's growth. It is *then*, that the limits are assigned to *number*, and any future vigour on the part of the plant must expend itself in the production of size, and in the full filling up of all the parts which have been formed in an embryo state. This latter point is doubtless of great importance; and the farmer, by all means in his power—the right preparation of the land and due thinness of sowing—must endeavour to push the plant on so as to induce the fertility of all the buds on the ear, which is, be it remembered, of rare occurrence; but let him, by careful attention to these same means, endeavour in the first place to obtain length of ear, such a number of buds on each, as, if all brought to perfection by a good season, may result in a large crop.

ON THE FARMER'S CAPITAL.

WE believe that error is often committed in estimating the capital required on entering a farm; various estimates have been made, but all of them have disappointed the farmer. This remark is suggested by the notice in your *Agricultural Gazette* of the 6th ult., that Professor Low says, "Let no man venture on a farm without having a sufficient capital to work it, which from long experience I compute to be about 6*l.* per acre."

Before we can enter into an estimate of the capital required, we must not only know the kind of farm in question, whether it be a dairy farm, a grazing farm, a stock (hill) farm, or an arable farm; we must also know the state of culture it has been in, and in which it is to be left by the out-going tenant, and the cultivation or tillage and crops the in-coming tenant has to take to and pay for, before we can attempt an estimate with any chance of approaching near to the sum required. Let us, therefore, suppose a case where a lease has just expired, and where a just and rational system of culture has been embodied in the conditions of it, binding the tenant after every seed-producing crop to have a root or dung-producing crop, to be all consumed on the farm; binding him also to apply all the manure to the production of the roots; and to continue this system from the beginning to the end of the lease; but giving him absolute property in all straw and manure of the last crop, for which, as it belongs to the farmer as much as the grain produced or the stock reared that year, he ought when he leaves the farm to get the full value. And, beside this, as half of the culture and the manure put on to produce the root-crop of the last year of his tenancy has not been exhausted, but remains in the soil to produce the seed-producing crop of the in-coming tenant's first year, the out-going tenant ought to have the full value of it.

It is not necessary, at present, to enlarge upon the merits of these conditions in a lease. Believing that they ought to be embodied in the clauses of all leases of arable land, I merely allude to them now as affecting the subject in hand—the capital which the in-coming tenant will require.

I suppose the farm to be one of 300 acres, 240 of which are arable, and the remaining 60 acres in permanent pasture. Of the 240 acres, say 40 acres, or a sixth part, is in Clover; 80 acres, or a third part, in roots or dung-producing crops; and 120 acres, one half of it, in Wheat, Barley, Oats—seed-producing crops. I suppose, further, that the term ends at Michaelmas, with a clause in the lease embodying the conditions already alluded to, binding the landlord or his in-coming tenant either to take to all or to any part of the 80 acres of roots, all or any part of the straw, and all or any part of the Hay (if the Clover be made into Hay) at a valuation, or to allow the whole, or what he does not take, to be disposed of, to be carried off the land; also to pay for one half of the value of the manure applied to the cultivation or tillage of the 80 acres of the root-crop of the last year; and if the Clover has been pastured by sheep being folded thereon, instead of being made into Hay, to allow the value of the manure which the stock has dropped during the time they have been depasturing it.

A farm entered upon under such conditions would be in such a state of culture, that the first crop of the land to the new tenant would be as productive as any of the crops which the last tenant had during the whole of his lease, and the amount paid by the in-coming tenant would be

satisfied to lean on the contemplation of the root and the Corn crop at harvest. And assuming that such cultivation-clauses as were in the last lease are continued in the new one, we proceed with our estimate of the capital required for such a farm: an estimate, viz., of the capital required to cultivate a farm of 300 acres, of which 240 is in arable culture, and 60 in permanent pasture: the arable land to be cultivated so as to have one half of it (viz., 120 acres) in Corn every year, and the other half of it in roots and Clover; 40 acres in Clover, and 80 acres in roots.

Working Cattle.			
To 8 working horses and a saddle-horse			£270 0 0
Implements.			
Plough and cart-harness, 1 saddle, &c.		£6 6 14 0	
8 one-horse carts, at 12*l.*		96 0 0	
4 ploughs, at 4*l.*		16 0 0	
4 sets of draft-bars		2 2 0	
A subsoil plough		2 0 0	
Chain and draft-trees for four horses		2 10 0	
4 two-horse grubbers or scarifiers		34 0 0	
4 one-horse hoes and drill harrows		10 0 0	
Hornsby's drop drill for Corn and Turnips, say		30 0 0	
4 pair rhomboidal harrows, 50*s.*		10 0 0	
1 pair of do. seed-harrows		3 0 0	
Hand seed-sowing machine		4 0 0	
2 rollers		15 0 0	
6 dung-forks, at 4*s.*		1 4 0	
2 scythes and 2 rakes		0 15 0	
4 water-pails, at 2*s.*		0 8 0	
2 wheel-barrows and a hand-barrow		3 0 0	
Barn Implements.			
Threshing-machine and steam-engine being the landlord's, there is only a winnowing-machine		10 0 0	
Buckets, sieves, shovels, &c. &c.		5 0 0	
100 sacks, 4 bushels, at 2*s.* 6*d.*		12 10 0	
Implements for Sheep and Pigs.			
70 dozen hurdles, at 18*s.*		32 10 0	
70 troughs, at 4*s.*		14 0 0	
3 Gardener's Turnip-cutters, at 5*l.*		15 0 0	
2 wheelbarrows and baskets		2 10 0	
Troughs for pigs		5 0 0	
Steaming apparatus		20 0 0	
			450 2 0
Food for working Cattle.			
Oats for the 9 horses for 12 months at 15 lbs. or ¼ peck per day each, 156 quarters, at 20*s.* per qr.		156 0 0	
14 lbs. of Hay each per diem, 22 tons, at 3*l.*		66 0 0	
14 lbs. of Straw each per diem, 22 tons, at 2*l.*		44 0 0	
			266 0 0
Seed.			
40 acres of Wheat, 10 quarters, at 50*s.*		25 0 0	
40 acres of Barley, 15 quarters, at 30*s.*		22 10 0	
40 acres of Oats, 20 quarters, at 20*s.*		20 0 0	
Seed for 40 acres of Clover, at 20 lbs. per acre, 800 lbs., at 6*d.*		20 0 0	
20 acres of Mangold-wurtzel, 100 lbs., at 1*s.*		5 0 0	
20 acres of Swedes and Turnips, 100, at 1*s.*		5 0 0	
20 acres of Carrots, 100, at 1*s.*		5 0 0	
80 acres of Potatoes, 100 sacks of 2½ cwt. each, at 6*s.*		48 0 0	
			150 10 0
Servants' Wages for one Year.			
4 ploughmen at, say, 12*s.* per week		124 16 0	
2 other men, at 12*s.*		62 8 0	
2 boys, at 8*s.*		26 0 0	
A shepherd, at 18*s.*		39 0 0	
Mowing 120 acres of Corn, at 2*s.* 6*d.*		15 0 0	
Mowing 80 acres of roots three times, say 10*s.*		40 0 0	
Harvesting 120 acres of Corn—carting and stacking Corn and stubble, say 12*s.* per acre		72 0 0	
Harvesting 80 acres of roots—carting and storing them at, say, 15*s.* per acre		60 0 0	
			439 4 0
Sheep-Stock, &c. &c.			
The 100 acres of Grass will keep 400 ewes, 20*s.*		400 0 0	
The 80 acres of roots will require 400 lambs 20*s.*, bought in September		400 0 0	
Buy 5 breeding sows, at 3*l.*		15 0 0	
Buy 30 store pigs, at 23*s.*		35 0 0	
6 rams		45 0 0	
			1985 0 0
Tillage and value of the out-going tenant's crop to be taken to by the in-coming tenant:—Straw of 80 acres of Wheat and 40 acres of Barley, say 240 tons, at 2*l.* p. ton		480 0 0	
Hay off one-third of the permanent pasture-land, 20 acres, at 525 cwt.; 25 tons, at 3*l.* per ton		75 0 0	
The in-coming tenant will not require additional capital to purchase the crops of Swedes, Wurtzel, Carrots, and Potatoes, because these will be converted by stock, and sold before Lady-day, and capital to more than an equal amount for many of the items mentioned above will not be required till then. These, therefore, are not mentioned.]			
One-half of the dung and tillage on the 80 acres of roots, at 3*l.* per acre		240 0 0	
Manure dropped on 60 acres of Clover, pastured, at 20*s.*		60 0 0	
		£855 0 0	
Subtract value of Hay and Straw for horses, estimated above at		110 0 0	
			745 0 0
Rent and Taxes.			
Rent to landlord, say 30*s.*		450 0 0	
Tithe		90 0 0	
Poor-rates		75 0 0	
Road-rates		15 0 0	
Church-rates		7 10 0	
Gross rent			637 10 0
Recapitulation.			
1. Working Cattle			270 0 0
2. Implements			450 2 0
3. Food for working cattle			266 0 0
4. Seed-corn, &c. for first crop			150 10 0
5. Servants' wages			439 4 0
6. Sheep and Pig-stock			100 0 0
7. Tillage and stock			745 0 0
8. Gross-rent for one year			637 10 0
			£4068 7 0

According to the above estimate, the farmer requires a capital of about 13*l.* per acre to cultivate arable land, under such conditions of entry as we have before named. Under these conditions the out-going tenant has no interest in running out the land during the last four years of his term; because he gets full payment for all the cultivation he has left in it, and also because he gets the full value of his last year's crop of straw and roots, either from the in-coming tenant or from public sale. The sixth item in the estimate seems large, but we have seen as great a stock of sheep, and of as much value, on many of the best-cultivated farms in Lincolnshire and Norfolk; and we suppose the root-crop, as in these districts, to be consumed by the farmer's own stock. The 7th item is a payment to the out-going tenant, for the good state of cultivation in which he has left the farm, and it is much less than the new tenant would have to sink in order to recover it into that state had he entered upon a farm which had been run out by his predecessor. I have sunk upwards of 800*l.* during the first two years of my tenancy, and got a farm not so large into a tolerable state of cultivation, without getting a single sixpence of return from it till towards the end of my term, during the last four years of which of course I endeavoured to take it all out again, knowing, from the nature of my term, that this was the only way I could ensure myself against loss. The 8th item contains the rent and parochial taxes, all these becoming due and requiring to be paid out of the capital before any of the crop can be brought to market.

According to Professor Low, a farmer's capital is not quite one-half the sum I have estimated it to be in the best-cultivated districts of Lincolnshire. This, however, may, I think, be explained by the mode which the Lothian farmers adopt of consuming their produce, and by their mode of entry and of paying rent. Thus, the 1st, 2d, 3d, 4th, and 5th items of the above estimate I believe give pretty nearly the amount required by the East Lothian farmer; but in the 6th item I think we shall find a very great difference. If it be true that the arable farmers in the Lothians and Roxburghshire sell all their roots, &c., to the hill or stock farmers to be consumed on their own farms by the other's sheep, then nearly the whole of this item of 1,085*l.* will not be required by them as capital; again, the 7th item will also have to be altered, for the term of the out-going tenant is, there, always May-day (although he gives up to the in-coming tenant all the land in course for Wheat at Midsummer, and all the stubble at Michaelmas); and, of course, he consumes all his roots and straw by stock in the coverts, converting it into manure, as this is the only article he is paid for by the in-coming tenant. This item may, therefore, be reduced to the value of 1,500 cubic yards of well-rotted dung, at 4*s.* per cubic yard; so that it will now stand at 300*l.* instead of 745*l.* Again, the 8th item must be struck off altogether, because the rent in the Lothians, as well as over Scotland generally, is made to become due 18 months after the term of entry; so that this 637*l.* 10*s.* is not regarded as any part of the farmer's capital. The gross rent in Scotland is generally paid to the landlord; there are no tithes, nor poor-rates, nor church-rates, and the only parochial rate is the statute-labour (the road-rate in England), which on a farm of this size may amount to about 4*l.* per annum. Thus, then, we have reduced our estimate, under the Lothian system, as follows:—

1. For working cattle	£270 0 0
2. Implements	450 2 0
3. Food for working cattle	266 0 0
4. Seed-Corn, &c. &c.	150 10 0
5. Servants' wages, Harvest work, &c.	439 4 0
6. Cows, pigs, say	100 0 0
7. 1,500 cubic yards of dung, at 4*s.*	300 0 0
8. Rent (statute labour)	4 0 0
	£1968 17 0

Or about 6*l.* 10*s.* per acre—nearly Prof. Low's estimate.

It only remains to add to these observations a few remarks on items 1, 2, and 5. The capital estimated as necessary under these heads is supposed to be spent in the purchase of everything that is best of its kind, whether it be strong and active horses, efficient and newly-made implements, or intelligent labour; for it is believed that capital so spent will yield a larger annual interest than a less amount spent in the purchase of third-rate horses, second-hand implements, or spiritless labour. Possibly the first two of these items might be reduced one-half by the purchase of horses and tools "good enough for a tenant-farmer," as the common but most erroneous saying has it, and I doubt not but that labour may be had in certain districts one-third cheaper than what I have estimated it at; and looking at this, many will say that the annual return from the employment of such, being nearly equal to that from the 1st class description of stock, which I suppose the farmer to purchase, and the expense of obtaining such being barely more than one-half of that which I suppose the farmer to incur; the interest yielded by the former must be nearly double that yielded by the latter; but it must be remembered that in both cases, in order to calculate the interest yielded by capital thus employed, we must subtract from its gross annual amount, so much as is necessary to keep the stock good; so much in fact, as, added to its value at any time, will enable the purchase of other stock of equal value with that which was purchased to begin with. It is the net annual return thus obtained which is the true interest of our capital. Now the rapidity with which second-hand articles wear out, the amount of disease and death amongst third-rate, *i. e.*, half worn-out horses, and the loss from idleness by the use of half-paid labour, are all so much greater, and in fact the money value of these losses is so much more than double that of the losses under these several heads, under the system I have recommended, and on which I have calculated, that when their respective amounts come to be subtracted from the gross annual returns of capital employed, with which they are respectively connected, even though these returns should be of equal value, which is not reasonably to be expected, I venture to say that the one will thus be so much more reduced than the other, that the annual interest or per-centage, derived from the less amount of capital invested in inferior stock, will be much less than that from the greater amount invested, as I have supposed it to be, in first-rate stock.

The subject of the "capital required by the farmer" is one necessarily of first importance to Agriculturists, and none could better occupy the thoughts or employ the pens of the readers of the *Agricultural Gazette*. I hope that a discussion on this subject conducted here may be useful in bringing out the truth of the matter.—*John Morton, Chesterhill, Stroud.*

EXPERIMENTS WITH POTATOES—1843,

Planted in rows, 27 inches apart; the sets being 7 inches apart in the rows, and 6 inches deep.

Sulphate of Magnesia .	Nitrate of Soda .	Average .	Sulph. Magn. and Nitrate Soda, each	Guano, N.A.	Sulph. Magn. and Nitrate Soda, each	Guano, G.L.	Sulph. Magn. and Nitrate Soda, each	Guano, E.	Sulph. Magn. and Nitrate Soda, each	Guano, C.	Sulph. Magn. and Nitrate Soda, each	Average .	Manures.	Applied at rate per acre.	Quantity of Guano.	Produce. Large.	Produce. Small.	Produce per Acre. Large.	Produce per Acre. Small.	Total produce per acre.
1	1	—	1	4	1	4	1	4	1	4	1	—		cwt.		lbs.	lbs.	tons. cwt. lbs.	tons. cwt. lbs.	tons. cwt. lbs.
		—										—	Guano, C.	4	Bod. 1·0338	308	29	1 187	1 5	1 192
		—										—	" E.	4	1·1746	259	43	1 16	1 15	2 11
		—										—	" G.L.	4	1·1746	256	19	1 10	1 3	2 13
		—										—	" M.A.	4	1·1746	416	69	1 13	1 14	2 27
		—	1·9859		1·9036		1·9036		1·9859		1·9859	—			8·7573					
995		—	297		257		76		296		274	—				lbs. 308	lbs. 29	tons. cwt. lbs. 1 187	tons. cwt. lbs. 1 5	tons. cwt. lbs. 1 192
310		—	101		78		8		64		59	—				259	43	1 16	1 15	2 11
8	4	50	11	15	50	10	99	11	14	4	10	13				256	19	1 10	1 3	2 13
		—										—				416	69	1 13	1 14	2 27
3	11	23	7	0	5	5	10	3	10	1	8	8								
16		—	13		13		13		14		13	—								
15		13	9		18		4		18		18	13								
75		104	67		6		18		66		67	18								

The guano consisted of four different samples, distinguished by the marks above given. When applied it was mixed with sifted earth, and then sown in the bottom of the trenches, and well watered. The salts were applied after the plants appeared above-ground.

This result was obtained from the Bread-fruit Potato, planted in the London clay, well drained, and largely mixed with old plaster. The piece of ground was here and there shadowed by trees, so that the total produce was thereby diminished. It had borne a much heavier Potato crop the previous year, as is reported at p. 551 of the *Chronicle* for 1842.

It is sufficiently clear that there is much difference in the quality of guano, all these samples having been furnished by one of the most extensive importers, for the purpose of experiment.—*John Lindley.*

REPORT OF DR. VON MARTIUS ON GUANO.

(*Continued from page* 182.)

The proportion of soluble salts in the guano appears, from the two most recent analyses, to be much greater than in dove-cote manure. According to Klaproth they are only 16.5 per cent.; but according to Völkel they are 39.22 per cent.; and according to Vertels, 44.858. So that if the manuring power of guano be allowed to be in proportion to its soluble ingredients, it will be, in comparison to dove-cote manure, as 39 to 16 according to Völkel, and 44 to 16 according to Vertels. But we may very correctly estimate the manuring power of guano at a higher rate than its solubility, as the nature and combination of its salts are of importance. So that it would not be an over estimate to say, that the manuring power of guano is four times stronger than that of dove-cote manure.

These speculations are confirmed by practice. In Arequiqua, on the coast of Peru, if a field of Potatoes or Maize yielded an eighteen-fold produce with ordinary manure, it yielded, when guano was used, forty-five-fold of Potatoes, and thirty-five-fold of Maize. On the growth of Grass, according to experiments made at Hamburgh, it has an extraordinarily favourable influence. An experiment was made at Flotbeck, near Hamburgh, on a piece of grass, which bore a second cutting five days after the first, whilst double the length of time was required on the ordinary method. For the speedy growth of grass on dry soils, and for the improvement of poor meadows, which are common near Hamburgh, it has been strongly recommended in the Transactions of the Prussian Horticultural Society.

In Peru, three fanegas of guano, or about 7¼ Spanish pounds, are laid upon a tapo of land, which is about a three-

rienced. In England, two cwt. (centner) has been added to an acre for Wheat, and four cwt. for Potatoes and Turnips. In England, on account of the facility and cheapness of transport, the guano seems to promise most. In Peru, a fanega or 256 French pounds, cost between three and five florins (from 5s. to 8s.). In Hamburgh it is sold at from 3½ to 5 six-dollars (from 9s. to 14s.) per cwt., according to the quantity bought. In Germany, the use of guano can only be recommended in Bavaria, where it is found to be cheaper than bone-dust or *Poudrette*. It is, however, very desirable that some of the rich possessors of land should try some experiments on the subject.

Guano recommends itself on account of its great concentration, and the facility with which it may be employed where heavier manures cannot be carried. It is very probable that many of the steep, stony, mountainous districts which possess at present little soil, but by further breaking down, promise a rich vegetation as soon as they shall be brought into cultivation,—such for instance as the steep ridges of hills in the Rhenish vine regions, would quickly repay the expense of manuring them with guano. But it must not be concealed that such culture in the first instance would require a considerable outlay of capital.

With respect to the peculiar nature of guano, from containing many volatile ingredients, which are lost by immediate contact with the atmosphere, it should be remembered, 1st, that it proves less beneficial for manuring in winter than in spring; and 2d, that it is used cheapest where it can be dissolved, and consequently where manure cannot be carried, yet where a spring of water exists, by which the guano may be dissolved, it may be used successfully.

In America, the farmer often takes a small quantity of powdered guano, about as much as he can hold in his fingers, and places it in a shallow hole at the root of any plant to be manured, and then pours over it a small quantity of water. Guano cannot be recommended in those districts of Germany where the expense of carriage would counterbalance its advantages, or where water cannot be easily obtained. In the cultivation of gardens it promises much, as well as for increasing the growth of Grass on pleasure-grounds.—*Munich, Feb.* 13, 1843.

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. VIII.

(Continued from page 123.)

Of the Inorganic Elements in the Composition of Plants.*

Lime.—Composed of calcium and oxygen, one equivalent of each—exists in variable proportions in almost all plants, and, consequently, must form part of the soil in which they grow. It is essential for the formation of bone in animals, hence the necessity for its existence in plants. United with carbonic acid, it is known to the farmer as chalk, marl, &c., with sulphuric acid as gypsum, and with phosphoric acid as phosphate of lime.

Phosphorus united with oxygen forms phosphoric acid, which again uniting with lime, forms the phosphate of lime above alluded to, and this is contained in considerable quantity in the husk of grain. Phosphate of lime is the form in which the earth of bones is deposited. Phosphorus is also essential to the formation of brain and nervous matter. Its importance, therefore, as an ingredient of the soil is evident, and the more so as it is the inorganic ingredient most deficient in all soils. Bran, which contains the phosphate of lime, is therefore a good manure when added to other ingredients. Crushed bones, of course, contain it in abundance, united with the azotised principle gelatine. In some remarks which have been made upon the experiments of His Grace the Duke of Richmond, the fact of the sulphuric acid which was added preventing the escape of ammonia from the decomposition of gelatine has been lost sight of. To be an efficient manure, phosphate of lime must be added to other species of food; thus in guano it is united with sulphate of ammonia; and in the experiments of Mr. Lawes, of St. Alban's, the union of phosphates of lime and ammonia succeeded best.†

Silicon united with oxygen, as silicic acid, and, again, with potash as silicate of potash, is essential to the stiffness of stalk in the Cerealia. Wheat grows best on light lands, when they contain much silex in the form of fine sand.

Potash.—This, which is a compound of potassium and oxygen, is also an essential ingredient in the soil for agricultural purposes. If it is deficient, the stalks of the Corn do not become stiff, and are subject to mildew and other diseases. A gentleman in this neighbourhood, Mr. Boby, informed me that his father used to burn the straw from his farm for the purpose of procuring the potash. The consequence was, their crops became subject to mildew. The potash manufactory was given up, and the mildew ceased. Either potash or soda are necessary in the soil of all pastures or meadows, for without the alkaline base the cows would produce no milk.

Sulphur is found in most soils, and also as a constituent of plants. Its use in the vital economy is not exactly known, but that it is important is proved by its presence in the egg. With the exception of lime, it is the most constant inorganic constituent of animal structure.

Iron has a very important function to fulfil in the animal body. It exists as an oxide in the blood of all vertebrate animals, and serves the purpose of a "carrier of oxygen" from the atmosphere, through the lungs to all parts of the body. It is therefore an essential ingredient in the plants upon which animals feed.

* This part of the subject is so well handled in the papers now publishing in The Gazette by Prof. Sprengel, that I need do little more than allude to each.

† Vide *Agricultural Gazette*, 13th January.

The constituents of plants forming food for animals classed thus:—

NON-AZOTISED.

Sugar, Starch, Gum, Oil, Fat, Wax	For supporting respiration and animal heat, and for the formation of fat.

AZOTISED.

Albumen, Fibrine, Casein	Restoration of waste, formation of muscle, and all other organic tissue of the animal body.

As existing in the gluten of Wheat, &c., the legumen of Peas, Beans, &c.

Inorganic Elements.

Lime	— for the formation of earth of bone.
Phosphorus	for the formation of brain, nervous matter, and earth of bone.
Sulphur	— not known.
Potash or Soda.	for the formation of bile, milk, &c.
Iron	— as a carrier of oxygen.

Silica and Alumina are not used in the vital economy of animals.

The chemical composition of crops will be best considered in the next section, where I propose to treat at some length the subject of the practical application of manures.—*C. R. Bree, Stowmarket.*

(To be continued.)

ON MINERAL AND INORGANIC MANURES. No. IX.

By Professor Charles Sprengel.

Another very important substance contained in marl is the phosphate of lime. It neither occasions nor undergoes any decomposition in the soil, yet it improves the plants more than any other of the component parts of marl—it supplies them with phosphorus, so indispensable to vegetation. Phosphate of lime, as we know already, is not soluble in pure water, yet it dissolves in such as is impregnated with either humic or carbonic acid; from which it may be seen that it is important, even in this respect, that a soil to be manured with marl should contain humic acid. The quantity of phosphate of lime which the soil may obtain from marl is often greater than may be believed, because if the marl contain only ½ per cent. of the above phosphate, 20,000 lbs. of marl used on one acre will bring 100 lbs. on this area, which is enough for more than 100 crops; and there are marls which contain about 2 to 3 per cent. of phosphate of lime.

If marl contains gypsum, which is often the case, it is one of the most valuable of its ingredients, as it is well known how astonishingly this mineral substance promotes the growth of plants. Gypsum passes into plants without being decomposed, and is soluble in 450 parts of water. If any sort of marl were merely to contain ½ per cent. of gypsum, 20,000 lbs. of marl would bring 100 lbs. into the soil, and this would have a great effect on the first crops; and there are sorts of marl which contain 2 to 3 per cent. of gypsum.

Marl also generally contains common salt, which passes without decomposition into plants and nourishes them. By this substance, however, marl acts only for a short time, because common salt is easily soluble in water, and is only contained in the marl in very small quantities. It does not effect any decomposition in the soil.

A substance found in many sorts of marl, especially those of alluvial lands, is silicate of potash. It is not soluble in water, and therefore cannot serve as food for plants until it is decomposed by the humic and carbonic acids of the soil, and converted into humate and carbonate of potash, which are easily soluble in water. Some marls contain one per cent. of potash combined with silica; if, therefore, 20,000 lbs. of marl are conveyed on one acre, the soil will obtain thereby 200 lbs. of potash, on which account the effect of the silicate of potash, which is difficult of decomposition, will last for many years. Another ingredient of several marls of the alluvial lands, is silicate of soda. I have found in several of them so much as 1½ per cent., and as (like the silicate of potash) it is successively decomposed by the humic and carbonic acids, and changed into carbonate and humate of soda, such marl will supply the crops for many years with soda.

At times marl contains also an ingredient which will chiefly improve the growth of cerealia, and this is saltpetre. It will, however, act but very transiently, as its amount is mostly very small, and as it is too easily soluble in water for the furrow slice to retain it for any length of time; it neither induces nor undergoes decomposition, but acts directly on the plants.

(To be continued.)

MANX AGRICULTURE.—No. IV.

(Concluded from page 123.)

Before concluding this sketch of Manx Agriculture, it devolves upon the writer, as an impartial historian, to point out any circumstances of a counteracting nature, the knowledge of which may be essential to the personal comfort or the worldly success of an intending emigrant. The chief difficulty which the "stranger" (as every settler in this colony is called) has to encounter, arises not from an ungrateful soil, or a capricious climate, but from the state of existing Manx laws and institutions. The domestic government of the colony is vested in a Governor with his Council, and in the House of Keys. The latter was in better times elected by the people, but now consists of 24 self-elected and irresponsible men.

The island is happily free from the jarring contests of politics, and in a small agricultural community this must be considered as no social evil. Questions of church-rates, *pro* or *con*—the uneasy pokes of an income-tax, or of Queen's taxes, poor-rates, heavy turnpike tolls—vex not the spirit of the Manx farmer; for of all these he is happily ignorant. Little more is required to promote peace and harmony, than the faithful discharge by our Legislature and rulers of their responsible duties.

The present law of arrest is one of the greatest barriers to a stranger's comfort, and, as a consequence, to the island's prosperity. It will surprise the English reader to be informed that it is in the power of any Manxman to arrest a resident stranger (should he even be the lessee of the freeholder of 100 acres) for 5*s.*, nay for 5*d.*, if he (the native) will venture to make oath that he has heard and believes that the stranger is about to leave the island; or he can arrest for any sum above 40*s.* upon a mere loose affidavit that the debtor is not a native of the island.

The frequent facilities which fraudulent debtors possess for escaping to the neighbouring kingdoms, render it quite necessary that some check should be provided for the protection of the creditor; but the stranger has surely a right to expect that such protection should be reciprocal, and that he too, in case of need, shall have an equal right to arrest his Manx debtor. As the law now stands, he has no such privilege.

If he can positively swear that a native, in his debt, is about to leave the island (a subject upon which he may expect no previous information), he can arrest him; but, as before stated, *the stranger* is liable to summary arrest upon the loose oath of his creditor that he "is not a native of the island." Englishmen would almost stand aghast at the tyrannical and galling manner in which the law may be, and often is carried into effect.

The debt may be altogether a fallacious one, or it may arise upon a disputed account, or, what is worse, may be a mere speculative action for damages, as for a libel, an assault, &c., which when brought before a Jury falls to the ground, or perhaps is never brought before a Jury, because the stranger would oftentimes prefer to submit to extortion or to a robbery rather than be torn from his family and his property: the former to be afflicted, and the latter to be distributed during his incarceration. But setting aside commercial engagements (which are allowed to require some extra protection), it is an unpleasant part of the writer's duty to state that the tenant-farmer is placed in a still less enviable position. The laws endow the landlord with the power of arresting for rent before it is due: a tenant may enter upon a farm at Lady Day, or at any other period; he may stock, manure, clean, and crop it, and yet the landlord has the power to arrest the man and imprison him until he finds security for the current year's rent; and, although he may have in hand to-day his landlord's receipt for rent due yesterday, he may to-day be called on to find security for the next year's payment. It is an ungrateful office to announce that such senseless laws should exist in an island claiming to be civilised, and situate within a day's journey of the metropolis of the world; but it would ill accord with the writer's duty to leave these facts unnoticed.

It is but just, in conclusion, to state that an active, industrious farmer, with adequate capital and of conciliating disposition, will find little practical obstruction from these causes. Let the Legislature of the island, who may literally be said to hold the "keys" of its prosperity, only unlock its resources by the timely improvement of its institutions; let it hold the scales of justice fairly balanced between the native and the stranger, and Mona, if not destined to become, in the language of the poet—

"The first flower of the earth,
The first gem of the sea,"

may nevertheless remain the abode of industry, plenty, and harmony; and should be content if, in the peaceful contests of civilisation, commerce, and Agriculture, she can give full effect to her ancient motto of war—

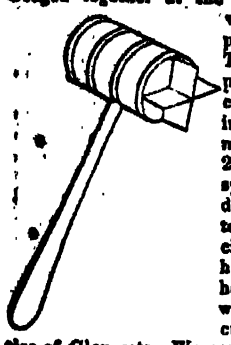
"Quocunque jeceris stabit."

—*Cultor.*

Home Correspondence.

On Gorse.—My attention has been drawn to an article on "Gorse, as a Winter Food for Horses," in your Paper of the 3d ult., and as I can speak from experience, I herewith send you a few remarks on the culture of the Furze—its preparation for food, and its results, as a winter food for all cattle, but more especially for milch cows. Furze will grow well on any soil which is of a dry, gravelly, sandy, or loamy nature. The seed should be sown about the beginning of April, in drills one foot apart, after the land has been made as clean as possible. As soon as the plant appears, the ground should be hoed. In the February following, you may brush off with a scythe what little crop there is, for litter. Continue hoeing till the following November, when you may begin to cut for food; the crop will be comparatively small, but much better the following year. No manure whatever is required in any stage. The period for commencing cutting must be regulated by the season, from the latter end of October or beginning of November, till the middle or end of March, when the sap begins to rise, and the cattle do not relish the food so well. A labourer cuts and carts home sufficient for a day's consumption with a short strong scythe, such as is used for mowing rough grass, or for stubble cutting. On Saturday enough must be cut and prepared for the following day, and to prevent fermentation it must be spread thinly on a barn floor, or other boarded place; and perhaps some chaff mixed with it would assist in preventing fermentation. The least expensive method of preparing the Furze for food, is on a floor of Oak or Ash stubs, raised about 16 or 18 inches above the level on which the labourer stands to chop it. The floor should be about seven feet long and three wide, quite level, and the stubs or blocks of wood both firmly and nicely fitted together; and if placed in the corner of a barn or lodge, additional firmness would be secured by making the building form the back and one side. Round the outsides, in order to prevent the Furze tumbling out, must be placed a strong skirting

board, about seven inches higher than the floor. A certain quantity of Furze, as brought from the field, is trodden down on the floor. The instrument used for chopping is a wooden-headed iron-bound cleaver (such as is used for driving wedges), into the head of which are driven two knives, let into each other at right angles, and wedged together at the bottom. The subjoined is a wood-cut of this instrument, placed so as to show its knives.



The Furze is chopped till the prickle is so subdued that it can be masticated without inconvenience. An able-bodied man will prepare from 20 to 25 bushels per day. If this system (which we will call for distinction, the chopping system), does not prepare a sufficient quantity of Furze for your horses and cows, resort may be had to the grinding system, which is done by the stone cider-mill, as used in the counties of Gloucester, Worcester, and Hereford; it is better that the trough and wheel be shod with iron. There is only one objection to the iron, which is, that sheep will eat, and like other animals no doubt, eventually like the Furze, but they dislike (as I believe it is generally allowed) any food bruised with iron. Preparatory to the grinding, the Furze goes through Passmore's chaff-cutter, which may be worked by hand or by a fly-wheel attached to the axis of the cider-mill. The Furze, cut to the length of an inch, is then ground in the mill till the prickle is completely destroyed. The expense of this apparatus cannot well be reckoned under £*, while that for "chopping" may be erected for about 60*s*. I have seen other plans for bruising Furze. The specimens exhibited at the Royal Agricultural Society's shows were none of them I believe considered of sufficient merit or utility to entitle them to the premiums. Much, however, as it is to be desired that some plan might be invented, whereby small occupiers and poor persons living on commons or wastes, may convert the wild growing Furze into food for their cows during the winter, I am inclined to think, from what I have seen of the working of the various implements, that those only which involve the principle of a heavy roller on a plain hard surface, can do the work speedily and effectually. As to the quantity of food to be given to each animal, this must depend on their size and constitution, and it will require the constant watching and judgment of the feeder. For some cows, three bushels will be sufficient; others will consume four bushels per day. A small quantity of salt should be added to every feed, and as Furze is of a binding nature, a single root of Mangold Wurtzel should be given each day, either before or after one of the feeds, when necessary. A bait of Hay, from three to five pounds per day, may also be given to each cow or other animal, but it is not in all cases necessary, as from the time six Alderneys were put into the yard, up to the 6th of April, 1840, they did not have a single blade of Hay, and instead of Mangold Wurtzel, about a month before and after calving, they had a few white round or Swede Turnips. The quantity of salt, the size of the root of Mangold Wurtzel, and the Hay (if given at all), will be regulated by the feeder's observation of the animal's requirement. One acre of tolerably strong Furze will keep two cows about 20 weeks. The Furze must be of one year's growth only, and cut close to the ground, and if the whole of the field is not used, it must be mown off about March. At this time it is necessary that the person usually cutting the Furze should examine the whole field, and cut off close to the ground any stubs that may have been left, otherwise they become next year too strong for the scythe. On food prepared as above, the cows do well and are healthy, and the quality of the milk and butter is very much improved both in sweetness and richness. I am inclined to think that your correspondent has been misinformed about the large dairy now at Birmingham of two hundred cows kept on Furze during the winter. It may be the case; but I think it more probable that his informant has heard of an establishment that has been for many years kept by a gentleman near Worcester, to whom your readers are indebted for the subjoined figures; being a comparative estimate of the expense of feeding 24 cows per week on *Furze* and *Hay*, computed with the greatest accuracy.

Furze principally.				*Hay entirely.*			
160 bushels of Furze, cost 2*d.* per bushel grinding	£1	13	0	2 ton 16 cwt. at 3*l.* per ton	£11	4	0
Cost of cutting and carting home	0	16	0	Man's time	0	12	0
24 cwt. of Hay, at 4*l.* per ton	4	16	0		11	16	0
16 cwt. of Mangold Wurtzel	0	10	0	Expense of Furze	8	9	0
Man's time	0	12	0				
	£8	9	0	Difference in favour of Furze	£3	7	0

I have endeavoured to lay before you these facts as clearly as possible, and must leave your readers to judge of the value of the Furze from these statements, which are grounded on the experience of several years.—*Vigora.*

Lucerne.—I send you the following extract from Professor Low's work on Agriculture, on the cultivation of this plant.—"The best period of sowing Lucerne is at or before the middle of April. When sown broadcast the quantity of seed per acre may be 16 or 18lbs.; and when sown in rows 10lbs. The soil should be well prepared by deep ploughing, and a previous summer fallow or fallow-crop, such as potatoes, turnips, &c. When drilled, the rows need not be more than 18 inches apart, which will give room for tilling the intervals by the horse and hand-hoe. After the seeds are sown, care must be taken to keep down, by means of the hoe, all weeds that spring up amongst the plants, and in the rows. In the month of August of the first year, when in flower, the crop may be mown, and after this cutting, the shoots may be kept down by a slight pasturing with sheep, but not while the soil is wet, nor continued till a late period. Early in the following spring the ground is to be horse or hand-hoed, so that all weeds may be kept down, and the earth stirred about the roots of the plants. In the month of May the crop will be ready for the first cutting. After being cut, it is to be horse-hoed in the intervals. It will now grow very rapidly, and when ready for cutting is to be cut again, and after each cutting hand-hoed; in this manner it may be mown four or five times in the season; it does not, however, arrive at maturity till the third year; it requires to be manured at intervals, as every fourth or fifth year; the manure may be farm-yard dung, spread upon the surface after the last cutting in autumn, or early in spring."—*M. S.*

Seaweed as Manure.—The Isle of Thanet is celebrated for its fertility. It sends a great quantity of the very best Wheat to the London market, and produces, in addition to the more common grain, large quantities of Carraway, Coriander, Spinach, Radish, Canary, and other seeds. In many parts of the island the soil is naturally very shallow and poor, but these are rendered extremely productive in consequence of the extensive use of Seaweed as manure. This appears to be a comparatively modern usage. Lewis, in his History of Thanet, written in 1723, in a short account which he gives of the system of agriculture followed in this island says, "Within these few years past the inhabitants of the North and East side of the island next the sea, have made great use of the Alga or Sea Woor, which is often cast up by the sea in great quantities under the cliffs. This the farmers carry on their maxhills, where they mix it with their other dung, which it helps to rot. In this mixture they observe no proportion, but endeavour to have one layer of dung and another of Sea Woor, which they turn once or twice in the summer in order perfectly to mix and rot it. But it is observed that the Sea Woor is not so kind for the land lying near the chalk as for the colder land; and that where the land is very cold the best way is to carry out the dung rough, without laying it into a maxhill at all. The stench of this weed when first laid on the maxhills is very nauseous, but as it is in the open fields, is the more tolerable." The Seaweed is now one of the mainstays on which the farmer who is near enough to the coast depends. Deep cuttings have been made through the chalk cliffs for the convenience of carting up the Seaweed; and as this is very hard work for the horses, the team is in general peculiarly good. They do not wait for any decomposition, but collect it as soon as it has been thrown up by the storms. The common custom is to lay alternate layers of Seaweed and sand, which are turned frequently till the whole is decomposed. I have not heard that the manure is not found as good for the shallow land; indeed, I believe the present fertility of a considerable portion of the land depends mainly on the use of this manure. Neither, again, have I heard that after a series of years the land becomes deteriorated by the presence of magnesian salts. Seaweed is, I believe, sometimes used on the coast of Scotland in its rough state as manure, without any previous decomposition, and is considered very good for Potatoes. I don't know whether its use is at all general. The Potatoes in the isle of Thanet, it may be remarked, are peculiarly good, which may possibly arise from the use of this manure.—*M. J. Berkeley.*

Rats.—Seeing that you recommend "Nemo" to smear the holes and passages frequented by Rats with arsenical ointment, I beg to state, that as accidents frequently happen from the use of poison, perhaps some other method might be acceptable. Slice a number of corks as thin as sixpences, and then roast or stew them in grease, and lay them in the way of the rats; these will prove a delicacy, and will be speedily devoured; the rats that partake of them will die of indigestion. Another method is to cut a piece of sponge into small pieces, and fried and dipped in honey; these are placed along with shallow pans of water in the neighbourhood of their holes. By eating the sponge, and then satisfying the thirst which it produces, their stomachs become so distended, that it generally proves a fatal repast.—*Herbert, Sussex.*

Waste Lands, &c.—I quite agree with "H." in thinking that "A National Agricultural Society" should be formed to bring into cultivation the waste lands of the British islands, and to inclose and reclaim from the sea and at the mouths of large rivers, the vast tracts of land which now are not only lying useless, but are dangerous to navigation. When so many hands are now unemployed, and when so much capital is lying useless, no time could be fitter than the present for the formation of such a Society, and I hope it will be taken up in earnest.—*P.*

Manure Dropped in the Field.—By neglect of the simple means I pointed out in No. 4, page 59, *Agricultural Gazette*, the greater part of the manure made in the fields is lost, the common practice being, to allow it to remain until the spring, when it is knocked and spread about. But the misfortune is, that by that time it has become like so many masses of dried turf. It is in reality then deprived of all its fertilising qualities by atmospheric influences, whereas, were it managed in the way I have described, I am quite sure that the results would be most beneficial. I would suggest that profitable employment would thus be afforded for aged persons, who are incapable of more laborious work, and for women. It would be much better and more economical paying for this labour, than laying out money in foreign, or any other manure; and the poor and the infirm would be happier and better satisfied thus engaged, than if imprisoned in a workhouse. If those who read these observations would only just try the plan recommended, they will soon find how easy it is to improve their land without being at any material expense, for the means are always at hand, and only require application. There is another subject which I beg to bring under the notice of your readers. In almost all parks, woods, and plantations, that have come under my observation, I have remarked that the annual waste of the leaves of trees is very considerable; I mean, these are suffered to be dispersed, and have their virtues, as a manure, nearly dissipated by the effects of drying winds. They are sometimes collected by the gardener, who is the only individual who appreciates their value as an ingredient for the composts he requires. If, instead of wasting them, gentlemen would allow the poor, when unemployed, to collect in the woods or fields, the leaves, weeds, and moss, and then purchase it from them at a reasonable rate, what a valuable supply of litter it would bring to their piggeries and sheepcotes. When spread in the yard, and mixed with the dung, it would add greatly to the quantity and quality of the manure, especially if collected soon after the fall of the leaf, before its fertilising properties were diminished. I am inclined to think that manure thus made would be much better than if made from straw alone. Leaves mixed with dung make excellent manure for Potatoes on strong land. They might be employed in sheep-cotes during the lambing season, as litter for the ewes. After being in this way enriched by the dung of the sheep, if mixed with earth and well decomposed, it will form a most valuable and cheap compost; and if simple vegetable leaf-mould is of such vast importance to the Horticulturist, what would it not be in this enriched state to the Agriculturist, for his Grass, grain, or root-crops? Cottagers, also, are often at a loss for litter for their pigs, and farmers do not like to diminish their own manure by giving or selling their straw; but leaves would answer the purpose perfectly, if gentlemen would permit them to be collected from their woods for the purpose. Those who approve of these suggestions will, I trust, point out to the cottagers such an easy way of procuring good litter, giving them permission, at the same time, with certain necessary precautions, to gather as many as they want. The fertility of their gardens will then be increased, and feelings of good-will towards their employers will be excited. —*W. Billington, Underhill.*

Manure dropped in the Fields.—The plan laid down by Mr. Billington is a great improvement upon the present practice of totally neglecting the manure dropped from cattle in the fields. Through him it is that you have the excellent communication of "R. F. S.," whose practice deserves the particular notice of all graziers. By collecting all the manure and placing it in different situations in each field, say one heap in each corner, an opportunity is afforded for making a valuable compost each year. And these fertilising means will be derived from sources which have, as Mr. Billington justly says, been "hitherto almost wholly neglected."—*J. West.*

Lime.—There are few counties in England where lime is more universally used as a manure than in Devonshire. The farmers apply it both to the Wheat and Turnip crops, and many fields I was assured had never received any dung or other fertilising substance during the memory of man. At Castle Martin, in the north of Devonshire, the limestone rock abounds, and is burnt for agricultural purposes; but limestone from South Wales also is brought by vessels to be burnt there, and is preferred by the farmers although selling at a higher price. I collected some samples of both, which yield the following analyses. It appears from these analyses that the value of limestones for agricultural purposes depends in a great degree upon the quantity of carbonate of lime contained in them.

ANALYSES OF LIMESTONES.

	South Wales Stone 2 grammes. Contained per cent.		Devonshire Stone. 1.653 grammes. Contained per cent.
	1st analysis.	2d analysis.	
Silicious matter	0.55	0.55	9.228
Alumina	0.15	0.15	1.573
Carbonate of lime	98.25	98.95	87.258
Magnesia	trace		trace
Carbonaceous matter and loss	1.05	00.35	1.941
	100.00	100.00	100.000

—*J. B. Lawes.*

"*Ought Potatoes to be cut or planted whole?*"—I am in the habit of planting five or six acres of Potatoes yearly, and for the last two years I have planted the greater part with whole Potatoes, and find they produce as good crops as with cut sets, with this great advantage, I have scarcely a Potatoe misses growing, whereas in cut sets I have often had a great loss from dry rot. When taking up the general crop, I pick out my seed Potatoes of a uniform size, each weighing about 1½ oz. I plant them in rows two feet apart, and one foot in the row, and have had exceedingly good crops.—*A. C. Hornecastle.*

Seed Wheat.—I last year made the following experiment, the repetition of which I think may prove interesting and valuable to Agriculturists; and, as I have not leisure nor convenience to pursue the subject myself, perhaps some of your readers may be inclined to do so. I took 12 ears of Wheat; from each of the ears I took the top corn, and sowed them in one flower-pot. I then from

* It is impossible to state any definite sum, as the carriage of the stones composing the mill will vary so much, with regard to distance, land or water carriage. The stones themselves at the pit are not so very expensive.

each of the ears took the corns next to the top, and sowed them in another pot, and so on till I had 12 pots, each containing the corns from corresponding parts of the 12 ears. My object was to see whether or not the corns from all parts of the ear were alike valuable for seed, and if not, what corns were the most valuable. As far as my experiment went, the corns taken from the middle of the ear were decidedly the best.—*D. C.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's house, on Wednesday last, the 28th. Present: W. Miles, Esq., M.P., in the chair, T. Alcock, Esq., T. Raymond Barker, Esq., Rev. T. C. Browne, F. Burke, Esq., Col. Challoner, F. Clifford Cherry, Esq., H. Colman, Esq., A. E. Fuller, Esq., M.P., H. Gibbs, Esq., B. Gibbs, Esq., W. H. Hurst, Esq., P. Pusey, Esq., M.P., Professor Sewell, and T. Villiers Shelley, Esq. The following new members were elected:—

Stretton, William R., Dany Park, Crickhowell, Brecknockshire.
Whitby, M. P., Newlands, Lymington, Hampshire.
Marsh, John, Lydgate Hall, near Sheffield.
Gillespie, Robert, 39, York Place, Portman-square.

The names of 19 candidates for election at the next meeting were then read.

Cottage Tracts.—The Secretary reported the distribution of 15,000 copies during the past two years, of the articles on Cottage Gardening, by Mr. Main; and on Cottage Economy and Cookery, by Mr. Burke, reprinted from the Journal in the form of distinct Tracts, and sold to members at the prime cost of one penny each. The Council ordered that the question of a further reprint of 6000 impressions of these Tracts should be referred to the monthly meeting on the 6th of March.

Drainage.—Mr. J. Clarke, of Long Sutton, Lincolnshire, informed the Council that little or nothing having been yet done to improve the drainage of the low-land district, near Wisbeach, in which he resided, it had been his wish to draw public attention to the subject, and he had accordingly drawn up a work, of which he then presented a copy to the Council, on "Thorough Draining in Principle and Practice," with its advantages and simplicity as applied to a dead level, addressed to the owners and occupiers of the soil in the parts of Holland, in the county of Lincoln, and the great level of the Fens, for which the Council ordered their best thanks to be given to Mr. Clarke. Colonel Challoner gave notice that he should on a future occasion propose that the Society should offer a prize for a practical Essay on the best mode of draining sandy land.

Southampton Meeting.—Mr. Shelley, as one of the stewards appointed for the Southampton Meeting, informed the Council, that agreeably with the directions of the General Southampton Committee he had, in company with the Messrs. Gibbs, visited Southampton on the previous day, for the special purpose of making the requisite arrangements for the ensuing Show of the Society in that district, and now presented to the Council the joint report of himself and those gentlemen on the results of their personal visit and inspection of the localities proposed for the adoption of the Society, and the conditions under which they were offered. Mr. Shelley having read the report, and detailed to the Council the ruinous propositions made to them by the authorities of Southampton, and the great difficulties which presented themselves at every stage of the proceedings, concluded by giving notice that he should move at the next monthly Council to be held on the 6th of March—

That, owing to the difficulties alluded to in the Report of the Stewards, the propriety of holding the Annual Meeting of 1844 at Southampton be reconsidered.

Mr. Gibbs also gave notice that he should, at the same time, move the following resolutions:—

1st. That the bye-law regulating the selection of the place of holding the Annual Country Meeting be suspended.

2dly, That in future the place of holding the Annual Country Meeting shall not be decided upon, until three Members of the Society, who have acted as Director or Stewards of the Yard, shall have visited and inspected the several towns and their localities, and have reported upon their respective fitness for the purposes of the Society.

The Southampton Committee immediately held a meeting for the purpose of enabling them, by reference to all the documents in possession of the Society which had been received from the Mayor or other authorities in reference to the Meeting of 1844 at Southampton, to lay before the Council the specific declarations which had induced them to prefer the site of Southampton to that of other places which had been offered to the Society for the purpose of holding that Meeting.

Sir John William Lubbock, Bart., communicated suggestions on the subject of farm-buildings and cottages, which were received with thanks, and referred to the Journal Committee; Mr. Cottam applied for leave to exhibit at his lecture on the Mechanics of Agriculture, at the Royal Institution, on the 8th of March, the Society's model of Lord Ducie's Uley cultivator; and leave was granted accordingly. Mr. Rickards presented to the Society a copy of his "System of Agricultural Accounts;" Col. Greenwood a copy of his "Tree-lifter;" and Professor Royle, on the part of the East India Company, a collection of Pine-seeds, received from the Company's botanic garden in the north-west of India: for which the best thanks of the Council were ordered.

The Council then adjourned to Wednesday next, the 6th of March.

FARMERS' CLUBS.

Wrentham.—At a recent meeting of this Club, a discussion took place on the most effective means of hindering the destruction of the Wheat-plant by slugs and wire-worms. With regard to the former of these, several remedial measures were stated to have been pursued; the application of soot, lime, or common salt, in small proportions, had each been attended with some degree of success. It would appear necessary that the application of any of these substances be in the night only; for, unless the slugs are exposed at the time of sowing, such measures would prove ineffectual. Another plan pursued was that of slicing Turnips about the land; but the most beneficial effects were experienced by strewing the land with the tops of Turnips only, and in sufficient quantities to afford ample food for these mollusca. Where this latter system has been adopted, the result has generally been, that the plant of Wheat has been preserved, while the leaves of the tops have been almost entirely consumed. The injuries done by slugs are principally confined to an early stage of the Wheat-crop, while the ravages of the wireworm frequently extend over a length of time, and affect the crop at different periods of its growth. In reference to the latter, early ploughing, and afterwards obtaining a sufficient degree of solidity, may be considered as practically amongst the best means to be taken as a preventive. The effects of such a system have also frequently been apparent, not only as a protection from wireworm, but with reference to the ultimate value of the crops. The wireworm is generally most destructive on lands which have been fed through the summer, and also on others where the previous layer was not good. In these cases, shallow ploughing, as well as an additional quantity of seed, were recommended. Treading the land by sheep after the seed is deposited had also been practised, with a view of obtaining more solidity. When, however, the crop is affected in the spring, as (notwithstanding these precautions) is too frequently the case, the greatest benefit appears to have arisen from lightly breaking the soil, either by light harrows, or even raking, as early as circumstances may render practicable. A resolution was passed in accordance with these observations.—*J. D. Robinson, Assist.-Sec.*

Reviews.

The Application of Geology to Agriculture, and to the Improvement and Valuation of Land, with the Nature and Properties of Soils, and the Principles of Cultivation. By Nicholas Whitley, Land Surveyor. London. Longman, Brown, Green, and Longmans, 1843.

This work furnishes an example of the prevalent rage for giving to Geology, applied to Agriculture, credit for more than really belongs to it. The author says in his preface that he has been led to enforce the application of Geology to Agriculture, to which he hopes he has succeeded in demonstrating it to be no less valuable, as an auxiliary, than it has been in the development of mineral wealth; and he enforces the application of Geology to Agriculture, by such arguments as the following:—"But whilst improvable land is worth more than its apparent value, improved land is worth less. If the improvement is substantial and permanent, the full benefit of the increased yearly value is obtained; but this is not always the case; the drains may give way, or become blown, the river may burst the embankment, or a high and forced state of fertility may require such expensive manures to keep it up, that a lower standard of produce would prove the most profitable mode of culture. Geology leads us to detect these circumstances." We should be glad to know how. We had thought that questions as to the sufficiency of drains, the strength of embankments, or the economic value of a given mode of cultivation, were to be solved, not by the Geologist, but by the Engineer and Agriculturist. And so it is throughout, whether it be the classification of soils, the valuation of land, the improvement of its texture, and chemical composition by adding from other strata ingredients in which it is deficient—by draining and subsoil-ploughing, in order to rid it of superfluous moisture—by ploughing in a crop of Clover, in order to increase the humus in the soil; or whether it be the detection in improved land of plethoric symptoms indicating a tendency to apoplexy such as have been mentioned above—everything is ascribed to Geology. Such exaggerated pretensions must ultimately do harm by producing a reaction, and leading to a disparagement of the value of geological knowledge to those engaged in the valuation and improvement of land.

The application of Geology to Agriculture may be said to have commenced with the infancy of Geology itself as an inductive science. William Smith endeavoured to render those studies, by which he established the order in which the sedimentary rocks succeed one another, subservient to his professional duties as a land and mineral surveyor and agricultural engineer. But his views, as Professor Sedgwick has said, were in advance of the age, and he suffered, as many men of genius suffered before him, in his peace and his pecuniary prospects, from that which constitutes his glory among geologists, and earned for him the title of the Father of English Geology. Conybeare and Phillips, in their "Outlines of the Geology of England and Wales," blended with their descriptions of the different formations, notices of their agricultural characters. Dr. Buckland, in the opening of his "Bridgwater Treatise," took a rapid glance at the effects of the geological character of different districts of England, in influencing the nature of the industrial pursuits of their inhabitants, and, by consequence, their numerical amount, their wealth, the amount of health and longevity enjoyed by them, dependent on the salubrity or insalubrity of their employment, together with their moral condition as affected by that employment. Sir H. De la Beche, in his "How to Observe," remarked on the superior fertility observable at the junctions of strata, arising from the intermixture of their constituents, expressing surprise that effects so evident should not have oftener led farmers to seek improvement by similar artificial mixtures of adjoining soils. In his report on the Geology of Cornwall and Devon, he has devoted a chapter to the relations between the Agriculture and Geology of the various districts comprised in the survey—a field which had previously been broken by Dr. Paris in communications to the Geological Societies of Cornwall. Professor Johnston of Durham has more recently treated of the connection between Agriculture and Geology in his lectures on Agricultural Chemistry and Geology. But the first Agriculturist who studied Geology purely for its practical value in the discrimination, improvement, and valuation of land was Mr. Morton, who, in his work on soils, has given the results of his personal examination of every part of England, with that object in view, during a period of years. From these sources, as well as the works of Davy and Liebig on Agricultural Chemistry, and all that has appeared of late in the Journal of the Royal Agricultural Society, on draining and subsoil-ploughing, Mr. Whitley's work is drawn. The volume is a compilation throughout. To this we do not object when a work is fairly announced as such, for a compilation may be more useful than the many and expensive works of which it gives an epitome, and to which, as authorities, it refers for all its statements which are not original. But when it lays claim to originality, its pretensions cannot be allowed to pass as current coin without examination. The Author of the work before us says that his is "principally compiled from notes and observations made by him in various parts of the country, and that though he is conscious of its many imperfections, he feels emboldened in laying his facts and opinions before the public, by the consideration that the subjects here treated of have not received from practical men that attention which they deserve; and by a conviction that, at the present time, when artificial manures are so extensively used, it is of especial importance that the attention of all parties connected with Agriculture should be directed to some more accurate data from which to deduce the value of land, than that which a surface view, abstractedly considered, affords. The soils which occur in the west of England are those which are most fully and particularly described." There is, as we have said, scarcely anything in the book which is the result of original observation. Even for his descriptions of the West of England, that is, of Cornwall and Devon, he has recourse to Paris and De la Beche, sometimes with, sometimes without acknowledgment. He has gleaned, industriously enough, in every field, making notes and observations, no doubt, of what he read, in whatever part of the country he happened to be, but he has not always been satisfied with legitimate gleaning, making free, occasionally, with the sheaves, and stating, as his own, the facts and opinions of others. Like most gleaned corn, too, the sample is unequal, occasionally containing a mixture of defective grain, with that which is sound—of old and new theories without attempt to discriminate between them. Thus, for instance, at p. 115, he ascribes, with Liebig, the exhausting effects of Corn-crops to the large quantity of the alkalies which they extract from the soil, and the beneficial effects of Turnips and other fallow crops, to the small quantity of inorganic food which they require; while in the Appendix A, we have a table of the constituents of plants, from which, if Mr. Whitley will take the trouble of making the calculation, he will find, that while four quarters of Wheat and 3000 lbs. of Straw take from the soil little more than five pounds of potash and about the same quantity of soda, a crop of Turnips, weighing 25 tons, or 56,000 lbs., will take up 40 lbs. of potash and 61 lbs. of soda. With silica, however, it is quite the reverse. The Wheat crop contains full 93 lbs. of it, and the Turnip crop not more than 20 lbs. Thus a bare fallow, or a fallow crop not requiring silica, may operate beneficially by the time which it affords for bringing the slowly soluble silicates of the alkalies into solution, and thus presenting the cereals with silica, not potash, in a form capable of being assimilated by them. The author is likewise involved in similar inconsistencies from attempting to adopt both of the opposing theories respecting the assimilation of carbon by plants. We are told, for instance, p. 62, that "although humus is only slightly soluble in water, humic and ulmic acids, which are modifications of humus, unite and form soluble compounds with alkalies. Alkaline earths exist in the soil in sufficient quantities to form such compounds. It is therefore probable that humus not only forms a source of carbonic acid, but also enters into plants in a liquid compound through their roots." At p. 107 it is said, that "decayed animal and vegetable matter (humus) is of the first importance in manuring. Without its presence in the soil, the application of mineral manures will be of little service. If it does not exist naturally in the soil, from the decay of vegetation, it must be supplied artificially." At p. 108 we read, "It appears that three-fourths of the substance of plants usually cultivated is derived from the air, and it is on this fact that the principle of green manuring is founded. If a crop of clover be grown, and ploughed in when it begins to flower, it will give to the soil four times the amount of humus which it extracted from it. Land which is rich in the inorganic food of plants, may, in this manner, be furnished with a proper quantity of humus."

In taking a view of this plan for improving land from a practical point, we think it would be found much more profitable, having obtained such a crop of Clover, to feed it off on the ground with sheep, than to plough it in; and that such a proceeding would be equally beneficial to the land.

Notwithstanding these defects, however, Mr. Whitley's compilation, though somewhat slight and superficial, is not badly made. We have no doubt he will find the knowledge which he has acquired from the works he has read useful to him in his profession; whether that which he has to impart was not be better learned from it Morton

on Soils," and "Johnston's Lectures on Agricultural Chemistry and Geology," admits of a question. His work, however, may fall into the hands of those who would not have purchased the above volumes, and it may induce others to commence the study of the subject of which they treat, who will not be satisfied with the taste Mr. Whitley has given them of it, but will be led to drink at the fountain head. At all events the reputation of being a geologist and a chemist will now be as advantageous to the author, in his profession, as it would, a few years ago, have been detrimental to him; and we heartily wish him success.

In the following sober and judicious summary of the benefits to be derived from Geology in the improvement and valuation of land we fully concur. We give it as a specimen of Mr. Whitley's most successful manner of treating his subject:—

"1st. Geology offers to the practical Agriculturist essential aid in affording the means of definitely describing and classifying the various soils, thereby enabling him to apply to the land he cultivates those means of improvement found by experience to be suitable to any particular soil. 2d. Geology enables us to infer, from the mineral constituents of the parent rock, the chemical composition of the soil, and hence, to select such plants as may be most adapted to it. 3d. Geology points out the causes of fertility or unproductiveness, with the manure generally adapted to any particular soil, and the means by which waste land may be effectively reclaimed. 4th. Geology is of essential importance to the land-valuer, not only furnishing him with the information stated above, but enabling him to distinguish temporary fertility or exhaustion of land from its natural productiveness, and supplying him with data from whence he may estimate with some degree of certainty the value of the unexplored mineral wealth."—*E. W.*

Miscellaneous.

Agriculture in France.—On Monday the Central Congress of Agriculture opened at the Luxembourg its first session, the duration of which is fixed by the rules at one week; the Duke Decazes presided. More than 250 Agriculturists from different parts of France, a great number of Peers and Deputies, and members of scientific societies were present at the meeting. The bureau is composed as follows:—President, the Duke Decazes; Vice-Presidents, MM. de Gasparin, de Tracy, the Marquess de Torcy, and M. de Caumont. After having agreed upon all the questions to be discussed, the Congress entered upon those of Agriculture, Education, and Experimental Farms. Several able speeches were delivered. The members then formed their committees, and adjourned at half-past four till the following day.

Caution to Farmers.—Last week, four bullocks belonging to Mr. Lee, of Neopardy Farm, Crediton, died suddenly, without apparent cause. Mr. Reed, veterinary surgeon, found, on searching their stomachs, a quantity of the common Yew, mixed with the other food. On opening the skull, the membranes of the brain appeared in a very congested state, the poison having acted on the brain and nervous system, producing symptoms resembling apoplexy. A few days before, Mr. Lee had cut down a Yew tree, and two or three of the faggots were left where the animals had free access, and having been for some time deprived of green fodder, they ate it with great avidity.—*Western Luminary.*

Guano from Africa.—We have this morning seen a private letter from Liverpool, in which is the following important information:—"The first vessel from Africa with Guano arrived here yesterday afternoon—the Levenside, with 400 tons, full cargo. She reports a great number of vessels, some loaded, some partially so, riding off the island, and from the information which I have been able to receive, we shall shortly have a very large quantity from that quarter. The Levenside's cargo is on Glasgow account, and the captain set off for Glasgow a few hours after arrival at this port." We find from the Clyde shipping-list that the Levenside sailed from the Clyde on the 20th of September, having cleared out for Valparaiso, and comes to Liverpool from the island of Angia Pequena, coast of Africa.—*Ayr Advertiser.*

Notices to Correspondents.

RURAL CHEMISTRY, By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

OUR CORRESPONDENTS will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them:—*J. J. Mechi, Woodend, D. C., A. Hurtubise, J. Steele, R. Spooner, P., F. Davies, Northumbriensis, An Old Subscriber, J. Drummond, F. Singer, W. Billington, W. B. Booth,* and *G. Anderson.*

CHEAP WATER-POWER. — *Anonymous.* — The cheapest water-power is one invented and patented by Mr. T. Burstall, manufactured at the Udey Iron Works.

CONVERSION OF SULPHATES OF POTASH AND SODA INTO CARBONATES.—*Veritas.*—It is an expensive process, requiring an apparatus of furnaces, &c., &c.

CURRAN OF CROPPING.—*J. L. T.*—We should think that one-half your farm being in Grain crop, the other half might be cropped as follows:—1-3rd Clover, 1-6th Swedes, 1-6th Carrots, 1-6th Mangold Wurtzel, 1-6th Potatoes. Supposing you have 12 fields, your rotation would then be thus:—1 Wheat, 2 Swedes, 3 Wheat or Barley, &c sown down with Clover-seeds, 4 Clover, 5 Wheat, 6 Potatoes, 7 Wheat or Barley, &c., 8 Mangold Wurtzel, 9 Wheat or Barley sown down with Clover-seeds, 10 Clover, 11 Wheat, 12 Carrots. We believe by crossing the Down ewe with the Cotswold ram you will obtain as useful a stock of sheep as any one who intends to grow *fat mutton* can obtain. Thanks for your instructive letter. The per centage of potash given in your analysis is so great as to make us doubt its accuracy.

EXTIRPATION OF THE REED.—*J. Mac., Hillsborough.*—Drain the land, and this plant will ultimately die out of it. We doubt the efficacy of specifics for particular weeds, such as the application of salt, &c. Many thanks for your voluminous paper.

FARM ACCOUNTS.—*A Beginner.*—Put the *whole real value* of everything that belongs to you, live stock among the rest, to credit. More on this subject hereafter.

FIXER OF AMMONIA.—*A Subscriber.*—Sulphuric acid. Put it by degrees into the tank till effervescence stops.

GRASSES.—*A Novice.*—Messrs. Drummond and Son recommend a bushel of Perennial Rye-grass, 6 lbs. of Timothy, 6 lbs. of Meadow Fescue, 3 lbs. of hard ditto, 3 lbs. of Meadow Foxtail, 3 lbs. of Cocksfoot, 3 lbs. of Cow-grass, 6 lbs. of White Clover, as seed for one acre.

GYPSEOUS MARL.—*A Subscriber.*—We think it would be a most valuable top-dressing for Grass. Try ten cubic yards per acre, uniformly spread.

INSECT-KILLING MANURE.—*W. Cormack.*—We will publish the well-authenticated results of experiments, but cannot insert such a general and apparently extravagant statement as that you send.

LIME.—*G. B. M.*—Lime has been applied on the siliceous soils of Whitfield-farm before scarifying the Turnip land in March for Barley, before ploughing Clover-lea in Oct. for Wheat; and on Oat, Wheat, and Barley-stubble in autumn for the fallow-crop of the following year, and in all these instances with *uniformly* good effect.

LUCERNE.—*G. B. F.*—See Home Correspondence.

MANGOLD WURTZEL.—? & J.—Mid-April is the proper seed-time. We shall refer to the subject shortly.

MANURES.—*A Beginner.*—Your compost will be benefited by being soaked with liquid manure;—what compost would not?

MARKETS FOR YEARLING CATTLE.—*J. Clark.*—Barnstaple fair, Devonshire, April 21, Sept. 19, for Devon; Steyning fair, Sussex, June 9, for Scotch cattle; Hereford fair, July 18, and Oct. 22, for Hereford; Abingdon fair, Berks, Aug. 5, Sept. 19, for various breeds; at Barnet fair, Herts, April 8, 9, 10, for Scots, or anything you wish.

MARKETS.—Thanks for your suggestion, but we cannot at present adopt it.

MURRAIN.—*Anonymous.*—Your question will be answered if you will inform us which you mean—that usually called "the epidemic," which affects the feet and mouth; or the formidable disease of the chest termed pleuro-pneumonia.

NO. OF ACRES FOR ONE MAN'S EMPLOYMENT.—*W. P.*—It depends on the soil. One man can manage with the spade, 8 or 10 acres of light soil.

POND-MUD.—*L. B. W.*—Mangold Wurtzel and Cabbage will grow luxuriantly on your land. You could hardly do better. Apply wood-ashes to the land before sowing your grain crops, in September for Wheat, and in March for Oats and Barley, previous to harrowing before the drill. 40 bushels an acre might then be applied.

PRODUCTIVE BARLEY.—*O. M.*—Your notice is an advertisement.

SALT.—*Agricola.*—With the number of yards of ditch-scourings you intend to put on an acre, mix 1 cwt. of salt. Do not attempt to kill the weeds with that, lest in your success you have to lament the death of more valuable plants also. The hoe is the true remedy for weeds.

STEEPING SEEDS.—We believe that Mr. Campbell sells a liquid for Turnip seed. We shall be glad to hear your results.

STEAMING APPARATUS.—*A Subscriber.*—Potatoes are almost the only root generally steamed. Parsnips and Carrots are very well, when steamed for pigs; and Swedes are sometimes steamed for cattle. We never advertise tradesmen; it would subject us to stamp-duty. Most machine-makers manufacture a steaming-apparatus.

SWEDES.—*C. G. Sidy.*—Though we have heard it often, yet we do not *know*, if success attends general transplantation of young plants instead of sowing; therefore we do not like to advise. Try it on half an acre this year, and if it succeeds try a larger extent next. It has the advantage of hindering attacks of fly &c.

TOLLS.—*W. C.*—We cannot advise our correspondent without seeing the local Act regulating the tolls. If he will furnish us with a copy of it we will endeavour to give him the information which he requires. We believe that local Acts universally provide that a person who has paid a toll shall not be liable to a second on the same day, but the right to claim the exemption in general depends on the wording of the particular Act.

*** As usual, many communications have been received too late for answering this week.

Markets.

SMITHFIELD, MONDAY, Feb. 26.—Per stone of 8 lbs.

Best Scot., Hereford, &c.	3s 10 to 4s 2	Best Downs & Half breds	4s 0 to 4s 6
Best Short Horns	3 6 3 8	Best Long wools	3 8 4 0
Second quality Beasts	3 0 3 2	Ewes and second quality	3 4 3 8
Calves	4 0 5 0	Pigs	3 0 4 4

Beasts, 2811; Sheep, 24,560; Calves, 83; Pigs, 327

Our supply of *Beef* to-day is very small, and there is an advance in the best qualities of 2*d* per 8 lbs.; some few Short-horns have, perhaps, made 3*s* 10*d* per 8 lbs., but cannot be quoted as a general price. The trade is still dull, but the shortness of supply causes all to be sold off. The Mutton trade is very heavy; the best small Downs support our former quotation, large Downs are a slow sale at a little less money, and Long-wools are fully 2*d* per 8 lbs. less than last week. Veal trade is steady. Pork very heavy, and it must be superior quality to make our highest quotation

FRIDAY, March 1.

Although we have a short supply to day, it is difficult to maintain Monday's prices; there is, however, no quotable difference. The trade is remarkably dull, the demand on a Friday being generally so very small through Lent. The only brightness we can at all discover is in the Veal trade—the best quality being scarce, they are readily sold at 5*s* per 8 lbs. Pork is lower.

Beasts, 437; Sheep, 2189; Calves, 124; Pigs, 280.

41, West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, Feb. 26.

THE weather during the past week has been much like the preceding one—remarkable for its changeableness. The market has been supplied from most of the shipping districts since our last Report, but by no means liberal, yet fully equal to the present demand. The information received from most of the principal shipping districts of the scarcity of Potatoes imparts firmness to holders of the best samples, but it does not ingure the retailers to purchase beyond their present wants; they considering that there are plenty of Potatoes left to supply this market, at the present languid demand, as the advance in price has ceased a decrease in the consumption.

York Reds	60s to 80s	Kent and Essex Whites	55s 65s
Perth	65 70	— Kidneys	70 —
Early Devons	60 70	Wisbeach Kidneys	65 70
Late Devons	70 —	— Blues	55 60
Cornwall	45 70	— Whites	50 55
Jersey and Guernsey Blues	60 65	Prince Regents	70 —

WOOL.—BRITISH, FRIDAY, March 1.

THERE has been hardly so much business doing in our market during the past week. Those parties who have been desirous of forcing sales have been obliged to submit to a reduction in price, but, upon the whole, we think prices may be quoted the same as last week. All parties are looking forward anxiously to the approaching Wool Fair at Bristol, which will be held on the 6th and 7th March.

	per lb.		per lb.
Long-woaled Wethers	1s 1d to 1s 2d	Southdown Hoggitts	1s 1½ to 1s 2½
Do Hoggitts	1 1½ 1 2½	Kent Fleeces	1 2½ 1 3½
Southdown Fleeces	1 0½ 1 1½		

JAMES PEARCE, Wool Broker.

SEEDS, FRIDAY, March 1.

Canary	per qr	54s to 58s	Linseed Cakes, Foreign, p. ton	£7 to £7 10s
Caraway	per cwt	56 60	Mustard, White p. bush.	4s 6s
Clover, Red, English	— 64	76	— Superfine	6 8
— — Foreign	— 64	76	— Brown	14 16
— White, English	— 94	105	Rapeseed, English, per last	36l 38l
— — Foreign	— 94	105	Rape Cakes per ton	— —
Coriander	— 18	19	Safflower	3 5
Hempseed	per last	34 36	Tares, Essex, winter p. bush.	3 5
Linseed	per qr	— —	— Foreign	3 4
— Baltic	—	— —	Teazle	per cwt — —
— Cakes, Eng. per 1000	10l 0s	10l 10	Turnip (too variable for quotation).	

KINGSFORD AND LAY.

MARK LANE, FRIDAY, MARCH 1.—We had very little English Wheat fresh up for this morning's market; dry parcels, being scarce, were fully as dear; but a large proportion of that sold last week and on Monday was refused, in consequence of its bad condition, and could only be disposed of at a considerable reduction. The business in free Foreign was limited, but its value is maintained. We only heard of one sale of Bonded Wheat, in which we observe no alteration.—Barley is the turn lower.—Beans and Peas remain as last quoted.—Oats are a dull sale, and Irish 6*d.* per quarter cheaper.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk White	46	57	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire	50	57	White	—	—
Oats, Lincolnshire and Yorkshire Potands	18	23	Feed	16	24
—— Northumberland and Scotch	—	—	Feed	—	—
—— Irish	16	23	Potato	17	25
Barley, Malting and distilling 28s to 33s	Chevalier	30	37	Grind.	24	30
Malt, pale, ship	—	—			
—— Hertford and Essex	—	—			
Rye	—	—			
Beans, Mazagan, old and new 32 to 39	Tick	32	34	Harrow	25	3
— Pigeon, Heligoland 36 to 38	Winds.	30	36	Longpod	3	0
Peas, White 30 to 32	Maple	32	39	Grey	26	27

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 19 per Quarter.	47s 8d	32s 7d	18s 9d	31s 7d	29s 0d	30s 5d
Feb. 5	48 6	33 8	18 11	34 10	29 8	30 6
— 9	48 7	33 1	19 1	32 9	29 10	30 3
— 16	48 6	33 4	19 0	33 5	30 0	31 1
— 23	48 1	33 7	19 7	32 10	29 4	31 2
6 weeks' Aggregate Aver.	48 11	33 5	19 2	33 9	29 11	30 9
Duties on Foreign Grain	18 0	5 0	7 0	10 0	11 0	10 0

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	2270	2980	3070	3000 Sks
Irish	—	—	7710	—
Scotch	—	—	—	—
Foreign	1840	930	—	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	7247 Sks.	Brls.	5514	2941	6961	4401	—	1871	205
Irish	00	00	—	779	64	17749	—	—	—
Foreign	00	00	600	—	—	—	—	—	210

KINGSFORD AND LAY.

COVENT GARDEN, MARCH 1.—Although the weather still continues changeable, the Market is well supplied, and trade begins to get a little brisker. Pine-apples have been more plentiful during the week; they are offered at nearly the same prices as quoted in our last Report. Little alteration has taken place in the prices of Grapes, which are still sufficient for the demand. The supply of foreign Apples has been well kept up during the week; but English ones are scarce. Some good dessert Pears are still offered; they bring nearly the same prices as last week. Oranges are improving in quality, and are very plentiful. Lemons are offered at from 1*s.* to 2*s.* per dozen; Chesnuts are selling at nearly the same prices as last week. A few ripe Strawberries are in the Market. Among vegetables Savoys are becoming less plentiful. Brussels Sprouts are still selling at nearly the same prices as mentioned in our last report, as are also Greens, which are plentiful. Carrots and Turnips continue to be pretty well supplied. Broccoli has been more abundant during the week; a large white variety is selling at from 2*s.* to 12*s.* per dozen. A slight alteration has taken place in the price of French Beans; they are selling at from 2*s.* 6*d.* to 3*s.* 6*d.* per 100. Asparagus, Seakale, and Rhubarb are plentiful, and are offered at nearly the same prices as last week. Celery is becoming scarcer. Cucumbers are a little reduced in price. Cut Flowers chiefly consist of Combretum purpureum, Erica Willmoreana, Burchellia capensis, Lachenalia tricolor, Acacias, Azaleas, Pelargoniums, Camellias, Primulas, Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb., 6*s* to 10*s*	Almonds, per peck, 6*s* to 7*s*
Grapes, Portugal, per lb. 1*s* to 2*s* 6*d*	Sweet Almonds, per lb., 2*s* 6*d* to 3*s*
Apples, des., p. bush. 4*s* to 10*s*	Nuts, Spanish, per bushel, 14*s* to 15*s*
— Kitchen, p bus. 3*s* to 7*s*	— Brazil, 16*s*
Pears, per half-sieve, 4*s* to 12*s*	— Hazel, 2*s* to 4*s*
Oranges, per dozen, 9*d* to 2*s*	— Barcelona, 20*s* to 28*s*
— per 100, 5*s* to 14*s*	— Cob, per 100 lbs., 18*s* to 100*s*
Lemons, per doz. 1*s* to 2*s* —	Chesnuts, per peck, 2*s* to 3*s*
— per 100, 6*s* to 14*s*	Filberts, English, p bushe., 60*s* to 65*s*

VEGETABLES.

Rhubarb, per bundle, 6*d* to 1*s* 3*d*	Spinach, per sieve, 1*s* 6*d* to 2*s* 6*d*
Broccoli, per bundle, 1*s* to 3*s*	Leeks, per doz. bun., 2*d* to 1*s*
White Broccoli per doz. from 8*s* to 12*s*	Garlic, per lb. 6*d* to 8*d*
Brussels Sprouts, p. h.-sv., 1*s* 6*d* to 2*s*	Onions, 2*d* to 4*d* p bsh.
Red Cabbages per doz. 2*s* to 6*s*	— Large, per bushel, 3*s* to 3*s*
Sorrel, 1*s* to 1*s* 6*d* p. h.-sv.	— Spanish, per doz., 1*s* to 2*s*.
Asparagus, per 100, 2*s* to 4*s*	— pickling, p. h.-sv., 2*s* to 4*s*
Seakale, per punnet, 1*s* to 3*s*	Shallots, per lb., 4*d* to 6*d*
French Beans, sieve 1*s* to 6*d* per 100	Lettuce, Cabb., p. score, 6*d* to 1*s*
Autumn Potatoes, 3*d* to 6*d* per lb.	— Cos, per score, 6*d* to 1*s*
Savoys, per doz. 6*d* to 1*s* 6*d*	Celery, per bun., 6*d* to 3*s*
Greens, per doz. 2*s* to 4*s* 6*d*	Mushrooms, per pottle, 2*s* to 3*s* 6*d*.
Potatoes, per ton, 85*s* to 75*s*	Walnuts, per bushel, shelled, 12*s* to 20*s*
— per cwt., 2*s* to 4*s*	Small Salads, per punnet, 6*d* to 8*d*
— per bushel, 2*s* to 2*s* 6*d*	Watercress, per doz. sm. bun. 2*d* to 6*d*
— Kidney, p. bush., 2*s* to 2*s* 6*d*	Parsley, per doz. bunches, 3*s* to 5*s*
Turnips, per doz. bunches, 1*s* 6*d* to 2*s* 6*d*	Tarragon, Green, per bun. 4*d* to 6*d*
Red Beet, per doz., 6*d* to 1*s*	Endive, per score, 1*s* 6*d* to 4
Horse Radish, per bundle, 1*s* to 2*s*	Green Mint, 4*d* to 6*d* per bunch
Radishes, spring, 1*s* 3*d* to 1*s* 6*d* p. pun.	Marjoram, green, p. doz. bun. 1*s* 6*d* to 2*s*
Carrots, p. doz. bun., 2*s* 6*d* to 5*s*	Chervil, per punnet, 2*d* to 3*d*
Cucumbers, 1*s* to 6*s* each	Salsafy, per bundle, 1*s* to 1*s* 6*d*
	Scorzonera, per bundle, 1*s* to 1*s* 6*d*

HOPS, FRIDAY, March 1.

THERE is no alteration in the Hop Market; the quantity in offer is very trifling, and prices remain firm.

Mid & East Kent Pocks.	8*l* 0*s* to 10*l* 10*s*	Sussex Pockets	6*l* — to 6*l* 8*s*
Choice ditto	11 0 — —	Choice ditto	6 12 —
Weald of Kent Pocks.	6 0 6 15	Farnham	9 9 10 10
Choice ditto	7 0 — —		

PATTENDEN & SMITH, Hop-Factors.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 1.

Prime Upland Hay	65s to 70s	Clover	70s to 100s	Straw 30s to 31s
Inferior	50 60			

Trade worse. JOHN COOPER, Salesman.

WHITECHAPEL, March 1.

Hay	50s to 60s	Clover	84s to 95s	Straw 26s to 32s
— fine	62 70	— fine	100 105	

Supply large. Trade dull at the above quotations.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 240s per ton	—	Rags, —s to 90s per ton	—
Bleaching Powder, 28s per cwt.	—	Rape Cake, 105s to —s per ton	—
Brimstone, 300s per ton	—	— Dust, 210s per ton	—
Bone-dust, —s and 17s per quarter	45	Sal Ammoniac, 80s per cwt.	—
— Half-inch, 16s dith	42	Salt, Agricultural, 32s per ton	80
— Calcined, 8s per cwt	—	— clean, 80s per ton	80
Carbonate of Ammonia, 68s per cwt	84	— Hide, 21s per ton	84
— of Lime, 1s to 1s 6d per cwt	—	Saltpetre (Nitrate of Potash) 28s per cwt., duty paid	80 to 84
— of Soda, 20s to —s per cwt	—	Silicate of Potash, in powder, 60s per cwt.	—
Chloride of Lime, 30s per cwt	—	Soap Ashes, —s per ton	—
Graves, 90s to —s per ton	—	Soda Ash, 14s to —s per cwt.	65
Guano, 200s to 280s per ton, in dock	80	Sulphate of Ammonia, 240s to —s per ton	70
— Potter's, 240s per ton	65	— of Copper, 28s to 40s p. cwt.	—
Gypsum (Sulphate of Lime), 80s to 85s per ton	80 to 84	— of Magnesia (impure) 10s per cwt.	—
Humphreys's Compound for Hyacinths, 1s 6d per bottle	—	— of Magnesia (pure crystal) 12s p. cwt.	65
Muriate of Ammonia, 90s per cwt.	70	— of Potash, 14s per cwt.	—
— Lime, 3s to 6s	70	— of Soda, 8s 6d per cwt.	—
Nitrate of Soda, 16s p cwt., duty pd.	80	Sulphur, 14s per cwt.	—
Phosphate of Lime, 15s p. cwt.	65	Sulphuric acid, London, 72d per lb.	—
— — Super, 18s per cwt.	65	— Country made, 10d per lb.	—
— of Ammonia, in crystals 2s 6d per lb	—	Willey Dust, —s per ton	—
— — — in fine powder, 24s per cwt.	65		

Expenses of shipping about 1s to 2s per ton, according to quantity.

MARK POSTLETHWAITE.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, FACTORIES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal-works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

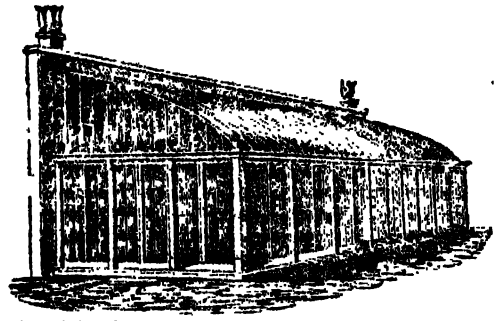
D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL-ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices, in consequence of the present depressed state of the Iron Trade.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public, or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS' BOILERS. After 15 years' experience, and having fixed upwards of 1000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale. For the convenience of those who wish to fix their own Apparatus, they have affixed the following low prices:—

Cottam's Patent Boiler, 18 inch . . .	£2 15s. 6d.
Rogers' Boiler, small size	1 17 0

Larger in proportion.

Hot-water Pipe, at 2, 3, and 4 inches, at reduced prices.

The TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

GARDEN ROLLERS 18 inches long, 24s.; 20, 44s.; 22, 50s.; 24 inches, 60s.; 26, 75s.; 28, 84s.; 30, 108s. each.

CAST-IRON KICKSTANDS, 2 feet six inches high, 5s. 9d. each.

Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases and Pedestals in great variety, and every description of Horticultural Articles, Agricultural Implements, and Furnishing Ironmongery; Dr. Arnott's Stoves, Anglo-Belgian Cooking Stoves; Broiling Stoves. The above low prices being on account of the depression in the Iron Trade, are subject to future alterations.

STRONG IRON HURDLES, 3 ft. high out of the ground, 6 ft. long, with five horizontal bars, weighing about 36 lbs., 3s. 6d. each.

Light Cattle Hurdles, 3 ft. 6 in. high, weighing	42 lbs.,	4 0	,,
Strong do.	do.	do.	45 lbs., 4 4 ,,
Ox Hurdles, 4 feet high,		do.	60 lbs., 5 6 ,,

BEST WIRE, for STRAINED WIRE FENCING, at 9s. 6d. per bundle of 100 yards each. Uprights for ditto, 7d. each. The Improved continued, and every kind of Fencing, Fancy Wirework.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 3s. 6d.; 20 inches, 4s. 6d.; 22 inches, 5s. 6d. each.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 7s.; 4 ft. 6, 9s.; 5 ft., 11s.; 6 ft., 15s.; 7 ft., 20s. per dozen.

SHOW-ROOMS at the Manufactory, No. 2, WINSLEY-STREET, where every information may be obtained.

W. A. ROWLAND'S IMPROVED METALLIC WIRE, for WALL-TREES, VINES, and FLOWERS.

This WIRE having given great satisfaction, and its utility being, from the experience of several years, now fully established, the INVENTOR most respectively acknowledges the extensive patronage he has received, and as the season is now approaching when it will be in requisition, he respectfully begs to inform his customers that he has been enabled to reduce the List of Prices; and he assures them that no expense or exertion will be spared to render the article deserving of their continued approbation.

IMPROVED NAILS for fastening the Wire, being made so as not to cut or injure the Trees.

☞ Also, IMPROVED METALLIC LABELS and INDELIBLE INK, for naming Flowers, Trees, &c.

Observe, each article has the name of "ROWLAND" affixed to it. Sold wholesale and retail by Messrs. Dickson, Goodman, Chester, and retailed by all respectable seedsmen throughout the kingdom.

Garden Implements, Engines, Syringes, &c.—Chester, Feb. 14.

WIRE-WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE-FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

GENUINE PERUVIAN & BOLIVIAN GUANO ON SALE, BY THE IMPORTERS, ANTONY GIBBS AND SONS, LONDON; GIBBS, BRIGHT, AND CO., LIVERPOOL AND BRISTOL. 47, Lime-st., Feb. 21, 1844.

ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported.—Apply to COTESWORTH, POWELL, and PRYOR, London; EDWARDS, DANSON, and Co., Liverpool; or WILLIAM J. MYERS and Co., Liverpool, the Importers.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with Synopsis of mode of use, on applications to MARK FOTHERGILL, 40, Upper Thames-street, and 5, Railway Place, Mark-lane, London.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt. Phosphate of Potash, 15s. per cwt.

,,	Soda .	12s. ,,
,,	Magnesia 9s.	,,
,,	Ammonia 1s. per lb.	

MANURES FOR WHEAT, &c.

POTTER'S GUANO.—Result of an Experiment on Wheat, tried near Colchester—sown Nov. 1842, reaped August 1843. POTTER'S GUANO.—Seven bushels per acre gave 54½ bush. Grain. Daniell's Manure, 40 bush. per acre, gave 46 bush. Grain. Difference in favour of POTTER'S GUANO, 8½ bush.

Note.—The Daniell's Manure cost 3l. POTTER'S (present price) 2l.—Works 28, Upper Fore-street, Lambeth; sold by M. FOTHERGILL, 40, Upper Thames-street.

BEAUTIFUL FLOWERS.—POTTER'S CONCENTRATED LIQUID GUANO, for Flowers, Kitchen Garden Produce, &c. Sold by appointment, by SAVORY and MOORE, Chemists to the Queen, 136, New Bond-street, and 220, Regent-street, and can be had of most respectable Chemists and Seedsmen. Price 1s. 9d. the quart bottle, with directions.

DR. LINDLEY, in the *Gardeners' Chronicle* for 1843, p. 560, says—"POTTER'S GUANO will convert your desert into a paradise." And in the Number, Feb. 10, 1844—"POTTER'S GUANO is unrivalled."—Works, 28, Upper Fore-street, Lambeth.

HYACINTHS AND GROWING STOCK.

HUMPHREYS'S COMPOUND, applicable to all Greenhouse Plants, to Hyacinths and other Bulbs, and to promote the germination of Seeds. Sold in bottles 1s. 9d. each, by FLANAGAN and SON, Mansion-house-street; HURST and McMULLEN, Leadenhall-street; W. CLARK, Bishopsgate-within; SMITH, Islington Nursery; GRIMLEY and Co., Covent Garden; BATT and RUTLEY, 412, Strand; WILLIAM and JOHN NOBLE, Fleet-street; SMITH, Covent Garden; CHARLWOOD, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KERNAN, Great Russell-street, Covent Garden; LOCKHART, 150, Cheapside; SHUTTLEWORTH, Pantheon; MINIER, ADAMS, and NASH, 63, Strand; THATCHER and SON, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS ANSELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. E. RENDLE, Plymouth; DICKSON and Co., Edinburgh; PONTEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THORNE, Shepton Mallet; and other leading SEEDSMEN in town and country. Wholesale Agents, DAVY, MACKMURDO, and Co., 100, Upper Thames-street, London.

THE NEW MANURE.

HUMPHREYS'S FARMERS' COMPOUND, presenting superior advantages to any Manure yet offered to the Public. It is rich in the Phosphates, Silicates, and Nitrogen, with certain new agents, so as to prove most economical and effective for Wheat, Barley, Pulse, Potatoes, Meadow Land, &c. Being manufactured on a new principle, this Manure *will not wash out of the soil* like Guano or the Salts, but with the mild and lasting qualities of the "Home-made" combines the most energetic fertilising chemical agents; adapted to all the purposes of Husbandry and Garden Culture, and unrivalled as a TOP-DRESSING for all Spring Crops. 12s. per cwt.—Wholesale Agents, DAVY, MACKMURDO, & Co., 100, Upper Thames street, London.

LIQUID MANURE.

PUMPS of a Superior Construction, fixed and portable, for Liquid Manure. Garden Pumps, Hydraulic ditto, and Pumps for deep wells. Also Pumps for Ships, Barges, Tanners, Soap-boilers, Brewers, &c. Well Digging and Boring executed. BENJAMIN FOWLER (late George Turner,) 63, Dorset street, Fleet-street.

HORSE POWER SUPERSEDED IN AGRICULTURAL OPERATIONS.

THE INVENTOR of a most efficient and economical SUBSTITUTE for ANIMAL and STEAM POWER, invites the attention of Capitalists to his important Discovery, particularly those interested in the prosperity of Agriculture.

A considerable amount of Capital being required, which must be obtained under great disadvantages, the advertiser is prepared to make such arrangements with any respectable party as would secure them from loss under all circumstances, and ensure to them a liberal share of the profits.

Prepaid letters, addressed Mr. ALEXANDER, No. 18, Easy-row, Birmingham.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURKIS, Secretary, 49, New Bridge Street.

TO NOBLEMEN, AGRICULTURISTS, and OTHERS.

ANALYSES of SOILS, MANURES, &c., are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 2, Victoria Cottages Rawley-road, Kentish-town. N.B.—A Vacancy now occurs for One House or Out-door Pupil.—Apply as above.

TO AGRICULTURISTS.—IMPORTANT DISCOVERY.

"Quid faciat lætas segetes."—VIRGIL.

THE CORN-PRODUCING LIQUIDS.—"One of the most extraordinary exhibitions in the yard (at the late Agricultural Show, Dundee), was that presented by Mr. JAMES CAMPBELL, of the Dundee Public Seminaries. It consisted of magnificent plants of Oats and Barley, grown from seed which had undergone a certain chemical preparation, and without the aid of any manure whatever.

"Such a mode of culture is at variance with all practical experience; but Mr. CAMPBELL declares that his prepared seeds, which have produced these strong, healthy plants, were sown by him on land which, to his certain knowledge, had had no manure of any kind for eleven years; and he declared himself quite ready to verify his statement by experiment, and said he was willing, at any time, to impregnate with his chemical preparations the seed which any member of the Society should send to him for that purpose, so as to enable gentlemen to satisfy themselves fully as to the efficacy of this wonderful mode of culture."—*Journal of Agriculture, October*, 1843.

In this discovery is actually realised that boast of science, which some years ago prophetically asserted, that the time would soon come when one might carry in his pocket matter sufficient to manure an acre of land.

After impregnation with these liquids, the seed possesses within itself elements which not only afford additional nourishment to the grain during the progress of germination, but communicate to the expanding vessels of the plant an aptitude to absorb food, both from the soil and the atmosphere.

Of one specimen of Oats exhibited, the average produce of 38 seeds was 1600 grains from each, or a total of 52,800 grains, weighing 48 lbs. per bushel.

The produce of Barley was an average of upwards of 500 grains from each seed sown; and of Wheat sown on 5th July, and taken up on 8th August, to be exhibited, the result was, that while the unprepared seeds gave plants with two, three, and four stems only, the impregnated grain yielded plants with nine, ten, and eleven stems.

The material for these liquids, at the following prices, may be had of the following Agents.

Wheat . . .	material for one gallon . .		2s. 6d.
Barley . . .	do.	do. . .	2 0
Oats and Grasses .	do.	do. . .	1 6
Beans and Peas .	do.	do. . .	2 0
Turnip and Rape-seed	do.	do. . .	2 6

Agents:—Messrs. GEORGE GIBBS & Co., 26, Down-street, Piccadilly, and Mr. EDWARD PURKIS, London Manure Company, 49, New Bridge-street, London; JAMES HAYDEN, Ironmonger, Warminster, Wilts; CROUCH & Co., Newcastle-on-Tyne; P. BRUCE, Hull; JOHN CAMPBELL, 5, Mersey-street, Liverpool; SAMUEL WALDIE, Carlisle; W. W. FYFE, *Agriculturist* Office, Berwick; and F. KARKEEK, Truro.

One-third, or even one-half less grain, is required for seed than is commonly used; and twelve gallons will impregnate eight bushels of grain; for the operation may be repeated in the residual liquid with additional measures of grain, as not more than one-tenth is absorbed in each operation.

Particular printed instructions for using the liquids will accompany invoices. No order under 20 gallons will be supplied.

1, Dudhope street, Dundee.

SUPERIOR SUBSTITUTE FOR TARPAULIN, &c.



C. MACINTOSH & Co. having made a considerable reduction in the price of the Patent India Rubber Covers for Carts, Waggons, Ricks, &c., beg to call the attention of Users of Tarpaulin and Oiled Sheets to the superiority of their manufacture as an effectual protection against wet, not liable to crack on being folded, and more economical than any other Waterproof cover.—22, York-street, Manchester; and 46, Cheapside, London.

THE LATE Mr. LOUDON.—The following Subscribers to the Works of the late Mr. LOUDON have been obtained since making up the List which appeared in the *Gardeners' Chronicle* of Saturday last:—

ARBORETUM BRITANNICUM.—10l.

John Wolfe, Esq. Kennington	R. H. Cheney, Esq., Badger Hall, Shiffnal
James Yates, Esq., F.R.S., L.S., &c., 49, Upper Bedford Place	

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Lord Calthorpe	Mr. Brown, Mereveale Hall
Charles Barry, Esq.	John Bruce, Esq., Clifton
John Wolfe, Esq., Kennington	Major Campbell, 7th Hussars
Mr. Marnock, Royal Botanic Gardens, Regent's Park	George Scott, Esq., Ravenscourt, Hammersmith

THE SUBURBAN HORTICULTURIST.—10s.

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The Rev. E. J. Edison, Stock Rectory, Ingatestone	John Bruce, Esq., Clifton
R. Sewell, Esq., jun. Albany-st.	Mr. John McEvoy, Arlington-court, Barnstaple
O. Hargreave, Esq., 2, Bloomsbury-place	The Rev. J. Gurbrie, Calne
Mr. Pearson, Hackney-road	Dr. Greenup, Calne
Dr. Turner, King-street Bloomsbury	Wm. Masters, Esq., Canterbury, 2 copies

REPTON'S LANDSCAPE GARDENING, plain, 30s.

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Lord Calthorpe	Miss Parry, 7, Portman-square
R. H. Cheney, Esq., Badger-hall	Messrs. A. Paul and Son

REPTON'S LANDSCAPE GARDENING, coloured, 66s.

The Duke of Bedford	Anth. Peacock, Esq., Ranceby, Sleaford
John Wolfe, Esq., Kennington	
The Marquess of Lansdowne	

ENCYCLOPÆDIA OF COTTAGE ARCHITECTURE.—63s.

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Mr. Marnock, Royal Botanic Gardens	Joseph Knight, Esq.

WAKTERTON'S ESSAYS ON NATURAL HISTORY.—8s.

Charles Barry, Esq.	Mr. Brown, Mereveale Hall
John Wolfe, Esq., Kennington	The Marquess of Lansdowne
Joseph Knight, Esq., 6 copies	

CEMETERIES AND CHURCHYARDS.—12s.

Charles Barry, Esq.	John Wolfe, Esq., Kennington

THE GARDENERS' MAGAZINE, 9 vols. 9l. 17s.

Sir W. Middleton, Bart., the vols. for 1841, 1842, and 1843.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	Orange Tubs
Garden Edging	Flower Boxes, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

GREAT YARMOUTH NURSERY, NORFOLK, 1844

YOUELL & CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER

A SELECT CATALOGUE of the NEWEST and VERY BEST VARIETIES OF FUCHSIAS, VERBENAS, PETUNIAS, CHRYSANTHEMUMS, & ANAGALLIS, offered by YOUELL & CO.

YOUELL & Co., in submitting their Catalogue of FUCHSIAS for 1844, take this opportunity of drawing the attention of admirers of the above elegant tribe of plants, to their select and superb Collection. They have spared no expense in forming a selection of such as are really good, to the exclusion of many that are mere nominal varieties; and they will refer to the numerous testimonials of success which attended their mode of selection last season, collections for Amateurs for competition at the various Horticultural Exhibitions throughout the kingdom.

YOUELL & Co., being the parties who first sent out per post, with safety, these tribes of plants are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms —

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12 ditto ditto 21s, the Selection left to the Purchaser
50 Fine varieties . 40s, the Selection left to Youell & Co
50 Extra Fine ditto 60s, the Selection left to the Purchaser

With the exception of those marked thus *

The plants will be strong and healthy, and ready for delivery by the latter end of March, with the exception of those marked thus * (which will be ready in April), thus ensuring the Purchaser fine plants for competition in the ensuing season. Many of the varieties can be supplied now.

NEW AND SPLENDID SEEDLING FUCHSIAS

* "PUCHSIA LONDESVANA" This brilliant Fuchsia the entire stock of which is in the possession of Youell & Co is now for the first time offered to the notice of the public.

Its exceedingly large tube and sepals are of the most vivid vermillion, and excessively expansive surpassing in brilliancy any hybrid that has yet been raised. It was exhibited at the London Horticultural Society's Meeting, Regent street, and greatly admired, and was pronounced by all who saw Youell & Co's specimen plant to be the most dazzling object of this tribe they ever witnessed. The foliage and habit exceedingly fine, a most abundant bloomer, and will be found a desideratum to every collection. Plants will be ready for delivery by the first week in April, at 7s. 6d. per plant. Usual discount to the Trade, when more than six plants are ordered.

Youell & Co., in calling the notice of Amateurs and others to the following seedling Fuchsia, raised in their nursery beg to state that in the summer of 1842 they bestowed every care in hybridising the best varieties in cultivation, from which they succeeded in raising upwards of 3000 plants, to the flowering of which one house was entirely devoted last year. And although many varieties possessing superior claims to the attention of those cultivating this elegant tribe were submitted for the opinion of Dr LINDLEY, and most favourably noticed, yet Youell & Co feel that, in making a selection of the following six varieties, to which a most accurate description is affixed, will prove not only satisfactory to the purchaser but to themselves.

These will be ready for delivery in April next, and as the stock is very limited, early orders are solicited.

* "QUEEN VICTORIA" Tube and sepals smooth, of a bright vermillion, corolla stout, long, of a fine purple rose colour, forming a good contrast, and of fine texture, price 7s. 6d. per plant.

* "PRINCE OF WALES" Tube and sepals rosy vermillion the latter tipped with green, expanding well, and showing a fine purple of unique purple; price 7s. 6d. per

* "PRINCESS ROYAL" Tube and sepals bright red corolla rich and peculiarly bright in colour; price 5s. per plant.

* "MARCHIONESS OF NORMANBY" Flower large and showy flower, measuring four inches from the commencement of the pod to the termination of the petals, tube and sepals scarlet corolla open, having a tinge of purple on it; price 7s. 6d.

* "LADY ANNE PAUL" A flower of good form and substance, tube rosy red tube and sepals, the latter terminating in a decided green, corolla very large and stout, of a beautiful crimson purple; price 5s. per plant.

* "LADY WALSINGHAM" Tube and sepals smooth, of a rosy vermillion, the latter turn up and expose the white of the corolla, which is stout, and of a fine purple crimson; price 5s. per plant. When the six are ordered, they will be charged 21 10s. 6d. the set.

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Fuchsia Seed, saved from the best varieties, 5s. to 10s. per packet, with Directions for sowing &c. &c.

DUCHSIAS

	per pair — s.	d.
Fuchsia affinis, or radicans	1	0
,, arborea	1	0
,, spectata	1	6
,, Aurora	1	6
Alba (Smith's)	2	0
Bellafolliata, Bellana, or Rosea alba	1	0
Balloonii	1	6
Bicolor	1	6
Brecciana	1	0
Blanda	2	6
Brockmanii	2	0
*Beauty (Youell's), fine	3	6
Britannia (Smith's)	2	6
Cormackii	2	0
Curtisii	1	0
Compacta	1	0
Conspicua	1	6
Carnea	1	0
Chandlerii	1	0
Coccinea	1	0
,, arborea	1	6
Corymbiflora	1	0
*Countess of Pricemet (Youell's), fine	3	6
*Countess of Zetland (Youell's), fine	2	0
*Conservatrix (Youell's) fine	1	0
Cooperii	1	0
Champion (Smith's)	2	0
*Constellation (Miller's) to be sent out this season—late	12	6
*Candidissima (Girling's) in May	5	0
Dominii	1	0
Dickensii	2	6
Dulcata	2	0
Duchess of Gloucester (Standish's)	2	0
Dianee (Smith's)	1	0
Elegans superba	1	0
Excelsa	1	0
Exoniensis	1	0
Equisi	2	0
Fructuosa	1	6
Elegans	1	0
Enchantress	1	0
,, Harrison's	2	0
Fronticosa	1	0
*Exquisite (Youell's) fine	1	6
Eclipse (Smith's)	2	6
Floribunda Standishi	1	6
Formosa elegans	1	0
Fulgens multiflora	1	0
Floribunda magna	1	0
Gem		6
Globosa variegata		0
Grandis	1	0
Globe (Standish)		0
*Hero of Surbiton (Girling's) in May		6
Iverryana		6
Insignis	1	0
King	1	6
Lamii	1	0
Longiflora hybrida	1	0
*Lady Rae Reid (Youell's) fine	2	6
*Lady Sondes (Youell's), fine	2	6
Magnifica	1	0
*Marchioness of Ormonde (Youell's) fine	3	6
*Madonna (Youell's), fine	2	6
Majestica (Smith's)	3	0
Mouypennii	1	0
Magnificent	2	0
Nobilissima (Smith's	2	6
Pendula Young's)	1	6
Pulcherrima	2	0
Princeps	1	0
*Prince Albert (Youell's), fine	2	6
Paragon (Smith's)	2	6
*Queen Victoria (Smith's), expect to be sent out this season	21	0
Racemiflora	3	0
Racemosa	2	0
Racemiflora elegans	1	0
Rubecta (Smith's)	2	0
Rogersiana	2	0
Riccartonii	1	0
Smithii	1	0
Splendida	1	0
Scandinavii	1	0
Splendens (Humboldt)	1	0
,, (Kyle's)	1	0
Salmonia	1	6

With every other variety worthy of cultivation, that may be advertised by other parties after the publication of this list.

YOUELL & Co. are preparing a short treatise upon their successful mode of cultivation of the Fuchsia, which will be presented Gratis to Purchasers.

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* "MONARCH" (Youell's) is a delicate creamy white, surpassing in its size and fragrance every other variety; the tufts of bloom measuring from 3½ to 4 inches diameter, and will be sure to give satisfaction. Price 5s. per plant.

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The above four varieties have been selected from upwards of 2000 Seedlings and may be confidently relied upon as possessing superior claims and will be sure to give satisfaction; will be ready to send out in April next (post free). If the four varieties are taken, they will be charged 10s. the set.

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Arraniana superba	1 0	Laconii	1 0
Barkerii, extra fine	1 0	* Longiflora (Girling's)	2 0
Barnesii	1 0	Melindria major	0 6
* Beauty	2 0	* Minstrel Boy	2 0
* Blue Queen (Miller's)	5 0	Picta	0 6
* Boule de Feu	2 0	Prince of Wales Wood's)	1 0
* Bridesmaid	2 0	Princess Royal (Youell's, the best white out	1 6
Edmondii	1 0	* Renown	2 0
Emperor	1 0	Sanguinea	1 0
Favourite	1 6	Speciosa (Kyle's)	1 0
Formosa elegans (Croft's)	1 6	Splendens	1 0
Formosa beautiful pink, with white eye	1 6	Striata coccinea, extra fine	1 0
* Fortune teller	2 0	Tuerroides rosea, do	2 6
Grandis	1 6	Tweediana	0 6
Groomiana	1 0	Victory	1 0
Hendersonii	1 0	Vivid	1 0
Halopiana	1 0	* Zeuxes (Miller's)	3 6
Imcisa	0 6		

To be sent out in April next, per post free, at the following prices, viz —

12 Extra fine Varieties, 6s., the select on left to Youell & Co
12 Ditto 10s. the selection left to the purchaser

[With the exception of those marked thus *]

Any other variety worthy of cultivation that may appear, after the publication of this Catalogue, can be supplied at the advertised prices.

PETUNIAS

Beauty	1s. 0d.	Magna rosea	1s. 0d.
Bicolor	1 0	Magnifora	2 6
Gem	1 0	Meteora	1 0
Grandis	1 0	Punctata (Miller's in Apr	7 6
Lady Peel	1 0	Rosea alba	1 0

With every other variety worthy of cultivation that may be advertised by other Parties after the publication of this List.

CHRYSANTHEMUMS

Achmet Be lilac	Formosum, white and yellow	Mirabile, white and buff
Arago, buff and red	Golden Lotus, flowered yellow	Peter creamy
Beauty, pale lilac	Gem pink and white	Perapicuum pink
Belladonna pink	Goliath white	Princess Marie, light pink
Bethnia lilac	Gouvain St Cyr orange	Pulcherrimum rose
Campestrom purple	Hero	Queen deep rose
Casimir Perrier small crimson	Incurved pink	Quilled yellow,
Chancellor, white and pink	Insigne, pink and red	Rosalind, pink
Changeable, yellow	Imperial pale lilac	Salters, white
Christophe Columbe, lilac	King, pale rose	Sulphurea
Col Combes, salmon	Louis Philippe	Sultana, rose
Conspicuum	Lucidum, white	Superb clustered yellow
Defiance, white	Marchioness, white	Surprise, white
Duc de Conighano, crimson	Madame Pompadour, dark rose	Starry purple
Duchess de Monte bello	Marchale Messina, yellow and red	Tasselled, lilac
Duke extra fine	Marie, red	— yellow
Elegans rose	Marie Antoinette	Triumphant, pink & buff
Expanded purple	Magnet, yellow	Two coloured in curbed, yellow and brown
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Fletcher, dark rose	Minerva, pink and white	Wheelerana

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JOHN MILLER, surviving Partner of the late firm of Sweets and Miller, Nursery and Seedsmen, Bristol, begs respectfully to inform Nurserymen, the Trade, and his Friends in general, that he has commenced business as Auctioneer and Valuer of Horticultural and Agricultural Stock, &c., and hopes by strict attention to the interest of his employers, to merit their support. Letters addressed to John Miller, Portland House, Kingsdown, Bristol, will meet with immediate attention.—Bristol, May 6, 1844

TO THE NOBILITY, GENTRY, CLERGY, AMATEURS, AND OTHERS.

THE SUBSCRIBER begs to state that he is prepared to supply the undermentioned, viz.—

Cineraria, "The Queen of May,"—a beautiful sky blue, of shrubby compact growth, quite new colour, of fine form and large size, at 5s each

Cinerarias—12 of the most distinct and approved varieties for 20s

Fuchsias—25 distinct fine sorts, including his own seedlings, for 20s

Calceolarias—20 distinct and good sorts, of all shades of colour, for 20s.

Hollyhocks—fine strong one year-old plants from his best selected seed, 20s per 100.

Herbaceous Plants of the most showy varieties, correctly named, 100 sorts for 42s

Hardy Flowering, and Evergreen Shrubs, in 50 sorts, two plants of each, correctly named according to Loudon's "Arboretum Britannicum," at 42s per 100, including package

He will also have to offer in April a new Collection of beautiful Calceolarias, not yet sent out, a Descriptive Catalogue of which is in preparation, and will be forwarded to applicants. These are from his own celebrated Stock, and of the same breed as his Cal. "Lady Constable," so much in repute.

Seeds in packets of Hollyhock, Pansy, Picotee, Calceolaria, and Hybrid Fuchsia, at 1s 6d, and 3s each

TO THE TRADE, MARKET GARDENERS, AND OTHERS, he begs to state that he has yet to offer a few thousands of Gooseberries, and the large Red Antwerp Raspberries.—The Gooseberries are comprised in upwards of 100 of the most generally useful kinds in cultivation, and the Red Antwerp Raspberry is decidedly the best sort grown, for produce, size, and quality; both of which he will offer on very moderate terms, in quantity. The plants are young, clean, strong, and healthy, two and three years old.—Also Mac's new large late red "Victoria Currant," a dish of which was sent to and exhibited in 1843 at the Horticultural Society in Regent-street, London, some of the bunches of which measured 6 inches in length, and individual berries 1½ inch in circumference—12s per doz. New Black Bang-up Currants, 6s per doz. The usual allowance to the Trade on the Currants.

Woollen Net for protecting Fruit-trees from frost, of the best material, at 6d per yd.

Stove and Greenhouse Plants and Florists' Flowers of every description. Finest and Fruit Trees, Garden and Flower Seeds, of all the approved sorts. William May.

Hope Nursery, Leeming-lane, near Bradford, Yorkshire.

DAHLIAS.—KEYNES' REGISTERED BY PRESTON; DODD'S ORANGE PERFECTION, and DOWDING'S Nimia Mundi.—The Stock of these splendid DAHLIAS is in fine condition, and will be sent out after the 1st of May. A List of the Subscribers who have ordered the above splendid Plants, will be determined the 1st of April. Those who intend growing these varieties only, by giving their orders, secure the Plants the first week in May.—Salisbury, March 7, 1844.

TAPSCOTT RASPBERRY.

PATRONISED BY [illegible]

MOST [illegible]

OF [illegible]

LORD [illegible]

LORD [illegible]

TURAL SOCIETY [illegible]

YOUELL AND Co. [illegible] ing they [illegible] supply [illegible] valuable and much [illegible] extraordinary size of the fruit and [illegible]

Those to whom Y. and Co. sent it [illegible] their high admiration of its superiority over [illegible] and has been awarded several prizes from [illegible] exhibitions during the season, [illegible] rated in execution, drawing, [illegible] (see *Gardeners' Chronicle* of the 24th [illegible] opinion of it is as follows:—

"Tapscott Raspberry.—We have received [illegible] Youell, of Great Yarmouth, fruit of the Tapscott Raspberry, and we find its merits all that have been stated to [illegible] of excellence. The fruit that we have received [illegible] tately ripened, and of rich flavour, far surpassing [illegible] some other new and large varieties. The plants [illegible] and in long succession."

They also exhibited it [illegible] London Horticultural Society, [illegible] prize was awarded. It would [illegible] Youell and Co. to recommend it [illegible] confidence of the nobility, [illegible] continues in high perfection [illegible] and has maintained its pre-eminence [illegible] soils and situations, and supplies an [illegible] treatment of the old varieties.

Fine Canes are ready for delivery, and can be [illegible] to any part of the United Kingdom (on the receipt of a Post office order), upon the following terms:—

Packages containing 144 Canes	:	£2 2s. 0d.
Do. do. 72 do.	:	1 1 0
Do. do. 24 do.	:	0 10 6

Package included.

The usual discount to the Trade, when not less than [illegible] ordered.

*** Caution.—Y. and Co. beg to call the [illegible] Friends and the Public in general to the fact [illegible] pointed no Agents in London for the sale of [illegible] not be held responsible for its being [illegible] direct from their Nursery.

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c., FOR 1844.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of last week, and will be found to contain such varieties only as are worthy of cultivation.

Youell & Co. being the parties who first sent out, and got them with safety, these tribes of plants, are desirous of calling attention to their advantageous method of forwarding orders, namely, that they will deliver them free of postage (at the [illegible] Post office order), to any part of the United Kingdom, upon the following terms:—

12 Extra fine varieties, 12s., the Selection left to Youell & Co.
24 ditto ditto 21s., the Selection left to the Nurseryman.
50 Fine varieties 40s., the Selection left to Youell & Co.
50 Extra fine ditto 70s., the Selection left to the Nurseryman.

With the exception of Cuttings, [illegible] Plants will be strong and healthy, and ready for delivery by the latter end of March, with the exception of those marked thus * (which will be ready in April), thus ensuring the Purchaser fine plants for competition in the ensuing season. Many of the varieties can be supplied now.

YOUELL'S TOBOLSK RHUBARB, Patronised by Her Most Gracious Majesty the Queen, and many of the Nobility, 15s per dozen. For particulars of which see their Advertisement of the 16th November.

TWO NEW SEEDLING PICOTEES.—"Last Alice Pike," 10s 6d, and "Mrs. Beaton," 10s 6d. per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge Norfolk, and kindly presented by that gentleman to Messrs Youell & Co., for purchasing which see their Advertisement in this Paper of the 16th ult.

FINEST CARNATIONS AND PICOTEES.

YOUELL AND Co beg to refer the Readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers which appeared on the Advertising pages, 706 and 707, of this Paper, of October 12th, and will be found to contain every variety worthy of cultivation.

Fifteen best Blows		
12 pair of good Show Borts	:	£1 1s 0d
12 ditto fine ditto	:	1 10 0
25 ditto ditto	:	2 2 0
12 ditto extra fine and very superior ditto	:	3 3 0
25 ditto ditto	:	5 5 0

The selection being left to Youell & Co.

ARAUCARIA IMBRICATA.

YOUELL AND Co, possessing the most extensive stock in the country of this elegant Ornamental Tree beg to offer them on the following advantageous terms.—Fine robust 4 year old plants, 2 to 2½ inches high, 10s. per 100 or 70s. per dozen.

Fine Plants of CEDRUS DEODARA, 1ft. to 2ft. 6 in., 4s. 6d. each.

Great Yarmouth Nursery, March 7, 1844.

STANDARD CURRANTS, white and red, trained on a single stem 5 ft. high, like Standard Roses.—Any Nurserymen having any to sell may direct to A. Z., Spencer's Library, No. 314, High Holborn, post paid, stating size and price

1844.

A LIST OF CHOICE FLOWER AND VEGETABLE SEEDS, SOLD BY

WARNER AND WARNER, SEEDSMEN, No. 28, Cornhill, London.

Acacia lophantha		0s	6d
,, untimifolia		0	6
Aconitum variegatum		0	6
Achimenes rosea superba		0	6
*Alonsia grandiflora		1	0
Alstroemeria, in fine varieties		0	6
*Anagallis indubitata major		1	0
,, ,, grandiflora			
form		1	0
Anchusa, new hybrid, Russian		0	6
Antirrhinum hybridum, 24 shades of colour, mixed		0	6
Aquilegia glandulosa		0	6
Argemone grandiflora		0	6
Aster, extra fine German, 24 sorts, mixed, from imported varieties		0	6
Aster, collection of 24 varieties, as imported, most splendid		5	0
*Auricula, from fine named flowers, extra		1	0
Balsam, fine double Camellia flowered mixed		0	6
Balsam, double German, 12 splendid varieties		3	6
Blumenbachia insignis, a fine climber		0	6
*Boronia denticulata		1	0
*Brachycome iberidifolia		0	6
Cacalia aurea		0	6
*Calceolaria, shrubby and herbaceous, separate, saved from fine named vars. and newest kinds		1	0
Calempelis scaber		0	6
Calendrina grandiflora		0	6
*Calliprora, extra		1	0
Cenanthus aureus		0	6
Callopsis Drummondii, grandiflora		0	6
,, lutea		0	6
Campanula Loreii, blue and white		0	6
Campanula Trachelium fore pleno		0	6
*Campanula stricta, new and beautiful		0	6
Campanula pendula		0	6
Canterbury Bells, double blue and white		0	6
Carnation, from fine named flowers, extra fine		1	0
Catananche bicolor		0	6
Centaurea Americana		0	6
*Chorizema varium		1	0
,, spectabile		1	0
*Cineraria, from the newest and most approved varieties		0	6
Cistus helianthemum, for rockwork, mixed colours		0	6
Clarkia elegans		0	6
,, grandiflora, crimson		0	6
,, alba fimbriata		0	6
*Clerodendron speciosum		1	0
Clintonia pulchella		0	6
Collinsia bicolor		0	6
Collinsia verna		0	6
Cockscomb, new giant scarlet		0	6
Cockscomb, Brighton prize yellow		0	6
,, new dwarf		0	6
Collinsia rubra major		0	6
Commelina coelestis		0	6
Convolvulus minor, new dark purple		0	6
Convolvulus tricolor		0	6
Cosmidium, three choice varieties		0	6
Cuphea silenoides		0	6
*Cyclamen, three varieties, mixed		1	0
Dahlia, from the best varieties, saved by the best growers		1	0
Datura, double white		0	6
,, double purple		0	6
*Daviesia saligna		1	0
Delphinium azureum		0	6
,, grandiflorum		0	6
,, nanum		0	6
Dianthus chinensis, extra fine, double		0	6
Dianthus cruciatus		0	6
Dianthus, new spotted		0	6
Dimorphotheca aurantiaca		0	6
*Dipidax cum monostrosum, new		0	6
*Dichrysum microcephalum		0	6
*Erica andromedæflora		1	0
*Eriostemon buxifolium		1	0
Eschscholtzia grandiflorum, new		0	6
Ficus Menckeli		0	6
*Fuchsia fulgens, splendid dark variety		0	6
Fuchsia, fine var., mixed		0	6
*Gaillardia coccinea		0	6
,, Wellsiana, new		0	6
*Geranium from the finest new named sorts, mixed		1	0
*Gesneria splendens		1	0
Gloxinia splendens		1	0
Gilia splendens		0	6
*Gladiolus, new and choice varieties, mixed		0	6
*Gloxinia, fine varieties, mixed		1	0
Gnaphalium rubra splendens, per paper		1	0
Godetia, choice kinds		0	6
*Heartsease, from choice named varieties, saved by the best growers		1	0
Heliotropium Peruvianum		0	6
Hibiscus Manihotoides		0	6
,, grandiflora		0	6
Hollyhocks, in 24 sorts, splendid		5	0
Hollyhocks, 24 sorts, mixed, extra		0s	6d
*Hovea Celsii		1	0
Iberis superba		0	6
Impatiens glanduligerum		0	6
,, new alba		1	0
*Ipomœa rubra cærulea		1	0
,, alba, new		1	0
,, roseo		0	6
,, yellow, new		0	6
Ipomœa elegans		0	6
Jacobea, double dark mulberry		0	6
Jacobea new double violet		0	6
*Kennedya, cloud kinds		1	0
Larkspur, German 12 kinds, extra fine		3	0
Larkspur mixed German		0	6
Lathyrus grandiflora rubra		0	6
,, ,, alba		0	6
Leptosiphon densiflora, white, new		0	6
*Lilium Philadelphicum		1	0
Limnanthus grandiflora		0	6
Linanthus Russellianus		2	6
*Loasa Pentlandica		0	6
*Lobelia ramosa, new and splendid		0	6
Lobelia propinqua		0	6
Lophospermum Hendersonia		0	6
Lucaria senecioides, new		0	6
Lupinus, German, 12 varieties, mixed		0	6
Lupinus ramosus alba, new		0	6
*Martynia fragrans		1	0
Marygold superb African, extra fine		0	6
Marygold, superb French dwarf, extra fine		0	6
*Maurandia semper florens		0	6
Mesembryanthemum tricolor		0	6
*Mesembryanthemum tricolor alba, new		1	0
Mimulus Deshamii, new sweet-scented		0	6
Mimulus Gutherianus		0	6
,, Cardinalis splendens		0	6
*Nemophila discoidalis, new black		1	0
Nemophila grandiflora azurea		0	6
Nicotiana, new scarlet		0	6
Nemesia roseo		0	6
Œnothera Drummondii		0	6
,, macrocarpa		0	6
,, silenoides		0	6
Oxalis rosea		0	6
Papaver bracteata		0	6
,, nudicaule		0	6
*Passiflora incarnata		0	6
,, edulis		0	6
Pentstemon gentianoides splendens		0	6
Petunia purpurea, grandiflora, and rosea			
Petunia, mixed from the most splendid named flowers		0	6
*Phlox Drummondii, new large crimson		1	0
*Picotee, yellow imported, mixed from named kinds		0	6
Picotee, saved from the finest English named flowers, per packet		1	0
*Pimelia hypericifolia rosea, & lindenaeia		1	0
Pink, from fine named flowers		1	0
,, Chinese, six fine dbl			
,, Mountain, new hybrid beautiful		0	6
*Polyanthus, fine mixed, from named prize flowers		1	0
*Pollolobium, new imported species		1	0
Primula, 8 fine varieties by name		2	6
*Primula Montan		1	0
Portulaca thellusonii		0	6
,, splendens		0	6
Poppy German, 12 distinct colours		2	6
*Potentilla Thonisni		1	0
Primula, sinensis rubra fimbriata		0	6
,, ,, alba, do		0	6
,, ,, roseo, do		0	6
Ranunculus saved from superb new scotch varieties		0	6
Rhodanthe Manglesii		0	6
*Rhododendron dense		1	0
,, Lowii		1	0
Salpiglossis, 20 varieties mixed, superb		0	6
Salvia, varieties mixed		0	6
Sanvitalia procumbens		0	6
Scabiosa Columbaria, new		0	6
,, elegans, fine		0	6
Schizanthus Aboa		0	6
,, Grahamii, red		0	6
,, Hookerii, scarlet		0	6
*Schizopetalum Walkeri, sweet-scented		0	6
*Schypanthus retusus, new		0	6
*Silene speciosa, new and beautiful		0	6
*Stachys Dowsetti		1	0
Stocks, new German, imported, 24 vars, mixed		0	6
,, new Prince of Wales, splendid variety		0	6
,, Victoria, new, violet crimson		0	6
,, Moss's, intermediate		0	6

Those Warners' List of Flower and Vegetable Seeds continued.

Stocks, new buff colour, very large, flowered		1s	0d
,, collection of 36 varieties as imported, splendid		0	0
Statice sinuata		0	0
*Sweet William, new double, many vars, mixed		0	6
Thunbergia alata, buff		0	6
,, aurantiaca		0	6
,, alata alba		0	6
Tropæolum cornutum		0	6
Trachymene cœrulea		0	6
Trachelium cœruleum		0	6
*Tropæolum Jarrattii		1	0
,, Canariense		0	6
Venidium fastuosum		0	6
Venus's looking glass, white		0	6
,, purple		0	6
Verbena, fine mixed		0	6
Verbena, Miss Ellis		0	6
Verbena, Defiance		0	6
Verbena, Purple Perfection		0	6
Verbena, Purple King		0	6
Verbena, Purple Perfection		0	6
Verbena, Purple Perfection		0	6
Verbena, Purple Perfection

RANUNCULUSES, ANEMONES,
PELARGONIUMS, AURICULAS, CARNATIONS,
AND LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near Stockwell, respectfully informs Walworth, by Appointment Florist to Her Majesty, begs to inform the Nobility, Gentry, and Amateurs, that in consequence of the success he has had in the cultivation of the above flowers at his new Garden, he can offer them at very moderate prices. He would particularly recommend an early application to be made for RANUNCULUSES and ANEMONES, as they should not be planted later than the end of March to secure a good bloom. His Catalogue of PELARGONIUMS, AURICULAS, and NEW PLANTS, is now ready, and will be forwarded by post on application. The Trade supplied.

MELON SEEDS.—A very liberal Remuneration will be given for some PERFECTLY PURE AND GENUINE SEEDS of the under-named Melons, or Seeds procured the last year direct from China, Cabul, and Candahar, will be given in exchange:—Striped Roccoinan, Daree, Gorse, Gernala, Melon of Gerger, Nukshevan, Sweet Melon of Ispahan, and Italian Green-flesh.

Application to Mr. G. Mills, Gardener, Gunnersbury Park, Acton, Middlesex.

The Gardeners' Chronicle.

SATURDAY, MARCH 9, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS

Wednesday, March 13	Society of Arts	8 P.M.
Tuesday, March 19	Horticultural	3 P.M.
	Linnean	3 P.M.
Wednesday, March 20	Microscopical	8 P.M.

"With the exception stated below, trees imbibe from every part of them which is exposed to moisture, and give off (transpire) from every part of them which is exposed to drought. The root is the part which is constantly exposed to moisture, and which furnishes the constant supply of sap to the tree. That part of the root which is universally believed to imbibe no moisture, the woody part, is the only part which does imbibe moisture; *and that part of the root which is universally believed to be the only part which does imbibe moisture, the unripe ends or fibres, is the only part which does not imbibe moisture.*"

Such is the startling declaration of Colonel Greenwood, whose book on planting we noticed a fortnight since (p. 118). On the one hand, it is the opinion of a man who has evidently paid attention to practical foresting, and has indulged in the good habit of thinking for himself; on the other, it is entirely opposed to the views of preceding writers, and strikes at the root of some of the most solid observations in vegetable Physiology. It has, therefore, a double claim on our attention.

We will not stop to inquire at what time the term "spongelet" was first applied to the young and tender points of the roots of plants. It will be sufficient to state that, with the exception of a few ill-informed persons, who fancied the spongelets were special organs, everybody from the days of Duhamel up to those of Colonel Greenwood, has recognised in those spongelets the most powerful of the absorbent parts of plants. Senebier, a Swiss physiologist, proved the fact by the following experiment:—"I placed," he says, "in water, a plant of Radish, inserting only the point of the root; it remained fresh for many days. I bent the root of another Radish, without breaking it, and plunged the curved part in water, so that the leaves and the point of the root were above the edge of the vessel employed: the leaves at first flagged, but as soon as the point of the root was introduced into a tube of water, they recovered their original freshness. I repeated the same experiment, with similar results, on several other plants, having roots flexible enough to be bent, and sufficiently clear of side rootlets, to render the experiment trust-worthy."—*Physiologie Végétable*, vol. i. p. 311. Duhamel had previously remarked that many plants suffered more from being planted under old Elms when they were 4 or 5 feet off than when they were close to the trunk; "because, at the former distance the fine fibres of the Elms were able to exercise their sucking force, while, near the trunk itself, the old roots were inactive." This in fact is so well-known a circumstance, that it could hardly have escaped observation, if Senebier had never published his Physiology. Let us take a few instances about which there can be no doubt. In a fruit border the wall trees become too luxuriant; the gardener cuts off the points of the roots where the great act of absorption is going on, and so for the moment checks them. An old tree is exhausting the soil; where is manure added,—round the trunk, or by breaking up the soil at a distance from it, and introducing the manure at that place? We think there is but one answer to that question. It is true that we have seen ignorant people pouring water round the trunk of an old tree, in the summer, in the hope of reviving it; but they might almost as well have poured the water in another county. And again, we all know that plants which are growing in pots may be transplanted at those seasons with safety, when no precautions would enable the same plants to live if taken out of the ground. In that case, the preservation of the young and tender roots is undoubtedly the explanation of the uniform success attending pot-transplanting in summer.

But experiment is hardly necessary to show that the young and tender fibres of plants are the most powerful of their absorbing surfaces. It is an undoubted fact that all vegetable tissue allows water to pass through it with a facility proportioned to its youth. The younger is vegetable tissue, the thinner it also is, and the more easily penetrated by fluids. As it grows old it thickens, hardens, and even dies: and with that thickening, hardening, and dying, does its power of transmitting fluids diminish. The youngest parts of the roots of plants are the spongelets; next in age is the part behind them, or the small fibres; and the oldest are the large thick roots; therefore the most absorbent are the spongelets, next the smaller fibres, and last the large thick roots.

Let it not be supposed from these statements, that we deny all power of absorption to the surface of old roots; on the contrary they no doubt do absorb to a certain extent; and Col. Greenwood is right when he says that "trees imbibe from any part which is exposed to moisture." But the question is not, whether the roots of plants absorb by their points alone, or by their old surfaces; it is, whether they absorb fastest by the one or the other: and to that there can only be one answer. Col. Greenwood says that in transplanting "the supply must be equal to the demand; if not, scarcity will ensue." and nothing can be more true; it is the fundamental axiom of transplantation. And that being so, it is obvious that the supply of food to plants will be greatest where the most powerful absorbing parts are preserved. Those parts are the tender fibres and their spongy extremities.

It is superfluous to examine the evidence produced by Col. Greenwood to prove that all parts of plants in contact with moisture will absorb it, because nobody denies that fact. The true question is, which parts will absorb it fastest, so as to ensure a supply equal to such demand as may be made? Physiologists say the spongelets; Col. Greenwood undertakes to prove that "roots do not imbibe at all from the small sponges (spongioles) which are *supposed* to exist at their ends." Let us consider the nature of his proof.

He begins, as will be seen from the passage just quoted, by denying the very existence of spongelets. But we presume that fibres must have an extremity; as they grow by additions to the extremity, that part must be the youngest; and as spongelet is merely the technical name of the young point of a root, a spongelet must have a real existence. We may therefore consider the existence of spongelets to be sufficiently proved. The next argument is founded upon the roots of Horse Chesnuts growing in water. It was found that "where the root was cut off when several inches long, the plant would still grow, and would continue to throw out fresh roots as fast as they were cut off." But this proves nothing further than that the Horse Chesnut seed, when in contact with water, is capable of absorbing fluid fast enough to live until the loss of the rootlets can be repaired. It surely does not prove that the young fibres had no action. Then it was found that "if the plant was divided from the seed, by cutting the *umbilical bands*, it died, though the root was perhaps twice the length of the plant." We are not sure whether we understand what is meant by "umbilical bands;" but if the bases of the seed leaves (cotyledons) are intended by the expression, we still find no proof in support of Col. Greenwood's theory; for we all know that seedlings are incapable of living in the absence of their cotyledons. The experiment shows that roots cannot live in the absence of leaves, or their equivalents, which the cotyledons are; but by no means that the young fibres of roots are useless.

Beyond this experiment we find nothing in Col. Greenwood's book in support of his novel views, except the well-known fact that trees may be transplanted successfully when the fibres are for the most part cut off. In those cases, however, it will be found that, in the first instance, the wounded ends themselves absorb fluid until the organisable matter lodged in the vicinity is called into action and has formed fresh fibres. And the notorious danger of trusting to the transplanting of trees with greatly mutilated roots lies in the chance that the leaves will draw upon the roots for fluid faster than the roots can provide it, and that thus the supply should *not* be equal to the demand.

Let no one therefore imagine, because it is possible, under very favourable circumstances, to transplant trees with few small fibres attached to them, that it is a practice which can be in any way recommended for adoption. We must never neglect the probable, from a blind reliance upon the possible.

BARRENNESS IN THE FIG.

Much inquiry has taken place lately about the management of Fig-trees in our moist climate, and I do not wonder at it; for of all our fruit-trees the Fig seems most difficult to bring under system. When, however, the bright and dry climate of the East, where it is indigenous, is taken into consideration, and compared with the climate of Britain, together with the rapidly-absorbing powers of both the roots and leaves of this plant, the wonder will be much diminished.

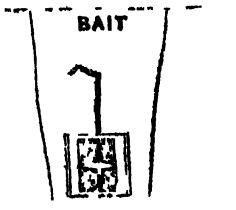
Short-jointed wood is allowed on all hands to be the criterion of fruitfulness in most fruit-trees; this is particularly so with the Fig, and of course is quite incompatible with luxuriance. Now, few persons that have any practical knowledge of its habits will venture to put manure of any kind within its reach in open-ground culture; animal manures, especially, are entirely out of the question. However, it is not enough to refrain from the use of manures; even plain loam, with liberty to range, is by far too powerful a stimulant for the average heat of our summers. I have some Fig-trees on a south wall that were old trees when the following detail of operations took place: they had grown with excessive luxuriance for many years, and seldom bore fruit; the leaves were twice as large as they should be, and the internodes between the buds on the young shoots were from four to six or eight inches in length, whereas in fruitful Figs the internode is sometimes barely perceptible. These Fig trees, in consequence of alterations, had to be removed, and when they were replanted I placed a temporary wall at two feet distance from the trees, and filled the inclosed space with maiden soil—not the turf, but taken from under the turf; and in addition to this, I formed a substratum of bricks, allowing only nine inches of soil in depth. The Figs were taken up in November, and laid in amongst some rubbish until the end of March; it had been a most severe winter, and the trees when planted were to all appearance nearly dead—the bark was much discoloured. However, they grew after some weeks, and they are now again too luxuriant, although they have borne much better since the operation.

From this, and many other observations I have made for years, I have no doubt that it would be much better for the Fig out of doors, as well as for some luxuriant Pears, to mix a very considerable portion of stone, in masses of some size, with the soil, when the border is prepared. I should think that equal portions of sound loam, rough lime-rubbish, and masses of stone, trod well together when dry, would be an excellent compost for Figs, or even for many tender Pears. The rapid action of the root must be impeded by some means—and what more in accordance with nature than acting thus on the texture of the soil? If this were done, we should not hear so much about disbudding and systems of pruning. The Thorn-tree, with its profusion of fruit, ought to teach us a lesson—growing, perchance, on a solid and shallow bank of dry soil; here the annual growth is in proportion to the light and heat of the climate, and the consequence is, extensive and perfect elaboration of the sap.—*Robert Errington.*

ON TRAPPING VERMIN DESTRUCTIVE TO GAME.

Some gardeners have to act as gamekeepers, especially those who are employed by gentlemen whose incomes are too small to allow them to keep men for the sole purpose of preserving or of killing game. Though many gardeners can kill, yet they sometimes cannot preserve game, that is to say, they do not know how to destroy vermin. To such, a few remarks on the trapping of vermin that destroy game may be useful.

They are generally taken in what gamekeepers in the north call "wears." A wear is only a few twigs stuck in or laid on the ground around a bait and a trap, so that the animal to be taken cannot reach or take away the bait without going over the trap. When a wear is against a wall, fence, tree, or bush, it is usually in the form represented in the accompanying figure. If it is made in an open field, it is oval. I have said that a wear is made of twigs, but it must be made of whatever is about the spot on which the bait is laid, whether it is Chickweed, Ragweed, Long, bushes, or rotten branches. A wear, about a foot long, 9 inches broad at the back or wall, 6 inches at the mouth where the trap is set, and 6 or 7 inches high (uncovered), is large enough for the polecat, weasel, &c.; but one to entrap a fox ought to be 2 feet long, 18 inches broad at the back, and one-third narrower at the mouth.



Almost all sorts of carrion may be used as baits, which ought to be pegged down; the traps should be covered with the same material as that amongst which they are set; that is to say, if they are placed on sand they must be covered with sand; if on Moss, with Moss; or if amongst rotten branches, with them.

The Fox is exceedingly wary and subtle, and avoids everything that has any appearance or shadow of danger. On the side of an avenue or in a strip of plantation, if there is a foot-path running from the one end to the other, it is a good place to form a wear for this animal. He may also be taken in wears near rivers, streams, standing water, spongy marshes, or Furze covers; and without wears, by hanging a bait against a wall, fence, or tree, within his reach, and setting a trap 15 or 16 inches from the wall, &c. Several traps around the mouth of his hole or "earth" may likewise take him in going in; and if it is certain that he is in, a trap ought to be set inside, and a few branches put over the mouth of his "earth," that he may come upon the trap before he is aware. If the hole is not darkened, it is probable that he will come out under the trap. When it is known which way he comes from his cover, the best plan is to fasten a bait of an animal that has been some time dead, so that the effluvia may be smelt at a distance, to a stick or string, and trail or drag it round a field, and then into the centre of it, where the bait ought to be half buried, pegged down, and three traps set around it. This plan is often attended with success. Foxes, badgers, and other vermin are sometimes taken in pitfalls, but as it requires a little time and labour to make them, and as men and cattle may fall

take them, I shall not recommend them for anything but for the domestic cat. The best places to dig pitfalls for them are near his "earth," and on a path that goes from one plantation or cover to another.

The Polecat, Stoat, and Weasel.—These vermin can be taken in wears, steeltraps, and counterfeit or false burrows. Wears should be near rivulets, large heaps of stones, old walls, or rubbish of any kind. Where two walls or fences join is an excellent place for a boxtrap. In the absence of a boxtrap, four boards, wide enough to let common traps spring, may be nailed together, and made to pass through a wall or fence, and common traps set at each end of it with a bait in the middle. Traps placed at the entrances of their holes, or against holes in stone fences through which they pass, will take them. False burrows should be made at the bottom of hedges, &c. By hanging baits against walls, banks, fences, and gateposts, and placing traps under them, they may be taken. Almost all vermin that destroy game often pass through gates.

The House or Domestic Cat will put her foot on an uncovered trap to reach a bait on a gatepost. Puss is easily taken in wears; but by using "a charm" she is much more easily captured. This charm is the root of the shop Valerian (Valeriana officinalis). One writer on British plants says that "cats, and especially rats, are fond of the roots of this plant." Another says that "cats are powerfully affected by the odour of them." This root is powerfully attractive; insomuch, that if sixpenny-worth were put into the foot of a stocking, and hung over the mouth of a pit-fall for a few nights, a great number of cats might be taken. About as much of this material as can be held between the finger and thumb, put into a box-trap, will entice a cat to go into it; and if it is placed at the bottom of a 32-sized flower-pot laid on its side, poor puss will put her head through the noose of a snare in order to reach it.

The Carrion Crow and Magpie.—These birds can be entrapped in wears. The most likely places to make them are near pools, spongy places, running water, on edges of rocky hills, and in open fields. In spring, and the beginning of summer, eggs ought to be used as baits, and carrion during the rest of the year. A very good way to take them is to fix a dead cat, rabbit, or an egg in the cleft of a stick, and put it in a pool or pond, or standing water, within 4 inches of the edge, where a trap should be placed, and well covered. If the edge of the pool does not answer well, a narrow turf-bridge 15 inches long should be made, on the extremity of which a bit of flesh or an egg ought to be laid, to entice the bird to walk over the trap. A dead sheep or lamb is excellent bait for carrion crows. This should be placed in an open field, and traps may be set within 6 inches of its belly and eyes. If it is likely that there will be more than one crow at the bait, it is advisable to place traps on the little hillocks that are near it; for when one crow is trapped the others hover above it for a little, and then alight on these hillocks. By these means may be taken all animals that are destructive to game.—*A. Pettigrew, Wrotham Park Gardens.*

FAMILIAR BOTANY.

MORPHOLOGY, No. VI.

(Continued from page 132.)

"Lift up the eye of faith and thou wilt see
The clear blue sky of the untroubled heavens."

HAVING now cleared away the historical matter which seemed necessary in order to introduce Morphology to your readers, I shall henceforth discontinue all reference to the opinions of individuals, and confine myself to an explanation of what appear, at this day, to be the facts of the case; and for the better doing so I shall begin with the beginning.

Of all the prodigies with which science brings us acquainted, nothing can be compared for interest to the TRANSFORMATIONS OF ELEMENTARY matter. They are so surprising, so difficult to observe, and so entirely unlike what the untaught sense is conscious of, that they are among the last things whose truth reason and evidence succeed in impressing upon the human mind. The Pitt Diamond is valued at the sum of 100,000*l*. This mass of precious adamant is composed of the most valueless material; of nothing better than human breath, solidified by the operation of unknown forces. There is no resemblance whatever between the two substances; fancy cannot paint any two things more entirely dissimilar than human breath and diamond. Nevertheless, they are the same, and beneath the mere action of heat the gem loses its solidity, and is expanded into human breath again. What is, if possible, still more surprising, it was plants which stole from animals the matter of this gem, which, beyond all doubt, is a condensation of charcoal. It, the most brilliant, and most solid substance in creation, is a transformation of one of the most opaque, porous and uninviting materials that we know of. Charcoal itself is but a piece of wood deprived of its water. Here is one great Morphological fact. If you ask why this thing is so, and inquire where the force resides that impressed such properties on matter, the only answer is an appeal to the Most High.

Go into the laboratory of the chemist. He will show you a bottle of air or gas labelled O, and called oxygen; another labelled H, and called hydrogen; a third marked CO_2, and called carbonic acid. These are colourless to be seen, smelled, nor felt. They wholly escape our sensitive organs. You would never believe that the bottles contained anything. But you find that a match burnt brightly in O, sets H on fire, and is extinguished by CO_2. It is, therefore, evident that the bottles do contain something, although the ordinary powers of perception may fail to detect it. Out of similar colourless bottles are plants composed. [illegible] visible, fabric of a [illegible] transparent, untouchable, [illegible] in these bottles, H and O go together and form HO, which is water, the most important and [illegible] of fluid matter; by their union they become visible and touchable; their original qualities are changed; the new compound will neither catch fire like H, nor assist a match to burn like O, but is the sworn enemy of fire in every form. If you doubt this fact the Chemist will separate water for you into its original elements, and H will burn, while O will assist to burn, just as before.

In like manner CO_2 is, by the chemical processes of separation, found to consist of the O already brought on the stage, and C, which signifies charcoal (carbon), so that although soot and all such matters are both opaque and soft, yet they consist in reality of the transparent O and the adamantine matter of the diamond. What can be more strange than this metamorphosis?

But others quite as singular have to follow. The green, the red, the white, the blue of vegetation, the iron trunk of the Oak, the tender mucilage of the Starjelly, the gum, starch, and sugar that nourish us, the many vegetable products that heal our diseases, or cut us off by their poisonous qualities; the soft, the hard, the dry, the moist, fabrics that constitute the solid masses of the vegetable kingdom, are little more than compounds of the H, O, and C already mentioned. For example, 9 parts of H and O, and 12 parts of C go together and form sugar; then if two parts of H and O are added we have gum; a much smaller change produces starch; and the dry unchanging woody texture of a tree only differs from the sugar that is so soft and nutritious, in having a little less of H and O in its composition.

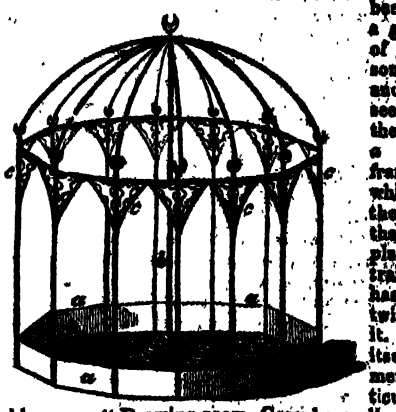
Metamorphoses like these—and there are hundreds of them—give rise to the whole of the infinitely varied products of the Vegetable Kingdom. When the Frenchman is sipping his *eau sucrée*, he is indulging in a feast of charcoal and water; when the laundress views with admiration the magical effects of starch upon her mistress's ruffs and laces, she only does homage to the effects of charcoal and water; the sailor, whose pride is the wooden walls of Old England, is still but a worshipper of charcoal and water; the prince who exchanges his forests for diamonds is a barterer of charcoal for charcoal, and, finally, the whole Vegetable Kingdom is little more than a metamorphosis of charcoal and water in countless masquerading forms.

Such are the elementary changes that science recognises in the matter out of which the tissue of plants is constructed. We shall next see that the many forms of tissue are again metamorphoses of but one simplest type.—*R. E.*

Home Correspondence.

Diseases of Plants.—In treating of the "Diseases of Plants," you say, at p. 99 (Feb. 7), "The medical man divides diseases into *functional* and *organic*, and under the former head places all those diseases in which he cannot detect an alteration in the structure of the diseased organ; but this arises from his want of the power of observing the minute changes of structure on which the diseased function depends. There is no such thing as function independent of structure, and there is no evidence to prove that a function can be deranged whilst the structure is quite perfect." Such a proposition as this should not be allowed to go without some qualification; and it would be well that such an authoritative dictum should not be made to prejudice your readers against one of the most useful maxims, and best rules of guidance, in the practice of their medical advisers. It is true that this useful division of diseases into two great classes is in part conventional, and standing in the stead of a more exact knowledge of the proximate cause, or to speak more popularly, the exact and essential nature of the change in the condition of an organ, which we call disorder or disease. But it is quite as gratuitous, in the present state of our knowledge, to assume, that the action (for that is function) of an organ may not vary, without change of structure; or that the simultaneous action or function of parts (for that constitutes health or disease, as the case may be) may not lose their consentaneousness without such change. Neither proposition, perhaps, is capable of direct and positive proof, and your columns are not the place for a lengthened discussion of the subject; but I will endeavour to show, by a little analogy, that the doctors have some reason on their side. The animal body is composed of many organs, the consistent and harmonious working of which constitutes healthy existence—life; in its best sense—*ease*. If this harmony is disturbed, if any, or all of these organs are unduly worked, or if any one, or some, or all are idle, the healthy current of existence is disturbed, and disease is the consequence. Now, the actions of functions of the several organs depend on certain moving powers, derivable mediately or immediately from the nerves and blood-vessels; and it may happen, and often does happen, that these moving powers are unduly and irregularly supplied, and thence comes derangement of the animal machine, loss of healthy action, and disease; just as an inanimate engine, or a part of it, may be overdone, or underdone, by its moving power, be it steam, or wind, or water, or any other, and a stoppage, or a derangement, of its ordinary or proper function follows. In such a case it is evident the stoppage, or derangement, alike does not depend on any organic change, or structural fault; the moving power, and the object to be set in motion, are exactly balanced, and the machine works badly, or is stopped. Take another analogy (for such illustrations will perhaps be better understood by [illegible] who are not apt to be very [illegible] with the physiological, or pathological [illegible] of their machines), and compare the healthy condition of the animal body to a well-tuned and well-played musical instrument. With the due and appropriate application of the moving power, all is harmony and ease; put the same instrument into the hands of an unskilful artist, let the moving power be unduly distributed, let the various parts be unduly and unartfully animated, and all is discord and disease. To bring the matter more home:—we will suppose a healthy person just about to sit down with a good appetite to his dinner; he is told that his banker, in whose hands he has a large deposit, has stopped payment, and he sends his meat away untasted. Or suppose the happy father of a family, easy in his circumstances, and in the enjoyment of excellent health, having just taken a hearty meal, is told that his eldest son, a college lad, is lying at the point of death, and the first immediate effect is, at the least, a fit of indigestion. In both these cases there is functional derangement without change of structure; reverse the picture to either of these persons, their functional powers and appetites return; or, in other words, the motive power within them operates in its proper channels, and their disease is at an end. Still more to the point:—there are innumerable cases on record where the functions of particular organs have been disturbed for years by what was called sympathy (now more correctly the reflex action of nerves), and have been immediately restored by the removal of the remote excitant cause. In such cases there could not be any structural derangement. Notwithstanding all I have said, I still concede to you, that there is no function independent of organism. I only maintain, that there may be disorder without lesion of parts, or change of structure; and that till we know more of the proximate changes of the vital actions (vital Chemistry, I might have said) we have reason to abide by a distinction as philosophical as it is convenient—so convenient, that I bet my best Melon, of the forthcoming summer, to "L. E.'s" best bunch of Grapes (the good English method of settling a dispute), that he will by-and-by, when he treats of the diseases of plants, produced by too much or too little nutriment, too much or too little warmth, and so forth, use the distinctions, and perhaps the phrases now in discussion. In the foregoing illustrations of my position, I have not overlooked the objection which will probably occur to the able writer of your "article," that a change may take place and does take place in the vascular system, and the distribution of blood in the disturbed organs; and this he will say is tantamount to structural change. I have provided against this by admitting the agency of that fluid as a motive power. More may be said to meet this objection; but your readers will probably think there is enough for the present.—*M. D.* [We must still maintain that our position is correct. "M.D.," in his own instances, shows clearly that there must be derangement of structure to produce functional disorder. The *convenience* of the term functional disease in medicine we admit, but we deny its *correctness*. We shall endeavour in all cases to point out the structural change on which the decayed functions of plants depend.—*L. E.*]

Ward's Cases.—The following is a drawing of a "Ward's case" of my own designing and making. It has been filled with a great variety of plants for some time past, and they all seem to enjoy their position. *a a a* is the frame or case which contains the soil in which the plants are placed; the central pillar, *b*, has a creeper twining round it. The house itself is ornamental, and particularly suitable as a "Drawing-room Greenhouse." It seems to require very little care except occasionally picking off decayed leaves. The shape is exceedingly light and simple, and it can be made even more so by the omission of the arches and "tracery" marked *c*.—*J. L. Knox, Swiston Gardenes.*



The Fastolff Raspberry.—I obtained in 1842 some canes of the large sort of Raspberry mentioned by "Fair Play" as growing at Filby, and at the same time canes of the Fastolff from Messrs. Youell and Co.; the latter proved far superior both in size and flavour of fruit, the canes growing to the height of nine feet and literally covered with fruit.—*Justice, Liverpool.* [We have this correspondent's name.]

Cucumbers.—For two years past I have entirely discarded the old method of growing Cucumbers on dung hot-beds, or of allowing them to grow on the surface of the soil at any time. I find that by training them to trellises I have not half the trouble with them that is required by the old plan, and that the plants continue much longer in bearing when so treated. I have had plants in this way continue in a bearing state and in perfect health for upwards of twelve months, and it is very seldom we are without Cucumbers from all the year round. We have at this place a range of pits [illegible] a hundred feet in length and nine feet wide inside, heated with two

rows of bricks on edge along the front and both ends; the water or return-pipe lies in a trough made of bricks and Roman cement; this can be filled with water as an ordinary to cover the pipe, that it may raise a constant and powerful steam in the pit when required. Besides Pine-apples, in this pit I grow Melons, Cucumbers, and various other things. Instead of brick partitions I have movable wooden ones, which I find very convenient. By this means I can easily enlarge or reduce the size of each compartment to suit exactly the purpose it may be wanted for. Suppose that in next autumn I shall have fruited off a number of Pines, and consequently have three or four lights to spare, I shall begin to prepare for a winter crop of Cucumbers. After throwing out all the tan, and fixing in a partition of boards, I next build a temporary wall of loose bricks lengthwise, about four feet from the front wall, and fill up the space with tan for bottom-heat. When the heat is risen to the proper degree for putting in the plants, the soil is put on in little hills at first, and the trellis is fixed in its place, in which is left an open space at the back, in one of the corners, about two feet square, for the purpose of going in to regulate the plants. This is very easily accomplished by pushing down the light and having a short ladder to step upon; the laps in the glass are puttied perfectly close, and for at least four months in winter no air whatever is admitted, and the plants receive very little water,—say once in a month at most,—and then only a small quantity is given them. In pruning up the centre of each light I generally take only a single shoot, which pushes out its bearing laterals throughout its whole length, and this covers the whole surface of the trellis under the light. Should any accident happen to the main shoot, a lateral brought into its place will soon fill up the vacancy. With respect to the sorts most worthy of cultivation, I have tried a good many of the most famed varieties for three years past, and I find they differ widely, both with regard to bearing and hardiness. The true Sion Cucumber is the kind that I prefer before all others for general cultivation; it is a hardy and prolific bearer, and answers either in winter or in summer for pot-culture or for planting out in beds. Of the long kinds the best I have met with is one that was sold in London two years since, under the name of the Superb White Spine; it is hardy, and a good bearer. I had three lights of it last year, which kept in bearing for 12 months, and would have borne longer if they had been allowed. It frequently grows from 22 to 26 inches long, and is a very handsome-shaped fruit. From one plant of this growing in a box standing on the footpath in a corner of the Pine-stove, I have cut, since the middle of January, seven brace, averaging 18 inches in length each. The black-spined sorts appear to require a stronger heat, and are of a more rambling habit than those that are white-spined; but I have just now in bearing three lights of Latter's Victory of England, which seems to be a very hardy sort, as well as a handsome and prolific bearer; it is the best black-spined Cucumber I have yet met with. —*Robert Reid, Noble Thorpe.*

Inscriptions.—In order to clear a stone slab of Lichens, place the stone face downwards on the ground, if convenient; but if that cannot be done, cover it with loam or soil—the richer the better. If the stone should form part of a wall, this may, nevertheless, be done by fixing a board a short distance from it, and filling up the space with soil. In Scotland, grave-stones may be frequently seen lying on the ground, face downwards, for the purpose of destroying Lichens and rendering the inscriptions legible.—*Y. G. H.*

Yeast.—We have received three recipes for making yeast, from different correspondents. One informs us that the following never fails to make light good bread:—Mash about two quarts of malt in a gallon of boiling water, and let it stand about two hours, then skim it off into another small tub, and when it is sufficiently cool, add a table-spoonful of yeast, which will produce a sufficient quantity for a large baking. Repeat this whenever you want a fresh supply, always keeping a little of the former yeast to make the next work; the process is the same as brewing, only without adding Hops, or boiling the wort. If the weather is very cold it may require to be put by the kitchen fire to make it work. What will fall to the bottom of the tub, besides that which rises to the top.——Another states that eight gallons of excellent yeast may be made as follows:—Take ten gallons of water, and half a pound of Hops, boil them for two hours, then strain the liquor into a tub, and stir in half a peck of ground malt, mix them well together and stir occasionally; let it stand until blood-warm, then take one gallon of yeast, from the brewer at first, and afterwards from the residue of your own stock, with two pounds of flour, mix all together, and let it work eight hours, then stir it up, and strain into a barrel, and keep it well corked. The yeast will be about eight gallons, which has an appearance between that of thick beer and thin yeast. The method of using this yeast for the manufacture of 35 stone of bread is as follows:—Boil one and a half peck of Potatoes, mash them well and strain them, add about one and a half gallon of soft water, mix them well together, then one pound of the above patent yeast, with two pounds of flour, stir up well, and cover down for five hours prior to setting sponge, which will be ready in seven or eight hours, according to the weather; great attention must be paid in making the sponge at the first or second rail, in order to get the bread sweet. The dough must not be allowed to lie longer than an hour in hot weather, but put into the oven as soon as possible. This will be found to produce very excellent yeast that can be made, if properly used. This receipt is on a large scale and will, of course, have to be proportionably divided for domestic use. If a smaller quantity be made, viz., a gallon or two, it will fill a stone bottle, quite corked, and put in a cool place, keep good for a long time.——A third communication says:—Boil one ounce of Hops in four quarts of water until the Hops fall to the bottom of the pan, strain it, and when milk-warm, add six ounces of flour and five of sugar; set the mixture by the fire, stirring it frequently; in 48 hours add four pounds of potatoes, boiled and bruised fine; next day bottle the yeast—it will keep a month. One-fourth of yeast, and three of warm water, is the proportion for baking.*** [We have tried this, and find it a good substitute for yeast. A fourth communication on this subject very nearly agrees with the last.]

What is the best Temperature for the Pine-Apple?—We are always best answered if the reply to our queries can be obtained from Nature; and the reply, therefore, to the above query shall be from observations made at Calcutta. In the vicinity of that city, the yellow-fleshed Pine-apples are high-flavoured, and commonly weigh between 5 and 6 lbs.; and Mr. Speede, in his "Indian Hand-Book of Gardening," says (p. 183) that, by a system of very ordinary cultivation, his brother grew them weighing 7½ lbs. This was, of course, when the plants were exposed to a climate of which the following Table shows the monthly averages of temperature taken at the hottest and coldest periods of the 24 hours. Now, although Pine-apples may be obtained nearly all the year at Calcutta, yet their period of greatest perfection is from April to September. This may be termed their ripening or stove period; and it will be found, upon referring to this Table, that the average maximum temperature of that period is above 91°, and the average minimum more than 79°:

	J.	F.	M.	A.	M.	J.	Jy	A.	S.	O.	N.	D.
Max. Temp.	84.5	90	90.8	97.	95.	91.5	88.	87.	90.	91.	85 5	81.5
Min. Temp.	60.	63.	71.	77.5	78.5	81.	80.	40.	80.	75.	64.	57.

I may just observe that the above are average temperatures, and that the Pine-apple in Bengal often has to endure such widely-differing temperatures as 129° and 53°. From these facts I conclude, that if in England the temperatures each month never ranged higher in the Pinery than the minimums in the above Table, they would not be too high in proportion to the diminished light of our latitude.—*George W. Johnson.*

Larch and other Resinous Trees.—In a late Number are some observations by "C. Wren," on an article of mine, p. 61, on the propriety of felling Larch for durability in the early part of summer. The words, "June is the best time to fell resinous trees for durability," require explanation. What I intended to say was this: "My friend—an experienced person—says they should be felled just when the sap begins to be fluid, in spring before the first buds and leaves are expanded, as the resinous fluid is more regularly dispersed in the wood" (perhaps by being more miscible, and filling up the pores—at least he said the timber was better from that circumstance.) This brings the time I intended to state for felling such trees to the period "C. W. H." proposes, viz., in March. I then inquired if such were the fact, and could it be corroborated by other experienced persons? As the sap or resinous fluid remains in Larches in a dormant state all the winter, viz., in the state in which it was deposited at the end of the previous autumn, it cannot have undergone much change, if any, before the buds and leaves have expanded; therefore there can be no doubt but early in spring is the best season for felling such trees, but whether just before or after the sap begins to be in motion, requires to be proved by accurate experiment—I am inclined to think after. The best time to prune resinous trees, to prevent bleeding, is soon after the sap is fixed, late in autumn or early in winter, or else after the first buds and leaves have expanded in spring, but by no means when the sap first begins to flow in spring.—*W. Billington.*

Preservation of Wood.—In a late *Chronicle*, "A Subscriber" asks for information about Burnett's Antiseptic Solution. This is the chloride of zinc, patented by Sir William Burnett in 1838, and which has been very successfully tried at the Woolwich Dock Yards, and is now becoming adopted in the navy. It has been found superior to Kyan's Patent Solution, the chloride of mercury. The solution of the chloride of zinc contains one pound of the chloride to five gallons of water. Another simple process for preserving wood and other substances appears to be that of Mr. John Bethell. This consists in the application of creosote, along with coal-tar, or other bituminous matter. The wood is thoroughly saturated to the centre of the log with great rapidity. A load of Fir timber will absorb as much as forty gallons, the close-grained woods less. A cubic foot of Beech usually weighs 8lbs. heavier after it has been prepared by this plan than before. The price of the creosote is 3*d.* per gallon. In some places—Liverpool, for instance—it may be had for 2½*d.* Preserved timber, by Bethell's process, is supplied to the railways at 15*s.* a load beyond the price of common timber. The use of creosote is strongly recommended by Sir John Barrow, in his "Life of Lord Anson." He states that Kyan's Patent (corrosive sublimate) does not prevent decay, neither does it prevent the Teredo navalis from penetrating the timber, as has been proved at the Dock Yards. Wood treated with creosote becomes nearly waterproof, and is not touched by the T. navalis; it requires no painting, but after exposure of some days it loses every unpleasant smell.—*J.*

Transportation of Bees.—In answer to "C. W.'s" inquiry, I beg to inform him that I secured my Bees in their boxes, by screwing each box down firmly to its box—covering the entrances with perforated wire. The boxes were then laid upon the bottom of a large deal case, at such a distance from each other and from the sides of the case, as to allow straw mats to be pushed in tightly between and around them, leaving the entrances free. The case was then laid on the floor of one of those fly-vans which are constructed with double springs, for the conveyance of musical instruments. Thus accommodated, I accompanied the Bees on their journey, travelling with them about 90 miles, and occupying nearly three days in the transit. On examining them at the end of their journey not a Bee nor a comb appeared to have sustained the slightest injury. After placing them in their new locality I gave them their liberty, when they issued forth most vigorously and joyously, and soon felt themselves at home.—*Edw. Bevan, Esgair Evan, Montgomeryshire.*

The Polyanthus.—I have been much pleased with "W.'s" remarks upon the Polyanthus, and agree with what is advanced regarding the necessity of paying more attention to the raising of new varieties; but this is not so easy a matter as may be imagined. There is so great a similarity in all the seedlings that are yearly raised, it rarely happens that a distinct variety can be obtained. It is said that attention has not been paid to collect seed from first-rate varieties; but I can assert that seedlings have been raised from one which is considered a leading one; viz., Hufton's Earl Grey, *alias* Clegg's Lord John Russell, that cannot be distinguished from the original; although only Pearson's Alexander, Buck's George IV., Nicholson's Bang Europe, Collier's Princess Royal, as well as some others equally select, were grown in the garden. Pearson's Alexander generally produces seedlings so much similar to the parent, that many now sold as Pearson's Alexander are nothing but seedlings from it. The great difficulty in seedlings is getting them distinct with respect to marking and character; and the question is, how is this to be remedied? for seed sown from first-rate sorts only has been unsuccessful, and some of the more recent new varieties have been accidentally raised by persons who grow only a few plants, and those not leading ones. Cheshire Favourite was raised by an individual who professes only to be a Gooseberry grower, and has only a straggling plant or two. There is ample room for improvement, and the only way of attaining that object is perseverance, and, occasionally, something may turn out different, which will amply repay the florist for his trouble and exertions. The cultivation of seedlings, if not attended with success, will be a source of enjoyment to the fancier, as seedlings generally are more vigorous, and bloom more freely than such as have been a long time in cultivation; and although they may not be quite equal to the parent, yet they may be planted in the borders, as they are not so tender as those that have been nursed long. With respect to the management of Polyanthuses, *I do not think they are so difficult to manage* as is represented. I am afraid the reason why they do not succeed in the south is, that proper care is not taken of them. Loudon, in his "Encyclopædia of Gardening," says, "they are very hardy, and will stand the wettest and most severe weather;" but the only varieties that will stand all weathers, are Buck's George IV., Faulkner's Black Prince, and Boardman's Victoria; the two last are not considered stage varieties at the present time. Probably, in mild winters, a collection may be wintered on a warm border; but in the north they are not risked; all are framed. I am not an advocate for their being grown in pots, although when they are raised in that way for exhibition, they can be placed in any situation, and either hastened or retarded, as required; and when the bloom is over, if is easy to have a border prepared twelve inches deep, of the following compost:—

1 barrowful of rotted cow-dung.
1 „ horse-dung (droppings are generally used.)
1 „ maiden-earth.
1 „ peat earth.

all which should be mixed up and worked for twelve months previous to using, so that it may be rendered perfectly sweet and pure. Put the plants in this, not plunging the pots, without displacing much soil. I have witnessed the superiority of the mode of growing plants in a border, and shall, until I find occasion to alter, continue that system, although the potting system is principally adopted here. The border in which I grow my plants, is bounded by a double hedge—the outer one is of Thorns, and the inner one of Beech-trees; it is again subdivided by Beech-trees every five yards, which prevents the sun's rays from acting too powerfully upon the plants, and causing them to flag; it also keeps them cool. The border has only the sun shining upon it until eleven o'clock in the morning, and the fence screens them from the mid-day heat. I put down a frame of wood eighteen inches high at the back, and nine inches at the front, and fill in the compost, which is deep enough to bloom the plants in. Glass-lights four feet by three feet are kept over them from October to the end of April, in order to protect them from all severe weather, taking especial care to take off the lights every mild day, and to give them as much air as possible during that time; but, above all things, I take care to protect them from receiving much rain from October until February, as they do not like much moisture; besides, when they are too moist, severe frosts have much greater effect upon them. Emerson says they require the same treatment as Auriculas, which coincides with my practice. In order to give them air during wet days, I have a curved flat iron, about 18 inches long, 1 inch broad, and about ⅛ of an inch thick, with 4 holes like a keyhole placed at equal distances, and fastened by a staple to the frame, being furnished with a pin having a square shank and head sufficient to go through the wide part at the top, which falls down and keeps the light perfectly fast in windy weather, and it can be elevated or lowered according to circumstances, and this mode mildew is prevented. I have taken up plants with roots from 12 to 18 inches long, and

look much healthier than when they are grown in pots. I have lost during this pleasant winter six plants in pots for one growing in the border, although the number of plants in the latter is almost six times that of the former. There is another advantage also gained, viz., the plants being more vigorous, and also much more moist, they are not so liable to be attacked in a dry summer by red spider. I have no doubt that if the above plan is followed out, the difficulty of growing Polyanthuses near London will be obviated, and this favourite flower will once more adorn the gardens of the metropolis.—*John Slater, Cheetham Hill, Manchester.*

Vineyards.—When we consider the trifling expense of cultivation, and the valueless soil in which the Vine will succeed—(it will ripen much better, and be finer flavoured, on a hot, dry, poor soil than on one rich and moist)—it is certainly very strange that this branch of our domestic and rural economy should have been neglected these last 150 years. About this time back immense quantities of wine used to be made for home consumption, and by private families; for instance, at Hatfield, Painshill, Arundle Castle, Hammersmith and many other places. On the warm gravels of Hertfordshire, the sands of Beds and the chalky hills around Brighton Dover, Deal, &c., which are exactly the localities and soils chosen in Normandy where the Vineyards are situated, it may be safely asserted that no other crop is so profitable on this description of soils The Fruit in this country, in the worst of seasons, when not sufficiently ripe to be eaten, will make wine fit for pies, tarts, &c. The following sorts are well adapted for this country—White Muscadine, Burgundy, July, Verdelho, Turner's Hardy, Esperione, and Black Cluster, and never fail of a crop. A plantation may be made with cuttings about 18 inches in length, of well-ripened wood; layers the second year, and cuttings the third year, come into bearing, and continue prolific for ages. Herewith I send you directions for making a plantation, which is the result of experience. Plant your Vines 4 feet apart every way; dig holes, and in each put a very little rotten manure; place your plant in the centre, and firmly press the soil round the plant; cut layers down the first year, cuttings the third year, leaving about six eyes only to break from; this to be performed in February; select three of the strongest shoots to remain to each plant; always retain last year's wood for bearing; the summer pruning consists in stopping each shoot when 4 feet high; at which height they must remain, and cutting away all laterals; the three shoots to be tied loosely, as Raspberry canes, to admit the light, &c; the ground to be kept clean by hoeing only. Each plant will produce, on an average, a dozen bunches; the lowest produce from one acre of poor ground, worth 10*s.*, as follows.—3,500 plants, 42,000 bunches of Grapes at one farthing per bunch, 43*l.* add.—*Vitis.* [*Good* wine cannot be made in England; and *bad* wine may be bought cheaper than it can be made.]

Pruning Forest trees.—In the *Chronicle* for Jan 13, Mr. Thackeray describes his practice on this subject That gentleman is right in "planting those trees the soil most loves," but the subject that I wish to advance a few remarks upon is, whether curtailing, mutilating, or lessening the head of a tree has a tendency to increase the bulk of its stem—that is, facilitate its growth into timber, which is what is required? Dr. T says, speaking of plantations made in 1814, "They have been pruned and thinned annually since that period, by taking off from 3 to 5 branches, as before described; and the result has been, that the sap which the cut branches would have exhausted has given vigour and increased strength to the trunk, as is evident from the healthy appearance of the trees, as well as their augmented size." This is founded on the supposition which I have endeavoured to expose from the first starting of the subject in your columns, viz., that what is taken from the head must necessarily be laid on the stem, forgetting the true principle of increase—namely, reciprocal action between roots and branches. The fallacy lies in supposing that the action of the roots will continue the same, whether the head is curtailed or left entire. I by no means disapprove of a little knife-work on young plantations, and highly approve of Dr. T.'s attention to his. Will Dr. T. allow me to ask, how long does he propose his system should be continued—or at what age or size of the trees would he alter or discontinue his practice? I live among many magnificent trees, and see, in abundance of instances around me, the evils resulting from bad management, or no management at all; but I never yet saw a magnificent stem that had not a proportionably large head. "Cut wood and have wood," which Dr. T. has adopted as a motto, has also been assented to by Mr. Hammerton; but its application as a maxim requires some degree of discretion, and Mr. Hammerton's mode of carrying out the maxim is what I should be disposed to approve of. I trust, before another pruning season arrives, those who now so strongly advocate pruning may be induced to consider the true principle of increase, viz., reciprocity between roots and branches; they will then be cautious of interrupting that principle by any system of pruning whatever, and will perceive the fallacy of indulging the idea, that what is taken from the head must necessarily be added to the stem.—*Querens.*

Wild Mistletoe.—In reference to the article on the subject of this parasite, at p. 95, I observe that your correspondent quotes the opinion of Sir John Colbatch. I presume this must be the same John Colbatch who wrote a treatise on "the Mistletoe of the Oak," London, 1719. He was a Member of the College of Physicians, and found the Mistletoe efficacious against the epilepsy, chorea Sancti Viti, and other diseases of the nervous system, giving half a drachm of the powder every three or four hours. The book contains full directions for collecting and preparing the plant, which, it appears, was then imported, he says, gathered from trees other than the Oak. Does not this tend to prove that the Oak 150 years ago was the principal support of the plant? An example on a large scale of the Mistletoe's affection for the Lime (Tilia), is to be found in Kent, at Sundridge Park, the seat of Lord De Lisle, where in the winter season the very lofty avenue of that tree has, at a little distance, the appearance of a rookery, from the undisturbed and luxuriant growth of the parasite—attributable, no doubt, to its being beyond the reach of Christmas depredators. I have some recollection of seeing it on the Elm close to the same locality, but for this I cannot at the present moment vouch.—*Anonymous.*

Mixture to Heal Wounds on Trees.—I have not found any mixture so good for this purpose as bird-lime; of course the wound of a tree must be dry when it is applied, and therefore it is requisite that a bough or limb should be cut off, one, two, or three days previous to its application, and that the wound should be pared and in readiness. I have in June cut off a limb of an Oak, four or five inches in diameter. I first saw half through the limb at about six inches from the trunk, with the saw teeth upwards. I then saw an inch or two higher up the limb downwards, until the limb drops. The stump is then cut off close to the trunk, taking care not to tear the bark, and the wound is pared clean with a draw-knife, or paring-chisel. If the weather is fine and dry the bird-lime will adhere on the second day. The bird lime is in a gallipot, and this is placed in water at the heat of 110°, the lime is spread thinly all over the wound, and just a little beyond its edge. This material dries of not a bad colour; but if desired to be very nice indeed, it may be powdered over with a mixture of powdered sumac, indigo, ivory-black, flour dried, old tanners' bark, of which or of some of them a mixture may be made to imitate the colour of the bark of any tree. I imagine pitch mixtures could not be applied unless the wound was in a dry state.—*J. C. X., Bermondsey.*

Winter-felled Oak.—Mr. Billington, in his article on this subject, in a late *Chronicle*, says that "The numerals are thus 1035, old-fashioned figures," &c If the figures are Roman numerals, the date may be correct; but if Arabic there must be some mistake, for the Arabic numerals were not used in this country till the fourteenth century. Of the superiority of winter-cut Oak, all carpenters are pretty well agreed; it seems to be an inveterate opinion, as far, at least, as the "sap Oak" timber is concerned. "Heart Oak" is so durable, cut when it may be, that the eight centuries, supposed by Mr. B for the duration of his Oak beam, are very likely. Two summers ago I met in Normandy with a well-carved inscription, in old French, thus [illegible&hout] on an Oak beam that had been a chimney lintel There can be little doubt that, if preserved from wet, it would last five centuries more The soft or sap part of Oak timber is soon eaten up by the worms, unless winter-cut. I have seen timber taken out of old buildings with the bark still on it with some worm holes in it, but I believe the prejudice in favour of such timber is founded in *fact* and experience. I have lost an authority, which some of your readers will probably help me to again, in regard to the fact, that the gates of Constantinople, which were put up by Constantine, were still hanging when it was captured by the Turks. I thought it was in a foot-note of "Gibbon," but I do not find it there But these, like the gates of Somnauth, I believe were of Cedar, or some such Oriental timber.—*P. P.*

New Heating Apparatus.—The invention described under this title at page 806 of the *Gardeners' Chronicle* for 1843, and said to be constructed on an entirely new principle, will be found to be the same as the hot-air stove known as Boyce's patent. Their mode of action is precisely similar—a current of air being admitted into a kind of chamber surrounding the furnace—which after being heated by the thick iron plate of which the furnace is composed, passes off in pipes communicating with the chamber and opening into the apartments intended to be warmed. In Boyce's patent the furnace is fixed in such a manner as to preclude the possibility of any danger arising from the fire, or from the pipes becoming overheated The latter in fact never can be the case, as the pipes are merely conductors of the heated air, and have no connection with the open fireplace. They are generally made of thin copper, and are about four or five inches diameter. The circulation is regulated by ventilators which admit of its being increased or diminished at pleasure For warming large buildings, I have reason to know that this kind of stove answers the purpose most completely; but I very much question whether it will be found so well adapted for Horticultural purposes, as the heat obtained from it is always dry compared with that derived from the circulation of hot water on the tank or open-gutter system.—*W. B. Booth.*

Budding and Inarching.—In your Paper of the 27th ult., there is an article on this subject, signed "W. G." If I understand the writer correctly, he cuts off a growing bud or shoot, when the leaves do not exceed two inches in diameter, and inserts it in the usual method of budding. Will "W. G." state how much of the bark he cuts with the young shoot?—*A Subscriber, Maidstone.*

Roses.—Mr. Pettigrew has now presented you with his animadversions on the "Honey Bee," and his remarks on Bee culture in general, and brought both to a conclusion. But I feel by no means disposed to flatter at any length upon a reply to him. It would be almost tantamount to undertaking the task of publishing a third edition of the "Honey Bee," which I must be impelled to by some stronger inducement than Mr. Pettigrew has held out to me. To my readers and well-wishers of this system of management, accustomed to their work, I might perhaps in duty, their kind confidence and the statements it contains remain unanswered by anything advanced by Mr. Pettigrew. Any inquiries, however, from whatever quarter, as to the rationale of this system, shall be attempted to be fully replied to, as they always have been. This Mr. Pettigrew, as a constant reader of the *Gardeners' Chronicle*, must be aware of.—*Edward Bevan, Regent Street, Monmouthshire.*

Societies.

HORTICULTURAL SOCIETY.

March 5.—R. W. Barchard, Esq., in the chair. Col. W. Mason, J. Dixon, G. H. Hooper, J. Bateman, and A. G. Fullerton, Esqrs., were elected Fellows. From S. Rucker, Esq., were two exceedingly handsome large-flowered varieties of the Lycaste Skinneri, differing in colour, the one being paler, with a more distinctly marked lip than the other, which was of a deeper purple. Along with these was Phalænopsis amabilis, a plant of great beauty, having a fine branching raceme of large showy white blossoms; also a specimen of Cyttochilum maculatum, having two pretty spikes of brown and white blossoms; and a plant of Cypripedium barbatum, which considerably resembles venustum. From the same collection was likewise the scarce Galeandra Devoniana, and a cut spike of Coryanthes maculata, curious, on account of having its lip gathered up into a kind of bucket, which serves in the economy of the plant to hold a sweet fluid, which slowly drops into it from two processes or secreting glands that are situated immediately above it—a large silver medal was awarded to Mr. Rucker for this collection.—Mr. Robertson, gr. to Mrs. Lawrence, sent a well-grown plant of Æschynanthus maculatus with dark fleshy leaves, among which its numerous clusters of gorgeous scarlet blossoms produced a pretty effect. Also plants of the pretty Schomburgkia undulata and S. crispa, having tall flower stems bearing rich heads of showy blossoms. From the same collection was likewise a pretty plant of Camarotis purpurea, growing in a basket, and a well-grown specimen of Styphelia tubiflora, a greenhouse plant of a gay graceful appearance—a Knightian medal was awarded for the Schomburgkias, Camarotis, and Styphelia.—From Messrs. Rollisson, of Tooting, were beautiful plants of Dendrobium densiflorum and D. Cambridgeanum, the latter with handsome racemes of bright orange blossoms, having a pretty dark velvety spot on the labellum. In the same collection was likewise Phalænopsis amabilis in good condition; also Coelogyne cristata, a scarce plant, having pretty fragrant blossoms of pure white, except the lip which, in the centre, is covered with bright yellow fringes; also a beautiful large-flowered variety of Oncidium papilio, much superior to the old one, both in point of size and colour. Messrs. Rollisson likewise sent a variety of Cattleya Mossiæ, a Maxillaria from Guatemala, and a new species of Miltonia from Brazil, having handsome brown and white blossoms; a Knightian medal was awarded for these.—Mr. Henderson, gr. to F. Cox, Esq., of Stockwell, exhibited Stanhopea quadricornis, having a fine spike of flowers; Zygopetalum rostratum, Oncidium papilio, and Dendrobium Pierardi, on a block, in good condition.—From Messrs. Veitch and Son, of Exeter, was Lycaste Skinneri, and Barkeosia squamata, with red star-like flowers, and a small hard dry foliage, that was lately introduced by Mr. Veitch's collector; a certificate was awarded for it.—From Mr. Jackson, of Kingston, was a cut specimen of Inga pulcherrima, a pretty stove plant, having charming tassels of bloom, which are formed by the long crimson filaments. C. B. Warner, Esq., sent a collection of cut flowers, among which were Dendrobium densiflorum, Camarotis purpurea, a Bletia, &c.—Mrs. Marryatt sent a cut flower of Schomburgkia marginata which, although not so showy as others of this genus, is nevertheless pretty.—Mr. Glendinning, of Chiswick Nursery, sent a beautiful plant of Eriostemon buxifolius, of which he writes as follows:—"It is one of the prettiest plants we have, and may be forced into flower at any period during the winter months. Its fine dark green foliage, and neat habit, combined with its abundant snow-white, sweet-scented blossoms, render it an object of much interest. It will stand a good deal of forcing without the least injury, and remain in blossom for a considerable period. It is, therefore, a plant not only desirable for summer exhibition; but more especially for decorating the conservatory or drawing-room in winter. Cut sprigs of it are very useful in making bouquets." Mr. Glendinning states that this plant, which is now in good health and covered with bloom, was of small size, growing in a small pot about six months ago, and in bad health; but that the large shift and a higher temperature had brought it to its present healthy and luxuriant state; a Banksian medal was awarded for this.—From Mr. Hamp, gr. to J. Thorne, Esq., was a bushy plant of Epacris nivalis, a large specimen of Phaius Tankervillii, and a small plant of Franciscea Hopeana, along with Erica transparens, which was in good condition.—Sir C. Monck, Bart., sent specimens of Forbidden Fruit for exhibition. From the same gentleman was also the following communication respecting the destruction of brown scale on Orange-trees:—"I ascertained by experiment, that an infusion of Camomile would serve to clear Orange-trees of their most baneful pest, the brown scale. I am confirmed in the opinion; my trees are cleared, and have proportionably recovered their health." The fruit exhibited were in good condition, and were stated to have been gathered from a small tree which had had no more accommodation than was afforded by a shady Winery in summer, and the same Winery in winter.—From Mr. Dunsford, gr. to W. Bennett, Esq., was a house of

Cucumbers, each 18½ inches long, that had been cut from a dung-pit six weeks after putting out.—Mr. Apted, gr. to C. L. Stephens, Esq., sent two brace of Cucumbers, the longest measuring 19 inches in length; they were grown in a pit that is heated by Rann's system. For these a certificate was granted.—Mr. Doran, gr. to T. Hanes, Esq., sent three specimens of Cucumbers.—From J. Biddulph, Esq., were six specimens of Apples, in good condition.—From the garden of the Society were Chysis bractescens, Epidendrum Stamfordianum, a charming fragrant species, sent to the Society from Guatemala, by Mr. Hartweg; also E. cinnabarinum, Rhyncha, ignea, Acacia vernicifiua, and another species, along with Arctostaphylos pungens, which is a neat little half-hardy evergreen shrub, that was introduced from Mexico, by Mr. Hartweg.—Cuttings were distributed of Knight's Monarch Pear, stated to be hardy and a good bearer, succeeding best as a standard, and bearing rich and melting fruit which keep well until January: the Dunmore Pear, also raised by Mr. Knight; it is perfectly hardy, and the fruit attains a large size, on a standard partaking of the flavour of the Brown Beurré, when the latter is perfectly ripened. There were also cuttings of the Blue Perdrigon Plum, sometimes known by the name of Brignole Violet; it is one of the varieties which furnish the Brignole Prunes; the fruit is of a purple colour, very rich, and comes into use soon after the Green Gage. Likewise the Perdrigon Violet Hâtif, which, in some respects, resembles the former, but is quite distinct, ripening much earlier; the flesh is so very rich, that, instead of decaying rapidly when ripe, the fruit will hang and become shrivelled on the tree.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

GENISTA VIRGATA. Twiggy Broom. (*Hardy Shrub.*) Leguminosæ. Monadelphia Decandria.—Mr. Young, Nurseryman, Milford, states that with him this is a very handsome compact shrub, which resisted the hard winter of 1836-7. It was raised from the seeds sent by Mr. Webb from Madeira in 1838, was turned out in 1839 into the open border, and is now a very woody shrub. It is deserving a place in all shrubberies. In the garden of the Horticultural Society it grows about four feet high, and is capable of enduring the ordinary winters round London, if placed in a dry situation, and planted in a loamy soil. It is increased by seeds, or by cuttings of the young wood after midsummer. The cuttings should be placed in a shady situation, in light sandy soil, and covered with a hand-glass. It if were treely in May and June, and forms a loose rather spreading bush, rather thin of foliage. In the nurseries it is generally known by the name of Spartium virgatum. In such wild and cultivated specimens as we have had the opportunity of examining, the leaves were uniformly simple; in Mr. Young's specimen, however, the lowest on each twig, those, in fact, from whose axil the twigs proceeded, were trifoliolate. This is interesting, as showing an occasional passage to the 3-leaved species, even among those whose foliage is most decidedly simple.—*Botanical Register.*

LUXEMBURGIA CILIOSA. Fringe-leaved Luxemburgia. (*Stove Shrub.*) Violaceæ. Monadelphia Polyandria.—This fine plant forms a very elegant shrub, from two to four feet high; but it is said to attain a height of eight to twelve feet in Brazil, where it also bears branches. "It was first detected," says Sir W. J. Hooker, "by Martius, in the Diamond district, province of Minas Geraes; and subsequently in the year 1841, by Mr. Gardner, in moist, peaty soil, in open places, growing with species of Andromeda, on the Organ Mountains, at an elevation of 3000 feet above the level of the sea. It has been in British collections about eighteen months or two years, and flowered in several places during the season of 1841. We saw beautiful specimens from the Royal Botanic Gardens of Kew; from Messrs. Lucombe, Pince, and Co., of Exeter; at the nursery of Mr. Knight, King's-road, Chelsea; and in other large nurseries. It is through Mr. Gardner that the stock now in England appears to have been obtained. No plant can be more regular, neat, and pleasing in its mode of growth. There is a very peculiar symmetry, cleanness, and healthiness about it, which seem to attend it in all conditions, and give it a most ornamental appearance. It grows perfectly erect, with a clear stem, and, as we have seen it, to about a foot or eighteen inches in height, without at present having borne any branches. It is well clothed with leaves, from about four or six inches above the soil, and these leaves are long, narrow, very elegant, of the purest green, and delicately cut along the edges into hair-like teeth, which are remarkable for their extreme uniformity. From the top of the stem an upright spike of flowers issues, forming a sort of cone. The flowers are numerous, well disposed, large, and of a clear lively yellow. They last a considerable time, and are produced abundantly on plants not more than a foot high. The species requires a stove temperature, and a moist atmosphere, with a rather enriched loamy soil. It would most probably be benefited by a gentle bottom-heat. Were it once to branch in this country, as it may possibly be induced to do by cutting off its summit, its spikes of flowers, proceeding from the extremity of every shoot, will render it one of the very best of our stove plants.—*Paxton's Magazine of Botany.*

Miscellaneous.

A Textile Plant from China.—M. Stanislas Julien has given to the Museum of Natural History (at Paris), the seeds of a Textile plant, which M. l'Abbé Volain, one of the directors of foreign missions, obtained from China. This plant, which they call Ke-hoang-kin, Louho, and Khi-thai, is met with everywhere, but particularly in the provinces of Tche-Kiang and Tiang-Nan. M. Julien has taken its description, the details connected with its cultivation, and the preparation of the clothing that is made from it, from the "Encyclopædia of Chinese Agriculture." The seeds germinated in the Garden of Plants, and its botanical characters, will soon be ascertained. In the meantime, M. de Jussieu thinks that the plant is a Kidney-Bean, near Dolichos, and particularly D. bulbosus.—*Mag. Hort., Nov.* 1841.—T.

Pelargonium Leaves a Cure for Wounds.—The leaves of the Pelargonium are, as everybody knows, strongly scented; some smell of Rose, others of Lemons, Apples, &c.; there are also other sorts, which, when bruised, have a nauseous and rather disagreeable odour. All the species and varieties of this genus contain a large quantity of essential oil, which is usually fatty; there are several sorts which are cultivated in the open air in the south of France, and particularly at Nice, for the purpose of extracting the oil, which is sold to the perfumers. The leaves of all Pelargoniums have also the property of healing cuts, places where the skin has been grazed off, and other sores of that kind. You take one leaf or more of the Pelargonium, which you bruise upon a piece of linen; you then apply it to the sore place, and it often happens that one leaf is sufficient to heal the wound. It sticks closely to the surrounding skin, and helps to close the flesh, and heals the wound in a short time. I have often tried this method, and found it succeed well with myself, and also with others to whom I have mentioned it. The Pelargonium zonale, one of the oldest and most common in gardens, is much more efficacious than others of the same kind; its shining and fleshy leaves render it far preferable to those which are dry, ribbed, and downy. —*Rev. Hort.*, 1843, p. 464.

Plants producing Wax.—There is in Brasil, besides the well-known Corypha cerifera, two other plants remarkable for the secretion of wax in their fruit. The one is called in Brasil, Hycuiba, and grows about San Paulo; the other is called Ocuuba, and abounds in Para.—*Bot. Zeit.*

Cultivation of Onions by the Tartars.—The Tartars, who bring all sorts of vegetables to Wilna, the capital of the grand duchy of Lithuania, have a particular method of cultivating Onions. Instead of raising them from seeds, in which they do not succeed, or which appears to them too long a process, they dry and smoke in a chimney those which they wish to propagate, and in spring, when the time to plant them is arrived, they cut them diagonally into quarters, but so as not to separate the pieces entirely one from the other. They set these Onions in rows, when thus prepared, in good soil, well dug, but not freshly manured, at about 10 inches from each other, and two inches deep. These Onions increase extraordinarily, and grow large and strong.—*Rev. Hort.*, 1843, p. 449.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

When a considerable portion of plants is potted, the stove ought to be kept pretty close for a week or two, to encourage the plants to form new roots and strike freely into the fresh soil. Many of the more robust kinds must be pruned at the roots, the old soil being first shaken from them, when they may be got into smaller pots; the larger roots will do to graft some of the same family on, or will form young plants if put in as cuttings; this is an easy way of getting a large stock of some plants, and almost any sort will grow from root-cuttings, in the spring. Plants may now be more freely watered, and the houses kept moderately moist.

Conservatory.—As a great number of spring-flowering plants are now coming into bloom, more air must be admitted; but those recently removed from the forcing-pits, and all stove plants brought in to bloom, must be arranged in the warmest parts of the house. Fresh beds of soil should now be made for all climbers that are to be planted this season, and a portion of the old soil removed, from such established ones as are known to quickly exhaust the soil, to be replaced by a fresh supply: this will be a good opportunity to cut or root-prune such climbers as have rambled over the house without flowering much for the last year or two, and where duplicates exist, this is a suitable time to cut down some of them to the surface of the ground, in order to prolong their flowering season; this is also the best way to get rid of plants infested with scales, or other troublesome insects, if care is taken to clean the remaining portion of the plants and the pillars or trellis, &c., to which they have been trained.

Greenhouse.—This is a good time to propagate greenhouse-plants by cuttings, &c., where a gentle bottom-heat can be maintained; great attention is required to keep these plants from growing too fast at this season; the least confinement is injurious to many tribes of woody plants of this department. The tops of young plants in free growth, ought occasionally to be cut off, in order to get good bushy specimens, even if their bloom is sacrificed at this stage.

Forcing-Pits.—These must now be kept more moist as the season advances. Cuttings reared in these pits ought to be potted off as soon as they are rooted. Thumb-pots are convenient for striking cuttings of favourite plants, in putting only one in each, and when they are rooted they are easily removed into larger pots with little check to the young plant. Seedlings demand all the attention you can give them now. When the least appearance of mouldiness is seen on the seed-pots, rub it off and sprinkle some dry peat or sand over the surface, and keep the pot rather dry for a day or two, when this additional covering may be shaken or blown off the pot.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

Need I ask if you have decided upon what plants the beds in the Flower-garden are to be planted with this season? If not, the sooner the decision is made the better, or you will be too late. Autumn-sown annuals may now be removed to their blooming-places, planting three or five in a patch according to the kind and size. For beds intended to be planted with half-hardy things, I plant the annuals in a line round the outside, and being pegged or clipped into shape, they form a neat and gay edging in the early part of the season, and leave the centre of the beds to be thickly planted with such plants as are intended for summer and autumn decoration. Californian annuals, such as Clarkias, Collitasias, Leptosiphons, Nemophilas, &c., sown now, will bloom almost as soon as those sown in the autumn; indeed, it is a good plan to sow a few seeds at the time of planting, as they fill up all vacancies, and prolong the season of bloom. Herbaceous borders, if not dressed over in the autumn, must be attended to immediately, and either fresh compost or manure must be added to all plants that are weakly.

Reserve Garden.—Proceed with the planting out of biennials of all kinds, and prepare a good-sized piece of ground for a sowing of Anemone coronaria, hortensis, and vitifolia. Anemones delight in a strong rich soil, and a rather shady situation in the summer season. Sow the seed, after being well rubbed in sand, in shallow drills, nine inches apart, and cover with rich soil from the compost-yard. A sowing of Ten-week Stocks must also be made on a warm sunny border; cover with litter or mats at night, until the seeds begin to vegetate. Sow likewise a general assortment of annuals for transplanting, to fill up vacancies.

Pits and Frames.—Here the work needs no pointing out; the means of providing room after the plants are potted is the greatest difficulty in most gardens. Dress dressed with Whitney's composition, at a cost of 3d. per yard, answers admirably in the gardens of Mr. Beck, of Isleworth. This is, I imagine, likely to become an exceedingly useful article, and is just the sort of material that is required after plants are first potted off. Choice annuals—such as Brachycomes, Burtonias, Vincaria ocnlata, Mesembryanthemum tricolor, Schizanthus, Clintonias, and the like—should always be potted off as soon as they are sufficiently large to handle, and afterwards be placed in a warm moist atmosphere, with plenty of air in mild weather, until they are properly established. Sow in a pan, heat Marsyna fragrans and Banksias, the different varieties of Pelargonium and Ixoneas, Convolvulus scoparius and major, and, where they are admired, the common yellow and other Lupines.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Attend to directions previously given. Seed may now be sown. The best compost is sandy peat and loam. Shallow boxes or pans should be filled nearly full, and repeated well to make it settle, when the seed may be thinly strewn on the surface, covering very slightly. The blooms are now finding; mind that the trusses are not drawn by keeping the lights on too much.

Polyanthuses.—Still have a sharp look out for snails. With a very small hand-fork keep the surface of the bed loose, taking care not to disturb the fibres. If grown in pots, the soil must be occasionally stirred, keeping them moderately moist. In pruning Polyanthuses it must be borne in mind, that Mullion's Earl Grey and Clegg's Lord John Russell are one and the same flower, the former being the proper name.

Ranunculuses.—If the fine day or two last week were taken advantage of, many Ranunculus beds will have been planted; if not, the sooner the better.

Tulips.—The beds must be carefully gone over and the cracks in the soil filled up, putting it firmly round the neck or rising leaves of the flower. A blunt stick is a simple though effectual instrument to loosen the soil between the rows. Should the leaves appear cankered, the soil must be displaced and the diseased part cut away with a sharp penknife; after which operation it is necessary to keep the wound dry, which may be accomplished by placing a hand-glass over it, supported by three small forked pegs; thus ensuring a free circulation of air, and at the same time defending it from the rain. Cover the beds well on frosty nights.

Carnations.—Are now beginning to move, and diseased plants which have struggled through the winter tree-fair, are dying off. Double diligence must be directed towards the compost. The careful florist who does not mean to give a chance away, will make it all pass through his hands, so that it is almost impossible a wire-worm should escape him.

Pinks.—A few sorts worth growing are Norman's Splendid, Beauty of Weston, very fine, Creed's President, Headley's Duke of Northumberland, Kirtland's Dr. Danbeny, Pearson's Professor, Cawdrey's Lord Calthorpe, Kirtland's Gay Lad, Church's Navigator, and Bunkell's Prince Albert. All vacancies in the beds must now be made up, and the soil kept in a loose friable state on the surface. Look well to the trap for wire-worms, &c. —*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—It is now quite time that the spring shifting and regulating of Pines were finished. Where this is not the case, the plants will receive the greater check, as the roots are now active from the influence of the returning spring. The fruiting Pines should be kept at 65° or 70° by night. The whole of the Pines will now require a more moist atmosphere during the day, particularly in clear weather. It sometimes occurs that an excess of moisture in the pits causes the soil round the collar of the plants to become quite wet, and as this proves very injurious to the young roots that will be now forming at that particular point, it will be well to guard against it. Much syringing and sprinkling with the watering pot at this time has the same injurious effect. When the sun has more power, and air is more freely admitted, this otherwise useful practice may be indulged in.

Vinery.—In the early house, the leading shoots being stopped at the required length, and the laterals regularly pinched in, the fruit will be advancing fast. Keep a moist atmosphere during the day, and particularly when air is admitted. The roots in the joints of the Vines are of use in extracting nourishment from the atmosphere, and when that is kept moist during sunshine, they are longer kept in a condition to perform those functions assigned them by nature. Rub off all useless shoots from the Vines now breaking, and thin the fruitful ones, leaving the strongest and best placed, and when it can be seen which are the most promising "shows," thin them also, leaving one on each spur or side shoot. It is better to have several bunches less than the Vine could bring to perfection without injury, than one too many. Examine again the state of the heat in the outside borders, as the rains and cold weather soon chill the heating material.

Peach-house.—The roots of the Peach being numerous, and generally running near the surface, it can scarcely be too often repeated, that it is necessary to pay strict attention to the state of the border as regards moisture during the swelling of the fruit. If the border was not top-dressed during the winter, it may be done now with decayed turf and soot, or the dust from charcoal. It is quite astonishing to see how soon the roots attach themselves to the turf, if applied when the plant is growing; and perhaps this is the best time to apply it, as less of the fertilising matter is lost.

Fig house.—Those plants in pots, started in November, will be approaching maturity, and must have air on all favourable occasions. Stop the side-shoots on all the plants that have attained the desired size, above the second leaf. Keep down insects, by a free use of the syringe, till the fruit begins to ripen.

Melons.—Plants grown in pits, heated by hot water, are seldom so healthy at this season as those grown on dung beds; but by giving a little air every day—keeping at the same time a moist atmosphere, and a temperature not less than 75°, by fire-heat; on dull days—they soon become strong; and, as the season advances, they surpass in vigour those in frames. Never shade the plants till they appear to be flagging, remove the netting as soon as possible, and endeavour to get your plants to stand the heat of the sun.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Cutting and Raising Roots of Fruit Trees.—This may still be performed where there is a tendency to over-luxuriance. Unless in extreme cases, the roots should not be cut nearer the stem than from two to three yards. It is safer to raise the roots nearer the surface. If trees were planted shallow, in poor fresh soil, mulched with dry litter during summer, and the cropping of the borders dispensed with, the operation of cutting the roots would be seldom required.

Potatoes.—Where gardeners grow the general supply for the establishment, it is desirable to change seed with another place where soil and situation are different. A few Ash leaved Kidney may be planted on a warm border.

Protection.—Much trouble will have been requisite lately with Cucumbers, Radishes, Cauliflowers, Potatoes, Salads, &c. The chief thing to be aimed at, is not merely to keep out the frost, but to prevent the plants from being drawn up weak, by keeping them in a higher temperature when covered up, than when they are exposed to the light.

Cabbage.—Take the first opportunity to fill up all vacancies in those planted in autumn, and sow in a warm border for succession. A sort I received last summer, under the name of the "London Market," seems to be very early. For general purposes I have met with none heretofore so profitable as the Vanack. A quarter planted in the autumn of 1839 has produced plentifully to the present time.

Rantine.—In favourable circumstances, Horn Carrots, Radishes, Spinach, &c., may be sown; but, in most cases, it will be preferable to get the ground in good order, and defer sowing or planting much out of doors for a week or two to come.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—In the present state of the weather little can be done in this department.

Coppice.—While the weather is favourable, the cutting of corf rods, poles, &c., should be proceeded with; spring is the best season for such operations, as the stools make more vigorous shoots. Birch should be left until the buds and leaves are beginning to expand, on account of its being very liable to bleed.

Young Plantations.—Great injury arises to outside trees, by suffering the hedges to grow up for years before planting, or cutting them, whereby they become naked at bottom. If hedges were kept low at an early period, the outside trees would become feathered with branches to the bottom, and would form a screen

or the others. By shortening the lower outside branches in time, it would prevent them from extending to destroy the hedges, before the trees are advanced to a sufficient height above them to become ornamental as outside trees, when the lower shortened branches might be taken off if necessary. From 3 to 5 feet high, according to circumstances, is a good height for hedges. Spring is the best time to perform such work, when the weather is suitable.

Hedge-row.—Proceed with the works pointed out in the two preceding months.

Nursery Work.—Little can be done in this department, except indoor work, or trenching rough ground when the weather will permit.—*W. B.*

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending March 16, 1844.

Mar.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.					
						N.	E.	S.	W.		
Sun. 10	38.0	28.6	33.3	7	0.21 in.	1	2	3	4	0	0
Mon. 11	38.1	25.5	31.8	7	0.30	2	1	3	6	1	1
Tues. 12	39.4	29.0	34.2	8	0.27	1	2	2	1	7	2
Wed. 13	37.0	27.3	32.2	8	0.37	—	2	2	1	5	3
Thurs. 14	37.4	27.8	32.6	7	0.47	—	2	2	0	4	4
Fri. 15	37.2	29.4	33.3	10	0.29	2	1	—	2	4	2
Sat. 16	37.9	28.7	33.3	7	0.25	—	2	1	2	3	3

The highest temperature during the above period occurred on the 13th, 1838 and 15th, 1841—therm. 67°; and the lowest on the 14th, 1838—therm. 21°.

State of the Weather near London for the week ending Mar. 7, 1844, as observed at the Horticultural Garden, Chiswick.

Mar.	Moon's Age.	Barometer.		Thermometer.			Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.		
Fri. 1	13	29.450	29.336	55	34	43.5	S.W.	.01
Sat. 2	14	29.499	29.272	52	37	44.5	W.	.04
Sun. 3	15	29.477	29.260	50	37	43.5	S.W.	.10
Mon. 4	○	29.513	29.240	41	30	34.5	N.E.	.43
Tues. 5	16	29.396	29.762	43	19	31.0	N.	
Wed. 6	17	29.984	29.740	43	26	35.5	N.	
Thurs. 7	18	30.126	30.091	44	26	35.0	N.	
Average		29.878	29.547	46.3	30.4	38.6		.78

March 1. Cloudy and fine; rain at night.
2. Lightly overcast with whitish hazy clouds; squally, with heavy showers.
3. Cloudy and windy; clear and fine.
4. Constant heavy rain throughout; cloudy and fine at night.
5. Overcast; cold, with heavy clouds; clear, with sharp frost at night.
6. Clear and frosty; lightly overcast; clear; slight frost.
7. Cloudy and cold throughout, very clear, with slight frost at night.
Mean temperature of the week, 3.7 deg below the average

Notices to Correspondents.

GARDENERS' CHRONICLE.—The first Number of the present year has been reprinted, and may now be had. The newspaper part has been omitted.

OUR CORRESPONDENTS will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

COMMUNICATIONS from the following CORRESPONDENTS are in type, and are only waiting till room can be found for them:—*Mr. S. S. Pettigrew, R. J., J. Wighton, W. B., W. Billingham, M. G., J. B. K. L., A Practical Man, Peter Mackenzie, C. Thompson, Gr., J. Spencer, J. M'I., R. Reid,* and *J. Alexander, J. C. S.*

APPLES.—*A Subscriber.*—Six first-rate dessert varieties in succession may be the Golden Reinette, Claygate Pearmain, Ribstone Pippin, Pearson's Plate, Herefordshire Pearmain, and Stunner Pippin.‡

ATMOSPHERIC MOISTURE.—*H. C.*—The air within your Vinehouse will be found sufficiently moist, if the soil below is kept duly watered, the wall and foliage syringed, and some warm covering drawn over the glass at night. The latter precaution will prove doubly beneficial,—1stly, on account of warmth; and 2dly, as a consequence of the glass being kept warmer, its effect in condensing moisture at the expense of that contained in the air within the frame will be diminished. The space being small, if you do not make sure of giving ventilation soon enough, you will lose your crop. ‖

BEES.—*J. W. K.*—Two of Bagster's hives were stocked with a swarm each in 1838; No. 1 on the 2nd May, and No. 2 on the 4th of June. From that time to the present No. 1 has yielded 54 lbs. of honey and one swarm, and is still strong; No. 2 yielded 30 lbs. of honey, and 3 swarms, and died during last winter. When the Bees enter the side apartments, they fasten the tin slides so securely with their propolis, that it is impossible to return them in the way directed by Mr. Bagster, and the taking of honey is effected with much difficulty and danger. The small quantity of honey obtained is not owing to a bad situation, as from a single box-hive, with a glass on the top, in the same garden, 40 lbs. of honey were taken, in 1843, leaving the Bees an abundant supply for the winter; nor was this a solitary instance.—*Beta.*

BOOKS.—*A Beginner.*—Mackintosh's Practical Gardener.

BROCCOLI.—*Rus.*—Grange's Early White and Chapple's Early Cream, if sown at three different times between the beginning of May to the end of June, will produce heads in succession from Michaelmas to Christmas. ‡

CEDARS, &c.—*S. Hl. H.*—There is little hope of recovering an old Cedar when once it is in a bad state of health, but as yours is planted in a soil which is dry and mixed with chalk, it may be improved in the following manner:—Remove the turf round the tree to the distance of about 20 feet in diameter, and then loosen the soil with a fork, so as not to injure the roots; afterwards give the exposed surface a watering with 2 gallons of sulphuric acid diluted with sixty times its quantity of water, using it when the weather is moist. When this is done the turf may be relaid. Nitrate of soda is very injurious to sickly Firs, and particularly in a light dry soil, although very beneficial to healthy young ones in a strong damp soil. A small portion of nitrate of soda may benefit your Araucaria, when it becomes well established in the open ground; but this should certainly not be applied when it is first planted, which should be done about the middle of May.¶

CHIMONANTHUS FRAGRANS.—*B. F.*—There are few plants of more easy cultivation than this. You have only to train it in an open border against a south wall, and it will take care of itself.‖

CLIMBERS.—*A Subscriber.*—The following are suitable for covering the back wall of a greenhouse: Clematis azurea grandiflora, C. Sieboldii, Cobæa scandens, Maurandya Barclayana, and Hardenbergia macrophylla. A mixture of turfy loam, peat, and sand is a suitable compost for them. On iron supports, you may train Kennedia Marryattæ and Hardenbergia monophylla.‡

CLIMBERS.—*A Gardener.*—In order to render an old root of a tree an ornament to a flower garden you may cover it with the following creepers, viz.:—Eccremocarpus scaber, Thunbergia grandiflora, T. scandens, and Convolvulus major.‡

COTYLEDONS.—*W. F. C.*—Phillyreas and Alaternus may be struck from cuttings, but it is a very uncertain way; they do much better to be layered in pots about Midsummer. In striking them from cuttings select the previous year's young wood, before the shoots begin to grow, after Midsummer, and placing them in a light sandy soil, cover them close with a hand-glass. They should be placed in a north aspect, out of the sun's rays. When the cuttings are first put in, give them a good watering; but afterwards let the glasses remain close until they are struck.¶

DOUBLE-FLOWERED ROCKET.—*A. B.*—This requires to be planted in a very large tub, or in the open pit of a conservatory. It should be allowed plenty of sunshine heat and light, but it must have age before it will bloom. The still the best it is getting into is suitable for it. The flowering of *Clerodendron Minahassæ* grows often from 6 to 12 feet before its blossoms appear. Why Stanhopea insignis does not flower we cannot tell without seeing it.‡

FABIANA IMBRICATA.—*Anon.*—This is hardy, and will flower in a north border in the neighbourhood of London.‡

FELLING.—*J. L.*—Trees which are to preserve their bark should be felled in winter.

FIR-TREES.—*W. F. C.*—The common Spruce and Scotch Fir will bear planting on a cliff near the sea, and may be kept down to 5 or 6 feet high, if the leading shoots are constantly pinched off. The Tartarian and Chinese Arbor Vitæ, or the common kinds of Cypress and Juniper, will also suit that purpose. The common Yew will likewise succeed in such a situation. These kinds will all bear cutting and clipping when young.¶

FRUIT-TREES.—*H. Palmer.*—The Marie-Louise and Bacon's Incomparable will suit you, as regards Pears; the Blue Gage Plum is not worthy of cultivation, but the Purple Gage, or Reine Claude Violette, and Royale Hâtive, are excellent. The nearest respectable nurseryman ought either to be able to supply you with the above, or procure them. ‖——*D.*—On your south aspect you may plant two Glout Morceau, two Winter Nelis, two Beurré Rance, one Passe Colmar, Elton and Knight's Early Black Cherries, and the Purple Gage Plum. On the north aspect, Marie-Louise, Comte de Lamy, two Bacon's Incomparable, the Catillac for stewing, Washington Plum, May Duke and Morello Cherries. For the east and west aspects, Knight's Monarch, Beurré Bosc, Thompson's, Louise-Bonne of Jersey, and Easter Beurré Pears; the Purple Gage, Coe's Golden Drop, and Royale Hâtive Plums; Knight's Early Black and Florence Cherries. Four good Peaches are Royale Charlotte, Barrington, Bellegarde, and Malta. ‖

GOLD FISH.—*A. C.*—Our answer was given upon the *best* authority which can be obtained. You are certainly wrong.

GOOSEBERRIES.—*H. Palmer.*—The Roaring Lion, London, Companion, Wonderful Leader, Thumper, and Eagle, are amongst the largest of prize varieties. ‖

GORSE.—*H. C.*—Your plantation of this that has an unsightly appearance, being naked at bottom, should be cut over to within 4 inches of the ground. The best season for the operation is October; but if the plants are not yet far advanced in flowering, it may be done now.‡

GRAFTING VINES.—*Z.*—The Vine may be successfully grafted either by whip or cleft grafting; but whichever mode is adopted the plant must be in leaf before the operation is performed.‖

GRASS LAWNS.—*B. D.*—Resinous sawdust is of little value as a manure for grass lawns except it is charred, when it becomes useful. Sawdust from trees that are not resinous does very well as manure when mixed with the dunghill or soaked with urine from the tank. It may also be burned, when its ashes are useful; but charring is best. ‡

HARDY SHRUBS.—*Anon.*—The following dwarf shrubs are suitable for a border:—Berberis aquifolium, Ribes sanguineum, R. aureum, Amygdalus nana, Daphne Cneorum, Calycanthus floridus, Deutzia scabra, Spiræa ariæfolia, S. tomentosa, Syringa Josikæa, Garrya elliptica, and Viburnum Tinus. In front of these the following plants will have a good effect, viz., Delphinium grandiflorum, Coreopsis lanceolata, Lupinus polyphyllus, Pentstemon ovatus, Campanula grandis, Saxifraga crassifolia, Baptisia australis, Trollius Asiaticus, and Aubrietia deltoidea. ‡

HEATING.—*X. Z.*—Use such gutters as are represented at p. 653, 1843. Two, viz., a flow and return, are sufficient for the pit of your hot house; and the same number for your other pit. For so small an amount of duty, a second-sized boiler should be quite enough.——*G. H.*—Your question demands a longer answer than we can give just now; but we will hear it in mind, and answer you soon in some detail.——*T. A. N.*—Sawdust is a bad plunging material, because it is a very bad conductor. Coarsely-sifted cinders are found by experience to be the best we have seen tried.

HYACINTHS.—*Chemical Jack.*—In order to preserve Hyacinths (which have been grown in glasses) for the next year, it is best to transfer them, after flowering, to the open air, where they can be plunged in soil, and guarded from frost, which will be sufficiently effected by mats thrown over them at night.

INSECTS.—If *A Beginner* will favour us with specimens of the Caterpillars which puncture the fruit of his Cherry-trees we shall feel obliged, but to give him any useful information without such materials is not in our power. To get rid of the Black Fly, syringing with tobacco water is considered the best remedy. To make the wash dissolve ¼-lb. of soap in a gallon of soft water, add to it one gallon of tobacco-water, and then dilute it with two gallons more of soft water. *R.*——*W. C.*—Your Pear-tree is hide-bound with the Mussel-scale (Aspidiotus conchiformis), whose history was given in last year's *Chronicle*, p. 735, to which we must refer you for a remedy. *R.*

LIME.—*Rustic Robin.*—Lime is a bad conductor of heat. All earthy substances are so. The conducting power of marble as compared with gold is as 24 to 1000. We do not like your plan. If your dung is sweetened no ill effects will arise from its vapours; but your flues will, we fear, dry it so as to injure the roots of the Cucumbers.

MANURES.—*Inquisitor.*—About 3 cwt. to an acre of Potter's guano is the quantity usually applied for kitchen-garden produce. Of this, about half of a wine-glassful to a 24-sized pot is sufficient for Pelargoniums. It should be strewed on the surface of the mould in the pot, covering it slightly with soil, and allowing it to be washed down by degrees.‡——*W. B.*—We have not seen it tried; but there can be no doubt that a good watering with liquid guano would be advantageous to fruit-trees that *require* manure. We should stir a double handful up in a pot of water.——*G. R.*—Give a wine-glassful of sup-phosphate of lime to each pot in which your Pelargoniums are to flower. Apply it as a top-dressing only allowing it to be washed down by degrees in watering the plants. ‡——*G. I. T.*—Two parts of superphosphate of lime mixed with one of charcoal, may be applied to Onions when they begin to appear above ground, or it may be mixed with a small quantity of fine soil and sown in the drills along with the seeds. It should be applied at the rate of 3 cwt. per acre. ‡——*John.*—We do not know the composition of Potter's guano. It is said to contain the same constituents as Peruvian guano, without the impurities, and with the ammonia fixed.

MORELLO CHERRIES.—*A Constant Reader.*—In pruning, leave sufficient of last year's shoots, for on such this kind of Cherry bears its fruit.‖

NAMES OF FRUITS.—*A Poor Puncher.*—1, Easter Beurré; 2, Imperfect probably, Ne plus Meurie; 3, Holland Bergamot.——*A. D.*—1, Glout Morceau; 2, Newton Pippin; 3, St. Germain. ‖

NAMES OF PLANTS.—*O.*—Double Daffodil.——*M. Y.* and a *Constant Reader.*—Pezica coccinea: not very uncommon.——*A Constant Reader.*—1, Lasiopetalum solanaceum; 2, A Clematis; 3. Apparently Clerodendrum squamatum; but what a specimen! 4, Linaria cymbalaria.——*J. W. J.*—A Clematis, and apparently the hardy C. viorna.——*Pteris.*—A small specimen of Asplenium lanceolatum.

PANSIES WITH DISEASED LEAVES.—There is nothing in your compost that would be likely to affect your plants, and the disease being confined to this particular variety (a seedling) it is fair to conclude that it arises from some constitutional defect in the plant.*

PEACH-TREES.—*M. U.*—Your Royal George Peach-tree, from which the blossom-buds drop off, is perhaps too much heated from being near the hottest part of the flue, in consequence also of which, its roots may have been too dry; or its vitality may have been weakened from the attacks of insects. You ought to shorten much the bearing-shoots, and keep the roots sufficiently moist. ‖

PEARS.—*A Subscriber.*—We have not the means of saying to whom you applied that the Pears which he sent in a box of sundry were grown as follows:—*Winter Nelis*—Chelmsford, on a wall: *Passe Colmar*, dittos: *Beurré Capiaumont*, standard: *Ne plus Meurie*, standard: *Jean de Witte*, ditto; *Marvelle d'Hiver*, wall; *Beurré Rance*, standard; *Easter Beurré*, ditto.‡——*A Subscriber.*—The following are select varieties, that are good bearers, and that will succeed well as standards:—Summary, Autumn Crassane, Flemish Beauty, Marie-Louise, Beurré Bosc, Passe-Colmar, Beurré Diel, Louise-Bonne (of Jersey), Bacon's Incomparable, Knight's Monarch, Ne Plus Meurie, Winter Nelis, and Jean de Witte.‡——*J. F. D.*—As many varieties as you can find room for, may be grafted on the same tree. In some cases, a graft of a different variety caused an improvement in the general health and bearing of the whole tree. Weak-growing kinds should be worked so as to occupy a position more upright than those that are strong.‖

POTATOES.—*Beulah.*—You will have a succession and variety enough, by planting the following:—Early Manly, Kerr's Seedling, Taylor's Forty-fold, Leathercoat, Red-coated Kidney, Irish Cup, and Bread-fruit. The old turf will assist in producing a good crop; but a little manure in addition would be repaid. For two spits 1s. 6d. and 1s. 9d. a rod is more than is generally paid. ‖——*Z.*—The Ash-leaved Kidney is one of the best varieties that can be employed for forcing, and likewise for the first crop in the open air. ‡

RASPBERRIES.—*Genys.*—You may cut down your Raspberry-canes now, leaving them about 4 feet high, and tying them neatly up to stakes of about the same height. Only 4 or 5 good canes should be left on each shoot.‡

ROCKWORK.—*A. B. C.*—Any rough materials will do, except granite and similar rocks. Near London there is little to be had except the large half-vitrified masses of bricks in the brickfields. If these are put together irregularly, in a terraced style, they look very well, and grow plants as well as anything, except masses of limestone or sandstone.

ROCK-PLANTS.—*Z.*—The following are 40 plants, that are suitable for a rockwork, viz.:—Rhododendron ferrugineum, R. hirsutum, Arctostaphylos Uva-ursi, Chamædaphne procumbens, Sedum rupestre, S. Forsterianum, S. populifolium, S. villosum, S. hexangulare, Persettia phillyreæfolia, P. pilosa, Mahonia aquifolium, Ramondia pyrenaica, Soldanella alpina, Androsace villosa, Corydalis nobilis, Phlox ovata, P. subulata, P. nivalis, Vinca minor flore pleno, Campanula pumila, Gentiana verna, Dryas octopetala, Digitalis lutea, Sibthorpia europæa, Arabis alpina, Draba aizoides, Prenanthes purpurea, P. muralis, Antennaria plantaginea, Gnaphalium arenarium, Ceterach officinarum, Polypodium vulgare cambricum, P. dryopteris, Onoclea sensibilis, Asplenium adiantum nigrum, Pteris caudata, Adiantum capillus-veneris, Aspidium rigidum, A. Lonchitis ‡.

ROOT EXCRETIONS.—*J. T.*—Since the publication of the "Theory of Horticulture" this question has received much attention, and the result is very unfavourable to the existence of such secretions. We will inquire about Beehives.

SOIL.—*J. S. J.*—As a substitute for sand, fragments of sandstone, pounded bricks, or even well-worked cinders would do, though not so well. It is probable that the silex is to a certain extent decomposed by the roots of plants; and therefore siliceous rather than aluminous or carbonaceous materials should be given them. We should also try the effect of adding bricklayers' and plasterers' rubbish, such as is obtained where old houses are pulled down.

VERBENAS.—*J. G. H.*—Procure the following 12 varieties:—Girling's Amethystina, Boule de Feu, Catleugh's Ne Plus Ultra, Youell's Princess Royal, Ivery's Purpurea perfecta, Croft's Formosa elegans, Miller's Blue Queen; Tweediana superba, Atrosanguinea, excelsa, Stewartii, and Hawardii.*

VINES.—*J. R.*—Presuming the roots of your young Vines were in good condition, the shoots, which become dried up on being readmitted into the Pine-stove, must have been injured by the severity of the frosts which occurred in autumn.‖

YEW HEDGE.—*Theresa.*—Your Yew Hedge may be very much improved by cutting it down to the height you propose; the tops should not all be cut down at once, but rather thinned out at different times; one part of each plant may be cut down this spring, another part just as the buds begin to awake in summer, and the remainder the following season, observing always to leave as many of the little twigs as possible on the old stems, and not to clip the young shoots the first season; in two years you may have the hedge quite green. Open a trench on each side of the hedge and put in some fresh loamy soil, giving the plants a good watering just as they begin to grow in summer, if the weather should prove dry at the time.¶

MISCELLANEOUS.—*Spectator.*—At the Garden of the Horticultural Society young men are received for three or four years, for improvement and final placing, at from 12s. to 14s. a week, with or without lodging, and always without board. They are received upon the recommendation of Fellows of the Society, and it is generally three years after application is made that the applicant can be received.——*O.*—Ipomœa Bona Nox will flower the first year, if sown early, and well managed; but it is usually regarded as a biennial. The Mesembryanthemum is a tender annual.——*R.*—We cannot entertain either religious or political disputes, which do not the more relate to gardening because gardeners are a party to them. If we did entertain them we should say that you are wholly wrong; for what can be more unreasonable than for a gardener to insist upon following his own religious faith, while at the same time he abuses his master for not liking men of whose faith he disapproves? If the one is free to choose, so should the other be. Would you insist upon liberty of conscience for yourself, and refuse it to your master? We hope not.——*J. W. T.*—We have had no experience with calico glazed over with Whitney's composition for shading a greenhouse. We, however, imagine that it is too transparent for that purpose. With regard to the exhibitions, see *Adv.* p. 779, 1843.‡——*H. P.*—Read the article on Cucumbers, at p. 168 in to-day's paper.‡——*Charcoal.*—The fumes from a charcoal fire are injurious to plants.——*Y. G. E.*—Respecting the spot on Camellia leaves, see p. 24 of the present year.‡——*A Subscriber.*—Whitney's transparent composition is advertised at p. 996, 1843. Respecting your Apple-trees, we recommend you to plant dwarf standards.‡——*T. H. Fenn.*—In answer to above. Toads are useful for destroying woodlice.‡——*J. W. S.*—Will find the mode of applying guano to kitchen-garden crops, given in last Number, p. 136.——*A Beginner.*—Any rough coarse cinder-siftings, for plunging material, over a tank.‡——*M. A.*—Bornett's chloride of zinc certainly preserves canvas well, and we have every reason to believe that it also answers the purpose with timber; but we have not heard of the latter being employed in the construction of hothouses.——*J. T.*—Pray say to what statement about cuttings you allude.——*B. S.*—Give your Tropæolum a good bottom-heat. ‡

ERRATUM.—In Messrs. Youell's advertisement of 2d March, FUCHSIAS should be *per plant*, and not *per pair*.

SEEDLING FLORISTS' FLOWERS.

AZALEAS.—*R. W. and Co.*—The only improvement in your seedling over the Old White, is a slight one in the general form of the flower, arising from the segments of the corolla being a little broader, consequently the divisions between them are not so deep; the surface of the flower appears to want smoothness, and the three or four irregular petals in the centre of each is a decided defect.*

CINERARIAS.—*J. C. S.*—The colour of your seedling is very bright and beautiful, but the flowers are rather small, and the petals too narrow.*

*** As usual, many communications have been received too late for answering this week.

PRESERVENCE BARLEY.

MR. CHILLINGWORTH, of Cuddesdon, near Wheatley, Oxon, planted Two Bushels of the above Barley upon 1 A. 3 R. 27 P. of Land, the produce from which was 11 C. 1 Qr. 1 lb. of Barley and 2 tons 15 cwt. 3 qr. of Straw, besides the chaff.

Persons desirous of planting any of the above wonderfully productive variety of Barley, can obtain seed of Mr. Rosser Mastery of Donnington, near Stow, Gloucestershire, at 5s. 6d. per bushel for 40 bushels and upwards, and 6s. per bushel if a less quantity is ordered. Cash Payment, or a Good Reference.

N.B.—The Barley is of good quality, and malts well. Donnington, March 9, 1844.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c., are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 3, Victoria Cottages, Stanley Road, Kentish Town.

A vacancy now occurs for one house or outdoor Pupil, for the study of Chemistry as applied to Agriculture. Apply as above.

The Agricultural Gazette.

SATURDAY, MARCH 9, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Mar. 13 . Agricultural Society of England.
Thursday, Mar. 14 . Agric. Imp. Society of Ireland.
Wednesday, Mar. 20 . Agricultural Society of England.
Thursday, Mar. 21 . Agric. Imp. Society of Ireland.

The constituent parts of animals—the substances of which their bodies are composed—we mean the carbon, oxygen, hydrogen, nitrogen, lime, phosphorus, alkalies and acids, &c., existing in various combinations within them, are necessarily all contained in the food which they eat. In the case of herbivorous animals, therefore, it is obvious that their component elements must all exist in vegetables. With regard to plants, their constituent parts also are gathered up from certain sources. One of these is the air, the importance of which in this capacity has within the last few years been fully demonstrated by Professor Liebig; the water contained in the soil is another; all matters dissolved in that water are taken up by the plant and undergo a process of digestion within it. All the matters which a plant contains are soluble in water in certain natural conditions of their existence, and are therefore capable of being taken up by it at its root. Now, as herbivorous animals and plants consist of the same elements, the food received by them must be similar in its composition. We do not now speak of the proportion which the quantities of the various elements of that food bear to one another. In this there is doubtless a difference, and this difference is undoubtedly important in its influence on the processes of nourishment. We refer only to the fact that the same elements, unaccompanied by others, must all be present in the food both of animal and plant. Then why might not animals and plants both live on the same food—food not only the same in chemical composition but also in form and substance? There are various answers to this question, and the following is one of the reasons why this is impossible. The union of those elements which constitute the animal body is very slight; a very slight derangement of ordinary circumstances would cause a partial or entire re-arrangement of those elements, and so induce disease or death. Among the causes (poisons) which are capable of this effect are a class of substances which are not directly poisonous, but which act so in virtue of a tendency in substances that are in contact to acquire a common condition. We know that though but a little leaven be added to a batch of dough, it will spread, and the whole lump will soon acquire the condition of the small quantity which was added to it; and it is upon a similar principle that but a small quantity of matter, if in a decomposing state, whose elements may be identical with those of a living animal, may yet prove the cause of its death, if it be partaken of. The process of re-arrangement proceeding amongst its own elements, which is in fact the process of putrefaction, would communicate itself to the substance of the living body, and the leaven gradually working its way would impress its own character upon the whole mass, rendering it diseased, and ultimately depriving it of life.

The very condition, however, of food, which is thus rendered poisonous to animals, makes it peculiarly suitable for vegetables. Plants cannot consume massive food like animals; they have no mouth which can take it up in such a state, and no stomach in which to digest it. The soil answers this purpose for them, and the organic matters existing there are, under the influence of external agents, gradually losing certain of their elements, which, forming soluble compounds with others, are dissolved by water, and so introduced into the vegetable. This rotting condition—the poisonous state of food for animals—is thus the very condition in which food for plants is most valuable.

We have thus arrived at this conclusion;—there is no case in which food of an organic character, in a condition of unfitness for vegetables, can be safely administered to animals. And the point to which we wish to direct all these observations is simply this: there is, notwithstanding what has been said, an instance of daily occurrence in which such food is administered on many farms to the most valuable stock. We refer to the condition in which rotten dunghills are generally to be seen—black foetid pits, the receptacles of stables and manure heaps; and this filthy stuff is confidently asserted by many to be wholesome, and even preferable to pure water as a beverage for their cattle!

We need not quote the analyses of the various matters which thus run into many horseponds: they will be found under the head Liquid Manure, in Mr. C. Johnson's "Encyclopædia of Agriculture:" it is sufficient to remark, here, that, besides certain salts of ammonia, which are undergoing various chemical changes, and besides other soluble mineral salts, there is a considerable quantity of purely *animal matter* suspended in this water, which, under the influence of air and moisture, is necessarily undergoing a putrefactive process, and which, if introduced into the animal system in sufficient quantity, must tend to act as a leaven and to introduce that putrefactive process there, perhaps to result in death. But on this very account is this animal matter peculiarly valuable as food for plants, and united, as it is, in liquid manure with ammoniacal and phosphoric salts, it possesses the most fertilising properties. Instead, however, of being used as a manure, it is, on such farms as we allude to, suffered to run to waste; and, of all possible places to which it may run, it is allowed to select the only spot where it can be injurious.

But what a perversion of means is this! Not only is a valuable manure wasted, but it is made use of in a manner having a most dangerous tendency; that which, if applied to the crops on the land, would increase their fertility, is not only allowed to waste, but it is negligently, if not purposely, allowed to run into the very drinking-trough of the cattle—almost the only place in the wide world where it could be injurious. We say "purposely," for it is insisted on by some, that this water is preferred by cattle, nay, that it is beneficial to them. To complete the absolute foolishness of their conduct, those whom we would call *guilty* of it are, in all probability, the very parties who will cry out against what they term the want of economy displayed in erecting necessarily expensive but well-arranged buildings, calculated to hinder such waste as that we have been describing.

The prejudice, however—for if anything deserve the name of prejudice, it is this—that water, filthy from such admixture, is wholesome, seems, from the following statement received from a medical friend, to be in unison with some of the eccentricities of human nature:—"The love of filthy and disgusting remedies seems to have been by no means rare. *Album Græcum* was formerly much used in medicine; it is the white earthy remains of the bones on which dogs feed, after digestion has extracted the whole of the soluble animal matters. *Mummy* used to be a most celebrated remedy for the cure of numerous complaints, and, as it was sold at a high price, some Jews carried on a very profitable business in the manufacture of mummies for medicinal purposes; they had a regular apparatus of ovens and drying-houses for the purpose; the discovery of these, however, destroyed the public faith in the operation of what had previously been one of the most effectual remedies in the whole Materia Medica. A friend told me some years ago that there was a drawer in the shop of an old apothecary to whom he was apprenticed, labelled '*Pulvis e cranio humano*!' *Foxes' lungs* used to be highly celebrated for the cure of the asthma, the fox being a long-winded animal." Then follow remarks on the medicinal properties of matter contained in muck-water:—"The salts contained in farmyard muck-water have almost all of them a slightly purgative, and also, probably, a diuretic action. I should think that until the animals were well habituated to such potations, they would have a strong tendency to destroy or diminish the appetite, and that they would drink a less quantity than if supplied with pure and wholesome beverage. How far the decomposing animal and vegetable substances contained in this water may be capable of communicating their own process of putrefaction to living tissues I cannot tell; but I should certainly fear that such putrefying substances introduced into the stomach would increase any tendency to diseases connected with the state of the blood."

We must add to the above the following statement, received from a distinguished veterinary surgeon; it is upon the same subject—the runnings of liquid manure into horse-ponds:—"I must confess that I have not met with cases of disease that could be attributed to this cause. The urine is doubtless generally in such a state of dilution as not to be prejudicial; for it is to be borne in mind that, in its natural state, nine-tenths of this liquid is pure water. It must be given pure, and in quantity, to produce disease, unless it be in a putrefying state, when a far less proportion would be sufficient." It will be remembered, that it is because it acquires this putrefying state that we insist upon its poisonous tendency. "The effect of water rendered impure by decayed leaves is more injurious than that just mentioned. In Australia there is frequently a scarcity of this fluid, and the ponds become impure from decayed leaves, and an endemical disease of a fatal nature is the result. When water also has been in a stagnant state for some time, it abounds with myriads of minute insects; and there are instances of worms (though not of the ordinary kinds) being the result of drinking the filthy water; and inflammation of the bowels has arisen, and death has also been the consequence in a few instances. Filthy ditch-water, in a state of absolute putrefaction, is still more dangerous; but animals will not partake of it, unless suffering from extreme thirst. Disease of a low typhoid character, soon followed by death, has been the result. In all cases, animals should be provided with water as pure and as soft as can be obtained.—*W. C. S.*" Although the writer of this has never seen disease arising from the causes we refer to, yet the remarks he makes afterwards show that his opinion, valuable as the result of experience, coincides with our own, expressed above, as to the folly and danger of *thus* wasting the valuable parts of the dungheaps, and the runnings of stables and cattle stalls.

We are now busily engaged in THE PREPARATION OF LAND FOR THE CARROT CROP. That on which we intend growing Carrots this year, is a siliceous sandy soil, sufficiently rich in vegetable matter, and therefore just such as this root likes. It was broken up from old pasture four years ago, having first been efficiently drained. The first crop taken was Swedish Turnips on one part, and Potatoes on another; for both of which it was manured and limed; it was subsoil ploughed in the spring of that year; the following season it bore Wheat, along with which Clover-seeds were sown; the third year it was mown and grazed, and then broken up for Wheat, of which we had last year a heavy crop on it. All this is stated, although it involves matters unconnected with our present subject, just to show the condition in which the land is, and its suitableness for the growth of Carrots.

No principle of any importance is involved in the cultivation of this root, on which that of Turnips, Beet-root, or any other of our green crops does not also depend. There are, however, peculiarities in the cultivation of the Carrot, arising from the character of the seed, the shape of the root, and the early period at which it must be sown.

There are few soils, however severe the frosts of winter may have been, which will not, when ploughed early in March, turn up stiff, so as when harrowed to present a cloddy surface, which is not easily reduced. Now, it is important that the surface should be fine when Carrot-seed is sown; and, therefore, it is a good plan, in order to avoid the necessity of ploughing in spring, to plough in the manure before winter. We read and hear of the Carrot-crop requiring no manure, which the authorities for such statements account for by the depth to which, as it is stated, these roots descend for nourishment. It may be safely admitted, however, as universally true, that all crops require manure, and especially those which we expect to yield a weight of 20 tons and upwards per acre. The manure, which may be that of the farm-yard, should be ploughed under in October, as deep as possible, *i. e.* from 8 to 10 inches under the surface, and the land may then be left till spring. We were unable to do this at the proper time last autumn, not having sufficient on hand, and therefore we are now cross-ploughing our land before spreading the manure, after ploughing in which we shall have to harrow it repeatedly to get it ready for the seed. Had we ploughed in the manure in autumn we might have left the land till the middle of March, and then using merely the cultivator or scarifier, we should have saved the spring ploughings, and there would have been no difficulty in getting the land fine for receiving the seed.

Carrot-seed should be sown during the first week in April. About 5lbs. per acre is the usual quantity. The seeds are surrounded by stiff short hairs, so that they cling together, and in order to enable the farmer to drill them (the common Suffolk drill is used for the purpose), they must be mixed with sand. If the drill be set to sow 2 bushels per acre, 2 bushels of sand must be mixed with 5 lbs. of seed for every acre that is to be sown. It is an advantage to make the seed germinate in the land as soon as possible, and therefore it is well to mix the seed and sand together four or five days before sowing, and to damp them somewhat, so as to swell the seed, and partially to sprout it. Do not *wet* the mixture, merely damp it so that on squeezing a handful it shall preserve its form, and not crumble on opening the hand. If the sand be wet, the drilling machine will soon choke; it must be spread out as soon as damped, and turned three or four times every day before sowing; this will dry it somewhat, so as to enable it to pass easily through the drill. The seed is drilled on the flat surface in rows, from 12 to 24 inches apart. It is right to adopt such a distance as will enable the use of the horse-hoe, and 18 inches is the least at which this is practicable. We grew them in rows only one foot apart last year; but

at this distance the land could not be cultivated, and could hardly be kept clean; it became very hard, and it was probably on that account that so many roots went to seed. This year we shall adopt an average distance of 18 inches from row to row; but in order the more effectually to use the horse-hoe, we shall sow the seed in rows alternately one foot and two feet apart; the one-foot interval must be kept clean by hand-hoeing, the two feet interval we shall be able to horse-hoe; and one side at any rate of every row will thus receive the benefit of deeply stirring the land. Whenever the rows can be distinguished, the land should be hoed, and whenever the plants have come into full leaf they should be singled out. The distance at which they should be left may be 8 or 9 inches. When the land is apt to get soon covered with small weeds, not easily distinguishable from the young Carrot-plants, it is a good plan to sow a few Oats along with the seed. The Oats spring up before the Carrots, and point out the position of the future row, so that the land may be hoed when necessary, even though the Carrots are not up, without any chance of destroying the young plants. The summer cultivation of the crop consists in a repetition of the hoeing whenever necessary (this will cost at least 15*s.* per acre), and occasional horse-hoeings to stir the land. All the plants which run to seed should be pulled up whenever they are seen, and they may at once be carried to the yard for the pigs.

The best variety of Carrot for field culture is unquestionably the White Belgian. On suitable land, under good cultivation, the farmer may expect, in ordinary seasons, a crop of this root weighing from 18 to 22 tons per acre. It should be ready to harvest towards the end of October; and before then we shall return to the subject.

ON THE SOIL AND CLIMATE OF THE SHORES OF THE MORAY FRITH, IN SCOTLAND.—No. I.

From the remarks contained in the first two Numbers of your new Paper, on the necessity of a general knowledge of the soil and climate of a district, towards the right understanding of the peculiarities of its husbandry, the public, I trust, may expect soon to find in your columns a series of papers descriptive of all the principal Agricultural *districts of* the United Kingdom. Without some general notices of this sort, to which we may refer, the vast mass of detached observations accumulating in your pages may become unmanageable, and practices in one district be found quite inapplicable in others. As you will, no doubt, receive many communications from the North of Scotland, which exports a good deal of grain and fat stock to the English markets, and as throughout this district the Lothian system of husbandry is now extensively and successfully followed, it has occurred to me that a short popular account of its soil and climate may not be unacceptable to many of your English readers. In the present paper I will confine myself to the north-eastern side of Scotland, which, in fact, is also by far the most productive and important one; and in a general sense, it may be observed, that the cultivated zone in this district extends only for a few miles inland from the shores of the Moray Frith. In this district examples, yearly increasing in size and value, exist, as I have said, of a successful imitation of the best Scotch or Lothian system of husbandry, with this peculiarity, however, that throughout the Lothians the soil and subsoil have been naturally enriched by the clay and mineral alkalies resulting from the decomposition of the trap and porphyry rocks, which so universally prevail in the Southern Lowlands of Scotland, while in the northern district to which I refer, there are no secondary trap or porphyry rocks of any extent, and the clay which does occur has resulted from the disintegration of primary gneiss and granite and the older felspathic rocks, and from the breaking up of secondary shales and aluminous slates. Stiff clay loams are hence rare with us, while light sandy soils are by far the most prevalent in the Agricultural portions of the north Highlands. This results from the prevalence of sandstone rocks along the whole north-eastern shores of the country; and any deviations from this structure will be readily accounted for by attending to the following slight geological description.

The great basin of the Moray Frith appears to have been at one time filled with strata of the old red sandstone formation, having superimposed upon them members of the Lias and Oolitic series, and of other partial or local deposits as high up as the chalk, but of which latter formations only faint traces are now to be found at wide intervals along the Ross and Sutherland coasts, and in a few detached spots in Moray and Banffshires. The great sandstone pavement itself has been most extensively denuded and cut up by the ocean, so much so that it now exists only as a narrow frame-work to the primitive rocks composing the interior of the country on which it reposes—the inner boundary of the sandstone being an irregular line running generally round the whole coast at the distance of from 2 to 10 miles from the sea, except in Caithness, which county is entirely covered by this rock, whose beds are also prolonged into and constitute almost all the Orkney Islands. In many places, especially in the lower parts of the country, the rocks retain the horizontal position in which they were at first deposited, but in others they are found in undulating lines, and are often contorted and broken up by intruding masses and spurs of granite against the sides of which they are often abutted at highly inclined angles. Near Cromdale and Cawdor Castle in Nairnshire, the black rock of Inverfarikaig, and the precipices below Mealfourvonie on Loch Ness, Craigphadrick, near Inverness, the ridge from Avoch to Cromarty, the Ord of Caithness and other picturesque localities, beautiful instances of the intrusion of the amorphous granites among the sandstone layers occur, thus giving rise to much of the irregularity and boldness of our inland fastnesses, and of our projecting headlands and rocky coasts.

The sandstone, or Devonian system, and its associated beds, are divisible into three great groups:—1st. The uppermost consists chiefly of pure yellow freestones, such as those of Bishopmill and Quarrywood at Elgin, which form beautiful and durable building-stones, and which were formerly regarded as the yellow sandstones peculiar to the coal formation. 2nd. Gray and variegated sandstones, with soft bituminous and calcareous shales and flagstones; all highly charged with bituminous matter, the remains most probably of extinct marine vegetables and fishes, of which impressions and scales are still occasionally found. These beds were formerly held as occupying the place, in the north of Scotland, of the true coal formation, though not exactly identical with it; (see Murchison and Sedgwick's papers, in the Geological Society's Transactions, on the Brora Coal-field, &c., and Anderson's Highland Guide, first edition, p. 197); and many attempts have at different times been made to procure coal from the deposit, but without success. 3d. The fundamental rock of the series is the true old red sandstone, with its associated coarse conglomerate, together forming the round-backed undulating chain of hills (often presenting abrupt escarpments and finely-shaped conical summits) which encompasses the whole country, being interposed between the low plains and the high and rough primitive mountains of the interior. This sandstone, which is usually of brick-red colour and of a great diversity of texture and hardness, is by far the most abundant rock in the secondary strata; and is in general a mere agglutination of sand coloured by the red oxide of iron, though in many places it is highly micaceous and aluminous. It is the parent, so to speak, of all the superior beds, which (though at one time it was somewhat difficult to find their true geological position) have, of late, been pronounced as belonging to the same old red-sandstone formation, in consequence of the identity of the organic remains found in both the lower and the upper strata *.

In some few places, as at Linksfield, Inverugie, and Cothall, in Morayshire, and at Helmsdale, in Sutherland, irregular unstratified masses of a concretionary limestone (called cornstone), a deposit most probably from ancient hot springs, occur subordinate to the sandstones, but in general the district in question is devoid of lime; gritty quarts or sand being by far the most abundant ingredient of the rocks.

The distribution, in greater or less quantities, of the several members of the foregoing series, affects much the fertility and outward aspect of different parts of the district around the Moray Frith; and in my next paper I will shortly describe the leading features of each portion of country in which the different members respectively prevail, and then advert to the general covering of gravel which almost universally constitutes our subsoil, and will conclude with a brief sketch of our northern climate.—*G. Anderson, Secretary to the Horticultural and Farmers' Societies of Inverness.*

* The most interesting and beautiful account of the very strange organisms in these deposits occurs in Mr. Miller's "Old Red Sandstone," a work which has justly received the highest praise from the first geologists in Britain.

EXPERIMENTS WITH MANURES.

From the numerous experiments which have been made with different manures in various parts of the kingdom, on almost every variety of soil and situation, it is reasonable to hope that by a comparison of the results obtained by these means, we may arrive at something near the truth, and be enabled to form an estimate of the relative value of the substances that may have been made the subject of investigation. It is with the view of assisting in this important work, that I have received the permission of Sir Charles Lemon, Bart., M.P., to transmit you the following details of some experiments made at Carclew, in 1843, for the purpose of testing, on a small scale, the merits of certain manures, when applied as a top-dressing to growing crops; and although they are far too limited in extent for us to draw any positive conclusions from them, as to the real value or efficiency of any of the substances employed, they will probably be useful in some degree as exhibiting their fertilising powers under circumstances precisely similar in every respect.

The subjects selected for experiment were, 1, nitrate of soda; 2, sulphate of soda; 3, guano; 4, sulphate of ammonia; 5, Stott's soluble manure; and 6, drainings from the farmyard. The field considered as the most suitable for giving the whole a fair trial, was one with a high open exposure sloping to the south, where the soil is a free light loam, averaging about a foot in depth, on a yellow clayey subsoil, interspersed with spar. It had been well manured the previous season, and cropped with Turnips. After these were removed, the ground was ploughed and prepared for Barley, which was sown in the latter part of April. On the 15th May the manures were applied, the tenth part of an acre being allotted for each experiment.

1. *Nitrate of Soda.*—The quantity used was 33½ lbs., which is at the rate of about 3 cwt. per acre. It was sown by hand with the utmost care, so as to distribute it as equally as possible over the plot of ground. Little or no effect was observable for some time afterwards, owing, no doubt, to the unusually late wet weather, by which vegetation generally was very much retarded. The manure, however, did its business quietly and surely, and a change was apparent, not only in the more rapid growth of the plants, which soon outstripped those around them, but also in the colour of their leaves and leaves, which were alike remarkable, both for their greater size and the rich deep green they subsequently assumed. During the season, this plot maintained its fine healthy appearance, from which I was led to infer that nitrate of soda would prove a most valuable manure; but the result was very different to what I anticipated, the weight of the produce being, in Straw, 199 lbs., in Corn, 176 lbs., which measured 2¾ Winchester bushels, equal to 37½ bushels per acre, and less by 6½ bushels per acre than any in the series.

I was not prepared for such a difference between the weight of the Corn and Straw in this experiment, and those of the others; and I am quite at a loss to account for the deficiency. The only way in which I imagine it to have arisen, was from the plants having been stimulated by the application to become more succulent and vascular than they would have been under other circumstances; so that when they arrived at maturity, and were cut and dried, the Straw and Grain lost in weight more than their bulk and appearance would otherwise have led us to expect.

2. *Sulphate of Soda.*—The same quantity, 33½ lbs., of this salt was used as in No. 1. The large hard lumps in which form it arrived, were pounded and reduced to a fine powder. It was then sown by hand in a similar way to the preceding, and to the same cause may be ascribed the slowness of its action, no change being perceptible until warm weather made its appearance, when its effects became nearly as striking as in the previous experiment. The plants acquired a dark healthy green colour, and were upon the whole nearly as tall and luxuriant as those treated with nitrate of soda; but here again the produce was less than expected, the weight of Straw being 264 lbs., of Corn 215 lbs., measuring 4 bushels and 3 gallons, which is at the rate of 43¾ bushels per acre. In so far, therefore, as we may judge from the result of these two experiments, it would seem as if neither the nitrate nor sulphate of soda were adapted for using on this light soil. It is perfectly true that they act in some way as a stimulant to the growing plant, as shown by the places where they have been used being invariably of a dark healthy green; but I am inclined to think their beneficial effects, if any, will be found to be very transitory, and by no means so wonderful as they have been represented.

3. *Guano.*—The conflicting statements which have appeared from time to time respecting the proper quantity which ought to be applied of this manure, and the failures that have occurred from using it too bountifully, induced me to use a much smaller proportion of it than is now recommended, but, notwithstanding this, its effects were truly remarkable; for, although only 16½ lbs. were sown dry over this allotment, which is at the rate of about 1½ cwt. per acre, it could readily be distinguished during the growing season from any other part of the field. The corn tillered well, and appeared thicker than in Nos. 1 and 2, and although somewhat shorter, it was in other respects equally strong and healthy, and of a rich deep green. It deserves to be noticed that, at the time of binding up the Corn, the workmen remarked what appeared to them to be a difference in the weight of the sheaves, compared with those in the first and second plots, which they had previously bound up, and the result showed an increase over the nitrate of soda, of no less than 81 lbs. of Straw, and 74 lbs. of Corn; the weight of the Straw being 280 lbs., of Corn, 232 lbs., equal to 5 bushels, or 50 bushels per acre. Besides this experiment, I have made several others with guano in a liquid state, on vegetables in the kitchen garden, all of which have satisfied me that this manure, when unadulterated, is one of the most powerful that can possibly be employed for gardening purposes. Its effects are visible in the course of eight or ten days after its application. For Onions, Celery, and the Cabbage tribe, it surpasses anything of the kind I ever witnessed. I had portions of each of those vegetables watered with guano, without being made aware of the particular spots so treated, and at the end of a week I had no difficulty in pointing out every one of them where the guano had been used.

4.—*Sulphate of Ammonia.*—A small quantity of this salt, prepared by gas-liquor acting on sulphuric acid, produced from the roasting of copper ore, was forwarded from Bristol to Sir Charles Lemon, for the purpose of experiment, with the following directions:—"The quantity usually applied is about 2 cwt. per acre. Upon Grass-lands or growing crops it may be sown broadcast; or, in preparing the land for seeds, harrowed lightly into the ground; or it may be mixed up in any proportion with soil or any decayed vegetable matter that may be most easily procured." In the present case the quantity used was 22½ lbs., which after being reduced and made tolerably fine, was sown by hand unmixed with any other substance. A fortnight after the application I remarked a trifling difference in the colour of the young plants, which seemed to be of a paler green from those adjoining them; but this soon wore off, and was succeeded by a fine healthy green, which they retained during the rest of the season. The Corn was about the same thickness as where the guano was used, and of an average height. The produce gave of Straw, 269 lbs.; of Corn, 232 lbs., equal to 5 bush., or 47½ bushels per acre. Between this and guano there is a difference in favour of the latter of 13 lbs. in the weight of Straw, and 20 lbs. in Corn; while the difference in the cost of sulphate of ammonia is nearly double that of guano.

5.—*Stott's Soluble Manure.*—This is a preparation somewhat resembling the last, but of what it is really

…ommercial I am unable to say. It was obtained by Sir Charles Lemon, Bart., from G. L. Stott, Esq., of Ashley-hill, near Bristol, and appeared to me, from its smell, to be some putrescent urine impregnated with ammonia, on which I suppose its value as a manure principally depends. It was directed to be used at the rate of 1 cwt. to 1000 gals. of water per acre. The quantity which I applied seems to have been rather more than the right proportion, being 12 lbs. to 120 gallons of water, which was dissolved and distributed over the ground with a large watering-pot, without producing any injurious effect; on the contrary, the return of the weight of Corn and Straw proves it to have been one of the best manures in the series, although there was certainly nothing remarkable in the growth and appearance of the Corn whilst growing, to indicate its superiority over the others. It was of an average height, and dark healthy colour, but all the plots were more or less so, and from adjoining one another formed a deep green stripe down the field, which could readily be distinguished from any elevated position where the whole could be overlooked. The only difference in those cases where the return exceeded the average crop appeared to be in the plants having tillered better, and produced a greater number of stems than usual. In this instance the weight of Straw was 288lbs.; of Corn, 257lbs., which measured 5⅛ bushels, or at the rate of 53½ bushels per acre.

Drainings from the Farm-yard.—The value of liquid manure is well known to gardeners, and there is no reason why it should not become of equal importance to farmers for using on a large scale. The trial which was made of it in this instance was highly satisfactory, and confirms the opinion I have long entertained, that more attention ought to be paid to the proper formation of dung-heaps, as well as to the making and preserving of liquid manure in tanks, &c., than is the general practice. Were this the case, I am persuaded it would be far more advantageous to the farmer, than wasting his money on foreign substances whose virtues, if any, are of a questionable character; or, at all events, not more powerful than those which may be obtained, at much less cost, from other agents within reach, if the means are only adopted to secure them. Here we have the fact of the common drainings of the farm-yard giving a return equal to that obtained from the finest manure of which we have any knowledge. The quantity used was 100 gallons, or 1000 gallons per acre, not in the strong brown coloured state it appears when running from the stables, or cattle-houses, but diluted with water until it resembled what is commonly used for gardening purposes. It is difficult to make the general reader understand this, but I should think one gallon of the dark-coloured liquid, to two gallons of water, would be near about the right proportion. The appearance of the Corn was remarkably strong and healthy. The weight of Straw was 300lbs., of Corn 256lbs., which measured 5½ bushels, or 52½ bushels per acre. If the effects of guano and some of the other manures were such as to excite surprise, I think the result of this experiment will appear no less remarkable, as it supplies us with evidence in proof of the great value of liquid manure, which in too many instances, I regret to say, is either little attended to, or wholly permitted to run to waste. In this particular, I believe it will be generally admitted, there is great room for improvement; and it is to be hoped the time is not far distant when the facts derived from these and similar experiments will be the means of causing a better system of management to be introduced. A portion of equal extent to those allotted for each experiment was set apart for comparison, and found to produce in Straw 233lbs., in Corn 200lbs., which measured 4 bushels, or at the rate of 40 bushels per acre.

The subjoined Table will more readily show the results of the several experiments:—

Table showing the result of Experiments with different Manures applied as a top-dressing to Barley, 1843.

Kind of Manure.	Quantity used on one tenth of an Acre.	Price.	Produce of one tenth of an Acre.			Cost per Acre.			Rate of Produce per Acre.		
			Straw.	Corn.	Bushels				Straw.		Corn.
	lbs.	s. d.	lbs.	lbs.		£ s. d.			cwt.	qr	lbs.	bush.
Nothing	—	—	232	200	4	—			20	3	6	40
1. Nitrate of Soda	28½	6	199	178	3½	3	0	0	17	3	3	37½
2. Sulphate of Soda	28½	5	264	215	4½	1	10	0	23	2	3	42½
3. Guano	14½	2	260	250	5	1	0	0	25	0	0	50
4. Sulph. of Ammo.	28½	5 11	269	228	4½	1	19	2	24	0	2	47½
5. Mott's Soluble Manure	12	4	266	227	4½	2	0	0	25	2	24	53½
	gals.											
6. Drainings of Farm-yards	100	—	300	236	5½	—			26	3	4	55½

—*W. B. Booth, Caroline, 25th Nov. 1843.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. IX.

PART III.

(*Continued from p. 139.*)

ON THE CHEMICAL COMPOSITION OF THE FOOD OF PLANTS, AND THE RELATION IT BEARS TO THAT OF THE PLANT ITSELF; FORMING THE BASIS OF THE THEORY AND PRACTICE OF MANURING LAND.

Under this head I also propose to discuss the best means of retaining or increasing the fertilizing properties of manures.

Plants having no power of locomotion must have the food by which their growth is supported and their waste supplied to them upon the spot where they grow. Now, in the proverb implies, *as sticks will not*, so from attempting to clear nothing can be more, as it is equally certain that the grain, leaves, straw, and roots of a stalk of Wheat, must have derived the material of which their fabric is composed either from the earth in which the roots are planted, or from the atmosphere in which the straw, leaves, and grain grow. Now, we have only to apply the same truth to different parts of which a plant is composed, and instead of saying that as a whole it derives its material from the earth or air, we prove that it must have carbon and the elements of water for its starch and sugar, an addition of nitrogen for its gluten or albumen, phosphate of lime and magnesia for the husk of its seed, and silicate of potash for its straw; and we have only further to prove that these elements must be present for one crop, and with variations or omissions are essential for another, and also that by the addition of individual elements, we can increase the quantity of individual produce, as azote for gluten, carbonaceous matter for starch, and we arrive at once at the foundation of Agricultural Chemistry, at the basis of those great principles which must ever guide the scientific farmer, in a judicious application of the food of plants. A moment's reflection too will convince any one who thinks it worth while to consider the subject at all, that the cause of failure, which we so constantly hear of in the application of manures, arises from the want of attention to these principles.

Let us take an example:—A farmer is anxious to try a certain manure—we will say nitrate of soda or potash; he applies it to his land according to the prescribed rules of so much per acre.

Now the nitrate acts as a manure principally, if not entirely, by supplying the alkali, soda, or potash to the soil. The Cerealia, Wheat, Barley, &c., exhaust the soil of alkali, because a union of it with silicic acid (which is formed of silicon and oxygen) is necessary for the stiffness of the stalk; and this I may observe, *en passant*, is the cause of the green, rank appearance of the corn crops to which the nitrates are applied.

But it may happen, and does frequently happen, that there is no deficiency of alkali in the soil, or that if it did exist, it has been supplied by the usual rotation of crops. Now in such a case it is obvious that the experiment must fail. Another farmer applies it where the alkali is deficient, and it succeeds; hence the discordance in experiments, of which we hear so much.

I will take a second example:—A crop of Turnips or Mangold Wurtzel, or Potatoes, is manured in part with guano and azotised manure, and with good rotten stable manure in part, and the crop from the last-named is the best. Another crop of Wheat, Barley, or Beans, shall be manured in a similar way, and that from the guano succeeds best. Now in these cases the results are strictly in accordance with chemical fact; and yet the experimenter who fails on the Turnip crop, rejects the guano as a useless increase of expenditure in his future operations. There is another source of apparent failure and consequent disappointment in the use of artificial manures, which cannot be too strongly dwelt upon: I mean the fallacy of trusting to appearances in judging of the effect of manures. If Wheat is manured with rotten stable manure and guano, or urine, the plant from the stable manure will have the freshest, greenest, and strongest appearance; but notwithstanding this, the grain from the guano or urine will be the best sample—its quality and quantity will both be superior to that in the other experiment.

Experiment—sound co-operative experiment—as Professor Henslow has so frequently urged, is the means by which these principles can be proved true or false; but no good results will ever be obtained by putting a bushel of this or that manure at random upon the first crop that comes to hand, and judging of the result from mere appearances; on the contrary, much mischief may arise, and a certain retardation of the application of one of the most interesting and important of the sciences to Agriculture. Mr. Pusey was, to a certain extent, right, when he stated that the experiment of the Duke of Richmond was the first real contribution of Chemistry to Agriculture. But this was not the fault of the science, but of those who have undertaken experiments. An experiment, as Liebig has observed, is the expression of a thought; and whether this thought is that of the chemist or the farmer, it is quite impossible to prove its soundness, unless the minutest details are attended to. Professor Henslow's schedule is an example of what ought to be done in Agricultural experiments; and even this will be improved when farmers get into the habit of making themselves acquainted with the true nature of their soils.—*C. R. Bree, Stowmarket.*

(*To be continued.*)

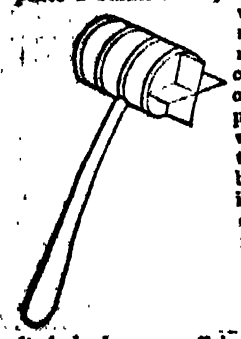
Home Correspondence.

Value of Green Crops.—In your last Paper it appears that Mr. Smith, of Deanstone, estimated at Bristol the value of 200 acres of Oat-straw at from 300*l.* to 400*l.* I cannot make out which sum, as the price per quarter of the Oats is not given. He estimated 100 acres of Green Crop, one-third Potatoes and two-thirds Turnips, at 1200*l.*; 100 acres of Hay at 625*l.*, and 100 acres of Old Field as pasture at 200*l.* Mr. Morton, too, in his Book on Soils has estimated that on the Whitfield Farm, consisting of 240 acres, farmed on the alternate system of green crop and white crop, he may fairly expect to make 922*l.* 5*s* 6*d.* of corn crops, and 990*l.* a-year from stock. I deny altogether that any such returns can be made from stock, and I call upon Mr. Smith to say whether he, from a farm of 600 acres, has ever realised from cattle, sheep, and pigs, any sum approaching 2424*l.*; and I call on Mr. Morton to say what actual yearly amount he has ever realised from stock on the Whitfield Farm. I have visited the Whitfield Farm twice; I was delighted with Mr. Morton's crops, both green and white Straw. His Corn crops have, I dare say, far exceeded his estimate of their amount. I have the greatest respect for Mr. Morton as a scientific man, and I feel the greatest respect for Mr. Smith, from his having introduced a system of deep draining and deep ploughing, of the advantages of which I have had practical experience; but I think they are both misleading people in putting forth the statements they have done as to the profit to be derived from stock, and I call upon them publicly to rectify their errors, or to give proof that they themselves have made their estimated profit. I farm on the alternate system of green crop and white straw crop; but with a flock of sheep, and with cattle fed in the yards on Straw and Turnips, I cannot make one-half the amount put forth by these gentlemen as the value of green crops; and I believe that for some years past, the Norfolk farmers have barely got paid for the Corn, Hay, and Oil-cake their oxen and sheep have eaten. With beef and mutton at their present prices they do not get one-half the amount put forth by Mr. Smith as the value of a Turnip-crop.—*A Subscriber.* [Did a Subscriber notice that among the expenses was that of dung for green crops—*bought*—put at 10*l.* per acre. The 12*l.*, the value of green crop per acre, is obtained by selling not only the beef or mutton made, but the dung produced also. Of course Mr. Smith did not mean that the dung should be sold or bought, either; but he estimates the total value of all sorts of produce on the one side, as well as the total amount of all expenses on the other.]

Agricultural Improvements.—As agricultural improvement is the order of the day, allow me to mention an extreme case—the expenditure of 5200*l.* on a farm of mine (Tipton Hall, near Kelvedon, Essex), that only cost 3250*l.* In due course, when the results are accurately ascertained, I shall deem it my duty to submit statistical details and drawings of the buildings to every Agricultural Society in the kingdom, in the hope it may give confidence to those who, having the means to improve their property, are doubtful as to such improvements paying a remunerating profit to both landlord and tenant. The expenditure above mentioned has been appropriated to—1st. The perfect and permanent drainage of the land with stones and pipes, 4 yards apart, and 32 inches deep—between 80 and 90 miles of drains. 2d. To the entire removal of all timber trees, which cannot be profitably grown in Corn fields. 3d. To the removing all old, crooked, and unnecessary banks, fences, and ditches. 4th. The cutting new parallel ditches and fences, so as to avoid short lands. 5th. The inclosure of waste, and conversion of useless bog into good soil. 6th. The economising time and distance by new roads, arches, and more direct communications with the extremities of the farm. 7th. The erection of well-arranged farm-buildings built of brick, iron, and slate in a continuous range, excluding all cold winds and currents of air, but open to sunny warmth. 8th. The building a substantial and genteel residence, with all due requisites for domestic comfort and economy. 9th. The erection of an efficient threshing machine, and needful apparatus for shaking the straw, dressing the Corn, cutting chaff, bruising Oats, &c., so constructed as not to injure the straw; avoiding, by its perfect action, that immense waste of grain visible in almost every truss of straw we examine. 10th. The avoidance of thatching and risk of weather, by ample barn room, with convenience for in-door horse labour at thrashing, &c., when not employable without, so as to have no idle days for man or beast. 11th. The saving of every lb. and pint of manure by a tank, (90 feet long, 6 feet deep, 8 feet wide, with slated roof facing the north, and with well and pump,) into which is received the whole drainage from the farm yard and stables. 12th. The conveyance by iron gutters and pipes of every drop of water from the roofs of each building, so as in no manner to dilute the manure in yards. 13th. The perfect drainage of the foundations of the barn, and every building on the farm. 14th. A steam-house to prepare food for cattle. I am thus particular in detail, because it is from each of the above branches of expenditure that some portion of remuneration is expected. But, during the progress of my undertaking I have been warned, entreated, and dissuaded by my farming friends, who protested that a profitable return for such an enormous expenditure was impossible; my calculations, however, were made, and mere assertions without facts and figures weighed nothing with me. Although the operations were only commenced early in 1843, the results, so far as they go, are gratifying and convincing. As one instance of success, a field of Oats sown on the 16th of May, after drainage, was harvested and stacked before another (sown two months earlier on better but undrained land) was ready to cut. Hereafter you shall have detailed statistics of every department in which saving is effected and increase produced. In a moral and social point of view, these improvements have acted beneficially. They have excited the energies of the tenant and his labourers, stimulating them to think, compare, and improve. They have awakened the attention and curiosity of the neighbouring farmers, who are watching the result, and already have they caused many undertakings in drainage, which otherwise would not have been thought of. Had I invested my money in the funds, there would have been an end of the matter; but now I have the satisfaction of having fulfilled a public duty (without injury to myself) by calling into action, temporarily and permanently, a considerable amount of labour. I conceive *that* the highest order of charity which, by providing employment to the willing labourer, confers a favour unseen, and leaves uncompromised (his most valuable privilege) his self-dependence. If every one who has the means follows my example, where requisite, there will be little need to complain of

the want of employment for our peasantry or our capital. —*J. J. Machi, 4, Leadenhall-street, London.*

On Gorse.—I can bear testimony to the merits of furze as a food for horses, as referred to by "J. Trimmer" in your Paper of the 3d, having seen it universally used in Wales by farmers; their horses are in the most excellent condition, fed on Gorse alone, and have coats as fine as carriage horses. It may be useful to those who may think it well to try the experiment, to describe the mode of preparing it; and to this end I send you a *list* of the tools used. With these the carter is expected to cut, chop, and entirely keep his two or three horses himself. They are a pair of strong gloves, a reaping-hook (or grass-hook not toothed), a chopping-block, like that of a butcher, with a raised rim of iron round the edge, and a chopper, or bruiser, of which I send you the figure. On every farm a portion of land is left for the growth of Gorse; the last year's shoots only are taken. The cattle take this food in preference to any other, except Oats. I used to buy it chopped, at the rate of three-halfpence a bushel for my riding and carriage horses, by which I gave employment to many an idle boy. On commons the poor might keep their cows during winter in capital condition by the use of this plant. In some places in Wales, where there is a water-power, they have little simple mills for bruising the Gorse; the crushing apparatus being two wooden cylinders, with iron studs of 3 inches by 1 inch square, which, in the revolutions of the cylinders intersect each other. The Gorse, being laid on the block, is chopped or pounded until it is broken up sufficiently. The head of the chopper is a cylinder of oak, of 10 inches long, and 7 inches diameter; the knives are 4 inches deep (or high) above the surface. This Gorse feeding is a matter of much more importance than may be imagined.—*Woodman.*





Pig-Feeding.—In fattening pigs I have always found a mixture of Barley and Pease-meal, moistened with milk in the best; the pigs must be rung to make them lie quiet; the sty must be warm and airy, and the sun not suffered to scorch their backs, as thin skinned white pigs are blistered by it, which not only renders them of an unsightly appearance, but retards their thriving; neither can they bear exposure to cold winds, or cold rain, or sleet, or snow, they must be kept out of all these. This is not sufficiently attended to; on many farms you see them lying in heaps shivering with the cold; in such cases thriving is out of the question; and, on the other hand, I have seen them crammed to the height of four feet with a low ceiling above them, leaving a space of a foot and a half for a current of air; in this case they looked very delicate and sickly, like consumptive subjects, and never arrived at any size or weight for their age; their constitution was undermined by being kept constantly in a pestilential atmosphere; whereas, had the door been an open-barred door, a current of fresh air would incessantly have set in and purified the place, and given the animals a vigorous habit and a doubly increased size. These extremes should be carefully avoided, and in addition too much cleanliness cannot be observed, for nothing tends more to their well-doing than dry-feet, a dry bed, and sweet air. They wallow in mud it is true in the summer, to get a coat to shield them from the sun and flies; but that only proves that they require protection from excessive heat and the teazing of flies, and all who wish their pigs to thrive will provide shelter. My pigs are never allowed to run about, as no food they can get by prowling about will compensate for the loss of flesh sustained by the continual state of motion. In a farm it may be very well to have some running about to pick up dropped offal, but where the pigs are regularly fed with a sufficient supply, it is a thriftless plan to waste by exercise the flesh that by a state of rest would make a good return for the food consumed and the expense of attendance.—*J. Steele.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House, in Hanover Square, on Wednesday, the 6th of March; present, the Right Hon. Earl Spencer, President, in the chair, Lord Worsley, Lord Portman, Colonel Austen, Thomas Raymond Barker, Esq., Samuel Bennett, Esq., G. T. Bonanquet, Esq., Thomas William Bramston, Esq., M.P., W. R. Browne, Esq., F. Burke, Esq., Colonel Challoner, F. C. Cherry, Esq., Henry Colman, Esq., J. C. Compton, Esq., M.P., P. Davies Cooke, Esq., Ralph Etwall, Esq., M.P., A. E. Fuller, Esq., M.P., Humphrey Gibbs, Esq., Brandreth Gibbs, Esq., Stephen Grantham, Esq., W. Goodenough Hayter, Esq., M.P., W. Fisher Hobbs, Esq., John Hudson, Esq., W. H. Hyett, Esq., Sir John V. B. Johnstone, Bart. M.P., Rev. Charles Edmund Keene, George Kimberley, Esq., John Kinder, Esq., Bickham King, Esq., Sir Charles Lemon, Bart. M.P., William Miles, Esq., M.P., Philip Pusey, Esq., M.P., Francis Pym, Esq., Professor Sewell, William Shaw, Esq., John Villiers Shelley, Esq., Edward Solly, jun. Esq., Professor Spooner, W. R. Crompton Stansfield, Esq., M.P., Charles Hampden Turner, Esq., and George Willbraham, Esq., M.P. The following gentlemen were elected Members of the Society:—

Buckling, Rev. R., Dantsbourn Abbots, Cirencester, Glouc.
Spooner, William C., V.S., Southampton.
Wharton, John Thomas, Skelton Castle, Guisborough, Yorkshire.
Wade, Rev. Albany, Elton Rectory, Stockton-on Tees, Durham.
Garland, Joseph, Woolgrot, Wareham, Dorset.
Berwick, Rt. Hon. and Rev. Lord, Cleveland Row, St. James's.
Thompson, George, Jun., Prestwood, Stourbridge, Worc.
Rous, T. B., Court-y-Rala, Cardiff, Glamorganshire.
Townshend, Lee Porchar, Wineham, Northwich, Cheshire.
Symonds, John, Broad Windsor, Beaminster, Dorset.
Samson, Thomas, Kingston-Russell, Dorchester, Dorset.
Valzey, Joseph, Whitcombe, Dorchester, Dorset.
Homer, John, Martinstown, Dorchester, Dorset.
Long, Francis Stephen, Bulford, Amesbury, Wilts.
Cantrell, Charles Seward, Jun., Old Windsor, Berks.
Loader, Caleb, Gomeldon, Salisbury.
Nockolds, I. A., Stanstead, Essex.
Havers, William, Bacon's Farm, Mountnessing, Ingatestone, Essex.
Foakes, Charles L., Ramsden-Bell-House, Billericay, Essex.

The names of twelve Candidates for election at the next meeting were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the Report of the receipts and expenditure of the Society during the previous month, and of the several cases of defaulters whose subscriptions were in arrear. The Council having confirmed the preceding part of this report, proceeded to take the concluding portion into mature deliberation, and at length agreed unanimously to the following Resolution:—

"That a professional person shall be appointed to write letters demanding arrears of subscription to all such parties as shall be designated from time to time by the Finance Committee; and in the case of such applications not being successful, to take further legal steps for enforcing the payments due."

Southampton Meeting.—Mr. Miles having reported to the Council his communications with Colonel Henderson, Mayor of Southampton, in reference to the notice of motion given by Mr. Shelley, at the previous Council, of which he (Mr. Miles) had been the chairman, Mr. Shelley proceeded to state the grounds on which he had given such notice of his intention to submit to that meeting a motion for the re-consideration of the place at which the Country Meeting of the present year should be held. He detailed at considerable length the whole succession of proceedings which had taken place in reference to the arrangements which had been attempted to be made in the definitive settlement of the various points connected with the business of the Meeting, a practical difficulty having been started on almost every question regarded by the Society as finally [illegible] duly, as one of the Stewards appointed by the Council, to lay before them at their present Meeting, the whole state of the case, in reference to the points on which such difficulties had been raised. Having done that, he was happy to find that a deputation of the Authorities of Southampton was then in attendance, and prepared, in their interview with the Council, to submit such terms for their acceptance as would render the further proceedings in the arrangements for the Southampton Meeting both satisfactory and secure. Communications from his Grace the Duke of Richmond, Mr. Mayes, the chairman, and Mr. Trew, the treasurer of the committee of the town and neighbourhood of Southampton; Mr. Bulpett, late Mayor of Winchester, and Mr. Burn, high-constable of Brighton, having been laid before the Council, the following deputation from Southampton were received, namely:—

Col. Henderson, Mayor of Southampton.
Edward Mayes, Esq., late Mayor and Chairman of the Local Committee.
Geo. W. Johnson, Esq., Hon. Sec.
Thomas Trew, Esq., Treasurer.
W. C. Spooner, Esq., and
John T. Ekless, Members.
} of the Local Committee.

The deputation having been received with every mark of respect by the President and Members present, proceeded to express the regret they felt in common with the inhabitants of Southampton and its neighbourhood, that any difficulty should have arisen in the practical details connected with the arrangements for the ensuing meeting in that locality. The Mayor could assure the Council that the occasion of that meeting was the subject of the most lively interest to every person within that district, and the mere apprehension of a removal of the meeting to another place would occasion not only severe disappointment but considerable loss both to individuals and the railway and other companies, all of whom, in anticipation of the occasion, had gone to considerable outlay in providing accommodation of every kind for the numerous visitors expected to be present. The deputation, in conclusion, submitted to the Council the choice of various propositions which they were authorised to offer for their acceptance. The deputation having retired, the Council proceeded to discuss in detail the subject of the propositions then brought before them; and on the return of the deputation to the Council-room, the following stipulations were unanimously agreed to by all the parties present, viz.:—

1.—The Council accepts the 1000*l.* paid into the hands of Messrs. Drummond by the Southampton Committee, for the use of the Royal Agricultural Society of England.

2.—The Southampton Committee are to provide and prepare in a satisfactory manner, from the three sites offered, such sites as shall be determined upon by the Council for the show-yard and pavilion, free of all expense.

3.—The Southampton Committee shall guarantee the use of the Victoria Rooms and grounds; the Guildhall and its house, and other rooms; the registration of lodgings; the lands already selected for the trial of implements and experiments—free of all expense.

4.—The Directors and Directors shall proceed to-morrow to Southampton, to select the different sites, and report the same to a special council on Thursday, the 14th of March, for confirmation.

The Mayor expressed to the Council the satisfaction he felt in this final decision respecting the place of the meeting, and the stipulations then agreed to, the communication of which, on his return to Southampton, would, he knew, occasion the most lively gratification throughout every class of the inhabitants, who were fully prepared in every way to greet the Society at its ensuing meeting in the most cordial manner. The deputation having withdrawn, the Council proceeded to receive from Colonel Challoner, the vice-chairman of the General Southampton Committee (in London), the Report of their proceedings during the preceding month. The following programme, prepared by the Committee, was approved and adopted by the Council.

Programme of the Arrangements of the Society's Show at Southampton.

Thursday, July 18.—Last day of receiving Implements, Wheat, Barley, Seeds, &c. to be exhibited in the Implement-yard, and arranged by the Stewards for the Judge's inspection.

Tuesday, July 23.—The Implement-yard open to the public from eight in the morning till six in the evening, at 2*s.* 6*d.* each person. The public exhibition of the working of the Implements to take place at Mr. C. Gaters', Swathling Farm, at twelve o'clock. Cattle received in the Show-yard from eight in the morning till four in the afternoon.

Wednesday, July 24.—The Judges inspect the Stock, and award the Prizes. The Implement-yard open to the public from eight in the morning till six in the evening. Admission, 2*s.* 6*d.* Council Dinner in the Victoria Archery Rooms, at Five o'Clock; when the Judges' award of prizes (with the exception of those for Horses), will be read. Doors open at four.

Thursday, July 25.—The cattle and implement-yards open to the public from six in the morning till one o'clock in the afternoon, admission 2*s.* 6*d.*; and from one, till six in the evening at 1*s.* Dinner of the Society in the Great Pavilion at Four o'Clock. Doors open at Three.

Friday, July 26.—Cattle-yard open at seven; sale to begin at Nine for Ten o'Clock precisely.

Stewards of Departments.—*Cattle*, Hon. Capt. Spencer, Mr. Druce, Mr. H. Gibbs; *Implements*, Mr. Miles, Mr. Shelley; *Finance*, Colonel Austen; *Sale of Tickets*, Mr. Wilson; *Receipts and Admission to Show-yards*, Mr. Barker; *Pavilion and Council Dinners*, Col. Challoner; *Ladies' Gallery*, Mr. Etwall; *General Arrangement of Show*, Mr. B. Gibbs.

By order of the Council, Jas. Hudson, Sec.
London, March 6, 1844.

By the 15th Regulation of the Society, all persons admitted into the Show-yard shall be subject to the Rules, Orders, and Regulations of the Council.

N.B.—Sale of Tickets for the Pavilion Dinner to Members of the Society at the Pavilion from Nine until Four o'Clock on Wednesday, the 24th of July, and from Eight until Three o'Clock on Thursday, the 25th of July—Price 10*s.* *each!*

Implement Regulations.—Mr. Shelley, as Chairman of the Committee for taking into consideration the best mode of arranging and adapting for immediate publication the Regulations for Implements at the Southampton Meeting, proposed by Mr. Miles and Mr. Gibbs, reported to the Council the resulting schedule of regulations, unanimously agreed to by the committee. The Council adopted this report, and ordered a copy of the regulations to be sent by post to each exhibitor of implements at the Bristol and Derby Meetings.

Annual Country Meetings.—The Council resolved, on the motion of Mr. Miles, that in future all replies to queries on the subject of the capabilities afforded by any particular locality for holding the Annual Country Meeting of the Society, and required by the order of Council in December 1841, prior to the selection of any town for such place of meeting; and all applications made to the Council in favour of particular towns within the district of any particular year, shall be laid before the Council by the first Wednesday in April of the year preceding that in which the meeting is to be held, in order that the Council may be enabled to ascertain by personal reports the actual facilities and capabilities of such proposed locality before their final selection, agreeably with the bye-laws, on the first Wednesday in the May ensuing.

Mr. Miles also gave notice that he should move at the next monthly Council: "That in future the place of holding the annual country meeting shall not be decided upon until a Committee (of whom at least three shall have acted as Directors or Stewards of the yard) shall have visited and inspected the several towns and their localities, and have reported upon their respective fitness for the purposes of the Society."

Prize Essays.—The Sixty-five Essays reported by the Secretary as received by the 1st of March, in competition for the Prizes offered for the present year, were referred by the Council to the Journal Committee.

Farm-yard Manure.—Mr. Pusey, as Chairman of the Journal Committee, has reported the adjudication of the Society's Prize of 15 Sovereigns, for the best Essay on the Mode of Management and Application of Farm-yard Manure, to Mr. John Clarke, of Long Sutton, Lincolnshire.

Communications were received with thanks from Mr. Colman, Mr. Isaac Clapp, Mr. Denison, M.P., Mr. Purchas, and Mr. Falconer.

The Council then adjourned to Wednesday next.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the meeting of the Council on the 29th ult. the Secretary stated that he had addressed a circular letter to the foremost of the different grand juries in the province of Leinster, requesting them to originate a local subscription in their different localities, for the purpose of defraying the expenses of the next great Cattle-show of the Society, in Dublin, in August, similar to the funds which were raised in the provinces of Ulster and Munster for the same purpose. His Grace the Duke of Leinster had intimated his intention of contributing 200*l.* upon the occasion, and other large proprietors had communicated their intentions of contributing liberally also. Replies were received from 40 local societies, complying with the terms of the resolution for qualifying them for the central society's premiums this year. It was expected that almost all the existing local societies, now amounting to 100, would be enabled to qualify before the 1st of May next. The committee, upon the reports on thorough draining, for the Society's gold medal, reported that they had selected the four first competitors in point of quantity, pursuant to the terms of the original article, namely, Lords Dufferin and Claneboy, Ballyleidy, 154 acres—John Andrews, Esq., Comber, 129 acres—Sir Richard A. O'Donnell, Bart., Newport, Co. Mayo, 127 acres, and the Earl of Courtown, Co. Wexford, 104 acres; and, as all these lots professed to be equally well executed, and strictly according to Mr. Smith of Deanston's principles, it was resolved to apply to that gentleman himself, to know whether he could conveniently undertake the personal inspection of these four different places, in order to ascertain whether, in his judgment, they had complied with the terms of the original resolution, and the secretary was directed to communicate with Mr. Smith for the purpose. The reports of the different competitors were most elaborate, and carefully prepared, and, it was thought, would form a foundation for a most valuable volume of the Society's Transactions for the present year. The secretary laid the balance-sheet of the receipts and expenditure of the Society, for the year 1843, on the table, as prepared by Mr. Corlett, the accountant appointed for the purpose, which was ordered to be referred to the finance committee, previous to the next half-yearly meeting of the Society, which was fixed to take place on Friday the 19th of April.

FARMERS' CLUB.

Chepstow, Feb. 26th, 1844.—The subject for the evening's discussion,—*the best manner of cultivating Sainfoin, and the land best adapted to its production*,—was introduced by Mr. C. Blunt, who said, "I consider that a great deal of the stony, hilly land in this neighbourhood ought to be cultivated with Sainfoin; I know from experience that it would pay better under that crop than any of our meadow land. To grow it successfully a dry soil is indispensable, and with that proviso it will flourish on most soils. I do not know if thorough draining will sufficiently alter the nature of Clay so as to adapt it to the growth of Sainfoin, but I think such land could never be made so congenial to the habits of this plant as the other descriptions of soil. The first step in the cultivation of Sainfoin is thoroughly to clean the land intended to be sown. The best manner of putting in the seed is with a spring crop of corn, neither too early nor too late; because I have found the young plant, just as it comes out of the ground, is too tender to bear frost; and if late, and dry weather should set in, the seed is very apt only to vegetate partially. I think it may be sown any time from the beginning of March to the middle of April. The best way of putting the seed in the ground is to drill it 6 inches wide, because when sown broadcast it is difficult to cover. I should recommend 4 bushels per acre to be drilled, and 5 bushels to be sown broadcast; and I think it better not to sow any clover or grass seeds with the Sainfoin. The crop should be allowed to stand for seed the first year, and not be cut too low. I am of opinion there cannot be a more useful grass. It is invaluable for lambs in the fall of the year, but should never be grazed in the winter or spring. It not only prevents the lambs from scouring, but I have often cured some of this complaint by putting them on the Sainfoin. It is very early at harvest, and very easily made into hay, in good weather only requiring to be turned once; and it should not be shaken more than can be avoided. It should be cut for hay when in full blossom, at which time the flowers are red, and as soon as they turn blue the hay is fit to carry. It is not liable to heat in the stack. It will last many years mowed every year, without manure, and when broken up will leave the land in much better condition for Corn than when laid down. I recommend none but new seed to be sown; the husks of old seed become so tough as to prevent it from vegetating. I consider the crop to be in its prime about the fifth year, though it will last as good for several years. I have grown about 25 bushels of seed to the acre, and have found the straw excellent to cut for horses after threshing out the seed, and sheep will eat it much better than clover, owing to the stems of the Sainfoin being sweet and the clover bitter."—Mr. R. Phillpotts recommended yellow Trefoil to be sown with the Sainfoin, because it insured a crop the first year and then died off without injury to the latter. Another member said he once sowed red Clover with Sainfoin, and had a good crop of the former the first year, but the latter never came to anything, which he attributed to being injured by the clover.—Mr. C. Townsend said he had sown the worst piece of land on his farm with Sainfoin, and had cut three waggon loads of hay per acre every year since. Mr. Blunt added in conclusion, that Sainfoin would do very well on stony land if the roots could get between the stones; but if the soil were very thin, on a flat rock, it would be likely to burn up in the summer.—*A. Hall, Sec.*

Macclesfield.—At the late annual meeting of this Club, Mr. Carbuck delivered a lecture on Organic Chemistry in its relations to Breeding and Feeding. He detailed and illustrated at considerable length Liebig's views on this subject. In the conversation which ensued at the close of the lecture, he stated his belief that there are perhaps as many good horses now as there were 50 years ago; but the number of bad ones had greatly increased. M'Culloch had stated there were 1½ million of horses in Great Britain; and he believed he should not be far wrong in affirming that two out of every ten were not worth the food they consumed. He believed also that 8 good horses would do more work than 10 bad ones. (A member called out, "More than 20.") If by an improved system of breeding, and the introduction of better horses, they could get rid of only one horse out of 10, there would be a saving to the country, in the rearing only, of more than 2,000,000*l.* a year, reckoning the cost at 5*l.*, a year; and an equal amount would be saved annually after the rearing to 3 years old, supposing the cost of keeping the horse to be 15*l.* per annum. In reply to Mr. Prater's observations, Mr. Karkeek gave it as his opinion that a two-years old filly was too young to breed from. Her powers were not properly matured. He thought they ought not to breed from a mare under three years old. With reference to the Yorkshire horses he said, that at the last meeting at Doncaster of the Breeding Society, they boasted of their having the best sheep and cattle in the world, but actually acknowledged that their breed of horses had deteriorated very considerably within the last few years.

Probus.—At the last meeting of this Club, in consequence of the absence of the member whose place it was to introduce a subject for discussion, the attention of the Club was directed to some experiments reported in this Paper by Dr. Lyon Playfair (see page 59) which had been lately instituted on "Whitfield Example Farm," by Lord Dunie, on the feeding of sheep in sheds. Mr. Doble, of Bartelver, stated his intention to test the accuracy of this experiment on his farm, and sheds will soon be erected for the purpose. There cannot be a doubt that the exposure to the cold winds abstracts the heat rapidly from the bodies of animals, and consequently a much larger supply of food is requisite to support the proper temperature, which excess of food, as Professor Playfair has plainly shown, is entirely lost to the farmer and the country at large.

Reviews.

Treatise on Alkali as a Manure, showing its Cheapness and Efficiency for increasing the Productiveness of the Soil. Dedicated by permission to the Right Hon. the Earl Spencer. By Hugh Waterton, Esq. G. Philip, South Castle-street, Dublin.

This pamphlet contains some useful ideas on the subject of manures, which we do not remember ever before to have met with. We do not allude at present to what the author states of the action of common salt on the ammonia arising from dung-heaps. He is wrong in some of his chemical statements. Ammonia is *not* a compound of hydrogen, nitrogen, and carbonic acid. This is the composition of its carbonate. And with regard to the alleged action of salt on this substance, to which a prominent place is given in this pamphlet, as we hope shortly to adduce evidence of high chemical authority upon the subject, at present we leave it. Neither do we speak of the importance which the author attaches to the alkaline bases of most of the artificial manures, to the comparative exclusion of their nitrogenous ingredients, except only when occurring as ammonia or its salts. In this we believe he is wrong—the nitrogen contained in nitrates of soda and potash contributes to the value of these manures, more or less than the alkalies united with it, according to the condition of the land to which they are applied. The relative value of the different portions of any food, whether given to plant or to animal, is not fixed, but depends upon the wants of the plant or animal, and on the nature and quantity of the food already supplied to them. But we refer to remarks made towards the close of the pamphlet, upon the economical application of manures. We all acknowledge, in the case of the tradesman, that it is his interest to turn his money over as often as possible during any given period; and though this truth is equally applicable to the farmer, yet in practice he seems to deny its applicability.

"It is a common observation amongst farmers to say, 'I have given such a field a dressing it will not forget for years.' Upon reflection it must strike any one that this is a most improvident mode of proceeding."

It is so for two reasons: 1st, because as the author immediately states, the manure, if not all absorbed by the crop to which it is applied, is liable to waste during periods when the land is not under crop; and 2nd, because that portion remaining in the soil after the first crop is so much capital lying useless till the second and third or fourth crop, before which it is not all consumed. Hear Mr. Waterton:—

"The practice of using strong and lasting manures, as they are termed, has generally been most approved; and the artificial or highly concentrated substances, which have lately been introduced, have failed to give satisfaction to the Agriculturist, from their evanescent nature, and from the supposition that they exhaust the soil. The small cost of these substances is overlooked, and, because they act but for one year, they are turned aside as new-fangled things, fit only for the experimental farmer. If is the general usage to put bones upon land in such large quantities, that they are, from the great expense thus incurred, out of the reach of the majority of our farmers, and landlords are often compelled to advance the requisite capital. If another mode of applying the bones were adopted, this would not be necessary, and the gain to the farmer would be considerably greater than it is at present. Ten or fifteen per cent. is generally given by tenants for the advance of capital to buy bone waste, and the virtue of the bones is said to last fourteen or fifteen years. Now it is quite certain that if the land derives benefit in the fifteenth year after the bones have been used, it must be that some of them have remained all that time undecomposed, and, consequently, fourteen years must have elapsed without any good result, except from the portion that has annually been absorbed by plants. If 100*l.* is laid out in bones, and fifteen acres of grass are top-dressed with them, and their effects are visible for fifteen years, the first return of profit can only result from that portion of the bones that has become immediately decomposed, and entered into the composition of the plants; and suppose that portion to be one-fifteenth part of the bones, then 6*l.* 13*s.* 4*d.*, or one fifteenth of the capital borrowed, enables the farmer to pay the interest agreed upon; the remaining fourteen parts having to wait each succeeding year till the whole quantity has been decomposed. Now if the 100*l.* worth of bones were so prepared as to come into operation all at the same time, 225 acres, or fifteen times the usual quantity, could be top-dressed, and the return for the capital would be 223*l.* However exaggerated this statement may at first appear, nevertheless it is perfectly true, and must be the consequence of employing substances that require years to convert them into food for plants. So sensible are the Dutch and Belgians of the advantage of supplying their land annually with manure ready for immediate use, that they take great pains to prepare every substance that can be used with advantage, in such a manner as to be made available by the crop intended to be sown; and where circumstances will allow them, they supply the plants themselves rather than the soil."

These are very useful remarks, and ought to be influential. We certainly should not like our land to be *wholly* dependent, for the crop it bears any year, upon the manuring we had given it that year. There must always on well cultivated farms be *a certain amount of capital* invested in cultivation, which lies dormant from year to year—which the farmer in part invested when paying his predecessor for the cultivation in the land, as it is termed, and which he expects to receive again only when he gives his farm into the hands of his successor. But there is no necessity for his investing, besides this necessary sum, an annual amount in the purchase of manures, applied in such form and quantity that the profits resulting from them shall not be fully obtained till 10 or 15 years have run their course. He has already invested a considerable sum, which is now lying idle; he surely is not anxious to add to that sum, and allow the increase to lie as long dormant as that to which it is added.

With regard to this work generally, the one prominent idea which runs throughout it, is the alleged action of common salt on the carbonate of ammonia, erroneously called "ammonia" by the author. On the subject of this action he ought to have adduced specific evidence, as he must have known that it is disputed. It was too much to suppose that farmers would wholly change their present mode of managing manures upon a statement (whether of a fact or not we do not now stop to inquire) brought forward unsupported by evidence of any kind.

Miscellaneous.

Application of Liquid Manure.—Put it into a large barrel, and sprinkle it upon the thinnest or shallowest parts of the field lying nearest to the steading, in a way similar to the plan adopted in watering the streets in large towns. The way in which I have myself applied it is as follows:—I annually carted from a moss lying on the side of the river Tweed, from 150 to 200 square yards of the moss. This I lay down in a long heap wherever most convenient, along each side of which I place lime, amounting from 60 to 80 bolls. I then mince the moss and mix it up with the lime; in that state it is allowed to lie for nearly twelve months, after which I put it into the artificial pit formerly mentioned, where it remains for about another twelve months, or until it is required for manure to the Turnip crop. During this period, the urine, which the manure cannot absorb, escapes by the covered drain, and is spread over the mass in the pit by means of wooden conductors, or small drains cut on the surface, changing them as circumstances may require, until the whole mass is thoroughly saturated. I shut up the drain of communication in the month of April, when I again turn over the moss in the pit, which has a tendency to pulverise and reduce it. For some years past the moss has been nearly exhausted, and as a substitute for it, I have been in the habit of lifting the soil from the foot ridges, these, from the constant carting on them, being of little value. The only difference of preparation is, that the earth may at once be carted to the pit, and there mixed with lime, whereas it is absolutely necessary, in the case of the moss, that its antiseptic qualities should be counteracted before being subjected to the urine, as I have found from experience, unless that is done, it neither decomposes nor absorbs one-third of the urine in the same time. Where good moss can be procured, I would give it the preference, from the facility with which it is dug out; besides, in its natural state, it is much lighter, and altogether free from stones. I also find that moss, when prepared as above, absorbs more urine in a given space than earth can. This process I repeated every year previous to the introduction of bone manure, but since then, from the great weight of the compost, I never apply it, save to the knolls or light-

land lying in the vicinity of the steading, using bones on the more distant parts, so that, generally speaking, I only empty the pit every alternate year. The mode I apply it on the steep land, is to lay it down in heaps with as much regularity as the nature of the ground will permit, then commence spreading it on the surface in the same direction I intend running the drills. The plough follows closely after the spreaders, collecting the compost into the centre of the drills by going once round them. Its application on level land is the same as other farm manures. Having accidentally mentioned bone manure, I beg to state the following as bearing upon this subject, and which was communicated to me by a farmer in this district. Last season he applied urine to his bone-dust in such quantities as not to prevent, but encourage, fermentation. In the course of three or four days he turned over the bones again, saturating them with urine. In this state they were put into the drills; the result of which was, that the bones thus prepared produced a much heavier crop of Turnips than where the same quantity was applied to land of the same quality, and sown at the same time without any preparation, so much so, that it was apparent to the most casual observer. Whether this was to be attributed entirely to the effects of the urine, or other causes combined, I shall not presume to say.—*Mr. Alexander, Easter Haprew, Peebles.*

A new Insurance Company.—A meeting was lately held for the purpose of forming a mutual insurance company, to be called "the Vale of Aylesbury Association to protect the Property of the Members from the now prevailing Distemper, the *Pleura Pneumonia*," which in the last season has become very general amongst cattle. Some graziers in the neighbourhood have suffered to an alarming extent. The society is based upon the one formed at Sudbury, and has, with a few alterations, adopted their rules. The meeting, which was numerously attended, was presided over by Mr. J. K. Fowler. A secretary was appointed at a salary of 15*l.* per annum, and the society may now be said to be in operation. The subscriptions are in accordance with the number of cattle entered by each member, which are insured by a payment of 1*s.* per head per annum, to be paid in half-yearly payments to the treasurer, Mr. Wing.—*Aylesbury News.*

Prevention of Potato Failure.—My seed-Potatoes last year (1842) were raised before they were perfectly ripe, and I have had no failure. Nearly all the seed I planted this year, however, was the small unsaleable tubers planted whole, rejecting the very smallest. The crop was very healthy and productive. Indeed I have never seen a failure where small Potatoes uncut are used for seed; and I believe this uniform success to arise from the small Potato being unripe when taken from the ground. This opinion rests on the assumption that all the small Potatoes of a crop have not reached maturity when the rest of the crop is ripe, as being the last formed. If this be so, it strengthens the common opinion that the less ripened Potato of the upland districts makes the best seed. But at the same time we see how good seed may be had without the trouble or expense of a change from a late district, if we either plant the small Potatoes of our own crops, or raise a portion for seed before they have reached maturity.—*Mr. Caird, in the Journal of Agriculture.*

Coal Tar as Manure.—A communication was read at the Bath Agricultural Society on the subject of the value of coal tar as a manure. The writer stated that in 1840 he published his experience on the subject; he had now used it as a manure for seven years, and had never found it to fail when properly applied. By means of a watercart he distributed over his Wheat-stubble 180 gallons to the acre, allowing it to remain there two or three months in the autumn before being ploughed in. Its cost was a half-penny a gallon; it was economical, and valuable for Carrots, Turnips, Potatoes, and all roots. He had tried it on seeds, but not with equal advantage on Wheat. It was very useful on a sandy loam, resting on a marl subsoil; next to that, a deep clay land was best; but its least beneficial effects had been upon soil resting on an oolite formation.

Sale of Grain by Weight.—Before the introduction of this system, the farmers were often inattentive to the degree of preparation that was necessary, in order to remove all the light grain, and the most experienced may be deceived by grain appearing plump and round, yet found deficient in weight, and consequently in real value; but the corn-merchant has more confidence to give a good price for a good sample when he is fully assured that it is not at all deceptive. I am also a farmer myself, and can state with perfect confidence that to the farmer the system has been most beneficial; it is not only a guarantee that any trouble he may be at to cultivate and prepare a good sample of grain will be rewarded, but it also induces him to adopt the best method of producing it.—*Mr. Cruickshank.—Dublin Farmers' Gazette.*

Notices to Correspondents.

Rural Chemistry, By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

Our Correspondents will oblige us by not mixing together Agricultural and Horticultural questions, and by writing them on one side of the paper only. Such precautions can give them no trouble, and will save us a great deal.

Books.—*A Subscriber.*—Low's "Practical Agriculture," Martin Doyle's "Practical Husbandry."—*Northumbriensis.*—J. Lindley's "Introduction to Botany," Metcalfe's "Withering;" Dr. Reid's "Chemistry of Nature," Dr. Reid's "Elements of Practical Chemistry," Lyell's "Elements of Geology," De la Beche's "Manual of Geology," Morton on "Soils," and Jameson's "Mineralogy." Thanks for your suggestion.

Barren Chaff.—*Nodus.*—Spraegel states that unburnt chalk has the same effect as if burnt, only in less degree. The process is more tedious, but the larger quantity of chalk which is applicable at the same expense would probably compensate for the slowness of its action. If your land be already calcareous use burnt chalk; if it do not contain lime use unburnt in large quantity. If your land is sour from wetness, the only remedy is drainage.

Dairy Management, &c.—*A Leicestershire Man.*—Confining cows entirely to the house tends to weaken their constitution, and renders them liable to disease. The same quantity of food given under these circumstances will increase the growth of fat, but will not diminish the yield of milk. Such a diminished quantity should be given as will keep them in the same condition as they were in when feeding in the fields. Selling cows is a practice more suited to arable lands than to permanent pasture. The cheapest way of burning clay is, not in kilns, but in large heaps, as is done on the railways. See answers on this subject above.

Diarrhœa.—*A New Subscriber.*—Your statement is very curious. Give us full particulars, and describe cases, and we will lay the matter before a competent person.

Dibbling Turnips.—*Don Quix.*—We never knew an instance of the seed being dibbled. Your distance ought to be at least 18 inches. Don't know what price per acre should be given. Watch a boy at work at it for half an hour, and calculate the price per acre from what he does.

Disease amongst Young Stock.—*J. L.*—Next week.

Drainage.—*J. Cl.*—We shall notice your work as soon as possible. We propose taking up the general subject shortly.

Farmers' Capital.—*Constant Reader.*—Your request has been forwarded to Mr. Morton.

Fences.—*W. W.*—Holly will effect your purpose, but it takes a long while to grow. Furze will do, but you must keep it down, or it will spread. It is a good plan to have a close cut Quick fence round the wood, and to make it ornamental by planting Laurels, Broom, Furze, &c., irregularly a perch or two wide in the field side of the hedge.

Garlic.—*E. S. W.*—You must dig each root out; or, if there is much of it, break up the Grass, fallow it well, and lay it down again.

Guano.—*Gorsyn.*—Hoe it in between the drills of Wheat some time this month; 2 to 3 cwt. per acre is the usual quantity. English oilcakes weigh about 3 lbs. a piece.

Haymaking Machine.—*A Sussex Subscriber.*—That invented by Salmon, of Woburn, and improved by Wedlake, of Hornchurch.

Laying down Grass-land.—*Novice.*—We hardly know how to improve on your plan. Your land being near the salt-water, needs no muriate of soda. Apply guano rather. If you lay your Grass-seeds down with a crop of Corn, should it turn out wet weather, a heavy crop of Straw would spoil the Grass.

Liquid Manure.—*A. H.*—Add sulphuric acid till effervescence ceases. Any of the soluble salts commonly used in manures would, each under special circumstances, strengthen the fertilising power of the liquid. Which of them, or how many of them, it would be advisable for you to use, depends on the condition of the land. Try a patch of land with 1 cwt. per acre of common salt in the liquid. The burnt earth you speak of may be of use as a top-dressing for Grass, especially if the land be a stiff clay.

Mangold Wurtzel.—*G. P.*—Field-beet is, perhaps, a better name.

Manure.—*A Cheshire Farmer.*—Apply about 2 cwt. of guano, broadcast, over the Wheat-land as soon as it is dry, and harrow or hoe it in.—*J. White.*—Six or eight bushels of bones per acre, previously treated with sulphuric acid. Guano is the best of the new manures: it is generally applied at the rate of 3 cwt. per acre. You should depend for your Corn crop, not upon a special application of manure to it, but upon the fertility of the land consequent upon your manuring and cultivation of the previous green crop.—*Delta.*—Phosphate of ammonia is a powerful but expensive manure. With regard to Potatoe-planting—hereafter. We do not know the patent inorganic manures you speak of. It is the interest of the farmer to pay little attention to *patent* manures, and to see to the due economising and preparation of the dung of his own farm-yard. We should be sorry to say, "Don't believe half the statements purporting to be of facts, put forth by the advertisers of their patent manures;" but we may safely say, "Don't admit half the inferences they would have you draw from these statements."

Marl.—*A Subscriber.*—This will not injure dung that it is mixed with. A source of carbonic acid will not volatilise ammonia. Marl does well applied as a top-dressing.

Nitrate of Soda.—*Cler., Lancast.*—Apply it now, in wet weather, 1 to 2 cwt. per acre.

One-horse Carts.—*M. C.*—You can get working drawings from any Scotch implement-maker, and get them made at any English implement maker. We do not advertise tradesmen in our Notices to Correspondents.

Parsnip.—*Leeds.*—Next week.

Road-material.—*V.*—If your clay is calcareous, it will not do to burn for road-material. Further particulars next week.

Rotation or Crops.—*T. Ridge.*—Your plan is a good one. Guano, or Potter's guano, is our best manure. Bone-dust and sulphuric acid might answer on your clay-land. Further particulars next week.

Sparrows.—*A New Subscriber.*—Put a little bird lime, some dry day, about the holes in your roof.

As usual, a host of letters has arrived too late for answers this week.

Markets.

SMITHFIELD, Monday, March 4.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	4s 0 to 4s 4	Best Downs & Half-breds	4s 2 to 4s 6
Best Short Horns	3 8 4 0	Best Longwools	3 0 4 2
Second quality Beasts	3 2 3 8	Ewes and second quality	2 4 3 8
Calves	4 0 5 0	Pigs	3 4 4 4

Beasts, 2115; Sheep, 22,810; Calves, 50; Pigs, 338.

The continuous heavy rain we have this day experienced has checked the advance in prices which, doubtless, would otherwise have been realised, in consequence of the very short supply. Notwithstanding the thorough wet day kept away many buyers, yet the unusual shortness of numbers caused a ready sale at rather more money than last week. The best Scots, for the most part, made 4*s* 4*d* per 8 lbs, and the best Short horns from Norfolk, 4*s*; those from Lincolnshire were few, and of indifferent quality, and cannot be quoted at more than 4*s* 2*d* per 8 lbs. The larger Downs and Half-breds have been more in demand, and made fully 4*d* per 8 lbs. more than of late; but the smaller Downs scarcely exceed our former quotations.—In some instances, perhaps, 4*s* 6*d* has been realised, but 4*s* 6*d* is the more general price. Ewes are a heavy sale—so many being in lamb at this time of year, the Butchers are very shy of purchasing them. Veal and Pork remain steady.

Friday, March 8.

We have to-day a very large increase on last week's number of Beasts, owing to the arrival of some Scotch vessels with an extra quantity for Smithfield. We notice, also, a few from Holland, in very good condition. Our Monday's highest quotations can hardly be supported; the best qualities of Beef cannot be quoted at more than 4*s* 2*d* per 8 lbs., and other qualities in like proportion. Sheep trade is brisk, at Monday's prices; there are a few more, but all in demand. Calves and Pigs sold slowly, at late rates.

Beasts, 919; Sheep, 8400; Calves, 109; Pigs, 200.

J. W. 41, West Smithfield.

ENGLISH TIMBER AND BARK.—March 5, 1844.

Round Timber, per load.		Plank, per foot cube.		Inch board, p. ft. sup.
	l. *l.* to *l.*	*s.* *d.* to *s.* *d.*		*d.* to *d.*
Oak	5 0 to 8 0	2 0	4 0	5½
Ash	5 0 7 10	2 0	3 0	3
Elm	4 10 5 10	2 6	3 0	3
Beech	3 10 5 0	1 6	2 0	2½

Oak Bark (per load), 18*l.* to 19*l.* 10*s.*

J. B.

WOOL.—British, Friday, March 8.

During the past week the Market has been flat, and lower rates have been submitted to. The report of the Bristol West Fair by that last Mails business was done, and that at reduced prices.

	per lb.			per lb.
Long-woolled Wethers	1*s* 1*d* to 1*s* 2*d*	Southdown Wethers	1*s* 1 to 1*s* 2	
Do. Hoggetts	1 1 1 2½	Kent Fleeces	1 2 1 3	
Southdown Fleeces	1 0½ 1 2			

James Parson, Wool Broker.

Mark Lane, Friday, March 8.—The arrivals of all descriptions of Corn have been moderate during the week, and the few parcels of English Wheat fresh up for this morning's market realised fully Monday's prices. Business in free Foreign has been very limited, but we observe no depreciation in its value, with the exception of a cargo of Polish Odessa from Trieste, sold ex ship at 38*s.* per qr. in Bond. We have not heard of any transactions under lock or key. Having therefore a slow sale at our quotations.—Beans and Peas are unaltered in value.—The Oat trade is heavy, and rather lower.

British, per Imperial Quarter.				*s.*	*d.*			*s.*	*d.*
Wheat, Essex, Kent, and Suffolk				White	40	52	Red	40	50
—— Norfolk, Lincolnshire, and Yorkshire					40	52	White	41	—
Oats, Lincolnshire and Yorkshire				Potatoes	18	26	Feed	16	24
—— Northumberland and Scotch				Feed	—	—	Potato	17	22
—— Irish				Feed	16	20	Potato	18	24
Barley, Malting and distilling				36s to 38s	Chevalier	32	36	Grind.	24	30
Malt, pale, ship						—	—			
—— Hertford and Essex						—	—			
Rye						—	—			
Beans, Harnagan, old and new				32 to 32	Tick	32	34	Harrow	34	36
—— Pigeon, Heligoland				32 to 36	Winds.	32	34	Longpod	32	34
Peas, White				36 to 38	Maple	37	39	Grey	36	37

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	per Quarter.					
Jan. 26	42s 5d	25s 9d	19s 0d	28s 4d	30s 0d	30s 0d
Feb. 6	52 6	32 3	20 11	34 10	30 6	30 8
—— 9	51 7	32 1	19 1	33 9	29 10	30 6
—— 16	52 6	33 4	19 6	35 6	30 6	31 1
—— 23	53 1	33 7	19 7	34 10	30 4	31 2
March 1	56 2	32 9	20 0	33 3	30 6	31 0
6 weeks' Aggregate Aver.	53 0	32 5	19 4	33 5	30 1	30 11
Duties on Foreign Grain	19 0	5 0	7 0	9 0	10 6	10 0

Arrivals this week.	Wheat	Barley	Oats	Flour
English	2180	5910	4530	3040 Sks
Irish	—	190	14370	—
Scotch	—	—	—	—
Foreign	3300	—	—	—

Arrivals in the River last week.	Flour.		Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	3155 Sks.	Brls.	5165	6320	6707	2007	—	1573	978
Irish	"	"	—	60	35	21291	—	—	—
Foreign	"	"	1250	930	—	—	—	—	6

Kingsford and Lay.

COVENT GARDEN, Mar. 8.—The supplies of most articles during the week have been pretty well kept up, and trade begins to get brisk. No alteration has taken place in the prices of Pine Apples since our last report; Grapes are a little advanced in price, they are offered at from 1*s.* to 4*s.* per lb. Large Kitchen Apples are becoming scarce, and are offered at higher prices. Good Dessert Pears are not plentiful; they are selling at from 4*s* to 12*s.* per bushel. Oranges are sufficient for the demand. Lemons are offered at nearly the same prices as quoted in our last report. Chesnuts are good and plentiful. A few Strawberries are still in the market, but they are only brought in small quantities. The supply of most kinds of Vegetables has been tolerably well kept up. Large White or Cornish Broccoli is selling at from 8*d.* to 12*s.* per dozen heads. Savoys have not been very plentiful during the week. Little variation has taken place in the prices of Brussels Sprouts or Greens, which continue to be pretty abundantly supplied. Carrots and Turnips are good and plentiful. Seakale is a little advanced in price since our last report. French Beans are nearly the same as last week. Asparagus and Rhubarb are good and plentiful. Celery is becoming scarcer. Cucumbers being more plentifully supplied are becoming cheaper; they are offered at from 2*s.* to 4*s.* each. Cut Flowers chiefly consist of Gardenia radicans and florida, Erica Willmoreana, Lechenaulia tricolor, Camellias, Scarlet Pelargoniums, Lily of the Valley, Acacias, Azaleas, Heliotropes, Tulips, Jonquils, Cinerarias, Moss, Province and China Roses.

Fruits.

Pine Apple, per lb., 6*s* to 10*s*	Almonds, per peck, 6*s* to 7*s*
Grapes, Portugal, per lb. 1*s* to 3*s* 6*d*	Sweet Almonds, per lb., 3*s* 6*d* to 6*s*
Apples, des., p bush. 4*s* to 12*s*	Nuts, Spanish, per bushel, 10*s*
—— Kitchen, p bus. 8*s* 6*d* to 8*s*	—— Brazil, 16*s*
Pears, per half-sieve, 4*s* to 12*s*	—— Hazel, 2*s* to 4*s*
Oranges, per dozen, 2*d* to 3*s*	—— Barcelona, 20*s* to 22*s*
—— per 100, 5*s* to 16*s*	—— Cob, per 100 lbs., 90*s* to 100*s*
Lemons, per doz. 1*s* to 3*s*	Chesnuts, per peck, 2*s* to 6*s*
—— per 100, 6*s* to 14*s*	

Vegetables.

Rhubarb, per bundle, 6*d* to 1*s* 3*d*	Spinach, per sieve, 1*s* 6*d* to 2*s* 6*d*
Broccoli, per bundle, 1*s* to 3*s*	Leeks, per doz. bun., 2*d* to 1*s*
White Broccoli per doz. from 4*s* to 12*s*	Parsley, per lb. 6*d* to 8*d*
Brussels Sprouts, p.h. sv., 1*s* 6*d* to 2*s*	Salsafy, 2*d* to 6*d* p. bch.
Red Cabbages per doz. 2*s* to 3*s*	—— Large, per bushel, 2*s* to 3*s*
Sorrel, 1*s* to 1*s* 6*d* p. hf.-sv.	—— Spanish, per doz., 1*s* to 2*s*
Asparagus, per 100, 3*s* to 6*s*	—— pickling, p. hf.-sv., 3*s* to 4*s*
Seakale, per punnet, 1*s* to 2*s*	Shallots, per lb., 6*d* to 8*d*
French Beans, 2*s* 6*d* to 3*s* 6*d* per 100	Lettuce, Cabb., p. score, 6*d* to 1*s*
Autumn Potatoes, 3*d* to 6*d* per lb.	—— Cos, per score, 6*d* to 1*s*
Savoys, per doz. 6*d* to 1*s* 6*d*	Celery, per bun., 6*d* to 8*s*
Greens, per sco. 2*s* to 6*s* 6*d*	Mushrooms, per pottle, 2*s* to 3*s* 6*d*
Potatoes, per ton, 45*s* to 60*s*	Walnuts, per bushel, shelled, 16*s* to 20*s*
—— per cwt., 2*s* to 4*s*	Small Salads, per punnet, 2*d* to 3*d*
—— per bushel, 1*s* 6*d* to 2*s* 6*d*	Watercress, per doz. gm. bun. 3*d* to 6*d*
—— Kidney, p. bush., 3*s* to 3*s* 6*d*	Parsley, per doz. bunches, 2*s* to 3*s*
Turnips, per doz. bunches, 2*s* 6*d* to 3*s* 6*d*	Tarragon, Green, per bun. 4*d* to 6*d*
Red Beet, per doz., 6*d* to 1*s*	Endive, per score, 1*s* 6*d* to 2
Horse Radish, per bundle, 1*s* to 2*s*	Green Mint, 4*d* to 6*d* per bunch
Radishes, spring, 1*s* 6*d* to 1*s* 6*d* p. pun.	Marjoram, green, p. doz.bun. 1*s* 6*d* to 2*s*
Carrots, p. doz. bun., 3*s* 6*d* to 5*s*	Thyme, per punnet, 2*d* to 3*d*
Cucumbers, 2*s* to 4*s* each	Savandy, per bundle, 1*s* to 1*s* 6*d*
	Scorzonera, per bundle, 1*s* to 1*s* 6*d*

POTATOES.—Southwark Waterside, March 4.

There has been considerable firmness in the prices during the past week, and the best samples have gone off readily; other qualities, also, have been in more request. We have had but a limited supply, generally, particularly from the northern districts, owing to a severe snow storm, which has caused a slight advance in the price of the best samples; yet this has been occasioned more by the shortness of the supply, than by any extra demand.

York Reds	80s to 90s	Kent and Essex Whites	60s 65s
Perth	70 —	—— —— Kidneys	70 75
Early Devons	70 —	Wisbeach Kidneys	70 —
Late Devons	70 —	—— Blues	60 65
Cornwall	70 —	—— Whites	55 65
Jersey and Guernsey Blues	65 —	Prince Regents	70 75

SEEDS, Friday, March 8.

Canary	per qr	52s to 56s	Linseed Cakes, Foreign, p. ton	6*l* to 7*l* 10*s*
Carraway	per cwt	56 60	Mustard, White	p. bush. 5*s* 7
Clover, Red, English	64 76	—— Superfine	" 6 8
—— —— Foreign	64 76	—— Brown	" 14 16
—— White, English	84 105	Rapeseed, English, per last	24*l* 28*l*
—— —— Foreign	84 105	Rape Cakes	per ton — —
Coriander	12 13	Saintfoin	— —
Hempseed	per last	24 26	Tares, Hog, bush.	3 5
Linseed	per qr	— —	—— Foreign	3 3
—— Baltic	— —	Trefoil	per cwt — —
—— Cakes, Eng. per 1000	10*l* to 10*l* 10	Turnip (too variable for quotation).	

Kingsford and Lay.

Hops, Friday, March 8.

The Hop Market has been more active this week, and the following prices are fully supported.

Mid & Mast Kent Pocks.	82s to 86s	Sussex Pockets	6*l*—s to 6*l* 8*s*
Choice ditto	11 0 — —	Choice ditto	6 18 —
Weald of Kent Pocks.	6 0 6 10	Farnham	9 0 12 10
Choice ditto	7 0 — —		

Pattenden & Smith, Hop-Factors.

HAY.—Per Load of 36 Trusses.

Smithfield, March 6.

Prime Upland Hay	60s to 72s	Clover	80s to 108s	Straw	30s to 36s
Inferior	55 60				

Jones Cooper, Salesman.

Whitechapel, March 6.

Hay	60s to 80s	Clover	84s to 96s	Straw	30s to 38s
—— fine	82 75	—— fine	100 108		

Cumberland Market, March 8.

Superior Meadow Hay	70s to 76s	Superior Clover	100s to 108s	Straw	32s 36s
Inferior	56 68	Inferior	84 90		

Trade very dull. Joshua Banks, Hay Salesman.

THE CONICAL HOT-WATER BOILERS, invented by J. Bowman, Esq., and constructed at any site from JOHN WEEKS, Horticultural Architect, &c., of Gloucester-place, Chelsea, London.

J. Bowman having had every opportunity afforded him by an extensive practice to bring this apparatus to perfection, begs to offer it to the public confidently and economically; it may be seen at Messrs. Chandler & Sons' Nursery, Vauxhall; Messrs. Loddiges', Hackney; Messrs. Henderson's, Pine Apple-place; Messrs. Veitch and Son's, Exeter; Mr. Penny's, Plymouth; the Royal Botanical Society's Gardens, Regent's Park; and at the Gardens of the Horticultural Society of London. Considerable improvements have been effected since last season; particulars of which are in course of preparation.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS & Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. Lawes' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash, 14s. per cwt.		
,,	Soda .	12s. ,,
,,	Magnesia 9s.	,,
,,	Ammonia 1s. per lb.	

MANURES FOR WHEAT, &c.

POTTER'S GUANO.—Result of an Experiment on Wheat, tried near Colchester—sown Nov. 1842, reaped August 1843. POTTER'S GUANO.—Seven bushels per acre gave 54½ bush. Grain. Daniell's Manure, 40 bush. per acre, gave 46 bush. Grain. Difference in favour of POTTER'S GUANO, 8½ bush.

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DR. LINDLEY, in the *Gardeners' Chronicle* for 1843, p. 560, says—"POTTER'S GUANO will convert your desert into a paradise." And in the Number, Feb. 10, 1844—"POTTER'S GUANO is unrivalled."—Works, 28, Upper Fore-street, Lambeth.

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ON SALE, in any quantity, PERUVIAN and BOLIVIAN GUANO, genuine as imported.—Apply to COTESWORTH, POWELL, and PRYOR, London; EDWARDS, DAWSON, and CO., Liverpool; or WILLIAM J. MYERS and Co., Liverpool, the Importers.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with Synopsis of mode of use, on applications to MARK FOTHERGILL, 40, Upper Thames-street, and 5, Railway Place, Mark-lane, London.

PERUVIAN GUANO, of first quality, and in any quantity, direct from the Bonded Stores. Also African Guano, and Nitrate of Soda.—Apply to H. ROUNTHWAITE and Co., 6, Cable-street, St. George's Crescent, Liverpool.

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HUMPHREYS'S COMPOUND, applicable to all Greenhouse Plants, to Hyacinths and other Bulbs, and to promote the germination of Seeds. Sold in bottles 1s. 9d. each, by FLANAGAN and SON, Mansion-house-street; WARNER and WARNER, Cornhill; HURST and MCMULLEN, Leadenhall-street; W. CLARK, Bishopsgate-within; SMITH, Islington Nursery; GRIMLEY and Co., Covent Garden; BATT and RUTLEY, 412, Strand; WILLIAM and JOHN NOBLE, Fleet-street; SMITH, Covent Garden; CHARLWOOD, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KERNAN, Great Russell-street, Covent Garden; LOCKHART, 155, Chespside; SHUTTLEWORTH, Pantheon; MINIER, ADAMS, and NASH, 69, Strand; THATCHER and SON, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS ANSELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. E. RENDLE, Plymouth; DICKSON and Co., Edinburgh; PONTEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THORNE, Shepton Mallet; and other leading SPECIMENS in town and country. Wholesale Agents, DAVY, MACKMURDO, and Co., 100, Upper-Thames street, London.

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HUMPHREYS'S FARMERS' COMPOUND, presenting superior advantages to any Manure yet offered to the Public. It is rich in the Phosphates, Silicates, and Nitrogen, with certain new agents, so as to prove most economical and effective for Wheat, Barley, Pulse, Potators, Meadow Land, &c. Being manufactured on a new principle, this Manure *will not wash out of the soil* like Guano or the Salts, but with the mild and lasting qualities of the "Homo-made" combines the most energetic fertilising chemical agents; adapted to all the purposes of Husbandry and Garden Culture, and unrivalled as a Top-DRESSING for all Spring Crops. Quantities per acre, according to the condition of the land:—For WHEAT, from 2 to 5 cwt.; GRASS, CLOVER, &c., from 1 to 4 cwt; TURNIPS, from 2 to 4 cwt.; HOPS, from 4 to 6 cwt. 12s. per cwt.—Wholesale Agents, DAVY, MACKMURDO, & Co., 100, Upper Thames-street, London.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition, have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 5ft. by 3ft. 3in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

Agents wanted for London and the country.

ASPHALTUM in its pure state, with all the material and instruction how to prepare, or if required, the labour performed at a moderate charge.—Apply to J. A. HUSSARD and SON, 20, Harp-lane, Tower-street. All Letters prepaid.

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Conservatories and Greenhouses, being calculated, from its extreme hardness, to resist the wear incident to ordinary Plastering. For Floors it has a threefold advantage over Stone-paving: 1st, in its lightness; one inch in thickness of KEENE'S CEMENT sufficing where 2 to 3 inch flagging would be employed. Next, in its appearance, combining as it does the hardness of stone with an uniform colour and even surface free from joints; and lastly, in economy, being one-third the price of Portland paving.

The most conclusive evidence can be given of the utility of KEENE'S CEMENT for these purposes by the Patentees and Manufacturers,—JOHN BAILEY WHITE & SONS, Millbank-st., Westminster.

TO AGRICULTURISTS.

THE Dry Material for making CAMPBELL'S CORN-PRODUCING LIQUID, or FERTILISING STEEPS, which have arrested the attention of Agriculturists in all parts of the United Kingdom, is now to be had in Boxes containing quantities for 5 Gallons and upwards, at the following prices, viz.:—

For WHEAT, Material per Gallon	2s. 6d.
,, OATS and GRASSES, ...	1 6
,, BARLEY, ...	2 0
,, BEANS and PEASE, ...	2 6
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SUPERIOR SUBSTITUTE FOR TARPAULIN, &c.



C. MACINTOSH & Co., having made a considerable reduction in the price of the Patent India Rubber Covers for Carts, Waggons, Ricks, &c., beg to call the attention of Users of Tarpaulin and Oiled Sheets to the superiority of their manufacture as an effectual protection against wet, not liable to crack on being folded, and more economical than any other Waterproof Cover.—22, York-street, Manchester; and 46, Cheapside, London.

GREAT ECONOMY.—*Much time and a great deal* of labour will be saved by the use of the SUSSEX CHURN. ATTWOOD, WIMBLE, and WARNER, Manufacturers, Lewes. This Churn being made entirely of block tin, the necessary degree of temperature can be given to the cream, by placing it in a pan of cold or hot water, which ensures the butter coming in 10 or 12 minutes at all seasons of the year. The simplicity of its construction, and the facility with which it may be cleaned, are no inconsiderable advantages over those now in common use.

Sizes.	Nos. 00.	0.	1.	2.	3.
Churn	2½ lbs.	4 lbs.	7 lbs.	14 lbs.	28 lbs. of butter.
Price with pans complete,	18s.	20s.	28s.	33s.	40s.

Delivered, carriage paid, to any part of London.

London Agents.—BENHAM, 19, Wigmore-street, Cavendish-square; LIVERMORE, 30, Oxford-street; BAILY, 71, Gracechurch-street; WRIGHT'S Range Warehouse, near the Monument.

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N.B.—To be seen at the Polytechnic, and Adelaide Gallery.

Observe.—The Improved Water Pail, 4s. and 5s. each.

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In the present day it is impossible to produce anything new and useful without exciting the cupidity of imitators. Already attempts are made to mystify the identity of the original and genuine article, by trusting upon the public the contents of bottles having a Tin Foil covering, falsely denominated "a neat metallic capsule." J. T. BETTS & Co. therefore deem it essential to impress upon purchasers the absolute necessity of comparing the embossed Capsules with the Labels, as an infallible mode of detecting fraudulent substitutions.

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A DESCRIPTION of the BEE and FRAME BEE-HIVE, invented by T. W. [illegible], Esq., with some short Directions for the Management of an Apiary.

A Bee and Frame Hive may be seen at Mr. JOHN MEEKIN'S, No 10 Great Marylebone street, London.

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The truth of Dr. LINDLEY'S statement in his review of the above work was strictly verified at the late Great Exhibition of Cucumbers at Ipswich, viz., "Any person having Mills's book, whether a gardener or not, can grow Cucumbers"

By the report of the above exhibition to the *Gardeners' Chronicle* the first prize was won by an almost one, Edward Leather, Esq., on Mills's system

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Reports of all Public MEETINGS of the PROFESSION, and of the Speeches on Medical Law delivered in PARLIAMENT; all the general Medical Regulations of the POOR LAW UNIONS;—ARMY AND NAVY Medical Intelligence;—Medical Appointments, and Medical News of every description, occurring in all parts of the civilized world

THE LANCET, which has long maintained the largest sale and circulation of any medical Journal in the kingdom, will now be printed in a form to admit of its general transmission by post, at the cost of A PENNY STAMP. Mr Church fully expects that orders for the Work, to this date including the *stamped* or the *unstamped* Numbers, will be given to Booksellers or News men without delay

London: The Lancet office, 18 Princes street Cavendish square

THE IRISH FARMERS' GAZETTE and HORTICULTURAL JOURNAL. Edited by LAWRENCE MEREDYTH, A.B., T.C.D. Landscape Gardener and Improver of Estates &c

This Paper was commenced in May 1843 and having been adapted to the circumstances of Irish Farmers, is now in a transition state from the worst to the best system—it daily points out the best practice, but gives no rules how every operation should be performed, nor recommends the ORGAN OF AGRICULTURAL IMPROVEMENT IN IRELAND where the advantages which have already resulted from it are universally recognised. The result of practical communications and experiments on all subjects connected with the improvement of land and the increase of its produce, are freely communicated to the Editor and records. Selections of the most practically useful articles are made from the various works on farming with which the press now teems, and utterly exclusion rejection—as none, the bane of the Irish Farmer and devoting its columns exclusively to Agricultural and Horticultural improvement

THE FARMERS GAZETTE has the distinguished honour to be strongly supported by the approbation of the eminent individuals, Wm Blacker, Esq., James Smith, Esq. of Deanston and the late Mr Tuke, and is received with such confidence that the practice of having its contents read at stated periods to assembled farmers is becoming general. The circulation of the IRISH FARMERS GAZETTE has of late been extending even in England and Scotland, where, up to this period no effort has been made to bring it under notice, but where the principles of good husbandry (by every where the same, it is calculated to be equally useful as it has been found to be in Ireland. The most practically useful essays on Farming are from time to time, struck off for distribution in the shape of TRACTS FOR FARMERS, and have been very extensively circulated, viz:—On the Dairy—A Catechism of Thorough Draining and Subsoiling—The Culture of Flax—Management of Manure and Green-Cropping and House Feeding, are nearly ready. Also, on the 1st Jan. was published, the 'Irish Farmers', Gardeners', and Foresters' Almanac"

THE IRISH FARMERS' GAZETTE is published every Friday, at 23, Bachelor's Walk, Dublin, and goes free by post. Annual subscription, 10s., half-yearly, 5s., payable in advance; and orders directed to the publisher are immediately attended to.

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GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given, that an Election for three Pensioners on the Funds of this Charity will take place in June next. All persons desirous of becoming Candidates, are requested to forward their testimonials and certificates to the Secretary on or before the 26th inst. (after which time they will not be received), and of whom printed forms of application may be had.

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E. SPARY begs respectfully to call the attention of Florists and Amateurs to the above new and distinct Seedlings, which have received prizes at the following first-rate Exhibitions, viz.:—Salthill (1st), Portsea, Salisbury Plain, Chippenham, London Floricultural Society, Stockwell, Surrey, &c. For description, notices of the Press, &c., vide *Gardeners' Gazette*, 4th Nov., *Gardeners' Chronicle*, 11th Nov., also the November Number of the "Gardener and Practical Florist," for Mr. Glenny's opinion. As the number of dry roots would not allow all orders to be executed, strong healthy plants will be sent out by the first week in May. Lady Antrobus, 10*s.* 6*d.*, Aurantia, 7*s.* 6*d.*, with the usual discount per dozen. Also the select new and old varieties, at Catalogue prices.—Hungerford, March 12.

FUCHSIA AND DAHLIAS.

J. JONES, Florist, Ackworth, near Wakefield.—Fuchsia Bellissima is a delicate and pretty variety, of moderate size, Tube light-pink, Sepals tipped with green, and expanding freely, showing a well-formed Corolla, of a deep rose colour, which forms a good contrast to the other parts of the Flower; it appears to be of good habit, blooming freely.—See Dr. Lindley's opinion, Nov. 25, 1843.

DAHLIAS.—Delectus (Jones's), good form, dark purple, height, 4ft., 7*s.* 6*d.*

Imperator (Jonks's), fine crimson, scarlet, well up in the eye, fine form, 4ft., Plants, 5*s.*

Zechin (Jonks's), dark velvetty-maroon, good form, rather coarse in the petals, 5ft., Plants, 5*s.*

Dyson's Vanquisher—fine rose, good size and form; has taken several first Prizes, height, 5ft., Plants, 7*s.* 6*d.*

J. J.'s list of Dahlias, Geraniums, Fuchsias, &c., containing a full description of the above, may be had on application.

CHARLES DALY & SON, Nursery & Seedsmen, Coleraine, beg to inform the Trade that they have a quantity of One year Seedling Thorns, at 1*s.* 6*d.* per 1000. Also upright Irish Yews, 1 to 1½ ft., at 4*d.* each. Bays, 3 years in pots, 25*s.* per 100. Portugal Laurels, good Plants, at 6*s.* per 100. Laurels, 1½ to 2ft., 20*s.* per 1000. Some Hollyberries, at 5*s.* 6*d.* per bushel. Also a quantity of fine Pine apple Plants, fruiting and successive, warranted clean, from 1*s.* to 3*s.* each, delivered free in Glasgow, Fleetwood, and Liverpool.

TRUE HIGHLAND PINE.

JAMES GRIGOR begs to announce to the Land Proprietors of England, that he has received a supply of the true HIGHLAND PINE PLANTS, raised from Seeds collected on the Mountains of Strathspey, in the North of Scotland, where the tree is indigenous. These plants are of the variety so highly prized for producing hard and durable timber, known as the *Red Deal*, and formed part of the stock for which Mr. John Grigor was awarded the Premiums of the Highland and Agricultural Society of Scotland. It has been also strongly recommended by Sir Walter Scott, Mr. Don, of Forfar, and others, as far preferable to the common Scotch Pine, both as to the quality of its timber, and as a picturesque object. It will grow on almost all soils—clay, peat, sand, gravel, and even chalk—so that it is peculiarly fitted for all waste lands. It is worthy of a place, too, as an ornamental tree, for in old age it assumes much of the bold and contorted figure of the Oak. To the Landscape Gardener, who has to clothe the bold declivities of distant scenes, it is invaluable; and, indeed, whether viewed as an ornament, or simply as a forest tree to be cut down for railway sleepers, or blocks for wood pavement, or with regard to civil architecture generally, it is without a rival among the trees of Britain. Two-year-old picked plants, carefully packed, at 2*s.* 6*d.* per hundred. If taken in thousands, a considerable abatement will be made in price.

Old Lakenham, Norwich, March 15, 1844.

NEW HARDY ANNUAL.

VISCARIA OCULATA—DARK-EYED VISCARIA.

T. AND J. BACKHOUSE, Nursery and Seedsmen, York, have the pleasure of offering to the Public the above new and beautiful Annual, which is figured at page 59, (No. 10), of the "Botanical Register" for 1843. The blossoms are of a bright rose-colour, with a deep crimson eye, and changing to a pale purple. It flowers very abundantly through the greater part of the summer and autumn. It is a native of Algiers, and may be sown either in the open ground in spring, or raised on pots and planted out.

Packets, 2*s.* 6*d.* each, will be sent, on the receipt of a Post-office order, postage free, to any part of the Kingdom.

SLOUGH NURSERY, NEAR WINDSOR.
CHOICE SELECTION OF NEW DAHLIAS, 1844.

THOMAS BROWN directs attention to his beautiful DAHLIAS, particularly that unrivalled light flower, "LADY ST. MAUR," the superiority of which over every other of its class is too well known to need further comment. Strong and healthy plants will be ready for delivery early in May.

AURANTIA (Spary's)—Orange buff; fine form and petal. A very desirable show flower; obtained numerous prizes; 3 ft. 10s 6d

ALEXANDER (Brown's)—Maroon and crimson mottled; full and constant, centre well up, and a very useful show flower; 3 ft. 7 6

DELIGHT (Brown's)—Cream, veined and tipped with purple; petal of fine substance and high centre; very distinct to any in cultivation; 4 ft. 7 6

DESIRABLE (Brown's)—Shaded buff, quite new in colour; a good show flower; 3 ft. 7 6

LADY ST. MAUR (Brown's)—White, delicately tipped with violet purple; very deep and full, high centre, forming a beautiful outline; the petals are round, and smooth at the edge; habit of Perpetual Grand: it is decidedly the finest light flower ever offered. It attracted great admiration at Windsor, and was universally acknowledged to be the finest flower in the Exhibition; 4 to 5 ft. 10 6

NUBYTA (Brown's)—Bright crimson; a fine open-cupped petal, and a good show flower; 4 ft. 7 6

RAPHAEL (Brown's)—Dark maroon, beautifully shaded with light crimson; superior petal, of excellent form: a very novel and striking variety, and will be an acquisition to any stand; 4 ft. 10 6

REMBRANDT (Brown's)—Dark purple, very round and double, rising well in the centre, and a constant show flower. It was very successfully exhibited; 3 to 4 ft. . 10 6

EMMA NOKE (Dowding's)—Blush white, good general form and centre: a good useful show flower; 4 ft. . 10 6

ESSEX BRIDE (Turville's)—Delicate peach lilac, of excellent petal and form; 3 ft. . . . . (no discount) 10 6

LADY ANTRODUS (Spary's)—White and lilac, mottled; good form, constant, and very useful show flower; 3 ft. 10 6

NONPAREIL (Proctor's)—Ruby scarlet, of first-rate properties; extra show flower; 4 ft. . (no discount) 10 6

STANDARD OF PERFECTION (Keynes')—Crimson; of very superior form; 4 ft. . . . . (no discount) 10 6

MRS J. STEWART RICHARDSON (Union)—Brown ruby, great depth, and excellent show flower; 4 ft. (no discount) 10 6

T. B. has also Selections of fine Carnations, Picotees, and all other Florists' Flowers; Plants, Fruit trees, Shrubs, and general Nursery Stock.

A general Catalogue of Dahlias, with a List of Superb New Pansies, to be had on application.

NEWEST, CHEAPEST, AND VERY BEST FUCHSIAS AND VERBENAS.

FUCHSIAS.—12 fine choice distinct sorts, for . 7s. 6d.
12 extra very superior, selected from all new kinds sent out last season for the first time, for . 15 0

Such as Exoniensis, Enchantress, Balloonflora, Toddiana, Spyall, Cormackii, Deaniana, Prince Albert, Lancii, Frostii, Grenvillii, Fairy Queen (Bell's), Ivery ana, Gem (Ivery's), Nobilissima (Smith's), Majestica (Smith's), Defiance (Smith's), Robusta (Smith's), Stanwelliana, Transparens (Youell's), Deansii (Dean's,) Recurva (Dean's), Alice Maude Mary (Bell's), Princess Royal (Bell's), Brockmanii, Prince of Wales (Bell's), Lowryii, &c.

VERBENAS.—12 fine distinct varieties, for . . 3s. 6d.
" 12 extra and very superior, for . . 6 0

Such as Duke of Cornwall (Knight's), Speciosa (Kyle's), Princess Royal (Youell's), Howardiana (Low's), Prince of Wales (Wood's), Cærulea (Harrison's), Boule-de-Feu (Girling's), Tweediana picta, Minstrel Boy (Girling's), Rosy Queen (Halley's), &c. &c. &c.

Purchasers are requested to send the names of those kinds they already possess; and Mr. MILLER pledges to send them entirely different, and sorts such as will add beauty as well as novelty to their collections. Mr. M. is enabled to do this satisfactorily, having bloomed every new kind sent out last season. —See extensive list in this Paper of Feb. 17, 1844.

100 fine Hybridised Fuchsia Seeds, 7s. 6d; fifty, 4s.; Geranium Firefall, 5s.; Black Nemophylla discoidalis (plants) 1s. each.

The above will be sent post free, packed in stout tin cases, so as to warrant their arrival to any part in safety; or may be had in pots, carriage paid to London, and no charge for packing or hamper.—W. MILLER, Providence Nursery, Ramsgate, Mar. 15.

SPLENDID SEEDLING FUCHSIAS, PANSY, and AQUILEGIA.

W. ROGERS AND SON, SEEDSMEN and FLORISTS, beg to offer the *following*, which they can with the greatest confidence recommend.

SEEDLING FUCHSIAS.

No. 1, ROGERS'S UTTOXETER BEAUTY.—"*W. R. & Son.*—Your seedling is a flower of good substance, tube and sepals of a bright rosy red, corolla purple veination, petal very long and erect; *a very large and showy variety.*"—*Gardeners' Chronicle*, August 5, 1843. Plants 10s. 6d. each.

No. 2, ROGERS'S UTTOXETER RIVAL.—"*W. R. & Son.*—In the seedling now sent the tube is stout, with sepals of a rosy carmine, broad and tipped with green: they expand freely, showing the corolla, which is of a rosy purple. *This is a very large and bold flower.*"—*Gardeners' Chronicle*, August 19, 1843. Plants 10s. 6d. each.

No. 3, ROGERS'S PENDULA ELEGANS.—"Stout tube and sepals, which are broad and slightly tipped with green, which expand freely; corolla shaded purple."—*Hare's on's Floricultural Cabinet*, August 1843. A very good one Plants, 5s each.

In addition to the above opinions, W. R. & Son beg to state No. 1 is a variety of immense size and substance; the colour has a very rich glossy appearance, while the extraordinary length of the plaill forms one of the most distinct and splendid kinds ever offered. A fine plant was exhibited at the Uttoxeter Royal Horticultural Society, with branches extending from the main stem 12 to 18 inches, in full bloom, which shows it to be a free bloomer, and not merely blooming at the ends of the branches. It gained the first prize, and was much admired. The same remarks are applicable to No. 2, except that this gained the first prize for the best seedling, and allowed by the judges to be a superior variety. No. 3 is a fine variety, and very free bloomer; gained the first prize at the Lichfield Horticultural Society.

FUCHSIA ROGERSIANA, 2s. 6d. each.

The usual discount to the Trade on the above, when not less than six plants are ordered at one time, and on the following when not less than three are ordered.

PANSY—ROGERS'S LORD VERNON.—Upper petals crimson purple, lower petals laced with same, centre pale yellow, with an extremely large eye; this is of immense size and good form; a very distinct and fine sort. Plants 5s. each.

AQUILEGIA GRANDIFLORA.—This is a beautiful plant (a hybrid), flowers the colour of A. glandulosa, but twice the size. It has been several times exhibited at the Uttoxeter Royal Horticultural Society, and invariably won the first prize for Herbaceous plants, and particularly admired by all who saw it. Plants 5s. each.

Strong plants of the above will be ready to send out by post or otherwise the first week in April. A reference or remittance requested from unknown correspondents.

W. R. & Son's Catalogue of Dahlias, Pansies, Phloxes, Pelargoniums, Cinerarias, Verbenas, &c. &c., including many new varieties, may be had prepaid, on a prepaid application.

Agents for the above, Messrs. HURST and MCMULLEN, Seedsmen, 6, Leadenhall-st., London.—Uttoxeter, Staffordshire, Mar. 11.

GENUINE BEECHWOOD MELON SEED.

R. GLENDINNING respectfully begs to inform the Cultivators of the MELON that he has had presented to him by Sir JOHN E. SWINBURNE, Bart., Heads of the fruit variety of his delicious MELON; for besides being one of the very best sorts known, it is of easy cultivation and a good bearer. This opportunity will enable gentlemen to procure it *quite genuine*, which is rarely the case, as the following note will testify:—

"Beechwood, Feb. 5, 1844.

"*Sir*,—I send you a small parcel of the Beechwood Melon Seed. None that I have seen exhibited under that name, nor any that I have seen grown from Seed that has been bought, are of the true sort, but have obviously been intermixed with other varieties. I have grown no other for many years.

"Your obedient servant,

"To Mr. Glendinning. J. S. SWAINEY."

R. G. has also a few Seeds of the true SION FREE-BEARING CUCUMBER, a splendid variety which has been nearly lost.

Packets of the above sent by post free.

Beechwood Melon per packet . . . 5s.
Sion Free-bearing Cucumber per packet . 5s.

R. G.'s Kitchen garden and Flower-seeds have been selected with great care, and embrace all the new and good kinds.

Chiswick Nursery, near London, Feb. 16, 1844.

CHOICE PANSIES.

J. HENCHMAN begs to inform cultivators of the PANSY that he is now sending out healthy plants of six good seedling varieties, for 21s. the set. Also a few choice kinds at 15s. and 18s. per dozen.—Edmonton, March 1844.

NEW CAMELLIAS, FUCHSIAS, and CINERARIA.

J. HALLY, NURSERYMAN and FLORIST, Blackheath, begs to offer for sale the following SEEDLING CAMELLIAS, which have been highly approved of by all who have seen them:

PULCHELLA ROSEA.—Figured and described in the "Florist's Journal" for July last; a finely formed delicate rose-coloured Flower, perfect in shape, rising well up in the centre. Good Plants, each, 5*l.* 5*s.*

ALBA MULTIFLORA.—Colour very pure white, with sometimes a delicate pink stripe; petals thick, cupped, and round. The chief novelty and merit of this variety consists in the abundance with which it blossoms, the flowers appearing at every joint throughout the young wood, so as when in bloom to give the plant the appearance of bearing racemes of flowers. Strong plants, 1*l.* 11*s.* 6*d.*

J. HALLY can confidently recommend the following 6 SEEDLING FUCHSIAS, which he intends sending out early in April; they are all very distinct and beautiful varieties.

1. SANGUINIVEA.—Tube and sepals clear delicate white, with crimson corolla; of excellent close habit. This very distinct variety gained the seedling prize at the West Kent Floricultural Exhibition, Sept. 6, 1843. For its character see *Gardeners' Gazette*, Sept. 9th, in the account of the said exhibition, described as shown by Mr Branscombe. Price 7*s.* 6*d.*

2. FAIR HELEN.—Tube and sepals white, corolla scarlet; a very neat Flower, of good habit, exhibited at the Surrey Zoological Gardens, at the September show, and universally admired. 5*s*

3. BOYDII.—Fine thick scarlet tube and sepals, corolla large and bright crimson; of bold habit. 5*s.*

4. WAT TYLER.—Tube and sepals very large, light rose; corolla large and scarlet. A large flower, and most abundant bloomer. 5*s.*

5. KING JOHN.—Habit of plant and colour of flower like Chandlerii, but twice the strength and size. A noble variety. 5*s.*

6. MARGINATA.—Very large flower; tube and sepals scarlet, corolla (large and expanding well) crimson, having a scarlet margin round each petal. Plant of particular fine habit. 5*s.*

The above collection of Fuchsias may be had, by taking the whole, for 30*s.* The usual allowance to the trade on the above.

Also will be ready for delivery at the same time with the Fuchsias, PIPER'S "PRINCESS ROYAL" CINERARIA (not yet sent out). This beautiful variety obtained the seedling Certificate at Chiswick, and first prize at the Regent's Park last season. Price 7*s.* 6*d.* each, with the usual allowance to the trade, when four plants or more are taken

A general Collection of Camellias, Fuchsias, Azaleas, Ericas, Cinerarias, &c. Veronica speciosa, 21*s.* each; Rosa Devoniensis, from 18*s.* per dozen.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, beg to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 2500 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurtzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3*s.* 6*d* per quart.

AGRICULTURAL SEEDS.

WHITE BELGIUM GREEN-TOP CARROT, 1*s.* per lb.; Altringham Carrot, 1*s.* per lb.; Large Green-top Orange Carrot, very thick shouldered, and well adapted for shallow soils, 1*s.* 6*d.* per lb.; Long Red Mangel Wurtzel, grows well out of the ground, 1*s.* per lb.; Fine long Yellow Mangel, produces roots as large as the red, 1*s.* 6*d.* per lb.; Yellow Globe Mangel, 1*s.* per lb., Lucerne, 1*s.* per lb.; Italian Rye Grass, 8*s.* per bushel; Pasture Grasses of all kinds, fine mixed Grasses for Lawns; Skirving's improved Swede Turnip, 1*s.* per lb.; Laing's do. 1*s.* per lb.—W. J. SAUNDERS, Seedsman, 48, Cheapside, London.

Garden and Flower Seeds of every kind, as advertised by other houses.

GREEN GLOBE TURNIP SEED.—A Grower of Turnip Seed has 150 bushels of fine Green Globe Turnip Seed. Samples and price sent to order by applying to W. STENT, Nurseryman, Stockwith, near Gainsborough.

SEEDS.—Belgium Large White Carrot, 1*s.* per lb.; Mangold Wurtzel, Long Red, Orange Globe, and Red Globe, 1*s.* per lb. each; Le Couteur's Belle Vue Talavera Wheat, 11*s.* per bushel; Kinbury Skinless Barley, 8*s.* 6*d.* per bushel; Meadow and Pasture Grass Seeds in Mixtures, suited to soils, &c., at 32*s.* per acre: Mixed Sorts for improving old Grass Land, 1*s.* 3*d.* per lb.; Lime Sorts for forming Lawns, &c., 1*s.* 6*d.* per lb. Price Catalogues of Turnips and other Seeds are ready. Kitchen Garden and Flower Seeds.—GEORGE GIBBS AND CO., Seed-smen, &c. 615 the Agri. Soc., 26, Down-street, Piccadilly.

TO GENTLEMEN, FLORISTS, AND OTHERS.

TO BE SOLD BY AUCTION.—By Mr. IZOD, at the Auction Mart, Bartholomew-lane, on Tuesday, March 19, at 12 for 1. A Choice Stock, the entire property of Mr. W. Alexander, of Lamb Farm, Kingsland, comprising a FINE COLLECTION of CARNATION PICOTEES, ROSE TREES, GERANIUMS, and other choice plants. The Carnations comprise Twitchet's Don John; Martin's Splendid; Puxley's Prince Albert; Hepworth's Brilliant True Briton; Lowe's Grand Sultan, Marchioness of Westminster, Lord Palmerston; Maudsley's Beauty of Woodhouse, Romny Bess, &c. Picotees—Nelli Secundus, Williams' Mrs. Hamilton; Robinson's Nottingham Hero; Ely's North Midland; with a choice stock of Geraniums, comprising the leading varieties, 200 Dwarf Roses, and other miscellaneous plants. May be viewed on the morning of sale, and catalogues had at the Mart, and of Mr. IZOD, at his offices, 2, Warnford-court, Throgmorton-street, City.

TO GENTLEMEN, FLORISTS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, at the Auction Mart, Bartholomew-lane, on THURSDAY, MARCH 21st, 1844, FRIDAY 22nd, and TUESDAY, 26th, at 12 o'clock, about 2000 Standard and Dwarf ROSES, consisting of Bourbons, Perpetuals, Hybrids, Chinas, &c. CAMELLIAS, well set with bloom, DAHLIAS in dry roots, &c.—May be viewed the morning of sale; Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

TO BE SOLD, a Quantity of VINE PLANTS—all PRUNED SORTS: One-year old Cuttings now ready for Planting, raised under the directions of Mr. Stafford, late of Willersley Gardens.—Direct to Mr. JAMES RAWLINSON, Belle Vue, Matlock Bath, Derbyshire.

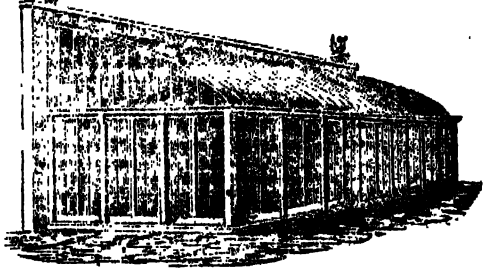
TO BE SOLD, about 1000 clean, robust, well-grown Succession QUEEN PINE PLANTS, from 2*s.* 6*d.*, 3*s.* 6*d.*, to 5*s.* per plant; those at 5*s.* will fruit this autumn, delivered free in London. Gentlemen in want of such will find this an advantageous opportunity of supplying themselves. Application to be sent to Mr. KERNAN, Seedsman, 4, Great Russell-street, Covent-garden, or to Mr. TRUDGEN, the Grower, Forest-hill, London.

FARMS TO BE LET IN THE ISLE OF WIGHT:—FORELANDS, at BEMBRIDGE, in the Parish of BRADING;

Containing:—Arable . . .	229a.	1r.	33p.			
Meadow and Pasture	26	1	15	a.	r.	p.
Homestead, &c. . .	2	0	18—248	3	23	
TAPNEL FARM, in the Parish of THORLEY;						
Containing:—Arable . . .	244	1	39			
Meadow and Pasture	78	1	28			
Down . . .	50	0	29			
Homestead . .	4	0	8—472	0	24	
CHESSELL, in the Parish of SHALFLEET;						
Containing:—Arable . . .	217	1	33			
Meadow	6	2	39			
Pasture	10	0	14			
Down	70	2	23			
Homestead . . .	2	2	22—307	2	11	
BARTON FARM, in the Parish of WHIPPINGHAM;						
Containing:—Arable . . .	350	0	12			
Meadow and Pasture	71	2	38			
Homestead . .	7	3	14—430	1	14	

For Particulars and to treat for Lease apply to Messrs. H. and R. B. SEWELL, Newport, Isle of Wight.—Mar. 15, 1844.

COTTAM AND HALLEN, ENGINEERS, IRON FOUNDERS, &c. &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL-ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices, in consequence of the present depressed state of the Iron Trade.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public, or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS' BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale. For the convenience of those who wish to fix their own Apparatus, they have affixed the following low prices:—

Cottam's Patent Boiler, 18 Inch . . . £2 15*s.* 0*d.*
Rogers' Boiler, small size 1 17 0
Larger in proportion.

Hot-water Pipe, at 2, 3, and 4 inches, at reduced prices.

The TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

GARDEN ROLLERS 18 inches long, 34*s.*; 20, 44*s.*; 22, 50*s.*; 24 inches, 60*s.*; 26, 75*s.*; 28, 84*s.*; 30, 105*s.* each.

CAST-IRON RICKSTANDS, 2 feet six inches high, 5*s.* 9*d.* each. Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases and Pedestals in great variety, and every description of Horticultural Articles, Agricultural Implements, and Furnishing Ironmongery; Dr. Arnott's Stoves, Anglo-Belgian Cooking Stoves; Broiling Stoves. The above low prices being on account of the depression in the Iron Trade, are subject to future alterations.

STRONG IRON HURDLES, 2 ft. high out of the ground, 6 ft. long, with five horizontal bars, weighing about 36 lbs., 3*s.* 6*d.* each. Light Cattle Hurdles, 3 ft. 6 in. high, weighing 42 lbs., 4 0 ,,
Strong do. do. do. 45 lbs., 4 4 ,,
Ox Hurdles, 4 feet high, do. do. 60 lbs., 5 5 ,,

BEST WIRE, for STRAINED WIRE FENCING, at 9*s.* 6*d.* per bundle of 150 yards each. Uprights for ditto, 7*d.* each. The Improved continued, and every kind of Fencing, Fancy Wirework.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 3*s.* 6*d.*; 20 inches, 4*s.* 6*d.*; 22 inches, 5*s.* 6*d.* each.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 7*s.*; 4 ft. 6, 8*s.*; 5 ft., 11*s.*; 6 ft., 15*s.*; 7 ft., 20*s.* per dozen.

SHOW-ROOMS at the Manufactory, No. 2, WINSLEY-STREET, where every information may be obtained.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive Orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

MELON SEEDS.—A very liberal Remuneration will be given for some PERFECTLY PURE AND GENUINE SEEDS of the under-named Melons; or Seeds procured the last year direct from China, Cabul, and Candahar, will be given in exchange:—Striped Hoosainee, Daree, Geree, Garmek, Melon of Gerger, Nukshevan, Sweet Melon of Ispahan, and Italian Green Seed.

Application to Mr. G. MILLS, Gardener, Gunnersbury Park, Acton, Middlesex.

The Gardeners' Chronicle.

SATURDAY, MARCH 16, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

TUESDAY, March 19	Horticultural	3 P.M.
	Linnean	8 P.M.
WEDNESDAY, March 20	Meteorological	8 P.M.
	Society of Arts	8 P.M.

A WORK has lately been published by Dr. Von Martius, on the EPIDEMIC DISEASES OF POTATOES, and to this work we shall again have occasion to refer. He enumerates all the diseases that have been observed from time to time in Potatoes, and describes more particularly two forms which did extensive damage to the Potato-crops of Germany in 1841. These he calls, in German, Stock-fäule, and Räude—in literal English, Stem-rot, and Scab. It is to the first of these diseases, stem-rot, that we wish to draw attention as resembling, in many of its symptoms, the *moist gangrene* we spoke of in our last article. There is, however, this difference between that disease and the one we are about to mention, that the former attacked only leaves and fruits, and was accompanied by the presence of a large quantity of moisture, whilst this attacks the tuber, an underground stem, and is characterised by a diminution of water in the tissues of the plant. It is, in fact, a form of *dry gangrene*; and Martius calls it, Gangræna tuberum Solani.

When Potatoes are attacked with this disease, the first thing that is observed is a drying-up or shriveling of the tuber. The skin loses its ordinary lustre, becomes wrinkled, and shows at last little irregular spots, of a dark-brown colour, which, as the disease progresses, run together into larger spots. In these places the skin seems thicker, and has the appearance of having been rubbed against something. Subsequently the tissue of which the skin is composed becomes loosened and torn; and by the breaking-up of its continuity it assumes the appearance of the bark of an old tree. Sometimes the skin is split up into distinct patches, like scales. At the commencement of the disease, the interior of the tuber does not suffer; but, at last, a change of colour takes place in the tissue under the spots on the skin. Patches of a yellow or brown colour are observed, which are at first isolated, but at last run one into the other. These patches are drier than the surrounding tissue; but up to this period in the appearances of the disease, no changes have taken place that render the tuber unfit to eat.

As the disease advances, little warts or excrescences form on the skin, which are of a dark colour inside; they are at first small, but keep on extending, and at last run one into the other. From the surface of these warts a fungus, belonging to the mould tribe, is observed to project. The Potato now begins to emit a disagreeable odour, and its physical character is generally changed. Its specific gravity, which in a state of health is 1.163, becomes successively reduced as the disease proceeds, and at last is about 0.9. When in this state, it is frequently attacked by a species of Acarus, the A. farinæ, which feeds upon the grains of starch. If the Potatoes are planted with this disease, in no case do they put forth healthy shoots. In the commencing stages, the eyes put forth shoots which rise above the ground, but soon perish. In the latter stages, the whole tissue of the Potato is involved in the disease, and on cutting into it, it presents a dark-coloured disorganised mass, very dry, and not unlike the appearance of a truffle. The attempt at putting forth shoots now results in the formation of little knobs, varying in size from a quarter of an inch to an inch in circumference, and having a red or rose colour on the outside.

On examining the tissues under a microscope, it will be found that the cellular tissue of the skin has lost its transparency and become of a brown colour, and that of the interior has lost its brightness, as well as its moisture and whiteness. The starch grains gradually disappear, and cells filled with air and a yellow fluid occupy their place. Many of the cells are torn, and the intercellular passages are filled with a brown fluid.

Scattered between the cells in all directions will be seen dark-coloured, opaque grains, of varying form and size. These grains do not develop any further, but at last burst, and in their appearance and history resemble the Protomyces, or primitive Fungus germs of Unger. On cutting into the little knobs, masses of the fibres of a Fungus are observed, which at last make their way to the surface, and there either fructify or become shrivelled into a whitish layer. Sometimes the fibres of this Fungus, which are very delicate and transparent, are found throughout the whole mass of the diseased tuber. On examining these fibres, they present two distinct forms, the one being probably a variety of the other. Martius has named it *Fusisporium solani*.

Potatoes thus diseased have been chemically examined by Dr. Buchner. The starch of the Potato does not appear to undergo much change as long as the tubers are kept from the influence of moisture, or that the dry form of the gangrene does not give way to a moist one, which is sometimes the case. The albumen of the Potato entirely disappears. The greatest alteration is in the water, which is reduced to half the quantity that exists in healthy Potatoes.

In healthy Potatoes, the water is	.	73 parts.
In diseased ,, ,,	.	35 ,,
In healthy Potatoes, the dry matter is		26 ,,
In diseased ,, ,,	.	64 ,,

The lignin becomes of a brown colour, and is converted into humus. A more accurate analysis than the above has not at present been obtained. The following, however, is an analysis of healthy Potatoes by Pfaff:—

Water	76.6
Starch	11.2
Ligain	7.8
Mucus and Salts . .	3.7
Albumen	0.7

These figures are the mean of nineteen analyses:—

We are not aware that this form of disease has prevailed extensively in England; but we have lately received communications from correspondents complaining of their Potatoes, and in some instances we make little doubt that they are suffering from the disease we have just described. We wish our correspondents would be more particular in their descriptions of the diseases of plants, or, which is far better, send us up specimens for our own examination.

With regard to the causes of this disease, nothing certain is at present known. In Germany it has occurred in all soils and in all weathers. It has occurred to almost all sorts of Potatoes, and after all modes of planting and gathering, so that many have been inclined to attribute it to the influence of contagion; whilst those who are advocates of the doctrine that all diseases spring from the sporules of fungi, will at once conclude that the existence of the fungus in this disease is a proof of its having originated in their presence. We shall, however, consider the subject of contagion and infection in their relation to the propagation of disease amongst plants, in a future article.

For the present we can only say, that for the prevention of the dry gangrene in Potatoes every precaution should be taken in planting them, to secure their healthful growth. The conclusions of Von Martius are as follows:—The newer the variety is the better. The Potatoes intended for seed should be grown separate from the rest. The seed-Potatoes should not be kept heaped up in damp cellars, and allowed to shoot before they are planted, and they should never be cut for sowing till they are brought into the field.—*L. E.*

We are sure that all sensible gardeners who are striving after eminence in their art, will have read with interest the various papers by Mr. W. Wood, which have from time to time appeared in our columns. We would now invite their very particular attention to a communication, nominally on FUCHSIAS: but really on the whole *rationale* of potting plants, the commencement of which appears in our columns of to-day. They may not, perhaps, entirely agree in all the views of Mr. Wood, but they will find in the principles which he inculcates, much that they cannot reflect upon without advantage.

We are too well aware that many gardeners disregard first principles, and rely entirely upon what *they* call experience, but what *should* be named blind chance. It is not, however, the intelligent men among them who do this; and we trust that the day is near when no one will care to avow it. For however reluctant cultivators may be to apply the first principles of Horticulture to practice; whatever success may attend the attempts of the ignorant, jealous, or crafty, to throw obloquy upon the advocates of a rational system of gardening; and however difficult it may appear to apply theory to practice; we may rest assured that the day is near at hand when first principles, though last learned, will be universally recognised as the only guide to be safely followed.

Gardeners are, as a body, far better informed and more intelligent than any men in their own condition of life; and it is only necessary for them to turn their attention steadily to an examination of the causes that produce the results with which they are familiar, to win for themselves a really high station in the estimation of the world. It is an earnest striving after perfection that alone leads to distinction. For attempting to inculcate those truths, ourselves, Mr. Wood, and others, have been assailed in the most unworthy manner. The attacks made by a disreputable portion of the press upon the course we have seen fit to take on this subject have been unjust, false, virulent, and vulgar; discreditable to the taste and temper, and disgraceful to the character of their writers.

A popular authoress, when speaking of her hero, has happily observed that—"The more he learned to see, the more afraid of darkness he became. He was very much afraid of ghosts; yet the ghosts which he feared have been known among men from time immemorial. *Ignorance*, a wonderfully large lady, clothed in glittering white texture; *Selfconceit*, her long-necked child, who always treads in the footsteps of her dear mamma; and *Boasting*, which must be the ghost of an old French language-teacher, who in his lifetime had been connected with these ladies, and often been seen in their company." Let all Gardeners be as much afraid of ghosts as Cornet Charles, and, like him, take for their motto "FORWARD! MARCH!"

FUCHSIAS.

For easy culture, elegance, and long continuance of bloom, the Fuchsia is probably unequalled. Its fitness for growth in pots or open borders, for portable specimens, or for permanent effect, and, above all, its adaptation to almost every kind of soil (under proper treatment,) give it more than ordinary attraction. Though Nature has omitted to endue it with her most spiritual attribute of odour, she has so mantled it with the "perfection of beauty," that the most fastidious taste could not imagine a more graceful and brilliant form of vegetable structure. There is scarcely, however, another race so generally grown respecting whose cultivation such opposite opinions are entertained. Whilst one man recommends exclusively the annual growth from the root, directing each preceding season's shoots to be removed, a second as strenuously maintains the value of the previous year's growth, as the best means of ensuring prolific bloom from the exhausted, but partially renovated source of by-gone vigour.

As the permanent character of plants may, to a great extent, be determined by their capability of accumulating such an annual supply of sap as may be sufficient to maintain their fertility unimpaired in successive seasons, it may be confidently assumed that the constitutional vigour of all plants is impaired in proportion to their excessive fertility, which being the ultimate function of vegetable life, can only be continued by the reproduction of the organs (or buds) essential to the formation of bloom. The Fuchsia is one of the most striking instances of fertility in plants; and, apart from other objections to the modes of cultivation just mentioned, which however will be productive of favourable results by good management, it may be stated as certain, that a better method is to be expected for managing all plants whose tendency to bloom is strictly commensurate with their annual amount of growth; a habit which is strongly characteristic of the present genus. The management of Fuchsias, to which the present remarks are introductory, commenced from their first stage of growth in the 2d and 3d weeks in March 1843.

To successful cultivation the following qualifications appear requisite:—A knowledge, 1st, of the constitutional habits of the plants to be grown; 2d, of the nature of the materials (soils, &c.), best adapted for their growth; 3d, of the extent to which such soils, &c., can be applied; 4th, skill to maintain the means essential for growth by a due regulation of light, air, heat, and moisture.

Before proceeding to practical remarks, it will be as well to refer the reader to opinions given in a previous Paper, viz., that 1st,—"It is the elementary condition of an organised being, which favours the ultimate development of its parts. 2d, That a uniform circulation of the fluids necessary for the highest objects in Horticulture, is the result of adapting the arrangement, proportions, textures, and qualities, of the materials employed in cultivation, to the organic structure of plants, and to the external agencies which operate upon them throughout their entire growth."—(*Gardeners' Chronicle*, 1843, p. 820.)

Admitting the correctness of these conclusions, the following inference is clearly to be drawn from them, namely: that there is no arrangement of soil essential to the perfect condition of a plant, which is not proportionately essential throughout its whole period of growth. That the fertility of plants is regulated by the modified action of atmospheric and solar agencies upon other elements in Nature, is too well known to require proof; but it is equally certain that the most fit medium by which such agencies can be applied is not equally well understood; or why is it that opinions are still given, that the condition of certain plants has been caused by the presence or absence of some single substance? Why is it that we hear of such various combinations of matter for the conveyance or suspension of the elements of food for plants? Why is it that so many ingenious external contrivances are sought out and applied as attracting influences and channels to convey the vital elements of Nature to every organised being, however diversified its structure?—as though a perfect system of cultivation would be found in connexion with the greatest extent and influence of atmospheric agency. The next generation will smile at the fact that their predecessors, with all their skill, were advocates of such internal materials for the growth of plants as would most readily imbibe the vivifying influence of atmospheric and solar agency, in connexion with external structures which would be the least pervious to them.

The first general truth in the department of Horticulture, to which the present subject refers, is, that every operation of art implies a limitation of the agencies of Nature; the successful application of the former being exactly in proportion to the correct recognition of the laws of the latter.

In illustrating these remarks I must once more advert to the primary truths upon which a correct arrangement of soils depends in artificial cultivation; and the reader is particularly requested to compare the principles stated at p. 848, (1843), with the following:—

§ 1. The particles of which all matter consists being subject, by the law of attraction, to form solid bodies, are, in the absence of a modifying agent, unfavourable to that condition which admits the action of other essential agencies to growth. The soils employed for plants in pots being circumscribed, are subject to the force of attraction, by the increased pressure of their parts towards and upon each other.

§ 2. As the force of attraction in matter, implies a division of its parts to be attracted (*or vice versa*), it also implies an agent capable of acting singly upon its parts.

§ 3. The force of attraction, by the pressure or cohesion of matter, being in proportion to the number and closeness of its parts in any given body, it follows that any arrangement by which such parts are diminished or increased, must necessarily be a modifying power, or agent, whereby the force of attraction is governed.

§ 4. The primary agent in Nature, which operates upon the form or arrangement of matter, previous to its decomposition, or affinity, is mechanical *force*.—(Herschel).

§ 5. If the attraction or cohesion of matter may be modified (§§ 3 and 4) by *mechanical* agency, it may be inferred that such a modifying *power* or agent is essential to the condition of other agencies acting upon matter. The proportions of soils in pots being subject to attraction by pressure, increase the force of attraction by lessening the distances of the individual parts, and diminish the force of attraction by increasing the distances of such parts (§ 3.)

§ 6. As matter, when circumscribed, is subject to an undue attraction of its parts (§ 1), and as mechanical agency is a modifying cause of attraction (§§ 3 and 4), it may be assumed that a just mechanical arrangement is essential in all soils employed in growing plants.

§ 7. As the force of attraction is in proportion to the number of parts in any given body, (§ 3), and is inversely as the distances between such parts, it follows that mechanical agency should be strictly in proportion to the number of such parts.

§ 8. All elementary substances are capable of entering into combination with each other only in fixed or definite proportions, and not arbitrarily. (Herschel.)

§ 9. What is thus true of combinations may be assumed to be true of mixtures; and therefore the proportions of soil in which plants are potted should also bear a strict relation to each other.

§ 10. As the soils in which plants are potted may be acted upon by other agencies, only according to their uniform condition,—1st, mechanically (§ 7); and 2d, chemically (§ 8); it may be assumed that a law of mutual relation is the only true basis of a perfect arrangement of soils for the growth of plants.

§ 11. The fitness of pots for a perfect arrangement of soil, will be in proportion to their uniform admission (externally and internally) of the mechanical, chemical, atmospherical, and solar agencies, essential to the support of plants (§ 9).

§ 12. As the mechanical and chemical properties of soils are modified by atmospheric and solar action, the latter exerting an opposing tendency upon the former, it may be assumed that the mutual relation or counterbalance of these opposing agencies to the growth of plants constitutes the law of equilibrium, by which the vital elements of support to plants are held in solution for such period as their organic structure, or assimilative power demands.

§ 13. As all plants are sustained by agencies peculiar to their organic structure, and possessing a mutual relation and dependency, it is shown by § 8, that the absence of one agent cannot be supplied by the excess or modification of another.—*William Wood, Pine-apple Place.*

(To be continued.)

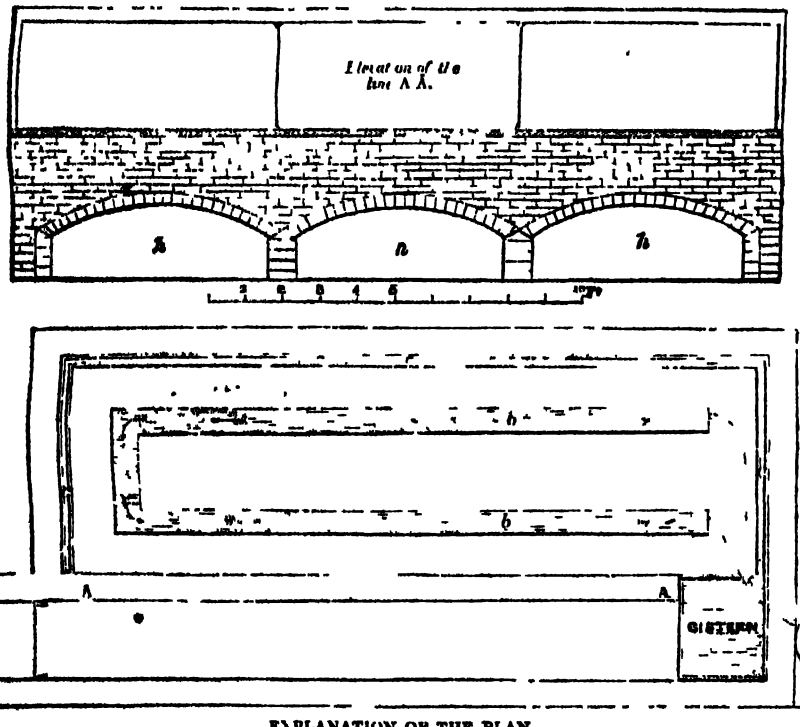
PLAN OF A MELON PIT.

By Mr. R. Glendenning, Nurseries, Turnham green.

Mr. Knight has very justly remarked that "there is not any species of fruit at present cultivated in this country which so rarely acquires the greatest degree of perfection which it is capable of acquiring in our climate as the Melon." *

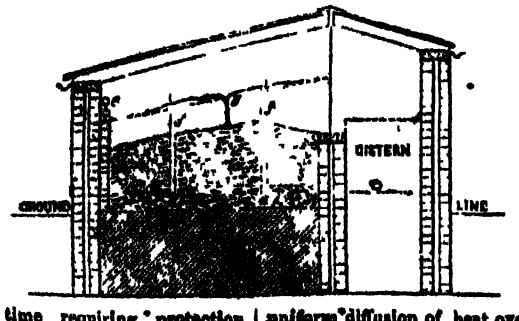
One of the great evils attending the common mode of producing the Melon in this country is the practice of raising them on dung-beds, where the roots are permitted to descend into the rank decomposing material under them; the plants, of course, grow very luxuriantly, in consequence of receiving an immense supply of impure and improper food, which is a fact well known by all practical gardeners. In order to obviate this evil, I have been employed by a scientific gentleman in this neighbourhood to design a pit for the culture of the Persian varieties of Melons; his object is to produce them in the highest possible perfection, which I am quite sure cannot be accomplished on a common hot-bed, for Persian Melons are much more difficult to manage than the kinds in general cultivation.

* Knight's Hort. Papers, p. 191.



EXPLANATION OF THE PLAN.

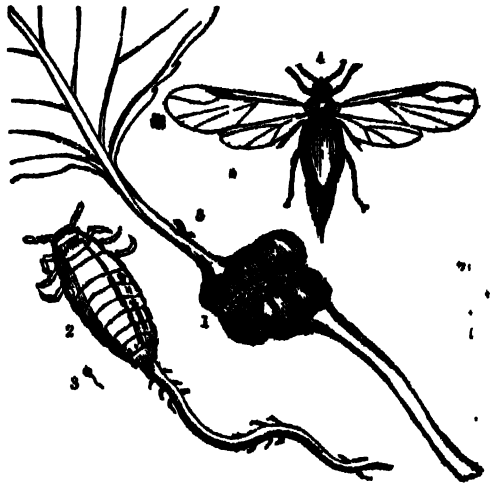
A, Burbidge and Healy's Boiler.
b b, Iron troughs *c c*, Pipes.
d d, Iron troughs as at *b b*, in Plan.
e e, Pipes as at *c c* in Plan.
f, f, Copper tubes fastened to the troughs to admit steam when required.
g, Wire-trellis on which to train the plants.
h, h, h, Convenient places for the growth of Seakale, Rhubarb, or Asparagus, or keeping tubers of any kind during winter.



This pit is intended for Melons in summer, and to preserve Pelargoniums, or other plants in winter. As the object in constructing it is more for the purpose of experiment than the permanent culture of Melons, I have designed it so that Vines may be substituted without any alteration whatever; indeed, any kind of plant, which such a structure is capable of resolving, and at the same time requiring protection and a warm temperature, may be very advantageously introduced, the hot-water apparatus being so contrived as to command both bottom and surface-heat, either separately or conjointly. For the purpose of supplying soft water for the plants, I have placed a slate cistern at one end of the pit, in order to collect the rain-water from the roof. The soil, if permitted to come in contact with the iron troughs, would, of necessity, become dried, and totally unfit for the roots of any plant. With a view to obviate this, I have placed rough flint, or other stones, over the bottom of the bed, and around the troughs, to prevent immediate contact, and at the same time, to admit of a more uniform diffusion of heat over the bottom of the pit, so that the soil which rests upon it may be more regularly heated. The other advantages and conveniences of this pit will be apparent from the above plan and section, without further remark.

ENTOMOLOGY.—No. LVI.

The Poplar-gall Aphis (*Eriosoma lanuginosa, Lindley*).—Having recently given the histories of the Elm-tree-gall Aphis and the American Blight, the economy of another species, which is a genuine Eriosoma, may not prove uninteresting, especially as it is the animal which led to the destruction of the Poplars at Bresham. In the early part of August and September, I have frequently observed excrescences upon the midrib and stalks of the Poplar leaves (fig. 1), which are invariably at the back; if the seeds of the foot-stalk be twisted in contrary directions, the suture in these galls will readily open, and the contents will be exposed to view. The galls are green with a rosy tint, more or less convex, with an irregular surface, and very thick comparatively; they generally contain a very considerable number of wingless individuals, varying in size; and I have seldom found more than four or five winged ones in them. The inner surface is covered with liquid globules, powdered over and resembling a vast number of eggs of all sizes, which soon dry up and disappear on being exposed to the air and light; the old exuviæ are also scattered about, and amongst them I detected some young Eriosomas with remarkably long tails (fig. 3), which were white, and appeared to be of a cottony substance; and it seemed as if the skins on moulting had been strung upon this appendage, for I have little doubt that the six minute claws visible at short distances are the skins from the six legs, in which case there is evidence of the specimen represented having moulted at least thrice (fig. 2). These little apterous Eriosomas were very pale-green, with black eyes and short 4-jointed horns. The winged specimens (fig. 5) were also very pale-green, the head and thorax dusky, the eyes black, the horns rather short and 6-jointed, with a seventh joint or minute tubercle at the inside of the apex; they were powdered over with pearly white, and the apex of the abdomen was woolly and destitute of tubes (fig. 4); the wings were colourless, with a large pale fuscous stigmatic spot, a large marginal cell, with three oblique nervures beyond, the first not forked at the apex (*), and the second and third uniting at the base; in the inferior wings the basal nervure forms a trident; the legs are short, especially the anterior, and slender, the feet are two-jointed, the basal joint minute, the other terminated by two claws.



The Poplar and Elm-tree galls are formed by a wingless female, which in the spring fixes upon a bud or stalk, and, piercing it, the extravasation of the sap causes the vegetable matter to assume an unnatural and distorted shape, and gradually expanding as the insect buries itself deeper in the tender tissue, it is at last completely enveloped. There she becomes the parent of a large family, sometimes producing eight daily; and by giving birth to young Eriosomas instead of laying eggs, the brood increases at a prodigious rate; for they grow rapidly, undergo their moultings at very short intervals, each one speedily becoming a mother in its turn; and at a later period of the year winged females appear: so that before the original founder of the colony dies she is surrounded by a numerous offspring, removed by many generations. Here, as, indeed, everywhere, we see the wisdom of the Creator in his works: the duty of the first female being to form a dwelling for her family, she is unprovided with wings—they would be an encumbrance to her, and it is even probable that their development might diminish her fecundity; but when the family has attained sufficient extent winged females are perfected, which, led by instinct, depart from the place of their birth, to disperse their progeny over the face of the earth; these are always so different in appearance, and vary so essentially in the anatomical structure of the thorax, that, knowing them to be of the same species, one would never imagine they were of the same sex.

In all probability, the expansion of the gall causes it to crack, or an entrance may be made by insectivorous birds or ants, wasps and other insects, which, attracted by or feeding upon Aphides, may gain access to the interior through the natural suture, and thus the winged specimens are enabled to escape from their prison and wing their way to other and distant districts to deposit eggs, which will again provide for a succession of wingless and viviparous females the ensuing spring. These helpless animals seem to require the protection of an artificial covering to guard them from the extremes of heat and cold, and unless the inner surface of the gall were kept moist, in the manner already alluded to, it is probable that

the sap would not flow, and these feeble creatures would all perish. In these cells one would have supposed they must rest secure, but such is not the case, for they are saved from the larvæ of Aphidivorous insects, such as the larvæ of the Ladybirds, Syrphidæ, &c., many of which I have found living amongst the Plant-lice in the galls, luxuriating upon their flocks, which seem scarcely to be diminished by the hourly drafts which are made upon them: this, however, is not actually the case, for a single larva of a Syrphus will often, before it arrives at maturity, entirely clear a gall of the Plant-lice.

I wish to repeat, that the Briosoma bursaria is a typical species of the genus; and if the nerving of the wings be compared with that of the Elm-tree-gall Aphis and the American Blight, it will be seen that it varies very materially, so that a careful observer could readily distinguish the first from either of the others, which are also easily separated by the form of the stigma.—*Ruricola.*

FAMILIAR BOTANY.

Morphology, No. VII.

(Continued from page 148.)

What is this mighty breath, ye sages! say,
That in a powerful language, seen, not heard,
Instructs us? —— What but God?
Inspiring God, who, boundless Spirit all,
And unremitting Energy, pervades,
Adjusts, sustains, and agitates the whole?
He censeless works alone, and yet alone
Seems not to work; with such perfection fram'd
Is this complex stupendous scheme of things.

If it is a fact almost surpassing man's powers of comprehension, that all the varied products of vegetation are but little changes in the proportions of the elementary matter that constitutes the fabric of plants—which fabric is, moreover, itself, for the greater part, a mere condensation of air—it is not less curious, though far more intelligible, that the different kinds of tissue which are gathered together into stems and leaves, and flowers and fruits, should themselves be but changes from one common form of tissue, notwithstanding the diversity of forms in which it finally appears.

If you boil a head of Asparagus, and then rub it in water in a dish, you will find that it separates into different parts, one being a kind of pulp, the other strings. The pulp consists of minute bladders; the strings are composed of fine threads of different kinds. Or, again, take a young shoot of the Elder-tree, and pound it in water; it, also, will separate into pulp and strings, the former consisting of bladders, and the latter of threads, as before. Such bladders and such threads are found in all plants, constitute what is named their tissue, and form the whole fabric of vegetation.

Nothing can be more different than the forms of tissue. The bladders are more or less round and brittle, constitute pulp, pith, cork, and such parts, and, from their appearance when cut across, are named *cellular tissue.* The threads are very long and tough, and some of them extremely curious, resembling little corkscrews of silver. A muslin handkerchief is composed of threads that are straight, extremely fine, and several inches long; such threads form wood, give toughness to all the parts of a plant, and are called *woody fibre.* If you snap the stalk of a Strawberry leaf, with a little care, you will find that it contains a fine cobweb-like substance in its interior; the parts that snap and cover up the cobweb are, first, a layer of cellular tissue, and next a coating of woody fibre, which guards the cobweb. The cobweb itself may, with gentleness and care, be pulled out to a considerable length, and will be found, when viewed against the light, to consist entirely of spiral threads of inconceivable fineness; such threads we name the *spiral vessels.* These kinds of tissue are all very different, not merely in form, but in the uses they are for; thus the cellular tissue is for digestion, the woody for strength and the conveyance of sap, the spiral for the passage of air. Yet they are all one, as may be demonstrated.

The Oak grows out of an Acorn, the Wheat from a grain of Corn, the Cocoa-nut tree from the contents of a hollow shell. The Oak, the Wheat, the Cocoa-tree, have both cellular, woody, and spiral tissue; but the Acorn, the Corn, and the shell have nothing but the cellular. It would therefore *seem* from this that the two others must be fashioned by the powerful hand of the Creator out of the cellular. But the Morphologist is not contented with an inference; he looks for proof.

Armed with a powerful microscope, keen knives, and yet keener eyes, he patiently watches the progress of development in the germinating embryo, and then he finds that some of the little bladders lengthen, thicken, and cluster together, till they cease to be bladders, and become long and delicate threads. He looks again, and lo! there are other cells, which also lengthen, but without becoming tougher, and gradually form on the inside of their thin transparent sides a spiral line, which applies its turns the one against the other, till at last a second shell, spiral and tough, though indescribably slender, is deposited within the first. The primitive bladder has, in truth, the double property of lengthening on the one hand, and of depositing matter, which is secreted all over its inside, in a spiral direction, or as a uniform varnish, or in a variously broken and interrupted layer.

Here, then, we have proof, irresistible and convincing, that the many textures of a plant consist of bladders, differently varied by the wondrous power of life. Unchanged, and in their primitive condition, these bladders form mucilages, Mushrooms, pith, pulp, and all the softer parts; lengthened out, and rendered tough by a smooth lining of matter secreted within them, they become wood, and the powerful net-work which holds together the leaf,

[illegible] Gardeners' Chronicle, vol. I., p. 85, and Royal Agric. Journal, vol. III., pt. 2.

still gives it force to resist the storm; or extended, and lined by a spiral thread deposited within them, they form the exact imitation of the breathing apparatus of insects, and those of man.

And thus does Nature simply work in the elementary construction of that which seems so wonderfully complicated a machine, the fabric of a tree. Three, or at the utmost four, air-like bodies are condensed into bladders, to which the power is given of secreting internally matter like themselves, and of assuming various forms at the bidding of the vital force. The bladders in their new shapes are compelled to arrange themselves in the endless forms that clothe the earth with a verdant mantle; and thus, and thus only, are provided the materials of the largest of the Kingdoms of Nature.

Untutored man looks on such things without seeing them; he is surrounded by silent prodigies more surprising than the wildest dreams of fancy; and he knows them not, or disbelieves. He is satisfied with results, and thinks not of their causes. It is only to the philosopher that are revealed the mighty secrets of the hidden places of the earth.—*R. E.*

THE ROSE-GARDEN.—No. VII.

(Continued from page 117.)

Plants which have been weak, sickly, and unfit to work the first season, will frequently break at several joints in the spring, beginning from the root; in this case, the converse of the habit of a healthy plant is exhibited, in the unhealthy the highest shoot is the weakest, in the vigorous the greatest power is displayed at the summit of the plant. When the weakness of a plant is determined, the whole of the buds should be allowed to push, in order to loosen the bark; when each push has produced two or three pair of leaves, the highest, which is in general weak, should be removed, the two next left to increase, and all below them stopped, only one or two pair of leaves being left to each, their final removal not taking place until the three upper shoots left to increase are become vigorous.

Insects.—In order to secure the shoots from the attacks of the caterpillar, it is necessary to look over them frequently, destroying slugs and snails also, as all of these do much injury—the first by eating the point of the shoot, on which it remains whilst there is food, twisting the end leaves together, and living on them—the others by eating through the shoot, frequently at its base, if not large and ripening.

Keeping shoots even, and removing thorns.—As soon as the spring-shoot is over, it will be well to look over the stocks, and wherever a single shoot be found which is running away from the others upon the same stem, it must be stopped by pinching off the extreme point, in order to bring the others up to it, that all the shoots may assimilate in size by the time they are to receive the bud. On the 1st of July, it will be well to remove the thorns from the places desired to bud upon. If this be delayed, the plant will have had no time to recover from any slight injury; and if omitted, there will be some trouble and inconvenience in placing the buds. A sufficiency of the shoot should be thus cleared, to allow of the ligature being bound around, without any thorn interfering with the operation.

Time of Budding.—It may be observed, that the growth of the wild Rose differs so much from that of most other plants, that shoots may be found to receive a bud at all seasons of the year. A plant budded on the 21st of October with a species not free growing, was the forwardest, out of fifty which had been budded the same autumn, to start vigorously in the following spring. If, therefore, an unexpected shoot break in a desirable place from a stem (already budded in August or before), use should be made of it without reference to the time of year.

From the beginning to the end of August is, perhaps the most certain time to bud with a dormant eye (*a l'œil dormant*), as the sap is then in full force, especially if the season be moist, after a drought. The passage of the sap, however, varies in different years, and the time to bud of course varies with it. The desideratum is, that the trees should be in full vigour, and the bark part with the utmost facility from the wood, showing a rich supply of sap below it. This is, in general, the case at the season before mentioned. A fall of rain should be taken advantage of, if possible; for, be it observed, that budding during a long drought would be labour entirely thrown away. If the season, therefore, advances without rain, and the sap in consequence be checked, the substitute (which, by the bye, is a poor one) of watering the roots of the stocks well for some days beforehand should be adopted; but, in the event of rain, the operations may be commenced the next day. Early in the morning, and late in the evening, are the best times to bud; and a cloudy atmosphere affords the most advantageous opportunity. Above all, a day having a dry northerly or easterly wind should be rejected, for great evaporation taking place at that time, the tender parts exposed to it are instantly dried up, and the work is frequently destroyed before it is completed.

It will be observed, that during wet weather plants increase in bulk, during hot weather in length; if, therefore, a long continuance of heat and drought take place (especially in a poor soil), after the working of a plant, the action of the sun, which drives the sap to the point of the shoot by contracting the bark, loosens the ligature, and the inserted eye frequently perishes. For this reason it is desirable to enter the buds as soon as each plant is forward enough to receive them. Stopping the end of the shoot may occasionally remedy the evil, by preventing an extension, and thus causing it to swell. When a slight or indeed heavy rain takes place just before the stocks are setting, the sap will be found in motion, and buds may be inserted with facility; but unless a continued supply follow, the juncture of the newly inserted bud with the stock will not take place, and failure may be expected.

Dormant and Pushing Buds.—The difference in England between a dormant and pushing-bud (*œil dormant* and *œil poussant*) is generally one of chance, and almost confined to free-growers. The time chosen to bud is commonly the end of July, or beginning of August; and if a bud springs, the branch is shortened, two or three buds only being left on the branch, (and these are pinched off, one by one, as the shoot advances:) these, of course, beyond the inserted bud, which thus has a chance of shooting strong enough to ripen before winter: if this be done, one bud should always be left (though nipped at the point to prevent its occupying the sap), as a security during winter, which would, otherwise be more likely to cut off the shoot, which has, as yet, but little strength. This lopping a branch, however, at a time when the sap is at its fullest, cannot but injure the root of the plant, by the temporary stagnation it causes.

Grafted and budded Roses of all sorts will be found to dwindle away, when the heads they carry have become weak and the bark of the stock set and hard for a whole season. On the transplantation of all worked Roses great care should be bestowed to secure the roots from injury, as well as to replace directly (rapid growing soils suffering less from temporary stagnation than delicate ones). The stock, in its natural state, will exist and recover, almost without a root, but it must be remembered that this pre-supposes it to have been healthy and vigorous, under which circumstances, when the top is cut off and the roots cut in, the vigour which is retained in the neck of the plant will make extraordinary exertions for its recovery; large shoots will be thrown out from its sides, and the activity of the plant will be rapidly restored; if, on the contrary, the stock be replanted with any shoots left upon it, this recovery will be neither so rapid nor so certain. Great attention is, therefore, necessary in pruning trees after transplantation, which operation should always be done with the object of promoting the speedy ascent of the sap and formation of fresh free-growing wood on the spot to which the plant has been removed. In direct opposition to this, many sorts of Roses, on their own bottoms, require lifting occasionally, to prevent the roots going too deep, and the flowers diminishing in quantity, as well as to divide the roots, remove the decayed parts, obtain offsets, &c.

In France, budding with a pushing eye takes place at the end of May, and is frequently used when, a few buds only being procurable of a certain desired species, it is an object to increase them as soon as possible; in this case, three or four natural buds should be left beyond that which has been inserted, and these should be taken away, as before mentioned, with the intervention of a week between each.

(To be continued.)

Home Correspondence.

Tank-Heating.—Permit me to make one or two observations upon the subject of tank-heating, of which I have now had some experience. My greenhouse is 45 feet long and 14 feet high, and therefore contains a considerable area. This I have succeeded in heating very perfectly, by means of the smallest size Rogers boiler communicating with a brick gutter cemented: the gutter is not divided, but passes round the house, obstruction to the entrance being avoided by carrying the water under the floor opposite the door, by means of a lead pipe which dips and rises on the other side to the same level; the water thus leaves the boiler, and passing once round the house re-enters the boiler. I conceive that this arrangement is to be preferred to the divided gutter, where the water-course is long, the water being less cooled than if it ran round the house and back again before it re-entered the boiler. You had some doubts as to the applicability of brick gutters with slate covering, to the case of greenhouses, fearing that the atmosphere might be too much charged with moisture. I can assure you that fear is quite groundless, as I find my house perfectly free from damp, and indeed the plants require watering now every other day, the soil becoming quite dry in that time; a moister state of the air may be maintained when proper, by raising two or three slates in different parts of the house. The slates I employ are a quarter of an inch thick, and are cemented to each other at the sides; this thickness adds to the strength, but I imagine, has the disadvantage of confining the heat longer than thinner slates would do, which might be equally well secured by cementing their edges, made to overlap. There is an appearance upon the surface of the water contained in these cemented gutters, which being a crisp scum and somewhat like a coating of ice, may have puzzled some of your readers who have seen it. I may mention that it is chalk, and that the water contained in a recently constructed cement tank is highly charged with lime; in fact, is pretty strong lime-water, feels soft to the fingers, and gives a bitter taste to the tongue; the carbonic acid gas contained in the air of the house, acts upon the surface of this lime-water, and converts it into carbonate of lime. I suppose that this solution of the cement is peculiar to recently constructed tanks, and such as have been made use of before the air had the opportunity of acting upon the surface, and converting it into carbonate of lime; and should the evil continue, I should be disposed to draw off all the water, and allow the tank to be exposed to the air for a few days. My gardener has been employing boiling hot water for the parts of my Mills' pits infested b

sow-bugs, and with very decided effect, those numerous and troublesome little pests yielding up their lives by thousands to this application.—*T. Harrold Fenn, Weyland, Suffolk.*

Pines.—I have lately seen some fine fruit from young plants, at Colney House, near Barnet. On Christmas week an Enville was cut there weighing 7 lbs. 4 ounces; a Queen, 4 lbs. 12 ounces; and a black Jamaica, 5 lbs. 3 ounces. Many more were cut previously of a similar size, but were not weighed. In the beginning of December an Enville was cut 6 lbs. 9 ounces; this was a curiosity in its way; three small fruit, each being perfect, grew out of the crown, and were all ripe at the same time with the principal fruit. Mr. John Fish, the gardener there, grows them almost entirely in loam from Colney Heath, using it as rough as possible. He attaches great importance to growing the plants very fast, and fruiting them when they are young.—*A Visitor.*

The Beefin Apple.—Being a native of Norfolk, I am well acquainted with our excellent Apple, the Beefin. This is frequently known by the names of Biffin and Beaufin; but Beefin is the true name, originating from its striking resemblance to a piece of raw beef.—*M. G.*

Gourds.—A correspondent some time since remarked that he had never seen the Potiron Jaune grown in England to anything like the size and perfection which he had witnessed in the north of France. In the year 1822, I grew in my garden at Stoke Newington, from seed which I had of the Society in Regent-street, a fruit which weighed 130 lbs., and which measured in circumference 5 feet 8½ inches. This I intended to exhibit at a meeting of the Society, but could not, at the time, find a convenient conveyance. After keeping it several weeks, till it began to decay at the part where it had rested upon the ground, it was placed upon the hall table as a curiosity, and was cut up and used, in lieu of Peas for soup, which was of a bright golden colour and excellent flavour.—*J. B. K. L.*

Excrescences on Oak.—"T. G. Clithero," at p. 22 of this year's *Chronicle*, appears to have misunderstood me on this subject, where I said the timber of trees having excrescences was generally shaky and worthless. "T. G." says, "it is of ten times more value, if not unsound, and that whatever may be the cause of the curliness, it has nothing to do with unsoundness." He says, further, "that such trees grow as vigorously as others, their neighbours." Trees may appear to grow vigorously, and yet be unsound in the inside. What I said was, that the trees (alluding to those growing in Porkington-park,) appeared to be of a great age, and showed symptoms of decay, from various causes, and that those that had been cut down were found to be decayed in the inside; namely, all the wood that had been formed previously to the commencement of the excrescences. I have lately seen many Oak-trees, including Pollards, covered with excrescences. The Pollards are all, more or less, decayed inside, some of them are quite hollow; but to look at their branches, they appear to be in vigorous growth. A person who has had much experience in working up such trees says, that if the trees are old he invariably finds the timber either decayed or beginning to decay. Hence it is only the curled excrescence that is of much value. He confirms what "T. G." says respecting its shrinking and requiring five or six years' seasoning, before being worked into furniture, &c., and says that it requires to be cut in a particular manner for such purposes, or it is of no value. The reason of curled wood of Oak shrinking, and requiring so long a time to season before it can be advantageously made use of, appears to be the premature decay of some of the annual shoots and buds, on account of their being crowded closely together; they are inclosed in the living wood, similar to the decayed branches sometimes inclosed in other timber; these make spaces in the wood like small holes and fissures, of a dark-brown colour. The excrescences are an after-growth, formed by the filaments or woody tissue from the numerous annual buds and shoots that grow, as it were, on the original wood, being obstructed by some cause in descending. Such curled wood recently formed, is generally sound to a considerable thickness, and it is only the curled wood that is valuable, and not the first-formed straight-grained timber. Such wood would be more valuable and more in demand, if cabinet-makers knew the proper way of cutting and seasoning it for their purposes, as it is the timber of such trees that is of little value. "T. G." is wrong when he says "the excrescences occur from a tendency the trees have to throw out roots from every part of the stem." He instances the roots, or protuberances that would be roots, in some kind of Apple-trees; but the excrescences on the Oak and Elm are very different from the knobs or burrs on some kind of Apples, which is an effort to make roots, but they cannot do this, except in a close, moist, atmosphere; the knobs on old Cherry or other trees not apt to emit roots, must arise from obstruction of the descending filaments. Protuberances of these, if of a large size, would probably be curled like the Oak and Elm; but the annual young shoots and buds on the Oak and Elm make no roots at all, except "T. G." designates the obstructed woody tissue roots, or the rudiments of roots; neither does the curliness penetrate into the previously-formed wood, but is evidently an excrescence formed upon, and after the original wood begins to decay in the inside, whether visible or not to outward appearance. All the trees having excrescences in Porkington Park, seem to be past their best, and, no doubt, beginning to decay inside; in many of them the decay is perfectly visible either at bottom, middle, or top; hence, when durable and profitable timber is required, such trees should be felled as soon as the excrescences make their appearance, except it is desirable in parks or pleasure-grounds to retain them for their singular appearance and the value of the curled wood.—*W. Billington.*

Durability of Oak-timber.—I fear that the beam found at Oswestry, and mentioned by Mr. Billington, (*Gardeners' Chronicle*, 1844, pp. 69 and 117), is not so old as he supposes. When reading that account, it struck me that the numerals were so given by him as to make it appear that they are the Arabic numerals now in use; and if so, it is highly improbable that the date really intended is 1035. If Arabic numerals were at all in use at that date, which I doubt, they must have been very rarely used. It is also highly improbable that the person who built the house, supposing the date to be 1035, should have been sufficiently acquainted with letters to be able to use them in this case, more especially as the Rev. T. Salway informs me that they are very perfectly formed. It should be remembered that Oswestry was upon a disturbed frontier, and also that grants of that early time are usually not dated, and that even William the Conqueror himself could not write. Mr. Salway tells me that he believes that the date was originally 1635, and that some person has altered it by cutting away the top of the 6. I believe, therefore, that the Oak-beam cannot be proved to be more than 209 years old, instead of 809; and this is of consequence, from an argument for the durability of Oak being derived from the former supposed date.—*Charles C. Babington.*

Garden Varnishes.—The composition described by "Devoniensis," at p. 301, 1843, is a very good one, and is used by the fishermen on the Norfolk coast to pay their stout calico-jackets with, thus making them waterproof. They add a little mutton suet. The mixture is as follows:—1 gallon of pale linseed-oil, 3*s.* 9*d.*, 3 oz. of sugar of lead, 3*d.*, 10½ oz. white resin, 1½*d.*, and ½ lb. mutton suet, 3*d.*—in all 4*s.* 4½*d.* the gallon. These simmered together will make a useful varnish, at a reasonable cost. The use of the sugar of lead is merely to dry the oil.—*Rambler.*

Miscellaneous.—*J. K.* suggests that it would be an advantage to country gardeners if gentlemen, instead of giving money prizes, were to offer rare plants as rewards at floral exhibitions. This, he imagines, would create a more general desire for fine flowers. For instance, he says, if a dozen of Verbenas in flower were given for a prize, it would encourage many to become florists, and thus strengthen the object of a society. A knowledge of the qualities of objects exhibited would likewise by this means be increased.——*Verax*, a known correspondent, in justice to Messrs. Youell and Co., states, that about this time last year he planted a few canes, had from them, which bore abundantly very large fruit, and continued bearing until the frost. He informs us that he had more this year, being so much delighted with the flavour, size, and long-continuance of bearing.——*J. P.* intimates that guano is an effectual destroyer of worms, as long as its influence lasts, and that by applying it frequently in small doses its action may be extended much. Being also beneficial in promoting growth, it is an important friend to the gardener.——*J. G.* informs us that he planted a few early Kidney Potatoes in an old Pine bed in a Vinery, about the beginning of December. He put about two feet of leaves in the bed, and covered the tubers about nine inches deep with soil. They came up very strong; but being far from the glass they became drawn. When they were about 18 inches high, he pinched about half an inch off the leading shoots of part of them, leaving a few untouched. Those that were stopped began in a few days to form Potatoes, but those that were not stopped produced only a bunch of fibres. Of the former a very fair crop is now ripening off, and our correspondent says that any kind of pit, however far from the glass, will answer the purpose under this treatment.——*R. P.* states that his Vines are subjected to the heat of a fruiting Pine-stove. Some of them are fruitful, others are not, although apparently producing equally luxuriant wood; they are planted outside, and introduced into the house by holes under the front lights. The first is a Black Hamburgh, with two branches; one branch, which produces thirty bunches, is trained up the rafter, the other runs along the inner side of the front lights, until it reaches the adjoining rafter, up which it is also trained, but it produces no fruit. The White Frontignan is trained up the next rafter; it bears eighty bunches, while the Black Muscat, trained along the front, and taken up the adjoining rafter, is perfectly unproductive. Next follows a Black Hamburgh, that was cut down last year; it is trained in the same way, and bears a good crop on the branch taken up the rafter; they are all pruned on the spur system. [It appears that the upright shoots are fruitful, whilst those trained horizontally are unfruitful. The former should be waved. Has any one seen a similar case?]——*A Paddy*, speaking of Heath edgings, observes, that Heath will grow in any ordinary garden-soil, and that it may be removed at any season. He informs us that he has pulled up young plants from their natural bed in all seasons, and larger plants in flower, all of which succeeded perfectly in the garden; he states that the flowers are as brilliant as if they were produced on their native wilds.

Societies.

BOTANICAL SOCIETY OF LONDON.

Feb. 2.—A. Gerard, Esq., in the chair. Various donations to the Library and Herbarium were announced, including 44 new species of Mosses, collected at Swan River by Mr. J. Drummond.—Read, the commencement of a paper by E. Lees, Esq., being A Synoptical View of the British Fruticose Rubi, arranged in groups, with explanatory remarks. The groups into which Mr. Lees unites the species have been already reported in this journal, in a paper read before the Society last year. The list of species will shortly be published in a new Catalogue of British plants, now in the press, for the Botanical Society of London. The following explanations in the words of the author will sufficiently show that this arrangement has not been founded upon any brief or superficial study of his subject:—"Having previously designated the general groups into which the British Fruticose Rubi are divisible, I now proceed to attempt the more difficult task of describing the species in each group, and tracing them in succession in a synoptical form. In doing this, as I must necessarily propose some alterations, it is advisable that the candid and inquiring Botanist should be informed as to the principles I have kept in view. In the first place, then, I have desired to make no innovation but what seemed imperatively required for correct elucidation; and have, therefore, made every effort to profit by the labours of preceding eminent Botanists who have particularly studied the Rubi, as Sir J. E. Smith, Drs. Weihe and Nees von Esenbeck, Mr. Borrer, and Professor Lindley. But, secondly, I have observed with the eye of an original explorer, tracing every form that appeared to me different, without reference to the ideas of other Botanists. And, thirdly, having observed the same plants in a living state for several successive years, I have collated and revised my original observations, sketched every apparent species, and compared them again and again with the figures, descriptions, and named specimens of Botanists of authority. Thus, I have been enabled, in a great degree, to understand the forms to which particular names have been assigned, and to test their propriety by my own experience; I trust, therefore, that I shall not be considered guilty of assumption when I may differ from others, being only anxious for the nearest approximation to correctness. It is unnecessary for me to go into the question as to what constitutes a species in this genus; for, as I have before hinted, it is not unlikely that the forms in every 'group' may be really only varieties sporting from a normal form, and into each other; but, if Botany be a science of discrimination, it is at any rate convenient to name every remarkable form as a species or sub-species; since, otherwise, minor variations can scarcely be distinguished, or must be placed in the same rank with more important deviations of structure. Indeed, Nees von Esenbeck, one of the authors of the elaborate 'Rubi Germanici,' has well remarked, in a letter to the Rev. Mr. Leighton, in the 'Shropshire Flora,'—'I am not of opinion that all the forms proposed by my friend Mr. Weihe as species are to be considered as such; but, in my opinion, it is absolutely necessary to look for the greatest number of forms which present themselves to us in the genus, before attempting to judge of species, and fixing their limits. I can scarcely tell which is most perplexing in the path of our science, whether,—with Mr. Weihe, to distinguish as species every form of Bramble that presents itself to our view,—or, with Mr. Koch, to consider all as modifications of one only. In this case, I do not doubt that these are matters purely of observation, and that the faithful observer of Nature will find that the truth really lies between the two extremes.'"

LINNÆAN SOCIETY.

March 5.—Edward Forster, Esq., in the chair. Dr. W. H. Milne, of Nottingham, was elected a Fellow.—Mr. T. Hall presented, through Dr. W. H. Brown, a specimen of the eight-banded Armadillo.—Sir W. J. Hooker presented specimens of above 50 species of fruits, the greater part new to the Society's collection, including many rare Coniferæ, from North America and Australia; the flowering scapes and portions of the stems of two species of Xanthorrhœa; the root of a species of Ebony from Madagascar; a specimen of the inner Bark and section of the stem of the Lace-bark tree, &c.—Miss Potts, of Chester, presented specimens of Lepidium latifolium, and of a variety of Erodium cicutarium.—The stem of a Xanthorrhœa was presented by T. W. Mann, Esq.—A paper was read from C. C. Babington, Esq., on the Spiranthes gemmipara. This plant is the Neottia gemmipara of Smith, and was named and figured by him in English Botany from a single specimen found by Mr. Drummond, at Bearhaven, Castleton, in Ireland. During the late meeting of the British Association, Mr. Babington visited the spot where the original specimen was obtained, and found about twelve specimens in flower. The plant was confined to a few spots near the sea-shore, occurring on the drier parts of boggy fields. This species differs considerably from the others of the genus, but more especially in the connection of all the sepals with the two upper petals. The flowers are arranged in three spiral lines, forming a dense spike. The Hybernacula, described in English Botany, are not constant. Two papers were read from W. Griffith, Esq. The first was a description of Cytinus dioicus. It is a native of the Cape, and found parasitic upon Eriocephalus racemosus. It does not, however, injure the plants on which it grows. The second paper was a description of the genus Mystropetalon, which had been referred by Mr. Harvey to the Rhizanths, and to the order Balanophoreæ. The author considered it to be nearly allied to Cynomorium, and that these two genera form a peculiar family of a very distinct kind.

ENTOMOLOGICAL SOCIETY.

Mar. 4.—George Newport, Esq., in the chair. The president announced that the subjects for Mr. Hope's two prizes of five guineas each were,—First, the Natural History of Vesicatory Insects, including an account of all that had been used for the purposes of vesication, with descriptions of the species; and also a chemical analysis of their secretions. Second, the Natural History of the genus Stylops.—Mr. Stephens exhibited several specimens of rare insects, and amongst others a variety of Meloina Euphorbiæ, taken a fortnight earlier than usual for this species.—Mr. Westwood exhibited a variety of Acacia Chen, with larger wings and antennæ than usual; also the cocoons of a species of Ichneumon, attached to a piece of

cord, and from which the insects escaped at either end.—Mr. Doubleday exhibited a new species of Polyommatus, from the Missouri.—Four species of Papilio, from Assam, were exhibited, two were new, and the other two had not yet been figured.—Mr. Westwood exhibited specimens of an orthopterous insect, in which the leg had been reproduced after having been broken off. The new leg was distinguished from the others by its smaller size, and the absence of the warty projections which exist on the old ones. He believed that no reproduction of parts took place in those insects which undergo what is called perfect metamorphosis. The antennæ of the larvæ of Raphidia had been reproduced, but this genus must be looked upon as having an imperfect metamorphosis, as the pupa moved when touched, some days before it passed into the imago state. Mr. Westwood also read a paper on the economy of the genus Palmon. This genus belonged to the Ichneumonidæ, and a species of it had been described by an anonymous writer in the "Entomological Magazine," as attacking the eggs of a species of Mantis. The eggs of the Mantis are covered over with a woolly case, which however did not prevent the Palmon from depositing its ova in the case. This fact the author considered was opposed to the opinion expressed by Mr. Curtis in his paper on the cocoons of the larvæ of Dieloceras Ellisii, which he supposed were covered with wool to prevent the attacks of the Ichneumonidæ. A discussion followed the reading this paper, in the course of which the President observed that he believed the law of the reproduction of parts was the same in all the Articulata. The reason why the limbs of the larvæ of insects undergoing a perfect metamorphosis were not reproduced was, that they died of hæmorrhage from the wound. He referred to Mr. R. Goodsir's observations on the reproduction of the legs of the Crustacea, which Mr. Goodsir had traced to the existence of a gland for the especial purpose. He hoped, however, those observations would be repeated. In the course of the discussion the curious fact was stated that sometimes insects belonging to winged genera failed to develop their wings, and were wingless, whilst sometimes wingless species, of which the too common Cimex lectularia (Bug) was an example, took to themselves wings and begun to fly.

Reviews.

A History of British Fossil Mammalia and Birds has been commenced in monthly Parts by Prof. Owen. The Author proposes "to give a description of the most instructive and remarkable remains of the extinct Mammals and Birds of the British islands; to define their generic and specific characters, so far as they are exhibited by such remains; to deduce therefrom, by physiological comparisons, the habits of the species when living; to trace out their zoological affinities, and to indicate their geological relations, and the order of their occurrence in the fossiliferous strata of Great Britain." We cannot doubt that this will be an important publication, and most acceptable to Geologists. The first Number is executed in the same beautiful manner as Mr. Van Voorst's other works, and the name of Prof. Owen is the best of all guarantees for the value of the information it contains.

A Descriptive List of Perennial Grass-Seeds, by J. Sutton and Sons, Reading, is a single sheet of paper setting forth the kinds of soil best suited for the Grasses and other plants employed in forming permanent pasture artificially. It will be found useful, and may be had upon application to the authors.

A Practical Treatise on Brewing. By William Black. 3d Edition. 8vo. Longmans.

This is a complete account of the process of brewing in the large way, with directions for conducting the operation properly in small households. Among the novel views of the author, we may more particularly mention his opinion, that the quality of malt depends on the soil on which the Barley is grown; and that the bad quality of beer, although no doubt owing very often to other causes, is frequently caused by the unsuspected agency of galvanic influence. For the evidence adduced in support of these views, we must refer the reader to the work itself.

The Natural History of the County of Stafford. By Robert Garner, F.L.S. London. Van Voorst.

There is nothing more likely to excite a taste for the study of natural history than well-written, interesting accounts of local objects. However important lists of plants and animals, and technical descriptions of strata, &c., may be to the advancement of science, they are not things that interest the feelings, and induce persons to embark in their study. Up to this time there have been but few books published on local natural history, embracing all the objects of interest in a particular district. This may have arisen from the want of persons, with time and leisure, who could accomplish such a task. It has, however, been done in the volume before us for the county of Stafford, by Mr. Garner; and few persons could have been found more competent to the task.

The work commences with some history of the eminent men who have been born, or have lived, in the county of Stafford. The geography, meteorology, antiquities, geology, zoology, and botany of the county, are treated of in successive chapters. All these subjects are developed at some length, and the zoological and botanical departments contain general observations of an introductory nature, that will make the volume serve, in some measure, as a text-book for the study of animals and plants. We cannot, however, commend Mr. Garner for arranging his plants according to the Linnean system. None of the Floras of the whole island are so arranged now, and it will soon be more calculated to puzzle than to assist the student in botany. The Flora of Staffordshire is somewhat northern and subalpine, the surface of the county lying between 700 and 1500 feet above the level of the sea. It is quite deficient in many of the plants very common in the south of England and near London, and comparatively few of the plants of the chalk are found, as Stafford consists principally of the new red sandstone. In addition to the flowering plants, there are lists of the Cryptogamia, which seem to be tolerably full, and much more complete than such lists usually are.

There are interesting accounts of the lead, copper, and coal mines, and also of the Staffordshire potteries. A memoir is added of that extraordinary man Josiah Wedgwood, to whom his country and the world are so much indebted, for extending and beautifying the art of pottery. He was the son of a potter, the youngest of 13 children, and at 11 years old begun to work at his father's business. He was, however, obliged to give up, in consequence of a lameness. In spite, however, of all these difficulties, he by his genius and perseverance obtained that wealth and position which are well known to all.

The work is illustrated with a number of engravings of antiquities, trees, animals, and other objects of interest, and we can but recommend the volume to those who take a general interest in natural history, and especially those who are living in the county of Stafford.—*L. E.*

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

Saxifraga ciliata. Fringed Saxifrage. (*Hardy Perennial.*) Saxifrageæ. Decandria Digynia.—This plant, of the section Bergenia, and very nearly allied to S. ligulata, is like that species a native of the mountains of Northern India. Dr. Royle speaks of it thus:—"I have had some difficulty in naming this plant, as the published descriptions, as well as the distributed specimens of Wall. Cat. 4193. and figures of S. ligulata, to which it is most nearly allied, do not correspond with one another; indeed, two distinct species pass under that name. The plant, S. ciliata, is found on the Mussooree and Sucn Range, at lower elevations than S. ligulata." The plant in the garden of the Horticultural Society was raised from seeds sent under the name of S. ciliata, from the Botanical Garden of Saharunpur. We must remark that Dr. Wallich has a second S. ciliata from India; the latter being S. imbricata of Royle. This is a robust hardy perennial, requiring the same soil and treatment as S. crassifolia; but when planted in the open border it must not have a situation which is damp in winter or fully exposed to the sun in summer. It is easily increased by dividing the old plants, or by seeds, which should be sown, when ripe, in pots filled with sandy peat and a small portion of loam. It flowers about May, in the open border. —*Botanical Register.*

Nelumbium Caspicum. Caspian Nelumbium. (*Stove Aquatic.*) Nelumbiaceæ. Polyadelphia Polygynia.—We are happy to have an opportunity of publishing this, not only for its own sake, but because it affords an opportunity of pointing out the true distinction between the Caspian and Indian Nelumbia. According to M. De Candolle all the Nelumbia found in various parts of Asia are varieties of one species, and this opinion is generally adopted. It is, however, difficult to believe that the deep red Nelumbium of India, with very sharp-pointed petals, such as is figured in the "Botanical Magazine" t. 3976, and elsewhere, can be the same with the blunt-petalled white-flowered plant "found at the mouth of the Volga, near Astrachan, in a part of the river called Tschulpan, amongst reeds intermixed with Nymphæas and Trapa," which, according to Messrs. Fischer and Steven, is the locality of this plant. M. De Candolle indeed suspected that it must be different, but he did not remark in the dried specimens examined by him any character beyond the bluntness of the petals and their general uniformity in size, and upon that distinction he was unwilling to rely. The true difference seems to consist in the very small number of carpels, which do not appear to exceed nine, while in the great Indian species they are as numerous as thirty or thirty-three. Speaking of N. speciosum and its supposed varieties, Dr. Roxburgh writes as follows:—"I have met with only two sorts on the coast of Coromandel, one with rose-coloured flowers, the other with flowers perfectly white, and since that time a third variety has been brought from China with smaller rosy flowers. They grow in such sweet water lakes, &c., as do not dry up during the driest season, and, on the coast, flower all the year round. In Bengal they flower during the hot season, April, May, and June, and ripen their seed about the close of the rains. In China there is a still more beautiful bright crimson variety, which they call Hung-lin; I have hitherto only seen a drawing of it. The white Nelumbium differs in few respects from the red one, and may be considered as only a variety of it. The tender shoots of the roots between the joints of both sorts are eaten by the natives, either simply boiled or in their curries. The seeds are eaten raw, roasted, or boiled. The leaves are used to eat off instead of plates. These holy and beautiful plants are often met with in the religious ceremonies of the Hindoos under their Sanscrit name *Padma*." It is a stove aquatic, requiring to be kept dry during winter. Before putting it into the water, which ought to be done about the beginning of February, it should be repotted in sandy loam mixed with pieces of sandstone, to act on the same principle as drainage, for the water in which it is grown requires to be renewed once or twice a week, and should never be allowed (especially in summer) to be below 60°. About the end of October, when the leaves begin to decay, the pot should be lifted out of the water and dried off gradually. As the soil becomes dry it will crack or leave the sides of the pot, which should be filled up with sand, in order to cover many roots that would otherwise be exposed.—*Botanical Register.*

Miscellaneous.

Age and Extraordinary Size of an Oak.—At about 6 miles W.S.W. of Saintes (in the Lower Charente), near the road to Cosnes, stands an old Oak-tree, in the large court of a modern mansion, which still promises to live many centuries, if the axe of some Vandal does not cut it down. The following are the proportions of this king of the forests of France, and probably of all Europe:—

Diameter of the trunk at the ground	from 9 to 10 yards
" At the height of a man	6½ to 7½
" At the base of the principal branches	1 to 2
" Of the whole head	40 to 43
The height of the trunk	6
" The general height of the tree	23

A room has been cut out of the dead wood of the interior of the trunk, measuring from 9 to 12 feet in diameter, and 9 ft. high, and they have cut a circular seat out of the solid wood. They put a round table in the middle when it is wanted, round which twelve guests can sit. A door and a window admit daylight into this new sort of dining-room, which is adorned by a living carpet of Ferns, Fungi, Lichens, &c. Upon a plate of wood taken from the trunk, about the height of the door, 200 concentric annual rings have been counted, whence it results, in taking a horizontal radius from the exterior circumference to the centre of the Oak, that there must have been from 1800 to 2000 of these rings, which makes its age nearly 2000 years. — *Annales de la Société d'Agriculture de la Rochelle.*

An Economical Polish Beverage.—Into sixty quarts of water put three ounces of Elder flowers, five pounds of common brown sugar, one quart of vinegar, and one of brandy; infuse them for three days, stirring them once every day. This beverage, which is mentioned in the "Agricultural Journal of Aix," is quite as agreeable as beer, and costs ten times less.—*Rev. Hort.*, 1843, p. 468.

Tea in India.—The Tea plantation at Kaola Ghir, on the western branch of the Tonse Canal, is, perhaps, the most interesting of all the symptoms of slowly returning animation in the Dhoon. There are to be seen 5000 vigorous plants of the shrub, thriving with a luxuriance unequalled, we were assured by the Malli, Cheyt Ram, and the Chowdrie of the Botanic Gardens, in this neighbourhood, Nanuck, unequalled in any other garden in the country. Many of the plants had blossoms and seeds upon them, and there seems no limit to the extent to which these plantations may be carried within half a dozen years. The increase, this year alone, at Kaola Ghir, by Dr. Jameson's orders, exceeds 3000 plants, and next year it might be 20,000! The best plants are raised from seeds, layering appearing not to be so quick nor so good a process; and these seedlings produce in the third year, a few even in the second, a large crop of seeds, which of course may be employed in extending the plantations. In 20 years, the entire Tea market of the world might be furnished from the Dhoon and similar Indian localities."—*The Hills*, an Indian Paper.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSES, CONSERVATORIES, &c.

Keep up a moist heat of 75° or 80°, and let the house be rather close, in order to encourage newly-potted plants. Proceed with potting the different tribes as before mentioned; watch carefully over seedlings, and get in cuttings of those plants you wish to increase as early as possible. Now is the best time to strike cuttings.

Conservatory.—Climbers will now begin to spread over the house, and will require particular care in training them regularly at first. Stephanotus floribundus seems rather more hardy than Passiflora Loudoni: both survived in the conservatory here, this winter, in a temperature that averaged 45°; they are now beginning to grow freely. Little syringing should be done here, on account of the bloom; water must therefore be poured on the paths, and any spare places, to keep the atmosphere moist and cool. See that insects are kept down, and that plants have sufficient room. Specimen plants are easily injured at this time, if they are crowded together; all the plants brought in for the sake of their flowers only should be removed as soon as they are out of bloom.

Greenhouse.—Some of the more hardy and common plants in this house might now be turned out to some sheltered place, in order to give more room to the finer kinds. Young plants in small pots might now be potted on the one-shift system; but for this, it is essential that their roots are not much matted, and that they are in a growing state. The only disadvantage in this system is, that after a few years the soil will subside too much in the pot, and many delicate plants will not bear the pots to be filled up again. The best remedy against this, is to place an inverted pot over the drainage, as is often done for Orchidaceæ, and to have it so adjusted, that when you place the small ball on the bottom of it, the top of the ball will be level with the top of the large pot. A small Heath thus treated may safely be trusted in the largest pot: the collar of the plant always remains at the same level at which it is first placed.

Forcing-pits.—Keep every part of these pits full of plants, cuttings, &c.; any plant that can be forced into flower during spring is desirable. The Glycine sinensis is one of the easiest to force in a heat of 55° to 60°; we have it now beautifully in bloom. All the species of Jasmine force well; if they are kept under-potted, and their young wood is constantly stopped in the growing season, they form loose bushes, and give up their climbing habit when they are more manageable for forcing. Honeysuckles might doubtless be treated in the same way. All American plants require large quantities of water when forced. Introduce dry bulbs of sorts to succeed Gloxinias and Achimenes, and sow a few seeds of Balsams, Coxcombs, Browallias, Thunbergias, &c.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

The weather has been so exceedingly precarious of late that it is doubtful whether many of the operations already recommended have been performed; therefore look back to former calendars, and bring the work up as expeditiously as possible. Worms are very troublesome this showery weather, but they may be kept in check by watering the turf occasionally with lime-water made from stone lime, or they may be brought to the surface of the ground, and then removed by hand, by watering with a weak solution of corrosive sublimate. The best plan to dissolve this mineral poison is to add its weight of spirits of salts to it. Attend to mowing, sweeping, and everything that tends to promote neatness. Vacant beds in the Flower-Garden will be benefited by being dug over again when they are dry.

Shrubbery.—If it is intended to make any addition of new shrubs or trees in this department they should be got in immediately. Paulownia imperialis is a noble plant, if for its leaves only, and should be planted on every lawn; it will require protection until the stem gets woody, but after that it will probably stand as well as Catalpa syringæfolia. Araucaria imbricata is one of the noblest plants we have, and many of the Cedars, Pinuses, and Cypresses—to say nothing of Magnolias—are very beautiful. Continue the covering of tender plants for some time longer. Pinuses suffer more from the destruction of their early spring growths than from any other cause; therefore, endeavour to check them by admitting a current of cold air from the north side, and by keeping the plants shaded on sunny days.

Pits and Frames.—Among the first things to be attended to, especially where a large stock is required for flower-garden decoration, is the propagation of Chrysanthemums. Among the new ones which bloomed with me last year, may be mentioned Bijou, Arago, Grand Napoleon, Casimir Perier, Demosthenes, Julius Cæsar, Abelard, Ivanhoe, Minerva, Theresa, Marie and Phidias. Several of these are seedlings sent out for the first time last season by Messrs. Chandler, and are really excellent. Pot Tuberoses in 48s. in turfy soil, and place them in a gentle warmth until they begin to grow. They are useful for setting among plants near the windows, or for the decoration of the hall or drawing-room.—*W. F. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Another class of these flowers, styled Alpines, have made great advances in public favour of late. They are selfs, of all shades, from light pink and grey to dark crimson and deep purple, the eye or centre of the flower being yellow. Joined to extreme hardiness and beauty, they likewise used profusely. It

to dangerous to grow them in the vicinity of Auriculas with white grounds, if seed is an object, as the pollinia bee, particularly, will carry the farina from one to the other, and thus "masterfize" the ensuing crop of seedlings. They do not appear to be so susceptible of wet as the Auricula, and certainly are not so fantastic as to situation, flowering and flourishing almost anywhere. They are usually exhibited at spring shows, and cannot be too strongly recommended to the admirer of early flowers. Plants in frames must be watched in rainy weather, taking care that they have no drip; should this be the case, the laps must be pattied the first fine day.

Polyanthuses are now throwing out fibres round the neck of the plant, and growing fast. If increase is more an object than blooming, they may be parted to advantage now. The breed of this class of Florists' flowers requires improvement, and has made little progress during the past twenty years than any of the others.

Hedges ought to be protected from heavy soaking rains, as well as sharp frosty winds, which we may yet expect and the directions given in previous Calendars must be strictly attended to

Carnations.—From correspondents in various quarters I learn that there are great quantities of seedlings throughout the country; and as cross breeding is now better understood and acted upon than formerly, we may confidently expect some valuable additions to this deservedly popular flower

Ranunculuses.—Since beds have been planted we have had heavy rain; they should be protected with mats, as the roots are susceptible of frost when swelling, which often occurs after much rain at this time of the year. Keep seed-pans moderately moist.

Dahlia cuttings, that are rooted, may be potted off in light vegetable or leaf-soil, and put in close frames till they get fresh hold.

Pansies.—Young plants put out in beds last autumn will flower better than those planted in spring. Where additions are requisite, they should be made now, taking care in the purchase of them that you get the roundest flowers, with the colours as well defined as possible, the smoother and thicker the petal the better, and the ground or body colour of one shade, and perfectly clear; bearing in mind that white tinged with yellow, or yellow stained with orange, will not now do.—*J. F. W.*

IV.—PINERIES, VINERIES, &c

Pinery.—The plants in fruit may now have an atmosphere of 70° by night, and 75° by day. Give air when at 85°, and shut up at 90°, dewing the plants directly after with a fine-rosed syringe Sprinkle the plants lately potted, morning and evening, and continue to shade those that have been disrooted

Vinery.—Look over the earliest Grapes again, to see if any of the bunches are too thick, in which case, remove as many berries as is necessary, to give room for those that are left to swell without pressing against each other. It is necessary that syringing should be discontinued whenever the fruit begins to ripen; a drier atmosphere and more air will assist in giving it flavour and colour Attend well to the stopping and tying of the shoots in the second house. The late Vines will now be swelling their buds, and where there are long rods of last year's growth, bend them so as to have the lowest buds on the shoots considerably higher in the house than those near the points, and as the lowest buds break, keep raising the shoot gradually till all are broken.

Peach-house.—In thinning finally the fruit on the trees in the first-house, it will be proper to leave only one fruit upon a shoot of last year's growth (excepting where very strong) if the crop has set well and there is sufficient choice; but in thinning Peaches much depends on the crop being regular over the tree and the degree of vigour the tree may possess. One good fruit in a square foot would be sufficient for a tree in a medium state as to vigour, but more than this should be left till after the stoning. Weak branches should not be allowed to bear any fruit. If the fruit in the second house has set too thick, it will now require a partial thinning. Tie in the shoots in good time, and keep the syringe in use twice a day, and few insects will trouble you.

Cherry House.—Where the fruit is swelling keep the night temperature at 55° or 57°. With sunshine give air early shut up at 70°, and syringe immediately. Be careful to destroy all insects before the fruit begins to ripen, as you cannot syringe or fumigate afterwards.

Fig-house.—The Figs now ripening should be kept dry, and as they are liable to red spiders, use flower of sulphur on the foliage till you can resume the use of the syringe It is hardly necessary to say that those plants in pots that have much fruit upon them, should be assisted with liquid manure.

Strawberries.—The whole of the plants in pots for forcing would be benefited by a top dressing of some rich soil, or very rotten dung, and if they are under cover, they will occasionally require watering with liquid manure. Keep those now swelling off their crop in the houses free from insects, and bring in a succession once a fortnight.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Apricots and Peaches.—Proceed with the pruning and nailing of these as expeditiously as the weather will permit. If cut too soon, an access will be given to the frost, which will induce gum and canker in unfavourable situations. Daub all wounds, especially large ones, with thick paint Anoint Peaches with a mixture of clay, soot, sulphur and lime, adding soft soap and tobacco-juice, if you think necessary. The great use of such painting is to cover, and thus prevent the hatching of the eggs of insects For this purpose nothing is better than pure clay, well wrought up; soot and sulphur, if they do not nourish the buds, keep off birds; and lime gives the mixture a lighter appearance, than if soot alone were used, which helps to keep the shoots in a more equal temperature, by day and night

Cauliflower.—Sow in a slight hotbed for succession It is best to sow little and often A regular supply is thus obtained, and no superabundance.

Celery.—Sow in a slight hotbed, or under a hand light Prick out in pots what was previously sown

Tomatoes and Capsicums.—Sow in heat to get them forward, as otherwise they do no good in unfavourable places

Herbs.—Prepare for transplanting those where necessary, and get ready ground for annual sorts. Above all, forget not Parsley, and plenty of it.

Onions, Carrots, &c.—Prepare the ground for at least partial sowings of these crops. Those having wet stiff soils, must watch their chance.

Cucumbers.—Keep up the temperature; sprinkle the sides of your pit, or frame, after a sowing-day; stop, peg, or tie down shoots, impregnate fruit-blossoms as they appear, as the fruit swells faster in consequence.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Attend to the directions given in preceding Nos., and proceed with the same work where it is not finished

Coppice.—Proceed with what has been previously recommended to be done here

Young Plantations.—Continue to put the fences in good order Cut and plash hedges, where that has not been done, as directed last week, and attend to what has formerly been stated under this head

Hedge rows.—Continue to plant and train young trees, repair and make new fences where they are required, secure trees from being injured by cattle, and protect newly-planted ones from strong winds.

Nursery Work.—From the continued unfavourable state of the weather, little can be done in this department Thin out the strongest side-branches where they are too numerous, and train young plants to one upright leader When the weather becomes milder, digging, planting, or sowing will be performed with more advantage than when the ground is wet and not in a proper state.—*W. M.*

VII.—COTTAGERS' CALENDAR.

As the season for grafting is at hand, the appearance of Thorn hedges may be much improved by grafting the sparish and other varieties on the top shoots. These should be allowed to grow up at different distances along the hedge, which should be regulated according to the size of the garden, and the taste of the occupier. A few hardy Roses may also be planted in the hedge, and trained in it. When these are in bloom, the blossoms projecting a little out from the hedge, only appear, and render it very ornamental. Some of the Roses might also be budded on tall shoots above the top of the hedge as Standards.

Vegetables.—This is an important time for getting in crops of several kinds; ground should be in readiness for Onions, Carrots, &c., which should be sown in drills as soon as the weather will permit. Of the former, the Strasburgh and James's keeping are good kinds. Make up deficiencies in Cabbage-rows, and sow a small patch for succession in a warm border. The Vanack is as profitable a kind as any. Of Potatoes a few of the Ash-leaved Kidney may be planted for an early crop.

Fruit.—See that all Standards are now pruned, and that the training of wall-trees is finished; this is a good time for grafting Apples, Pears, &c

Flowers.—As bulbs are all above ground, flower-borders may now be forked up, giving them a dressing of leaf mould or rotten dung. Herbaceous plants that are spreading too much should be divided, so as to occupy less room. Everything about the cottage should be trimmed up, and kept neat, as this is always a mark of taste and industry.—*Mr H.*

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending March 25, 1844

Mar.	Aver Highest Temp	Aver Lowest Temp	Mean Temp	No. of Years in which it Rained	Greatest quantity of Rain	Prevailing Winds						
						M	M	A	A	M	M	A
Sun 17	51 1	27 1	44 1	6	0 06 in	1	2	—	1	4	1	2
Mon 18	50 8	25 6	42 8	6	0 05	1	5	—	1	4	5	3
Tues 19	51 6	32 3	44 5	4	0 02	—	5	1	1	5	5	2
Wed 20	53 1	27 6	45 4	7	0 18	1	1	3	—	2	2	5
Thur 21	56 2	30 1	46 1	8	0 21	4	1	1	2	4	3	1
Fri 22	50 7	35 8	46 3	10	0 18	3	1	1	3	4	4	2
Sat 23	50 0	30 2	45 1	9	0 38	4	2	1	1	3	5	3

The highest temperature during the above period occurred on the 19th, 1836 and 20th, 1840—therm 69°, and the lowest on the 21st, 1677—therm 21°.

State of the Weather near London for the week ending Mar 14, 1844, as observed at the Horticultural Garden, Chiswick

Mar	Moon's Age	Barometer Max	Barometer Min.	Thermometer Max	Thermometer Min	Thermometer Mean	Wind	Rain.
Fri 8	13	30 051	29 995	49	35	42 0	S	
Sat. 9	20	30 121	29 949	50	34	40 0	S W	
Sun 10	21	29 707	29 571	44	31	37 5	N	69
Mon 11	C	29 598	29 468	54	34	44 0	S W	20
Tues 12	28	29 710	29 481	47	31	39 0	W	09
Wed 13	29	29 854	29 699	47	36	39 5	W	
Thurs 14	30	29 898	29 702	60	30	44 0	S W	42
Average		29 794	29 731	49 1	34 0	41 7		1 40

March 8th—Slight frost early A M; very fine; overcast at night
9th Densely and until mid-day overcast, cloudy and mild overcast
10th Constant heavy rain commenced half past six, continuing till noon fine clear, and boisterous at night
11th Boisterous, with rain cold stormy showers, and very boisterous throughout, clear at night
12th Very cloudy at noon boisterous, dark and stormy, with sleet, clear
13th Clear with slight frost; dark clouds clear at night
14th Uniformly overcast; rain, dense fog in afternoon rain at night
Mean temperature of the week, 1 8 deg below the average

Notices to Correspondents.

MR. PAXTON'S COTTAGER'S CALENDAR.—At the earnest solicitation of many of our Subscribers, we have determined on again reprinting *Mr.* Paxton's "Cottager's Calendar," in the form of a small volume, for general distribution, priced *3d* each copy It may be ordered of all booksellers. Gentlemen wishing to *distribute copies* among their cottage tenantry, may have them *delivered in any part of London*, by remitting a post-office order to this office, at the rate of *5s.* for every 25 copies.

APRICOTS.—*T Barnes.*—The Moorpark is one of the best Apricots for a south wall.‡

ASPARAGUS.—*Omega.*—Your plan of proceeding with the land to be converted into a garden, is unexceptionable; but there ought not to be any need of guano for the Potato crop. We should avoid that expense. In cultivating Asparagus we advise you to observe, as nearly as you can, the method employed in Biscay, as described by Capt Churchill at p 187, for 1842 But you may employ guano with advantage, instead of the Spanish manure, provided you mix it with an abundance of soil, or with common stable manure. Potter's guano or superphosphate of lime may be given afterwards, when the plants are in full growth. The grand point with Asparagus is to get the summer growth excessively strong the spring shoots will be large in proportion. We should be never satisfied with Asparagus till its summer shoots were at least 6 or 7 feet high. In planting Sea Kale you have nothing to do but get two year old plants, manure them richly, adding a good dressing of salt, and cut them every other year If you cut them every year you will weaken the shoots too much.——*C J.*—When your Asparagus makes its summer-shoot, give the beds weekly a dressing of salt and guano, dissolved in water, at the rate of ½ a cwt of salt, and the same quantity of guano per acre, and continue the dose for six weeks Gas-water, or sulphate of ammonia, will kill Moss, and make Grass grow, apply them in April. Potter's guano and superphosphate of lime have both an extraordinary effect on Asparagus, but we do not know that they will kill Moss on Grass land

AVIARIES.—*M E* inquires what birds would do best together in a garden aviary 17 feet by 12 Perhaps some correspondent will say. Nothing will do better for warming it than passing a couple of hot-water iron pipes through it; which may be heated by such a small boiler as Stephenson's There is a single white Hepatica, but we are unacquainted with a double white

BOOKS.—*A G.*—Lyell's Geology, unless you should prefer Mr. Ansted's, now in course of publication.

CHARCOAL.—*T B.*—Charcoal having been found not to disagree with plants of various kinds to which it has been applied as a manure, its introduction into compost for the growth of Cucumbers is worthy of trial ‖

COMPOST FOR CARNATIONS.—*A Beginner.*—Carnations require a light rich soil, consisting of turfy loam, well-rotted hotbed manure, with a portion of leaf mould, and a little grit, or coarse sand. Broken pots form the best material for drainage *

COVERINGS FOR FRAMES.—*R D B* states that he has tried the composition recommended at page 691 of last year's *Chronicle*, and although he followed the directions exactly, he found it required a long time to dry. We have communicated with "M E. H" on the subject, who says he did not experience any difficulty in this respect; that his covering, which is 20 ft. long and 10 ft. wide, was coated with the preparation one day, and was dry enough for fixing on the roller and putting in its place the day following He cannot account for "R. W. B 's" want of success, unless it was owing, perhaps, to a difference in the quality of the materials employed. The only remedy he thinks, in case of "R. W. B." making another trial, would be to add a small quantity of litharge, such as painters use for drying their paint, and no doubt it would have the desired effect.

CUCUMBERS.—*A Subscriber.*—In order to check mildew upon these, remove the worst of the leaves, dust the remainder with sulphur, and keep your frames warmer in night than you have been accustomed to do. Flowers of tobacco will also kill Thrips; let it remain on the leaves for a few days, and then give them a good washing with the syringe.‡

FRUIT-TREES.—*J. B.*—The following are good dessert Apples:—Early Harvest, Pearson's Plate, Golden Reinette, Golden Harvey, Court of Wick, Reinette du Canada, Court-pendu Plat, Nonpareil Russet, Stunner Pippin. For Kitchen use:—Dumelow's Seedling, Alfriston, Bedfordshire Foundling, Dutch Codlin. *Pears*—Marie-Louise, Beurré Rose, Bosen's Incomparable, Glout Morceau, Passe Colmar, Thompson's Winter, Beurré Rance; and, for Baking, Red Catillac. *Plums*—Royal Hâtive, Reine Claude Violette, Kirke's Washington, Coe's Golden Drop ‖

FUCHSIAS.—*W. G.*—Exoniensis, Formosa elegans, Roberti, Venus victrix, Colossus, Splendens, Conspicua arborea, Kentish Bride, Pontay's Tricolor, Insignis, Radiata, and Miller's Constellation *

GOOSEBERRIES.—*D.*—The following varieties are distinguished for rich flavour rather than large size:—Red Champagne, Red Turkey, Keen's Seedling Warrington, Early White, Woodward's Whitesmith, Hebburn Green Prolific, White Pig, Pitmaston Green Gage, Yellow Champagne, Taylor's Bright Venus, Red Warrington, Rumbullion. Nurserymen in the county in which you reside will most likely be able to furnish all, or most of the above. ‖

GRAPES.—*D. R.*—The London Nurserymen having informed you that they have sent out all their disposable stock of the Black Muscat of Alexandria and Charlesworth Tokay, we cannot inform you where these rather scarce sorts of Grapes are to be procured ‖

GUANO.—*R. W. B*—We should prefer applying guano in a liquid state to Carnations, rather than mixing it with the compost, or as a top dressing; 4lbs of guano to 12 gallons of water will be found a good proportion; it should remain for 24 hours before being used; the same guano will do for mixing again with the same quantity of water after the first is drawn off.—*M. H. H.*

HEATING.—*Walberton.*—If you want air-heat, slate tanks are best. If bottom heat is your object, we cannot at present advise you to use slate, except for the tops.——*P. Tomkins*—The best mode of securing the joints of hot-water pipes is by means of tar-rope untwisted and thick red-lead. Probably your joints are badly packed ——*R. D.*—The smallest boiler you can get Wait a little, and perhaps you may find the plan of one to your mind in our columns.

JONQUILS.—*A Subscriber*—The reason why your Jonquils do not flower freely arises from their leaves being cut off in summer while they are in a green state. The bulbs should be taken up when the foliage has become yellow and dried. If they are allowed to remain in the ground all the year they generally become exhausted, and do not flower freely. They require to be kept rather dry in winter. ¶

MAGNOLIAS.—*M grand flora* and its varieties are the only evergreen Magnolias The two best others are M acuminata and macrophylla Your other question has been often answered in former columns

MANURES.—*Late*—As far as our experience goes, Potter's guano beats everything Three or four cwt an acre are sufficient. Whether such manures can be advantageously applied year after year, remains to be seen We apprehend it will eventually be found useful to mix them with stable litter, which they will render very powerful, because of the mechanical action of the litter.——*Herts.*—We cannot tell what No 2 is good for No. 1 is not guano, but *rubbish*

NAMES OF FRUITS.—*P Q*—Your Apples are 2, Top Apple; 29, Beauty of Kent; 29, (perhaps) White Costin; 37, Blenheim Pippin, 41, Kentish Fill basket, 43, Holland Pippin ‖——*T Barnes*—Your Apples are a variety of Codlin ‖——*P. W. M.*—The Apple you sent, of a green colour, with a thick russeted base, and which you state is called "Little Herbert" or "Herbord," is not known by any other name ‖

NAMES OF PLANTS.—*Indiana Meta*—Trapa bicornis is a tender aquatic, requiring the same management as a greenhouse Water Lily ——*A M.*—A Tradescantia, and perhaps T. crassifolia ——*A Beginner.*—Schinus Molle ——*J C L*—Oncidium pubes.——*J. H G*—Apparently some male Chenopodiaceous plant, but we are unacquainted with it; neither do we know such a Gladiolus as you mention ——*G. R.*—Bæobotrys arguta ——*M*—The Ipon tea is new. It will, however, we fear, travel badly, and therefore be hardly worth exhibition. ——*C M S.*—Apparently some Juniper probably the common one ——*L B.*—1, Erica Westcottii; 2, E. colorans; 3, Dioama capitata.

PANSIES.—*W G.*—Brown's Curion, Maid of the Mill, Cook's Mulberry superb, Sulphurea elegans, Pearson's Black Prince, Major's Bridegroom, Thompson's Eclipse, Miss Stainforth, Ultra flora, Corona, Jewess superb, King's Exquisite.*

PEAS.—*R S.*—The "British Queen," the same as Knight's Tall Marrow Pea, grows to the height of 6 or 8 feet. Some of it may be sown now, and more in the end of May, for a late crop.‡

PRESERVING BLOSSOMS.—*A Subscriber.*—Garden-mats are not fit for sheltering the blossoms of fruit trees. You should employ some material that allows the light to pass through, and hang it an angle of 30°. Very coarse canvas will do.

ROSES.—*T S*—Perpetual Roses, if for free standards, should be cut back much; if trained on walls or trellis, only down to the ripe wood.

WILLOWS.—*Caledon*—There is no objection to your soil, if it is not dry. You had better get cuttings of the best sorts from the neighbouring osier-grounds, for we doubt whether you can procure them easily by the Botanical names. Salix viminalis and triandra are considered the most useful for fine work.

MISCELLANEOUS.—*J C L.*—No one knows what the Spirit Eagle is.——*A Beginner.*—We really cannot answer such a string of questions. The reply would occupy half a column. Besides, you will find nearly all your inquiries answered on former occasions, and must search for yourself.——*Geelyn.*—The Cedar of Lebanon strikes as freely as the Deodar, if the cuttings are taken from a young and vigorous tree.‡ ——*Aliquis.*—A hotbed, by having the litter mixed with tan, will continue in heat longer; but the tan will render the litter useless as manure. Leaves are best for the purpose ‡——*Sensus.*—Common manures, as far as we know, make the best dressing for Cauliflowers. ‡——*R.* is answered in last week's paper, p. 166. ‡——*Guschenet* may cut down the flower-stems of Hyacinths, when the flowers have died off them; but the foliage should be left until it becomes yellow and withered. ‡——*T. B*—You should consult some of the classed Catalogues of Roses, and our former pages. It is impossible to fill space with such long lists as you ask for, and which have been given already.——*A. B.*—The cause is probably cold and damp, either of the atmosphere or roots.——*J. B.*—Train Clematis flammula to the posts of your pigeon-houses. ——*S. T*—The front of your pit is *a* on the section. There plant; our Melons, and train them on a trellis near the glass.‡ ——*G. P.*—Please to send your address to the office.——*J. R.*—Galangale is the underground root-stock of Alpinia Galanga, a plant allied to Ginger, and harmless.——*A Subscriber*—We do not know where the Trinidad Pine is to be seen; it is not at all like the Cayenne Ita.——*Guichenet's* letter is sent to Mr. C. H.——*J. M'I.* is requested to forward his address.——*A. B.*—Orangee may be whip grafted in the common way.‡ ——*T. M.* will find directions for the management of Orchidaceæ given at p. 119, 1843. ‡——*Virgil.*—The Cicrelean Willow is Salix alba.

SEEDLING FLORISTS' FLOWERS.

CINERARIAS.—*J. and T. G.*—The flower of your blue seedling is small, and the disk too large in proportion to petals; the colour, though good, is not uncommon. The rose-lilac variety, with broad well-formed petals, is a much better flower; the colour is pleasing, and if the flower expands well (which it has not done in water), it will prove a desirable flower.——*W. P. W. R.*—Your seedling is a half-coloured, well-formed variety; the petals are a little too pointed, but the flower opens well, and is large and showy ¶

¶ All communications have been received too late for answering this week.

PASTURE AND LAWN GRASSES of the finest quality, selected for every description of soil, comprising all Rye, Perennial, Cocksfoot, Meadow Foxtail, &c., with a large supply of Clover, will enable Noblemen and Gentlemen to lay down upon very reasonable terms. Particulars of quantities suitable to various soils to be had, with an estimate of the cost per acre, by application to WARNER and WARNER, Seed-merchants, 26, Cornhill, London. Genuine Italian Rye-Grass, Mammoth Wurtzel, and superior selected Turnip Seeds.

TO BE SOLD, a Handsome Short-Horned Bull, named "Marengo," roan, calved Sept. 4, 1840, (bred by Mr. Whittaker, by the Prince of Northumberland, dam by Norfolk (13,772), Medora by Ambo (1656), g. g. d. Blossom by Memnon (2196), g. g. g. d. own sister to Isabella by Pilot (496), g. g. g. g. d. by Agamemnon, g. g. g. g. g. g. d. by Harrell's bull. He obtained the first prize at Glastonbury Cattle Show, in 1843. To be seen at Calcott, near Bridgewater, by application to Mr. Thomas Jones, at that place, or Mr. Joseph Latch, Newport, Monmouthshire.

The Agricultural Gazette.

SATURDAY, MARCH 16, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Mar. 20 . Agricultural Society of England.
Thursday, Mar. 21 . Agric. Imp. Society of Ireland.
Wednesday, Mar. 27 . Agricultural Society of England.
Thursday, Mar. 28 . Agric. Imp. Society of Ireland.

FARMERS' CLUBS.

March 25 Chepstow.
March 26 { Radleigh. Wrentham. Debenham. Stoke Ferry. Grove Ferry.
March 28 Richmondshire.
March 30 { Gloucester. Cardiff.

THE CULTIVATION OF THE PARSNIP resembles that of the Carrot in every essential point. The land should be prepared as stated last week for the Carrot. Especial care should be taken in this, as in that case, to have a deeply-cultivated soil. In the Channel Islands, where this root is largely grown, it is customary in the preparation of the land to use the large trench plough,* and bury the manure—20 tons per acre of stable manure—12 or 14 inches deep. This is of course only practicable on deep soils, and it is on such, whether light or heavy, that this root flourishes. Parsnip seed may be damped, mixed with sand, just as in the case of the Carrot, and drilled early in April at the rate of 4lbs. per acre, in rows on the flat, 18 inches apart. New seed only should be used. Colonel le Couteur informs us, in the Journal of the English Agricultural Society, that seed sown in 1838 would not vegetate in 1840, though soaked and sown in a greenhouse. The damping of the seed, though we have advantageously adopted this plan in the case of the Carrot, for the last three years, is to a certain extent hazardous. Seed thus sprouted, if sown on a dry soil, is liable to be deprived of life. After having been thus treated it must not be sown till the land is damp. The summer culture of the Parsnip is just the same as that of the Carrot. An average weight of from 9 to 11 tons per acre is obtained of it in Jersey. We have not had much experience in the field culture of this root, but we are inclined to think that however superior it is to the Carrot in quality, *i. e.* per cwt., the superiority in the weight of the latter crop renders the Parsnip inferior to it per acre. It is most excellent food for Cows, imparting a rich flavour to the milk, and it possesses extraordinary feeding properties when given either to oxen or Pigs. It should be steamed for the latter; and when thus treated it is a nourishing food for poultry also.

EVERY farmer is aware, that where old pasture land has been broken up, and is again laid down to Grass, many years elapse before it recovers its original productiveness. This arises from the destruction of a LAYER OF MOULD immediately below the turf, which, whatever the colour and composition of the subsoil, is invariably black, composed of very fine particles, and destitute of pebbles, however numerous they may be near the surface in the adjoining arable land. What is the origin of this layer of fine earth? It is generally called vegetable mould, and is supposed to have resulted from the decay of the roots of the Grass. In a paper communicated to the Geological Society in 1838, Mr. Darwin has adduced strong arguments for its being of animal origin, and composed of the accumulated excrements of the earth-worm, usually denominated worm-cast. It is a prevalent opinion among farmers that mineral manures, such as lime, chalk, and burnt clay, have a tendency to sink in the soil. If Mr. Darwin's views are correct, it would appear that, instead of these substances sinking, the mould is mixed over them by the agency of the worms.

His attention, he says, was first drawn to the fact by Mr. Wedgwood, of Maer-hall, Staffordshire, who showed him several fields, some of which, a few years before, had been covered with lime, others with burnt marl, and cinders. These substances, in every case, are now buried to the depth of some inches beneath the turf. These fields were examined with care. The first consisted of good [illegible] land, which had been limed without having been ploughed, about twelve years and a half before. The marl was about half an inch thick, and two inches and a half beneath it was a layer or row of small aggregated lumps of the lime, forming at an equal depth a well-marked white line. The soil beneath this was of a gravelly nature, and differed very considerably from the mould nearer the surface. About three years since, cinders were likewise spread on this field; these are now buried at the depth of one inch, forming a line of black spots parallel to and above the white layer of lime. Some other cinders which had been scattered on another part of the field, were either still lying on the surface, or entangled in the roots of the Grass. The second field examined was remarkable only for the cinders being now buried in a layer nearly an inch thick, three inches beneath the surface. This layer was in parts so continuous, that the superficial mould was only attached to the subsoil of red clay by the long roots of the Grass. The history of the third field is more complete. Previously to 15 years since, it was waste land; but at that time it was drained, harrowed, ploughed, and well covered with burnt marl and cinders. It has not since been disturbed, and now supports a tolerably good pasture. The section here was—turf, half an inch; mould, two inches and a half; a layer, one and a half inch thick, composed of fragments of burnt marl (conspicuous from their bright red colour, and sometimes of considerable size, viz., one inch by half an inch broad, and a quarter thick), of cinders, and a few quartz pebbles mingled with earth; lastly, about four inches and a half beneath the surface was the original black peaty soil. Thus, beneath a layer (nearly four inches thick) of fine particles of earth, mixed with some vegetable matter, those substances now occurred which, 15 years before, had been spread on the surface. Mr. Darwin states that the appearance, in all cases, was as if the fragments had, as the farmers believe, worked themselves down. It does not, however, appear at all possible, that either the powdered lime, or the fragments of burnt marl and the pebbles could sink through compact earth to some inches beneath the surface, and still remain in a continuous layer. Nor is it probable that the decay of the Grass, although adding to the surface some of the constituent parts of the mould, should separate, in so short a time, the fine from the coarse earth, and accumulate the former on those objects which so lately were strewed on the surface. Mr. Darwin also remarked that, near towns, in fields which did not appear to have been ploughed, he had often been surprised by finding pieces of pottery and bones some inches below the turf. On the mountains of Chili, he had been perplexed by noticing elevated marine shells covered with earth in situations where rain could not have washed it on them.

Mr. Darwin likewise records the following circumstance, communicated to him from Staffordshire, respecting two fields:—1st. In the spring of 1835, a boggy field was so thickly covered with sand, that the surface appeared of a red colour; but the sand is now overlaid by about three quarters of an inch of soil. 2d. About 80 years ago a field was manured with marl, and it has since been ploughed, but it is not known at what exact period. An imperfect layer of the marl now exists at a depth, very carefully measured from the surface, of 12 inches in some places, and 14 in others, the difference corresponding to the tops and hollows of the ridges and butts. It is certain that the marl was buried before the field was ploughed, because the fragments are not scattered through the soil, but constitute a layer, which is horizontal, and therefore not parallel to the undulations of the ploughed surface. No plough, moreover, could reach the marl in its present position, as the furrows in this neighbourhood are never more than eight inches in depth. The preceding cases have shown that three inches and a half of mould had been accumulated in 15 years; and in this case within 80 years (that is on the supposition, rendered probable from the Agricultural state of this part of the country, that the field had never before been marled) a bed of earth had accumulated averaging 13 inches in thickness.

The explanation of these circumstances which first occurred to Mr. Wedgwood, although it may at first sight appear trivial, Mr. Darwin does not doubt is the correct one; namely, that the whole is due to the digestive process by which the common earth-worm is supported. On carefully examining between the blades of grass, in the fields above described, the author found that there was scarcely a space of two inches square without a little heap of the cylindrical castings of worms. It is well known that worms swallow earthy matter, and that having separated the serviceable portion, they eject at the mouths of their burrows, the remainder in little intestine-shaped heaps. The worm is unable to swallow coarse particles, and as it would naturally avoid pure lime, the fine earth lying beneath either the cinders and burnt marl would, by a slow process, be removed and thrown up to the surface. This supposition is not imaginary; for in the field in which cinders had been spread, only half a year before, Mr. Darwin actually saw the castings of the worms heaped on the smaller fragments. Nor is the agency so trivial as, at first, it might be thought; the great number of earth-worms (as every one must be aware who has ever dug in a Grass field) making up for the insignificant quantity of work which each performs.

On the above hypothesis the great advantage of old pasture land, which farmers are always particularly averse from breaking up, is explained; for the worms must require a considerable length of time to prepare a thick stratum of mould by thoroughly mingling the original constituent parts of the soil, as well as the manures added by man, and of the peaty field about three inches and a half had been well digested in 15 years. It is probable, however, that the process is continued, though at a slow rate, to a much greater depth; for as often as a worm is compelled, by dry weather or any other cause, to descend deep, it must bring to the surface, when it empties the contents of its body, a few particles of earth.

Mr. Darwin was prepared for the formation of a bed of earth by the digestive process of small animals, from what he witnessed in the coral islands of the Pacific. He there saw through the deep clear water multitudes of fishes of the genus Sparus browsing on living corals, like herds of grazing quadrupeds, and, on opening their bodies, he found their intestines filled with a substance resembling impure chalk. From this he was led to the opinion that much of the soft white mud found at the bottom of the sea near coral reefs had passed through the intestines of fishes, and other portions through those of worms, by which the stony masses of the coral are everywhere bored.

The above statements and opinions of Mr. Darwin on the formation of the mould of pastures are laid before our readers in the hope that it may lead them to make observations on the subject and to bring forward other cases similar to those which have been described. If it shall be established by more extended observations this will be only one out of the many instances in which the operations of Nature present to our view important results, produced by the most insignificant agents, which make up by their numbers and incessant activity for their individual weakness. The poor despised "worm of the earth," the very emblem of weakness and vileness, is, perhaps, one of the farmer's best friends, for it appears highly probable, that every particle of the surface soil has passed through the intestines of worms. The Agriculturist, as Mr. Darwin has observed, in ploughing his land, follows a method truly natural, and he only imitates in a rude manner, without being able to bury the pebbles or to sift the fine from the coarse soil, a work which Nature is daily performing by the agency of the earth-worm.—*E. W.*

ON FEEDING FARM-HORSES.

IN this part of the country, the following plan of keeping farm-horses is generally adopted:—As soon as there is a sufficient bite (which is not usually the case till the middle or end of May), the horses are turned out to grass at nights, and receive their usual allowance of corn,—3 feeds of a gallon each, and perhaps a little Hay during the day. This management continues till the Clover is ready for cutting, a bunch of which is substituted for the mid-day feed of Corn. When the Turnips are all sown, and the hard work consequently over, most farmers reduce the allowance of Oats, and give Clover instead; and in the early part of harvest, when horses are generally quite idle, they often get no Corn. When the leading-in of the crop commences, they are again put upon Corn; and as the Clover is then generally all consumed, they receive Tares instead, as their mid-day meal, and when these are finished, Corn or Hay. During all this time, the horses have been constantly turned out at nights; but about the middle of October, or whenever the weather becomes chilly or unsettled, they are kept in the house, and they now receive full feeding, *i. e.*, 3 feeds of Corn per diem, and Hay *ad libitum*. This management is continued throughout the winter; but most farmers, during the short days, give Oat or Wheat-straw instead of Hay for two or three months, generally those of November, December, and January.

Throughout the winter, too, most farmers give boiled or steamed Barley at nights, twice or thrice a week; of this, each horse gets about 2 gallons. To such horses as will eat them, one or two Swedish Turnips are also given once a day, which tends greatly to keep them in condition.

When Whitsunday again comes round, the horses are put out to Grass, as I began by describing. Although there are many little differences in practice, yet the above is the general management of farm-horses in this county, and, indeed, throughout all the southern counties of Scotland.—*A. J. Roxburghshire.*

P.S. I should mention that the working hours are, in spring, summer, and autumn, from 6 o'clock till 11, and from 1 till 5. In the winter months they are from daylight till dark, with an interval generally of an hour, or an hour and a half as the days lengthen.

ON MINERAL AND INORGANIC MANURES.

No. X.

By PROFESSOR CHARLES SPRENGEL.

There are also cases where marl may improve vegetation by containing protoxide of manganese. It is the humic

* See paper on this subject by Colonel le Couteur, in the 3d Vol. of the "English Agricultural Society's Journal."

acid, by which it is carried into the plants, and here again the importance of the latter substance is seen.

The clay of marl is especially useful to such soils as are subject to drought, because a soil may contain all the substances required for the nourishment of plants in sufficient quantity, and still be unprodnctive, if it is deficient in water, which has to convey the nutritive substances into them; and clay retains water for plants in dry weather. Besides that, the alumina of the clay, which has a great affinity for humic acid, will also somewhat decompose the coal of humus and the vegetable matter of the soil. It is also to be remembered, that alumina, the protoxide of manganese, lime and magnesia, potash, soda, and the oxide of iron of the marl will equally prevent the decomposition and useless volatilisation of the humic acid, as these substances fix it chemically.

Marl also improves vegetation by the silica which it contains, i. e., in those soils which are deficient in this substance, for instance moor, peat, or marshy soils. The sorts of marl which are very rich in lime, and at the same time sandy, improve clayey soils by loosening them.

If marl contains (which is sometimes the case) sulphuret of iron, it will be converted, by contact with air, into sulphate of the oxide of iron, which again becomes decomposed by the carbonate of lime, so that gypsum will be formed, which will naturally increase the manuring quality of the marl, as we shall see hereafter.

Marl, however, contains at times a substance detrimental to vegetation, viz., carbonate of the protoxide of iron. I have found this to be the case in two instances. Such marl is generally found under marshy soils, and contains remains of fresh-water shells. In using this sort of marl we must guard against ploughing it under too soon; it must be spread and left lying on the ground till the protoxide of iron has been changed into oxide of iron, which will be seen by its grey colour having changed into yellow, which, however, will take up sometimes a whole summer. If a marl containing much carbonate of the protoxide of iron is ploughed under too soon, the humic acid of the soil will combine with the protoxide of iron into a salt, which is very noxious to plants. Carbonate of iron will, like carbonate of lime, effervesce if acids are poured upon it, and this may lead us into error when calculating the amount of lime which a marl may contain. From the different statements I have made about the action of marl, it will have been seen that it is not merely the carbonate of lime or the clay which constitutes its worth as a manure; still, generally speaking, those sorts are considered best which contain most of the former substance. It is, therefore, mostly tested only as to the amount of carbonate of lime it contains, but it would be as well to take notice of all its other component parts.

The question, how long will marl act? has been often raised. If, however, we consider that it supplies the plants with different nutritive substances, which occur in it in very different proportions—that these substances are taken hold of by plants in very different degrees—that many of these ingredients are carried away by rain or snow-water; if we consider, in short, that plants are also deprived of part of the lime and magnesia by these latter substances combining with the silica into substances insoluble in water, it will be seen that this question can never be accurately answered, even were the amount of marl spread on a certain area accurately known. The repetition of the marling is always dependent on the quantity used at any former occasion—on its chemical constituents—on the component parts of the soil—on the sort of crop reared—on the nature of the subsoil—and on the annual amount of rain. If, for instance, any sort of marl owes its manuring properties to the gypsum and phosphate of lime which it contains, its application will have to be often repeated, as it rarely contains much of these substances, and the gypsum becomes easily extracted by the water. The same is the case if it improves vegetation by the magnesia which it contains, as of this also most marls contain but very little. If, on the other hand, the value of marl depends on its carbonate of lime (which will be the case whenever the soil possesses the other nutritive substances to a sufficient amount,) it will require to be repeated only after a lapse of twenty or thirty years, it being understood that the first supply has been to a considerable amount. Because, though a small quantity of lime be dissolved and carried off by the rain-water, which contains carbonic acid, or though another portion of it combines with the silica of the soil, still enough will remain for the use of the plant, supposing that only 10,000 lbs. of a calcareous marl have been conveyed on one acre of land. Whoever wishes to ascertain before hand, with some degree of accuracy, how long a certain quantity of marl will act, has to subject to chemical analysis the marl itself, as well as the soil to be manured by it; and having accurately ascertained the component parts of both, he may form an estimate, by deducting the amount consumed by every crop, and that which is annually carried off by the rain. Though, however, all the nutritive substances of marl have been consumed by plants, it will act beneficially on dry soils for centuries, if it contains much clay; both because this will supply the plants with moisture, and because the drier the soil the smaller the quantity of soluble matter that can be absorbed by the crops.

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. X.

(Continued from page 139.)

As I divided the chemical composition of plants into organic and inorganic, the same division must be adopted in treating of their food; but it will be more convenient to discuss the subject under the general head of

Manures, or the Food of Plants.—If any person has any difficulty in comprehending how manure applied to the soil, serves as nourishment to the plant, let him revert to the fact which he may daily witness in that beautiful process which is undergone in the incubation of the egg.

If a chemist analyses the white and yolk of the egg, he finds them identical in chemical composition, with the source of all animal nutriment—the blood; and he thus has no difficulty in solving the problem, how they are converted or organised into the perfect bird. So, if he examines the plant upon which animals feed, he finds there also the essential elements of blood from which all organised animal structure is formed. And again, if he examines the proper food, or manure of the plant, he finds in that the elements necessary for the structure of the vegetable. All difficulty at once vanishes from the subject, except a knowledge of how the mysterious principle of life performs its agency. Of this we know nothing, and it is not probable that a finite mind will ever be able to comprehend it.

Chemists, then, have no difficulty in deciding, that plants, to be grown in perfection, must have a supply of food which is similar in composition to their own ultimate structure. But Nature is sometimes obstinate in refusing the interference of man; she is always so when, from ignorance of her laws, that interference is misapplied. Granting that plants must be fed, it must always be remembered that, like animals, they require due attention to be paid to the quantity and quality of their food. For instance, although quite true that to form Gluten and Starch in the seed of grain, the plant must have supplied to it the elements of these substances, it by no means follows, that if Gluten and Starch in their pure state were given to the plant, that it would appropriate the food so offered. We must in these inquiries study and follow out the plans of Nature herself.

In primeval forests, where the trees grow to an enormous height, live, and flourish, and die, without the interference of man, how does Nature provide their food? The question is not difficult to solve. Of organic matter they require the elements carbon, hydrogen, and oxygen, to form the fabric of the plant; and in many cases, a fourth element, nitrogen, either for the perfection of their seed, or to be stored up for ulterior purposes.

The carbon is supplied from the atmosphere. The carbonic acid in the atmosphere is about one part in a thousand; and yet Liebig has calculated that this apparently small amount would produce more solid charcoal than all the vegetable kingdom and all the brown coal on the surface of the earth. By the decomposition of water the other elements, oxygen and hydrogen, are provided. Then, of nitrogen we have a source in the atmosphere, which Liebig has proved to contain a constant quantity of ammonia. But the atmosphere only nourishes plants in part. The Oak, with its immense branches, has roots as large in the interior of the earth constantly at work in selecting and appropriating proper food to the purposes of nutrition.

This food in the earth is supplied by the decomposition of the leaves and branches, forming humus; by the decay of animal matter, forming ammonia; and from rain, charged with this substance, which is constantly falling upon the surface of the earth. Of inorganic matter the supply is derived from the disintegration of the subjacent rocks.

In the wilds of Nature, with the food of Nature, we see these works of the Creator in their boldest magnificence and beauty, and there every living thing finds the means of subsistence; but civilisation, want of luxuries, and, above all, the gradual increase of mankind, create the necessity of bringing into action the aid of science in developing the resources of Infinite Wisdom.

In the food of plants which Nature restores to the soil we observe that the process of decomposition takes place before it can be appropriated by the vegetable organism to the purposes of nutrition. Vegetable matter decomposing is converted into humus. Humus is converted, by decomposition of its constituents, into carbonic acid—it is burnt, in fact, by the action of oxygen. Carbonic acid, again, is resolved, by chemical agency, into carbon and oxygen. And thus the ultimate elements of the old plants are reconverted into what are termed the proximate elements of the new, and woody fibre, starch, gum, &c., are the result. This cycle of changes is in never-ceasing activity throughout the scale of living beings. It does not, however, apply to inorganic matter, which serves no purpose in the nutrition of the plant, properly so called. Their use in the vegetable economy is either to give strength and durability to portions of the fabric, or to be stored up in its cellular structure, with the evident and beautiful design of being appropriated by the animals which feed on it.

Decomposition, then, is the first great principle to be attended to in the preparation of organic manures.

The second is to secure to the plant the results of decomposition, by fixing the volatile salts, which would otherwise be lost.

And having prepared the manure, a third object will present itself—that of applying it, with a due regard to the chemical composition of the crop to be grown, and to the necessities of the soil in which it is to be planted.—*C. R. Bree, Stowmarket.*

(To be continued.)

Home Correspondence.

Lucerne.—An article appeared in a recent Number of the *Gardeners' Chronicle* calculated to mislead many farmers who might be induced to adopt the method recommended by Mr. John Sandford and Mr. A. Hall for the cultivation of Lucerne. All husbandmen, particularly those who would know "the true principles of tillage" and grow Lucerne in the proper way, should read Jethro Tull "On Drill Husbandry." This valuable book was written more than a century ago, but there was a reprint some few years since by the late William Cobbett. It will require no great penetration to discover, by perusing this work, that the principles of Mr. J. Sandford, and Mr. A. Hall, of the Chepstow Farmers' Club, are not "the true principles of tillage." Lucerne roots deeply, so deeply that a dry surface will not materially affect its growth. If properly cultivated the crown of a plant will spread as widely as the palm of the hand, and Grasses of any kind (its greatest enemies) will, if permitted to grow, always injure it, and ultimately destroy it.—*Nicodemus.*

Scotch Agriculture.—The following extract, taken from the account of the parish of Dunbar, published in the "Statistical Account of Scotland," may be interesting to some of your readers, as bearing on the questions regarding the food of plants. It is from the pen of the clergyman of the parish, who is an able man and zealous Agriculturist. "The soil being dry, is easily pulverised and cleared of root-weeds, therefore there is comparatively but little fallow. The rotation of crops is:—1. Turnips, upon two or more ploughings, dunged, and generally fed off; when carried off, a compost of lime and earth is generally applied. 2. Wheat, with Clover and Rye-grass seeds. 3. Grass, fed off with cattle or sheep. 4. Potato Oats. 5. Beans, drilled and dunged. 6. Wheat. Instead of Oats, Wheat is sometimes taken, and then the rotation is confined to four crops. This course, peculiar to the parish, has been called the Dunbar system; but objections have been made to it. Wheat every second year, it is said, exhausts the soil; the answer is, that the food of plants in the soil may be exhausted by any crop, while the soil itself cannot be exhausted. Where there is a command of manure, there is no system which will so richly repay the labours of the husbandman. It was adopted here for many years on one of the best farms, without any diminution of either quantity or quality. And in order to ascertain whether soil is injured by frequent crops of Wheat, the glebe of Dunbar (the clergyman's allotment of land), was properly dressed, either with sea-weed, street dung, or soot, and cropped with Wheat for five successive years. The result was, an extra crop every year, and the land left in a condition that it may produce a crop or two of any kind without additional manure. The least crop in the succession was on the third year—10½ bolls (5¼ quarters) per acre; it promised to be the greatest, but it was lodged flat as the surface soon after it came into ear. All the other crops were above 12 bolls (6 quarters) per acre. One season, exactly suited to the soil, there were 16½ bolls per acre; and the last of the five years there were 14 bolls per acre. It was ascertained that on each of three of these years there were more than 300 stones of straw per acre. The soil is a sandy loam. There is another field in the parish which has produced Oats four successive years with increasing produce and fertility. Hence it seems to follow that land, properly cultivated and manured, may produce abundantly the same kind of crop in regular succession. If the food of plants is exhausted in exact proportion to the weight of crop produced, it is worthy of investigation whether the advantage of changing the kind of crop arises, not from one kind giving off food for another kind, but solely from the different modes of cultivation which different kinds of crop admit of at different seasons." Thus far the Minister of Dunbar. I will only add, that the parish is in East Lothian, and stretching along the sea-coast, enjoys one of the warmest and driest climates in Scotland.—*J. S.*

Dairy Management.—Our Somersetshire dairymen are complaining bitterly of the great depression in the value of their dairy produce. It would be happy for them, if their complaints would lead them to see clearly the necessity of a change of system in their dairy management, which is generally as bad as it can be. The cows are out all the winter, and the pasture land is very much exposed to land floods, as it lies very low, especially in the neighbourhoods of Wales and Glastonbury; the consequence of which is, that the Grass resembles a ploughed field, from the constant tread of the animals, and the deep impressions which their feet make in the soil filled with water. Rarely do you see any sheds for shelter. The Grass, of course, cannot provide sufficient food for them, and Hay is brought to them and thrown down in different lots, which again injures the pasture land, as it is completely trodden down, and worked up by the treadings of the animals, and in rainy weather the nourishing juices of the Hay are soon washed out, and very great waste is the consequence of this mode of feeding. It is evident also that the manure is completely wasted. Under such a system, it cannot be reasonably expected that the produce of milk can be very great. The constant exposure to cold and wet must be injurious also. The greatest want of economy appears in the whole of this system.—*A Dunmowshire man.*

Steeping of Seeds.—Animated by the statements in the January Number of the "Agricultural Journal," I commenced a series of trials of soaking seeds in solutions of the sulphate of soda, ammonia, magnesia, and nitrate of potash, guano liquified, &c., both singly, and in various combinations. The seeds subjected to the process were those of Wheat, Beans, Oats, and Turnips, and Linseed. In every instance the vitality of the seed has been destroyed. I have entered upon a new set of experiments with solutions of much greater dilution; such as 5 oz. of the salt to a pint of water; but I feel this is some great work, and wish to inquire whether you have made any attempt to ascertain within what limits these saline solutions may be safely employed. I fear the quantity recommended in your Paper No. 6, viz., 5 lbs. of the salt dissolved in one

merely sufficient to cover the seed, may prove too strong. May I be permitted to suggest that these seeds after steeping might be dried in some of the powders suggested by "Victor" in the "Journal of Agriculture," page 216? I have just come from an attempt to dissolve 320 lbs. of bone-dust in 160 lbs. of sulphuric acid in the manner recommended by Mr. Lawes, in the last *Agricultural Gazette*; the heat produced and vapour was so great, that if the windows and doors of the mill where the process was tried had not been thrown open, my fellow experimenter and self would have been suffocated. I mention this as a caution to any parties who adopt the plan suggested by Mr. Lawes. I think it should only be attempted in the open air.—*A. Hurstable, Sutton Rectory.* [The drying powders alluded to are powdered clay, bone-dust, charred animal matter, &c. We have put 5 lbs. of each of the salts we named into about 1½ bucketful of water, and placed the Wheat in it, about ¾ of a bushel. It is all in the ground, and we can only hope that it will not share the fate of our correspondent's unlucky seeds. These experiments are necessarily guess-work, and experience alone can teach the right proportions of the materials to be used.]

A communication from "Rustic Robin" describes the advantages of ploughing in a mixture of lime and earth applied to Clover ley. The superiority of the Wheat crop after this manuring could be distinguished many fields off.

Cow-Wheat.—In the *Chronicle* for last year, a Correspondent from the Isle of Wight mentioned that the weed called Cow-Wheat had appeared in that island amongst the corn, and he conjectured that it might have been introduced with some seed Wheat from Norfolk. I believe that the plant in question is the *Melampyrum arvénse*, which is indigenous to this county. Mr. Crow, the botanist, says it grows "between Norwich and Cossey, and Bixley, near Norwich." I have made some inquiries amongst farmers respecting this weed, and they do not seem to know it; hence we may conclude it is not very troublesome.—*J. Wighton.*

Draining Materials.—"A Surrey Farmer" is entitled to credit for bringing under notice the efficacy of Scotch Fir poles as a draining material, but his plan of using them is not to be recommended. I shall endeavour to point out a cheaper, better, and more lasting one. In the first place, sawing the poles lengthways is not only a useless expense, but they will not last half so long as when placed in the drains in a round state with the bark on; but I agree with him that the poles should be cut when the sap is up. A few years ago I effectually drained a piece of bog-land, not previously worth 2*s.* 6*d.* per acre, and on which peat had been for many years cut for fuel. The plan I adopted was this: it was a flat piece of ground, and the land adjoining sloped gradually to it; I cut a drain seven feet deep between the dry land and the bog, and two feet and a half wide at the bottom, the substratum being gravel without any admixture of earth; by this means I cut off all the springs that fed the bog, and then I placed at the bottom of the drain strong Fir poles (the weedings of plantations), laying them horizontally end to end on each side of the drain, leaving a space between them of about ten inches, which, when completed, formed a funnel; and to secure the poles in their proper position I had cross bars to keep them apart nailed into them with spike nails, thus forming a sort of ladder which lay flat in the bottom of the drain. I then placed other bars between them, within a foot of each other, crossways without nails, and afterwards the branches lengthways with their fibres on. The surface sods, which were carefully preserved, were then placed so as to cover the whole with the Grass side downwards; and lastly, the drain was filled up with the excavated soil. The poles at the bottom had better be of unequal lengths, by which means the nailed bars will keep the whole line more firmly united. Where the drain crossed the sloping land as before described, I had some clay rammed in at the back of the poles at the lowest side, to prevent any of the water from percolating out of the funnel. Thus I succeeded in draining more land effectually, and at one-fifth of the expense, than I could have done with frequent drains, even if there had been a stone quarry in the field. With regard to durability, I have no doubt that Scotch Firs thus placed are superior to, and cheaper than, any other materials. Scotch Firs must answer equally well if used in a similar manner in frequent drains; but the drains must be cut to the depth of four or five feet, and they must also be at least twenty inches wide at bottom. The following year after I drained this piece of bog, it produced thirty strikes (of 40 grs.) per acre of Muncorn (Meslin). It was pared and burned, and an allowance of lime made to it at the rate of three tons an acre; the first crop nearly remunerating all expenses, and the land is now worth 30*s.* per acre.—*T. Jones, Newtown.*

On Storing Turnips.—The most approved and now generally adopted method of storing Turnips in Roxboughshire, is as follows:—The Turnips, deprived of their leaves and roots, are laid in an oblong heap, sloping up on both sides to a point, like a Potato-pit, and the outside ones packed close together, and a smooth uniform surface formed. The heap is then covered with dry straw to the depth of about 18 inches, which is secured and bound down by straw ropes. Turnips stored in this way generally keep well, and are scarcely ever touched by frost. Should it be late in spring before they are used, they are generally somewhat sprouted, but much less so than if they had been pitted in earth. Of course the length of the heap will depend on the quantity of Turnips. The breadth is generally about 10 or 12 feet. Swedes are generally stored in November or December.—*Ibid.*

Moles.—Wherever I go I see the trees and hedges covered with the dead bodies of the poor Moles, which

without mercy or judgment. I have wet meadows, in which they do me vast service. One of the meadows was so wet that no Mole worked into it, but only burrowed on the surface, barely deep enough to cover his body with the roots of the grass and weeds, and this only in the very dry, hot days of August—the only time when worms could be found. I dug a few drains, and the next summer found the Moles work as deep as the bottom of the drains, and into them. Another year these drains were cut as deep as the fall would allow, and the same result followed. My friends, the Moles, opened scores of their channels into the very bottom of these open drains, and the meadow is firm and sound. In all my meadows, finding the good they thus do, I never have them disturbed; but only in April send out a man to level their hillocks, then roll them; and I never have any complaint from the mowers. Depend upon it, they are very beneficial to all lands, particularly to wet bog-soil. Where 4-feet drains are made with inch-tile, they cannot enter, but would work at that depth in all directions, and be of the greatest possible use. The best open drains for meadows, if I may call them so, are some I have met with—thus made: The drains are cut about 6 inches wide, and as deep as the fall will allow—3 or 4 feet deep. In these finely-broken stones were placed to within one inch and a half of the surface; over them nothing is to be laid, the grass from the sides will run over the stones and meet, but having no earth, they act most completely as surface-drains, and as well as deep ones. They are most permanent, never out of order, never want anything done to them again.—*P.*

Pig-Feeding.—In my remarks on Pig-feeding, my observations were directed chiefly to fattening hogs to a large size; the strong food recommended does not exactly suit quarter porkers; it is too heating, and produces pimples, which give the appearance of disease; therefore, for quarter pork, I either use fine middlings with milk or pure water, or reduce the strength of the Barley and Pea-meal by adding an equal quantity of Pollard; wash or pot liquor is unpalatable to pigs during the process of fattening on meal. I have tried various liquids—mutton broth, the liquor from a round of beef, and good kitchen wash; but have always been obliged to take it out of their troughs, and replace it with meal and milk or water. It will sometimes happen, from change of weather or other causes, that the pigs get costive and are off their food; in such a case I supply them with a little green food according to the season of the year, as a few Cabbage leaves, Lettuces, or Potato tops, or with Potatoes, and Mangold Wurtzel: if, on the other hand, they are purged, I have a sod dug from the road side and given them, or, which I sometimes think is better, I let them into a yard where there are cinders, mould, and brick and chalk rubbish. I think very little of garden stuff as a means of keeping a pig in a good growing condition; it is no help farther than satisfying occasionally the cravings of hunger; sows will do on it, or on grass, if there can be added daily a feed or two from the wash-tub. As I keep sows I may as well add my management of them. During the time of gestation their diet is restricted to articles that will not produce obesity, for sows as well as cows are apt to be attacked with what is called the milk-fever; and besides, unwieldy sows have not that command over their movements that sows with a less proportion of flesh have, and are very likely to crush many of their young ones. For the first fortnight the sow is fed in such a manner as to leave off with a good appetite, and no better or more forcing food is given than fine pollard or coarse middlings; but as soon as all fever has disappeared, and the pigs can take the milk as fast as the sow can supply it, the finest middlings or oatmeal, or sometimes boiled rice, when it can be procured at about 8*s.* or 8*s.* 6*d.* per cwt., are given three times a day; the little pigs are cut when five or six weeks old, the sows are not spayed if intended for quarter pork; the operation both throws them back and disfigures them. Many people recommend a spayed sow for the poor; I always recommend a barrow pig, as growing to a larger size than the spayed sow pig, and in being far superior meat to an old spayed sow. These remarks, with what I forwarded you before, are about all I can remember for a brief sketch. In choosing a pig, look out one with a wide open chest, well filled up from the ears to the tail, small toed, and with meat in the fore arm down to the knee, and in the ham down to the hock; tail fine and short, with a small spread of hairs at the end. Let the breed be more inclined to make flesh than fat, and fine in the grain; another peculiarity should be ascertained—the breed should be famed for broad backs and small entrails; large-bellied pigs do not pull down the scale. You have now such a lecture on pigs as I sometimes give to my inquiring friends.—*J. Steele.*

Rooks.—It is singular how long men will argue about matters which facts only can decide, and when the facts might be so easily ascertained. Thus it appears by an article in the *Agricultural Gazette* of Feb. 17, p. 107, that it is yet a question whether Rooks do more good by destroying the larvæ of insects, or harm by eating grain. Now, surely this is a point which admits of being decided. What more easy than that a few sportsmen, when the game-shooting season is over, should each shoot his half-dozen rooks daily for a week, when they have made their morning's meal, and see by examining their crops what they actually contain; whether wireworms and other larvæ of insects, and slugs, &c.; and by taking the average of several days, calculate the good Rooks do in this way in the season when they have no access to grain. Again, let it be ascertained in the same mode, in seed-sowing time, both in autumn and spring, what is the relative amount of the grain and larvæ of insects, &c., which then serve them for food, and from these data the balance may be easily struck as to the good or harm done by them, and whether it is always in their favour, as some suppose, or is thought near Dumfries occasionally against them. It is to be hoped that another year will not have passed over without these important points having been ascertained, and made known through the *Agricultural Gazette.*—*S.*

Potatoes.—A correspondent asked some time back if seaweed had been used much in this neighbourhood for manure? It was not found to be of much value; but on a light loam with flinty gravel a foot below the surface, I find that the salt mud from a tide-river is an admirable manure for Potatoes. It is ploughed in fresh from the river side, before the furrows are drawn for Potato planting, and has produced an excellent crop this season without other manure. The tubers are large, clear skinned, and of very good flavour. The hint is worth the attention of those who live near any harbour, or arm of the sea. Probably Thames mud would be equally useful on light soils.—*C. D., Lavant, near Chichester.*

Experiment on Winter Fallow and Subsoil Ploughing.—This experiment was tried upon four fields, in all about 40 acres, consisting of drilled Bean stubble, and Oat stubble. The method adopted was the following:—Immediately after harvest, the fields were ploughed across, in drills, by furrows from nine to ten inches deep, laid together, and the subsoil-plough passed once between the drills seven or eight inches deep, the horses in the subsoil plough being yoked one before the other, to avoid treading on the ground subsoiled. During the dry winter weather, the drills were reversed, and the subsoil-ploughing between the drills was repeated as far as the season would allow it to be overtaken. By this plan of working, the ground was kept much drier, and a much larger surface exposed to the action of the atmosphere than is attained by the common method of winter ploughing; and the beneficial effects were evident even during the winter, from the ridges appearing drier and white, long before ground ploughed in the common way. Besides, the constant souring by the winter rains, so detrimental to clay ground, was in a great measure avoided, and the spring work rendered comparatively light and easy. At seed time, the ridges were ploughed up and down in the usual way with a light furrow—the seed furrow, of course across the drills, which, however, were never harrowed down nor interfered with, the action of the plough carrying forward enough of earth to fill up the hollows in the drills, and no more was ploughed in a day than could be sown and harrowed. In this way the rest of the field was left in the drills, and therefore less likely to be injured by the heavy rains of last spring. Part of the ground was sown broadcast, and part drilled by a single-horse plough, with a drill barrow placed between the stilts of the plough, the single-horse plough crossing the drills as in the broadcast, without being harrowed down. By this method the ground was rendered so fine, from not being so deeply ploughed, that the Grass seeds required only to be bush-harrowed, and the spring labour was rendered very light indeed. Notwithstanding the heavy rains of last spring, the Barley sowing was made very easy by this method of winter fallowing, and the same advantages were obtained in the Turnip ground, which had been similarly treated. The crop of Barley produced on the ground prepared as above, was a third more in bulk than that after Turnip ground treated in the usual way—the one being 35 threaves, and the other 45 threaves, per acre. The drilled Barley and the broadcast were nearly the same—if anything the drilled being more productive. In the Turnip field the following mode was adopted:—The winter drills were once ploughed across, and after being harrowed and rolled, the ground was immediately drilled up for receiving the dung—the rest of the field remaining in the winter drills, and thereby not suffering from the severe rains of last spring. A specimen of the Turnip may be seen in Messrs. Drummond's Museum. It may be useful to mention, that by taking the mould board off a common plough, it can be used as a subsoil-plough.—*Polmaise, Stirling, Sept.* 1843.

Spade Husbandry.—Your late Agricultural correspondent, the Rev. W. L. Rham, does not appear to have considered the subject of Spade Husbandry in all its bearings. I therefore trouble you with a few general observations upon that subject, which occurred to me after reading his paper. Both policy and philanthropy teach us that a labourer, able and willing to work, ought to be enabled to support himself by his labour instead of being, as unfortunately too many now are, a useless burden upon the land. But, in framing laws and regulations for the protection of property, we are too apt to lose sight of the only right a man who is destitute of it can claim as his inheritance—one more potent than all others—the right to live. When it is proposed to inclose and cultivate commons and waste lands, we are told that the lord of the manor has his vested right, and that the copyholders have their vested rights, in the waste, which cannot therefore be disturbed; but, surely, some plan might be devised to make all this unproductive land beneficial to the community, without injustice to either lord or copyholder. Why may not an Act of Parliament be passed empowering the guardians, or the principal ratepayers, to inclose all waste lands in their respective parishes, granting to all who now have a right of common, and to the lord of the manor, a certain portion of the land as freehold, in compensation for whatever loss they may sustain by the inclosure, the remainder to be appropriated to the support of the general poor? The benefit derived by those who now possess common-right is so trifling, that a small quantity of freehold property would be a fair equivalent; the surplus would therefore be considerable, and if well cultivated on the Spade Husbandry system by the able-bodied poor who are now living upon the labour of others, the produce would contribute to the

maintenance of the aged and infirm, and thereby materially lighten the poor-rates, which in the parish where I reside amount to the enormous proportion of nearly one-fourth of the rental. The plan I propose has probably been suggested before; but, whether or not, it seems to me worthy of consideration. This, however, is not the only way in which I conceive the spade might be advantageously employed instead of the plough. Dry, shallow soils, upon which in droughty seasons the crops are materially diminished in productiveness through want of sufficient moisture at the roots to maintain a vigorous growth of plant, would be greatly improved by digging. The average depth of mould stirred by the plough in such soils will not exceed 4 inches, at a cost of about 12*s.* per acre; while the same space might be dug 9 inches deep for from 24*s.* to 30*s.*, according to the texture of the ground; and, in such a case, I calculate that one 9-inch digging would be fully as beneficial to the land as two 4-inch ploughings. Spade Husbandry, therefore, would not add to the expense of culture. It would, of course, be preposterous to suppose that all tillage could be worked by the spade; but I maintain that *there is scarcely* a farm upon which manual labour might not, *in some degree*, be substituted for horse-labour; and, *if by such substitution* the number of *husbandry horses throughout* the kingdom could be reduced only *one in twenty* or thirty, a very considerable portion of land *now occupied* in producing food for those horses might be appropriated to the sustenance of human beings. Mr. Rham's objection to employ men in doing the work of horses ought not to stand in our way. Digging in a field is no more derogatory to the "majesty of man" than digging in a garden, nor is it harder work than many things which a farm-labourer is called upon to do in the routine of business. Unmitigated poverty, on account of its too frequent offspring—crime, tends more to the debasement of a man's nature than any kind of work, however menial, by which he is able to earn an honest subsistence.—*Horticator.*

Burnt Clay.—Clay, however well burnt, is a bad material for road-making, being too *soft* to stand the wear and tear to which roads are exposed; but, laying aside its inferiority, it would be cheaper to bring stone a distance of ten miles than to burn clay for ballast, with coals at 10*s.* per ton, on the spot. To burn clay to good hard ballast, it requires from two and a-half to three cwt. of coals per cubic yard of ballast, and the cost, including labour and coals at 12*s.* or 13*s.* per ton, averages about 1*s.* 4*d.* per cubic yard. Faggots will not give you the heat that coals will; but those who are accustomed to use them will be the best judges of their respective merits, and the cost of each in relation to any given effect. Spring and autumn are perhaps the two best seasons of the year for burning ballast. It is generally burnt in heaps, and in the moist condition in which it is dug from the ground; it is laid in layers round the heap, and when one is sufficiently burnt, fresh coal is spread over the surface, and another layer laid on. Your correspondent asks how large a quantity may be burnt at once, provided they have plenty of clay, (and I should think they had in "Clay-down") faggots, and workmen? I am not aware that there is any limit to the quantity they may burn at a time, or the size they may make their heaps.—*G. S. D.*

Yew Poisonous to Horses and Cattle.—I saw a horse opened that had died a few hours after eating Yew branches. The stomach was greatly inflamed, and the gullet also, where, here and there, a few leaves were sticking. Inflammation seemed to have set up speedily. The branches had been lying on the ground a few days. In the withered state the Yew is more actively poisonous. I have a pony now that has often eaten the tips of growing branches.—*Esle.*

Sawdust.—The following is the method of preparing sawdust for compost here:—To a large tank connected with the drain from the cattle strawyard and dunghill the sawdust is carted, and after being saturated in the tank with the drainings of the dunghill for several months, it is thrown out into a heap, and a quantity of lime-shells are mixed up with it—a layer of sawdust and a layer of lime-shells alternately. The wet sawdust slakes the lime, which acts as a stimulus to decompose the sawdust without greatly charring it. Not only sawdust, but ditch-scourings also, and the switchings of the hedges (and there are here above 20 miles in length of hedges, under the spade and knife) are prepared in this manner. The sawdust of resinous wood should be kept by itself, as there is scarcely any possibility of decomposing it.—*J. Drummond, Blair Drummond Gardens.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held, at the Society's House in Hanover Square, on Wednesday last, the 13th of March; present, Thomas Raymond Barker, Esq., in the chair, Thomas Alcock, Esq., R. Westbrook Baker, Esq., David Barclay, Esq., M.P., John Barton, Esq., William Baskford, Esq., W. R. Browne, Esq., French Burke, Esq., Henry Colman, Esq., A. E. Fuller, Esq., M.P., Humphrey Gibbs, Esq., Brandreth Gibbs, Esq., W. H. Hyett, Esq., John Kinder, Esq., Theodore Rathbone, Esq., Professor Sewell, William Shaw, Esq., Professor Solly, Samuel Staffurth, Esq., and William Stafforth, Esq. His Excellency Count Reventlow, the Danish Minister in London, addressed a letter to the Council in favour of M. Tesdorpf, a gentleman of large landed property in Denmark, who had come over to England for the purpose of making himself personally acquainted with the Agricultural improvements of this country; and for whom, on account of his high character and the active usefulness of his pursuits at home, His Excellency ventured to claim for him, as a distinguished foreigner, the favourable reception of the Society. The Council immediately admitted M. Tesdorpf to their sitting, and unanimously invited him to attend their Weekly Meetings whenever it might suit his convenience to do so during his residence in England. The following Gentlemen were elected Members of the Society:—

King, Frederick, Notcling, Southampton.
Turner, Thomas, (President of the Royal College of Veterinary Surgeons), Croydon.
Dowden, Thomas, Mitcheldever, near Winchester.
Percy, E. T., (Land-Surveyor), Sherborne, Dorset.
Farmiter, Edward, Beaulieu, Southampton.
Pearse, Thomas, Launceston, Cornwall.
Fothergill, Matthew, Cefnrachder, Badwelty, Newport, Monmouthshire.
Marjoribanks, Stewart, M.P., Bushy Grove, Watford, Herts.
Hodge, Henry, Boalstow Vale, Penzance, Cornwall.
Hawkins, Henry Montonnier, Tredunnock, Usk, Monmouthshire.
Walmsley, Thomas, Ribblesdale Place, Preston, Lanc.
Hopper, John Mason, Newham Grange, Stockton-on-Tees, Durham.

The names of ten Candidates for election, at the next Weekly Council, were then read.

Agriculture of Essex.—Mr. Pusey, M.P., chairman of the Journal Committee, announced to the Council the adjudication of the Society's prize of 50*l.*, for the best Report of the present state of the Agriculture of the county of Essex (stating the ordinary course of cropping adopted in the different soils of the county; the breeds of cattle, sheep, and pigs, most generally bred or fed within it; the state of its drainage; the implements used; the number of horses or other cattle employed in the different operations of husbandry; the tenure on which the farms are generally held; the wages of labour; the average amount of the poor's rate; and whether any and what alterations and improvements have been made in the system of Agriculture pursued within it since the Report made to the Board of Agriculture by Arthur Young, the Secretary to the Board, and published in the years 1807 and 1813)—to Mr. Robert Baker, of Writtle, near Chelmsford.

Weights and Measures.—The Marquis of Downshire communicated to the Council the great desire felt by the Royal Agricultural Improvement Society of Ireland to promote the establishment of a uniform system of weights and measures throughout the United Kingdom, for the sale of all Agricultural produce; in order to facilitate and increase as much as possible the free intercourse in commercial and Agricultural arrangements, between its three great integral portions, England, Scotland, and Ireland, reciprocally, &c. The noble marquis inclosed in his communication the particulars of the plan proposed by Mr. Blacker, of Armagh, to effect this desirable object; but as it appeared to be the ultimate result of Mr. Blacker's recommendations to establish the proposed uniformity by means of an Act of Parliament, the Council doubted whether, by the distinct legislative neutrality enjoined upon their discussions and proceedings, by the strict exclusive condition of the Royal Charter, they were at liberty to entertain the proposition; but agreed to receive the communications with thanks, and refer them to the decision of the monthly council.

Flemish Plough.—The old Flemish Plough procured as a present for the Society, by the late Rev. W. L. Rham, and imported by his executor David Jardine, Esq., having been released from bond in the Custom-House, was this day submitted to the inspection of the members. The high value set by Mr. Rham on the properties of this plough, for use in light lands, and the difficulty he experienced when preparing, for the Society's Journal (vol. ii. p. 58), his paper on the Agriculture of the Netherlands, in endeavouring to convey, by an engraved illustration, the peculiar curve of the sheet-iron turn-furrow, in which its excellence consisted, were the reasons which induced him to procure from the Continent an actual Flemish plough for the museum of the Society. This simple plough, says Mr. Rham, has been adopted or imitated in most countries, and for light soils without stones none can surpass it. The old Rotherham plough, which was improved by Small, was only a copy of it. In France and Switzerland it has almost superseded the old ploughs of the country wherever improvements have been introduced; and, with a few modifications, to adapt it to different soils, it has re-appeared in England as an improved plough.

Rotation of Soil.—Mr. Colman, the Agricultural Commissioner of Massachusetts, and at present engaged in an agricultural tour through Europe, having presented at the previous Council the model of a new implement, transmitted from Boston in the United States to this country by Mr. Isaac Clapp, for which the Council voted their best thanks and ordered all shipping charges to be paid, has laid before the Society Mr. Clapp's own account of his invention. This implement consists essentially of two rollers confined loosely on a fixed axle, and followed closely by an attached scarifier formed of a single row of strong tines. Mr. Clapp states:—"I have used this implement on newly-ploughed sward-land to great advantage. The greatest value which I consider it as possessing consists in the dispatch with which it works, and the perfect control it gives one over the soil, producing a rotation of soil which, in my opinion, is as advantageous as a rotation of crops. The working of the soil in rotation can be best effected by the use of the pulveriser, the second year, in place of the plough, leaving the sod to decompose; and then sowing Grass-seed, or a second crop, on the surface given by the first ploughing. If seeded to Grass the second year, and after the ground has acquired a sward equal to that first turned under, it may be then re-ploughed, bringing to the surface a vegetable mould that will insure an abundant crop without the aid of manure. By cultivating the soil in this manner, we have always one vegetable mould at work, and one at rest."

Trial of Manures.—Mr. Mowbray, of Glasham-house, Saxmundham, Suffolk, communicated to the Council the following result of his comparative experiments with manures:—"As the cost of manure is of essential importance to Farmers, an equality of price, or nearly so, has regulated their application, which took place on the same day, early in last March, and was followed by frequent rain. The cost of each sort, excepting that of the nitrate of soda (which was put on the land by mistake, at the rate of 28*s.* per acre), was about 16*s.* per acre, exclusive of carriage and sowing. The whole produce of Grass was weighed in my presence, on the day after it was mown and strown; therefore, the weight must be deemed to be that of Grass, not of Hay.

	Tons.	cwt.
Nitrate of Soda 131lbs., cost 28*s.* per acre, and produced	4	12
Sulphate of Ammonia 58½lbs, cost 18*s.* 6*d.*, and produced	4	10
Guano 131lbs., cost 16*s.* 7½*d.*, and produced	4	12
Carbonate of Ammonia 21½lbs., cost 18*s.* and produced	3	16
Saltpetre 42lbs., cost 16*s.* 6*d.*, and produced	3	3

Sulphuric Acid and Bones.—Mr. Evelyn Denison, M.P., communicated to the Council a statement he had received from Mr. Brackenbury, agent to the Earl of Scarborough, containing the result of his own trials of sulphuric acid and bones on sand land in Nottinghamshire, sown with Wheat, and on forest lands newly broken up, as well as of trials made by his Lordship's tenants, both with sulphuric acid and bones, and also bones alone. These results were in favour of the land on which the chemical preparation had not been used, and particularly so in reference to that on which bones only had been applied. Mr. Denison, wishing to make the experiment on strong clay Grass-land, less favourable commonly for the operation of bones than sand-land, thought it probable that the manipulation of the mixture of sulphuric acid and bones might make a considerable difference in the result, and he was therefore not deterred from the contemplated trial by the ill-success which had attended Mr. Brackenbury's applications. Still, however, he conceived it very desirable that more distinct particulars should be furnished, in reference, 1st, to the proportions of the sulphuric acid and bones; 2d, the quantity of water; 3d, the mode of mixing; 4th, the mode of application to Grass-land; and, 5th, the strength of the sulphuric acid itself, which is often sold in a diluted state for medicinal as well as chemical purposes.—Mr. Lloyd Walrond transmitted a copy of the fourth Report of the Gloucester Farmers' Club; Mr. Renton, a copy of the Report of the Newcastle-on-Tyne Agricultural Society; and Mr. MacNab, copies of his "North British Cultivator;" for all which and other communications thanks were ordered.—The Council then adjourned to Wednesday next, the 20th of March.

A Special Council was held on Thursday last, the 14th of March; present, the Rt. Hon. Earl Spencer, President, in the chair; Hon. G. H. Cavendish, M.P.; Sir T. Dyke Acland, Bart., M.P.; Col. Austen, H. Blanchard, Esq.; T. W. Bramston, Esq., M.P.; French Burke, Esq.; Col. Challenor, H. C. Compton, Esq., M.P.; H. Gibbs, Esq.; B. Gibbs, Esq.; W. H. Hyett, Esq.; Sir J. V. B. Johnstone, Bart., M.P.; J. Kinder, Esq.; G. Kimberley, Esq.; Sir R. Price, Bart.; Professor Sewell, J. V. Shelley, Esq.; and G. Wilbraham, Esq., M.P.

Southampton Meeting.—The report of Messrs. Shelley and Gibbs, the stewards and director who had proceeded, agreeably with the stipulations made with the authorities of Southampton at the last monthly council, to that town, for the purpose of selecting from the localities placed at the disposal of the Society, a suitable site for the Show-yards on the occasion of the ensuing county meeting of the Society in July. The Report having been read, the stewards and director present pointed out to the Council, on Lewis's large map of Southampton, the situation of a fifteen-acre field they had strongly and unanimously agreed to recommend for their adoption, as a piece of sound old park pasture land, near Portswood-lodge, nearly even in its surface, with a gentle slope to the south, situate midway between the town and the ground selected for the trial of implements, and only a few hundred yards from the old terminus of the line of the railway, which would be re opened for the occasion; and a tram-road being laid down from that point in the direction towards Portswood, all arrivals of stock and implements would at once be wheeled almost into the very Show-yard itself, with the least possible inconvenience to all parties concerned. The Council unanimously adopted this Report; and the President ordered a meeting of the General Southampton Committee, to be held on Thursday next, for the purpose of deciding on the plans to be recommended for the Pavilion and Show-yards, and for drawing out the proper specifications of contract for the works required.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the meeting of the Council on March 7th, it was proposed that for the future, copperplate certificates, handsomely engraved, should be substituted for the Society's medals, to the Local Farming Societies, it appearing by the Secretary's returns that the sum for medals awarded last year amounted nearly to 200*l.*; that thereby a great saving would be made of the funds of the Society, which might be more beneficially applied, and the same effect produced.—Lord Erne, the chairman of the sub-committee upon Essays upon the best and most approved Plans for Cottages for the Working and Labouring Classes in Ireland, brought up the report, also signed by the Hon. C. J. Trench, and James L. W. Naper, Esq., which reported that they had examined the only essay on the subject, which had been sent in to the secretary; that the plans accompanying it were neatly executed, and their respective advantages, with the mode of building, explained in a clear and succinct manner; that the essay itself displayed

knowledge on the part of the author of the habits of the country and small farmers in the North of Ireland. The sub-committee were, however, reluctantly obliged to state that they did not think that the essay possessed sufficient merit to entitle it to the Society's medal.—The secretary was directed to communicate again with Mr. Smith, of Deanston, who, it was understood, was at present in this country, and to ascertain from him whether it would be in his power to undertake the task of personally inspecting the thorough-draining, executed by the four competitors for the Society's gold medal, who were selected at the last meeting of the council, for the purpose, on the principle of being the four who had executed the greatest quantity of thorough-draining amongst the different competitors.

FARMERS' CLUBS.

Bromsgrove District.—A meeting of this club was held in the Town Hall, Bromsgrove, on the 27th ultimo, E. F. Iddens, Esq., in the chair.—Mr. H. F. Fardon read a paper on Manures. He considered it impossible to obtain a clear and complete view of this subject without reference to principles. He adverted to the germination of a seed and the formation of a root and leaf,—the former intended to derive nutriment from the soil, the latter from the air. It is through the root that manures act on plants. This root consists of a fibre or fibres with a small spongiole at the extremity, which absorbs water containing the food of the plant in solution. All plants do not take the same ingredients from the soil, or the same quantities of different ingredients; but they generally absorb more or less of ammonia to supply nitrogen; carbonic acid to supply carbon; potash, soda, lime, magnesia, alumina, iron, manganese, silica, sulphuric acid, phosphoric acid, and chlorine. As the farmer takes his crop off the ground the soil becomes exhausted of particular ingredients, which must be restored by means of manure. It is of importance to the farmer to know what each crop abstracts from the soil, and by what kind and quantity of manure it may be best restored. For instance, Swede Turnips take 2651 parts of potash from the soil, while only 390 are absorbed by the same weight of Potatoes, and an acre of land will yield double the weight of Swede Turnips that it will of Potatoes. Turnips, therefore, exhaust the soil of potash more than Potatoes. Besides those manures which supply plants with food, there are others which improve the mechanical texture of the soil, and some act in both ways. *Farm-yard Manure.*—A considerable portion of this consists of straw, which thus restores to the soil the ingredients it has taken from it. The dung varies in composition according to the animal which afforded it, and to the food that animal received. The better the food the richer the manure afforded. The dung-heap should be formed under cover, that it may not be washed by the rain; but in that case it must be kept moist, and no liquid should be allowed to escape from it. To preserve this it might be well to form it on a stratum of soil. The gases given off during fermentation should also be preserved. The most important of these is ammonia, which, it is believed, may be retained by covering the surface of the heap either with gypsum or common salt, the heap being kept moist. Before we can decide how long the fermentation of the heap should be allowed to proceed, we must decide whether it is desirable to apply manure in a form to come into immediate action on the growing crop, or to give out its valuable qualities gradually to two or three successive crops. The former would appear to be the most economical plan, as in the latter case some of the valuable qualities of the manure might be wasted during the intervals between the crops. In the process of decay in the heap, nitrogen is converted into ammonia, and carbon into carbonic acid; and this process should be allowed to proceed to some extent, provided nothing is allowed to escape from the heap. Potash, soda, &c., remain in the manure after fermentation; but these and ammonia too may be washed away by water. Liquid manure may either be absorbed by the litter or collected in tanks. Where there is plenty of litter, the former is the best plan, as the application of the liquid is a troublesome operation. When collected in a tank, it should be allowed to ferment a little before application, and gypsum or salt might be useful to fix the ammonia. The animal and vegetable manures produced on a farm contain all the essential ingredients; but it may sometimes be desirable to apply particular nourishment in a concentrated form, or to apply something which should ameliorate in a greater degree the texture of the soil. These artificial manures act either directly, by furnishing food to the plant, or indirectly, by acting upon other ingredients in the soil to produce food. Guano is chiefly valuable on account of the phosphate of lime and ammonia which it contains, and sulphate of ammonia is also valuable from the latter ingredient. When applied to Grass-land early in the spring, at the rate of from 1 to 2 cwt. per acre, its effect is quick and powerful. Lime should not be mixed either with this manure or guano. Soot, night-soil, and nitrate of soda, are also valuable as furnishing nitrogen. There are other artificial manures, whose action depends on their containing one or more ingredients useful as food to plants.—A long discussion followed the reading of this paper, and resolutions were passed, "That well-fermented manure produces a speedy effect on the first crop, but long manure is most permanent in its action;" and "That salt is the most economical application for fixing ammonia in manure, which can be used in this neighbourhood; and that the Club recommends it for trial."—Mr. H. F. Fardon will read another paper, in continuation of the same subject, at the meeting in March.—*H. F. Fardon, Sec.*

Westbury and Newnham.—The first monthly meeting of this club took place on the 27th Feb. last. The subject of Mineral Manures, and the Inorganic Principles of Plants, was ably introduced by Mr. Henry Bird. Previous to entering upon the subject he stated that it was necessary to make some observations upon the soils of the neighbourhood. He stated the soils of that district to consist of several varieties, but all of them very productive if properly cultivated; and divided them into the stiff dark-coloured tenacious clay resting upon the lias limestone; the stiff red clay upon the soft red marl, extending to the red sand-stone, where the soil became lighter and more stony and dry; the rich alluvial soils found in the valleys and flat portions of that district, consisting of the detritus of a variety of rocks and decaying vegetable and animal substances, conveyed there through the agency of water; and lastly, the reddish-yellow soil resting on the magnesian limestone near the Forest of Dean. He next directed their attention to the nature and varieties of the neighbouring limestones used for building and agricultural purposes, pointing out the limes that contained iron and magnesia in large quantities, and those nearly free from the above substances. The Forest limestone, of a dirty reddish colour, contained a considerable quantity of iron and magnesia, as proved by the tests of those bodies; and he stated that it was unfit for agricultural purposes, except in small quantities, for Potatoes, and such crops. The Longhope limestone, of a bluish colour, and hard enough to scratch glass, contained iron, but no magnesia, and was composed chiefly of lime and flint, and was well suited for the stiff and red soils, which coincided with the farmers' experience who had used it. The Plumphill limestone, from the Forest, of a light drab colour, and smooth upon its surface, but very hard, contained a trace of iron, and no magnesia: it was extensively used for agricultural purposes. The lias limestone, at Awre, of a dark-blue colour, contained a little iron and no magnesia. He recommended this lime for dressing land, and a farmer present stated he had used it, and found it much superior to the Forest limestone. He then examined the red clays, pointed out their composition as being very productive; but from being wet and requiring draining, there were large tracts of that land in the district nearly unproductive from the neglect of it. The first principle upon stiff and wet lands was draining, for by that means the soil would be rendered more porous, and would admit the air freely after rain, as rain-water contained ammonia which, in passing through the soil, combined with it; and that was the chief cause why well-drained land so soon became productive. He then appealed to their experience, if cultivating land so wet as not to bear good pasture ever remunerated them for their trouble and expense. Next to draining, he stated the red soils required lime to render their iron inert and their consistency more porous, by disturbing the equilibrium of the soil, and to set the potash, which they contained, free; not for the purpose of bringing humus and vegetable fibre into a soluble state, for most of the red soils were deficient in that respect, so that after liming, farm manure was necessary to make up that deficiency. He concluded by stating that many of the farmers used green manure upon their stiff lands, which he considered a good practice, as the ammonia of the dung combined with the soil, and its straw contributed to make it lighter.—Charles Rosser, Esq., inquired the best means of restoring land that had been injured by magnesian limestone; to which Mr. B. suggested the manuring of it with diluted oil of vitriol (?) as gypsum would be formed, and the fixed air of the lime would unite with the magnesia and render it soluble and useful in the soil.—Another member inquired the best means of managing manure.—Mr. B. recommended it to be turned over with mould, common salt, and diluted oil of vitriol, and to be well covered with earth, as the nitrates of potash, soda, and lime, would form rapidly in it through the agency of the air; all of which substances were useful for the different crops.

On Tuesday, the 2d of April next, Mr. J. P. Smith will give a lecture at Newnham, on Artificial and other Manures, and their application to plants.—*S. R. S.*

Reviews.

Practical Hints to Practical Men, on New and Old Manures, &c. By J. D. Humphreys, Esq. Longman.

THE first half of this tract is in keeping with its title. We extract the following passage, which is usefully true:—

"How can the Farmer understand Manures unless he is a chemist? I answer—perfectly well, in the main, for the point with him is not what they are, but what they will do: it might as well be said, that he could not understand the benefit of a mutton chop, because he knows not the physiology of digestion.

"But again, it may be asserted, that the Farmer only understands the old forms of Manure, and that he has no more judgment of the new, than a sailor, landing on a foreign shore, has of its fruits,—to eat, may be to swallow poison! Very well,—but it is only so to a limited extent; for if the sailor has his wits on board, he will not eat, unless the fruit has some of the qualities of others which he has known, and which show it to be wholesome; and so the judicious Farmer will not use a new form of Manure, unless it contains the substantial qualities of the old, with new and peculiar advantages.

"It seems to have been expected, that the Farmer should become a practical student of organic and inorganic chemistry—an absurdity as gross, as to suppose, that every man should learn anatomy, because he may happen to break a limb, and need a surgeon."

But in the latter half the author forgets all this, and strings together a series of paragraphs in which he developes his peculiar views of the action of Manures, attributing it all to electric influence; in studying which, as the disciple of Sir H. Davy, he states, that he has "been so happy as to discover the governing principles of vegetable nutrition!"

This tract is apparently published as an advertisement of the "New Farmer's Compound," invented by the author. We advise its readers to pay especial attention to Mr. Humphreys's remarks on Farmyard Manure. "It is fit for all and everything:" and to depend more upon making and using a large quantity of this than on the purchase of the large quantities of artificial Manures—many of them no better than quack medicines—which now inundate the market.

Report of the Judges appointed to inspect the Farms entered for the Prize and Sweepstakes proposed by the Yorkshire Agricultural Society. 1843. J. Coultas. York.

WE notice this pamphlet for the sole purpose of extracting largely from it. It is republished from the Transactions of the Yorkshire Agricultural Society, and, containing condensed reports of good farming, it includes within its 16 pages more really useful matter than is often found in Agricultural works of many times its size. There were seven competitors for the Society's premiums within the prescribed district. The judges appointed to report upon the farms were Messrs. C. Howard, W. Pick, and R. Brough; and the following are some of the remarks they make before entering upon the work of description:—

"It may be proper to state, that after an extremely wet season, from the 4th May to 11th June,—during which important period for preparing the land for the reception of green crops, little or nothing could be done,—the weather changed to an almost equally remarkable drought. The cultivation of Turnips (and especially the Swedes) was in consequence extremely difficult, and the period of sowing was necessarily much delayed. This circumstance exemplified in a striking manner the advantage of always cleaning the land to the greatest extent the season will allow immediately after the harvest.

"Left to our own judgment as to the interpretation of 'the best cultivated farm,' we could only decide upon awarding the prize to the person who, in our opinion, adopted such a system, and carried out its practice in such a manner as, in the course of years, would tend to produce the largest amount of grain and animal food at the smallest expense per bushel and per pound. We think that *good* cultivation and *profitable* cultivation are synonymous terms, and that this applies alike to the Grass and to the arable lands."

They then proceed to describe the farms they visited—

"Mr. T. C. Johnson [to whom the first prize was awarded], has occupied the Chivet Grange farm [of 283 acres], 8 years. It is land of excellent quality, situate near Wakefield, and well adapted for the four-course system of cropping, which is pursued upon it.

"*Turnip Fallow.*—The cleaning of this commences as it ought to do, immediately after the harvest. In January or February it is covered, broadcast, with manure that has been previously led from the farm-yard (and to a considerable extent decomposed), at the rate of six tons to the acre. This is immediately ploughed in, and afterwards intimately mixed with the soil. The Turnip-seed is drilled in rows 18 inches apart, with 12 bushels of bones mixed with two quarters of ashes, or pulverised earth enriched with liquid manure. Sowing upon the level was evidently advantageous in the present dry season, and the advantage of early working, after the last harvest, was strongly exemplified by the clean and forward state of the land, notwithstanding the wet weather of May and June. Some of the Swedes are drawn, for the sheep to eat upon the Grass-pastures, but the greater part of the Turnips are consumed upon the land where they have been grown, more especially upon the lighter soil.

"*Barley* is drilled after the Turnips at the rate of 12 pecks to the acre; about two-thirds of the breadth are sown with 18 lbs. of White Clover, 3 lbs. of Rib-grass, and half a peck of Italian Rye-grass per acre, for sheep pasture. The remaining third is sown with 14 lbs. of Red Clover, and half a peck of annual Rye-grass per acre for mowing. This course prevents the too frequent repetition of Red Clover, as it thus comes into use only once in 12 years.

"*Wheat* is the principal crop after the Clover or pastured Grass, though parts of the latter are occasionally sown with Oats or Beans to vary the grain. Be the Corn-crop what it may, it is sown with the drill, and hoed both for the immediate purpose of encouraging the growth of the plant, and as a preparation for the succeeding Turnip-fallow.

"*Grass Land.*—In addition to the average annual pasture of about 40 acres of White Clover and Grass-seeds, this farm possesses about 100 acres of permanent Grass-land, of very good, though not prime quality. A portion of this is dressed every year with manure, sometimes supplied from the farmyard alone, but more generally enriched with a mixture of bones. Bones are used extensively on the Grass-land. They are purchased from the manufacturers of size, after having been boiled to extract the gelatine, and are obtained at one-third less price than those which have not undergone that process. Mr. Johnson is of opinion that their fertilising qualities are uninjured by the extraction of the gelatine, but in this opinion we cannot concur. Three quarters of these bones, mixed with three cart-loads of earth, and considered the proper dressing for one acre, and the period of application not material.

"Sixty or seventy acres have been underdrained with tiles, at an average expense of 4*l.* per acre. The work has been done by Sir W. Pilkington, for which, by agree-

meat, Mr. Johnson pays an interest of six per cent. upon the expenditure.

"*Linseed Cake* is used largely with great advantage as a substitute for Turnips in the farmyard; it is given to all the cattle. By this means the manure from the folds is doubled in value; and perhaps much of the superiority in bulk and luxuriance of all the growing crops may arise from this excellent practice. They were full and regular in every part. It has been observed that Mr. Johnson spreads his manure for Turnips over the land in January and February. This is a peculiarity in management. He keeps his fold-yard manure nearly 12 months before using it; as from the large size of his yards he is not obliged to take any manure out of them until the autumn; and to prevent too rapid a decomposition when carted into the field, it is closely pressed down in very large heaps, and protected from the air by a covering of earth. We might be inclined to doubt the advantage of keeping so large a stock of manure for such a length of time; but we cannot forget the unusual weight and fertility of the crops now upon the land." *(To be continued.)*

Miscellaneous.

Guano and Turnips.—As few subjects at the present day are more interesting to our agricultural readers than the comparative merits of manures on the various soils, we notice the following statement made by Mr. Vivian, M.P., as Chairman of the Swansea Farmers' Club. At the recent meeting of that club Mr. Vivian said "he would at present only allude to a trial which he had recently made of three manures with Swedish Turnips in a field near the Bryn. He had divided the field into three nearly equal portions, and had manured one part with farm yard manure, another with bone-dust; and the third with guano. The crops from the two first were good, that from the dung having rather more leaf than the other, but the guano crop which was in the centre of the field had failed entirely, from what cause he knew not. His farm-man stated that he had mixed sixty bushels of ashes with three hundred weight of guano, and that the manure was drilled in and covered with an inch and a half of soil under the seed. However the seed did not vegetate. At the same time he should mention that some Norfolk Turnips thrown in broadcast over the ground had done very well, showing that the guano was favourable to vegetation, but that it was ticklish stuff for the farmer to meddle with in Turnip crops. On grass land he had found it answer well. But where this and other artificial manures could be applied with the greatest advantage appeared to him to be on farms that were not easy of access, and where the land had been completely run out, such, for instance, as on the Clyne farm that he had lately taken. Grain crop after grain crop had been grown there, and the crop in most instances had been carried off the land. His difficulty was to make a start and provide keep for stock, so as to get yard manure. This he was endeavouring to do by growing Turnips and other green crops by means of artificial manures, and in such cases they might be valuable. But after all, the farmer's chief dependence for manure must be on his own farm-yard."—*Welsh Paper.*

[There is danger attending the *immediate* application of guano as a manure. It should be thoroughly mixed with the soil before the seed is put in above it.]

Caution to Farmers.—The following extract will show the danger and folly of the practice of keeping milk in zinc bowls, a custom which has lately become very prevalent, these articles being sold with the recommendation of a larger quantity of cream being produced, owing to galvanic action. "I would scarcely have believed," says Dr. Elaines, of Berlin, "that zinc vessels could again have come into use for holding fluids used for alimentary purposes, as Vauquelin forty years ago proved that such were certain, after a short time, to hold a considerable portion of zinc in solution. I have found by experience that a solution of sugar, which had stood only a few hours in the summer in a zinc vessel, contained a considerable amount of zinc salts. It has been often stated that the cream will separate more easily from milk if the latter be kept for a short time in a zinc vessel. As, however, it is known that milk will turn acid much sooner than a solution of sugar, it is the more to be apprehended that some zinc will be dissolved, and such milk will be the more noxious, as it is well known that even a small amount of zinc will cause violent spasmodic vomiting."—*Pharmaceutical Journal.*

Notices to Correspondents.

RURAL CHEMISTRY, By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

AGRICULTURAL IMPLEMENTS.—*An Emigrant.*—We cannot advertise tradesmen here. The best small charn we have seen is manufactured at Lewes, Sussex.

BRARING REIN.—*W. K.*—It is rarely useful.

BLUE LIAS CLAY.—*X. Y.*—Your soil is not suitable for Gorse. The scouring properties of the Grass in the months of August and September caused, we think, be owing to the presence of sulphur. We do not know to what to attribute it.

BURNT CLAY.—*F.* and *A Zummersetshire Man.*—See Home Correspondence.

CARROTS.—*An attentive Reader.*—If you have not sufficient yard manure apply 3 cwt. of guano per acre, broadcast, and harrow and scarify it well in before drilling the seed.

CLOVER DODDER.—*The Earl of Essex* will find that the seeds of the Clover Dodder are much smaller than those of Clover, and may be separated by the sieve. The size, No. 17, will answer the purpose. See p. 862, vol. iii, *Gardeners' Chronicle.*

DRAINING PLOUGH.—*C. W. S.*—The mole plough is generally worked by chain and capstan by two horses. If you pull it through the land by horses alone, you will need 10 or 12 if your soil be stiff. This mode of drainage answers well on Grass land.

FARM CAPITAL.—*A Farmer and Father.*—All the green food, &c. produced on the farm is consumed, in Mr. Morton's estimate, by sheep. You may consume as much as you like by other stock, and your doing so will reduce the stock of sheep, you will be able to keep, at the rate of about 12 sheep for every three-year-old ox or cow. Mr. Morton's estimate of the number of horses required for the farm is quite large enough. What kind of horses cannot be got for 80*l.* a-piece?

GRASS SEEDS.—*Presto.*—For a heavy soil, to remain down two years:—Perennial Rye-grass, 20 lbs.; Timothy, 1 lb.; Rough Cock's-foot, 3 lbs.; Meadow Foxtail, 2 lbs.; Meadow Fescue, 1 lb.; Red Clover, 4 lbs.; White Clover, 4 lbs.; Trefoil, 3 lbs.

GUANO.—*An Old Subscriber.*—Apply 3 cwt. per acre of it in the drills before setting the Potatoes, and work it well up with the mould by horse-hoeing, or otherwise. Sulphate of ammonia is sold by manufacturing chemists.—*Inquirer.*—3 cwt. per acre, mixed with as many cart-loads of earth, and spread some showery day. This is better than nitrate of soda, which is applied at the rate of about 2 cwt. per acre.

GYPSUM.—*Lancashire.*—Put four to six bushels per acre on your Clover.

ITALIAN RYE-GRASS.—*Suburban.*—Sow about 1½ bushel of Italian Rye-grass seed, and 12 lbs. of a mixture of ½ Red Clover, ½ White Clover, and ½ Trefoil, broadcast, per acre, on your Barley after it is up—say about the end of April; and if the Barley has been drilled hoe them in; if the Barley has been sown broadcast, harrow them in. See what liming your land, at the rate of about 80 bushels per acre, will do to restore the Clover in your meadow.—*J. Spratt.*—Sow it after the Barley is up, and hoe or harrow it in.

MANURE.—*J. N. V.*—You had better mix your blubber compost with the manure destined for Turnips, as you propose.—*J. McT.*—The sea sand on the north coast of Cornwall is a mass of pounded shells; 60 to 100 bushels are generally applied per acre. Your oyster shells will act equally well.—*Senex.*—Guano is more likely to be a useful manure than nitrate of soda. It contains a greater number of valuable ingredients.

MURRAIN.—*J. L.*—This disease appears to be a peculiar and remarkably virulent epidemic. In many respects, it is like the epidemic called *pleuro pneumonia*, but the ulcers along the neck and back are peculiar, and resemble putrid fever. You do not say if the disease has extended amongst the cattle of your neighbours; you say the lungs are black, but do not mention whether or not they are much heavier than common, or whether any portion sinks in water. The latter appearance denotes disease of some standing; the blackness of the lungs does not. Is there any effusion of water in the chest? The course of treatment indicated appears to be bleeding in the earliest stage, but with caution, and seldom repeated. If costiveness exists, a moderate dose of Epsom salts, followed by tartarised antimony, 10 grains. submuriate of mercury, 5 grains; powdered opium, 10 grains; nitrate of potash, 1 scruple; hydriodate of potash, 4 grains. The above may be mixed up with an egg, and a quarter of a pint of Linseed oil added. For a cow, four times the strength of the above will be necessary. The medicine may be given twice a day till the bowels are in a relaxed state, and then continued without the oil, but with gruel instead. Setons may be placed in the brisket, and blisters on the chest, and shelter, care, and nursing afforded. The ulcers should be dressed with a solution of chloride of lime. *W. C. S.*—*C. H. T.*—The *post mortem* appearances of the bodies in the fatal cases should have been mentioned. I have heard of no cases of this kind in which the feet are affected, becoming fatal in a few hours. I presume there must have been in those cases either organic disease, or the malady must have existed some little time before it was discovered. I should recommend, in many respects, the same treatment as that advised in the reply to the previous question, signed "J. L." The disease is probably principally in the chest, and if so, blisters on the sides and brisket will be necessary. The skin may be previously scalded, and one-half of the blister should consist of the ointment of iodide of mercury, and one half of the ointment of cantharides. It should be well and freely rubbed in. To the feet, a strong solution of sulphate of copper may be applied; and if fungus should appear, it should be touched, by means of a feather, with muriate of antimony. *W. C. S.*

POND MUD.—*S. S.*—Make a compost of it with lime, and put 20 cart loads per acre on your Grass. It ought to have been done in autumn. *FFFF*, in the plan you allude to, are the yards of the adjacent farmery.

SMALL FARM.—*T. Ridge.*—Trench your land, keeping the top soil uppermost. Your crops, after your plan, will be 8 tons of Potatoes, 18 of Carrots, and 25 of Mangel Wurtzel. Four cows would about consume the Potatoes and Mangel Wurtzel in six months, but your horses will not in that time have eaten more than three tons of the Carrots, if they have Corn too, so that you can keep more stock, and make more manure, and if you preserve the liquid manure too, you have no occasion to buy guano.

SPADE HUSBANDRY.—*Clericus.*—Dr. Yellowly is the best writer on this subject. We do not know the titles of his works. Order "Advice, &c." of any bookseller.

THE ROT.—*Gorys.*—"It is not likely to be true" that liming sheep pastures will cause the rot.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, March 11.—Per stone of 8 lbs.

	s.	d.	s.	d.		s.	d.	s.	d.
Best Scots, Herefords, &c.	4	0	to 4	2	Best Downs & Half-breds	4	2	to 4	6
Best Short Horns	3	8	—	4	0	Best Long wools	4	0	—	4	4
Second quality Beasts	3	2	—	3	6	Ewes and second quality	—	—	—	—
Calves	4	0	—	5	0	Pigs	3	8	—	4	6

Beasts, 2504; Sheep, 22,870; Calves, 74; Pigs, 410.

Again we have a very wet day and an increased supply of Beasts; the prices, however, do not suffer any diminution from Friday's quotation, there being a very good attendance of buyers. In some instances the best Scots have realised 4s 4d, but not generally; Herefords, Devons, &c., 4s 2d, and the short horns were of superior quality that sustained our highest quotation for that description. The supply of Sheep was still very short, which caused a brisk trade at a little advance. The very choicest Downs in some instances made 4s 8d, but this price was not general, the most selling Half-breds made 4s 6d, as did also the nicest selling Longwools. Calves are moderate in supply, but no advance in price can be observed, there is a brisk trade in this article, as also in Pigs.

FRIDAY, March 15.

Although the number of Beasts is much shorter than last Friday, we have to report a very dull trade, at rather lower prices. There being a great increase in the supply of Short horns, that description has suffered more, the very best scarcely making 4s 1od per 8 lbs, and the best Scots, &c., very little over 4s. The supply of Sheep is larger, but prices remain about the same, the very top for Downs, &c., being 4s 6d, and Longwools hardly reach 4s 4d. We notice several Lambs at market to-day, but the trade for them is hardly established yet, and the weather is against the sale of them; there is, however, a demand for the best qualities at about 7s per 8 lbs. The best Calves support Monday's quotations, but middling ones are a very heavy sale at less money; the prices of Veal range from 4s to 5s. Pork remains steady.

Beasts, 6081; Sheep and Lambs, 23,990; Calves, 128; Pigs, 380.

41, West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, March 11.

THE late snow-storm in Scotland prevented the loading of Potatoes for several days, the "Bread" was lost in our market, which occasioned a shorter supply than usual, and more money was consequently obtained; this trading in some measure to check the demand, yet, the weather being favourable for the consumption of Potatoes, and the supply unusually limited, the annexed quotations have been fully realised.

York Reds	-	-	70s to 80s	Kent and Essex Whites	- 60s	85s
Perth	-	-	70	75	— — Kidneys	- 70	75
Early Devons	-	-	70	75	Wisbeach Kidneys	- 70	75
Late Devons	-	-	75	—	— Blues	- 60	65
Cornwall	-	-	70	75	— Whites	- 60	65
Jersey and Guernsey Blues			70	—	Prince Regents and Shaws	70	75

WOOL.—BRITISH, FRIDAY, March 15.

One Market continues in pretty nearly the same state as it was reported last week. The present is considered a wholesome check, as prices were obliquely getting too high. Those who hold stocks now are willing to quit them, but not at a reduction on our last quotations.

	per lb.				per lb.	
Long-woolled Wethers & Ewes	1s 1d	to 1s 2d	Southdown Hoggins		1s 1	to 1s 2d
Do. Hoggins	1 1	1 3	Kent Fleeces		1 3	1 3
Southdown Fleeces	1 0½	1 0				

James Forster, West Smithfield.

COVENT GARDEN, MAR. 15.—On account of the weather having been rather changeable during the week, the market has not been so well supplied, and trade has not been so brisk. Pine-apples are a little reduced in price; they are good in quality, and sufficient for the demand. We noticed a small quantity of good hothouse Grapes in the market; Portugals are good and plentiful. Desert Apples of good quality are scarce, as are also large Kitchen ones. Pears are likewise becoming scarce. Oranges are good and plentiful; they are slightly reduced in price. Lemons are nearly the same as last week. Chesnuts are a little cheaper. Strawberries continue to be brought in small quantities. Of Vegetables, Broccoli has been most plentiful; it is a little reduced in price. Savoys are getting scarce, and Brussels Sprouts are not so plentiful. Greens are selling at from 3*s.* to 6*s.* per dozen. Early Horn Carrots are excellent and sufficient for the demand; Turnips are likewise abundant. Seakale is offered at the same prices as last week; French Beans are tolerably well supplied; Asparagus is considerably advanced in price since our last report; it is selling at from 3*s.* to 15*s.* per 100. Rhubarb of excellent quality is abundant. Celery is getting scarce, and it is very inferior in quality. Cucumbers are nearly the same as last week. Cut Flowers chiefly consist of Combretum purpureum, Lachenalia tricolor, Gardenia radicans and florida, Epacrises, Heaths, Camellias, Scarlet Pelargoniums, Acacias, Azaleas, Lily of the Valley, Primulas, Fuchsias, and Roses.

FRUITS.

Pine Apple, per lb., 3*s* to 10*s*		Almonds, per pack, 6*s* to 7*s*	
Grapes, Portugal, per lb. 1*s* to 2*s* 6*d*		Sweet Almonds, per lb., 2*s* 6*d* to 3*s*	
Apples, des., p. bush. 6*s* to 20*s*		Nuts, Spanish, per bushel, 15*s*	
— Kitchen, p bus. 4*s* to 8*s*		— Brasil, 16*s*	
Pears, per half-sieve, 4*s* to 12*s*		— Hazel, 2*s* to 4*s*	
Oranges, per dozen, 6*d* to 2*s* 4		— Barcelona, 20*s* to 28*s*	
— per 100, 8*s* to 14*s*		— Cob, 12*s*	
Lemons, per doz. 1*s* to 2*s*		Chesnuts, per peck, 3*s* to 4*s*	
— per 100, 6*s* to 14*s*			

VEGETABLES.

Rhubarb, per bundle, 6*d* to 1*s* 6*d*		Spinach, per sieve, 1*s* 6*d* to 2*s* 6*d*	
Broccoli, per bundle, 1*s* to 2*s* 6*d*		Leeks, per doz. bun., 6*d* to 1*s*	
White Broccoli per doz. from 4*s* to 9*s*		Garlic, per lb. 6*d* to 8*d*	
Brussels' Sprouts, p.h.-sv., 1*s* 6*d* to 2*s* 6*d*		Onions, 2*d* to 4*d* p. bush.	
Red Cabbages per doz. 2*s* to 3*s*		— Large, per bushel, 1*s* 6*d* to 2*s*	
Sorrel, 1*s* to 1*s* 6*d* p. hf.-sv.		— Spanish, per doz., 1*s* to 2*s*	
Asparagus, per 100, 3*s* to 16*s*		— pickling, p. hf.-sv., 2*s* to 3*s* 6*d*	
Seakale, per punnet, 1*s* to 3*s*		Shallots, per lb., 4*d* to 6*d*	
French Beans, 2*s* to 3*s* per 100		Lettuce, Cabb., p. score, 6*d* to 1*s*	
Autumn Potatoes, 8*d* to 6*d* per lb.		Celery, per bun., 6*d* to 8*s*	
Savoys, per doz. 6*d* to 1*s* 6*d*		Mushrooms, per pottle, 1*s* 6*d* to 2*s*	
Greens, per doz. 3*s* to 6*s*		Walnuts, per bushel, shelled, 16*s* to 20*s*	
Potatoes, per ton, 60*s* to 85*s*		Small Salads, per punnet, 3*d* to 6*d*	
— per cwt., 2*s* 6*d* to 4*s* 6*d*		Watercress, per doz. sm. bun. 2*d* to 3*d*	
— per bushel, 1*s* 6*d* to 2*s* 6*d*.		Parsley, per doz. bunches, 3*s* to 4*s*	
— Kidney, p. bush., 2*s* to 3*s* 6*d*		Tarragon, Green, per bun. 4*d* to 6*d*	
Turnips, per doz. bunches, 1*s* 6*d* to 2*s*		Endive, per score, 1*s* 6*d* to 4*s*	
Red Beet, per doz., 6*d* to 1*s*		Green Mint, 4*d* to 6*d* per bunch	
Horse Radish, per bundle, 1*s* to 6*s*		Marjoram, green, p. doz. bun. 1*s* 6*d* to 2*s*	
Radishes, spring, 10*d* to 1*s* 3*d* p. pun.		Chervil, per punnet, 3*d* to 6*d*	
Carrots, p. doz. bun., 3*s* 6*d* to 4*s*		Salsafy, per bundle, 1*s* to 1*s* 6*d*	
Cucumbers, 2*s* to 4*s* each		Scorzonera, per bundle, 1*s* to 1*s* 6*d*	

MARK LANE, FRIDAY, MARCH 15.—The arrivals of Grain and Flour during the week have been small, owing in some measure to the boisterous weather. Having a very thin attendance at Market this morning, business in all kinds of Corn was extremely limited; nor do we observe any alteration in their value.

BRITISH, PER IMPERIAL QUARTER.	s.	d.		s.	d.
Wheat, Essex, Kent, and Suffolk	46	57	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire	50	57	White	—	—
Oats, Lincolnshire and Yorkshire	13	25	Feed	16	24
—— Northumberland and Scotch	—	—	Feed	17	25
—— Irish	—	—	Feed	16	23
Barley, Malting and distilling 28*s* to 33*s*	Chevalier	30	35	Grind.	26	30
Malt, pale, ship			—0	—	
—— Hertford and Essex			—	—	
Rye			—	—	
Beans, Mazagan, old and new 28 to 30	Tick	28	31	Harrow	28	28
—— Pigeon, Heligoland 28 to 30	Winds.	30	36	Longpod	28	30
Peas, White 30 to 32	Maple	27	29	Grey	26	27

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 8 per Quarter.	52*s* 0*d*	33*s* 3*d*	19*s* 11*d*	34*s* 0*d*	29*s* 8*d*	30*s* 5*d*
— 9	53 7	33 4	19 1	32 9	29 10	30 6
— 10	53 6	33 4	19 0	32 5	30 6	31 1
— 22	55 1	33 7	19 7	33 10	30 4	31 3
March 1	56 3	33 9	20 0	35 3	30 5	31 6
— 8	56 0	33 6	19 11	35 2	31 0	31 6
6 weeks' Aggregate Aver.	54 4	33 5	19 6	33 7	30 4	31 0
Duties on Foreign Grain	18 0	5 0	7 0	9 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	1410	3190	940	1890 Sks
Irish	—	—	—	—
Scotch	—	—	—	—
Foreign	—	—	—	—

KINGSFORD AND LAY.

SEEDS, FRIDAY, March 15.

Canary	per qr	52*s* to 56*s*	Linseed Cakes, Foreign, p. ton	8*l* to 7*l* 10*s*	
Carraway	per cwt	5*d* 6*d*	Mustard, White	p. bush.	6*s* 6
Clover, Red, English	—	64 70	— Superfine	—	6 8
— — Foreign	—	64 74	— Brown	—	4 16
— White, English	—	84 105	Rapeseed, English, per last	24*l*	28*l*
— — Foreign	—	84 105	Rape Cakes	per ton	— —
Coriander	—	12 18	Safnfoin	—	— —
Hempseed	per last	36 38	Tares, Eng. winter	p. bush.	3 5
Linseed	per qr	— —	— Foreign	—	3 5
— Baltic	—	— —	Trefoil	per cwt	—
— Cakes, Eng. per 1000 10*l* to 10*l* 10			Turnip (too variable for quotation).		

KINGSFORD AND LAY.

HOPS, FRIDAY, March 15.

THE Hop Market continues firm and gradually advancing, with very few in offer at last week's prices.

Mid & East Kent Pocks. 8*l* to 10*l* 10*s*		Sussex Pockets	- 6*l* — to 6*l* 8*s*
Choice ditto	- 11 0 — —	Choice ditto	- 6 12 — —
Weald of Kent Pocks.	6 0 6 15	Farnham	- 9 9 10 10
Choice ditto	- 7 0 — —		

PATTENDEN & SMITH, Hop-Factors.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 15.

Prime Upland Hay	65*s* to 74*s*	Clover	- 80*s* to 103*s*	Straw	- 23*s* to 30*s*
Inferior	- 60 62				

JOHN COOPER, Salesman.

WHITECHAPEL, March 15.

Hay	- 65*s* to 68*s*	Clover	- 83*s* to 85*s*	Straw	- 26*s* to 28*s*
— fine	- 62 70	fine	100 105		

CUMBERLAND MARKET, March 15.

Superior Meadow Hay	72*s* to 77*s*	Superior Clover	100*s* to 105*s*	Straw	23*s* to 30*s*
Inferior	— 60 68	Inferior	— 80 90		

JOSHUA BANKS, Hay Salesman.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 240s per ton	—	Rags, — to 100s per ton	—
Bleaching Powder, 20s per cwt.	—	Rape Cake, 105s — per ton	—
Brimstone, 80s per ton	—	— Dust, 12s per ton	—
Bone-dust, —s and 17s per quarter	45	Sal Ammoniac, 42s per cwt.	—
— Half-inch, 16s ditto	42	Salt, Agricultural, 5s per ton	80
— Calcined, 10s per cwt	—	— clean, 20s per ton	80
Carbonate of Ammonia, 42s per cwt	24	Saltpetre, 90s per ton	84
— of Lime, 1s to 1s 6d per cwt	—	Saltpetre (Nitrate of Potash) 28s per cwt., duty paid	80 to 84
— of Soda, 30s to —s per cwt	—	Silicate of Potash, in powder, 60s per cwt.	—
Chloride of Lime, 10s per cwt	—	Soap, 90s per ton	—
Cinders, 20s to —s per ton	—	Soda Ash, 10s to —s per cwt.	56
Guano, 10s to 21s per ton, in dock	60	Sulphate of Ammonia, 24*l* to —s per ton	90
— Peter's, 24*l* per ton	60	— of Copper, 30s to —s p. cwt.	—
Gypsum (Sulphate of Lime), 3*l* to 5*l* per ton	80 to 84	— of Magnesia (Impure) 10s per cwt.	65
Humphreys's Compound for Hyacinths, 1s 6d per bottle	—	— of Magnesia (pure crystal) 14s p. cwt.	65
Muriate of Ammonia, 24s per cwt.	70	— of Potash, 120 per cwt.	—
— Lime, —s to 6s	70	— of Soda, 1s per cwt.	—
Nitrate of Soda, 16s 6d to 18s 6d per cwt., duty paid	60	Sulphur, 12s per cwt.	—
Phosphate of Lime, 6s 6d p. cwt.	65	Sulphuric acid, London, 14*l* per ton.	—
— — Super, 8s 6d p. cwt.	60	— Country made, 12*l* per ton.	—
— of Ammonia, in crystals 2s 6d per lb.	—	Willey Dairy, —s per ton	—
— — — In fine powder, 2s 6d per lb.	60		

Expenses of shipping about 2s to 3s per ton, according to quantity.

JAMES FOSTER.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 372, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 372, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

WIRE-WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

GUANO ON SALE BY THE IMPORTERS,
JOHN BOYD & Co.,
Wellington Chambers, London-bridge, Borough.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, March 16, 1844.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with Synopsis of mode of use, on applications to MARK FOTHERGILL, 40, Upper Thames-street, and 5, Railway Place, Mark-lane, London.

MANURES FOR WHEAT, &c.

POTTER'S GUANO.—Result of an Experiment on Wheat, tried near Colchester—sown Nov. 1842, reaped August 1843. POTTER'S GUANO.—Seven bushels per acre gave 54½ bush. Grain. Daniell's Manure, 40 bush. per acre, gave 46 bush. Grain. Difference in favour of POTTER'S GUANO, 8½ bush.

Note.—The Daniell's Manure cost 3*l.* POTTER'S (present price) 2*l.*—Works 28, Upper Fore-street, Lambeth; sold by M. FOTHERGILL, 40, Upper Thames-street.

BEAUTIFUL FLOWERS. — POTTER'S CONCENTRATED LIQUID GUANO, for Flowers, Kitchen Garden Produce, &c. Sold by appointment, by SAVORY and MOORE, Chemists to the Queen, 130, New Bond-street, and 220, Regent-street, and can be had of most respectable Chemists and Seedsmen. Price 1*s.* 9*d.* the quart bottle, with directions.

DR. LINDLEY, in the *Gardeners' Chronicle* for 1843, p. 560, says—"POTTER'S GUANO will convert your desert into a paradise." And in the Number, Feb. 10, 1844—"POTTER'S GUANO is unrivalled."—Works, 28, Upper Fore-street, Lambeth.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7*s.* per cwt.

Phosphate of Potash,	15*s.*	per cwt.
,, Soda,	12*s.*	,,
,, Magnesia	9*s.*	,,
,, Ammonia	1*s.*	per lb.

THE URATE of the LONDON MANURE COMPANY, 5*l.* per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c., are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 5, Victoria Cottages, Rawley Road, Kentish Town.

A vacancy now occurs for one house or outdoor Pupil, for the study of Chemistry as applied to Agriculture. Apply as above.

TO AGRICULTURISTS.

THE Dry Material for making CAMPBELL'S CORN-PRODUCING LIQUIDS, or FERTILISING STEEPS, which have arrested the attention of Agriculturists in all parts of the United Kingdom, is now to be had in Boxes containing quantities for 5 Gallons and upwards, at the following prices:—

For WHEAT, Material per Gallon	2*s.* 6*d.*
,, OATS and GRASSES,	1 6
,, BARLEY,	2 0
,, BEANS and PEASE,	2 3
,, TURNIPS and RAPE SEED	2 6

Agents in London:—Mr. EDWARD PURSER, 40, New Bridge-st.; Messrs. GEO. GIBBS and Co., 26, Down-st., Piccadilly; and Messrs. THOMAS GIBBS and Co., Corner of Half-moon-street, Piccadilly.

TO AGRICULTURISTS.
ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for Hire, for Excavations and Wells, Buildings heated by hot-water, for Horticulture, and every variety of manufacturing purposes. The trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset street, Fleet-street, London.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition, have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2*s.* 6*d.*, quarts, 4*s.* 6*d.* each. One pint is sufficient to coat four Frames twice over, each Frame to be 5ft. by 3ft. 3in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

Agents wanted for London and the country.

YORKSHIRE LAND-DRAINING ASSOCIATION.
Capital, 500,000*l.*, in stock of 25*l.*—Deposit, 5 per cent.

PATRONS.—The Right Hon. Lord Beaumont.
The Right Hon. Lord Viscount Morpeth.
Sir William M. Milner, Bart.
Edward Stillingfleet Cayley, Esq., M.P.

PROVISIONAL COMMITTEE.

Mr. James Andrew, Kirkham Cottage, Wakefield.	J. Bailey Denton, Esq., 9, Gray's-inn-square, London.
Mr. Caleb Angus, Newsick, Driffield.	John Grey, Esq., Dilston.
J. Barkerridge, Esq., Bretton, Wakefield.	Mr. Edwin Green, Havercroft, Barnsley.
Thomas Bradley, Esq., Richmond.	James Hall, Esq., Scarborough, Beverley.
Christopher Bradley, Esq., Richmond.	James Hammerton, Esq., Hellifield Peel, Skipton.
Henry Briggs, Esq., Overton, Wakefield.	J. Mildred Hustler, Esq., Bradford.
Mr. George Baker, Roundhay-road, Leeds.	R. M. Jaques, Esq., Easby Abbey, Richmond.
Joseph Dent, Esq., Ribstone-park, Wetherby.	James Smith, Esq. (Deanston), 13, Queen-sq., Westminster.
	Mr. William Take, Bradford.

With power to add to their number.

BANKERS.—The York City and County Banking Company.
STANDING COUNSEL.—H. Bellenden Ker, Esq., Lincoln's-inn.
DRAINING ENGINEER.—James Smith, Esq. (Deanston.)
SOLICITORS.—Messrs. Blanchard, Richardson, and Gurch, York.
SECRETARY.—John H. Charnock, Esq., Wakefield.

This Association is formed for the purpose of affording to the Agricultural Interest, by means of its collective capital, the funds necessary for the THOROUGH DRAINING OF LAND; and of executing and superintending the execution of the works required for this purpose on the most economical and effective principles—repayment of the money advanced to be made, with interest, by such equitable half-yearly instalments as in the several cases may be determined.

Among the various objects to which of late years collective capital has been more or less successfully applied, it is not a little surprising that the one which, of all others, offers the most certain and profitable return, with the soundest security, should have hitherto been almost disregarded. The time, however, has arrived, when an urgent desire for Agricultural improvement on the one hand, and a dearth of safe and profitable investment for superabundant capital on the other, renders such an Association highly desirable to both the landed and monied interest, whilst to the community generally an almost incalculable advantage will be secured by a proportionate increase of labour and food.

At a meeting of the council of the Yorkshire Agricultural Society, held in York, on the 29th of December, 1843, a resolution was passed, approving generally of the objects of this Association, and at the monthly meeting of the Wakefield Farmers' Club held on the 5th January, 1844, a resolution approving of the principle and objects of the Association, was unanimously adopted.

At the meeting of the Royal Agricultural Society of England, at Liverpool, in July, 1841, Lord Stanley remarked—that "there was no bank in the whole country—no commercial speculation—no investment so safe, so sure and profitable, as that in which even borrowed capital may be engaged, by investing it under the ground of your own soil." And in reference to this Association, his Lordship, in a letter to the Committee says:—"I am fully satisfied of the benefits which such an Association is capable of conferring on the country, if confined to its legitimate object—the lending of capital on the security of an investment in draining; and I think it very probable that many landed proprietors would avail themselves of the facilities afforded by an institution lending money on land, repayable by instalments—a condition on which few private parties are willing to lend.

Bearing in mind the important objects of the Association, and the perfect security with which its operations can be conducted, at a comparatively trifling expense (no large expenditure for previous outfit being required), it may be reasonably expected that the return for the capital embarked will be such as to insure the support of prudent and permanent investors, thereby divesting it of that speculative character which has stigmatised so many modern projects, and which it is the especial desire of the Committee to avoid.

Application for prospectuses, and further particulars to be addressed to the Solicitors, Messrs. BLANCHARD, RICHARDSON, and GURCH, York; or to J. H. CHARNOCK, Esq., the Secretary, Wakefield.

ASPHALTUM in its pure state, with all the material and instruction how to prepare, or if required, the labour performed at a moderate charge.—Apply to J. A. HEBBARD and SON, 20, Harp-lane, Tower-street. All Letters prepaid.

CHOICE FLOWERS and PLANTS in POTS.

HUMPHREYS'S COMPOUND, applicable to all Greenhouse Plants, to Melons, Cucumbers, &c., and to promote the germination of Seeds. Sold in bottles 1*s.* 9*d.* each, by [illegible] and SON, Mansion-house-street; HURST and MCMULLEN, Leadenhall-street; W. CLARK, Bishopsgate-within; SMITH, Islington Nursery; GRIMSLEY and Co., Covent Garden; BATT and RODLEY, 412, Strand; WILLIAM and JOHN NOBLE, Fleet-street; SMITH, Covent Garden; CHARLWOOD, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KERNAN, Great Russell-street, Covent Garden; LOCKHART, 136, Cheapside; SKUTTLEWORTH, Pantheon; MINIER, ADAMS, and NASH, 63, Strand; THATCHER and SON, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS ANSELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. E. RENDLE, Plymouth; DICKSON and Co., Edinburgh; POWNEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THORNE, Shepton Mallet; and other leading Seedsmen in town and country. Wholesale Agents, DAVY, MACKMURDO, and Co., 100, Upper-Thames street, London.

AGRICULTURAL IMPROVEMENT.

SPRING WHEAT.—HUMPHREYS'S FARMERS' COMPOUND, manufactured on a *new principle*, so as to present a cheap manure of greater power, and more extensive usefulness, than the guano; and without its caustic rankness, and liability to be washed out of the soil. From its wholesome character, it is unrivalled for garden culture; and as a Top-Dressing for all Spring Crops. Per acre, for WHEAT, BARLEY, &c., with a bad soil, *Five cwt.*; with better land, *Three* or *Two*. GRASS on the average, *Two cwt.* TURNIPS, THREE or TWO. Price 12*s.* per cwt. Agents, DAVY, MACKMURDO, & Co., Manufacturing Chemists, 100, Upper Thames-street, London.

CHOICE FLOWERS AND PLANTS IN POTS.

HUMPHREYS'S INDOROUS SOLUBLE COMPOUND. A few grains dissolved in water, and used occasionally, are effective. For list of Agents see other Advertisement.

TO COLONISTS, AGRICULTURISTS, &c.—Mrs. MARY WEDLAKE, widow of the late Mr. THOMAS WEDLAKE, of the Original Iron-foundry and Agricultural Implement Manufactory, established forty years, at Hornchurch, near Romford, Essex, and of 118, Fenchurch-street, London, begs to inform the friends of her late Husband that she continues to Manufacture all kinds of Agricultural Implements, for the invention of which he was so often honoured with the medals of the Royal Society of Agriculture, and which obtained for him so high a distinction among the Farmers of England and British Colonists. Being assisted by men of talent in the Manufacture of these articles, she is in hopes of deserving the high repute this Establishment has so long enjoyed, and now solicits respectfully a continuance of the patronage of the numerous friends of her late husband. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, 118, Fenchurch-street, viz.:—

Patent Hay-making Machines	Subsoil Ploughs
Winnowing Machines	Horse-power and Hand-thrashing Machines
Dressing Machines	Patent Horse Rakes
Patent Chaff-cutting Machines	Scarifiers
Oil-cake Crushers	Drills of all kinds
Double-action Turnip Cutters	Park Fencings, Hurdles
Flour Mills	Furnace Bars
Bean Mills	Cast Iron Horse Racks
Railway Wheels, Vacuum Pumps	Kitchen Ranges
Patent Essex Ploughs, 30 different sorts	Stoves, Fenders

*** Castings to any pattern.

☞ *For a more detailed List, see Johnson and Shaw's "Farmers' Almanack" for 1844.*

Please to be particular in the address, Mrs. MARY WEDLAKE, 118, Fenchurch-street, London; or, Original Iron Foundry, Hornchurch, Essex.

AGRICULTURAL PROTECTION SOCIETY.—
PRESIDENT—The Duke of Richmond.
VICE-PRESIDENT—The Duke of Buckingham and Chandos.

TRUSTEES.

The Duke of Norfolk	The Duke of Cleveland
The Duke of Rutland	The Earl of Yarborough

GENERAL COMMITTEE.

Mr. Allen, M.P.	Mr. Plumtree, M.P.	Mr. Fisher Hobbs
Mr. Brandon, M.P.	Mr. Pusey, M.P.	Mr. P. Matthews
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Mr. Newdegate, M.P.	Mr. Ellis	Mr. T. Woodward
Mr. S. O'Brien, M.P.	Mr. Greetham	

1. That a Society, to be called the Agricultural Protection Society for the United Kingdom of Great Britain and Ireland, be now formed, for the purpose of upholding, by constitutional means, protection to British Agriculture.

2. That the object of this Society is to maintain protection to British Agriculture, not less than that at present existing.

3. That the Society shall, through the press, repel the imputations and point out the incorrectnesses contained in the statements of those who oppose such protection.

4. That party politics shall not be introduced into the proceedings of this Society, and that the Society shall on no account interfere in any election for a Member to serve in Parliament.

5. That the affairs of the Society shall be managed by a President, Vice-President, four Trustees, and a Committee of 40 Members, whereof 26 shall always be tenant-farmers; and that Chairmen or Vice-Chairmen of County Societies connected with this Society shall be ex officio members of this Committee, and that the said Committee shall have power to add to their numbers.

6. That any funds contributed by such Country Societies or individuals be paid into the Bank of England, to the credit of the Trustees of the Agricultural Protection Society for the United Kingdom of Great Britain and Ireland.

7. That the publications of the Society be issued on reduced terms to Country Societies which have contributed to its funds.

8. That a donation of not less than 5*l.*, or an annual subscription of not less than 1*l.*, shall constitute every person who shall agree in the principles of this Society one of its members.

9. That there be an Annual Meeting of the Society in the month of December, notice of which shall be given in the London papers three weeks previously.

10. That the meeting of the General Committee shall take place, except as hereinafter stated, on the first Tuesday of every month, to receive and take into consideration the reports of the different Sub-committees.

The next meeting of the General Committee will take place on Friday, the 22d inst., at Eleven o'clock, at 51, Portland-place.

(Signed) RICHMOND, President.
W. MILES, Hon. Secretary.

FLORTICULTURAL FETE IN LONDON.

Grosvenor and [illegible] Gardens, 12th June, 1844.

The Society distributes the following Medals and Rewards, viz:—

		£	s.	d.
G.	Gold Medal	10	0	0
SG.	Silver Gilt Do.	5	0	0
S.	Silver Do.	3	0	0
SB.	Silver Banksian Do.	2	0	0
B.	Bronze Medal Do.	1	0	0
GE.	Gold Elizabethan Do.	7	0	0
GG.	Gold Grecian Do.	5	0	0
GK.	Gold Knightian Do.	10	0	0
LG.	Large Gold Do.	20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate. In case an Exhibitor shall receive a First Prize in any one Letter, he shall not be entitled to receive any other Medal in the same Letter, except in *CC*, *DD*, and *EE*.

CLASS I.—FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A. Pelargoniums, in collections of 12 new and first-rate varieties, cultivated with superior skill, in pots of 24 to a cast. GB—SG—LS—SK.

B. Pelargoniums, in collections of 12 varieties, in pots of 12 to a cast. SG—LS—SK

N.B. Persons exhibiting in *B* cannot also exhibit in *C*.

C. Pelargoniums, in collections of 6 varieties, in pots of 6 to a cast. LS—SB

D. Rhododendrons, in pots; not fewer than 6 plants, in 6 varieties LS—SK—SB.

E. Roses, in pots; Amateurs to show in collections of 12, Nurserymen in collections of 25, distinct varieties. GB—SG—LG

N.B. It is the wish of the Society in a future season, to require Roses to be shown exclusively in pots; and not to allow cut specimens to be exhibited at all.

F. Moss Roses in loose bunches, so as to exhibit, as far as possible, the habit of the variety; in 12 varieties. SK—SB—C

G. China Roses, exhibited as in the last letter, and in 50 varieties. LS—SK—B—C.

N.B. No one who exhibits in this letter can also compete for the following.

H. Other Roses, exhibited as in the letter *F*, and in 25 varieties. SK—SB—C.

N.B. Higher medals than those here offered for Roses cannot be given by the Judges. And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to be placed on the tables.

I. Cape Heaths, in collections of 20 distinct varieties. GB—SG—LG.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion

K. Cape Heaths, in collections of 6 distinct varieties. SG—LS—SK.

N.B No person who shows in *I* will be allowed to exhibit also in *K*

L. Calceolarias, in sixes; in pots of 12 to the cast LS—SK—SB.

M. Carnations, in pans of 24 distinct varieties. LS—SK—SB.

N. Picotees, in pans of 24 distinct varieties LS—SK—SB.

O. Pinks, in pans of 24 distinct varieties. SK—SB.

CLASS II.—FLOWERS, for which all persons are admitted to equal competition.

P. Stove or Greenhouse Plants, in collections of 30 plants. GK—GB—SG—LS.

N.B. Heaths, Calceolarias, Fuchsias, Greenhouse Azaleas, Rhododendrons, Orchidaceæ, Cacti, and Pelargoniums, to be excluded from *P*, *Q*, and *R*.

Q. Stove or Greenhouse plants, in collections of 15 plants. GB—SG—LS.

N.B. Persons exhibiting in *P* not to compete in *Q* also.

R. Stove or Greenhouse plants, in collections of 6 distinct species SG—LS—SK.

N.B. Persons exhibiting in *P* or *Q* will not be allowed to compete in *R* also.

S. Greenhouse Azaleas, in 12 distinct varieties. GB—SG—LS.

T. Greenhouse Azaleas, in 6 distinct varieties. SG—LS.

N.B. No one can show in both classes of Azaleas.

U. Stove or Greenhouse climbers, in collections of 6 species. SG—SK.

V. Exotic Orchidaceæ, in collections of not fewer than 20 species. LG—GE—GB

N.B. Exhibitors cannot show in more than one of the classes, *V*, *W*, and *X*.

W. Exotic Orchidaceæ, in collections of not fewer than 6 species GE—GB—SG.

X. Exotic Orchidaceæ in single specimens SG—LS—SK

Y. Plants in glass cases, grown on Mr Ward's plan. SG—LS—SK.

N.B. It is highly desirable that these cases be made with a moveable door, so as to prevent the condensation of the water on the inner face of the glass during the time of exhibition.

Z. Distinct varieties of Tall Cacti in flower. GB—SG—LS.

N.B. The GB and SG Medals are not to be given if fewer than six varieties are exhibited.

AA. Fuchsias in collections of 12 distinct varieties. LS—SK.

BB. Cinerarias, in pots, in collections of 12 distinct varieties. SK—SB.

CC. Single specimens of new or extremely rare ornamental plants. BG—LS—SK—SB—C.

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Gardens in a previous season*

DD. Miscellaneous subjects. SK—SB—C

N.B. Cockscombs, Heartsease, Hydrangeas, and cut flowers, are altogether excluded from exhibition. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

EE. Seedling Florists' flowers. SK—SB—C.

N.B. Every seedling must be shown singly, and must be marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season Pelargoniums are to be shown in pots, and not in a cut state. No person will be allowed to exhibit more than five seedlings at each meeting. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

In Addition to any medals assigned to the classes *I*, *P*, *Q*, and *W*, the SK and SB medals are offered for the two collections in those classes which shall be best named by the Exhibitor.

N.B The Society's officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy and the spelling, and the neatness of the writing.

CLASS III.—FRUIT, for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the market, and private growers, exhibit independently of each other.

N.B. All fruit must be FULLY ripe and WELL-COLOURED; if the contrary it will be disqualified.

FF. Miscellaneous collections of Fruit, consisting of at least three different kinds, Peaches and Nectarines being considered as only one kind. GE—GB—LS.

N.B. Cucumbers, Tomatoes Gourds, and similar Kitchen Garden produce, are excluded from this letter.

[illegible] Grapes. SG—LS—SK

HH. Pine-apples. SG—LS—SK.

II. Peaches or Nectarines. SG—LS—SK.

KK. Other kinds of Fruit. SG—LS—SK.

Judges.—The Judges have been selected for their knowledge of Horticulture, and the number and value of the prizes awarded by the Society for particular [illegible] Gardener, and in these publications, if [illegible] Gardeners' Chronicle.

It is also requested to be borne in mind that the Society's Medals are offered for other and [illegible] objects, than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the collector as to reward the skilful Gardener; they are also not to make any award in cases where the objects exhibited do not appear worthy of a Medal; otherwise a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

Copies of the above list may be obtained at 21, Regent-street, upon application to the Secretary.

FASTOLFF RASPBERRY.



PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, THE MOST NOBLE THE MARQUIS OF AILSA, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c &c, as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL AND Co. have much pleasure in announcing they are now supplying Fine Canes of the above highly-valuable and much-esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour

Those to whom Y. and Co sent it last season have expressed their high admiration of its superiority over all other varieties, and has been awarded several prizes from various Horticultural exhibitions during the season As a proof they have not exaggerated its excellent qualities, fruit was submitted to Dr. LINDLEY, (*see Gardeners' Chronicle* of the 22d July last, page 503), whose opinion of it is as follows:—

"FASTOLFF RASPBERRY.—We have received from Messrs. YOUELL, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find its merits all that has been stated in favour of its excellence The fruit that we have received is very large, obtusely conical, and of rich flavour, far exceeding in this respect some other new and large varieties. The plants bear abundantly, and in long succession"

They also exhibited it on the 1st of August, 1843, before the London Horticultural Society, 21, Regent-street, to which a prize was awarded. It would therefore be unnecessary for YOUELL and Co. to recommend it more fully, or with greater confidence to the notice of the public, merely observing, that it continues in high perfection throughout the autumnal months, and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties.

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post-office order), upon the following terms:—

	£	s.	d.
Packages containing 100 Canes	2	2s	0d
Do. do. 50 do.	1	5	0
Do. do. 25 do.	0	14	0

Package included.

The usual discount to the Trade where not less than 200 are ordered.

*** CAUTION.—Y. and Co. beg to call the attention of their friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and cannot be held responsible for its being genuine, unless purchased direct from their Nursery

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c., FOR 1844.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of 2d inst., and will be found to contain such varieties only as are worthy of cultivation.

YOUELL & Co being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms —

12 Extra Fine varieties, 12*s*, the Selection left to Youell & Co.
12 ditto ditto 24*s*, the Selection left to the Purchaser.
50 Fine varieties. . 40*s*, the Selection left to Youell & Co.
50 Extra Fine ditto . 60*s*, the Selection left to the Purchaser.

VERBENAS.

12 Extra fine Varieties, 6*s*, the selection left to Youell & Co.
12 Ditto ,, 10*s*, the selection left to the purchaser.

With the exception of those marked thus.*

The plants will be strong and healthy, and ready for delivery by the latter end of March, with the exception of those marked thus * (which will be ready in April), thus ensuring the Purchaser fine plants for competition in the ensuing season. Many of the varieties can be supplied now.

CHRYSANTHEMUMS.

50 Newest and Best Varieties, 12*s*. per dozen

PANSIES.

12 Fine Show Varieties, by name, 9*s*. per dozen.
12 Extra fine do. do. 18*s*. ,,

Per post free.

FLOWER-SEEDS.—30 packets of the newest and best kinds, sent per post free for 6*s*

TWO NEW SEEDLING PICOTEES.—"LADY ALICE PERI," 10*s* 6*d*, and "MRS. BUNYON," 10*s*. 6*d*. per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs. YOUELL & Co., for particulars of which see their Advertisement in this Paper of the 16th of Sept.

FINEST CARNATIONS AND PICOTEES.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows	£.	s.	d.
12 pair of good Show Sorts	1	4	0
12 ditto fine ditto	1	16	0
24 ditto ditto	3	0	0
12 ditto extra fine and very superior ditto	2	10	0
24 ditto ditto	5	0	0

The selection being left to YOUELL & Co.

ARAUCARIA IMBRICATA, recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—fine robust 4-year-old plants, 9 to 12 inches high, 10*s*. per 100; 12 to 18 inches high, 16*s*. per 100; 18 to 30*s*. per dozen.

Fine Plants of CEDRUS DEODARA, 2*ft*. to 3*ft*. 6 ins., 10*s*. 6*d*. each.

Great Yarmouth Nursery, March 14, 1844.

A LIST OF CHOICE FLOWERING PLANTS, SUITABLE FOR SALE OR EXCHANGE, MAY BE HAD OF WARNER AND WARNER, Sabbath Row, No. 28, Cornhill, London.

	£	s.	d.
Azalea calliciflora	0	2	6
Achimenes rosea superba	0	1	0
Alcasia grandifolia	0	2	6
Alstrœmeria, in fine vars.	0	1	0
Anagallis azurea grandiflora	1	0	
Anemone, new hybrid, Russian	0	6	
Aquilegia glandulosa	0	6	
Argemone grandiflora	0	6	
Aster, extra fine German, 24 sorts, mixed, from imported varieties	0	6	
Aster, collection of 24 varieties, as imported, most splendid	0	9	
Auricula, from fine named flowers, extra	1	0	
Balsam, fine double Camellia-flowered, mixed	0	6	
Balsam, double German, 12 splendid varieties	2	6	
Blumenbachia insignis, a fine climber	0	6	
Boronia denticulata	1	0	
Brachycome iberidifolia	0	6	
Calceolaria, saved from fine named vars. and newest kinds	1	0	
Calempelis scaber	0	6	
Calendrina grandiflora	0	6	
Calliprora flava	1	0	
Ceanothus azureus	0	6	
Calliopsis Drummondii	0	6	
,, grandiflora intea	0	6	
Campanula Lorsii, blue and white	0	6	
Campanula Trachelium	0	6	
Campanula stricta, new	0	6	
Canterbury Bells, double	0	6	
Carnation, from fine named flowers	1	0	
Centaurea Americana	0	6	
Chorizema varium	1	0	
Cineraria, from the newest and most approved varieties	0	6	
Clatus hellanthemum, for rockwork, mixed colours	0	6	
Clarkia grandiflora, crimson	0	6	
Clarkia alba fimbriata	0	6	
Clerodendron speciosum	1	0	
Clintonia pulchella	0	6	
Cobœa scandens	0	6	
Cockscomb, new giant scarlet	0	6	
Cockscomb, Brighton prize	0	6	
Collinsia rubra major	0	6	
Commelina cœlestis	0	6	
Convolvulus minor, new dark purple	0	6	
Convolvulus infatus	0	6	
Coronanthus, three choice varieties	0	6	
Cuphea silenoides	0	6	
Cyclamen, three varieties, mixed	1	0	
Dahlia, from choice varieties, saved by the best growers	1	0	
Davlesia saligna	1	0	
Delphinium azureum	0	6	
,, grandiflorum	0	6	
,, mesoleucum	0	6	
Dianthus chinensis, fine, double	0	6	
Didiscus cœruleus	0	6	
Digitalis, new spotted	0	6	
Elichrysum monstrosum	0	6	
Erica andromediflora	1	0	
Eriostemon buxifolium	1	0	
Eucharidium grandiflorum, new and beautiful	2	6	
Eutoca Menziesii	0	6	
Fuchsia fulgens, splendid dark varieties	1	0	
Fuchsia, fine vars., mixed	1	0	
Gaillardia cœcinea	0	6	
,, Wellsiana, new	0	6	
Geranium, from the finest new named sorts	1	0	
Gesneria splendens	1	0	
Geum splendens	1	0	
Gilia splendens	0	6	
Gladiolus, new and choice	0	6	
Gloxinia, fine varieties	1	0	
Gloxinia rubra splendens	2	0	
Goodetia, choice kinds	0	6	
Heartsease, from choice named varieties	1	0	
Heliotropium Peruvianum	0	6	
Hibiscus Humboldtii	0	6	
,, grandiflora	0	6	
Hollyhocks, in 24 sorts, splendid	5	0	
Hollyhocks, mixed	0	6	
Hovea Celsii	1	0	
Impatiens glanduligerus	0	6	
,, new alba	1	0	
Ipomœa rubra cœrulea	1	0	
,, albo, new	1	0	
,, rosea	0	6	
,, yellow, new	0	6	
Ipomopsis elegans	0	6	
Jacobea, double dark mulberry	0	6	
Jacobea, new double violet	0	6	
Larkspur, German, 12 kinds, extra fine	2	0	
Larkspur, mixed German	0	6	
Lasthenia glabrata, new	0	6	
Layia elegans, fine mixed	0	6	
Leptosiphon, Aureolus, yellow, new	0	6	
Leptosiphon androsaceus	0	6	
Lilium Philadelphicum	1	0	
Limanthes grandiflora	0	6	
Limnanthes Douglasii	0	6	
Lobelia ramosa, splendid	0	6	
,, prostrata	0	6	
Lophospermum Hendersonia	0	6	
Lucaria senecioides, new	0	6	
Lupinus, German, 12 varieties, mixed	0	6	
Lupinus racemosus albus	0	6	
Martynia fragrans	1	0	
Marygold, superb African	0	6	
Marygold, superb French	0	6	
Maurandia semperiflorens	1	0	
Mesembryanthemum tricolor	0	6	
Mesembryanthemum tricolor alba, new	1	0	
Mimulus Deniesonii, new sweet-scented	0	6	
Mimulus Cardinalis splendens	0	6	
Nemophila discoidalis, new black	1	0	
Nemophila grandiflora azurea	0	6	
Nicotiana, new scarlet	0	6	
Nonea rosea	0	6	
Œnoth era Drummondii	0	6	
,, macrocarpa	0	6	
Papaver bracteata	0	6	
,, nudicaule	0	6	
Passiflora incarnata	0	6	
,, edulis	0	6	
Pentstemon gentianoides splendens	0	6	
Petunia, from the most splendid named flowers	0	6	
Phlox Drummondii, new large crimson	1	0	
Picotee, saved from the finest English named flowers, per packet	1	0	
Pimelia hypericiifolia, rosea, & Hendersonia	1	0	
Pink, from fine-named flowers	1	0	
,, Chinese, ex. fine dbl.	0	6	
,, Mountain, new hybrid	0	6	
Polyanthus, fine mixed, from named prize flowers	1	0	
Podolobium, new imported species	1	0	
Pœonia, 3 fine varieties by name	2	6	
Pœonia, Moutan	1	0	
Portulacca Thellusonii	0	6	
,, splendens	0	6	
Poppy, Germans, 12 distinct colours	2	0	
Potentilla Thomasii	1	0	
Primula, sinensis rubra fimbriata	0	6	
,, sinensis alba, do.	0	6	
Ranunculus, from superb Scotch varieties	0	6	
Rhodanthe Manglesii	0	6	
Rhododendron dauca	1	0	
,, Lowii	1	0	
Salpiglossis, 24 varieties mixed, superb	0	6	
Salvia, varieties mixed	0	6	
Sanvitalia procumbens	0	6	
Scabiosa Columbaria, new	0	6	
,, elegans, fine	1	0	
Schizanthus albus	0	6	
,, Grahamii, red	0	6	
,, Hookeri, scarlet	0	6	
Schizopetalum Walkeri, sweet-scented	0	6	
Schyspanthus elegans, new	0	6	
Silene speciosa, new	0	6	
Stachys Downeii	1	0	
Stocks, new German, imported, 24 vars., mixed	0	6	
,, new, Prince of Wales, splendid variety	0	6	
,, Victoria, new, violet crimson	0	6	
,, Moss's, intermediate	0	6	
Stocks, new buff-colrd., very large flowered	1	0	
,, collection of 36 vars. as imported, splendid	0	6	
Statice sinuata	0	6	
Sweet William, new double, many vars, mixed	0	6	
Thunbergia alata, buff	0	6	
,, aurantica	0	6	
,, alata alba	0	6	
Tradescantia cœrulea	0	6	
Trachelium cœruleum	0	6	
Tropœolum Jarratii	1	0	
,, Canariense	0	6	
Tropœolum tricolorum	1	0	
,, pentaphyllum	0	6	
Verbena tricolor, hybrid variation	0	6	
Vinca rosea and alba	0	6	
Viscaria cœulea, new	2	6	
Wallflower, chameleon	0	6	
,, new lilac	0	6	
,, new French striped	0	6	
Zinnia elegans, 8 new varieties, in mixed	1	0	
,, 24 splendid vars. mxd.	0	6	

PEAS.—Warner's Incomparable Large, late Marrow Peas, 2*s*. per quart; most delicious flavour, and great bearer. Fine Giant Asparagus, plants two years old, 2*s*. per 100, with printed particulars for planting. Humphrey's Compound, in bottles, 1*s*. 3*d*. each. Potter's celebrated Liquid Guano, in qrt. bts, 1*s*. 6*d*. each.

A General Catalogue of Garden and Flower-Seeds may be had on application by post, or a single letter.

Printed by William Bradbury, of No. 13, Upper Kennington-lane, and Frederick Mullett Evans, of No. 11, Church-row, Bayswater, both in the county of Middlesex, printers, at their office in Whitefriars, in the precinct of Whitefriars, in the City of London; and published by them at the office, No. 5, Wellington-street, in the parish of St. Paul's, Covent-Garden, in the said County, Saturday, March 16, 1844.

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All communications to the Editor are to be addressed to the Editor.—Saturday, March 16, 1844.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 12.—1844. SATURDAY, MARCH 23. [PRICE 6d.

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FROM the last Official Stamp Returns published March 16, it appears, that during the three months of October, November, and December, in the past year, 1843, the Stamps applied to each of the under-mentioned Journals gave them an average Publication of:—

GARDENERS' CHRONICLE & AGRICULTURAL GAZ.	5461
Morning Herald	5283
Morning Chronicle	5231
Mark Lane Express	4154
Spectator	3731
Sun	3347
St. James's Chronicle	3321
Record	3212
Observer	3184
Morning Post	3013
Globe	3000
John Bull	3000
Atlas	2847
Railway Times	2770
Standard	2565
Patriot	2308
Bell's New Weekly Messenger	1731
New Farmer's Journal	1431
Mining Journal	1404
Herapath's Journal	1231
GARDENERS' GAZETTE	1066

The weekly circulation of the GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE is at the present time (March 20) above 7000, as will be seen by the next Parliamentary Return.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—SOUTHAMPTON MEETING.—Prize-Sheets and Regulations for the Exhibition of Stock, Implements, &c., together with the blank PRINTED FORMS OF CERTIFICATE required to be filled up by Exhibitors, and copies of the printed Programme of the Meeting, may be had on application, either personally or by letter, addressed to the Secretary, No. 12, Hanover-square, London.

Exhibitors are particularly requested to observe, that all Certificates for Implements, &c., must be sent, complete, so as to reach the Secretary on or before the FIRST OF MAY; and all Certificates for Stock on or before the First of June.

By order of the Council, JAMES HUDSON, Secretary.

London, March, 1844.

SODENS' EARLY OXFORD POTATOES.

HURST AND M'MULLEN, SEEDSMEN, No. 6, Leadenhall Street, London, still continuing to receive numerous orders for the above celebrated Potato, feel it their duty to inform their numerous friends, and the public generally, that the entire Stock is all sold. They have made arrangements, for another season, with Mr. SODEN, to grow a larger supply, and beg to solicit early orders, to prevent disappointment. They have still on hand MARTIN'S new early Globe, new early Wiltshire Kidney, and several other approved varieties. See their Advertisement in this day's Paper.

RANUNCULUSES, ANEMONES, PELARGONIUMS, AURICULAS, CARNATIONS, AND LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by APPOINTMENT FLORIST TO HER MAJESTY, begs to inform the Nobility, Gentry, and Amateurs, that, in consequence of the success he has had in the cultivation of the above flowers at his new Garden, he can offer them at very moderate prices. He would particularly recommend an early application to be made for RANUNCULUSES and ANEMONES, as they should not be planted later than the end of March to ensure a good bloom. His Catalogue of PELARGONIUMS, AURICULAS, and NEW PLANTS, is now ready, and will be forwarded by post on application. The Trade supplied.

FUCHSIA.—MARNOCK'S PRINCESS SOPHIA.—This beautiful FUCHSIA, which was raised by an Amateur, and purchased by Messrs. MARNOCK and MANLEY, is a dazzling vermilion; thick, glossy, substance; large tube, and, excessively brilliant; corolla, dark purplish rose, well expanding and forming a beautiful contrast from the sepals. Plants in April, 10s. 6d. each; an allowance to the trade if three or more plants are taken at a time. Their Catalogue of Fuchsias, Verbenas, Cinerarias, &c., containing every variety worthy of cultivation, with many new varieties of Cinerarias, &c., not yet let out, is now ready, and may be had on application at their Nursery, Hackney.

N.B.—Every description of choice Flower-seeds, at moderate prices.—March 23, 1844.

FINEST CARNATIONS AND PICOTEES.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows:

		£.	s.	d.
12 pair of good Show Sorts		1	4	0
12 ditto fine	ditto	1	10	0
25 ditto	ditto	3	0	0
12 ditto extra fine and very superior	ditto	2	10	0
25 ditto	ditto	5	0	0

The selection being left to YOUELL & Co.

ARAUCARIA IMBRICATA.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year-old plants, 8 to 10 inches high, 10*l.* per 100, or 30*s.* per dozen.

Fine Plants of CEDRUS DEODARA, 2ft. to 2ft. 8 ins., 10*s.* 6*d.* each.

Great Yarmouth Nursery, March 21, 1844.

N.B. All Orders above £2 will be delivered carriage free either to London or Hull.

NEW FUCHSIA "ADONIS."

T. PULLEN begs respectfully to call the attention of Nurserymen, Florists, and Amateurs, to the above SEEDLING, which has been pronounced by all who have seen it to be a splendid variety. The flowers are very large, and a very bright colour, with a very waxy substance; is a strong grower, with very fine foliage, and free bloomer, &c. Plants may be had the first week in May, at 5*s.* each, of the Raiser, or of Messrs. HURST and M'MULLEN, Seedsmen, 6, Leadenhall-street, London; who have seen the flowers, and will answer to any inquiries respecting its merits, &c.—Midhurst Nursery.

BUSHELL'S Light Seedling Dahlia, "EMMA."—Plants in May, 10*s.* 6*d.* Colour white, tipped with deep cherry; the petals, form, and centre, good; the largest, most constant, and free in flowering of any Dahlia yet propagated, and has obtained several prizes. "Pet Rival" Plants in May, 5*s.* Colour, purple maroon; fine cupped petal and free bloomer; exhibited in several winning stands last season. Kennington Rose, Plants in May, 5*s.*; most constant Rose grown. To be had of Messrs. ANSELL, Camden Town; S. GIRLING, Stowmarket; F. & A. SMITH, Hackney; and J. BUSHELL, 12, Hall-place, Kennington-lane.

SEEDLING FUCHSIAS.

W. PAWLEY, of the White Hart Hotel, Bromley, Kent, begs to inform the Nobility and Gentry that he has purchased the entire Stock of three splendid Fuchsias, which he intends sending out in April next, at 10*s.* 6*d.* per plant. They are considered by competent and practical men to be the best known, and twice the size of any yet in cultivation.

QUEEN.—A large Flower, a very free bloomer, and of good habits. Colour, a delicate light Pink, and a beautiful Rosy Vermilion Corolla.

PRINCE OF WALES.—A very large bold Flower, and good substance. Colour, a bright Crimson, with an extraordinary large Violet Corolla. Magnet is also a large long Flower, good substance, habit, and a free bloomer.

To prevent disappointment, which is too often the case with new Flowers, the public are requested to come and see them before purchasing. Early orders are solicited, as the stock is limited, having broke very sparingly. A specimen of each will be open to any three Seedlings of 1843, grown from young plants, for the sum of 5*l.* To be exhibited at the West Kent Exhibition, held at Blackheath, in June next. N.B.—If accepted, notice to be given this month.—Bromley, March 22, 1844.

DAHLIAS.—KEYNE'S STANDARD OF PERFECTION, DODD'S ORANGE SUPERB, and DOWDING'S EMMA NOKE.—The Stock of these splendid DAHLIAS is in fine condition, and will be sent out the 1st of May. A List of the Nurserymen who have ordered and can supply Plants, will be advertised the 1st of April. Gentlemen who intend growing these varieties may, by giving early orders, depend on fine Plants the first week in May.—Salisbury, March 5, 1844.

DILLISTONE'S APPLE, the STURMER PIPPIN.—From the satisfaction given last season by the mode of transmitting by post scions of the above most valuable Apple, to distant parts of England, Scotland, and Ireland, S. & J. DILLISTONE are again induced to offer it in packets (true from the original tree), post-free upon receipt of a Post-office order, payable at Halstead, for 3*s.* 6*d.*, or the amount in stamps.

The Editor of the *Gardeners' Chronicle*, in "Notices to Correspondents," NOV. 25, 1843, says—"The Sturmer Pippin deserves the character given of it."

Mr. RIVERS, in the Supplement to his Fruit Catalogue, says—"The Sturmer Pippin again deserves noticing, for its excellent qualities; it seems to grow and bear well in all soils and situations, and will supply the desert or kitchen from March till July. It can be grafted with success till middle of May."

A choice Collection of Roses, Dahlias, Pansies, &c. &c. Nursery Stock in general.—Sturmer Nurseries, March 22, 1844.

PETUNIA PUNCTATA.

W. MILLER refers the readers of the *Gardeners' Chronicle* to his full advertisement of this beautiful flower—just remarking that its *Strong, Dwarf habit*, and *Glossy Dark Green* foliage, (by far surpassing any Petunia yet out), renders it a desirable object for every greenhouse, and especially to all Exhibitors. Strong plants in April, 7*s.* 6*d.*

W. M. can still take orders for his cheap and new Fuchsias and Verbenas, as advertised.

FUCHSIAS.		VERBENAS.	
12 Fine distinct sorts	7*s.* 6*d.*	12 Distinct sorts	2*s.* 6*d.*
12 Extra, very superior	10*s.* 6*d.*	12 Extra, very superior	5*s.* 0*d.*

N.B.—Printed Lists can be had of Pelargoniums, &c.

WILLIAM MILLER, Providence Nursery, Ramsgate, March 19.

SEEDLING FUCHSIAS, PHLOXES, and VERBENAS.

S. GIRLING begs to inform the admirers of the above, that he will have fine healthy plants of his superb Seedlings ready for delivery by the 20th of April. S. G. offers them with the greatest confidence, being well convinced of their superiority over any others he cultivated last year, which included about 100 varieties. The FUCHSIAS have been seen by Dr. LINDLEY, whose opinion on their merits will be found in the *Gardeners' Chronicle*, pages 528 and 561, of 1843, under the signature "*S. Girling.*"

FUCHSIAS.

CANDIDATE.—Deep crimson tube and sepals, petals bright violet-purple, reflexing so as to show the corolla. Price per plant, 5*s.*

GLOBOSA COCCINEA.—Tube nearly globular, dark vermilion, sepals and violet petals. 3*s.* 6*d.*

HERO OF SUFFOLK.—Dr. LINDLEY's description of this is—"No. 5 is a handsome seedling, with short crimson vermilion tube and sepals of good substance, the latter expanding so as almost to reflex, after the manner of Magnifica; stamen and pistils much exserted." Price 7*s* 6*d.*

PHLOXES.

KING OF THE WHITES.—The best white out; height 2 feet. Price 5*s.*

SPECTABILIS.—Shaded lilac, very fine, height 2 feet. 2*s.* 6*d.*

DRUMMONDI, var. SPLENDENS, a new annual of great beauty, being of the richest crimson scarlet, and quite circular in form. In packets of 12 seeds; 2*s.* 6*d.* per packet.

VERBENAS.

DEFIANCE.—Bright rosy pink; the best in its class. 2*s.* 6*d.*

TRESOR PARFAIT.—Bright violet-purple, shaded with deep crimson; quite distinct from any Verbena known. 3*s.* 6*d.*

S. G. also begs to state that his Catalogue of Florist's Flowers is ready, and may be had on prepaid application; it will be found to contain nearly every novelty of the season, any of which S. G. will be happy to receive orders for, and which shall have every care and attention. The Fuchsias and Verbenas will be sent by post, free of charge, where preferred. The Phloxes are now ready for delivery.

Dane Croft Nursery, Stowmarket, March 23, 1844.

WOODLANDS NURSERY, MARESFIELD, near Uckfield, Sussex

WILLIAM WOOD AND SON have much pleasure in acquainting their numerous Patrons and Friends that they have been appointed Agents for the sale of that most invaluable article—WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, samples of which may be seen, and the composition in use, at WOOD and SON'S Nursery. Sold in bottles, with ample directions for use, pints 2*s.* 6*d.*, quarts 4*s.* 6*d.* each. Discount to the Trade.

SEEDLING FUCHSIA, CACTUS, and PANSY, HOLLYHOCK SEED, &c.—LYNCOMBE VALE NURSERY, BATH.

J. KITLEY begs to inform the Nobility, Gentry, and the Public that he has purchased of Mr. POND his unequalled SEEDLING FUCHSIA (PONDII), allowed by all who have seen it to be one of the largest and handsomest Fuchsias of the day; tube and sepals bright crimson, with darker corolla, and extremely free bloomer; fine compact habit; cannot fail to give satisfaction. 5*s.* per plant.

J. K. has a few more plants of fine SEEDLING CACTUS (SPECIOSA SUPERBA), 10*s.* 6*d.* per plant. Also, good healthy plants of his SEEDLING PANSY (LYNCOMBE VALE RIVAL). This Flower, both for shape and decision of colour, is decidedly the best light PANSY out. 3*s.* 6*d.* per plant.

J. K. can recommend his HOLLYHOCK SEED, with the greatest confidence, having taken great care to select from his best full and very double Flowers of 1843 20 distinct varieties, named to colour, which he will *forward to any purchaser* post-free, on the receipt of a *Post-office order for* 5*s.* The whole of the above are now ready to send out.—Bath, March 20, 1844.

SUPERIOR SEEDLING FUCHSIAS, VERBENAS, AND DAHLIA—"HAMPSTEAD RIVAL."

G. SMITH begs to call particular attention to his New Seedlings, which G. S. flatters himself will give satisfaction, as they far surpass anything in their class.

FUCHSIA—"LONDON RIVAL" has been exhibited at Chiswick, and at the Royal Botanic Gardens, Regent's Park; also submitted to the Editor of the *Gardeners' Chronicle*, Aug. 19, 1843, whose opinion of it is as follows:—G. S.'s Fuchsia, London Rival, is a handsome variety, with dark purplish vermilion tube and sepals, the latter opening so as almost to reflex, showing the large crimson purple corolla to great advantage in growth, and free flowering habit of Moneypenil, 7*s.* 6*d.* per plant.

FUCHSIA—CYLINDRIA SUPERBA is described by Mr. Glenny as being the most vivid scarlet that can be conceived, and as having a singularly interesting appearance; it is of strong growth, and a free blooming variety, 5*s.* per plant.

FUCHSIA—GLOBOSA GRANDIFLORA; much larger and superior to Globosa major, 5*s.* per plant.

VERBENA—EXCELSA obtained a first-class prize at the July Show, Royal Botanic Gardens of London, and is a very large compact flower, quite new in colour, being a deep Rose, extra fine, 5*s.*

VERBENA—DELICATA, a fine blush changing to pink, very compact and large, 3*s.* 6*d.* per plant.

VERBENA—ARRAYA, a fine free flowering red with white eye, 2*s.* 6*d.* per plant.

VERBENA—STRIATA, scarlet striped with pink, 2*s.* 6*d.* per plant.

DAHLIA—HAMPSTEAD RIVAL (Cowing's), a Rosy crimson, rising high in the centre, with a great depth of superior formed petals, and is warranted a noble show flower, constant, 4 feet, 10*s.* 6*d.* per plant. Strong plants will be ready by April 20.

London Agents:—Messrs. WARNER, 28, Cornhill; SMITH, Hackney; and the Metropolitan Union.

Country Agents:—Messrs. YOUELL, Great Yarmouth Nursery; STEWART, Salt-hill Nursery; CRIPPS, Tunbridge Wells; and E. TILLEY, Bath.

*** Nurserymen or Florists becoming Agents, their names will appear as received in this Paper.

TOLLINGTON NURSERY, Hornsey Road, Islington.

WOOD'S SUPERB SCARLET PHLOX DRUMMONDII.

J. WOOD begs to announce that, owing to the late unfavourable season, the stock of seed of this beautiful Annual, which gave such universal satisfaction last year, is very small, and that it will in consequence be sold at 2*s.* 6*d.* per packet as last year. Town Agents, HURST and M'MULLEN, 6, Leadenhall-street, Huntingdon Nursery.

N.B. This Advertisement will not be repeated.

GREAT YARMOUTH NURSERY, NORFOLK, 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER.

A SELECT CATALOGUE of the NEWEST and VERY BEST VARIETIES OF FUCHSIAS, VERBENAS, PETUNIAS, CHRYSANTHEMUMS, & ANAGALLIS, offered by YOUELL & CO.

YOUELL & Co., in submitting their Catalogue of FUCHSIAS for 1844, take this opportunity of drawing the attention of admirers of the above elegant tribe of plants, to their select and superb Collection. They have spared no expense in forming a selection of such as are really good, to the exclusion of many that are mere nominal varieties; and they would refer to the numerous testimonials of success which attended their mode of selection last season, collections for Amateurs, for competition at the various Horticultural Exhibitions throughout the kingdom.

YOUELL & Co. being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms:—

12 Extra Fine varieties, 12s., the Selection left to Youell & Co.
12 ditto ditto 24s., the Selection left to the Purchaser.
50 Fine varieties . . 48s., the Selection left to Youell & Co.
50 Extra Fine ditto . 96s., the Selection left to the Purchaser.

With the exception of those marked thus, *

The plants will be strong and healthy, and ready for delivery by the latter end of March, with the exception of those marked thus * (which will be ready in April), thus ensuring the Purchaser fine plants for competition in the ensuing season. Many of the varieties can be supplied now.

NEW AND SPLENDID SEEDLING FUCHSIAS.

* "FUCHSIA LINDLEYANA." This brilliant Fuchsia, the entire stock of which is in the possession of YOUELL & Co., is now for the first time offered to the notice of the public.

Its exceedingly large tube and sepals are of the most vivid vermilion, and excessively expansive, surpassing in brilliancy any hybrid that has yet been raised. It was exhibited at the London Horticultural Society's Meeting, Regent-street, and greatly admired, and was pronounced by all who saw YOUELL & Co.'s specimen plant to be the most dazzling object of this tribe they ever witnessed. The foliage and habit exceedingly fine, a most abundant bloomer, and will be found a desideratum to every collection. Plants will be ready for delivery by the first week in April, at 7s. 6d. per plant. Usual discount to the Trade, when not less than six plants are ordered.

YOUELL & Co., in calling the notice of Amateurs and others to the following seedling Fuchsia, raised in their nursery, beg to state that in the summer of 1843 they bestowed every care in hybridising the best varieties in cultivation, from which they succeeded in raising upwards of 3000 plants, to the flowering of which one house was entirely devoted last year. And although many varieties possessing superior claims to the attention of those cultivating this elegant tribe, were submitted for the opinion of Dr. LINDLEY, and most favourably noticed, yet YOUELL & Co. feel that, in making a selection of the following six varieties, to which a most accurate description is affixed, will prove not only satisfactory to the purchaser, but to themselves.

These will be ready for delivery in April next, and as the stock is very limited, early orders are solicited.

* "QUEEN VICTORIA." Tube and sepals smooth, of a bright vermilion, corolla stout, long, of a fine purple rose colour, forming a good contrast, and of fine texture, price 7s. 6d. per plant.

* "PRINCE OF WALES." Tube and sepals rosy vermilion, the latter tipped with green, expanding well, and showing a fine corolla of maroon purple; price 7s. 6d. per plant.

* "PRINCESS ROYAL." Tube and sepals bright red, corolla large and peculiarly bright in colour; price 5s. per plant.

* "MARCHIONESS OF NORMANBY." This is a large and showy flower, measuring four inches from the commencement of the pod to the termination of the pistil, tube and sepals scarlet, corolla stout, having a tinge of purple on it; price 7s. 6d.

* "LADY ALICE PEEL." A flower of good form and substance, fine rosy red tube and sepals, the latter terminating in a decided green, corolla very large and stout, of a beautiful crimson purple; price 5s. per plant.

* "LADY WALSINGHAM." Tube and sepals smooth, of a rosy vermilion, the latter turn up, and expose the whole of the corolla, which is stout, and of a fine purple crimson; price 5s. per plant. When the six are ordered, they will be charged 1l. 11s. 6d. the set.

"FUCHSIA QUEEN." Quite new, very beautiful, and not yet out, tube and sepals large and stout, of pure white, showing a dark crimson corolla; price 10s. 6d. p. plant; ready in April next.

Fuchsia Seed, saved from the best varieties, 6s. to 10s. per packet, with Directions for sowing, &c. &c.

FUCHSIAS.

	per plant.—s. d.
Fuchsia affinis, or radicans	1 0
,, arborea	1 0
,, aurantia	1 6
,, Aurora	1 6
Alata (Smith's)	2 6
Belladitoliata, Belliana, or Rosea alba	1 0
Ballooni	1 6
Bicolor	1 6
Brucenna	1 0
Blanda	2 6
Brockssmii	2 0
*Beauty (Youell's), fine	3 6
Britannia (Smith's)	2 6
Cormackii	2 6
Curtisii	1 0
Compacta	1 0
Coperii	1 6
Carnea	1 0
Chandlerii	1 0
Conspicua	1 6
,, arborea	1 6
Corymbiflora	1 0
*Countess of Tyrconnel (Youell's), fine	3 6
*Countess of Zetland (Youell's), fine	3 6
*Conservative (Youell's), fine	3 6
Coperii	1 6
Champion (Smith's)	3 0
*Constellation (Miller's) to be sent out this season—late	12 6
*Candidate (Girling's) in May	5 0
Daisemii	1 0
Dipksonii	2 6
Delicata	2 0
Duchess of Gloucester (Standish's)	2 0
Defiance (Smith's)	3 0
Elegans superba	1 6
Excelsa	1 6
Exima	1 0
Eppati	2 6
Erectum	1 6
Elegans	1 6
Enchantress	1 6
,, (Harrison's)	2 0
Exoniensis	3 6
*Exquisite (Youell's), fine	3 6
Eclipse (Smith's)	2 6
Floribunda (Standish)	1 6
Formosa elegans	1 0
Fulgens multiflora	1 0
Floribunda magna	1 0
Gem	2 6
Globosa variegata	2 0
Grandis	1 0
Hebe (Standish)	2 0
*Hero of Suffolk (Girling's) in May	7 6
Iveryana	2 6
Insignis	1 0
King	1 6
Lancii	2 6
Longiflora hybrida	1 6
*Lady Rae Reid (Youell's) fine	3 6
*Lady Sondes (Youell's), fine	3 6
Magnifica	1 0
*Marchioness of Ormonde (Youell's), fine	3 6
*Madonna (Youell's), fine	3 6
Majestica (Smith's)	2 0
Mooypennii	1 0
Magnificat	2 0
Nobilissima (Smith's)	3 6
Pendula (Young's)	1 6
Pulcherrima	2 0

[List of Fuchsias continued.]

Princeps	1s. 6d.
*Prince Albert (Youell's), fine	2 6
Paragon (Smith's)	2 0
*Queen Victoria (Smith's), expect to be sent out this season	21 0
Racemiflora	2 6
Racemosa	2 0
Racemiflora elegans	1 6
Robusta (Smith's)	2 6
Rogersiana	2 6
Ricartonii	1 0
Smithii	1 0
Splendida	1 0
Standishii	1 0
Splendens (Humboldt)	1 0
,, (Kyle's)	1 0
Salmonia	1 6
Stewartia	1s. 0d.
Sanguinea	1 6
Stylosa elegans	1 6
,, maxima	1 6
,, pulchella	1 6
St. Clare [true]	2 6
*Sylph (Youell's), fine	3 6
Stanwelliana	2 6
Transparens	2 0
*Taglioni (Youell's), fine	3 6
Thompsonii superba	1 6
Towardii	1 0
Triumphans	1 0
Toddiana	2 6
Tricolor	1 0
Victory (Smith's)	3 6
Venus Victrix	1 0
Victoria	2 0
Youcelii	1 0

With every other variety worthy of cultivation, that may be advertised by other parties after the publication of this list.

YOUELL & Co. are preparing a short treatise upon their successful mode of cultivation of the Fuchsia, which will be presented Gratis to Purchasers.

VERBENAS.

*"MONARCH" (Youell's) is a delicate creamy white, surpassing in its size and fragrance every other variety; the tufts of bloom measuring from 3½ to 4 inches diameter, and will be sure to give satisfaction. Price 5s. per plant.

* "BRILLIANT," (Youell's). This fine variety is of the most vivid scarlet, equal in this respect to "Melindris;" the bloom, however, is three times the size, and very fragrant, and will prove most desirable in any collection. Price 3s. 6d. per plant.

*"ELEGANS" (Youell's), is a most interesting variety, being a delicate lilac, with a distinct white eye; flower large and fragrant. Price 3s. 6d. per plant.

* "SURPRISE" (Youell's), can be recommended as a variety completely novel, and one that must be cultivated in every collection, the colour being of the richest rosy crimson, or ruby, producing tufts of flowers of 3½ ins. in diameter, and delightfully fragrant. Price 5s. per plant.

The above four varieties have been selected from upwards of 2000 Seedlings, and may be confidently relied upon as possessing superior claims, and will be sure to give satisfaction; will be ready to send out in April next (post-free). If the four varieties are taken, they will be charged 15s. the set.

Amethystina	2s. 0d.
Arraniana superba	1 0
Barkerii, extra fine	1 6
Barnesii	1 0
* Beauty	2 0
* Blue Queen (Miller's)	5 0
* Boule de Feu	2 0
* Bridesmaid	2 0
Edmondii	1 0
Emperor	1 0
Favourite	1 6
Formosa elegans (Croft's)	1 6
Formosa beautiful pink, with white eye	1 6
* Fortune-teller	2 0
Grandis	1 6
Groomiana	1 0
Hendersonii	1 0
Hislopiana	1 0
Incisa	0 6
Incisa major	1s. 0d.
Laconii	1 0
* Longiflora (Girling's)	2 0
Melindris major	0 6
* Minstrel Boy	2 0
Picta	0 6
Prince of Wales (Wood's)	1 0
Princess Royal (Youell's), the best white out	1 6
* Renown	2 0
Sanguinea	1 0
Speciosa (Kyle's)	1 0
Splendens	1 0
Striata coccinea, extra fine	1 0
Teucroides rosea, do.	2 6
Tweediana	0 6
Victory	1 0
Vivid	1 0
* Zeuxes (Miller's)	3 0

To be sent out in April next, per post free, at the following prices, viz.—

12 Extra fine Varieties, 6s., the selection left to Youell & Co.
12 Ditto ,, 10s., the selection left to the purchaser.

[With the exception of those marked thus *]

Any other variety worthy of cultivation that may appear, after the publication of this Catalogue, can be supplied at the advertised prices.

PETUNIAS.

Beauty	1s. 0d.
Bicolor	1 0.
Gem	1 0
Grandis	1 0
Lady Peel	1 6
Magna rosea	1s. 0d.
Magnifiora	2 6
Medora	1 0
Punctata (Miller's) in Apr.	7 6
Rosea alba	1 0

With every other variety worthy of cultivation that may be advertised by other Parties after the publication of this List.

CHRYSANTHEMUMS.

Achmet Bey, lilac	Formosum, white and yellow	Mirabile, white and buff
Arago, buff and red	Golden Lotus, flowered yellow	Peter, creamy
Beauty, pale lilac	Gem, pink and white	Perspicuum, pink
Belladonna, pink	Goliath, white	Princess Marie, light pink
Bethuia, lilac	Gouvain St. Cyr, orange	Pulcherrimum, rose
Campestroni, purple	Hero	Queen, deep rose
Casimir Perrier, small, crimson	Incurved, pink	Quilled yellow,
Chancellor, white and pink	Insigne, pink and red	Rosalind, pink
Changeable, yellow	Imperial, pale lilac	Salters, white
Christophe Colombe, lilac	King, pale rose	Sulphurea
Col. Combes', salmon	Louis Philippe	Sultana, rose
Conspicuum	Lucidum, white	Superb, clustered yellow
Defiance, white	Marchioness, white	Surprise, white
Duc de Conigliano, crimson	Madame Pompadour, dark rose	Starry, purple
Duchess de Montebello	Marechale Messina, yellow and red	Tasselled, lilac
Duke, extra fine	Marie, red	— yellow
Elegans, rose	Marie Antoinette	Triumphant, pink & buff
Expanded, purple	Magnet, yellow	Two-coloured incurbed, yellow and brown
Empress, lilac	Memnon, pink	
Flechier, dark rose	Minerva, pink and white	Vesta, white
		Wheeleriana

Sent post-free to any part of the United Kingdom at 12s. per doz.

ANAGALLIS.

A. Carnea grandiflora	1s. 0d.	A. multiflora	1s. 0d.
A. Brewerii	1 0	A. speciosa	1 0
A. cerulea grandiflora	1 0		

The above can be sent free of postage to any part of the kingdom.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name . . 9s. per dozen
12 Extra Fine ditto, do. . . 10s.

FLOWER-SEEDS.—30 Packets of the choicest and newest kinds sent per post free for 6s.

FASTOLFF RASPBERRY.

For Particulars of this highly valuable and much-esteemed RASPBERRY, patronised by her Most Gracious Majesty the QUEEN, and most of the Nobility, see their Adv. of last week.

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post-office order), upon the following terms:—

Packages containing	100 Canes	£2	5s 0d
Do.	do. 50 do.	1	5 0
Do.	do. 25 do.	0	14 0

Package included.

TWO NEW SEEDLING PICOTEES.—"LADY ALICE PEEL," 10s. 6d., and "MRS. BURTON," 10s. 6d. per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs. YOUELL & Co., for particulars of which see their Advertisement in this Paper of the 16th of Sept.

SPLENDID LARGE, DEEP-BLUE ANAGALLIS and SUPERB CINERARIAS.—Plants of that large, splendid deep-blue, full and complete round-petalled ANAGALLIS BREWERII, being of a strong and vigorous habit, are well adapted for bedding out; 12s. per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light-blue, at 2s. 6d. per packet. Strong flowering plants of the above, 18s. per dozen. Applications, including Post-office orders, will be immediately executed.—Direct to MICHAEL BARNES, Esq., Cambridge Nursery.

MELON SEEDS.—A very liberal Remuneration will be given for some PERFECTLY PURE AND GENUINE SEEDS of the under-named Melons; or Seeds procured the last year direct from China, Cabul, and Candahar, will be given in exchange:—Striped Honsainee, Daree, Geree, Garmek, Melon of Gerger, Nukshevan, Sweet Melon of Ispahan, and Italian Green-flesh.

Application to Mr. G. MILLS, Gardener, Gunnersbury Park, Acton, Middlesex.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurtzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3s. 6d. per quart.

TURNIP SEED, &c., at CHESTER.

FRANCIS AND JAMES DICKSON beg to announce to the Farming community and Agriculturists in general, that having succeeded in saving an unusually large quantity of their "IMPROVED PURPLE-TOPPED SWEDISH TURNIP," (originally from the reputed Ashcroft's Stock, but annually picked and transplanted under their own superintendence), they are enabled to offer it on very low terms.

Also "DICKSON'S PURPLE-TOPPED HYBRID SCOTCH YELLOW," a hardy and much-admired variety. Laing's East Lothian, Pink-topped, Victoria, and other Swedes; White and Cream Globe; Dale's, Gordon's, and several Hybrids; Red, White, and Green Round Turnips, &c. &c.

F. and J. D. have likewise on sale all kinds of FARM SEEDS, in the selection of which they pay particular attention. Mangold Wurtzel, Carrots, Parsnips, Clovers, Imported Scotch Seed Oats, Barley, and Rye-grass. Grasses for Permanent Pasture, &c. &c.

Orders are respectfully solicited, in the fulfilment of which every attention will be paid.—Chester, 20th March, 1844.

LAWN GRASS-SEED.—Mixtures of the finest kinds of GRASSES and CLOVER, warranted to insure a fine Sward (allowing two quarts to the square rod), 14s. per bushel. Sent carriage-paid to London, in not less quantity than half a bushel. Mixtures for Lawns intended to be fed, 10s. per bushel.

JOHN RIVERS, Sawbridgeworth, Herts.

G. CHARLWOOD, 14, Tavistock-row, Covent-garden, begs to inform his numerous Friends and the Public in general, that his Catalogue of AMERICAN SEEDS is now ready for distribution. In it will be found Cones of Pinus Douglasi, 21s. per doz.; likewise, his new General Catalogue, containing all the newest and most improved Vegetable and Flower Seeds; together with an abridgment of the same, containing the more select and rare Sorts.

He has likewise received his annual importation of German Stocks, Asters, Wall-flowers, Carnations, &c., &c. List, with prices, will be found in the Abridgment.

G. C. having been many years in the habit of making mixtures of the different kinds of Grasses for Pasturage of all descriptions, can supply the same from 24s. to 36s per Acre; or, in distinct Sorts, as may be desired. The finer Sorts, mixed for Lawns, at 1s. 6d. per lb. Also Lucerne, 1s. per lb. White Belgium Carrot, 1s. per lb. Altringham Carrot, 1s. per lb. Mangold Wurtzel, 1s. per lb. Yellow and Red Globe Mangold, 1s. per lb. Laing's improved Swedish Turnip, 1s. per lb. Skirving's do., do., do., 1s. per lb. All other Sorts of Agricultural Seeds equally low, and of genuine quality.

AMERICAN FOREST-TREE and SHRUB SEEDS.—A consignment of 24 barrels recently received are offered FOR SALE, either entire or in separate portions, as may suit the convenience of the cultivators of them.—For further particulars apply to GEORGE CHARLWOOD, Seedsman, 14, Tavistock-row, Covent-garden.

The assortment consists of the following articles:—Andromeda, arborea, Mariana, and paniculata; Alnus serrulata, Acer rubrum, montanum, and striatum; Betula populifolia and excelsa; 1 bushel Crataegus pyrifolia, Cornus florida, 2 lbs. Cercis Canadensis, 4 lbs. Ceanothus Americana, 16 lbs. Diospyros Americana, Fraxinus tomentosa, acuminata, and sambucefolia; 14 lbs. Gleditschia triacanthos; Hibiscus syriaca et spec.; 1 bushel Ilex Opaca; 7½ bushels Juniperus Virginiana; 2 bushels Juglans tomentosa; Kalmia angustifolia, latifolia, Laurus Benzoin, Ligustrum Americana; 2 pecks Myrica cerifera; Magnolia glauca, grandiflora, and macrophylla; Prinos verticillatos, Phytolacca decandria, Philadelphus inodorus and grandiflorus; In cones—18 bushels Pinus nigra; 2½ bushels P. balsamea; 2½ bushels P. Canadensis; 7½ bushels P. rigida; 2 bushels P. alba; 3 bushels P. microcarpa; 2½ bushels P. strobus; ½ bushel P. variabilis; 2½ bushels Quercus coccinea; 1 bushel Q. tinctoria; Rhus glabrum Vernix; 1½ bushel Sorbus Americana; 4½ bushels Thuja occidentalis, and several other articles.

G. C. begs to inform his friends and customers that this consignment is totally distinct from his usual supply, of which a priced list may be obtained by application.

PASTURE AND LAWN GRASSES of the Finest Quality, selected for every description of soil, consisting of Poas, Festucas, Cold Grass, Meadow Foxtail, &c., with a moderate supply of Clover, will enable Noblemen and Gentlemen to lay down upon very reasonable terms. Particulars of quantities suitable to various soils to be had, with an estimate of the cost per acre, by application to WARNER and WARNER, Seed-merchants, 28, Cornhill, London. Genuine Italian Rye-Grass, Mangold Wurtzel, and superior selected Turnip-Seeds.

TO FINE GROWERS.

TO BE SOLD BY PRIVATE CONTRACT, between 400 and 500 Fruiting and Succession PINE PLANTS, principally composed of Queen's, Black Jamaicas, White Providences, Black Antiguas, and other good varieties. The whole are in a very healthy, clean condition, and will be found worthy of notice. For Particulars apply to Messrs. JANSON and FINNEY, Gateshead Nursery.

TO GENTLEMEN, FLORISTS AND OTHERS.

MESSRS. PROTHEROE & MORRIS will offer at the Auction Mart, Bartholomew Lane, on Tuesday, March 26th, the remaining Standard and Dwarf ROSES and DAHLIAS; and on Thursday, 28th, a stock of CARNATIONS and PICOTEES, PINKS, NEW FUCHSIAS, HEARTSEASE, &c., the stock of a celebrated Grower; may be viewed the morning of sale. Catalogues may be had at the Mart, and of the Auctioneers, Leytonstone.

"PETUNIA PUNCTATA."

WILLIAM MILLER intends to give a List in next week's *Chronicle* of those Nurserymen that have ordered Plants of this unrivalled Flower. Other Nurserymen who wish their names to be added, must send their orders immediately.

Providence Nursery, Ramsgate, March 21, 1844.

CHOICE PANSIES.

J. HENCHMAN begs to inform cultivators of the PANSY that he is now sending out healthy plants of six good seedling varieties, for 21*s.* the set. Also a few choice kinds at 18*s.* and 12*s.* per dozen.—Edmonton, March 1844.

WOODLANDS NURSERY, MARESFIELD, near Uckfield, Sussex.

NEW and SUPERB FUCHSIAS, VERBENAS, PETUNIAS, CINERARIAS, CAMELLIAS, GREENHOUSE and HERBACEOUS PLANTS, HARDY CLIMBERS, and Plants adapted for bedding.

WM. WOOD & SON beg to inform their Friends and Amateurs that a Catalogue of the above, together with a List of entirely new ROSES, is now ready, and may be had GRATIS on application.

The Gardeners' Chronicle.

SATURDAY, MARCH 23, 1844.

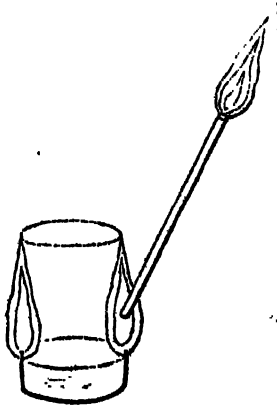
MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 27	Society of Arts	. .	8 P.M.
MONDAY, April 1	Entomological	. .	8 P.M.
TUESDAY, April 2	Horticultural	. .	3 P.M.
	Linnean	. .	8 P.M.

THE well-known experiment of conducting a portion of the unburnt gas from the interior of a candle-flame, and then lighting it at the end of the tube, forms the basis of Mr. Williams's reasonings in behalf of his IMPROVED FURNACE. This experiment, which we recall to mind by the annexed diagram, is assumed as proving that the whole of a gaseous current will never be consumed unless some extraordinary means be previously taken to intermix the gas with the air, whose oxygen is to combine with it. "If, then, the free unrestricted access of air on all sides of this small flame is not able by force, attraction, or the laws of diffusion, to form a due atomic mixture in time for ignition, *à fortiori*, it cannot do so when the supply of air is restricted, and that of the gas increased."



These words form the conclusion of Mr. Williams's notice of the experiment in question, and he proceeds to contrast it with the combustion of an argand lamp (his furnace being called the *Argand* furnace), in which he infers that no such phenomenon could be exhibited. We think, however, that there is a slight error in supposing that because some portion of unburnt gas can thus be abstracted and afterwards inflamed, that it would not have been equally burnt if left to itself. There is little doubt, we apprehend, that the upper part of every flame consists of the gas which but an instant before had formed the yet unconsumed central portion of the volume, and which might have been conducted away and burnt at the end of a tube instead of rising to increase the length of the original flame. We think there is a second error in supposing that in this respect there is any essential difference between the flame of an argand lamp and that of a candle. The combustion in the flame of the argand-lamp is, like that in the candle, successive. The flame has length in proportion to the supply of gas, because each portion of gas requires to be brought to the surface of the flame, in order to gain access to the air; and there is exactly the same central portion of temporarily unburnt gas, throughout the entire ring of the argand flame as there is in the candle, and which may be in the same manner abstracted and burnt at the end of a tube thus.

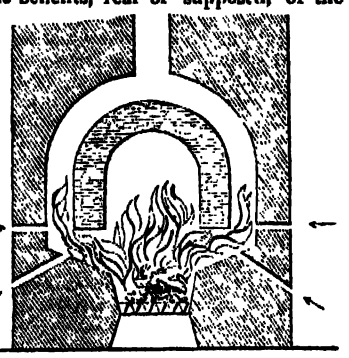


The great distinction between an argand lamp and a candle consists in the chimney, for without the chimney the best oil in an annular wick burns less perfectly than the commonest tallow with a simpler form of cotton. Besides the draught produced by the chimney, and the consequent increased supply of air, the contraction or shoulder in the chimney drives the ascending current of air forcibly against the rising gas, and compels an intermixture of the air and gas, which is highly favourable to combustion, and which may easily furnish hints for the construction of furnaces.

The effect of this contraction in the chimney, and indeed of any contrivance by which an inflammable gas and the air are made to impinge against each other is very strikingly shown in the recently-invented lamps for burning highly rectified spirits of turpentine. In these, a narrowing of the chimney corresponds with a metal button over the centre of the flame, by means of which the mutual penetration and intermixture of the two currents is made much more complete than in the common Argand lamp, and therefore a material is caused to burn without smoke, which, without some such extraordinary provision, fails to obtain a sufficient supply of oxygen from the air for its complete combustion.

These lamps exemplify very conclusively the leading argument of Mr. Williams, that, in order to obtain chemical combination, it is not sufficient to bring the materials into mere juxtaposition, though they may leave some doubt as to whether the means he proposes are the only ones, or the best for the purpose. The public is much indebted to him for the perseverance with which he has followed out the subject, but we think his own illustration of the Argand lamp scarcely does justice to this invention.

In the annexed diagram we have shown how simply and easily the benefits, real or supposed, of the contrivances in question may be obtained in furnaces resembling those generally used for Horticultural purposes. The apertures in the brick-work marked by 4 arrows, which indicate the course of the entering current of air, are the only novelties, and *they* are new only in this peculiar arrangement, because, as we have already stated, air has been admitted behind the fire for the same purpose for very many years. In this arrangement, the air which enters by the four channels meeting the current of gas at right angles, or rather, indeed, opposed to it, would tend to produce that sort of forced intermixture which is secured in the turpentine-lamps by the peculiarly-formed chimney, and the deflecting button placed above the flame. Common open stoves for dwelling-houses have been made with grated sides and backs to admit air to the upper parts of the fuel, for nearly half a century. For furnaces, the mode of admission has been much varied, though it has never, we believe, been done exactly as proposed by Mr. Williams, nor as is suggested above. Many years since, a furnace was brought before the Society of Arts, and was published in their Transactions, in which the fire-bars are all tubes, through which the air is made to pass, and from which it escapes into a long narrow chamber formed in the *bridge* behind the fire, which communicates with the tubular bars, and from which it issues finally through a thin aperture. This arrangement was supposed to possess the double advantage of heating the current of air, and of cooling, and therefore preserving, the fire-bars. How far all this is accomplished we are not called upon to say; but this proposal, and many others, show that the attention of practical men has been long directed to the supposed necessity of giving air to the gases otherwise than through the fuel.



The first question therefore for any Horticulturist who wishes to avail himself of these advantages, is one having reference to patent rights. The air has been admitted through gratings, through long narrow channels, and through tubular fire-bars, but not through small perforations in bricks, as suggested by Mr. Williams. It may therefore be questionable whether the four or more apertures described in the above diagram, which are supposed to be eight or nine inches long, and an inch wide, could be used without infringing any patent. On this subject we, of course, do not offer an opinion; our business is merely to show with what facility provision may be made for admitting air above the fire in the boilers used by gardeners; because it will be obvious that the arrangement above described is perfectly applicable to conical, cylindrical, and indeed to all the boilers now commonly in demand, as well as to the horseshoe-form shown in the engraving.—*A.*

FUCHSIAS.

(*Continued from p.* 164.)

Having thus stated what the conditions are upon which the just preparation of soils depends, it will be of some interest to consider the separate parts which constitute a correct arrangement of soils in the process of potting. It has been shown by an illustration of § 1, that matter when circumscribed is subject to an undue attraction or cohesion of its parts, and that all arrangements of soil in pots being circumscribed, are, in the absence of some modifying agent, subject to cohesion by atmospheric and mechanical pressure. Suppose, for instance, a flower-pot without the bottom hole which admits the escape of superfluous water, and in that state filled with soil, it is obvious that the application of water, or any other agent which acts mechanically by pressure upon such a mass of confined matter, will naturally tend to lessen the distance between every particle of which the mass is composed, which will thus become, because of the cohesion of its parts, incapable of permitting the uniform action of other agencies (§§ 3, 6, 7.) This shows that the confinement of matter in garden-pots is attended by a loss of the mechanical force by which matter operates. Again, suppose the same amount of soil to be transferred to a pot with the ordinary bottom hole, and water to be similarly applied, it is clear that by the passage of the fluid, and the diminished confinement of the soil, its mechanical force is increased exactly in proportion to the continued agency which acts upon it. We know that the passage of moisture in pots is in proportion to the absence of any obstruction to the bottom hole, in consequence of potsherds over it. This will be clearer, if we consider that, as the gravitating tendency of all matter is to a common centre, and as the theory of gravitation or attraction implies an agent, namely, mechanical force (Herschel), so it is assumed that mechanical agency should be strictly in proportion to the amount of the circumscribed matter it is intended to affect (§ 7.) Admitting the correctness of this view, the reader is reminded that the whole base of an ordinary flower-pot surrounding the bottom hole is diametrically opposed to the natural arrangement of matter which admits the action of other agencies upon it, this defect being in all cases obviated by the internal arrangement of potsherds, which, acting mechanically, modify the pressure of the remaining parts.

The arrangement of the materials employed in potting may be defined to be—1. Bottom drainage by potsherds, &c., solely intended, according to general cultivation, to act mechanically, by preventing the obstruction of the cavity which regulates the chief drainage. 2. Sub-drainage, by coarse vegetable matter or soil, intended also to act mechanically, by the coarseness of its parts, and nutritively, by its progressive decomposition. 3. Soil, adapted for growth, acting mechanically by its peculiar texture, and nutritively by its uniform proportion of chemical properties.

That these parts should bear a strict relation to each other (mechanically and chemically), has been proved by the principles 7 to 10, inclusive.

In accordance with the opinion given in a previous Paper, which states that the vigour of plants is in proportion to the uniform excitability of their organs,* plants of Fuchsias from cuttings of the current year's growth are preferred to others; and when such are not procurable, the most vigorous, uniform, and short-jointed of one-year-old plants may be selected; and in all cases cuttings from the base or root of the plant are preferable to those from the maturer stem.

On receiving plants which may have been injudiciously potted, with a deficiency or disarrangement of drainage, it is nevertheless better to retain them in their pots (unless injured or broken), in order to regulate the circulation of their fluids, according to the existing state of the plant, as follows:—1st. If the bottom cavity shows, by its close position, that free drainage is impeded, enlarge the cavity externally with an iron wedge, in proportion to its defective state, and thus, without disturbing the vital function of the roots, the first simple remedial process is effected. 2d. If the growth of the plant is feeble, reduce it by pruning to the size which appears most favourable to a uniform and accumulated vigour. As the future figure of the plant is regulated by its first formation, the following rule may be given for plants of one year's growth, namely, a branch may be formed from every axil or bud, where already the small young leaves appear; but, where they are wholly absent, there is a risk of a very late development: this, however, will depend in some measure upon the uniform excitability of the plants, and upon the nature of the atmosphere to which they are exposed. 3d. Open the surface of the soil; and, 4th. Raise the pots either upon a shelf, or on inverted pots on an ordinary front platform of a stove or forcing-house, where the heat is maintained at from 55° to 70°, where they will require occasional waterings, with alternate syringings. The importance of syringing is in proportion to their continued exposure to strong sun-light, and an otherwise dry atmosphere; apart from other reasons, which will be hereafter noticed. In this position they remain until the buds are formed as young branches, and the roots are making their appearance at the enlarged cavity.—*William Wood, Pine-apple Place.*

(*To be continued.*)

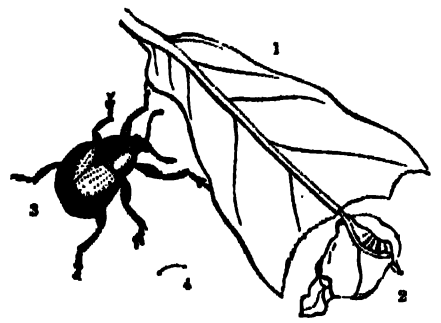
ENTOMOLOGY.

ATTELABUS CURCULIONOIDES (*the Black-legged Coral Weevil.*)—There is no district, however barren, nor any period of the year, however cold and dreary, that will not afford amusement and instruction to the reflecting mind, if imbued with a taste for Entomology and other branches of Natural History. Even in the Polar regions our enterprising countrymen found various insects to capture and admire, and tropical countries are swarming with species which vie with the splendid feathered race in the brilliant lustre of their plumage. We need not, however, wander from our native land for amusement, if we are disposed to study the economy of insects; there is not a wood, field, or meadow, heath, or hedgerow, that will not present abundance of materials to those who seek diligently and zealously to explore the treasures that Nature has in store for those who become her admirers, and we are often rewarded in the pursuit when we least expect it. I remember rambling in a wood early in June, admiring the charming wild flowers which there adorn

* *Chronicle*, p. 733 (1843.)

every uncultivated spot, enlivened by the cheerful hum of busy flies, which hover over every sparkling leaf, when I was attracted by the singular aspect of the foliage of a sapling Oak, the basal half of the leaves alone appearing to be alive (fig. 1), whilst at the extremity was suspended a little sort of pod (fig. 2). On examining them attentively, I found each leaf cut through to the midrib on either side; the apical portion had been folded together, so that the two upper surfaces were applied to each other, an egg having been previously deposited near the apex, and the whole had then been rolled up, beginning at the extremity, by which process the broadest points of the leaves were often left sticking out. This operation being performed when the leaf has become soft and flaccid, from the division of the vessels, it rolls up firmly, and as it dries it becomes brown, hard, and very difficult to unrol, unless it be relaxed by moisture; and to expedite the extinction of vitality in this portion of the leaf, the animal eats a deep little hole in the midrib, about an eighth of an inch from the cut margin, so as to interrupt entirely the supply of sap beyond the point of the basal portion, which remains alive and adheres, of course, to the branch or twig of the tree.

Having collected about a dozen leaves thus transformed into the *nidus* of an *insect*, I soon returned home to commence unrolling one, and found within a quarter of an inch of the apex an egg, about the size of a small pin's head, smooth, translucent, yellow, and shining; it was nearly globular, and apparently loose, for it rolled off immediately, and in this instance I had employed no moisture in the unrolling which could relax the gum, by which eggs are generally attached. The leaves had, no doubt, been recently rolled up, for upon some of them I saw the Coral-red Weevils, which were very conspicuous, contrasted with the rich green foliage on which they were resting, and relieved by their jet-black legs. As this is nearly allied to a similar insect which I have bred from the Hazel, it will be advisable to describe the species before us, which Linnæus named



Attelabus curculionoides (fig. 3).—It is intensely black and shining; the thorax and elytra are bright red; the head is oval, with a small but prominent eye on each side; the nose is elongated, and forms a short punctate rostrum, a little dilated at the extremity, which is furnished with two mandibles, minute palpi, &c.; towards the base of this rostrum is a little tubercle, on each side of which are inserted the antennæ; they are longer than the head, straight, and 11-jointed, the two basal joints being a little shorter than the six following, the three apical ones forming a slender elongated club; the thorax is semi-ovate, and minutely punctured; the elytra are nearly twice as broad, very short, and rounded at the apex, indistinctly punctured, with nine punctured *striæ* on each, the sutural one short; the legs are long, the anterior appearing the longest; the thighs are stout, the tibiæ slender, a little curved, serrated, and bristly internally, with two small claws at the apex; tarsi longish and 4-jointed, two basal joints obtrigonate; 1st, the longest; 3d, bilobed and cushioned beneath; 4th, slender, clavate, furnished with two small but strong claws.*

Having seen many other sorts of trees similarly affected, I shall return to this subject as soon as I have ascertained the various species which are the authors of the work; and I doubt not they belong to the genera Rhynchites, Deporaus, and Apoderus.† The present species, however, will supply abundant employment to any one who has leisure to study its economy—for I saw nothing of the operation—which would be highly interesting. The mouth, as above stated, is at the extremity of the rostrum, and being furnished with jaws, it, no doubt, first cuts the leaf transversely, and afterwards the egg is deposited; from this we may infer, that the female is the skilful operator; but may not the male assist her in rolling up the leaf? which, it must be admitted, is a very curious piece of workmanship for so small an animal to execute. The natural size is exhibited by the curved line at fig. 4. The maggot of another species I have found in its leafy case, and although I have not discovered the pupa inclosed, it is certain that the transformation takes place where the larva is nourished, from my having witnessed the fresh-born Attelabus emerging from its cartridge-like cell.—*Ruricola.*

* For dissections, &c., *vide* Curtis's Brit. Ent. pl. 710.
† Curtis's Guide, Gen. 305, 304, and 308.

FAMILIAR BOTANY.

MORPHOLOGY, No. VIII.

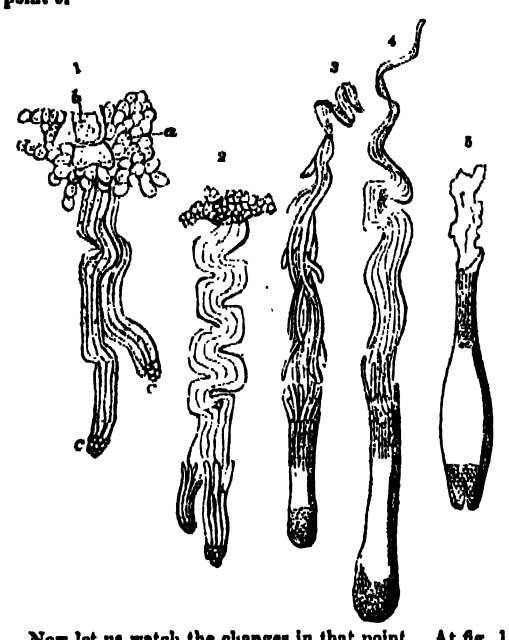
(*Continued from page* 168.)

"Ohne studium der Entwickelungsgeschichte giebt es keine Wissenschaft der Botanik."—SCHLEIDEN.

OUR first two steps have carried us over the threshold of Morphology, and have shown that in the first place all the kinds of matter known in the vegetable kingdom are little transformations of an extremely small number of physical elements; and in the second, that every herb, grass, or tree, is built up with one organic element only, differently fashioned by plastic force. As hydrogen, oxygen, and carbon are the foundation of all the tissue of vegetation, so is the cell, first-born and simple, the parent of every other, even the most apparently complicated and dissimilar form of that tissue; so that the succulency of plants, the toughness of timber, and the elastic springs that lie hidden within the veins of the leaf are all derived from one common state, through various transformations.

How wonderful and admirable is this simplicity! how much more consistent with our finite notions of the power and wisdom of God, than to suppose that a hundred different things are to be made in the first instance, and then put together after the fashion of man! How beautifully, let us add, is this marvellous plan adapted to the nature of the bodies in which it is worked out, and how inconceivable is it, by any one really acquainted with the true nature of created beings, that any other plan should have been adopted, or in fact that they could be fashioned in any other way.

Let us now direct our attention to the manner in which the tissue (or organic elements as distinguished from the chemical or physical) are themselves brought together when a plant is to be generated. The way in which the common Yew forms its embryo within the young seed may be taken as a beautiful example. (See a curious paper by Mirbel and Spach, in the Annales des Sciences for Nov. 1843). In this plant, as in all others, the young seed is in its earliest condition a mere bag of mucilage, containing rudiments of cells which gradually arrange themselves in a regular and somewhat honeycombed manner. After a time the interior is acted upon by the point of a pollen-tube, which is itself a cell drawn out into a long and even microscopically minute thread. Then begins an active change among the cells; from *a* and *b*, fig. 1, which are primitive cells of different kinds, extend others in the form of tubes, which pass irregularly into the cavity of the young seed, and there ceasing to lengthen, the next formed cells reassume their first condition, as at *c*. We must pay particular attention to the point *c*; the tubes themselves are but *suspenders* of that point, and undergo no very important change after they have once acquired their natural length; they become more numerous, and more solid, as at fig. 2; or they separate as at fig. 3 and 4, or they gradually become absorbed and disappear, as at fig. 5; all these alterations being consequent upon their growing older, and ceasing to be of use to the point *c*.



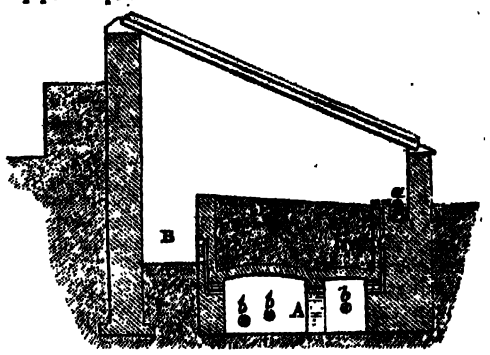
Now let us watch the changes in that point. At fig. 1 it is a little heap of cells; at fig. 2, it is older, and has become rather larger, but still is not materially altered; at fig. 3, it is becoming far more compact, and has assumed the appearance of a short cylinder of cells (part only of which are shown in this and the following sketches); at fig. 4, it has become some weeks older, is still larger, begins to separate from its suspender; and at fig. 5, when nearly perfect, it divides into two lobes and contracts at its base, possessing scarcely any connexion with the suspender, which has become useless, because the original point *c*, to nourish which the suspender was wanted, has advanced from a few cells, with scarcely a fixed form, through various intermediate changes, to the condition of an independent embryo plant, with two lobes or cotyledons which are rudimentary leaves, and a solid mass which represents the future stem and root. It is still, however, merely composed of cells, and in that respect has scarcely changed from what it was at the first hour of its birth.

Here we have a young plant in its embryo state indeed, but perfectly organised, formed by the gradual addition of cell upon cell, till it has gained its destined form. And out of these simple materials all the future fabric of the Yew-tree is to be produced.—*R. E.*

PLAN OF PINE AND MELON PITS AT WORSLEY GARDENS.

THE objects I wished to accomplish in erecting these were—1st. A circulation of air without loss of heat; 2d. A supply of moisture at command, proportionable to the temperature; 3d. A desirable amount of bottom-heat; and 4th, A supply of external air (when necessary) without producing a cold draft.

The method by which the first of these is accomplished will be understood by referring to the section in which *a* is the flow-pipe, *b b b* the return-pipes in the chamber A. It is evident that, as the air in the chamber becomes heated, it will escape upwards by the opening *c*, and the cold air from the passage (B) will rush in to supply its place; but the ascending current of heated air coming in contact with the glass is cooled, descends, and, entering the passage (B), passes into the chamber (A), where it is again heated; and thus a constant circulation is produced. In order to obtain the second object, I have to some extent combined the tank and pipe systems. The flow-pipe *a* is placed about half its diameter into the channel (C), which, when filled with water (or so far as is necessary) gives off a vapour exactly proportionable to the heat of the pipe and pit.



The third requisition is produced by the surrounding atmosphere and heating materials. The fourth is accomplished simply by lowering the upper sash; the cold air thus entering at the top only, falls directly into the passage (B), and passes through the hot chamber before coming in contact with the plants. In order to test the circulation, I fixed a piece of paper near the front of the pit, and found the current to be so strong as to bend it backwards and give it a tremulous motion. When the heat in the chamber is 95°, in the open space over the bed it is 71°, in the bottom of the passage only 60°, and in the mould in the bed it is 80°. The amount of vapour is regulated with the greatest facility, even from the smallest quantity to the greatest density. In one division of the Melon-pits, at present employed as a propagating house, the cuttings have for some time past been covered with a fine dew, and yet not one of them has been injured by damp. This I can only account for by the air around them being kept in constant motion.—*John Mitchell.*

Home Correspondence.

Functional Disease.—In the 10th Number of the *Gardeners' Chronicle* the possible existence of functional disease, apart from structural derangement, in organised bodies, is maintained by a correspondent, who, in support of his position, compares the working of an animate organ to the operations of an inanimate engine, and asserts that because a want of due adaptation of the moving power of the latter to the work to be done is simply a functional derangement, therefore a deficient supply of moving power, whether derivable from nerves or blood-vessels, to the animate organ, causes also a purely functional disease. Does not a very small amount of consideration make it evident that this illustration is peculiarly unapt to the purpose for which it is professed that it is designed, and far more likely to mislead than to enlighten those readers who do not chance to be very well acquainted with the physiological and pathological workings of their animal machines? It appears to us that the cause of movement in all inorganic machines (for such we presume your correspondent to mean when he writes of inanimate), is simply and solely mechanical force, the operation of the physical properties of matter, whether elasticity or friction, or gravitation, upon matter endowed only with the like physical properties, although moulded into some peculiar form; in this case function springs out of rest. It would be of little use that the particles of steam were endowed with elasticity and expansibility, if the piston-plate had not also impenetrability and the moving parts inertia; and those very properties especially indispose the material of the engine to take upon itself structural change; so that its "diseases" and "derangements" must be solely from some mal-application of the moving power. But surely this is not the condition present in any animate "machine:" the moving cause there is continued change. The vital blood and nervous influence do not come to the animal organ as the steam to the high-pressure cylinder, or the moving stream to the wheel. They furnish to the living organism the material by which structural changes are immediately impressed upon its constitution—changes upon which its very existence as a portion of vital organisation hangs. The perfection of its intimate constitution requires the continued operation of waste and repair; and consequently, if what your correspondent calls the supply of the moving power—that is, blood and nervous influence—be withheld, the immediate consequence is the presence of structural disease. That there shall be no structural derangement it is required that that structure shall be continually and constantly renewed—that the affinities of the corroding oxygen conveyed by the blood shall seize upon the products of incipient decay, and remove them from the vital tissues, where their continued presence must be injurious. The happy father of a family who eats a hearty dinner, and hears of his collegiate son's death immediately,

that he may prove your correspondent's position, seems to us to have had his fit of dyspepsia rather unopportunely for that purpose; for surely it cannot be true that in his loaded organ of digestion there is "functional derangement without change of structure." The coats of his stomach are thrown into a state of great vascular activity, under the application of the stimulus of the imbibed food. That there shall not be structural derangement in the organ, it is required that a certain series of changes shall ensue; that a portion of the organ already in an incipient state of decomposition shall be mixed up with the loosened atoms of ingested material, to cause in them an analogous chemical change. But it so happens that by a sudden impression upon other organs of the animate individual, the series of changes constituting healthy action is checked; the organ becomes consequently structurally deranged; and the result is, that impairment of function becomes the evident indication of the concealed cause of the evil. In the inorganic engine of the mechanist, fixity of material is necessary to the perfection of the machine, so that when the active stimulus is withheld from it, no alteration in structure ensues, although it ceases from its work; while in the animal and vegetable organisation, loose chemical affinities and aptitude for continued change are the conditions required in order that it may do its work effectually; and when the needed stimulus is withheld from it, the necessary and unavoidable derangement of intimate structure is the immediate cause of functional disease; and that derangement may be either so subtle in its nature or slight in its degree, as to be only discovered by the disordered function which it has caused; or it may be so evident, as to be at once detected and known. And in this difference of degree, and this only, we presume, is to be found the source of the useful but inaccurate and unphilosophical division of the pathologist of structural and functional diseases. Your correspondent conceives that he disposes of sundry objections to his position, when he admits the agency of the blood as a motive power in animal organs. It is surely more important that he overlooks the fact, that it becomes a motive power only by inducing structural change. We are not quite able to see, being ourselves perchance but little skilled in the philosophy of harmony, the weight and bearing of the abuse of the poor musical instrument to the question at issue; but we yet have enough of practical harmony within us to hold the hand of good fellowship to "M. D." while thus differing from him in our views. And we offer to bet him, in good honest English mood, our earliest Rhubarb plant against his best Melon, that the next time he undertakes, in the routine of practice, to remove a functional disease, he will seek, notwithstanding his avowed theory, to call to his aid some remedy that will apply its energies to the structure of the deranged organ, either by mediate or immediate means; and, wishing him all the success practically, which theoretically we deem he does not deserve, we beg to remain—*Der Greif.*

Durability of Timber.—Your correspondent "P. P." in the *Chronicle*, p. 150, will find the following passage in Davy's Third Lecture on Agricultural Chemistry, at p. 139 of the 6th Edition, 1839:—"The woods that contain aromatic oils are remarkable for their indestructibility, and for their exemption from the attacks of insects; this is particularly the case with the Cedar, Rosewood, and Cypress. The gates of Constantinople, which were made of this last wood, stood entire from the time of Constantine, their founder, to that of Pope Eugene IV., a period of 1100 years."—*C. J. Lancaster.*

Aviaries.—In reply to "M. E.'s" inquiries relative to the description of birds suitable for an Aviary 17 feet by 12, I beg leave to state that I have kept birds for several years, in an Aviary 28 feet long, 9 feet wide, and 12 feet high, divided, however, into two parts, for the following reasons:—I found that the class of birds named Sylviadæ, or soft-billed, were not destructive to flowers, trees, or plants, beyond occasionally soiling them, which is easily remedied by frequent ablutions, and that their food differed from the other class Fringillidæ, &c., or hard-billed, which are destructive to every living plant, and for which dry twigs on a leafless tree served as perches. I will enumerate those I have been in the habit of keeping together in each separate division.

Sylviadæ.	Redbreast	Fieldfare
Nightingale	Long-tailed Tit.	Redwing
Black Cap		Song Thrush
Garden Warbler	Fringillidæ.†	Blackbird
Hedge Sparrow	Chaffinch	Starling
Comm. Whitethroat	Goldfinch	Large spotted Woodpecker
Lesser Whitethroat	Greenfinch	Green Woodpecker
Redstart	House Sparrow	Nuthatch
Stonechat	Tree Sparrow	Jay
Whinchat	Bullfinch	Lapwing
Wheatear	Linnet	Barbary Dove
Pied Wagtail	Averdevine	Turtle Dove
Grey Wagtail	Redpole	Wood Pigeon
Yellow Wagtail	Hawfinch	Blue Tit
Willow Wren	Bramblefinch	Cole Tit
Hedge Warbler	Canaries	Marsh Tit
Woodlark	Twite	Water Hen
Titlark	Crossbill	Partridges
Skylark	Blk.-headed Bunting	Pheasants
Meadow Pipit	Common Bunting	Quails
Snipe	Yellow Bunting	Water Rails, and
Common Wren	Cirl Bunting	Kingfishers.
Spotted Flycatcher	Missel Thrush	

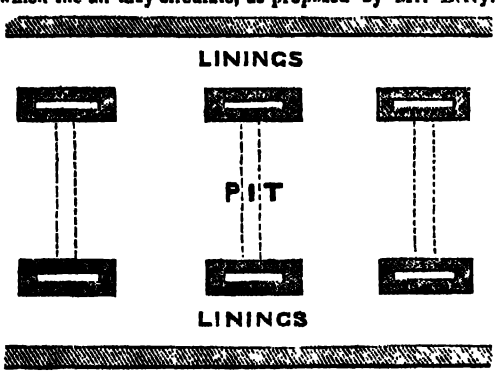
Should "M. E." wish further information, I shall be happy to communicate with him, by his addressing me to that effect.—*W. Rayner, Surgeon, Uxbridge.*——Another correspondent writes thus "you may put into your aviary 5 cock and about 12 hen canaries—the cocks rich, and the hens mealy. You may add two or three goldfinches, linnets, yellowhammers, chaffinches, or siskins;* but these should be all cocks, in which case you may have some mules. Feed daily on the best canary and rape-

* Hedge-sparrow, reed-sparrow, and greenfinch.

seed, three parts to one. Give fresh groundsel, as seedy as you can get it. Boil an egg hard, and cut it in two. Bread is quite unnecessary, even when you have young birds. Fresh clean water in a flower-pan, about seven inches over, every day. Your seed may conveniently be put into a tin receptacle, called "a witch." No growing shrubs or plants can be kept in the aviary; but thick boughs may be fixed up, either with or without boxes or baskets, for the nests. To enable them to construct these, you cannot supply them with anything better than fine sweet hay. If the aviary is open to the sun, you will be much better without any additional source of heat. I have now canaries building in an open aviary. You may add skylarks, and the song-thrush; not the blackbird; but in this case you must give hemp-seed and bread-crumbs. You may, instead of the seed-birds, put in soft-billed birds, such as the nightingale, blackcap, whitethroat, &c.; but the two sorts seldom do well together, and the latter are much the most precarious and troublesome. These observations are the results of some years' experience.—*Corylus.*

Mr. Loudon.—A paragraph having appeared in several of the newspapers, stating that above a thousand pounds had been subscribed for poor Mr. Loudon's books, since his much lamented death, many of our friends have supposed that Mr. Loudon's family are now free from all pecuniary difficulties. This, however, is far from being the case; for though it is quite true that the large sum alluded to has been collected (and the greater part of it in the short space of six weeks, since the first advertisement on our behalf appeared in the *Gardeners' Chronicle*), yet more than half the original debt is still owing, and till the whole of it is paid, Mr. Loudon's family cannot derive the slightest benefit from his copyrights. I am anxious that this should be known, in order that our friends may be aware of the important service they will still do us by ordering copies of poor Mr. Loudon's "Arboretum," or any of the other works which were his own property; and I cannot conclude without expressing my warmest gratitude for the kindness we have already experienced. It is, indeed, only when we are in trouble, that we find how much real goodness there is in the world.—*J. W. Loudon, Bayswater.* [We understand that his Royal Highness the Duke of Cambridge has kindly expressed his intentions to become a purchaser of the "Arboretum Britannicum," and that a meeting in behalf of Mrs. Loudon has lately been held in Edinburgh, which promises to be attended with successful results.]

The Heckfield Melon-pit.—In this pit, as described and alluded to in former Nos. of this Paper (p. 892, 1843, and p. 54, 1844,) the front and back walls have been considered as unbroken, and, therefore, as cutting off all direct communication between the linings and the interior of the pit. The effect of the linings was limited, therefore, to heating the cavities in the front and back walls, through which the circulating air was made to pass, and no means of access to the litter within the pit existed, except through the bed on which the plants were growing. It has been thought, therefore, that all the benefits of the original contrivance might be retained, and the inconveniences in question be removed by building the front and back supports as detached hollow piers, having communicating drains at bottom, as shown by the dotted lines, through which the air may circulate, as proposed by Mr. Berry.



The plan is fully explained in the annexed figure, and it will doubtless be considered as an improvement on the former arrangement.—*A.*

Joints of Hot-water Pipes.—In our last Number, we recommended the use of old rope-yarn for making these joints. We are since informed that when the rope has been much saturated with tar, this material melts out with the heat, and sometimes leaves the joints imperfect. It is, nevertheless, very much employed; but new or at least untarred yarn is better, where the permanence of the joints is greatly desired.

Wash for Fruit-trees.—You constantly recommend that Fruit-trees should be done over with lime as a wash. Nothing can look more frightful than their glaring conspicuous trunks on a hot summer's day; and to obviate this dissight I use cow-dung, soot, or wood-ashes, mixed up with urine, the drainage of a dung-mix, or ammonical water from the gas-works, to the consistency of thin paint. This composition appears to me to possess all the advantages of the lime, and the trunks of the trees appear less-cased, and altogether much more pleasing to the eye.—*J. C. S.*

Bees.—In answer to a "Constant Reader," I beg to state that the period of the year when artificial swarming is resorted to, is from the beginning of May to the middle of July, or as soon as the stock-hives are full of Bees. In order to ascertain when hives are ready, it is necessary to blow a little smoke into them, then lift them up and look how many Bees are on the boards. If there should be as many as will fill a 32 or 24-sized flower-pot on each board, it is time to take off swarms. In 99 cases out of 100 the queens run up into the empty hives, but it is advisable to ascertain that they are with the swarms before they are put into the hives, which are prepared with sticks and combs to receive them. The swarms would be drummed into these hives at once, if the sticks and combs did not make it more difficult to see the queens. When swarms are drummed into empty hives the queens are easily seen, for the Bees fall to the crowns of the hives, when they are inverted, and then run up the sides. If the queens are not seen within the space of two minutes from the time the hives were inverted, the Bees must be put on the crowns of the hives with spoons. If it happen that a queen has not left the stock-hive, drum her and a few Bees into the sticked-hive, and throw the swarm in beside them. On the 17th or 18th day afterwards, second swarms will issue from the stock-hives, and on the 21st day all the brood, but a few drones, being 24 days in their cells, will be hatched, on the evening of which day all the Bees are drummed into empty hives. Thus we obtain three swarms and a pound's worth of honey at an early season, from every stock-hive. If a pound's worth of honey cannot be thus obtained, it is better not to drum the swarms out. Instead of taking the honey out of these hives after the Bees are drummed out of them, it is often more profitable to put them in a garret till September, when two swarms ought to be put into each. The honey is simply squeezed or allowed to drop out of the comb.—*A. Pettigrew.*

Grafting.—As this is the proper time for grafting, I beg to subjoin a list of plants the most difficult to take, but which will invariably succeed, if, in addition to clay-ing, they are moulded up to within a bud of the scion; to admit of which, the stock must be cut very low, as near the ground as possible, the earth drawn up in a pyramidal form round the plant:—

Willows.	Mistletoe on Apples.	Laburnums.
Ligustrums.	Cotoneaster on Thorns, &c.	Ash.
Euonymus.		Vines.
Chinese Cherries.	Roses.	Azaleas.
Pinuses.	Acacias.	Rhododendrons.
Daphnes.	Elms.	Andromedas.
Evergreen Oaks.	Poplars.	Kalmias.
Loniceras.	Chesnuts.	Lilacs.
Jasminums.	Limes.	Deutzias.
Pears on Quinces.	Almonds.	Arbutus.
Pears on Thorns.	Cytisus.	Phillyreas.
Laurel on Cherries.	Sorbus.	Careganas and
Mespilus canadensis.	Currants.	Ribes.
Pyrus spectabilis.	Hollies.	

—*Union.*

Solandra grandiflora.—Among the many plants that adorn the conservatory with blossoms at this season, few are more showy than is Solandra grandiflora; and as this plant in many places does not bloom freely, I shall give my method of flowering it: After it attains to the height of from 3 to 5 feet, I do not shift it, but it is allowed to remain in as small a pot as it will grow in until the roots become matted round the outside of the ball; this, in some measure checking over-luxuriance, without injuring much the constitutional vigour of the plant, gives it a disposition to bloom. Early in autumn it is kept in a cool situation, and allowed to become perfectly dry, when the leaves will drop off. About the beginning of November it is introduced into heat, and forced gently, supplying it plentifully with water when it begins to grow. Being thus excited for a short time, the plant grows freely and produces blossom-buds on the young wood, and at the end of each shoot, these in January and February, expanding into large Magnolia-like flowers, have a gay and imposing effect. As soon as it has done flowering, which is generally in March, the shoots are cut back, and the plant, being shifted, is put into heat, and encouraged to grow, stopping the young shoots frequently, to induce it to throw out laterals, and to keep it dwarf. By this treatment it very often forms spurs similar to a Pear or Apple-tree, at the ends of which, after allowing the roots to become matted in the pot, giving it a rest, and keeping it dry and cool from August till November, blossoms are produced in abundance upon its being put again into heat, and excited into growth.—*J. Brown, Whittlebury Lodge Garden, Towcester.*

Hops.—Will any scientific reader be kind enough to inform me whether the Hops are a necessary ingredient either for yeast or for making beer keep? Or are they merely useful for flavouring? Have they really, when thus applied, any antiseptic virtue? If they have, why will not a strong decoction keep for any length of time in a Chemist's shop? If they are of any use in keeping beer, it must be in checking the tendency to fermentation; and if so, would they not be better left out in making yeast?—*J. B. K. L.*

Miscellaneous.—*Nova* states that Heath has been long used for edgings in the gardens of the Lord Great Chamberlain, where it is much admired during summer and autumn. In 1840 and 1841 about 1000 yards were laid, and most of the old edging was renewed, the soil was taken out eight inches wide and eight inches deep, and the trench filled up with bog-earth. Into this the heath was planted firmly four inches broad; it is cut square every spring. Planted and managed in this way it will stand for 10 years without being renewed, and if it is cut twice in the year it will stand longer. It should be planted in spring.——*A Correspondent* states that he has tried Humphreys's compound with success on several Hyacinths this year, and also on several sorts that would not hitherto root in water. This season they have rooted very freely and strongly; the whole of the blossoms are considerably larger and more beautiful; the foliage is dwarf and waxy. ——*Wax* inquires if any of our correspondents can inform him where he can purchase or see one of "Wildman's mahogany hives."——*M. P. E.* suggests that

the culture of Tropæolum tricolorum might be attempted in the open air with success, as it is grown in abundance in the cold climate of Cashmere, where it forms an important article of food, as related by Baron Von Hugel in his Travels.——*J. Webster* observes, that for Orchidaceous plants, where fibrous peat is scarce, an excellent substitute is to be found in woods, where leaves, sticks, &c., have accumulated and become a mass of fibrous roots. This material is lifted with a spade, about the thickness and in the same way that turf is lifted, and is again cut into smaller pieces when it is used.——*R. S. D.* informs us that being obliged to form a cut through an old meadow which had been drained some 13 years ago with spray or brushings of Spruce and Scotch Firs, he found the drains were running well. He states, that to his astonishment, soon after exposure to the air the Firs budded freely.

Societies.

HORTICULTURAL SOCIETY.

SIR C. LEMON, Bart., M.P., in the chair. Mr. Wm. Cock, Jun., was elected a Fellow of the Society. Mr. Cockburn, gardener to the Earl of Mansfield, at Kenwood, sent bulbs of Oxalis Deppei for the purpose of being distributed. A smaller, and in every respect an inferior kind to this, is generally cultivated for it, which is no doubt one reason why this root is not more in use for culinary purposes. In Belgium it is extensively grown, where not only the tubers but the leaves are also made use of. Respecting its culture Mr. Cockburn says, "I have grown it for several years, and I am convinced that if a little attention is paid to its cultivation it will be found very useful in the months of October, November, and December; but it would require a longer season of fine weather than our climate affords to bring its tubers to perfect maturity. The bulbs should be potted as early in spring as circumstances will permit, and as they vegetate in a low temperature the pots may be placed in a Peachhouse, greenhouse, or even in a cold frame: but they must not be turned out of doors until all danger of frost is over. They thrive best in a light sandy soil in a southern exposure; the bulbs may be planted from 9 to 12 inches apart each way, and should be so arranged that they may be protected from the early frosts of October and November by a slight covering of straw, mats, or spare lights. As 8 or 10 good tubers are sufficient for a dish, there may be 2 or 3 dishes a week for 3 or 4 months, which is no small acquisition to a gardener who has a family at that season to supply with vegetables. Along with these Mr. Cockburn sent for exhibition a tall well-grown specimen of Correa Harrisii, for which a certificate was awarded.—From Mr. Robertson, gardener to Mrs. Lawrence, was a collection of plants, containing handsome specimens of Epidendrum rhizophorum, a rather scarce plant, remarkable for its bright orange-red blossoms; Illicium religiosum, a hardy greenhouse plant with pale green flowers, and somewhat resembling a Spurge Laurel in appearance; Dendrobium secundum, with handsome small racemes of purple flowers; a tall plant of the old Cyrtopodium Andersonii, in excellent condition; also Batemannia Colleyi, Schomburgkia violacea, a good specimen of Cyrtochilum maculatum remarkable for its fragrance, an Amaryllis and 5 pretty plants of Epacris, viz. E. impressa, variabilis, nivalis, attenuata rubra, and a variety of impressa. A Knightian medal was awarded for the first 4 plants.—Mr. Graves, gardener to Mrs. Cannon, sent a bloom of an Epiphyllum from Brazil, which was not different from E. violaceum.—From C. B. Warner, Esq., was Camarotis purpurea, an East Indian species, having gracefully drooping racemes of purple blossoms, and a large flowered variety of Lycaste Skinneri that was imported late last autumn; the bulbs were at first placed in an Orange-house, and were not exposed to the sun until after roots were formed. The plant was then removed to the cool Orchidaceous-house, where it has since been growing—a certificate was awarded for the former.—Mr. Plant, gardener to J. H. Schroder, Esq., sent Vanda cristata, singular on account of the curious form of its flowers; and Oncidium bicornutum having a fine spike of dingy yellow blossoms: a certificate was awarded for the Vanda cristata.—From Mr. Jackson, of Kingston, was a large specimen of Erica Cushiniana with small purple blossoms; and Morina longiflora, a scarce herbaceous plant, which will grow out of doors, but does better to be kept in a cool frame or in a greenhouse, where, if it is well grown, it produces a stem 2½ ft. high, which, when covered with bright crimson blossoms, is rather a striking object.—Mr. Crawford, gardener to Mrs. Arabin, sent a cut specimen of Solandra grandiflora, a beautiful hothouse shrub, having large showy white bell-shaped flowers. It was introduced from the West Indies a great many years ago, but on account of the difficulty found in blooming it, it is not generally cultivated.—From Mr. Doran, gardener to T. Hawes, Esq., was a brace of straight, well-formed Cucumbers, measuring 19 ins. in length: a certificate was awarded for them.—From the garden of the Society was a collection of plants, comprising Oncidium amplistum, both the small and large variety; they were sent from Guatemala by Mr. Hartweg, and are both one species, but differ in the size of the flowers, the one being much larger than the other. It is one of the many instances in which Orchidaceæ differ in this respect; it seems to be a general disposition among them, for plants of the same species to produce flowers different in size, while in other respects they are not dissimilar. In the same collection were likewise Dendrobium Heyneanum, Epidendrum Stamfordianum, Lycaste cruenta, Franciscea Hopeana, Euphorbia melanthera, and three Cinerarias, viz. Fanny Tripet, Urania, and Unique; which had been drained with charcoal, the second had been top-dressed with the same material, and the third, besides being top-dressed with charcoal, received one teaspoonful of Harris's liquid manure to a pint of water, on the 5th of February. With these differences, the plants were treated in every respect the same. The first was the smallest, and the leaves were of a pale yellow green; the second was larger, and the foliage was of a deeper shade; the third, being the one that had received the liquid manure, in addition to the top-dressing of charcoal, was the largest, and the leaves were of a very healthy dark green; but that this results from the use of the liquid manure is not perfectly ascertained. Along with these were cut flowers of Camellia Colvillii, imbricata, and Reevesiana; and also of Acacia pubescens, and Riceana. The following cuttings of Pears were distributed:—Comte de Lamy, a Belgian variety, middle-sized, very sugary and rich, and in perfection in October, Thompson's, also of Belgian origin; it was received from Dr. Van Mons; and although it possesses great excellence, it has not yet been discovered among the more recent importations of new varieties from the Continent, received with names; it is by many esteemed the richest Pear of its season, which is November. Winter Crassane, one of Mr. Knight's varieties; it is an abundant bearer, as a standard quite hardy, of the form and size of the Crassane, with its flavour and less grittiness: it comes into use in December or January. Althorp Crassane, also raised by Mr. Knight, and hardy like the preceding: specimens of it have been found of excellent flavour, although grown in a much worse climate than that of London.

LINNÆAN SOCIETY.

Mar. 19.—EDWARD FORSTER, Esq., in the chair.—Thomas Bridges, Esq., was elected a Fellow. A collection of fruits was exhibited, presented to the Society's collection, by John Reeves, Esq.—A spurless variety of Tropæolum was exhibited by Mr. Hugh Low.—A paper was read from George Newport, Esq., on the structure and classification of the class Myriapoda. The author stated that this class had received less attention than any other belonging to the animal kingdom. Dr. Leach had left materials at the British Museum for their further study, of which the author had availed himself. This class was placed by many systematists with the insects; but they differed from the true insects in many respects. They were more like the larvæ of insects. They differed from insects in being born with a small number of segments, which go on increasing and lengthening the body of the animal, till it has attained maturity. Insects always have the same number of segments. In true insects the legs are only six in number; but in the Myriapoda, each segment is furnished with several legs, and in some species they amount to 160 in number. The Myriapoda were not more nearly allied to the Crustacea and Arachnida, but there were species pointing out an affinity with each of these classes. In arranging the Articulated classes, the author considered this group ought to be placed next the Vertebrate division, and he placed the insects at the top of the Articulated classes. He did so on account of the larger developments of the supræsophageal ganglion in this class, which must be looked upon as the representative of the brain in the vertebrate classes, and which accounted for the superior instincts and intelligence which those animals exhibit. In the arrangement of the whole group, he should not take alone the digestive apparatus as his guide, but the skin, the organs of locomotion, and the nervous system, as it was on these organs that the functions of animals depended, which most clearly distinguished them from the vegetable kingdom.

Reviews.

A Treatise on the Cultivation of the Pine-apple, &c. &c. By Joseph Hamilton, Gardener to F. A. Philips, Esq. 12mo. Masters.

THE author of this book is the grower of the large Thornfield Pines, mentioned at p. 861 of our Journal for 1843, and on previous occasions. He is, therefore, a man of authority, and his method of cultivation will be read with interest.

The weight of Pines grown by him is stated by himself (p. 93) to be as follows:—"The Montserrat has been frequently cut here, from 6lb. to 7lb.; 20 Montserrats have been cut the last two years, viz, 1841 and 1842, which in all weighed 104lb., the largest of which was 7lb. 4oz., all out of one house. The Black Jamaica generally speaking runs rather larger. The majority of the Enviles cut at this place vary from 7 to nearly 9 lbs."

And he adds, that in his opinion—"A Queen of 5lbs. is equal to a Montserrat, 5 lbs. 4 oz., Black Jamaica, 5 lbs. 8 oz., Enville, 7 lbs., White Providence, 11 lbs.;" long experience having taught him, that to grow the above varieties to the weight specified above, deserves equal merit. These things will enable the reader to judge in some measure of Mr. Hamilton's skill.

The first fifty-seven pages consist of a brief and useful sketch of the plans of Pine Growing employed by former gardeners, from Welend up to Marsland; but, strange to say, not a word is said of Mr. Glendinning's, which is the best of them all; nor of Mr. Barnes's, published in the January Number of the "Gardeners' Magazine," and which might have been introduced into a note at the end of the work. Mr. Hamilton next sets forth his own mode of proceeding, which occupies forty-five pages. The main points on which his practice seems to depend are: 1st, Fruiting the suckers of old stools; 2d, Turning his successions out of their pots into a tan-bed, in which they fruit, and through which their roots find their way without let or hindrance; and, 3d, Watering the plants overhead. His mode of proceeding with suckers is stated at considerable length. We can only make a few extracts:—

"The plant being ready for its last shift, I commence by putting two or three inches of broken Oyster-shells, mixed with a little bone-dust, at the bottom of the pot as drainage; on this I place a covering of half-decomposed turf, and then turn the plant carefully out of its pot, re-removing a little of the soil from the bottom of the ball, in order to have it a good depth in the pot, so as to allow room for soiling up after the first fruit has been cut.—I am quite convinced of the superiority of earthing up, over that of transplanting into larger pots, after the fruit has been cut. I have frequently tried the latter as an experiment, and invariably found the plant to be from two to four months longer in fruiting, and the fruit also to be much inferior in size.—The plants after earthing up will commence growing immediately, and new roots will be thrown out from the bare trunk into the fresh soil.—By attention to watering, moist atmosphere, &c., the suckers will grow rapidly, and perfect their second fruit, generally speaking, in from eight to twelve months from the time the first was cut.—With me it invariably happens that all the varieties of the Pine that I have cultivated, except the White Providence, have one sucker or more in progression, whilst the plant is swelling its fruit; in such cases one only ought to remain, the others should be destroyed as they appear, except the cultivator prefers quantity to quality.—After the fourth fruit has been perfected, I then cut off the sucker which produced the last fruit, with from six to eight inches of the old trunk attached to its bottom. The leaves are all dressed off that portion of the detached trunk, and from the bottom of the sucker, which will have made a quantity of roots in the axil of the leaf of the detached trunk, is then planted into a pot, nine or ten inches diameter at the top, placing the attached trunk at the bottom of the pot, before the drainage is put in, in order that the sucker may be sufficiently deep to be covered with the soil.—It must be observed that by the practice of planting a portion of the old trunk, with the sucker, although the former when first planted, has frequently no roots, it undoubtedly assists in supporting the sucker until it has made roots of its own; and this I ascribe to the sap or juices already deposited in the trunk, which are very probably set in motion by the chemical agency of the soil. The plant being a succulent one, is capable of holding in reserve its accumulated food in a fluid state, for a great length of time, and particularly if screened from the powerful rays of the sun."

The method first employed in turning the succession plants out into the tan-bed is thus described:—

"On February 26th, 1828, I planted 48 Pine-plants in the tan-bed, all of which, except one, fruited the same year. The process which I adopted was as follows:—The pit in which they were grown was 27 ft. long, by 10 ft. wide inside; two feet of which were occupied by the flues and cavities, which left a width of 4 ft. for the tan-bed. After all the plants were taken out of the bed, the old tan was levelled, well trodden down, and smoothed with the rake; the whole bed was then covered with fresh tan to the depth of 10 inches; the plants were then immediately turned out of their pots, with their balls as entire as possible, and plunged into the bed; they were then beaten tightly about the ball, and covered to the depth of one inch only. It will be necessary here to observe, that if the ball, with the roots, be covered too deeply, they will be in danger of being burned. The tan used for this mode of culture must be made from British bark, as it undergoes a slower putrid fermentation than foreign tan; and I have always found that as it decays it is rendered less fit for supplying the plants with food. I have tried planting in old decayed tan, but the plants made very little progress: the fruit also was of inferior size. Foreign tan is objectionable, as it soon decays."

Afterwards it underwent some variations.

"Thinking, however, a great improvement might be made in this method of planting out into the tan, I tried the following experiment, which fully answered my expectations:—At the time the plants were showing fruit, I added two or three inches of fresh tan all over the roots of twenty, beating it down with the spade, and the beneficial result was seen in the swelling of their fruit. By the time this was cut, the suckers then growing on all the plants were of a prodigious size, and had I then known the value of their produce, by letting them remain attached to the old stools, their second fruit might have been ripened by the following October."

The reason why tan is found a better plunging material than anything else, is, in Mr. Hamilton's opinion, its warmness; for he found that the best kind of compost was too cold. And this we quite believe. But we should like to know whether tan would be found better than rich soil, if bottom-heat were supplied by hot-water gutters. We should expect it would *not*.

Upon the importance of watering overhead with *warm* water, Mr. Hamilton much insists. Indeed, he also keeps the atmosphere damper than is usually thought necessary. At page 65 he says—"I only water the plants over their leaves in the evening, at the time of closing the house, which ought to be done whilst the sun is still shining on the glass, before its rays are much diminished, thus causing the heated particles of the water, which have been sprinkled inside the house, to convert the superincumbent atmosphere into a state of humidity, which being inhaled by the respiratory organs, into the assimilating system, will assist the plant to promote those secretions indispensably necessary in maintaining it in health and vigour. It is also of much importance that the atmosphere be kept moist during the day, by throwing plenty of water in the alleys and other vacuities; the humidity arising therefrom will be absorbed by the plants, and thus the respiration and perspiration of fluids being perpetuated day and night, will

tend greatly to keep the plant in a vigorous growing state." And in another place he writes thus—"My motive for supplying the plant with a sufficiency of water, by syringing over the leaves, is twofold; first, I believe the epidermis of the Pine to be very porous, and therefore capable of absorbing a great quantity of its food by that process. Thus I syringe with tepid water," &c.

In this practice of pouring water on the leaves, we have no doubt that Mr. H. is right—*at certain seasons*—that is to say, when the plants are growing *fast*; for that is what naturally happens to them, and what the peculiar arrangement of their leaves is manifestly intended for. But we greatly fear that it will have a bad effect upon the *quality* of the fruit, if followed up after the blossoms are withered and swelling begins. At that period, Nature gives the Pine-apple a hot and dry atmosphere, which is doubtless required to bring out its rich secretions; and all the moisture it obtains is from the soil.

We should like to hear, from disinterested persons, what the *quality*, that is flavour, of the Thornfield Pines has really proved to be. In the meanwhile, we reserve some more special remarks on Mr. Hamilton's work for another opportunity.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

ARCTOSTAPHYLOS PUNGENS. Pungent Bearberry. (*Evergreen Shrub.*) Ericaceæ. Decandria Monogynia.—This seems to be a common Mexican shrub, for it occurs in most collections from that country. In appearance it is extremely like Arctostaphylos tomentosa, and an insufficient examination of dried specimens led to the belief that it is a mere variety of that plant. The fresh specimens show, however, that in addition to a want of the long beard-like hairs of the branches of A. tomentosa, this species has the awns of the anthers longer than the anthers themselves, and only seven cells to the ovary instead of ten. It was introduced to the garden of the Horticultural Society by Mr. Hartweg, who found it in Mexico, at an elevation of 7000 to 9000 feet above the sea, forming an evergreen shrub six to eight feet high, with a reddish brown smooth stem and branches, and very hard wood. It was common about Guanaxuato, Real del Monte, Bolanos, and Oaxaca, and is known there under the name of "Pinguica" or "Manzanilla," according to that Botanist. Up to the present time it has proved, in cultivation, to be a neat little half-hardy or possibly hardy evergreen shrub, growing two or three feet high. But it is one of those uncertain plants which will die suddenly during the hot weather in July and August, especially after a few hours' rain, if planted in the open border, although it may have been previously in the highest state of health and vigour. Mr. Gordon, who has had the management of it in the garden of the Horticultural Society, has given us the following note concerning its management:—"It seldom can be kept alive for more than two or three seasons after being raised from seeds, even in pots, unless treated in the following manner:—The seeds should be sown in pans, filled with a mixture of peat and loam, to which should be added a small portion of decomposed cow-dung, and placed in a close pit or frame. They soon come up if sown in the spring or summer, but if sown late in the autumn the seeds lie in the soil until the following spring before they vegetate. When up, and before they make a rough leaf, prick them off into a fresh pan filled with the same kind of soil as that in which the seed was sown. Afterwards keep them shut up close and well shaded, and finally pot them off singly when they have made three or four proper leaves, giving them at once a shift into larger pots, and return them to the frame, which should now have the back turned to the sun, and be kept close for a few weeks; air not being given at any time until the plants are fairly started and growing again. Afterwards remove the lights entirely during the night time, and keep them on quite close in the day, during the summer and autumn. When the nights become wet and frosty, remove the plants to a cold pit for the winter, where there is plenty of light and air and no damp."—*Botanical Register*

BERBERIS PALLIDA. Pale Ash-leaved Berberry. (*Evergreen Shrub.*) Berberaceæ. Hexandria Monogynia.—To the pinnated, or Ash-leaved, Berberries, formerly miscalled Mahonias, Mr. Hartweg has been able to add seven new Mexican species, among which is the plant now described. In its native country it forms an evergreen shrub from five to six feet high, and is found but sparingly near Cardonal and Zimapan, on mountains thinly covered with Pinus Llaveana. Mr. Hartweg also met with it near the hot springs of Atotonilco El Grande, but nowhere in any quantity. That gentleman informs us that it is easily distinguished by its dry hard leaves, and pale yellow flowers; and that the wood is also of a lighter colour than in any other species. In our gardens its appearance is vastly improved, and it will probably prove as handsome as others. It grows freely when potted in a mixture of sandy loam and leaf-mould, to which is added a small portion of rough bone-dust. Being at present extremely rare, it has not been tried in the open border; but the appearance of the plant leads us to suppose that it may be at least as hardy as B. fascicularis. Up to the present time, in the garden of the Horticultural Society, it has been kept in a cold pit. It may be increased like the other pinnated kinds, by grafting on the common B. aquifolium either in spring or autumn, when the young shoots are nearly hard; but hitherto the plant has not shown the least disposition to make any lateral shoots, although three feet high. It will, no doubt, be increased hereafter by seeds, which are likely to be produced freely when the plants get older; as yet the Berries have had no seeds in them. It flowers during the months of January and February, if kept in the greenhouse, and in July ripens its long erect spikes of deep purple Berries.—*Botanical Register.*

Miscellaneous.

*Propagation of Plants by Circumposition.**—The following mode is practised by M. Fonlup, at Mont-Brison. He procures a quantity of small tin cases of a conical form, like the upper part of a funnel, 2½ inches in length, and 2⅛ inches wide at top, narrowing towards the lower part till only sufficient room is left for the introduction of the shoot or branch intended to be propagated. These cones are supported on rods, to which they are secured by wire. Commencing with the central branches, the leaves are taken from the parts which the tin is intended to inclose. The branch is cut two-thirds through, as in layering; and being inclosed by the funnel the latter is well packed with moss. Moisture, necessary for favouring the emission of roots, is supplied by means of a bottle from which the bottom is struck off and the neck furnished with a cork, perforated so as to admit a small pigeon's feather or bit of wool, to form a syphon, by means of which the moss is kept in a proper state of moisture. The plants on which the operation is made are placed so as to be partially shaded by trees during the first month. Hard-wooded plants are propagated in this way from the middle of May till the end of June; and the branches are sufficiently rooted to be taken off by the end of September. Soft-wooded plants may be operated upon in March, and the plants taken off in June, or in the end of June and beginning of July, in which case the plants may be taken off, if sufficiently rooted, in the end of September. It is, however, necessary, in all cases, to ascertain whether the branches are sufficiently rooted previously to their being separated. This is easily done by opening up the edges of the tin. When the branches are found to be sufficiently rooted they are potted off without removing the Moss by which the roots are surrounded. Being moderately watered, they are immediately placed under glass, on a slight hotbed, and kept shut up for a fortnight. They are then gradually exposed, and afterwards placed in the shade of large trees, so that only half the rays of the sun shall reach them. In this manner M. Fonlup obtained from one stool of Pittosporum sinense, 52 well-rooted plants in the short space of two months, by means of 30 tin cones. He also employs the latter for invigorating weak branches, and for increasing the size of fruits.—*Revue Horticole, for Sept.*, 1843. ‖

M'Nab Testimonial.—At a dinner lately given to Mr. M'Nab, the following articles were presented as the result of the late subscriptions, viz., a silver snuff-box enclosing a draft for 400*l.*, on the Edinburgh and Glasgow Bank; also another snuff-box fashioned like a Scotch Thistle, and formed out of the root of a Scottish Bamboo, grown by Mr. M'Nab in the Botanic Garden; and it was stated that the cane from which it was taken grew to the height of 40 ft, in the short space of six months. A silver salver, silver divider, and silver sugar-basin were likewise presented to Mrs. M'Nab, and a work-box bearing an inscription was given to Miss M'Nab, who has drawn a well executed portrait of her father, which is to be given to every subscriber.

African Guano.—We lately announced the arrival of African guano at Liverpool. We are now enabled, by the kindness of a friend, to give its analysis, as obtained by Mr. Huson of Liverpool.

Guano from Ichaboe, Western Africa.

Moisture (water)	16·3
Free Ammonia	6·5
Ammoniacal salts, chiefly urate and phosphate of ammonia	52
Carbonate of lime	6
Organic (animal) matter, with phosphate of lime, traces of oxide of iron, and an inappreciable amount of silica	19
	100

[If this analysis is correct, there can be no doubt that the substance is of great value.]

Hamburgh Botanical Garden.—The friends of Mr. Edward Otto, son of the botanical veteran, will be glad to learn that he has been appointed Superintendent of the Hamburgh Botanical Garden, an establishment provided by the government of that republic, for the use of students and lovers of our science. Mr. Otto will assume his office in the middle of next month, and it is, as he writes to correspondents, his wish and hope to keep up an active and useful intercourse with his many friends on this side of the water.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

PROPAGATION and potting will occupy the greater portion of the time here for the next six weeks; attention must also now be directed to training and regulating the young growths of climbers and other free-growing plants. Newly potted plants do not want much water until they are more established in the fresh soil; bulbs of the Amaryllis tribe brought in for forcing may be potted, if they require it, when their leaves are half grown, but never pot them when they are at rest; the heat and moisture may be the same as recommended for the last few weeks.

Conservatory.—The temptation to collect all plants in flower into this house being great, you may be led into error, by crowding them too much at this early season; crowding plants in winter is a matter of necessity, and when the plants are in a dormant state this is of less consequence, but now that they are in active growth, unless they have room to admit light and air among them, they soon spindle up out of all shape and proportion; except on fine days, little air is necessary for this house in March, and might prove very injurious to tender flowers. Camellia blossoms are as soon affected as any by cold currents; damp the paths in the evening, and light gentle fires at night while the weather keeps cold, and do not let the temperature get below 40° for the season.

Greenhouse.—The great facility and economy of heating ranges of pits now, and the superior manner in which plants grow in such pits, will do away with greenhouses altogether in a few years; this will make a great improvement in small places, where all the plants are now packed together in a neat little greenhouse, and where many of them die yearly, under the greatest care that can be given them; such little greenhouses will then be devoted to plants in flower only, except perhaps a few good specimen plants in winter. In the meantime keep this house as cool as possible—our nights are too long yet, and we have too little sun to preserve early growths properly; great attention is necessary in watering here now, as the plants soon get dry in fine weather.

Forcing-pits.—Bulbs of the Amaryllis tribe, or other kinds brought in for forcing, often make fine large leaves, but show no blossom, and on that account anyout of the way place is thought good enough for them afterwards; but the less these are disposed to bloom the more care is necessary to cultivate them, to expose their leaves as much as possible to the light, to see that they have neither too much or little water, and that their pots are well drained; turfy loam, with a little leaf-mould and sand, suits a great many of these; peat is injurious to some of the more delicate sorts of them, while the most tender of the Iridaceæ will live only in light peat. Always keep up a good moist growing heat, of from 56° to 60° in these pits from this time, and smoke them as soon and as often as the fly appears, but avoid strong doses; better do it often and give a little at a time.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

IF the directions of former Calendars relative to seed-sowing have been attended to, it will not be necessary to sow any more at present; but if not, a general collection must be got in without delay. The last few days, though they have been piercingly cold, have been favourable for the performance of out-door operations, and though the ground is in tolerable good condition, it will not be advisable to use the rake much on the beds until the end of the month. It will, however, be well on heavy land, to hoe it deeply, so as to get as great a depth as possible in a free pulverised state prior to planting out the half-hardy plants. Recently-transplanted annuals will suffer much during these parching winds, if they are not protected by a few branches or some other contrivance. Ply the broom and roller vigilantly, both on the lawns and walks, and above all things get the Grass cut well into the "bottom" before the middle of next month, or you will be troubled with it throughout the season. Snowdrops are now on the wane, therefore remove the flowers, and strengthen the bloom for another season. These simple things, though they take good care of themselves, are not unworthy of a little cultivation.

Rockwork.—This, where it is covered with plants, is one of the most difficult things in the garden to manage, without the plants being destroyed on the one hand, or a character of stiff formality imparted to it on the other. In regulating the plants avoid everything like formality, and while you keep each plant in due bounds, do not, if you can possibly avoid it, distort the symmetry of Nature. A little fresh peat or leaf-mould may be added as a top-dressing to the more choice of the Alpine plants, and a few seeds of trailing annuals may be sown in any vacant places.

Pits and Frames.—Many of the established and more hardy plants in these structures may now be removed to temporary pits to make room for the spring-struck stock, which are now being daily potted off. Some judicious remarks on this subject were offered by Mr. Errington three weeks back, which, though they do not accord with the practice of the best metropolitan cultivators, are nevertheless worthy of consideration. For my own part I imagine that plants should not be kept in a perfectly shaded situation from this time until June, merely because it happens to be good treatment for them from November until March, when they ought to be in a perfectly dormant state. My practice, which extends to upwards of 20,000 plants annually, is to get the plants growing as soon as the natural season will induce them to do so, so as to get rid of that rusty appearance which is always attendant upon plants that have been shaded for a few weeks after they are first planted out. Proceed with potting off, and do not permit any vacant space in the propagating frame until you have more plants than you require for bedding out.—*W. P. A.*

III.—FLORISTS' FLOWERS.

THE boisterous winds of March are anything but congenial to Florists' Flowers; and the frosts that we may constantly expect, must be guarded against with redoubled care; for every Florist knows that more havoc is made amongst their collections during the present month, than at any period of the year. The Auricula is very susceptible of cold when expanding its blossoms; and, should the temperature of the frame get too low, it is with the greatest difficulty (and with some sorts wholly impossible), that they are enabled to bloom. The crop or stock of Carnation layers is much below the average, many growers complaining sadly of the loss they have sustained. When the nights are likely to be fine, the frames ought to be left open, so that the plants may be hardened preparatory to their removal into blooming pots. Very few Ranunculuses ought now to be out of the ground. Seed may still be sown with success. *Pinks* appear to have been rather affected by the late winds; all cracks in the bed must be closed, and the plants looked over after frosts, and fastened. *Polyanthuses* are rapidly growing; care must be taken to trap snails and other insects injurious to the forthcoming blossoms. Under this head we may just observe, that "we" are not in the habit of asking fictitious questions on the Polyanthus, and then "*modestly*" answering them ourselves. *Pansies.*—Would amateurs and cultivators for sale discard from their stocks all varieties with undecided body-colours, flimsy petals, and bad forms, one half the flowers in the published lists of the present season would be ejected. We are rather fastidious in the matter of Pansies; but the following may be relied on as prime show-flowers, combining shape, purity of ground, and distinctness of colour, joined to perfect marking:—Pearson's Milton, Sobiraki, Macgraith and Black Prince, Gibbons's Belle du Monde, Prince of Orange, and Sovereign, Duff's Enchanter, and Bridesmaid.—*T. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—With the increased light the plants now enjoy, they will bear a greater degree of excitement by bottom-heat, as well as a warmer atmosphere. The fruiting plants may now have a bottom-heat of 85° at a depth of 9 inches from the surface. If the heat exceed 95° at the above depth, it will be requisite to draw a portion of the tan from the sides of the pots, or to use some other means to let the heat escape. The plants intended to fruit in the autumn should have from 80° to 85° of bottom-heat, and the same for the younger successions. The safest way of ascertaining the degree of bottom heat is by the thermometer. The heat-sticks in common use do very well for practised men, but the unpractised should not depend upon them, and it is of the greatest importance to be careful that the bottom-heat is of a proper degree. Shade those plants potted in February only during very clear sunshine. Be careful not to give much water to newly-potted plants, till it is ascertained that they are rooting freely.

Vinery.—Attend to the directions given last week with regard to thinning, tying, and stopping. Look well to the state of the heating material on the outside borders; for, if the heat is allowed to decline now, it will prove very injurious to the Vines and crop. Any healthy Vines, but not of good kinds, should be inarched before the wood gets too old.

Peach-house.—Continue the treatment recommended last week. Where it is intended to force Peaches, Apricots, or Cherries, in pots next season, and some suitable plants have to be provided, it should be no longer deferred. It is a good plan to pot some good maiden plants every year to succeed any that are becoming useless.

Figs and Cherries.—See last week's Calendar.

Melons.—Many will now be preparing to plant out their first Melon plants, and it is indispensable to success that the plants be strong and healthy at planting. Take care that the heat is "sweet," and that the soil is in a medium state of dryness. Those plants turned out in February ought now to be rooting freely. If the roots are appearing through the hills or ridge upon which they are planted, encourage them by adding a few inches in depth of soil of a rough turfy texture; the soil should be of the same heat as that in which the plants are growing. Keep the shoots in their proper position by tying or pressing down.—*G. J.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Protecting Peaches and Apricots.—A temporary wood coping, of from 12 to 15 inches in width, is of great advantage. Screens of woollen netting or thin bunting are preferable to thicker materials, as when the latter are used they must be drawn up or aside once a day, when the blossom or fruit is as apt to suffer from unobstructed bright sunshine as from slight frosts. Where these materials are wanting, or too expensive, a good substitute will be found in straw ropes, twisted rough, so as to leave part of the straw hanging out; these, 18 inches separate from each other, and fastened to poles 9 feet apart, constitute a good pro-

* This term was employed by early writers on gardening, but has latterly fallen into disuse. In the "History of the Propagation and Improvement of Vegetables by the concourrence of Art and Nature," by Robert Sharrock, Fellow of New College, Oxford, 1660, layering and circumposition are thus defined:—"Circumposition is a kind of laying; the difference is, that in this, the mould is borne up to the bough which is to be taken off; in laying, the bough is to be depressed into the mould. Such plants are propagable this way that might take by laying, but that the branches are too far risen from the ground to be laid along therein; and therefore it becomes necessary, since they cannot stoop to the earth, that the earth should be lifted up to them."

tection. Apricot-blossoms appear to be very thin in this neighbourhood, owing to the wood being imperfectly ripened. *Pruning and Nailing.*—Finish all sorts as soon as possible. *Planting* should now be attended to, in favourable weather. All young trees should have their roots hampered in a puddle as soon as taken up, to prevent the young fibres being dried up. *Carrots, Parsnips, and Onions.*—Sow the first main crops, if not already done. In wet stiff soils, cover the seeds with some dry soil. Sow almost everything in rows, and then any one may clean and thin. *Basil, Balm, and Scorzonera.*—Sow a little of each for early use. *Potatoes.*—Get in the main early crops. Spring ones may be planted in beds intended for late Celery, as previously recommended. *Pits and Frames.*—Keep up the heat to Cucumbers. Grow them quick, if you want crisp fruit. Give plenty of air to Potatoes, Carrots, &c., in order that the frames may be removed shortly for other purposes.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—There will be nothing particular to do in this department but what has been previously recommended, till the bark season commences.

Coppices.—Now that the weather seems to be more favourable, all the work recommended to be done at this season in former Numbers, should be completed as soon as convenient. Cutting of hedges, corf rods, poles, &c., will do well *for* some time yet, particularly Birch, and some of the more copious bleeding kinds.

Young Plantations.—Works previously recommended should be forwarded with all possible *haste*. When the ground is a little firm, and before it becomes too hard, go over all newly-planted trees, and placing them upright fasten them firmly in the ground by various *means*, according to size and other circumstances; also mulch any choice sorts.

Hedge rows.—Neglect nothing that requires doing at this season, which has repeatedly been adverted to in previous Nos.

Nursery Work.—As soon as the ground is in a favourable state, proceed with all necessary work; complete the planting of seedlings, and small plants taken up. Plant Larch and early budding kinds first; sow seeds, kernels, nuts, &c. of forest-trees and shrubs, and fasten all newly-planted trees and cuttings, that have been lifted up by frost, as soon as the ground is in a favourable state.—*W. B.*

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending March 30, 1844.

Mar.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.						
						N.	NE.	E.	SE.	S.	SW.	W.	NW.
Sun. 24	49 5	33.3	41.4	7	0.11 in.	2	0	2	—	2	5	1
Mon. 25	50.4	34.0	41 2	7	0.50	2	4	0	—	1	1	1
Tues 26	52.1	30 6	42.4	7	0.16	—	2	2	2	4	1	2
Wed. 27	53 4	34 6	44.1	7	0.37	1	0	2	1	1	2	0
Thur. 28	53 3	35.3	44.3	6	0.61	0	0	2	1	0	1	2
Fri. 29	52.0	34 0	43 0	6	0.12	1	2	3	2	1	0	2
Sat. 30	53.2	35.5	44 3	5	0.30	2	2	—	—	0	2	3

The highest temperature during the above period occurred on the 27th, 1830, —therm. 73°; and the lowest on the 26th, 1829—therm. 23°.

State of the Weather near London for the week ending Mar. 21, 1844, as observed at the Horticultural Garden, Chiswick.

Mar.		Moon's Age	Barometer.		Thermometer.			Wind.	Rain
			Max.	Min.	Max.	Min.	Mean		
Fri.	15	24	30 457	30.447	52	30	41 5	W.	.04
Sat.	16	27	29.607	29.460	53	26	45.5	E.	
Sun.	17	28	29 971	29 879	44	30	37 0	N.E.	
Mon.	18	29	30 080	29 985	46	25	40.5	N E.	
Tues.	19	●	30.089	29.997	51	30	42 5	N.W.	
Wed.	20	1	29.811	29.650	48	23	35.5	W.	.01
Thurs.	21	2	30.017	29 921	50	21	40 5	N.	
							13		
Average			29 990	29.903	49 3	31.6	40.5		.05

March 15th Rain; fine; clear and fine at night
16th Slight haze; fine; densely overcast; boisterous
17th Overcast and cold, with easterly winds; cloudy and boisterous
18th Clear; cold and dry; overcast at night
19th Cloudy and cold; overcast; fine
20th Cloudy; rain; boisterous, with hail-showers in afternoon, and at intervals calm and sunny; clear and frosty
21st Sharp frost early; very clear; sunshine; clear, with slight frost at night

Mean temperature of the week, 4 deg below the average.

Notices to Correspondents.

ANEMONES.—*R. V.*—Procure some good sandy loam and well-decomposed cowdung, and mix them in the proportion of three-fourths of the former to one of the latter. If the loam is stiff, add a sufficient quantity of fine sand, to make it free. Having thus prepared the compost, procure some 24-sized pots, and drain them with a few potsherds, putting over them a layer of fine charcoal, which is excellent for bulbs, independent of its preventing the admission of worms. Then pot your roots of Anemones and Tigridias, putting three or four roots (less or more, according to their size) in each pot, and placing the pots in a cold frame or pit, where they will be free from frost and damp. When they are up, admit air freely in fine days, otherwise they will become drawn and will not flower well, nor will they remain long in flower. After they have done flowering, remove them to a shady situation, and supply them plentifully with water at first, reducing it as the leaves begin to turn yellow, and, finally, allowing them to become quite dry, in which state they may remain all the winter. Some of the Anemones might be potted in the autumn for an earlier bloom. The bulbs of Tigridia keep much better all the winter if they are allowed to remain in dry soil in the pots they were grown in.¶

ASPARAGUS.—*Ponterdulais.*—Now is the time to prepare your beds for sowing the seed; but it is getting too late to plant the beds with seedlings. Sea water is most advantageously applied when the summer shoots are about 6 inches high.

AURICULAS.—*A Subscriber.*—Although a Cowslip and a dark Auricula were planted in conjunction, the colour of the blossom of the Cowslip would not partake of the dark colour of the Auricula bloom.‡

BEES.—*A Lady.*—A "Nutt's hive" does not prevent Bees from swarming. The unusual proportion of drones in the old stock was an evil, but the greatest was being weakened by its offspring and the bad season. The supply of food in autumn does not seem to have been sufficient. Probably many of the Bees were induced to leave the hive on account of the mildness of the winter, and perished in search of food. Those that died in the hive would be cast out by the famished inmates. The empty combs will be of great use when the hive is replenished again with another swarm.—*J. W.*——*J. T.*—The single-leaf hive is the best for experiments. A good plan of it is given in Dr. Bevan's work on Bees. But if you wish a wooden hive with windows, merely for observing the insect's at work, and expect part of their treasure, the collateral, or Polish hives are the best. You ought, however, to be careful in purchasing a hive, as some are made more for show than real utility. Mr. Wighton, in his book on Bees, mentions a very simple plan of constructing a Polish hive.—*W.*

BEET.—*A W.*—The sweet flavour in the root seems to depend much on the soil; for the best sorts will taste earthy in some gardens, where inferior kinds are not so. The red Castelnaudary, when it can be obtained genuine, is best coloured; and it is much esteemed for its superior flavour. It is small in its whole habit, and, occupying little space, may be sown closer than other kinds. Beet requires a deep, rich, and rather light soil, to prevent its growing forked; and being impatient of frost, it should not be sown until all danger of destruction from that is over.‡

BOOKS.—*E. B.* must consult the advertisements.——*G.*—Gloxinias on the Pine-Apple by all means.——159.—No man can be a good gardener by reading books. Gardening, like all arts, requires practical experience. Loudon's "Suburban Horticulturist" may perhaps answer as well as any.

BROCCOLI.—*Rambler.*—See p. 153.‡

BURNT EARTH.—*Rural Chemistry.*—All plants will be the better for this, if it is mixed with the soil in which they grow.

CELERY AND CELERIAC.—*Rambler.*—It will be worth while to grow, or at least attempt to grow, Celeriac instead of Celery if you prefer using the former; but if your soil be not adapted for it, that is, if it be a rich loam, and not sandy, you will find its cultivation will be a more difficult matter than that of preventing your Celery from "running away or piping."‡

CHARCOAL.—*S. S. S., and Others.*—We want much a good and *cheap* contrivance for charring charcoal, peat, and similar substances. At present, every one must act upon his own judgment. The principle is, to form the charcoal with as little access of air as can be secured; otherwise, the woody matter will be reduced to ashes. Possibly, the cheapest contrivance in the long run, would be to construct an iron chamber, into whichthe wood, &c. can be introduced, and then to surround the chamber with fire. A small chimney or sock in the chamber, would allow the smoke and volatile matters to fly off.

CLIMBERS.—*A Lady* may cover her wire trellis with Jasminum revolutum, Lophospermum scandens, Convolvulus major, and Eccremocarpus scaber.‡

ENGINE-ROOMS.—*W. T. W.*—Nothing but stove plants will succeed in an atmosphere of 60° to 70° by day, and 70° to 80° by night; and they not well, because the natural difference of temperature between day and night is reversed. It is indispensable to the majority of such plants that they should have a damp atmosphere; and you possibly might obtain that by plunging the pots in a thick bed of bog-moss (Sphagnum) well wetted, or in refuse sponge clippings, if they can be had. What are called dry stove plants, such as Aloes, Stapelias, Cactuses, Mesembryanthemums, Echeverias, and the like, would suit you best. Can't you manage a Ward's case? In it you might grow any kind of small stove plants, if you can get light freely.

FIGS.—*D.*—Two good varieties of Fig for the open wall are, the Brown Turkey and the Brunswick. So long as the tree you already possess bears abundantly, there is no necessity either for cutting its roots or allowing it to ramble above the wall. Thin out some of the branches, in order to make room for a fresh supply of bearing-shoots, near the base. Protect the extremities, the bearing portion of the shoots, from the early frosts of autumn most especially.‖

FRENCH BEANS.—*A Subscriber.*—The cause of your French Beans dropping their blossoms is no doubt owing to cold and damp combined; but, from what you say, principally from the latter.‡

FRUIT-ROOMS.—*N. V.*—Your fruit-room window should face the north, and it would be advisable to have shutters on it, so as to be opened or shut as required.‡

FUNGI.—*An Inquirer* must permit us to class under this head the information he has received. We cannot answer the question about the Botanic Garden. Why not write to Mr. Maund?

THE FIG.—*Clericus.*—If your Fig-tree does not bear, it is owing to some other cause than the advance of another tree in its neighbourhood. Caprification is not required in this country. If, however, your fruit swells pretty well, and then drops off, try the effect of moistening the eye of the Fig with a little sweet-oil, at the time when it is open.

GRASS SEEDS.—*Ponterdulais.*—The Grass which smells like new Hay is the Sweet Vernal (Anthoxanthum odoratum); but it is of no use in a lawn. The best for that purpose are the Crested Dogstail and Meadow Poa. Certainly put down your Calceolarias, &c., if the old stems are on them; but there is no advantage in doing so with the new shoots. All Greenhouse plants should be repotted now, if they are to be fine; if you do not care for that, you may let alone such as are to be turned out in June.

HEATING.—*R. S. D.*—Will not the Heckfield-pit plan at p. 892 (1843), or another in to-day's paper, answer your purpose? They are both excellent in different ways.——*M. J. R.*—Your tank is unnecessarily deep; six inches are enough. We do not otherwise object to your propositions. Iron will, however, be much better than wood and stone, if you do not mind a little present expense. All, however, depends on the degree of forcing you wish for. If it is only to bring Grapes a little forward, then wood and slate will do well enough. All the modern boilers are sufficiently good, and we should, for such a job as yours, take the cheapest. There is more difference between many of the boilers in theory than in practice. A good iron boiler well set is quite as useful as one of copper, unless you want to have it exposed to view.

HOTHOUSE BULBS.—As you are an *early member* you may refer to various answers to correspondents, and to the Indexes of former Volumes, for the information you seek. The cultivation of each of the bulbs you inquire about has been *fully* explained on former occasions.

HOTHOUSES.—*N. N.*—Your plan for propagation is unobjectionable, provided you can prevent the materials in your bed from becoming dry, in consequence of the action of the pipes. It would be desirable to place upon them an evaporating-pan. The Cannon Hall Muscat is different from the common Muscat, but not better.

INSECTS.—*Peter Mackenzie.*—The beetle you found in the Beans is the Bruchus granarius, figured and described in last year's *Chronicle*, p. 188. It is not the same which eats the edges of the Bean leaves.*R.*——*E. B.*—The insects in your Cucumber frames are the Acarus coleopterorum, which infests beetles inhabiting dung and putrid animals. They are conveyed into your frames, in all probability, with the hot muck, and a single diseased beetle, concealed in the earth or in a rotten Cucumber left for seed, would generate myriads of the Acarus in a short space of time. But are you convinced that these mites eat the roots of the Cucumbers? *R.*——*J. Took's* little beetle, which he considers a troublesome pest amongst his Cucumber plants, is the Hister (Abræus) minutus. We believe that he need not apprehend any mischief from its appearance; but should we be mistaken, we shall feel obliged by his correcting us. *R.*——*A. F.*—We cannot make out the name of the animal complained of as a pest in his Cucumber frames; but if he will favour us with specimens, we will advise him on the subject. *R.*——*A Lady's* Pelargonium-leaves have been eaten by some animal infinitely larger than those which were detected by her; but whether the culprit be the caterpillar of some moth, or a slug or snail, which probably ventures out at night only to feed, it is impossible to say, but by scheeching after dark the truth may be ascertained. *R.*

MANURES.—*G. S. T.*—The ammoniacal liquor of the gas works, is not gas-tar, but what they call gas-water, through which the gas passes in the process of purification.——*E. A. N.*—It is very troublesome to char saw-dust. It can only be done by great care in a sort of kiln furnace, expressly constructed for the purpose, and must be *quite dry.*——*Amateur.*—No doubt your Pernambuco Gourd will require the management of a Melon. We know nothing of it.——*Jack.*—We do not know what the effect of Potter's Guano may be on resinous trees, such as Firs; for other plants, it seems to be generally useful. Both Peruvian and Potter's Guano are far better than nitrate of soda; but the Peruvian requires to be reduced in strength by being largely mixed in the soil or cinder-ashes.

NAMES OF FRUITS.—*J. G.*—The Apple you sent is correctly named Hammond's Pearmain. It is a Suffolk variety, excellent as you describe it to be.‖

NAMES OF PLANTS.—*W. H.*—Cotoneaster microphylla ‡——*Jones*—Vestia lycioides.——*C. J. C.*—Catasetum discolor; not an uncommon species. You will hardly find twelve *good* varieties of Azalea indica, if you buy all that are on sale. Phœnicea, alba, variegata, interitia, and the old Indica are the best.——*W. Rayner.*—What you have got for Martynia fragrans is some kind of Kali!——*G. H.*—Your bulbs are small specimens of a fungus called Scleroderma vulgare.——*A Reader.*—Your plant seems to be Iria stellata, and not Stanhopea nobilis.

ORCHIDACEÆ.—*H. T.*—There are no exotic Orchideæ in cultivation that would succeed in a Vinery all the year. The dry atmosphere in summer necessary to colour Grapes, and the low temperature in winter required to ripen the Vines, would destroy the most hardy sorts.‡

PELARGONIUMS—*C. D. F.*—Your plants of these, that have been kept in a cellar during winter, should be replaced in pots as soon as possible. ‡

PHLOXES.—*A Subscriber.*—The following 12 are showy:—*Dwarf or early flowering kinds:* Phlox nivalis, white; P. procumbens, purplish blue; P. amœna, rosy red; P. setacea, pink; P. subulata, rosy purple; P. Nuttalliana, rosy pink. *Tall or late flowering kinds:* P. omnifiora, white; P. Brownii, crimson; P. picta, lilac striped; P. Van Houttii, purple striped; P. Coldreyana, bright red; P. tardiflora, white. We have had no experience with Potter's Liquid Guano.¶

PINES.—*A. N. S.*—The dung of deer or sheep or pigeons, steeped for a few hours in water and well stirred, then left till it is clear, will prove as useful as anything. We should not value the second infusion. The action of patent manures on the Pine-apple is unknown; but they are well worth a trial. The best Pines are the Queen, Black Jamaica, and Montserrat. None of the English-raised seedlings are first rate. The Cayenne Pine is from French Guiana; cannot state its price; that is the affair of the nurserymen. How can you suppose that the seeds of a plant infested with insects will also produce a filthy offspring?

POOR-RATE.—*A Constant Reader and a Rate-Payer.*—The overseer can demand the poor-rate after the quarter for which it was made, and there is nothing to prevent his collecting two rates for two different periods at the same time.

POTS FOR CARNATIONS.—*A. B.*—The pots commonly made and used for the purpose of blooming Carnations in, are called wide-mouthed 12s. Two plants are put in each pot, and they are made wide at the top for the convenience of layering the plants in.*

STOCKS—*Vectis.*—There is no means of distinguishing a double from a single stock before the flower-buds show; when they do show it is not too late to transplant the stock, if the operation is performed with care. ‡

STRAWBERRIES.—*A Novice* seems to have ruined his plants in pots by forcing them too quickly. If they are to be fine, the temperature of their forcing-house should be raised very slowly at first. Probably the Violets have been spoiled by similar means.

VERBENAS.—*A. Y. L.*—Six plants will be sufficient for a bed of Verbenas the size you mention; when they are planted peg down the branches in the direction of the vacant spaces; they will readily take root, and, sending forth fresh branches in different directions, the surface of the bed will soon be completely covered. We recommend you to procure V. Symondsii, which is a brilliant orange scarlet, a prolific bloomer, and one easily preserved in the winter. In September, when the plants are growing vigorously, it is a good plan to sink some small pots in the earth, filled with soil, and passing a branch over it peg it down upon the earth; the pot will soon become filled with roots, when it may be cut from the parent plant: these should be re-potted and encouraged, and when winter approaches put them into a cold frame, or bring them into the house; give very little water during winter.*

VINES.—*A Subscriber.*—It is not surprising that your Vines only four years old are now in a bearing state, after having been forced summer and winter, and sometimes prematurely stripped of their foliage by your predecessor. You cannot do better than cut them back in order to get good bearing-wood for next season.‖——*T. Y. P. R.*—It is a disputed question, and you had better put it to the test of experiment. If the laterals of Vines are permitted to grow without being stopped, they will probably injure the bunches; but the question is, whether it is not better to leave them and stop them than to destroy them entirely. Your gardener is right in not risking the experiment upon his own authority; but you can relieve him from the responsibility by directing the experiment to be tried.

WHITNEY'S VARNISH.—*C. Gyde.*—Your muslin is not so clean and white as Mr. W.'s, but it is as transparent, and will answer the same purpose.——*To a Constant Reader* we return the same answer; his, however, is not so good as Mr. Gyde's; that is, it is less transparent; but that may be owing to the stouter quality of the linen.

MISCELLANEOUS.—*Ignoramus, W. M.*—Although truth is seldom elicited by ridicule, yet you employ your weapons with so much good nature, that we would find room for your remarks if we could, and probably shall do so hereafter. In the meanwhile we would submit to you that it is not fair to expect from a mere gardener that degree of clearness which is demanded from a scholar, and that with the one, as with the other, the context will often show the writer's meaning, better than his actual words. Indeed, the old saying, *ex fumo dare lucem*, shows that educated men are sometimes sufficiently obscure in their language. If you will again read the editorial remarks you will find that they are used with considerable reserve, and relate to the general tendency of the articles criticised, and not to particular opinions, which of course *we* should not defend. We attach importance to these papers notwithstanding their obvious faults, and trust hereafter to convince you that although there may be a good deal of smoke it really conceals a reasonable quantity of light.——*W. B. B.*—A Walnut can only be *grafted* on a Walnut; the operation can only be performed when the tree is growing.‡——*A. B. C.*—Asphalte was advertised last week. For the purpose of preserving the points of stakes, we imagine that one kind is as good as another.‡——*A Subscriber.*—No.——*One of Ten Weeks.*—You will gain the information you seek from the Secretary of the Royal Agricultural Society in Hanover-square. Urine is of the greatest value; it should be mixed with twice its quantity of water, and allowed to become putrid, when it may be mixed with earth into a rich compost.——*W. C.*—You may cut hurdle coppices up to the end of April. The best Willow for planting in such places is the Bedford.——*Northumbriensis.*—As the Deodar is a Mountain plant, it is to be presumed that it will stand high winds as well as *any evergreen.* Dr. Royle says it is sometimes 10 ft. in diameter. Willow and Poplar form the purest charcoal.——*John Foster.*—You may kill blackbirds by common rat-traps, baited with anything they like. Probably jackdaws and thrushes may be killed in the same way.——*A Subscriber.*—West Indian Agriculture cannot be advantageously dealt with except by a person who has visited the islands. It is a pity that the planters do not send out a scientific commission, which, if well selected, would be the making of them. To *speculate* on such matters might do harm. We agree with you that there *is* some room for fearing that misdirected zeal may do harm. At the same time we do not see why stirring the ground should be disadvantageous. Ratooning might, we presume, be dealt with like the stools in a nursery-ground. What the Cane-fields want is plenty of strong manure, and a thorough breaking up of the land.

SEEDLING FLORISTS' FLOWERS.

CINERARIAS.—*J. S. J.*—Your seedling named No. 1, Blue Beard, is a very beautiful variety; the colour is a splendid blue, the flowers large and showy, a decided acquisition. No. 2, Bonny Bess, is sweet in colour, but it differs but little from many that are out.——*W. G.*—There is a pleasing variety in the colours of your seedlings, but the petals appear to want substance, and the flowers are very small. No. 3 is the most novel in colour, and No. 5 is prettily marked, but they both want size, and in all the petals are too narrow.——*F. B. Y.*—Two flowers of the largest Cineraria we have seen, measuring two inches in diameter; the flower is white, slightly tipped with a purple tinge; petals stout and well formed.*

*** As usual, many communications have been received too l t.

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FORELANDS, at BEMBRIDGE, in the Parish of BRADING;

Containing:—Arable	226a.	1r.	32p.			
Meadow and Pasture	26	1	16	a.	r.	p.
Homestead, &c.	2	0	15—256	3		23

TAPNEL FARM, in the Parish of THORLEY;

Containing:—Arable	341	1	39			
Meadow and Pasture	73	1	26			
Down	50	0	29			
Homestead	4	0	5—472	0		24

CHESSELL, in the Parish of SHALFLEET;

Containing:—Arable	217	1	33			
Meadow	6	2	39			
Pasture	10	0	14			
Down	70	2	23			
Homestead	2	2	22—307	2		11

BARTON FARM, in the Parish of WHIPPINGHAM;

Containing:—Arable	350	0	12			
Meadow and Pasture	71	2	38			
Homestead	7	2	14—429	1		14

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The Agricultural Gazette.

SATURDAY, MARCH 23, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Mar. 27.	Agricultural Society of England.
THURSDAY, Mar. 28	Agric. Imp. Society of Ireland.
WEDNESDAY, April 3	Agricultural Society of England. Highland and Agricultural Society.
THURSDAY, April 4	Agric. Imp. society of Ireland.

FARMERS' CLUBS.

March 25	Chepstow.	March 30	Cardiff.
March 26	Richmondshire.	April 1	Yoxford.
March 29	Stoke Ferry.		Wenlock.
	Hedleigh.		W. Firle.
	Wrentham.	April 2	Framlingham.
	Debenham.		Rayleigh.
	Grove Ferry.	April 3	Harleston.
March 30	Gloucester.	April 6	Collumpton.

THE following are useful remarks upon an important subject. They are extracted from a periodical published in 1798*, which was edited by Dr. Anderson, of Edinburgh:—

"Mr. Locke began his 'Essay on the Human Understanding' by showing the necessity of adverting to the precise meanings of words. The same thing ought to be done respecting Agriculture; for we shall find that the frequent use of words and phrases which have no precise and definite meaning affixed to them has been one of the most powerful causes of that retardment which has so justly excited our wonder. To give an example: every person who has but begun to enter upon the study of Agriculture has heard of three or four grand divisions of soils, viz., clays, sands, loams, and gravels; and to each of these terms he annexes an appropriated idea, which particularly corresponds with the qualities of such soils as have been denominated clays, sands, loams, and gravels, in his native place; so that, whenever a soil of any of these denominations occurs to him, whether in conversation or in writing, he thinks it must be somewhat similar in its nature and qualities to the soils which he has been accustomed to discriminate by those names; but as the clays of one region are extremely different from the clays of another region, some of the soils so called being endowed with almost inexhaustible fertility, while others are as justly characterised by that of insuperable sterility; and as there are innumerable shades between these two extremes—as it also happens that there is a diversity equally great in regard to every other peculiarity of clay as that which respects its vegetative power, it must follow that whenever a clayey soil is mentioned among any number of farmers, that single word must convey to each of them a separate idea." Dr. Anderson then proceeds to show that the benefit which other sciences derive from the arts of writing and printing, by the accumulation through these means of the observations and discoveries of many generations, is comparatively lost to Agriculture; "for so long as one man remains ignorant of the precise meaning of the words that are employed by another, he cannot benefit by the acquirements which that other shall have made." The works of his predecessors are thus in great measure useless to him, and "each individual must begin with the knowledge that his own observations furnish; nor is he able to communicate his knowledge to others, unless it be to his immediate descendants or his nearest neighbours, to whom he may point out the identical objects with which he has been conversant. And thus we can account for the fact which must have been noticed by every Agricultural observer, viz., that striking improvements in this line have always been of a local nature."

Agricultural writings of a practical kind are generally descriptive of certain operations on certain soils, and they state the results of these operations as the test of their value. Now it is evident that the usefulness of all such writings is dependent both upon the accuracy and clearness of the description given of the soil (for many operations which would benefit some soils are injurious upon others), and upon the accuracy with which the results of those operations are described. Whether it be the fault of the author, or of the means he has at his command, if the account he gives under either of these heads be not clearly conveyed to his readers, it is evident that, by acting in accordance with what they believe to be his advice, they will either suffer absolute injury, or at any rate be much disappointed in the amount of benefit they receive.

In the above quotation, Dr. Anderson refers especially to the importance of accurately describing the soil on which any operation to be detailed is to take place; but it is obvious that his remarks are demonstrative also of the importance of employing terms by which all may understand the nature and quantity of the results of such operations; for the value of an author's report of experiments depends as much upon his due attention to the latter, as it does upon the care with which he attends to the former of these particulars. In all writings of this kind, those weights and measures which are sanctioned by Act of Parliament ought alone to be referred to. The use of LOCAL WEIGHTS AND MEASURES has been productive of much confusion and uncertainty, and, like every other source of error, is often provocative of angry and useless discussions.

We have made some inquiries into the quantity of certain measures of length, surface, and solidity, which have been and are used in many districts of the kingdom, and the following information, which we have received on this subject from many kind correspondents, is published with the view of exposing the absurdity of the system. To commence with measures of length:—the perch, pole, rope, or lug, (for it bears all these names,) which is properly the fourth part of a chain, or 5½ yards long, is the ordinary unit of length employed in the measurement of various descriptions of work; as the digging of drains, cleaning out ditches, building walls, grubbing up hedges, &c. Over Ireland it is 21 feet in length; it is the same in Richmondshire, Yorkshire; near Rayleigh, Sussex; and, for certain descriptions of work near Chepstow; for other descriptions of work near Chepstow, it is 18 or 20 feet; at Truro in Cornwall, at Cardiff, at Witney in Oxfordshire, in Berwickshire, and in Fife, it is 18 feet; in East Lothian, for certain kinds of work it is 18½ feet; at Baldoon, in Wigtonshire, and at Collumpton in Devonshire, it is 20 feet in length; at Llandilo and Swansea in South Wales, and in South Lancashire it is 24 feet in length. The unit of surface employed in the measurement of digging, paring and burning, and various kinds of field-work, is generally the square of the perch in length, whatever that length may be in the various districts in which it is used. The imperial acre is 4840 square yards; the acre of South Wales is 5120 square yards; that of Ireland and of Lancashire is 7840 square yards; that of Cornwall, the same as the Scotch, is 1¼ imperial acres; the Cheshire acre is 10,240 square yards. With reference to measures of solidity:—the imperial bushel is an arbitrary measure of 8 gallons, each containing 277·274 cubic inches; the Cornish bushel and the Carlisle bushel each contains 3 imperial bushels; the bushel used about Llandilo in South Wales, in Monmouthshire and other places, contains 10 gallons; the old bushel used about Chepstow contains 10½ gallons; and, which is the most extraordinary measure ever we heard of, the old bushel used near Swansea contained rather more than 3 imperial bushels, viz. 3 stricken half-bushels, and the 6th heaped! We extract the following from Mr. C. Johnson's "Encyclopædia of Agriculture:"—"At Abingdon and Andover, a bushel contains 9 gallons; at Appleby and Penrith, a bushel of Peas, Rye, and Wheat, contains 16 gallons; of Barley, Malt, and Oats, 20 gallons. A bushel contains at Carlisle, 24 gallons; at Chester, a bushel of Wheat, &c. contains 32 gallons, and of Oats 40; at Dorchester, a bushel of Malt and Oats contains 10 gallons; at Falmouth, the bushel of stricken coals is 16 gallons; of other things 20, and usually 21; at Kingston on Thames, the bushel contains 8½ gallons; at Newbury, 9; at Wycomb and Reading, 8¾; at Stamford, 16 gallons. The Winchester bushel contained 2150·42 cubic inches. The imperial bushel is therefore to the Winchester bushel as 2218·192 to 2150·42."

In Scotland and the north of England, grain is often sold by the boll, containing so many imperial bushels. In Wigtonshire, the boll of Oats contains 12 bushels, and that of Potatoes contains 16 bushels of ¼ cwt. each; at Newcastle, Hexham, and Richmond, the boll of Wheat contains 2 bushels; at Stranraer, it contains 4 bushels, and in East Lothian, and Berwickshire it contains 6 bushels; at Hexham, the boll of Oats contains 5 bushels, and at Stranraer, it contains 12 bushels. The sack of Wheat contains in some places 3, in others 4 and 5 imperial bushels; formerly in some parts of Monmouthshire it used to be understood to weigh 336 lbs., *including the bag!* The sack of Potatoes weighs 200 lbs. in the Isle of Thanet; in East Suffolk, &c., it contains 3 heaped bushels; in many other places it contains 5 heaped bushels, and weighs 2¼ cwt.; at Collumpton, it weighs 160 lbs.; at Rayleigh, it weighs 252 lbs. In Ireland, Potatoes are sold by the barrel of 20, 24, 48, and 96 stones.

We need not continue this subject further into the various ways of selling butter, cheese, hay, wool, meat, &c. Enough has been said to prove the extreme absurdity of sanctioning in any way the use or preservation of local weights and measures; and from what has been said it may be easily inferred of Agricultural writings which adopt local terms, whether of quantity or quality,—terms signifying length, surface, and bulk, or descriptive of soils and their production—that such writings are liable to mislead rather than inform. We are glad to find that our national Agricultural Societies are about to take up this subject, and we hope that their endeavours to induce the general adoption of a uniform system of weights and measures will be attended with success.

SALT AS MANURE.

AMONGST the many manures strongly recommended to farmers, few are more highly lauded than common salt; which, it is stated, supplies to crops all that they require, being at the same time the cheapest, most effectual, and most universal of all known manures. As to the practical evidence on which such assertions are based, I will say nothing; well authenticated facts are always valuable, and we may form our own conclusions from them; the advocates of salt as a manure are, however, not satisfied with stating simple facts respecting its use, but theorise as to the probable manner in which it may act, and endeavour to prove by those theories, its excellence as a manure. Two chemical reasons are advanced to prove the value of common salt as a fertiliser. It is stated that salt fixes ammonia; and secondly, that when decomposed by ammonia, alkali is set free, which greatly increases the fertility of the soil. In the *Gardeners' Chronicle* for 1843, No. 8, I made some observations on the action of salt on carbonate of ammonia, my object being to show, that the assertion that salt was one of the best fixers of ammonia, was not supported by chemical facts; but that, on the contrary, it was highly improbable that salt could be used for that purpose, although true that under particular circumstances salt and carbonate of ammonia partially decompose each other. As the subject is again exciting a good deal of interest, I am induced to make a few further observations on the subject, more especially in respect to the second assertion, that salt, when decomposed by carbonate of ammonia, furnishes alkali to plants.

There can be no doubt that in some situations, on particular soils, and applied to particular crops, salt in moderate quantity is an excellent manure—abundant evidence of this is given in the writings of those who have studied the effects of manures; but at the same time there are many cases in which its application has done no good, and indeed sometimes produced evil effects. In many cases, no doubt, these effects were the result of too large an application of salt, whilst in others the nature of the soil was such as to render the salt of no value.

In the following observations, my object is not in any way to discourage the employment of salt, but merely to point out the questionable nature of the scientific reasons in favour of its application, which are made use of by its advocates. When very strong solutions of common salt and carbonate of ammonia are mixed at low temperatures, they slowly and imperfectly decompose each other, and a quantity of bi-carbonate of soda and muriate of ammonia are formed, whilst a portion of ammonia is set free. The bi-carbonate of soda being almost insoluble in the solution of muriate of ammonia, may be separated and obtained pure, whilst the muriate of ammonia may be obtained by evaporating the solution and separating it from undecomposed common salt, and free ammonia. If, in place of separating the two substances, a quantity of water is added, the bi-carbonate of soda dissolves, and the two salts re-decompose each other, common salt and carbonate of ammonia being formed. In the same way, if solutions of carbonate or bi-carbonate of soda be mixed with solution of muriate of ammonia, they mutually decompose each other, and form carbonate of ammonia and common salt.

It is perfectly true that very strong solutions of bi-carbonate of ammonia and common salt decompose each other, and that common carbonate of ammonia decomposes solution of salt, when carbonic acid is passed through it; but it is equally true that this only holds good when the solutions are concentrated; if dilute, no such change takes place. When salt is employed as manure it is exposed to the action of a very dilute solution of carbonate of ammonia, for dew and rain-water contain a minute quantity of that salt; under these circumstances it is not to be expected that the salt will be decomposed; and it is not reasonable to compare what takes place in strong solutions in close vessels, with what takes place in the open air with abundance of water. We can only compare the action of rain-water on salt, to the action of very dilute solution of salt and carbonate of ammonia, and such solutions do not decompose each other. Although chemical facts are certainly against the decomposition of salt by carbonate of ammonia, or the fixation of ammonia by common salt, yet this in no way diminishes the value of salt applied as manure.

* Recreations in Agriculture, Natural History, Arts, &c., by James Anderson, LL.D., &c. &c. The writings of Dr. Anderson on Agricultural subjects, though published so long ago, are still among the most valuable in the English language.

It has been assumed that salt cannot act beneficially on vegetation except it be previously decomposed, but there appears very little proof of the truth of this assertion. Even supposing it proved that salt must be decomposed, it is yet by no means impossible that this decomposition is effected after it has been absorbed by the roots of plants; on the contrary, it is very possible that such a change may take place in their organs, and more likely than that it should be effected in the soil by the carbonate of ammonia, of dew and rain. Salt mixed with soot is often praised as an excellent manure, and mentioned as affording an example of the decomposition of the former by the carbonate of ammonia contained in the latter; there is, however, no need to suppose any decomposition to have taken place to explain the beneficial effects of such a mixture. When plants are manured with ammoniacal salts they grow with increased vigour, the roots increase rapidly, a larger supply of inorganic matter is required, and if this is withheld from the plants they do not flourish. When inorganic manures are used, plants acquire increased powers of absorbing ammonia, and when manured with salts of ammonia they acquire increased powers of absorbing in organic matters; hence, the best manures are those in which both classes of substances are supplied at the same time, and hence it would be reasonable to expect that salt and soot together would produce a more powerful effect than either alone, except in soils rich in alkaline or ammoniacal salts. The mode in which manures act can only be ascertained by observing the effects which they produce on living plants, but the changes which take place in the organs of plants cannot be compared with those which are the mere effects of ordinary chemical action. The process which can effect the decomposition of carbonic acid and water in the organs of a plant, are equally able to cause the decomposition of common salt, and other inorganic compounds.—*E. Solly.*

SOME REMARKS ON DRAUGHT.

Whatever there may be of theoretical uniformity among scientific men respecting the mechanical principles to be regarded in the construction of carriages, and the manner of applying the draught powers, there is much difference of opinion among mere practical farmers on those points. For instance, some are advocates for the four-wheel waggon, and others for the Scotch cart (or one on a much smaller scale), each party giving very good reasons for their preference of one vehicle to another. Some again maintain that the teams for all wheel conveyances and ploughs ought to be yoked in single file; and others contend (and with these I concur,) that they ought to be placed two or even three abreast, when there is room enough for the purpose. But circumstances may render it judicious to adopt a system, though it may not be correct in the general abstract principle. A Norman French farmer employs a team of five or seven horses and oxen (they are generally combined) in a single row, to draw 2 tons weight it may be of farm produce, though half or a third of the number would be sufficient for the purpose on a good road, because the execrable state of his bye-lanes renders the draught severe along them; and he arranges his cattle in single file on account of the narrow breadth of those lanes. Again, no sensible man, knowing that a horse, which can carry but 2 cwts. conveniently on his back, will draw 10 cwt. with as much or more ease in a cart, would say, generally, that it would be economical to convey manures on the backs of mules or horses, or by sledges instead of carts; yet in very hilly, uneven places, or along the rough and precipitous passes which in many localities conduct to a sea-shore, loaded panniers or sacks upon the back of a horse, or a load on a sledge, may be more safely and effectively conveyed in that manner than by means of a cart. Perseverance, however, in an imperfect practice (advisable only under peculiar circumstances) is evidently absurd when the necessity for it has ceased by the change of those circumstances. The Frenchman pursues his favourite mode of yoking his teams even on the finest road imaginable, though in every winding of a road there is a loss of power consequent upon it (incurred by the deviations from the true line of traction). He is *accustomed* to that method, which he acquired under very different circumstances, and will not adopt a new one, though in a case which, by its suitableness to his purpose, plainly invites its adoption. Hardened by custom, he carelessly observes the unequal and severe labour which is imposed on his shaft-horse in turning corners and crossing watercourses, and the painful pressure that the poor animal suffers from the belly-band whenever the weight is thrown backwards from its equilibrium by the prevailing system of harnessing. In Ireland, where the great improvements in the construction of roads within the last 15 or 20 years has led to the almost universal substitution of the spoke for the block-wheel, as the solid wheel was termed, and the abandonment of the back-load system, there is still a disinclination to adopt the high spoke-wheel, from a lingering regard for the form of the original wheel, which was found useful as a drag in descending hills, and in preventing the rude shocks which the horse would receive on very rough roads, from the concessions given to the lighter, and therefore more unsteady wheel. But another consideration also operated to preserve the use of the very defective block-wheel, even after the supposed necessity for employing it had been removed by the new construction of roads; namely, a penny-wise sort of economy evinced in the determination to wear out the old wheels before incurring the expense of purchasing new ones—a kind of prudence somewhat similar to that of a thrifty parent, who is unwilling to dress his hobbedyhoy son in a new long-tailed coat until he has completely worn out his jackets, notwithstanding that he has much outgrown them. There is, however, this difference between the two cases: in the latter there is a positive saving, and that without any hindrance to the boy's advancement, either in mind or body; while in the other case there is loss in the lesser quantities and weights conveyed by means of these imperfect wheels, and the greater wear and tear of the animals employed in moving them.

There is still, I apprehend, not only in Ireland, but in Great Britain generally, a deficiency in the formation, or rather in the height of cart-wheels. From frequent observation of the power of those which are used in France, which enable a very feeble horse to draw great weights, I am convinced that the average height of the cart-wheels we employ in road and farm labour ought not to be less than from five feet six inches to six feet. The wheel of the common Irish farmer rarely exceeds three feet six inches; for he is impressed with the notion that, if it were higher, the pressure would be too great on the horse when going down hill, having no knowledge of the simple contrivance of the Frenchman, who, by means of a piece of wood which can be pressed from behind by a simple sort of screw, causes a degree of friction which retards the action of the wheels, so as to relieve the horse in the descent. In a level country, there can be no doubt whatever of the mechanical advantage to be derived from a very high wheel, and still more on ascending ground; and though it often occasions difficulty to the horse on descending ground, from want of a friction-break, or the neglect of the carter to apply it, there is on the average of work a decided advantage obtained from the use of the high wheel, provided that it does not exceed the elevation which will admit of an horizontal shaft, or, still better, allow a trifling declination from the fore point to the other extremity; and, I may add, from a narrow axle, which causes a lesser friction than a wide one.

Having referred to the Continental custom of attaching the animals of draught to carts and roulages, one before the other, and being of opinion that the Scotch cart, with one horse, or two at the most, is the most efficacious vehicle for ordinary work, I may venture to advert to the reasons which have been sometimes urged in condemnation of the former mode, because, though the conclusion is practically correct, one of the chief reasons assigned against the yoking of the cattle to carriages (or ploughs) in single files, is that there is a loss of power in proportion to the distance at which they are placed from their load. I have myself erroneously concurred in that opinion. Now, in the first place, the term proportion, used in this sense, is wrong in a scientific point of view; for though the draft may increase or diminish, as the distance increases or diminishes, there may be neither proportion nor ratio in the amount of increase or decrease of both, as compared together.

The waste of power in the case I have supposed, has nothing to do with the distance. There is no ratio whatever in respect of that; the loss of power is only occasioned by a deviation from the direction in which the weight is to be moved; and in practice that deviation is continually occurring, owing to the inequalities and windings of a road. If there be two or more horses abreast, there can be no deviation from the true line of draught; still less can there be any such deviation in the case of the single-horse carts. From knowing that the mere increase of distance between the horse and his load will not diminish his powers of draught, it follows that very long traces may be very advantageously used on occasions; for instance, to effect the passage of a cart through a slough, at the entrance of a field, which has been deeply rutted from frequent traffic, it is plain that all the horses of a team, except the one in the shafts, would have greater power in drawing, if they were on firm ground within the field, than if they were labouring through the slough, along with the shaft-horse; a pull from the firm footing within, however long the distance, would give increased power. If the line of traction be preserved, all is right on the general principle.—*Martin Doyle.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XI.

(*Continued from page 170.*)

Every practical farmer is so well acquainted with the value of good rotten manure, that it would be a waste of time for me to dwell upon the advantages derivable from the decomposition of vegetable matter. Sir H. Davy recommended the application of dry Straw to land, in order that plants might derive the benefit of its slow decomposition. Others have used dry bran upon the same principle. A little reflection, however, will convince the reader that such experiments must fail, and that it is better to secure the decomposition of these substances, before they are used. But some one will exclaim:—"Do you not obtain all the results of decomposition, and prevent volatilisation, by burying the straw?" The answer to this is simple and conclusive. In the decay of Straw by itself, there is no volatile matter formed, and therefore none can be lost. It is only where urine or animal matter is added to the Straw, that any appreciable amount of ammonia is formed by the decomposition.

When the crop of Corn is removed from the land, the grain, converted into flour or malt is consumed by man, and the animals around him. The Straw thrown into the yard is formed into manure by the cattle. Now Straw will not readily decompose without moisture. In the straw-yard it is mixed with rain and urine, both containing nitrogen. The Straw and dung contain little or no nitrogen, and we therefore see that the cause of decomposition is the source of volatilisation,—that the two phenomena depend upon each other. Without urine the Straw would make very indifferent manure, for the nitrogen of the urine is one of the principal sources of the azotised part of the future crop—the seed. Nothing can be more simple or true than this well-established fact. Surely, then, the grand object of the farmer should be to secure to his crops of grain as much azotised matter as possible; for upon this depends chiefly its *quantity*, the *quality*, and the *weight*. The more azotised matter within certain limits, the more Corn—is as clearly demonstrable as a problem in mathematics, or as the fact of the quantity of fat in the sheep being proportioned to the amount of oil-cake and turnips that it devours. The more Straw or carbonised matter in the manure, the more Straw in the crop, is also equally clear; for Straw by itself can never produce grain.

From the rain, then, containing ammonia, and the urine of cattle containing urea, (which by decomposition is converted into the carbonate of ammonia,) the Straw in the farm-yard receives a considerable quantity of azotised matter, but much of this is lost by volatilisation. The carbonate of ammonia is a volatile salt, and the grand object of the Agricultural Chemist is to fix it, convert it into a salt of ammonia, which is not volatile; and the sulphate or phosphate are of this character. Numerous remedies have been proposed to fix the ammonia of dunghills, and the experiment proposed by Professor Henslow, and now in progress in the county of Suffolk, will set at rest the value of one agent proposed—gypsum. But I do not think that the fixation of ammonia in the dunghill is of so much importance to the farmer, when compared with the means which he has always at hand, at little cost or trouble, of obtaining large quantities of ammonia easily fixed in the form of liquid manure or urine.

For this purpose every farm-yard must be provided with tanks of considerable size, in which the urine must be collected, and treated in a manner to be explained presently. That the urine is the only azotised source of stable-manure I do not mean to contend; for dung, straw, and rain-water, all contain nitrogen in small quantity. But the aggregate of these sources is so small when compared with that contained in the urine, that we are justified in treating of that liquid as the real and practical source of supply. If any person wishes to convince himself that urine contains much nitrogen, let him place a vessel of it aside for a fortnight, and then add sulphuric, or any other acid to it as long as effervescence continues. From the amount of acid used, it is easy to calculate the amount of carbonate of ammonia which the decomposition of the urine has formed. If this amount is estimated at half the weight of the acid, it will be near enough for ordinary purposes. Liebig has stated from theory that a pound of urine contains the elements necessary to form a pound of Grain. In an experiment which I made, I have proved the soundness of Liebig's "thought;" for, from 80 lbs. of urine, with the ammonia fixed, I obtained of produce 77½ lbs., and about 37½ lbs. of Grain to 40 lbs. of Straw. Now, every human being passes about a pound of urine in the twenty-four hours, upon the average; and it has been estimated that every adult is capable of manuring, by his urine alone, an acre of land per year! and yet how little of this is saved?

I have stated that, directly or indirectly, every human being is indebted to Agriculture for his food. It matters not whether he lives upon beef, or pork, or bread, or potatoes,—upon the whale blubber and roots of the Fuegian, or the oil and saw-dust of the Esquimaux; still we can trace the primitive organisation of the elements of animal nutrition to the vital operations of plants. Now, almost all human beings and animals, the former especially, take in more azote in their food than the waste of the body requires. If this takes place with the principal element of respiration—carbon (as is often the case), it is deposited as fat. But the excess of nitrogen is separated from the blood by that beautifully constructed organ the kidney, and thrown off in the urine. Nature intends to restore to nature all that is superabundant in her living organism. It is the negligence, or the blindness, or the indolence of man that prevents this means of increasing the produce of the soil from being taken advantage of.

Human urine is much richer in nitrogen than that of cattle—according to Liebig, as four to one. It is, consequently, four times better for the purposes of agriculture. But the urine has other ingredients of the seeds of corn besides azote. The seed contains phosphate of lime and magnesia, and the salt is found in considerable quantity in urine. The carbon for the starch in the seed is always to be obtained from the atmosphere; but the grain cannot of course be formed without the stalk and roots; and for their formation several important ingredients not found at all, or in sufficient quantity in urine, are requisite; and these are supplied to the soil either in abundance by the original rocks from the disintegration of which it was formed; or, as is most frequently the case, they are supplied by the constant application of rotten straw and dung by the farmer. What phosphate of lime and magnesia is deficient in the urine, is supplied by the dung; and the potash, sulphur, iron, and in heavy lands sometimes silica, is restored from time to time in the straw. In addition to this, the decay of straw is a constant source of humus, which is an important means of nutrition to the young or embryo plant. While, then, the straw and dung supply the above ingredients, the urine is the great and important, though much neglected source of azote; and thus each of the parts of stable manure contain and supply the plant with the appropriate food for each portion or division of parts into which the structure of the plant can be divided: for the whole plant, it is obvious a union of all its constituents is requisite.

It is quite clear that the principle which guides the feeding of animals holds good with regard to plants. If in fattening a bullock, we select that food which will

deposit fat (the oleaginous), such as oil-cake, &c., so in desiring to increase the bulk and weight of a grain of Wheat, we select for food that which will deposit azotised matter (gluten), and for this purpose we have every element we require in urine. But as a dog will die if fed only upon sugar, so will a plant if we do not supply it with a union of all the elements entering into its composition. —*C. B. Bree, Stowmarket.*

(To be continued.)

EXPERIMENTS ON THE RAISING OF TURNIPS.

[In No. 8 of the *Agricultural Gazette* we published the report of experiments by the Duke of Richmond and Dr. Manson on the influence of certain manures on the growth of Turnips. These experiments were apparently undertaken in competition for premiums offered in connection with the subject, by the Moray shire Farmers' Club. The second premium was awarded to Dr. Manson. Mr. M'William, to whom the first prize was awarded, has sent us the report of the Club, from which we extract the following account of his experiments.]

No.			Imperial Measure. A. R. P.	Loads of Bushels Bones per load.	Lbs. Sulphuric Acid, at 1½d. per lb.	Guano, at 13s. p. cwt.	Gypsum at 4s. p. cwt.	Sulphate of Ammonia, at 81s. per cwt.	Gallons of Water.	Dates of Sowing.	Dates of Hoeing first time.	Second Hoeing.	Expense per Imperial Acre. £ s. d.	Weight per Imperial Acre. tons cwt. lbs.
1	Gibb's Swedish Turnips		4 3 22	27	46 2-5ths	cwt. lbs.	cwt. lbs.	cwt. lbs.	397	"May 31	July 8	The second hoeing commenced on the 27th Aug., and followed up through the field in same rotation as first time, and finished on 13th Sept.	2 18 3	15 5
2	Do.		3 0 0	27	23				6	June 3 & 5	" 5 & 6		2 14 10	13 15
3	Laing's Swedes, raised at Sheriffston		3 1 5	27	23				9	" 3 & 5	" 7 & 9		2 14 10	13 15
4	Dale's Hybrid, raised at Sheriffston		3 0 0	18½	46 2-5ths				397	June 13	July 12, 13, 14, & 15.		0 17 5	6 9
5	Gibb's Red Top Yellow—common Turnip		1 2 1	27	46 4-5ths	3 0			794	" 14	July 25		0 17 5	6 9
6	Do.	6. 2. 14	1 0 27		46 4-5ths	3 0			794	" 15	" 26		1 1 0	6 9
7	Elgin Green Top Yellow,	6. 2. 13			46 2-5ths	3 0			794	" 16	" 27		0 18 0	6 9
8	Do.		1 0 27		46 4-5ths	4 0	1 0		794	" 17	" 28		0 18 0	6 9
9	Do.				46 4-5ths			0 90	794	" 20	" 29		0 18 0	6 9
10	Mixed Seed—Green Top White		0 3 18		46 4-5ths			0 90	794	" 21	" 30		0 18 0	6 9
11	Do.		1 1 8		46				10	" 23	" 31		0 18 0	6 9
12	Do.		1 1 27		46				10	" 25	Aug. 2 & 3		0 17 5	6 9
13	Do.		1 2 1		46				10	" 26	" 4 & 5		0 17 5	6 9
14	(Short Drills), White Globe (Gibb's London)		1 3 0		46				10	" 27	" 6 & 7		0 17 5	6 9
15	Do.		1 2 32		46				10	" 28	" 8 & 9		0 17 5	6 9
16	Dale's Hybrid (Sheriffston seed)		1 3 11		46				10	June 6, 7, 10	July 17 & 18	Handweeded	1 2 6	6 9
17	Do.		1 3 32		46				10	" 15, 17, 19, & 20	" 19, 20, & 21	"	1 2 6	6 9
18	Green Top White		2 3 21		46				10	" 28 & 29	Aug. 1 & 2	"	1 2 6	6 9

Rates per Imperial Acre.

* This lot was injured by the sand blowing in a gale.

Nos. 9 and 12.—The bones were watered with the sulphuric acid the day before being sown.

No. 7.—The sulphate of ammonia, guano, and bones, were mixed together.

No. 10.—The sulphate of ammonia used was dissolved with the liquid.

Nos. 16 and 17.—The bones and guano were dibbled in with a mixture of saw-dust.

Part of two drills of each experiment, measuring 4 perches, were topped, tailed, and carefully weighed on 13th and 14th December.

The quantity experimented on was 30 acres, 2 roods, 23 falls. The liquid manure was prepared in the same way as reported on last year;* but in place of being applied with a watering-pan, as then, it was put on with a cart, constructed on purpose, to do three drills at a time, and so as to give a uniform discharge when nearly empty as when full, which cannot be done by any common discharge-pipe. When 2 bushels of bone dust per Scotch acre, with the sulphuric acid, were applied with the full proportion of water, a portion of the mixture, equal to a half-bushel of bones, was put into the cart, and filled with water, which went over exactly quarter of a Scotch acre, the horse going at the rate of 3 miles an hour. When 4 bushels were applied with the acid to the Scotch acre, with the same proportion of water, in like manner a half-bushel was put in and filled up, which went over the quarter of an acre as before; but this had to be repeated, and gone over a second time. In order, if possible, to save this labour, several experiments were tried, with half the quantity of water; in this case the full bushel of mixture of bones and acid was put in at once, and the cart filled up with water, and went over the quarter of an acre Scotch, thus effecting a considerable saving of labour; and, as far as I can judge from the experiments, with equal effect. When the proper proportion of water to be put in the mixture is ascertained by experience, the plugs which regulate the discharge may be graduated, and a series of them made so as to regulate the quantity of mixture per acre during pleasure, the horse going at the regular and common pace, without having to do so by augmenting or lessening the quantity of water, or by making the horse go faster or slower, the latter being difficult to regulate.

Remarks with regard to the varieties of Turnips.—Laing's Swedes, part of No. 3, are decidedly superior to Gibb's in point of quality and hardiness, and, under the same treatment, much heavier. 4. Dale's Hybrid have been raised on Sheriffston for years, and properly selected, and decidedly a superior variety to the other yellow sown. 15. White Globes, Gibb's London, superior variety of Turnip to the Green Top White, which were of an inferior description—bought seed.—(*Signed*) *Geo. M'William.*

ON MINERAL AND INORGANIC MANURES.

No. XI.

By Professor Charles Sprengel.

I shall now proceed to explain some other phenomena which are observed on fields manured with marl.

It has been very often observed, that marl will not produce any effect on one sort of soil, whilst on another it will act most beneficially. This is to be ascribed to the fact that marl is not only of use to plants by the decomposition of humus, but that it really nourishes them by its constituent parts. If, for instance, a soil is deficient in magnesia, but not in all other essential parts, it will not be materially improved by marl, though rich in lime, gypsum, phosphate of lime, &c., if it does not contain magnesia; whilst the same marl, conveyed on a ground which contains plenty of magnesia but is deficient in other substances, will produce the most beneficial effect. I have found this out by too many experiments for me to doubt it for a single moment. I have seen, very often, that a marl merely composed of carbonate of lime and clay, produced at some places the best results, whilst in others it produced none; but chemical analysis always pointed out to me that any soil where it showed itself very useful, contained but very little lime, whilst that where it was useless, had already plenty of lime.

It is often the case, that a soil which has been marled some time since, contains yet a sufficient quantity of carbonate of lime, whilst its fertility has nevertheless become much impaired, although there is also no deficiency of humus. The reason is, that such soil, although not deficient in lime, does not possess enough of those other substances which had been once conveyed to it by the marl. At times it is only the gypsum or potash it is deficient in, and it is merely necessary to apply to it these substances to re-establish its former fertility, or to apply an additional dose of the marl previously used. The mineral substance in which it is especially wanting is, however, often obtained more cheaply than by a repeated application of marl. In most cases, however, a soil which, after a previous plentiful manuring with marl, exhibits signs of sterility, will be found deficient in humus, and in this case the marl which may yet be in the soil cannot produce any effect, because we have seen before, that it is especially humic acid, through the action of which lime, magnesia, alumina, iron and manganese, potash, soda and phosphate of lime, are conveyed to the plants. A soil which no longer contains any humus, is called in Germany over-marled (*ausgemergelt.*) In order to make it fertile it must be manured with substances which not only contain humus, or yield humus by their decomposition, but must also contain nitrogen, as any soil which is "out-marled" is always deficient in that substance. Dung, certainly, is best in most cases, but it may be also advisable to use along with it some vegetable-mould, as it requires a great deal of dung to supply the soil even with one-fourth per cent. of humus. At times, however, a soil, though deficient in humus, will yield (after being manured with marl) some good crops, in which case it may be that the marl contains some humic particles, or saltpetre, by which latter substance the plants are supplied with that essential food for them—nitrogen.

At times marl acts the first year very powerfully, but the effect soon decreases, which will be the case if it is applied in a powdery state. It is clear that in this case the particles of lime more easily become mixed with the soil, and bring the humus sooner to a state of decomposition, and many of its other constituent parts are easier soluble in water, and can be more speedily conveyed to the roots of the plants. If, on the contrary, marl is hard or stony, it will hardly act at all for the first year or two, for the lumps will not affect the humus, neither can the water penetrate into them to receive their soluble parts. At times marl will act the first year with astonishing power, and cease altogether the second; it may then be taken for granted that it contains saltpetre, which, on account of its great solubility in water, comes soon into play, and forces the plants by its great amount of nitrogen. Marl will always act better on wet soils than on dry ones,* which is chiefly caused by the plants being only able to receive nourishment through the medium of water. If, therefore, a dry soil has been manured with marl, it is always advisable to have it fallowed by Rye, as then the moisture of the winter season will remain longer in the soil. This moisture will be instrumental in the decomposition of the coal of humus and the vegetable matter, which will increase the action of the marl. On account of the necessity of preserving moisture, it is also well to let a soil manured with marl rest for a few years after the Rye has been cut down; the field may be planted with Clover and Grasses, and used as a pasture.

(To be continued.)

* To 1 bushel of bone dust sifted out, put 29 lbs. sulphuric acid previously diluted with 56 lbs. of water; and having stood 24 hours, it was then mixed up with the full quantity of water.

Home Correspondence.

Salt as a fixer of Ammonia.—An article appeared in No. 3 of the "Agricultural Gazette," under this head, signed "Peter Mackenzie," in which it is asked if any other means of decomposing common salt for the use of land have been discovered besides that of first converting into sulphate, and then into carbonate, as described in "Rural Chemistry." I am in a situation to answer this question, and I deem it of no small importance to the farmer. I saw in my newspaper last week a recommendation to apply salt to the dunghill, stating that the carbonate of ammonia generated there would be prevented from going off into the atmosphere, if common salt were occasionally thrown on the dung, as the carbonate of ammonia and common salt would by the moisture and heat of the dunghill decompose each other, forming muriate of ammonia and carbonate of soda. Carbonate of ammonia will be evaporated into the air by the ordinary heat of a dunghill, but muriate of ammonia will not—thus we not only save the ammonia, which is the most valuable part of the manure, but we get a new ingredient—carbonate of soda, which is also highly valuable. This is all to be accomplished by buying a little Agricultural salt and applying it to the dunghill—that is to say, if the foregoing be true. On reading this I got a chemist to try the experiment, and stood by him the whole time. He saturated a solution of common salt, say ½ or ¾ of a pint, put into a white glass bottle with a wide mouth and glass stopper; he then put into this strong brine several pieces of carbonate of ammonia in lumps, so that in the event of a precipitate before the ammonia was all dissolved it should be distinctly known. After shaking the bottle for half an hour so as to dissolve some of the ammonia, it was subjected to a gentle heat, and a large deposit of white powder was the result. In this state the bottle remained all night, and next morning the powder was separated from the fluid by filtration, and it was found to be soda, and the chemist said that it was mostly in a state of bicarbonate. After the powder was dried it was tested, and found to contain 29.41 per cent. of real soda, which the chemist told me proved that it contained upwards of 80 per cent. of bicarbonate of soda. Now I know all this to be true, for I saw the whole operation, and the bottle was in my own keeping during the whole period. I have directed my people to put about 1 lb. of salt to every good wheelbarrow-full of manure that they take from the stable or feeding-stalls. The adoption of this quantity is all guess-work, and if any of your readers have any experience or information on this point, I should be glad to see it transmitted to your columns. I have considered the subject of the preparation of manures for some years past; and with this new, and, to my mind, very important fact before me, I am strongly of opinion that all newly-made manure should be accumulated under a shed, with a tank to receive the drainings, salt being intimately mixed with it, but not in too great quantity;—be sure to mind this; 1 lb. to a barrowful may be too much—this can only be known by trial. Let the drainings be pumped over the dung from time to time, and the heat of the dunghill will evaporate the watery part of the fluid, and leave all the rich salts of the urine of the animals incorporated with the dung, to be acted upon by the salt as hereinbefore described."—*J. F.*

Dibbling Turnip-Seed.—This is much practised here, and by some of our very best farmers, and we believe it to be the surest way of procuring a regular braird. One sturdy Scot with an improved hand-dibble, will go over one imperial acre in a day. He makes the holes at the proper distances; a boy or woman follows with bones, or other portable manure, puts into each hole the requisite quantity, when another boy or woman follows with the seed. They take a pinch betwixt the finger and thumb, and with finger and thumb thus joined, they shove a little of the soil above the manure, and while doing so they drop the seed. By this mode you will never see a failure; and, after a little practice, the workmen become so accurate, that they scarcely ever err in giving either too much or too little of seed or manure. Perhaps this method will not do so well with guano, but for bones it is excellent, and not expensive. This hasty notice is given

* By "dry soils" are probably meant thin stony land, easily scorched in summer.

from having seen the matter hinted at in the *Gazette*.—*W. Drummond & Son, Stirling.*

Bones.—In the *Agricultural Gazette* of the 13th ult., I observe some remarks, under the signature "E. R., Halifax," with details of a conversation on the subject of that manure with a Roxburgh farmer, from which it is inferred that unboiled are preferable to boiled bones. For years back I have been in the habit of using bones largely, and have made trial of both sorts of bones. The result of my experience is, that boiled are infinitely preferable to unboiled bones. The boiled bones I made use of were procured from a large establishment in Aberdeen for the manufacture of soups for exportation, and had been subjected to a thorough boiling. I obtained them whole, and had them ground for myself. The first season I tried them to the extent of 1 ton, and at the rate of 18 bushels per imperial acre; and to test them thoroughly, I applied, beside them, in the same field, and at the same rate per acre, a ton of unboiled bones. The result proved the superiority of the boiled, as I had double the crop of Turnips from them that I had from the other. The two following seasons I increased my supply of boiled bones from 1 to 7 tons; and, had I not found guano a less expensive and equally effective manure, would have given up using any other extraneous manure than boiled bones. Last year I believe these bones were all purchased by the Duke of Richmond's land-steward for Gordon Castle, and it might be desirable to learn the result of his experiments with them. The "hoar-frost" appearance mentioned by the Roxburgh Farmer is no criterion of boiled or unboiled bones. Any one using bones is aware that they are materially affected by the nature of the soil they are used in, and the state of the weather. Here, however, the boiled bones have again the advantage, for they are not to be found entire when the ground is ploughed after Turnip in the ensuing spring, as the unboiled are, being much more easily decomposed. To produce "hoar-frost" in the drill rapidly, however, and at the same time to encourage quick germination of the Turnip-seed, let a little water be added to the bones about 24 hours previous to their being put in the ground, so as to induce a heat, which will materially assist their decomposition, and consequently rapid incorporation with the soil. I ought to mention that these boiled bones were about 12 lbs. per bushel heavier than the unboiled, and, on being heated, gave out a very strong ammoniacal odour.—*A. H., Aberdeenshire.*

Bones.—In your *Gazette* of the 13th inst., Mr. Patrick Clay, Berwick, states that for the last three or four years he has sold large quantities of bones in the counties of Roxburgh and Berwick, and that consequently I have been misinformed as to their going out of use. This I do not altogether admit: it is quite possible that Mr. Clay may have sold large quantities of bones in the two counties; it is also equally possible that in some districts they may be in less repute; my informant merely spoke of his neighbourhood, which is Kelso. My object in making the communication to the *Gazette* of the 13th ult., was to elicit information as to the respective merits of boiled and unboiled bones, and not to bring them into disrepute. If Mr. Clay can give any information on the subject, I have no doubt it will be acceptable to many.—*E. R., Halifax.*

Gorse.—Under the word Gorse in "Withering's Botany," it is mentioned, on the authority of Dr. Evans's tour in Wales, that my father, Mr. Davies, of Llechdwnny, fed a large team of horses on the young shoots of that plant. The fact is, that my father planted 10 acres of very steep land with Gorse seed, and it was cut down and ground in a mill erected for the purpose, the horses invariably preferring it to the best Hay. Dr. Evans was in Carmarthenshire, I believe, in 1802, and it had been the custom then to use the Gorse from time immemorial. One circumstance I must mention:—and Messrs. Rowland and Son ought to know it:—immediately after its use the horses' beards and moustaches grew to an enormous size. —*F. Davies.*

Lime and Salt.—I tried this mixture on two acres of old Grass land, having mixed them in the proportions recommended by Mr. Cuthbert Johnson. A heap was made, and the lime and salt were laid in alternate beds, then mixed up together, and well covered over with soil and sods. After three months this was applied to the meadow in question; it was in a state resembling mortar, and was with difficulty spread; after it became dry, it was beat to pieces, and spread and bush-harrowed. In many parts of the field the Grass appeared as if it was scorched. It did not grow luxuriantly, and the crop was the worst I ever had—in some parts not worth cutting.—*Northumbriensis.* [Possibly too much was applied.]

Analysis of Soils.—The following is a method of analysing soils for ordinary Agricultural purposes:—Weigh a convenient quantity of the earth to be analysed, say 1000 grains dried in the open air; dry the same before a fire on paper, so as not to scorch the paper; re-weigh, and the difference will be the moisture. Roast the residue; re-weigh, and the difference will be the organic matter. Pour a convenient quantity of muriatic acid on the remainder; when stirred and settled pour it off, and add oxalate of ammonia: the precipitate will be the lime. Mix remainder with water, and stir it well; when a little settled, pour off the turbid mixture, and the suspended contents are argillaceous, and the deposit siliceous.—*An Old Subscriber.*

Mangel Wurzel.—It is to be hoped the *Agricultural Gazette* will not patronise the barbarous mode often adopted of spelling this name "Mangold Wurtzel." We allow sailors to transmogrify foreign proper names into words to which they can attach some meaning, and to call the *Ville de Milan* the *Wheel-em-along*, the *Bellerophon* the *Belly-ruffian*, and to distort the beautiful Italian *Livorno* (for they no doubt have first done it) into *Leghorn*; but surely it cannot be necessary that the enlightened Agriculturists of the present day should frame the word Mangel into Man and gold before adopting it. The original and proper German name Mangel Wurzel literally means Want (or Scarcity) root, from its having been found so valuable when there was a deficiency of other food for cattle. And why should we not keep to this correct name, which is intelligible to nearly all the rest of Europe, instead of corrupting it into another which must puzzle them, and is in itself absurd?—*S.* [If our correspondent will examine a German dictionary, he will find that the words "*Beetroot*" are translated there "*Mangold Wurtzel.*" It is possible that "*Mangold*" has had its origin in Germany by some such distortion of "*Mangel*" as those quoted above; if so, the distortion is not chargeable on us. In importing an article from another country, we must just give it the name which it bears there, however ridiculous its origin may have been. The adoption of the word *Mangel* involves, we think, a very questionable theory.]

On the Preservation of Guano.—Guano has been found to exercise wonderful powers in exciting the growth of vegetable life, on nearly every kind of soil, but it is expensive in the first outlay, and to a certain extent it loses its properties by exposure to air and moisture. A few words, therefore, on the means of better preserving it will be useful to such of your readers as use it, and also to those parties who have to keep a large stock on hand for sale. It is well known that this article comes from a climate where it is nearly always dry; it is also known that a great portion of it is soluble in water—a portion containing some of its most fertilising ingredients; hence it must be evident that the exposure to continued moisture, which it receives in England, must wash out the greater part, if not the whole of the soluble matter contained in it, and render it comparatively worthless. It is probably on this account that some parties who have used this manure have found very little benefit from it, and have exclaimed against the new-fangled manures as useless, whereas it has not been the fault of the manure itself, but of the way in which it has been kept—not preserved. In order to keep guano fit for use, it must be preserved in a perfectly dry place, otherwise much useful matter will be washed out. Besides its soluble ingredients, there exists in guano a volatile compound of ammonia, to which it owes its peculiar pungent odour when in a fresh state. Old guano does not possess this pungency in an equal degree, and when very old not at all. The carbonate of ammonia, or common smelling salts of the shops, is the state in which the volatile part of the ammonia exists in this manure. By exposure to the air, even when dry, this compound escapes in the state of vapour, and when wet, is washed out; so that in course of time it is completely lost in either way. Now, as it is well known from the recent researches of Liebig, that ammonia has a wonderful fertilising power, every care ought to be taken to preserve the whole of this compound for the use of the plant, and this can only be accomplished by converting it into a fixed ammoniacal compound, which can be readily and cheaply done by the addition of about 30 lbs. of sulphuric acid (oil of vitriol), mixed with about twice its weight of water, to one ton of guano. A small excess of the acid will not be injurious, as it renders the phosphates soluble, which are not so in simple water, thus enabling them to enter by absorption into the rootlets of any plants to which they might be applied. From the remarks made, it appears that but two very simple conditions are requisite for the preservation of guano, for any length of time, in a state fit for use: the one condition being absence of moisture; the other, the addition of a small quantity of sulphuric acid.—*John Mitchell.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday last, the 20th of March; present, T. Raymond Baker, Esq., in the Chair; W. R. Browne, Esq.; F. Burke, Esq.; F. C. Cherry, Esq.; E. D. Davenport, Esq.; J. Dean, Esq.; C. G. Dupre, Esq., M.P.; A. E. Fuller, Esq., M.P.; H. Gibbs, Esq.; B. Gibbs, Esq.; Rev. C. E. Keene; W. Miles, Esq., M.P.; H. Price, Esq.; Prof. Sewell, and R. Trench, Esq. The following gentlemen were elected Members of the Society:—

Pearse, Henry, 9, Manchester Square, London.
Parke, Charles, Jun., Lower Henbury, Wimborne, Dorset.
Croft, Rev. Richard, Rector of North Ockendon, Romford, Essex.
Eve, William, North Ockendon, Romford, Essex.
Coape, William, Duddington, Stamford, Linc.
Benson, Alan, Papcastle, Cockermouth, Cumberland.
Rees, William, Treharne, Holly House, Newport, Monmouthshire.
Paris, Thomas Greenwood, Barnet, Herts.
Twitchen, Andrew, North Oakley, Kingsclere, Hants.
Stratton, William, Laverstock, Overton, Hants.

The names of 15 candidates for election at the next Meeting were then read.

Burnt Clay.—His Grace the Duke of Richmond having transmitted to the Council the results of Mr. Page's experience in the application of burnt clay, the communication was read to the Meeting. The report stated the length of time during which the burnt clay had been used on the farm, the mode in which it had been prepared, the quantity applied to the land, the time of year, and to what crops; concluding with the following statement of its effects:—"I have known," says Mr. Page's servant, "that in a wet cold season it beats all other manure for Turnips: of course, it keeps our stiff lands from congealing together, giving the seed more power to vegetate stronger. I never earthed any without seeing an improvement made. All I can say about it is, that it certainly answers on wet cold lands; it will increase the Barley crop 2 coombs per acre. I do not think it answers so well for Wheat as for Barley. It has been used on the farm for 20 years upon a small scale, but for the last six years very plentifully: last year, had the season allowed me, I should have burned 600 loads."

Model Experiments.—Mr. Miles, M.P., informed the Council, that Mr. Pusey, in his capacity of chairman of the Journal Committee, being desirous that as much practical matter as possible should be communicated to the Society, and under such a uniform statement of the plan adopted, as would lead to direct inferences on a comparison of the results obtained, had suggested to the Journal Committee that a prize should be given to promote that object, a proposition that had been unanimously adopted by the Committee, and of which the details would in a short time be laid before the Council, and the conditions of the prize made public. Mr. Miles was anxious to see the model experiment on the growth of Turnips, which on a former occasion had been recommended by the Council to those members of the Society who had the means and opportunity for engaging in such inquiries, repeated on an extended scale, embracing in its plan not only a trial of the different manures on a root crop, such as that of Turnips, but also on a grain crop, as, for instance, that of Barley, made on not less than an acre of ground, and weighing the produce of not less than half an acre: the trial being tested not only by the resulting weight of Turnips, but also by that of the Barley. He thought that such an experiment would be important and interesting in many points of view; and as it would be desirable that in this, as in the former model experiment, the seed should be obtained from a given and genuine source. He then gave notice that the attention of the Council having been called to the circumstance of there being at present no duly appointed seedsmen to the Society, he should move at the next Monthly Council, that Messrs. Thomas Gibbs and Co., of Halfmoon-street, Piccadilly, the parties who had always been engaged by the Society to furnish seed for the model experiment, and to test by cultivation the various samples of seeds and plants from time to time referred to them by the Council, should be officially appointed the seedsmen to the Society. The Council then adjourned to Wednesday next, the 27th inst.

Southampton Meeting.—A Meeting of the General Southampton Committee was held on Thursday last, Colonel Challoner, Vice-Chairman, in the Chair; at which the recommendations of the Committee respecting the plans for the Pavilion and Show-yards at the ensuing country Meeting in July, were finally determined upon, and ordered to be reported for confirmation to the Monthly Meeting of the Council on the 3rd of April next.

ROYAL DUBLIN SOCIETY.

At the last meeting of the Society, H. Kemmis, V.P., in the chair, it was reported from the Agricultural Committee, that Professor Dick, of Edinburgh, has kindly undertaken to come to Dublin in April, to deliver lectures on the diseases of cattle, at the approaching Show. It is also hoped that Professor Kane will deliver, on one of the days of the Cattle Show, a lecture on the relations of science to agriculture, and the practical benefits derivable from its application.

HIGHLAND AND AGRICULTURAL SOCIETY.

At the late monthly meeting of this Society, the first paper read was a Report of Experiments with Manures by Mr. Finnie of Swanston, near Edinburgh, at an elevation of 600 feet above the level of the sea. Oats, Barley, Tares, Grass, and Turnips were tried with about a dozen manures. The cost of all the fertilisers, with the exception of common salt and ammoniacal liquor, was 24*s.* per acre each, as that sum was considered a sufficiently large expenditure for any farmer to incur for such purposes. The amount of produce obtained from the ordinary state of the land was made the standard of comparison with that obtained from the use of the fertilisers. The results obtained were the following per imperial acre:—

	Gain	Loss
Oats.		
Ground Rape cake		£0 5 11½
Ammoniacal salts	£0 7 3	
Common salt	0 12 10	
Nitrate of soda and sulphate of soda	1 6 10	
Nitrate of soda	1 15 4	
Foreign guano	3 10 8	
Artificial guano	3 3 8	
Bones dissolved in sulphuric acid	0 4 2½	
Ammoniacal liquid		0 8 1½
Barley.		
Saltpetre		0 15 5
Nitrate of soda and common salt	0 8 6	
Common salt		0 6 9½
Foreign guano		0 1 2½
Artificial guano		0 19 0½
Bones dissolved in sulphuric acid		1 0 3½
Humus	0 2 1	
Ammoniacal salts	1 7 4½	
Nitrate of soda	1 9 4½	
Ground Rape cake	0 6 11½	
Tares.		
Gypsum		1 1 3½
Foreign guano		0 10 11
Artificial guano		0 13 6½
Nitrate of soda		0 5 0½
Humus		0 8 2½
Nitrate of soda and sulphate of soda	0 1 0	
Sulphate of soda		0 15 1½
Bones dissolved in sulphuric acid		1 1 4½
Ammoniacal salts	0 1 4½	
Ground Rape cake		0 13 7½

The fertilisers applied to the Turnip-crop cost 1*l.* 12*s.* per imperial acre, in addition to 12 tons of well-made farm-yard manure, the land which received no fertilisers being manured with 16 tons; so that the value of the

produce obtained from the fertilisers was set against that obtained from 4 tons of farm-yard dung.

	Gain in bulbs	Loss in bulbs
Turnips.		
Bone dust		£1 9 11½
Sulphate of soda	£0 18 8½	
Burned bones		2 1 11½
Rape dust kept over year		0 5 11½
Second quality of Rape dust	0 6 0½	
Best quality of Rape dust	2 2 1	
Inferior Linseed cake	1 10 0½	
Bones dissolved in sulphuric acid	0 16 0½	
Humus	0 11 0½	
Artificial guano	0 0 0	
Nitrate of soda		0 12 0
Ammoniacal salts	2 12 0½	
Foreign guano	2 8 1	
Grass.		
Sulphate of soda		0 0 10
Common salt	0 0 7½	
Nitrate of soda	2 16 6	
Foreign guano	1 0 10½	
Concentrated manure		0 5 7½
Ammoniacal salts	0 16 10½	
Sulphate of ammonia	1 8 5½	
Refuse saltpetre from powder-mills	3 2 5½	
Muriate of ammonia	0 13 8½	
Sulphate of magnesia		1 4 0
Saltpetre	0 11 9	
Soot, 30 bolls of 4 bush., at 1s. per boll	3 2 6	

Papers on Sheep-washing and Irrigation were then read. The last communication consisted of reports of trials made at the request of the Society by farmers in different parts of the country, of certain varieties of Wheat, which had been decided to be the best in a competition that took place in Edinburgh in 1842, and the comparison thus obtained was not only to be in respect of the recommended Wheats themselves, but also with varieties usually raised in the part of the country in which the experiments were made. The varieties of Wheat selected by the Society for the trials were white Dantzig woolly-eared, Pearl, and Chidham; and of red varieties, Belgian red and Blood red. To Mr. Dickson, near Edinburgh, was assigned the three white varieties, namely, Dantzig woolly-eared, Pearl, and Chidham; and they were compared with the following varieties: Short cluster, Chidham, Hunter's, Hopetoun, Belgian red, White Essex, and Fenton; and the results obtained from these were as follows per Scotch acre in value and quantity, viz.:—

	Bushels per acre	lbs. per Bushel	Value of Corn and Straw
Dantzig, woolly-cared	55	65	£26 4 0
Pearl ,,	47	65½	23 16 3
Chidham ,,	49	65½	23 17 11½
Short-cluster ,,	47	64½	22 4 1
Chillham ,,	52	65½	25 4 5
Hunter's ,,	48	64½	24 1 1
Hopetoun ,,	48	64½	23 5 5
Belgian Red ,,	53	64½	24 2 11
White Essex ,,	46	65½	22 19 6
Fenton ,,	57	64	26 13 0

To Mr. Ritchie, of Alloa, were also assigned the three above-named white varieties, and with them he compared Hopetoun, Hunter's, and Whittington, and the results per Scotch acre obtained by him were as follows:—

	Bushels	lbs. per Bushel	Value of Corn and Straw
Chidham ,,	38	64	£17 7 9
Pearl ,,	40	60	15 0 4
Danzig woolly-cared	37	63	15 15 10½
Hopetoun ,,	41	62	17 13 4½
Hunter's ,,	43½	64½	19 1 2
Whittington ,,	30	62	16 9 5

These two statements may be correctly compared, as they indicate the results per Scotch acre. Mr. Allan, Berkshire, conducted the experiments with the red varieties, and compared them with Hunter's, and he obtained these results per imperial acre:—

Blood Red, rather more than 34½ bush., 57 lbs. per bush.
Belgian Red ,, 35½ — 57 ,,
Hunter's, rather less than 43½ — 57½ ,,

Among the donations sent to the Society was a small packet of African guano, from Mr. James Bell, of Liverpool, obtained from the first cargo, per the Levenside, of 300 tons, that has just arrived in Scotland. The cargo, it seems, has been offered at auction, and 8*l.* 2*s.* 6*d.* per ton refused, but offered at 9*l.*, and but little had been sold at that price. Mr. Bell is of opinion that a large quantity of the manure will be imported. The Society has requested Professor Johnston to analyse this guano, and compare it with the Peruvian.

FARMERS' CLUBS.

Debenham.—The subject of artificial manures was discussed at the meeting of this club on the 2d inst. The gentleman who introduced the subject said, that last year he had tried several kinds of artificial manure to a small extent, with a view of testing their comparative fertilising qualities, and from the success he had had with some, he was induced to increase his expenditure this year to 30*l.* Last year he was of opinion he applied the different artificial manures too late (the latter part of April); this year he should commence immediately. He had tried guano, gypsum, nitrate of soda, saltpetre, and urate. Last year he top-dressed a piece of Wheat (every other ridge) with 2½ cwt. of guano per acre, at a cost of 28*s.* per acre; he had taken with the greatest care an equal quantity (by measure) of the produce where top-dressed and where not top-dressed, and having had them kept and threshed separately, he found there was an increase of eleven bushels per acre where he had applied the guano, beyond the produce of that where no guano was applied, and a proportionate increase of Straw. From a top-dressing of one cwt. of nitrate of soda applied to Wheat, alternate ridges, he had an increase of six bushels per acre, cost per acre 26*s.*; from saltpetre about the like increase—but the cost per acre more than for soda: with both soda and saltpetre there was an increase of Straw. He had applied urate at the rate of 5½ cwt. per acre, cost 28*s.* per acre, but without benefit from its use. He had also tried an experiment with the above manures on Clover last year, each at an equal cost per acre; he had sown two ridges with guano and gypsum, two with guano alone, two with gypsum alone, and two with urate alone. He had the greatest produce from the guano and gypsum;—from guano alone, good; from gypsum alone, good; from urate, not so good as from the other artificial manures. He believed the produce from the guano and gypsum was double, compared with the other part of the field where no manure whatever had been applied.—Another member stated he had had a small quantity of guano sent to him last year, with directions for sowing which he strictly complied with. He top-dressed a spot in his Turnips, which were up and fit for the hoe; it was a decided failure—indeed, the Turnips so top-dressed were the worst in the field. He had also used a small quantity on Grass land; the effects were soon visible; the Grass there soon outgrew the rest of the field, for which there was a good reason—the cattle grazing therein would not eat the grass when top-dressed with guano, it was so very rank; thinks probably too much was applied, or that it ought to have been mixed with ashes or mould; he had used nitrate of soda as a top-dressing for Grass land, which produced a visible increase.—Another member said he had used soot as a top-dressing for Wheat, and found an increase in the quantity both of Straw and Grain. He had watched an application of rape cake, burnt earth, and farm-yard manure, for Turnips; the proportion used was as follows:—rape cake one third of a ton per acre, drilled in with the seed; 90 bushels burnt earth, also drilled; and about 15 chaldrons per acre of farm-yard manure; the other part of the field was manured with pig manure, and from it the best Turnips were obtained; the next best, where the rape cake was applied; from the common farm-yard manure and burnt earth, the Turnips were about equal. He had also examined the Barley which succeeded the Turnips; the pig manure had the preference, then the rape cake, then the farm-yard manure; the burnt earth appeared there to have lost its power.—Another member said he had seen a field of Turnips where the occupier had manured with the best bullock-yard manure, which, falling short, he had finished the field with rape cake; where the rape cake was used there were two thirds more Turnips than where the bullock-yard manure was applied.—Another member said he had top-dressed part of a field of Wheat with soot, about 25 bushels per acre, from which the increase was four bushels per acre.—As but few artificial manures had been tried, and those only to a small extent, it was thought advisable by the club not to come to any resolution on the subject this evening, but from what had been stated, it was hoped many of the members would be induced to try as many of the artificial manures as convenient, both as top-dressings for Wheat, and also for Clover and Grasses, and that they would report the results of such experiments to some future meeting of the club.—*Wm. Green, Secretary.*

Collingham.—At the meeting of this Club, held the 5th March, J. S. Woolley, Esq., jun., came forward to explain his method of keeping Farmers' Accounts. The system is principally this,—he has two books, a journal and ledger; the journal is for one year, and contains 52 pages, one for each week; half of each page is occupied by a daily journal of labour, the other page is divided into three parts, one for the stock account, another for the corn account, and a third for the cash account, which is an account of all receipts and expenditure not coming under the head of labour, stock, or corn. The ledger then is divided into four parts, ruled double; the first is occupied by a common cash account, which receives the weekly receipts and expenditure in labour, stock, corn, &c., and at the end of the month is balanced and carried into the ledger, or second part of this book; the third part is appropriated to the yearly valuation, and the fourth is to be occupied by all debts due to and from the farm, such as cake and bone bills, rent and taxes, &c. The meeting was numerously attended, and the members expressed their satisfaction in the proposed plan.—*Robert M. Wright, Secretary.*

Reviews.

Report of the Judges appointed to inspect the Farms entered for the Prize and Sweepstakes proposed by the Yorkshire Agricultural Society. 1843. J. Coultas. York.

(*Continued from page* 174.)

"Godfrey Wentworth, Esq. [who received the second premium], has occupied his Woolley-park farm about 14 years. The four-course rotation of green crops, Barley, seeds, and Wheat, is here adopted; a variation being occasionally effected by the introduction of Beans or Tares on portions of land that would otherwise have been sown with pasture-grasses or Clover after the Barley-crop.

"*Turnips and Fallow Crops.*—The preparation for these commences as soon as the Corn is carried, by ploughing and harrowing the stubbles as much and as often as the weather permits—making the last ploughing deep to give the greatest exposure of the soil during the winter. The manure is led from the farm-yard in December and February; placed in a convenient and level site on a layer of earth, and protected from the air by a light covering of the same. For these crops the manure is conveyed by one-horse carts, up the centre of each third drill, as soon as the drills are formed, and care is taken to spread it equally and quickly that it may be covered in with the least exposure to wind and sun. The drills for Potatoes are 30 inches apart; for Mangel-wurzel 27 inches; Carrots and Swede Turnips 25 inches. We found all these crops extremely promising and remarkably clean. They had been sown about the 8th of May; 6 lbs. of Mangel-wurzel, 4 lbs. of white Belgium Carrot-seed, and 3 lbs. of Swedes were sown per acre; 15 carts of manure per acre, were allowed for these crops. One-half of the Swedes are carted to the farmyard for the cattle by removing six rows alternately; but to supply the drain thus made upon the land, a quarter of a pound of Linseed-cake per head is daily given to the sheep when consuming the remainder. For the white Turnips, which are all consumed upon the land, only 10 cart-loads of manure are allowed.

"*Grass Land.*—The management of this department is admirable. The average stock of Leicester sheep is 550; of short-horned cattle, 40, all of a very superior breed, and in high condition. There being 76 acres of good permanent Grass-land upon this farm, the heaviest cattle are pastured upon it, with a smaller proportion of sheep. The younger stock are principally maintained with the ewes and lambs upon the seeds. Much pains is taken to make compost on a large scale, which is applied to the Grass-land in the autumn, winter, and spring. Thistles and other weeds are carefully kept down. Nine farm-horses are kept."

This is a most extraordinary stock for a farm of 255 acres, of which 76 are permanently pasture, and 50 in Clover-seeds.

"The next farm, Mr. Newham's, of Edlington, afforded us great interest. As a tenant-farmer he is peculiarly liberal in his management, both by consuming Linseed-cake, to a great extent, and purchasing bones, as the following account, which he delivered to us, of his consumption of these articles for the last four years will show:

Year.	Tons of Oil-cake consumed.	Bushels of Bones consumed.	Cost of Bones
1839	13	1200	£157 10 0
1840	16	1100	151 5 0
1841	22	1000	125 0 0
1842	28	1000	125 0 0
4	78	4300	558 15 0
Average....	194	1075	£139 13 9

"His sheep, from the period of weaning from the ewes to the time of their sale when fat, whether on Turnips or Grass, have always a full supply of oil-cake, be the pasture good or closely eaten. His opinion is, that the extra produce of beef and mutton pays for the cake, and that he obtains the prodigious benefit of the superior manure without cost. Certainly the land gains much by the application of linseed-cake, as food for cattle, and we never met with an instance where so much was consumed on a farm of scarcely 300 acres.

"This year, two acres of Lucerne and two acres of Sainfoin, have been sown close to the farmstead, for the purpose of soiling. Ten regular draught-horses are employed; the practice is to purchase annually two, of two years old, and sell out two of seven years old, thus keeping the stock always young. The ewes kept on the farm, on the average of the three last years, have been 122; lambs bred from them, 151, which are sold fat, when shearlings; and in addition to this stock, from 250 to 300 shearlings are bought each September, put upon Turnips, and sold fat in the spring. Mr. Newham also fattens about 20 bullocks every winter in the yards with linseed cake, holding besides about 20 cattle of various ages. It is chiefly from the vast supply of first-rate manure, made from these causes, and the liberal purchase of bones, that the high condition of Mr. Newham's farm has been obtained. He adopts the four-course of Turnips, Corn, Clover, and Corn, varying the Corn crops, but often taking two crops of Wheat in a course, and sometimes substituting Beans in the place of red Clover. His mixture for one year's pasture is ten pounds of white Clover, ten pounds of Trefoil, four pounds of Rib-grass, four pounds of Parsley, and a quarter of a peck of Rye-grass per acre.

"Mr. Snowden, of Marr, who has occupied his farm 15 years, has also practised a course of cropping somewhat similar to that followed by Mr. Newham. He sows Swedes 22 inches apart, allowing nine carts of well-rotten farm-yard manure per acre for the rows, on which he also drills 10 bushels of bones, 6 bushels of pigeon-manure, 8 gallons of whale-blubber, and 10 bushels of ashes, all mixed together. Estimating the farm manure at 10*s.* a cart, the cost of manure per acre for the Swedes is about 6*l.* More than half this crop is carted to the farm-yard, for cattle, and not many are eaten on the Grass-land. The white Turnips have 24 bushels of bones, and 10 bushels of ashes drilled, with two pounds of seed; these Turnips are seldom drawn."

The concluding remarks of this valuable report are well worthy the attention of Agricultural societies.

"In closing our report, we may perhaps be permitted to remark, that valuable as large Agricultural meetings for the exhibition of stock and implements are, on account of the opportunities which they afford for obtaining a knowledge of the excellences to be aimed at by the breeder and the grazier; and the improvement of machinery, which these exhibitions have mainly encouraged, yet the minute inspection of well-cultivated farms, is not less worthy the attention of the arable farmer. We are of opinion that the produce of grain would be much more than doubled, and that the profit of the cultivators would be greatly increased, if the praiseworthy examples set on the farms we inspected were generally followed. An inquiring mind is necessary to form a perfect, or even a successful farmer. The best-informed farmer would, on each of these seven farms, discern that he had something yet to learn, and would see some practice from which to improve his own."

An apology would have been necessary for extracting so large a portion of a published work, had it not been

that in thus giving circulation to its contents we are simply meeting the desire of the society to whom it belongs.

The Value of Landed Property demonstrated by Practical Deductions and Illustrations, tending especially to facilitate the valuation of estates as applicable to the purposes of Agriculture. By Layton Cooke, Esq., Land-Surveyor, chairman of the Committee of Agriculture of the Society of Arts, Manufactures, and Commerce, London. Published by the Author, 7, John-st., Adelphi, London.

We have not space at present for more than a short notice of this work, but we hope to be able *soon to direct* the attention of our readers in detail to some of the important subjects of which it treats. Mr. Cooke has had a lengthened experience as a land-surveyor; indeed, it may be seen from a perusal of this work that it was written by a practical man. Besides a detail of all the points which affect the value of land, and illustrations of the mode in which they act, it contains numerous tables, showing the amount of the influence which each exerts under given circumstances. The contents of this work were first "arranged for the author's private reference, and for the purpose of conveying to his pupils a correct idea of the principles which should regulate the practice of valuing land;" and by its publication he has made known "a rational and intelligible mode of valuing," which will promote what is much to be desired—uniformity in practice.

Miscellaneous.

Rotation of Crops for Heavy Clays.—My course of crops is as follows, viz., one-fourth Wheat; after that Oats, one-half of which is sown alternately with Clover; after that, sown with Winter Tares, eaten off green by fatting sheep; then a bastard fallow for Wheat—the other half fallowed for Turnips, part eaten on the land and part drawn off; then fallowed for Spring Tares or Colesced, eaten off by fatting sheep; then ready for Wheat again. For example, say if the farm be 200 acres of arable land—

50	acres	Wheat
50	,,	Oats
25	,,	Winter Tares
25	,,	Fallow for Turnips
25	,,	Clover
25	,,	Colesced and Tares
200	acres	

This is a system I have used for some years on strong retentive clay-soil, which I have found answer well.—*Mr. Nowlson, English Agricultural Society's Journal.*

The Highland and Agricultural Society of Scotland have fixed on Dumfries as the scene of their Show for 1845.

Ventilation of Cowhouses.—Every one knows that pure air is necessary for respiration, and that air on being used by the lungs is expelled in a deteriorated condition, and rendered unfit for being again inhaled. If, therefore, cowhouses are not properly ventilated, the air becomes foul from the respired air, as well as, perhaps, from impure exhalations, and the air so deteriorated is rendered unfit to maintain health. In the neighbourhood of large towns, too, there is another predisposing cause to disease, viz., the unnatural forcing of a cow's milk by a too liberal supply of brewer's draff. Fresh supplies of air, that the blood may be purified, are essential objects of a respiratory apparatus, and if the blood that goes to the lungs is returned to the system in the same state as it is sent, death will be the consequence, for venous blood is poison to the body. It does not often happen that imperfect ventilation produces immediate death, but it is too often the real cause of inflammation, fever, and deadly distempers.—*Correspondent of Mark Lane Express.*

Guano on Turnips and Potatoes.—Having since your meeting tried the weight of our Turnips on the different manures, I find them as here annexed, per Scotch acre:—

	Tns.	cwt.	qrs.	lbs.
1. Sowed 19th May, 30 bushels bones, produced	26	3	1	10
2. Sowed 19th May, 16 bushels bones, and 2½ cwt. guano, produced	34	52	1	14
3. Sowed 19th May, 5 cwts. guano	30	16	0	16
4. Sowed 19th May, 48 tons farm-yard manure	33	15	1	4

The above variety were all Laing's Purple-top Swede. The bones and guano came away first, and kept ahead. The soil is heavy clay: all were furrowed, drained, and limed at the rate of 50 barrels per acre. We have another field manured with 45 tons farm-yard manure per acre, which has produced 40 tons, 2 qrs., 24 lbs. The soil is a middling loam; the variety green-top Swede. The Potatoes I mentioned at your meeting were planted on the 4th and 5th of May. The six acres produced 40 tons, farm-yard manure. On the 9th and 10th of May I planted six acres with 5 cwt. guano mixed with four times the weight of coal-ashes; the drills made light, and the guano put in the bottom, and the Potatoes planted on it. The difference of crop when raised was not perceptible, both averaging 12½ tons per acre; the Potatoes mostly cups; the soil heavy clay: but all drained, subsoiled, and limed, and after two Corn crops.—*Andrew Templeton, of Ballyleidy, to the Secretary of the Holywood Agricultural Society.*—*Belfast Paper.*

Pea-straw.—At a lecture of the Rev. Mr. Sidney, at Acle, Norfolk, the rev. gentleman drew attention to the waste of Bean and Pea-straw. It was cut too late. He gave the analysis of each as to nitrogen and gluten, which showed that 74lbs. of Pea-straw, and probably of Bean-straw also, equalled in nutriment 100lbs. of common hay—a fact most important for farmers here, and well known in Scotland.

Fermentation in Manure-Heap.—When a piece of paper, moistened with spirit of salt, or muriatic acid, held over the steams arising from a dunghill, gives dense fumes, it is a certain test that decomposition is going too far; for this indicates that ammonia is not only formed, but is escaping.—*Smith's Productive Farming.*

Notices to Correspondents.

CARROT-TOPS.—*Vigil.*—They form a good feed for horses; but we have *experienced* the injury to the root that arises from thus cutting the plant.

CHURN.—*Clericus.*—Milk is said to be a solvent of zinc, and zinc vessels for holding it are therefore dangerous. The churn you mention is highly spoken of; we think it is made of tin, which is perfectly safe.

CLOACINE.—*A. W.*—You may disinfect it by the use of chloride of lime. Apply to any manufacturing chemist. Mixing with charcoal-dust will improve it, and dry it; but why wait till it is dry before mixing it with your peat? Your compost, which you may make at once for use in May, will be sufficient manuring in the quantity you propose per acre for Swedes. Good guano is more valuable, weight for weight, than night-soil.

CONCRETE TILES.—*F. C.*—The price, as you will find on making the calculation, ought to have been 13*s.* per 1000 tiles. 2560 tiles are made of one ton of lime, half a ton of black cinders, four tons of common sand, two tons of fine gravel. The two latter are ground together wet, and the other materials afterwards added. More particularly, hereafter, in the course of a series of articles on the subject.

DEEP DRILLING.—*A Surrey Subscriber* had better apply to Mr. Hornsby, of Grantham, Lincolnshire, on this subject.

DIRECTION OF DRILLS.—*Sussex Farmer.*—We drill our Wheat up and down the hill without reference to the points of the compass. If your ridges are well rounded, it is well, if the fall of the land will permit, that they should run north and south, as both sides will then get an equal share of the sun; and the drills may be either across or down the ridges, according to the degree of the fall. The same rules apply to spring Corn.

DRAINING-PLOUGH.—*D. Pugh.*—We shall be able to give you information on this subject in detail shortly.

FURZE.—*P. B. B.*—It will ultimately become dead below, and very open. The plant will spread, too, by seed. A Thornfence may be hidden by evergreens at intervals, so as to render its appearance ornamental. The sediment of rivers would be a useful top-dressing for light soils. The mud of roads is useful as an ingredient of the compost-heap; mix it with farm-yard manure.

GRASS-SEEDS.—*Graminea.*—Mr. Lawson, in his "Agriculturist's Manual," recommends for deep mossy ground per acre, intended to lie in Grass, Agrostis stolonifera, 2 lbs.; Alopecurus pratensis, 2 lbs.; Festuca duriuscula, 2 lbs.; Lolium perenne, 6 lbs.; L. Italicum, 3 lbs.; Phleum pratense, 2½ lbs.; Poa trivialis, 2½ lbs.; Trifolium repens, 6 lbs.; Lotus major, 1½ lbs.; and Rye, 1 bushel.

GUANO.—*Vigil.*—The addition of gypsum to guano *may* benefit it, and certainly *will not* injure it. It will probably make it a better top-dressing for Clover.

LINSEED FOR CALVES.—*M. P. S. T.*—Boil 1 pint in a gallon of water; you need not soak it in water first. Give your calves from 1 pint to 1 quart of the jelly daily, according to their age. Give 1 pint to horses along with their Chaff, &c., twice a day. It will not improve the milk, if given as food to cows.

LIQUID MANURE.—*W. D. W.*—40 bushels of soot are sufficient of an excellent manure for an acre. It may be advantageously applied as you propose. We apply liquid manure in a water-cart. If the land be dry, the marks of the wheels are no injury. Perhaps Mr. Booth will inform you the way in which he applies it.——*Amicus.*—Use it unadulterated in wet weather, and dilute it with, say an equal bulk of water, in dry weather. Potter's Guano is an excellent manure; you can apply it after the rate of 2 to 4 cwts. per acre.

NITRATE OF SODA.—*W. Northumbriensis.*—Decomposition, were it in the soil possible, probably would not injure it. You may apply it on newly-limed land, without chance of decomposition.

PERMANENT GRASS.—*Three Years' Subscriber.*—Mr. Lawson recommends for light land shaded with trees, Agrostis vulgaris, 1 lb.; Anthoxanthum odoratum, 1 lb.; Dactylis glomerata, 5 lbs.; Lolium perenne, 8 lbs.; Poa nemoralis, 4 lbs.; P. trivialis, 2 lbs.; Trifolium repens, 3 lbs., with an ordinary seeding of Barley.

PERMANENT PASTURE.—*J. B.*—April is the proper time to sow Grass-seeds. You can sow them safely enough with an ordinary seeding of Barley, unless your land is liable to grow much straw.

POINTS OF A MILCH COW.—*G.*—We know what you allude to, and will endeavour to obtain the pamphlet.

POTATOES.—*H. C. S.*—Mix 3 cwt. per acre of guano thoroughly with the soil before planting. It will not injure your young trees, if well mixed with the soil. We shall be glad to see your account of Prickly Comfrey.

SEEDS.—*A. B. C.*—If your field is only to remain 1 year in seeds, Italian Rye-Grass is useful, on account of its rapid growth, for filling up patches that have failed. The Yoxford Farmers' Club recommends Tares at the rate of 1 bushel an acre, to be sown when the blanks have not been noticed till spring.

SULPHURIC ACID AND BONE-DUST.—*York Subscriber.*—We doubt the propriety of drying this mixture with quicklime. Rather take ashes, charcoal-dust, &c.; and on mixing these in sufficient quantity, you can get it to pass through the drill. Please send a specimen of your guano.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, March 16.—Per stone of 8lbs.

Best Scots, Herefords, &c.	3*s* 8 to 4*s* 0	Best Downs & Half-breds	4*s* 2 to 4*s* 6
Best Short Horns	3 4 3 8	Best Long-woods	4 0 4 4
Second quality Beasts	3 0 3 4	Ewes and second quality	3 6 4 0
Calves	4 4 5 0	Pigs	3 8 4 4

Beasts, 3003; Sheep and Lambs, 23,320; Calves, 61; Pigs, 376.

We have to day a very large increase in the supply of Beasts. Although the weather is remarkably fine, and there is a good attendance of buyers, the quantity obliges us to submit to a reduction of prices. Not only is the number larger, but the Beasts are in much finer condition than we have noticed for some time, thus there is a very great weight of meat in market. The best and most selling Scots, &c. are making 4*s*, but very many not quite so complete are sold at 3*s* 10*d*, and Short-horns are not in ready sale at 3*s* 10*d* per 8 lbs. The supply of Sheep continues very short, and the trade steady, at fully as much money; there is a slight improvement in the best Downs, but scarcely a quotable one. There are a few Lambs in to-day, but the trade for them is very dull; a nice small Lamb is worth from 5*s* 8*d* to 6*s* per 8 lbs. Calves and Pigs are a steady trade at former rates.

FRIDAY, March 22.

The trade to-day is excessively heavy. Beef almost generally suffers a decline of nearly 2*d* per 8 lbs; only the very best selling Scots may be said to maintain Monday's quotation—they still realise about 4*s* per 8 lbs. The Sheep trade is very heavy, but the best Downs are still worth 4*s* 6*d*; other qualities are fully 2*d* per 8 lbs lower than Monday. Lamb is more in request, although it is too early and cold for any extensive dealings in that article, small Lambs of good quality are making from 5*s* 8*d* to 6*s* 4*d*. Calves are heavy, at from 4*s* to 4*s* 10*d*. The Pork trade is also very dull, but we cannot observe any alteration in prices.

Beasts, 734; Sheep and Lambs, 3800; Calves, 130; Pigs, 230.

41, West Smithfield.

HOPS, FRIDAY, March 22.

THE Hop Market remains steady at full last week's currency.

Mid & East Kent Pockets	3*l* 0*s*	to	5*l* 10*s*	Sussex Pockets	-	6*l*	—*s* to 6*l* 6*s*
Choice ditto	11 0		— —	Choice ditto	-	6 12	— —
Weald of Kent Pocks.	6 0		6 15	Farnham	-	9 9	10 10
Choice ditto	7 0		— —				

PATTENDEN & SMITH, Hop-Factors.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 22.

Prime Upland Hay	70*s* to 78*s*	Clover	80*s* to 105*s*	Straw	28*s* to 30*s*
Inferior	55 65				

JAS. COOPER, Salesman.

CUMBERLAND MARKET, March 22.

Superior Meadow Hay	70*s* to 75*s*	Superior Clover	100*s* to 105*s*	Straw	30*s* to 32*s*
Inferior	60 65	Inferior	90 95		

JOSHUA BAKER, Hay Salesman.

MARK LANE, FRIDAY, MARCH 22.—A few runs of Essex and Kent Wheat remain unsold, and Monday's prices cannot be obtained by 2*s.* per qr. Free Foreign is a moderate sale at the same rates. There has been a slight inquiry for Bonded, principally Red Wheat, and a little business has been done in Rostock and Polish Odessa, f. o. b. at rather reduced prices.—Barley is dull, but not cheaper.—Peas and Beans continue the same.—Oats are flat, but there is no alteration in value.

BRITISH, PER IMPERIAL QUARTER.

	s.	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk	White	46	56	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire		50	57	White	—	—
Oats, Lincolnshire and Yorkshire	Potands	15	25	Feed	16	24
—— Northumberland and Scotch	Feed	—	—	Potato	17	25
—— Irish	Feed	16	22	Potato	18	24
Barley, Malting and distilling	28*s* to 32*s*	Chevalier	29	35	Grind.	24	30
Malt, pale, ship				—	—		
Hertford and Essex				—	—		
Rye				—	—		
Beans, Mazagan, old and new	22 to 29	Tick	29	31	Harrow	25	29
—— Pigeon, Heligoland	28 to 30	Winds.	30	32	Longpod	28	30
Peas, White	30 to 33	Maple	27	30	Grey	26	27

IMPERIAL AVERAGES.

		Wheat.	Barley	Oats.	Rye.	Beans.	Peas.
Feb.	9 per Quarter.	43*s* 7*d*	33*s* 1*d*	19*s* 1*d*	32*s* 9*d*	29*s* 10*d*	30*s* 6*d*
—	16 . . .	53 6	33 4	19 6	33 5	30 6	31 1
—	23 . . .	55 1	33 7	19 7	33 10	30 4	31 3
March	1 . . .	56 2	31 9	20 0	35 3	30 8	31 0
—	8 . . .	56 0	33 6	19 11	33 9	31 0	31 6
—	15 . . .	56 8	33 8	20 1	33 8	31 2	31 4
6 weeks' Aggregate Aver.		54 11	33 5	19 8	33 7	30 7	31 1
Duties on Foreign Grain		18 0	5 0	7 0	9 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	4970	4140	1410	3970 Sks
Irish	—	—	1880	—
Scotch	—	—	—	—
Foreign	1440	630	700	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.			Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	3032 Sks.	—	Brls.	8751	2947	5469	1360	—	1106	647
Irish	,,	—	,,	—	1467	—	10205	—	—	—
Foreign	,,	—	,,	1900	336	—	—	—	—	—

KINGSFORD AND LAY.

COVENT GARDEN, MARCH 23.—In consequence of the weather during the week having been cold and changeable there has been little new in the Market since our last Report. It has, however, been pretty well supplied, and trade begins to get brisk. The prices of Pine Apples are nearly the same as last week; they are good in quality and sufficient for the demand. Hot-house Grapes are offered at 15*s.* per lb.; they are scarce, but Portugals are plentiful. The prices of Apples and Pears are nearly the same as are mentioned in last week's Report. Oranges and Lemons are sufficient for the demand, and are not altered in price. Chesnuts are offered at from 3*s.* to 8*s.* per peck. Nuts are plentiful. Vegetables have been pretty well supplied. Broccoli is a little reduced in price. Savoys continue to get scarce, and Brussels Sprouts are not plentiful. Greens are also beginning to get scarce. Carrots and Turnips are good and plentiful. Sea-kale is slightly reduced in price, as is likewise Asparagus; the latter is selling at from 3*s.* to 15*s.* per 100. French Beans are nearly the same as last week. We noticed some excellent Rhubarb in the market, and also a few good specimens of large well-formed Cucumbers. Frame Potatoes are offered at 3*s.* per lb.; and Strawberries are selling at 2*s.* an ounce. Among Cut Flowers were Erica Willmoreana, princeps, and rubra-calyx; Gardenia radicans and florida; Gnidia pinifolia, Acacias, Azaleas, Camellias, Pelargoniums, Cinerarias, Primulas, Fuchsias, and Roses.

FRUITS.

Pine Apple, per lb., 2*s* to 10*s*	Almonds, per peck, 6*s* to 7*s*
Grapes, Portugal, per lb. 1*s* to 2*s* 6*d*	Sweet Almonds, per lb., 2*s* 6*d* to 3*s*
Apples, dess., p. bush. 6*s* to 20*s*	Nuts, Spanish, per bushel, 15*s*
—,, Kitchen, p bus. 3*s* 6*d* to 6*s*	— Brazil, 16*s*
Pears, per half-sieve, 4*s* to 12*s*	— Hazel, 2*s* to 4*s*
Oranges, per dozen, 9*d* to 2*s*	— Barcelona, 20*s* to 24*s*
— per 100, 5*s* to 14*s*	— Cob, 14*s*
Lemons, per doz. 1*s* to 2*s*	Chesnuts, per peck, 3*s* to 8*s*
— per 100, 6*s* to 14*s*	

VEGETABLES.

Rhubarb, per bundle, 1*s* to 2*s* 6*d*	Spinach, per sieve, 1*s* 6*d* to 2*s* 6*d*
Beetroot, per bundle, 1*s* to 1*s* 6*d*	Leeks, per doz. bun., 9*d* to 1*s*
White Beetroot per doz. from 4*s* to 8*s*	Garlic, per lb. 6*d* to 8*d*
Brussels' Sprouts, p.h.-sv., 1*s* 6*d* to 2*s* 6*d*	Onions, 2*d* to 4*d* p. bch.,
Red Cabbages per doz. 2*s* to 3*s*	— Large, per bushel, 1*s* 6*d* to 2*s*
Sorrel, 1*s* to 1*s* 6*d* p. hf. sv.	— Spanish, per doz., 1*s* to 4*s*
Asparagus, per 100, 3*s* to 15*s*	— pickling, p. hf.-sv., 2*s* to 4*s*
Seakale, per punnet, 9*d* to 1*s*,	Shallots, per lb., 4*d* to 6*d*
French Beans, 2*s* to 3*s* per 100	Lettuce, Cabb., p. score, 6*d* to 1*s*
Autumn Potatoes, 3*d* to 6*d* per lb.	Celery, per bun., 6*d* to 2*s* 6*d*
Savoys, per doz. 1*s* to 1*s* 6*d*	Mushrooms, per pottle, 1*s* 6*d* to 2*s*
Greens, per doz. 2*s* to 6*s*	Walnuts, per bushel, shelled, 16*s* to 20*s*
Potatoes, per ton, 60*s* to 90*s*	Small Salads, per punnet, 2*d* to 3*d*
— per cwt., 2*s* 6*d* to 3*s*	Watercress, per doz. sm. bun. 3*d* to 6*d*
— per bushel, 2*s* 6*d* to 3*s*	Parsley, per doz. bunches, 4*s* to 6*s*
— Kidney, p. bush., 2*s* to 2*s* 6*d*	Tarragon, Green, per bun. 4*d* to 6*d*
Turnips, per doz. bunches, 1*s* 6*d* to 2*s*	Endive, per score, 1*s* 6*d* to 4*s*
Turnip-tops, per bushel, 6*d* to 1*s* 6*d*	Green Mint, 4*d* to 6*d* per bunch
Red Beet, per doz., 6*d* to 1*s*	Marjoram, green, p. doz. bun. 1*s* 6*d* to 2*s*
Horse Radish, per bundle, 1*s* to 2*s*	Chervil, per punnet, 2*d* to 3*d*
Radishes, spring, 10*d* to 1*s* 3*d* p. pun.	Salsafy, per bundle, 1*s* to 1*s* 6*d*
Carrots, p. doz. bun., 2*s* 6*d* to 5*s*	Scorzonera, per bundle, 1*s* to 1*s* 6*d*
Cucumbers, 1*s* to 4*s* 6*d* each	

POTATOES.—SOUTHWARK WATERSIDE, March 18.

In consequence of the very limited supply during the past week, the best samples have gone off readily, and every description have been eagerly sought after, and some fresh arrivals the latter part of the week brought an advanced price; at the close, the subjoined rates were fully supported. The weather continues favourable for the consumption of Potatoes, and is calculated to hasten vegetation.

York Reds	-	-	75*s* to 90*s*	
Perth	-	-	75	80
Early Devons	-	-	75	80
Late Devons	-	-	80	—
Cornwall	-	-	80	—
Jersey and Guernsey Blues			75	—
Kent and Essex Whites	-	60*s*		70*s*
— Kidneys	-	75		80
Wisbeach Kidneys	-	—		75
— Blues	-	65		70
— Whites	-	60		65
Prince Regents and Shaws		65		80

SEEDS, FRIDAY, March 22.

Canary	- per qr	52*s*	to	55*s*
Carraway	- per cwt	56		60
Clover, Red, English	-	64		76
— — Foreign	-	64		72
— White, English	-	84		105
— — Foreign	-	84		105
Coriander	- -	18		18
Hempseed	- per last	34		36
Linseed	- per qr	—		—
— Baltic	- -	—		—
— Cakes, Eng. per 1000		10*l*	to	10*l* 10
Linseed Cakes, Foreign, p. ton		8*l*	to	7*l* 10*s*
Mustard, White - p. bush.		5*s*		6
— Superfine ,,	-	6		8
— Brown ,,	-	14		16
Rapeseed, English, per last		24*l*		28*l*
Rape Cakes - per ton		—		—
Saintoin	- -	—		—
Tares, Eng. winter p. bush.		3		6
— Foreign	- -	3		5
Trefoil	- per cwt	—		—
Turnip (too variable for quotation).				

KINGSFORD AND LAY.

PRINCIPAL MANURES.

Weight per bush., about 1lbs	Weight per bush., about 1lbs
Alum, 560*s* per ton - - - —	Phosphate of Ammonia, in fine powder, 24*s* per cwt. - 65
Bleaching Powder, 6*s* per cwt. - —	Rags, - *s* to 105*s* per ton - —
Brimstone, 20*s* per ton - - —	Rape Cake, 110*s* to —*s* per ton - —
Bone-dust, —*s* and 17*s* per quarter 45	— Dust, 110*s* per ton - —
— Half-inch, 16*s* ditto - 42	Sal Ammoniac, 6*l*s per cwt. - —
— Calcined, 8*s* per cwt - —	Salt, Agricultural, 3*l*s per ton - 80
Carbonate of Ammonia, 3*l*s per cwt 24	— clean, 10*l*s per ton - 90
— of Lime, 1*s* to 1*s* 6*d* per cwt —	— Hide, 8*l*s per ton - - 94
— of Soda, 3*l*s to —*s* per cwt —	Saltpetre (Nitrate of Potash) 36*s* per cwt., duty paid - 90 to 94
Chloride of Lime, 3*l*s per cwt - —	Silicate of Potash, in powder, 60*s* per cwt. - - - —
Graves, —*s* to —*s* per ton - - —	Soap Ashes, —*s* per ton - - —
Guano, Peruvian, 15*l*s to 22*l*s p. ton	Soda Ash, 14*s* to —*s* per cwt. - 65
— Foster's, 240*s* per ton - 60	Sulphate of Ammonia, 24*l*s to 30*l*s per ton - - - 70
Gypsum (Sulphate of Lime), 27*s* 6*d* to 32*s* per ton - - 60 to 64	— of Copper, 40*s* to —*s* p. cwt. —
Humphreys's Compound for Plants, 1*s* 6*d* per bottle - - —	— of Magnesia (impure) 10*s* per cwt. - - - 65
— — for Farmers, 10*s* per cwt. - - - —	— of Magnesia (pure cryst.) 12*s* p. cwt. - - 65
Muriate of Ammonia, 6*l*s per cwt. 70	— of Potash, 16*s* per cwt. —
— Lime, —*s* to 6*s* - - 70	— of Soda, 3*l*s per ton - —
Nitrate of Soda, 16*s* 3*d* to 16*s* 9*d* per cwt., duty paid - - - 80	Sulphur, 14*s* per cwt. - - —
Phosphate of Lime, 6*s* 6*d* p. cwt. 65	Sulphuric acid, London, 1¾*d* per lb. —
— — Super, 3*l*s p. cwt. 65	— Country made, 1½*d* per lb. —
— of Ammonia, in crystals 3*s* 6*d* per lb - - —	Expenses of shipping about 3*s* to 7*s* per ton, according to quantity.

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J. G. WAITE, SEEDSMAN, &c, 1 & 4, Eyre-street-hill, Hatton-garden, London, embraces the present opportunity of returning his best thanks for the very liberal support he has received, and to assure his friends that his exertions will at all times be used to deserve a continuance of that preference with which he has been so highly honoured.

J. G. W. most respectfully reminds the public that the seed time is rapidly advancing, and many of the following articles will now be in requisition.

	s.	d.
Waite's Queen of Dwarf Peas . . per quart	1	0
[A splendid new variety, growing only one foot high, producing a larger pod than any of the same habit; the seed is quite distinct from all others, and larger than any dwarf Pea in cultivation. The stock is limited to a few quarts.]		
Cormack's Prince Albert Pea . . per bushel	60	0
Shilling's New Grotto do. . . per quart	2	6
New Mammoth do. ,,	3	6
Dwarf Blue Victory, p. bus.	18	0
Early double blossom Frame do. . p. bus.	10	0
Dwarf blue Scimetar do. ,,	10	0
Tall and dwarf Knight's do. . . p. bus.	14	0
Spanish & Bishop's dwarf do. . . . p. bus.	12	0
Blue Prussian do. ,,	7	0
Victoria do. . ,,	10	0
Bedman's Imperial do. ,,	10	0
Green Marrow do. ,,	10	0
Woodford's Green Marrow do. . . p. bus.	10	0
Taylor's large Windsor Beans . . p. bus.	6	0
Early Longpod do. ,,	5	0
Green Longpod do. ,,	6	0
Waite's dwarf blood-red Beet . . . p. lb.	2	0
White do. . . ,,	1	6
Walcheren Broccoli, p. oz.	2	0
Chappell's Cream do. p. lb.	7	0
,, White do. ,,	10	0
Grange's Early do. do. ,,	6	0
Early White Cape do. ,,	6	0
Brimstone do. ,,	3	0
Large late White do. ,,	3	0
Late Purple do. ,,	3	0
Early Purple Cape do. ,,	4	0
,, Sprouting do. . . . p. lb.	2	0
Fine Southampton do. ,,	4	0
Fine Malta do. . ,,	3	0
Dwarf Siberian do. ,,	3	6
Imported Brussels Sprouts, p. lb.	2	0
Superfine early dwarf Cabbage . . p. lb.	1	9
Large and dwarf York do. . . . p. lb.	1	9
Nonpareil do. . ,,	1	9
Emperor do. . ,,	1	9
Early Battersea do. ,,	1	9
New Hope do. . ,,	1	9
Penton do. . . ,,	2	0
Sugar-loaf do. . ,,	1	9
Red Dutch do. . ,,	1	9
Drumhead or Scotch do.,,	1	9
Dwarf Green curled Kale, p. lb.	1	3
Red Giant Celery ,,	1	6
White do. do. ,,	1	6
Early Scarlet Horn Carrot . . . p. lb.	0	9
Long Red Surrey do. ,,	0	9

	s.	d.
Fine selected Altringham do. . . . p. lb.	0	9
Large green-top white Belgium do. . p. lb.	0	8
Fine Early Cauliflower, p. lb.	6	6
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,, German do. ,,	7	0
Fine Stockwood Cucumber . . . p. lb.	14	0
Long Prickly do. . p. lb.	7	0
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Victory of Suffolk do. . . p. pkt. 6d. to	1	0
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Walker's Prizefighter do. . . p. pkt. 6d. to	1	0
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Windsor Prize Melon p. pkt.	0	6
Beechwood do. ,,	0	6
Candid do. . . ,,	0	6
Greenflesh do. . ,,	0	6
Scarlet do. do. . ,,	0	6
Pine-apple do. . ,,	0	6
Large Spanish do. . ,,	0	6
King Charles' Pocket do.	0	6
Queen Anne's do. do. ,,	0	6
And many others too numerous to insert.		
Round Spinach p. bus.	10	0
Green curled Endive, p. lb.	4	0
White do. do. ,,	4	0
Superior broad-flag Leek ,,	2	0
True London do. ,,	1	0
Brown Dutch Lettuce ,,	3	0
Improved White Cos do. ,,	5	0
True Paris do. do. ,,	6	0
,, Bath do. do. ,,	5	0
Drumhead Cabbage do. ,,	5	6
Hammersmith Hardy do.,,	3	0
Brighton Cos do. p. lb.	5	0
Egyptian do. do. ,,	4	6
Green do. do. ,,	5	0
Berlin Cabbage do. ,,	5	0
Saxony do. do. ,,	4	0
Tennis-ball do. ,,	5	0
New White Globe Onion p. lb.	5	0
White Spanish do. ,,	3	6
True Deptford do. ,,	3	0
James' Long-keeping do.	4	0
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Blood-red do. ,,	3	0
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Welch do. . . ,,	2	0
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Extra treble-curled Parsley . . p. qt.	1	0
Early Frame Radish ,,	1	0
,, Scarlet short top do.	1	0
White Turnip do. p. qt.	1	0
Scarlet do. do. . ,,	1	6
Large Drumhead Savoy, p. lb.	1	6
Imported Early Dutch Turnips . . p. lb.	1	0
Early Snowball . ,,	1	6
Fine selected Grass-seed for Lawns per bush.	10	0
Fine Mixed do. for pasture . . per bush.	7	0

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Antirrhinum, fine mixed
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Dianthus, fine double
Erysimum Perofskianum
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Egg Plant
Geum coccinea
Gillia tricolor
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Mignonette . p. lb. 2s. 0d
Scarlet Sweet Peas p. qt. 2 0
Painted Lady do. do.,, 2 0
Black do. do. . ,, 2 0
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Lupinus Cruickshankii
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Marygold, superb African
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16 distinct varieties fine double Balsams . . 5s. 0d.
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	per lb.	s.	d.
Turnip, Early Stubble	.	0	9
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,, Red do.	.	0	8
,, Green do.	.	0	8
,, White Globe	.	0	9
,, Red do.	.	0	8
,, Green do.	.	0	8
,, Purple Top Scotch	.	0	9
,, Green do.	.	0	8
,, Dale's Hybrid	.	0	9
,, Yellow Malta	.	1	0
,, Green Barrel	.	1	0

	per lb.	s.	d.
Turnip, Laing's Improved Swede, the best known	.	0	9
,, Skirving's Liverpool		0	9
,, Purple Top Swede		0	8
,, Green do.	.	0	8
,, Red Tankard	.	0	8
,, Green Tankard	.	0	8
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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 18.—1844. SATURDAY, MARCH 30. [PRICE 6*d.*

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WM. WOOD & SON beg to inform their Friends and Amateurs that a Catalogue of the above, together with a List of entirely new ROSES, is now ready, and may be had GRATIS on application.

NEW FUCHSIAS.

JOHN SMITH, NURSERYMAN, Dalston, begs to announce that he intends sending out, in May next, the following fine and showy FUCHSIAS, in strong plants, at the prices named, viz., Albion, 5*s.*; Coronet, 7*s.* 6*d.*; Coccinea pera, 5*s.*; Decora, 7*s.* 6*d.*; Expanse, 7*s.* 6*d.*; Gigantea, 10*s.* 6*d.*; Hector, 5*s.*; Incarnata, 5*s.*; Modesta, 5*s.*; Neptune, 5*s.*; Reflexa, 5*s.*; Vesta, 10*s.* 6*d.*

A Descriptive List may be had on application at the Nursery, Dalston, Middlesex. The price of the Collection, 3*l.* 13*s.* Mar. 29.

AMERICAN FOREST-SEEDS.

MESSRS. EDMUND PHILLIPS AND CO., 8, London-street, Fenchurch-street, beg to inform Seed and Nurserymen that they have a consignment of all the usual varieties of the above, which they are offering at very reduced prices, with a view to effect speedy sales. They can warrant them to be fresh and genuine, all of them having been collected this last fall by a gentleman who has been long accustomed to supply the Trade.

	s.	*d.*		*s.*	*d.*
Pinus strabus, in cones p. bus.	9	0	Thuya occidentalis, clean seed . . . p. qrt.	3	0
,, nigra, do. ,,	18	0	Hamamelis Virginica, in cones . . p. bus.	9	0
,, Balsam feria, do. ,,	9	0	Rhus glabrum ,,	9	0
,, Canadensis, do. ,,	18	0	Quercus rubra ,,	12	0
,, alba, clean seed, p.qt.	3	0	Fraxinus Americana ,,	12	0
Acer stiratum . p. bus.	18	0	,, sambucifolia ,,	12	0
,, rubrum . p. qrt.	—		Prunus Americana ,,	18	0
,, montanum ,,	9	0	Juniperus depressa ,,	27	0
Betula populifolia, p.bus.	12	0	Berberies Canadensis, p.qt.	0	9
Sorbus Americana ,,	9	0			

SEEDLING FUCHSIAS.

W. PAWLEY, of the White Hart Hotel, Bromley, Kent, begs to inform the Nobility and Gentry that he has purchased the entire Stock of three splendid Fuchsias, which he intends sending out in April next, at 10*s.* 6*d.* per plant. They are considered by competent and practical men to be the best known, and twice the size of any yet in cultivation.

QUEEN.—A large Flower, a very free bloomer, and of good habits. Colour, a delicate light Pink, and a beautiful Rosy Vermillion Corolla.

PRINCE OF WALES.—A very large bold Flower, and good substance. Colour, a bright Crimson, with an extraordinary large Violet Corolla. Magnet is also a large long Flower, good substance, habit, and a free bloomer.

To prevent disappointment, which is too often the case with new Flowers, the public are requested to come and see them before purchasing. Early orders are solicited, as the stock is limited, having broke very sparingly. A specimen of each will be open to any three Seedlings of 1843, grown from young plants, for the sum of 5*l.* To be exhibited at the West Kent Exhibition, held at Blackheath, in June next. N.B.—If accepted, notice to be given this month.—Bromley, March 29, 1844.

DAHLIAS.

J. KEYNES, FLORIST, Salisbury.—"STANDARD OF PERFECTION," (Keynes').—The finest self-coloured Dahlia in the world! gained the first class prizes at Stonehenge, Windsor, Kingston, Surrey Zoological Gardens, and Crown and Anchor, Stockwell; also the first prize specimens at Stonehenge Floricultural Society, Stockwell. "It is as round as any Dahlia in cultivation; as complete an unbroken circle as could be drawn with the compasses; and as globular in front as possible. It is symmetrical to a hair, and as double as a Ranunculus. It is so remarkable as to be instantly recognised among a thousand. Colour, deep crimson. It is the flower of the season, and must be had."—*Gardeners' Gazette*, Oct. 14. "The best-grown flower we ever saw, without exception, every requisite to meet the taste of a connoisseur being complied with; good colour, a honeycomb, regularity of growth and disposition in the leaves, and above all, as complete a rotundity of shape as if it had been cast in a mould."—*Salisbury Herald*, Sept. 2, 1843. Plants in May, 1844, 10*s.* 6*d.* "Orange Superb" (Dodd's), first-rate showflower, 10*s.* 6*d.* "The specimen sent would grace any stand."—Glenny. "Emma Noke" (Dowding's), bluish white, extra fine, indispensable to a first-rate stand, 10*s.* 6*d.* Catalogues containing all the fine old varieties and new flowers for the season may be had on application.—Salisbury, March 29, 1844.

FASTOLFF RASPBERRY.

J. T. WILLMER begs to announce to his Friends and the Public generally that he is able to supply a few hundreds of the above-named Raspberry, in strong Canes, at 40*s.* per 100, warranted to be the genuine kind, packing included, with carriage paid to London; or in less quantity, price in proportion. Fine showing sort of CARNATIONS and PICOTEES, in 12 kinds, one pair of each, 24*s.* AURICULA.—Strong Plants of showing sorts, 12 plants, in 12 sorts, including basket and packing, the selection left to J. T. W., who possesses a large healthy stock.—Sunbury Nursery, Middlesex, March 21, 1844.

NEW PETUNIAS AND VERBENAS.

J. PEARSON, NURSERYMAN, Hampstead-road, London, respectfully begs to inform the Cultivators of PETUNIAS and VERBENAS that the following SEEDLINGS will be found well worth their notice. The Petunias were exhibited at the Royal Botanic Gardens, Regent's Park, in July last, and were much admired for their fine rich colour and size of flower; they were also noticed in the *Chronicle* by Professor LINDLEY. The Verbenas flowered too late for Exhibition; they will prove equal to the description given of them; they were much approved of (and orders given) by all that have seen them in flower. Plants will be sent out the first week in April. A remittance requested from unknown correspondents.

PETUNIAS.

NE PLUS ULTRA.—Colour deep rose, large and stiff flower, habit robust. 3*s.* 6*d.*

SPECIOSISSIMA.—Fine bright crimson, large and abundant bloomer. This is an excellent variety. 3*s.* 6*d.*

FORMOSA.—Rosy lilac, with fine dark centre, flower large, habit compact. This is quite a distinct variety. 3*s.* 6*d.*

CELESTIAL.—White, with dark centre, flowers large; the same habit as P. Beauty. 3*s.* 6*d.*

SPLENDIDA.—Very rich, dark crimson; large round flower; habit excellent. 3*s.* 6*d.*

VERBENAS.

TEUCRIOIDES ATRO-SANGUINEA.—Fine blood-red, long spike of flower with white eye, foliage fine dark green; decidedly the best Verbena ever offered to the public either as a pot plant or for bedding out. 5*s.*

TEUCRIOIDES CŒLESTINA.—Rich purple, changing to a beautiful sky-blue; habit strong, with a spike of flower in the true character of the old Verbena teucrioides. 3*s.* 6*d.*

TEUCRIOIDES PRINCESS ALICE.—Delicate rose, flowers large and very fragrant. 3*s.* 6*d.*

SPECIOSISSIMA.—Rosy vermillion, with white eye; flowers large; a good trusser. This is a showy and distinct variety. 3*s.* 6*d.*

BEAUTY SUPREME.—Rosy lilac, habit strong, the flowers large and fine, very clear and constant in colour; an excellent variety. 3*s.* 6*d.*

FLORIST TO HER  MAJESTY THE QUEEN.

PETUNIA PUNCTATA.

W. MILLER refers the readers of the *Gardeners' Chronicle* to his full advertisement of this beautiful flower—just remarking that its *Strong, Dwarf habit*, and *Glossy Dark Green* foliage, contrasted with its lovely, large, spotted flowers of various colours (by far surpassing any Petunia yet out), renders it a desirable object for every greenhouse, and especially to all Exhibitors. Strong plants in April, 7*s.* 6*d.*

The following Nurserymen have ordered plants, and will be enabled to supply them true:—

Messrs. Henderson and Co., Pine-apple-place, London
Low and Co., Clapham, London
Wood and Son, Marcafield, Sussex
Marnock and Manley, Hackney
Veitch and Son, Exeter
Hancock and Son, Durham
Mountjoy and Son, Ealing
Sage and Son, Southampton
Jeyes and Co., Northampton
White and Son, Poole
Garaway, Mayes, and Co., Bristol
Fisher, Holmes, and Co., Handsworth Nursery, near Sheffield
Rogers and Son, Uttoxeter, Staffordshire
Whitley and Osborn, Fulham, near London
T. and J. Backhouse, York
W. Catleugh, Sloane-st., Chelsea
J. Benton, Birmingham
W. E. Rendle, Plymouth
S. Girling, Stowmarket
W. Foster, Stroud, Gloucestersh.
J. Hally, Blackheath, nr. London
R. Henbrey, Croydon
R. Cooper, Croydon
Ch. Van Gert, Antwerp
A. Stewart, Saltlill, nr. Windsor
J. Backhouse, York
H. Silverlock, Chichester
— Bunney, Kingsland
E. Bartlett, Sidmouth
W. Bell, Thirsk, Yorkshire
T. Appleby, York
J. Carden, Westmoreland
H. Major, Leeds
R. Glendinning, Chiswick
— Harrison, Downham, Norfolk
R. Pettit, Bury St. Edmunds
J. Smith, Dalston
G. Smith, Hornsey-rd., Islington
Mrs. Blencowe, Dawlish, Devonshire
J. Slater, Versailles, France
J. Backway, East Dereham, Norfolk
M. Brewer, London-road, Cambridge
H. Groom, Clapham
J. Edwards, New Bridge-street, York
W. Gregory, Cirencester
W. Day, Oxford
W. Masters, Canterbury
A. Milan, Doncaster
J. Ingram, Southampton
E. Perkins, Leamington
W. Ivery, Peckham, nr. London
J. Cook, London-rd., Worcester
E. Collanoby, Tunbridge Wells
E. J. Lowe, Leuton, Nottinghamshire

LONDON AGENTS.

Messrs. Warner and Warner, 28, Cornhill
Hurst and M'Mullen, Leadenhall-street
Flanagan and Sons, Mansion House-street
Noble and Sons, Fleet-street
Mr. Kerman, Seedsman, Great Russell-street
Mr. Corstein, St. James-street, Covent Garden

*** This List will appear again in a fortnight, when all other Nurserymen and Florists' names will be added who order plants. The time will also then be stated of the sending out of the plants.

The usual trade allowance when three or more are taken at once. A remittance or reference will be expected from unknown correspondents.

W. M. cannot supply more orders for choice Fuchsias till the latter part of April.

Any person having any Canadian Hollies, the following are wanted:—Some strong white Clematis Plants in the Seed-pots, 2 or 3 years' old, and the price per 100.

Providence Nursery, Ramsgate, March 27, 1844.

NEW CAMELLIAS, FUCHSIAS, and CINERARIA.

J. HALLY, NURSERYMAN and FLORIST, Blackheath, begs to offer for sale the following SEEDLING CAMELLIAS, which have been highly approved of by all who have seen them:

PULCHELLA ROSEA.—Figured and described in the "Florists' Journal" for July last; a finely-formed delicate rose-coloured Flower, perfect in shape, rising well up in the centre. Good Plants, each, 3*l.* 3*s.*

ALBA MULTIFLORA.—Colour very pure white, with sometimes a delicate pink stripe; petals thick, cupped, and round. The chief novelty and merit of this variety consists in the abundance with which it blossoms, the flowers appearing at every joint throughout the young wood, so as when in bloom to give the plant the appearance of bearing racemes of flowers. Strong plants, 1*l.* 11*s.* 6*d.*

J. HALLY can confidently recommend the following Six SEEDLING FUCHSIAS, which he intends sending out early in April; they are all very distinct and beautiful varieties.

1. SANGUINEA.—Tube and sepals clear delicate white, with crimson corolla; of excellent close habit. This very distinct variety gained the seedling prize at the West Kent Floricultural Exhibition, Sept. 6, 1843. For its character see *Gardeners' Gazette*, Sept. 9th, in the account of the said Exhibition, described as shown by Mr. Branscombe. Price 7*s.* 6*d.*

2. FAIR HELEN.—Tube and sepals white, corolla scarlet; a very neat Flower, of good habit, exhibited at the Surrey Zoological Gardens, at the September show, and universally admired. 5*s.*

3. BOYDII.—Fine thick scarlet tube and sepals, corolla large and bright crimson; of bold habit. 5*s.*

4. WAT TYLER.—Tube and sepals very large, light rose; corolla large and scarlet. A large flower, and most abundant bloomer. 5*s.*

5. KING JOHN.—Habit of plant and colour of flower like Chandleril, but twice the strength and size. A noble variety. 5*s.*

6. MARGINATA.—Very large flower; tube and sepals scarlet, corolla (large and expanding well) crimson, having a scarlet margin round each petal. Plant of particular fine habit. 5*s.*

The above collection of Fuchsias may be had, by taking the whole, for 30*s.* The usual allowance to the trade on the above.

Also will be ready for delivery at the same time with the Fuchsias, PIPER'S "PRINCESS ROYAL" CINERARIA (not yet sent out). This beautiful variety obtained the seedling Certificate at Chiswick, and first prize at the Regent's Park last season. Price 7*s.* 6*d.* each, with the usual allowance to the trade, when four plants or more are taken.

A general Collection of Camellias, Fuchsias, Azaleas, Ericas, Cinerarias, &c. Veronica speciosa, 21*s.* each; Rosa Devoniensis, from 18*s.* per dozen.

Agents in London, Messrs. HURST and M'MULLEN, 6, Leadenhall-street.

SLOUGH NURSERY, NEAR WINDSOR,
CHOICE SELECTION OF NEW DAHLIAS, 1844.

THOMAS BROWN directs attention to his beautiful SEEDLINGS, particularly that unrivalled light flower, "LADY ST. MAUR," the superiority of which over every other of its class is too well known to need further comment. Strong and healthy plants will be ready for delivery early in May.

AURANTIA (Spary's)—Orange buff; fine form and petal. A very desirable show flower; obtained numerous prizes; 3 ft. 10s 6d

ALEXANDER (Brown's)—Maroon and crimson mottled, full and constant, centre well up, and a very useful show flower; 5 ft. 7 6

DELIGHT (Brown's)—Cream, veined and tipped with purple; petal of fine substance and high centre; very distinct to any in cultivation; 4 ft. 7 6

DESIRABLE (Brown's)—Shaded buff, quite new in colour; a good show flower; 5 ft. 7 6

LADY ST. MAUR (Brown's)—White, delicately tipped with violet purple; very deep and full, high centre, forming a beautiful outline; the petals are round, and smooth at the edge; habit of Perpetual Grand: it is decidedly the finest light flower ever offered. It attracted great admiration at Windsor, and was universally acknowledged to be the finest flower in the Exhibition; 4 to 5 ft. 10 6

NUTWITH (Brown's)—Bright crimson; a fine open-cupped petal, and a good show flower; 4 ft. 7 6

RAPHAEL (Brown's)—Dark maroon, beautifully shaded with light crimson; superior petal, of excellent form; a very novel and striking variety, and will be an acquisition to any stand; 4 ft. 10 6

REMBRANDT (Brown's)—Dark purple, very round and double, rising well in the centre, and a constant show flower. It was very successfully exhibited; 3 to 4 ft. . 10 6

EMMA NORR (Dowding's)—Blush white, good general form and centre: a good useful show flower; 4 ft. . 10 6

ESSEX BRIDE (Turville's)—Delicate peach lilac, of excellent petal and form; 5 ft. . . . (*no discount*) 10 6

LADY ANTRONUS (Spary's)—White and lilac, mottled; good form, constant, and very useful show flower; 3 ft. 10 6

NONPAREIL (Proctor's)—Ruby scarlet, of first-rate properties; extra show flower; 4 ft. . (*no discount*) 10 6

STANDARD OF PERFECTION (Keynes')—Crimson; of very superior form; 4 ft. . . . (*no discount*) 10 6

SIR J. STEWART RICHARDSON (Union)—Brown ruby, great depth, and excellent show flower; 4 ft. (*no discount*) 10 6

T. B. has also Selections of fine Carnations, Picotees, and all other Florists' Flowers, Plants, Fruit trees, Shrubs, and general Nursery Stock.

A general Catalogue of Dahlias, with a List of Superb New Pansies, to be had on application.

SPLENDID NEW SHRUBBY CALCEOLARIAS for 1844.

H. MAJOR, of Knosthorpe, near Leeds, begs to announce that he has raised 30 new varieties of Shrubby CALCEOLARIAS, which he intends to send out, for the first time, in May. They are strikingly beautiful, and of good form and size. They are selected out of upwards of 100 cut specimens which were exhibited at the Grand Annual Floricultural Show, held in the Museum Gardens, at York, Aug. 16, 1843, and had an extra prize awarded them; they also obtained an extra prize at the Leeds September Show. The following eight will be sent out together for 2*l.*:—

MIDAS.—Lemon ground, strongly marked all over the surface with red brown; good form, singularly beautiful, inch across.

FLORA.—Creamy white, densely marked on the surface with large and small spots of carmine, leaving a distinct belt round the edge, good formed flower, inch across.

APOLLO.—Lemon centre, thickly marked with large and small spots of chocolate, leaving a belt of cream round the flower, strongly marked in the throat, well-formed flower, better than an inch across.

AURORA.—Solid blotch of rich crimson brown in the centre, distinctly belted with clear yellow: round, well-formed flower, very showy, 1¼ inch across.

CYNTHIA.—Rich rosy amaranth centre, belted with light buff; fine formed flower, inch across.

MARS.—Centre mottled with two shades of red, distinctly belted with bright yellow; fine formed round flower, inch and a quarter across.

CERES.—Clean sulphur, with white shoulders; good formed bold flower, inch and an eighth across.

HERCULES.—Solid maroon centre, belted with brick red; good round well-formed flower, inch and a quarter across.

The remainder of the 30 (see Catalogue) at 3*s.* 6*d.* each.

The following approved varieties of last year may be had at 2*s.* 6*d.* each:—Purity, Enterprise, Mrs. Meynell Ingram, Knosthorpe Hero, and Bridal Ring. Other good sorts at 1*s.* each. Amateurs desirous of growing a small collection, by stating the amount they wish to expend, may depend upon having such varieties as he trusts will meet their approbation.

Mr. M. has still a few plants of his new Seedling Pansy "Princess Alice," at 5*s.* each; and he offers 24 first-rate varieties for 30*s.*, post-free. For names, see List. A few packets of very select Calceolaria and Pansy seed, 2*s.* 6*d.* per packet. A List of Select Pansies and Dahlias may be had on post-paid application. From unknown correspondents a remittance is respectfully requested.—Knosthorpe, March 28, 1844.

SPLENDID GERMAN STOCKS, ASTERS, &c., in the original packets, as imported, sold by ROBERT COOPER, Sion Nursery, Croydon.

24	Splendid varieties	German Asters . . .	7*s.* 0*d.*
12	do.	do. . . .	4 0
24	do.	Stocks	10 0
12	do.	do. . . .	4 0
8	do.	Scabiosa atropurpurea major .	3 0

Acacia armata . .	0*s.* 6*d*	Godetia albescens, new .	0*s.* 6*d*
Achimenes rosea .	1 0	,, Wildenovii .	0 3
Aidisia crenulata .	1 0	Heartsease, splendid mxd.	1 0
Bossiea thymifolia .	0 6	Impatiens glanduligera .	0 6
Calceolaria, splendid mix'd	1 0	Ipomopsis elegans . .	0 6
Campanula strieta . .	1 0	Kennedya glabrata . .	0 6
Canterbury Bells, dble.	0 6	,, prostrata .	0 6
,, white .	0 6	Larkspur, dwarf double,	
Carnation, finest German	2 0	8 sorts . . .	2 6
,, double mixed		Lobelia Pentlandica .	0 6
Picotee . . .	1 0	,, Placei . .	0 6
Carnation, fine yellow	2 6	Maurandya alba . .	1 0
Chorizema ilicifolia	0 6	Mesembryanthemum tri-	
Cineraria, splendid mixed	1 0	color . . .	0 6
Clianthus puniceus .	0 6	Petunia phœnicea .	0 6
Dahlia repens . .	0 6	,, splendid mixed .	1 0
Delphinium azureum .	0 6	Pelargonium, finest mix'd	1 0
Didiscus cæruleus .	0 6	Portulacca grandiflora .	1 0
Eucharidium concinnum.	0 4	,, splendens .	1 0
Gaillardia aristata .	0 4	,, Thellusoni .	1 0
,, picta .	0 6	Thunbergia aurantiaca .	0 6
Gilia splendens .	0 4	,, alata alba .	0 6
Gloxinia speciosa .	1 0	Beechwood Melon, true .	1 6

SHADES FOR GREENHOUSES.

J. WEEKS & Co., ARCHITECTS, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

FASTOLFF RASPBERRY.



PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, THE MOST NOBLE THE MARQUIS OF AILSA, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL AND CO. have much pleasure in announcing they are now supplying Fine Canes of the above highly-valuable and much-esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour.

Those to whom Y. and Co. sent it last season have expressed their high admiration of its superiority over all other varieties, and has been awarded several prizes from various Horticultural Exhibitions during the season. As a proof they have not exaggerated its excellent qualities, fruit was submitted to Dr. LINDLEY, (see *Gardeners' Chronicle* of the 22d July last, page 502), whose opinion of it is as follows:—

"FASTOLFF RASPBERRY.—We have received from Messrs. YOUELL, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find its merits all that has been stated in favour of its excellence. The fruit that we have received is very large, obtusely conical, and of rich flavour, far exceeding in this respect some other new and large varieties. The plants bear abundantly, and in long succession."

They also exhibited it on the 1st of August, 1843, before the London Horticultural Society, 21, Regent-street, to which a prize was awarded. It would therefore be unnecessary for YOUELL and Co. to recommend it more fully, or with greater confidence to the notice of the public, merely observing, that it continues in high perfection throughout the autumnal months, and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties.

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post-office order), upon the following terms:—

Packages containing	100 Canes . .	£2	5*s* 0*d*
Do.	do. 50 do. . .	1	5 0
Do.	do. 25 do . .	0	14 0

Package included.

The usual discount to the Trade where not less than 200 are ordered.

*** CAUTION.—Y. and Co. beg to call the attention of their Friends and the Public in general to the fact that they have appointed no Agents in London for the sale of the above, and cannot be held responsible for its being genuine, unless purchased direct from their Nursery.

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.
FOR 1844.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of the 23d of March, and will be found to contain such varieties only as are worthy of cultivation.

YOUELL & Co. being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms:—

12 Extra Fine varieties,	12*s.*,	the Selection left to Youell & Co.
12 ditto ditto	21*s.*,	the Selection left to the Purchaser.
50 Fine varieties .	40*s*,	the Selection left to Youell & Co.
50 Extra Fine ditto .	60*s.*,	the Selection left to the Purchaser.

VERBENAS.

12 Extra fine Varieties,	6*s.*,	the Selection left to Youell & Co.
12 Ditto ,,	10*s.*,	the selection left to the purchaser.

With the exception of those marked thus *

The plants will be strong and healthy, and ready for delivery by the latter end of March, with the exception of those marked thus * (which will be ready in April), thus ensuring the Purchaser fine plants for competition in the ensuing season. Many of the varieties can be supplied now.

CHRYSANTHEMUMS.

50 Newest and Best varieties, 12*s.* per dozen.

PANSIES.

12 Fine Show Varieties, by name, 9*s.* per dozen.
12 Extra fine do. do. 10*s.* ,,

Per post free.

FLOWER-SEEDS.—30 packets of the newest and best kinds, sent per post free for 6*s.*

TWO NEW SEEDLING PICOTEES.—"LADY ALICE PEEL," 10*s.* 6*d.*, and "MRS. BENYON," 16*s.* 6*d.* per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and kindly presented by that gentleman to Messrs. YOUELL & Co., for particulars of which see their Advertisement in this Paper of the 16th of Sept.

FINEST CARNATIONS AND PICOTEES.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows:	£.	*s.*	*d.*
12 pair of good Show Sorts	1	4	0
12 ditto fine ditto	1	10	0
25 ditto ditto	3	0	0
12 ditto extra fine and very superior ditto .	2	10	0
25 ditto ditto	5	0	0

The selection being left to YOUELL & Co.

ARAUCARIA IMBRICATA.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year old plants, 8 to 10 inches high, 10*l.* per 100, or 30*s.* per dozen.

Fine Plants of CEDRUS DEODARA, 2ft. to 2ft. 6 ins., 10*s.* 6*d.* each.

Great Yarmouth Nursery, March 29, 1844.

N.B. All Orders above £2 will be delivered carriage free either to London or Hull.

EXHIBITION of CAMELLIA JAPONICA, or Japan Rose.—A Collection of these beautiful Exotics is now in Bloom at CHANDLER & SONS' Nursery, Vauxhall. Admittance gratis.

S. AND J. DILLISTONE will continue to supply Scions of their APPLE, the STURMER PIPPIN, throughout April, in packets of Six Scions, upon receipt of 2*s.* 6*d.* See Advertisement in this Paper of the 16th and 23d inst.

Nurseries, Sturmer, Halstead, Essex.

N.B.—This Advertisement will not be repeated.

CARNATIONS AND PICOTEES.

JOHN SLATER, Florist, Cheetham Hill, near Manchester, has on sale upwards of 1000 pairs of healthy plants of Carnations and Picotees, which he will sell at low prices. 20 pairs of Carnations and Picotees, one pair of each variety for 20*s.*, package included, provided the selection is left to J. S.

CHOICE PANSIES.

J. FRYER begs to remind his Friends that he can now supply good healthy plants of most of the leading varieties of PANSIES, Catalogues of which will be forwarded on application; likewise packets of Seed from his superb collection, 1*s.*, 2*s.* 6*d.*, and 5*s.* each. J. F. likewise begs to say that he can supply a few more packets of his new Thunbergia Fryeri; four seeds, 2*s.* 6*d.*, eight seeds, 5*s.*, and all the new Fuchsias, Verbenas, Carnations, Picotees, and an extensive collection of Herbaceous Plants, all of which will be supplied at very moderate prices.

N.B. Agent for Potter's Guano and Humphreys's Compound.

Clarendon Nursery, Camberwell, London, March 29, 1844.

H. CORSTEN, 19 A, Davies-street, Berkeley-square, Florist to Her Majesty, has just imported a splendid Collection of Gladiolus Gandavensis, so greatly admired on the Continent. See *Gardeners' Chronicle*, Feb. 24, 1844, under Miscellanea. He has also for sale the Dutch Plum Gooseberries at 12*s.* per dozen; Dutch Grape Currant Trees, 6*s.* 6*d.* per dozen; large Orange and Lemon Trees, 10*s.* each. A choice Collection of Araucaria imbricata, and Pinus; also a splendid assortment of Scarlet and Red Rhododendrons: under the last named is the large Scarlet La Gloire d'Haarlem, 5*s.* each.

SEEDS.

THOMAS GIBBS & Co., corner of Half-Moon-street, Piccadilly, London, Seedsmen to the Hon. Boards of Agriculture of England and Sweden, beg to call the attention of Agriculturists to their general Stock of SEEDS, and they beg to assure their Friends that they have bestowed the greatest care and attention to the selection and saving of the various kinds. They beg to call particular attention to the following kinds, viz.: White Belgian Carrot, which produces the largest crops; Large Field Altringham Carrot, an excellent Field Carrot; Long Red Mangold Wurtzel, large produce on deep soils; Yellow Globe do. do., adapted to shallow soils; Red Globe do. do., adapted to lighter shallow soils; Purple Top Swedish Turnip, very fine small top; Green Top do. do, hardy and useful Turnip; Gibbs's Green Top Yellow Hybrid Turnip, highly approved; Red do. do., and other varieties. Mixtures of selected Natural Grass-Seeds, properly apportioned to suit the nature of various soils. From long experience and extensive practice in this particular department, T. G. and Co. confidently recommend their Mixtures to their Agricultural Friends. Mixtures of Grass-seed for Field-lawns; Do. for Grass Plots. Italian Rye-Grass, Improved Perennial Rye-Grass, and other kinds of Grass-Seed.

PERENNIAL GRASS SEEDS.

SUTTON AND SONS, having for many years paid particular attention to the collecting of NATURAL GRASSES, and having been employed by most of the Nobility and Gentry of Berkshire, Hampshire, and Oxfordshire, to mix Seeds in proper sorts and proportions to suit the soils on their Estates, both for laying down new Pastures and improving old ones, have great confidence in soliciting orders from the readers of the *Gardeners' Chronicle*, in the more northern parts of the kingdom.

SUTTON and SONS have just published a Descriptive Table of Grasses, with some information which they consider would be acceptable to their Agricultural friends, and which may be had gratis.—The cost of the Seeds is very moderate, as will be seen by a reference to the Table above referred to.

Agents for Potter's Guano.

Reading Seed Warehouse, 7 and 8, Market place, Reading, Berks.

AGRICULTURAL SEEDS.

WHITE BELGIUM GREEN-TOP CARROT, 1*s.* per lb.; Altringham Carrot, 1*s.* per lb.; Large Green-top Orange Carrot, very thick-shouldered, and well adapted for shallow soils, 1*s.* 6*d.* per lb.; Long Red Mangel Wurzel, grows well out of the ground, 1*s.* per lb.; Fine long Yellow Mangel, produces roots as large as the red, 1*s.* 6*d.* per lb.; Yellow Globe Mangel, 1*s.* per lb.; Lucerne, 1*s.* per lb.; Italian Rye-Grass, 8*s.* per bushel; Pasture Grasses of all kinds, fine mixed Grasses for Lawns; Skirving's Improved Swede Turnip, 1*s.* per lb.; Laing's do., 1*s.* per lb., &c. &c.—W. J. NUTTING, Seedsman, 46, Cheapside, London.

Garden and Flower Seeds of every kind, as advertised by other houses.

LONDIGES' BOTANICAL CABINET, consisting of coloured delineations of Plants from all countries, with a short account of each, 2000 plates, engraved by George Cooke, and most accurately coloured from Nature, 20 vols. small 4to, elegantly bound, Russia, gilt leaves, 1817-33, price 28*l.* Published at 50*l.*, in Numbers, and now very scarce.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurtzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3*s.* 6*d.* per quart.

TO GENTLEMEN, FLORISTS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition at the AUCTION MART, BARTHOLOMEW-LANE, on TUESDAY, APRIL 2d, and THURSDAY, 4th, 1844, at 12 o'clock, a fine Collection of CARNATIONS and PICOTEES, consisting of all the leading varieties; Standard and Dwarf ROSES, Fine Lancashire GOOSEBERRIES, Choice FUCHSIAS, DAHLIAS in dry roots, &c.—May be viewed the morning of sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

EDGING BOX.—To be disposed of, A Quantity of very fine BOX, about 400 yards, at 9*d.* per yard. To be seen by application to RICHARD TURNER, Green-lane, Battersea.

TO BRICKMAKERS, FARMERS, and OTHERS.

FOR SALE, about 1000 Chaldrons of ASHES and BREAZE, and about 1000 Loads of MANURE, lying at Albion-street, and near King's Mills, where barges may be loaded. Apply to Mr. THOS. AVERY, Albion-street, Rotherhithe, Surrey.

ELIGIBLE INVESTMENT.

TO BE SOLD, with immediate possession, a Freehold DWELLING-HOUSE, SHOP, &c., and about Six Acres of rich, productive Land, fully stocked and cropped, on which an extensive business in the Nursery and Seed line has been carried on for many years, and parted with in consequence of the death of the late Proprietor, who was in business upon the premises for 50 years, and whose books may be inspected, if desired. The House fronts the high turnpike-road, in a good market town 20 miles from London. Part of the money may remain on mortgage, if desired.—Apply to Mr. THOMAS JACKSON, Marlborough-road, Old Kent Road.

MOUNTFIELD, SUSSEX.

TO BE LET, and possession had at Michaelmas, 1844, MOUNTFIELD-PARK, and GLOTTINGHAM FARMS, containing about 500 acres of excellent Arable, Pasture, and Hop Lands.—For particulars, apply to Mr. JAS. HILDER, Robertsbridge.

W. JACKSON AND CO. beg to offer the following PLANTS, at the very low prices attached:—Trapeolum azureum, 12s. 6d. each. Also, well-established in 48-sized pots—Veronica speciosa, 21s. each; Clematis Sieboldii, 30s. per dozen; C. aurea grandiflora, 24s. per dozen. Fuchsias.—12 of the most approved distinct new varieties, including a very beautiful Seedling not yet sent out, which they warrant will give satisfaction, 30s. Delivery at the railway station gratis. A reference or remittance from unknown correspondents is respectfully solicited.
Cross Lanes Nursery, near Bedale, Yorkshire, March 25.

MESSRS. MARNOCK and MANLEY beg to inform their Friends and the Public, that their DESCRIPTIVE CATALOGUE of FUCHSIAS, VERBENAS, CINERARIAS, DAHLIAS, &c., with a Treatise on the best and most successful Modes of Cultivation, is now ready, and may be had on application.
N.B.—Their beautiful Fuchsia, MARNOCK'S PRINCESS SOPHIA, is now ready to be sent out; the stock is not large, therefore early orders will prevent disappointment.
Nursery, Hackney, March, 27, 1844.

The Gardeners' Chronicle.

SATURDAY, MARCH 30, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY, April 1	Entomological	8 P.M.
TUESDAY, April 2	Horticultural	3 P.M.
	Linnean	8 P.M.
WEDNESDAY, April 3	Society of Arts	8 P.M.
FRIDAY, April 12	Botanical	8 P.M.

WE have now before us a goodly crop of letters upon the speculations of Mr. W. Wood as to the principles on which the *rationale* of potting is, as he supposes, dependent. When his paper on Fuchsias shall be concluded, we will endeavour to explain what we understand to be his meaning; and, at the same time, the letters of our correspondents shall be duly noticed. In the mean while, we must beg to set them right on one or two points.

Some seem to imagine, because we have directed attention to Mr. Wood's paper, that therefore we adopt his reasoning as our own. They could not have fallen into a greater error. Our own little children demand all our care, and our benevolence does not go to the extent of accepting the paternity of other people's productions. Although our observations upon the paramount importance of studying the principles of horticulture were connected with the paper on Fuchsias, we did not intend that they should be interpreted into a eulogium of the particular views promulgated by its author. It is one thing to speak with praise of the general tendency of a man's writings, and another to approve of their details. What we wished was to induce gardeners *to think*, and *for themselves*; and to accustom them to *search* for the true causes of the most common operations of their art.

Suppose Mr. Wood's notions about the properties of matter, in connexion with the art of potting, to be wholly wrong, that would not alter our opinion one iota: they are new; they are an attempt to explain on principle a very important process upon which scarcely a thought has been bestowed by science up to the present hour,—and that is enough for us. His paper is a step in the right direction; and its errors will lead to discussion and consideration, out of which the right will spring. The assertion of Democritus that the goddess Truth resided at the bottom of a well was full of wisdom. The wrong reasonings of a thinking man are like failures in experimenting—they pave the way to success hereafter. The bad physiology of Linnæus opened a road to the just views now entertained of Vegetable development; if it had not been for the false speculations of the alchemists, chemistry would have been retarded for centuries—without a Paracelsus there might not have been a Davy; the dreams of Descartes led to the philosophy of Keplar and Newton; and who shall say that the misty revelations of Mrs. Ibbetson did not herald the brilliant observations of Brown, Mirbel, and Schleiden?

Another class of correspondents protests against the obscure style of the paper on Fuchsias. But shall we throw away our corn because of the chaff that hides it? or shall we not rather sift and winnow it patiently until the valuable grains are separated, and the refuse is cast to the winds? And so it should be with the writings of man; for it may happen that the truest thoughts are concealed by the obscurest words, and that what reads smoothly and speaks instantly to the apprehension will produce an effect as fleeting as it was sudden. It is more profitable to fish for gold in muddy waters than to gaze on pebbles through a stream of crystal. Not that we are advocates of a perplexed and confused style, which is a real misfortune to both reader and author; but we would not, on that account, discourage the endeavours of untaught men. On the contrary, we regard it as one of our most important duties to employ the power which education has conferred upon us in assisting others to whom Providence has not given the same advantages. We confidently trust that our readers will think that we are right.

FUCHSIAS.

(Continued from page 170.)

Some may wonder at my recommending plants to be retained in the pots supposed to have a defective arrangement of soil; it will therefore be as well that I should offer reasons for the recommendation; which is founded upon the principle (page 20, 1844) that "the accumulative vigour of all plants is exactly in proportion to the progressive agency of the causes to which they are first subjected." Many years' experience has convinced me that the larger the quantity of mould in pots, within reasonable limits, the more rapidly and safely are plants capable of acquiring vigour; other processes interfere more or less with their vital organs. To remove a plant from given conditions before it is capable of availing itself of such conditions, is opposed to reason and sound practice. In all cases of defective drainage in pots, it is found that the mechanical arrangement is unequal to the external pressure which acts upon the material.

When the principal buds are formed as young branches, they may be shifted from small, or large 60, to large 48 or 32 pots, according to their vigour, using two parts turfy friable loam, 2 of well-pulverised cowdung or leaf-mould, with upwards of one-sixth of sand. If the soils are such as to part readily by the hand, which, in a turfy state, is a certain test of its being well pulverised, sifting may be dispensed with; if otherwise, for the first shift, the soil may be passed as closely as possible through a sieve of 6-eighths or 1 inch in the wire; and in all cases when the several parts are sifted, the whole of the portions should be passed through together, and not separately—the latter method reduces the texture too much. Previous to shifting, the plants should be in a uniform state of moisture, or, otherwise, well watered when turned out of their pots, so that surface-watering may be dispensed with for one or two days after potting; during which period, the newly-applied soils being exposed to the influence of sun and air, become less retentive, and more fitted to receive repeated waterings.

In the process of potting, the bottom-drainage should (especially in the first operation) lie tolerably loose over the bottom cavity, the potsherds or other material lessening in size upwards. The sub-drainage of coarse flakes of partially-dried leaf-mould, or cowdung, or dry open turfy loam, should be pressed tolerably firm. Of the soil generally, the coarsest and most open portions should occupy the lower and middle positions in the pot, and the finer should be towards the top. As to pressing down soil in potting, that should be regulated in proportion to the vigour and size of the plants: being most considerable on the lower portions, and slightest towards the surface. The smaller the plant, in proportion to the quantity of soil in which it is placed, the more uniform and slight should be the pressure. The entire surface of the soil should slightly incline towards the edge of the pot; but this should not be managed by greater pressure round the edge; the soil should be originally arranged in that way.

After the first process of potting, the plants are to be placed upon inverted pots on the front platform of the forcing-house, to admit a better exposure to air and light, and for the first forty-eight hours they should be plentifully syringed; then, morning and evening, the front lights being closed for the time stated; and if sun-light becomes powerful, they should be shaded from 11 to 2, 3, or 4 o'clock, in proportion to its intensity, if in a west aspect; or earlier and later if facing the east.

After the surface soil shows that it has been sufficiently exposed to the air, by beginning to require water, the plants may, in the first instance, receive enough to pass through the whole amount of soil. The second application should be applied with judgment, and, to avoid excess, may, in part, be supplied by a copious syringing. Such precautions may appear trivial and unnecessary, but a difficulty will be found in drawing a line between the application of water to recently heavy-shifted plants and others. Alternate syringings are more beneficial for a short period, in such cases, than repeated waterings, allowing for casual exceptions.—*William Wood, Pine-apple Place.*

ON THE CULTIVATION OF GRAPES IN POTS.

THE first impulse given to fruiting Vines in pots was by a paper in the "Horticultural Register for 1831," by Mr. G. Stafford, then gardener at Willersly Castle, in Derbyshire, and which at the time elicited much surprise. Through him I became practically acquainted with the system he followed; and since then having been more or less engaged annually in preparing and fruiting a considerable number of Vines in pots, I can safely bear witness to the successful results that will follow the practice detailed below.

After fixing on the kinds of Vines you intend growing, the first thing to be done is to procure eyes (or buds) of the required kinds, from some known good bearing Vines, taking care to have the wood perfectly hard and ripe, with the eyes prominent and round. If the Vines are intended to be fruited the next season, the eyes should be potted in 32-pots, placing them one inch below the surface, and using soil of a light turfy nature, or if stiff, adding a portion of half-decayed leaves; only one eye must be planted in each pot. This should be done early in February, and when finished the pots containing the eyes may be plunged in any pit or frame that may be at work, where a bottom-heat can be maintained of 90°, or thereabouts. They may remain there until growth has commenced, when sun-light being indispensable to the welfare of the young plants, they should be placed (if they were not previously) as near the glass as possible, sinking the pots as the plants reach the glass, but still keeping a steady bottom-heat, and supplying them with air every day if possible. It is supposed that the heat of the frame or pit varies from 80° to 90° in sunshine. When the pots are filled with roots, which will be some time in April, they may be transferred at once into their fruiting-pots, which should be 2s or 4s, according to the strength you wish your Vines to attain; bearing in mind that those in the smaller size will ripen their wood earlier, and consequently be available for forcing at an earlier period than the others. This operation will bring us to a consideration of the description of soil or compost most suitable for the Vine. When growing naturally out of doors the Vine will flourish in a variety of different soils and composts; but when its roots are confined in so small a space as a pot, we must place within the action of its roots that kind of soil from which it can most readily assimilate the elements which constitute its food. After trying nearly all the different composts recommended by the numerous authors on the Vine, I am convinced that the more simple the constituents of the soil are for it, or any other kind of pot-plant, the more successful will be the results. The compost I use is two-thirds turfy loam, from a down having a chalky bottom, and one-third decomposed night-soil. Should the loam be strong, I use the same proportion of half-rotten horse-droppings. The turves in the loam should only be half decayed, and it should be used as rough as possible.—*John Spencer, Gardens, Bowood.*

(To be continued.)

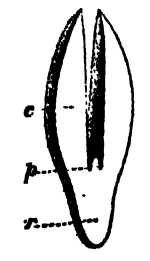
FAMILIAR BOTANY.

MORPHOLOGY, No. IX.

Lo! on each seed, within its slender rind,
Life's golden threads in endless circles wind;
Maze within maze the lucid webs are roll'd,
And, as they burst, the living flame unfold.
The pulpy Acorn, ere it swells, contains
The Oak's vast branches in its milky veins!
Each ravell'd bud, fine film, and fibre line,
Traced with nice pencil on the small design;
Grain within grain successive harvests dwell,
And boundless forests slumber in a shell.

THE manner in which the embryo plant of the Yew-tree is formed is essentially the same as that which is observed in all other flowering plants; and therefore, without confining our attention to the Yew, we may now proceed to consider in its general sense the value of the knowledge gained by an examination of the manner in which the embryo Yew goes through its various changes till it arrives at that first stage of perfection in which it may remain asleep, for ages perhaps, until the fitting circumstances awaken its germinating powers, and call it into a new and active life.

It is plain that the embryo of the Yew was at first a few microscopical bladders, arranged in a loose and apparently confused manner; that through various changes it arrived at another and much more perfect condition, in which the bladders are collected into a solid mass, having a definite form, with a pair of lobes at its free end. Let us now suppose that the annexed diagram represents some such embryo plant cut through lengthwise, and placed erect instead of being inverted, like that of the Yew. Three parts are then distinguishable, viz. *c c*, which are called cotyledons; *p*, a point between their bases, called the *plumule*, or in a general sense, the *growing point*; and *r*, a cone, extended downwards, and named the *radicle*. Here we have the whole preparation which Nature makes wherewith to fashion out a plant, with its leaves, stem, flowers, and fruit. In no seeds have we anything more—in some we have not so much. We have nothing whatever except a collection of little bladders, gathered together into a definite form, invariable in each species, and provided with the wonderful power of working out of such materials all that hereafter may be proper to its nature. The cotyledons are, in fact, the first leaves, sometimes having a peculiar shape, but often not distinguishable from those which succeed them. The plumule, or growing-point, is that which lengthens upwards, and changes into a stem clothed with leaves, flowers, and fruit. The radicle goes downward, and gives rise to the root. The embryo is, in fact, a young plant, whose bones, sinews, and breathing apparatus are not yet formed, but out of which they have to be developed: and it consists of a root and short stem, with one pair of leaves upon it; or, to use the language of morphologists, of an axis and its appendages. The axis gives birth to all the future ramifications above and below ground; the appendages are the rudiments of what, in one state, are called leaves, in another, flowers, in a third, fruit, as I shall next proceed to show.



When the poet exclaimed that "every heart contains proportions germ," he did not dream, perhaps, of the extent to which that beautiful truth may be applied. What crowds of proofs rush forth the instant that the veil of Nature is withdrawn but for a little space!—*R. E.*

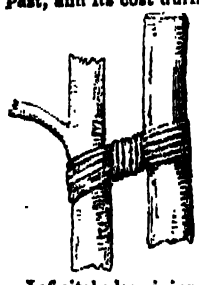
REMOVAL OF TREES.

WOULD any of your correspondents oblige me with their opinion respecting the best time for cutting a trench round large trees to prepare their roots for future removal? Winter seems, according to my practice, to be preferable to spring, after the buds have begun to swell; and it is possible that autumn, or as soon as the leaves begin to fall, may prove a still better period for that operation, and that the descending sap would form the commencement of new roots, in lieu of wood on the stem, in readiness to shoot with vigour in the spring. This experiment was neglected last autumn, but it probably required a trial on an extended scale, in consequence of the variable growth of the roots of trees under apparently similar conditions. The question is asked, in the hope that it may meet the

eye of parties willing to try comparative experiments in different soils and situations.

A rapid formation of roots has been remarked to have taken place in autumn in large shrubs (Laurels) which were taken up last September, and heeled close together with some loose earth thrown over their roots, for subsequent planting at leisure during winter. And a similar occurrence was observed some years ago in similar shrubs that were lifted, and replaced in their holes in August: their subsequent removal about November was remarkably successful. Loose earth seems more favourable for the formation of young roots than the tight packing of the balls, according to Sir Henry Stewart's method, adopted when more care and attention is paid to the removal of better plants; yet this last operation *is* essentially necessary, before the ground is dried up by summer heat. On the whole, the double removal seems to have been most successful. Doubtless good roots will be formed by early autumn cutting. The question may be asked:—"Will it be at the expense of the buds for the ensuing year?"

Having adopted some variations in the mode of taking up large trees from that recommended in the "Planters' Guide," which tend both to reduce its expense and risk of injury to the roots, I will venture to detail the method in which that operation has been conducted for some years past, and its cost during the present season.



As soon as the surface-roots have been cleared in the trench, the tree is firmly secured to a pole, of 22, instead of 15 feet in length, by three or four lashings formed of five or six rounds of 1-inch rope, frapped together. The carriage and tree are then hove down by a purchase applied to the top of the pole, consisting either of two single blocks, or a single and double block, and a 2½-inch rope (shroud laid).

Infinitely less injury seems done to the lower roots by tearing them up than would be occasioned by undercutting the ball, while the surface-roots entirely escape the handling and turning back that would otherwise be required to enable men to work below them.

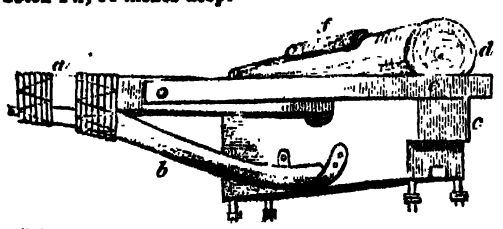
The strain on the carriage and stem of the tree is, however, extremely severe; but the bark of Turkey Oaks of 8 inches in diameter is capable of lifting near 2 tons of earth without injury, in ground that is unfavourable for the formation of tap-roots, when properly secured, that is, wrapped up in pieces of old sacking. Only one soft-barked tree (a Lime) has been removed exceeding 8 inches diameter near to the roots; it bent under the weight, about 2 tons of earth, and, had the least slipping of the lashings occurred, it is obvious the bark must have been stripped off. The bark has been injured for a few square inches, where it bore on the straw matting. The plan is clearly not suited for such trees.

While some of the men are employed in tying up the branches, one of them shifts the upper block from the pole to the axletree; 5 or 6 fms., however, of rope, fixed to the axle, would be preferable, as the block could be hooked on at once; the carriage is then quietly drawn out of the hole by a horse, at just one-third of his speed. In many cases it is requisite to shift the purchase, so as to draw out the carriage with the roots forward. The work done in five days by four men was—an 8½-inch tree in diameter in the morning, and a 6-inch tree in the afternoon. A horse was brought by another man at half-past 10, and at half-past 3 o'clock, which are charged at half a day each.

4½ Men, at 20*d.* . . .	7*s.* 6*d.*
½ Horse, at 3*s.* . . .	1 6
A load of compost . . .	1 6
	10 6

To this must be added an hour's work for two more horses, if the tree is removed up-hill. The larger tree may be taken at 6*s.* 6*d.*, and the small one at 5*s.*; their average height was about 35 feet.

The carriage is roughly made; its cost was 2½ days' labour for a carpenter, and 2 days for a labourer to assist, and about 25 lbs. of iron-work to fix it on a pair of strong and broad cart-wheels, 6 inches wide, and 4½ feet high. The pole is a small-leaved Cornish Elm, exceeding 8 inches in diameter at bottom, and rather less than 6 at top. The bed was adzed out of a waste piece from the fork of a large Scotch Fir, 18 inches deep.



a. Pole of Elm, 22 ft. long, 8 in. diameter at bottom, and 5½ at top.
b. Ash stay, gammoned up to the pole with inch stuff.
c. Rough piece of Scotch Fir, adzed down.
d. Do., Scotch Fir. *e.* Side stays. *f.* Mat of straw.
The pole is placed high, to enable the lashings to be made more secure.

On calculating the solid contents of wood in the carriage in cubic inches, it amounts to about 11 solid feet, hence its weight is about 5 cwt.; and about 3½ tons would be the probable limit of the load for the axletree.

The wood in the previous carriage was crushed, in consequence of decay, and the axletree was bent by the strain in taking up a tree.

It is obvious that the success of these operations is entirely dependent on the lashing of the tree securely to the pole; it can be managed with the greatest ease, if a labourer can be found who has been a few months at sea, otherwise great attention must be paid to this point, and perhaps some failures from slipping will occur.—*E.*

Home Correspondence.

Whitney's Composition.—To the many notices of the successful application to the purposes of Horticulture of Mr. G. Whitney's (of Shrewsbury) Transparent Composition which have appeared in your columns, permit me to contribute the following, which I doubt not will be perused by your numerous subscribers and readers with similar gratification which resulted to myself from its examination. During the last few weeks Mr. Whitney has erected in his garden a house 28 feet long by 12 feet wide and 15 feet high, covered entirely with muslin prepared with his Transparent Composition. Internally the house is divided into a stove-pit, heated by a hot-water apparatus; and a greenhouse or conservatory. In the stove a Vine (Black Hamburgh) has been introduced (for experiment), which bids fair in a very few days to be clothed with healthy and luxuriant foliage. Cucumber plants inserted there are thriving well, and never flagged or drooped in the least on their removal, although not shaded. In the greenhouse compartment Pæonies, Fuchsias, and other plants, are healthily putting forth strong and vigorous shoots. Indeed, the whole promises speedily to be a scene of great beauty and luxuriant vegetation. Nor can it fail to be so, the light being so clear, abundant, and yet subdued, being very similar to that reflected from a white cloud, quite unaccompanied with any glare, and admirably and equally diffused throughout every portion of the house by the singularly radiant and repeated reflections from the white coverings, walls, and surfaces. The temperature in the stove, which is usually kept at 80°, is well and uniformly preserved, the air-tight nature of the whole apparatus not suffering it to fall more than a very few degrees even during the late cold and severe frosty nights, although very little fire has been kept up. In addition to all this, economy speaks loudly, the cost of the prepared muslin not having exceeded one-fifteenth that of glass for an erection of similar dimensions. I trust to hear that so successful an example has been followed throughout the kingdom, and that the time is near at hand when every one devoted to gardening in any department, however humble his means, will be found gratifying his taste in the possession of greenhouses, &c. similarly constructed, with this useful composition, for the ingenious invention of which the cordial thanks of high and low are abundantly due to Mr. Whitney.—*Botanophilos.*

Durability of Oak.—There can be no doubt that the supposed date, 1035, on the Oak-beam taken from a house near Oswestry, is not of the time assigned to it. One of the earliest authenticated instances of the use in Europe of Arabic numerals is the date 1375, written by Petrarch on a copy of St. Augustine's works. When the use of these numerals was first introduced into England is doubtful, but they were, at all events, not used in keeping the accounts of the English colleges till near about the beginning of the 16th century, and it is very unlikely that they came into vulgar use till long afterwards; they are of rare occurrence in writings of the first half of the 16th century. But is it certain that the figures 1035 were used for a date at all? May they not be the mark denoting the number of a lot of wood, or the private mark of a tradesman?

The Vine.—There is a very singular and perplexing statement by "R. P." at p. 166, respecting the fruitfulness and unfruitfulness of his Vines, that are subjected to the heat of a fruiting Pine-stove. The subject is worthy of the attention of practical men; it opens up a wide field for discussion. "R. P." prunes his Vines on the spur system, which is good; but why does not the shoot trained across the bottom of the light and up the adjoining rafter bear equally with the parent stem? First, is caution used to make the wood on both rafters break its buds at one time? Although the wood is ever so promising on the adjoining rafter, if the parent stem breaks its buds while the other is dormant, I have not the least doubt but that what would have been fruit on the adjoining rafter will be converted into tendrils; the organisable matter stored up previously, and while the Vine was at rest, should the parent stem take the lead in breaking its buds, will be drawn to the support of them, more especially as it has a clear upright course, not receiving a check in having to flow horizontally before it reaches an upright position, as in the other stem. There is still some mystery with regard to the Black Muscat (a Grape I am not acquainted with—perhaps a synonyme of the Muscadel or Morocco, neither of which is calculated for a fruiting Pine-stove, being late Grapes: should it approach its congener in size of bunch, berry, and flavour, it will be a desirable variety). There is no obvious reason for its sterility, unless, being a late Grape, it is impatient of heat at an early period, which experience teaches is one great reason of its being abortive. I should wish to be informed regarding "R. P.'s" system of summer-pruning, and whether he follows the system of disbudding, as mentioned in my treatise on the Vine, as on that, and attention to the roots, will, in a great measure, depend the fruitfulness of his Vines. The following case occurred here last season. I have three succession Pine-stoves, with upright glass in front, 2 feet 6 inches high; the rafters and back walls are covered with Vines, besides a late Vinery. In my earliest house of Grapes, which is one of the above Pine-stoves, I had, at the time of planting, in 1839, to one of the rafters planted a White Muscat, which proved wrong to its name, and turned out to be a Black Morocco (which is a valuable late Grape, and keeps equally well with West's St. Peter, but it is not suitable for an early house); last season I cut it away, intending to bring in a white Muscat in its place. On the adjoining rafter is a Hamburgh; after it had pushed shown fruit, and the shoots were stopped, a thought struck me of carrying out my method of disbudding still farther, and marking the result; accordingly, I selected the bud on the lowest spur below the angle of the rafter, near where the stem of the Vine entered through the sill in the wall, and conducted the young shoot as it progressed in growth across the bottom of the light and up the adjoining rafter, taking off all tendrils and laterals as they appeared, and disbudding the shoot, as I do in autumn, as it advanced in growth, or as soon as I could perceive that the buds were formed. This, by many, would have been thought a dangerous experiment, operating on the growing shoot. I then stopped it at 14 feet in length, including the portion across the bottom of the light and to the bottom of the parent stem, intending to prune it back to 12 eyes; I allowed three laterals to remain at the extremity of the shoot, to keep it in check, which I stopped with caution, and removed altogether in a few weeks afterwards. I left 12 eyes for spurs, 6 on each side, and not a single bud broke untimely under the experiment: using caution, the buds broke with the parent stem when I began to force; and the result is, that this season the 12 eyes have shown 31 bunches of Grapes. I forward you a specimen from a young cane of a Cannon Hall, carried up in a similar manner, that was not disbudded while it was growing, but operated upon (according to my usual practice) when it had attained its full growth; it has shown three and four bunches at one eye: the specimen sent is from an eye producing four. If "R. P." will observe the following three points, viz., timely stopping at summer pruning, in order to induce his Vines to make strong wood; disbudding as soon as they have made their summer growth, or, with caution, at the time they are making their growth, taking care that they break the whole of their buds regularly, under as low a temperature as is consistent with the welfare of his Vines; and paying attention to the root—I imagine he will find little cause for complaint.—*James Roberts, Ashton Hall.* [The specimen sent promised to be a very large bunch. It contained 2816 flowers!]

Old Wall Nails.—When a boy, many a long cold day I have sat in a cold shed on a stool, having a square piece of iron fixed in one end, similar to what a blacksmith makes use of in preparing horse-shoe nails, with a hammer, rap, tap, tapping, cleaning and preparing in readiness old wall nails for the men who were nailing and training the wall-trees. Many a tap it required to get one thousand cleaned for use, letting alone, if possible, any extra raps on the thumb or forefinger when the hands were cold. I then resolved, if ever I should myself get master of a place, and have old wall nails to clean, that I would adopt some more expeditious method. When attending Covent Garden Market, I observed that the fruiterers had a very clever and expeditious method of cleaning old Nuts and Walnuts of dust and mildew; putting a quantity into a sack or large bag, a person took hold of each end of the sack and worked it to and fro to each other, in the same manner that two stone-sawyers use a cross-cut saw; the friction soon cleaned and brightened both Nuts and Walnuts. By turning them into another sack, and dropping a very small portion of oil among them, and well working them in the same way, the Nuts would look as clean and bright as if they were quite new. Imagining that it would be a famous plan for cleaning old wall nails, I took the first opportunity of putting it into practice; it answered my expectations admirably: putting about five thousand into the sack at one time, along with two or three handfuls of coarse, sharp, river or sea sand, and working them as above recommended, in about twenty minutes or half an hour's friction they turned out as clean as new pins. By turning them into a suitable sieve or basket, the dust may readily be separated, and thus all the old nails of a large garden may be thoroughly cleaned in a few hours; if they are particularly wished to be kept free from rust afterwards, you have only to drop a small quantity of oil amongst them, and give them another good working in the sack.—*Observer J.*

Seed Steeping.—If I understand the theory of the steeping process, the body of the seed, i.e., the cotyledons or what answers to them, being of a lower order of organisation than the germ or actual seat of active vitality, is charged by art with a larger quantity of saline and other parts than what was originally furnished by nature; that the germ, on being awakened to growth, and finding an unusual supply of nourishment, vegetates with a proportionate vigour of growth. This I can understand, but that the process, upon the above principles, should so entirely influence the vegetation of a whole season, as possibly to render subsequent manuring unnecessary, is not so easily conceived. The effect of this earliest of all manuring so instant upon germination, and as it were so close to its work, appears to be to induce in the case of the cerealia a profuse tillering or production of fruitful shoots. Now, a plant, like an animal, is increased by the assimilation to itself—to use an old-fashioned term—of certain heterogeneous substances derived from without; in other words, by absorption by root and otherwise of various mineral and organic substances, and by its own peculiar system of combinations, converting them into its own substance. When, then, the young embryo has consumed the nourishment afforded by its placenta, and Mr. Bickes's sulphate of ammonia into the bargain, and is thrown upon a barren world to seek subsistence, how is it by its multiplication of parts more capable of production than before? and will it not feel want of food, with its superior number of mouths, equally with any unpickled companion? It would appear that a saving of seed may be effected, assuming that three seeds affording two stems each, are no better than one with three, the amount of

nourishment being the same. The opinion of Mr. Campbell, or any one conversant with the subject, would, I am sure, be as acceptable to many readers as to myself.—*Micklewell.*

Morphology.—If this doctrine is a fallacy, as some assert, why is it that the art of the cultivator can have any influence in bringing plants into a blooming state? How is it that we hear and read of certain modes of treatment causing plants "to grow to leaf, and not to blossom?" and others, again, by means of good management, even in artificial cultivation, made "to exceed the splendour of native specimens?" I imagine it may be referred to Morphology; for I conceive that it seeks to establish these most important truths, viz.,—firstly, that all vegetable bodies, varying as they do in their appearance, are but modifications of the same kind of matter, created by the same power, from the same source—nothing, and imbued with a mysterious property of extension and reproduction; and, secondly, that this matter is not, indeed, convertible from one organ to another, but capable of being developed either in one form or the other, as the circumstances to which it is exposed may have influence over that development. And, if this is Morphology, then every gardener daily demonstrates its truth; for why else does he prevent the blooming of annual plants when he wishes to preserve them beyond a single season, or, on the other hand, why does he adopt any particular course of treatment to induce a state of bloom in his plants? This refers to cultivated plants, and these being removed both from their natural situations and the natural circumstances of their growth, afford the strongest proof of the correctness of the science; for, why else could their removal from their natural circumstances influence the nature of their development at all? This by no means interferes with the order of Nature's laws; flowers are flowers still, and leaves are leaves, but what would be leaves, under certain conditions of growth, would be flowers if those conditions were changed soon enough, and the requisite conditions supplied. In all this there is no imputation of imperfection—no atheism—no infidelity.—*T. Moore.*

Cement.—I have used with unvaried success for joints to pipes and fittings for steam-engines of 14 and 16 horse power, a composition formed of iron-filings, muriate of ammonia or sal ammoniac (quantities indefinite, say four ounces to one pound of filings), and a small quantity of brimstone in powder, mixed together with water, so as to form a stiff paste, to be well rammed into the crevices and joints. Another is, ground white-lead, and a sufficient quantity of red-lead powder mixed, so as to make it of the consistence of stiff putty; this is spread on a flange of millboard on both sides, and placed between the pipes or joints.—*W. Rayner.*

Transmitting Cuttings to India.—All the cuttings that have been received at Calcutta by the Overland Mail, had been taken from the middle of last year's shoot, or nearly so. Such cuttings of plants that are difficult to propagate are never used in India, as they are considered useless. Our mode is this—1 or 2 joints or eyes of last year's wood are cut off along with the whole of this year's wood. If the shoot is not too long for a large hand or bell-glass, it is not topped; but if it is, we cut it to a reasonable length, say six or seven inches. The cutting, when made, is somewhat in this form ⊥. Before sending them from England (if the shoot is too long), as much of the top as is necessary may be cut off, provided five or six eyes or joints are left. I beg to mention that I only refer to plants that are difficult to multiply from cuttings in any climate. Some time ago Mr. Beaton says, "August is the best time for taking the first steps for preparing cuttings of fruit-trees, &c., destined to go by the Overland Mail next November to India or China. With regard to Hindostan, from experience I can say that August or November are not suitable months to send cuttings here; for the following reasons—the rains set in in June, and cease in October; the rainy season is best for raising plants of any kind, whether hard or soft-wooded, from cuttings; and if they are sent here by the November Overland Mail, the time mentioned by Mr. Beaton, they arrive here during the dry season, and only a few weeks before the commencement of what we call our hot season. We are glad if we can only keep life in our plants during the hot months. The time that cuttings should be sent to India is at the commencement of the rains, about the 20th of June; although they are a fortnight later it is of little consequence, but they should not, on any account, be sooner, as they will not succeed. Cuttings taken off in the winter or spring pruning, and 'heeled' in the ground until the grafting season, are the sorts that are likely to succeed, provided they are taken off with a little of the old wood attached, as already mentioned. We never put in cuttings of hard-wooded plants in the dry or hot months, as they root so readily under glass during the rainy season, being simply shaded from the hot sun with mats.—*R. Ross, H. C., Botanic Garden, Calcutta, Nov.* 3. [Sending cuttings to India in April and May, exposes them to travel in the driest and hottest time of the year. To put cuttings of European trees into the ground in the tropical climate of June, although best suited to the plants of such latitudes, is of doubtful expediency. The true course appears to be that adopted at the India House, by Dr. Royle, of sending all European plants, in the first instance, to Saharunpoor, in the quasi-European climate of the hills, where they can be easily established and prepared for subsequent transmission experimentally to Calcutta. Many of our European plants thus sent, are now flourishing at Saharunpoor, under the care of Dr. Jamieson.]

Bees.—A "Lover of Bees" may rest assured that there is no probability of the Bees seen hovering about the place where their hive had been taken from, joining with those in the other hive; they would soon find the way to their own. Why the hive was tenantless in spring, whilst it contained "about a stone of honey," is probably, owing to there not being a sufficient number of Bees reared in autumn to supply the places of those that die off. If the second swarm had not left the stock, the case might have been otherwise; for most of the Bees in it were young ones, and would have been the principal stay to the hive during winter and spring. In all cases that have come under my notice of Bees dying whilst they had plenty of honey, there was always a sad falling off in their numbers in autumn. A few days ago, I found in one of my boxes a handful of dead Bees at the top between two of the combs, where there was little or no honey, but there was plenty in the others, and it is easily got at through the thoroughfares or holes in the combs. This contradicts the statement, that "except hives are sticked there will be no passages through the combs."—*J. Wighton.*

Bees.—The season has commenced for examining stocks which have survived the winter; they should now be gently lifted up from their stands, and have the floors thoroughly cleaned, removing all dead Bees, particles of broken combs, or any filth that may have accumulated during winter. It is sometimes necessary to scrape the floors, using for the purpose a strong carving-knife, or sharp garden-trowel, in the first instance; and then finishing them with a stiff hair-brush. It is advisable to place the hive upon a broad board, or stand, during the short time required for cleaning. When the floor is finished, carefully place the hive exactly upon the spot from which it was removed, and endeavour to do so without injuring a single Bee, as they are all required at this season. The entrance, or door-way, should next be carefully attended to; it may be enlarged or contracted as the number of Bees require it, but never allow the opening to be more than three-eighths of an inch high, and six inches long; this size is required previous to and at the time of swarming. This is a matter of more importance than many Bee-keepers are aware of, as it prevents robbers from entering, either in spring or autumn, and allows the Bees an easier passage in and out during summer. These things being attended to, next endeavour to ascertain what honey is in the hive for the support of the Bees during the next two months; if it is scarce, do not neglect to feed them abundantly. Several articles on feeding were given in the *Chronicle* in the early part of last spring; which, if attended to, will save many poor stocks from starvation, and ultimately render them more productive than might have been expected.—*W. Savage, Swaffham, Norfolk.*

The Balsam.—Having some three-year-old seed, sowed it last year in the first week of April, in 24-sized wide-mouthed pots, and placed them in a Cucumber-frame. When they were up, and had fully expanded their seed-leaves, I removed them to a warm part of the greenhouse, taking care to keep them free from damp. As soon as they had attained sufficient strength, I potted them off singly into 48-pots, inserting them in the soil up to their seed-leaves, and plunged the pots into a tan-bed, where they had a bottom-heat of from 50° to 55°. The plants were kept as close to the glass as possible, and they had plenty of air given them in fine weather. I supplied them plentifully with water, and syringed them over-head when the house was shut up in the evening, as they are fond of a damp atmosphere. By this treatment the plants soon became strong and bushy. All flower-buds were removed as they appeared, until the plants were finally potted into 24, 16, or larger-sized pots, according to the growth I wished them to attain. The compost consisted of one-half strong loam, well mixed with rotten dung and old brick rubbish; it was prepared three weeks previously, and placed under cover until it was required. Before plunging the plants the last time, the heat in the bed was renewed, by forking the tan over, taking care to maintain the heat the same during their growth. The plants are occasionally turned, in order to keep them straight. As they came into flower, they were removed to the greenhouse. While in bloom, I supplied them plentifully with water, which they require then as well as throughout the various stages of their growth. The greenhouse was well-aired, in order to preserve them longer in bloom.—*J. F. M'Elroy, Clapham-common.*

Grafting the Luculia.—I have been more than once reminded that I ought to fulfil the promise I often made last year with regard to grafting this plant, which is difficult to increase by cuttings. The truth is, after I mentioned the subject, I felt a diffidence in recommending one stock more than another, for the purpose—as in such a very large order as the Rubaceæ, to which the Luculia belongs, there must be many plants on which it might be easily grafted. During this spring I found a much better stock for it than the one I used last autumn, and perhaps one that will answer better; experience alone, however, must prove this. Of late years most gardeners have studied the affinities of plants more or less, and with such men it is not a question whether this or that plant can be grafted on others of the same nature, but which of them is best suited for the purposes of cultivation. The way to determine the choice of a stock in a case of this nature is easy enough, if you graft evergreens on evergreens only, and deciduous things on deciduous; but this rule is violated every year: then the periods at which the two plants naturally begin to grow and go to rest, should correspond as near as possible; and lastly, they should correspond in the size they attain under cultivation; besides, the stock in all cases ought to be more hardy in its constitution. If the plants thus agree, and yet are known to differ in respect to the soil in which they grow best, we are satisfied in practice to use that soil which is best for the stock; but this is a point in gardening still open for experiments; however, when the Rhododendron flourishes in clay and strong loams, so different from its natural soil, we may rest satisfied in preparing that soil which we know to suit our stock, although the plant from which the graft is taken might refuse to grow in it. Nauclea Cadamba is the stock I used for the Luculia last year; it is well suited for it in all respects, except that it is a stove plant, and for this reason I object to it, and to many others equally suitable among Gardenias, Hymenodictyons, Exostemmas, &c. The plant I now use, and which I think is the best in every respect, is Burchellia capensis; and I do not know of any other plant in this large order which is more likely to make a permanent stock for the Luculia; and, no doubt, plants of it worked on this stock will be found easier to manage by those who find any difficulty in growing this, the most lovely of all our late flowering plants, when well managed.—*D. Beaton.*

Miscellaneous.—*Petts* states that a packthread-string, about 6 inches from the ground, round a bed of Cabbages, is a sure protection from rabbits.——*A. R. C.* begs to suggest to all Bee-keepers the advantage of sowing at this season a small patch of Bokhara Clover. It flowers late, continues long in bloom, the Bees are particularly fond of it, and it gives a very high flavour to the honey.——*Mr. C. H. Smith*, of 41, Queen-street, Edinburgh, sent a cut specimen of Camellia sasanqua that had been raised and flowered in a Ward's case. The flower was of the usual size, well-coloured, and perfect in every respect; the foliage was of a healthy deep green. Mr. Smith states that it was planted in May, 1842, and has flowered this spring. He informs us that, in the same case, plants of Epiphyllum truncatum, and speciosum, flowered beautifully through the winter, as did also the Cape Jasmine last summer; one of the flowers of which measured three inches in diameter. The case is about 42 inches long, 18 wide, and 4 ft. high; all were planted about the same time.——*William Bishop*, who says that he has had considerable experience in Pine-growing, informs us that he resided for three years near Thornfield, and that during that time he tasted several of the large Pines that were grown there by Mr. Hamilton. He mentions that one of those he tasted was a large Enville, the flavour of which, he says, was excellent; but still inferior to that of two large Montserrats, which he also tasted there. He states that the usual weight of Montserrats grown round Liverpool and Manchester, is from 2 to 4 lbs.; but that few reach the latter weight. Mr. Bishop writes that he has visited many Exhibitions in Lancashire and Cheshire; but that he never saw the Montserrat weigh above 4 lbs. He adds that Mr. Hamilton's Pines and Cucumbers are much superior to what is generally to be met with in that neighbourhood.

Societies.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

May 7.—This was the spring meeting; it was held in the hall at the Experimental Garden, Inverleith, Sir G. S. Mackenzie, Bart., V.P., in the chair. The hall presented a beautiful scene, each end being adorned with choice exotic shrubs, and the long table in the centre displaying in rich profusion collections of Camellias, Epacrises, Cape Heaths, and Hyacinths. The following prizes were awarded:—For the six finest and newest varieties of Camellia Japonica in flower, the Silver Medal was voted to Mr. J. Young, gr. to T. Oliver, Esq., Newington Lodge, the kinds being C. tricolor, Hendersonii, imbricata, rosea, carnea, and Vandesii; 2, Mr. J. Macnaughton, gr. to J. Wauchope, Esq., of Edmonstone, for Lady Hume's blush, double white, imbricata, fimbriated white, waratah, and double blush. For the two finest specimens of spring-flowering Cape Heaths, the Silver Medal was awarded to Mr. G. Stirling, gr. Melville Castle, for Erica hyemalis, and E. ariatata; 2, Mr. Young, for E. gracilis autumnalis, and E. Linnæoides. For five distinct varieties of double Primroses in flower, the Bronze Medal was voted to Mr. J. Thomson, gr. to W. Keith, Esq.; the kinds were white, yellow, crimson, Irish purple, and pale purple. For a beautiful seedling Epacris, the Silver Medal was voted to the raiser, Mr. J. Reid, gr. to Profes. Syme. It was a hybrid between E. impressa and nivalis, with elegantly-disposed foliage, and blossoms of a uniform hue, intermediate between the colours of the parent flowers. For the six finest Hyacinths, in pots, the Silver Medal was assigned to Mr. Thomson, for Ne plus ultra, Triomphe Blandina, Lawrens Koster, La Grande Vidette, Blocksberg, and Monsieur de Fesch; and a second prize to Mr. Young, Newington Lodge, for Grande Vidette blue, Grande Vidette white, Lord Gray, Lord Wellington, Grand Vainqueur, and Voltaire. For three collections of Flowers, two consisting of fine Hyacinths, and the other of beautiful seedling Epacrises, an extra premium was voted to Messrs. Dickson and Co. And another extra premium was assigned to Messrs. J. Dickson and Son, for a collection of rare Plants, in flower, including Centradenia rosea (a small Mexican shrub, densely clothed with blossoms,) Begonia coccinea, a seedling Gesnera fascialis, and Maxillaria Harrisonæ. A seedling purple Cytisus, raised at Biel, from seeds taken from a purple flowering branch which spontaneously appeared on a yellow Laburnum, was regarded as curious; and for this production an extra premium was awarded to Mr. J. Street, gr. at Biel. A hybrid Rhododendron, in flower, being a cross between R. arboreum album and R. Caucasicum, was exhibited from Dysart House garden; an extra premium was also voted for it. From the Nurseries of Messrs. Eagle and Henderson was a specimen, grown in a pot, of a shrub or tree raised from seeds received from New

Zealand, having the habit of a Pittosporum, but probably quite new. From the garden of Prof. Dunbar, were exhibited two Camellias in flower, one a seedling raised at Rose Park, the other C. Colvillii, with a fine specimen of Erica hyemalis; from Trinity Cottage-garden, a tall and well-furnished plant of Epacris impressa, in full bloom; from the garden at Biel, a most beautiful flowering branch of Acacia affinis, and a specimen of Calla Æthiopica in flower, raised from seeds ripened at Biel, where Mr. Street considers the Calla as completely acclimatised; and from a Ward-case, kept in the drawing-room of Mr. Smith, landscape gardener, Queen-street, flowering sprigs of Camellia Sasanqua, and Daphne odora. There were placed on the table packets of seeds of Bokhara Clover, presented to the Society by the Earl of Wemyss, and of Himalayan Coniferæ, presented by the Highland and Agricultural Society; and also various materials for making steeps for seeds, recommended by Prof. Johnston, presented by Lord Murray. At this meeting various communications were read. The first was an account by Mr. R. Foulis, Fordel, of the mode of dressing for table the tubers of Oxalis Deppei. The tubers are peeled, and the hollow centre cleaned out; they are then well boiled in rich stock, the fat being skimmed off. The tubers are served up hot, with a sauce prepared by heating a piece of butter and a spoonful of flour in a saucepan till browned, and adding a little stock. The next was a notice regarding the successful raising of various Himalayan Coniferæ, especially Deodars, at Elchies, on the Spey, in Morayshire. The seeds, which came by the overland mail, were sown on an open south border in spring 1842, and they all germinated freely. During winter a glazed frame was placed over a portion of the seedlings, but the rest were left wholly exposed, and were repeatedly buried in snow. In spring 1843 the plants left unprotected were as healthy and vigorous as those which had been under glass.—Then followed remarks by Mr. James Macnab on plants grown in water charged with various salts and manures, the specimens being exhibited in glass jars. One general remark was, that when only a small portion of liquid was placed in the vessel containing the plant, and the mass of roots was suspended above the liquid, the plant grew much better than when the roots were wholly immersed.—The next was a communication from Mr. Moffatt, Edengrove, recommending a four-pronged spade, a model specimen being exhibited. This spade he finds more useful than the common spade, when the soil is bound in frosty weather, or when it is very wet in rainy weather, and particularly safe in stirring the soil in shrubberies or in flower-borders.—The last was an interesting and lively account of the progress of Horticulture in Scotland during the last fifteen years, drawn up by the Curator of the garden.

GHENT ROYAL SOCIETY OF AGRICULTURE AND BOTANY.

The wealth, enthusiasm, and science, entering into the several parts, and forming the combined operations of this Society, taken as a whole, is certainly not surpassed at the present time, by any similar institution in Europe. It has existed since October 28, 1808, and conducted its operations with energy and prudence, as is abundantly proved by the fact, that the present is the 76th Exhibition of the Society; nor is its success less evident, when the improved state of botanical skill, displayed in all their gardening operations, is taken into consideration, especially with respect to whatever relates to propagation. The present Exhibition is the second forming a series of Shows of great magnificence, which are held every fifth year; other Shows are held by the Society (I believe four annually); but the one in question, which is termed "Festival Quinquennal de Flore," is, in all respects, a very great display, both of industry and science. The saloon in which these Exhibitions are held, has been built expressly for the use of the Society, and with especial reference to the Exhibitions; it is 300 feet in length. The centre is a lofty dome, 50 feet wide, supported by two wings, each 40 feet wide. The light is admitted at the roof, and in some cases at the sides; and the plants are arranged along each side, leaving abundance of room for the visitors to promenade without interruption along the centre, throughout the whole length of the building. Under the plant-saloon are offices for business; a small library, and other apartments occupied with specimens of Horticultural and Agricultural implements. There is also a refreshment-room capable of dining 200 persons. The general appearance of the plants, and the aspect of the whole arrangements, were in many respects different to the great metropolitan Shows in England. There were at least three times the number of plants exhibited, that are usually seen at the largest English Shows; but three-fourths of these would not have been considered admissible here, in point of culture, and very few of the plants were above mediocrity in this respect. Such is the zeal and desire for novelty, that both amateurs and nurserymen seem to lose sight of everything else; and such also is their skill and success in propagation, that with them the temptation is quite irresistible to cut up every leaf and bud of a new plant for the purpose of increase, and hence the general absence of well-grown and handsome plants of whatever is new. There is, nevertheless, much to admire and learn from their ingenious and scientific methods of budding and grafting. It is no disparagement to our Belgian neighbours to say that they do not excel in everything; in their knowledge and display of culture they are immeasurably behind the gardeners of this country. The leading features of this great Exhibition consisted of Camellias, Rhododendrons, and Azaleas; besides these, there was a great many collections of miscellaneous plants, both stove and greenhouse; and also hardy plants forced into bloom. The Camellia was, however, the great object of attraction, and is above all others the popular plant in Ghent; every amateur who can afford a greenhouse, however small, esteems it his highest honour, as it is by far his greatest ambition, to be possessed of a few of the newest varieties of the Camellia. In the mode of conducting the Exhibition, and more especially with respect to the manner of judging the plants, there was something of novelty, as compared with the method adopted in this country. Previously to the opening of the Exhibition, one or two days were occupied in collecting and arranging the plants; then one clear day was allowed for the proceedings of the judges; the next day, till 2 o'clock, was occupied in re-arranging the plants after they had been examined by the grand jury, and the prizes had been awarded; and the members, the grand jury (judges), and foreigners were admitted at 2 o'clock on the same day; the following day (Monday) was reserved for the grand jury, and the royal family and suite; then the three following days, the public were admitted without charge. The mode of judging the plants was conducted in the following manner:—The judges, or grand jury, were divided into two sections—the first consisted of 41 persons, and the second of 46; 15 of these were from Paris, 3 from London, 3 from Geneva, some from Germany, and others from Prussia, Holland, &c. &c. The operations, then, of this great combination of wisdom and science, were thus proceeded with:—Each judge was required to examine separately each collection or single specimen, as the case might be, without reference to any consideration or any agreement whatever with any other judge; his decision was written on a card, and thrown into a box or basket, and when each member of the same section had performed the same duty, the ballot or cards were examined, and whichever member had the highest amount of votes, was declared the winner. As the awards were thus determined, they were also announced by the firing of cannon planted in the adjacent grounds. It may be worthy of remark, that certain members and patrons of the Society forwarded for decoration various large plants, which were classed according to some arrangement, and dedicated to the honour of the Society; others to the King, as Chamærops excelsa, and Latania borbonica; others were dedicated to the Queen, as Chamærops Birro, and Phœnix farinifera; and so on, with several other classes of plants presented in homage of worthy objects. The following will convey some idea of the number and quality of the plants exhibited:—

Competition between Gardeners and Amateurs in the neighbourhood of Ghent.

Collections of 40 *to* 60 *Plants, in Bloom* (distinguished for their culture and variety).—1st prize to Mr. E. Rosseels, of Louvain, for Pimelia ligustrina, Bignonia cherere, Enkianthus quinqueflorus, Cratægus indica, Pultenæa daphnoides, Tropæolum pentaphyllum, Indigofera rosea, Chorozema varium, Billbergia amœna, Epacris grandiflora, and 19 other miscellaneous plants; Rhododendron arboreum alta-clerense, R. incarnatum, R. Nobleanum, R. triumphans gandavense, R. ponticum, Camellia jap. Cliviana, Colvillii, Donkelaerii, Press' Eclipse, punctata, imbricata, and 6 other varieties; Rosa, 6 varieties; Azalea ind. Smithii, amabilis, elata rubra, phœnicea, and 4 other varieties. *Collections of* 50 *Camellias, in bloom.*—1st prize to Mr. Glym, of Utrecht, for Camellia japonica punctata, King's, elegans Chandlerii, Sacoya nova, Daelenii, splendens, Stephanie, fimbriata, Ferdinandii, Susanna, Traversii, nobilissima, Lefevreana, imbricata, do. alba, alba Loudoniensis, Fraseri, resplendens, Cavendishii, Roi des Pays-bas, maculata, Colvillii spectabilis, maculata, Vandesii, Reevesii, Derbiana, Chandlerii, candidissima, Vandesii vera, Loudoniensis magnif, electa, striata, minuta, punctata major, electa (Casier), Queen Victoria, Gilliesii, Fordii, speciosa, futteng, formosa, Ferleyana, Campbellii, splendens, Thomsoniana, Stephanie, Vandesii superba, delicatissima. *Collections of* 15 *Rhododendron arboreum* (*hybrids*).—1st prize to Mr. Maurice Otin, of Etienne, for Rhod. arb. altaclerense, Russellianum sup., tigrinum, fulgens, superbissimum, delectum, Drummondii (sp. n.), amabile, formosum, sericeum, excelsum, hybridum nov., atrorubens, Smithii, and Knightii.

Competition between Gardeners and Amateurs throughout Flanders.

Collections of 25 *Forced Plants, in bloom.*—1st prize to Mr. A. Van de Woestyne-D'Hane, of Ghent, for Magnolia striata, Glycine sinensis, Kalmia latifolia, K. glauca, Ledum palustre, Pæonia arborea, Lilium Broussartii, and others. *Collections of* 50 *to* 150 *Plants, in bloom.*—1st prize to M. le Cher Heynderyex, of Ghent, Vice-President of the Society, for Dendrobium nobile, Lælia anceps, Maxillaria aromatica, Oncidium Baueri, Trichopilia tortilis, 14 varieties of Rhododendron arboreum, 9 varieties of Acacia, Banksia integrifolia, B. prostrata, B. intermedia, 9 varieties of Azalea indica, 5 varieties of Pæonia arborea, 19 varieties of Camellia, 7 species of Epacris, 20 species and varieties of Amaryllis, Crinum amabile, Clivia nobilis, Begonia coccinea, Ixora Bandhuca, and others, making a collection of upwards of 150 plants. *Collections of* 50 *to* 100 *Camellias, in bloom.*—1st prize to M. Alex. Verschaffelt, of Ghent, for a collection of 50 plants, including the following varieties, which were not included in M. Glym's collection, noticed above:—C. delicatissima, Kew blush, Colvillii, tricolor, rubra aurantia, Grunellii, Woodsii, do. alba, cœlestina, Pressii, alba plena, rubricaulis, Haylockii, Parkerii vera, Philadelphica nova, rosa chinensis, Sweetii, Lechmannii, ochroleuca, Youngii, reticulata, rubra plena, florida, gloriosa, picturata, coronata vera, Rollinii, Hendersonii. *Collection of* 12 *new Camellias, in bloom*, (exhibited in honour of his Majesty the King of the Belgians.)—1st prize to M. Alex. Verschaffelt, of Ghent, for C. Queen Victoria, Prince Albert, Fentonia, Marchioness of Exeter, fasciculata nova, Mathilde, imbricata rosea, alba mutabilis, picta nova, amabilis triumphans, alba plena nova, composita. *Collection of* 30 *Coniferous Plants.*—1st prize to M. Alex. Verschaffelt, of Ghent, for Araucaria imbricata, A. Cunninghamii, A. do. glauca, A. excelsa, A. Brasiliensis, Pinus tenuifolia, excelsa, Gerardi, religiosa, macrocarpa, (abies) Douglasii, Lamberti, Menziesii var. (abies), Fraseri, cephalonica (abies), Pinsapo, longifolia glauca, Phyllocladus trichomanoides, Dammara australis, D. orientalis, Dacrydium cupressinum, D. taxifolium, Juniperus pendula, Thuja pendula vera, Cupressus pendula, C. sp. New Zealand, C. australis, Podocarpus Totara, Cedrus Deodara. *Collections of* Rhododendrons, Azaleas, Pæonias, Roses, Amaryllis, Dutch bulbous plants, Orchideæ, Cacti, Ericas and Ferns, with various specimen plants, and minor collections, were exhibited. Among the collections of new plants, which were very extensive, was a most interesting one from Dr. Von Siebold, consisting of plants from Japan and Java.

Reviews.

Theory and Practice applied to the Cultivation of the Cucumber in the Winter Season, &c. By Thomas Moore. 12mo. Groombridge.

This little tract, like Roberts' excellent treatise on the Vine, is what it should be,—not only an explanation of the mode of managing the Cucumber in the winter, but also of the reasons for its management. We welcome its Author as another recruit in the good work of regenerating Horticulture, and of substituting for receipts, which are only to be compared to those in our grandmothers' kitchen-book, something like rational language, fit for the consideration of rational beings. If we could see Mr. Moore's example universally followed by competent persons, Horticulture would quickly receive an impetus which nothing could resist. The plan of a Cucumber-pit, which the Author proposes, although perhaps inferior to the Worsley pit (figured at p. 180), is one which will be found to suit some places better, and is, like it, a wonderful improvement upon the barbarous old contrivances for obtaining heat by fermenting stable-litter.

Dried Specimens of the Agricultural Grasses of Ireland forms a small thin folio volume, which Mr. D. Moore, the Curator of the Royal Dublin Society's Garden, has prepared for the use of farmers. It is not too much to say of this work, that it is one of the most useful things that can be put into the hands of a person interested in rural affairs, and unacquainted with Botany. Its very small price (6*s.*) places it within the reach of everybody. Young Gardeners, too, who are expected to know the common Grasses when they see them, will find it an excellent companion.

GARDEN MEMORANDA.

Lord Wicklow's Seat, Shelton Abbey, in the Vale of Avoca.—At this place is a tree of the Olea paniculata, nearly 40 feet high, a wonder to all the gardeners in the neighbourhood, and probably the only specimen in Great Britain, in the open air.

Sheffield Botanical Gardens.—A large house at this place is appropriated to the cultivation of Ferns, and is one of the most unique structures of the kind in this country. There is a walk near the front, and a flight of steps at each end leading to a gallery. Next the back wall is a platform, on which is placed in pots a collection of Orchidaceæ. The space between the front walk and the gallery is where the Ferns are grown. They grow on a rustic kind of rockwork formed with chumps of wood, rough roots of trees, and large pieces of petrifaction from the Derbyshire hills. The outline of the rockwork is broken into knolls, promontories, and bays in miniature, with pools of water seen in some places through rustic arches covered with those interesting plants. The interstices of the rockwork are filled with a compost of chopped sphagnum, heath-mould, and loam, in which the Ferns appear to delight, as the following dimensions of some of the principal ones will show—

	long	wide
Pteris longifolia, fronds	3½ ft.	1½ ft.
,, specimens from New Zealand	4½	3
,, Plumieri	4	3
,, arguta	4½	3
,, specimen from New Zealand, a most splendid plant, the entire plant being 6 ft. diameter, 4½ ft. high, with a circular rhizoma; the stems of each frond average 2 ft., and then divide into a quadripinnate frond, 20 fronds forming the entire plant.		
,, nemoralis, 4 ft. diameter	high	wide.
Cheilanthes repens, many fine fronds; one measures	9ft.	7ft.
Nephrolepis exaltata	5½	
,, tuberosa	3	
Allantodia coreovadensis	5½	
,, nemorosa	4½	2½
Antiogonium Seramporense	5	3
Aspidium coriaceum	3½	2½
Blechnum Brasiliense	3	3
,, occidentale	2	4 in.
Doodia, species, New Zealand, fine	2 diam.	

Lomaria Patterson, fronds 1 ft. 4 in. long, both barren and fertile fronds ramifying, a circumstance rarely seen.

Gymnogramma, new species, something like dealbata, a most extraordinary plant, diameter of the entire plant, 2 ft.; fronds, 3½ feet high by 1 ft. 4 in. wide.

Gymnogramma ochracea, 4½ ft. diameter, with hundreds of fronds, 2 to 3 ft. high.

Dicksonia antarctica, 3 years' old, fronds 3 ft. high.

Adiantum formosum, 3½ feet high, and many others equally fine.

One part of the collection is very fine. The lofty Cheilanthes in the back ground, Polypodium aureum, with its graceful fronds, overhanging a lofty promontory, on a lower portion of which stands a noble plant of Acrostichum alcicorne, 4½ feet in diameter,

and 3 feet high; whilst the pretty dwarf Niphobolus chinensis creeps round the base, and is in, what is rarely seen, full fructification. The hollows or bays of the rocks are filled with the dwarf species of Adiantum, Aspidium, &c. Altogether, it forms to the lover of those beautiful plants an interesting scene, and is well worthy of a visit to those who delight to study the beauties of the vegetable kingdom.—*T. Appleby.*

Northwood Park, Cowes.—We understand that 8 or 10 Eucalypti trees that were planted in the open air some time ago at Northwood Park, have hitherto passed through the winter very well, and that this season they have done better than usual. We learn that, although they are not more than four years old, from seed, they measure fully 20 feet high.

Miscellaneous.

The Mustard Tree of Scripture.—At a late meeting of the Royal Asiatic Society (the Earl of Auckland in the chair), an interesting paper on this subject was read by Professor Royle. He stated that he had been induced to bring the subject before the Society in consequence of having traced an Indian tree, chiefly by its Asiatic synonyme to be the Mustard-tree of Scripture. Having referred to the passages of the New Testament, Matt. xiii. 31, Mark iv. 32, Luke xiii. 19, &c., where the Mustard-tree and seed are mentioned, he next showed how unsatisfactory were the ordinary explanations respecting the common Mustard plant, and the total want of proof respecting the Phytolacca dodecandra, adduced by Mr. Frost. He then mentioned how his own attention was turned to this subject. Dr. Royle stated that having been asked by the then Principal of King's College, now the Bishop of Lichfield, whether he knew the Mustard-tree of Scripture, and having replied in the negative, he was informed that Mr. Ameuny, a native of Syria, and a student of the College, said he was well acquainted with the tree. Mr. Ameuny confirmed this statement to Dr. R., and added that he had often sat on horseback under the tree, which was, in Syria, considered to be the Mustard-tree of Scripture, and where it was commonly called Khardal. On this Dr. R. observed, "That is the Arabic name for Mustard." Mr. A. replied, "It is so, and in Syria the seeds are employed for the same purposes as Mustard is in Europe." Dr. Royle referred to a variety of sources to obtain some explanation of Khardal as applicable to a tree of Palestine, but was unable to proceed beyond the Asiatic names of three kinds, enumerated in his manuscript Materia Medica of the East. 1, *Khardal*, or common Mustard; 2, *Khardal barree*, or wild Mustard; 3, *Khardal Roomee*, or Turkish Mustard. The last would appear to be the tree, though there was no way of finding what tree is intended by these names in the Arabic works on Materia Medica. On referring to the Index of his "Illustrations of Himalayan Botany," he found the word *Kharjal*, which he was himself surprised to find one of the names of a tree in N. West India, apparently well suited to be the Mustard-tree of Scripture, though he had no proof that it extended into Palestine. This is the Salvadora Persica, first obtained from the Persian Gulf, which is there a tree of moderate size, with drooping branches, and leaves something resembling those of the Olive, with acrid bark, and edible berries. Dr. Roxburgh describes the same tree as common in the Peninsula of India, growing well in every soil, producing flowers and ripe fruit all the year round, with the inflorescence in panicles; the berries red and juicy, much smaller than a grain of black pepper, having a strong aromatic smell, and taste much like garden cresses. Retz had previously obtained the same plant from Tranquebar, and had called it Embelia grossularia. Forskal found it in Arabia, and called it Cissus arborea, stating that it was much esteemed by the Arabs, and even celebrated by their poets. Having traced this tree from India up the Persian and Arabian Gulfs, the author was still unable to find any authority for its being found in Palestine. On inquiry he was informed by Dr. Lindley, that he had seen specimens of the plant collected by Bové, near Mount Sinai. Captains Irby and Mangles, however, in their travels, mention a tree which they suppose to be the Mustard-tree of Scripture, and which Dr. R., even from the few characters given, has no doubt is the same tree, which he had traced from India, up the Persian and Arabian Gulfs, and from thence to Mount Sinai. These travellers mention, that advancing towards Kerak, from the southern extremity of the Dead Sea, they met with a number of curious plants, and among them, one which they observed in great plenty, and which bore a fruit in bunches, resembling in appearance the Currant, with the colour of the Plum. It has a pleasant although strongly aromatic taste, exactly resembling Mustard. We think it probable that this is the tree our Saviour alluded to in the parable of the Mustard-seed, and not the Mustard-plant, which we have in the north, and which, even when growing large, can never be called a tree; "whereas the other is really such, and birds might easily, and actually do, take shelter under its shadow." On further inquiry of Mr. Ameuny, Dr. R. was informed, that the tree called Khardal is found in the neighbourhood of Jerusalem, but most abundantly on the banks of the Jordan, and round the Sea of Tiberias: that is in the very locality where our Saviour appears to have spoken the parable of the Mustard-tree. There can be little doubt but that this is the same tree seen a little further south by Captains Irby and Mangles, and that it is to it that writers in the Talmud refer, under the name of Chardal—one describing a tree of which the wood was sufficient to cover a potter's shed, and another that he was wont to climb into a Chardal-tree in his field, as men climb into a Fig-tree. These statements have been sneered at by Rosenmüller and other Biblical writers. Dr. Royle concluded by stating, that though he thought that Captains Irby and Mangles had been the first to indicate this tree, though without any name, as the Mustard-tree of Scripture, yet he thought that he himself had been the first to ascertain that Salvadora Persica was the tree. But he had been surprised to find in the "Flora Medica" of his friend Dr. Lindley, the observation that this tree is supposed to be the Mustard-tree of Scripture. Having only a day or two previously heard from Dr. L. respecting the source of his information, Dr. R. had as yet been unable to trace it out. He, however, presented his paper as a result at which he had arrived, by an independent mode of investigation, and which is, at all events, interesting, as proving that the name Kharjal is applied even in so remote a country as the north-west of India, to the same plant, which in Syria is called Khardal, proving the impossibility of collusion, or the recent application of the latter name to a plant of Palestine, merely to meet the exigencies of the case. Notwithstanding the absence of authentic specimens, the author stated he felt no doubt that Salvadora Persica is the Mustard-tree of Scripture, as it has a small seed which produces a large tree with numerous branches, in which the birds of the air may and do take shelter; that the seed is possessed of the same properties, and is used for the same purposes as Mustard, and has a name, Khardal, of which Sinopi is the true translation, and which, moreover, grows abundantly on the very shores of the sea of Galilee, where our Saviour addressed to the multitude the parable of the Mustard-tree. [We entirely agree with Dr. Royle in this view of the subject, notwithstanding the objections urged against it by Lambert and Don, which appear to us to have no weight.]

New Work on the Vine.—We learn with much pleasure that a descriptive account of an improved method of planting and managing the roots of Grape Vines is about to be published by Mr. Clement Hoare, whose valuable work on the general management of Vines in the open air is so well known. We understand that the author's intention is to make known a new method of planting and managing Vines, so as to give the gardener as perfect a command of the roots as he now has of the branches.

Robinia Uterhartii.—This tree, obtained from a seed planted by M. Uterhart nearly twelve years ago, has a large thick foliage, and its wood is straight and green. Instead of the branches being crooked in the disorderly way of the Robinia, they grow in tiers of whorls, each season of growth producing its shoot and crown of twigs. It appears to be as vigorous as R. pseud-acacia, if not more so. It has no thorns, and produces beautiful bunches of white flowers. M. Uterhart has propagated it, and can now offer some for sale.—*Rev. Hort., Nov.* 1843.—*T.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

In potting stove and other plants, a distinction should be made between the preparation of the composts for permanent woody plants and for those soft-wooded kinds which are annually shaken out of pots. Justicias, Vincas, and some of the Clerodendrons form part of the latter class. After these are done flowering in autumn, they should be close pruned, and left partially dry during winter; in spring the soil should be shaken from their roots, when they are put into small pots to be shifted into larger ones as they advance. The compost for this potting should be made quite fine, in order to let the roots occupy every particle of it in a few months; while the compost for permanent woody plants can hardly be too rough. This distinction ought to be borne in mind a potting-time. A steady heat, not more than 60°, by fire is now essential, as all the plants are in growth; and, except on fine days, little air is necessary at this stage, but keep the atmosphere moist.

Conservatory.—To keep this house now in perfect order, you must go over the plants daily, or at least every other day, and take out such as are beginning to fade. Pick off all dying flowers and leaves, and also distorted flower-buds, or indeed any small or ill arranged flower, which does not look well. Every plant at this season ought to be a gem of its kind, or it is not fit to be brought into the conservatory. Others, however, may be useful for cut flowers to fill glasses, vases, or urns in the drawing rooms. Change the plants in sitting-rooms often, if they are worth preserving afterwards. I give very little air to the conservatory at this season; but for small houses this would not answer so well, and they should have more air, if only to keep down the temperature.

Greenhouse.—Fuchsias represent that class of greenhouse plants which do best to be shaken out of the pots annually; but as the strong varieties of them are gross feeders, you may use a rougher compost for them than is recommended above for stove plants under the same treatment. When potting Heaths, let me urge on you to try the plan of growing them without pots; there is no more trouble or danger in growing the finest Heaths in this way than there is in growing Rhododendron pontieum; and you may remove them from a frame or bed any day in the year, when they are coming into flower, to be brought in doors, or for any other arrangement. Epacrises may be treated in the same way. Both families here are now in the best of health, and many of them are in bloom in the borders of a conservatory wall; others of them, treated as above recommended, give no trouble.

Forcing pits.—Among the many common plants that will force may be placed the old Gazania pavonia and rigens, or Gorteria, as we used to call them in our younger days. Force these exactly as you would Strawberries, and as near the light. Those who force Roses late in spring will now be getting them in for the first time, and must smoke them almost every week. Experiments are now in progress by some of the great Rose-growers, which will settle the question as to whether the Dog rose or the Boursault make the best stocks for forcing on. Repot cuttings and seedlings as soon as they are ready, and keep up a sweet growing temperature of about 70°, and shade every young thing, if it offers to droop under a strong sun.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

The fine weather has come upon us so suddenly, that we appear almost on the verge of summer, before the spring has fairly commenced. All new ground work, such as planting, turfing, &c., must be finished as expeditiously as possible; and as soon as all rubbish has been cleared from the borders, grass, &c., prepare for turning the walk, and making clearer for the season. This, though an operation readily performed, is frequently hurried over and badly executed. A walk, after it has been turned, levelled, and the facing of new gravel laid upon it, should remain in that state three or four days, for the gravel to bleach, and not be rolled until it has had a shower of rain upon it. The utility of this plan is, the gravel becomes washed before it is rolled down, and you have a clean bright walk at all times, instead of one sticking to your feet, and falling into holes in wet weather. This delay causes a little inconvenience while it is about; but it is fully counterbalanced by the excellence of the walks throughout the season.

Reserve Garden.—Birds are very troublesome to newly-germinating seeds, and where it is inconvenient to cover with netting, it will be well to sprinkle the beds with sand made wet with spirits of tar. The transplanting of all autumn-sown annuals should be completed without delay, and also biennials. Prepare a piece of ground for a sowing of the latter, which must be slightly enriched and dug to a good depth.

Shrubberies.—Here the work for the season will be finished except attending to newly-planted shrubs and watering them when necessary. Take care that all newly planted trees are properly staked before they begin to make new roots, and mulch them with short grass occasionally when the lawn is mown.

Pits and Frames.—The bloom of the Hydrangeas, introduced into the forcing-house in January, will now be advancing. If you have any doubt of its being blue, water the plants regularly with water impregnated with alum, to the extent of one ounce to every quart, and keep the plants standing in feeders to prevent the loss of water. The plant may be occasionally sprinkled over head with alum-water. The young plants of this season's propagation will now be fit to pot off. Use the third spit loam from Norwood if you can procure it, which is certain to produce blue flowers. I intend to pot my plants into large 60s, and then plant them into a mass of Norwood loam on a slight hotbed in May. In this way, with a very little trouble, I hope to have unusually fine heads of bloom another season. Brompton Stocks in pots may be planted out, surrounding the wall with rich soil, and spring-flowering ten-week varieties may be left unprotected, so as to prepare them for bedding out about the middle of April.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—These flowers are putting on an improved appearance; still keep them warm at night by mat coverings, and as they are growing fast, they should have a moderate supply of water. I know a very successful Auricula grower, who waters his plants with a decoction of weeds and vegetable refuse, and the luxuriance of his plants is astonishing. *Polyanthuses.*—Last year's seedlings are now throwing up their trusses, and "showing their faces." Those which do not come up to the mark should either be pulled up, or transplanted for border flowers in the shrubbery or elsewhere. *Ranunculuses.*—Seed is now coming up fast; shelter from cutting winds, and if any are rooted out of the soil, which sometimes is the case, they must be carefully re-inserted. Where practicable, the main beds, of named flowers, should be covered with mats, when frost is expected. *Carnations.*—Potting has commenced in many parts of the country, and where the plants have been brought up hardy, the sooner they are out the better; as a precaution, place a slice of Potato between the layers, if two are planted in a pot, so that they may have a chance of avoiding destruction, should a solitary wireworm have escaped you. *Pinks.*—If the directions previously given have been attended to, they will require little else at present. *Pansies.*—The beds may be top dressed with decayed Melon-bed manure, and screened from the prevailing cold wind with Spruce Fir boughs, or other efficient protection. Snails must be trapped, as they begin to be seriously troublesome.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Having last week recommended the removal of the tan from the sides of the pots if the heat exceeded 95°, I may now add, that the Pine will bear a bottom heat of 95°, or even 100°, without apparent injury, and may even appear to be doing better with that high degree of bottom heat; but I am satisfied that those plants grown in a bottom heat of from 85° to 90° will be the best by the end of the season. It is strength and compactness in the plants that is so desirable, not only for the sake of appearance, but they are more manageable, and produce finer fruit. Suckers in small pots will require watering often when they begin to root freely; admit air daily, if only for half an hour.

Vinery.—Vines started in October will now be changing colour, and should not be syringed; give air daily, excepting during cold, windy weather. The atmosphere should now be drier, to give flavour to the fruit. Continue to stop the laterals till the fruit is quite done swelling, after which they may be allowed to grow at freedom. In the second house the shoulders of some of the bunches may require supporting. Vines lately introduced into houses where the temperature has to be kept high for Pines or other plants, will require much attention to induce all the buds to break. *Bend them more*, just above those buds which are least prominent. Syringe them often, and that this may be done more effectually, keep them along the front of the house, till all the buds have broken.

Peach house.—On trees started in the latter end of November, the fruit will now be showing; and during this process the temperature should be kept very regularly at 55° or 60° by night. Tie in the young shoots often, and continue to stop over strong growths, in order to keep all parts of the tree in an equal state of vigour. If syringing fails to keep down insects, have immediate recourse to fumigating. The late house need have no fire, unless the thermometer fall below 45°.

Fig house. Fig-trees on which the fruit is now ripening will require moderate waterings, on account of the second crop now appearing. Till the first crop is gathered, keep down insects by means of sulphur.

Strawberries.—Bring in another succession of plants according to the demand; let the plants have plenty of air till the fruit is set. Water with liquid manure till the fruit begins to ripen, after which use clean soft water.

Melons.—Those plants put out in February will now require attention to training, watering, and adding fresh soil as the roots appear through the ridges or hills. Give air as early as possible, shutting up with 90° of sun heat. Renew the lining of dung-beds frequently, to prevent any check to the plants; doing the back and front alternately.—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Finish planting; all sorts of fruit trees as soon as possible. If deferred later they will suffer greatly, especially if brought from a distance. In such a case the trees, as soon as raised, should have their roots passed through a puddle of loam and water; otherwise the best fibres are dried up before they are inclosed in the package. If nurserymen would see to this, and seedsmen could be brought to act upon the excellent advice of Mr. Forsyth, there would be fewer disappointments.—*Sea Kale* may now be obtained plentifully with little trouble. Where it is wanted early in November, a fresh plantation should be made about this time every year. The ground should be well manured, and deeply trenched. If a stiff clay, add leaf-mould, chalk, sand, or gravel. Sow in patches, or rather use one-year old plants, which will be strong for forcing next season.—*Rhubarb.*—Where this is greatly in demand, prepare the ground as above; divide and plant out old roots; or sow seeds under protection to be planted out in a good situation, encouraged during summer, and lifted for forcing next winter.—*Asparagus.*—A trench may be cut by the sides of a bed in the open ground, and filled with fermenting matter, to forward some to succeed those in frames. It is a good plan to have several beds surrounded with pigeon-holed walls for this purpose, provided with wooden covers. (The same remark will apply to Rhubarb and Sea Kale). Sprinkle all the beds with a little salt repeating the operation at intervals. Stimulants and

manures are most useful in the growing season, when, too often, Asparagus is left to shift for itself.—*R. F.* [In last Calendar, p. 184, 12th line from top—read, "sprung ones," instead of "spring ones."]

VI.—ARBORICULTURE.

Old Woods.—Be careful to go through these before the trees, shrubs, &c. get into leaf, and relieve any young plants that have been kept down, forced to one side, or otherwise injured. Cut away all or a part of whatever injures them, as recommended in former Calendars, and take off any rotten or broken branches.

Coppice.—Great attention should be paid to clearing them of all the saleable and useful produce, as well as of the useless spray from the stools, before the young shoots appear, as they are easily broken off.

Young Plantations.—Continue to forward all the works that are necessary at this season, until they are completed. In recently planted ones now is the best time to hoe among the young plants, in order to clear away all weeds, Grass, &c., before such get firm hold in the ground. It is of the greatest advantage that the first buds and shoots should have a *fair start*; and it saves much labour to clear away the weeds now, as the ground is in a loose state after the frost.

Hedgerows.—Attend to former instructions before the season is too far advanced.

Nursery Work.—The weather still continues unfavourable for many kinds of work that should now be done, but it must be put off until circumstances will admit of it being performed with propriety. The hoeing, weeding, and cleaning of last year's seed-beds, and nursery rows of young plants, &c., should be commenced and finished as soon as possible.—*W. B.*

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending April 6, 1844.

Mar.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 31	53.7	37.0	45.3	9	0.94 in.	2	5	1	2	1	2	4	1
Mon. 1	52.0	36.1	44.5	10	0.76	3	1	2	2	2	3	1	4
Tues. 2	51.3	37.7	45.5	9	1.19	3	2	1	1	2	4	2	4
Wed. 3	54.5	34.7	44.6	9	0.07	4	3	2	—	—	3	4	2
Thur. 4	54.2	36.3	45.3	7	0.14	3	5	1	—	2	1	1	2
Fri. 5	55.3	37.5	46.7	8	0.56	—	3	2	1	2	5	2	—
Sat. 6	56.0	37.6	46.8	7	0.13	2	4	1	—	4	3	1	—

The highest temperature during the above period occurred on the 5th, 1838 —therm. 74° ; and the lowest on the 5th, 1841—therm. 25°.

State of the Weather near London for the week ending Mar. 23, 1844, as observed at the Horticultural Garden, Chiswick.

Mar.	Moon's Age	Barometer.		Thermometer.			Wind.	Rain
		Max.	Min.	Max.	Min.	Mean		
Fri. 22	3	29.720	29.503	47	41	39.5	S.W.	.08
Sat. 23	4	29.570	29.513	52	36	39.0	W.	
Sun. 24	5	29.655	29.513	48	35	41.5	S.W.	.02
Mon. 25	6	29.644	29.373	56	43	49.5	S.W.	.06
Tues 26	7	29.805	29.617	50	46	53.0	W.	
Wed. 27	8	30.031	29.851	50	41	45.5	S.W.	
Thurs. 28	9	30.095	30.000	50	39	44.5	N.	
Average		29.836	29.691	54.7	37.6	46.0		.14

March 23d Overcast; cloudy, slight rain at night
24 Overcast; fine; clear and frosty at night
25th Cloudy; boisterous, with rain in torrents; overcast
26th Overcast; rain; fine
27th Very fine throughout
27th Lightly overcast; fine; hazy and mild
28th Fine; very fine, with bright sun; clear and fine at night
Mean temperature of the week, 3 deg. above the average.

Notices to Correspondents.

BOILERS.—*K. L.*—The brick sides to the furnace will most likely cause the fuel to burn better and to keep alight longer, than when the sides consist of the boiler itself. Lowering the position of the fire will not produce any ill effect if there is sufficient thickness of brickwork on each side to prevent the heat from escaping through it. By thus lowering the furnace, you can doubtless increase the area of your fire-bars as much as you please, and the heat will act more powerfully and directly upon the boiler. We shall be glad to hear the result of the change, if you make it.—*A.*

CALCEOLARIAS.—*A Subscriber, Manchester.*—Standishii, Barnes' Landmark, Green's Alba coccinea maxima, Miss Antrobus, Prince Albert, Isabella.*

CAMELLIAS.—*Short.*—A small portion of well-decayed cowdung may be advantageously mixed with the soil for Camellias.‡

DRY-ROT.—*Isle of Wight*—How to destroy this formidable enemy, when it has once attacked timber, no one knows. Your only remedy is, to take out all the infected wood-work, and *burn* it; for thus you will kill the fungus that produces the evil, and all its seeds. Before replacing the timber, you should also rake out all the old mortar that touched it. The new timber should be rendered dry-rot proof by some of the means now patented, such as Sir Wm. Burnett's chloride of zinc, or Mr. Bethell's creosote, or Payne's lime and silicate of potash. Any unprepared timber will probably be again attacked, notwithstanding all the precautions you can take. Be thankful if it does not spread all over the lower part of your house, or even mount to the roof.

FIGS.—*Z.*—Figs are liable to drop their fruit from various causes; but chiefly from their being badly conditioned as regards temperature and water. If the fruit-buds have advanced into the form of young Figs, and then for want of sufficient temperature are allowed to remain stationary for a time, they are apt to drop in consequence, even although a proper heat is afterwards afforded. But supposing a due temperature to be all along maintained, if the juices of the plant have become greatly inspissated from the want of a regular supply of water in sufficient quantity, the young fruits become tough like so many pieces of india rubber. ‖

FRUIT-TREES.—*Strath Isla.*—If you graft your wall-trees which you have cut in with some of the new varieties of Pears, recommended in some recent Numbers of this Paper, you will find they will bear abundantly. Cuttings of Apple trees will no doubt strike by inserting them in a Potato; so they will by inserting them in the soil. Potatoes contain a large proportion of water; and the principal elements of all vegetables likewise enter into their composition. But when decomposition takes place, there is then nothing to hinder these elements from becoming subservient to the vegetating powers of the Apple-tree. ‖——*Anglus.*—You will obtain a supply of fruit much sooner from dwarf than you will from standard trees. There can be no doubt that where the Ribston Pippin does well, many culinary varieties of Apples will succeed as dwarfs. You may plant Dumelow's Seedling, Bedfordshire Foundling, Alfriston, Hawthornden, Royal Russet, Round Winter Nonsuch, and Mère de Ménage. ‖

FUCHSIAS.—*M. W. K.*—Cut them down at once; take care that they have plenty of pot-room, and are thoroughly drained; and dress them with charcoal-refuse steeped in some sort of liquid manure. They will make beautiful plants.——*A Subscriber, Manchester.*—F. Exoniensis, Formosa elegans, Standish's Colossus, Conspicua arborea, splendens, and Epps' Scottish Bride.* ——*Y. M.*—From your description of the properties you require, the following six varieties will most probably suit you:—Epps' Winsertl, Prince of Wales, Standish's Colossus, Candidate and President, and Robusta. Strike a cutting of Corymbiflora after it has formed its buds.*——*W. J.* Venus Victrix.*

GLADIOLI.—*A Subscriber.*—Seeds of the hardy kinds may be sown in the American border, in the second week in April. Whenever the weather is dry, the young plants should be plentifully watered to promote their growth. At the beginning of October, or as soon as the leaves wither, the young bulbs should be taken up and dried; they may be re-planted again at any time, placing them about eight inches under the ground to prevent the frost reaching them, for very severe frosts will destroy them if they are near the surface. The seedlings, if well encouraged, may be expected to flower next year. If the peat is close and rich, it should be mixed with sand, to prevent its cankering them, or causing them to rot by the retention of too much wet in the winter.‡

GRASS-SEEDS.—*Subscriber.*—For permanent pasture, Mr. Lawson, recommends the following:—Anthoxanthum odoratum, 1 lb.; Dactylis glomerata, 8 lbs.; Festuca duriuscula, 1 lb.; F. elatior, 1 lb.; Lolium italicum, 4 lbs.; L. perenne, 8 lbs.; Milium effusum, 1 lb.; Phleum pratense, 1 lb.; Poa nemoralis, 1 lb.; P. sempervirens, 2 lbs.; P. trivialis, 1 lb.; Lotus major, 1 lb.; Trifolium pratense perenne, 2 lbs.; and T. repens, 2 lbs. A plan of a Piggery is given at p. 44 of this year.‡

HOLLIES.—*D. R.*—Holly-seed three years old is not worth sowing when fresh seed can be so easily had. To form a hedge you may either sow it or plant it. A light loamy rich soil is what the Holly likes best.

INSECTS.—*Anon.*—Keep off green-fly with weak gas-water (see p. 697, 1843). Do not use train oil, which can do no good, and certainly does harm.——*Anne.*—After the most diligent search amongst the Moss we could find no living animal—the box having been crushed it had made its escape; we therefore hope to be favoured with another specimen, better secured. *R.*—*A B.*—Cannot you cover your Peach-trees, one at a time, with a thick mat or carpet, fixing it close over the top of the wall and letting it touch the earth at the bottom? By introducing the spout of the fumigating bellows as low down as possible, after being well charged with tobacco-smoke, we are convinced you might get rid of the aphides. The best period will be as soon as you detect them, which you must do by examining the under sides of the young leaves *daily*. Be so good as to send us some infested leaves, and say, as the spring advances, how you have succeeded with the operation, if you can adopt our plan. *R.*——*S. H.*—After the most attentive examination of your Camellia-leaves, I cannot discover a single insect; nevertheless, a few of them seem to have been pierced sometime since by the little Thrips. I regret not being able to assist you in remedying the evil, for the little exotic insect called Thrips can sustain a very great amount of heat. Probably cutting off the leaves most affected will prevent the spreading of the disease. *R*——*J. W. I* of Down, transmitted three pupæ of some fly, saying he failed in procuring more specimens, and desired to know the name, which we cannot ascertain until the insects hatch. We shall feel obliged by his communicating their history, for we know not to what he refers.—*R.*

LAWNS.—*X. Y. Z.*—We said nothing about diluting the gas-water; because we have over and over again stated that it must be lowered by water: with how much we cannot tell, because the gas-water varies in strength. Four of water to one of gas-water will probably do; the stronger, however, the better, if not too strong. It will scorch your grass, but that does not signify; the lawn will soon recover. But from what you say, we should fear that your case is hopeless without thorough drainage, and perhaps burning the upper spit.

MANURES.—*Tyro.*—We can but repeat that as far as we have seen it tried, Potter's guano is a most useful substance; but we have not seen its effects on Onions. It is used at the rate of 3 or 4 cwt. per acre. We would also advise you to try on your Onions the following mixture:—One peck of salt, two pecks of soot, well mixed and left for a few days; then applied as a top-dressing, or lightly forked in. We *hear* of great effects thus produced on the Onion crop.——*Inexperience.*—Both lime, soot, and wood-ashes can be used advantageously in a stiff, clayey garden, especially the two first; but none of them will prove of much service unless the ground is thoroughly drained. On such land farm-yard manure is almost indispensable until it is in a state of perfect tilth, and then it may be dispensed with if other fertilising materials are employed. You will never get good Carrots on heavy land; all such long-rooted plants prefer a deep, light, rich soil.

MIGNONETTE.—557.—If you cannot please your wife how can we hope to be so happy? If we were you, however, we should see whether slate Mignonette boxes of rich soil, exposed to the full sun, and carefully watered, would not satisfy the gentle dame's expectations. We presume that your plants die off in summer; but you are very chary of explanation.

NAMES OF PLANTS.—*R. G*—A Dendrobium, which we do not recognise.——*J. M.*—Gnidia simplex.——*A Reader.*—Erica persoluta alba.——*A.*—Dillwynia cinerascens.‡——*J. L L.*—1, Asterotrichion sidoides; 2, Erica Bowieana; 3, Euphorbia melanthera, Phascum alternifolium.§——*W. Gardner.*—Hypnum ruscifolium. That the filaments which inclose the granules of Equisetum fluviatile are elastic, is known to all who have studied the genus.§——*A Subscriber.*—Burchellia capensis.‡——*Anon.*—Hypnum ruscifolium.§

NAMES OF FRUITS.—*C. C.*—Pears: 1, Beurré Rance; 2, Winter Bon Chrétien. Apples: 3, Cockle Pippin; 4, 11, probably Alfriston; 6, Court of Wick; 12, Pearson's Plate; 13, Green Balsam; 14, Cockpit; 16, Norfolk Beaufin; 17, Kentish Fillbasket; 18, Easter Pippin, or French Crab; 20, Yorkshire Greening; 21, Winter Pearmain.‖——*A. Z.*—1, Chaumontel Pear. Apples: 1, Royal Russet; 2, Blenheim Pippin; 4, Bedfordshire Foundling; 5, Brabant Belle Fleur; 6, Alfriston; 7, London Pippin.‖——*W. H.*—Dumelow's Seedling; 2, Æsopus Spitzenberg.‖——*Kate.*—Your Seedling Apple has become rather mealy; it, however, appears worthy of further trial. ‖

ORANGES.—*M. C. Y.*—One kind will train as well as another, except the dwarf, small-leaved kinds. Neither is there much to say about their appearance as standards, except that the true Oranges form a better foliage than Citrons and Shaddocks; at least that is our taste. No good eatable fruit will be had without plenty of warmth; if properly treated the Malta and common Sweet Orange are as valuable as any. The back of a greenhouse is a bad place for plants. You may, however, grow on it scarlet Pelargoniums, the Cape Plumbago, and Passionflowers, or Cobœa scandens. To the names of shrubs which we have repeatedly given we have really nothing to add. Any of the crimson Callistemons, some of the smaller Acacias, Camellias, and Chorozema varium are almost indispensable to a nice collection.——*Dublin.*—These require a very rich soil. A mixture of turfy rich loam, thoroughly decayed manure, and leaf-mould, in the proportion of two-thirds of the former to one-sixth of each of the latter, is suitable for them. Pelargoniums also like a light rich soil.‡

PANSIES.—*Y. N.*—Brown's Curion, Pearson's Black Prince, Cook's Mulberry Superb, King's Sulphurea elegans, Major's Bridegroom, Thompson's Eclipse.*

PETUNIAS.—*E. B.*—Petunia punctata, Magnifiora, Lady Peel.*

PEACHES AND NECTARINES.—*A Lady Subscriber.*—In order to prevent your Peaches and Nectarines from splitting before they begin to ripen, it is necessary that the border should not be allowed at any time to become too dry; and further, that too much foliage should not be taken off at once; neither should insects be allowed to injure that which is left. If the trees are thus kept in health in dry weather, the fruit will not be affected as you describe when wet sets in. In watering, cold spring water must not be used.‖

PEAR-TREES.—*A Subscriber.*—It is too late in the season for root-pruning; besides, as your two Pear-trees blossom abundantly, it does not appear that they require that operation. A dressing of fresh soil and manure, applied as far as their roots extend, will prove beneficial ‖

POLYANTHUSES—*An Amateur.*—Buck's George 4th, Pearson's Alexander, Clegg's Earl Grey, Hufton's Squire Ray, and Lord Ranclife, Crowshaw's Invincible. Begin to use the liquid manure as the buds begin to swell, about once in a fortnight: take care to keep it from the foliage.*

PELARGONIUMS—*A Subscriber, Manchester.*—Matilda, Witch, Queen of the Fairies, Sir R. Peel, Grand Duke, Lyne's Duke of Cornwall, Rising Sun, Erectum, Nestor, Rhoda, Favourite, Armynta.*——*W. Heath.*—All the flowers in your list we have seen, and recommend you the above 12.*

RHODODENDRONS.—*J. M.*—See p. 88 of this year; for a list of Ornamental Shrubs, see p. 149, 1843.‡

ROSES.—*Amateur.*—Your stocks are covered with young germinating Mosses. They do no harm, but they show that your ground or your air are too wet, and not well ventilated, which should be cured.——*J. B.*—That your China Roses may bloom late, they should be left unpruned until they show their blossom-buds. When these begin to appear you may then prune them as you would do at an earlier season. It is not, however, advisable to leave all the plants to be pruned thus late, as they bloom but sparingly. If some of them are cut in about a fortnight hence, they will flower earlier and much more freely, and the others will come in in succession.‡——*J. M.*—Superphosphate of lime, or Potter's guano, is better for Roses than the substance you mention, of which we have not a good opinion. They may be applied at the rate of a wineglassful to a 24-sized pot. We are not acquainted with the Rose "Beauty of the Prairies."‡

SCARLET GERANIUMS.—*E. B.*—Compacta, Brighton Hero, Frogmore Scarlet, Waterloo, Smith's Emperor, Green's Seedling.*

SEAKALE.—*Guichenet.*—It likes good rich well trenched ground; it will succeed quite well in the situation you mention.‡

TAN.—*H. P.*—Tan will keep up a good bottom heat for a considerable time. It should be used in a moist state, as if it is too dry it will not ferment. When the heat begins to decline the tan should be forked up and mixed with a little fresh material, in order to raise the heat again.‡

TRINIDAD PINES.—*A Subscriber* will find this, and I dare say in perfection, at Cunliffe Lister Kaye's, Esq., Manningham House, near Bradford. I had a small root-sucker from there upwards of three years ago, which fruited with me, but only produced a deformed fruit, from water having accidentally dropped in the heart of the plant in winter. It produced five gills and crown, which are promising plants, but not fruiting here until next year. Mr. Kaye told me himself it was the true Trinidad or Pitch-Lake Pine.—*James Roberts, Eshton Hall.*

WORN-OUT GARDENS.—*Subscriber.*—Can't you get cow-dung? If not, you may employ guano; and as the soil is entirely worn out, it will be better to do so at different periods of the year—say ½ cwt. before cropping, to be thoroughly incorporated with the soil, and then left for a week or two till rains have mixed it; more afterwards, when the crops are up and growing; give them frequent small doses in a liquid form, not over the leaves but between the rows. Mind that your guano is of good quality; a great deal of rubbish is in the market.

VINES.—*Guichenet.*—Inarching may be performed at any time after the Vines have started so far as not to bleed.‡

MISCELLANEOUS.—*Clouden.*—We have been paying 10*d.* per bushel for refuse charcoal; but it is much too dear. We know nothing about faggots. A Hatch load of English bark weighs 45 cwt. Foreign is always sold by the ton. 2 ton 5 cwt. being an English load, therefore if Foreign bark sells at 7*s.* 4*d.* per cwt., English will be 16*l.* 10*s.* per load, and so on. There are many ways of selling bark. In the rough, 50 cwts make a load. A Hatch-load of Oak bark is, the bark stripped from the timber, as felled in April and May, set up to dry in the open air, put under cover, and "hatched"—that is, the moss and outside rough bark are shaved off, and it is chopped into pieces from 2 to 3 in. long; it is then ready to go through the mill in the tan-yard.——*Anon.*—If your Pear-trees bloom and do not fruit you must protect the blossoms.——*B. F.*—Chimonanthus may be propagated from cuttings of the just ripe wood struck in heat under a bell-glass; it is now commonly raised from layers, which, however, root unwillingly; the best way is to get the seeds, which are always found on old plants after a mild winter. It is not particular about soil.——*Farnham.*—Cuttings of the roots of Glycine sinensis may be struck in a little heat; it will also root freely from layers.——*W. F.*—If a lady cannot buy the seeds she wants, there is nothing to be done but to save them herself. No instructions are required, as they will be saved in the usual way. In sending them to New Zealand they must be packed loosely in a coarse canvas bag, which must be suspended in some well-ventilated part of the ship. All European seeds are useful in New Zealand.——*Boulogne.*—There is no objection to a south-east aspect for a small greenhouse. Many plants will thrive very well in it.——*M. C. M.*—Next week; the question is referred to one conversant practically with such questions.——*Argo.*—The cause of the young bulbs of Orchidaceous plants damping, is no doubt owing to their being kept too wet. The suckers may be taken from Musa Cavendishii before it fruits.‡——*Exhibitor* is answered at p. 104 of this year.‡——*P.*—See last vol., pp. 303 and 335, where a full account of the method of burning clay is given, and also at p. 85 of the present year.‡——*Amicus.*—Currants will bear grafting very well.‡——*A Beginner.*—Calico done over with Whitney's composition dries in a few days; the Beechwood is a better Melon than the Green Rock; the plants should be turned out of their pots and planted into the mould in the bed. ‡——*B. D.*—The management of "Couve Tronchuda" is given at p. 120 of this year.‡——*D. G.*—A list of herbaceous plants may be found at p. 681, 1843.‡——*Rum-tbler.*—We do not know it. Walcheren Brocoli is like a good large Cauliflower. It is reported to be hardy, and requires the same treatment as other varieties.‡——*W. J.*—A Pansy for showing should not be less than 1½ inch across.*——*W. J., and W. J. and Co.*—Flowers may be sent packed in tin cases with moist moss.*——*W. J.*—Shape and habit of male, and colour of female, and colour of male parent.*——*W. J.*—The "Florists' Journal."*——*A. R. Z.*—See p. 197, in to-day's Paper.‡

SEEDLING FLORISTS' FLOWERS.

AZALEAS.—*C. M.*—Your seedling presents no improvement either in colour or form, and the petals in the centre are a decided defect.*

CINERARIAS.—*Winton.*—Your seedling is a bold and showy variety of good colour in the specimens received; the edges of the petals curl back, which make them look narrow and irregular; if this fault is not apparent on the growing plant, it is a handsome flower.*——*T. B. Y.*—No. 2 is a flower of good form and substance; the colour with which the petals are tipped, is rather too faint, which gives it a faded appearance, but from its other good properties it makes a desirable variety.*——*E. J. L.*—Rookwood is not worth preserving, on account of its colour being weak, and the petals thin and small.*——Alice is a very good flower in colour, form, and substance, but there are others in cultivation similar to it.*——*Z. Z. Z.*—Formosa elegans, a very lively-looking variety, surpassed by one similar to it in appearance, already in cultivation, named the Dowager Queen. Rotunda, compact and pretty flower, but no improvement, and we have similar varieties to Venus Victrix and Rosea alba, which are both pretty, compact varieties.——*A. B.*—A large and very finely-coloured seedling, of an azure tint; the petals appear rather too long for their substance, as they hang about rather too much; no doubt part of this irregularity arises from the faintness produced by travelling. We are glad to see these splendid colours gradually getting into larger flowers; this specimen measures 1¾ inch in diameter.*

FUCHSIAS.—*Z. Z. Z.*—Alba coccinea. We have the same delicate colours in larger, stouter, and better flowers.*

*** As usual, many communications have been received too late.

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The Agricultural Gazette.

SATURDAY, MARCH 30, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 3 . { Agricultural Society of England. Highland and Agricultural Society.
THURSDAY, April 4 . Agric. Imp. Society of Ireland.
WEDNESDAY, April 10 Agricultural Society of England.
THURSDAY, April 11 . Agric. Imp. Society of Ireland.

FARMERS' CLUBS.

April 1 . { Yeaford. Wenlock. W. Firle.
April 2 . { Framlingham. Hayleigh.
April 3 . Harleston.
April 6 . Collumpton.
April 8 . { West Hereford. W. Market.

WE have received from a correspondent who signs himself "Alpha," the following interesting communication, commenting upon our remarks in a late Number of the *Gazette*, on the filthy state of the WATER IN HORSEPONDS:—

"Though I admit the impropriety of allowing the drainage of the yards, or urine from cow-houses and stables, to get into the ponds from which water is supplied to horses and cattle, as demonstrated in your leading article of the 9th inst., yet in establishing the principle thus laid down, an important circumstance seems to have been overlooked. The practice so justly reprobated in that article is impolitic, not only as rendering impure and unwholesome the beverage of the domestic animals, which it is especially important to guard against, but also as allowing this to be done through the agency of matters which are in themselves of great value when properly managed. The conclusion, then, arrived at—that 'there is no case in which food of an organic character in a condition of usefulness for vegetables can be safely administered to animals,' must, we fear, be taken with some grains of allowance. It is well known that the putrefactive process must have proceeded a certain length before animal matters can be rendered available as food for plants; but the circumstance was overlooked by the writer, that a certain class of animals are almost entirely supported by food which is partially and often to a great extent decomposed. That such is a wholesome article of diet I do not mean to assert, yet that it is *decidedly poisonous* is controverted by the circumstance of its being so extensively used. Animal matters constitute the food of the class of animals to which reference is now made, and it may be said the case of such is not analogous to herbivorous animals, which are those referred to in the article in question. With certain exceptions, however, all animal matters are affected by the same laws, and the cases are rare indeed in which any substance proving decidedly poisonous to one class can be partaken of with impunity by another. Instances are not uncommon in which even herbivorous animals have been trained to partake freely of animal food; and although such in a decomposing state might be more injurious to them than to carnivorous animals, yet it does not by any means follow that it would be poisonous. No doubt 'a little leaven added to a batch of dough will spread, and the whole lump acquire the condition of the small quantity added to it,' but the inference drawn from this circumstance, 'that a small quantity of matter, if in a decomposing state, whose elements may be identical with those of a living animal, may yet prove the cause of its death if it be partaken of,' cannot, as it appears to me, be established. The *practice* which the article referred to condemns, is unquestionably deserving of the most severe censure, but the *principle* sought to be established appears to have been too hastily adopted."

We take advantage of this opportunity for recurring to this subject, to direct the attention of our readers to a case bearing directly upon it—a statement of which occurs in the 89th page of Dr. Pereira's work on "Diet." Dr. Pereira writes as follows:—

"At the Nottingham Assizes in July 1836, it was proved at a trial on which I was a witness, that dysentery in an aggravated form was caused in cattle by the use of water contaminated with putrescent vegetable matter, produced by the refuse of a starch manufactory. The fish (perch, gudgeon, pike, roach, and dace), and frogs in the pond through which the brook ran were destroyed. All the animals (cows, calves, horses) which drank of this water became seriously ill, and in 3 years the plaintiff lost 24 cows and 9 calves, all of a disease (dysentery) accompanied by nearly the same symptoms. It was also shown that the animals sometimes refused to drink the water; that the mortality was in proportion to the quantity of starch made at different times, and that subsequently when the putrescent matter was not allowed to pass into the brook . . . . the fish and frogs began to return, and the mortality ceased among the cattle. The symptoms of illness in cows were as follows:—the animals at first got thin, had a rough staring coat, and gave less milk (from two to three quarts less every day); they then became purged, passed blood with the fæces, and at length died emaciated and exhausted. On a *post mortem* examination the intestinal canal throughout its whole length was found inflamed and ulcerated."

Now, here we have proof to the great loss of their owner—proof that cattle (horses, oxen, &c.) are liable to disease and death, from drinking water containing putrescent matter. It must be admitted, from the circumstance mentioned by "Alpha" above, that the proposition of organic matter in a decomposing state being poisonous to animals, is not universally true; the vulture among birds, and many other animals, live almost wholly on carrion and half-rotten animal matters; but, believing this proposition to be true, so far as the farmer is concerned in the matter, and that the putrid state in which many horse-ponds are to be seen is not only disgraceful but dangerous, we were glad to meet with the above passage so entirely corroborating this opinion.

SALT AS A MANURE.

OWING to Mr. Edward Solly's valuable observations on this subject in our Paper of last week, having by an oversight been printed without the author's corrections, we are under the necessity of reprinting two of the paragraphs:—

"When concentrated solutions of common salt and common carbonate of ammonia are mixed at low temperatures, they decompose each other to a considerable extent, and a quantity of bi-carbonate of soda and muriate of ammonia is formed, whilst a portion of ammonia is set free. The bi carbonate of soda being almost insoluble in the solution of muriate of ammonia, may be separated and obtained pure, whilst the muriate of ammonia may be obtained by evaporating the solution and separating it from undecomposed common salt, and free ammonia. But if, in place of separating the two substances, a quantity of water is added, the bi-carbonate of soda dissolves, and the two salts redecompose each other, common salt and carbonate of ammonia being again formed. In the same way, if solutions of carbonate or bi-carbonate of soda be mixed with solution of muriate of ammonia, they mutually decompose each other, and form carbonate of ammonia and common salt.

"It is perfectly true that very strong solutions of bi-carbonate of ammonia and common salt decompose each other, and that common carbonate of ammonia decomposes solution of salt, when carbonic acid is passed through it; but it is equally true that this only holds good when the solutions are concentrated, depending, as it does, on the insolubility of the bi-carbonate of soda, in the solution of muriate of ammonia; if dilute, no such change takes place. When salt is employed as manure it is exposed to the action of a very dilute solution of carbonate of ammonia, for dew and rain-water contain a minute quantity of that salt; under these circumstances it is not to be expected that the salt will be decomposed; for it is not reasonable to compare what takes place in strong solutions in close vessels, with what occurs in the open air with abundance of water. We can only compare the action of rain-water on salt, to the action of very dilute solutions of salt and carbonate of ammonia, and such solutions do not decompose each other. Although chemical facts are certainly against the decomposition of salt by carbonate of ammonia, or the fixation of ammonia by common salt, yet this in no way diminishes the value of salt applied as manure."

There are also the following errata:—

Line 27, from the bottom, *after* nia omit the comma.
" 14 " *for* in organic *read* inorganic.
" 4 " *for* process *read* forces.
" 3 " *after* and *insert* of.

FARM BAILIFFS.

THE national importance of the Commission now acting in Ireland, under the presidency of the Earl of Devon, to inquire into and report upon the relative positions of landlord and tenant, has naturally attracted my attention, and I entertain sanguine expectations that much practical benefit will result to the country in consequence of its investigations. That there is great need of improvement in the social and Agricultural state of Ireland is indisputable; but the question is, By what means the objects sought will be most easily attained? I do not presume to meddle with the political part of the subject, but I may hazard a few observations respecting the Agricultural bearings of the matter. That a considerable impulse will be given to the development of the resources of the country in different ways, I have sanguine expectations; that good landlords will be led to persevere in their humane and rational efforts to ameliorate both the moral and physical condition of their humbler tenantry, and to promote those Agricultural improvements which common sense must show to be conducive also to their own advantage, I fervently hope; and that many bad landlords may be compelled, from the shame of exposure, or the stringency of legislative enactment, to be just, if not generous, to the occupiers of their land, and stimulated to some laudable exertions, through the awakening interest on the subject, I also anticipate. The machinery of our National Agricultural Society, with its numerous auxiliary branches, may be worked with effective power, in combination with other forces, and model schools and farms will contribute in their respective departments. But one of the chief wants—assuming that an extended system of draining, subsoil-ploughing, and spade-trenching, &c., were set in motion—would be that of a sufficiency of intelligent, well-informed, and hard-working Bailiffs, or Stewards, as my countrymen choose to call these dignitaries.

Now, there is a vast difference in England between the sporting-looking bailiff, dressed in a knowing kind of shooting-jacket, mounted on his smart cob, and enjoying a snug salary of from one to two hundred a year, and the plain working bailiff, who in return for his weekly wages of from 12*s.* to 18*s.* a week, and perhaps some extra perquisites of milk, or the keep of a pig and poultry, is thankfully content to take his share in the daily operations of the farm; who, from his own manual acquaintance with the plough and the spade, can not only set a job to a labourer, but can and will show him how to execute it in the neatest and best manner; a man, in short, who considers that his hands, as well as his head, ought to be engaged in the service of his employer. The introduction into Ireland, from time to time, by the land proprietary of first-rate bailiffs from England and Scotland, has been the means of establishing, on numerous demesnes and estates, a highly improved system of Agriculture; and among those bailiffs many admirable men have been found, to whom our country is much indebted for the information they have communicated, and the practice they have exhibited for the imitation of the higher order of our farmers; but since the great majority of Irish landlords and farmers, living by husbandry, cannot afford to pay high salaries, with *et ceteras*, they must either personally superintend their farm-labours (if they know how to do so effectively), or in most instances be content to employ the common working bailiff, whose wages do not greatly exceed those of the labourer.

In referring to the extreme classes of bailiffs, I have passed over some intermediate varieties—very good ones, too—in which efficient and trustworthy men are to be found, who are content with salaries far lower than the maximum point, yet considerably above the wages of the labourer; because the essence of the observations which I would make, is confined (in my own mind, at least), to the humblest description of bailiffs, which I believe to be the most useful, yet the least easily obtainable in Ireland. If men of this low class were a little elevated in their grade of life, and a good deal advanced in acquirements and skill, we have the description of persons critically suited to our ordinary circumstances. A humble person, who is honest, will be more cautious in the first place in the expenditure of his employer's money, more alive to profit, and therefore less disposed to speculative operations than a more consequential sort of personage; and from his personal association with the workmen whom he leads, he will be more likely to acquire their confidence than one much elevated above them; and without a cordial feeling between the confidential manager and the labourer, (I admit, however, that this very confidence may operate very unfavourably, without a sufficient distinction between them) there is danger of those acts of atrocious outrage which so often paralyse the most promising efforts of the patriotic and good of all parties.

But it is difficult to provide in Ireland such a supply of practical and inexpensive native superintendents, as an improved and extended state of her Agriculture may require. I have used the expression native, for, while I most readily acknowledge the superior skill of the imported British bailiff, a feeling of jealousy unfortunately exists, more or less among Irish labourers, against any stranger who may be placed over them. The alterations and improvements which our modes of cultivation so generally call for, would, when suggested and applied by Irish heads and Irish hands, be received and adopted with a cordial interest in their success, instead of being obstructed by that sentiment of distrust which would be entertained to a considerable degree towards what would be designated the innovations of a foreigner. If, then, we hope to effect any great change with an uneducated class of land occupiers, we must begin with soothing their prejudices before we appeal to their reasoning faculties—of which no people possess a greater natural share than my countrymen; but we all know how constantly, even in the most intellectual classes of society, the truth of the old adage is illustrated—

"A man convinced against his will,
Is of the same opinion still."

Now, the difficulty in Ireland—where farming is so defective—is to find the nurseries in which young men can be sufficiently trained, even in practical matters alone. In England there are excellent bailiffs, of every rank to be obtained, from that of the gentleman bailiff (all these matters are relative), who has been highly educated in his profession, to the working manager, who acts in obedience to the orders of the experienced farmer, who knows no superior, and requires no instructor. In Scotland the great farmers, who are their own head bailiffs, could find among some of their hinds, men competent, on emergencies, to work the machinery of a farm—long experience, and familiarity with the details of husbandry, qualify them in a great degree; but in Ireland, our perfect models are very few indeed, whether in agricultural seminaries, or on the private farms of the land proprietary. The proportion of good farmers living by husbandry is small, and it is among them that the most practical bailiffs ought, in altered circumstances, to be looked for and found. The farmer's house and establishment is the true nursery for the class of men in question. Why does the emigrant to Australia, or the Cape of Good Hope, or any great sheep country, seek in Scotland for an intelligent and experienced shepherd? Because sheep-farming, in all its branches, is perfectly understood in that country. The Highland and the Lowland shepherd have their distinct habits and practices, and there is no district in which a suitable shepherd may not be found, fully trained in his vocation by the sheep-farmer in whose service he has been, perhaps, from boyhood.

Again, for illustration.—In the north of Germany, a young man who is to be trained as a bailiff of any class, is required to work on the farm of a practical husbandman for at least three years, as an apprentice, before he can gain admittance into an Agricultural seminary, in which he must pass four years, in every kind of labour; after that servitude he may obtain the situation of the lowest

kind of bailiff on the farm of a land proprietor, or of a farmer who rents his land; or, what is very common, if his means do not permit him to enter one of the admirable Agricultural schools, which have been many years in active operation there, he binds himself—after his first three years' drudgery—on his father's farm, or that of some other person, to a more eminent agriculturist, in a capacity which may be considered that of a principal labourer; for no prudent farmer would think of employing him in a higher rank until he had obtained much more experience, and the scientific information also which the seminaries and model-farms are designed to afford. In short, seven or eight years of patient industry must be passed by these men in Germany before they can presume to expect employment, even in the humblest capacity of superintendence, and many more of practical occupation in this lowest grade, before they can reasonably hope to fill either of the two higher ones. And their expectations as to amount of wages are moderate in a corresponding degree.

These then are, I conceive, the true models for us, and no efforts should be spared by our land proprietors to encourage the discipline of their tenants' sons in this way. The pupils hitherto instructed in our schools have been, for the most part, too much above the peasant class, and filled with exaggerated notions of their own acquirements, and very sublime opinions on the subject of salary,—impressed with the mistaken idea that a smattering of scientific education, neatness of execution in drawing maps, correctness in book-keeping, acuteness in solving problems, and such qualifications, important and essential though they be—are of themselves sufficient qualifications for the situation of land-bailiff, which requires so much experimental knowledge, and so much experience. That numerous model-farms may be so organised, and schools so conducted as to educate the peasantry in a generally useful and practical way, is my anxious wish.—*Martin Doyle.*

ON THE SOIL AND CLIMATE OF THE SHORES OF THE MORAY FRITH.—No. II.

(Continued from page 154.)

Distribution of the Secondary Rocks.—The prevalence of one or other of the members of the great sandstone series now described, influences much the agricultural characters of the different districts. Thus, in Morayshire the upper silicious beds of the deposit preponderate, and hence that district is distinguished for its light, sharp, sandy soils; enriched, however, in very many places by the lime or cornstone formerly alluded to, and by the debris (especially towards the Loch of Spynie and the Laigh or low grounds of Moray) of the lias shale, and by rich modern alluvial deposits.

Protected on the east and north by the high mountains of Banff and Aberdeenshires, and on the west by those of Inverness-shire, which attract and break the great volumes of watery clouds passing over the island from the German and Atlantic Oceans, the district of Moray has always been regarded as possessing a kindly soil and a genial climate; and farther back than the days even of George Buchannan it was described as a favoured spot, and as the granary of Scotland.

In Nairnshire, the silicious beds so greatly predominate and are so near the extensive granitic and primary mountains, intervening between the rivers Nairn and Findhorn, that the whole upper covering of that county consists almost exclusively of a fine loose sand, whence the soil is exceedingly light and porous, and the coating of vegetable mould extremely thin.

As we approach Inverness, the upper and middle schists and freestones of the secondary series, thin out and almost disappear, their line of bearing being prolonged across the Frith into Ross-shire. And accordingly for several miles to the east and west of our Highland metropolis, the fundamental or most characteristic members of the old red sandstone formation are alone to be seen, namely, a chocolate or brick-red compact rubble-stone and huge imbedded masses of a granitic and quartzose conglomerate; the latter presenting themselves chiefly in mural escarpments, or forming the rough summits of the hills. The sandstone penetrates far inland into the Great Glen, composing the beautiful and fertile valley of Urquhart, on the north side of Loch Ness; above which it has been tilted up by the subjacent granite, into the mighty dome of Mealfourvoney, an enormous rounded mass of conglomerate, overhanging a stupendous precipice of granite. The same structure extends around the inner basin of the Moray Frith, called Loch Beauty, along the top of which a beautiful and varied chain of sandstone-hills extends in a curved line; thence deflecting boldly off into Ross-shire, and skirting along the southern flank of the great mountain Ben Nevis. In the fine valleys of the Conon, Strathpeffer, Ferindonald, and Easter Ross, this belt of old red sandstone is covered to a great depth by the soft argillaceous shales of the middle division of the series, so highly charged with bituminous matter as in some few places to contain small inflammable portions, and so much up-heaved and dislocated by the granitic masses below, as to present their strata at every possible angle of inclination, and so broken as to be readily decomposed by the rains and frost. Hence, the surface is beautifully varied and undulating, and the rocks being seldom horizontal, the water easily percolates between their joinings, so that the drainage is good, and the ridges gently sloping, except along the sea-shore, where there are occasional flat fields of rich clayish loam.

The Agricultural zone in Sutherlandshire is confined to a narrow strip along the coast, seldom exceeding a mile in breadth; but it is a beautifully sloped acclivity, rising up along the front of the red sandstone conglomerates, which here rest immediately upon granite, and next the sea there are a few slight remains of the lias and oolitic shales and grit, which anciently extended far out, if not across, the trough of the Moray Frith; and in addition to these, the soil is enriched by the cornstone and other limestones, which are plentiful, especially near Brora and Helmsdale. An enormous protruding mass of granite composing the Ord of Caithness, over which the public road ascends to a height of 1203 ft., interrupts the continuity of the secondary strata; but behind it the old red sandstone and its coarse conglomerate re-appear in the high chain of prominently-marked mountains, which form the boundary betwixt Sutherland and Caithness, and which, observing a north-westerly course, fall into the Northern Ocean at the fishing-station of Port Skerry. From this elevated silicious platform the county of Caithness falls rapidly towards the north and east, composing one enormous undulating inclined plain; the rocks at the further ends dipping into the sea in low horizontal ledges, or cut up by it into long lines of beetling cliffs and headlands. The mass of the Caithness schists has not been disturbed by granitic or trapean action from below, and hence the rocks are nearly horizontal and impervious to water, and the surface is in consequence disfigured by an immense number of stagnant lochs and marshes, and by vast accumulations of peat and bog, rendering the climate cold, and the drainage difficult. Yet even here, though totally devoid of trees and shelter, the persevering industry and intelligence of the proprietors and tenants have reclaimed and brought under the plough a large extent of land, and the fat stock now reared in Caithness are not surpassed in size or beauty in any part of the north of Scotland. These spirited exertions are no doubt much favoured by the circumstance that in Caithness there is an immense development of the mid-calcareous and bituminous shales which are extensively quarried as fine paving-stones, and which everywhere abound with the traces of extinct races of vegetables and fishes; and also that the outer promontories are formed of members of the highest sandstone series (similar to those of Moray and Tarbet Ness in Rossshire), which are more easily cultivated and more clayish in their texture than the hard dark-red beds of the inferior sand-stones next the primitive mountains. Those middle schists of Caithness are likewise prolonged across the Pentland Frith, into the Orkneys, where an exactly similar arrangement exists as on the mainland; there being first a central nucleus of primitive gneiss rocks near Stromness, on which rests a great pavement of old red sandstone, having over it deep beds of calcareous and bituminous shales and grits, and these finally surmounted (especially in the island of Hoy), by an enormous deposit of lighter coloured and variegated freestones, but all banded together into one great formation, by the dissemination throughout the layers from top to bottom, of the same or similar tribes of organic remains. In Orkney also we have the further addition, which is rare in the other districts we have been considering, of extensive dykes and veins of secondary traps and porphyries, the decomposition of which adds considerably to the Agricultural value of the soil.—*G. Anderson, Inverness.*

(To be continued.)

ON MINERAL AND INORGANIC MANURES.

No. XII.

By Professor Charles Sprengel.

(Continued from page 187.)

On very fertile soils, marl will avail little or nothing, which is easily explained by such soils being already possessed of all mineral substances which are required for luxuriant vegetation. Such a soil requires but good care to yield abundantly, and thus marl is superfluous.

It is often the case that a marly soil is considerably improved by the application of marl. This is easily explained by the former not containing in sufficient quantity all the mineral substances required for vegetation; it may be deficient in gypsum or magnesia, which the other sort may supply it with, and thus make it more fertile. And this fact affords (so it seems to me) an additional proof that these mineral substances are a real food of plants.

In places where marl manure has been used for some time, people have observed that the land which once got marl, cannot be kept any more in a good condition by merely manuring it with dung: it must be marled from time to time, in order to make it yield good crops. On this account people are very cautious in such places not to manure a field with marl, the produce of which has been hitherto satisfactory. Without doubt this phenomenon rests on the fact, that dung does not supply the soil with a sufficient quantity of certain mineral substances, especially not with lime, magnesia, phosphoric, and sulphuric acids. The accuracy, however, of the opinion that a soil is not to be made accustomed to marl, is much to be doubted, because if better crops have repaid twice or thrice the expenses of the one application of marl, why should this process not be repeated?—the expense is repayed by abundant harvests.

Very often the 1st application of marl has a greater effect than the 2d, 3d, or 4th. Nothing is easier to be explained than this; for in a soil never before marled, the lime of the marl will find much of the coal of humus to dissolve, and thus bring powers into play which were hitherto slumbering. Subsequent applications of marl will therefore find less of carbonic humus to dissolve, for a very long time elapses before a new portion will be formed. The greater, therefore, the intervals at which marl is applied, the more striking is the effect. Still, our readers must not believe that we ought to wait the whole interval till the soil again acquires a large amount of coal of humus; on the contrary, it ought to be made a general rule to repeat the marling as soon as the soil is deficient in those mineral substances with which the marl at our command may supply it. It is easy to ascertain, by the condition of the crops, whether the soil is thus deficient. There is certainly a means of obtaining from every marling a similar good effect, viz, to manure the soil not only with dung, but at times also with mould or vegetable earth, as it will thereby receive back that humus which the last marling has decomposed. Large quantities, however, of this mould are thus required; because, if the soil previously contained only 3 per cent. of humus, this will amount, in a furrow-slice six inches deep, to 40,000 lbs. in the Magdeburg acre of land; and it is impossible (even if it were to be useful in other respects), to supply the soil by dung alone with such a large amount of humus, 20,000 lbs. of dung yielding scarcely 2000 lbs. of humus. It is on this account that it is so difficult to replace the humus once taken from the soil, and the greatest caution is therefore to be taken as well in the application of marl as of lime, for a hundred years may not suffice to remedy what has been spoiled in a dozen.

It has been further observed, that the better the crops succeed after the application of marl, the sooner the exhaustion of the soil takes place. In order to explain this phenomenon we must observe, that a greater mass of vegetation encroaches upon a greater amount of the mineral substances of the marl. The weight of any crop is always in a direct proportion with the weight of the mineral substances which the soil has yielded towards its development; because in 1000 lbs. of Clover there is always twice as much potash, phosphate of lime, sulphuric acid, &c., as in 500 lbs. Even the carbon of the soil is more encroached upon by 1000 lbs. of Clover than by 500 lbs., and if we observe that after luxuriant Clover, corn will grow better than after one of a poor extraction, this results from the former always leaving a larger weight of roots behind in the soil. As it may well be supposed that by marl more coal of humus may be decomposed and converted into vegetable nourishment than the plants may be able to consume at the time, we must take care not to use too much of this mineral, as that humus which has been decomposed and is not used by the plants, is liable to loss by volatilisation and extraction by water, and the coal of humus is to be considered as a treasure not to be drawn upon but by necessity. It is, indeed, one of the most important substances for vegetation, because through its instrumentality Nature has guarded plants against being deficient in nourishment; in it many nutritive substances for plants are stored up. Notwithstanding this, however, it is often considered as a useless ingredient of the soil, and every one tries to get it decomposed as fast as he can. It is the coal of humus which chiefly heats the soil, by its detention of the rays of the sun; it is this, also, which loosens the soil, and supplies it with moisture, as it possesses great hydroscopic power: its value is rarely sufficiently appreciated. If, however, marl is used with discretion, we never need apprehend that the soil will be deprived of its strength, because, even if the plants growing more luxuriantly should deprive it of more mineral substances, yet the greater amount of vegetable matter will furnish us with the means to prepare more manure, and we can thereby return what has been taken from the soil.

(To be continued.)

MECHANICS AS APPLIED TO AGRICULTURE.

[The following is an abstract of a lecture on this subject delivered by Mr. Cottam, on March 8th, at the Royal Institution—the President, Lord Prudhoe, in the chair.]

To state that within the last few years the character of English Agriculture has materially changed is, perhaps, superfluous. The great problem that we now attempt to solve is, how to draw from the land the greatest possible product at the least possible expense; and this not for one year or for two, but for many years in succession. In this consists Agriculture as an art. Subordinate to this, however, each in different degrees, but all more or less subordinate, is a long range of subsidiary sciences. It is the recognition of the importance of these subsidiary sciences wherein consists the improved character of the Agriculture of the days we are living in. It is not enough at the present time to cultivate our lands as either empirical experimenters or as the indolent followers of established practices. Of science, in more than one shape, we call in the aid and assistance. The value of the particular science of chemistry, and its bearings upon the all-important subject of artificial fertilisation and manures need scarcely be pointed out. The labours, first of Davy, afterwards of Liebig, have not been expended in vain. The importation even of foreign manures has become a large element of English commerce. We fetch bones from the continent of Europe, and guano from the islands of America; and doubtless in this department of traffic new sources will be discovered and made available. In the desert between Egypt and Syria the bones of unnumbered horses and camels that have whitened and accumulated during the lapse of centuries afford a supply that, according to the report of eye-witnesses, is inexhaustible. Over and above the importance of geology in all matters of drainage, that science has discovered the manures that chemistry has indicated. Liebig had scarcely shown the importance of the phosphates when Professor Buckland indicated an indefinite supply in those remarkable fossils called coprolites, which analysis has shown to be rich in the phosphate of lime. Beds of coprolite underlie whole areas of the counties of Huntingdon, Bedford, and Cambridge, which a subsoil plough could reach, and may be brought to the surface and exposed to the decomposing influence of the atmosphere. In the Spanish province of Estremadura, a whole stratum of phosphated rock has been discovered. A part equally conspicuous with that of chemistry and geology,

is played by the sciences of botany, zoology, and physiology. These determine the choice of seed; the culture of artificial grasses; the value of stock; merits or demerits of particular breeds of cattle; the methods of feeding and fattening; and thus, in a manner too direct to be overlooked, influence the great question of economical agricultural production. The points of agriculture that bring us in contact with the exact mathematical sciences, and with natural philosophy, are numerous, varied, and dissimilar. The method by which we lighten the draught of plough or carriage, and the plan by which we convert by means of drainage whole areas of unproductive moss into fertile soil, are alike subject to the exact calculations of mathematics, and alike involve the science of the mechanical philosopher, the skill of the engineer, and the practical ingenuity of the mechanist. It is upon the latter subject that I have this evening the honour of addressing you; and I feel certain that in the points which I shall attempt to illustrate, viz., the Improvement in Agricultural Implements and Machinery, we have not only a department of agriculture far from unimportant, but also one wherein the progress made in late years is quite on a par with the advancement made in the other sciences, applicable and subsidiary to the art of agricultural production. The agricultural engineer has to contend against difficulties unknown to all other branches in the whole range of manufactures. In manufactures you have everything at command. If you require a high temperature to spin cotton in, it is easily obtained; if a moderate one for silk, it is as easily to be had. If you require a very moist one for flax, or as it is found now to be better spun in water, it is easily accomplished. If a difficulty is met with, once removed, it is wholly removed. Not so with Agriculture: in this we must take wet or dry, hot or cold, as the season may happen to be.

(To be continued.)

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XII.

(Continued from p. 186.)

I HAVE stated above that the carbon of plants is derived from the atmosphere. This is the opinion of Liebig, who confines the use of humus (which by its decomposition sets free carbonic acid), to the young plant, before its leaves are sufficiently matured to absorb it from the atmosphere. But I do not think this question by any means settled; and we yet want a series of sound experiments to decide the point.

The effect produced by carbonised manures, such as rotten straw, on the crop of Corn, or on tubers, as Mangold Wurtzel, Potatoes, and Turnips, is sufficiently striking to throw a strong doubt upon such effect being entirely due to the ammonia and inorganic constituents. If the amount of starch in Wheat were found the same in a crop manured with urine, and that treated with rotten straw, the inference would be just—*cæteris paribus*—that the carbon of this starch was derived from the atmosphere. If the difference were in favour of the rotten straw, it would be fair and rational to assume this as the source, and to conclude the opinion of Liebig to be erroneous. But Liebig affirms that if we supply a plant with nitrogen we enable it to attract more carbon from the atmosphere.* If this opinion is correct, we may fairly arrange the food of plants into two classes, direct and indirect nutrients. Thus, if, according to the opinion of Liebig, we supply a plant with a certain amount of nitrogen, this nitrogen will fix a certain amount of carbon in the organism of the plant. Every 15 parts of nitrogen requires 55 parts of carbon to convert it into gluten or albumen, which according to the above supposition is drained from the atmosphere, and thus the nitrogen becomes the indirect means of supplying the plant with carbon. If this fact be established by sound experiment, it is very important, because it adds another element to those supplied by the urine—it would render the use of straw-manure less necessary in soils abundant with the inorganic constituents of plants, and infinitely increase the already great value of urine as a manure.

But Liebig's view of the use of nitrogen as a fixer of carbon, it is clear, can only apply to azotised crops. In Turnips and Potatoes the proportion of nitrogen to the carbon is as 1 to 10 or 15. Here the carbon is in much greater proportion than could have been produced by the union of nitrogen with it to form gluten or albumen. Whence, then, is the excess of carbon? If we increase the weight of a Turnip by a pound, by adding rotten straw and dung manure, and we find the increased amount of nitrogen insufficient to fix the additional carbon, we naturally infer that it must have derived it from the decomposition of the manure. But this and other important questions can only be decided by experiment—mere inferences may lead us to inquire, but they are useless in application to practice, unless confirmed by experiment.

What I have just said, however, will prepare us for considering a very important point, which has hitherto been much neglected in performing these experiments,—I mean the necessity of adapting the manure tried to the crop grown. Thus, if Liebig's assertion is right, that plants derive their carbon from the atmosphere, and that a supply of nitrogen increases their power of absorbing it to the extent necessary to form albumen; then if we apply urine or guano to Turnips, or Potatoes, or Beet, much of the azote must be lost to the crop, which only contains one part of albumen to every nine of unazotised matter; whereas, if we apply the same manure to Beans or Peas, one part of albumen is required for every two of unazotised food! It thus requires no illustration to prove that to test the value of urine or guano as a manure, it should be tried upon Beans, Peas, Wheat, or Barley. I do not wish to be misunderstood. I do not mean that guano or urine will have no effect upon the tubers, but that different results will be obtained if they are applied to the Corn crops; that an azotised crop is the proper one to test the real value of an azotised manure. The weight of grain is increased by the deposition of gluten; that of the Turnip, by sugar or starch. In the former case, the action of the azotes may be said to be almost unlimited; in the latter, it is confined within certain limits.

But it may be asked, Does not an azotised manure, or any other manure, act as a stimulant to the roots of plants, and thus increase their growth? The question is important, and deserves inquiry; for it is one upon which the minds of nine out of ten are made up in the affirmative. Our notions of a stimulant are formed from the effect produced by certain substances upon the nervous and circulating systems of animals. If a man drinks a glass of brandy, it extricates nervous influence in the heart and arteries, and produces increased action in them. Thinking of this, we are apt to assume that a strong application of manure has a stimulating effect upon plants. But, whatever the effect of this upon plants may be, we must entirely reject the notion of its being similar to that upon animals. In the first place, plants are destitute of a nervous system; and I know of no proof that their circulating fluid—the sap—is increased in the velocity of its ascent or descent by the application of manure. Does it cause the roots to penetrate further into the soil in search of proper food, and thus act as a stimulus to them? We are again met by the same difficulty—the want of a nervous system; but we have a still greater objection to this notion in the statement of Liebig, that the carbon of plants is derived from the atmosphere, and therefore the search of the roots, to which they are assumed to be stimulated, would be useless. If, however, we carefully observe the action of manures, we shall not fail to reject entirely the notion of stimulants, and attribute their effect to the simple supply of abundance of food by which their rapid growth and increase in bulk is occasioned. Thus, nitrate of soda, or potash, will give a green, rank appearance to the blades of Corn. We have shown the alkali to be one of the constituents of the stalk; and being supplied with abundance of material, an increased size of the fabric results. The green colour is a well-known effect of the addition of alkali to vegetable matter, as every cook who adds soda or potash to the water in which she boils her Peas or Kidney-beans well knows.

Again, the effect of stimulants is not that of increasing the bulk of the animal. Some men, who drink hard, certainly accumulate fat, but this is not the result of eating more, for the converse is generally the case: it is caused by the elements of the alcoholic fluid producing a superabundance of carbon in the system, which is converted into, and deposited as fat. But if a stimulant, properly so called, were applied to the roots of plants, it would destroy their vitality, and the plant would die.

We must, then, altogether reject the notion of any manure or application to plants acting as a stimulant. The effect of strong manures in making plants grow is owing to the supply of abundance of food. Potash will not make the roots take up azote, nor azote potash; they are each taken up by the roots, and appropriated to the peculiar part of the plant they are destined to form or increase, and azote can only enable a plant to fix as much carbon as is necessary to form gluten, albumen, or fibrine. This digression will be excused, as the subject is very important in deciding the *modus operandi* of manures.

Having said so much about the theory, let me now make some remarks upon the confirmation which the principles I have advocated receive from the observations and experiments of others.—*C. R. Brer, Stowmarket.*

(To be continued.)

* Agricultural Chemistry, p. 189.

Home Correspondence.

Transplanting Swedes.—I attended the Show of the Royal Agricultural Society at Liverpool, and the evening after the great dinner joined a party of farmers at the Angel Hotel, and was induced, after discussing various subjects, to detail to them my practice and success in transplanting Swedes, which was listened to with great attention, and one of the party said—"I have travelled many miles from the north to this great meeting; and I thought I should return home without 'gaining a wrinkle;' but I discover that what you, Sir, have said about transplanting Swedes, is the best information I have obtained." Several expressed themselves to the same effect, and requested me to repeat the subject. The recollection of that circumstance, and the uniform success that has attended my plan, induces me to send it to you for publication. The land I have always appropriated to the purpose has been that which has borne a crop of winter Vetches, and which is in general cleared by the middle of July. It must be prepared by ploughing, rolling, &c. &c., as it would be for seed; also by cutting out the ridges, laying in the manure, and spreading it, and all is ready for planting. The plants having been drawn from the seed drills, and placed at convenient distances for the planters (women, girls, or boys), the length of the land is to be divided into as many equal distances as you have planters, the ploughman then turns one furrow on the manure, and the planting begins. The row finished, the plough returns, and, with a lighter furrow covers the plants. Each planter should be directed to follow the plough, watch the covering of the plants he has laid down, draw out any plant too much covered, or cover any displaced by the feet of the horse. Whilst the plough is returning in the next furrow, the planters will supply themselves with plants, and take their places as before, to be ready to lay them down so soon as the plough has passed. In windy weather, and when the plants are large, it is better to direct the planters to lay a handful of soil on the roots to prevent their being displaced. The planters must be urged to quickness, &c.; and those who may be induced to try this plan will be surprised how very fast the work will be performed; and when a sufficient number of hands can be procured, two or more sets can be employed in the same field. The after-work is very little—drawing the soil from top to root, from between the plants, and cutting up the few weeds that may appear, is all that is necessary. I planted Swedes one remarkably hot and dry summer, when the soil was "as dry as the dust on the turnpike-road." The leaves were in two or three days so completely dried, that they could be rubbed to powder. However, two-thirds of them grew, and produced a fair crop. The Swede plant is not easily killed; and I prefer the soil rather dry than otherwise for transplanting. The advantages are these—you are sure of a crop—the expense is less—and the weight per acre is greater than that raised from seed. My seed-crop last year was so much destroyed by the fly, that I could not draw a plant further than to fill up vacancies, and I was "put to my shifts" to plant my ground. I purchased 10,000 plants, at 1*s.* per 1000, of a gardener, whose foreman had sown Swede instead of Cabbage seed. They were seven or eight inches long, and like sticks, and queerly-shaped bulbs they made; but the weight per acre was much greater than that from the seed crop, and would have surprised anybody. I am so thoroughly convinced that a more equal and better crop can be raised by transplanting, that I fully intend to transplant my main crop, and shall sow seed to grow plants the first week in May. I hope that some of those gentlemen who may be induced to try my plan will give the result through your Paper next autumn.—*W. S.*

Yew poisonous to Animals.—Seeing an article on this subject in your last *Gazette*, I send you the following extract bearing upon it from Anderson's "Rural Economy," published in 1798. No plant in Britain is a more certain poison to domestic graminivorous quadrupeds than the common Yew-tree, and many are the instances of cattle, horses, and sheep being killed, which have accidentally tasted of its leaves and young twigs. Yet it is a very surprising fact that in the province of Hesse, in Germany, where hedges of this tree abound, the peasants feed their cattle through the winter with its tender shoots, which they find a very excellent and nourishing food, at a season of the year when other sorts of succulent food cannot be easily obtained. Prof. Wiborg, of Copenhagen, hearing of this, was at first inclined to think that the common opinion that the Yew-tree is a poison to animals was unfounded; but experiments soon satisfied him, to his cost, that it certainly was so. He then suspected that the tree called by that name in Hesse must be something else than the common Yew, and he determined to take a journey thither to ascertain the fact. He found it was the common Yew-tree, and by experiments he then made he also found that it proved equally poisonous to beasts in Hesse as it had been in Denmark. He then suspected that he had been misinformed in regard to its being there used as a food for beasts in winter; but here also he was soon satisfied he had been told only the truth, as the peasants readily allowed that they used it for that purpose every year, and that it made a valuable part of their winter provender. Surprised at these facts, he then inquired what were the means they employed to destroy its poisonous quality; but to this they could give him no satisfactory answer. All they knew of the matter was that they found it necessary, at the beginning of each season, to use it sparingly at first, and to give it to the beasts along with their other food; that they gradually increased the proportion of Yew twigs, which at last came to be a principal part of their food, but that they never kept their beasts entirely on that food alone. At the first he suspected that in this case, as is experienced by man in regard to opium, the animal frame gradually became habituated to this drug, so as to admit of its being taken in much larger doses, in time, with safety, than could have been practicable at the beginning; and it seemed to him probable that its deleterious effects were counteracted merely by the operation upon the animal economy of other food that was administered along with it. Convinced of this, he ventured to give at once to a horse eight ounces of green Yew twigs, (which he had previously repeatedly found was sufficient to kill any horse, when given by itself,) chopped small and mixed among 20 ounces of Oats. This mixture the horse readily ate up at the first, nor did the smallest symptoms of any disorder appear. This experiment he so often repeated as fully to ascertain the fact that, when administered in this manner, the Yew-tree was perfectly innoxious, and that it is solely to the circumstance of its being always administered along with some kind of dry food in Hesse, that it proves there salutary instead of hurtful.—*M. S.*

Gorse.—"Vijorn's" remarks on preparing Gorse as food for cattle, remind me that when a boy we used it as food for horses (in Forfarshire); and as at that time machines for those purposes were not so common, the means used was to place the Gorse on the barn floor, and thresh it well with the flail; and this was found to answer well, and the cattle to improve by its use. As every one may not be in possession of a machine for bruising it, perhaps it may be useful to know that the above method will answer until such time as they get a better.—*A. C.*

Allotment System, and Liquid Manure.—I beg to submit to the judgment of your readers a few observations, in order to draw public attention to the importance of this subject; and in doing so, I shall simply detail my own practice, and take especial care to advance no opinions which I have not tested by long experience. To the labourer who keeps a pig in the sty, I would say, the inner and outer yards should have a paved bottom, with a

gentle slope to one point, at which point a hole should be made, if the subsoil be an impervious clay; or, what is better, a tar-barrel, or something of that sort, should be inserted in the ground, with its top on a level with the surface, and covered with a lid of some sort. Into this hole, or tub, all the drainings will run; and into it should daily be poured, when there is any, all the waste wash, soap-suds, &c., that the cottager's wife can command. Whenever the hole, or tub, is full, it must be emptied with an old bucket, or watering-pot, not used for other purposes, and carried into the garden, either to the different crops, or when they do not require it, to some vacant place before cropping, for which it will be an excellent preparation. It may be applied with great advantage to the roots of Gooseberry, Currant, Raspberry, or other fruit-trees, not merely to the stems, but at some distance from them. I dare say it is often out of the power of many respectable labourers to procure a tar-barrel. If his own resources be inadequate, let him state his case and his intentions to his landlord, or neighbours, and they, one would hope, would readily aid him in such a laudable object. To the owner of a cow, or a horse, &c., and who is generally the occupier of more or less Grass-land, this subject is also important. In this case there will probably be a stable or cow-house, and, if of a good size, the tar-barrel will, in my opinion, make a cistern large enough for a cottager who keeps two cows, or a cow, horse, and pig. If he also have a fold-yard, the draining from that, as well as from the pigsty and eaves of his house, should all run into it. The waste of the house, too, must help to fill it. The cottager must also see that all the dung his cattle drop in the field or near his house is carefully collected, and put into the tub, and stirred well up before using it. I believe that to be the best way of using out-door manure. Or he may collect it often, and throw it upon his manure-heap at his house; or do with it as recommended in a previous article. In disposing of the liquid the cottager must attend to his Grass-land; and if it be close to his house—as it always ought to be—he will easily apply it by means of a bucket or watering-pot, which should be emptied all at once with a jerk, to spread it, taking care to select the barest places on which to apply it. Nor must he forget the claims of his garden. I have been in the habit of applying this liquid manure at all seasons of the year. I have manured, the last dry summer, a great deal of close grazed land in this manner with the best effects, and I never observed any burning or scalding from it when applied in any state, or at any time. In a very short time after applying it the herbage springs up luxuriantly, and is greedily eaten by cows, horses, and pigs. This plan of managing liquid manure is much better for the cottager and small occupier of land than catching the drainings, and returning them again upon the dung or compost heaps, as recommended by some popular writers. The benefit is immediate, sure, and without waste.—*W. Billington, Oswestry.*

Foot-rot in Sheep.—Caution.—While your readers' attention has been turned to the disease of foot-rot in sheep, when either house-fed or kept in a damp situation for any length of time, I would beg to offer a caution to shepherds, and others looking after the animals, when so affected. If any of the matter of foot-rot come in contact with a sore or abraded surface on the hand or other part of the body of a person tending the animal, it is apt to produce a violent inflammation and rapid mortification of the part,—a disease termed by medical men gangrenous inflammation. A shepherd in this neighbourhood nearly lost his life from this cause lately, and the disease was only arrested by burning out the whole affected part. The mode of treating sheep when labouring under foot-rot here, is to clean the parts diseased, and apply the strongest nitrous acid carefully with a straw, or glass rod. This very soon conquers the disease. Those animals affected with the complaint should be immediately separated from the rest of the flock, as treading in the same footsteps will spread the disease from the tainted to the free.—*J. L., Newburgh.*

Fieldbeet v. *Mangel Wurzel*, alias *Mangold Wurtzel.*—In the last Number of the *Agricultural Gazette*, your correspondent "S." comments upon "the barbarous mode often adopted of spelling this name Mangold Wurtzel," and pretends to show that it should be called Mangel Wurzel. This is decidedly exchanging bad for worse, as will be seen from the following explanation:—The word Mangold signifies Beet, and is applied in Germany to Leaf-beet (Beta cicla, L.), which is grown in gardens for the sake of its leaf-stalks, which are eaten like Seakale. Wurtzel, or more correctly, Wurzel, signifies root; Mangold Wurzel, therefore, is literally Beetroot, a name given to a variety of Beta vulgaris, L., of which the Field-beet and Sugar-beet are also varieties. As for Mangel Wurzel, which literally means root of scarcity or deficiency, it is ridiculous to suppose that this root should be abundant when other crops have failed. If your correspondent "S." is not content with the proper name of Fieldbeet (however generally adopted that of Mangel Wurzel may be), and if he should have a predilection for foreign names, then let him import those of "Runkelrübe," "Knollrübe," or "Dickrübe," by which the Fieldbeet really goes in Germany; as for that of Mangel Wurzel, he may in vain ask for it in the seed-shops on the Continent. How the word Mangel Wurzel came to be received in English I am not prepared to say, unless we allow the usual dose of distortion in adopting foreign names. With regard to consulting dictionaries for the proper translation of technical or scientific terms, the following example will show how far such authorities can be depended upon:—The word Melocoton is applied in Spanish to a yellow-fleshed cling-stone Peach; in some fruit-catalogues I find it changed to Mélecoton and Mallacoton; in an English and German dictionary, I find the original pure Melocoton, but for an explanation I must turn over to Melicotony, where I see it translated "a Quince," "a Peach." Not satisfied with this information, I refer to a Spanish and English dictionary, where, in the mean time, it had grown into "a Peach-tree ingrafted in a Quince-tree!"—*A German.* [Melocoton is evidently the Malum cotoneum of Pliny, which was our Quince, whence the Melacotogna of the Italians; it has been applied to the woolly clingstone Peaches on account of their resemblance to Quinces.]

Remarkable Heifer.—Mr. Matthew Bailey, of King's Cliffe, Northamptonshire, killed, on the 7th of March, a Short-horn heifer, in which the left kidney with the fat attached to it weighed six stone and a half, 14 lbs. to the stone. The suet was extremely compact and white, and of the very best quality, and there was not the slightest adhesion to any of the adjacent parts, or the least appearance of disease. The heifer had been in the field without any hay during the winter, till the middle of January, when it was taken up and fed with oilcake and hay by Mr. Boughton, of Fotheringhay. The weight of fat on the kidney is very extraordinary, especially in a beast which had been fed so short a time, and weighed only 58 stone. The other kidney had the usual quantity of fat upon it, and the beast altogether was in excellent condition.—*M. J. Berkley.*

Manure.—The necessity of bringing land, which now lies fallow, into cultivation, becomes daily more pressing as the population increases, and the demand for food is greater. The reason for allowing arable land to remain unproductive, is the want of manure. Cropping the soil where it is well fed is an advantage, as it tends to keep it clean and healthy; whereas the best fallows are often, during part of the year, covered with weeds, which require sustenance, and are stealing that which would enrich grain, and by so doing impoverish the land. To obtain a cheap and lasting manure should be the grand object of the landlords and farmers. The greatest part of household refuse in towns and villages is now thrown away (forming the very essence of food for vegetation), all drains are being led into some neighbouring stream, by which thousands of pounds' worth of valuable dressing is carried into the sea, and lost to the present inhabitants of the country. The fertilising power of night-soil is extraordinary, being too strong for any plant excepting Tobacco, for which it is much used in France. The question arises, How can the off-scourings of towns, &c. be judiciously collected for beneficial use? It is not perhaps possible to save the whole drainage of a populous district, in consequence of the manure being in a liquid state; yet by constructing a succession of reservoirs, of a certain depth, the fluid passing through these would deposit a valuable portion of matter in each; and they might be so connected that any one might be cut off from the rest, to admit of the solid substance settled on the bottom being cleared out for agricultural purposes. These receptacles would answer also for liquid manure, which might be pumped out for watering the land. On examining into the results of experiments tried with various composts, it appears that, in almost every instance, good farm-yard dung carries the palm in giving heavy crops, and afterwards in essentially benefiting the soil more than what may be termed the new manures. Such being the case, it is most important not to discard that which is even more powerful than the common muck-heap.—*Falcon.*

Turnip Seed.—As the following method of treating Turnip seed has proved very successful in preventing the ravages of the flea, I have taken the liberty of sending it to you. A day or two before sowing, put the seed into a sieve and tub of clean water, and rub it quite clean through the sieve, changing the water once or twice; dry it in the sun under a wall or glass, or before a fire. A little flour of brimstone may be mixed with the seed while still damp. If the egg of the Turnip flea is committed to the soil with the seed, this is an effectual preventive.—*A. B.*

Mr. Booth, in the article "Experiments with Manures," states that "the soil is a free light loam, averaging about a foot in depth on a yellow clayey subsoil, interspersed with spar." Perhaps it would have been more satisfactory to the readers of the *Chronicle* if he had told them what sort of spar it was—whether it was calcareous spar—carbonate of lime, gypsum—sulphate of lime, or heavy spar—sulphate of barytes, &c. If it was either of the latter—barytes perhaps—it might have some effect upon the other sulphates which he used.—*Peter Mackenzie.*

British Guano.—I have just received a bag of sea-birds' dung from the Flamborough Cliffs, on the Yorkshire coast; it is like the dark guano. There are recesses in the rocks, where it is a great many feet deep, where this was got; there were a great many tons got up last autumn by the farmers, who were going to try experiments with it, but the time has not come to know the results. If you would like to see a little of it, I will send it you. As there are so many different opinions about guano, you would have a chance of comparing the two together, as we know this to be the real dung of sea-birds.—*A Yorkshire Subscriber.* [We should be glad not only of a specimen, but of the results of its application when they are known.]

Rooks.—Your correspondent "S." suggests that sportsmen should shoot these birds for the purpose of examining their crops, to ascertain the good or evil which they do. I have frequently requested farmers to examine the crops of every Rook which they cause to be killed; some of them having done so, have declared that they would never destroy another. These trials, however, may not be fully decisive, because they will generally be made when the grain is most exposed, whereas the birds must feed all the year. Besides, we have a simple remedy against any evil which they may do, by watching at seed time, or near harvest, when corn is laid. I believe it will be found that they will never touch corn when they can procure grubs, &c.; that is, in moist weather. Similar observations will show that pigeons do not so much harm as many suppose. They will sometimes be found full of Charlock seed, &c. when the farmer shoots them for destroying his Barley; and the grain which they may eat occasionally is only what is left on the surface (and would come to very little), as they cannot move the ground.—*B. W.*

Moles.—I recollect seeing many years ago, that the tenants of the Duke of Buccleuch had resolved to destroy no more of these hard-working animals. Can you tell whether they persevered in their experiment—and with what success? In high farming, without summer fallows, we should take every precaution against destroying our best allies. At least, let us try to distinguish friends from foes.—*B. W.* [Can any one answer "B. W.'s" question?]

Nettles as a Fodder for Cattle.—Some of your readers will perhaps think we are jesting when we assure them that such a common weed as the Nettle may be used with advantage as a green and dry fodder for their cattle. It is much used on the Continent, particularly in Holland, where whole fields are cultivated for this purpose; it is cut five or six times a year. In Holland the horse-dealers give the seeds to their horses to make them brisk, and to give them a fine skin; the roots are also extensively used for dyeing yellow. Nettles either eaten green or dried are considered by the farmers of the Continent to promote the fat of horned cattle, as also sheep and pigs, and the seeds when mixed with Oats are considered excellent for hard-working horses; it is a good food for poultry, and the fibres are manufactured into cordage. In our own country the tender shoots are often used as a pot-herb, and they are said to relieve consumption; it is also much used on the Continent as a salad, for which purpose it is sometimes forced in gardens, when other salads are scarce. If any of your correspondents have made use of this plant as above, we shall feel obliged for the results through your pages.—*J. McI., Hillsborough.*

Steeping Seeds.—I have been not a little amused on perusing the article on Steeping of Seeds, by the Rev. Mr. Huxtable, in page 170 of the *Agricultural Gazette.* It is to be expected, however, that failures will happen on a first trial of the process, as there are many contingencies that will affect the success or failure of it. In many instances, at first, I destroyed the vitality of seeds in endeavouring to ascertain the precise limits of quantity, strength of solution, &c., that are necessary to obtain the maximum of fertilising effect. I expect, however, if in health during the course of this spring and summer, to do so; but, as yet, I must confess that I have not satisfied myself on these points, although my experiments have in this respect been eminently successful. Being the first, in this country at least, who has turned his attention to this subject, I have entered a *caveat* for England, Scotland, and Ireland, in order to secure to myself the right of manufacture, for sale, of all fertilising solutions from salts of ammonia, soda, potass, alumina, silica, magnesia, liquefied guano, &c.; but, at the same time, I should be very glad to hear of other experimenters among Agriculturists who are trying by similar means to increase the productive powers of their own properties or farms. I may soon, perhaps, write you more fully on this important subject; but, at present, I have with difficulty found time even to write you these few lines.—*James Campbell, Dundee.*

Waste of Manure.—In these times of low prices, unusual exertions must be made, and an improved system of cultivation adopted. The soil undoubtedly, were it cultivated aright, would send into the market a third more of the staff of life than it does at present. To attain this desirable object, nothing should be wasted. The dust from the house, ashes of every description, soap suds, the wash not used for the pigs,—indeed, anything tangible either solid or fluid, should go to the general mass of fructifying materials; not, however, placed in a heap in order to allow the most nourishing parts to escape, but cast into a large tank formed out of the soil, if stiff and clayey; and if sandy or loose, the sides and bottom must be bricked. Nitrate of soda on Grass land answers remarkably well every other year, and brings up heavy crops. Grazing the land, or a dressing from the dung-hill on alternate years, keeps the field in good heart, provided it is judiciously drained; without which precaution the expenditure of rich dressings, in anticipation of remunerating crops, is labour in vain. Companies established in all large towns for the purpose of collecting the refuse, &c., and applying them to Agriculture, offer excellent speculations to an overflowing money market, promising a certain and large per centage. It must be acknowledged that a manure composed of a great variety of substances, is more beneficial on any kind of soil than one particular ingredient; this must continue to be the case until a simple mode of analysis can be discovered, by which the component parts of the land may be annually ascertained. The object of these remarks is not to depreciate the value of many excellent preparations lately introduced into this country, but to show that a superior manure exists within the reach of all farmers and gardeners, which is now permitted to waste its fragrance uncared for.—*Falcon, Cheltenham.*

Guano and Turnips.—On reading, at page 174 of the *Agricultural Gazette*, the statement made by John Henry Vivian, Esq., M.P., as chairman of the Swansea Farmers' Club, respecting the failure of his Turnip crop that had been manured with guano, it reminded me of a similar occurrence which happened to a friend of mine in this neighbourhood, and of which I was an eye-witness. Hearing so much about the wonderful effects of

guano as a manure, induced him to make trial of it for part of his Turnip crop; and not knowing anything of its nature, or of the mode of using it, he thought the best plan he could adopt was to sow the guano and Turnip-seed with the Turnip drill, in the same way as when bones are used. He accordingly did so; and after waiting for some time, he wondered why no Turnips made their appearance, as they were doing in other parts of the field. On examining the drills, he was surprised to find that some of the seed had chipped, and made an effort to grow, but had afterwards shrivelled up. Others, again, looked as if they had been kiln-dried, and lost their vegetative power. As a matter of course, the guano was blamed as the cause of the failure, and most heartily was it and every other new kind of manure abused. Nothing, in his opinion, would ever surpass good old farm-yard manure, and anybody might have his share of guano for what he cared about it. Happening to ride past at the time my friend had made this unfortunate discovery, I recommended him to have the part of the field harrowed afresh and sown again, by way of experiment—for I ought to observe, he had applied the guano at the rate of rather more than 3 cwt. per acre. He adopted my suggestion, and, singular enough, in the course of some days, the Turnips which had been sown broadcast made their appearance in rows from one end of the field to the other, marking as distinctly as possible the lines where the drill had deposited the guano in the first sowing. In due time, the intermediate spaces were horse-hoed, and the Turnip-rows thinned to a proper distance. Nothing could exceed their luxuriance. Although sown nearly three weeks later than the main crop, they soon overtook them, and became far superior in every respect—so much so, indeed, as to be the subject of general remark in the parish. Hence I think it may be safely laid down as an axiom in the use of guano, and which has been already mentioned in the *Gardeners' Chronicle*, Vol. iii. p. 383, *that it should never be applied in contact with seeds, as it kills the embryo in germination.—M. E. H.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday last, the 27th of March, present, T. R. Barker, Esq., in the Chair; Col. Henderson (Mayor of Southampton), R. Westbrook, Baker, Esq.; J. R. Barker, Esq.; J. Benett, Esq., M.P.; W. R. Browne, Esq.; F. Burke, Esq.; J. W. Bury, Esq.; F. C. Cherry, Esq.; L. Cooke, Esq.; C. Cure, Esq.; E. D. Davenport, Esq.; A. E. Fuller, Esq., M.P.; B. Gibbs, Esq.; T. Mainwaring, Esq., M.P.; R. A. Slaney, Esq.; Prof. Sewell, and J. Spencer Stanhope, Esq. The following gentlemen were elected members of the Society:—

Child, William, Vernham Manor, Andover, Hants.
Fletcher, Alexander, Millbrook, Southampton.
Coupland, J., Southampton.
Perry, John Watlington, Moor Hall, Harlow, Essex.
Perry, Richard, 18, Chester Terrace, Regent's Park.
Hussey, Edward, Scotney Castle, Lamberhurst, Kent.
Kerrison, Edward Clarence, Stanhope-st., Mayfair.
Holloway, Horatio, Marchwood, Southampton.
Spearing, John B., Chilton, Hungerford, Berks.
Kitson, Rev. Robert, Dean Vicarage, Ashburton, Devon.
Bent, Major John, Wexham Lodge, Slough, Bucks.
Milner, William, Nunappleton, Tadcaster, Yorkshire.
MacNiven, Charles, Perrysfield, Oxted, Surrey.
Newbery, Charles, Godstone, Surrey.
Beardmore, John, Uplands, Fareham, Hants.

The names of 15 candidates for election at the next meeting were then read.

Tussac Grass.—Sir William Jackson Hooker, K.H., Director of the Royal Botanic Gardens at Kew, in reply to an application which had been made to him on the part of members of the Society, who, in consequence of the publication in the Journal (vol. iv. part i. page 17) of an extract from Governor Moody's Despatches to Lord Stanley, having reference to the Dactylis cespitosa, or Tussac Grass, growing on Peat-bogs in the Falkland-Islands, were desirous of obtaining small portions of the seed for trial, favoured the Council with the following communication on the subject:—"I should be but too happy, were it in my power, to send you seeds or plants of the Tussac Grass. Some of the latter were living on their arrival in England, but they soon sickened and died. The seed, to a great extent, has been given away and sown in the Royal Gardens, in all kinds of situations, but not a single grain has germinated anywhere. Indeed, I have reason to believe that, in such a climate as that of the Falklands, and with a great disposition to increase by the roots, the Tussac seldom produces perfect seeds; not always, certainly, because while my son was with the Governor there, he raised seeds in the Government garden. I do not despair yet of introducing it. I have a Ward's Plant-case now in the Falklands, and have given instructions to have good tufts of the Grass with roots planted in this case, and *established* before the box is sent home. Should I be successful, you may rely upon it I shall not forget the Royal Agricultural Society." The Council ordered their best thanks to be returned to Sir William Hooker for this communication.

Bone Sawdust.—Messrs. G. W. Lees and Co., of 47, Fleet-street, transmitted to the Council a box of sawdust obtained from bone by means of the lathe, in the ordinary process of button-making. The soundness of the material necessarily employed for that purpose, and the favourable state of division into which it was reduced by the operation of turning, led them to infer that a greater uniformity would attend the application of bones as a manure under these conditions, and a greater produce result from their action, than when employed in their impure or imperfectly reduced state: and they accordingly had received from members of the Society residing in Hampshire and Hertfordshire comparative results of experiments which fully corroborated their opinion. Mr. Fowle, agent of Sir William Heathcote, Bart., M.P. of Hursley Park, near Winchester, had found the bone saw-dust applied to turnips far superior to any other manure he had made use of for that purpose; and Mr. Heard, of St. Margaret's, near Ware, states: "Two tons and a half of the bone saw-dust were applied upon 10 acres for turnips. The crop was excellent. The "rest" part of the field, 15 acres, was manured in the usual way with farm-yard manure, and the crop was an entire failure, after sowing even a third time. The fly did not attack the part done with the bone saw-dust, but totally destroyed the plant where the farm-yard manure was used."

Bones, Guano, and Ashes.—Mr. Slaney, of Walford Manor, near Shrewsbury, communicated to the Council the results obtained by Mr. T. C. Eyton, a member of the Society, residing at Donerville, in the county of Salop, in his experiments on artificial manures, especially on bones dissolved in sulphuric acid, embodied in a lecture delivered by that gentleman to the members of Wellington Farmers' Club, and at their request printed and published at a small nominal price by Simpkin, Marshall, & Co., London. Mr. Eyton having detailed various experiments made by other parties, proceeds to those instituted by himself, and which are of a very interesting character. "The manures and mixtures of manures I tried," says Mr. Eyton, "are calculated per acre. The Turnips, which were Skirving's Swedes, were mildewed, or probably the crops would have been larger. The largest crop is that raised upon guano and wood-ashes, at an expense of about two pounds four shillings, per acre, or at three half-pence for each bushel of Turnips; the cheapest, that raised upon bone-dust dissolved in sulphuric acid, at an expense of eight shillings and five-pence half-penny per acre. Both guano and muriate of ammonia were tried by themselves, and also mixed with gypsum, at the rate of 220 lbs. to the acre; where the gypsum was applied with muriate of ammonia, the crop was worse than where the muriate of ammonia was applied alone; where gypsum was applied with guano, the crop was only better by six cwts. in the acre than where none was applied, which may have been caused by the vicinity of a drain. We may therefore, I think, fairly conclude, that gypsum is no manure for Turnips, whatever it may be for Clover and other crops. I confess, I am much puzzled by this result, as from an analysis of the subsoil of the field, by the Messrs. Blunt, of Shrewsbury, it appears that it contains merely a trace of sulphate of lime, or gypsum; from which I should, until these experiments were tried, have supposed that gypsum would have had a powerful effect. Muriate of ammonia does not appear to answer well in the quantity used, and if larger quantities were applied, it would be too expensive for the farmer.

No. of Exp.	Description of Manure.	Cost per Acre.	Weight of Crop per Acre.	Measure per Acre.	Cost per Bushel.
		l. *s.* *d.*	Tons Cwt.	Bsh.	*d.*
I.	165 lbs. of muriate of ammonia; 220 lbs. of gypsum	1 10 11	7 1½	154	2¼
II.	330 lbs. of guano	1 13 0	15 1	308	1½
III.	165 lbs. of muriate of ammonia	1 6 6	8 16	192½	1¾
IV.	330 lbs. of guano; 220 lbs. of gypsum	1 17 5	15 14½	346½	1½
V.	330 lbs. of guano; 11 bushels of wood-ashes at 1*s.* per bushel	2 4 0	17 7½	423½	1¼
VI.	165 lbs. of muriate of ammonia; 11 bushels of wood-ashes	1 17 6	14 19½	385	1¼
VII.	1322 gallons of liquid manure (consisting of urine and soapsuds)	..	11 9¼	269	..
VIII.	66 lbs. of bones; 8¼ qts. or 33 lbs. of sulphuric acid; 550 gallons of water	0 8 5½	14 6	346½	0¼
IX.	484 lbs. of bone-dust	1 1 7½	14 19½	308	0¾

"In the above calculation, fractional parts are not included: the following is an analysis of the subsoil. I was told by a former tenant of the field, that it would not grow Turnips; it was, however, drained shortly before the Turnips were sown.

One hundred parts of the soil were found to contain:

Water	11 parts
Silica (or sand)	70 ,,
Alumina (or clay)	15 ,,
Red oxide of Iron	1½ ,,
Carbonate of Lime	1½ ,,
(Loss)	1 ,,
A trace of Sulphate of Lime, in weight not appreciable.	—
	100

"The proportion of silica is that yielded by the soil after the largest stones or pebbles had been removed from it. The seed was sown on the 17th May, 1843, and the Turnips pulled and weighed on the 22d of November. The plants all came up together; nor was there any perceptible difference in their appearance on the 27th of May; on the 14th of June, No. II. appeared to take the lead; I., VII., VIII. looking the worst, and being more backward than the others. On the 20th of June they were horse and hand-hoed; Nos. IX., X., VIII., IV., and V., were equal in appearance to No. II.; on the 21st July, No. V. looked best, and No. I. worst of all." Mr. Slaney then proceeded to call the attention of the Council to the comparative cost of the different manures tried by Mr. Eyton, and stated in the Table just read to them, from which it appeared that the bones and sulphuric acid cost only one farthing per bushel on the Turnips grown; whilst the other manures cost from three to ten times as much. The soil on which they were raised was a tolerably light loam, and, as Mr. Eyton stated, had been recently drained. The bones used were ground into powder, and were the fine siftings from collections of bones. This bone-powder being put into an earthenware vessel, a small quantity of water was first poured over it, and the sulphuric acid then added; when the whole mixture was stirred with a stick, until the bone-powder was entirely dissolved, and the solution being diluted with more water, was ready for use. It was applied to the land as liquid manure, either by means of a common watering pan, or the distributing trough of a liquid-manure cart, care being taken that the liquid should fall on the rows of Turnips just sown. This process, Mr. Slaney understood, was repeated after the plants came up; and in submitting this brief statement of Mr. Eyton's experiments to the Council, he trusted that the interesting results obtained might stimulate other members of the Society to extend the inquiry to other artificial manures, with a view to the determination of their economical application and practical value.—Mr. Davenport, of Capesthorne, near Congleton, Cheshire, fully corroborated the statement made by Mr. Slaney, in reference to the mode in which the mixture of sulphuric acid and bone-dust should be conducted; and as some danger to the inexperienced operator was to be apprehended, from a different mode of proceeding, it was desirable that great care should be taken, not only to effect the solution of the bones, but also to add the sulphuric acid in so cautious a manner as to prevent its accidental ejectment from the vessel, in consequence of the violence of chemical action. With regard to the abstract value of sulphuric acid and bones as a manure, he adduced the opinion of Mr. Burness, of Manchester, a pupil of Professor Liebig, and who had been delivering a lecture or two in Cheshire on Agricultural Chemistry, as unfavourable to its exclusive use; for, although it was no doubt a powerful and excellent restorer of land, it could not be considered as a permanent and efficient manure for rotation of crops, unless combined with other substances.—Mr. Davenport preferred bone manure in a dry concrete form to its being in the state of liquid solution; and had found a mixture of half a ton of bone-powder, and two hundred-weight of guano answer extremely well. The African guano just imported was offered at 3*l.* per ton less in price than the Peruvian guano, but he understood that it contained a correspondingly greater amount of water in its composition. Mr. Townshend Mainwaring, M.P., of Marchivial Hall, near Wrexham, Denbighshire, stated that with him the application of the sulphuric acid and bones had been attended with decided injury rather than advantage to his crops; a result, he had since learned, occasioned probably by the bones employed being left in fragments of too large a size, and consequently not in a state to be at once subject to the chemical action of the sulphuric acid as their solvent; his land having thus not only lost the advantage of the nutriment contained in the bones, but received, on the contrary, the injury of a strong, corrosive, and unneutralised acid.—Mr. John Raymond Barker, of Fairford-park, Gloucestershire, communicated the results of two experiments he tried last year on the effects of ashes, both singly and mixed with guano, on the growth of Swedish Turnips. The first experiment was made by applying a mixture of 40 bushels of coal-ashes, and 20 bushels of wood-ashes, per acre, to a bad piece of heavy land, sown with Skirving's Purple-top Swede, drilled in rows 18 inches apart. The Turnips, on being cleared of their tops and tails, were weighed, and found to give an average of 39 tons, 15 cwt. to the acre. The other experiment was made in a field of good light land, manured with 25 bushels of coal-ashes, and 1 cwt. of guano per acre, and sown with Skirving's Purple-top, in rows 27 inches apart. In this experiment the Turnips were much larger than in the former, and Mr. Barker expressed his regret that the result had not been weighed, as the crop was, without exception, the finest he had ever witnessed, the Turnips being of excellent quality, and of immense size.

Destruction of Insects.—Mr. Read, of Regent Circus, Piccadilly, had leave given him to submit to the inspection of the Council his garden syringes for throwing currents of aqueous vapour or narcotic fumes over the surfaces of trees and plants infested with noxious insects, without the slightest injury to their bloom or foliage. By an ingenious arrangement of the nozzles of the syringes, the currents could be directed to any given point without inconvenience to the operator; and water being introduced into the syringe in its liquid state, passed out through the nozzle as vapour or mist, settling on the plants as the gentle dew. Mr. Read had the thanks of the Council for the favour of this inspection.

Southampton Meeting.—Colonel Henderson, Mayor of Southampton, laid before the Council copies of the various engagements entered into by the Local Committee of the town and neighbourhood of Southampton, with the owners and occupiers of the various sites selected for the purposes of the meeting; along with a Surveyor's plan of the ground on which it is intended to erect the pavilion. These documents were received with thanks, and referred to the general Southampton Committee.

Prizes for Essays.—Mr. Burke gave notice that he should move, at the next monthly Council, "That Silver Medals should be granted to the authors of Essays not entitled to a first prize, but which are yet thought by the Judges to be worthy of commendation; all such Essays to remain the exclusive property of the Society, and to be made use of in such manner as the Society may think proper."

The Agricultural and Commercial Society of British Guiana transmitted a copy of their proposed laws and regulations; Mr. Sproule of Dublin, copies of his "Essay on the Growth and Management of Flax in Ireland;"

and Mr. C. M. Willich, a copy of the annual Supplement to his "Tithe Commutation Tables:"—for all which thanks were ordered. The Council then adjourned to Wednesday next, the 3rd of April.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

Mar. 21.—At the meeting of the Council, the Secretary laid on the table the report of the sub-committee, on reclaiming waste lands in Ireland, relative to the essay or report of Wm. Steuart Trench, Esq., upon the subject, for the Society's medal. The report, which was prepared by Acheson Lyle, Wm. Sherrard, and Wm. Jones Armstrong, Esqrs., entered fully into the subject, and stated that they considered the claimant fully entitled to the medal, for the spirited and enterprising way in which he had executed the work, and also deserving of considerable praise for the mode in which the subject has been treated in the report itself. They felt, however, that it was deficient in some respects, particularly as regards the different items of expenditure; and for this reason the report, together with the observations of the sub-committee, were ordered to be referred back to Mr. Trench, to make such observations by way of notes and commentaries as he should desire, in order to make the work the more valuable for publication in the Society's Transactions this year. A letter was read from Thomas Butler, Esq., one of the sub-committee for perusing the Essays on Manures, stating that he had entered into correspondence with Mr. Blacker and Mr. Coddington, who were associated with him for the purpose, and that they were inclined to pronounce a verdict of "no merit" upon the different productions which had been submitted to them for their decision. It appeared that the Society had only hitherto offered a silver medal for essays and literary productions of the kind, which had completely failed in producing anything valuable or worthy of publication; and that it was most desirable, if the funds of the Society would allow it, that some more substantial prizes in money should be given, for the purpose of procuring valuable information upon the subjects more directly connected with Ireland, and of giving them general publicity among the farming classes.

FARMERS' CLUB.

Cardiff.—At the monthly meeting of this Club, held on the 3d inst., Mr. David in the Chair, the subject for discussion, adjourned from last meeting, was On Road-making, and the Advantages of Turnpike Roads to the Agricultural Interests. The chairman said that few farmers were fully aware of the amount of hauling required on a farm of moderate size, especially if it were an arable one; this item of labour is greatly reduced by having a good hard road to go over. He himself had not believed it was so extensive until he had made the calculation he held in his hand, which he should be happy to submit to the meeting, and should be glad to have it corrected, if they thought necessary. In the first place, he would suppose that a farmer had to lime—

20 acres, at 7 tons per acre	140 tons.
Lime-coal required	60
20 acres of Turnips dunged at 20 tons per acre	400
60 acres of Corn, of all sorts, to be harvested and stacked, at 4 tons per acre	240
40 acres of Hay, ditto, at 1 ton per acre	40
Half the Turnips to be consumed in the farm-yard, or hauled off the field—10 acres, at 15 tons per acre	150
5 acres of Potatoes, at 6 tons per acre	30
Corn to market, crop of 60 acres, at 1800 bushels, at 56 lbs. per bushel, 45 tons—just say only	40
Haulage of stones off Clover, also for draining, materials for repairs, artificial manures, &c.	100
Total	1200

Few of them, perhaps, had imagined that the operations he had stated required so much labour in hauling, and a moderate size farmer would have all these operations to perform; therefore, he believed he had made out that road-making was an object of importance to the occupier of land in general, yet the bye-roads in this country were, in general, in the worst condition possible—often almost impassable—and this in a country abounding in the best materials, most of our roads passing over a lime-stone rock. He believed he might safely say that more money was wasted on the small parish roads in this county than on any other operation connected with the farm.—Mr. Watson said that drainage was a most important point to be attended to. He had recently witnessed the beneficial effects of drains under a road in a very striking manner. The road, which was a very public one, was always wet in the centre. He had recommended an underground drain, and since this had been done it had been always dry and firm.—Mr. Evan W. David bore testimony to the good effect of drains through the centre of roads on swampy land, having seen a piece of road at Deanston, in Stirlingshire, which had been treated in that way under the direction of Mr. Smith. This was done as an experiment, the portion adjoining having been dealt with quite similar in other respects. When he (Mr. D.) examined the road there was a very great difference in the two portions. The part drained was sound and good, while the other was in ruts and pools.—*Abridged from the Cardiff Advertiser.*

Reviews.

Thorough Drainage in Principle and Practice, as applied to a Dead Level. By John Clarke. Simpkin, Marshall and Co. pp. 46.

This is a very neatly got up pamphlet, describing the present condition of the alluvial and fens land in Lincolnshire, and the practical details of modes of drainage applicable to so flat a country. It is addressed to the landed proprietors and others connected with these districts, and will, we doubt not, be extensively read by them. It contains tables of the expenses connected with different kinds of drainage under various circumstances, and is also accompanied by a very accurate statement of the principles on which their efficiency depends. It is drawn up on a very complete plan, and seems well calculated to be an extensively useful little work on the subject.

Miscellaneous.

Trenching with the Spade.—An experiment, that was made in trenching last year, was attended with the following results. The field was about five acres; the soil a strong clay. The tenant had refused to plough it again, as he said it would not bear a corn crop. It was double-trenched in the manner mentioned. The price of the trenching was 10*d.* a rod of seven and a half yards, which amounted to 3*l.* 11*s.* 10*d.* the acre. A tolerable crop of Oats followed this management, perhaps from three to three and a half loads per acre. The grasses which have succeeded them are rich and luxuriant to a degree; and what the most striking circumstance is, that one butt, by some mistake, having been omitted being sown, the difference on this is most remarkable, there being scarcely the appearance of a good grass root upon it, and little else but thistles or the coarsest weeds.—*Rawstorne's Remarks on Lancashire Farming.*

Notices to Correspondents.

Rural Chemistry, By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all Booksellers, price 4*s.* 6*d.*

Gas-water.—*Gowyn.*—Next week.——*H. H.*—The quantity you may apply depends on its quality, which is various. *Mr.* Paynter, of Cornwall, spread 400 gallons per acre undiluted, with benefit. Apply it now.

Guano.—*A Young Farmer.*—Apply two or three cwt. per acre, according as it appears to be required, and mix it well with a lot of earth before spreading.

Italian Ryegrass.—*Gowyn.*—Sow about 1½ bushel per acre.

Lime.—*A Nottinghamshire Subscriber.*—Apply the lime on the Wheat stubble in autumn. Thistles will ultimately die out if you cut them off whenever they appear.

Liquid Manure.—*Anglus.*—You had better put sulphuric acid, till effervescence ceases, into the tank, before throwing the water over the manure heap.

Mangold Wurtzel.—*Dr. H.*—Always use fresh, *i. e.* last year's seed. That of the year before will rarely sprout.

Nitrate of Soda.—*S. L. B.*—Apply to Mr. Fothergill, who reports for us the state of the manure market.

Old Mortar.—*Alpha.*—It will do very well to mix it with road scrapings and a small portion of salt.

Pigs.—*A. H.* is desirous of knowing where he can hear of a thorough-bred breed of Neapolitan Pigs.

Sheepskin.—*Economist.*—Soak the skin in tan-water in a tub for two months; and if you first dip it in lime-water for a short time, it will acquire a red colour. Your best plan is to send it to the tan-yard.

Tallow Refuse.—*An Improver.*—You had better break it small and moisten it in a heap. Decomposition will soon ensue, and you may then mix it with a quantity of farm-yard or other bulky manure. The compost will be valuable.

Whitfield.—*Querist.*—No Report for 1843 has been published. We will endeavour to obtain an account of the experiment you allude to.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, March 25.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	3	to 3s	6	Best Downs & Half-breds	4s	0 to 4s 4
Best Short Horns	3	4		3	8	Best Long-wools	3	10		4	2
Second quality Beasts	3	0		3	4	Ewes and second quality	3	4		3	8
Calves	4	0		4	8	Pigs	3	4		4	0

Beasts, 2200; Sheep and Lambs, 25,240; Calves, 75; Pigs, 320.

The supply of Beasts continues good. The trade is heavy, and it is very difficult to maintain our highest quotations. The best Scots are, however, making 4s, but it must be a very good selling Short-horn to make 3s 8d.—the more general price for this description is 3s 6d. We have several more Sheep to-day, and a consequent reduction in price, the best Downs sell heavily at 4s 4d, and for the most selling Longwools 4s 2d is the very top. We observe more shorn Sheep to-day, but trade for them is heavy, at from 3s 8d to 3s 6d per 8lbs. Lamb is more in demand, at from 5s 8d to 6s 4d for small ones of good quality. Veal trade is very heavy, at lower prices. Pork also is lower.

Friday, March 29.

Since Monday, the trade at the dead markets has been so bad, that there are very few buyers here to-day. We have in to-day several that were left over from Monday, and a fair supply of fresh Beasts, but an exceedingly small demand; a great many cannot be sold at all; what sales are effected scarcely support Monday's prices. A prime little Scot is worth about 4s, but the very best Short-horns are more than 3s 6d. Sheep are tolerably plentiful, and the demand is so limited that a great many remain unsold; the very best Downs support Monday's price, but other qualities, in what few are sold, suffer a reduction of quite 2*d* per 8 lbs. There are several shorn Sheep; the trade for them is excessively bad. Lamb is the only trade in which there is any life, there being an increased demand, and rather shorter supply; small selling ones are making from 6s 4d to 6s 8d, large ones from 5s 4d to 6s per 8 lbs. Veal trade is exceedingly dull, the very best scarcely makes 4s 8d. Pork is rather lower.

Beasts, 784; Sheep and Lambs, 3780; Calves, 133; Pigs, 818.

41, West Smithfield.

SEEDS, Friday, March 29.

Canary	per qr	52s	to 55s	Linseed Cakes, Foreign, p. ton	5*l*	to 7*l* 10s
Carraway	per cwt	50	60	Mustard, White - p. bush.	5s	6
Clover, Red, English	- 64	72		— Superfine ,, -	6	8
— Foreign	- 64	76		— Brown ,, -	14	16
— White, English	- 84	100		Rapeseed, English, per last	24*l*	26*l*
— — Foreign	- 84	100		Rape Cakes - per ton	—	—
Coriander - - -	12	14		Rainfoin - - -	—	—
Hempseed - per last	3*l*	3*l*		Tares, Eng. winter p. bush.	3	5
Linseed - per qr	—	—		— Foreign - - -	2	3
— Baltic - -	—	—		Trefoil - per cwt	—	—
— Cakes, Eng. per 1000	10*l* 5s	10*l* 10		Turnip (too variable for quotation).		

Kingsford and Lay.

HAY.—Per Load of 36 Trusses.

Smithfield, March 29.

Prime Upland Hay	70s to 76s	Clover	90s to 100s	Straw	32s to 38s
Inferior - -	58 65				

Joan Cossins, Salesman.

Cumberland Market, March 29.

Superior Meadow Hay	70s to 75s	Superior Clover	90s to 100s	Straw	28s to 40s
Inferior - -	60 66	Inferior	80 90		

Joshua Bakes, Hay Salesman.

Whitechapel, March 29.

Hay - - -	50s to 60s	Clover -	90s to 95s	Straw -	30s to 32s
— fine - -	63 70	— fine	100 105		

HOPS, Friday, March 29.

The Hop Market is firm, and likely to continue so, as, beside the small stock on hand, the Parliamentary Returns just published show a decrease in the Hop-plantations of 564 acres, and an increase in the quantity of Malt made of 139,761 quarters in the year 1843, as compared with 1842. Present prices:—

Mid & East Kent Pocks	60s to 105s	Sussex Pockets -	0*l*—2 to 0*l* 3s
Choice ditto - -	6 —	Choice ditto - -	0 12 —
Weald of Kent Pocks.	4 0 6 15	Farnham - -	0 9 10 10
Choice ditto - -	7 0 — —		

Patteson & Smith, Hop-Factors.

MARK LANE, Friday, March 29.—There are no fresh arrivals of English Wheat, and the parcels left over sell at rather lower prices than on Monday. Free Foreign is a slow sale, and scarcely maintains that day's rates. In Bonded there is nothing doing.—Malting Barley continues in demand.—Beans and Peas are unaltered in value.—There is very little doing in Oats.

British, per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk - White	46	52	Red -	46	54
—— Norfolk, Lincolnshire, and Yorkshire - -	50	57	White	—	—
Oats, Lincolnshire and Yorkshire - - Potland	18	25	Feed	19	24
—— Northumberland and Scotch - - Feed	—	—	Potato	17	25
—— Irish - - - Feed	16	22	Potato	19	24
Barley, Malting and distilling 32s to 35s Chevalier	32	35	Grind.	24	30
Malt, pale, ship - - - - -	—	—			
—— Hertford and Essex - - - -	—	—			
Rye - - - - - - -	—	—			
Beans, Mazagan, old and new 32 to 32 Tick	29	31	Harrow	25	32
—— Pigeon, Heligoland - 32 to 36 Winds.	30	36	Longpods	30	
Peas, White - - - 30 to 34 - Maple	27	29	Grey	26	27

Imperial Averages.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb.	16 per Quarter.	55s 6*d*	33s 4*d*	19s 6*d*	33s 5*d*	30s 6*d*	31s 1*d*
—	23 - - -	55 1	33 7	19 7	32 10	30 4	31 2
March	1 - - -	56 2	33 9	20 0	33 3	30 5	31 6
—	8 - - -	56 0	34 6	19 11	32 9	31 0	31 6
—	15 - - -	56 3	33 3	20 1	33 8	31 2	31 4
—	22 - - -	56 5	33 1	20 9	34 1	31 2	31 2
6 weeks' Aggregate Aver.		55 7	33 5	19 10	33 10	30 10	31 2
Duties on Foreign Grain		17 0	5 0	7 0	9 6	10 6	10 6

Arrivals this week.

	Wheat	Barley	Oats	Flour
English - - -	2640	1760	2170	3100 Sks
Irish - - -	—	780	19990	—
Scotch - - -	—	—	—	—
Foreign - - -	—	—	—	—

Arrivals in the River last week.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English - 5060 Sks.	— Brls.	5920	3331	6179	2870	19	1360	795
Irish - -	,, — ,,	—	—	84	1691	—	—	—
Foreign - -	,, — ,,	1440	1345	—	720	—	—	880

Kingsford and Lay.

COVENT GARDEN, March 29.—The weather during the week being fine, the market has, generally speaking, been well supplied; but trade is not brisk. Pine-apples are sufficient for the demand, and they are offered at nearly the same prices as mentioned last week. Hothouse Grapes continue to be supplied, but only in small quantities; they are selling at 15*s.* per lb. Good Apples are scarce, and have advanced a little in price since our last report; the best dessert varieties are offered at 28*s.* per bushel. Little alteration has taken place in the price of Pears. Oranges are abundant, and Lemons are sufficient for the demand; Chesnuts bring the same prices as last week. Vegetables begin to improve; Broccoli is good, and continues to get cheaper. Savoys are becoming very scarce, as are also Brussels Sprouts; the former has slightly advanced in price. Greens are still sufficient for the demand. Carrots and Turnips, of excellent quality, are abundant; they are not altered in price. Seakale and Asparagus are well supplied, and are good in quality; the latter is a little reduced in price. French Beans are sufficient for the demand. Rhubarb is good in quality, and very plentiful. A good many of the Syon-house Cucumber have been brought to the market lately, but they do not sell so well as either the Black or White Spine, which meet with a ready demand. Strawberries are good, and are becoming more plentiful. Frame Potatoes are offered at 3*s.* per lb. Cut flowers chiefly consist of Erica Willmoreana, E. Westcotii, Euphorbia Jacquiniflora, Gardenias, Azaleas, Camellias, Pelargoniums, Cinerarias, Fuchsias, Primulas, Lily of the Valley, Mignonette, and Roses.

FRUITS.

Pine Apple, per lb., 8s to 10s	Almonds, per peck, 6s to 7s
Grapes, Portugal, per lb. 1s to 3s 6d	Sweet Almonds, per lb., 2s 6d to 3s
Apples, doz., p. bush. 8s to 28s	Nuts, Spanish, per bushel, 18s
— — Kitchen, p bus. 5s to 10s	— Brazil, 16s
Pears, per half-sieve, 4s to 12s	— Hazel, 3s to 4s
Oranges, per dozen, 9d to 2s	— Barcelona, 20s to 24s
— per 100, 5s to 14s	— Cob, 12s
Lemons, per doz. 1s to 3s	Chesnuts, per peck, 3s to 6s
— per 100, 6s to 14s	Strawberries, 1s 6d to 2s per oz.

VEGETABLES.

Rhubarb, per bundle, 1s to 2s 6d	Spinach, per sieve, 1s 6d to 2s
Broccoli, per bundle, 1s to 1s 6d	Leeks, per doz. bun., 2d to 1s
White Brocooli per doz. from 2s to 6s	Garlic, per lb. 4d to 6d
Brussels' Sprouts, p.h.-sv., 1s 6d to 2s 6d	Onions, 2d to 4d p. bch.,
Red Cabbages per doz. 2s to 3s	— Large, per bushel, 1s 6d to 2s
Sorrel, 1s to 1s 6d p. hf.-sv.	— Spanish, per doz., 1s to 4s
Asparagus, per 100, 3s to 12s	— pickling, p hf.-sv., 2s to 4s
Seakale, per punnet, 2d to 2s 6d	Shallots, per lb., 4d to 6d
French Beans, 1s 6d to 3s per 100	Lettuce, Cabb., p. score, 6d to 1s
Autumn Potatoes, 3d to 6d per lb.	Celery, per bun., 6d to 2s
Savoys, per doz. 1s 6d to 3s	Mushrooms, per pottle, 1s 6d to 2s
Greens, per doz. 3s to 6s	Walnuts, per bushel, shelled, 16s to 20s
Potatoes, per ton, 60s to 90s	Small Salads, per punnet, 2d to 3d
— per cwt., 2s to 3s	Watercress, per doz. sm. bun. 6d to 9d
— per bushel, 1s 6d to 3s	Parsley, per doz. bunches, 3s to 6s
— Kidney, p. bush., 3s 6d to 5s	Tarragon, Green, per bun. 3d to 4d
Turnips, per doz. bunches, 1s 6d to 2s	Endive, per score, 1s 6d to 2s
Turnip-tops, per bushel, 6d to 1s	Green Mint, 4d to 6d per bunch
Red Beet, per doz., 6d to 1s	Marjoram, p. doz. bun. 1s 6d to 2s
Horse Radish, per bundle, 1s to 6s	Chervil, per punnet, 2d to 3d
Radishes, spring, 10d to 1s 6d p. punn.	Salsafy, per bundle, 1s to 1s 6d
Carrots, p. doz. bun., 3s 6d to 5s	Scorzonera, per bundle, 1s to 1s 6d
Cucumbers, 6d to 4s each	

POTATOES.—Southwark Waterside, March 25.

The heavy gales of wind the early part of the week prevented the arrivals anticipated, and the cold north-east winds checked vegetation, which caused an extra demand for Potatoes, and a further advance on some samples was maintained. The Farmers having been fully employed with their field operations, they have not had time to ship, and our market still feels the hindrance to the shipping caused by the late snow-storm in the north, and since the roads have been opened, many cargoes have been shipped to Yorkshire for plants. Several cargoes arrived from the northern districts the end of the week, yet the supply is moderate, especially for this season of the year. The weather became more genial the last two days, and the dealers only purchasing for present use, sales were languid at the annexed quotations:—

York Reds - - -	80s	to 90s	Kent and Essex Whites -	60s	70s
Perth - - - - -	80	85	— — Kidneys -	80	85
Early Devons - - -	—	—	Wisbeach Kidneys - -	80	85
Late Devons - - -	80	—	— Blues - - -	—	75
Cornwall - - - -	85	—	— Whites - - -	65	70
Jersey and Guernsey Blues	90	—	Prince Regents and Shaws	65	80

WOOL.—British, Friday, March 29.

Our Wool Market continues quiet, and there appears a disposition to quit stock whenever it may be done at late quotations; but we do not think any reduction in price since our last can be quoted.

	per lb.			per lb.	
Long-wooled Wethers	1*s* 1*d*	to 1*s* 2*d*	Southdown Hoggits	1 1	to 1s 2d
Do. Hoggins	1 1	1 2	Kent Fleeces	1 2	1 3
Southdown Fleeces	1 0½	1 2			

James Perkin, Wool Broker.

PRINCIPAL MANURES.

	Weight per bush., about lbs		Weight per bush., about lbs
Alum, 24s per ton - -	—	Phosphate of Ammonia, in fine powder, 24s per cwt. -	65
Bleaching Powder, 28s per cwt. -	—	Rags, —s to 105s per ton -	—
Brimstone, 200s per ton - -	—	Rape Cake, 102s to —s per ton -	—
Bone-dust, —s and 17s per quarter	45	— Half-inch, 115s per ton -	—
— Half-inch, 17s ditto - -	42	Sal Ammoniac, 42s per cwt. -	—
— Calcined, 3s per cwt - -	—	Salt, Agricultural, 20s per ton -	80
Carbonate of Ammonia, 65s per cwt	84	— clean, 36s per ton -	80
— of Lime, 1s to 1s 6d per cwt	—	— Hide, 6s per ton - -	84
— of Soda, 30s to —s per cwt	—	Saltpetre (Nitrate of Potash) 28s per cwt., duty paid -	80 to 84
Chloride of Lime, 20s per cwt -	—	Silicate of Potash, in powd., 65s p. cwt.	—
Graves, —s to —s per ton - -	—	Soap Ashes, —s per ton - -	—
Guano, Peruvian, 30s to 32s p. ton	—	Soda Ash, 14s to —s per cwt. -	65
— Potter's, 240s per ton -	65	Sulphate of Ammonia, 240s to 260s per ton - - - -	70
— Potter's Liquid, 21s p. doz.	—	— of Copper, 32s to —s p cwt.	—
Gypsum (Sulphate of Lime), 30s to 35s per ton - - -	80 to 84	— of Magnesia (Impure) 10s per cwt. - - -	65
Humphreys's Compound for Plants in Pots, 10s per doz. -	—	— of Magnesia (pure crystal) 12s p. cwt. - -	65
— Farmers' Compound, 12s per cwt. - - -	—	— of Potash, 14s per cwt. -	—
Muriate of Ammonia, 24s per cwt.	70	— of Soda, 8s per cwt. -	—
— Lime, —s to 6s - -	70	Sulphur, 14s per cwt. - -	—
Nitrate of Soda, 16s 6d to —s per cwt., duty paid - - -	80	Sulphuric acid, London, 13d per lb.	—
Phosphate of Lime, 6s 6d p. cwt.	65	— Country made, 1½d per lb.	—
— — Sugar, 6s 6d p. cwt.	65	Whitney's Composition for Frames and Lights, 30s and 40s per doz.	—
— of Ammonia, in crystals 2s 3d per lb - - -	—		

Expenses of shipping about 3s to 7s per ton, according to quantity.

Mark Portsmouth.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

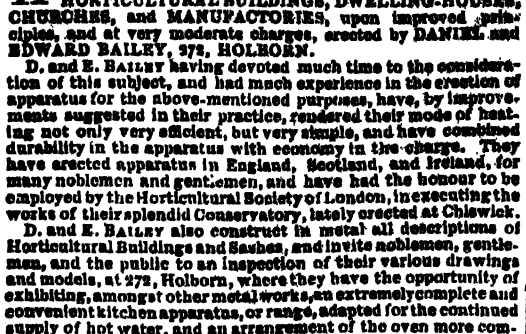
D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melon-pits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c. &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL-ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices, in consequence of the present depressed state of the Iron Trade.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public, or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS' BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale. For the convenience of those who wish to fix their own Apparatus, they have affixed the following low prices:—

Cottam's Patent Boiler, 18 inch . . .	£3 15s. 0d.
Rogers' Boiler, small size	1 17 0

Larger in proportion.

Hot-water Pipe, at 2, 3, and 4 inches, at reduced prices.

The TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

GARDEN ROLLERS 18 inches long, 34s.; 20, 44s.; 22, 50s.; 24 inches, 60s.; 26, 75s.; 28, 84s.; 30, 105s. each.

CAST-IRON RICKSTANDS, 2 feet six inches high, 5s. 9d. each. Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases and Pedestals in great variety, and every description of Horticultural Articles, Agricultural Implements, and Furnishing Ironmongery; Dr. Arnott's Stoves, Anglo-Belgian Cooking Stoves; Broiling Stoves. The above low prices being on account of the depression in the Iron Trade, are subject to future alterations.

STRONG IRON HURDLES, 3 ft. high out of the ground, 6 ft. long, with five horizontal bars, weighing about 36 lbs., 3s. 6d. each. Light Cattle Hurdles, 3 ft. 6 in. high, weighing 42 lbs., 4 0 ,,
Strong do. do. do. 45 lbs., 4 4 ,,
Ox Hurdles, 4 feet high, do. 60 lbs., 5 6 ,,

BEST WIRE, for STRAINED WIRE FENCING, at 6s. 6d. per bundle of 130 yards each. Uprights for ditto, 7d. each. The improved continued, and every kind of Fencing, Fancy Wirework.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 3s. 6d.; 20 inches, 4s. 6d.; 22 inches, 5s. 6d. each.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 7s.; 4 ft. 6, 9s.; 5 ft., 11s.; 6 ft., 18s.; 7 ft., 20s. per dozen.

Show-Rooms at the Manufactory, No. 2, WINSLEY-STREET, where every information may be obtained.

E. WEEKS, Sen., Hortulan-place, King's-road, Chelsea, the original Builder of Hothouses, Conservatories, &c. &c., Inventor and Patentee for Heating by Hot Water, begs to inform the Nobility, Gentry, and Public that he has great improvements for inspection, surpassing anything yet seen. Houses of all descriptions ready for fixing.

GUANO ON SALE BY THE IMPORTERS,
JOHN BOYD & Co.,
Wellington Chambers, London-bridge, Borough.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, [illegible] mode of use, on application to MARK FOSTER [illegible] Thames-street, and 5, Railway Place, Mark-lane, London.

GUANO (GENUINE PERUVIAN & BOLIVIAN)
ON SALE, BY THE ONLY LEGAL IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, March 29, 1844.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt. Phosphate of Potash, 18s. per cwt.
,, Soda. 12s. ,,
,, Magnesia 9s. ,,
,, Ammonia 1s. per lb.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Floriats will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition, have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 5ft. by 3 ft. 3 in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

Agents wanted for London and the country.

ASPHALTUM in its pure state, with all the material and instruction how to prepare, or if required, the labour performed at a moderate charge.

TOBACCO ASHES.—A few Tons of Tobacco Ashes to be Sold at 3l. per ton, convenient for land or water carriage.—Apply to J. A. HUBBARD and SON, 20, Harp-lane, Tower street. All Letters prepaid.

SUPERIOR SUBSTITUTE FOR TARPAULIN, &c.



C. MACINTOSH & Co., having made a considerable reduction in the price of the Patent India Rubber Covers for Carts, Waggons, Ricks, &c., beg to call the attention of Users of Tarpaulin and Oiled Sheets to the superiority of their manufacture as an effectual protection against wet, not liable to crack on being folded, and more economical than any other Waterproof Cover.—22, York-street, Manchester; and 46, Cheapside, London.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	
Garden Edging	Orange Tubs, Flower Boxes, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

TO AGRICULTURISTS.

THE Dry Material for making CAMPBELL'S CORN-PRODUCING LIQUIDS, or FERTILISING STERPS, which have arrested the attention of Agriculturists in all parts of the United Kingdom, is now to be had in Boxes containing quantities for 5 Gallons and upwards, at the following prices:— For WHEAT, Material per Gallon . . . . 2s. 6d.
,, OATS and GRASSES, ... 1 6
,, BARLEY, ... 2 0
,, BEANS and PEASE, ... 2 0
,, TURNIPS and RAPE SEED 2 6

Agents in London:—Mr. EDWARD PURSER, 40, New Bridge-st.; Messrs. GEO. GIBBS and Co., 26, Down-st., Piccadilly; and Messrs. THOMAS GIBBS and Co., Corner of Half-moon-street, Piccadilly.

LEVEL.—This Instrument, the invention of a Gentleman extensively engaged in Draining, is confidently recommended for its simplicity and cheapness; it requires only one person to use it, and gives the rise and fall in land as well as the level, and is also adapted for giving a uniform fall to drains. Each Level is packed in a case 18 inches by 8. Price, 2l. Direct to W. B. WEBSTER, Hounsdown, near Southampton.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables must ever depend upon the food supplied to the plants producing them; and these a very extensive series of trials on various soils has shown, may be secured by the use of DR. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found in the Atlantic Ocean. Sold by Messrs. WARNERS, 28, Cornhill; Messrs. WINSTANLEY, 7, Poultry; and every other respectable Chemist and Seedsman; with directions, in stone quarts, at 1s. 6d. each. The liquid requires 64 parts of water to reduce it for use, for watering soils and growing bulbs in.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2s. 6d. each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

AGRICULTURAL IMPROVEMENT.

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Familiar Botany	211 *c*	Pig feeding	220 *c*
Farmers, caution to	222 *a*	Pine-apples	211 *a*
Fertilisers of commerce	218 *a*	Pine-seeds, to sow	216 *c*
Fever in young cattle	219 *c*	Plants, season for shifting	214 *a*
Flax, to cultivate	218 *c*	Prunus cerasifera	214 *c*
Fountains	219 *b*	Purple Beech, to graft	216 *b*
Forest Trees, to prune	214 *a*	Season for shifting plants	214 *a*
Fuchsias	213 *a*	seedlings	213 *c*
Functional disease	214 *b*	Shores of the Moray Frith, soil, &c. of	219 *a*
Geology, &c., by D. T. Ansted esq.	215 *a*	Shrubs for a shady situation	216 *c*
Gold-fish	213 *a*	Slugs, to kill	216 *c*
Grapes in pots	212 *c*	Stirling Farmers' Club	221 *c*
Greenhouses, covering for	214 *a*	Young cattle, fever in	219 *c*
Hepatica, Double White	213 *c*	Yeast	214 *a*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—SOUTHAMPTON MEETING.—Prize-Sheets and Regulations for the Exhibition of Stock, Implements, &c., together with the blank PRINTED FORMS OF CERTIFICATE required to be filled up by Exhibitors, and copies of the printed Programme of the Meeting, may be had on application, either personally or by letter, addressed to the Secretary, No. 12, Hanover-square, London.

Exhibitors are particularly requested to observe, that all Certificates for Implements, &c., must be sent, complete, so as to reach the Secretary on or before the FIRST OF MAY; and all Certificates for Stock on or before the First of June.

By order of the Council, JAMES HUDSON, Secretary.

London, March, 1844

CHOICE PANSIES.

J. HENCHMAN begs to inform cultivators of the PANSY that he is now sending out healthy plants of six good seedling varieties, for 21*s.* the set. Also a few choice kinds at 15*s.* and 18*s.* per dozen.—Edmonton, March 1844.

WOODLANDS NURSERY, MARESFIELD, near Uckfield, Sussex

WILLIAM WOOD AND SON have much pleasure in acquainting their numerous Patrons and Friends that they have been appointed Agents for the sale of that most invaluable article—WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, samples of which may be seen, and the composition in use, at WOOD AND SON'S Nursery. Sold in bottles, with ample directions for use, pints 2*s.* 6*d.*, quarts 4*s.* 6*d.* each. Discount to the Trade.

SEEDLING FUCHSIA, CACTUS, and PANSY, HOLLYHOCK SEED, &c.—LYNCOMBE VALE NURSERY, BATH.

J. KITLEY begs to inform the Nobility, Gentry, and the Public that he has purchased of Mr. POND his unequalled SEEDLING FUCHSIA (PONDII), allowed by all who have seen it to be one of the largest and handsomest Fuchsias of the day; tube and sepals bright crimson, with darker corolla, and extremely free bloomer; fine compact habit; cannot fail to give satisfaction. 5*s.* per plant.

J. K. has a few more plants of fine SEEDLING CACTUS (SPECIOSA SUPERBA), 10*s.* 6*d.* per plant. Also, good healthy plants of his SEEDLING PANSY (LYNCOMBE VALE RIVAL). This Flower, both for shape and decision of colour, is decidedly the best light PANSY out. 3*s.* 6*d.* per plant.

J. K. can recommend his HOLLYHOCK SEED, with the greatest confidence, having taken great care to select from his best full and very double Flowers of 1843 20 distinct varieties, named to colour, which he will forward to any purchaser post-free, on the receipt of a Post-office order for 5*s.* The whole of the above are now ready to send out.—Bath, April 5, 1844.

WILLIAM MILLER begs to direct attention to his Advertisements of PETUNIA "PUNCTATA," New VERBENAS, &c., in the past Numbers of the *Chronicle*.—Providence Nursery, Ramsgate, April 4, 1844.

PELARGONIUMS, AURICULAS, CARNATIONS, AND LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by APPOINTMENT FLORIST TO HER MAJESTY, begs to inform the Nobility, Gentry, and Amateurs, that in consequence of the success he has had in the cultivation of the above Flowers at his new Garden (where he requests an inspection of the quality of his plants), he can offer them at very moderate prices. His Catalogue of PELARGONIUMS, AURICULAS, and NEW PLANTS, is now ready, and will be forwarded by post on application. The Trade supplied.

BUSHELL'S Light Seedling DAHLIA, "EMMA."—Plants in May, 10*s.* 6*d.* Colour white, tipped with deep cherry; the petals, form, and centre good; the largest, most constant, and free in flowering, of any Dahlia yet propagated, and has obtained several prizes. "PET RIVAL," plants in May, 5*s.* Colour, purple maroon; fine cupped petal, and free bloomer; exhibited in several winning stands last season. "KENNINGTON ROSE," plants in May, 5*s.*; most constant rose grown. To be had of Messrs. ANSELL, Camden-town; S. GIRLING, Stowmarket; F. and A. SMITH, Hackney; and J. BUSHELL, 13, Hall-place, Kennington-lane.

CARNATIONS AND PICOTEES.

JOHN SLATER, FLORIST, Cheetham Hill, near Manchester, has on sale upwards of 1000 pairs of healthy plants of Carnations and Picotees, which he will sell at low prices. 20 pairs of Carnations and Picotees, one pair of each variety for 20*s.*, package included, provided the selection is left to J. S.

FASTOLFF RASPBERRY.

J. T. WILLMER begs to announce to his Friends and the Public generally that he is able to supply a few hundreds of the above-named Raspberry, in strong Canes, at 40*s.* per 100, warranted to be the genuine kind, packing included, with carriage paid to London; or in less quantity, price in proportion. Fine showing sorts of CARNATIONS and PICOTEES, in 12 kinds, one pair of each, 24*s.* AURICULA.—Strong Plants of showing sorts, 12 plants, in 12 sorts, including basket and packing, the selection left to J. T. W., who possesses a large healthy stock.—Sunbury Nursery, Middlesex, April 5, 1844.

A CATALOGUE of CHOICE DAHLIAS, sold by W. R. WHALE, FLORIST, &c. &c., Elcot, near Hungerford, Berks.

Whale's Preceptor, a seedling of 1842; bright crimson scarlet; good substance and outline; beautifully cupped petals; splendid show flower; fine habit; height, 4 ft.	10*s.* 6*d.*
Second—Crimson Perfection, of great substance, being 20 petals deep; high rising centre; fit for a back row flower in any stand; good habit; height, 4 ft.	10 6
Third—Mary; white ground, margined with rose-pink; a fancy border variety; constant and abundant bloomer; height, 3 ft.	5 0
Spary's Lady Antrobus; white ground, margined with scarlet lake; beautifully cupped petals; good substance and outline; took numerous prizes; decidedly the best light show flower of the season; height, 3 ft.	10 6
Second—Aurantia; on an orange buff; decidedly the best flower of its class; took several prizes; height, 4 ft.	10 6
Madeline (Daniel's); a beautiful lilac; good substance; fit for a back row flower; constant; height, 4 ft.	10 6
Prince of Waterloo (Drummond's); a shaded red; beautifully cupped petals; fine centre; took the first prize at Chippenham; placed before Keynes's Standard of Perfection, Lady Antrobus, and Brown's Lady St. Maur; first prize at Bath, &c.; height, 4 ft.	10 6
Sir H. Pottinger (Drummond's); dark plum-colour; cupped petals; good centre; a most desirable show flower; height, 4 ft.	10 6
Sir J. B. Richardson, Union; one of the best flowers of the season; height, 4 ft.	10 6
An improvement on the Duchess of Richmond.	
Opher Yellow (Edwards's); fine show flower; height, 4 ft.	10 6
Bermondsey Bee (Proctor's); crimson purple; fine show flower	10 6
Nonpareil (Proctor's); ruby scarlet; first-rate	10 6
Talmer (Girling's); purplish rose; good show flower	7 6
Royal Sovereign (Stanford's); bright yellow. This flower is little known, and scarce; was shown in Hampshire, Sussex, &c., last season in grand style; height, 4 ft.	5 0
Park Mount Rival; a superb yellow	10 6
Vanquisher (Wood's); shaded maroon; first-rate	10 6
Lady Stanford (Groves's); yellow; fine	7 6
Cheltenham Queen (Hodges's); white; first-rate	7 6

The following Varieties at 30s. per dozen.

Antagonist (Bragg's), white	Purple Perfection (Mitchell's)
Asmodeus (Davis's), dark	Swindon Rival (Compton's), mottled rose
Beauty of Sussex (Mitchell's), edged	Sir R. Sale, self
BlancheShelley (Mitchell's), edg	Sultana (Appleby's), shaded purple
Blue Bonnet, brown, self	Vivid (Thomson's), scarlet
Colonel Baker (Dodd's), self	Virgil, dark, self
Confidine (Cook's), orange	Perfection (Keynes's), purple
Cornett (Thomson's), dark, self	Venus (Gaines's)
Dreadnaught, self	Venus (Attwell's), white
Essex Triumph, dark, self	Suffolk Hero, dark, fine
Favourite (Dodd's), light edged purple	King of Lilacs (Girling's)
Hero of Stonehenge (Whale's), dark mulberry	Claude Laurain (Harrison's)
King of the West (Walters's), dark, self	Lady of the Manor (Attwell's), light edged purple
Miranda (Brown's), white-mottled purple	Lady of the Lake (Gaines's)
Mrs. J. Richardson (Edwards's), white and purple	Sir R. Chester (Stein's), dark, self
Mogul (Attwell), self	Lirchiel, scarlet, large flower
Paul Pry (Brown's), rose	Lady Sale (Edwards's), red
Perpetual Grand (Brown's), red	Victory of Sussex (Stanford's), dark, fine
	Novelty (Whale's), shaded red
	Queen of Trumps (Brown's), &c.

The following Good Old Varieties, 12s. per dozen.

Admiral Stopford	Bedford Surprise	Marchioness Exeter
Andrew Hofer	Lady Murray	Prince of Wales, D.
Admirable	Euclid (Ward's)	Prince of Wales, G.
President of the West (Whale's)	Eclipse, W.	Pickwick
Phenomenon, ditto	Eclipse, C.	Princess Royal, H.
Attila, ditto	Tournament, C.	Queen, W.
Beauty of the Plain 'Spary's)	Indispensable, G.	Rival Sussex
Mrs. Shelley	Burnham Hero	Rouge-et-Noir
Lady Cooper	Bridesmaid	Sir F. Johnstone
Maria (Wheeler's)	Maid of Bath	Springfield Rival
Competitor (Hodges')	Candidate (Silverlock's)	Twyford Perfection
Grand Baudine (Low's)	Duchess Richmond	Prince Albert, A.
Conservative, ditto	Lady Harland	Defiance (Cox's)
	Marquis Lansdowne	Rose Unique (Ansell's), &c. &c &c.
	Metella (Brown's)	

Robespierre, dark plum colour, 2*s.* 6*d.*

A Good Assortment of Fancy Varieties, at 12s. per dozen.

Oakley's Sun, Rise, Nihile, &c. &c. &c.

MAY'S "QUEEN OF MAY" CINERARIA.—The above new and beautiful Cineraria is now ready to be sent out by post, or otherwise, at 5*s.* 6*d.* each, including case, prepaid. It is confidently recommended as being one of the most splendid novelties that has been offered in Cinerarias; the colour being a beautiful light sky-blue; the flowers large and of good form; the plants compact, shrubby, and dwarf in growth.

W. M. begs to state that his descriptive List of new, superb Calceolarias may be had on application to WILLIAM MAY, Hope Nursery, Bedale, Yorkshire.

W. M. also begs to intimate that he cannot supply any more Eucharidium grandiflorum.

MESSRS. MARNOCK and MANLEY beg to inform their Friends and the Public, that their DESCRIPTIVE CATALOGUE OF FUCHSIAS, VERBENAS, CINERARIAS, DAHLIAS, &c., with a Treatise on the best and most successful Modes of Cultivation, is now ready, and may be had on application.

N.B.—Their beautiful Fuchsia, MARNOCK'S PRINCESS SOPHIA, is now ready to be sent out; the stock is not large, therefore early orders will prevent disappointment.

Nursery, Hackney, April 5, 1844.

EXHIBITION of CAMELLIA JAPONICA, or Japan Rose.—A Collection of these beautiful Exotics is now in bloom at CHANDLER & SONS' Nursery, Vauxhall. Admittance gratis.

SPLENDID LARGE, DEEP-BLUE ANAGALLIS and SUPERB CINERARIAS.—Plants of that large, splendid deep blue, full and complete round-petalled ANAGALLIS BREWERII being of a strong and vigorous habit, are well adapted for bedding out; 12*s.* per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light blue, at 2*s.* 6*d.* per packet. Strong flowering plants of the above, 12*s.* per dozen. Applications, including Post-office orders, will be immediately executed.—Direct to MICHAEL BREWER, Sen., Cambridge Nursery.

SEEDLING FUCHSIAS, PHLOXES, and VERBENAS.

S. GIRLING begs to inform the admirers of the above, that he will have fine healthy plants of his superb Seedlings ready for delivery by the 20th of April. S. G. offers them with the greatest confidence, being well convinced of their superiority over any others he cultivated last year, which included about 100 varieties. The FUCHSIAS have been seen by Dr. LINDLEY, whose opinion on their merits will be found in the *Gardeners' Chronicle*, pages 528 and 561, of 1843, under the signature "*S. Girling.*"

FUCHSIAS.

CANDIDATE.—Deep crimson tube and sepals, petals bright violet-purple, reflexing so as to show the corolla. Price per plant, 5*s.*

GLOBOSA COCCINEA.—Tube nearly globular, dark vermilion sepals, and violet petals. 3*s.* 6*d.*

HERO OF SUFFOLK.—Dr. LINDLEY'S description of this is—"No. 5 is a handsome seedling, with short crimson vermilion tube and sepals of good substance, the latter expanding so as almost to reflex, after the manner of Magnifica; stamen and pistils much exserted." Price 7*s.* 6*d.*

PHLOXES.

KING OF THE WHITES.—The best white out; height, 3 feet. Price 5*s.*

SPECTABILIS.—Shaded lilac, very fine, height, 3 feet. 3*s.* 6*d.*

DRUMMONDI, var. SPLENDENS, a new annual of great beauty, being of the richest crimson scarlet, and quite circular in form. In packets of 12 seeds; 2*s.* 6*d.* per packet.

VERBENAS.

DEFIANCE.—Bright rosy pink; the best in its class. 3*s.* 6*d.*

TRESOR PARFAIT.—Bright violet purple, shaded with deep crimson; quite distinct from any Verbena known. 3*s.* 6*d.*

S. G. also begs to state that his Catalogue of Florist's Flowers is ready, and may be had on prepaid application; it will be found to contain nearly every novelty of the season, any of which S. G. will be happy to receive orders for, and which shall have every care and attention. The Fuchsias and Verbenas will be sent by post, free of charge, where preferred. The Phloxes are now ready for delivery.

Dane Croft Nursery, Stowmarket, March 23, 1844.

OLIVER'S "YOUNG HEIR" Dahlia.—To be sent out the first week of May, at 7*s.* 6*d* each.—A. OLIVER begs respectfully to call the attention of Dahlia-growers to the above Seedling, which gained prizes at the following Open Shows:—Fetton, Sept. 27th, 1842, First Seedling Prize; Fetton, August 31st, 1843, an Extra Prize, Nine Blooms; Fetton, Sept. 28th, 1843, First Seedling Prize, Nine Blooms; Alnwick, Aug. 29th, 1843, in the first stand of 12; also the Premier prize, Self colour; also the First Seedling Prize, Five Blooms. The above DAHLIA is one which the Advertiser flatters himself will give every satisfaction to purchasers, being a free bloomer, and never showing the eye; good petal, good centre, first-rate outline; colour, rosy crimson, height, from 3 to 4 feet. A. OLIVER would take one-half in plants from the Trade. The following Nurserymen in the north will be able to supply plants, viz. NEWTON, Newcastle; JANSON and FINNEY, Gateshead; HANCOCK and SON, Durham.—Eslington-house, Whittingham, Northumberland.

NEW AND CHOICE FUCHSIAS, VERBENAS, PETUNIAS, Sold by WARNER & WARNER, SEEDSMEN, 28, Cornhill, London.

FUCHSIAS.

Smith's Albion	5*s.* 0*d*	Epps's Kentish Hero	5*s.* 0*d*
,, Coronet	7 6	,, Duke of Wellington	5 0
,, Coccinea verna	5 0	,, Winsorii	5 0
,, Decora	7 6	,, Maria	5 0
,, Expansa	7 6	,, Florence	5 0
,, Gigantia	10 6	,, Kentish Bride	7 6
,, Hector	5 0	,, Emperor of China	5 0
,, Incarnata	5 0	Standish's Attraction	7 6
,, Modesta	5 0	,, President	7 6
,, Neptune	5 0	,, Colossus	7 6
,, Reflexa	5 0	,, Antagonist	5 0
,, Vesta	10 6	,, Conductor	5 0
Epps's Bridegroom	5 0	,, Candidate	5 0
,, Espattero	7 6	Miller's Constellation	12 6

PETUNIAS.

Miller's Punctata	7*s.* 6*d*	Pearson's Formosa	3 6*d*
Pearson's Neplus Ultra	5 6	,, Celestial	3 6
,, Speciosissima	3 6	,, Splendida	3 6

VERBENAS.

Pearson's Teucroides atro sanguinea	5*s.* 0*d*	Pearson's Teucroides Princess Alice	3*s.* 6*d*
Pearson's Teucroides cœlestina	3 6	Pearson's T. Speciosissima	3 6
		,, T. Beauty Supreme	3 6

WARNER & WARNER beg to inform their Friends they can supply all the varieties of FUCHSIA, PETUNIA, and VERBENA now out, either in single plants or collections. They have also all the new CINERARIAS, CALCEOLARIAS, GERANIUMS, DAHLIAS, &c., now in cultivation.

Catalogues of the above may be had. Plants of the new black Nemophilia, 9*d.* each.—Agents for the late Mr. LOUDON'S works.

NOW READY FOR SENDING OUT.



YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER.

A SELECT CATALOGUE of the NEWEST and VERY BEST VARIETIES OF FUCHSIAS, VERBENAS, PETUNIAS, CHRYSANTHEMUMS, & ANAGALLIS, offered by YOUELL & Co.

YOUELL & Co., in submitting their Catalogue of FUCHSIAS for 1844, take the present opportunity of drawing the attention of admirers of the above elegant tribe of plants, to their select and superb Collection. They have spared no expense in forming a selection of such as are really good, to the exclusion of many that are mere nominal varieties; and they would refer to the numerous testimonials of success which attended their mode of selecting, last season, collections for Amateurs, for competition at the various Horticultural Exhibitions throughout the kingdom.

YOUELL & Co. being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms:—

12 Extra Fine varieties, 12s., the Selection left to Youell & Co.
12 ditto ditto 21s., the Selection left to the Purchaser.
50 Fine varieties . . 40s., the Selection left to Youell & Co.
50 Extra Fine ditto . 60s., the Selection left to the Purchaser.

With the exception of those marked thus. *

The plants are strong and healthy, and ready for delivery: thus ensuring to the Purchaser fine plants for competition in the ensuing season.

NEW AND SPLENDID SEEDLING FUCHSIAS.

* "FUCHSIA LINDLEYANA." This brilliant Fuchsia, the entire stock of which is in the possession of YOUELL & Co., is now for the first time offered to the notice of the public.

Its exceedingly large tube and sepals are of the most vivid vermillion, and excessively expansive, surpassing in brilliancy any hybrid that has yet been raised. It was exhibited at the London Horticultural Society's Meeting, Regent-street, and greatly admired, and was pronounced by all who saw YOUELL & Co.'s specimen plant to be the most dazzling object of this tribe they ever witnessed. The foliage and habit exceedingly fine, a most abundant bloomer, and will be found a desideratum to every collection. Plants will be ready for delivery by the first week in April, at 7s. 6d. per plant. Usual discount to the Trade, when not less than six plants are ordered.

YOUELL & Co., in calling the notice of Amateurs and others to the following seedling Fuchsia, raised in their nursery, beg to state that in the summer of 1842 they bestowed every care in hybridising the best varieties in cultivation, from which they succeeded in raising upwards of 3000 plants, to the flowering of which one house was entirely devoted last year. And although many varieties possessing superior claims to the attention of those cultivating this elegant tribe, were submitted for the opinion of Dr. LINDLEY, and most favourably noticed, yet YOUELL & Co. feel that, in making a selection of the following six varieties, to which a most accurate description is affixed, will prove not only satisfactory to the purchaser, but to themselves.

These are now ready for delivery, and as the stock is very limited, early orders are solicited.

* "QUEEN VICTORIA." Tube and sepals smooth, of a bright vermillion, corolla stout, long, of a fine purple rose colour, forming a good contrast, and of fine texture, price 7s. 6d. per plant.

* "PRINCE OF WALES." Tube and sepals rosy vermilion, the latter tipped with green, expanding well, and showing a fine corolla of maroon purple; price 7s. 6d. per plant.

* "PRINCESS ROYAL." Tube and sepals bright red, corolla large and peculiarly bright in colour; price 5s. per plant.

* "MARCHIONESS OF NORMANBY." This is a large and showy flower, measuring four inches from the commencement of the pod to the termination of the pistil, tube and sepals scarlet, corolla stout, having a tinge of purple on it, price 7s. 6d. per plant.

* "LADY ALICE PEEL." A flower of good form and substance, fine rosy red tube and sepals, the latter terminating in a decided green, corolla very large and stout, of a beautiful crimson purple; price 5s. per plant.

* "LADY WALSINGHAM." Tube and sepals smooth, of a rosy vermilion; the latter turn up, and expose the whole of the corolla, which is stout, and of a fine purple crimson; price 5s. per plant. When the six are ordered, they will be charged 1l. 11s. 6d. the set.

"FUCHSIA QUEREV." Quite new, very beautiful, and not yet out, tube and sepals large and stout, of pure white, showing a dark crimson corolla; price 10s. 6d. per plant; ready in April next.

Fuchsia Seed, saved from the best varieties, 6s. to 10s. per packet, with Directions for sowing, &c. &c.

FUCHSIAS.

	per plant.—s. d		per plant.—s. d
Fuchsia affinis, or radicans	1 0	Defiance (Smith's)	3 0
" arborea	1 0	Elegans superba	1 6
" aurantia	1 0	Excelsa	1 6
" Aurora	1 6	Exonia	1 0
Alata (Smith's)	2 6	Eppsii	2 6
Belladifolia, Bellana, or Rosea alba	1 0	Exoniensis (Harrison's)	2 0
Balloonii	1 6	Exoniensis	3 6
Bicolor	1 6	*Exquisite (Youell's), fine	3 6
Bruceana	1 0	Eclipse (Smith's)	2 6
Blanda	2 6	Floribunda (Standish)	1 6
Brockmanii	2 0	Formosa elegans	1 0
*Beauty (Youell's), fine	3 6	Fulgens multiflora	1 0
Britannia (Smith's)	2 6	Floribunda magna	1 0
Cornuckii	2 6	Gem	2 6
Curtisii	1 0	Globosa variegata	2 0
Compacta	1 0	Grandis	1 0
Cooperi	1 6	Hole (Standish)	2 6
Carnea	1 0	Hero of Suffolk (Girling's, in May	6
Chandlerii	1 0	Iveryana	2 6
Conspicua	1 0	Insignis	1 6
" arborea	1 6	King	1 6
Corymbiflora	1 0	Lanii	2 6
*Countess of Tyrconnel (Youell's), fine	3 6	Longiflora hybrida	1 6
*Countess of Zetland (Youell's), fine	3 6	*Lady Rae Reid (Youell's) fine	3 6
*Conservative (Youell's), fine	3 6	*Lady Sondes (Youell's), fine	3 6
Cooperi	1 6	Magnifica	1 0
Champion (Smith's)	3 0	*Marchioness of Ormonde (Youell's), fine	3 6
*Constellation (Miller's) to be sent out this season—late	12 6	Madame Ida (Youell's), fine	3 6
*Candidate (Girling's) in May	5 0	Magdalena (Smith's)	3 0
Dalstonii	1 0	Monogenna	1 0
Dickwonii	2 6	Magnolia	2 0
Delicata	2 0	Nobilissima (Smith's)	3 6
Duchess of Gloucester (Standish's)	2 0	Pendula (Young's)	1 6
		Pulcherrima	2 0

[Youell's List of Fuchsias continued.]

	per plant—s. d.		per plant—s. d.
Princeps	1s. 6d.	Stewartia	2 6
*Prince Albert (Youell's), fine	3 6	Sanguinea	2 6
Paragon (Smith's)	3 6	Stylosa elegans	1 6
*Queen Victoria (Smith's), expect to be sent out this season	21 0	" maxima	1 6
Racemiflora	0 6	" pulchella	1 6
Racemosa	2 0	St. Clare [tree]	2 6
Racemiflora elegans	1 6	*Sylph (Youell's), fine	3 6
Roburta (Smith's)	3 6	Stanwelliana	2 6
Rogersiana	2 6	Transparens	2 0
Ricartonii	1 0	*Tagliani (Youell's), fine	3 6
Smithii	1 0	Thompsonia superba	1 6
Splendida	1 0	Towardii	1 0
Standishii	1 0	Triumphans	1 0
Splendens (Humboldt)	1 0	Toddiana	2 6
" (Kyle's)	1 0	Tricolor	1 0
Salmonia	1 6	Victory (Smith's)	3 6
		Venus Victrix	1 0
		Victoria	2 0
		Youellii	1 0

With every other new variety worthy of cultivation, that may be advertised by other parties after the publication of this list.

VERBENAS.

*"MONARCH" (Youell's) is a delicate creamy white, surpassing in its size and fragrance every other variety; the tufts of bloom measuring from 3½ to 4 inches diameter, and will be sure to give satisfaction. Price 5s. per plant.

* "BRILLIANT," (Youell's). This fine variety is of the most vivid scarlet, equal in this respect to "Melindris;" the bloom, however, is three times the size, and very fragrant, and will prove most desirable in any collection. Price 3s. 6d. per plant.

*"ELEGANS" (Youell's), is a most interesting variety, being a delicate lilac, with a distinct white eye; flower large and fragrant. Price 3s. 6d. per plant.

*"SURPRISE" (Youell's), can be recommended as a variety completely novel, and one that must be cultivated in every collection, the colour being of the richest rosy crimson, or ruby, producing tufts of flowers of 3¼ ins. in diameter, and delightfully fragrant. Price 5s. per plant.

The above four varieties have been selected from upwards of 2000 Seedlings, and may be confidently relied upon as possessing superior claims, and will be sure to give satisfaction; are now ready to send out (post-free). If the four varieties are taken, they will be charged 15s. the set.

Amethystina	2s. 0d.	Incisa major	1s. 0d.
Arraniana superba	1 0	Laconii	1 0
Barkerii, extra fine	1 6	*Longiflora (Girling's)	2 0
Barnesii	1 0	Melindris major	0 6
* Beauty	2 0	* Minstrel Boy	2 0
* Blue Queen (Miller's)	5 0	Picta	0 6
* Boule de Feu	2 0	Prince of Wales (Wood's)	1 0
* Bridesmaid	2 0	Princess Royal (Youell's), the best white out	1 6
Edmondii	1 0	* Renown	2 0
Emperor	1 0	Sanguinea	1 0
Favourite	1 6	Speciosa (Kyle's)	1 0
Formosa elegans (Croft's)	1 6	Splendens	1 0
Formosa beautiful pink, with white eye	1 6	Striata coccinea, extra fine	1 0
* Fortune-teller	2 0	Teucroides rosea, do.	2 6
Grandis	1 6	Tweediana	0 6
Groomiana	1 0	Victory	1 0
Hendersonii	1 0	Vivid	1 0
Hislopiana	1 0	* Zenxes (Miller's)	3 6
Incisa	0 6		

Are now ready to send out, per post free, at the following prices, viz.—

12 Extra fine Varieties, 6s., the selection left to Youell & Co.
12 Ditto " 10s., the selection left to the purchaser.

[With the exception of those marked thus *]

Any other variety worthy of cultivation that may appear, after the publication of this Catalogue, can be supplied at the advertised prices.

PETUNIAS.

Beauty	1s. 0d.	Magna rosea	1s. 0d.
Bicolor	1 0	Magnifiora	2 6
Gem	1 0	Medora	1 0
Grandis	1 0	Punctata (Miller's) in Apr.	7 6
Lady Peel	1 6	Rosea alba	1 0

With every other variety worthy of cultivation that may be advertised by other Parties after the publication of this List.

CHRYSANTHEMUMS.

Achmet Bey, lilac	Formosum, white and yellow	Mirabile, white and buff
Arago, buff and red	Golden Lotus, flowered yellow	Peter, creamy
Beauty, pale lilac	Gem, pink and white	Perspicuum, pink
Belladonna, pink	Goliath, white	Princess Marie, light pink
Bethnia, lilac	Gouvain St. Cyr, orange	Pulcherrimum, rose
Campestioni, purple	Hero	Queen, deep rose
Casimir Perrier, small, crimson	Incurved, pink	Quilled yellow,
Chancellor, white and pink	Insigne, pink and red	Rosalind, pink
Changeable, yellow	Imperial, pale lilac	Saltere, white
Christophe Colombe, lilac	King, pale rose	Sulphurea
Col. Combes', salmon	Louis-Phillippe	Sultana, rose
Consolcuum	Lucidum, white	Superb, clustered yellow
Defiance, white	Marchioness, white	Surprise, white
Due de Conigliano, crimson	Madame Pompadour, dark rose	Starry, purple
Duchess de Montebello	Marechale Messina, yellow and red	Tasselled, lilac
Duke, extra fine	Marie, red	— yellow
Elegans, rose	Marie Antoinette	Triumphant, pink & buff
Expanded, purple	Magnet, yellow	Two-coloured incurved, yellow and brown
Empress, lilac	Mennon, pink	Vesta, white
Fletcher, dark rose	Minerva, pink and white	Wheeleriana

Sent post-free to any part of the United Kingdom at 12s. per doz.

ANAGALLIS.

A. Carnea grandiflora	1s. 0d.	A. multiflora	1s. 0d.
A. Brewerii	1 0	A. speciosa	1 0
A. cærulea grandiflora	1 0		

The above can be sent free of postage to any part of the kingdom.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name . . 9s. per dozen
12 Extra Fine ditto, do. . . 12s.

FLOWER SEEDS.—30 Packets of the choicest and newest kinds sent per post free for 6s.

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year old plants, 8 to 10 inches high, 10l. per 100, or 30s. per dozen.

Fine Plants of CEDRUS DEODARA, 2ft. to 2ft. 6 ins., 10s. 6d. each.

Great Yarmouth Nursery, April 4, 1844.

N.B. All Orders above £2 will be delivered carriage free either to London or Hull.

FASTOLFF RASPBERRY.



PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, THE MOST NOBLE THE MARQUIS OF AILSA, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL AND CO. have much pleasure in announcing they are now supplying Fine Canes of the above highly-valuable and much-esteemed RASPBERRY, unequalled for the extraordinary size of its fruit and richness of flavour.

Those to whom Y. and Co. sent it last season have expressed their high admiration of its superiority over all other varieties, and has been awarded several prizes from various Horticultural Exhibitions during the season. As a proof they have not exaggerated its excellent qualities, fruit was submitted to Dr. LINDLEY, (see *Gardeners' Chronicle* of the 22d July last, page 503), whose opinion of it is as follows:—

"FASTOLFF RASPBERRY.—We have received from Messrs. YOUELL, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find its merits all that has been stated in favour of its excellence. The fruit that we have received is very large, obtusely conical, and of rich flavour, far exceeding in this respect some other new and large varieties. The plants bear abundantly, and in long succession."

They also exhibited it on the 1st of August, 1843, before the London Horticultural Society, 21, Regent-street, to which a prize was awarded. It would therefore be unnecessary for YOUELL and Co. to recommend it more fully, or with greater confidence to the notice of the public, merely observing, that it continues in high perfection throughout the autumnal months, and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties.

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom (on the receipt of a Post-office order), upon the following terms:—

		£	s	d
Packages containing 100 Canes	. .	2	5	0d
Do. do.	50 do. . .	1	5	0
Do. do.	25 do. . .	0	14	0

Package included.

The usual discount to the Trade where not less than 200 are ordered.

☞ CAUTION.—YOUELL and Co. deem it requisite to inform their Friends and the Public in general of the fact, that other varieties of Raspberries are being offered for sale under the title of "Fastolff," and such having no pretensions whatever to the genuine variety, they beg to state they cannot be held responsible unless it has been supplied from their Nursery; neither have they appointed any Agents for the sale of it.

TWO NEW AND SUPERB PICOTEES.—"LADY ALICE PEEL," 10s. 6d., and "MRS. BENYON," 10s. 6d. per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes, of Lingwood Lodge, Norfolk, and were kindly presented to YOUELL & Co. by that gentleman. They have already obtained Prizes at the Norfolk and Norwich Hort. Soc. Exhibitions, and Y. and Co. feel assured that no further proof of their superior merit is necessary when they refer to the eminent raiser of them.

"LADY ALICE PEEL" is a large well formed flower, guard leaves and petals throughout of fine form and substance, and of the purest white; the lacing a delicate rose, and confined entirely to the edge. This is considered by all who have seen it to be superior to "Mrs. Barnard," or any flower of its class, and carries a beautiful long pod.

"MRS. BENYON," (red edge) also possesses every character of a first-rate Show flower, petals of splendid size, form, and substance, and the blooms expanding so correctly as not to require dressing, and carries a beautiful long pod.

FINEST CARNATIONS AND PICOTEES.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows: £. s. d.

12 pair of good Show Sorts	. . . . .	1	4 0
12 ditto fine	ditto	1	10 0
25 ditto	ditto	3	0 0
12 ditto extra fine and very superior ditto, including a pair of that beautiful rose-flake, "Wilson's Harriet," and all first-rate Show flowers	. . . . .	2	10 0
25 ditto	ditto . . . . ditto	5	0 0

The selection being left to YOUELL & Co.

Great Yarmouth Nursery, April 4, 1844.

TO GARDENERS AND FLORISTS.

JAMES DICKSON & SONS, SEEDSMEN and NURSERYMEN, Edinburgh, beg to inform their numerous Friends throughout the country that they have been appointed Agents for the sale of WHITNEY'S CHEMICAL TRANSPARENT COMPOSITION for rendering Muslin, Calico, or Linen a suitable and economical substitute for Glass for Horticultural purposes. It has been very favourably noticed by Florists and Horticultural Societies throughout the country. Specimens may be seen at the Warehouse, 32, Hanover-street, or (the composition in use) at INVERLEITH NURSERIES.

Sold in Bottles (with directions for use)—pints, 2s. Cd.; quarts, 4s. 6d. each. Discount to the Trade.

J. D. and S. respectfully call the attention of their Friends to their NURSERY AND SEED CATALOGUES, which may be had on application.—April, 1844.

T. PEARSON begs to inform his Friends that he has lost the greater part of his stock of PANSIES, and cannot supply any sort at present except "Black Prince" and "Agnes," either of which will be sent post-free at 2s. 6d. each.

Chilwell Nurseries, near Nottingham.

FARM TO LET.

TO BE LET, with immediate possession, a very desirable FARM, containing about 436 Acres of Arable Pasture, and Sheep Walk well adapted for the Turnip system of Husbandry, the greater part of which is free from Tithes, lying within a ring fence, and situate in the parish of Battle, Sussex, and to which may be attached about 35 acres of good Marsh Land.

For further particulars apply to R. YOUNG, Esq., Solicitor, Battle.

Also, TO BE LET with immediate possession, a very desirable FARM, containing 254 acres of Arable and Pasture Land, including 10 Acres of Hops, in the parish of Battle, Sussex, to which 34 Acres of rich Marsh Land may be attached. Apply as above.

TO GENTLEMEN, FLORISTS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, at the AUCTION MART, Bartholomew-lane, on THURSDAY, APRIL 11th, 1844, at 12 o'clock, about Three Hundred Pair of PICOTEES, the surplus stock of a first-rate collection. Also, a choice assortment of DAHLIAS, FUCHSIAS, GERANIUMS, and other flowering Plants.—May be viewed the morning of sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS of FLOWERS and FRUIT, in the Society's Garden, in the ensuing season, will take place on the following Saturdays, viz.—May 18, June 15, and July 13; and that Tuesday, April 16, is the last day on which Tickets are issued to Fellows of the Society, at 5s. 6d. each.

EXHIBITIONS OF FLOWERS, &c.—REGENT'S PARK.—The following are the Days appointed for the Exhibitions of PLANTS, FLOWERS, and MICROSCOPES, in the Gardens of the ROYAL BOTANIC SOCIETY OF LONDON, this season:—
TUESDAY, April 30,
TUESDAY, June 4,
TUESDAY, July 2, 1844,
When Prizes, exceeding 900l., will be distributed. Tickets for admission may be had, by orders, from Fellows or Members, at the Office, in the Gardens; price, on or before Saturday, April 13, 4s., after that day, 5s., except on the Days of Exhibition, when they will be 7s. 6d. each.
Schedules of Prizes and further particulars may be had at the Gardens. J. D. C. SOWERBY, Secretary.

FLOWER-SHOW.—The Annual Flower-Show, under the Superintendence of Mr. J. T. NEVILLE, of Ebenezer House, Peckham, will be held in the Grounds of the Almshouses of the Butcher's Charitable Institution at Walham Green, Fulham, at the latter end of June or beginning of July, of which urther notice will be given. JAMES NEES, Secretary.

ANY PERSON having healthy young plants of THE CITRON (Citrus medica), THE LIME (Citrus acida), THE SHADDOCK, (Citrus decumana), or any of the larger fruited Citrus tribe, may hear of a purchaser, by addressing a line to A. Z., 5, Charles-street, Covent Garden, stating size, price, &c.

The Gardeners' Chronicle.

SATURDAY, APRIL 6, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Friday, April 12	Botanical	8 P.M.
Tuesday, April 16	Horticultural	3 P.M.
	Linnean	8 P.M.
Wednesday 17	Society of Arts	8 P.M.
	Microscopical	8 P.M.

A Fox, says the fable, having lost his tail, persuaded his companions that tails were useless, and thus it was that bobtails came in fashion. Something of this, sort must have happened to the early Pine-growers or they never could have fallen upon the strange plan of cutting off its roots to make the Pine-apple grow The preservation of roots was found difficult with the old and inefficient modes of obtaining bottom-heat; and therefore roots were voted useless.

Cut off all roots that are not fresh and healthy, says Speechly; away with straggling roots, writes Nicol; disroot, disroot, cry half-a-dozen more, for roots are only annual things, and of no use to Pines after they are a few months old. Even Baldwin, with all his skill, could not perceive the error of the practice, although he confined his disrooting to the time when his successions were taken out of the tan and transferred to pots; and Mr. Glendinning, a still better authority, speaks of disrooting as a beneficial practice; adding, however, that it suits Queens better than the black sorts. There was, however, an exception to this singular practice, in the person of Griffin, the gardener to Mr. Samuel Smith, of Woodhall, who never would allow healthy Pines to be disrooted at any time, and who beat all his contemporaries in the magnificence of his fruit, although he was some way behind the Bicton and Longleat Pine-growers of the present day.

We should be greatly puzzled to find a reason for the practice of cutting off the roots of the Pine-apple, unless it was that as the imperfect mode of obtaining bottom-heat was continually leading to the destruction of roots, and nevertheless the plants continued to grow, it was thought that the roots could be of no use, and were better removed. Just as with the Orange-tree, which, because it will bear a great deal of cold, hunger, and neglect without perishing, some people fancy cannot well have too much of such treatment. "No plant whatever that I know of," says Mr. Barnes, "is subject to more unnatural treatment, and scarcely any other plant would endure half so much ill-usage, without dying altogether. The Pine-plant is something like that unfortunate beast the donkey,—it will endure a wonderful deal of ill-usage before dying or giving in altogether."

It may be, too, that the fibres of the Pine-apple plant have been thought to be merely annual, as is even now imagined to be the case with the Strawberry; although the most common attention to facts would show that this opinion is entirely unfounded. Mr. Barnes has sufficiently exposed this prejudice in his capital paper in the "Gardeners' Magazine;" and more recently, Mr. Hamilton, whose work on Pine-growing was reviewed the other day, has devoted a chapter to the exposure of this common and fatal error. In short, it would be an affront to our readers to dwell further on that point. Disrooting will therefore be regarded hereafter as the sure mark of a bad Pine-grower; and the destruction of roots by accident in Pine-houses will be the knell of the credit of either the gardener or his apparatus.

One of the soundest maxims of cultivation is—"*Never to allow a plant to receive a check;*" to keep it growing steadily during the whole period of vegetation—to let it sink gradually to rest—to maintain it in its state of torpor without disturbance—and to rouse it gently into activity when its allotted season shall have returned. This principle is of *universal application; there is no known or probable exception to it;* and every deviation from the rule is of necessity attended more or less with injury. The odd thing is, that Pine-growers should have generally admitted its importance, and yet not have perceived that a destruction of roots must be the severest check that a plant can well receive. Checks are indeed the greatest of all the causes of mischief in Pine-houses; crowds of suckers, a fence of gills, a disproportionate crown, and similar things, arise from that circumstance; and when once they appear, good-bye to good fruit. Disrooting is the prolific mother of them.

As we have no intention of returning to this subject for the present, we may as well mention Mr. Barnes's method of preventing the excessive growth of Pine-crowns, when by any accident a plant will try to produce them. It must be obvious that, if the Pine-apple plant has to feed both its fruit and a huge tuft of leaves on the top of it, (which, as our clever friend truly says, look like a baby's head with a man's hat on,) the nourishment which the plant is capable of yielding must be divided between them, and the man's hat will be formed at the expense of the baby's face. To prevent this, from three to six days after the blooming is over, he thrusts a small knife into the centre of the crown, and gives it a twist, when out comes the centre of the heart, which checks growth without disfiguring the plant. "The fruit taking the advantage, improves in swelling amazingly, and when finished, has a nice neat little crown on it, from 2 to 3 inches high, looking, in comparison, like a well-fed happy Englishman, with a becoming hat on his head." Speechly adopted a similar practice with suckers, in order to stop their growth.

THE next faculty which ought to be found in the mind of the Landscape Gardener is that of Imitation. We all know how readily this faculty runs into abuse when powerful, and not restrained by a sense of propriety. The proper exercise of it, in the case before us, is to imitate Nature—to ask, in all cases, what would Nature do? To be able to answer that question, the Landscape Gardener is supposed to have followed the advice formerly given, to examine Nature in all her aspects, and to take heedful note of them. A clever man, on looking at a scene to be improved, can form in his mind, almost instantaneously, a view of what is required; he can see at once what the execution of his design will effect, if well carried out. Having made himself acquainted with every kind of tree and shrub that may be available, its habits, size, colour, style of growth, &c., he knows what to select, and what will suit the soil and climate. The knowledge he must acquire, in order to enable him to imitate Nature—to make Art her handmaid, is extensive. The imitative power is indispensable; but there must be also a discriminative power, to hinder it from misplacing imitations. This faculty occasionally leads to very great absurdities; and yet we should consider its gratification, and not laugh at its votaries, though, to our taste, they may have spoiled what might have been rendered agreeable.

The faculty we are next briefly to consider—that of Construction—frequently helps Imitation into the ridiculous. We recollect having somewhere seen a mass of rockwork on a great scale—a little mountain, precipitous all round, and broken through by ravines, &c.; it was quite an expedition to get up to it and travel over it. But it was out of place. It is very proper to give to rock-plants a suitable dwelling-place in a collection; but where there are no rocks, imitations of them are absurd. If they exist on grounds that are to be ornamented, rock-plants may with perfect propriety be made to grow upon them. Any feature that is grand in Nature cannot be imitated with effect where the general scene is not grand; and where the scene is naturally grand, imitations of grandeur are not needed. Unless art can be effectually concealed—unless all objects be absent that can suggest it to the mind, trouble and expense are thrown away on imitations. There are many circumstances which render art essential, and certain forms imperative; but there is some great purpose to serve, which cannot be well served without a degree of formality. All that can be done in such cases is, to avoid formality as much as possible, and to render things not positively disagreeable.

It is only with great features that Landscape Gardening has to do; and little matters may be treated in a little manner. The symmetrical is allowable, and even necessary, when we come to minor concerns. The faculty of Construction undoubtedly operates in Landscape Gardening, though, apparently, the practitioner has only to design; but in designing, the execution of the design is kept in view, else schemes might be propounded the realising of which might be impossible. It appears to facilitate the conception of how a thing may be done, and likewise how it ought to be done, when more ways than one of doing present themselves. It is intimately connected with what is called intuition, and may possibly be identical with it, for everything is constructed in the mind before the hand is set to execute. The analysis of mental power is a very interesting subject; but it would be out of place to enter on it here.

Although mere Light and Shade are necessary to bring out striking effects, Colour must be attended to. Light and Shade, we all know, when the sun shines, vary every moment; and therefore it becomes a study so to assort objects within range of the principal point of view as to bring out various good effects. Not only must we regard the diurnal motion of the sun, but his position in the ecliptic, so that when he is at various elevations and positions light may strike and shadows spread out where they may make the strongest impression on the eye. This is a point not much attended to, but one of very great value, and well deserving the closest study by the Landscape Gardener. Frequently, the admission at a particular spot of a mere streak of light enlivens a whole scene and excites the highest admiration. Sunshine through trees, when the orb itself is concealed and the rays are penetrating a thin shower falling among them, produces at times delightful effects.

To enumerate all the effects that have occurred to us in rural scenery of various kinds, especially that denominated the romantic, might occupy a goodly volume. It is impossible to exhibit an effect and to analyse the manner in which it is brought about without the help of drawings and diagrams. With a few observations on colour, and remarks on one or two collateral subjects, we shall in our next conclude what we have to say.—*G.*

FAMILIAR BOTANY.

MORPHOLOGY.—No. X.

> Come sweet-lipped Zephyr and Favonius, bland!
> Teach the fine seed, instinct with life, to shoot
> On Earth's cold bosom its descending root;
> With pith elastic stretch its rising stem,
> Part the twin lobes, expand the throbbing gem.

IF the power of the Creator is wonderfully manifested in the formation of the embryo plant, out of mucilage and just-born cells, how much more admirable is the quality implanted in that embryo of developing itself into a perfect being! How marvellous the impulse which causes it to burst through the sides of its early tomb, to awaken by degrees from a death-like sleep, never again to rest, and from a wan and torpid grain to spring into that ever-changing, never-resting, gay and gaudy thing—a plant! Let us observe what we are permitted to know of the first changes that the little embryo undergoes; and for this purpose let us take the garden Mustard.

When the embryo of the Mustard is at rest it is yellow, and consists of two plano-convex scales of the consistence of an almond, upon which the radicle is folded down. The moment it begins to inhale the breath of life it softens, lengthens, bursts through the seed and begins its first change. This consists in a lengthening upwards and downwards of the small cylindrical space lying between the point of the radicle and the base of the scales; and its effect is to produce a white thread, the loose end of which forces its way downwards, drinking eagerly the moisture of the soil, while at the same time the other end rises upwards and carries the scale-like *cotyledons* into light and air; and while they *thus are rising* upwards, their solid contents are dissolved and converted into bland milk, which flows along the thread (which is the axis of growth) and sustains it in its growth, as a mother nourishes the infant at the breast. But in effecting this important purpose the scales are gradually metamorphosed, and from minute fleshy plano-convex yellow bodies they change into large thin roundish green lobes having all the texture and character of a leaf. Here, then, is a direct alteration of one thing into another wholly unlike it. The cotyledon grows into a leaf; therefore the cotyledon was a young leaf.

Next observe the garden Cress. It, too, goes through a similar series of changes in its earliest growth. The yellow fleshy scales of its embryo extend into long-stalked narrow lobes of a bright-green colour exactly of the nature of the future leaf; and, in order to show still more distinctly the identity of their nature, sometimes they are split into three pieces, just like those of the leaves to be subsequently produced.

It is true that this curious change does not take place in all embryos. In the common Pea, for example, the scales never alter their original appearance, but remain in their subterranean abode, shrivelling up and not enlarging; a circumstance which is possibly owing to their containing a much larger quantity of solid matter than the Mustard and Cress, and the conversion of which into fluid nutriment is so slow and difficult as to require, for chemical reasons, a continual detention in obscurity. But it is a principle in philosophy, which cannot be shaken, that *what is true of an organ in one plant, is true of the same organ in all other plants;* and, therefore, if it can be proved that the cotyledons of the Mustard and Cress are imperfect leaves, those of the Pea must be so regarded also. Not that it is absolutely necessary to have recourse to such reasoning in order to sustain the proposition; on the contrary, from the Pea, turn to the Kidney Bean, and therein will be found the most conclusive proof. The Kidney Bean is, in many respects, of the nature of the Pea; its embryo scales are very thick, hard, and fleshy, and slowly dissolve their solid contents, so that they have little power of thinning, expanding, and changing. They, however, differ from those of the Pea in this, that they do become green, are partially

thinned, acquire a small leaf-stalk, and actually reach an intermediate state between that of the true leaf and cotyledon.

And always thus does the young plant struggle into existence, proceeding from one state of perfection to a higher, or, as Morphologists say, from imperfection towards perfection—terms that have been cavilled at, and stigmatised as atheistical! but not used irreverently, or in the sense of materialists. It is, doubtless, true that an egg is perfect as an egg, and so is a seed as a seed; but that man must have a strangely-constituted mind, who cannot see that an egg is less perfect than the bird which is hatched within it, or a seed less perfect than the tree into which it grows. Those over-zealous persons, who, in their diseased imaginations, fancy they perceive in the Morphologist a latent Materialist, themselves exhibit the most enormous ignorance of the high attributes of the Creator. It is not necessary to be always talking of a great First Cause. In considering the works of Nature, we always deal with the facts that are plainly before us. By all men of sense it is *understood* that in speaking of natural phenomena an acknowledgment of the power that produces them is *implied*. "Il est certain," says an eminent philosopher, in writing of such things, "que tout cela est automatique; il n'y a point là d'intelligence ni de volonté. Mais derrière cet être inintelligent se trouve l'intelligence créatrice, qui a établi les admirables machines végétales qui exécutent ces mouvemens automatiques, tous dirigées vers un but indiqué par les besoins de la plante." We recommend this sentiment to the consideration of a class of writers, to whom, if we have sometimes alluded, it has been for the sake of what, we presume, are their good intentions, but certainly not for their intelligence and sound judgment.—*R. E.*

Erratum in last Number, p. 197, line 1 from the bottom, *for* "proportion's" *read* "perfection's."

FUCHSIAS.

(*Continued from p.* 195.)

The last paper contained remarks on the means of obtaining an accumulative growth from one-year plants, or those potted the previous autumn, such being generally found in a state unsuited for another season's growth. The principal points were, to obtain an increased circulation of moisture by enlarging the bottom cavity of the ball externally, and to reduce the terminal shoots to a proportion commensurate with the general vigour and habit of the plant.

The treatment required for young plants, as cuttings of the current season's growth, differs in some respects. When such plants have been duly attended to in their removal from the store-pot, it is well known that their growth is more uniform and accumulative than those which have received a previous and premature rest; consequently the period of their removal from 60-size pots to larger, is limited in proportion to their condition and the habit of the variety. Nevertheless, if the cavity at the bottom is such as to indicate an impeded circulation in consequence of being closed by the position of the bottom potsherd, the cavity should be partially enlarged, as before recommended, and after the first or second top buds are pinched or cut off, it may await the fuller formation of its side or axillary growth previous to being shifted to a large 32 or 24-pot, into similar proportions and qualities of soil, as before stated. If the plants have already expanded their buds from the base of each leaf, they should be immediately shifted; and, when established, the top bud may be taken off, or more, as the variety may require.

From these remarks it may be inferred that plants, received in thumb-pots, should, if four joints long, be divested of the top bud a week or ten days previous to being removed to small or large 60s. The reasons for this are, that, as it is probable that plants when exposed to such small portions of soil are likely to be subject to opposite extremes of temperature and of moisture, so as to reduce their constitutional vigour below the possibility of accumulating it under such conditions, it is essential to shift them in proportion to their strength, that the cultivator may start them into such a growth by uniform proportions of soil, &c. (§§ 8, 9, and 10), as to enable him to give a final shift, or potting. This appears to be an essential condition of cultivation, in accordance with the principle, that "there is no arrangement of soil essential to the perfect condition of a plant, which is not proportionately essential throughout its whole period of growth." It is therefore assumed that all plants should be brought to the highest possible vigour, compatible with their existing conditions, previous to being exposed to the intense agencies of heat, moisture, &c.

With respect to the removal of foreshoots, or top buds, in order to induce a freer growth below, the following opinions are offered:—Where the buds are bursting from the base of the plant upwards, their perfect formation depends upon the removal of the plant to a larger amount of soil from the time of their first appearance, and a strong exposure to light, heat, and other essential agencies, it being understood, that to obtain splendid growth from a plant of one stem by causing an expansion of growth from the base upwards, in proportion to its height, is much more difficult than a similar width of growth from a plant of two or three stems. The first implies an approximation to its conditions of growth in nature, by very ample and uniform proportions of soil, with appropriate exposure during the first stages of growth, aided by partially inverting the leading shoot to retard the vertical flow of sap; while the second instance is illustrative of the conditions of growth by art, which obtains by a comparative result the intervention of many causes, which the former obtains by less. The first forms, in its first growth, the basis of ultimate vigour; the second reaches it by successive efforts, each exerting a negative influence on the one which preceded it.

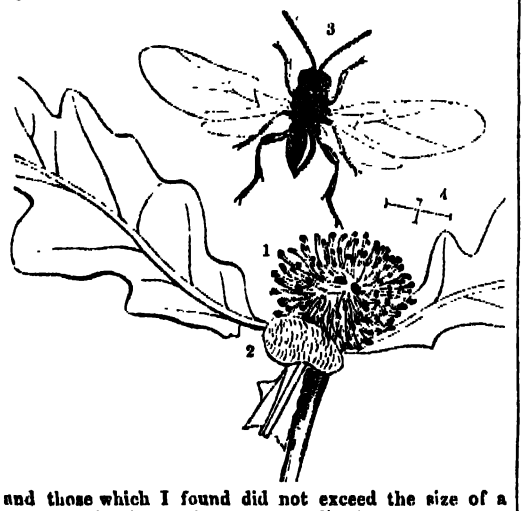
Heath-mould has been recommended by some growers for the cultivation of the Fuchsia. I have no wish to underrate the value of this material; but when it is remembered that the qualities of Heath-mould vary as much as the indefinite qualities of loam, it must be admitted (apart from the fact that, whilst there are several natural orders of plants, to the cultivation of which Heath-mould is indispensable, there are many others, on the contrary, to which it is in no respect essential), that its application, in many instances, will depend upon its prepared texture and quality. Vegetable matter, in a highly decomposed form, being the basis of Heath-mould, is capable of holding nutritive properties longer than other soils, where silex abounds; and it is probably this quality which gives it its value in the Vegetable economy, viz. of maintaining longer than others an equilibrium of moisture in plants whose external organs are less capable of absorbing aliment from atmospheric and solar agencies.—*W. Wood, Pine-apple Place.*

(*To be continued.*)

ENTOMOLOGY.

Cynips Quercus Castaneæ (*the Chesnut-fruited Oak-gall-fly.*)—I have already described various galls, and the insects inhabiting them, and lately some of those created by the Aphides or Plant-lice, which excrescences are not genuine galls; and of those Hymenoptera, which are allied to the species that cause the galls of commerce; the histories of three interesting varieties have appeared in this Journal,* viz., the Oak-spangle, the Parasol-gall, and the Root-gall flies. I have now the pleasure of contributing another species, which does not appear to have been noticed in any work; and I shall feel obliged by any information regarding it, should it be discovered in this country. I unexpectedly met with these curious galls last year in the month of August, in the beautiful park and plantations near Florence, called the Reali Cascine; some Ivy was twining round the Oak which produced the galls, and at a short distance I imagined they were the flowering buds of that creeper, and it was quite accidentally that I discovered my mistake. On mentioning the subject to my friend, Professor Passerini, he informed me they were not unfrequently found in the country around Florence, and that when they were sufficiently abundant to attract the notice of the common people, they gave a singular explanation of the apparent phenomenon, namely, that the Oaks had been impregnated by the Spanish Chesnut, whose spiny young seed-vessels, these galls certainly in some measure resemble.

Here we have another instance of the absurd errors into which persons fall, from their total ignorance of the laws of Nature, which might be easily remedied by making Natural History a branch of education. I am ready to acknowledge that these curious vegetable productions were quite unknown to me, but suspecting they were the nidus of some Cynips, I gathered a few; indeed they appeared to be very scarce at that season, for I could find none on any other Oak-trees; and last February I had the satisfaction of breeding nine specimens of the fly from one of them. These Oak-galls (fig. 1) are green,



and those which I found did not exceed the size of a common Hazel-nut; they are covered with erect filaments, rather flattened, especially towards the tips, which are clubbed, of a pitchy colour, and apparently viscid; they are formed on the sides of the twigs, and are probably produced from the small buds at the base of the leaves; there were also two kidney-shaped galls arising from two other buds (fig. 2) in the branch figured; these were of an ashy-brown tint, partaking of the colour of the Bark, with smooth spots, but they have produced nothing; indeed they appeared to be solid, and were as hard as a knot of wood; yet I do not feel certain these may not be the nidus of the males, from which that sex would issue in a natural state, for, the leaves falling to the ground in the autumn, they would be kept moist during the winter, which would enable the larvæ to feed, and the flies to escape at the appointed time. This, however, is mere conjecture; and it is possible that the male eggs may be deposited in separate buds, producing distinct galls, and that they are generated at an earlier or later period; however that may be, all the specimens I have bred are females, and such is usually the case; for out of hundreds of flies that I have obtained from the galls of Cynips Rosæ and C. Quercus radicis, I never yet bred a male. Two dark spots are exhibited in the gall (fig. 1), through which the gall-flies made their exit, by eating their way out, and there were seven other holes in different parts, proving that the cells are separated, and that each insect had to perforate its case as soon as it hatched, so that the last was not able to avail itself of the previous labours of its associates.

The female fly is similar to others of the same genus, but not being identical with any I have seen, I have named it Cynips Quercus Castaneæ, in allusion to the galls resembling the young fruit of the Spanish Chesnut. It is black, the antennæ are slightly clavate, and about as long as the head and thorax; they are composed of 13 small joints, the basal one being the stoutest, the second much smaller and oval, the third the longest and slender; the apical joint is conical; the head, thorax, and scutellum appear griseous, from the short gray hairs which are scattered over those parts; they are all minutely and thickly punctured; the eyes are oval and lateral, and on the crown are three ocelli, forming a tolerably large triangle; upon the thorax are four longitudinal grooves, two in front parallel, with one on each side, curved next the collar, and extending to the scutel, where they approximate, and nearer the lateral margin is a short one; the scutellum is nearly orbicular; the abdomen is rather smaller than the thorax, very glossy above, ochreous beneath, of an oval form, the apex conical and pointed; the ferruginous ovipositor is concealed beneath; the wings are pubescent, the upper ones, as usual, are very long and ample, the nervures are bright brown, with a minute triangular cell on the disc; the socket at the base is ferruginous; the inferior wings are small and nerveless; anterior legs ferruginous, the thighs partially, the apical joint of the feet entirely, pitchy; the other legs are of a deeper rust colour, the hinder the longest and stoutest; the coxæ are large, and piceous at the base, as are likewise the trochanters and thighs; the tibiæ and basal, as well as the apical joint of the tarsi, are blackish (fig. 3). The cross-lines show the natural size of the female; the male is unknown.—*Ruricola.*

* Vide vol. i. p. 732; vol. ii. Dec. 24; and vol. iii. p. 52.

ON THE CULTIVATION OF GRAPES IN POTS.

(*Continued from page* 197.)

After potting, the plants should be placed in some house or pit where a temperature from 60° to 80°, or 85°, is maintained; they should also be so arranged that the shoots as they advance can be trained immediately under the glass, and be exposed as much as possible to the light. The front kerbs and back shelves of Pine-pits are suitable places, and the partial shade that the Vines afford benefit the Pines during three or four of the summer months. Where there is only a Vinery they may be trained between the permanent Vines, or in any other place where the cultivator can make room for them. As the shoots advance train them carefully, and stop the laterals as they appear. When first potted the plants will want but little water, but it must be gradually increased as the pots become filled with roots; they will then require it regularly during their growth, and manure-water may occasionally be given, although the quantity they demand the first season is small in comparison to what they require afterwards. The most suitable length of cane for pots is from four to six feet, but if from any peculiarity in the house, in which they are to be fruited, a longer length may be required, they should be left accordingly, as the Vine will grow strong enough for fruiting, 8, or even 10 feet long. After it has grown a foot more than the length required the next season, it should be stopped; three or four of the upper laterals, however, may be allowed to grow at a few joints, to prevent the topmost eyes breaking. Manure-water may now be applied to cause the buds to swell, and care must be taken to preserve the principal leaves, as they are now performing a most important part in regard to the crop next season. When the wood appears to be turning brown (or ripening), water should only be applied to prevent the Vines flagging, the laterals should be taken off, and every means should be employed to ripen the wood perfectly. Indeed if it is not convenient to allow a large admission of air when they are growing, it would benefit them much by removing them to a cool house, where they would have the benefit of more air and a lower temperature at night. By the beginning of September, if the former directions have been followed, the Vines will be ripe enough to place out of doors. The north side of a wall is the best place, and the pots should be laid on their sides, and every means taken to throw the plants into a state of rest; the cultivator will thus find himself in possession of Vines which for strength and vigorous habits may justly be mistaken for older plants.

It will be seen, then, that the principles acted on above are, selecting properly-matured wood for cuttings—inserting only one eye in each pot to prevent any check to the plant in repotting—placing them at once in the pot in which they are to fruit—exposing them during their growth to the greatest possible amount of light you can give them, taking especial care to have the wood perfectly ripe, and inducing an early state of repose. But if the above mode of obtaining fruiting Vines for one year should be thought too troublesome, from the plants requiring bottom-heat during their first stage, the eyes may be planted singly, as before, in 48-pots, and set in any house or pit where there is a little heat; they will be longer, however, by this method in developing their roots, and may not want shifting into larger pots before May or June. When the plants may be shifted into 24s, in which they may remain through the season, in any house or pit in which room can be found for them, paying attention to watering, tying up, &c. They may be stopped when 2 or 3 feet high, and when the wood is fully ripened,

removed out of the house and plunged in any material out of doors that is a non-conductor of heat. In February or March cut these plants down to two or three eyes, shake them entirely out of their pots, and place them in similar sized pots to fruit in as the former ones, taking care to spread their roots (in potting) regularly through the soil, that when growth commences, each spongelet may be in immediate contact with food; this is a much better practice than placing them in a pot without disturbing the ball, as is often done. The same routine of management must be followed with these through the season, as recommended for the others. From the larger amount of organisable matter the Vine possesses by this mode of treatment, they will generally be found stronger than those raised the same year, and they possess the advantage of ripening their wood earlier in the summer. It will depend on the means the cultivator has at his disposal which plan he follows.—*John Spencer, Gardens, Bowood.*

(*To be continued.*)

Home Correspondence.

Grafting Pelargoniums.—In a late Number is an account of M. de Méline, of the Botanic Garden at Dijon, having grafted numerous varieties of Pelargonium on the same plant. There are very few plants that can be grafted with greater success than Pelargoniums, if the stock and scion be selected about the same diameter, and if the wood is neither too old nor too young and succulent. For the last ten years I have occasionally grafted some in August or September, using pretty well ripened wood of the same year's growth. I shall only detail one instance:—In August of 1842, I selected a plant of the Beauty of Ware, which had a single stem about a foot high, where it divided into several branches; these were cut back to about three inches long, and in ten days afterwards they were grafted with eight different sorts. They were done after the manner of whip-grafting, and tied with bast and clayed, over which was put a little moss, to keep the clay from cracking, and to preserve the whole in a moist state, being occasionally sprinkled with water. The plant was placed in a shadowy part of a vinery, and in a month every one of the grafts had begun to grow. The plant was then put into a cold frame for a few days; it was then taken out of the pot, and all the earth being shaken from the roots, it was repotted in fresh soil, and received the same treatment as the other Pelargoniums. Two of the grafts were broken off by an accident, the other six flowered well in June and July. In August the branches were again cut back, and ten more varieties were grafted on it, including Smith's Superb Scarlet, Carnation Scarlet, Frogmore Scarlet, and the old variegated-leaved Scarlet; the last two failed along with two of the other sorts. This, perhaps, was owing to the plant having been placed in a shady place out of doors, immediately after it was grafted, where it remained until October, when it was placed in the conservatory. In December there were 13 varieties growing on the same plant, which will be a novelty when in flower, having so many distinct colours, Smith's Superb Scarlet forming the centre. I have observed that weak growing sorts grow stronger when grafted on robust kinds than on their own roots.—*James Alexander, Heath Farm, Athy.*

Gold Fish.—In this neighbourhood, every pond that holds water through the year is full of them, and instead of complaints of failure in rearing them, the great difficulty is to get rid of them. In every cottager's garden, where there is a dip-hole dug to the depth of four, five, or seven feet, there the fishes thrive and breed. In these ponds there is nothing but hanging grass and stones imbedded in clay or gravel to which the fish can attach their spawn, and yet they breed. My own pond, which is perfectly alive with Gold and Silver Fish, is about eight feet deep in the centre; it is made with chalk rammed, and has never had plants of any description put into it, yet waterweeds of various kinds grow in it in the spring and early summer, and then sink down; it is a pond for the cattle to drink at. At the drinking-places rough gravel and stones have been put down to prevent the cattle from poaching or breaking the ground upon any of the chalk; about 14 or 15 years ago it was mudded, and only a few stones returned to it. Several other ponds near me, by the road-side, used as drinking places for cattle, are full of Gold and Silver Fish; nothing is ever done to them by way of nurturing the spawn; the pond in the centre of Epsom is also full. These ponds are all mudded every three or four years, and the fish taken out and sold or thrown away, except a few that are kept in tubs until the rain falls in sufficient quantity to allow them to be returned. On Epsom Common are several large gravel-pits full of fish. I would here observe, that none of these ponds are supplied by perennial springs; the water in them is either rain water, or water from land springs in the winter, or from both these sources. Gold and Silver Fish will not live any length of time in ponds in which there are springs, much less breed in them—the water is too cold; they fur with a kind of moss and die. The ponds I have mentioned have all of them stony or gravelly bottoms, and slope from the sides to the centre; the fish deposit the spawn on the pebbles or gravel in the shallow water, which being much warmer, from the greater power of the sun over it than the deep places required for aquatic plants, the spawn is more certain of being quickened into life. All who form ponds to keep fish in, contrive to have gravel or pebbles at the bottom, in the shallows, because this is the most sure method of succeeding. Another pond that I am acquainted with was made with clay, a little lime being mixed with it; it is full of large fish, but the sides being perpendicular, the fish do not breed well; its depth is three or four feet, and sticks are put in, to which the fish may attach their spawn; this pond is fed from another, where the fish breed abundantly, but it has plenty of stones as well as water-plants in it. The water feeding all these ponds is at times of a brackish nature; it runs over a soil impregnated with iron. I will describe four more ponds in which fish thrive and partly breed. The 1st and 2d are at Epsom, and are artificial; No 1 is made with tiles and cement, about two feet deep throughout, except near the edge, which shelves a little, and is supplied with water from a well in the chalk; when the water in the pond is getting low, a man pumps from the well into the pond. No. 2 is a small reservoir, about seven feet in diameter, and five deep; this, too, is supplied with water from a well in the chalk; the pond is cemented all round, the only places to which the fish may attach their spawn is the sides, and a small fountain in the centre; but in a pond like this it is advisable to put in a few branches of Willow to reach from the bottom to the top. No. 3 is formed like No. 2, only it is deeper by a foot or two, and is supplied with water from the New River; pieces of Willow and aquatic plants are put into it, and during the time I knew it the fish flourished. No. 4 was on the summit of the Gog-Magog Hills near Cambridge; it was a small basin, formed for the reception of the fish, and water was supplied to it from a well in the chalk; it was about a twelvemonth after I had sent fish to it that I saw them, when they appeared to be in good health, but had not then increased; the basin was too small, and too much shaded by trees to favour propagation. If any one is desirous to see fish and ponds, let them visit Epsom about the latter part of May and beginning of June; they will then see how ponds are constructed, and how the fish deposit their spawn, and any little boy on the common will catch them for sixpence per pair. If fish do not breed, the fault is either that they are all of one sex, or that the pond rests on a spring, and is too cold, or is not sufficiently shallow towards the edge; or there is a want of gravel, stones, or sticks in water sufficiently warm during the breeding season.—*J. Steele, Epsom.*

Morphology.—The structure and conformation of the vegetable world is a most interesting and curious study, and well deserves the attention of the botanist. The reduction of all the various organs and developments of plants to a few simple original forms, of which they are but modifications and degrees, has been effected by modern science, and has no doubt thrown great light on the subject. I would, however, beg leave to say a few words on what may be called the abuse of the doctrines taught by Morphology, or the utilitarian way (if I may be allowed the expression,) in which, by this method of explaining structural botany, the majesty of Nature is apt to be lost sight of, and some of her most beautiful productions attributed to mere chance. In the now generally received opinion, the leaf is thought to be the primary form of vegetable organisation, and all the other organs and parts of the plant (with the exception of the stem which produces the leaf) to be but leaves in a more or less developed state. But some writers on the subject go even further than this, and say (if not in precise words, at least by implication) that it is only by chance and casualty that any other organs than leaves and stem exist; that bracts, for instance, are merely immature leaves, which poverty of soil, or other causes, have prevented the plant from developing; or that flowers have been produced from leaves, merely by circumstances favouring their greater development. Now these assertions appear to me erroneous, and I think are at once disproved by the fact of the constant and unvarying arrangement of the different parts of plants by the hand of Nature. In the normal or wild state of any plant, we always find the various organs similarly disposed, and bearing the same relative position to each other. We find the leaf, the bract, and the flower, each occupying its allotted and certain situation. This would not assuredly be the case if their development was but the result of accident. I will admit that the structure of the leaf, the bract, and the flower, is essentially the same (and this seems to be now quite ascertained), but I would have things called by their right names, and I would deprecate the use of language calculated to derogate from the dignity and plastic power of Nature.—*Dendrophilus.* [Our correspondent evidently misunderstands the meaning of the Morphologists.]

The Penny Postage.—The facility, punctuality, and moderate charge at which letters and small parcels may now be conveyed from one part to another, even to the most remote village, hamlet, or peasant's cottage, must alike be beneficially felt by all; and in time will, I make no doubt, greatly improve and increase knowledge, the great bulwark of the country, by stimulating many to attempt writing that under the old system could not afford to pay the postage. Many a poor parent and distant child can now have the pleasure of corresponding with each other; merchants, tradesmen, publishers, and correspondents of all classes are alike benefited by the present reasonable and expeditious transit. To no profession has it opened up a wider field than to gardeners: it gives the opportunity of exchanging seeds with each other from different localities, comparing specimens, and getting them properly named, &c. They can also forward to each other any improved method they may have discovered in cultivating any kind of plant, fruit, &c.; and they can communicate their experience to some periodical, for the benefit of the public, who, if they think proper, may practise and improve on it; for it is to be observed that there is no method or system in practice, however perfect to appearance, that may not be improved upon, by the persevering and intelligent. At the same time I would observe, that a person that takes the opportunity of writing a practical article, which he considers likely to throw more light on the cultivation of any plant, fruit, &c., that he has himself been more successful in cultivating, or in bringing to a higher state of perfection than others, and attaches his name to the article, is certain to receive a host of letters; some wishing for a farther explanation, others observing that it is so different to what they have ever seen or heard of in practice, that they consider it is an impossibility to succeed, &c. Some again write for the whole article, as they have been informed that it has been published in some periodical or journal to which they are not subscribers. Nine out of ten of those worthy correspondents never think of inclosing so much as the penny postage stamp for the required information; thus it is not only an encroachment on a gardener's very limited time, but on his pocket likewise, if he should think proper to find paper, wafers, and stamps. To the correctness of this statement I have not the least doubt many can bear testimony, and like myself are deterred from adding their names, which is very essential to any practical article, in order to give it respect and confidence. Gardeners in general are not so well paid as to afford to answer a host of such correspondents, supposing they could allow their time to be encroached on by writing over again, what possibly cost them many years' anxiety, and ill-paid perseverance to obtain.—*Observer J.*

Double White Hepatica.—In a late Number it is stated that you are unacquainted with any Double White Hepatica. Being misled by Martyn's edition of the "Gardeners' Dictionary," I, for several years, endeavoured in vain to procure a specimen of it. I have, however, the certain evidence of a friend, that a pot of the double white, some years ago, was exhibited at a flower-shop in Bath, which the owner refused to sell for any money, alleging that he had never seen another; and in answer to some subsequent applications for a specimen, the gardener said that the plants had died without his being able to increase it. In Martyn's edition, above referred to, the double white is represented to be equally common with the double blue and double red Hepatica, and the error is continued in Rees' Cyclopædia; but no such mention of the double white variety is made in either of the original editions of the dictionary, and the following interesting suggestion of Miller's has been entirely omitted by Martyn:—"I have sometimes known the double blue sort produce some flowers in autumn, which were inclining to white, and thereby some people have been deceived, who have procured the roots at that season and planted them in their gardens; but the spring following their flowers were blue as before, and this is what frequently happens when the autumn is so mild as to cause them to flower; but whether the double white sort, mentioned in the books, was only this accidental alteration in the colour of the flower I cannot say, though it seems very probable it was, since I never could hear of any person who ever saw the double, white sort flower in the spring."—*L. W. D., Shelly-Hall.*

Celery.—I am induced to recommend a mode of cultivating this valuable esculent, which I practised last season with the most complete success. My gardener having mentioned that his supply of Celery-plants had run short of the expected demand on him, I told him to go to a marsh in his neighbourhood, on the banks of the river Lee, where the tide flows over at high water, and that he would find abundance of plants ready for his use, both of the red and white kinds, and to make trial of them. He looked astonished at my proposal, but seeing that I was in earnest and willing to take on myself the responsibility in the event of failure, he did as he was directed, and is now ready to confess that he never cultivated a better crop than the product of these wild plants, as he called them. Persons who eat of them at my table praised them not only for delicacy of flavour, but for freedom from hollowness in the heart, which was found in almost all the Celery of the past year in this quarter. My gardener is so well satisfied of the result of the experiment, that he does not intend sowing Celery-seed in a hot-bed as usual this season. It will be said in reply, such are not within the reach of many to procure; but where they are I can confidently recommend them. *En passant*, I may remark—"I do not consider the rearing of large Celery desirable," as Mr. Paxton and others observe.—*Coreopsis.*

Seedlings.—I have noticed that young plants in the seed-leaf, if deprived of their root and replanted, plunging them up to the cotyledons, and pressing the earth, which must be very fine, carefully up to the tender stem, will again strike root and flourish. This may be useful in the case of valuable plants, one only germinating perhaps out of the lot, and that damping or having been eaten off by insects close to the surface of the earth. It was first noticed in the case of a Balsam, afterwards with Anagallis and others. The fact may not be new, but is, at all events, worth knowing at this time of the year.—*Micklewell.*

Linnæan Botany.—On page 361 of the "Gardeners' Chronicle" for 1843, it is stated in a notice to a Correspondent that "The Linnæan system of Botany is not worth learning, and we cannot do you the disservice of recommending you a book on the subject." Now, if by this is to be understood, that a knowledge of the Linnæan system does not tend to explain the physiological structure of plants, to ascertain their medicinal properties, to assist the investigation of the laws of vegetation, to enable Botanists to declare the general nature of the soil on which plants are discovered; that, lastly, it does not allow the application of Botanical science to the purposes of Agriculture, the truth of the above statement is easily admitted. But if, on the other hand, we are to believe that Linnæus's system is abstractly bad, that the knowledge conveyed by it is not worth retaining in the memory, or that it positively misleads its followers, such a statement appears to be open to considerable objection. Superior as a natural system must always be to an artificial,

it still must be admitted that, considering the limited number of Phænogamous plants natives of Great Britain (for the natural orders of the Cryptogamic division are comparatively few, and generally known at sight) a person in this country who had not recourse to large collections, would scarcely be able to form any idea of a system guided and established by the principles of nature; the materials with which he has to work are too scanty, and allow not of a comprehensive comparison. There is nothing in the Linnæan system which is essentially incorrect; the knowledge gained from it is imperfect and unsatisfactory only. In the description of any natural order we are generally told the number of stamens and pistils; so that the number of these organs, even in a natural system, form two distinguishing characteristics of any given order. It would be well for any one, when studying an artificial system, to remember that this is not the Science of Botany, but merely an easy mode of discovering the name, and name only of the plants found in the particular place or country in which he might happen to be. And there seems to be no objection, in this sense, to the admission of the value of such a system. The pupil would consider that he was only reading the contents of, or introduction to a portion of a large volume, which he afterwards intended to study philosophically and in detail. There is no wish whatever to set up the old against the new system; at the same time it should be borne in mind that no new method is advanced by the depreciation of its predecessor. In a word, there seems to be no practical advantage in dissuading those from following an artificial, whose occupation and inclination would preclude the more laborious studies of a natural system.—*F.* [Our answer is, that Linnæan Botany teaches nothing but names, and them with less certainty and advantage than the natural system. It had its use in former days, but is now abandoned by all Botanists.]

Season for Shifting Plants.—Respecting the autumn-shifting of plants, "J. W. K.," at p. 102, says that "plants are in the habit of appropriating nutritious matter by their roots during the season of rest;" or, in other words, that their roots continue to grow while the head remains dormant. I have lately had an opportunity of testing the truth of this opinion. Having received a quantity of Pelargoniums from a nurseryman about the end of last November, and thinking the pots they occupied rather small, I immediately shifted them into pots two sizes larger; having been kept very cool, they have grown little. I examined them very lately, and I find in most instances, where few additional leaves have been formed, scarcely a single fibre has reached the outside of the ball (and yet the plants are perfectly healthy). I cannot comprehend how the formation of roots can take place, to any extent, without a corresponding development of leaves; we do, indeed, see in bulbs a disposition to form roots without any extension above ground; but this is contrary to what "J. W. K." assumes to be the case, which is, when plants are at rest, whereas this is when the bulbs are concentrating all their energies in order to produce leaves. I am decidedly of opinion that excepting where the one-shift system is pursued, no better plan can be adopted in the cultivation of greenhouse plants, than that of allowing them to fill their pots with roots by the end of October, and shifting them again about the middle of February, when the growing season commences.—*E. J.*

Yeast or Leaven.—The following recipe is known to make good light bread:—To 2 oz. of Hops put 8 quarts of water, simmer it four hours, until reduced to 6 quarts; thicken it with 2 lbs. of Wheat-flour, and stir into it two table-spoonfuls of moist sugar. Let it remain in an earthen pan until lukewarm, then add a tea-cupful of good fresh beer-yeast, and bottle it in wine quarts; each bottle must not be more than half-full, and two such bottles will leaven 13 lbs. or 14 lbs. of flour. It must be thoroughly well corked. The beer-yeast is required only for the first making. The second time it is made, a tea cupful of the old leaven should be substituted for the beer-yeast.—*K. O.*

Pruning Trees.—It is most extraordinary that the mode suggested in the *Chronicle* of pruning trees has not been generally adopted, since it appears that in the principality of Wales it has been practised 40 years with the happiest result. It recommends itself by its extreme simplicity, and by its accordance with plain, practical common-sense; and yet what (comparatively) little progress has it made amongst men who have an opportunity of seeing the advantages of the system at a trifling expense! But "they have eyes and see not." What number of acres does it require to make a wise-acre? About two years ago I got the ear of the bailiff of a gentleman who planted 12 acres when the common was inclosed. The trees required the knife; the bailiff saw the advantages of this method, and promised to set about it. That he might not be plagued by the ignorance or the obstinacy of the labourers, I took him a man who understood it, and was willing to undertake it almost without pay; for he had the sense to see that it would bring him into notice, and benefit him extremely. Notwithstanding all that had passed, the work was never begun, because the owner objected that the experiment should be made, and the plantation will be treated as all others in the neighbourhood have been, *i.e.*, neglected and spoiled!!—*A Fenman, Isle of Ely.*

Covering for Greenhouses.—A correspondent in the *Chronicle* recommends the use of prepared linen as a substitute for glass in frames, pits, and greenhouses. Plants require a pure light, and will not grow so luxuriantly if it is conveyed through a dense medium; if the top of a conservatory was covered permanently with anything to exclude the direct rays of light, the plants would be found to incline to the glass sides. The plan may answer as a temporary protection from frost, or to shade from the mid-day sun; but it would, in all probability, disappoint the amateur if he solely depended upon it instead of glass. —*Falcon.*

Functional Disease.—In the analogies made use of (p. 148, March 9), to illustrate my argument in favour of the possible existence of functional disorder independent of structural disease, I did not, as "Der Greif" supposes, overlook the difference between animate and inanimate machinery. But in treating of the phenomena of living organism, whether in its normal or abnormal condition, in our ignorance of the essential nature of the living principle, we can only reason of them with reference to the chemical and mechanical principles by which those phenomena are guided. It is the privilege of the living tissue to make these principles subserve its several purposes; but always in obedience to the laws which govern inanimate matter when moved by disturbing causes, whether of chemical or electrical affinities, molecular force, or any other moving power. Or, in other words, the only difference between the living organism and the dead is, that the former carries within itself the originator of its own movements, and to a certain extent the power of repairing its own waste; while the latter derives the same privileges from some extraneous agency. With this difference every animal organ is as much a machine for the performance of some chemical or mechanical action on the materials offered to it, as the merest engine of the factory or laboratory, and for such purposes is guided by the same laws. Premising thus much on "Der Greif's" objection to my mechanical analogy, I go on to observe that he does not seem to recognise the distinction which certainly exists in Nature between change of condition and change of structure. If it be maintained simply that disease arises from altered condition of an organ, then I concede the point, and there is an end of the matter. No one supposes that functional disorder can exist without altered action—abnormal motion. An organ may be over or undercharged with blood, may be over or underdone with nervous power or nervous electricity; there may be in it too much or too little combustion, for the healthful performance of its function, and yet its structure be unaltered. Just as a mill may be over or underdone with grist or with water, and stop, though all its wheels and cogs are in right order. There is still another and a better reason why functional and structural disease should exist independently. Every part of the animal organism is endowed with a double apparatus, or system of parts, the one subservient to its functional, the other to its material existence. There is not anything done in the animal economy that is not done by its peculiar instrument. The functions of an organ are maintained by nerves and blood-vessels, which administer nothing to the nutrition of that organ. Its powers are maintained, its waste supplied, its worn-out materials removed, by nerves, blood-vessels, and absorbents, distinct from and independent of the influences that determine function. The material existence of an organ may be maintained in perfect sanity; its supply and waste may go on, for a time at least, in perfect harmony, by means of the blood-vessels and nerves appropriated to its structure, whilst its functions may be increased beyond the ordinary rate, or altogether suspended. Every physiologist knows that the nerves of secretion in a viscus may be destroyed, and its functions lost, and yet that organ does not die, nor waste away, till long inaction has made it useless; and perhaps not then. Structural change, or organic disease, then, must be the work of the structural system. It may co-exist with functional disorder, and it cannot exist long without inducing it—for a faulty instrument must work badly. It may be induced by functional disorder, because inordinate or irritative action disturbs the healthy equilibrium of supply and waste—as an overworked engine soon gets out of repair. In fine, functional disorder may be of long or short duration,—it may come and go in a moment, because it is not structural. But organic disease cannot be established till some disturbance takes place in the nutritive apparatus appropriated to its maintenance, nor removed till the consequences of that disturbance are corrected.—*M. D.* [We trust our valued correspondents will agree with us, that it is better not to prolong this discussion, which may become inconveniently long.]

Hops.—It is my belief that Hops are absolutely necessary for the preservation of beer, but not at all essential for yeast. The flavour is dependent on an aromatic essential oil, which is dissipated by boiling, though the bitter extractive is obtained in solution. An infusion, however, will extract the aroma without much bitter principle. Now, a decoction of Hops will not keep long, any more than a decoction of Malt, but they contain very opposite constituents. Hops contain tannin, extractive bitter principle, wax, resin, and lignin: whereas Malt contains resin, gum, sugar, gluten, starch, and hordein. The antiseptic properties of the Hop, therefore, are evident, and, no doubt, after vinous fermentation of the two decoctions, a combination of constituents (notwithstanding the sugar, &c. of the Malt being converted into spirit) takes place, and the result is a liquid, which will keep for almost any length of time, if preserved from the action of the atmosphere. It is evident, from the common practice of brewers adding the Hops previous to fermenting the wort, that they do not prevent, nor even retard vinous, but undoubtedly they retard acetous fermentation; therefore yeast may be made with or without Hops.—*J. B. N.*

Rabbits.—I am possessed of a property, consisting of underwoods, arable pasture, and garden ground, adjoining to a gentleman who has large landed property, particularly 200 or 300 acres of underwood; and in which, both to my annoyance and injury, he suffers the breeding of rabbits to such an extent as to destroy acres of corn and grass of his neighbours, and he is deaf to entreaties to destroy them. As for myself and tenant we do all in our power to destroy them on our own premises; and he has suffered his keeper to take advantage of my tenant trespassing only about 20 yards out of my road to a bush in his hedge to shoot the vermin in my field at my desire, by laying an information through the Surveyor of Taxes, and fining him in the double penalty for carrying a gun. Can any of your correspondents assist me with advice how to destroy these rabbits? Traps, wires, guns, and dogs have been used to get them out of my premises, but I cannot devise means to keep them off. It would take a mile in length of netting to fence out, and net has been used round my garden, but they have eaten a thousand holes.—* [A good answer to this would doubtless be useful to others as well as to our unfortunate correspondent.]

Miscellaneous.—*A. H.* states that in Essex the Prunus cerasifera, commonly called the Myrobalan, or Cherry Plum, which bears so freely as a standard, is found valuable for the sake of the young fruit, which is used for tarts like green Apricots, and with about equal gratification to the palate.——*E. L.*, a known correspondent, informs us that he could have cut six fruit, averaging 15 inches long, from one plant of the Browston Stock Cucumber on the 21st of March; each fruit was from 14½ to 16 inches in length, making 90 inches of Cucumber from one plant in one day. He states that they were all good table fruit. The same writer says that from the same plant he lately cut four handsome fruit and a curious double one which, if considered as two, make six. The plant that produced these we understand is growing in a pit that was contrived by Mr. Mills, of Gunnersbury Park. It is worthy of remark that this same plant produced one of the fruit that won the first prize at Ipswich on the 8th of February, and it is still in full vigour. A fine specimen of the Browston hybrid, and also the double fruit, were sent to Covent Garden market, where they have been seen by many gardeners, who all consider them equal to any they have yet seen in the market this season.

Societies.

HORTICULTURAL SOCIETY.

April 2.—R. H. SOLLY, Esq., in the chair. A. Pryor, Esq., was elected a Fellow.—Mr. Hunt Grubbe, of Shirley, near Southampton, sent a specimen of slate wall contrived by him, which was stated to have the following recommendations. If placed direct with the meridian, and thus made to have an equal share of sun on both sides, it will ripen any fruit on either side earlier than the south side of a brick wall by means of the transmitted heat. It is not recommended as an outside fence, as it is liable to be broken; but chiefly for intersecting the interior of gardens in the place of dwarf or shelter hedges. It consists of squares of slate grooved into each other, and strengthened by piers or pillars, which are placed at certain distances—and, being built with circular and square bricks cemented together, are round and stand out a little from the wall. The trees are fastened to wires, which are fixed into the slate about six inches apart. Mr. Grubbe stated that this wall could be erected for 5½*d.* the square foot, being 1*d.* less than even a 4½-inch brick wall, which costs 6½*d.* the square foot.—From the gardens at Chatsworth were two bunches of West St. Peter's Grape, shrivelled, and in the condition of fine raisins, which Mr. Paxton stated to be of last year's growth, and to have been kept through winter at an almost nominal expense of fuel. The house they have been kept in was in a low situation, and therefore not well suited for late Grapes. Mr. Paxton considers it a better Grape than the Black Hamburgh; and if both have the same treatment, the St. Peter's will keep six weeks or two months longer than the Hamburgh. Along with these were also the following plants:—Dendrobium Paxtonii, a large specimen, with orange blossoms, having a black spot in the centre; also Eria excavata, cut specimens of Dendrobium Wallichii, D. cæruleseens, and Cœlogyne interrupta, the latter with pretty white and yellow flowers. A Knightian medal was awarded for the Dendrobium Paxtonii.—Messrs. Loddiges, of Hackney, sent Dendrobium macrophyllum in good condition,—this rare species is remarkable for the strong aromatic fragrance of its fine lilac blossoms. A Knightian medal was awarded for it.—From Mr. Green, gr. to Sir E. Antrobus, Bart., was a most beautiful large specimen of Erica aristata major, uniformly covered down to the pot on all sides with pretty carmine and white waxy blossoms; it was also feathered with healthy dark-green leaves to the very extremities of the branches. Along with it was a seedling Calceolaria (called zebrina), the flowers of which were of a bright yellow, beautifully spotted with brown; Amaryllis hybrida, and Boronia anemonefolia, the latter with pretty rose-coloured flowers. A Banksian medal was awarded for the Erica.—Mr. Jackson, of Kingston, sent Tremandra Hugelii, a greenhouse plant, with drooping star-like lilac blossoms, having a small dark spot in the centre.—From Mr. Fielder, gr. to W. Linwood, Esq., was a cut specimen of Phycella chloracra, a bulb sent by Mr. Hartweg from rocks near Saragura; the flower-stem that bore the handsome but not gaudy green, red, and yellow blossoms sent was said to have been 3 ft. 2 ins. high. —Mr. Robertson, gr. to Mrs. Lawrence, sent a collection of plants containing Cyrtopodium Andersonii, rarely seen in such perfection; an enormous specimen of Maxillaria Harrisonii in wonderful health; Brassia Wrayæ, a species from Guatemala; Oncidium ampliatum major; O. luridum; a Hippeastrum, and a well-grown plant of Erica Willmoreana. A Knightian Medal was awarded for the three first.—From Messrs. Henderson, of Pine-apple Place, was Odontoglossum Rossii, sent from Belgium under the name

of Oncidium Bergamia. From the same collection were Dillwynia tamarifolia, a scarce New Holland shrub, which has a gracefully drooping habit, and is a remarkably free bloomer; Brachysema platyptera; Epidendrum alcefolium; Boronia anemonefolia, and Dendrobium cruciferum covered with blossom. A certificate was awarded for the Dillwynia and Brachysema.—Mr. Ivery, of Peckham, exhibited seven seedling Cinerarias, and a plant of the new Nemophila discoidalis.—From Mr. Lee, gr. to P. Pole, Esq., was a Cucumber which measured 21½ inches long.—From the garden of the Society were the following plants:—Acacia hispidissima, Boronia anemonefolia, Begonia papillosa, B. acida, Columnea Schiedeana, the larger variety of Oncidium ampliatum, Acanthophippium bicolor, with curious yellow cupped blossoms, and Echeveria rosea, a greenhouse plant remarkable for its bright red leaves that are more conspicuous than the flowers, which are of the same colour. It was sent to the Society by Mr. Hartweg, from Mexico. It is not impatient of cold, having been sometimes exposed to a temperature as low as 35°; it will also, on the contrary, stand any amount of sun-light, and it keeps in bloom during the whole winter, so that it is a very useful plant for many purposes. With these was a flower of Aristolochia Gigas or "Pilate's nightcap;" a twining stove plant, which bears singular large concave blossoms having considerable resemblance to those of A. fœtens, but much larger, and assuming more the appearance of a cap.

Reviews.

Geology; Introductory, Descriptive, and Practical. By D. T. Ansted, M.A. 8vo. Van Voorst, London.

As far as we can judge from a single Number of 128 pages, this promises to be a useful work for the Geological student. The language is clear and simple, and the illustrations selected with judgment.

In describing the various conditions through which the crust of the earth has successively passed, the Author commences with the rocks in which the Geologist discovers the remains of extinct animals or plants, and he proposes to notice such formations in the order of their stratification,—that is to say of their antiquity,—deferring to a future part of his work the examination of those most ancient rocks which preceded the appearance of living things, and from the destruction of which the later rocks proceeded. We cannot at present judge how far this plan will prove judicious; at first sight it is open to obvious objections.

There is one point, however, in which Mr. Ansted seems clearly to have committed an oversight. At his 54th page he adverts to the importance of the statement that "fossils are characteristic of formations," an assertion which supposes "a degree of perfection in the application of Zoology and Botany to such fragmentary portions of structure, that the reader may fairly require some account of the successive steps by which the result was at length reached, and a connected view of the nature of the argument that has led to conclusions which, however viewed, are so exceedingly remarkable." And then he proceeds to give that account. But after sketching the nature of this kind of investigation in Zoology, he passes over the equally important and more difficult inquiry of the Botanist, with a short assurance that he will have some observations hereafter to make upon that subject. This is to us, we confess, a puzzle; if it was necessary to introduce at an early period of the work, a sketch of Fossil Zoology, it was equally important with respect to Fossil Botany, for plants and animals were coeval. This may to some appear like cavilling; but we have been too long students of Nature not to feel the paramount importance of good arrangements, and the excessive inconvenience of want of method; and we should be sorry to see so popular a work as that of Mr. Ansted promises to become, impaired in usefulness by inattention to such points.

We must not dismiss the Part before us without a word of praise to the printer and wood-engraver, who have each combined to render Mr. Ansted's work worthy of a place by the side of Yarrell's "Fishes." Nor should we omit a specimen of the Author's mode of treating his subject. For this purpose we select the following passage:—"I may safely conclude these introductory chapters by assuring the reader that, with regard to the various discoveries of Palæontology, they all speak the same language, and all support the same argument; namely, that, in the order of succession of those species of animals or vegetables which have preceded man upon the earth, as well as in the composition of the various strata in which they are found entombed, there may be traced, throughout, an unity of principle, acting by an infinite variety of means: and one system, perfectly symmetrical and beautiful, and adapted to every emergency, has been invariably pursued from the first creation of organised beings till now. From that far distant period when the inhabitants of the earth consisted only of the coral animalcule and the mollusc, throughout the gradual introduction of animals of higher organisation, until the day when man was created, and endowed with an intellect capable of comprehending and appreciating the infinite wisdom displayed in the great plan of creation, that plan has been the same; gradually unfolding itself until fully developed in all its extent and *perfection*."

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

QUISQUALIS SINENSIS. Chinese Quisqualis. (*Stove Climber*). Combretaceæ. Decandria Monogynia.—This plant was exhibited before the Horticultural Society in July, 1841, by Messrs. Lucombe, Pince, and Co., of Exeter; who stated that it is a more compact grower than the old Q. indica, and therefore more desirable for cultivation in pots. It manifestly differs in its smoother leaves and branches, and in the larger size of its flowers, which are, moreover, of a much deeper Rose-colour. Upon comparing it with wild specimens of the genus, it appears to be identical with the plant that is found about Canton, and which is probably the Q. indica of Loureiro. We presume it to be of the same nature as the true Quisqualis indica. That plant is a stove climber, requiring to be potted in sandy loam and peat, mixed with a few pieces of potsherds. In summer an ample supply of water should be given to its roots, and it should be syringed over head once or twice a day, as the weather permits, taking care always to have the plant dry before night; and the house, when air is given, shut up early in the afternoon, to retain as much sun heat as possible. During the growing season the temperature should average 80° by day, and 65° by night; but in winter it should never rise above 60° with fire heat. The plant may be propagated by cuttings under ordinary treatment.—*Botanical Register.*

BOLBOPHYLLUM MACRANTHUM.—Large-flowered Bolbophyllum.—(*Stove Epiphyte.*)—Orchidaceæ.—Gynandria Monandria.—This singular plant was imported by Messrs. Loddiges from Sincapore, and is closely allied to both B. leopardinum and affine. From each it differs in its much more fleshy and larger flowers, whose stalk is considerably longer than the petiole. The flowers appear in March, and expand so flat that they seem as if they had been pressed between paper. In the centre they are a pale lemon colour, but towards the tips they are much mottled with dark chocolate-coloured spots. Like the rest of the genus, it succeeds best when tied to a block of wood, and suspended to a rafter in a moist stove. If the wood is charred enough to burn off the bark, the block will be found to answer the purpose much better, and all insects that harbour about it will be destroyed. In summer the plant should receive water twice a-day at least, and the temperature should be kept about 80° by day, and 68° at night. In winter for a few weeks very little water will be required, only as much as to keep the pseudo bulbs from shrivelling. The temperature then should never be raised above 50° or 55° with fire-heat.—*Botanical Register.*

Miscellaneous.

Botanical News.—We learn with great pleasure that Mr. Harvey has been appointed Curator of the Herbarium of Trinity College, Dublin; and that he is about to make public the valuable Californian and Mexican plants of the late Dr. Coulter, which are preserved there. Dr. George James Allman has been elected Professor of Botany in the same College. We are also able to state that Government has given the sum of one thousand pounds towards defraying the expenses of publishing the Botanical collections made by Dr. Joseph Hooker in the late Antarctic voyage, and that the work will soon appear in quarto. The drawings which we have seen are really beautiful.

Artificial Fertilisation.—The attention of every friend of Horticultural science ought to be directed to a very interesting fact, which I have recently had an opportunity of observing in the course of a Horticultural tour in Belgium. In the climate of Paris, it is known that only a small number of species and varieties of the Camellia perfect their seeds. Those which commonly do so are the C. carnea, and a few species with semi-double flowers. I have thought, with other Horticulturists, that the difficulty in obtaining ripe fruit from the Camellia was attributable to the low temperature of the climate of Paris; and I was, moreover, inclined to entertain this opinion, from observing that the greater part of new varieties were from seeds ripened in Italy and sown in France. I was then very much astonished at seeing in Belgium all kinds of Camellias, almost of all ages, some only three years from the graft, bending under the weight of fruit with which they were loaded, as a Paradise Apple-tree is loaded with Apples in a favourable season. I formed the idea that this was to be attributed to artificial fertilisation; and in this I was confirmed by the following details, with which I have been favoured through the kindness of M. Haquin, a distinguished Horticulturist, at Liége. During three years in which M. Haquin has practised artificial fertilisation, he has only collected seeds of single-flowered Camellias, and preferred sowing but a few of the best seed. In the first season, out of 212 seeds, 146 grew; and, in the second, 188 plants were obtained from 294 seeds. In the present season the number of fruits on the following varieties is as under:—

Camellia carnea	.	.	3 Plants	96	Fruits
,, Donkelaeril	.	.	2 ,,	14	,,
,, King	.	.	1 ,,	3	,,
,, Press's eclipse	.	.	1 ,,	4	,,
,, Lady Henrietta	.	.	1 ,,	1	,,
,, marmorata	.	.	1 ,,	9	,,
,, punctata	.	.	1 ,,	1	,,
,, Campbellii	.	.	1 ,,	2	,,
,, Waratah	.	.	1 ,,	11	,,
,, Civiana	.	.	1 ,,	1	,,
,, variegata striata	.	.	1 ,,	6	,,
,, Loddiges' conspicua	.	.	1 ,,	2	,,
,, picturata	.	.	1 ,,	1	,,
,, nobilissima	.	.	1 ,,	3	,,
,, Weimari	.	.	2 ,,	10	,,
			19	168	

The fruit of the Camellia generally contains 7 or 8 seeds, and occasionally as many as 10. M. Haquin may, therefore, estimate his saving of this year at not less than 672 seeds, reckoning at the rate of 4 seeds in each fruit; this result promises for the ensuing year an important addition to a collection already rich in young plants. It is certain that the greater part of these Camellias would not have fruited, if their blossoms had not been artificially fertilized. The mode by which M. Haquin has effected hybridization is truly interesting. Many Azaleas have been fertilized with pollen kept for 6 weeks; that of Camellias has been employed successfully after having been kept 65 days. Fertile seeds of Lilies have been obtained from the application of pollen which had been saved 48 days. During the last flowering season of Camellias, M. Haquin collected pollen with which he intends hybridizing in the ensuing year. The following are some details of his procedure. The stamens are taken out just before their anthers begin to open; they are immediately wrapt in sized paper, and laid in a warm place for 24 hours, by which time the pollen separates from the stamens. It is then collected and inclosed in thin sheet-lead, and kept in a cool, dry place. I think the preservation would be rendered more perfect by placing the pollen between two concave glasses, as is done with vaccine matter. No limits can be assigned to the time during which pollen will retain its fertilizing power, provided the minute globules of which its masses are composed are not crushed by too great pressure. If there be a limit, it will be for experiment to ascertain. I believe the preservation of pollen between glasses is worthy of trial. The subject of the above statements is not new, for artificial fertilization has been long since practised on a large scale. But it is so powerful an agent in the hands of the horticulturist, that nothing which tends to render it more common can be considered unimportant.—*Rogonnet Godefroy*, in the *Revue Horticole, for Sept.* 11, 1843.‖

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

No opportunity should now be lost to pot all plants that require shifting. Plants that have been growing for some weeks, particularly young ones, will now require to be stopped, more or less, in order to make them bushy. Never make use of a stick to give form to a plant that can be managed by pruning or stopping. Many plants will require to be slightly shaded in the middle of the day, but this should be removed early. Use the syringe every day the sun is out strong; be cautious in watering newly potted plants, and guard against insects.

Conservatory.—Roses and all scented flowers that retain their sweetness after drying, should be gathered as they begin to fade, and carefully dried at this early season; those, if placed here and there through the rooms, will be better liked by many persons than fresh flowers. Orange trees require particular attention when they are making their young wood; stop luxuriant shoots at the fourth or fifth joint; no one part of the head should be allowed to grow stronger than the rest; young trees may require some of their stronger branches to be tied down for a time, which will strengthen the others. Forced Rhododendrons and Azaleas are the best from which to obtain hybrids; this is a good season for crossing them. Climbers for this house should soon be planted, if additions are to be made to them this season, and see that the young growths of the old ones do not get entangled for want of training.

Greenhouse.—Plants in this house will require all the air that can be given them, and they will be liable to get very dry on that account; water them late in the afternoon, and damp the paths and all empty spaces freely; give them besides a gentle syringing three or four times a week, when the weather is fine. These plants require constant attention now to stopping and regulating their growth.

Forcing-pits.—As these pits are the last places for spring propagation, and as this work does not admit of large portions of air being given, they must be regularly shaded in hot dry weather—thin hunting or calico should be used for this purpose, mats darken too much. Remove Roses and other plants as soon as their first blooms are ready to open. To get handsome plants of the different hardy shrubs for future forcing, cut down some of them now in the shrubberies; the strong shoots from the stools may be layered in summer, and with a little nursing they will soon make far better plants than older ones.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

Newly planted trees and shrubs will require strict attention in regard to water, as they already indicate the want of it. It is better to give them a thorough soaking at once, than to give them a little water, frequently repeated; and after the surface of the ground is dry, fork or hoe it over, and then mulch with short grass, to prevent the evaporation of moisture. The same remarks apply to newly planted annuals, which must be shaded as well as watered. Turf, which has been recently laid down, requires strict attention. It will be a good plan, after giving it a good soaking of water, to dress it over with old tan, or leaf-mould, and then shade it by covering the ground with pea-sticks, or any refuse branches that may be laying about. Get in a successional crop of Sweet Peas, and any other Annuals that were sown early in the year. Sow Ten-week Stocks for transplanting. The finer kinds of Gladioluses which have been brought forward in pots, may now be planted out, giving them a deep, rich, and well-drained soil; but it will be as well to protect them by an inverted pot at night, until all danger of frost is over. Attend to covering half-hardy shrubs and trees, or, as the sap is moving, one night's sharp frost, which we are not unlikely to have, will undo all that you have done in the way of acclimatising for years.

Pits and Frames.—Proceed with the potting off all plants for bedding out; those which have become established and hardened may be removed into temporary pits, and covered with mats. Some neat and very convenient permanent structures for protecting plants in small pots, may be seen in the nursery of Mr. Rivers. They consist of pits three feet wide, formed of large paving tiles, placed on edge and cemented together, they may be covered either with shutters, mats, or a large tarpauling to cover five or six ranges. Where flower-gardening is extensively practised, 500 or 600 feet of pits of this kind would be invaluable, and would not be very expensive.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—As the consummation of the Florist's hopes—a good and general bloom of this favourite flower—is now rapidly approaching, his constant attention to their various wants, such as shading from the mid day sun, watering, &c. &c., is imperative. As the trusses rise, the plant will sometimes produce two, should there be more hearts than one. In this case it is best to remove the weaker, and with a sharp-pointed pair of small scissors thin out mis-shapen buds from the centre of the truss, leave it so that the best may have room to expand freely and equally. It is highly important just now that the pots should never be allowed to get too dry, though indiscriminate watering must be avoided. *Tulips.*—The late fine weather has brought these flowers on fast, and they are looking unusually well throughout the country; some growers, however, complain of many of their bulbs missing bloom having only put up a single leaf. The beds must be kept free from weeds, and the surface loose. *Polyanthuses.*—These usually flower at the same time as the Auricula, or perhaps rather earlier. Plants on the border must have their trusses shaded with small boards, or other covers, as some of the varieties are apt to have the lace or edging of the flowers "blanched" by too much sun. Plants in flower may be taken up with a ball of soil, and potted, with perfect safety, for exhibition. Snails are very apt to mount the stems, and eat out the thrums, leaving their slimy track as a proof of their delinquency. *Ranunculuses.*—Seedlings may now have plenty of air and morning sun, but never let them get thoroughly "drought-ed." Frames covered with calico coated with some transparent composition, will doubtless answer admirably for their protection. *Pinks.*—The late dry weather has been anything but congenial to spring formed beds, and unless shaded, watered, and well attended to, they will suffer materially. *Carnations.*—Potting out should now proceed rapidly. Well drain the pots, putting a little moss over the broken tiles, cinders, pot, or whatever may be used for this purpose, that the soil may not run in and prevent the free egress of water; fill with compost, and, according to the size of your pots, place one or two layers, giving them a gentle watering, to settle the soil; after which, place them in the shade for a few days.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Plants swelling their fruit will require to be frequently looked over this fine weather. Give water to those re-

quiring it; but do not give any till they require so much as to wet the soil thoroughly. You will by this course avoid the evil of having the soil soddened; a thing certain to occur to some, if water is given whenever the surface appears dry without examining the state of the soil below; the plants being plunged, the soil in the pots is often sufficiently moist when the surface appears dry. Liquid manure will greatly benefit the plants in fruit, and those for autumn and winter-fruiting, as soon as they are known to be rooting freely.

Vinery.—The utmost attention must be paid to timely thinning the bunches of Grapes, stopping laterals, and tying in the leading shoots, also the spurs or bearing shoots. Give air early on clear mornings, that the leaves of the Vines may be dry before the sun comes full upon the houses. The Tokay and Cannon Hall Vines require shading in very bright sunshine, as the foliage of the former is liable to be scorched, and the fruit of the latter to acquire a scalded appearance: thin bunting would be very suitable for the purpose.

Peach House.—Give plenty of water to trees swelling their fruit. I find that the syringe keeps the trees perfectly clean of aphides; and tobacco water banishes from the trees or destroys the thrips. The late house should now be kept at 50° by night, and have air admitted from 9 in the morning till 5 in the afternoon during mild weather.

Fig-House.—Figs lately commenced growing should have plenty of water. Continue to stop the lateral shoots of trees more advanced, above the second or third leaf. Give plenty of air when the atmosphere is clear and warm, to keep the large and numerous leaves of the Fig in a healthy state.

Melons.—If the Persian Melons, planted out early, have been shaded from the sun, it will be proper to discontinue it by degrees, till dispensed with altogether. Avoid wetting the foliage after the shoots begin to grow freely, and endeavour to induce a firmness of texture in all parts of the plants. When the sun is bright and much air admitted, keep water in the vapour troughs and sprinkle the soil lightly; but in dull weather keep a drier atmosphere.—*G. F.* [In last week's Calendar in Peach-trees, read "stoning" instead of "showing."]

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Strawberries.—In cold exposed situations, plantations made now from plants, pricked out thinly last autumn in a sheltered situation, will succeed better if transplanted with balls, than if the plantation had been made in the autumn. The ground should previously be well trenched and manured, as no spade ought in future to be inserted amongst them, until it is necessary to dig them down. A plantation will stand, and produce plentifully many years, if, after bearing every season, the beds are thinned out, so that those left will have their leaves fully exposed to sun and air. Unless for new kinds, there is no method of making fresh plantations comparable to that of turning out those forced in pots. By this method I prolong the Strawberry season until frosty nights set in, and the same plants produce plentifully the following June.

Turnips and Radishes.—Sow on a warm border. If sown in alternate rows, the Radishes will be pulled out of the way of the Turnips. To have the latter juicy and sweet, sow every fortnight until August. The Snowball is an excellent early variety. Follow with the white Dutch, which is the most general favourite with the *artistes* of the kitchen. *Beans and Peas.*—Earth up and stake if necessary forward crops, and keep sowing successions of the Windsor Beans, and the Marrows and other large Peas. The Victoria Marrow is an excellent Pea, considerably earlier but not so good a bearer as Knight's tall or dwarf Marrow. The new sorts will be sufficiently tested this season. *Kidney Beans.*—Sow a few of the early Negro or Fulmer's Forcing on a warm border; also a number of pots to be placed on a slight hot-bed, to be gradually hardened and turned out when all danger from frost is over. The frames and glasses used for forwarding Cauliflowers, &c., will now be useful for Beans, Tomatoes, Capsicums, Cucumbers, &c. *Routine.*—Stir the soil among all advancing crops, earth up Cabbages, water Cauliflowers. Keep the Dutch hoe in motion during this fine weather, which will not only prove hostile to all springing weeds, but prevent your ground getting dry and cracked from rapid evaporation.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Should now be gone through, to fix upon and mark what Oak-trees, or others required for the bark, should be cut down before the peeling season commences. The same should be done with resinous trees; now is the best time to fell such trees, when the sap begins to flow.

Coppice.—The cutting of poles, cuttrods, rods for watling, or other purposes, may now be proceeded with. This is the best season for such work where a vigorous succession crop is required. Birch should be left until it is further advanced, in order to prevent injury from bleeding.

Young Plantations.—All planting for this season, where not previously completed, should be finished as soon as possible. The planting of evergreens is generally recommended to be done in April or May, but I would prefer October and November. All works formerly recommended should be completed as soon as convenient, such as thinning, weeding, hoeing, and fastening newly-planted trees. Training, shortening, and removing some of the strongest and too numerous side branches, may be continued through this and the next month.

Hedge-rows.—Young trees, in old hedges, should be relieved from the encroachment of Thorns, Briars, Hazels, &c.; in order to encourage side branches, they should be trained to one upright leader. Remove the strongest side branches, and shorten some of the moderate-sized ones, to prevent them from getting too large previous to their final removal.

Nursery Work.—Now, that the weather seems settled, this should be a busy time in this department; sow seeds, nuts, kernels, &c.; plant cut seedlings and other small plants, but take great care not to allow the small tender fibres to get dry after the plants are taken up; it would be a safe way to have a bucket with a puddle made of cow-dung, mixed with a little loam or clay, to put their roots into before planting, or while the operation is going on.—*W. B.*

VII.—COTTAGER'S CALENDAR.

This spring having been cold and wet, everything is later than usual. In the meantime, during these sunny days, prepare for the main crops of Carrots and Parsnips, so as to get them in when the ground is dry. Both of these like a deep rich soil, and if it is of a light nature, it is the more suitable for them long tapering roots. They should follow a crop for which the ground was previously well manured; for if manure is applied in spring the roots will be forked and wormy wherever they come in contact with it. Parsnips require a greater distance between the rows than Carrots; they should be sown in drills from 15 to 18 inches apart, and about an inch deep. The seeds being smooth do not require to be mixed with soil like Carrots; but in every other way they may be treated alike. Drilling crops, where it can be done, is far more convenient than sowing broadcast, as the intermediate spaces can be easily cleaned and stirred up, which is of great benefit to the plants. A sowing of Beans may now be made. If the first sown Peas are not already staked, it should be done without delay; if they are not sufficiently earthed up, draw a little more to them before staking them. Sow some to come in in succession, four feet apart, to make room for Spinach to grow between them. It is time for getting in Potatoes, planting them about 2 feet apart. A sowing of Curled Parsley should also be made without delay; it delights in a good fresh soil. A small patch of Radishes should be sown, for succession, about once in three weeks. Lettuces, Celery, and Cauliflower, may be sown in a warm border, the latter to succeed those that should now be planted out. *Flowers.*—Do not uncover anything that is tender for a short time yet. Continue to dress the borders. *Fruit.*—Get Strawberry-beds (if any) weeded, before the plants have grown much, and keep down weeds wherever they appear.—*M'H.*

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending April 13, 1844.

April	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds						
						N.	N.E.	E.	S.E.	S.	S.W.	W.
Sun. 7	57 4	37.0	47.2	9	0.40 in.	2	2	2	1	7	2	—
Mon. 8	55 7	37 5	46 6	6	0 30	1	3	4	3	2	3	1
Tues 9	54.2	36 0	45.1	8	1.21	3	2	5	—	3	1	1
Wed. 10	54 3	36.6	44.7	6	0 27	1	4	4	1	2	2	1
Thur. 11	54.9	35.8	45.3	8	0.51	2	1	2	1	6	1	1
Fri. 12	53.8	37.8	45.8	11	0.56	—	1	3	—	4	—	4
Sat. 13	54.0	35.5	45 7	4	0.19	0	0	1	1	5	3	—

The highest temperature during the above period occurred on the 8th, 1830 —therm. 70°; and the lowest on the 11th, 1843—therm. 32°.

State of the Weather near London for the week ending April 4, 1844, as observed at the Horticultural Garden, Chiswick.

Mar.	Moon's Age.	Barometer.		Thermometer.			Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean		
Fri. 29	10	30.505	30.411	63	37	50 0	E.	
Sat. 30	11	30.373	30.293	57	40	48.5	N.E.	
Sun. 31	12	30.318	30.150	60	33	49 0	E.	
April 1	☽ 13	30.225	30.170	65	19	47.0	N.E.	
Tues. 2	14	30.130	29.970	72	29	50 5	S.W.	
Wed. 3	○	29.830	29.704	72	32	52.0	S.W.	
Thurs. 4	16	29.634	29 502	68	36	52 0	S.W.	
Average		30.134	30.005	61.8	34 7	50.0		.00

March 29th Dense fog; dry haze; overcast
30th Dry easterly haze, fine; overcast at night
31st Slight haze; exceedingly clear and fine; foggy
April 1st Foggy; dry haze; fine; clear and fine at night
2d Slight frost early A.M.; very fine; clear and mild
3d Fine; very dry air; clear and fine at night
4th Very fine throughout
Mean temperature of the week, 5.2 deg. above the average.

Notices to Correspondents.

BOOKS.—*A Bachelor.*—Bevan on the Honey Bee.—*Rusticus.*—Mangles's Floral Calendar; apply to the booksellers.

CHARCOAL.—*Beginner.*—Prepare it from the softest wood you can get. Possibly your Pines are over-watered, without being enough exposed to light.

CONSERVATORY.—*T. J.*—A span-roof by all means, and if possible, running north and south. Glaze with the largest panes of sheet glass, if you do not mind the expense, and heat it by hot-water pipes, cast with evaporating pans. Brick water-gutters will not answer for a conservatory in winter. Have a tank inside in which you can keep water of the same temperature as the air of the house. Such a tank may be fed with the rain that falls on the roof.

CARNATIONS.—*Lambo.*—Those, Picotees, and Pinks will grow in almost any kind of soil; but they do best in a light rich mould, consisting of old turf, well-decayed dung, leaf-mould, and sand. For their management, see to-day's Calendar.‡

CROCUSES.—*Delta.*—Both these and Snowdrops like a warm, dry, light soil, in which they will thrive for many years without requiring removal. Both are, however, better for being taken up occasionally, because in that way their roots are exposed to fresh soil, and are not obliged to search through exhausted earth for their necessary food. They are fond of cow-dung as a manure; it may be applied just after Christmas. Transplant all Evergreens in November if you can, and when the weather is wet. The worst of all times is the spring, when the easterly winds prevail.

EVERGREEN BEECHES.—*Paris.*—It is true that the Evergreen Beeches have been lately received, in a living state, by Sir W. Hooker, at Kew. There has not, however, been as yet any multiplication of these rare plants, which are seedlings. It is hardly to be expected that they will be hardy in those parts of Europe where the cold is intense in winter.

FOUNTAINS.—*M. C. M.*—I should recommend the supply-pipe to be six inches diameter in the bore, where the ground falls rapidly; four inches in the level part, and three inches in the length, which ascends to the fountain. The six-inch pipes should be of half-inch metal, and the others three-eighths of an inch; the lengths may be united by flange joints, but turned and bored joints are more accurate and lasting. The nozzle should be made of brass, trumpet-shaped, and the orifice one inch in diameter. The supply-pipe must be kneed from the level to the upright position, with a flange to unite to that on the bottom of the nozzle. It will be found advisable to try the effect by wooden nozzles, of various sized orifices, before the permanent one is made. The small pipes which are to supply the house and offices should, at their junction with the main, be very stout, and about half an inch bore. Considering the head of water, if these rules are followed, the jet may be expected to rise from 60 to 70 feet, providing there is an ample supply, of which "M. C. M." says nothing. I know of no work treating of fountains, which would afford information applicable to the case in question.—*Joseph Paxton.*—*T. J. M. A. P.*—Next week if possible.

FRUIT-TREES.—*V. B. K. Z.*—On the south aspect, inside, the following trees will be proper:—Peaches, Royal George, Bellegarde, Noblesse, Malta, and Berrington; the Elruge, and 2 Violette Hative Nectarines; 2 Moorpark Apricots. For the south aspect, outside:—Cherries, 2 May Duke; 1 Knight's Early Black; Plums, 1 Royale Hative; 2 Green Gage; 1 Coe's Golden Drop; Glout Morceau; and Beurré Rance Pears; and the Mulberry you wish to have. For east and west aspects:—The Royal, Orange, Roman, and Moorpark Apricots; Plums, 1 Kirke's, 2 Purple Gage; Pears, 4 Winter Nelis, 4 Bacon's Incomparable, 2 Marie-Louise, 2 Passe Colmar, 2 Glout Morceau, 1 Thompson's, 2 Easter Beurré, 2 Knight's Monarch; Cherries, 2 Elton, 2 Florence.‖

GRAFTING.—*J. Jeffrey.*—One year old wood of the Purple Beech will not take with any certainty. Two years' old wood will never fail; we have not tried three years' old wood.

INSECTS.—*J. Took.*—The Cucumber-leaf was so crushed, that it was impossible to examine it. I should feel obliged by having a fresh leaf, with some of the little beetles upon it, and as many as you can conveniently send in a pill box. Say, also, at what period of the day, or night, they are eating the leaf, and if there be any season when they are more abundant than at present. *R.*—*A Beginner.*—Old Cabbage leaves laid in your Mushroom-beds will attract the woodlice, when they may be collected and killed every morning. As they harbour in the decaying wood of the frames which rest upon the soil, boiling water may be poured round that part inside and out; but one of the best remedies is to keep one or two *toads*, not frogs, in each frame. *R.*—*A. F.*—Your enemies are a species of woodlouse, called Oniscus murarius; kill them by the modes above recommended. *R.*—*Monmouth.*—Fumigating with tobacco will, in all probability, destroy the red insects; but we must beg of our correspondents to transmit specimens, without which it is impossible to give satisfactory answers. *R.*—*J. C. K.*—The foliage of your Fuchsias is undoubtedly eaten by some insects much larger than the one you placed in the quill; which, however, had escaped for want of being stopped with a *cork*. If you will examine your plants by night, I expect you will detect the culprits feeding. *R.*

LAWNS.—*Penthesilea.*—If you water your lawn well with gas-water and water, it will kill the Moss, and improve the Grass. Do not be alarmed if you should seem to have killed the Grass also, for that will recover. ‡

MANURES.—*H. J. D.*—For the price of superphosphate of lime see our advertising columns. Apply it to Pelargoniums now, as a top-dressing, about a wine glassful to a plant, and just scratch it into the soil.—*Mercator.*—Superphosphate is used in kitchen-gardens at the rate of 3 or 4 cwt. an acre. Oranges love a rich free soil—even such a manure as charcoal soaked in blood. They will, however, never thrive unless they are kept warm at their roots, and have plenty of room to grow in. Peat, loam and sand, equal parts, form a soil suitable to the Gladiolus.—*Rhodon.*—Three or four cwt. per acre of Potter's guano will probably be sufficient for your Roses: we do not, however, know what the maximum quantity is that may be advantageously used. Much, moreover, must depend on the condition of your land.—*M. A. B.*—Use Potter's guano as a top-dressing, and prick it in. As far as our experience goes, it suits everything; but we have not seen it tried on Coniferous plants. A good companion for a Petunia in a vase would be a Purple Salpiglottis; or, if you cannot get it, one of the taller purple Verbenas.—*H. C.*—Mix lime with your guano, and if you perceive strong ammoniacal fumes, it is probably good. There is no certainty about it, however, without careful analysis. The African guano is said to be good; but if it is very wet, you will have to buy water as well as guano; and as you have probably enough of that at home, it must of course be taken into consideration. Take a pound of the wet guano, put it in the sun to dry, and weigh it afterwards. The difference will be the water.—*J. A.*—It is worth trying whether water from gas-works would improve refuse hair. We have no experience with it.—*Guidenet.*—The superphosphate of lime, or Potter's guano, rather than the Peruvian. Apply them as a top-dressing; just fork them in, and leave the rest to the weather, unless it should remain very dry, in which case it will be necessary to water the border. Apply at the rate of 4 cwt. per acre.

NAMES OF FRUITS.—*J. Waldron.*—Dumelow's Seedling. ‖

OAKS.—*R. F.* may prune Oaks and Beeches now. Mr. Glendinning, Turnham Green.

ORANGES.—*J. A.*—Your Oranges drop their blossoms because their roots are too cold.

PEARS.—*An Original Subscriber.*—The Winter Crassane differs from the old Crassane in having the eye in a still larger cavity; but if you plant both side by side you will soon discover a most important distinction, for the Winter Crassane will bear most abundantly as a Standard, whereas the other will not. You will find a figure and description of the Louis Bonne of Jersey, at p. 860 of last year's *Chronicle*. Thompson's Pear resembles in appearance the Passe Colmar; but the leaves differ in being somewhat downy, and the fruit is more buttery. You have probably been too late in heading down your Quince-stocks. If this is not done early they are very apt to canker at the graft in the manner you describe. They ought to be headed down in January at the latest. You must not cut those you budded quite close to the bud at present, nor till they are fairly in leaf.‖

PICKLING WOOD.—*B.*—Apply to John Bethell, Esq., 78, King William-street, City, for Creasote.

PINE SEEDS.—*K. O.*—Sow them now in sandy loam, in a cool Cucumber frame. Remove them to the open air as soon as up, if the frosts are over. Put them as soon as they form their second leaves, and plant them out as soon as they are six inches high. Do not crowd them; and never let their roots become spiral.

PLUMS.—*A. H.*—The Myrobalan Plum is Prunus cerasifera—quite a distinct species. Thanks for the information, which we have used elsewhere.

RABBITS.—*S. S.*—We are not acquainted with the mode of destroying Rabbits by smearing Cabbage-leaves with poison. You may surely trap or snare them, if you cannot shoot them.‡

SEEDS.—*R. C. R.*—Of your seeds the following are worthy of growing:—Lagerstroemia Regina, Eranthemum nervosum, and Convolvulus Lucteus.‡

SHRUBS.—*Sarah.*—The following ornamental evergreen and deciduous plants may be recommended for planting in a shady situation in London: Common and variegated Holly, Aucuba Japonica, Laurustinus, Berberis aquifolium, Viburnum opulus, Cytisus Laburnum, Common and Persian Lilac, Ribes sanguineum, Cornus sanguinea, Hypericum androsæmum, H. calycinum, and Symphoria racemosa.‡

SLUGS.—*An Amateur.*—Lime-water applied night and morning, when the slugs are feeding, will soon rid you of such vermin. Or gas water is much better, provided you can apply it without its touching your plants.

THE ROSE-GARDEN.—*J. L.*—Patience is a virtue, and we must beg of you to exercise it. It is not our intention to resume the articles under this name for a few weeks, as all that relates to the actual season is already printed. You may expect their re-appearance about the beginning of May.

THORNFIELD PINES.—*Three Gardeners.*—Obliged by your information; but you must give us your names if we are to use it.

MISCELLANEOUS.—*Egg.*—We know of no means of preserving the colour of birds'-eggs except keeping them in the dark.—*W. M.*—Helonias asphodeloides thrives perfectly in a peat border among American plants, where it is shaded, but not overshadowed. It then flowers every year.—*Jason.*—It would be very unfair of us to answer your question. There are doubtless many professional men who are excellent landscape gardeners, and it would be invidious publicly to name one in preference to another.—*Anon.*—We have no idea to what you allude. Many plants have an acrid juice, and will raise blisters; as for example the Crowfoots and Clematis flammula.—*Anglus.*—Leaf-mould that is well decayed may be used instead of Bog-earth for American Plants.‡—*G. F. H.*—By application to the Secretary in Regent's Park. Verbenas like a light rich soil: it is too early to plant them yet.‡—*Rhodon.*—We are not acquainted with the Rhododendron "Gloire d'Haarlem." We have had no experience with Potter's guano for American plants.‡—*Col.*—The meetings of the Horticultural Society are on the first and third Tuesdays of the month, with certain exceptions, which can be learnt at 21, Regent-st.—*C. R. D.*—No doubt your Gooseberry bushes have been attacked by birds.—*2s. 6d.* will be given for No. 33 of 1842.

SEEDLING FLORISTS' FLOWERS.

CAMELLIA.—*W. B. T.*—The variety of which you have sent a specimen is not known: its principal merits consist in its colour and the texture of the outside petals; the centre is very bad, being partially filled with small narrow petals. *

CINERARIAS.—*W. M.*—Queen of the Fairies is like so many varieties we have with delicate-coloured tips to the petals, that it is impossible to distinguish it from many others. Model forms a more decided variety, being a mixture of purple and azure. Single flowers are not sufficient to form an opinion upon.* —*C. L. N.*—Seedling No. 1, a bright blue. The flowers of this variety are rather small; but they are very abundant, and bright and beautiful in colour. No. 2, pure white centre, with the termination of the petals of a delicate azure blue. This is also an abundant bloomer, with well-formed flowers, lively in appearance, and forms a distinct and desirable variety.*

PANSY.—*T. O. G.*—Everton is a fine, large, well formed seedling, with well-proportioned petals of a velvety texture; upper petals of a very deep purple, with a perfect broad belting of the same colour round the side and bottom petals; eye dark, ground colour yellow: it wants a little more decision where the belting joins the ground-colour.*

RHODODENDRON.—*C. L. N.*—The seedling hybrid Rhododendron is a very compact and handsome variety, the blotches of white with the deep rose colour of the outside of the flowers, contrasted with the delicate and spotted inside, give great richness to its general appearance: the fringed edge to the corolla is a defect. *

SCARLET GERANIUM.—*W. M.*—Fireball is a bright colour, but not surpassing in this respect many others; and the habit of the plant we are ignorant of.*

*** As usual, many communications have been received too late.

TO THE FARMERS' CLUBS AND AGRICULTURAL SOCIETIES, in Gloucestershire and the adjoining Counties.—It having been suggested to me, by Mr. Hyett, of Painswick, that it would be desirable to place within the reach of the farmers, upon reasonable terms, the means of obtaining the analysis of the various manures of commerce now coming into use, so as to estimate their commercial and agricultural value, I have determined to offer my services to the several Farmers' Clubs within my neighbourhood, upon the following terms, viz.: that upon being appointed Chemist to any Club, with an annual fee of 5*l.* 5*s.*, I will analyse for their members, at the undermentioned reduced charges, viz.:—

1. *Manures*.—Testing saline manures, such as guano, the nitrates of soda or potash, bone-dust, rape-dust, &c., for adulterations, for each sample, 3*s.* Examining, with a view to its commercial and agricultural value, any of these manures, so as to detect the quantities of impurity, or estimating the amount of phosphates, or animal matter, contained in any sample of bones, or of organic or of inorganic matter in any mixed manures, 6*s.*

2. *Soils*.—For estimating in a soil the amount of soluble saline matter, or of lime, clay, silex, phosphates, gypsum, organic matter (humus), &c., or the power of retention of water by a soil or subsoil, as indicating the necessity of draining for the estimation of one ingredient, 5*s.*, and 2*s.* 6*d.* for each additional one.

3. *Earths*.—Examining limestones, marls, &c., to ascertain the proportion of lime, and presence of magnesia, alumina, or silex, 5*s.*; ascertaining the proportions also of either of the latter, or any other ingredient, 2*s.* 6*d.* extra for each.

4. *Products of Vegetation*.—Examining the ashes of a plant, to determine the proportion of one ingredient, 5*s*; the proportion of every other, 2*s.* 6*d.* additional for each; and for examining, to determine the quantity of water, starch, sugar, gluten, vegetable albumen, or woody fibre in Turnips, Potatoes, Mangold Wurzel, Wheat, &c., 5*s.* for the first, and 2*s.* 6*d.* for each additional ingredient; and for determining the quantity of oil or fat, and of other proximate principles, requiring expensive re agents, in any agricultural crop, 5*s.* each.

5. *Dairy Produce*.—Estimating the amount of casein, fat, sugar, or salts, contained in milk or cheese, with a view to comparing the produce of two or more breeds of cows, or of different modes of feeding, for each ingredient, 5*s.*

6. A Lecture on any Agricultural subject, 2*l*, to 5*l.*

7. For chemical advice generally, on Agricultural subjects, the charge must be regulated by circumstances.

8. Water or liquid manure examined, with respect to its fitness for irrigation.

I am, gentlemen,
Yours, most obediently,
Painswick, March 26. A. GYDE.

TO AGRICULTURISTS, MINING PROPRIETORS, MANUFACTURERS, and OTHERS.

ROYAL POLYTECHNIC INSTITUTION.—The department of ANALYTICAL CHEMISTRY and Chemistry applied to the Arts, Manufactures, and Agriculture, now offers considerable advantages to parties engaged in the above-mentioned pursuits, both as to the moderate scale of charges, and the punctuality and accuracy with which all Analyses are conducted. The Chemists may be consulted at the Institution daily, after 11 o'clock, or in the country, if required. Simple Assays, one guinea each. Analyses, from one guinea upwards. Where business is regularly sent to the Institution the charges are reduced. R. J. LONGBOTTOM, Secretary.

The Agricultural Gazette.

SATURDAY, APRIL 6, 1841.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, April 10, Agricultural Society of England.
Thursday, April 11, Agricultural Imp. Soc. of Ireland.

Wednesday, April 17, Agricultural Society of England.
Thursday, April 18, Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.—April 8 { West Hereford. Wickham Market.

During the years 1842 and 1843, upwards of 400 experiments with manures, of which we have the manuscript report, were made by Mr. Lawes, whose name will be recognised as that of an intelligent writer in the *Agricultural Gazette*. We mention this to show that the opinion of this gentleman on the general subject of experimental farming is well worthy of our attention. It will be seen from the following remarks by him, that his extensive experience in this line fully proves the amount of error to which experiments are liable, from the influence of other causes than those specially employed by the experimenter. The way to remedy this is—either as already pointed out on many occasions, and as Professor Henslow has put in practice—by collating the results obtained from the action of the same cause, by different observers, under a great variety of circumstances, or by —what is very similar– increasing. not the number, but the extent, of the experiments. Mr. Lawes writes as follows :—

"I venture to offer some remarks upon this subject, having been engaged during the last few years in performing a variety of experiments, and having wasted a great deal of time and money, from ignorance of the precautions necessary to obtain an accurate result. A person wishing to try a variety of experiments is naturally anxious to perform them upon as small a space of land as possible. I have divided whole fields into spaces of the fortieth of an acre; and although the greatest possible care was taken to ensure accuracy, the results were unsatisfactory. I have since ascertained, by careful observation, that equal spaces of land measuring the fortieth of an acre, unmanured, or manured with the same substance, yield weights which vary in the proportion of 1 to 1¾. The greatest variation occurs in Clover and Grass; and I am inclined to think that half an acre is the smallest quantity of land that ought to be used for one experiment upon these crops. The manures should be reduced to a fine powder, and sown by hand when the Grass is beginning to grow; I prefer the month of April, a rainy day being selected for the purpose. The Grass should all be cut the same day, and treated in every respect alike, until it is fit to carry. Each experiment should be made into a separate stack, and thatched; the weights should be taken about two months after the Hay is carried.

"Experiments upon Wheat, Barley, and Oats, may be performed upon a quarter of an acre. I prefer the beginning of May for top-dressing with soluble salts, such as sulphate of ammonia, guano, &c. In harvesting the experimental portions, they may either be made into stacks in the field, or they may be threshed out at once in the barns. Experiments upon Turnips may be conducted upon much smaller spaces of ground, provided a space of not less than 27 inches be left between the rows; the fiftieth of an acre will give a very fair result, particularly if the Turnips are sown upon the ridges. A space of 129 yards long, by 27 inches, is about one-fiftieth of an acre. If a portion of ground of this size is used, a drill should be employed to sow the Turnip-seed, and the manure should be strewed by hand down the marks made by the drill, a light roller being passed over them to cover the manure. The seed should be sown very thick, to prevent injury from the fly; and to enable the Turnips to be set out at equal intervals, each row should contain an equal number of Turnips. The Turnips should be weighed about the beginning of December; all the roots, dirt, and tops, should be completely removed, and the bulb weighed. This is the only fair way of estimating the weight of a crop of Turnips, and if it were done, we should not hear so often of crops weighing 30 tons per acre."

No kind of experiments can afford more useful results than those instituted for the purpose of ascertaining the limits within which the results of other experiments can be depended upon. Mr. Lawes refers here to the effects of manures alone, and a good deal of the variety there noticeable is, it appears, owing to variety in the soil, and to other disturbing causes. There are many kinds of experiments connected with the soil, to each of which the above remarks by Mr. Lawes will apply, as they are all equally affected by the same sources of error; such are experiments with different varieties of any plant, for the purpose of determining the one of greatest productiveness. But there is another class of experiments, of great importance to the farmer, which aim at the determination of the nutritive properties of different kinds of food, or of the fattening tendencies of different breeds of sheep and cattle; and in these we can say, from experience, that the greatest care is required in drawing accurate inferences from the results arrived at.

We have no doubt that, were a sheep-farmer to divide his flock into tens, and observe them weekly, he would often find as much difference between these different lots, though fed and treated alike, as another would who had treated his lots variously, feeding one on Carrots, another on Swedes, a third on Field-beet, without hay, and a fourth, fifth, and sixth on all these, with hay. It requires a whole season at least, and a flock ten or twenty at least in number, to determine the merits of any peculiarity in the management of sheep. And while on this point, we may just mention one particular which appears to have been overlooked by experimenters on the value of different roots as food for cattle or sheep. A great source of error in all such experiments lies in the fact, that most of the different roots grown by the farmer come to perfection at different times during the year. The common Turnip should be all consumed by November, the Swede by March, while the Mangold Wurtzel and Carrot are as good, or even better, during the months of April and May as at any period while they are fit to eat. Thus, of two experiments with Swedes and Beet made on different lots of sheep, the one in December and the other in May, the former would probably result in proving the Swede to be the most nutritive food, and the latter would probably justify a preference of the Beet. We cannot tell how far to depend upon such experiments till all their details are made known.

It will soon be SEED-TIME FOR THE MANGOLD-WURZEL. This plant prefers a light soil, but will succeed on much heavier land than is suited for Turnip culture. It should be sown before the end of April. The land (a Wheat or Oat-stubble ploughed deeply in autumn), having lain exposed to the action of the weather during winter, will then harrow down to a fine tilth. It should be ploughed, not very deeply, about ten days before sowing; and, if the weather be warm and drying, the harrow and roller should follow close upon the ploughman. When, after repeated harrowings, the soil has been rendered sufficiently fine, the manure may be laid on; and in doing this, either of two ways may be adopted. It may be applied broadcast, *i. e.*, it may be emptied out of the carts in heaps at the rate of about 20 tons per acre, and spread evenly over the surface; after which, it should be immediately ploughed in, and then the land should be harrowed, rolled, and bouted up for sowing as soon as possible; or the manure may be applied in the drills, and this is generally the more economical plan. In this latter case, we suppose two ploughs to be at work; the land is first ribbed by these, a furrow being turned out, and a drill formed every 26 inches. As soon as a few drills are thus formed, the carts with manure are led up the centre of each three, and a man pulls out the load at a regular rate without stopping the horse. Supposing he has been directed to apply 20 tons per acre, he should then spread a load of 15 cwt. over about 84 yards in length. This is divided amongst the three drills to which it belongs, and spread evenly along the bottom of each by three men, who follow close behind the carts. The ploughs, by which 12 drills may by this time have been formed, three of which are then filled with manure, instead of continuing merely to bout up fresh drills, should now work round and round those already prepared; on the one side, splitting those first made in which manure has since been laid, covering it up, and leaving the land ready for the seed; and on the other, opening new furrows. There will thus never be more than 12 drills open, and in never more than six is there manure lying exposed to the air. Two ploughs, with manure-carts and men to keep them going, will get over 5 or 6 acres a-day. The land as it is thus left, should be rolled and sown as soon as possible. If it be in fine tilth, and the ploughman skilful, the drills need not be formed by a complete bout of the plough; they will be sufficiently well made by a mere ribbing of the land.

The seed should be sown as soon as possible after the drills are ready to receive it. It should be dibbled in by hand. We have not seen the machines at work which are described in some publications, for forming the holes to receive the seed; but from the statements of others we believe that they greatly facilitate the work. Before sowing, the drills should be rolled lengthways by a light roller, in order to flatten them, render the ground firmer, and hinder any chance of the dibbles being pushed in too far. This is of great consequence, as the seed is very easily buried and destroyed. To guide the dibblers in this work we have been accustomed to use a wooden roller about one foot in diameter, having upon it at intervals of one third of its circumference, strips of wood of triangular section nailed lengthways. These, as the roller passes up and down the drills, make marks across them at equi-distant intervals of about 12 inches. The seed is sown upon these marks, and thus comes up regularly over the field. The women and children who plant the seed use a short dibble, which they learn to press only half-an-inch into the land; they have a small bag of seed tied round the waist, and they hold a little of it in the left hand, from which by the action of the thumb and fingers they separate two or three berries at a time. They stand on the left side of the drill to be planted, with the right foot upon the top of it; bending, and stepping forward with the left foot, they strike a hole in one of the aforesaid marks, and on lifting out the dibble they place the two or three seeds, which they have ready between the fingers and thumb, in the hole thus prepared, and without lifting it they drag or slide the right foot along the top of the drill and cover the seed up. The covering is done wholly by the right foot, which rests above and presses the seed thus covered, while the left takes another step of 12 inches, and the hands are employed as before, first the right in forming the hole, and then the left in placing the seed, after which it is again brought forward to cover up. A great deal depends upon the proper division of the work among the feet and hands, and on each member performing its appropriate office. When once a labourer gets into the way of it, he can perform his task so rapidly that it appears as if he were running along on all fours.

The quantity of seed thus sown varies from five to seven lbs. per acre. The kind of seed to be sown should be one of three kinds—the long red, and the red and yellow globe. Last year, by weighing two or three successive rows of each kind, we ascertained that there was a produce of 31½ tons per acre of the first, and 33½ and 33⅓ of the second and third. The globe Beet is believed to be of the best quality.

Each of the berries in which the seed occurs contains three or four seeds, so that from the two or three berries which are sown at each spot in order to ensure plenty of plant, a little bush of plants springs, and whenever these get sufficiently large they must be singled out. Before doing this, however, the land should be horse-hoed. This pulls down the ribs and fills up the furrows, leaving untouched a space of only 3 inches wide up the centre of each drill, in which the plants are situated, and this is easily cleaned by the hand-hoe. Not only waste of time, but injury to the plant, is frequently committed in this operation, by the care which the hoer takes to treat the young plant gently. The proper way to do it is this :—The little 3-inch-wide ridge in which the bunches are situated should be knocked away by a push from the hoe, directed so as at the same time to knock away one third of one of the bunches; the effect of this is, to leave two or three of the centre plants of the bunch unsupported, which accordingly fall down

upon the space cleared by the hoe; another well-directed blow, a pull of the hoe as it returns, will clear away the rest of the bunch, and then, of the two or three helpless plants remaining, one may be selected, and the rest cut off. A field thus treated looks very forlorn immediately after hoeing, but the advantage of the rough treatment shows itself in a very few days by the vigorous growth of the young plants.

We shall speak more fully, when on the subject of Turnip culture, of the advantages of repeated horse-hoeings as long as the rapidly-growing leaves of the plants will permit it. At present, we leave the cultivation of the Field-Beet till its harvest time.

ON THE FERTILISERS OF COMMERCE.

To the farmer who reflects that all increase in his crops beyond the average which covers his costs of cultivation, &c., is clear profit to himself, any mode by which such increase is likely to be effected should be matter of serious consideration. Attention has lately been called to the very extraordinary returns from some of the manures of commerce; from the many which have been published I shall content myself with citing the following instances.

From nitrate of soda, applied to Wheat, the increase has frequently been great. Mr. Bubb, in the report of the Gloucester Farmers' Club for 1842, shows a profit of 19*s.* 5½*d.* per acre; for the last year he has informed us of still greater, and this upon a considerable scale. Mr. E. Solly, in the third volume of the "Transactions of the Horticultural Society," second series, reports an increase of more than ten bushels per acre; and on certain trials, which I reported in the second volume of the Royal Agricultural Society, I netted 2*l.* 17*s.* per acre.

In the "Transactions of the Highland Society" for July, 1843, in the report of some experiments (for which the Society awarded a premium of 20*l.*), made by Mr. Maclean, of Braidwood, on the increase of Hay, by the use of some of these manures, we find, among others, these results:

Manure applied.	Value of Increase, after deducting cost of application.
Rape Dust	£1 6 0
Guano	3 18 0
Saltpetre	4 15 0
Nitrate of Soda ..	5 0 10

Mr. Hannam, also, from near Wetherby, in Yorkshire, in his elaborate series of experiments, for which the Highland Society awarded a premium of 50*l.* (V. "Highland Society Transactions," No. 4, new series), gives, among a great variety of other interesting results, the following:

ON TURNIPS.

Manure applied.	Quantity used per acre.	Increase per acre.
		ton. cwt. stone.
Bones crushed..	16 bushels	8 7 4
,, burnt....	16 ditto	9 10 4
Bones and Guano	12 ditto, 1 cwt.	10 7 6
Bones and Rape Dust ..	12 bushels, 6 ditto	10 14 6
Guano, drilled..	2½ cwt.	6 17 0
Guano, sown ..	2½ cwt.	14 19 5

ON OTHER CROPS.

Manure applied.	Potatoes.		Barley.		Hay.	
	Quantity applied.	Increase per acre.	Quantity applied	Increase p. acre	Quantity applied.	Incr. per acre.
		bushels.		bushels.		st. lbs.
Guano	5 cwt.	59·6	2 cwt.	15·54	2 cwt.	52 0
Nitrate of Soda ...	1½ cwt.	76·9	1½ cwt.	14 22	1 cwt.	72 12
Nitrate of Potash..	....	....	1 cwt.	11·16	1 cwt.	25 10

I have selected the above examples from amongst the most successful, merely to show, when they do succeed, how great the profit may be to the farmer. But it by no means follows that there is not another side of the question; doubtless there is—failures perhaps are even more numerous. These manures are very often most uncertain and capricious in their effects—and I would strongly advise that no one should embark in them largely without first ascertaining, by trial on a small scale, the probability of their success, both as regards the crop and soil to which he thinks of applying them afterwards.

Presuming, then, that this is ascertained in the affirmative, these manures would seem to be of the greatest importance to the farmer; especially in those districts like our Cotswold hills, where farm-yard or town manure is seldom to be obtained in sufficient quantities. The introduction of a substance which could be purchased at any market-town, as for instance guano, at 11*l.* or 12*l.* per ton, from 2 to 4 cwt. of which per acre would go as far as a fair dressing of common dung, would be no inconsiderable boon to the farmer. Now this is all very promising—but it is not all gold that glitters. There are other drawbacks against which due caution must be exercised. When we have ascertained one year that the manure in question is likely to succeed on a given crop, we are by no means sure the next year of getting the genuine article; thus a serious loss to the purchaser may be incurred, not only in the article itself, but still greater on the year's crop, which, under different treatment, might have given very profitable returns. Let us see how the case stands in figures. Mr. Potter, in a little pamphlet entitled "A word or two on the use of Guano," tells us that it is sometimes found to contain 40 or 50 per cent. of inert sand. I have heard of some said to contain 65 per cent. Dr. Madden states, in one of his lectures "On the advantages of extended Chemical Analysis to practical Agriculture," that samples of nitrate of soda have been analysed and found to contain as much as 26 per cent. of common salt. I have seen a specimen which has also been analysed and contains more than 30 per cent. of foreign matter. Mr. J. B. Lawes, who, as a manufacturer of superphosphate of lime from bones, consumes two tons of bones a day, and is therfore a competent witness, states in the *Agricultural Gazette* that bone-dust is sold containing about one-third of lime. Suppose a farmer about to manure 20 acres with these impure substances, what would be his loss?

Manure.	Price per ton.	Impurity per cent.	Quantity used per acre.	Loss to Buyer on 20 Acres.
	£ s. d.		About	£ s. d.
Guano	11 0 0	50 Sand.	3 cwt.	16 10 0
Nitrate of Soda..	19 0 0	26 Salt.	1 cwt.	4 15 0
Nitrate of Potash	25 0 0	25 (27) Salt.	1 cwt.	6 5 0
Rape Cake	8 0 0	15 (27)	3 cwt.	6 8 0
	p. quarter			
Bones.....	1 0 0	33 of Lime.	20 bushels	16 10 0

Thus a farmer purchasing guano or bones for 20 acres of land would be a loser, first of 16*l.* 10*s.* on the article itself—and would only have half a crop on the land to which it was applied. Any one using 20 tons of foreign Rape-cake for food for cattle, which is said to be sometimes mixed with sand, if it contained only 10 per cent, would be a loser of 16*l.*, to say nothing of the injury which his cattle might sustain. It is by no means intended that these instances of impurity are altogether the result of adulteration. Indeed, it is known that most of these manures, in their natural state, are found mixed with large and varying proportions of foreign matter—and, if adulterated, that it is done before it reaches the hands of the merchant in this country; still, the loss to the consumer is the same, no matter how it happens. But even this is not the worst feature of the case; a few instances of disappointment will bring the genuine article into disrepute, from which it will not easily recover, and the advantages which might have arisen be lost to the country for years to come. The question then is how to prevent it?

The Scotch have formed a society for the purpose of employing a chemist at a salary of, I think, 600*l.* a year, who is to analyse for its members, at the reduced charge of a few shillings for each analysis, substances interesting to farmers; amongst others, especially these manures of commerce, so as to give at once their agricultural and commercial value. Thus a member of the association, who is desirous of testing any of them, has only to inclose a very small sample by post to the chemist, with the amount of charge for having any particular question answered, from 3*s.* to 6*s.*, or thereabouts, and in a few days he will receive an answer, which will probably save him from all the losses and disappointment before alluded to; and instead of paying for the article some 25 or 50 per cent. beyond its real value on a large order, he would be sure of his money's worth. Moreover, the chance of an impure article being ever sent into the country where a chemist is appointed, would be greatly diminished by the knowledge that it was likely to be analysed on its arrival. I am not about to propose to you to enter on any scheme so great as that of the Association of Scotland; but in a much smaller way it has struck me that results equally useful to the practical agriculturist may be obtained. I have applied to my neighbour Mr. Gyde, who, as an analytic chemist, from the variety of delicate and elaborate analyses in agricultural chemistry which to my knowledge he has performed, I believe to be as competent to the task as any one, at least in this neighbourhood, to know whether it would not be worth his while to offer his services to the Farmers' Clubs in this neighbourhood on such terms as would come within their means; and I am happy to say that he consents, upon being appointed chemist to any Farmers' Club, with an annual retaining fee of 5*l.* 5*s.* from each Club, to analyse for its members on terms similar to those of the Scotch chemist. I am aware that the subscriptions to Farmers' Clubs are very small, but I think, when the important objects above named are considered, there will be no difficulty in raising such a sum yearly by a subscription for the express purpose, from the richer members, if necessary. For further particulars I refer you to the letter of Mr. Gyde, advertised in this day's Paper, and if any Club think it worth while to encourage the scheme, I will thank their Secretary to signify the same to me, or to Mr. Gyde.—*W. H. Hyett, Painswick House, March* 26, 1844.—[This valuable article appeared in the *Gloucester Chronicle* of March 30th, as a letter to the Farmers' Club of the West of England, and we are glad to have the opportunity of publishing it here at the request of its author.]

ON THE ORIGIN OF MOULD.

As you have noticed a communication made by me to the Geological Society in 1837, on the Formation of Mould, I should be much obliged if you would correct an error into which I have fallen. In a postscript to that paper I state that marl was put on a pasture field, since ploughed, 80 years ago: I should have said 30 years, as I mistook the figures in the paper sent me. I found out this on visiting the place four years and a-half subsequently, and examining the old occupier of the farm. Wishing to ascertain the accuracy of the stated depth at which the marl now lies buried, I had three long holes dug in different parts of the field, and in each I found the marl, together with some cinders and broken pottery, in a layer 13 inches beneath the bottom of the potato-furrows, which were about four inches beneath the general surface; so that these substances are now buried at a depth of no less than 17 inches. They will never, probably, be undermined by the worms, to any much greater depth, as they almost rest on the general substratum of pure white sand. I particularly examined the occupier, whether the field had ever been ploughed to a greater depth than six or eight inches, and he positively assured me that it never had. My original informant, therefore, rather underrated the depth at which the marl now lies; although probably in the interval of four and a-half years, between our observations, some soil may have been removed by the worms from beneath the marl. In the other fields, formerly examined, I found that the layers of lime and cinders were, in almost every case, about an inch lower than they previously were. It was curious to observe in some of the holes how distinct three layers were preserved; the uppermost of cinders being two inches beneath the surface (on the former occasion one inch below), the middle layer of lime at four inches, and the lowest of cinders and burnt marl, at from 10 to 12 inches. I found this lowest layer wherever I dug, and likewise the other layers, but less regular, owing to different parts of the field having been limed and cindered at different periods. When digging in this field, after a long drought, I noticed, that one single clod of earth, about as large as a man's two hands, was penetrated by eight upright, cylindrical worm-holes, nearly as large as swan-quills, so that I could see through them. Now this shows the quantity of earth in a small space, which is often probably removed by the worms and brought to the surface. The boggy field mentioned in the postscript to my Paper, on which two years and a half before a thick layer of bright red sand had been strewed, and which, I was informed, was then buried three-fourths of an inch beneath the surface, I found four years and a half subsequently (*i. e.* seven years from the sand being put on) was exactly two inches beneath the surface. In that field (also rather boggy) which I have described in my Paper, as first reclaimed 15 years before, the burnt marl was buried at a depth of four inches; so that in these two cases the rate of sinking, or more properly of being undermined, has been nearly the same, namely, about two inches in seven years. In the fields, however, more particularly alluded to in this notice, in which the marl that was put on thirty-four years and a half before, then lay seventeen inches beneath the surface, the rate of being undermined has been much quicker, namely, three inches and four-tenths of an inch every seven years. This field is dry, and consists of black, poor, very light sandy soil. It has also been ploughed, which may make some difference; though it is clear, from the uniformity of the layer, that the marl must have sunk beneath the depth at which the plough could disturb it before the pasture had been broken up. I am surprised at the red sand on the most boggy field having been buried as much as two inches in the seven years, for I never saw a field on which there were so few worm-castings. One cannot, however, judge of the number of worms in a field from inspection at any one season.—*Charles Darwin, Down, Kent.*

ON THE CULTIVATION OF FLAX.—No. I.

The cultivation of Flax engaged the attention of the farmers of Great Britain and Ireland at an early period, and in certain districts of these countries few farms were without a portion of it, while in others it was scarcely known. Before the introduction of cotton fabrics into general use, the linen manufacture was necessarily one of much importance, and, in fact, it is so still, but in a different point of view. Since the days of which we speak, the manufacture has entirely passed into other hands. Then, the farmer was not only the grower of the crop, but, to a certain extent, the manufacturer also; it was invariably converted into yarn by the farmer's family; and, especially in the north of Ireland, it was also manufactured into cloth, the linen-weavers there being invariably small farmers. The Flax crop, therefore, in those days, was one to which a peculiar value was attached, not only as proving remunerating as an article of culture, but also as affording employment for the female members of their families in its subsequent manufacture. A small patch, at least, was grown with a view of supplying the materials for the manufacture of the household linen, which every frugal housewife knew the value of having done under her own superintendence.

The extent of land devoted to the Flax crop has been for many years past annually growing smaller; and, were it not for the late vigorous movements to extend its culture and introduce a better system of management, its cultivation would soon have been entirely abandoned. By the extension of machinery of late, the quantity of Flax consumed in this country, both for the home and foreign market, has greatly increased, and the growth of the crop having been neglected in this country, the small portion grown being also badly managed, the manufacturers were obliged to look to other countries for their supply. The consumption of oil-cake too, was considerable; and for this also the British farmer was dependent on the foreign market. In the year 1841, the importations of Flax alone amounted to about 80,000 tons, at an expense of from 5,000,000*l.* to 6,000,000*l.*, and if the sum paid for seed and oil-cake be taken into account, the annual outlay could not have been less than from 10,000,000*l.* to 12,000,000*l.** The importance of raising this supply at home was too manifest to escape the attention of those most interested in the matter, and the inquiry instituted with a view of ascertaining how far this could be done, gave the impetus to its cultivation, which is now so rapidly spreading itself throughout the country.

The cultivation of Flax in these counties had, indeed, for many years past been almost exclusively confined to the north of Ireland, but from the defective system of cultivation in general use there, and the still inferior method of manufacture to prepare it for the spinner, the sample produced was generally of a very inferior quality, and consequently brought a low price compared with that paid for the imported article. The small returns thus

* See Reports of the Belfast Flax Improvement Society.

obtained from the crop still further prevented the extension of its culture. Samples were, however, occasionally produced fully equal, if not superior, to any imported, clearly showing that by adopting a proper system of management, a superior article might be produced at home. So great, indeed, was the difference in prices, according to quality, that samples were occasionally produced in the Irish markets for which 7*l.* per cwt. were readily obtained, while the average price was considerably below half that sum. It was clear, therefore, that a proper system of management only was wanted to enable the home grower successfully to compete with the foreigner. The soil and climate of our own country was abundantly proved to be more favourable to the Flax crop than those even of the countries where the greatest perfection in its cultivation had been obtained. In the Flax-growing countries of the Continent, in Belgium especially, continued dry weather during the seed-time often renders the preparation of the land extremely difficult, and when this is imperfectly performed, Flax of a good quality is rarely produced. The alternations of sunshine, and shower so characteristic of our climate at that period of the season, obviates that difficulty, and when ordinary attention is paid to the preparation of the land, and the seed sown at a proper season, a good braird may almost with certainty be calculated on.

Premising these general considerations regarding the Flax crop, which is now occupying a much larger share of the attention of the farming community than it has done for many years past, I shall endeavour in a few papers on the subject to place before the readers of the *Gazette* the most approved practice both as regards its cultivation and manufacture. I do not, however, feel myself warranted in stating, as some of the advocates for the extension of Flax-culture have done, that there is not an acre of arable land in the country but will grow Flax of the finest quality. It is true that the Flax-plant has a rich range of soil, but like all our cultivated plants, there are soils to which it is decidedly unsuited, and on which its cultivation should not be attempted. There is perhaps no other crop which requires greater attention in the performance of every process connected with its culture and management, but when such attention is bestowed, there are few, if any, will yield a greater return. Nor need any fears be entertained that by its more general cultivation the supply would soon exceed the demand, as this cannot be the case for at least many years to come. The demand has been on the increase for some time past, and there is no good reason to suppose that it will not continue to increase with increased cultivation. An important part of the profits of the Flax-grower has hitherto in these countries been almost entirely neglected, namely, the proper management of the seed, which, of itself, often affords as large a return as some of our other cultivated crops altogether.

Having had more than ordinary experience in the culture and management of Flax, and being connected with the district in which the most important movement for the extension of its culture has been introduced and effectively carried into operation, I hope I may be excused the liberty of assuring my readers that the directions placed before them on the subject will be the result of experience, and that they may be implicitly relied on. I may also add that I shall willingly reply to any inquiry on the subject, through the *Gazette*, when the directions given may not appear to be sufficiently explicit. — *J. Sproule.*

ON THE SOIL AND CLIMATE OF THE SHORES OF THE MORAY FRITH.—No. III.

(*Continued from p.* 202.)

Gravel Banks and Subsoil.—A very remarkable feature of the North Highlands of Scotland, observable on every hill-side, and almost from the tops of the highest mountains to the bottom of our lowest valleys and sea-coasts is the general deep covering of loose sand and gravel over the rocky strata. Indications everywhere exist of the country having been long submerged beneath a great ocean, and it is extremely likely that the shapes of the hills and of the main valleys were impressed on the land before it arose from the deep. The summits of the highest mountains are found strewn over with rifted angular or but partially-rounded fragments (often different in composition from the rocks below), as if they had been for ages islands among the retiring waters; the glens beneath are studded on their opposing sides with numerous terrace-banks and gravelly barriers at various altitudes; and lower still, a general horizontal coast line of gravel invests the whole shores of the Moray Frith at an elevation of about 90 feet above the present high-water mark, which seems to indicate a period of repose in the waters at a time when they extended across the great Caledonian Valley, from Inverness to Fort-William, thereby throwing the northern counties into an island separated from the rest of Scotland. The lip of this general terrace-bank exactly coincides with the summit level of the Caledonian Canal; and the general features of the deposit are—its great regularity round all our coasts, its varying in breadth from a few yards to two or three miles, its being composed of sand and rounded pebbles which rarely exceed the size of a man's head, formed chiefly of granitic and primary rocks,—for the secondary softer strata seem to have been entirely pounded down into fine sand and clay; and sticking on the upper surface of the bank, or at least within a very few feet of the surface, large boulders of rock occur, often of many tons weight, and which appear to have been transported to their present localities at no very distant geological era, upon ice. There is a remarkable absence of organic remains either of animals or vegetables in these gravel beds, except on their very top, or connected with the layers of peat which cover them; but the rocky substances constituting the gravel can often be traced to their original beds, and the directions of the currents from which they were deposited can hence be determined. The scratches on the rocks below, and the component masses of the gravel in the neighbourhood of Inverness, and all along Nairn and Morayshires, demonstrate that the main current proceeded from the south-west extremity of the great Glen towards the north-east; and the primitive boulders from the interior of the country, strewn over the plains of Ross and Sutherland, indicate the same direction; while, on the north-west of Ross-shire, the current appears to have had a course more from the north. In the forms of the hills and valleys we can often trace the course of cross currents and eddies; and although the heterogeneous mixture of substances in the gravel demonstrates the extensive movements which occasionally and at first prevailed among the waters, still it would appear that there were long periods of repose, during which the clays and finer particles subsided; so that even the higher ridges frequently exhibit a remarkably good loamy subsoil. That the course of the waters tended generally towards the north is farther clear from most of the escarpments looking towards the south, and the declination of the ridges being in an opposite direction from them; while it would also appear that the southern front of the hills was most exposed to the currents, as it is a commonly observed fact among the farmers that the northern slopes of the ridges usually have the finest soil, and they are most abundant in clayish particles.

By far the greatest portion of the Agricultural districts in the north rests on the gravel beds and terraces now described, which thus form the common subsoil of the country; and from its open, porous texture and the general admixture of all manner of substances in its composition, that subsoil equalises much the productiveness of all the districts, and renders them less dependent than they would otherwise be on each peculiar or prevailing substratum of rock. In fact, the gravelly subsoil is, on an average, at least 10 feet deep, of which the debris of the immediately subjacent rock forms in general but a small proportion,—although it is remarkable that, on the whole, there is a much greater quantity of clay present than could be expected from the loose appearance of the beds. Indeed, a recent analysis of one of the commonest subsoils about Inverness has shown that it contains upwards of 60 per cent. of aluminous matter, which readily accounts for the rapid growth of trees in apparently mere sand-pits.

This paper having extended to a greater length than I expected, I must defer a sketch of the climate of the north of Scotland to another Number of your Journal.—*G. Anderson, Inverness.*

(*To be continued.*)

MECHANICS AS APPLIED TO AGRICULTURE.

By Mr. Cottam.

(*Continued from page* 203.)

The operations of Agriculture to be performed by machinery may be divided into five classes. 1st. Implements used in tilling the land and in the cultivation of the crops. 2dly. In harvesting the crops. 3dly. In preparing the crops for market. 4thly. Implements used in preparing the food for the stock on the farm. 5thly. Domestic machinery.

Under the first head will come the draining tools—the plough, the harrow, the cultivator, the rake, the roller, the drill, and the horse-hoe. Before I enter upon the implements, I will take the liberty of giving a slight sketch of the great improvement made by Mr. Smith, of Deanston—that of thorough-draining and subsoil-ploughing. This system will prove of great assistance to the Agricultural engineer, because the land can be laid all flat and even, will always be in a fit state to work, heavy rains will have a less injurious effect upon it (if any), and the hot sun in dry weather will not retard the performance of machinery as formerly. This system is clearly shown on the diagram; the drains are to be cut thirty inches deep and eighteen feet apart; the land may then be ploughed four or five inches deep, and subsoil-ploughed fourteen to sixteen inches more: this is only to break up and raise the soil, not to turn it up to the surface. The subsoil plough should follow the ordinary plough: it will take a great power to draw it at first, but it is evident that every year it will take less power to perform the operation. Land so drained and ploughed should be ploughed with a turn-rest plough, that the furrows may be all one way, and the land laid flat, so far as the natural undulations of the soil will permit it; in this state it will be easy to understand how this system will make wet land dry and dry land moist, in that state most congenial to the growth of plants. When the rains come, the water has not to flow from the ridges or stetches into surface drains, washing away all the manures and pabulum of the soil with it, but where it falls there it passes through to the drains, and becomes filtered in its passage, leaving all its virtues behind it; this shows that it is as beneficial to drain the hills as the valleys. If we compare this system with that of land not under-drained, but what is called well drained on the surface, and ploughed in high and narrow stetches (or lands), the subsoil has been what engineers call puddled, that is, trodden down till it is quite hard and impervious to water, and impenetrable by the roots of plants, for it has not been disturbed for years, never having been ploughed more than from four to six inches deep. When ploughed it is laid up in ridges or stetches, the narrow ones in seven furrows; but they are made in various numbers, so that in every five feet you have a drain a furrow wide. Now, if we observe this furrow in harvest time, we shall find if it is a wet season the crop in and on the sides of the furrow all perished, the straw short, and the ears of Corn small and unripe; in a dry season the crop will be dried up and equally as poor. The diagram will show the reason there is no depth of soil to hold moisture. Here, at the best, on the top of the ridge, we have but six inches deep, diminishing in the space of two feet six inches to nothing in the furrow; while in the new system we have sixteen inches of soil to hold moisture. If we wanted to keep anything moist, and we wet a blanket and laid it over it, and found it dry quickly, we should put on four blankets. Now this is a similar case; one has four inches depth of soil, and the other sixteen inches. In a dry season the roots can descend and obtain support. What an advantage does this mode of culture give to the implement-maker! He has a flat surface to work upon, and that in a dry state.

Mr. Cottam now compared the various ploughs, showing the improvements made upon them, referring to numerous models and diagrams, for want of which it would be impossible for us to give even an outline. He showed various ways of setting out the turn-furrow or mould-board of ploughs, as practised by different makers, and particularly one designed by the late Rev. W. Rham, in which, although apparently a beautiful curve, all the vertical lines were straight. He also explained Smith's, of Deanston, new turn-rest plough, and the way the sod was cut, raised, and turned over, referring to numerous mathematical diagrams. After going through the harrows and the cultivators in a similar manner, he compared Finlayson's, Biddell's, Wilkie's, Kirkwood's, Lord Ducie's, and his own, pointing out the advantages and disadvantages in working them. One harrow, said to be invented by Smith, of Deanston, and improved by himself, by serrating the discs (a sort of quoit-shaped instrument), attracted considerable attention. It was shown by the Dynamometer, that so great an improvement had been made in English ploughs, that they were now superior to the Scotch, by taking less draught, as 32 to 40. Mr. Cottam concluded by showing the great importance of every improvement in Agriculture. The importance of any improvement in Agriculture will be easily comprehended by the following calculation:—The extent of land under Wheat in the United Kingdom is about 8,000,000 of acres, and the average produce about 24 bushels per acre. Now if this average could only be increased to 27 bushels, this would yield 3,000,000 of quarters, which at the present price, say 50*s.*, would amount to the sum of 7,500,000*l.* It is not only in the Wheat-crop that an increase could be obtained by the new system of thorough draining and subsoil-ploughing, but all other crops; and the quantity of food for stock of all descriptions would be increased thereby.

ON INFLAMMATORY FEVER IN YOUNG CATTLE.

Inflammatory fever or quarter-evil, or, as it is also sometimes termed, black-leg, is one of the most fatal diseases to which cattle are subject, being exceedingly rapid in its progress, and seldom admitting of cure; never, indeed, unless the remedial measures are actively adopted at an early stage of the disease. Young cattle chiefly are its victims, and so rapid is its progress, that on being looked over in the morning the animals may appear as usual, and before evening one or more of them may be suffering from inflammatory fever, which may even have proceeded so far that decomposition has commenced in the part affected, after which a cure is hopeless. The farmer can never place much confidence in the success even of the best treatment for the cure of this disease; but he has much more influence in preventing its ravages than is *usually* supposed.

Inflammatory fever is now fortunately a disease of much rarer occurrence than formerly. In many cases I have known the rearing of calves altogether abandoned from the prevalence of this disease, and the probability of their being carried off by it before completing their second year. What appeared more surprising still, the animals making greatest proficiency in their growth were invariably those most liable to suffer. In other districts, however, it is comparatively unknown, especially where a uniform system of treatment is adopted in the feeding of the animals. A knowledge of the animal economy is of scarcely less importance to the farmer than that of the best systems of cropping, as his live-stock constitute the largest portion of his capital, and such knowledge would often save him from serious loss. It would show him that the disease to which we are now referring was the natural consequence of his violation of the laws of Nature in the treatment of his young cattle, and the penalty which he must pay for his defective management. His young cattle at one time are so miserably fed as merely to support life, and at another fed highly, the change in the quality of food being also effected in a short space of time. That this should produce a derangement of the system cannot appear surprising. In districts where Turnip cultivation is little practised, the young cattle are supported during the winter on straw, and that often of an inferior quality, from being improperly saved, with a run for a few hours each day over their miserable pastures; and so far have the animals been reduced during the winter by this treatment, that the first few weeks of the spring, after vegetation has made some progress, and the grass affords a full bite, produces such an effect on them that inflammatory fever seizes them and speedily carries them off. Those making most progress at the time are also most likely to become the victims of the disease, the reason for which is obvious. Though occasionally occurring at different periods of the season, yet nine-tenths of the cases of the disease which occur take place in the spring or beginning of summer, as at no other period does the system undergo such a change from a transition in the quality of food.

Though little can be done in the way of cure, yet it will

appear much may be effected by prevention. The more general cultivation of green crops to supply the cattle during winter with food, not merely to keep them alive, but also to promote their growth, will do much to render the devastations of this disease less formidable, or prevent its occurrence altogether. Many cases have come under my own observation in which this has, in a great degree, been effected by such means. I may mention one particular case, in which the rearing of young cattle was altogether given up, from the calamity of the young animals being carried off by inflammatory fever; but since the growth of Turnips was introduced on the farm five or six years ago, the farmer in question has again commenced rearing his calves, and the young animals being supplied plentifully with Turnips throughout the winter, not a single case of the disease has since occurred.

The advantage of early maturity in the rearing of live stock is now generally understood, and it is not a little singular that more effective means are not more generally employed to attain such a very desirable object. The farmer who does not maintain his young stock in a condition of progressive improvement from their birth until they are disposed of, very much neglects his own interests. It will not do to allow them to stand still, much less to retrograde in condition, at one period of the season, with the idea of making up the loss at another. This is false economy, to say the least of it; but it further subjects the unfortunate animals to disease, and that of the most active kind.

It is not my present purpose to enter into the treatment of inflammatory fever after it has made its appearance, as this must be reserved for another occasion. The foregoing remarks on the subject have been suggested by the perusal of the prospectus of an Association for Assuring the Farmer from Loss by the death of his Live Stock; but an exception is made in the case of the disease under notice. This exception would seem to indicate that the number of cases of inflammatory fever must still be great, otherwise, the conclusion of the Association has been arrived at on incorrect data. Though, as before remarked, the farmer can *do little* in the way of cure, he can do much in preventing the disease from at all making its appearance among his stock; therefore, the so general prevalence of this disease seems a reproach to the good sense of the farming community.—*J. Sproule.*

Home Correspondence.

Irrigation.—Liquid manure, and the waste of various drainings are the subject of frequent speaking and writing. Applications of this nature to land are usually effected by cartage. There is, however, another mode of applying liquid manure, which is seldom adverted to, and that is by irrigation. When once the land to be irrigated is formed for the purpose of receiving superficial water, the whole quantity of disposable water may be applied at a comparatively inconsiderable expense. The quality of water is a subject deserving much attention, where it flows from springs only, and in dry weather. In rainy weather, and in a cultivated country, most watercourses necessarily contain much fertilising matter, either in a solid state, or in solution, in addition to that which rain itself contains. Even in dry weather, where a stream is of considerable size, it usually receives some addition to the original springs which feed it, from various outlets in farm-yards and domestic buildings. There are, therefore, at least three conditions of running water. The first is its original quality as it comes out of the earth; in this state the temperature of the water is of great importance in its influence on vegetation. It is, perhaps, to this cause that the water issuing out of calcareous strata, such as chalk, produces in the winter months the continual growth of Grass, which would otherwise be torpid. It is true, these waters contain much carbonic acid gas; but even this, it is presumed, would scarcely affect vegetation in a temperature equivalent to the low mean temperature of the air; and thus water at a distance from the source, is said to lose much of its fertilising power. It cannot, however, be supposed that water, in running briskly along, exposed to the atmosphere, will lose much of its useful quality, otherwise than by its loss of heat; and this loss would not continue after the mean temperature of the air becomes greater than that of the earth, viz., between March and November. This agrees with what is observed in irrigated meadows: there is comparatively little growth in the winter months; but where the temperature of the air, and, consequently, the water, is greater as the spring advances, then vegetation proceeds with much activity. A long-continued irrigation in warm weather, however, produces unfavourable changes in the growing Grass, attended with an appearance of white scum, which dries of a leathery consistence. Perhaps some of your correspondents may be enabled scientifically to explain the nature of this substance. It is, however, very desirable that some more certain practicable mode of watering land should be made known. One person likes to water much, and another likes to water little. There is but one point upon which all good irrigators agree, and that is to keep the land thoroughly dry when it is not watered. But as to how long to keep it dry, and how long to water at a time, although questions material enough to be solved, no answer can be obtained. The second condition of running water is that which contains the washings and scourings of the soil through which it passes in rainy weather, commonly called land-floods. There can be no doubt of its good effects, nor that with reference only to this use of water, the irrigation should cease with the floods. The third condition which has been adverted to, partakes of both the former states of running water; it is that of a stream which in dry weather contains much adventitious matter. This water is, therefore, in relation to the more permanent nature of its constituents, nearly allied to the water of warm or calcareous springs, as containing the elements of vegetable life. Its application must depend on the previous questions being satisfactorily answered with regard to the proper mode, and intervals of application. Liebig, in his "Agricultural Chemistry," (page 159), refers to the very superior management and great produce of water-meadows in Nassau. He says the land is irrigated both in spring and in autumn, but no mention is made of winter-watering. One other remark should be made, and that is on the pernicious quality of some waters which have long continued stagnant, or which contain in solution the contents of metallic strata unfriendly to the growth of useful Grasses. There are, however, some waters which appear on analysis pure, and yet no good effect is produced by them. If these observations should obtain the notice of any of your more intelligent correspondents, it is hoped that some light will be thrown on this somewhat obscure subject.—*T. P.*

[With regard to the 2d description of streams alluded to above, it may be mentioned that most water-courses are affected by the causes there alluded to; and care should be taken not to avail one's self of the first autumn floods for the purpose of irrigation, as they contain the washing of ditches and waste places, and are generally loaded with the seeds of weeds.]

Lucerne.—As you have inserted the remarks of "Nicodemus" on the concluding paragraph of an article sent to the *Agricultural Gazette* by the Secretary of the Chepstow Farmers' Club, and as there is no probability that either of the gentlemen mentioned by him will take the trouble of replying to his uncourteous attack, made under an assumed name, I hope you will also insert these few observations addressed to "Nicodemus" on the subject. I allow that I am not sufficiently conversant with Agricultural matters to give such a decided opinion as "Nicodemus" has hazarded. That gentleman would have acted in a more praiseworthy manner, had he stated the extent of his own experience in the growth of Lucerne, both drilled and broadcast; the number of years he has grown it; the nature of the soil and subsoil; together with the situation and aspect of the land on which the crops were produced, with their weight on both plans; and then, without giving two gentlemen credit for wishing to mislead others, he ought modestly to have pointed out the superiority of the one he recommended, and to have inquired whether they had well-grounded experience to confute his arguments. Knowing the liability of men, though able and experienced, to form erroneous opinions, I will concede the point in dispute, though incapable of deciding the question, and suppose Mr. John Sandford and Mr. A. Hall are wrong in giving the preference to sowing Lucerne broadcast; still it is clear that they have only stated their own opinion, and that with moderation, founded on such knowledge as they have been able to acquire, and that they are both open to conviction, and ready to confess their error, when it is clearly proved that they advocate a wrong system.—*Nathaniel.*

Field Beet.—In several articles in your Paper reference has lately been made to the growth of Mangold Wurzel for milch cows; and as I can speak on the subject from my own experience, after growing it for several years, you will perhaps permit me to caution your readers against using it, if their object is quality in their milk, and not quantity. I have invariably found that it increases the measure of milk, but diminishes, to a great extent, the thickness of cream and weight of butter; whereas the use of Carrots or Parsnips keeps up the quantity of milk, and considerably increases the weight of butter. Perhaps this statement may induce others to communicate the result of their experience on the subject.—*A Cow Fancier.*

Chinese Agriculture.—[Notice of the Wheat tillage of China, communicated by John Smith, Esq., surgeon of H.M.S. Cambrian, coast of China.]—"Wheat is cultivated nearly throughout the whole of China; hence the difference in the time of planting, and its coming to maturity. In the southern provinces it is sown in November, as soon as the Rice crops or vegetables have been cleared away; and in the northern it is planted towards the end of October. In the former the harvest commences in April, and in the latter in May; in the Shantong and Chensi provinces it is not finished before the end of July; so that it requires above half a year to come to maturity. It is cultivated on almost every kind of soil, and on the slopes of the mountains, which are cut into terraces for the purpose. In the neighbourhood of Amoy (lat. 21° 25′) it is planted in the marshy grounds from which the rice crop has been removed; and the mean temperature of the months of January and February, 1843 (which were very wet) was about 56° of Fahrenheit. The coast about Amoy is extremely barren and unproductive, the soil being chiefly composed of disintegrated sand-stone, and the detritus of granite, naturally producing nothing but mosses, and a few stunted Pines and Laurels; by the industry of the Chinese, and the copious application of human manure, it is made highly productive; and cultivation is carried on to the very summit of hills 1000 and 1200 feet high, the slopes of which are formed into terraces, to prevent the soil from being washed away by the rains. Smut appears to be the only disease to which the Wheat is subject. Everything in the shape of a weed is most carefully removed, and the utmost attention paid to prevent any noxious influence from injuring the crop. The land is prepared in the ordinary manner when the autumnal rains have fully soaked it. Having been ploughed in a very loose manner, the clods are divided by a harrow, the pins of which have a cutting edge, which is drawn by a small ox, after which it is formed into deep and broad furrows, with intervening ridges for the reception of the plants, which, having been raised in nursery beds, are transplanted when about five inches high in bunches on the long ridges, so as to occupy only one half of the ground. In each bunch of the transplanted Wheat which I picked here (at Chusan) there were 29 plants or stalks; and a square yard contains 15 such bunches planted at equal distances. I examined 15 heads (ears) one from each stalk of the bunch, in their perfectly ripened state, and found them to contain as follows, 33, 45, 34, 49, 34, 40, 42, 32, 48, 45, 31, 33, 38, 34, and 44 grains each, giving an average produce of 38.8 per ear. An ounce avoirdupois contains 1067 grains (this gives 48.771333 to the apothecary's scruple, or 146.3213 to the drachm). The process of tillage is rather tedious, and the expense of ground considerable; but in return for this, the Wheat takes deep root, and is well nourished. The manure employed in some places is the cake left after expressing the oil from Mustard seed, human and other hair, lime from burned shells; but human fœces and urine constitute the prevailing manure, and are so highly valued that they are carefully preserved by every family, and sold at a high price. To such an extent is the economy of this manure carried, that, to prevent any possible waste, privies are everywhere provided in the towns, and those who have occasion for them, not only invited to enter, but paid for so doing with a small piece of money. All these several substances, with a vegetable expressly cultivated for the purpose, straw and weeds, are thrown into vats, of which several are placed for security at the door of every house, and left to ferment till required. Wheat is called by the Chinese "Syiy Nia," and Barley "Drow Nia," or "the poor man's grain;" the former being called, when speaking to us, "mandarin chow," chow or food. The latitude here (at Chusan) is 30° 0′ 20″, at Amoy 24° 25′ 0″; but the cold is both longer and more severe here than at Amoy during the season of Wheat. There is a Wheat here without a beard, a specimen of which I have. It is cultivated in the same manner as the other. The average weight of each ear in an undried state is 15 grains. Great attention is paid to the manuring and irrigation if the season happen to be dry. During the winter the Wheat remains very low, and no further attention is paid to it by the husbandman. In April and May the growth is extremely rapid; but the Chinese do not allow the crop to attain perfect maturity before they cut it, lest the grain should fall out. When cut it is left to dry, and the grain is then beaten out in a tub." Thinking it possible that the accompanying notice of the Wheat tillage of China might serve to amuse, if not to instruct the readers of the *Chronicle*, I send it to you, accompanied by one scruple of the Chinese Wheat, and the same quantity of Barley. The former is, I believe, the same with that described by my friend Prof. Desvaux, in his valuable "Mémoire sur les Froments cultivés en France, ou qu'on peut y cultiver," inserted in the first volume of the "Mémoires de la Société d'Agriculture, Science, et Arts d'Angers," page 347, under the name of "F. barbu de la Chine," (Triticum sativum Sinense); his account of which, however, is not very encouraging, as he says,—"This variety has never succeeded well; it is short," &c. In point of hardihood it is inferior to the Mummy Wheat of Mr. Tupper, of which I have three plants which have stood out all the winter without protection, in a pot outside my bed-room window; while the Chinese Wheat and Barley perished under similar circumstances, and I have only two or three plants left, which I sowed later and covered with a tumbler. However, it may answer as a spring variety, and admit of improvement by careful culture. I find 49 or 50 grains required to counterpoise a scruple. The Barley is six rowed, and an ear which I have is beautiful. The length of the ear, including the awns, is 5 inches, exclusive of them 3¾ inches, and each row contains 10 grains, giving 60 for the whole of the six rows; about 35 grains weigh a scruple. I have, however, in each case picked out the plumpest and largest grains. A Norfolk farmer will be amused at the Chinese method of thrashing in a tub; but, notwithstanding, some parts of the Chinese Agriculture may suggest useful hints, some for a Norfolk or a Lothian farmer; especially the attention paid to the eradication of weeds, and the value set upon human manure, which contains more nitrogen than any other. The offensive odour of this, which forms I believe its chief objection, may be corrected by the addition of powdered gypsum or other substances, which, by preventing the loss of ammonia as it arises from the decomposing mass, destroy the fœtor, and add to the value of the manure.—*William Hamilton, Plymouth.*

Pig Feeding.—Having for some years been a practical amateur feeder of pigs, and somewhat celebrated among my friends for my bacon, I willingly send you the result of my practice, together with the very simple mode which I adopt. First, as to the choice of sort, the description given by your correspondent "J. Steele" is not far from the mark; avoid large flapping ears, a long snout, and coarse hair. A long deep-bodied pig is most likely to fill up well at both ends. Purchase your stock for winter feeding about July; let them have the run of the wash-tub, refuse vegetables, and let them graze as much as you can afford. Let their sty be warm, thoroughly clean, and well ventilated, littered down regularly once a week, and well drained. If you brew, let them have the grains, but only whilst fresh. About the first week in October begin the process of fattening. First, on putting your pigs into the sty for good, wash them all with a good strong scrubbing-brush and soap and water; it relieves the hide generally, and tends much to their comfort. For their food, mix in a bucket only as much good fresh Barley-meal as your pigs (say three) will eat without leaving any—the meal to have just as much water, and that soft and cold, as will cause the meal to adhere [illegible] together, so that the pigs eat it and do not lap it up. Let your feeding-trough have a high back, so that there be no waste of food,

and let it be too heavy to be overturned. In the corner of the sty have a trough (a stone one is best, as least likely to be upset) filled every day with clean water, of which the pigs will partake with much relish; they will then lie down and sleep, a process greatly conducive to fattening. Give them their food about four or five times a day, as fresh as you can mix it, and only what they can consume at a meal. Let them out once or twice a week for an hour during the first month; occasionally give them a pound or two of coal-dust, which they eat greedily, and which certainly has some good effect on them. The second month give them every other day a peck of *chat* Potatoes, boiled or steamed, mixed with the Barley-meal; and the last fortnight, instead of the Potatoes, give them every other day about a gallon of Peas each; this will make the fat firm. In thus fattening three pigs, the third should pay or nearly so for the other two. The following is the expense attending this mode of feeding:—

	£	s.
Three pigs of about 10 stone each, 12 lbs. to the stone, 2*l.* 6*s.*	6	10*s.*
Barley-meal, 12 cwt., at 8*s.* per cwt.	4	16
Peas, 3 bushels, at 5*s.* per bushel	0	15
Potatoes, wash, &c.	0	5
	£12	15

Or 4*l.* 5*s.* per pig. The whole merit lies in never allowing the pigs to have more than they can comfortably eat at a meal, and their sleeping in a clean and warm sty during the progress of digestion.—*W. H. Hill, Pembridge, Herefordshire.*

Rooks.—I have been an attentive observer of animals and birds for many years, and I have in vain attempted to fix on the rook the character of a rogue in grain. I believe him to be grossly libelled when accused of eating grain; the question, I conceive, has been long decided by naturalists, that he is a feeder on worms, grubs, larvæ, &c. The mischief he does is this,—in grubbing up the ground newly sowed he stacks up the grain, and the larks and small birds take it away. A corn may occasionally adhere to a good fat grub, and such may have been detected in his unfortunate maw; but that he is a purloiner of grain I deny.—*W. H. Hill.*

Inland Railways and Agricultural Improvement.—To enable the Agriculturist to commence, and to avail himself of modern improvements, we know of nothing so necessary as a ready and cheap mode of transit. This is necessary for the advantageous disposal of his surplusage. Railway communication is the desideratum through the inland part of the country. Let us suppose a case, and how it is practicable to be made available, by an apparent sacrifice on the part of the landowners, and on the part of Government. Take the contemplated line from Carlisle to Edinburgh and Glasgow. This would open up a fine and productive country between the Atlantic and German Oceans, where there is at present no water conveyance. We shall admit that this line at first, for the sake of argument, could not support itself, or make any adequate return, so as to induce a company to undertake it. Well; the proprietors all along the line are to be especially benefited; and we shall suppose, in the first place, they agree to give a grant of the necessary ground excepting near Edinburgh and Glasgow, where it is very valuable, and very small properties. This would be a stimulant to the undertaking; and if, in addition, and on the abovementioned condition, Government could be induced to advance 25 per cent. of the then expense of the construction of the railway, on the security of the railway—*secundo loco* to the shareholders, who were to receive only a certain per centage upon their money—say 4 or 5 per cent.—we should soon see a railway between Carlisle and Edinburgh, and also between the former and Glasgow. The proprietors of the ground would be benefited by giving away, and the nation would be benefited by the advance made by Government, in so far as it would give employment. A right in reversion could be stipulated for in favour of the landowners, after ample provision was made for all contingencies, by a sinking fund or otherwise; and also a preference to proprietors who had supplied ground on the terms before mentioned, to take shares up to a certain period, and then to be open to the public; or these suggestions, or any of them, may be subject to modification. It may be said that entailed lands could not be alienated or given away; but the same Act of Parliament that authorised the formation of the line, could empower the necessary conveyance by the heir in possession, or otherwise provide for this, on the ground that it was beneficial to the estate, and consequently beneficial to heirs of entail. As this suggestion may appear to some Utopian, we may mention that Lord Panmure gave the necessary ground for the railway between Dundee and Arbroath, in so far as it passed through his entailed property, and he holds his estate under a very strict entail. Government gave 20,000,000*l.* for bettering the condition of the blacks. If it would give half this sum, or 10,000,000*l.*, to construct railways, it would not only better our condition, but would, in due time, receive a return for the advance.—*Amicus Humanitatus.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY Council was held, at the Society's House, on Wednesday last; present: the Right Hon. Earl Spencer, President, in the chair; Hon. Captain Spencer, Hon. R. H. Clive, M.P., T. R. Barker, Esq., S. Bennett, Esq., T. W. Bramston, Esq., M.P., W. R. Browne, Esq., E. Buller, Esq., M.P., F. Burke, Esq., H. Colman, Esq., F. C. Cherry, Esq., E. D. Davenport, Esq., H. Gibbs, Esq., B. Gibbs, Esq., S. Grantham, Esq., W. G. Hayter, Esq., M.P., W. F. Hobbs, Esq., J. Hudson, Esq., Sir John V. B. Johnstone, Bart., M.P., Samuel Jonas, Esq., Rev. C. E. Keene, G. Kimberley, Esq., J. Kinder, Esq., Sir Francis Lawley, Bart., W. Miles, Esq., M.P., P. Pusey, Esq., M.P., F. Pym, Esq., Professor Sewell, W. Shaw, Esq., J. V. Shelley, Esq., and C. Stokes, Esq.—The following gentlemen were elected Members:—

Chalcraft, William, Bramshot House, Liphook, Hants.
Wheable, Thomas, Mitchelmersh, Romsey, Hants.
Lindley, Urban, Radmanthwaite House, Mansfield, Notts.
Fitfield, John, Symondsbury, Bridport, Dorset.
Mathias, William, Lambert, Fishguard, Pembrokeshire.
Robbins, Col. T. W., Castle-Malwood, Stoney-Cross, Hants.
Stacey, George, Uxbridge, Middlesex.
Black, John, Marske, Guisborough, Yorkshire.
Rawlence, James, Heale, Woodford, near Salisbury.
Porquet, M. F. de, Iron Foundry, Hornchurch, Romford, Essex.
Pocock, Henry, Sowley, Beaulieu, near Southampton.
Martin, William, Paul's Grove, near Portsmouth.
Fifield, Job, Hill Park, Romsey, Hants.
Tichborne, Sir Henry, Bart., Tichborne, Alresford, Hants.
Plenty, Edward, Newbury, Berkshire.

The names of 16 candidates for election at the next meeting were then read.

FINANCES.—Mr. Raymond Barker, chairman of the Finance Committee, presented the monthly Report of the state of the funds of the Society; from which it appeared, that the invested capital amounted to 7,700*l.*, and the current cash balance on the 31st March, to 1,742*l.*

DISCRIMINATION OF SOILS.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the adjudication of the Society's Prize of 50*l.* for the best Essay "On the Indications which are practical guides in judging of the Fertility or Barrenness of Soils," to Mr. John Bravender, Land-Surveyor, Cirencester, Gloucestershire. Many attempts having been made to explain the productiveness of the soil by chemical or physical causes, without any decided result, it appeared desirable to the Society, in selecting this subject for one of their Prizes, that the researches of Natural Philosophy should be assisted by making them acquainted with those obvious signs, whether of colour, consistence, or vegetation, by which surveyors and farmers are enabled to give at once a practical opinion upon the probable nature of land which they inspect. Mr. Pusey further reported that the Judges had highly commended four of the remaining Essays in that class, namely, those bearing respectively the following mottoes:—"Truth needs no embellishment," "H. A. P." "Then cold and hot, and moist and dry, In order to their stations leap," and "Speed the Plough;" and the writers were requested accordingly to communicate their names to the Secretary. He felt much satisfaction in communicating to the Council the great improvement this year in all the Essays sent in to compete for the various subjects of the Society's prizes. The Essays were not only more numerous, but more clearly expressed, and, above all, of a more practical character. They were working better and better every year; a result highly gratifying to the Journal Committee, as indicative of the great interest taken by the members of the Society in advancing its important objects.

PROGNOSTICS OF WEATHER.—In reference to the prize of the Society's gold medal, for the best account or record of the prognostics or natural signs of changes in the weather, Mr. Pusey reported that the two Essays selected by the judges in 1842 for a twelvemonth's trial of the practical value of the rules they respectively contained, had been placed, as recommended by the Council, in the hands of Mr. J. C. Morton, of the Whitfield Example Farm, for that purpose; and Mr. Morton had informed him of the completion of the trial on a very extensive scale of observation; the results, however, being too numerous to admit of immediate reduction to a common standard of comparison. On the motion of Mr. Pusey, the Council resolved, that their best thanks should be given to Mr. Morton, and to each of those gentlemen who had so kindly undertaken to assist him in carrying out the objects of the Society in this inquiry.

ESSAYS FOR 1845.—Mr. Pusey laid before the Council the schedule of the subjects and amount of prizes proposed by the Journal Committee for the Essays of next year, viz.:—

10*l.*—On the advantages of One-horse Carts.
10*l.*—On the best method of Fattening Cattle.
20*l.*—On the best method of Reclaiming Heath-land.
50*l.*—On the Agriculture of Nottinghamshire.
50*l.*—On the Agriculture of Cornwall.
50*l.*—On the Agriculture of Kent.
20*l.*—On the cheapest mode of Establishing a Tile-yard.
20*l.*—On Catch Meadows.
50*l.*—On the Dutch method of Curing Butter.
20*l.*—On Fences.
20*l.*—For the best Experiment in Agriculture.

The special conditions annexed to each of the prizes, in reference to the general mode of treating the subject, and the distinct information required to be given on particular points, would be announced in the Appendix of the ensuing Part of the Society's Journal; the Essays themselves being required to be sent to the Secretary on or before the 1st of March, 1845.

(To be continued).

FARMERS' CLUBS.

Stirling.—On March 8 a lecture was delivered in the Court-house, by Prof. Johnston, On Soils and Specific Manures. Among other important statements made by the lecturer, we were informed how draining the soil and sheltering it will greatly increase the warmth of the earth, which will produce earlier crops, and cattle will require less food than they would do if they were in bleak situations. A farmer, to whom I afterwards spoke on this subject, believed such statements were quite true, and he added that cattle have a desire for bottom heat and sought for it. His cows, when they were feeding in a certain field where they required to be out all night, knew where the warmest part was, and came nightly to it; the field was well drained, but the most of it was a clayey bottom, and it was not to the hedge sides and hollows that the cows came at night, but to the most elevated part of the field; and that part was of a gravelly nature. The observation of the farmer and statement of the Professor, thus appears to harmonise. The Professor stated that the heat in the case of the dry soil entered and warmed it; in the moist soil, the heat was employed in evaporating moisture, and consequently keeping it cool.—*Peter Mackenzie.*

Inverness.—At the Annual General Meeting of this Society, the question, "What are the varieties of Oats best suited to the agricultural districts of Inverness-shire, and at what stages of ripening should the crops be reaped?" was discussed; and it was the general opinion, as summed up by the Chairman, that the Hoptoun and Sandy Oats are at present the varieties most in repute in this county—the former for the heavier and the latter for the lighter soils; that the Sandy Oat is superseding almost all the old varieties; and that recently the Hoptoun is, in its localities, giving way rather to the late Angus. Dr. Mackenzie, Kinellan, stated that, for some years back, he has almost exclusively reared the black Tartarian Oat, as one very prolific, much relished by horses, and one which meals well. The meeting was unanimously of opinion that the Oat crops should be cut about ten days before being fully ripe, not only to avoid the risk of shaking, and injury from wind and rain, but also because, when the grain is once fully perfected, the energy of the plant, instead of being thenceforward directed to the secretion of more farina, goes only to the protection of the seed, by increasing the thickness and toughness of the husk.—*Inverness Herald.*

Chepstow.—At the meeting on the 25th of March, the Member who was to bring forward a subject for discussion being unavoidably absent on business, Mr. T. Pride spoke on the best manner of draining land. He considered draining to be a matter of the first importance, and whoever delayed the process on land that required it was not only incurring a serious annual loss himself, but neglecting the performance of his duty to the community. He was convinced that it was only by long experience and closely observing the nature of the land to be operated upon, that any one would be competent, in the case of land wet owing to springs, to decide on the most effectual and economical method of removing the superfluous water. He confined his remarks to land that required parallel or thorough-draining, and gave his opinion of the best manner of effecting this desirable end. In the first place he was decidedly in favour of running the drains right up and down the fall, instead of what was called oblique or diagonal draining. He considered that the deposit from the water was much more likely to lodge in oblique drains, and consequently made them liable to stop the water and send it to the surface again. Where they were to be obtained he preferred stones to anything else for forming the drains. He used flattish stones at first, which are put in edgeways so as to form a channel for the water in the form of a triangle, with its base at the bottom, and then had the drains carefully filled up with broken stones, about two inches in diameter, to within twelve inches of the surface. He was laying his drains 18 to 20 feet apart, but in very stiff land he should not put them more than 15. He was now draining some land, 30 inches deep, on a small farm he had taken into his own hands expressly for that purpose, and in cutting the drains he found stones enough for the purpose. He paid 9*d.* for seven yards of drain, including cutting and filling; if the stones had to be carted of course it would cost him more, but at present this was the whole of the expense. He *should* recommend the drains to be from 30 inches to three feet deep; never less than the former. Mr. T. Perkins said he preferred diagonal draining, taking the main drain up the middle of the *fall*, and bringing the cross drains obliquely into it. He drained a piece of land with the fall eleven years ago, but did not find the remedy effectual. He had now cut other drains across, and completely dried the ground. He found all the drains open and running when they were cut through, but the land was not thoroughly drained by them. The first drains were only 20 inches deep, the others from two feet six inches to three feet. The system he followed was tile-draining.—A member stated that increasing the depth most probably caused the difference; and, had the first drains been deeper, he thought those across would have been unnecessary.—Mr. W. Baker said he once tried cross draining, which did not answer, but finding some benefit from the main drain, which went straight up the field, he put some more parallel with it and drained the piece of land effectually. He considered that draining with the *fall* was decidedly best.

In the course of a subsequent conversation on another subject, Mr. D. Baker said he intended to sow some cow Grass instead of red Clover, which a member advised him not to do on his land, because it was a shallow soil at a considerable elevation. He found it required good deep land to grow it to advantage, and then the produce was nearly equal to that of broad Clover, and the stem being solid, it did not cause hoven in cattle. He had tried it repeatedly on a shallow soil with very poor success.—*A. Hall, Hon. Sec.*

Reviews.

An Essay on the Growth and Management of Flax in Ireland, which obtained the Gold Medal of the Royal Dublin Society. By John Sproule, Author of a "Treatise of Agriculture." S. T. Machen, Westmoreland-street, Dublin.

WE have to direct the attention of our readers, in this day's Paper, to the first of a series of articles by Mr. Sproule, on Flax Culture; and we have great satisfaction

in doing so, after reading the pamphlet entitled above, for its author is evidently well qualified to teach upon that subject. It is a valuable practical treatise on the cultivation and manufacture of Flax, and enters most fully into detail on every necessary point.

Miscellaneous.

Adulteration of Manures. — Three different specimens of nitrate of soda, sold at 25*s.* per cwt., were submitted to analysis, when they were found to contain respectively 14, 25, and 26 per cent. of common salt! Now these specimens were purchased from extensive dealers in the article, and were contained in the bags in which it was imported, so that we have no reason for suspecting the honesty of the retailer; and it follows, therefore, that this shameful amount of adulteration must be effected prior to its being shipped for Britain. I would desire that you bear in mind, however, the *fact*, that the presence of common salt, even to this enormous extent, may be natural; but yet the imposition upon the British farmer is equally glaring, whichever be the case, as will be seen by the following statement regarding saltpetre. This article likewise contains common salt, though in much smaller quantities; but, in this instance, the fact is not attempted to be concealed. Every cargo is analysed at the India House before it is sold, and the per centage of salt marked upon it, and the amount of salt deducted from the lot purchased. For example, suppose the saltpetre contained 10 per cent. of salt, if a purchaser buys 100 cwt., he receives the 100, but only pays for 90. Here, therefore, there is no deception; but we would ask how it happens that the same is not done with nitrate of soda, and that three specimens containing from 14 to 26 per cent. of salt should all be sold at one and the same price? Why, if justice were done in this case, the specimen containing 26 per cent. should have sold at 22*s.* in place of 25*s.*, if that be the fair price for the lot containing 14 per cent.; and if, on the contrary, 25*s.* is the proper price for the pure article, those three lots should have sold respectively at 21*s.* 6*d.*, 18*s.* 9*d.*, and 18*s.* 6*d.* per cwt.*—*Dr. Madden, on the Advantages of Extended Chemical Analysis to Agriculture.*

Caution to Farmers.—On Thursday a lot of one and two-year old cattle belonging to Mr. Dumbell, 14 in number, were suddenly seized with illness while grazing in the meadow belonging to the Hills estate, situate at the foot of Lazy-hill, near this town (Douglas, Isle of Man), and in a few hours three of them died. Mr. T. Alston, an experienced farrier, was sent for with haste. On his arrival he instantly set about ascertaining the cause of sickness and consequent death. This he discovered by opening and examining the stomachs of the cattle that had first died, each of which was found to contain a quantity of the roots of common Hemlock. To save the 11 other animals, he immediately bled them, and administered pounded chalk and other ingredients in warm milk; and we are happy to say that he saved the whole of the remainder, 11 in number. It appears that the cause of the Hemlock roots coming within the reach of the animals originated in the drains throughout the meadow having lately been opened; and in turning up the earth, large quantities of the roots of this deadly poison, which abound in great quantities in one of the ditches, had been dug up, and thrown upon the surface. This should operate as a caution to farmers not to turn cattle into boggy pastures while the operation of clearing drains is being performed, as in such situations the presence of this poisonous root may almost always be suspected. — *Mona's Herald.*

Urate.—If the floors of stables or cow-sheds were strewed with common gypsum, they would lose all their offensive and injurious smell, and none of the Ammonia which forms could be lost, but would be retained in a condition serviceable as manure. This composition, swept from the stable-floor, nearly constitutes what is sold under the denomination of Urate. Manufacturers of this material state, that three or four cwt. of Urate form sufficient manure for an acre: a far more promising adventure for a practical farmer will be to go to some expense in saving his own liquid manure, and, after mixing it with burnt gypsum, to lay it abundantly upon his Corn-lands. For, in this way, he may use as much gypsum as will absorb the whole of the urine. Now, in the manufacture of Urate, the proportion of 10 lbs. is employed to every 7 gallons,—allowing the mixture, occasionally stirred, to stand some time pouring off the liquid, and with it nearly all its saline contents except the Ammonia. Urate, therefore, can never present all the virtues of the urine—100 lbs. of Urate containing no greater weight of saline and organic matter than 10 gallons of urine.—*Smith's Productive Farming.*

Indian Wheat.—The Wheat Committee of the Agricultural Society have reported that the question is one of the highest importance as affecting the interests of India, and recommend the Society to nominate a committee for the purpose of preparing memorials to the Board of Control and Court of Directors, urging the admission of corresponding advantage to grain from this country, as has already been conceded to that from Canada.—*Indian Mail*

* Messrs. Mark Fotheringill and Co., London, who deal extensively in nitrate of soda, inform me that they examine what they buy, and reject as "useless stuff" any specimen containing above 12 per cent.

Notices to Correspondents.

Bailey.—*W. P. T.*—It was advertised by Mr. Robt. Beman, of Donnington, near Stow, Gloucestershire.

Bokhara Clover.—*A. R. C.*—We have not seen it in any stage of its growth in which it could be useful for cattle. When very young it is a succulent plant, but it soon becomes woody.

Concrete Tiles.—*Subscriber.*—We do not know any work wholly on this subject; but you will find details connected with it in the Number of the "Farmers' Magazine" for August, 1842, and in the July Number of Stephens's "Book of the Farm" for that year.

Dibbling Swedes.—*W. P.* informs "W. S." that the method of transplanting Swedes which he recommends, was heartily recommended and fully detailed by the late William Cobbett, in his "Journal of a Year's Residence in the United States." Does "W. S." know whether Carrots, Beet, and Parsnips can be transplanted with success?

Drainage.—*T. T. Hawley.*—We have received none of the letters you refer to; and if you will favour us with their contents, they shall, as all applications do, receive our immediate attention.

Food of Plants.—*Rural Chemist.*—See Leading Article next week.

Gas-Water.—*Gonyn.*—It appears from your statement, that about equal weights of the gas liquor and sulphuric acid neutralise each other. If you are right, the liquor must be of extraordinary strength; every gallon must contain about 2 lbs. of ammonia. If you use 20 cubic yards of your compost per acre, put to every cubic yard of it one gallon of the neutralised liquor. You will thus apply 1½ cwt. of sulphate of ammonia per acre.

Grass.—*J. B. H.*—Your sheep-fed Grass land, other things being equal, is more likely to yield Hay than one that has been mown frequently. Potter's guano had better be applied in mixture with vegetable earth on Grass lands: you will thus be able to spread it more equally.

Guano.—*J. M'I.*—Guano is a good manure for land *out* of condition, whatever be the crop to be grown. It will be a useful manure for Flax.

Mortality among Cattle.—*a.*—We shall endeavour to meet your wish in the course of a Number or two.

Neapolitan Pigs.—*A. H.* is informed that Mr. France, of Hamhill, Worcester, has a herd of the pure breed.

Pigeon Dung.—*ἀμαυρὸς.*—Apply it to arable land, and plough it in at the rate of 10 bushels an acre, having first mixed that quantity with about a cart-load of vegetable earth.

Potter's Guano.—*Mudie.*—Drill the land up for Potatoes, and then having sown the guano, at the rate of two or three cwt. per acre, in the rows, mix it well with the earth, by means of a horse-hoe or otherwise, and plant the roots in the earth thus loosened and mixed, and cover up as usual.

Potatoes.—*Argus.*—There is no second-early Potato equal to Prince's Early.—*J. C.*

Salt.—*J. C.* can get from those who manufacture it from *salt springs*—the salt which burns on the pans—at a nominal price. Try 1 cwt. per acre. See Report of Bromsgrove Farmers' Club, next Number.

Salt and Lime.—*Archenfield.*—Dissolve 2 cwt. of salt in 80 gallons of water, and with this slake 20 bushels of quick lime; spread it abroad on a firm floor for a fortnight. It will probably deliquesce. Apply this quantity on an acre; mix it with plenty of mould before applying it on grass-land, and on arable-land plough it well in. Can any one give us their experience of this manure?

Soot and Salt.—*Anon.*—Apply it along the top of the rows before the Potato plants come through.

Superphosphate of Lime.—*A Subscriber.*—Six or eight bushels per acre of bones thus converted have been found equally efficacious with three quarters per acre in the ordinary condition.

Swedes.—*Young Farmer.*—You need not expect a crop on "*cold, wet, marshy*" land. It must be drained first.

Top-dressing for Oats.—*North.*—This depends on the soil. Nitrate of soda, sulphate of ammonia, at one cwt. per acre, or more probably guano at the rate of three cwt. per acre, will answer your purpose.

Top-dressing.—*A. V.*—Try nitrate of soda, 1 cwt. per acre, applied early in May. See Mr. Lawes's remarks in Leader. The same might be applied beneficially to Tares earlier. For Cow Cabbage next week. Parsnips are a better food than Beet for cows.

Trenching.—*H.*—By all means keep the top soil uppermost.

Whitfield.—*Vale of White Horse.*—Some of the sheep belonging to the Whitfield farm have been kept on other Grass lands the property of Lord Ducie, in the neighbourhood, during the summer. They have been paid for at the rate of 4*d.* and 6*d.* per head per week for tegs and ewes; and, on the other hand, cattle (2 years old and 3 years old oxen) belonging to the Earl of Ducie, have been kept on Whitfield farm during winter and spring, and they have paid for their keep (Swedes, Mangold Wurzel, and Straw) being half in yard and half in house, at the rate of 4*s.* per head per week. If these rates of payment were fair, then the fact that in settling accounts between the two farms there has always hitherto been a balance in favour of Whitfield, shows that a larger amount of stock might have been fed on that farm than was kept there. Mr. Morton's estimate of return from live stock has never yet been put to the test; the plan which he proposed to follow was not adopted, owing to circumstances which it is unnecessary to state here.

Worn out Land.—*An Old Farmer.*—Farm yard manure made by sheep or oxen fed on oilcake, roots, and straw, is the best material to apply. If you have not got it, or if haulage would be expensive, apply 3 or 4 cwt. of guano per acre, and mix it well with the soil. You will have to pare and burn the peaty turf; plough the land and harrow it to pieces, then apply the guano and harrow it in; cross plough, harrow repeatedly, roll, &c., and ridge up for Potatoes.

Miscellaneous.—*W. P., Taunton,* informs "A. H." that Mr. Clark, of Trinsbury Farm, near Romsey, Hants, has a herd of pure Neapolitan pigs.——And he informs "P. McKenzie" that "Spar" in Cornwall means Quartz.

*** As usual many communications have been received too late.

Markets.

SMITHFIELD, Monday, April 1.—Per stone of 8 lbs.

	s.	d.	s.	d.		s.	d.	s.	d.
Best Scots, Herefords, &c.	3	6	to 3	10	Best Downs & Half-breds	3	10	to 4	2
Best Short Horns	3	2	3	6	do. shorn	3	4	3	8
Second quality Beasts	2	10	3	2	Best Long-woods	3	2	4	0
Calves	4	0	4	8	do. shorn	3	0	3	4
Pigs	3	0	3	6	Ewes and second quality	3	0	3	4

Beasts, 2820; Sheep and Lambs, 27,140; Calves, 63; Pigs, 340.

A less demand for Beef and Mutton we do not remember for a very long time than has ruled here to day; it is greatly to be accounted for by the sudden setting in of warm weather, which invariably has this effect. Having also a considerable supply, the prices have suffered a decline of fully 2*d* per 8 lbs, and a very great many cannot be disposed of at that reduction; towards the close of the day several Beasts were sold at a little under our quotations—still, a very large number remain unsold, of both Beasts and Sheep, especially the latter. A great many of the best Downs did not make more than 4*s*, although some few choice ones made 4*s* 2*d*, and it was difficult to realise 4*s* for the best Long-wools. Ewes and plain Sheep were scarcely saleable. The Lamb trade presents an improving aspect, and several small good quality are sold at 7*s* per 8 lbs, large ones at from 5*s* 8*d* to 6*s* 8*d*. Veal is a very heavy trade, and but very few Calves realise our highest quotation. Pigs are also lower.

Friday, April 5.

This being Good Friday, the most interesting feature of to-day's market is the show of Lambs, and the trade in that article. This is considered the first day of the regular trade in Lamb. We have noticed a larger supply in former years; there is, however, sufficient to meet the demand—indeed, a few remain unsold; the very best are worth from 6*s* 8*d* to 7*s* per 8 lbs, and larger ones as 5*s* 8*d* to 6*s* 4*d*. In other kinds of stock very little is doing, and in what is sold we cannot notice any difference in price from Monday's quotations.

Beasts, 778, Sheep and Lambs, 6990; Calves, 316; Pigs, 220.

41, West Smithfield.

HOPS, Thursday, April 4.

There is no alteration in the Hop Market since last week.

Mid & East Kent Pocks	6	0	to 10	10	Sussex Pockets	6	6	to 7	8
Choice ditto	12	0	—	—	Choice ditto	6	12	—	—
Weald of Kent Pocks	6	0	6	15	Farnham	9	9	10	10
Choice ditto	7	0	—	—					

Patterson & Sons, Hop-Factors.

MARK LANE, Thursday, April 4.—Wheat sells at rather lower prices than on Monday. Free Foreign is a slow sale, and scarcely maintains that day's rates. In Bonded there is nothing doing.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk White	46	56	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire	50	57	White	—	—
Oats, Lincolnshire and Yorkshire Polands	15	23	Feed	16	24
—— Northumberland and Scotch	—	—	Potato	17	26
—— Irish	—	—	Feed	16	23	Potato	16	24
Barley, Malting and distilling 32s to 33s	Chevalier	32	35	Grind.	24	30
Malt, pale, ship				—	—	
—— Hertford and Essex				—	—	
Rye				—	—	
Beans, Mazagan, old and new 32 to 30	Tick	32	31	Harrow	25	32
—— Pigeon, Hollgmland 28 to 30	Winds.	30	30	Longpods	32	30
Peas, White 30 to 34	Maple	27	29	Grey	26	27

COVENT GARDEN, April 6.—Owing to the continued fine weather during the week, the market has been well supplied with most articles; and, generally speaking, there is not much alteration in their prices. Pine-apples are sufficient for the demand, and they are tolerably good in quality. Hothouse-Grapes are supplied in small quantities; they are offered at about 15*s.* per lb.; Portugals are plentiful. Good Apples are scarce; they have not altered in price since our last Report; the best dessert varieties are offered at about 28*s.* per bushel. Pears also continue to bring nearly the same prices as last week. Oranges are good, and very plentiful. Lemons are sufficient for the demand. Chesnuts are abundant, and are offered at last week's prices. Vegetables are, for the most part, plentiful, and they continue to improve in quality. Broccoli is good; it is offered at nearly the same price as last week. Savoys are now over for a season, and Brussels Sprouts are getting scarcer. Greens are still sufficient for the demand. Carrots and Turnips are abundant, and good in quality. Seakale and Asparagus are well supplied. French Beans are sufficient for the demand. Rhubarb of good quality is abundant. A few excellent Cucumbers are in the market; they are offered at nearly the same prices as last week. Strawberries are becoming more plentiful. Frame Potatoes bring about 3*s.* per lb. Among Cut Flowers are Erica Willmoreana, Euphorbia jacquiniflora, Gardenia radicans and florida, Acacias Azalcas, Camellias, Pelargoniums, Cinerarias, Fuchsias, Primulas, Lily of the Valley, and Roses.

FRUITS.

Pine Apple, per lb., 8*s* to 10*s*		Almonds, per peck, 6*s* to 7*s*	
Grapes, Portugal, per lb 1*s* to 4*s*		Sweet Almonds, per lb., 2*s* 6*d* to 3*s*	
Apples, des., p bush. 8*s* to 28*s*		Nuts, Spanish, per bushel, 16*s*	
— — Kitchen, p bus. 5*s* to 10*s*		— Brasil, 16*s*	
Pears, per half-sieve, 4*s* to 12*s*		— Hazel, 7*s* to 4*s*	
Oranges, per dozen, 9*d* to 2*s*		— Barcelona, 20*s* to 24*s*	
— per 100, 5*s* to 14*s*		— Cob, 12*s*	
Lemons, per doz. 1*s* to 3*s*		Chesnuts, per peck, 3*s* to 6*s*	
— per 100, 6*s* to 14*s*		Strawberries, 1*s.* 6*d* to 3*s* per oz.	

VEGETABLES.

Rhubarb, per bundle, 1*s* to 2*s* 6*d*		Spinach, per sieve, 1*s* 6*d* to 3*s*	
Broccoli, per bundle, 1*s* to 1*s* 6*d*		Leeks, per doz. bun., 3*d* to 6*d*	
White Broccoli per doz. from 3*s* to 6*s*		Garlic, per lb. 6*d* to 8*d*	
Brussels' Sprouts, p.h.-sv., 1*s* 6*d* to 2*s* 6*d*		Onions, 3*d* to 4*d* p. bch.,	
Red Cabbages per doz. 2*s* to 3*s*		— Large, per bushel, 1*s* 6*d* to 2*s*	
Sorrel, 1*s* to 1*s* 6*d* p. hf.-sv.		— Spanish, per doz., 1*s* 6*d* to 4*s*	
Asparagus, per 100, 2*s* to 12*s*		— pickling, p hf.-sv., 2*s* to 3*s*	
Seakale, per punnet, 9*d* to 2*s* 6*d*		Shallots, per lb., 4*d* to 8*d*	
French Beans, 1*s* 6*d* to 3*s* per 100		Lettuces, Cabb., p. score, 6*d* to 1*s*	
Autumn Potatoes, 3*d* to 6*d* per lb.		Celery, per bun., 6*d* to 2*s*	
Savoys, per doz. 1*s* 6*d* to 2*s*		Mushrooms, per pottle, 1*s* 6*d* to 2*s*	
Greens, per doz. 3*s* to 6*s*		Walnuts, per bushel, shelled, 12*s* to 20*s*	
Potatoes, per ton, 60*s* to 90*s*		Small Salads, per punnet, 2*d* to 3*d*	
— per cwt., 3*s* to 4*s*		Watercresses, per doz. sm. bun. 6*d* to 9*d*	
— per bushel, 1*s* 6*d* to 2*s*		Parsley, per doz. bunches, 3*s* to 6*s*	
— Kidney, p bush., 2*s* 6*d* to 3*s*		Tarragon, Green, per bun. 3*d* to 5*d*	
Turnips, per doz bunches, 1*s* 6*d* to 2*s*		Endive, per score, 1*s* 6*d* to 3*s*	
Turnip-tops, per bushel, 6*d* to 1*s*		Green Mint, 4*d* to 6*d* per bunch	
Red Beet, per doz., 6*d* to 1*s*		Marjoram, p. doz. bun. 1*s* 6*d* to 2*s*	
Horse Radish, per bundle, 1*s* to 6*s*		Chervil, per punnet, 6*d* to 3*d*	
Radishes, spring, 10*d* to 1*s* 3*d* p. punn.		Salsafy, per bundle, 1*s* to 1*s* 6*d*	
Carrots, p. doz. bun., 2*s* 6*d* to 5*s*		Scorzonera, per bundle, 1*s* to 1*s* 6*d*	
Cucumbers, 6*d* to 4*s* each			

SEEDS, April 4.

Canary per qr	52*s*	to 55*s*	Linseed Cakes, Foreign, p ton	5*l*	to 7*l*	10*s*
Carraway per cwt	56	60	Mustard, White p bush.	5*s*		6
Clover, Red, English	64	70	— Superfine „	6		8
— — Foreign	64	70	— Brown „	14		16
— White, English	96	105	Rapeseed, English, per last	21*l*		22*l*
— — Foreign	81	105	Rape Cakes per ton	—		—
Coriander	12	13	Saniolin	—		—
Hempseed per last	34	36	Tares, Eng. winter p bush.	3		5
Linseed per qr	—	—	— Foreign	3		5
— Baltic	—	—	Trefoil per cwt	—		—
— Cakes, Eng. per 1000	10*l* 5*s*	10*l* 10	Turnip (too variable for quotation).			

Kingsford and Lay.

HAY.—Per Load of 36 Trusses.

Smithfield, April 4.

Prime Upland Hay	70*s* to 77*s*	Clover	80*s* to 105*s*	Straw	26*s* to 32*s*
Interior	63	66			

John Cooper, Salesman.

Cumberland Market, April 4.

Superior Meadow Hay	75*s* to 77*s*	Superior Clover	100*s* to 105*s*	Straw	30*s* to 34*s*
Inferior	60	68	Inferior	90	94	

Joshua Baker, Hay Salesman.

Whitechapel, April 4.

Hay	80*s* to 86*s*	Clover	80*s* to 95*s*	Straw	26*s* to 32*s*
— fine	63	70	— fine	100	105	

POTATOES.—Southwark Waterside, April 1.

The weather since our last report has been very fine, which favoured the growth of vegetables, causing a depression in our market. Several samples moved off tardily, at terms of this day week; on some samples a reduction was obliged to be made before sales could be effected. The Farmers are still employed with sowing their spring crops. Several cargoes during the past week have been shipped from Perth to Goole for plants. Notwithstanding, there has been some arrivals from those parts, also from the Channel Islands and Devonshire, and from the inland of Sussex by Railway, and by barges from Kent and Essex. Although the supplies have been limited, they are fully equal to the demand, and the annexed quotations were barely maintained.

York Reds	—	—	80*s* to 90*s*	Kent and Essex Whites	60*s*	70*s*
Perth	—	—	80	85	— — Kidneys	80	85
Early Devons	—	—	—	—	Wisbeach Kidneys	—	—	90	—
Late Devons	—	—	—	—	90	— — Blues	70	75
Cornwall	—	—	—	—	— — Whites	65	70
Jersey and Guernsey Blues	75	80	Prince Regents and Shaws	65	75

WOOL.—British, Thursday, April 4.

We cannot quote any material alteration in our English Wool Market since our last report. Holders are firm for late quotations. Sales have been limited.

	per lb.				per lb.	
Long-wooled Wethers	1*s* 1*d*	to 1*s* 2*d*	Southdown Hoggitts	1*s* 1	to 1*s* 2*d*
Do. Hoggitts	1 1	1 2½	Kent Fleeces	1 3	1 3
Southdown Fleeces	1 0½	1 2			

James Pearse, Wool Broker.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 24*s* per ton	—	Phosphate of Ammonia, in fine powder, 24*s* per cwt.	65
Bleaching Powder, 28*s* per cwt.	—	Rags, 4*s* to —*s* per ton	—
Brimstone, 30*s* per ton	—	Rape Cake, 105*s* to —*s* per ton	—
Bone-dust, — and 17*s* per quarter	45	— Dust, 10*s* per ton	—
— Half-inch, 10*s* ditto	42	Sal Ammoniac, 50*s* per cwt.	—
— Calcined, 7*s* per cwt	—	Salt, Agricultural, 8*s* per ton	80
Carbonate of Ammonia, 65*s* per cwt	84	— clean, 30*s* per ton	80
— of Lime, 1*s* to 1*s* 6*d* per cwt	—	— Hide, 9*s* per ton	84
— of Soda, 30*s* to —*s* per cwt	—	Saltpetre (Nitrate of Potash) per cwt., duty paid	80 to 84
Chloride of Lime, 30*s* per cwt	—	Guano, Bolivian, 21*s*, in quant. 100*s* ton	—
Graves —*s* to —*s* per ton	—	— Potter's, 23*s* per ton	65
Gypsum (Sulphate of Lime), 50*s* to 55*s* per ton	80 to 84	Soap Ashes, —*s* per ton	—
Humphreys's Compound for Plants in Pots, 10*s* per doz	—	Soda Ash, 14*s* to —*s* per cwt.	65
— Farmers' Compound, 14*s* per cwt.	—	Sulphate of Ammonia, 36*s* to 38*s* per ton	70
Muriate of Ammonia, 34*s* per cwt.	70	— of Copper, 20*s* to —*s* p. cwt.	—
— Lime, —*s* to 6*s*	70	— of Magnesia (impure) 10*s* per cwt.	65
Nitrate of Soda, 16*s* to 16*s* 6*d* per cwt., duty paid	80	— of Magnesia (pure cryst.) 12*s* p. cwt.	65
Phosphate of Lime, 6*s* 9*d* p. cwt.	65	— of Potash, 16*s* per cwt.	—
— Super, 9*s* p. cwt.	65	— of Soda, 6*s* per cwt.	—
— of Ammonia, 1*s* crystals 8*s* 6*d* per lb	—	Sulphur, 14*s* per cwt.	—
		Sulphuric acid, London, 13*d* per lb.	—
		— Country made, 1*d* per lb.	—
		Whitney's Composition for Fowls and Lights, 2*s* and 4*s* per doz.	—

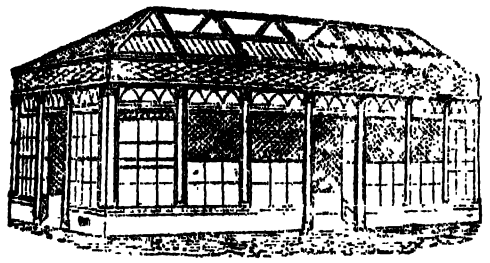
Expenses of shipping about 5*s* to 7*s* per ton, according to quantity.

Mark Fotheringill.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS & Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in ten hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's Seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane square.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melon-pits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

THE CONICAL HOT-WATER BOILERS, invented by J. ROGERS, Esq., may be obtained of any size from JOHN SHEWEN, Ironmonger, &c., Sevenoaks, Kent.

J. SHEWEN having had every opportunity afforded him by an extensive practice to bring this apparatus to perfection, begs to offer it as most efficient and economical; it may be seen at Messrs. Chandler & Sons' Nursery, Vauxhall; Messrs. Loddiges', Hackney; Messrs. Henderson's, Pine-apple-place, Messrs. Veitch & Son's, Exeter; Mr. Pontey's, Plymouth; the Royal Botanical Society's Gardens, Regent's Park; and at the Gardens of the Horticultural Society of London. Considerable improvements have been effected since last season, particulars of which are in course of preparation.

GUANO, PERUVIAN, &c.—The above Manures, also Potter's Guano, Nitrates of Soda and Potash, Gypsum, Bone-dust, and all other Chemical Manures of known value may be had of the undersigned, on the best terms, for cash.

Lists of Prices, with Synopsis of mode of use, on application to MARK FOTHERGILL, 40, Upper Thames-street, and 5, Railway Place, Mark-lane, London.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL; And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL. 47, Lime-street, April 5, 1844.

GUANO ON SALE BY THE IMPORTERS, JOHN BOYD & Co., Wellington Chambers, London bridge, Borough.

PERUVIAN GUANO, of first quality, and in any quantity, direct from the Bonded Stores. Also African GUANO and Nitrate of Soda.—Apply to H. ROUNTHWAITE and Co., 6, Cable-street, St. George's Crescent, Liverpool.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt. Phosphate of Potash, 15s. per cwt.
" Soda 12s. "
" Magnesia 9s. "
" Ammonia 1s. per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs. WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1s.

TO AGRICULTURISTS.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for Hire, for Excavations and Wells, Buildings heated by hot water, for Horticulture, and every variety of manufacturing purposes. The trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

ASPHALTUM in its pure state, with all the material and instruction how to prepare, or if required, the labour performed at a moderate charge.

TOBACCO ASHES.—A few Tons of Tobacco Ashes to be Sold at 3l. per ton, convenient for land or water carriage.—Apply to J. A. HUBBARD and SON, 20, Harp-lane, Tower-street. All Letters prepaid.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

NEW CHEMICAL MANURE.

HUMPHREYS'S FARMERS' COMPOUND, *stronger than Guano, and without its caustic rankness.* Samples on view at the Royal Polytechnic Institution. On Sale with the following Agents:—THOMAS GIBBS and Co., by appointment Seedsmen to the Royal Agricultural Society of England—corner of Half Moon-street, Piccadilly; COTTAM and HALLEN, Agricultural Repository, Winslow-street, Oxford-street; BURCHFIELD, Smithfield; BATT and RUTLEY, 412, Strand; CLARK, Bishopsgate-street; CHARLWOOD, Covent Garden; FLANAGAN and SON, Mansion-house-street; FOTHERGILL, 40, Upper Thames-street; HURST and MCMULLEN, Leadenhall-street; LOCKHART, Cheapside; WILLIAM and JOHN NOBLE, Fleet-street; W. J. NUTTING, Cheapside; WEDLAKE, Fenchurch-street; SAMUEL HOWARD, 38, Mark-lane; WHITE, Phœnix Wharf, Blackfriars; ALLEN, Shrewsbury; COPEMAN and Co., Wells, Norfolk; DICKSON and Co., Edinburgh; T. S. KING, Rochester; W. F. MOLESWORTH, Danbury; W. MADDOCK, Tunbridge Wells; W. E. RENDLE, Plymouth; THOMSON and Co., Macduff, near Banff; THOMAS WATKINSON, Market place, Manchester. Price 12s. per cwt.—DAVY, MACKMURDO, and Co., Manufacturing Chemists, 100, Upper Thames street, London.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c. are conducted by MR. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 5, A., Hawley Road, Kentish Town.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition, have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2s. 6d., quarts, 4s. 6d. each. One pint is sufficient to coat four Frames twice over, each Frame to be 5ft. by 3ft. 3in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

Agents wanted for London and the country.

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Conservatories and Greenhouses, being calculated, from its extreme hardness, to resist the wear incident to ordinary Plastering. For Floors it has a threefold advantage over Stone paving. 1st, in its lightness; one inch in thickness of KEENE'S CEMENT sufficing where 2 to 3 inch flagging would be employed. Next, in its appearance, combining, as it does, the hardness of stone with a uniform colour and even surface free from joints; and lastly, in economy, being one-third the price of Portland paving.

The most conclusive evidence can be given of the utility of KEENE'S CEMENT for these purposes by the Patentees and Manufacturers.—JOHN BAZLEY WHITE and SONS, Millbank-street, Westminster.

THE RIGHT OF PATENTING a valuable INVENTION for Ireland and Scotland for SALE. The Invention is an improved method of making Pipes, Tubes, and Tiles of Clay or other plastic substance, of any bore and any length. The uses to which they would be more particularly applied would be Draining, Sewerage, Conducting Water, Heating Greenhouses, Chimney-pots, &c. The Inventor reserves to himself the Patent for England. Any person interested in Draining in Ireland or Scotland would find the present opportunity worthy attention. Address, with real name and address, "DRAINER," at Mr. Scares', 44, High Holborn.

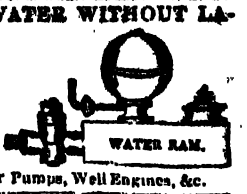
HORTICULTURAL IMPROVEMENT.

READ'S PATENT GARDEN SYRINGE, for the invention of which he has been honoured with the Silver Medal of the Royal Horticultural Society, as being the best Instrument ever offered to their notice. J. R. has IMPROVED the above by an additional branch to turn in every direction, so that water may be dispensed into all pots in Conservatories, in a perpendicular direction, resembling a gentle shower or dewfall, and in any quantity, from a pint to a table-spoonful. Likewise small Machines, Pails, Trucks, and Garden-Engines of every description, that will discharge water in a continuous powerful stream, made on the most improved principle, and may be worked with half the usual labour required for other engines now in use. The above are the best adapted for destroying insects, which make such deadly havoc on all choice Fruit-trees and Plants in Gardens, &c., which the Patentee (from 31 years' experience in Gardening, and 23 years in manufacturing and improving instruments) can safely warrant. May be seen and proved at 35, Regent Circus, Piccadilly.

N.B. None are genuine, except stamped with the words—"READ'S PATENT."

HENRY HUNT'S PATENT GARDEN POTS and STANDS, for effecting improved Drainage and Draught of Air. Patronised by Royalty and 30 Metropolitan and Provincial Horticultural Societies. Wholesale and Retail Depôt, 29, Queen's-row, Pimlico. The opinions of the Horticultural and Scientific Press, with priced Cards, forwarded on application, post-paid. Nurserymen in provincial towns appointed Agents.

RAMS FOR RAISING WATER WITHOUT LABOUR, WHERE A FALL CAN BE OBTAINED,



FOUNTAINS of every description. Specimens of the Fountain to be seen at the above address.

Also a Ram fixed on the premises. F. ROE, 70, Strand, London.

Every kind of Garden and other Pumps, Well Engines, &c.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2s. 6d. each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

ORNAMENTAL WIREWORK FOR THE GARDEN.
390, Oxford-street, London.

G. B. THOMPSON begs to tender his acknowledgments to the Nobility and Gentry who so kindly and liberally patronised his Manufacture of Ornamental Wirework, during the past years, and begs respectfully to remind them that with the opening season he has prepared an extensive assortment of Useful and Fancy Articles, suited to the Greenhouse and Flower-garden, and invites them to an inspection of his newly-arranged and well assorted stock of Flower-baskets, Trainers, Borders, Stands, Garden Arches, Temples, Vases, and durable Cast iron Garden Chairs and Seats, with his well-known and generally-approved Water-pot, fitted with finely-perforated roses, suited to the varying texture of different Plants; Hothouse Engines, Syringes, Fumigating Bellows, and all other Horticultural Tools and Implements of the most novel and improved manufacture. Game and Cattle Fences in variety.

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NEW ROSES

T. RIVERS, JUN., has now to offer healthy Plants, which will bloom this season of the new hybrid perpetual Rose, LA REINE. These are grafted in pits on stocks of the Rose Manetti, and may be planted out with safety towards the end of the month. This large and splendid Rose has bloomed at Sawbridgeworth, and is undoubtedly one of the finest autumnal Roses known; colour brilliant Rose, very slightly tinged with Lilac, in size it is larger than William Jesse, very double, most perfectly cupped, highly fragrant, and opens freely. Plants, 15*s* each, package included. Also a few plants of the new climbing Rose, Queen, or Beauty of the Prairies, a variety of Rose Rubifolia, from North America perfectly hardy. This has also bloomed with T. R. JUN., a colour bright Rosy red, flowers large as those of the Crimson Boursault very double and, unlike most climbing Roses, it has thick enduring petals. Plants, *7s. 6d* each. *Carriage paid to London.*

Other new Roses will be ready for delivery early in May. In consequence of the frequent complaints made of Roses in pots being crushed when packed in baskets, by heavy weights being placed on them in the railway trucks, they will in future be sent from the Sawbridgeworth Nursery, packed in wooden cases.—April 10, 1844.

SPLENDID NEW VERBENAS—BLUE QUEEN AND ZEUXIS.

W. MILLER, Ramsgate, will send out from his Nursery the above elegant Plants on the 22nd inst.

BLUE QUEEN.—The best Blue Verbena yet out (see Dr LINDLEY'S opinion in *Gardeners' Chronicle*, July 15, 1843, page 781). "M. B., your sweet-scented Seedling, No 105, is the best we have seen of its colour—bright blue lilac; the flower is large, smooth, glossy, and perfectly free from crumples." Price per plant 5*s*, post free.

ZEUXIS.—Beautiful, novel, rosy vermilion, with large light eye (see Dr. LINDLEY'S opinion in *Gardeners' Chronicle*, Sept. 30, page 661). "*J. Miller, your Seedling, named* Zeuxis, *is large and very brilliant.*" Price per plant 3*s* 6*d*., post free.

The usual allowance to the trade when three or more are taken at once.

W. M. has plants of rich coloured scarlet Geranium, "FIREBALL," now ready at 5*s*. each, post free. The Verbenas are figured in the "Florists' Journal" for March, 1844.

ORIGIN PANSIES.

J. HENCHMAN begs to inform cultivators of the PANSY that he is now sending out annually choice of the good seedling varieties, for 21*s*. the set. Also a few choice blooms at 12*s*. and 18*s*. per dozen.—Edmonton, April 1844.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER

NOW READY FOR SENDING OUT

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.,

10th 1844

YOUELL AND Co beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared inside this Paper of last week and will be found to contain such varieties only as are worthy of cultivation.

YOUELL & Co being the parties who first sent out per post, with safety these tribes of plants are desirous of calling attention to their advantageous method of executing orders namely that they will deliver them free of postage (on the receipt of a Post office order) to any part of the United Kingdom, upon the following terms —

12 Extra Fine varieties,	1*s*	the Selection left to Youell & Co
12 ditto ditto	2*s*	the Selection left to the Purchaser
50 Fine varieties	40*s*	the Selection left to Youell & Co
50 Extra Fine ditto	60*s*	the Selection left to the Purchaser

VERBENAS

12 Extra fine Varieties,	6*s*	the selection left to Youell & Co
12 Ditto	10*s*	the selection left to the purchaser

PANSIES [Sent postage free.]

12 Fine Show Varieties, by name	10*s* per dozen
12 Extra Fine ditto do	18*s* "

FLOWER SEEDS.—10 Packets of the choicest and newest kinds sent per post free for 6*s*

TWO NEW SEEDLING PICOTEES.—"LADY ALICE PELHAM" and "MRS. FERSON" 10*s* 6*d* per pair.—These two splendid Picotees were raised by the Rev. J. Burroughes of Ingworth Hall, Norfolk, and kindly presented by that gentleman to Messrs. YOUELL & Co. for particulars of which see their Advertisement in this Paper of last week.

FINEST CARNATIONS AND PICOTEES

YOUELL AND Co beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above highly esteemed Flowers which appeared on the Advertising Sheet of the 7th and 14th of this paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

		£	*s*	*d*
12 pair of good Show Sorts		1	1	0
12 ditto fine	ditto	1	10	0
25 ditto	ditto	3	0	0
12 ditto extra fine and very superior	ditto	2	10	0
25 ditto	ditto	5	0	0

The selection being left to YOUELL & Co

FASTOLFF RASPBERRY

For Particulars of this highly valuable and much esteemed RASPBERRY Patronised by her Most Gracious Majesty the QUEEN and most of the Nobility see their Advt of last week. Fine Canes are ready for delivery and can be sent with safety to any part of the United kingdom (on the receipt of a Post office order) upon the following terms —

		£	*s*	*d*
Packages containing 100 Canes		1	7	0
Do do	50 do	0	14	0
Do do	25 do	0	7	0

Package included

CAUTION.—YOUELL and Co deem it requisite to inform their Friends and the Public in general of the fact, that other varieties of Raspberries are being offered for sale under the title of "Last Off" and such having no pretensions whatever to the genuine variety they beg to state they cannot be held responsible unless it has been supplied from their Nursery, neither have they appointed any Agents for the sale of it.

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co, possessing the most extensive stock in the country of the above splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms.—Fine robust 4 year old plants, 8 to 10 inches high, 10*l* per 100, or 30*s* per dozen.

Fine Plants of CEDRUS DEODARA, 2ft to 2ft 8ins., 10*s* 6*d*. each.

Great Yarmouth Nursery, April 11, 1844.

N B All Orders above £2 will be delivered carriage free either to London or Hull, or goods added to compensate for the same.

WIVERY, FLORIST, Peckham, near London, begs most respectfully to offer after the 23rd inst. the following beautiful Seedling PETUNIAS, FUCHSIA, and VERBENA.

PETUNIAS

FAVOURITE.—Large, light, with a fine blue pencilled eye, 3*s* 6*d*.

MAGNA CHARTA.—Large, light, shaded with rose, and a very fine pencilled eye, 5*s*.

OVID.—Very large purple, and good shape, 2*s* 6*d*.

PRINCE ALBERT.—A very distinct, bright rose, 2*s* 6*d*.

RELIANCE.—Large light, with a beautiful pencilled eye, and good shape, 5*s*.

TOM PEP.—Small, light, with a beautiful rose edge, and striped eye, 5*s*.

FUCHSIA.

PRINCE OF PECKHAM.—Tube flesh coloured, sepals tipped with green, corolla scarlet, very distinct, first time bloom, 7*s*. 6*d*.

VERBENA.

PURPLE QUEEN.—Extra fine in colour and shape, 2*s*.

N.B.—A select Catalogue of Geraniums, Petunias, Verbenas, Calceolarias, Fuchsias, Pelargoniums, &c., may be had on application.

NEW AND CHOICE FUCHSIAS, VERBENAS, PETUNIAS, Sold by WARNER & WARNER, SEEDSMEN, 29, Cornhill London.

FUCHSIAS			
Smith's Albion	5*s*	0*d*	Eppe's Kentish Hero . 5*s* 0
" Cormet	7	6	" Duke of Wellington's 5 0
" Coccinea verna	5	0	" Winterii . 5 0
" Dactia . .	7	6	" Maria . . 5 0
" Expansa	7	6	" Florence . 5 0
" Gigantia	10	6	" Kentish Bride . 7 6
" Hector	5	0	" Emperor of China 5 0
" Incarnata	5	0	Standish's Attraction . 7 6
" Madeta	5	0	" President . 7 6
" Neptune	5	0	" Colossus . 7 6
" Reflexa	5	0	" Antagonist . 5 0
" Vesta	10	6	" Conductor . 5 0
Eppe's Bridegroom	5	0	" Candidate . 5 0
" Espartero .	7	6	Miller's Constellation . 12 6

PETUNIAS			
Miller's Punctata	7*s*	6*d*	Pearson's Formosa . 3 6*d*
Pearson's Ne plus Ultra	3	6	" Celestial . 2 6
" Splendidissima	3	6	" Splendida . 2 6

VERBENAS			
Pearson's Teucroides atro sanguinea	5*s*	0*d*	Pearson's Teucroides Princess Alice . 3*s* 6*d*
Pearson's Icon ides carlestina			Pearson's Splendissima 6
			The Many Supremes 6

WARNER & WARNER have sent out for their Friends they can supply the varieties of PETUNIAS, and VERBENAS now out of enumerable plants or collections. They have also all the new CINERARIAS, CALCEOLARIAS, GERANIUMS, DAHLIAS, &c., now in cultivation.

Catalogues of the above may be had. Plants of the new black Nemophila 9*d* each.—Agents for the late Mr Jeffreys's works.

MESSRS MARNOCK and MANLEY beg to inform their Friends and the Public, that their DESCRIPTIVE CATALOGUE OF FUCHSIAS, VERBENAS, CINERARIAS, DAHLIAS, &c., with a Treatise on the best and most successful Modes of Cultivation is now ready and may be had on application.

N.B.—Their beautiful Fuchsia Mr Rodgers's PRINCESS SOPHIA, is now ready to be sent out. Stock is not large, therefore early orders will prevent disappointment.

Messrs Hurst and Pulham are Agents for their Fuchsias and Cinerarias. Nursery, Hackney, April 12, 1844.

NEW HARDY ANNUAL

VISCARIA OCULATA DARK EYED VISCARIA.

T. AND J. BACKHOUSE, NURSERY AND SEEDSMEN, York, have the pleasure of offering to the Public the above new and beautiful Annual, which is figured at page 55, (No 10, of the "Botanical Register" for 1843. The blossoms are of a bright rose colour with a deep crimson eye, and changing to a pale purple. If it were very abundantly through the greater part the summer and autumn. It is a native of Algiers, and may be sown either in the open ground in spring, or raised in pots and planted out.

Packets *1s 6d* each, will be sent, on the receipt of a Post-office order, postage free, to any part of the Kingdom.

SEEDLING FUCHSIA CACTUS and FANCY HOLLYHOCK SEED, &c. LYNCOMBE VALE NURSERY BATH.

J. KITLEY begs to inform the Nobility, Gentry, and the Public that he has just sent out (Mr LOND his unequalled SEEDLING FUCHSIA (LORD) allowed by all who have seen it to be one of the largest and handsomest Fuchsias of the day; tube and sepals bright crimson, with darker corolla, and extremely free bloomer; fine compact habit; cannot fail to give satisfaction. 5*s* per plant.

J. K. has a few more plants of fine SEEDLING CACTUS (SPECIOSA SUPERBA), 10*s* 6*d* per plant. Also, good healthy plants of his SEEDLING PANSY (LYNCOMBE VALE RIVAL). This flower both for shape and decision of colour, is decidedly the best light PANSY out. 5*s* 6*d* per plant.

J. K. can recommend the HOLLYHOCK SEED with the greatest confidence having taken great care to select from his best full and very double Flowers of 1843 20 distinct varieties, named to colour which he will forward to any purchaser post-free on the receipt of a Post-office order for 5*s*. The whole of the above are now ready to send out.—Bath, April 12, 1844.

MAY'S "QUEEN OF MAY" CINERARIA.—The above new and beautiful Cineraria is now ready to be sent out by post, or otherwise, at 5*s 6d* each including case, prepaid. It is confidently recommended as being one of the most splendid novelties that has been offered in Cinerarias, the colour being a beautiful light sky blue; the flowers large and of good form; the plants compact shrubby, and dwarf in growth.

W. M. begs to state that his descriptive List of new, superb Calceolarias may be had on application to WILLIAM MAY, Hope Nursery, Bedale, Yorkshire.

W. M. also begs to intimate that he cannot supply any more Eucharidium grandiflorum.

PELARGONIUMS, AURICULAS, CARNATIONS, AND LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by APPOINTMENT FLORIST to HER MAJESTY, begs to inform the Nobility, Gentry, and Amateurs, that in consequence of the success he has had in the cultivation of the above Flowers at his new Garden (where he requests an inspection of the quality of his plants), he can offer them at very moderate prices. His Catalogue of PELARGONIUMS, AURICULAS, and NEW PLANTS is now ready, and will be forwarded by post on application. The Trade supplied.

CROSS LANES NURSERY, NEAR BEDALE, YORKSHIRE.

WM. JACKSON AND CO., beg to state that they can still supply the following Plants, strong and well established.—Veronica speciosa, 12*s*. 6*d*., Tropæolum azureum grandiflora, 12*s* 6*d* Clematis Stebbeldi, 12 6*d*, Clematis azurea grandiflora, 2*s* each; Fuchsias, 12 of the most approved and distinct varieties for 12*s*. 6*d*., including Eronicusis, Prince Albert, Staunwellensis, Prince of Wales, and their Seedling "Conqueror," a very fine variety, with long tube and sepals, of a fine bright scarlet, corolla crimson colour; an abundant bloomer.

A reference or remittance from unknown correspondents is respectfully solicited.

SLOUGH NURSERY, NEAR WINDSOR,
CHOICE SELECTION OF NEW DAHLIAS, 1844.

THOMAS BROWN directs attention to his beautiful SEEDLINGS, particularly that unrivalled light flower, "LADY ST. MAUR," the superiority of which over every other of its class is too well known to need further comment. Strong and healthy plants will be ready for delivery early in May.

AURANTIA (Spary's)—Orange buff; fine form and petal. A very desirable show flower; obtained numerous prizes; 3 ft. 10s 6d

ALEXANDER (Brown's)—Maroon and crimson mottled; full and constant, centre well up, and a very useful show flower; 5 ft. 7 6

DELIGHT (Brown's)—Cream, veined and tipped with purple; petal of fine substance and high centre; very distinct to any in cultivation; 4 ft. 7 6

DESIRABLE (Brown's)—Shaded buff, quite new in colour; a good show flower; 5 ft. 7 6

LADY ST. MAUR (Brown's)—White, delicately tipped with violet purple; very deep and full, high centre, forming a beautiful outline; the petals are round, and smooth at the edge; habit of Perpetual Grand: it is decidedly the finest light flower ever offered. It attracted great admiration at Windsor, and was universally acknowledged to be the finest flower in the Exhibition; 4 to 5 ft. 10 6

NUTWITH (Brown's)—Bright crimson; a fine open-cupped petal, and a good show flower; 4 ft. 7 6

RAPHAEL (Brown's)—Dark maroon, beautifully shaded with light crimson; superior petal, of excellent form: a very novel and striking variety, and will be an acquisition to any stand; 4 ft. 10 6

REMBRANDT (Brown's)—Dark purple, very round and double, rising well in the centre, and a constant show flower. It was very successfully exhibited; 3 to 4 ft. . 10 6

EMMA NOKE (Dowding's)—Blush white, good general form and centre: a good useful show flower; 4 ft. . 10 6

ESSEX BRIDE (Turville's)—Delicate peach lilac, of excellent petal and form; 5 ft. . . . . (*no discount*) 10 6

LADY ANTRONIUS (Spary's)—White and lilac, mottled; good form, constant, and very useful show flower; 3 ft. 10 6

NONPAREIL (Proctor's)—Ruby scarlet, of first-rate properties; extra show flower; 4 ft. . (*no discount*) 10 6

STANDARD OF PERFECTION (Keynes')—Crimson; of very superior form; 4 ft. . . . . (*no discount*) 10 6

SIR J. STEWART RICHARDSON (Union)—Brown ruby, great depth, and excellent show flower; 4 ft. (*no discount*) 10 6

T. B. has also Selections of fine Carnations, Picotees, and all other Florists' Flowers; Plants, Fruit trees, Shrubs, and general Nursery Stock.

A general Catalogue of Dahlias, with a List of Superb New Pansies, to be had on application.

LYCESTERIA FORMOSA.—One dozen fine healthy seedling plants of this perfectly hardy, fast-growing, and free flowering shrub, so justly recommended for undergrowth, and food for game, will be sent (post free) to any part of the kingdom upon the receipt of a Post-office order for 3*s*. 6*d*. It is of early habit, and must be planted immediately.—Direct to Mr. FENN, 24, Lamb's Conduit street, London.

WOODLANDS NURSERY, MARESFIELD, near Uckfield, Sussex.—New and Superb Fuchsias, Verbenas, Petunias, Cinerarias, Camellias, Greenhouse and Herbaceous Plants, Hardy Climbers, and Plants adapted for Bedding.

WM. WOOD AND SON beg to inform their Friends and Amateurs that a Catalogue of the above, together with a List of entirely New Roses, is now ready, and may be had GRATIS, on application at the Nursery, and in London, of Messrs. WARNER and WARNER, 28, Cornhill; Mr. JAMES CARTER, 238, High Holborn; and at Edinburgh, of Mr. ROBERT M'INTOSH, 13, Green Side-street.

KEYNES' STANDARD OF PERFECTION; DODD'S ORANGE SUPERB, DOWDING'S EMMA NOKE.—Nurserymen who can supply fine plants of these first-rate varieties, the first week in May, 1844.

Low and Co., Clapton	GARRAWAY, Bristol
HURST and M'MULLEN, London	MEAD, Lowisham
NUTTING, Cheapside, London	WHEELER, Warminster
GIBLING, Stowmarket	HEALE, Devizes
RENDLE, Plymouth	DRUMMOND, Bath
FOSTER, Stroud	GREADY, Bristol
MITCHELL, Maresfield, Sussex	MAULE and Co., Bristol
LODGE, Manchester	PINCE and Co., Exeter
APPLEBY, York	VEITCH and Co., Exeter
HARRISON, York	HANDASYDE, Edinburgh
EDWARD, York	MOUNTJOY, Ealing
WATKINSON, Manchester	WIDNALL, Cambridge
SPARY, Hungerford	BROWN and ATTWELL, Uxbridge
PONTEY, Plymouth	HODGES, Cheltenham
BROWN, Slough	

MESSRS. W. ROGERS & SON, FLORISTS, &c., beg to call particular attention to their splendid Seedling Fuchsias, Aquilegia and Pansy, which they are now prepared to send out by Post, or otherwise, viz.,

PER PLANT. *s. d.*	PER PLANT *s. d.*
Fuchsia, Uttoxeter Beauty 10 6	Aquilegia Grandiflora . . 5 0
,, ,, Rival . 10 6	Pansy, Lord Vernon . . 5 0
,, Pendula Elegans 5 0	

For Dr. LINDLEY'S opinion, description, &c. see *Gardeners' Chronicle*, March 16th, *Gardeners' Gazette*, March 23d.

The above will be found indispensable to those intending to compete for Prizes.

Fuchsia Exoniensis, 2*s*. 6*d*. to 3*s*. 6*d*.; do. Rogersiana, 2*s*. 6*d*., with all the best kinds out.

GERANIUMS.—Lyne's Sunrise, Duke of Cornwall, Hamlet; Gaskell's Lady Sale, do. Mars; Guinea's Pride of Surrey, do. Duchess of Sutherland, do. Lady Sale; Blackford's Thunderer, do. Jersey Maid; Wilson's Count d'Orsay; Hancock's Northern Beauty. The above 12 splendid kinds for 4*l*. 4*s*., or any 6 for 2*l*. 10*s*.

The above may be had by applying to Messrs. HURST and M'MULLEN, 6, Leadenhall-street, London.

W. R. & SONS' Catalogue of Dahlias, Pansies, Geraniums, Fuchsias, Cinerarias, Phloxes, &c. &c., may be had, prepaid, by a prepaid application.—Uttoxeter, Staffordshire, April 8, 1844.

IMPORTANT TO SEEDSMEN, &c.

GREAT FALL IN TURNIP SEEDS.

J. G. WAITE most respectfully begs to inform the Country Trade that a great fall has taken place in the price of TURNIP SEEDS, and that he can supply all sorts considerably below any other house. This his Catalogues will testify, which may be had on application at his Establishment, 3 and 4, Eyre-street, Hill, Hatton Garden, London.

J. G. W. has about 300 very fine RIPLEY SUCCESSION PINES, at 1*s*. 6*d*. per plant. Any person requiring 50 or 100 will be allowed a liberal discount.

N.B.—Cash, or reference in London, is expected from unknown correspondents.

SHADES FOR GREENHOUSES.

J. WEEKS & Co., ARCHITECTS, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

FLORIST TO HER MAJESTY THE QUEEN.

PETUNIA PUNCTATA.

W. MILLER refers the readers of the *Gardeners' Chronicle* to his full advertisement of this beautiful flower—just remarking that its *Strong, Dwarf habit*, and *Glossy Dark Green* foliage, contrasted with its lovely, large, spotted flowers (far surpassing any Petunia yet out), render it a desirable object for any greenhouse, and especially to all Exhibitors. He will commence sending out the plants on the 22d inst., at 7*s*. 6*d*. each, packed in strong tin cases, to insure their safety, to any part of the United Kingdom, post paid.

The following Nurserymen have ordered plants, and will be enabled to supply them true:—

Messrs. Henderson and Co., Pine-apple-place, London
Low and Co., Clapham, London
Wood and Son, Maresfield, Sussex
Marnock and Manley, Hackney
Veitch and Son, Exeter
Hancock and Son, Durham
Mountjoy and Son, Ealing
Sage and Son, Southampton
Jeyes and Co., Northampton
White and Son, Poole
Garraway, Mayes, & Co., Bristol
Fisher, Holmes, and Co., near Sheffield
Rogers and Son, Uttoxeter
Whitley and Osborn, Fulham
T. and J. Backhouse, York
W. Catleugh, Sloane-st., Chelsea
J. Benton, Birmingham
W. E. Rendle, Plymouth
S. Girling, Stowmarket
W. Foster, Stroud, Gloucestersh.
J. Hally, Blackheath, nr. London
R. Henbrey, Croydon
R. Cooper, Croydon
Ch. Van Gert, Antwerp
A. Stewart, Salthill, nr. Windsor
H. Silverlock, Chichester
— Bunney, Kingsland
E. Bartlett, Sidmouth
W. Bell, Thirsk, Yorkshire
T. Appleby, York
J. Carden, Westmoreland
H. Major, Leeds
R. Glendinning, Chiswick
— Harrison, Downham, Norfolk
R. Pettit, Bury St. Edmunds
J. Smith, Dalston
G. Smith, Hogsney-rd., Islington
Mrs. Blencore, Dawlish, Devonshire
J. Slater, Versailles, France
J. Backway, East Dereham, Norfolk
M. Brewer, London-road, Cambridge
H. Groom, Clapham
J. Edwards, New Bridge-street, York
W. Gregory, Cirencester
W. Day, Oxford
W. Masters, Canterbury
A. Milan, Doncaster
J. Ingram, Southampton
E. Perkins, Leamington
W. Ivery, Peckham, nr. London
J. Cook, London-rd., Worcester
E. Collaneby, Tunbridge Wells
E. J. Lowe, Leuton, Nottinghamshire
C. Noyes, near Manchester
W. Scirving, Liverpool
S. Wain, Blackley, Manchester
S. Parsons, Brighton
E. Henderson, Wellington-road, London
E. H. Fuller, Worthing
J. Webber, Merrish, near Crewkerne
J. Kitley, Bath
H. Pope, Birmingham
J. Griffan, Cowley, Exeter
G. Wheeler, Warminster, Wilts.
W. White, Swansea
W. Potts, Shrewsbury
T. Lyle, Isle of Man
W. Gausall, Hereford
T. Pullen, Midhurst
J. Charl, Peckham, Surrey
Rogers and Son, Southampton
Jeffries and Son, Ipswich
J. and H. Haycroft, Patrick-street, Cork
T. Davis and Son, Wavertree, near Liverpool
Metropolitan Union
J. Frazer, Lea Bridge-road
J. Chas. Otley, Peckham

LONDON AGENTS.

Messrs. Warner and Warner, 28, Cornhill
Hurst and M'Mullen, Leadenhall-street
Flanagan and Sons, Mansion House-street
Noble and Sons, Fleet-street
Mr. Kernan, Seedsman, Great Russell-street
Mr. Corstein, 19A, Davies-street, Berkeley-square

*** This List will appear again next week, with the addition of the Names of all Nurserymen and Florists who may order plants. The usual allowance to the trade when three or more are taken at once.—Providence Nursery, Ramsgate, April 10.

A LIST OF CHOICE FLOWER AND VEGETABLE SEEDS, SOLD BY

WARNER AND WARNER, SEEDSMEN, No. 28, Cornhill, London.

Achimenes rosea superba	2*s* 0*d*	Œnothera macrocarpa .	0*s* 6*d*
Aster, German, mixed .	0 6	Pentstemon gentianoides splendens . . .	0 6
Aster, collection of 24 varieties . . .	5 0	Petunia, from the most splendid named flowers	0 6
Balsam, fine double Camellia flowered, mixed	0 6	Phlox Drummondii, new large crimson . .	1 0
Balsam, 12 splendid vars.	3 6	Picotee, saved from the finest English named flowers, per packet .	1 0
Briza gracilis, new .	0 6	Pink, from fine-named flowers . . .	1 0
Calceolaria, saved from fine named vars. . .	1 0	Pink Indian dble. white, new . . .	0 6
Chorizema varium . .	1 0	Œmonia, 8 fine varieties by name . . .	2 6
Cineraria, from the most approved varieties .	0 6	Poppy, German, 12 distinct colours . . .	2 6
Cockscomb, giant scarlet	0 6	Potentilla Thomasii .	1 0
Dahlia, choice varieties	1 0	Primula, sinensis rubra fimbriata . . .	0 6
Delphinium mesoleucum	0 6	Salvia, varieties mixed	0 6
Eucharidium grandiflorum, new and beautiful .	2 6	Scabiosa elegans, fine .	1 0
Fuchsia, fine vars., mixed	1 0	Schizanthus . . .	0 6
Gaillardia Wellsiana, new	0 6	,, Hookerii, scarlet	0 6
Geranium, fine . .	1 0	Schizopetalum Walkerii,	0 6
Gesneria splendens .	1 0	Silene speciosa, new .	0 6
Gladiolus, new and choice	0 6	Stachys Downesii .	1 0
Hibiscus grandiflora .	0 6	Stocks, German, mixed	0 6
Hollyhocks, in 24 sorts	5 0	Stocks, new buff-colrd., ,, collection of 36 vars. splendid . . .	1 0
Hovea Celsii . .	1 0		5 0
Ipomœa rubra cœrulea .	1 0	Sweet William, new double	0 6
,, bona nox .	1 0	Tropœolum Jarratii .	1 0
Iris, new var. from the Cape	1 0	,, Canariense	0 6
Jacobea, double dark mulberry . . .	0 6	Verbena hybrid . .	0 6
Larkspur, German, 12 kinds . . .	3 0	Viscaria oculata, new .	2 6
Lilium Philadelphicum	1 0	Wallflower, chameleon .	0 6
,, superbum . .	0 3	Wallflower German dble. purple large-flowered, new . . .	1 0
Lisianthus Russellianus	2 6	Wallflower German dble. Mulberry, large flowered, new . . .	1 0
Lychnus fulgens . .	1 0	Zinnia elegans, 8 varieties	3 0
Lobelia ramosa, splendid	0 6		
Lupinus, German mixed	0 6		
Martynia fragrans .	1 0		
Mesembryanthemum tricolor albo, new .	1 0		
Mimulus Dunbamii, new, sweet-scented . .	0 6		
Nemophila discoidalis, new black . .	1 0		

Warner's Incomparable Large, late Marrow Peas, 2*s*. per quart. Potter's celebrated Liquid Guano, in quart bottles, 1*s*. 9*d*. each.

VEGETABLE.—Turnip-rooted Chervil, very delicious, 6*d*. per paper; Potatoes, new early American, a very superior kind, 3*s*. per peck.

W. and W. beg to refer their friends to their list of New and Choice Flower and Vegetable Seeds in *Harrison's Floricultural Cabinet*, and the *Gardeners' Chronicle* for April and the preceding months; also to inform them they have now ready a Choice Collection of Herbaceous and Rock Plants, including all the New Varieties.

A General Catalogue of Garden and Flower-seeds may be had, on application by post, as a single letter.

G. CHARLWOOD, 14, Tavistock-row, Covent-garden, begs to inform his numerous Friends and the Public in general, that his Catalogue of AMERICAN SEEDS is now ready for distribution. In it will be found Cones of Pinus Douglasii, 2*s*. per doz.; likewise, his new General Catalogue, containing all the newest and most improved Vegetable and Flower Seeds; together with an abridgment of the same, containing the more select and rare Sorts.

He has likewise received his annual importation of German Stocks, Asters, Wall-flowers, Carnations, &c. &c. List, with prices, will be found in the Abridgment.

G. C. having been many years in the habit of making mixtures of the different kinds of Grasses for Pasturage of all descriptions, can supply the same from 24*s*. to 35*s*. per Acre; or, in distinct Sorts, as may be desired. The finer Sorts, mixed for Lawns, at 1*s*. 6*d*. per lb. Also Lucerne, 1*s*. per lb. White Belgium Carrot, 1*s*. per lb. Altringham Carrot, 1*s*. per lb. Mangold Wurzel, 1*s*. per lb. Yellow and Red Globe Mangold, 1*s*. per lb. Laing's Improved Swedish Turnip, 1*s*. per lb. Skirving's do., do., do., 1*s*. per lb. All other Sorts of Agricultural Seeds equally low, and of genuine quality.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are particularly requested to state the nature of the soils. Mangold Wurzel, Carrot, and Turnip Seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3*s*. 6*d* per quart.

GRASS SEEDS.

HENRY D. CORMACK, SEEDSMAN, &c. begs to inform Agriculturists in general that they can be supplied with every variety of the Natural Grasses, adapted to the soil, properly apportioned and combined, from his Wholesale and Retail Seed Warehouse, 106, Dean's-gate, Manchester.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	
Garden Edging	Orange Tubs, Flower Boxes, &c

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to Public competition, at the Auction Mart, Bartholomew-lane, on Thursday, April 18th, 1844, at 12 o'clock, a splendid assortment of Dahlias, Geraniums in bloom, New Fuchsias, Verbenas, Pinks, Heartsease, and a variety of other Flowering Plants. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

SPLENDID COLLECTION OF PLANTS.

MESSRS. ENGLISH AND SON have the honour to announce for SALE the WHOLE COLLECTION of ORCHIDACEOUS and STOVE-PLANTS, &c. &c., from the extensive Conservatories of JOHN JARRETT, Esq., of Camerton Court, near Bath, which they will sell by Auction, at their Rooms, Milsom-street, on THURSDAY, MAY 16th, at Twelve o'clock, punctually.

In offering this rare and beautiful Collection the Auctioneers feel that any of the usual superlative expressions in its favour, however well merited, would be unnecessary—the highly-respected proprietor having long been well known as a connoisseur of the most liberal expenditure, and of the highest taste and judgment in his selection and culture, adding, by his extensive contributions, more highly than any to the interest of the Bath, Bristol, and other Horticultural Exhibitions, and the most successful in obtaining the first class prizes.

This genuine and splendid Collection comprises about 200 ORCHIDACEOUS PLANTS, including many very fine Specimens of CATTLEYA, IN VARIETY; several magnificent ARAUCARIAS EXCELSA; about 500 RARE STOVE PLANTS; and about 100 of the finest ERICAS, &c. &c. The whole will be found to be one of the very choicest assemblages of Floral varieties ever offered: public competition in the neighbourhood of Bath, there being not a production among them but would be an acceptable addition to the garden of any gentleman in the kingdom.

Catalogues are in preparation. Further particulars in next Advertisement.

TO GROWERS OF ORCHIDACEÆ.

MESSRS. J. C. and S. STEVENS beg to announce they will sell by Auction at their Great Room, 38, King-street, Covent-garden, on WEDNESDAY, April 24, at 12 o'clock, the valuable collection of ORCHIDACEOUS PLANTS, the property of Valentine Morris, Esq., of the Retreat, Battersea; amongst them will be found many fine examples of the rare varieties in the finest health: they number about 200 specimens. May be viewed the day prior and morning of Sale, and Catalogues had of the Gardener on the premises, and of Messrs. J. C. and S. STEVENS, 38, King-street, Covent-garden.

TO GENTLEMEN, FLORISTS AND OTHERS.—A FINE COLLECTION OF CARNATIONS, DAHLIAS, FUCHSIAS, GERANIUMS, AND MISCELLANEOUS PLANTS; THE PROPERTY OF MR. ALEXANDER, LAMB FARM, KINGSLAND.

TO BE SOLD BY AUCTION, by Mr. JAMES IZOD, at the Auction Mart, Bartholomew Lane, on Wednesday, April 17, 1844, at 12 for 1 precisely.—The *Dahlias* comprise Perpetual Grand, Blue Bonnet, Essex Triumph, Madeline, Antagonist, Mrs. Shelly, Victory of Sussex, &c. The *Fuchsias*—Exoniensis, Britannia, Cormackii, Champion, Defiance, Gem, Prince Albert, &c. *Carnations*—Martin's Splendid, Hepworth's True Briton, Chadwick's Brilliant, Bonnie Bess. *Geraniums*, in all the leading varieties. May be viewed the morning of sale. A Catalogue may be had at the Mart, and of Mr. Izod, 2, Crawford Court, Throgmorton Street, City.

PICOTEE CAPS.

TO BE SOLD, a few dozen at 9*s*. a dozen, quite new, and well made, painted green, and zinc tops. To be seen, after 5 o'clock, at Mr. CHAPMAN'S, near Holland Chapel, Brixton-road, near Kennington.

AN EXCELLENT FAMILY RESIDENCE DETACHED.

TO BE SOLD OR LET very reasonable, fit for immediate occupation, on an eminence, with the most extensive and beautiful views, and about 14 acres of superior Meadow, Garden, and Pleasure Grounds, Hot and Greenhouse, Stables, double Coach house, &c. &c., about 4 miles south of London. The House contains lofty Drawing-rooms, Dining-room, Library, double Entrance Hall, ample Bedrooms, Servants' Offices, &c. Apply to Messrs. WINSTANLEY, Paternoster-row; or Messrs. BARROW & CULLEN, 99, Bloomsbury-square.

TO BE SOLD.—A HIGHLAND COW.—A West Highland Cow, of the purest Argyleshire breed.—For address, apply (if by letter post paid) to B., Mr. Briggs, 27, Piccadilly.

UNIVERSITY COLLEGE, LONDON. — ELEMENTARY COURSE OF BOTANY.—Professor Lindley will commence a Course of Lectures on Botany to a Junior class, on Tuesday, April 16.

"Summer."—The distinctions between the principal Natural classes and orders of plants belonging to the Flora of Europe. The Course is adapted for persons commencing the study of Botany. Fee 2*l*.

The Course to the Senior Class will commence early in May. Further particulars may be obtained at the Office of the College.

P. B. Carey, A.M., Dean of the Faculty of Arts.
Thomas Graham, Dean of the Faculty of Medicine.
Charles C. Atkinson, Secretary to the Council.
April 1, 1844.

The Gardeners' Chronicle.

SATURDAY, APRIL 13, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Tuesday, April 16	Horticultural	. .	3 P.M.
	Linnean	. .	8 P.M.
Wednesday 17	Society of Arts	. .	8 P.M.
	Microscopical	. .	8 P.M.

[Friday, April the 19th, Royal Institution, Mr. E. Solly.—"On the Chemistry of Vegetation, and its Application to Agriculture."]

Now that the world has been sufficiently misled by assertions, speculations, or crotchets, and that money enough has been spent in looking for improvements blindfold, the value of well-conducted experiments is beginning to be felt, and the importance of theory in suggesting them to be recognised. We do, indeed, sometimes hear even now of a man's trying to do something new, merely for the sake of trying; and cases, doubtless, occur where chance, rather than reason, is looked to; but such instances are few, and not worth notice. Good experiments, wisely planned, skilfully conducted, and carefully worked out, with the strictest attention to the results, are now regarded as the sheet-anchor of improvement, in the all-important art of cultivation. The value of such men as Hales and Knight is felt, and none but blockheads sneer at men for spending their time in experiments, or ridicule them because they fail. Success is only to be obtained by means of failure: if it were otherwise, experiments would not be wanted.

Great Britain is now becoming one great scene of such exertions. Everybody interested in Gardening and Farming is opening a little campaign of his own, and it is to be hoped that, by the autumn, our letters will give us intelligence of a good many strong places taken, and permanently occupied. Our war may be less exciting than that of Algiers, but it will be as glorious.

It is, of course, to public establishments that the public looks for the initiative, as they call it, in these matters; and the Garden of the Horticultural Society is one, in particular, in which they are to be expected. The last Part of the Transactions of the Society contains the details of some of these experimental inquiries; a report on others is in progress; and, in the meanwhile, the Garden will this season become the scene of new operations. In order that the public may know what to inquire about at the Garden, or that those who wish to try the same experiments for themselves may do so, we have obtained permission to mention in our columns, from time to time, the principal trials that are in progress.

The great experiment of the season will be an examination of the results obtained by Mr. Campbell and others (see p. 57), by soaking seeds in various chemical solutions. For this purpose Mr. Edward Solly has selected a number of the most important common seeds, which have been sown in similar soil, after having been steeped in various saline solutions. Some of the seeds were sown without any preparation, some were steeped in pure water alone, whilst the remainder were steeped in solutions of different salts. These experiments will show what effect the various steeps have on the germination of the seeds, and also to what extent they influence the subsequent growth of the plants; and thus it is hoped that the conflicting statements respecting the action of steeps will be fairly examined. Mr. Solly's experiments on Wheat, which excited so much interest last year, are again repeated on the same ground. Each plot of Wheat is manured with the same simple manure as was applied last year; thus a fairer and more correct result may be anticipated, as the soil having been to a certain extent exhausted or weakened by last year's crop is in a better state to exhibit the effects of each individual manure, and it will be seen whether simple saline substances will maintain the fertility of land year after year, if annually repeated. Ground on which Potatoes were grown last year with saline manures will this year be cropped with Barley, in order to ascertain the influence which those substances applied last year to the Potato have had on the soil, and how far the Potato-crop exhausted it.

In the Arboretum superphosphate of lime has been employed upon Grass as a top-dressing, and upon trees and shrubs, in places that are greatly run out. This substance has been administered in the proportions of one or two ounces to a plant when removed, according to the size, and it has also been dug into the borders at about the same rate.

A collection of crimson early-flowering hybrid Rhododendrons has been planted at the back of a north wall, with a view to ascertaining whether by thus retarding their spring growth they may not become much hardier than they now are.

Some very singular and unexpected results were last year obtained, by increasing the daily rate of growth of plants in a hothouse, as has been reported in the last part of the Transactions. In order to ascertain how far the same results are to be expected from plants growing in the open air, the following trial is to be made:—A Vine, a Fig, a Sweet Willow, plants experimented with last season, and, in addition, a Jerusalem Artichoke and Scarlet Runner have been planted in rich soil in front of one of the Vineries. When fairly started it is intended to register their respective growths during three equal portions of the 24 hours, the observations being made at 4. A.M., 12 noon, and 8 P.M.

Calico screens, prepared with Whitney's composition, have been employed in front of Wall-trees for protecting the blossoms.

As manure for Onion crops, Charcoal-dust has been applied at the rate of 1½ peck per rod; superphosphate of lime, at 5 lbs. per rod; Potter's guano at 3 lbs. per rod; soot 3 lbs. per rod; and a mixture of 1 of salt and two of soot, in rather less quantity than that of the preceding application.

A Vine border has been covered with a roof of black asphalte sheeting, with a view to determine whether, by thus keeping off cold rain on the one hand, and absorbing heat on the other, the Vines will be maintained in a more steady rate of growth. This is also done for the purpose of ascertaining how far such a material can be substituted for hot stable-dung, as employed for the same purpose by Mr. Roberts and others.

It is a well-known fact that the Diseases of Plants, like those of animals, are occasionally epidemic, prevailing over the vegetation of large districts; and the question has been often asked—Are they *contagious* or *infectious?*—Are they propagated by matter engendered in one individual and communicated to another? We shall endeavour to answer these questions; and we think that the conclusion must be arrived at, from the evidence before us, that the diseases of plants may be, like those of animals, produced by contagion.

Amongst animals, diseases are engendered by the application of organic matter in three forms:—1st, that of animals, as in the case of the itch-mite, rot-worm, and the various forms of epizoa and entozoa; 2d, that of vegetables, as in the fungi of scald-head, the confervæ of impetigo, and other cutaneous diseases; 3d, that of organic cells, which do not give evidences of the possession of a specific animal or vegetable life, as in the case of small-pox, measles, scarlet fever, typhus fever, &c.; and it is these diseases which are most frequently epidemic.

The same agents are capable of producing diseases in vegetables. The attacks of the aphis, the scolytus, and other insects, are well known as producing extensive destruction of herbs and trees over large districts; and the most frequent pestilences that desolate the cultivated plants of our fields are produced by various forms of fungi. The agency of fungi is so great in producing blights, that some writers have been inclined to attribute all the diseases of the vegetable kingdom, not produced by insects, to this cause; and the peculiar characters which the cells of plants assume under disease have been named as though they were so many species of fungi. We are indebted to Unger, a German botanist, for having pointed out this error, and the real source of the supposed forms of fungi. There is not, however, any doubt that the greater number of the most destructive pests of our fields—as those known by the names of smut, brand, mildew, rust, &c.—are produced by the introduction of the seeds of fungi into the tissues of the affected plants. With the history and nature of these, we are happy to say we shall be able to make the readers of the *Gardeners' Chronicle* acquainted, through the able pen of the Rev. Mr. Berkeley.

These cryptogamic diseases of plants must be regarded as contagious, since they are produced by the contact of one portion of organic matter with another. But the diseased cells of a vegetable are capable of communicating their diseased action to healthy cells, just as the cells from an animal affected with small-pox are capable of giving that disease to another. If a healthy plant of Cactus be inoculated with some of the fluid from a plant affected with *moist gangrene*, diseased action will immediately commence, and extend more or less rapidly according to the condition of the plant thus inoculated; and *this* is the case with some other forms of vegetable disease. The kind of action thus established is analogous to that which occurs when a small quantity of ferment is introduced into a saccharine fluid, the consequence being the impartation of a new character to the particles of the fluid, and an entire change in the relation of its chemical constituents. In order that diseases may be thus produced, it is not necessary that the contagious matter be conveyed from one plant to another in a tangible form, but the diseased cells may be conveyed through the medium of the air, in the same way as the sporules of fungi which produce blights.

In treating of contagious diseases, or those produced by animals and plants, most writers have paid almost exclusive attention to the agent producing the disease, not taking into consideration the condition of the plant attacked. In human beings it is well known that only a small proportion of persons exposed to the influence of contagion will take the disease that it is calculated to produce. There is, in fact, in both animals and plants a condition of the tissues of the individual, brought on by circumstances, which favours the production of disease, and it is alone in our power over this condition that we can expect to control the visitation and destruction of epidemic diseases. That such a condition of plants exists is, we think, proved by the fact that epidemic diseases arising from the attacks of insects and fungi do not occur in the same districts in following years, although there can be no doubt that there are more of the seeds of disease,—as the ova of insects, the seeds of fungi, &c., in the vicinity of crops, in the year following an attack of the disease, than in years either previous or subsequent to the attack. We think, then, that there is reason to conclude that there are constantly in the atmosphere germs which are capable of producing disease in a plant, provided the plant gets into a condition to be attacked.

The circumstances that would produce such a condition of a plant as to render it liable to the development of epidemic diseases, are of a general nature. The state of the atmosphere in relation to moisture, the prevalence of unseasonable, hot or cold weather, the amount of light, and probably the electrical condition of the air and earth, are the circumstances which act on plants generally, and which may produce a state in which insects, fungi, or organic germs, may generate disease.

A more limited cause of predisposition to contagious disease is the natural decay of a plant or parts of a plant. Thus we find that the leaves are more exposed to the attacks of fungi just before the fall than at any other time. The trunk and branches of a tree become most frequently gangrenous when they have attained maturity. Soft fruits—as Apples, Pears, Oranges, Melons, Grapes, &c.—are more exposed to the attacks of disease the riper they get. Ripe fruit is already entering into a state of decay, and this process is hastened by the introduction of the seeds of fungi or the cells of diseased tissue.

Can the epidemic diseases of plants be averted? We think in some cases they may, and in others very much mitigated. We cannot control the sun and the wind, nor prevent electrical accumulations and escapes; but we may act in anticipation of their influence, and, if we cannot altogether prevent the occurrence of epidemic diseases among plants, we may do much to prevent their destructive consequences. Plants which have the most perfect health will always withstand depressing or exciting influences best, and the most carefully cultivated farms and gardens will always be those which, in the long run, will suffer least from blights of any kind. It is not our object here to point out the means of keeping plants in a healthy state; but we would say to farmers and gardeners—Take all care that your plants are healthy; be careful of stimulating them with heat, light, water, or manures; be equally careful of depriving them of a sufficient quantity of these things; and guard against poisoning them by noxious gases or improper manures. The influence of particular varieties of plants, and the age of them, in producing disease, we shall discuss in a separate article.—*L. E.*

FUCHSIAS.

(*Continued from page* 212.)

The last Paper recommended young plants which are found in a defective state of bottom-drainage, or in too retentive a soil, to be first excited to a healthy circulation of moisture, and then to be removed to 48 and 32 pots, or larger in proportion to their vigour. Well established plants in small 60s, of the present year's growth, may be removed to 24s, to be therein established prior to receiving a larger or final shift.

A difference of opinion exists as to the fitness of peat for Fuchsias. In the Natural Order, Onagraceæ, to which the genus belongs, it is found, in connexion with other genera characterised by requiring loam principally for their growth. Judging from those plants, to the cultivation of which peat is essential, such as Heaths, Epacrises, Pulteneas, Dillwynias, &c., it will be found that the habits and structure of the Fuchsia are very opposite. Therefore loam, with its usual accompaniments of leaf-mould or decomposed manure, may be considered as the most natural material for the cultivation of Fuchsias in pots. The fitness of peat depends upon the conditions to which their growth is subject, and will be alluded to hereafter.

That the perfect condition of this genus depends upon a partial exclusion of intense sun-light, must be known to all who have experience in its culture under artificial means. If a plant is placed in the open ground where it is exposed to intense light for only half the day, its foliage and flowers will be much more perfect and healthy than when they are exposed to the unintermitting glare of a summer's sun. Again, place two plants under equal conditions of exposure to intense sun-light, and give one a screen for a few hours each day, or grant it but the boon of a gentle syringing morning and evening, when sultry, and in this, as in the former case, the benefit of a partial shade and cool atmosphere will be sufficiently obvious. The genus, in fact, consists of beautiful under-shrubs, in their native country occupying at one time the fore-ground of lofty and luxuriant vegetation, and at another gracing shady recesses and streams.

Though the general habit of this favourite plant is such as to enable it to withstand exposure better than many others, it is only on condition that the supply of moisture is equal to its rapid absorption. When properly treated, few plants better deserve the character of "gross feeders." The essential conditions required for its "perfection of beauty" are heat, shade, and moisture. It is also capable, to a great extent, of assimilating food from materials in a gross and partially-decomposed state.

Bottom-heat is not essential further than as a means of maintaining a uniform and humid atmosphere. The period from which the present paper dates (March) is one which all who possess a Vinery or forcing-house may render convenient for its earliest growth. Where the communication of heat interferes with a maintenance of the necessary moisture, by the pipes or flue being too near the stage upon which the plants are placed, the following means are efficient in this and all similar cases. Where occasional excessive humidity is required for the young growth of plants, a platform of trellis-work is preferable to one of slate or stone. Fill up the interstices of the trellis-work with Moss (wedged in longitudinally), and over the entire surface add a heavy layer of the same material (the latter having been repeatedly immersed in boiling water, or heavily watered, in order to destroy slugs, &c.); over this place inverted pots or pans, upon which the plants are placed, their elevation being in proportion to the absence of light in front, or its distance above.

If it is necessary to raise the material, place bricks flat-ways at each end across the platform, to the elevation wished for, and add a bead, or curb, on the side next the path; then fill up with Moss, as before; and, in order to give a neat appearance, finish with a surface of coarse river sand or coarse gravel. By watering the surface of these materials an atmosphere will be maintained sufficiently humid for Fuchsias, Calceolarias, Lobelias, &c. &c. to luxuriate in during the early spring months, and capable of counteracting the injurious effect of dry, intense heat.
—*William Wood, Pine Apple-place.*

(To be continued).

ON THE CULTIVATION OF THE FIG.

In compliance with the request of several of my friends, I publish my mode of managing the Fig, for the benefit of amateurs and young beginners; and if the following simple rules are strictly attended to, I am confident that the result must be abundance of delicious fruit with them, as it has been with me here, for the last fourteen years, where there is a good Fig-house, and many plants in pots.

The Fig-wall here is not extensive; but I will commence with it, as it is of greatest importance to the amateur, and those who have little or no glass. I have tried several aspects for the Fig, but I find the south-east to be the best. I have likewise tried several sorts, but, finding them all inferior to the Nerii, I have discarded all others from the open wall. The best soil for this fruit is sandy maiden loam and turf mixed together, without manure of any kind, over-luxuriance being a great evil in their culture. I would advise all who are about to plant a Fig-wall, to form the borders about three feet wide and three feet deep, having a good drainage of any rough material. At the front of this a wall four inches and a half thick, running parallel with the other, should be brought up to within two inches of the surface, the intervening space being walled across, so that each tree may have its own division. This prevents over luxuriance, and causes them to fruit more freely. Any old trees that are growing strong and that do not bear well, might have their roots pruned back, in autumn, and walled in as above described. By doing this early, it would afford the tree time to provide itself with new feeders; and by opening a trench in the front of the wall, about the end of March or beginning of April, and applying a pretty brisk lining of leaves and long litter for a few weeks, it would greatly assist the crop for that season, and establish the trees for the following. Water occasionally with soft water, and after the fruit has attained three-fourths its size, two or three good waterings of liquid manure will assist materially in bringing the fruit to a larger size.

With regard to training, it is of minor importance; but as most people are desirous of having a uniform system, the accompanying figure represents a fine tree of the Nerii; the other exhibits a mode of training equally suitable for the Fig against a wall. The walls here are not flued, and consequently the trees derive no assistance from any but solar heat. My system of pruning is merely to thin the branches where they are too thick, and to admit plenty of light and air. The points of any branches that indicate too luxuriant a growth, are pinched out. The tree will show how young bearing wood is procured when the branches get too long, or begin to have a naked appearance. What I use for covering the Fig in winter is a double thickness of old mats, with a little mulching; a wide coping on the wall is very essential, and a canvas covering drawn over them at night in the early part of their growth is of great benefit to them. If it is desirable to increase the stock, if cuttings of well-ripened wood are taken off in spring, and potted singly in small pots, plunging them in a warm Cucumber-frame, and re-potting them two or three times, they will attain a large size in one summer. With these cuttings, as with the trees at all ages, bottom-heat and water is everything.

Fig. 1.

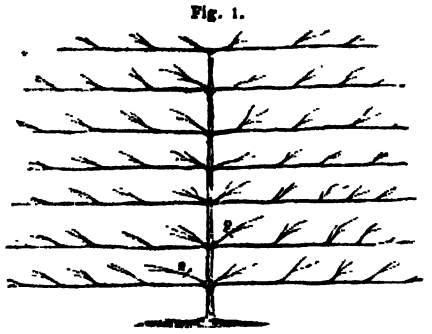


Fig. 3.

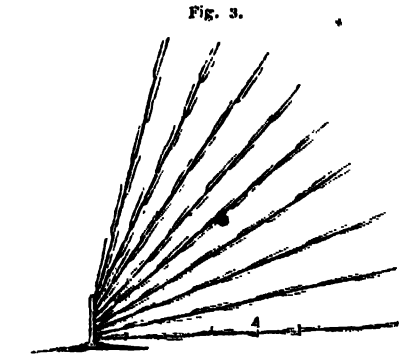


Fig. 1 is taken from a fine tree of Nerii, at Hewell. 2 shows where the long branches are cut back to produce young wood.
Fig. 3 is taken from a fine tree that I had the care of many years since, which looked remarkably well when growing in summer. 4 merely shows where the laterals are tied to the old wood.

The Fig-house—At this place is a structure entirely devoted to the growth of the Fig; it is 33 feet long, 14 feet wide, and 11 feet high at the back, which is trellised with wire, two inches from the wall. The trees on this wall are all fan-trained; the roots are walled in, as recommended for the open wall, excepting that the spaces are narrower, being only two feet wide, and two and a half deep; the path leading through the house rests on this partition wall. Between this path and the front is a border for small standards and circular-trained trees, ranging from three to five feet high; these are all walled in with rough stones, for the same purpose as already stated; the sorts in this house are the Nerii, brown Ischia, large white Genoa, and one called Kennedy's Fig, but the greater part is the Nerii. I generally prune them in the latter part of February, but this is a very trifling operation where they have been properly attended to in summer, being only to cut out here and there a superfluous shoot, or to shorten one back to any naked or unfurnished part, in order to procure a supply of young shoots. I then have the whole forked over between the trees, giving them a good watering with pure water. After this is done small fires are lighted, keeping the temperature at 50° Fahr., and syringing morning and evening with tepid water. Air is given plentifully in fine weather, and when the fruit begins to grow, the temperature is raised to 55°, then to 60°, and so on progressively, about the same as for Vines. For the first six or seven weeks water is given only in such quantity as to keep the soil moderately moist, but afterwards more freely.

When the fruit is about half grown, I commence watering freely every morning, and generally about twice a week with liquid manure, which I find of great service. As soon as the young shoots have attained the length of four or five inches their points are pinched out; this shoot is what we call the "second crop wood" for the latter part of summer, or autumn, according as the forcing was commenced early or late. During the growth of the second crop of fruit the tree produces a second shoot, from three to six inches long, which, when properly ripened, contains the crop in the embryo state through the winter for the following spring. A short time before the first crop of fruit is ripe, the watering overhead is discontinued, and abundance of air is given; when the Nerii begins to ripen, the sugar will drop from the fruit down the leaves like honey; in short, the fruit of the first crop has considerable resemblance to small bladders of honey. As soon as practicable, the watering overhead is again resumed in every part of the house where the fruit is not approaching maturity. The succession of fruit in this house generally lasts about four months. The winter management here is merely to keep the borders moderately dry, and to prevent frost from entering. Where houses are about to be heated with hot water, above all things have a pipe to run under the path at the back in a sort of gutter; the pipe may be laid five or six inches under the level of the border; this has a very beneficial effect on the Fig, even under Vines; with this they bear most abundantly, and with great certainty. At Sir H. H. Goodrich's, at Studley Castle, two Vineries were planted at the back, as above described; and, last year having several opportunities of seeing them, I was much pleased with the abundant crops of fine fruit they produced; and Mr. Dytch, the gardener, informed me that these two houses had supplied them well all the summer and autumn.

Culture of Figs in Pots.—Those who wish to force Figs in pots should have their plants examined as early in the autumn, or winter, as possible; and those plants that have got their roots much matted together should have them reduced and potted in sweet maiden loam, ready for the spring forcing in January or February, as they may be wanted. The pots should be plunged in a half-spent tan or leaf bed, either in a pit or forcing-house. If neither of these can be had, prepare a small bed of leaves and manure, and place a deep frame over it, plunging the plants to such a depth as to enable the roots to have 8° or 10° more heat than the tops. By doing this the roots are put in action first, which causes the embryo fruit to come forth in such a strong, healthy manner as will ensure a good crop after the fruit is fairly shown; the plants may then be removed to any forcing-house where they can have plenty of light and air,—if they can be plunged in gentle heat so much the better. It should always be borne in mind that the Fig, in a growing state, is almost an aquatic, therefore little danger is to be apprehended from over watering, but serious mischief may arise from not attending to this; for, if ever the soil gets thoroughly dry when the fruit is far advanced, some evil will be sure to result from it.—*I. Markham, Hewell Gardens.*

ON THE CULTIVATION OF GRAPES IN POTS.

(Continued from page 213.)

The next consideration is the time when you wish your Grapes to ripen; this being ascertained, it is easily known when forcing ought to commence. It may be stated that Vines under the above-mentioned treatment will be ready for forcing early in November, and consequently will ripen their crop by the end of March. As the principal use of Vines in pots here are kept to occupy the houses (where Vines are planted on the outside) during the period that they are inactive, say from November to May, those in pots are generally forwarded in their first stage in any pit or house whose temperature may happen to suit them, and, finally, when the wood of the permanent Vines is sufficiently ripened to allow of their being placed outside, the pots are taken in and arranged in their places on shelves put up for the purpose; by these means the houses are of far more use than if they remained empty nearly half the year. However, the precise mode in which the Vines are to be fruited depends on the kind of houses the cultivator has at his command; a flued pit answers well; but the best description of houses is that which admits the rays of the sun to pass through it in the winter at as near right angles as can be. Such a house, admitting considerably more light during the winter months, is much more suitable for such a plant as the Vine than low flat houses. Whatever the house is, if not perfectly ready for the Vines when you wish to begin forcing, get them placed in a dung frame where you can give them a moist heat of 55°, this will cause their buds to swell regularly, and prepare them for their removal to the fruiting-house, when ready, without losing time. Previous to losing their leaves in the autumn, they may, if thought advisable, be disbudded on Roberts' system, leaving a few more buds than you want bunches; but one objection to this system is, that if by any accident through the winter the bud should get injured, it leaves a blank which, had the next buds remained, might easily have been supplied.

The number of bunches that may be left on each Vine will depend on the soil, size of the pot, &c. When the Vines are strong, and No. 2 pots are used, I usually leave six or seven bunches on the Hamburgh, the same on the Sweetwater, and one or two more on the Muscadine. If the Vines are not so strong, four or five bunches on the Hamburgh will be sufficient. It is much better to have rather fewer bunches and the berries fine and well coloured, than ill-coloured puny bunches, which always is the case when too many are left on the Vine. The Vines from being placed in the house, presuming their buds to be swelled, must have their temperature raised from 55° fire-heat to 65° when in bloom, and it will be better if this heat by night is never exceeded; of course on all days when there is no likelihood of sun-heat, the heat of the house should be raised 5° or 10° by artificial means. Air should be admitted by some means or other *every day* early; this is of consequence, or the leaves are apt to get damp and their texture being so extremely thin, when the hot sun and drying winds of March act on the foliage, they often burn and shrivel, and consequently are unable to swell off the fruit or give it colour. During all the time the Vines are in a fruiting state, manure-water in some shape or other must be frequently given. Dung-water is made of various ingredients, but in whatever way it is made, it ought to ferment before using and should be applied in a pure state, and at a temperature equal, at least, to that of the house. The draining from farm-yards is always good and safe. I use manure-water, made by pouring nearly boiling water on equal parts of sheep or deer dung and fresh horse-droppings; this is fined by a lump of fresh lime, is drawn off clear, and when used is diluted with equal parts of rain-water. A very weak solution of guano is beneficial, but great caution is required in using it. It is astonishing during the period of active growth, what an immense quantity of dung-water Vines will take. I have frequently watered them twice a day with it, and this I prefer to placing bottom-pans or feeders under the pots, as is often done. If the dung-water is properly cleared and diluted, it may be given twice for fresh water once: when the Grapes are fully swelled, and beginning to colour, water must be more sparingly applied, using clean water only. The flavour of Grapes is often spoiled by being over-watered when ripening their fruit, by the proper propor-

tion of carbon and water, which constitutes the saccharine matter in Grapes, being destroyed and water formed in excess.

When the fruit is ripe, if the house is wanted for other purposes, the plants may be removed to any dry house or room, where the Grapes will keep until wanted.

The varieties I have found best for early forcing are, the Hamburgh, Dutch Sweetwater, and Muscadine. The small-berried varieties, as the Esperione and others, are hardly worth growing, compared with the above. Muscats, and all the delicate sorts, as the Frontignan, answer admirably later in the season, and thus the amateur and those who possess but a small extent of glass may cultivate all the varieties of Grapes procurable in British nurseries, at but a trifling additional expense.

Although I have given directions how to render fruitful Vines in one season, yet, when a stock is once acquired they may be kept for years in a fruitful state, by resting them at alternate seasons. Thus those plants which have fruited in spring may be turned out of their pots into a border, where they will require no farther trouble until the following spring, when they may be taken up, their roots reduced in some degree, and placed in pots again, planting them deeper than they previously were: they may then have the same management as young plants, and will make very strong canes in the course of the summer. I have Vines in pots now in fruit that have borne three or four previous crops. Where the cultivator prefers boxes to pots, they may be used, from 14 to 16 inches square, which will be quite large enough; they can be packed on shelves more closely together than pots, and are more handy to move about.

By the above process Grapes may be procured by the end of March and April, without interfering with those planted outside, and I would particularly recommend its adoption by amateurs possessing small establishments, as affording them a means of prolonging their Grape season; besides being productive of gratification and pleasure. It is to this class of gentlemen in particular that I wish the foregoing remarks to be addressed. Although it would be a considerable adddition to small places, yet in the large establishments at Tedworth, under Mr. Sanders, and at Tottenham Park, (Mr. Burns) it is an essential feature in their management, and is followed with the most complete success. I imagine the credit of growing plants in one season and fruiting them the next belongs to Mr. Tillans, of Alnwick Castle, who adopted that practice at Woodchester Park, when gardener to the late Lord Ducie.—*John Spencer, Gardens, Bowood.*

FAMILIAR BOTANY.

Morphology.—No. XI.

Nature, the daughter, ever-changing birth,
Of thee the Great-immutable, to man
Speaks wisdom; is his oracle supreme;
And he who most consults her is most wise——
Look Nature through, 'tis neat gradation all.
By what minute degrees her scale ascends!
Each middle nature joined at each extreme,
To that above is join'd, to that beneath.
Parts into parts reciprocally shot,
Abhor divorce. What love of union reigns!

We have now taken a great step in our subject. We have proved that a leaf is a metamorphosed cotyledon, and that a cotyledon is an imperfect leaf. We have shown that the leaf may exist in two very dissimilar conditions, according to the degree in which it is developed; and it is easy to conceive that it may equally occur in any number of other conditions; as, in fact, is obviously the case if we open our eyes wide enough to look into the great field of Nature. Instances meet us at every step. In the Scotch Fir, for example, there are two sorts of leaves; the first-born annually are very thin, narrow, colourless, and perishable, not existing in a living state more than a few weeks; the next-born are stiff, needle-shaped, deep-green, and live for months or years. The leaf of Grass is a thin, narrow ribbon; that of the Horse-Chesnut divides into large, stout fingers. Mosses have their foliage so small that it can hardly be seen without a microscope; in the Fan Palm-tree one leaf is large enough to thatch a house. Both the Nut-tree and the Sycamore have generally green leaves, but the one is sometimes purple and the other yellow; while the Kail-plant assumes the colours of the gayest flowers. The leaf of the Beech-tree becomes almost as dry as paper, that of the House-Leek is as fleshy as an Apple. The Oak-tree has thin, flat leaves, with an upper and under surface; but in the Stonecrop they are cylindrical and succulent, with no distinction of surfaces. It is unnecessary to multiply such instances; those which have been enumerated suffice to show that what is called the leaf of a plant is not to be known either by its uniformity in the same plant, or by its outline, size, colour, texture, solid figure, or any other of the qualities which the multitude assigns to it.

What then *is* a leaf? *A leaf is an expansion of the surface of a plant, arranged in some regular order as regards other leaves, and either producing, or capable of producing, a bud in its axil* (that is to say, in the angle which it forms with the stem). This being premised, I must next endeavour to show, not only that many kinds of leaves occur in different plants, but that the leaf occurs in wonderfully different states in the same plant, and that the irregularly varied aspect of vegetation is chiefly owing to that cause.

Let us proceed in our examination of the garden Pea, which I take because it gives every one the opportunity of following my observations.

If, when the seed-lobes have burst through the skin, we observe the condition of the plumule, it will be found to be soft, rather angular, and covered by many minute scales placed near together, but in a regularly spiral manner, and each consisting of a thin plate of cells expanded from the surface of the plumule. These are the beginning of new leaves; they are repetitions, upon the surface of the plumule, of the scales which appeared upon the embryo when it was in process of organisation. By degrees the plumule lengthens, and gradually the tiny almost invisible scales will have been transformed into verdant leaves. If we now examine the state of those leaves, we shall find the first, *a*, to be a trident-like scale, with a bud in its axil, the side lobes being anticipations of stipules, and the middle prong the beginning of a leaf-stalk—the plant is young and feeble. The next leaf, *b*, is rather larger; the



side lobes are broader and a little notched; the middle prong is, however, scarcely changed—the plant is still weak, and incapable of producing perfect organs; but it is stronger. The third leaf, *c*, shows a great advance; its stipules are perfect; the middle prong has formed two leaflets at its end, and has extended itself beyond them into a little bristle, which is the beginning of a tendril—the plant has almost gained its natural vigour. At last, at the fourth stage, *d*, the plant has formed its perfect foliage; the stipules are larger, the leaf-stalk is complete, the leaflets are notched and spread open to their full extent, and the tendril is lengthened, branched, and ready to cling to the first object that it touches for support.

Now, see what metamorphoses are these! If you place *a* and *d* side by side, you would not believe them to be the same thing; and yet we have had the plainest possible demonstration that the one is the same as the other in a different state of growth; that the little three-pronged scale which we hardly see, is as much a leaf as the tendrilled full-grown organ placed above it. How true, then, is it in fact as well as in theory, that Nature always proceeds from imperfection to perfection!

But the vigour which the plant has acquired ceases with its youth. By degrees we shall see it become feeble again, unable to expand its organs of growth, and, returning to its early weakness, producing scales for leaves, and out of those scales fashioning its flowers and its fruit.

Home Correspondence.

Gloxinias.—These generally receive the same treatment as other tropical plants, and many persons who have not the convenience of a stove, have been deterred on this account from cultivating this lovely genus. Gloxinias can, however, be cultivated where there is only a greenhouse or a frame, to greater perfection than when they are grown in a higher temperature. The Gloxinia requires a season of rest and another of growth; the roots should be allowed to become quite dry during autumn, and continue so all the winter; they should not be allowed to become dry, however, all at once, but by degrees. While they are in this state the pots may be laid on their sides on a dry shelf in the greenhouse, until February or March, but February is the best time for starting them. In potting them the earth should be carefully shaken from the bulbs, which should be repotted in a mixture of one half decayed vegetable mould, and one half good rich loam, with the addition of a little sand or charcoal. The pots should be well drained. In planting, press the roots gently on the surface of the soil, and give them no water for some time, as the moisture of the pot will be sufficient for them at first. After they are all potted, remove them to a frame where the temperature is about 60°, and when they have commenced growing, give them a little water, increasing the quantity as they advance in growth. A little air should be given them in fine weather. By the middle of May they will have attained a good size, and some of them will be showing flowers, when they may be removed to the greenhouse, where nothing, except proper attention to watering them, is required. When the plants have done flowering, water should be gradually withheld. It often happens, however, that some of the species continue in a growing state all winter; for instance, G. caulescens, which is unlike any of the others in habit and manner of growth. The Gloxinia is readily increased by seeds and cuttings; the seeds should be sown very thinly as soon as they are gathered, in pans that are well drained, and filled with a mixture of fine peat and sand; the seeds should not be covered; they may afterwards be placed in a frame where the temperature is about 60°. When they have acquired one or two leaves they should be potted off into small pots, and not dried off until the second year, as the small fibres are not sufficiently strong to cause them to grow vigorously in spring. This remark is also applicable to young plants raised from cuttings. Gloxinias are readily propagated even by a single leaf pressed firmly into the soil, which may be the same as is used for seeds. I have struck them, but with difficulty, in bottles of water, in the following manner:—Having detached a leaf from the stem with the bud entire, I immersed the leaf-stalk in the water, and placed the bottles in a temperature of 80°. In a few days there was found at the base of the stalk a curious protuberance from which the roots issued, which were extremely fine and delicate. After the roots had grown a little the plants were potted off in the same mixture as is mentioned above for seeds. With regard to kinds for a private garden the following may be recommended: G. coccinea, Youngii, Manglesii, rubra, maxima, speciosa, and candida. If the above directions are attended to, these beautiful plants will find their way into many gardens in which they are at present strangers. —*J. McI., Hillsborough.*

The Forget-me-Not.—There is a little common plant which grows in our woods and adorns the banks of our rivulets, the unassuming beauty of which is acknowledged by all; I mean the common Myosotis, or, to give it its more familiar and more expressive English name, the Forget-me-Not. There is a charm about the very name which tells of friendship and constancy in a fickle world; and though Shakspeare asks "What's in a name?" and adds, "A Rose by any other name would smell as sweet," yet there are many of our common plants which, if they were divested of their old names, would with them lose the power which they possess of calling up old associations, to which very much of their interest is owing. But what I wish to call attention to now is the fitness of this plant for bedding out, for planting in masses in the front of Shrubbery borders, and more especially for winter forcing. It has long been used for bedding out at this place with the happiest effect, and where masses of blue colour are required few plants excel it. It costs little trouble, and continues in flower nearly all the summer. While the almost countless varieties of Verbena furnish us with every shade of red, plants of a blue colour fitted for small beds are scarce. No plant better repays the trouble of forcing than this. It is only necessary to take up the roots from the border where they are growing, divide them into small pieces, plant them five or six in a small pot, and place them on a spare shelf in any house that may happen to be at work. In three or four weeks afterwards they will begin to display their pretty little blue and yellow flowers, which in a nosegay greet us like old friends, and by their associations with pleasant rambles, shady woods, and sunny skies, give rise to pleasurable sensations in the mind, which are not produced by the more gaudy colours of exotics.—*W. H. M., Trentham.*

Annoyances.—About 10 years ago a neighbour of mine (and a very good neighbour he was) kept a large quantity of pigs, which were in the habit of finding their way into my nursery, particularly on Sundays. Whenever my good neighbour met me, he always apologised, and said he had given strict orders to his bailiff to take care the pigs did not trespass again. The way in which the pigs got into the nursery was through gaps in the hedge which were made by my men "creeping" out and in. When I found that I must either lose my good neighbour's friendship, or allow his pigs to have part of my property, I adopted the following plan. One day we met, I said, "You are just the gentleman whom I wished to see. You and I are very good friends and neighbours, and also our families; and I should be truly sorry to be the first to give any offence." He answered, "If it did not begin on my side it should not on his." I then informed him that I had sown some seed of Oaks and Hazel, but found the mice so troublesome, that I had put down some Beans and Peas, which had been steeped in arsenic, and if your pigs should come and eat the poisoned material it will be no fault of mine. My friend gave me a look, but made no reply. From that time I have never seen a pig enter the nursery. If your correspondent, who is troubled with rabbits, was to crop some ground near the fence where they come through, with Potatoes, or have a strip in fallow, and in different parts of the fallow have squares of choice Turnips, &c., that would be guarded with hurdles or nets; and if a tenant has a fancy to put down a little arsenic on a dewy evening on the ground in order to kill slugs or insects, and rabbits come and eat up the food where the fence was taken away, who could help it? One thing is certain, the rabbits would never come again.—*J.*

Durability of Oak.—I beg to state that the date 1035, mentioned by me in a former article on this subject, I have since found, upon close inspection, to be wrong. The

upper part of the 6 is evidently worn off, as that part of the beam, being much exposed to the weather, is decayed, and there can be no doubt but that the date is 1635. From the Philosophical Transactions, Vol. x., Part iii., and p. 1254, it appears that the Indian or Arabic characters were introduced into Europe about the year 1352. In the same vol. are copies of Arabic numerals that were taken from beams; one from Ashford, in Kent, is dated 1295; another from Cambridge is dated 1332; but these are very rude specimens, with the figure 5 inverted thus ⅁. From this it is clear that these numerals did not get into general use until about the 16th century. The *durability* of Oak-timber, when felled in winter with the bark on, is, however, fully established, as the Oak-beams of both dates had sound bark on them, and, consequently, the timber was also sound.—*W. Billington.*

Thunbergias.—These pretty climbing plants are generally cultivated in a stove. They will, however, grow and flower freely in a greenhouse; or even when they are planted out in the open border, during the summer months, if the situation is sheltered, and exposed to the influence of the sun, they will flower well. In propagating those that are intended for planting out, take off the lateral shoots when they are of a sufficient length (which, if possible, should be done in March, so that the plants may have attained a medium size before they are put out), pot them in equal quantities of peat and sand, then plunge them in a hotbed, and they will strike root in a week or two. When they are rooted pot them off into small pots filled with good rich loam and leaf-mould, mixed with a little sand; then replace them in the pit, or frame, until the middle of May, when, if the weather is favourable, they may then be planted out. If the soil is not naturally good it should be made so; and as the plants advance in growth, they should be trained to some kind of support, which may be of any shape that fancy may suggest. If the season is dry, they should be watered and syringed. About the middle of October take up the plants, with good balls, repot them, and place them in the greenhouse. After they have been there for a short time, they may be removed to the stove, where they will keep gay for the greater part of the winter. T. alata has a beautiful effect when it is planted out on a rockwork, where the plant appears in its natural character, clinging to the various projections, which it quickly covers.—*J. McI., Hillsborough.*

Suggestions in Manuring.—Taking a lively interest in the subjects discussed in the *Gardeners' Chronicle and Agricultural Gazette*, and in the very various inquiries now in progress as to the food of plants, it has occurred to me whether sugar might not be usefully applied in certain cases—

The analysis of sugar I believe to be—of carbon .	42·85
Oxgen and hydrogen	57·15
	100 parts.

Consequently, it is wholly composed of most essential elements in the growth of plants. Might it not be well deserving of experiment whether its practical effects as a manure might not be powerful?—No doubt it would be expensive; but it might be efficacious in very small quantity, and although it might not be applicable to Agriculture generally—it might be reasonably applied to certain purposes in Horticulture. Can any one say what effect might be produced in the culture of the Grape or Garden Red Beet, both of which contain so large a quantity of saccharine matter? Possibly it might produce a powerful effect on the Onion. The constituent parts of sugar justify the idea that it might produce powerful effects on vegetation: experiment can alone determine, and such experiments can be so easily made, that I should presume to say they were deserving of being made. It might be applied judiciously either in the raw state, like other concentrated substances, or in solution. Possibly it might be worth while, in addition to the Vine, to make such trials with reference to the Peach, the Nectarine, and the Fig—on the principle that the produce of plants partakes more or less of the nutriment they receive. Considering the quantity of silica contained in the bark of the Vine, might not an experiment as to the effect of silicate of potass be deserving of being made? I admit that these proposals are somewhat empirical, but they seem also to have something like chemical principle for their foundation.—*Amateur, Dublin.* [We have ourselves tried the effect of solutions of sugar on plants, but the result was not such as to induce us to repeat the experiment. Others, however, may be more fortunate. Perhaps by mixing it with small quantities of animal manure, sugar might be made to act.]

Miscellaneous.—Sylvanus is desirous of obtaining information as to the price of Oak-bark, foreign and English, in the Bristol, Liverpool, and London markets. He observes that an extensive combination exists amongst the tanners to keep down the price of bark, and promises to write to us on the subject, if we do not take it up ourselves. We believe that a combination does exist amongst the tanners to keep down the price of bark; but we have really no time to devote to ferreting out these abuses satisfactorily, although it would give us pleasure to see the matter taken up by "Sylvanus," or any other party. ——A correspondent, signing himself *Dreuen*, states that an effectual way of preventing Vines from bleeding after they are pruned is to mix equal quantities of quicklime and poor cheese in a mortar, with a little water, and work all together until they become quite incorporated. He then directs that a small quantity of this mixture should be rubbed very hard into the wound, leaving a small covering of the cement on it. This, he says, will stop a Vine from bleeding at any time of the year.——We have before us some communications on the quality of the *Thornfield Pines*; but we should be greatly obliged to *known* correspondents for further information before we publish it. It is a public question of some importance, and we are anxious for the opinions of the best men who have personal knowledge of the facts relating to the subject.

Structural Disease.—"Der Greif" begs to express his willing acquiescence in the courteous suggestion of the Editor of the *Gardeners' Chronicle*, and therefore refrains from any further effort at present controversially to establish his opinion of the essential dependance of functional upon structural disease, although he feels how much ought to be said under other circumstances concerning the distinction between "change of condition and change of structure." At the same time he begs to express his lively sense of the aptness and beauty of "M. D.'s" reasoning, derived from the presence of nerves and vessels of nutrition, and of function in many organs, although he could not feel the weight of his mechanical analogies. He humbly conceives that that reasoning gives new strength to his own opinion, which he would be, nevertheless, far from wishing to hold against any evidence that could approve itself to his judgment as true. But "Der Greif" may perhaps be allowed to remark that "M. D." cannot have clearly understood the nature of his objections to the mechanical analogies. His position (defined now, not for the sake of controversy, but for the cause of truth, is simply this:—The cogs and wheels of a mill form component parts of an engine which has certain work to do; they are framed out of fixed material, and undergo no interstitial change excepting that dependent upon the slow chemical change of decay, and they are fitted for the performance of their labours by this fixity of atomic constitution. The individual organs of an animal form component parts of its integral frame, and have each a certain office to perform, but they are kept in a fit state for its performance by constant interstitial change effected in the material of their organisation by the absorption of effete material, and by the deposit of new; whatever may be the source of their functions, the healthy nutrition of their subject material is the means provided for the continuance of those functions; and therefore the inference is perfectly philosophical, since there can be no instant of their healthy existence in which atomic changes are not effecting within their tissues, and since no cessation of those changes can take place without occasioning structural derangement in that material whose structural fitness for office requires continued change; that functional derangement is intimately connected with the presence of some abnormal, or the absence of some normal, change in the intimate constitution of the material tissue of organisation.

Societies.

BOTANICAL SOCIETY OF LONDON.

J. E. GRAY, Esq., F.R.S., President, in the chair. Various donations to the Library and Herbarium were announced, including some specimens of Algæ from Cape Raceife, Algoa Bay, from Mr. Bowerbank. Read—the conclusion of the Paper commenced at the last Meeting, being a "Synoptical View of the British Fruticose Rubi, arranged in Groups, with explanatory remarks by Edwin Lees, Esq., F.L.S., &c." The groups into which Mr. Lees unites the species have been reported in the *Gardeners' Chronicle*, and it is unnecessary to enter into further details respecting Mr. Lees' views on the groups, species, and varieties of British Rubi, as they are now before the Botanical world in the "London Catalogue of British Plants," just published by the Society. The Paper was accompanied by drawings and specimens: the latter are deposited in the Herbarium of the Society.

LINNÆAN SOCIETY.

April 2.—Robert Brown, Esq., in the chair. Dr. Donaldson and Mr. Joseph Exall were elected Fellows.—Mr. Hugh Low presented to the Society 140 species of Australian plants, collected by Mr. Drummond; also a collection of Proteaceous plants from the Swan River. Captain Jones, M.P., presented to the Society dried specimens of the Ulva calophylla from Armagh, and the Oscillatoria æruginosa from Glasslough.—Prof. Forbes exhibited a species of Tulip, from Mount Ida, found by Capt. Graves and Lieut Spratt. The perianth was white, but it is undoubtedly the Tulipa tricolor, of Ledebour and others.—Mr. Osborne presented cones of the Pinus Ayacahuite, P. Sócarpa, P. filifolia, P. pungens, and a capsule of Spathodea campanulata.—The Duke of Northumberland presented a monstrous specimen of growth in the branches of the common Holly.—A continuation of Mr. Newport's paper on the Myriapoda chilopoda was read. This paper consisted of an elaborate examination of the structure of the Myriapoda, in relation to the other groups of articulate animals. The structure of the segments, their development in the ovum, the position and character of the nervous system, were minutely detailed. The number of the segments entering into the composition of the head of the articulata had been variously stated as two, twelve, five, three, and seven. The author concluded that in the Myriapoda they were eight. The foot-jaws of the Myriapoda he demonstrated to be the analogies of the mandibles of insects.

ENTOMOLOGICAL SOCIETY.

April 1.—Geo. Newport, Esq., in the chair. Dr. Harris, of America, Signor Costa, of Naples, Charles Lucien Buonaparte, Prince of Canino, were elected corresponding members.—Specimens of the bark of the Elm-tree were exhibited by Mr. Samuel Stephens, which had been attacked by the Hylesinus varius. These markings were smaller, but closely resembled those of the Scolytus destructor.—Mr. Westwood exhibited a box of Goliath beetles from the New World, from Mexico; these were unique, and the first American specimens seen in this country.—Cases of insects were exhibited from Mr. Eisdale Downes, of Bombay, accompanied with notes; they consisted of the larvæ of a small species of beetle, named Cassida, and several cocoons and perfect insects of a new species of moth. The cocoons were attacked by a species of the family of Ichneumons. The notes referred also to the habits of a species of Cercopis, which is called the Cow-ant. The author supposed that the ants, in surrounding this insect, attempted to destroy it; but the fact is, that the Cercopis secretes from its skin a saccharine matter, of which the ants are fond of partaking; and this is why it has the name of Cow-ant. It has also, in addition, a pair of abdominal appendages, which look very like horns.—A continuation of Mr. Saunders's paper on the Chrysomelidæ, consisting of descriptions of the genus Prionoplesus, was read.—A communication was read from Captain Boys, of India, accompanied with drawings of a species of Pausus, and of a small beetle belonging to the genus Anthrenus, which had been found living upon horse-hair gloves.—The secretary read a paper, which he had received through Mr. Horton Loyd, from Dr. Holme, on the discovery of the Cossomus linearus, a small beetle, in black carbonaceous matter taken from a cavity in a barrow, near Manchester. These insects were generally found between the bark and the wood of the Oak-tree; remains of Oak-wood were found in the cavity. This paper gave rise to some discussion.—Mr. Westwood thought the age of the barrow must be at least 1600 years; he had seen specimens of insects found in a vase in a tomb at Rome, and also some from a box in a tomb from Egypt. He thought these insects might have been intentionally buried with the body amongst whose remains they were found.—Mr. Spence thought they must have been introduced by means of the Oak-wood which was contained in the barrow; and Mr. Waterhouse accounted for the presence of insects in tombs, by supposing that they were introduced unintentionally with the articles in which they were found.

MICROSCOPICAL SOCIETY.

March 20.—J. S. BOWERBANK, Esq., in the chair. Messrs. Avery, Thomas Callaway, jun., Aikin and Orvill, were elected Fellows of the Society.—A paper was read by Edwin Quekett, Esq., on the Structure of the Ligament of the Valves of Conchiferous Mollusca. The author commenced by stating that the ligament which united the two valves of the shell-fish known by the name of Bivalves, was composed of elastic tissue, and that the property of elasticity remained after the death of the animal. The position of these ligaments is of two kinds; they are placed either on the inside or on the outside of the shells which they unite together. During life the contraction of the adductor muscle keeps the valves together, and when this is relaxed the shell opens by means of the ligament. In cases where the ligament is placed in the inside of the shell, its elasticity would produce the opening of the valves, but where the ligament is placed at the back of the valves it is necessary to suppose that it possesses a contractile as well as an elastic power. On examining by the microscope the texture of the ligaments, it was found that those existing in the inside of the shell presented a simple homogeneous structure, whilst those attached to the outside exhibited a fibrous structure. The fibres were of a uniform size, and transparent, and presented a close analogy with the structure of muscular tissue. This structure was remarkable, as neither blood-vessels nor nerves could be found in it, and yet it presented the power of contractility.—A discussion followed in which Dr. Lankester stated that he thought Mr. Quekett had not fully demonstrated the contractile function of the posterior ligament. If it were contractile it was an important fact, as this tissue was independent of the nervous system.—The Chairman stated his conviction that nerves might pass through the substance of the shell, and influence the function of the tissue. It was well known that vessels existed in the substance of the shell, as he had demonstrated.

Reviews.

Irby and Mangles' Travels in the Holy Land. 12mo. Murray.

A CHEAP edition of this most interesting book, which is quite indispensable to those who would study the Scriptures critically, is indeed most welcome, and Mr. Murray has our thanks for introducing it into his Colonial and Home Library. It is only a week or two since (p. 199) the question of the Mustard-tree of Scripture was discussed in our pages, and we are now able to give, *verbatim*, the travellers' account of this tree:—

"There was one curious tree which we observed in great numbers, and which bore a fruit in bunches, resembling in appearance the Currant, with the colour of the Plum; it has a pleasant though strong aromatic taste, resembling mustard, and, if taken in any quantity, produces a similar irritability in the nose and eyes. The leaves of this tree have the same pungent flavour as the fruit, though not so strong. We think it probable that this is the tree our Saviour alluded to in the parable of the Mustard-seed, and not the Mustard-plant, which is to be found in the north; for although in our journey from Bysan to Adjeloun we met with the Mustard-plant growing wild, as high as our horses' heads, still, being an annual, it did not deserve the appellation of a tree; whereas the other is really such, and birds might easily, and actually do, take shelter under its shadow."

We may add, that the volume is full of important information concerning the Natural History of the Holy Land.

THE second part of *The Botany of H.M.S. Sulphur* (see p. 70) is before us. It is wholly occupied with Californian plants. Among the more remarkable species are a new Fraxinus (latifolia) from San Francisco, a Martynia (althæifolia) from the Bay of Magdalena, and some Eriogonums. The plates consist of new genera and species described in the text. We are still without any intimation of Mr. Barclay's Californian plants having been sent from the British Museum for examination, which, considering that this work is supported by Government funds, is, to say the least of it, a circumstance that requires explanation. The public has a right to inquire how it happens that an official account of "The Botany of the Voyage of H.M.S. Sulphur" is published, without the slightest assistance from the materials of the

botanist who was paid by government for collecting them, although those materials are actually in the country. We trust that Mr. Hinds, to whose unpaid zeal the work owes its existence, will not be restrained by any false delicacy from enlightening the public upon this strange fact.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

GLADIOLUS GANDAVENSIS. The Ghent Corn-flag. (*Half-hardy perennial.*) Iridaceæ. Triandria Monogynia.—Few cultivators seem to be aware of the great capabilities of the genus Gladiolus for ornamental purposes, and hence we commonly see the better species cramped into comparatively small pots, with a poor soil, and reaching only half the size and beauty which they would acquire by being subjected to better treatment. It is as border-plants, especially, that they prove so peculiarly showy; whether the florder be in the open air, sheltered from behind, and having a southern aspect, or whether it be in a pit or frame, or low conservatory. When planted out in a free soil, they appear to take a new character, and become objects of the most beautiful description. G. Gandavensis, which has probably received its name from having come from Ghent to this country, is an exceedingly good addition to the genus. It is evidently of hybrid extraction, and G. communis is most likely one of its parents. To that species, indeed, it bears much resemblance; but has more of the open flowers of G. pudibundus, with a slight indication of its tints. Whatever may have been its origin, it is certainly a noble plant, and flowers in great abundance. To grow this and other Gladioli favourably, they should be planted in a rich soil, not too much pulverised, and effectively drained. If kept in a pot, that pot ought to be a pretty large one, for they will not thrive luxuriantly when much confined at the roots. The fittest situation for them is a prepared border in a pit, or in front of a plant-house. Wherever they are put, however, the bulbs should be taken up yearly, after the leaves have decayed, and replanted about the month of November. Propagation is carried on by separating the young corms, at the time of removing them from the ground; but it is desirable to put two or three of the old ones together in a tuft when a fine specimen is wanted. —*Paxton's Magazine of Botany.*

CAMPANULA FRAGILIS; var. HIRSUTA. Hairy fragile Bell-flower. (*Herbaceous perennial.*) Campanulaceæ. Pentandria Monogynia.—Of the many lovely plants belonging to the genus Campanula, we hardly know one which excels the present variety in beauty. And yet, somehow, it is not an object in which cultivators generally evince much interest, or which they grow to anything like its attainable perfection. The specimen now noticed was bloomed in the summer of 1840, at Messrs. Henderson's, Pine-apple Place, where most plants deserving of attention are cultivated with a care which is truly delightful. It had by some means got the name of C. carolina, an appellation the origin of which we cannot trace. In a greenhouse, however, the plant was covering a pot about eight inches in diameter with its charming blossoms, which were also profusely borne on some branches that were hanging over the sides of the pot. In its habit the plant is very dense and compact, bearing a considerable number of branches and large flowers, which are more expanded and star-like than those of most Campanulas. It is one of the neatest of greenhouse ornaments, and from the soft blue of its pleasing flowers, and the bright green of its foliage, attracts most persons' notice. Nothing can be done in the way of developing this beautiful plant's good properties, or cultivating it advantageously, unless it be put in well-drained and porous earth. De Candolle observes, that it is seldom met with farther north than 41° of latitude; that it occupies the evergreen region of Italy, and even extends itself into the lower woodland region, as far almost as the upper limits of the Beech, or to 3000 feet above the level of the sea. It hangs over the face of limestone rocks. To adapt its treatment to the peculiarities of its native situation, it ought to be grown in a very sunny part of the greenhouse, where it gets little moisture except while growing. The soil should be a very open loam, with a little leaf-mould, neither of which must be at all sifted. A little limestone mixed with it, or some pieces of broken sandstone will be useful, as it is essential that the soil be kept thoroughly drained. In the winter it needs hardly any water, and a particularly dry position. An upper shelf in a greenhouse is the best place for it at all times, save when it is flowering. It may be increased by cuttings of the fresh shoots taken off in spring, and placed in a trifling bottom-heat.—*Paxton's Magazine of Botany.*

GARDEN MEMORANDA.

Messrs. Chandler's Nursery, Vauxhall.—Most of the Camellias in the very extensive collection of them at this place are now in full bloom. The multitude of large dazzling blossoms of various colours which meet the eye on entering the house has a very imposing appearance. Among the newer or better varieties the following are well worthy of notice, and are deserving of a place in every collection. Hendersonii, a well-formed pink flower, is very double and one of the best. Eximia has large crimson blossoms, which are well shaped; the plant is an erect grower, and requires more heat to set its flower-buds than most other kinds. Henri Favre, a large rosy pink, is very double, and is one of the very best. Queen Victoria or Pressleyi is a good red, having a stripe of white up the middle of each petal. In the same collection was Albertus, a Carnation variety, which having a fine habit, and being a profuse bloomer, is one of the best of its class. Perfection, a small compact crimson flower, is very round, and comes occasionally striped with white. Pressleyi rosea, is a pretty Carnation variety. Albicans, a compact double flower, is white, and delicately shaded with yellow. Candidissima very much resembles the old double white. Imbricata alba, a fine showy variety with a good habit, has beautiful white blossoms that are faintly striped with pink. Among others the old Myrtifolia was conspicuous for its pretty fragrant pink blossoms; and Fimbriata also, an old variety, was producing its beautifully white-fringed flowers in abundance. Nitida is rather new; it has well-formed pink blossoms, each petal being finely striped with white. The plant has a good habit, and resembles Carswelliana in every respect except in the foliage. On a plant of Reticulata were some large showy blossoms, which are not unlike a fine large Paonia bloom. Fordii is a good new double pink. Florida has dark pink flowers, which are beautiful when about half-blown, on account of their fine cup-like shape. Sweetii, a variety of late introduction, has well-formed blossoms, and very round petals. Elegans has large bold pink flowers, which are beautifully mottled with white. Bealeii is a fine-shaped crimson; and Lady Hume's Blush, although an old variety, is worthy of a place, even in a small collection. The Camellia is a plant of easy cultivation; the most important point, after it has made its growth and the flower-buds are set, is to get the young wood well ripened. For this purpose the plants should be placed out of doors, about the end of June, in a partially shaded situation, where for six or eight weeks they may thus be exposed to increased light and a free current of air. By this treatment the plants store up a good supply of highly-elaborated sap, which materially assists their blooming the following season. In a span-roofed house, near the show-house, a plant of Wistaria sinensis, about 45 feet long, is trained along the angle at the top, immediately above the passage, where its newly-opened and delicately-perfumed pendent blossoms have a fine effect. Here also, among other plants, Dillwynia glycinifolia was producing its pretty small unassuming blossoms in abundance. The show-house was gay with Rhododendrons, Acacias, Azaleas, &c. Among the latter was a fine specimen of A. Smithii coccinea, which was covered with its showy red flowers.

Messrs. Rollisson's Nursery, Tooting.—At this place is a most beautiful plant of Dendrobium fimbriatum, which for magnitude of branches and profuseness of bloom I imagine is scarcely equalled. This plant, on entering the Orchidaceous house, presents a very grand and imposing sight. It is one mass of bloom, and covers a space of about 20 square feet with its gracefully pendent branches, which are five or six feet in length. It is about 12 years old, and is growing in peat, which is freely mixed with crocks. The house is kept at a temperature of about 60° at night, which might be quoted as a maximum in which this beautiful tribe of plants has been most successfully cultivated at this Nursery, where they grow as in their native habitats. Another very attractive plant is the Phalænopsis amabilis, which is covered with delicately white showy blossoms. This, like the rest of the plants which the house contains, bears evidence of the good treatment which they receive. The late Mr. Rollisson was renowned for his cultivation of Heaths, and his sons bid fair to merit the same reputation. This beautiful tribe promises to bloom very freely this season. They are grown in the Wimbledon peat mixed with silver sand; they are at present in the Heathhouse, where they are supplied daily with abundance of air and water, the principal care being in potting to give them a soil which will admit of free and rapid drainage.—*G. M.*

Miscellaneous.

Van Diemen's Land.—We learn from the *Launceston Examiner* that the Horticultural Society of Hobarton have been making arrangements with the Governor for possession of the Government Gardens there. It appears that considerable progress has been made in laying out buildings and works, and that Mr. W. Duncan has been appointed Superintendent at a salary of 75*l.*, with a house, &c. A recent meeting of the Society had been well attended, and had resulted in the addition of Sir Eardley Wilmot and 28 new subscribers. It was hoped that the Society would receive some assistance from the Colonial Government in aid of their funds, which are low.

The Scotch Fir.—We extract the following from a report by Dr. Dickie on the forest trees of Aberdeenshire, published in the "Quarterly Journal of Agriculture," for March, 1843:—"Its distribution through Aberdeenshire is very general, occurring near the sea level, and reaching an elevation of 2000 to 2300 feet. It is for the most part planted in the low grounds, where it never attains any great size; and it is only in the forests of Mar and Balachbuie where we meet with it in a state of nature, and frequently attaining large dimensions. The abundant remains of this species found in peat mosses, in different parts of the country, show that there must have existed extensive forests where no trees now grow. In the reports which were received, no distinction is made between the two varieties of this species, which are admitted by some botanists: and so far as my own observation entitles me to express my opinion, I believe that the redder colour of the wood in Mr. Don's variety Montana, is merely accidental, owing to difference of soil and climate; for examples occur in the lower grounds, of trees of this species yielding a pale wood, which is stated to be equally dense and valuable with that of the former."—"The following may be considered the average annual increase at different periods:—From six trees at Kinmundy and Wardhouse, 40 years old, 3.4 and 4.8 lines respectively, giving a mean of 4.1 lines;* five trees at Breda and Huntly Lodge, 70 years old, 4.1 and 4.5 respectively, giving a mean of 4.3 lines; three trees, 90 years old, at Strichen, give a mean of 3.9 lines; nine trees at Pitfour, Echt, and Wardhouse, 100 years old, afford respectively 2.4, 3.2, and 2.7 lines, the mean being 2.76 lines; two trees in the forest of Balachbuie, 120 years, give a mean of 2.9 lines. These results have reference to the diameter at the thickest part. On the supposition that the correct ages of the trees were stated, it would seem that the growth continues steady up to 70 years, diminishing from that period to 90; the examples at Balachbuie are no doubt very favourable, and hence the increase shown by them can scarcely be considered as generally happening. It must also be kept in view, that the trees measured were the largest at each place, and that the results would differ materially were the calculations made from a number of trees showing the extremes (highest and lowest) at the same age in the same place."—"In Invercauld forest, the age was reported from 180 to 300 years, and girths of 10 trees were given, the smallest being 8 ft. 9 ins. at the soil, and 7 ft. in girth at 4 ft. The mean annual increase calculated from these ten trees, and assuming them to be 180 years old, would be 3.3 lines. There can be little doubt that the largest of these far exceeds 300 years, as from 100 to 120 years, the annual zones in the sections above recorded were so small that it was very difficult to trace them. The forester at Invercauld states, that 'the second tree of natural Fir in Table I. at 25 feet from the soil, measures 7 feet 3 inches girth, the solid timber in it being 160 feet. Another measuring at the soil 9 feet 6 inches, at 4 feet, 8 feet 2 inches, and at 27 feet, 6 feet 9 inches, contains of solid timber 150 feet. Another at the surface of the soil is 8 feet 9 inches; at 4 feet, 7 feet; at 16 feet, it is 6 feet 2 inches, with a clean trunk to the height of from 40 to 50 feet, and shooting up to the entire height of 70 to 80 feet. This small tree is only a specimen of hundreds of trees of the same size around it.' Mr. Cumming of Allanaquoich, to whom I am indebted, for measurements of 28 of the largest trees in Mar forest says, 'Most of them are supposed to be from 200 to 300 years old; some of them probably more. The cleanest and straightest grown trees are generally found on the north sides of the hills; the most branched, and, when cut up, the most knotty, on the south side. The south side of the tree is also, for the most part, the most branched, and the north side least. It is also to be remarked, that wherever tall clean trees are to be found, it is either when they still stand comparatively close to each other, or when the ground bears evident marks of their having done so at some period. Generally speaking, in very old trees, those having fine smooth bark are the most likely to be rotten in the heart; but the quality of such portions as are not affected with rot, is finer than that with rough bark.' In the 7th volume of the Transactions of the Highland Society, it is stated, that three trees from Mar forest, one of which had been felled for three years, another one year, and the third eight months, were tested at Woolwich. Each of these three trees was about 28 inches in diameter at the root, and contained 50 feet in length of serviceable timber, the grain remarkably clean, free from knots and full of turpentine; and from the results it appeared that their strength exceeded that of any other Fir submitted to experiment, although a specimen of Riga was selected from a tree supposed to be of superior quality, on purpose to form a comparison. The forest of Mar, from which these were brought, is the property of the Earl of Fife, contains upwards of 60,000 trees of the above description (the results of these trials were published in 1817), besides an immense number of less dimensions, fit for various purposes. Mr. Mortimer, wood-merchant here, informs me that the best planted trees of this species occur at Aboyne; they range from 30 to 100 years of age; many of them contain from 30 to 40 cubic feet; and of those on the Newhill, at the same place, several have from 40 to 80."

* A line is 1-12th of an inch.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Now that the plants are getting hold of the fresh soil, more air may be allowed them; but shut up early in the afternoon, and when the watering is finished, give them a good syringing over head. Be sparing of fire-heat after this time, even although the thermometer is down to 55° in the morning. The fine weather we have lately experienced—hot dry days, mild dewy nights, and cool mornings—ought teach us how to regulate the temperature for our house plants. The last portion of the Gesneras and Achimenes should now be potted, as they can hardly be safe any longer in their dry state; but to have them late in September and October, they must be kept back till about the end of May in a cold pit, allowing them no more water than will keep the soil from being quite dry. There is more merit in retarding plants properly than there is in forcing them into early bloom.

Conservatory.—If you have plenty of room, and abundance of plants to keep up a full bloom all over this house, you may dispense with shades or screens for a few weeks yet, and your plants will reap the benefit, but this is at the expense of their bloom. Where the supply of plants is limited, you must make the best of their bloom by slightly shading them on fine days, although it is against young growths. See that you have cuttings of Pelargonium alba multiflora, and Jewess, put in now for flowering next November; Jewess is better than Admiral Napier for the middle of winter. As there will be no want of flowers from this time until September for this house, you will have more time to think of and prepare your winter stock. Among Roses, Fulgorie is the best of all the late ones for flowering in November and December; it continues in bloom until the forced ones come in. Now is the time to get a reserve stock of young Heliotropes for forcing next winter; it is also a good time to put in cuttings of Picotees for forcing after Christmas. In short, if you wish to have a good stock of these things, you must prepare always six months in advance.

Greenhouse.—Every plant that is intended for a specimen should have the best situation in this house, and should be turned round two or three times a week: the shoots should be stopped from time to time, and it should have freedom on all sides. Epacrises and spring-flowering Heaths will bear close pruning after they are done flowering. Correas that have been flowering during winter should now be rather close pruned, and kept in doors all summer, where they will take the place of Fuchsias after September. Luculias that have been at rest since flowering are now beginning to grow again, and should be kept in a low moist atmosphere till all the eyes break forth. Forcing the Luculia at this stage, or even encouraging it to make an early growth, was the principal cause of failure on its first introduction.

Forcing-pits. In many places these pits are now as full as at any former period. The over-stock of duplicates and condemned specimens, parcelled out at potting time, are put in here to see what flowers or cuttings they might produce before they are finally thrown away; but a better practice is to turn them out in the border to take their chance. Rolfeychiums to flower late in the summer may now be started, and another crop of Tuberoses put in for succession. Primula sinensis for flowering from September should now be little stocky plants fit to be planted out in cold close frames by the middle of May, and more seeds of it should now be sown. Gesnera zebrina and longifolia, both tall flowers, should now be pushed on by all the heat and moisture at command. Now is a good time to divide the stools of Chrysanthemums, and cuttings should be put in of those that are scarce.—*Ib.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

The necessity of strict attention to the watering of newly-planted trees and shrubs cannot be too much insisted upon, and the watering should not be a mere wetting of the surface of the soil, but a thorough drenching to the depth of a foot or 18 inches. Large Evergreens, moved early last autumn with every possible care, now indicate that they will be no ornament throughout the season; while others moved since January are fresh and healthy,

which rather militates against the prevailing notion that autumn is the best time for moving Evergreens. Where the leaves are become brown it will be best to reduce the head of the plants, so as to make them break again from the old wood. Proceed with the hoeing and raking of borders, and throw in a little Mignonette, or Sweet Alyssum seed in all bare places. The time of a few women or boys will not be uselessly spent in eradicating Plantain and other broad-leaved weeds from the lawn. Let them put a little salt in the holes after the plants are cut out. Attend to mowing and sweeping, and keep every part of the garden clean and neat. In mowing the American garden mulch the beds with short grass, which not only prevents the parching up of the soil, but is also, when decayed, an excellent manure for the plants. I rather suspect this is the Macintosh of a "Moorland Gardener," —at any rate it is exceedingly useful, both in the flower and kitchen-garden, in dry weather.

Rosery.—My Chinese and Tea-scented Roses which were covered up with leaves and branches in the autumn are all living, most of them in excellent condition and breaking away strong and healthy. We shall now regulate them, pegging them regularly over the surface of the beds, and then cover them again thinly with evergreen branches until all danger of frost is over.

Reserve Garden.—Get in the biennial seeds as soon as possible, sowing them in drills 9 inches or a foot apart, and covering with rich compost. Stocks, &c., in the seed-beds are now becoming crowded; therefore, take advantage of the first shower to transplant them.

Pits and Frames.—The most forward of Hydrangeas now in bloom must be hardened off preparatory to being bedded out, and stocks and other plants blooming in pots may now be removed to the flower-garden, taking care to have mats at hand to cover them in case of severe frost. Most of the plants for bedding out may now be removed to temporary pits, or placed in sheltered situations, and if the pots are wanted a number of the more hardy may be plunged in sand, or sand mixed with decayed tan. No time must be lost in propagating Chrysanthemums if not already done. Leonotis Leonurus is a fine plant for autumn blooming, either in pots or planted out; it should now be increased by cuttings. Can any one favour me with a few cuttings of Verbena sulphurea?—if so, send them to the office of this paper.—*W. P. A.*

III.—FLORISTS' FLOWERS.

The *Auricula.*—The frost on the morning of the 8th instant would most assuredly "set" the blooms exposed to its influence. Some varieties, such as Kenyon's Ringleader, open very slowly, and these, when caught by frost, seldom expand well after. That section of Auriculas termed Selfs, with body colours of purple of various shades, &c. &c., do not appear so susceptible; they are surpassingly beautiful, and merit general cultivation. Continue the directions previously given for their management, and do not let seedlings have too much sun. *Polyanthuses.*—Within the last few days we have seen some beautiful seedling varieties of most excellent properties, which, when brought into competition, will completely extinguish many of the older sorts. Good flowers with red grounds or body-colour are yet scarce, Bullock's Lancer being one of the best of them. Seedlings that have been raised in heat may now be gradually hardened. We would advise artificial impregnation of the flowers where cultivators have the inclination to carry out the means thus placed at their disposal, of improving their breed of Polyanthuses, but of this interesting operation more will be said next week. *Tulips.*—Some of the earlier kinds are putting up their buds. This is a critical period, for at this season heavy rain is often succeeded by a frost, which congeals the water retained by the leaves, and consequently the future bloom is surrounded by a mass of ice, to its certain detriment. Some Florists draw out the water with a syringe; others, on hands and knees, make the circuit of their beds, blowing it out with their mouths, heedless of their nose or eyes being filled by the experiment; at all events, the moisture must be got rid of, and though the operation is not very dignified, what will not the enthusiastic Florist do to ensure the well-being and safety of his favourite flowers? *Carnations.*—Ought all to be in their blooming pots; every day deferred in throwing a chance away; yet we fear that many layers have yet to be planted, and, when coming from a distance, in many cases with but little soil to their roots, it certainly cannot be expected that they can successfully compete with those which have been established in the autumn. Amateurs, I trust, will see the propriety of getting in their stock for blooming when the layers are ready, at the latter end of the year. *Pinks.*—Are on the move, and must be attended to; these, when planted in the spring, seldom face well.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—If the bottom-heat keeps of a proper degree, the principal things to be attended to for a few weeks to come are, to pay particular attention to the temperature of the pits, to the admission of fresh air to the plants at all favourable opportunities, and frequently to examine the plants to see if they require water. Shut up early in the afternoon, and refresh the plants not in bloom with a sprinkling of soft tepid water through a fine rose. If the thermometer ranges from 57° to 60° where the young stock is growing, it will be sufficient. Much air in warm weather will be necessary for these, to induce a stout and compact habit of growth.

Vineries.—During the ripening of the Grapes in the early house, the red spider, if not checked, will increase rapidly. Wash the pipes or flues with whitewash into which sulphur has been stirred, and in clear weather shut up early, that less fire-heat may be required. Do not relax in maintaining a gentle heat in the outside borders, by adding some fresh litter. Be assiduous in your attention to the Vines in the succession houses. The late houses require much air and frequent syringings this warm weather.

Peach-house.—Where there are large and long-established trees in the Peach-house, the moisture is rapidly absorbed in such weather as we now have, and attention to giving thorough waterings is essential to the welfare of the present crop, and the formation of wood for another year. For watering and syringing use soft water, of a temperature from 65° or 70°. After the stoning process is over, the fruit, if too thick, should be thinned.

Cherry house.—During the ripening of the fruit, when the quantity of moisture, both at the root and in the atmosphere, is diminished, insects will increase rapidly. Take means to eradicate them immediately after the crop is gathered, and supply the trees with water sufficient for their health.

Strawberries.—Endeavour to keep these free from insects, by fumigating and syringing, till the fruit begins to ripen, as these means cannot afterwards be put in practice without injury to the flavour of the fruit. The plants that have done fruiting may be planted out, to furnish early runners for potting—choosing a warm situation, where the soil is somewhat strong and rich.

Melons.—Attend particularly to the advancing shoots, and keep them at such a distance apart as will allow the leaves to expand without shading each other. The laterals must be cut away to a few of the best situated for bearers. Continue to add soil to the hills or ridges as the roots advance. The Melon-plants put out early, may now have the whole of the soil put into the pit or frame, pressing it firmly down if it is dry. Sow some seed for successional crops.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Newly Planted Trees will require to be well watered in this dry weather, and afterwards mulched, using in general cases, dry litter in preference to short manure, as the latter will be apt to make the tree grow too rampant. The season has as yet been very favourable for Apricots and Peaches, setting their fruit. Both will now need partial disbudding, removing only a few shoots at a time, that the flow of the sap may not be checked. Pick out the points of strong shoots, which will ensure healthy bearing wood. I make a point of saving carefully every twig of a Peach tree I remove at this season, as I find a decoction of them after being bruised, better for cleaning the trees of green-fly, &c., than any application of snuff dusting, tobacco smoking, or mud dashing.

Beans and Peas.—After sowing, soak the drills with water before covering the seed. After filling up the drills, spread dry earth over the rows, which will prevent the moisture evaporating. Sow *Savoys* for autumn and early winter use; *Lettuces*, of sorts for succession; *Grange's Cauliflower Broccoli*, to succeed the autumn Cauliflower; *Miller's Late White Broccoli*, to supply the table before the earliest Cauliflower comes in in May. This last variety, from its great usefulness, and dwarf compact growth, deserves a place in every garden. *Mushrooms.*—Make beds for summer produce. Choose the coolest situation you can find; if underground so much the better. In answer to "J. P.," sweep off any spawn that runs on the surface of the bed with a broom, or the palm of the hand. This will be a matter of no difficulty if the beds are as hard and smooth on the surface as they ought to be. *Routine.*—Make fresh beds for Cucumbers—much fermenting material will not now be wanted; prick out Celery, sow for the last crop; pot Capsicums and Tomatoes, water Cauliflower, Broccoli, &c.; watch your chance of a shower for transplanting; lay out paths for walking on round the various quarters; hoe and rake borders, and get the main walks put in good order for the season.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—In this department there is nothing particular to recommend, but what has been said previously; until the felling of Oaks and other trees of which bark is required commences. Felling and peeling should be commenced as soon as the sap flows freely, which circumstance should be carefully attended to, as it is the best season for such work.

Coppice.—The cutting of all poles, rods, &c., should be completed as soon as convenient before the peeling of Oak-poles commences; take great care to have the fences in good repair so as to keep out sheep and cattle.

Young Plantations.—The thinning of young plantations it is presumed is now nearly completed for this season, except where young Larches are felled for the bark, the felling and peeling of which should be commenced as soon as the bark will separate freely. All newly-planted trees should be carefully attended to now, fastening them well at the roots to prevent them from blowing about.

Hedge-Rows.—The fastening of any newly-planted trees should be carefully attended to, as it tends much to their success.

Nursery Work.—Continue to sow Nuts, seeds, kernels, &c., and plant in rows all seedlings and other small plants as soon as possible. Be sure not to let the roots get dry during the operation; endeavour to preserve carefully the newly-sown seeds, Nuts, kernels, &c., from birds and mice.—*W. B.*

State of the Weather near London for the week ending April 11, 1844, as observed at the Horticultural Garden, Chiswick.

April	Moon's Age.	Barometer Max.	Barometer Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Thurs. 4	17	29.785	29.719	56	34	48.0	N.	.01
Fri. 5	18	29.947	29.849	62	32	47.0	E.	
Sat. 6	19	30.047	30.065	62	35	43.5	N.E.	
Sun. 7	20	30.309	30.396	61	27	47.5	S.W.	
Mon. 8	C	30.400	30.441	73	29	51.0	W.	
Tues. 9	22	30.396	30.116	65	28	46.5	S	
Wed. 10	23	29.908	29.914	61	34	46.0	S.W.	
Average		30.104	30.075	64.5	29.6	47.0		.01

April 5 Overcast; very fine; slight shower; clear
6 Slight dry haze; fine; very clear
7 Clear and fine throughout
8 Sharp frost early A.M.; clear and fine
9 Frosty; clear; hot and dry
10 Slight frost; very fine; exceedingly clear and hot, with very dry air; clear at night
11 Slight frost, fine; becoming cloudy; slightly overcast and fine
Mean temperature of the week, 2½ deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending April 20, 1844.

April	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Wind N.	NE.	E.	SE.	S.	SW.	W.	NW.
Sun. 14	57.9	38.1	48.0	6	0.31 in.	2	3	—	2	4	1	4	
Mon. 15	54.4	39.2	46.3	9	0.47	1	2	1	4	4	1	4	
Tues. 16	55.0	36.8	46.2	8	0.63	4	3	1	1	3	2	2	
Wed. 17	56.0	37.1	46.5	9	0.32	6	4	1	1	2	1	1	
Thur. 18	57.4	38.2	47.8	8	0.49	2	3	1	1	2	4	2	
Fri. 19	59.3	38.2	47.3	4	0.14	4	2	1	—	2	3	—	
Sat. 20	58.8	36.0	47.9	8	0.39	1	4	2	—	—	3	4	2

The highest temperature during the above period occurred on the 13th, 1840, and 20th, 1843—therm. 70°, and the lowest on the 19th, 1836—therm. 28°.]

Notices to Correspondents.

BEES.—*Was* may see Wildman's Mahogany Hive at Milton's, No. 10, Great Marylebone-street, or at Neighbour and Son's, Oxford-street, London.—*W. S.*——*A Lady.*—Nutt's hive certainly does not prevent swarming, nor does any other hive made of any material of the like dimensions. The principal causes of Bees swarming are, an over-crowded population, and oftentimes poverty, with a prospect of Royal progeny succeeding the departure of the parent Queen. Bees are known to have been kept in a colony of boxes for 12 years without swarming; but there is nothing mysterious in that. A prolific Queen, and a good situation, with almost any sized hive, is favourable to swarming; but if sufficient space is given to the stock hive very early in spring, with suitable inducements to enter, and where the combs can be attached near the body of the Bees, it is a means of preventing swarming. All small flights should be returned to the parent stock unless in very favourable situations, or where it is desirable to increase the number of stocks.—*W. Savage, Swaffham.*

CALCEOLARIAS.—*A Reader.*—If you sow well-ripened seeds of these in pots or pans, filled with soil of a light nature, and press the seeds gently into the soil, without covering them with mould, they will vegetate quickly. They should be placed in a gentle hot-bed, and watered with a watering-pot having a very fine rose. We have seen trellises used on flued walls out of doors, opposite the furnaces, where the trees are liable to be injured by the heat; but never over the whole wall.‡—*Hospitis.*—As your terms are limited, and the price of flowers frequently depends upon the stock a seller has on hand, your best plan is to write to a respectable Florist, stating your terms, and get him to send you the best he can afford at the price.*

CAMELLIAS.—*Hospitis.*—If in vigorous health, let their roots alone for the present, and repot them next year, when they are about to grow again. Keep the plants in-doors during all the growing period, and when their wood is made, turn them out of doors in a sheltered sunny place during the summer. If you keep them too much in the shade, they will not form flower-buds abundantly.——*J. W.*—For grafting these, well-ripened young shoots should be taken, when they are just beginning to grow, and before the buds are far advanced. They should be worked upon healthy young stocks, which should afterwards be placed under hand-glasses in a stove or forcing-house, where a temperature of from 60° to 70° is kept up. Whip-grafting, without the tongue, is perhaps the best method; and it is advisable to retain a few leaves on the stock above the graft, in order to draw up the sap. The Single Red makes the best stock, as it strikes freely from cuttings. Orange-trees may be grafted in nearly the same way; but if a little bottom-heat can be given them, so much the better.‡

CURRANTS.—*Taro.*—We should think that calico, properly prepared with Whitney's composition, and put over your Currant-bushes, would protect their blossoms, and help to ripen their fruit earlier.‡

FOUNTAINS.—*T. J. M. A.*—Upon further consideration we see that there is no describing the contrivances for jets, and we have no woodcuts ready. You had therefore better apply to some engineer for patterns, or consult the "Revue Horticole," last Number for 1844, which any French bookseller can procure for a trifle.

FUCHSIAS.—*Rhodon.*—A sandy pulverised turfy loam is the best for the first potting; where this can be obtained, one-sixth of the whole proportion of sand is enough; but in heavy loam, one-fourth is requisite. The above distinction in loam is a necessary one in cultivation generally. *W. W.*——*A Young Beginner.*—Send a fresh specimen of the Fuchsia.——*G.*—We believe the following:—Smith's Queen Victoria, Epps' Kentish Bride, Standish's Colossus, Bell's Decora, and Youell's Queen Victoria.*

HEATING.—*A Constant Subscriber, Macclesfield.*—Certainly.

IRISH YEW.—*B. K. M. S.*—We believe it to be true that all the plants of the Irish Yew originated at Florence Court.‡

MANURE.—*Jeremiah.*—The fluid in your tank is of great value; but it should have some water added to it, say one third part, and then be well fermented. Afterwards, it may be employed as liquid manure, and will be found excellent. Before using it, try its strength by pouring a little over some young leaves: if it burns them, it is too strong, and must have water added to it. It is not the ammonia alone that gives this fluid its value; there are many other valuable constituents.——*Northumbriensis.*—We cannot say what is the *best* artificial manure for Apple-trees, &c. in a poor, worn-out, hungry soil. If you can get rotten dung, mix it with one sixth part of guano, either Peruvian or Potter's, or of superphosphate of lime, and dig it in. You will probably find it answer the purpose.

NAMES OF PLANTS.—*C. F. C.*—Flower quite crushed; apparently Lycaste aromatica.——*J. C. L.*—Catasetum semi-apertum.—*J. M.*—Hyoscyamus aureus.——*H. H.*—Rosa villosa, Trifolium minus. —— *Tuscyos.*—Erica andromedæflora, Epidendrum seligerum; Lycaste crushed and dried up. Is it different from L. cruenta?——*W. H. G.*—Very near Oncidium guttatum: perhaps a new variety of that species.——*C. J. P.*—The twigs of some tree stripped of bark. Why not of the Birch?——*J. C. L.*—Very near Epidendrum graniticum; but may be different.——*J. S. P.*—1, Clianthus puniceus; 2, Gorteria rigens; 3, Linum flavum; 4, Rhododendron davuricum; 5, Andromeda calyculata.——*K. B.*—Asplenium Trichomanes.

ROCKWORK.—*An Inquirer.*—If Roman cement does not hold together the stones in your rockwork it is because of one or the other of two things: either the cement is bad, or it is badly applied. No better material *can* be had.

STRAWBERRIES.—*Amateur.* Thanks. It is probable that your Strawberries have too much water in proportion to the light and heat they are exposed to. If so, the remedy is obvious.

VINES.—*J. M.*—If a piece of bast is tied tightly round the stem of a Vine, its buds will burst better below the bast than would be the case under the same circumstances if the bast were away. The reason is, that a tight ligature presses upon the sap-vessels below the bark, and prevents the sap rising up to the end buds so quickly as it naturally does; the effect of which is, to force the sap into the lateral buds.

WATER.—*Rus.*—Without knowing what it is that makes your water hard, we can hardly advise you how to soften it. Why not try for yourself whether common soda will answer the purpose; and if not that, whether carbonate of ammonia, (common smelling salts), will not do? In either case, very small quantities must be used.——*J. S.*—To every 100 lbs. weight of water add 2¼ lbs. of common salt, and it will be about as strong as sea water; but as sea water contains the muriate and sulphate of magnesia in notable quantity, they too are required to complete the resemblance; say ½ lb. of each to the same quantity of water. Drench the Asparagus beds two or three times when the summer growth is about to be made, and is a little advanced.

MISCELLANEOUS.—*H. P.*—We cannot recommend nurserymen.——*A Subscriber.*—You cannot keep Mosses from greening the stone of your house, because their seeds are always floating in the air, and wherever they find a place they like, there they grow. A solution of corrosive sublimate would perhaps clear the stonework, but it might become black by exposure to air, and it is very dangerous to apply. Your only remedy, as far as we know, is to paint the stonework, when perfectly dry—if it is ever so.——*N. G.*—Anti-corrosive paint is an excellent material for out-door work; but it is not suited for painting the rebates of movable sashes, because of its roughness.——*R. W.*—We have not seen guano tried on Rhododendrons. If to be used it must be well mixed with water. We do not recommend nitrate of soda. If guano is good, three or four applications in a year, in a fluid state, ought to be enough. Cowdung is capital manure for Rhododendrons.——*A. K. L.*—If you cannot get gas-water, try soot two parts and salt one part, thoroughly mixed a few days before using. What difficulty can there be in growing Violets? Keep them in a warm, well-drained place, and they require no more care.——*D. W.*—One of the Societies has a garden, the other not. You should consult the secretaries. We presume that the Botanical Society would be the more useful to a young botanist.——*E. C.*—The two species of Cornus are rather tender; the others are perfectly hardy. They are trees or shrubs, and are unfit for a very small garden. Raise them in a Cucumber bed, and expose them to the air by degrees, soon after they are up. They require the same management as Dogwoods, Hollies, Thorns, and such things.——*J. M.*—The distinctions among Apples called Russets, Pippins, and Pearmains are vague, and have no definite meaning. Pippins are simply "seedlings;" Pearmains are oblong without angles; Russets speak for themselves.——*Rural Chemistry.*—Is it *true* that vinegar and water will keep cut flowers from fading longer than common water? That is the *first* question. We doubt it.——*R. B.*—Prune Cedars of Lebanon after their young wood is made.‡——*R. B. M. J.*—Verbenas will grow in almost any kind of soil; some other thing than that must be the cause of failure. Possibly they are kept too wet and damp off.‡——*J. B.*—A full account of Saxifraga hypnoides is given at p. 285, Vol. 1843. We never recommend Nurserymen.‡ —— *Examiner, &c.*, may mix guano with water at the rate of 4lbs. of it to 12 gallons of water. After mixing, it should be allowed to stand for 24 hours before it is used.‡——*An Amateur* is thanked for the number sent.——*Amateur.*—The subject on which you write is one that we would advise you about personally with pleasure, but it is not suited for public communication.——*G. Mt.*—It is one of the privileges of the Fellows of the Horticultural Society. Upon what principle do you, who are not a Fellow, claim the privileges of those who pay for being so? Permit us to add that there is no blindness equal to that of meanness.——*W. L. M.*—Very strong brine is perhaps the most effectual fluid cure for grass in gravel walks; but there is nothing like labour: it is the most effectual and cheapest in the long run. You may kill Blackbirds, &c. by means of rat-traps baited with their favourite food.——2s will be given for No. 45, 1843.

SEEDLING FLORISTS' FLOWERS.

CALCEOLARIAS.—*G. S.*—A large cream-coloured flower, with maroon blotch; a fine flower, but too much like many of Mr. Green's.*

CINERARIAS.—*W. M.*—The flowers of your Queen of May want compactness of form, and the termination of the petals is rather defective. It forms, however, a distinct variety, and will be valuable in a collection, from the novelty of its colour, which is a light blue, of a peculiar tint, with the disk of a darker blue. The flower is large, and it appears to be a free bloomer.*——*G. S.*—A pure white flower, with a purple disk; a bright and lively flower. A sprig should be sent, not single pips.*

FUCHSIAS.—*B. W.*—Your seedling is a fine large bold flower, with rather coarse sepals; and in general appearance it too much resembles many varieties in cultivation.*

ERRATUM.—In the list of Subscribers to Mr. LOUDON'S "Encyclopedia of Trees and Shrubs," inserted in this Paper, March 30, for Mr. G. Tackman, *read* Mr. G. Jackman.

*** As usual, many communications have been received too late.

RESIDENCE AND SPORTING.

WANTED, to Rent, either Furnished or Unfurnished, a moderate Residence, with 10 to 100 acres of Land, and the exclusive right of Sporting over a well-preserved Manor. It is not absolutely necessary that the Manor adjoin or belong to the Residence.—Full particulars to be addressed to Messrs. HANDLEY, Surveyors and Land-agents, 10, New Bond-street, opposite the Clarendon.

The Agricultural Gazette.

SATURDAY, APRIL 13, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 17, Agricultural Society of England.
THURSDAY, April 18, Agricultural Imp. Soc. of Ireland.
WEDNESDAY, April 24, Agricultural Society of England.
THURSDAY, April 25, Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

April 23 Grove Ferry.
April 26 { Dorchester. Maidstone. Wrentham.
April 27 { Cardiff. Gloucester.

It is unnecessary to enter fully into detail on the subject of POTATO CULTURE, but there are two points to which we may usefully direct the attention of our readers: the diseases to which the plant is subject, and the manures suitable for it.

The Potato plant has of late years been subject to several diseases which, though many remedies have been suggested for them, still occasionally injure or destroy our harvests.

The Curl, so called from the crumpled appearance which the leaves assume under its influence appears to be owing to the over-ripening of the tubers to be used as seed. The experiments of Mr. Dickson, reported in the "Memoirs of the Caledonian Horticultural Society," show that, while sets from the waxy seed of the Potato produced healthy plants, those from the ripened seed did not vegetate at all, or produced curled plants. For further particulars on this subject see an article by Mr. Deans in this Paper.

The Rot, or *Taint*, which causes the entire destruction of the set, is also probably owing to a constitutional defect, arising from circumstances connected with the cultivation or treatment of the plant. It is believed by many that the liability of the Potato to this disease is owing to planting cut sets instead of whole ones; and the idea is corroborated by the fact, that means taken to produce upon the cut sets an artificial skin, have occasionally possessed a beneficial influence. Thus, in the September Number of the "Quarterly Journal of Agriculture" for 1841, there is a paper by Mr. R. White on what is stated to be "a simple means of preventing the failure of the Potato crop." It consisted in riddling over every basketful of newly cut sets a shovelful of hot lime, and then turning them over and over again till the lime was well taken up by the sets, when they were put into a heap three or four feet thick, and kept for two or three weeks. "The hot lime had the effect of stopping the flow of the juice, and of encrusting a strong skin upon the sets." The experience of several years is quoted in this article in favour of this plan. We should think that no good end was obtained by allowing the sets to lie in such a large quantity together; the skin would form with equal certainty on the cut surface without thus exposing them to risk of injury from heating.

The following remarks are extracted from the 15th Part of Mr. Stephens's "Book of the Farm:"—

"Were seed Potatoes securely pitted—not over-ripened before they were taken out of the ground—the sets cut from the crispest tubers and from the waxy end—the dung fermented by a turning of the dunghill in proper time—led out to the field, quickly spread, the sets as quickly dropped on it, and the drills quickly split, there would be little heard of the failure even in the driest season—at the same time the precaution of obtaining seed frequently from an elevated and late district compared to where the seed is to be planted, should not be neglected. I own it is difficult to prove the existence of constitutional weakness in any given tuber, as its existence is only implied by the fact of the failure; but the hypothesis explains many more facts than any other, than atmospheric influence—for example, producing the failure like epidemic diseases in animals, for such influences existed many years ago as well as now. The longer the cultivation of the tuber of the Potato, which is not its seed, is persevered in, the more certainly may we expect to see its constitutional vigour weakened, in strict analogy to other plants propagated by similar means; such as the failure of many varieties of the Apple and Pear, and of the cider fruits of the 17th century. This very season, 1843, contradicts the hypothesis of drought and heat as the primary cause of the failure, for it has hitherto (to June) been neither hot nor dry, while it strikingly exemplifies the theory of constitutional weakness, inasmuch as the fine season of 1842 had so much over-ripened the Potato—farmers still unaware of the cause of the failure, permitting the Potatoes they have used for seed to become over-ripened—that the sets this spring 'did not vegetate at all,' even in the absence of heat and drought, and in the presence of moist weather. Had the Potatoes been a little less over-ripened in 1842 the sets from them might have produced only curl this season, though it is not improbable that the same degree of over-ripening may cause entire failure now, that would only have caused curl years ago; and as over-ripening was excessive last year, owing to the very fine weather, so the failure is extensive in a corresponding degree in this, even in circumstances considered by most people preventive of its recurrence, namely in cold and moist weather. And observe the results of both 1842 and 1843 as confirmatory of the same principle, illustrated by diametrically opposite circumstances. The under-ripened seed of the bad season of 1841 produced the good crop of Potatoes of 1842, in spite of the great heat and drought existing at the time of its planting in 1842; while the over ripened seed of the good season of 1842 has produced extensive failure in spite of the coolness and moisture existing at the time of planting in 1843. How can heat, drought, or fermenting dung account for these results?"

The following are good varieties of the Potato for field-culture:—Prince of Wales' Early, Shaw's Early, Bread Fruit, London Purple, Pink Eye, Magpie, China Orange, Red Kidney, Lancashire Kidney, and the No-blow. And, as a Pig Potato, we know of no variety which unites quantity and quality of produce more profitably than what is known in Gloucestershire as the Irish White Apple.

We allude to the subject of manures in connexion with the Potato-crop, not because, in the experience of the farmer, any manure has been found peculiarly applicable to it that is not equally beneficial when applied to other green crops, but chiefly in answer to several questions that have been sent to us by correspondents. The best manure for the Potato is that made in the farmyard from the consumption of roots and cake, or corn, whether by horse, oxen, or sheep. It need not be so well made or fermented as that applied to the Turnip, for it is not in need of any extraordinary supply of nourishment till, when in an advanced stage of its growth, it commences the formation of the young tubers. With regard to the fertilisers of commerce, the only lengthened series of experiments that we know of is that made in the Horticultural Society's Garden by E. Solly, Esq. They were not on so extensive a scale as for their results to be looked upon by *farmers* with confidence so far as *quantity* of produce is concerned, but they are very interesting as far as they go; and we quote the following, being a compilation of some of them, extracted from Mr. Solfy's Report in the 3d vol. of the Horticultural Society's Transactions:—

	Quantity of manure per acre.	Proportional Nos. representing the produce p. acre of tubers.
Gas-liquor and phosph. acid	800 gallons	85
Gypsum	2 cwt. 96 lbs.	132
Nightsoil & bleaching powder	5 tons	117
Putrid urine	800 gallons	89
Gas-liquor and nitric acid	800 gallons	98
Sulphate of iron	1 cwt. 48 lbs.	125
Gas-liquor	800 gallons	98
Night-soil, bleaching powder, and sulphate of iron	5 tons	127
Gas-liquor and muriatic acid	800 gallons	135
Nitrate of soda	2 cwt. 96 lbs.	121
Do. do. and salt cake	2 cwt. 96 lbs.	147
Guano	16 cwt. 27 lbs.	163
Nitrate of soda	1 cwt. 48 lbs.	144
Nightsoil and sulphuric acid	5 tons	164
Putrid urine & sulphate of iron	800 gallons	168
Epsom salts	2 cwt. 96 lbs.	156
Gas-liquor and sulphuric acid	800 gallons	151
Bone-dust	76 bushels	186
Epsom salts	1 cwt. 48 lbs.	167
Rotten dung	5 tons	184
Salt cake	1 cwt. 48 lbs.	273
Nightsoil	5 tons	179
Daniell's Manure	20 bushels	185
Sal ammoniac	1 cwt. 48 lbs.	181
No manure		128
Salt cake	2 cwt. 96 lbs.	240

A correspondent from Bath will see that gas-water neutralised by phosphoric acid, being in fact a solution of the phosphate of ammonia, stands very low, as a fertiliser, in the scale of these manures, but "it must be borne in mind that these experiments were made on garden ground, the composition and nature of which is very variable and uncertain, and far too rich to enable positive deduction to be formed of the relative value of the different substances employed as manure." To this we may add that they were made on very small plots of ground, and coupling this with the known properties of some of the manures employed, we may, perhaps, consider this table as illustrative of Mr. Lawe's remarks in a leading article of last week, rather than of the relative value of the manures employed.

We may mention, in conclusion, that an account of very good Potato-culture is given in great detail by Mr. Morton, in his description of the mode of cultivation on Stinchcombe Farm, in the 1st vol. of the "English Agricultural Society's Journal." Mr. Dimmery, who occupied that farm, always grew Potatoes after Turnips which were consumed on the land by sheep; and in addition to the manuring which the land thus received, be used, with the greatest advantage, to apply about 25 bushels of soot per acre before planting the sets.

ON THE CULTIVATION OF FLAX.—No. II.

(*Continued from p.* 219.)

In the cultivation of Flax, the selection of the soil is a primary consideration. In this respect, it has been already remarked, it has a wider range than most of our cultivated plants. The soil preferred for this crop in the Low Countries, and other parts of the Continent, where its culture is so well understood, is what is generally denominated strong loamy land, such as is best adapted for the growth of Wheat. Adhesive clays and light sandy soils are equally unsuited for Flax, as also all soils containing any considerable portion of peat in their composition. On heavy clay soils, it is difficult—indeed, almost impossible—to attain that state of perfect pulverisation which is essential for the successful growth of Flax; and on the class of extreme light upland soils, the inferior quality of fibre produced sufficiently indicates that such are not the proper soils for that crop. In the case of reclaimed bogs, a great length of time must elapse, and the character of the soil be completely changed, before it is fitted for Flax-culture. Even when so far divested of its original character as to be well suited to the growth of Wheat, it will still produce Flax of a very inferior quality. In this respect, Flax differs from most of our other Agricultural plants, which usually succeed well on reclaimed bog, when the altitude is not great, and the soil otherwise of good quality.

The state of the land with regard to fertility, is also deserving of notice. The direct application of manure to the Flax-crop is found to be most injurious, producing fibre of so coarse a quality as to be almost worthless; yet a high degree of fertility in the soil by previous manuring, or otherwise, is indispensable. These remarks have reference to the manure of the farm-yard; the value of the portable manures, as they may be termed, not having yet been sufficiently ascertained to warrant an opinion being offered on the subject. So far as this crop is concerned, therefore, a wide field is open for experiment; and should the class of manures just mentioned prove equally valuable for promoting the growth of Flax as they have done for that of most of our other crops, they will remove one of the greatest obstacles to its culture, especially on inferior soils. Liquid manure is, however, advantageously applied to the Flax-crop in Flanders, and other Flax-growing districts on the Continent, the quantity being regulated by the wants of the soil. The effect of enriching the soil beyond a certain degree, for this crop, causes it to grow so luxuriantly, that the strength of the stem is unable to maintain it in an erect position; and when laid down before being ready for pulling, the crop is altogether destroyed. In this respect, Flax is subject to the same rule as our cereal crops, to which an excess of manuring proves decidedly injurious, and differs from the root-crops, and the Clovers and Grasses for the successful growth of which an excess of fertility can scarcely exist in the soil.

The place for Flax in the rotation is after Lea, or a Corn-crop; and in the latter case it should be the second crop after the land is broken up from Grass. This, indeed, is the proper place for Flax in the course, and its introduction into general cultivation would, therefore, in some degree, derange the order in which the several crops of the farm succeed each other at present. It may be successfully grown after the land is taken up from Grass, as the first crop; but the preparation for the Flax is in this case more difficult, and a valuable Corn-crop may then be grown without injury to the succeeding crop of Flax; nay, with absolute advantage. It should not, by any means, come after Potatoes, or other green crop. This has been a common practice in Ireland, though always productive of coarse fibre. Another important consideration in determining the place for Flax is, that it must not be grown on land which has been recently limed; certainly, not sooner than the third or fourth year. On many of the rich heavy soils throughout the north of Ireland, on which Flax had formerly been grown with the greatest success, it does not succeed from this cause alone. Lastly, it must not be frequently repeated on the same land—not oftener than once in every seven or eight years. The Flemings consider this circumstance of much importance, and arrange the divisions of their small farms so that the Flax crop, which they consider their golden one, shall not be cultivated on the same ground oftener than every ten or twelve years.

The preparation of the land for Flax should be similar to that for the Carrot—perfect pulverisation of the soil to a considerable depth, and the thorough eradication of weeds being the objects to be attained. The means to be employed for attaining these conditions, it does not seem necessary to describe at length in this place. The usual early ploughing in the autumn, with two further ploughings in the spring, assisted by the action of the harrow and roller, will, in general, be sufficient for this purpose. Deep pulverisation is much more important in the preparation of the land for Flax, than is usually imagined; it having been repeatedly ascertained that, under favourable circumstances, the roots of the plants will strike into the ground fully one-third of the entire length of the stalk.

To ensure the regular and even germination of the seeds, the surface of the ground should be firm and perfectly level before sowing. It is usual, immediately before sowing, to give a good rolling to the ground, after which light harrows follow, before the seeds are sown. Another slight harrowing and rolling afterwards finish the seed process. The proper seed-time is during the month o April, and as early as possible in the month, the precise

period being of course regulated by the weather and consequent state of the land. Flax is repeatedly sown in Ireland in the month of May, and often at a late period of the month, although experience has abundantly confirmed the propriety of an earlier seed-time.

The quantity of seed will in some degree depend on the chief object in view in the cultivation of the crop; but in these countries hitherto it has almost exclusively been cultivated for its fibre, the seed being, in the majority of cases, altogether disregarded, and allowed to go to waste; and there is little doubt that the prevailing practice has been to use too small a quantity of seed. When the saving of seed is a principal object, thin sowing will better answer the purpose in view. The production of the largest quantity of seed is indeed incompatible with the greatest return from the fibre; but the latter being the more valuable, the production of seed is to be regarded as a secondary consideration. Thin-sown Flax branches much towards the top, which produces an increased quantity of seed. It is, however, worthy of remark, that the plants from which the finest fibre is produced have rarely more than one seed-pod each,—in fact, not more than one in twenty having more than a single capsule. The cultivator, therefore, may be assured that when his Flax appears in any degree branched, that too small a quantity of seed has been used, and that an inferior sample will be the certain result. No doubt can be entertained that a sufficient quantity of seed has not been generally used in the cultivation of this crop. The stalks of Flax may, in fact, be aptly compared to trees in a plantation,—those standing closely together, from which alone fine fibre can be produced, being tall and slightly branched, while those standing at greater distances will be short and branched from top to bottom. About three bushels, or nine pecks, to the statute acre, will be the proper quantity; and if fibre of an extraordinary degree of fineness be required, another gallon or two should be added. This is a close approximation to the quantity used in the most celebrated Flax-growing districts on the Continent.

It is, perhaps, almost unnecessary to mention that the Flax-grower should ascertain that the seed he employs is of good quality, and free from any admixture of the seeds of weeds. Great circumspection is, however, required on these points, as large quantities are annually imported for sowing altogether unfit for that purpose, and the importation of which would not be attempted, were it not that what remains on hand after the seed-time is over can be advantageously disposed of to the oil-merchants. No crop requires greater care and attention than Flax, as it will either be a highly remunerating crop, or a ruinous one, according to the course of proceeding adopted; and it is especially important that the farmer should secure genuine seed, which will be smooth, bright, plump, and so heavy that it will sink in water.—*J. Sproule.*

GEOLOGY AND AGRICULTURE.

We have been informed, upon authority on which we can rely, that one of our most eminent living geologists received, in the early part of his career, many a lecture from an uncle engaged in commerce, for wasting time and talents on so frivolous and unprofitable a study. When Geology had raised the nephew to a professor's chair—to affluence and celebrity—his uncle used to exclaim—"Ah! it was I who advised him to apply himself to that pursuit." The fate of the science itself has been somewhat similar. It had a long noviciate of obloquy to endure—it is now beginning to reap its honours and emoluments. Long after the mercantile uncle had given his sanction to the studies of his nephew the Professor, a farmer, land-surveyor, or land agent, would have run considerable risk of having his reputation as a practical man damaged by possessing a geological hammer, or collecting organic remains. Geologists were looked upon as a set of cracked-brained enthusiasts, if not something worse, who went about breaking stones "like road-makers run daft." They themselves occasionally descanted on the advantages which the Agriculturist, the miner, the engineer, the architect, and even the surveyor of parish roads, might derive from the study of the materials composing the crust of the earth, the order in which they are arranged, the organic remains by which the sedimentary rocks are characterised, and the agencies at work in modifying the surface of the earth. Such assertions, however, were received either with peals of derision, or smiles of incredulity. Now the tide has turned, and there is a disposition to give to Geology the credit, not only of its own merits, but of those which it derives mainly from its connexion with other sciences.

Having long been of the number of the knights of the hammer, which we have wielded through evil report and good report, with much pleasure, and, we hope, some little advantage, we rejoice at the homage now paid to the economic value of Geology, applied to the improvement of the soil; but we cannot consent that chemistry should be robbed of its fair share of the honour. In our view of the case, it is from the knowledge of chemistry, involved in a knowledge of Geology, that its value to those engaged in the cultivation of the soil depends. Geology, it is true, teaches us to look below the surface to the subsoil, and establishes the connexion of both with the rocks from which they are derived; but it is the knowledge of the chemical composition of those rocks which gives value to that connexion. That amount of chemical knowledge, of which none engaged in the improvement of the soil or the management of landed property ought to be destitute, every geologist must possess. One of the first lessons which he learns is a knowledge of the simple minerals whose combinations constitute rocks; and, to discriminate one simple mineral from another, he must have recourse, not only to their external but their chemical characters. The blow-pipe and the test-tube will be his best guides; and thus, before he can make himself master of even the rudiments of Geology, he must have acquired a considerable degree of expertness in, at least, qualitative analysis. He will have learned how to detect the presence of lime and magnesia, of potash and soda, of the phosphoric, sulphuric, and hydrochloric acids, and of the oxides of iron and manganese. When he finds these substances present in a solution which he is examining, the laws of chemical affinity will indicate which of them must have been combined, and those of definite proportion will show the quantity of one substance which must have been united with a given weight of another. The Geologist has learned, moreover, to observe how the varying proportions of the earths and alkalies, in the different varieties of granite, syenite, greenstone, and basalt, affect the external characters; he has also learned the effects of varying chemical composition and state of crystallisation in promoting or retarding the disintegration of rocks; thus influencing their capability of forming soils or mineral manures, and of yielding their constituents for the use of vegetation. It was not, however, till the recent advances were made in organic chemistry, that the knowledge possessed by the Geologist of the chemical composition of soils acquired its full value. While chemists were looking for the organic constituents of plants in the soil, instead of in the atmosphere, and treating their inorganic constituents as mere accidents, their analyses of a soil in which they only estimated the proportions of the silica, alumina, lime, and humus, did little more than indicate its mechanical texture, which might be ascertained by simpler means. But when the paramount importance of the alkalies, alkaline earths, and acids, to the wants of vegetation was established,—when it was shown that within certain limits the proportions of these were constant in the ashes of certain tribes of plants, and that the most fertile soils were those which contained these substances in the largest proportions, Geology and Agriculture were furnished with a new sense.—*J. Trimmer.*

(To be continued.)

ON THE ROT IN POTATOES.

No remedy has hitherto been found for preventing this disease; nor has, I believe, any of importance been suggested; meanwhile it is increasing in many places in a fearful degree, and it is the duty of every one who takes an interest in the welfare of his fellow men to contribute his mite towards the effective staying of the evil. It is with this view that I take the liberty of adding my little experience to what is already known; and, should my opinion prove fallacious, it may, I trust, be the means of leading others to devote their attention to this highly-important subject.

I have thought for some time that the sprouting of Potatoes in cellars must have some effect on the healthy development of the future plant, and my late experience has led me to believe that my opinion is not without foundation. The cause of rot cannot lie in the soil, since we find healthy and diseased Potatoes growing beside each other; that is to say, on soils of the same constitution we sometimes find the rot in alternate plants, or in whole rows. It cannot be attributed to the atmosphere, as all plants and roots are equally surrounded by it; nor can the cause lie in the manure, as all the tubers receive the same kind and nearly the same quantity. It must, therefore, be attributed to the Potato itself; and I will now state my reasons for this belief. By careful inquiry among the farmers of Cheshire I found that they preferred those tubers which have sprouted in cellars, because they were sure that the plants would grow. The farmers, also, in this part of the country are remarkable for their tardiness in getting seeds and tubers into the soil, inasmuch as the tubers are frequently not planted until the commencement of May; they are likewise in the habit of setting cuttings, which are piled up into a heap and remain thus, perhaps, for a week or ten days before they are all planted. It is obvious that the warmth of April will cause these cuttings to sprout quickly, and the shoots put forth are always of a white colour, distinctly showing the absence of air and light, as is the case in cellars. On two farms in Lincolnshire which I have visited for the purpose of inquiring into the rot, I have found the same system pursued. In the town of Ballina (Ireland) and its neighbourhood, where the rot has never appeared, I have been told that all farmers, from the richest to the poorest, take especial care to select those Potatoes which have never sprouted in cellars, and to plant them as quickly as possible. Even there the Potatoes are beginning to degenerate, owing to the practice of planting Potatoes year after year in the same field. They do not rot but get smaller in size. An alkali of a very deleterious nature, *solanin*, is formed in the sprouts of Potatoes which shoot in cellars, while not a trace of it is to be found in the stalks of those grown in soil. How far this tends to injure the tuber I have not hitherto been able to ascertain; but I think it highly probable that it may have such a tendency. After Easter it is my intention to analyse the tubers of such Potatoes as have sprouted in cellars, in order to ascertain the change that has taken place. It is not, I think, probable that the degeneration of the tuber in one year should immediately induce rot; but that by neglect transformations have been going on for years which have ultimately led to it. Experiments might easily be instituted to show how far such shoots produced in cellars affect the crops, and it is certainly worth ascertaining. I hope to be able to make a series of experiments this year on this interesting subject, the results of which I shall not fail to communicate.

As the time for setting is fast approaching I may perhaps be allowed to make the following suggestions on the subject:—1. A species of Potato should be selected in which the rot has not yet appeared. 2. Whole tubers should be set instead of cuttings, and small but healthy ones should be selected for the purpose. 3. Especial care should be taken to set only those with healthy eyes and with sprouts. 4. They should not be set so deep as to exclude the influence of the air, nor so close together as that tubers of one plant should be formed at the expense of another. 5. For the sake of economy the Potato should not be allowed to come into flower, but the buds should be carefully nipped off. 6. The best manure will be guano and carbonate of soda, or thoroughly decayed farmyard manure.

Should all these precautions fail, no hope is left but to grow seeds of Potatoes in which the rot has never appeared, and to rear fresh tubers from seeds. The tubers for setting should be kept in a cool cellar, of as equal a temperature as is possible, and should not be planted later than the middle of April.—*A. B.*

ON MINERAL AND INORGANIC MANURES. No. XIII.

By Professor Charles Sprengel.

(Continued from page 202.)

After the application of marl, some weeds will disappear entirely, whilst others, which have not existed previously, will appear; thus, for instance, the growth of the golden Daisy, which is known to be a most mischievous weed, is altogether prevented by marl. I have found by experiment that marl which suppresses this weed is rich in oxide of manganese, and the plants contain but a trace of that mineral. Amongst the weeds suppressed by marl are Quick-grass and Bank-cresses, whilst it advances very much the blue Corn flower, the red Poppy, wild Oat, the bitter Vetch, and the wild Vetch. In order to hinder the increase of the weeds which are strengthened by marl, it is necessary to plant the crops in such a succession as will assist in their destruction. It would therefore be very erroneous, if on marled fields Rye should be often followed by Rye, as in this case the Corn flower, &c. would annually come to maturity, and the fields would be finally quite overrun with such weeds. The fact that marl advances the growth of some weeds, deters some farmers who are in the habit of growing Corn after Corn from its use.

All crops grown after marl are not only more relished by cattle, but also (as has been stated before) more nutritious than others; and this alone may induce farmers to use marl wherever it is at hand. This phenomenon is easily explained, by the fact that animal bodies require for their chemical constitution the very same elementary substances that plants do. By marl the soil is supplied with phosphate of lime, soda, chlorine; and, as the crops also will contain more of these substances than those previously grown, it is obvious that the animals will obtain thereby more of those very mineral substances which are necessary for their life. To this is to be added, that plants grown after marl contain more starch and sugar, and less of acid; so that on that account also they are more nourishing and palatable to the cattle. How much animals prefer plants grown after marl to those grown after other manures may best be observed on the limits of fields differently treated in this respect; because, whilst they always eat up the Grasses and weeds grown on the one to the very roots, those of the other are left untouched to a considerable height.

Experience shows, that of all the Cerealia, Oats will grow best after marl. The reason may be, that Oats are a very scourging crop, and grow better where the marl offers to it a great amount of available coal of humus. Whoever, therefore, may wish to exhaust a marled field requires only to plant Oats several times after each other. It has been further often observed that marl does not mature crops as early as lime does. It may be supposed that this is caused by the former being able to nourish the plants longer than the latter. Lime might also bring on the earlier maturity of crops by its corroding properties, as a small portion of it remains pretty long in a caustic state. If marl is brought on meadows covered with moss, it will destroy it, and elicit a quantity of Grasses, Clovers, and Vetches, in which respect it acts similarly to lime, but better, as it nourishes the plants to a greater extent than lime, on account of its more numerous mineral ingredients. Lime destroys the mosses, and opens, as it were, the carbonic humus of the soil, which is equally accomplished by marl, though in a less degree. The main rules which are to be observed in the use of marl are the following:—It is of importance that it be mixed with the furrow-slice as intimately as possible, especially if large quantities of clay marl (80 to 90 tons per acre) are brought on the field; because it must not only come into close contact with the humic parts of the soil which it has to decompose, but it is always injurious to vegetation if the roots of plants do not find a homogeneous soil to live in. The intimate mixing of the marl with the soil is best produced by its being spread in small heaps over the field, and left lying thus until it commences to fall to pieces; then it is broken still more with some dung-forks, and strewed about with a shovel. After that, it is left quiet for some time, for the sake of a more perfect disintegration; after which it is harrowed, or the field is gone over with an inverted harrow; then the field is rolled over, again harrowed, which is alternately continued in favourable weather until the marl has been converted almost into a fine powder. Finally, it is ploughed under in dry weather; the field is then harrowed, some time afterwards ploughed somewhat deeper, and again harrowed. The long exposure of marl to the air, and the

often working it up with harrow and roller is, as before said, especially indispensable with those sorts which contain much protoxide of iron; because, to render this harmless to vegetation, it must be converted, by the action of the atmospheric oxygen, before being ploughed under, into a real oxide. It is very probable that, during this process, ammonia will be formed by the decomposition of water, which shall be stated afterwards under the head of "Manuring with Burnt Clay." Clay marl will best fall to pieces during winter, under the influence of the frost; and therefore winter is the general season for applying it, and then it is worked during the spring and summer. Before the marl is brought on the field, it should be ploughed, as the first harrowing will then somewhat mix it with the soil.

(To be continued.)

WOODEN SHOES.

BY MARTIN DOYLE.

VARIOUS have been the suggestions for improving the condition of our labouring classes in Ireland, and numerous the dispensers of bounty, according to their individual notions of what might be most conducive to the end proposed. Some benefactors begin with the head, and seek to act upon the intellectual portion of the body by education, or agitation, as the case may be; others, preferring a middle course, and believing that hunger is a great impediment to the development of mental power, go directly to the stomach, advising "to fill the belly first."

I myself have made some unsuccessful experiments regarding the attic and middle stories of Pat's framework; but on this occasion I shall try what may be done with the basement, and suggest an efficacious mode of keeping his toes dry and warm, well knowing, from my own personal experience, the corresponding effects produced upon the upper extremity of the human column, by the good or bad condition of the pedestal upon which it rests.

I begin with childhood. It is absurd to affirm that children will be rendered hardy by being kept barefooted; this is the way to mar and not to make the constitution. Even before they can walk, their feet, in cold or moist weather especially, should be cased in warm covering, to preserve a sufficient circulation of blood in the lower extremities, which relieves feverishness in the time of dentition. And when the little creatures can paddle about, it is still more necessary to have their feet protected from the moisture of the cabin-floor, or the water in the ditch at the door, in which they are perpetually puddling, when they can escape from the mother's eye.

Whenever I look at the purple legs and feet of a child, which perhaps has at the same time the hooping-cough, or the measles in some alarming stage, or is enduring the tortures of teething, and entreat the parents to get shoes for the sufferer, immediately I anticipate the answers that will be given to my question, Why do you keep the feet bare? The replies are of the following kind:—Shoes are too dear for the likes of them; we think worse of the other children, or of ourselves, that must be out in the fields, or upon the road; or that plaguy shoemaker, Leatherstitch, disappointed us last Sunday; or the pair he made was too small; or the child burned a hole in one of 'em. I often see the mother of a family dragging her feet along in a broken pair of old unmatched slippers, to wash a basket of Potatoes in a stream, which flows in and out of her shoes; or standing in wet mud by the side of a pool, as she washes some of the duds of the family, all the time coughing and wheezing; it is plain that the want of shoes is among her chief deficiencies.

A good pair of shoes cost 5*s*.; and if she has such, she cannot afford to wear them, except on Sundays; and thus, from necessity, or economy, she plashes about in a broken useless pair, or goes altogether barefooted on the other six days of the week, until she contracts some alarming disorder: then, indeed, she begins to suspect that her illness might have been brought on from having worn very bad shoes, or having been barefooted. She is thus rendered incapable of that labour by which she might have earned the price of a pair, or is sent prematurely to the grave.

I have witnessed innumerable instances of fatal diseases in children especially, from deficiencies in this particular. We frequently see in Ireland poor females of town populations trudging about from one street or lane to another, sunk to their ankles in mud, with their feet wet, yet encased in the cast-off bombazin shoes of some lady, or would-be lady, who is charitable without being out of pocket, and could no longer make use of them herself; and we also see in the wintry season many a group of beggar children standing in agony on a frozen pavement, or snow-covered flags, without even the fragment of a shoe, or at the best, with only one, to defend a sore foot, and that one tied round with a piece of twine to keep it together, or stuffed with straw to make it fit.

It is grievous to refuse a pair of old slippers to a poor creature who imploringly asks you for them in God's name, to allay the agonies of feet tender from journeying on rugged roads or thorny paths; and this, when we ourselves are conscious of possessing at home shoes and boots in abundance for every season—every purpose. Many a time have I been asked for a single old shoe, to save one cold disabled foot, the other being less delicate, or already provided with an odd slipper; and I have been deeply pained at refusing the solicitation. Yet there are objections to leather shoes for the poor, even where they are attainable. What a great deal of time is lost in repairing them! Every labourer, male and female, knows this. In the busy spring season, when a farmer goes out among his work-people, and expects to find Andy Callaghan, one of his best men, at some important labour, he is told that Andy was obliged to stay at home to put a sole or a toe-piece to his shoes. Then he asks, as he sees two of his required number of Potato-setters absent—Where is Judy Kennessy? "She went to town to-day to try if she could make off a pair of shoes." Where the mischief is Peg Hoollahan? "She lent her pair of brogues to her sister, who was obliged to go to the chapel to-day." The wants, delays, and disappointments in this way are innumerable, and of every-day occurrence.

For attaining the object which I have at present in view, I know no means more likely to succeed than the distribution of the sabot, or wooden shoe, by landlords and employers of labourers, among their working-people. In France, a climate in which there is far less need of such a comfort than in that of ours, 9 out of 10 of the lower classes, both in town and country,—petty shopkeepers, petty farmers, operatives of all kinds, age, and young people of a higher grade, in the fields, in the streets, at home, or going to school or college,—one and all wear wooden shoes.

Wooden shoes and brass money! there is a supposed connexion between these; and if I can show clearly that a little brass money can buy large wooden shoes, and can persuade any influential persons to introduce a practice adopted by many millions of the French people, and approved from long experience of its economy and comfort, I shall not have written this paper in vain.

(To be continued.)

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XIII.

(Continued from p. 203.)

I will take as practical illustrations, the experiments related in your Paper of this day (Feb. 17), by two of your most valuable Correspondents, and I feel confident that these gentlemen will assist me in proving the correctness or error of my views by further experiments.

In the paper of Mr. Grey of Dilston, two series of comparative experiments were performed with nitrate of soda and gypsum—one upon Grass-land, the other upon Potatoes. In the first experiment Mr. Grey procured 65 stone more Hay from land manured with 1 cwt. of nitrate of soda over that treated with 10 bushels of gypsum; while the land treated with gypsum had no increase over that where no manure was applied. It is impossible to have a stronger confirmation of my views than this experiment affords. "The Grass to which the nitrate was applied," says Mr. Grey, "assumed in a few days a darker colour than the other, rose quickly above it in height came earlier into seed, and was sooner fit for cutting." Here we have abundance of crops from abundance of material; and Mr. Grey, had he analysed his Hay, would have found the alkali in its ashes. Gypsum, on the contrary, acts slowly, by absorbing ammonia from rain-water. And the azotised part of the plant may during the growing of the Grass have received no addition whatever from the gypsum, as it is clear it did not; gypsum requires moisture and time before it acts as a manuring agent at all; whereas the soda enters at once into the fabric of the plant, and it is of great use, particularly in Grass; for without it the cows which feed upon it could not secrete milk.

In the experiment upon Potatoes Mr. Grey says—"I applied the nitrate of soda to a row of Potatoes, at an early period of their growth. The tops soon showed the effect, and far outstripped the adjoining rows in growth. But when the Potatoes were taken up, the produce of that row was found to be less than the other, both in weight and measure." Here we have food given to the top and none to tuber; and the vital action was expended in assimilating this food to the formation of branches and leaves. Had Mr. Grey added rotten stable manure to the nitrate, the result would have been different; had he added urine, more carbon would have been fixed in the tuber; had he supplied phosphates, more tuberous matter would have been formed; but he only supplied material for the top, and therefore top alone was developed

The second experiment to which I will allude is that of Mr. Lawes, who separated the phosphate of lime from the gelatinous matter of bones, and performed a comparative experiment upon Turnips, from which he draws the inference that the result, being in favour of the phosphate, proved that the latter, and not the azotised principle, was the fertilising property of bones. I am aware that Liebig is of the same opinion, and I do not deny the fact. But the experiment of Mr. Lawes does not prove it. In the first place, the azotised matter was not presented to the plant under favourable circumstances for the development of the nitrogen. By heating and reducing to powder the gelatinous matter, a considerable proportion of the azote would be dissipated, as carbonate of ammonia, and the portion that remained as dried powder would resist the agency of decomposition much longer than had it been simply crushed and used, as bone-dust usually is. In the second place, the experiment, I think, ought to have been tried with an azotised crop, as Wheat or Beans. Gelatine contains more nitrogen than any other element of animal food; but it has this characteristic difference, that, while albumen, fibrin, or caseine are formed equally by plants and animals, gelatine is the exclusive product of animal organisation—it is the result of the metamorphosis of albumen. But it is a curious fact, the knowledge of which we owe to Liebig, that while gelatine is formed from the blood, it is incapable of being reconverted into blood. It differs also from albumen and fibrin, in containing no phosphorus or sulphur.

Now these facts prove that as gelatine it can afford no nourishment to the plant; but they do not oppose the fact, that gelatine by decomposition, under favourable circumstances, produces ammonia, which yields the nitrogen of the gluten in Wheat, or of the small proportion of albumen in Turnips. It is well known that bones will putrefy, and that carbonate of ammonia is the result. We must not then reject as useless the gelatinous part of bones, but endeavour to convert its elements into a form by which it can be taken up by the plant. We must expose it to the action of decomposing agents in the first place, and then fix the volatile salt of ammonia, by sulphuric acid or other media. A question of great importance in the nutritive physiology of plants here presents itself, and as it bears materially upon the views which I advocate, I will briefly allude to it:—

In a late work—which I cannot help regretting he ever wrote*—Liebig dwells much upon the notion that plants derive their ammonia, as well as their carbon, from the atmosphere. The presence of ammonia in rain-water is undoubted—it is one of the facts which Liebig has made known to modern science. Now Liebig states that if you supply a plant with the phosphates, you will enable it to imbibe, through its leaves, more ammonia from the atmosphere; in the same way as he contends that if you supply the roots of a plant with azote, you enable it to fix more carbon in its organism. I have in a previous paper contended that the carbon of plants can only be increased by the action of azote, in a quantity sufficient to form albumen, with the imbibed nitrogen. I contend that the same argument applies with equal force to the phosphates, and that the absorption of phosphorus by the roots of the plant can only fix as much ammonia from the atmosphere as is necessary to produce albumen. Now, the proportion of phosphorus in albumen is so minute, that chemists have not hitherto fixed it by any figure, and therefore the assumption that phosphorus taken up by the roots, induces the plant to absorb ammonia from the atmosphere, can only be correct in a very limited sense. But the amount of phosphate of lime in the seeds of plants is much greater than the phosphorus in the albumen of the plant; and as plants must be supplied with the elements necessary for the formation of the different parts of their organism, or the whole cannot be perfected, and as the phosphates are the most frequently absent from soils, and the most constantly exhausted from soils, we have no difficulty whatever in accounting for their utility as manures. If a plant absorbs by its leaves ammonia, and the nitrogen of that ammonia does not meet with the other corresponding elements of albumen, the carbon, the hydrogen, the oxygen, the sulphur, and the phosphorus—why, of course no albumen or gluten can be formed. But the assumption that the phosphorus by any peculiar virtue of its own has the power of fixing nitrogen and forming albumen, is assigning to an element the function of a perfect plant, which might, with equal propriety, be claimed by the sulphur, the carbon, or the elements of water. But I fear a continuation of this discussion will not be sufficiently clear to the general reader, and I will therefore proceed with my subject.—*C. R. Bree, Stowmarket.*

(To be continued.)

* Chemical Letters to a Friend.

Home Correspondence.

Yew.—Caution to Farmers.—In reference to what is stated at page 142 of the *Agricultural Gazette*, of four bullocks being poisoned by eating Yew, I observe that what I have invariably noticed respecting animals being poisoned by it, holds good, viz., that the Yew had been cut a few days before. Any animal, at least the horse, ass, cow, and sheep, may and do eat the Yew with perfect impunity from the living tree, but a very small quantity, if it is in a withered state, I believe always kills. I used to live in a neighbourhood where there were many of these trees, and, as a boy, was much puzzled to see all the above-mentioned animals eating the twigs with much relish (and I have at the present moment four smallish shrubby trees which my young stock and sheep have fed upon repeatedly this winter) and without harm; and yet every now and then some valuable cattle died suddenly, and on examining the stomachs were evidently poisoned by Yew. This made me reflect upon the subject, and I found that, if withered, it is a deadly and quick poison; if green, perfectly harmless, and much relished at times. I should be glad to know if the above agrees with the experience of your readers. I suspect that the same thing holds good with regard to the common Laurel. All the above animals eat it when green without hurt, unless perhaps taken in very great quantity; but a very small piece in a withered state will kill a pig. I lost several from it some years since, as was proved on dissection; and believe others had died from it, without, however, the cause being known. At all events, since the cuttings of the Laurels have been carefully put away, as I always do with Yew also, I have had no more sudden and unexplained deaths.—*Steaming Apparatus, p. 142.*—"A Subscriber" would find that no root pays better for steaming than the Swede Turnip, for horses, cows, and pigs.—*Swedes.*—By transplanting Swedes, you may secure a crop if the weather be favourable, but it will not be near so heavy a one as by sowing. Transplanting is only valuable when either from your land not being in a fit state you cannot sow them in time, or when you get a crop of the early Potatoes or Vetches. In the latter case, however, a much more valuable crop may generally be obtained by sowing either white, or some of the late yellow Turnips, which form in spring a most useful help either for sheep or calves, as I am experiencing at the present moment, having 40 ewes with their lambs doing very well upon but a small quantity of land sowed after early Potatoes and Vetches; and I have also six cows soiled upon this, giving butter as sweet as if upon meadow grass. The complaints about Turnips tainting milk may always be obviated by your plan of saltpetre, if the pans are kept clean.

and the decayed leaves of Turnips not given to the cows. Indeed, if complete cleanliness is adhered to by cowmen and dairymen, there will be little or no bad taste even without nitre. I keep my cows upon Turnips as the succulent part of their food, upon at least nine months of the twelve, and find no difficulty when cleanliness is adhered to.—*W. D. F.*

Experiments with different Manures on the Potato Crop.—The following experiments on the application of various manures to the Potato crop was tried last season, and as the mode of culture adopted differs from the usual practice, a few words of explanation on that subject are necessary. The land is of very superior quality, consisting of a moderately tenacious clay, through which a considerable portion of an impure carbonate of lime is interspersed, part of which is incorporated with the soil, and part occurs in the form of small stones, which, however, are rarely of such a size as to form any obstacle to the operations of tillage. It had been previously many years in Grass, and being merely marked out into ridges by the common plough, the Potatoes were planted on the surface without any manure. This practice is well known throughout a great part of Ireland; it is also usual to let the land in this state to produce a crop of Potatoes to the neighbouring cottagers, and from 4*l.* to 6*l.* per acre are frequently obtained for this purpose. This is the Corn-acre system, which has at different periods attracted public attention, as one of the causes for much of the pauperism in this country; but to this subject it is not necessary to make any further allusion in this place. The Potatoes were planted on the 15th of April, and were of the variety called Cups, which I believe are generally known. The ridges were five feet wide, five sets being placed across the ridges, being thus nearly a foot distant across, and nearly eighteen inches distant in the other direction. These were covered about three inches deep with the earth out of the furrows. Before the young shoots had reached the surface through their covering, the various manures were spread on the surface in the proportions stated below. An additional covering of earth, two inches deep, was then put over the ridges. The application of the manures and the covering of earth took place the same day, on the 20th of May. On the 15th of June the spaces between the rows across the ridges were loosened by the hoe and drawn up to the stems of the plants, forming, in fact, drills as it were across the ridges. The Potatoes were taken up on the 10th of October, and the following table exhibits the results:—

Kind of Manure.	Quantity applied per acre.	Produce per acre.	Cost of application.
		Tons Cwt.	£ s. d.
1. Guano	3 cwt.	19 11	2 2 0
2. Bone dust	18 bushels	15 13	2 5 0
3. Nitrate of Soda	2 cwt.	16 19	1 16 8
4. Nitrate of potash	2 cwt.	15 5	2 14 0
5. Muriate of ammonia	2 cwt.	17 16	2 15 6
6. Salt and quick-lime in equal quantities	6 cwt.	14 17	0 12 0
7. Farm-yard manure	10 tons	16 3	
8. No manure applied		13 10	

The farm-yard manure was that of the preceding season which had remained over in the yard, and was therefore well decomposed. Each of the other manures was mixed with a small portion of dried earth a few days before being applied. The common salt was obtained from a provision store, and contained a considerable portion of animal matter, as blood and pieces of fat, though its effects in combination with the lime were not very great. The whole of the manures applied were successful in so far as having considerably overpaid the original outlay. Another circumstance I may here mention as worthy of observation:—The produce of two equal portions of the crop to which no manure had been applied, the earth in the one case having been hoed between the plants and drawn up to their stems, and the other not, showed clearly the advantage of the former treatment, the difference in produce being no less than one ton and three quarters per acre. This work was performed by boys and girls under the superintendence of an experienced labourer, and the entire outlay did not exceed 7*s.* 6*d.* per acre. It is perhaps necessary to add that the statute acre is that referred to in the preceding remarks, although here all calculations are made in plantation measure of 49 square yards to the perch.—*W. Smyth, Mitchelstown, Kells.*

African Guano.—As you have made more than one reference in your publication, to the recent importations of guano from Africa, we beg to send you Dr. Ure's analysis of a cargo we lately received from thence, accompanied by his observations thereon. This cargo was from a different island, and considered much superior in quality to that by the Levenside, alluded to in your paper, and was sold deliverable from the ship at an average price of 7*l.* per ton.—*Lodge, Prichard, and Co., Liverpool.*

[Report, &c., by Andrew Ure, M.D. F.R.S., Professor of Chemistry, &c.]—This is the first sample of clean guano from Africa which I have seen. It has been very carefully collected, and contains no heterogeneous impurities. Its specific gravity is only 1.57 to water 1.00. Impure and decayed guano is always much denser, being sometimes so high as 1.80 or 1.90. 100 parts of this African guano contain 10 parts of ready formed ammonia, equivalent to about 32 parts of sal ammoniac, and to nearly 40 of sulphate of ammonia. 100 parts contain 21¼ of moisture, separable by the heat of boiling water; 100 parts lose 50 parts of volatile saline and organic matter, including the 10 parts of ammonia, by a red heat, besides the 21¼ of water, and leave 28¼ of white matter, which is chiefly phosphate of lime, with a little phosphate of magnesia and some sulphate and muriate of potash, with a little phosphate of the same alkali. 100 parts contain only one of siliceous sand, showing the guano to be the genuine excrement of the birds. The whole constituents may be thus stated:—

Saline and organic matter, containing 10 parts of pure ammonia	50.0
Water	21.5
Phosphate of lime and magnesia, as also potash	26.0
Silica	1.0
Sulphate and muriate of potash	1.5
	100.

London, March 12, 1844. (Signed) Andrew Ure.

The Symphytum Asperrimum, or Prickly Comfrey is a native of Caucasus. It grows to the height of five feet, and is hardy enough for any soil or situation; it produces abundance of nutritious green food from the beginning of May to the end of October, for cows, sheep, pigs, and especially for horses, it being glutinous and not purgative. It is a perennial, a strong grower, when once planted, and requires little trouble more than to be kept free from weeds; it is particularly adapted for spade-husbandry, and very suitable for those who have more garden ground than they require for vegetables. The soil should be of a nature to bear trenching two feet, and free from stagnant water. The ground should be well manured when first planted, and the distance from plant to plant should be two and a half feet, 6962 to the acre; and as one plant of the middle growth, when cut, will weigh eight lbs., this will amount to upwards of 24 tons. When the ground is good and well-managed, it may be cut four times in six months, thus yielding 96 tons per acre per annum. It should be cut close to the ground a few weeks after planting; it will then be established, and at every successive cropping produce more shoots and an increase of crop. April is the best month to plant, but I do not know where plants may be procured, but presume at the nurserymens'. —*F. C. S.*

Manures.—It is well known to every cultivator of the soil that no land will continue productive if some equivalent for its produce be not returned to it. If the land is always yielding and never receiving, it must in a short time become barren. However, there are particular soils, like those of Egypt, which, being annually overflowed, derive a valuable manure from the hand of Nature, and therefore cannot be rendered barren by bad husbandry or over-cropping. There are also some soils in our own country which are not easily exhausted, in consequence of being composed of materials which attract and retain the food of plants. Taking these things into consideration, we consider it a duty incumbent on all cultivators of the soil to use every means to promote its fertility, in the most simple and efficacious manner. We are fully convinced that if more attention were paid to the making of farm-yard manure, instead of running after every new importation, which has nothing but a fine advertisement to recommend it, and, in nine cases out of ten, fails to produce the expected crop, they would, at the year's end, find their purses heavier, and their land in better heart. In the north of Scotland, the small farmers and cottagers pay great attention to the making of manure from their pigs, by bedding them with leaves, Moss, Rushes, Grass, Fern; all of which materials make excellent manure, when trodden under foot and saturated with the urine of animals. In fact, if the small farmers of the north of Scotland did not use some such materials, they could not afford to bed their cattle with straw, which forms their principal food, with Turnips or Potatoes, during the winter months. We have lately noticed, in some parts of Ireland, bog-earth employed for bedding cows and pigs; this material makes an excellent manure, especially if it has been well saturated with the urine of the cattle. We have seen better crops produced from land which has been manured with these materials, than the produce of any of our new importations. We do not wish, however, to condemn these imported manures, but we would have farmers pay more attention to the making of manure on their farms, and when made not to allow it to manure the atmosphere instead of the soil, which we are sorry to say is too common a practice, particularly in Ireland. We would recommend farmers to adopt the following plan: To every two cart-loads of farm-yard manure, add one of the scourings of ditches, road-scrapings, or a matted sward; if these materials are properly mixed with the dung, he will be amply compensated for any additional expense. The use of intermixing the soil with the dung is to imbibe the gaseous elements, and hinder their dissipation. Whenever putrid fermentation is going on in his dunghill, he should apply some earthy substance in sufficient quantity to imbibe and retain all effluvia. Health, profit, and cleanliness require such a proceeding. The farmer who arrests the rank vapours which emanate from decaying animal and vegetable matter, instead of permitting them to pass into, and contaminate the air he breathes, causes the atmosphere to be healthy, and supplies his crops with an abundant food.—*J. McI., Hillsborough.*

Mangold Wurzel.—Miss Edgeworth has somewhere said, that "half the mistakes of life arise from taking things for granted;" and if such of the readers of the *Gazette* as have not before met with this golden aphorism now treasure it up and act upon it, they, at least, will not grudge the half-column which my blunder, from neglecting it, has caused to be occupied by verbal criticism. The fact is, that having always seen the root in question called Mangel Wurzel, when spoken of on its introduction many years ago, I "took it for granted" that this was its genuine German name; but on consulting a learned friend versed in that language, he tells me that Mangold is there given as a name common to many plants, chiefly to a kind of Cabbage, and also to a sort of Beet, and consequently you are warranted in using Mangold Wurzel; and, as duplicate names are always objectionable, I would by no means advise its being called "Field Beet," or even by any of its native appellations of "Runkelrübe," &c., quoted by "A German."—*S.*

Points of Milch Cow.—The following may be useful to "G." in No. 12, on the points of a milch cow in Guernsey, taken from the Report of the Guernsey Agricultural Society:—1. Purity of breed and qualities of the dam for yielding rich and yellow butter. 2. Small head, large and bright eye, small muzzle, encircled with white or yellow, horns polished and slightly curved inwards, with black tips, small ears, orange-colour within. 3. Straight back from the shoulders to the tail, and chest wide. 4. A fine and loose skin, with soft and short hair and of a good colour. 5. Sides well rounded, flank small between the side and haunch, tail fine. 6. Fore legs straight and well-proportioned, hind legs broad above the knee, fine and clean below, hoofs small, legs should not cross in walking. 7. Udder large, and the teats large and springing from the four corners of the udder, milk vein large and well defined. The above are the chief requisites to entitle the animal to a prize.—*Guernsey.*

Festuca elatior.—I observe, that in answers to Agricultural questions in a late Number, you say that Festuca pratensis gigantea, and Festuca elatior are the same. I grow both side by side, on the same ground, and the observation of several years induces me to believe that they are not identical. F. gigantea blooms very early, even before the ordinary F. pratensis. F. elatior is considerably later in flowering. The husk and seed of F. gigantea, when ripe, are of a very light colour, almost white. F. elatior has seed of a dark-grayish brown, and does not ripen for a considerable time after the other. I have more reason to think that Festuca gigantea is the same as Festuca arundinacea, more nearly agreeing with it in its early growth, and the periods of flowering, and of ripening its seed.—*W. Pyle, Taunton.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(*Continued from page* 221.)

Odessa Wheat.—The Hon. Sidney Herbert, M.P., Secretary of the Admiralty, communicated through Mr. Pusey, the wishes of the Agricultural Society at Odessa to enter into correspondence with the Society and receive its Journals; when the Council unanimously resolved, That the Imperial Agronomical Society at Odessa should be placed on the list of Corresponding Societies, and have the Journals in future transmitted to it, from time to time, as published.—The Hon. R. H. Clive, M.P., took that opportunity of calling the attention of the Council to the peculiar merits of the Odessa Wheat, and the importance of introducing and establishing its cultivation in this country. His brother, the Earl of Powis, had once possessed the variety in question, but by some unfortunate accident had, to his regret, again lost it. He regarded it as one of the most extraordinary Wheats ever grown, being a white soft Wheat of gigantic size and most beautiful colour. It was known at Odessa as the Taganrog Wheat; imported, be believed, into Taganrog, on the northern coast of the sea of Azov, from the surrounding agricultural districts, and shipped as an article of general commerce from Odessa, on the shores of the Black Sea, for western Europe.—Mr. John Hudson stated that large quantities of this variety of Wheat were to be obtained at Mark-lane; but being, as Mr. Gibbs remarked, kiln-dried before its exportation from Odessa, its vegetative powers were of course destroyed, and its employment for the purpose of seed-Wheat rendered useless.—Mr. Miles, M.P., hoped that by means of the new communication thus opened with the Agricultural Society at Odessa, a supply of the genuine Taganrog Wheat, in its natural state, and fit for seed, might be obtained in sufficient quantity to enable 30 or 40 members of the Society to cultivate an acre each, and report their results to the Council.—It was then resolved to refer the question to the Journal Committee.

Southampton Meeting.—Colonel Challoner, Vice-Chairman of the General Southampton Committee, transmitted to the Council the final Report of the Committee on the subject of the arrangements for the Pavilion and Show-yards at the ensuing Country Meeting in July; the Pavilion to be erected at Fairfield at an estimated expense of 620*l.*, and the Show-yards at Portswood at that of 152*l.*, exclusively of the inclosures required by the stewards for the trial of implements to effect their arrangements in the most advantageous manner. This Report was received and adopted by the Council.

Heavy-Land Implements.—The Hon. M. W. B. Nugent, of Higham Grange, near Hinckley, Leicestershire, suggested to the Council, as the result of his close and constant attention in effecting the cultivation of 400 acres of some of the stiffest and unworkable soil in that county, that the land at Southampton upon which the ploughs for working the stiff clay are to be experimented, should as soon as possible be ploughed in preparation for the trial, and not again interfered with, but allowed in that state to retain its moisture until the ploughs to contend for the stiff-clay prizes shall be brought to plough it across upon the day of such trial;—a clean furrow-slice, under these circumstances, upon stiff retentive clay previously ploughed and suffered to keep all the damp in it, being, in Mr. Nugent's opinion, the criterion of a perfect plough for land of that character; so that it may be worked early in the spring and prepared for green cropping by such a plough as will not gather the stiff soil before the mould-board and run it before the mouth of the plough in large lumps; every single plough, he added, hitherto constructed, being guilty of this greatest of faults in working stiff, cold, retentive clay in a condition midway between wet and dry. The Council referred this suggestion to the Stewards of the Trial of Implements.

Annual Country Meetings.—On the motion of Mr. Miles, M.P., it was resolved: "That in future the

place of holding the Annual Country Meeting shall not be decided upon until a Committee of which at least three Members shall have acted as the Director or Stewards of the yard, (three to be a quorum, one of which shall have acted as Director or Steward), shall have visited and inspected such towns and their localities as the Council shall think fit, and have reported upon their respective suitableness for the purposes of the Society."

The Council then proceeded to the nomination of the following gentlemen, to form such committee:—Mr. Miles, M.P.; Hon. Captain Spencer; Colonel Austen; Mr. Barclay, M.P.; Mr. Childers, M.P.; Colonel Challoner; Mr. Dean; Mr. H. Gibbs; Mr. B. Gibbs; Mr. Fielder King; Mr. Shaw; Mr. Shelley.

Occupation of Sites.—On the motion of Mr. Miles, it was also decided, that in future the period during which the Society would require the land intended for the sites respectively of the Pavilion and Show-yards, would be "three months," instead of "six weeks," as stated in the queries decided upon by the Council in 1841, to be answered by the authorities of any town prior to its being qualified to compete for selection as the locality of the country meeting of any particular year: such occupation of the ground, however, by the Society's contractor of works not being understood to interfere with any right of pasturage up to the actual time of the meeting.

Country Meeting of 1845.—Viscount Hill, on the part of the town of Shrewsbury, and Mr. Brittain, jun. (Hon. Secretary of the Chester Agricultural Society), on that of the city of Chester, transmitted to the Council documents in favour of those places respectively, as sites for holding the country meeting of 1845.

I.—*Shrewsbury*. 1. Memorial from the Mayor and Corporation of Shrewsbury, under the Great Seal of the Borough, and signed by the Town-Clerk.
2. Memorial of the nobility, gentry, agriculturists, and inhabitants generally of the county and town of Salop; signed by Viscount Hill, Chairman of the public meeting held in the Shire Hall.
3. Memorial from the Inhabitants of the Town of Shrewsbury; signed by Edward Haycock, Esq., Mayor, and ninety-five of the principal inhabitants.
4. Memorial of the Shropshire Practical Farmers' Society; signed by Viscount Hill, President.
5. Answers to the Official Queries of the Society; signed by J. S. Peele, Esq., Town-Clerk of Shrewsbury.
6. General Plan of Shrewsbury, with the Show-ground, Trial-ground, Approaches, Public-rooms, and site for Pavilion, marked thereon.
7. Special Plans of the Race-course, and a room capable of accommodating 1200 persons at dinner.

II.—*Chester*. 1. Memorial from the City of Chester; signed by Henry Kelsall, Esq., Mayor.
2. Memorials from the South Cheshire, Denbighshire, and Flintshire, Anglesey, Holywell, Daresbury, Hawarden, Chester, and Wirral Agricultural Associations; signed by their respective officers.
3. Statement of the mode in which the requirements of the Council are proposed to be met in Chester.
4. Plan of the Marquis of Westminster's Schools.
5. General Plan of the City, and indications of the various points proposed in reference to the meeting.
6. Small plans of the City, showing the various lines of Railway connected therewith.
7. Table of Distances of the various Market-towns from Chester.

The whole of these Documents having been read to the Council, it was moved by Mr. Miles and resolved unanimously, "That a Meeting of the Committee appointed to consider the sites offered for holding the Country Meeting in 1845, be summoned for Wednesday the 17th of April, at eleven o'clock, to which the plans and papers, now submitted and read to the Council, be referred.

Appointment of Seedsmen.—Mr. Miles then brought forward the motion of which he had given notice, for the official appointment of Messrs. Thomas Gibbs and Co. as the recognised Seedsmen of the Society. He stated to the Council the peculiar claims of the Messrs. Gibbs on the honorary appointment now proposed to be bestowed upon them by the Council, the intimate connexion of Mr. Thomas Gibbs with the late Board of Agriculture, and the essential services he had rendered to its members—the kindness, utility, and gratuitous services of his sons to the present Society on so many occasions, and especially in reference to the business of the Country Meetings, and the notoriety of the firm for the excellence of their seeds, and the circumstance especially that the Society had always applied to them both for the uniform and requisite supply of seeds in model experiments, and for the test of cultivation or information required in the case of new seeds or plants of any kind transmitted to the Society; and concluded by remarking that as the Society had already made the honorary appointments of a consulting Chemist and Engineer, he did not think that the Council could pay a better compliment to those gentlemen than by appointing them to the honorary office in question. The President having borne testimony, on the part of the Smithfield Club, to the services gratuitously rendered by the Messrs. Gibbs to that body, Mr. Shaw seconded the motion, which, on being put from the chair, was carried unanimously, and Messrs. Thomas Gibbs and Co., of Half-moon-street, Piccadilly, declared to be duly appointed Seedsmen to the Society.

Glass Milk-pans.—Captain Stanley Carr, of Tüschenbeck, near Lübeck, transmitted to the Society, through Sir John W. Lubbock, Bart., and at the request of Mr. Handley, a specimen of the glass milk-pans employed so successfully in his German dairy, and referred to in his Paper on the Rural Economy of Schleswig, Holstein, and Lauenburg, in the first volume of the Society's Journal (page 380). "The milk," says Captain Carr, "when brought to the dairy, is immediately strained through a horse-hair sieve into the vessels, whether of wood, earthenware, copper-tinned, zinc, cast-iron (lined with a China-like composition), or glass, placed in rows on the floor. All these different kinds of utensils have been tried with various success, in the hope of discovering how, in hot weather, more especially when a thunder-storm is gathering, the milk can be guarded against a too early acidity; for, as it is a fixed and invariable rule that the cream must be removed from the milk before the latter gets at all sour, and an equally established fact, that all the oily particles cannot be obtained in a shorter period than 36 hours, vessels in which, during sultry, and especially damp weather, the milk could be kept the due time, are a great desideratum. As yet, however, there reigns much diversity of opinion on the subject; and shallow wooden vessels, as nearly as possible equally wide at top and bottom, containing when full about eight quarts, but in which, during summer, seldom more than six quarts are poured, are in most general use. They have, however, some disadvantages, of which the chief is, the great difficulty and the consequent labour and close attention requisite to remove all acidity (which in some states of the atmosphere is almost unavoidable), and which, penetrating the pores of the wood, sometimes resists all the patient scrubbing; first, with hot water and small birch scrubbers; and secondly, with boiling water and a hard round brush made of pigs' bristles (with which every hair's breadth is carefully polished over), so that the despairing dairy-maid is compelled to resort to washing in a ley of wood-ashes, or boiling, or even scorching over lighted chips, followed by countless rinsings in pure spring-water. To diminish in some measure this labour, the plan of painting the milk-pails and dishes with a preparation of cinnabar, linseed-oil, and litharge, has been adopted by the milk-vendors in towns, and in some country dairies; not only, however, is the expense considerable, as the vessels must be finished off with peculiar care, and require to get three coats of the composition at first, and one yearly afterwards, but the milk, for some days after they are brought into use, has a perceptible taste of paint. The tinned copper milk-pans are very costly, and must be carefully watched lest they should require re-tinning. The zinc are as yet little known, and the assertion of their effect in better severing the cream from the milk not sufficiently proved. The cast iron, lined with enamel, though assuredly durable and very clean, seem too expensive; and the glass have many opponents, on account of their brittleness, and the vague notions respecting glass and electricity, inducing the idea that if the electric fluid get into the milk, it cannot get out again! whereas, as it is ascertained that it always attaches itself to a conductor, and, in the absence of anything more attractive, runs along the surface, it is more likely that the milk should be protected in glass, which is a non-conductor, than in any other substance. In my dairy, which contains upwards of 130 cows, the glass vessels have been used for more than four years; and I give them a decided preference over all others. Their form is good, being 16 inches broad at the top and 12 at the bottom; the glass is dark bottle-green, transparent, and perfectly smooth, about one-eighth of an inch thick, and provided with a rounded rim at the upper edge, which makes it easy to retain a safe hold of them, even when full. They contain eight quarts, but never receive more than six. They cost 8*d.* a piece, and their durability may be estimated by the fact, that to encourage carefulness, each dairymaid is allowed one dollar per annum extra, as pan-money, being bound at the same time to pay 10*d.* for each one she breaks, yet hitherto no girl has broken to the extent of her dollar. It is self-evident that acidity cannot be communicated to glass, and the ease and rapidity with which they are cleaned, requiring merely to be first washed with lukewarm water, then rinsed in cold water and placed in a rack to dry, effect such a saving in fuel and labour (diminishing the number of our dairy-maids by at least two), that the less quantity of butter obtained, supposing (which I by no means concede) that the milk, during a few weeks in summer, does sour sooner, and consequently throws up less cream in glass than in wood, is more than compensated by the lessened expense of the establishment, not to mention the great advantage of attaining the indispensable cleanliness and purity of the vessels with more certainty, because at a less expenditure of time and trouble. Although it is an ascertained and undeniable fact that the quality of butter depends much on the nature of the pasture, the locality of the dairy, the universally prevailing cleanliness of the whole management, and very essentially on the purity of the water employed, still I ascribe much of the reputation which our butter has of late years enjoyed (and which is verified by our obtaining at all seasons one penny per pound above the market price in our neighbourhood) to the beneficial introduction of glass milk-dishes. At the suggestion of Mr. Hayter, M.P., it has been ascertained from Mr. Apsley Pellatt of the Falcon Glass Works, Blackfriars, that in consequence of the heavy duty and restrictions of the Excise on manufactured glass articles in this country, glass milk-pans of a size and shape similar to those of Captain Carr, but of white flint-glass and stronger mould, could not be made for sale in England for less than 7*s.* 6*d.* each: but should that price, under the restrictive circumstances of the case, obtain purchasers, there would be no difficulty in manufacturing a superior and serviceable article of the kind to any extent that might be required. The milk-pan presented by Captain Carr to the Society is of the common dark-green bottle-glass, and weighs 6¼ lbs. It is round in shape, and nearly 4 inches deep, measuring 17 inches across the outside of the top, and 11 inches across that of the bottom.

Siberian Cow-parsnip.—Captain Carr's communication contained also the following Agricultural references: — "There is nothing new here, except that spring is unusually long delayed, the ground still frozen up and likely to continue so, until we get a heavy gale with rain from the southward. The grain-crops of last year, especially Wheat, make the worst yield I ever remember. A new plant, Heracleum Sibiricum, has been successfully introduced here, as yet in a small way, from Russia, giving a very early and abundant food for sheep; but it is probably already known and valued in England: if not, I should have pleasure in sending you some seed. The last journals have been most interesting."

Mr. Gibbs informed the Council, that the plant in question was a very early green crop, although perhaps not quite so much so as the Prickly Comfrey: if allowed, however, to remain uncut for some time, it became at last the heavier crop of the two. He stated that the seeds should be sown in a bed, and the plants, when sufficiently large, planted out at least three feet apart, if in a soil likely to bring them to a large size. He believed the leaf constituted the only edible portion of the plant. Messrs. Thomas Gibbs and Co. having planted a small piece of ground, consisting of loam upon gravel, with the Heracleum Sibiricum, they found the leaves to be very succulent and to attain the great height of from seven to eight feet; and as the plant had not yet been extensively cultivated, they placed at the disposal of the Council, for distribution among such Members as felt an interest in the cultivation of this plant, the whole stock of seed they had obtained from their experiment, in the hope that so extensive a trial as would probably be thus made of the qualities of the plant would procure satisfactory results in reference to its further cultivation.

Pollen of Wheat.—Mr. Groom (Florist to the Queen), of Clapham Rise, Surrey, favoured the Society with the following communication:—"In reference to the effects I have observed from the use of bone saw-dust, of which a sample was presented to the Council at its last meeting, I feel no hesitation in saying that I have experienced the most beneficial results from its use. I have now tried it two seasons, and think, if possible, it has answered better this season than the last. It has produced a most luxuriant growth, with a beautiful dark healthy green, and a robustness of habit in the plants, equal to the summer growth; the plants also retain their lower leaves much longer, which is most essential with plants cultivated in pots. There is another point of importance, which is, that I do not think any injury will arise should the bone saw-dust be used in what may be termed excess, as I have tried a very large quantity in the soil without the plants appearing in any way affected, except in luxuriance of growth. There is also a most important result in an Agricultural point of view, which I have no doubt will be found to take place from the free use of the bone saw-dust, and that is, the increased fertilising power of the pollen, which will in a great measure do away with the light and defective ears in the grain crops, as I believe a great part of the failure arises from the want of vitality in the pollen."—It is perhaps worthy of remark, that Chemists have found in their analyses of the pollen of plants a predominance of those elementary principles of which bone is constituted; and that the purity of the bones employed as a manure, and the state of division into which they are reduced, has a considerable influence on the results obtained by their action is strikingly exemplified in the following statement of Mr. Miles, M.P., in reference to his experiments on the growth of Swedes, in the Society's Journal, vol. iii. page 426:—"A curious fact, however, came out in the application of different descriptions of bones used at the distance of 27 inches. In the one case, the bones were procured as they came from the kennels, with the usual quantity of animal matter adhering to them, and crushed at home; in the other, they were brought as refuse from a large button-manufactory, after having been thoroughly cleansed for the purpose of manufacture: the respective proceed was,—

Turnips on bones crushed at home	. .	11 tons 8 cwts.
Do. do. from button-manufactory	.	16 10

African Guano.—Mr. Forbes, of No. 2, Great St. Helen's, presented to the Society three specimens of guano collected on different islands in the Bay of Angra Peguena, on the western coast of Africa. "We have as yet," says Mr. Forbes, "no arrivals of this guano into the port of London, but some cargoes are daily expected, when I shall take the liberty of submitting fresh samples." Mr. Miles stated that the African guano had reached Bristol, and having received from Mr. Greening, of Nelson-street, in that city, the analysis of it, made by Professor Herepath, he had the pleasure of then submitting it to the inspection of the Council:—"I have analysed Mr. Greening's sample of African guano, and find that it is quite equal to that of Peru of good quality. The results are below; but I have not particularised those matters contained in it, which Agriculturists do not yet know the value of; all those which are known to be beneficial are:

Phosphate of lime	21 parts
Soluble phosphates, with a little common salt	8
The elements of ammonia	11
Other matters, almost entirely organic . .	60
	100 parts

(Signed) William Herepath."

Adjournment of Council.—Mr. Shelley gave notice, that he should move at the next monthly Council "That the Council at its rising on the first Wednesday in July next do adjourn over the period of the country meeting in that month, until the first Wednesday in August.—Mr. Colman announced his intention of presenting to the Society three American ploughs for trial at the South-

ampton meeting.—Mr. Murray, of Albemarle-street, presented a copy of the last Number of the "Quarterly Review," as containing a review of the Journal of the Society, under the head of "British Agriculture."—Mr. Longbottom, Secretary to the Royal Polytechnic Institution, presented a specimen of Holloway's Farmer's Compound (Manure); Mr. Donaldson a copy of his new edition of Bayldon on Rents and Tillages; and the Royal Society of Agriculture at Caen, a copy of their last notice of proceedings—for which, and the other presents and communications received, the best thanks of the Council were ordered. The Council then adjourned over the Easter Recess, to Wednesday the 17th of April.

Reviews.

An Account of Agriculture and Grazing in New South Wales, and of some of its most useful Natural Productions, &c. &c. By the late James Atkinson, Esq. Second Edition. Simpkin, Marshall, & Co.

THIS is a very neat little volume, full of most useful matter to the intending emigrant. It details information on all the subjects mentioned in its title-page, acquired during several years' residence in Australia, and must, therefore, be one of the best of the many works written for the benefit of emigrants to that continent.

Peruvian and Bolivian Guano; its Nature, Properties, and Results. J. Ridgway. Pp. 95.

THIS pamphlet appears to be a compilation from various sources, of experiments with guano on various crops, and at various rates of application per annum, many of them being comparative with other manures. It is conclusive as to the value of guano "as a cheap, powerful, enduring, and portable fertiliser, adapted more or less to every quality of land, and to almost every vegetable production;" and to all who are still doubtful on this subject, we recommend its perusal.

Miscellaneous.

The Curl in Potatoes is the effect of an enfeebled vegetation, arising from over-ripening of the tubers to be used as seed; and to the same cause is to be attributed the fact of tubers not vegetating at all when planted. Whenever Potatoes are to be used as seed, they require a mode of treatment very different from those destined to be used as food. The mode of treatment which I prefer above all others for seed Potatoes, is this: As soon as the tubers have acquired their full size, and the vegetable tissue in the roots has become perfect, the skins beginning to set,—that is, when the cuticle can still be removed by the pressure of the finger and thumb, so that it peels off,—at this stage of their growth they ought to be immediately taken up, and spread on the surface of the ground, fully exposed to the influence of the atmosphere; by which means, in a short time the tubers will be tanned green. This early lifting prevents the cellular tissue of the tubers from becoming gorged with solid matter, by cutting off the power of absorption from the roots; whilst, by the subsequent exposure of the tubers to the atmosphere, the juices combine with a larger proportion of oxygen, which, in the light, enters into combination with the colouring matter of these roots, not only changing their colour from white to green, but also giving to them an increased vitality, as is seen in germination when oxygen enters into combination with the juices, and carbonic acid is parted with; by which means the starch in the tubers, instead of becoming fixed, is retained in the transition state; s that when those conditions calculated to excite vegetation are present, the organizable matter in the tuber immediately excites the buds or eyes to vigorous growth. Similar results, to a certain extent, may be obtained by very late planting; so that when the process of vegetation is stopped by the autumnal frosts, the maturation of the secretions of the plant may be somewhat in the transition state; that is, they may not have acquired the solidity I have alluded to. There are, I have observed, some soils calculated to produce the same effects. Peaty soils, and reclaimed bog, and morasses, are found to produce an imperfect vegetation, as is observable in the cereal or grain plants, which, when reared on these soils, are greatly deficient in that which constitutes its value as food, namely, starch. In like manner the Potato, when grown upon these soils, is always found soft and spungy, and little fitted for table; whilst they are found eminently fitted for planting, and that for the reasons already stated. Those who cannot, or will not, take the trouble to save their seed Potatoes by the first-mentioned method, ought assuredly to purchase their stock for planting annually from some of their neighbours who have such soils upon which they can be reared. The manner of keeping the tubers over the winter must have due attention. It is of the utmost importance that the chance of becoming in the least degree heated in the pits be avoided; and this is easily accomplished by storing them in pits never more than three feet wide, and ten inches to one foot deep. They will have little chance of acquiring heat in a pit of these dimensions, but the narrower the better, and not too thickly covered with earth; the less of this the better, if sufficient to prevent frost from reaching them. When taken out to be used for planting, and cut, the sets should never be allowed to lie in a heap, as is frequently done, but ought to be spread thinly in an airy place for a few days previous to planting, that the cut parts may be dried up a little, or healed, as it is termed. Many of our bogs might be most profitably employed in the growth of Potatoes for seed, which would yield good crops. It must be apparent that the finer and more valuable the variety is for food, so much greater is the risk of losing the crop. This has led, in many instances, to people being induced to plant those sorts which, from their great inferiority to those mentioned, are sure to produce a crop, while, by attending to the proper mode of treatment, heavy crops of the very best sorts may be obtained with certainty. Much has of late been said concerning raising new varieties from seed, and it is from this source that all our esteemed varieties are obtained; but when once obtained, unless they are preserved in vigour by those means which I have now pointed out, they will in a few years become so enfeebled, that they will appear in the same condition as the finer varieties now in cultivation, all of which may be effectually restored by proper treatment.—*Mr. Deans, in the Kelso Chronicle.*

Notices to Correspondents.

BARN FLOOR.—*A Subscriber*—Will find wood the best and most economical barn floor. We have heard of india rubber as material for pavement, and in one instance for the flooring of a stable, but never as material for a barn floor.

BONES AND SULPHURIC ACID.—*J. W.*—Mr. Lawes's plan is a former Number will succeed, but it assumes the bones to be ground small. This must be done at the mill. The refuse of the button factories can be got as cheap as ordinary bone-dust, and will answer your purpose better. Muriatic acid is a little dearer than sulphuric. See Manure Market.

BOOKS.—*Rural Chemistry.*—"Blaker's Essay on Small Farms." Apply to the booksellers.

COW CABBAGE.—*Ay Ay.*—The Drum-Head, or what is known in Devonshire as the South Ham are good varieties. Sow in August in beds, and plant out in the field early in spring two feet apart, or sow very early in spring and plant out in June. The one will be ready early, and the other late in autumn. It is a good plan to plant between these late Cow Cabbage some early plants of a kind which will be ready to cut before the others want their room.

CULTIVATION OF POOR LAND.—*Subscriber.*—Thanks for your suggestion.

ELF-RINGS.—*R. T.*—We shall be glad to see your explanation of them.

FOREIGN OILCAKE.—*Notts.*—The price is a pretty fair indication of its value, comparatively with British. We rather prefer the foreign. Why will your land not grow Tares? "Strong Wheat land" is just the thing for them. They are the best green food for horses. Try Italian Rye-grass with Clover for this purpose.

FOOD OF PLANTS.—*Rural Chemist.*—Please to excuse a farther delay in the answer to your question.

GRASSES.—*J. L.*—Lawson recommends as seed per acre for permanent Grass on deep mossy ground, Agrostis stolonifera, 2 lbs.; Alopecurus pratensis, 2 lbs.; Festuca duriuscula, 2 lbs.; Lolium perenne, 6 lbs.; L. italicum, 3 lbs.; Phleum pratense, 2½ lbs.; Poa trivialis, 2½ lbs.; Trifolium repens, 6 lbs.; Lotus major, 1½ lbs.; Rye, one bushel. And for 2 year Grass on medium light soils, Lolium perenne, 18 lbs.; Trifolium pratense, 6 lbs.; T. repens, 4 lbs.; Medicago lupulina, 2 lbs.

GUANO.—*G.*—It should be mixed with the mould. Plough it in before sowing the Oats.——*Subscriber.*—Gypsum may be advantageously mixed with it.——*Subscriber.*—The time this manure will last depends upon the quantity per acre applied, and the quantity of its different ingredients removed annually in the crop. Its effects will generally be apparent more than one season.

MANURES.—*N.*—The advice you ask for cannot be given confidently without a knowledge of your soil, &c. It may be stated, however, that gypsum has been found to act very beneficially on Clover swards—that nitrates of potass and soda have often increased the growth of Grass to which they have been applied—but that the application most likely to succeed would be guano treated as Mr. Mitchell recommended in a previous paper; for *that*, being a compound manure, is most likely to contain the substance for the want of which your pasture is failing. Apply about 3 cwt. per acre, broadcast, in wet weather.

NEAPOLITAN PIGS.—*A. H.* is informed that a boar and sow, imported from Naples, are for sale at Welcombe House, near Stratford-on-Avon.

POTATOES.—*Subscriber.*—Take care not to bring the clay to the top; drain your land, and subsoil plough or trench, and after thus opening up the subsoil for some years, you may begin cautiously to bring it to the surface. See leading article.

MISCELLANEOUS.—Will *J. M. C. T.* be kind enough to favour us with his name and address?

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, April 8.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 0	to 3s 10	Best Downs & Half-breds	4s 0	to 4s 4
Best Short Horns	3 2	3 6	do. shorn	3 6	3 10
Second quality Beasts	2 10	3 2	Best Long-wools	3 8	4 0
Calves	4 4	4 10	do. shorn	3 4	3 8
Lambs, small	5 0	5 8	Ewes and second quality	3 4	3 8
large	5 4	6 0	do. shorn	3 0	3 4
Pigs	3 4	4 0			

Beasts, 2407; Sheep and Lambs, 20,910; Calves, 88; Pigs, 340.

We have to-day a very limited supply, yet fully adequate to meet the demand, as this is a kind of holiday market—indeed, its being Easter Monday accounts for the smallness of numbers: it was anticipated that many less than usual would be wanted, and so it has proved; still, the effect has been to give a slight impulse to the trade, which is more cheerful, and in some things there is a little improvement in price. In Beef we can discover hardly a quotable difference from last week, although in the best qualities there is a slight average advance—in some few instances very superior have, indeed, realised 4s per 8 lbs. A few of the second class Beasts remain unsold. The best Down Sheep are making fully 2d per 8 lbs more than this day week, and the selling kind of Shorn Longwools are more in demand, at better prices. Lamb is not a very active trade, and suffers a decline from Friday's quotations. Veal trade is brisker, at a small advance. Pork is active.

FRIDAY, April 12.

The shortness of supply on Monday, together with the small arrivals at the dead markets since that day, has thrown a little life into our trade. There is no alteration whatever in the price of Beef, but Mutton is a shade better. Some of the very best old Downs in the wool are making 4s 6d, but this is not generally realised; the best Longwools, about 4s 2d; Downs without the wool make rather over 4s 10d, and the most selling shorn Longwools rather over 3s 8d; other qualities in the same ratio. Lamb remains the same as Monday—the morning being rather cool, trade for it is not very brisk. Some few superior Calves make 5s, but the more general price is 4s 10d per 8 lbs. Pork is steady.

Beasts, 672; Sheep and Lambs, 5900; Calves, 165; Pigs, 294.

41, West Smithfield.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, April 12.

Prime Upland Hay	70s to 76s	Clover	88s to 105s	Straw	28s to 32s
Inferior	55 65				

JOHN COOPER, Salesman.

CUMBERLAND MARKET, April 12.

Superior Meadow Hay	75s to 78s	Superior Clover	100s to 105s	Straw	30s to 32s
Inferior	60 65	Inferior	90 95		

JOSHUA BARNES, Hay Salesman.

WHITECHAPEL, April 12.

Hay	55s to 63s	Clover	90s to 98s	Straw	26s to 32s
— fine	65 78	— fine	105 108		

HOPS, FRIDAY, April 12.

THE Hop Market remains firm, with no variation in prices since last week.

Mid & East Kent Pocks.	90s to 105 10s	Sussex Pockets	82 to 92
Choice ditto	11 0 — —	Choice ditto	0 12 —
Weald of Kent Pocks	6 0 6 15	Farnham	9 9 10 10
Choice ditto	7 0 — —		

FAFFINGTON & SMITH, Hop-Factors.

WOOL—BRITISH, FRIDAY, April 12.

In our English Wool Market we cannot report any alteration since our last. The trade continues quiet, but the opinion that it will rally prevails. The public sales of Colonial and other Wools will commence on the 17th inst.

	per lb.		per lb.
Long-wooled Wethers	1s 1d to 1s 2d	Southdown Hoggits	1s 1 to 1s 2d
Do. Hoggits	1 1 1 2½	East Fleeces	1 2 1 3
Southdown Fleeces	1 0½ 1 2		

JAMES FARMER, Wool Broker.

MARK LANE, FRIDAY, April 12.—The arrivals of English Wheat during the week have been moderate, and the few up for this morning's market were taken off at our late quotations; there was rather more inquiry for free Foreign, having several distant buyers at market, but the business transacted was not extensive, nor can we note any improvement in prices.—Malting Barley maintains its value, but the Foreign arrivals amounting to nearly 7000 qrs., secondary description move off slowly, at a decline of fully 1s. per qr.—Beans and Peas are unaltered in value.—The Oat-trade is very firm, but business not brisk.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	66	68	Red	66	68
—— Norfolk, Lincolnshire, and Yorkshire	60	67	White	—	—
Oats, Lincolnshire and Yorkshire	18	28	Potato	17	25
—— Northumberland and Scotch	—	—	Feed	17	25
—— Irish	16	22	Feed	16	24
Barley, Malting and distilling	32	36	Chevalier	38	40
Malt, pale, ship	—	—			
—— Hertford and Essex	—	—			
Rye	—	—			
Beans, Massagan, old and new	32	36	Tick	32	34
—— Pigeon, Heligoland	38	40	Winds.	—	—
Peas, White	30	33	Maple	27	30
			Grey	26	27

IMPERIAL AVERAGES.

	Wheat.	Barley	Oats.	Rye.	Beans.	Peas.
March 1 per Quarter.	56s 8d	33s 5d	20s 6d	34s 2d	36s 8d	31s 6d
— 8	56 0	33 6	19 11	33 9	31 0	31 6
— 15	56 3	33 8	20 1	33 6	31 8	31 4
— 22	56 5	31 1	20 9	34 1	31 2	31 2
— 29	56 5	33 7	19 8	33 8	31 2	31 0
April 5	55 5	34 10	20 1	33 9	30 11	31 8
6 weeks' Aggregate Aver.	56 1	33 2	20 0	33 11	31 6	31 3
Duties on Foreign Grain	16 0	5 0	6 0	9 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	4510	3670	6730	3650 Sks
Irish	—	—	8080	—
Scotch	—	—	—	—
Foreign	9010	6720	2110	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	7035 Sks. — Brls.	5031	3230	4240	1292		1026	484
Irish	" — "	—	—	50	1840		—	—
Foreign	" — "	9586	702	—	810	—	—	—

KINGSFORD AND LAY.

COVENT GARDEN, APRIL 12.—In consequence of the continued fine weather most articles begin to improve rapidly in quality, and trade is getting better. Pines have advanced a little in price; they consist chiefly of Queens, which are of good quality. A few hothouse Grapes are in the Market; they are selling at from 30s. to 35s. per lb.; Portugals are sufficient for the demand. Apples are selling at nearly the same prices as last week, as are also Pears. Oranges are offered at from 4s. to 16s. per dozen. Lemons are sufficient for the demand. Chesnuts are becoming scarce, and are a little advanced in price. Spanish Nuts are scarce. The supply of Vegetables in general is increasing. Broccoli is good; it is selling at from 6d. to 2s. per bundle. Greens are still sufficient for the demand; but they are getting scarcer. Carrots and Turnips are good and plentiful, and Seakale and Asparagus are abundant; the latter is a little reduced in price. French Beans bring from 1s. 6d. to 2s. 6d. per 100. Rhubarb is plentiful. Cucumbers are slightly reduced in price, as are also Strawberries: the latter are becoming rather more plentiful. Frame Potatoes are nearly the same as last week. Among Cut Flowers we noticed Erica rubra calyx, E. androniedæflora, Cinidia pinifolia, Nemophila discoidalis, N. insignis, Heliotropes, Lily of the Valley, Cinerarias, Pelargoniums, Camellias, Azaleas, Gardenias, Fuchsias, and Roses.

FRUITS.

Pine Apple, per lb., 6s to 12s
Grapes, Portugal, per lb. 2s to 4s
Apples, des., p. bush. 3s to 20s
— ,, Kitchen, p bus. 8s to 10s
Pears, per half-sieve, 4s to 12s
Oranges, per dozen, 2d to 8s
— per 100, 4s to 16s
Lemons, per doz. 1s to 2s
— per 100, 6s to 10s
Almonds, per peck, 6s to 7s
Sweet Almonds, per lb., 2s6d to 3s
Nuts, Spanish, per bushel, 14s
— Brazil, 16s
— Hazal, 8s to 4s
— Barcelona, 20s to 24s
— Cob, 12s
Chesnuts, per peck, 3s to 5s
Strawberries, 1s. to 2s per oz.

VEGETABLES.

Rhubarb, per bundle, 6d to 2s 6d
Broccoli, per bundle, 6d to 1s 6d
White Broccoli per bun. 6d to 2s
Red Cabbages per doz. 2s to 3s
Sorrel, 2d to 1s p. bf.-sv.
Asparagus, per 100, 2s to 10s
Seakale, per punnet, 2d to 3s 6d
French Beans, 1s 6d to 2s 6d per 100
Autumn Potatoes, 3d to 6d per lb.
Greens, per doz. 6d to 4s
Potatoes, per ton, 60s to 90s
— per cwt., 3s to 4s
— per bushel, 1s 6d to 2s
— Kidney, p. bush., 2s 6d to 3s
Turnips, per doz. bunches, 1s 6d to 2s
Turnip-tops, per bushel, 6d to 1s
Red Beet, per doz., 6d to 1s 6d
Horse Radish, per bundle, 1s to 2s
Radishes, spring, 1s 6d to 2s per dozen bunds
Carrots, p. doz. bun., 2s 6d to 3s
Cucumbers, 6d to 2s each
Spinach, per sieve, 1s to 1s 6d
Leeks, per doz. bun., 2d to 1s 6d
Garlic, per lb. 6d to 8d
Onions, 2d to 4d p. bch.
— Large, per bushel, 1s 6d to 2s
— Spanish, per doz., 1s 6d to 4s
— pickling, p. bf.-sv., 2s to 4s
Shallots, per lb., 4d to 8d
Lettuce, Cabb., p. score, 4d to 1s
Celery, per bun. 6d to 1s 6d
Mushrooms, per pottle, 3d to 1s 2d
Walnuts, per bushel, shelled, 16s to 20s
Small Salads, per punnet, 2d to 3d
Watercress, per doz. sm. bun. 6d to 9d
Parsley, per doz. bunches, 2s to 4s
Tarragon, Green, per bun. 3d to 6d
Endive, per score, 1s to 2s
Green Mint, 3d to 6d per bunch
Marjoram, p. doz. bun. 1s 6d to 2s
Chervil, per punnet, 2d to 3d
Salsafy, per bundle, 1s to 1s 6d
Scorzonera, per bundle, 1s to 1s 6d

SEEDS, April 12.

Canary	per qr	50s to 54s	
Carraway	per cwt	56	58
Clover, Red, English		70	74
— — Foreign		64	74
— White, English		100	130
— — Foreign		84	125
Coriander		12	18
Hempseed	per last	34	36
Linseed	per qr	—	—
— Baltic	per cwt	—	—
— Cakes, Eng. per 1000		10l 5s	10l 10
Linseed Cakes, Foreign, p. ton		8l	to 7l 10s
Mustard, White - p. bush.		5s	6
— Superfine ,,		6	8
— Brown ,,		14	16
Rapeseed, English, per last		26l	28l
Rape Cakes - per ton		—	—
Saintoin		—	—
Tares, Eng. winter p. bush.		3	5
— Foreign -		3	5
Trefoil - per cwt		—	—
Turnip (too variable for quotation).			

KINGSFORD AND LAY.

POTATOES.—SOUTHWARK WATERSIDE, April 8.

THE continued fine weather during the past week has forced vegetation rapidly; the Town markets have been abundantly supplied with most articles. Hot weather always causes a serious depression in our Market. Owing to the contrary winds, the supply since our last has been small; but, in consequence of the continuance of hot weather, some further reductions were submitted to, and the trade was languid, at the following prices:—

York Reds	- -	80s to 90s	
Perth	- -	75	80
Early Devons	- -	—	—
Late Devons	- -	80	85
Cornwall	- -	—	—
Kent and Essex Whites	-	60s	70
— — Kidneys	-	80	85
Essex and Sussex Blues		70s to 75s	
Wisbeach Kidneys	- -	—	80
— Blues	- -	65	70
— Whites	- -	60	65
Jersey and Guernsey Blues		—	75
Prince Regents	- -	80	90
Shaws for plants	- -	65	75

PRINCIPAL MANURES.

	Weight per bush., about lbs		Weight per bush., about lbs
Alum, 26s per ton	—	Phosphate of Ammonia, in fine powder, 24s per cwt.	65
Bleaching Powder, 22s per cwt.	—	Rags, — 2 to — s per ton	—
Brimstone, 30s per ton	—	Rape Cake, 110s to —s per ton	—
Bone-dust, —s and 17s per quarter	46	— Dust, 115s per ton	—
— Half-inch, 16s ditto	42	Sal Ammoniac, 52s per cwt.	—
— Calcined, 8s per cwt	—	Salt, Agricultural, 22s per ton	80
Carbonate of Ammonia, 70s per cwt	84	— clean, 30s per ton	80
— of Lime, 1s to 1s6d per cwt	—	— Hide, 31s per ton	84
— of Soda, 30s to —s per cwt	—	Saltpetre (Nitrate of Potash) 28s 6d per cwt., duty paid	80 to 84
Chloride of Lime, 20s per cwt	—	Silicate of Potash, in powd., 60s p.cwt.	—
Cravens, —s to —s per ton	—	Soap Ashes, —s per ton	—
Guano, S. American, 210s p ton	—	Soda Ash, 14s to —s per cwt.	60
— Potter's, 240s per ton	65	Sulphate of Ammonia, —s to 260s per ton	70
— Potter's Liquid, 31s p. doz.	—	— of Copper, 28s to 60s p. cwt.	—
Gypsum (Sulphate of Lime), 30s to 35s per ton	80 to 84	— of Magnesia (impure) 10s per cwt.	65
Humphreys's Compound for Plants in Pots, 10s per doz.	—	— of Magnesia (pure crystal.) 12s p. cwt.	65
— Farmers' Compound, 12s per cwt.	—	— of Potash, 16s per cwt.	—
Muriate of Ammonia, 24s per cwt.	70	— of Soda, 6s per cwt.	—
— Lime, —s to 6s	70	Sulphur, 12s per cwt.	—
Nitrate of Soda, 16s to —s per cwt., duty paid	80	Sulphuric acid, London, 15d per lb.	—
Phosphate of Lime, 5s 6d p. cwt.	65	— Country made, 12d per lb.	—
— — Super, 8s p. cwt.	65	Whitmore's Composition for Finishing and Lights, 35s and 40s per doz.	—
— of Ammonia, in crystals 8s 6d per lb	—		

Expenses of shipping about 3s to 7s per ton, according to quantity.

MARK FREEMANTLE.

DISEASED AND HEALTHY LIVES ASSURED.

MEDICAL, INVALID, and GENERAL LIFE OFFICE, 35, Pall Mall, London.—This Office is provided with very accurately-constructed Tables, by which it can Assure Diseased Lives on Equitable Terms. Increased Annuities granted on *unsound* Lives, the amount varying with the particular disease. Members of Consumptive Families Assured at Equitable Rates. E. G. P. NELSON, Actuary.

GREAT BRITAIN MUTUAL LIFE ASSURANCE SOCIETY, 14, WATERLOO-PLACE, LONDON.

Directors.

The Chisholm, *Chairman.* Wm. Morley, Esq., *Deputy-Chairman.*
John Brightman, Esq. — James John Kinloch, Esq.
Francis Brodigan, Esq. — Henry Lawson, Esq.
James William Deacon, Esq. — Robert Power, Esq.
Jonathan Duncan Dow, Esq. — The Reverend F. W. Johnson Vickery, A.M.
Alexander Robert Irvine, Esq.
John Inglis Jerdein, Esq.

Auditors.

C. B. Rule, Esq.—T. C. Simmons, Esq.—George Thomas, Esq.
Physician.—John Clendinning, M.D., 16, Wimpole-street.
Solicitor.—Walter Prideaux, Esq., Goldsmiths' Hall.
Bankers.—Union Bank of London.

ADVANTAGES OF THIS INSTITUTION.

The whole of the Profits divided ANNUALLY among the Holders of Policies on which five Annual Premiums shall have been paid.

Credit given for half the amount of the first five Annual Premiums, by which means Assurances may be effected and loans for short periods secured with the least possible present outlay; and after payment of the arrears, the Policy-holder will become entitled to participate in the entire profits of this Institution, precisely in the same manner as if he had paid the whole amount of his Premiums in advance in the usual way.

Thus, for example—a person in the 25th year of his age, instead of paying 2*l.* 6*s.* per annum for an Assurance of 100*l.*, would be required to pay 1*l.* 3*s.* only during the first five years, when, on payment of the arrears of Premium, amounting to 5*l.* 15*s.*, his share of the profits would be such as to reduce his future Annual Premiums to very little more than the half Premium of 1*l.* 3*s.* originally paid by him. The GREAT BRITAIN is the only Mutual Assurance Society in which this very great accommodation is given to the Assured.

Credit allowed for the whole of the first five Annual Premiums on satisfactory security being given for the payment of the same at the expiration of five years.

Transfers of Policies effected and registered (without charge) at the Office.

Claims on Policies not subject to be litigated or disputed, except with the sanction, in each case, of a General Meeting of the Assured, to be especially convened on the occasion.

Holders of Policies of 1000*l.* entitled (after payment of five Annual Premiums), to attend and vote at all General Meetings of the Assured, who will have the superintendence and control of the funds and affairs of the Society.

Full particulars are detailed in the Prospectus, which, with every requisite information, may be obtained by application to

A. R. IRVINE, *Managing Director.*

ROYAL FARMERS' AND GENERAL FIRE, LIFE, AND HAIL-STORM INSURANCE INSTITUTION.

Empowered by Special Act of Parliament.—Capital, £500,000. Offices, Strand, London.

HONORARY DIRECTORS.

Duke of Rutland, K.G. — Earl Ducie.
Duke of Bedford. — Viscount Torrington.
Earl of Stamford and Warrington. — Viscount Campden.
Earl of Stair. — Lord Rayleigh.
Earl Howe. — Lord Feversham.
Earl of Stradbroke. — Lord Stanley, M.P.

And Seventy-six other Members of Parliament and Gentlemen.

HAIL-STORM DEPARTMENT.

ADVANTAGES OF INSURING IN THIS OFFICE:—

An actually subscribed Capital of £500,000, secured by 1963 Shareholders, whose names and addresses are enrolled according to Act of Parliament.

Insurances effected in one sum.

Division of profits amongst the Insured every third year.

All losses, whether total or partial, paid in full, as soon after the occurrence as the valuation can be completed.

No Average Clause; so that the sufferer will be certain of receiving the full amount of his loss, to be settled as in the case of loss by fire.

Premium Sixpence per acre for Wheat, Barley, and Peas; Fourpence for Oats, Beans, Turnips, and Potatoes.

Glass in hothouses, greenhouses, or private houses, 20*s.* p. cent.

The surplus profits, after paying an annual dividend of 4*l.* per cent. to the shareholders, and providing for a reserved fund, will be divided every *third* year between the shareholders and the insured.

The Directors of this Institution by no means wish to interfere with any other Office; but, as the General Hail-storm Insurance Institution, Norwich, has announced rates lower even than those charged by this Institution last year, they do not feel that they are going too far in calling public attention to the comparative positions of both Offices.

Royal Farmers' and General Fire, Life, and Hail-storm Insurance Company.	*General Hail-storm Insurance Company, Norwich.* (Not the Norwich Union Insurance Office.)
Empowered by special Act of Parliament.	No Act of Parliament.
Subscribed capital, 500,000*l.*	Nominal capital, 100,000*l.*
Number of shareholders registered, 1963, with names and addresses, according to Act of Parliament.	Number of shareholders, not announced. Query, what number, their names and addresses?
Four years' experience.	No experience.
Rates based upon the above-mentioned experience, but, if found too high, A RETURN WILL BE MADE EVERY THIRD YEAR.	Rates not founded on experience, and too low to meet losses on an average of seasons.
Full liability to the extent of 500,000*l.*	Limited liability, confined to shares taken, however few.
Power given by the Act of Parliament by which parties insured may sue the Company, in the name of the Managing Director, Secretary, or any one of the Directors.	No power to sue the Company in the name of the Managing Director, Secretary, or any one of the Directors; and, as the Shareholders are unknown, the insurers may have a difficulty in recovering their losses.
Shareholders, if sued, can recover contributions from their co-Shareholders.	Purchasers of Shares are individually liable to the 100,000*l.*, and if sued, have no power to recover contributions from their co-Shareholders. ANY CLAUSE INTRODUCED INTO A POLICY TO LIMIT LIABILITY IS INVALID unless the Company is empowered by Act of Parliament, giving Shareholders the power of obtaining contributions from their co-Shareholders.

Detailed Prospectuses may be obtained at the office, or will be forwarded, post free, upon application.

The usual commission to Solicitors.

Agents are appointed in all the principal Towns in the Kingdom.

W. SHAW, Managing Director.

PROVIDENT LIFE OFFICE, 50 REGENT STREET, PEB. 15, 1844.

BONUSES DECLARED, 899,806*l.* 17*s.* 7*d.*

NOTICE is hereby given, that all Persons who hold Policies in this Office, bearing date prior to the year 1824, may receive the present value of the Bonuses which have been added to their Policies, upon application at the Head Office, or to the Agents through whom the Policies were issued.

GEORGE BEAUMONT, Actuary.

NATIONAL MERCANTILE LIFE ASSURANCE SOCIETY, ARTHUR-STREET WEST, LONDON BRIDGE. (Established in 1837.)

Directors.

Chairman.—Robert Currey, Esq.

Edward Baker, Esq. — Thomas Bax, Esq.
Jasper Capper, Esq. — Joseph Cooper, Esq.
Thomas Dakeyne, Esq. — Russell Jeffrey, Esq.
Giles Redmayne, Esq. — William R. Spicer, Esq.
James Spicer, Esq. — Joseph Sterry, jun., Esq.
Henry Sterry, Esq. — Robert Wilcoxon, Esq.

Bankers.—Messrs. Prescott, Grote, and Co.

ADVANTAGES.

A BONUS of two-thirds of the Profits allotted to the Assured.

LOWER RATES OF PREMIUM charged for Assurances without profits.

PREMIUMS payable Annually, Half-yearly, or Quarterly.

ASSURANCES OF EVERY DESCRIPTION may be effected. Among others, the important one, *originated by this Society*, of securing a sum to the Assured himself on his attaining any given age, or to his family *in the event of his earlier death.*

A POCKET DIARY containing detailed particulars, may be had on application at the Office, or of the Society's agents.

JENKIN JONES, Actuary and Secretary.

LONDON, EDINBURGH, and DUBLIN LIFE ASSURANCE COMPANY, No. 2, Charlotte-row, Mansion House; and 18, Chancery-lane, London.

This is the only Company who are bound by their deed of constitution not to dispute any Policy, unless they can prove that it was obtained by fraudulent misrepresentation; and nothing but fraud proved to have been committed against them can vitiate a Policy granted by this Company.

This is the only Company from whom the assured on the mutual principle receive the whole of the mutual accumulations, and also a guarantee from the Shareholders for the sums assured.

This is the only Company who bind themselves to pay the sums in the Policies, although the debts for which they were effected shall have been liquidated before the claims arise.

This is almost the only Company who grant in favour of creditors *a hole-world Policies*, whereby the debt is secured, although the debtor should go beyond the limits of Europe.

By the half-premium plan only one-half of the premiums for the first seven years is required, the other half being payable at the convenience of the assured; thus allowing a Policy to be continued for seven years at one-half of the usual rate, or to be dropped at one-half of the usual sacrifice.

ALEX. ROBERTSON, Manager.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 130, Fleet-street. A Prospectus may be had detailing the prices, &c.

E. WEEKS, Sen., after a series of years' practice and great study in building Hothouses, Greenhouses, and Conservatories, combining utility with elegance, and as a practical man in Forcing, begs to inform the Nobility, Gentry, and Public, that he has for inspection a quantity of the above with all his new inventions for Heating the same on superior principles. Boilers and Apparatus on revolving, circulating, and ventilating systems; Bath and Office-stoves, &c., &c., superior to anything yet seen for steaming and circulating of heated water, at his Factory, Hortelan-Place, King's-Road, Chelsea.

GUANO ON SALE BY THE IMPORTERS, JOHN BOYD & Co., Wellington Chambers, London-bridge, Borough.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL; And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL. 67, Lime-street, April 12, 1844.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7*s.* per cwt. Phosphate of Potash, 15*s.* per cwt.
,, Soda 12*s.* ,,
,, Magnesia 9*s.* ,,
,, Ammonia 1*s.* per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs. WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1*s.*

MANURES.

BOAST AND Co.'s PATENT INORGANIC MANURES. These strong and productive manures have already proved their superiority over all others yet adopted. It is now thoroughly understood and acknowledged by intelligent agriculturists that each plant requires a distinct manure, and it is upon this perfectly scientific principle that these manures are prepared, being formed so as to supply all the substances taken from the soil by each particular crop. They are immeasurably more efficacious, far more economical than all others, and possess the great advantage of being easily applied to the land.

Prospectuses, with full particulars, may be obtained; or will be forwarded by post on application at the Manufactory, Bow, Middlesex.

*** By the use of these Manures, any land may be rendered fertile. Wheat, &c. may be grown on the same land every year with immense advantage to the farmer, and without injury to the soil; whilst all the other crops are greatly increased.

GUANO, superior to the foreign, at a reduced price.

Manures prepared expressly for Gardeners and Florists.

THE URATE of the LONDON MANURE COMPANY, 5*l.* per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, but not to be found in the Atlantic Ocean. Sold by Messrs. WARNERS, 28, Cornhill; Messrs. WINSTANLEY, 7, Poultry; Messrs. HURST and M'MULLEN, 6, Leadenhall-street; and all respectable Chemists and Seedsmen; with directions, in stone quarts, at 1*s.* 6*d.* each, and in bottles containing as much as six of these, at 7*s.* 6*d.* The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

Noblemen, Gentlemen, and Gardeners will, by using this composition, have the only effectual protection for their Fruit-trees during the blooming season; it is a certain defence from frost, sleet, wind, and blight; its transparency admits the general beams of the sun, with abundance of light, which causes the bloom to expand with increased luxuriance, the fruit to set and swell more freely, much earlier, and a crop of fruit to any extent may be warranted. The covering not to be moved by day (except to thin the Fruit, which will be necessary), till the month of June. It is recommended that the Calico be prepared early, so as to be thoroughly dry before using.

Sold in Bottles, with directions for use, pints, 2*s.* 6*d.*, quarts, 4*s.* 6*d.* each. One pint is sufficient to coat four Frames twice over, each Frame to be 5ft. by 3ft. 3in., or thereabouts. Prepared by GEORGE WHITNEY, Chemist, Shrewsbury. Seedsmen, Florists, and Merchants supplied by Mr. W. BAILEY, Chemist, North-street, Wolverhampton. Appointed Agents:—Messrs. BUTLER and MUCKLEY, Covent Garden, where a sample of prepared calico may be seen; Mr. WATKINSON, Market-place, Manchester; PAGE and SON, Southampton; T. and C. WHALLEY, Nurserymen, Liverpool.

Agents wanted for London and the country.

WOODLANDS NURSERY, MARESFIELD, near Uckfield, Sussex.

WILLIAM WOOD AND SON have much pleasure in acquainting their numerous Patrons and Friends that they have been appointed Agents for the sale of that most invaluable article—WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, samples of which may be seen, and the composition in use, at WOOD and SON'S Nursery. Sold in bottles, with ample directions for use, pints 2*s.* 6*d.*, quarts 4*s.* 6*d.* each. Discount to the Trade.

THE NEW CHEMICAL MANURE.

HUMPHREYS'S FARMERS' COMPOUND, *stronger than Guano, and without its caustic rankness.* Samples on view at the Royal Polytechnic Institution. On Sale with the following Agents:—THOMAS GIBBS and Co., by appointment Seedsmen to the Royal Agricultural Society of England—corner of Half Moon-street, Piccadilly; COTTAM and HALLEN, Agricultural Repository, Winslow-street, Oxford-street; BUTCHFIELD, Smithfield; BATT and BUTLEY, 412, Strand; CLARK, Bishopsgate-street; CHARLWOOD, Tavistock-row, Covent Garden; FLANAGAN and SON, Mansion-house-street; BUTLER, Covent Garden; FOTHERGILL, 40, Upper Thames-street; HURST and MCMULLEN, Leadenhall-street; LOCKHART, Cheapside; WILLIAM and JOHN NOBLE, Fleet-street; W. J. NUTTING, Cheapside; WEDLAKE, Fenchurch-street; SAMUEL HOWARD, 28, Mark-lane; WHITE, Phœnix Wharf, Blackfriars; ALLEN, Shrewsbury; COZZERMAN and Co., Wells, Norfolk; DICKSON and Co., Edinburgh; T. S. KING, Rochester; W. F. MOLESWORTH, Banbury; W. MADDOCK, Tunbridge Wells; W. K. RENDLE, Plymouth; THOMSON and Co., Macduff, near Banff; THOMAS WATKINSON, Market place, Manchester. Price 12*s.* per cwt.—DAVY, MACKMURDO, and Co., Manufacturing Chemists, 100, Upper Thames-street, London.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c. &c. conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), 36, 5, A., Rupley Road, Kentish Town.

N.B. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.

WIRE-WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof, WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

HENRY HUNT'S PATENT GARDEN POTS and STANDS, for effecting Improved Drainage and Draught of Air. Patronised by Royalty and 30 Metropolitan and Provincial Horticultural Societies. Wholesale and Retail Depôt, 29, Queen's-row, Pimlico. The opinions of the Horticultural and Scientific Press, with priced Cards, forwarded on application, post-paid. Nurserymen in provincial towns appointed Agents.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2s. 6d. each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

LEVEL.—This Instrument, the invention of a Gentleman extensively engaged in Draining, is confidently recommended for its simplicity and cheapness; it requires only one person to use it, and gives the rise and fall in land as well as the level, and is also adapted for giving a uniform fall to drains. Each Level is packed in a case 18 inches by 3. Price, 2l. Direct to W. B. WEBSTER, Houndsdown, near Southampton.

BUDDIDGE AND [illegible] CONCAVE APPARATUS, [illegible] Cochlear Apparatus is believed [illegible] preceding advantages than any yet submitted to the [illegible] as regards strength of material and workmanship; [illegible] the form of heat-tun so applied as to produce [illegible] with the least consumption of fuel, without [illegible] to the Apparatus; and B. and E. can safely recommend [illegible] experience, as unquestionably superior to anything [illegible] hitherto made. A Prospectus can be forwarded, upon [illegible], detailing particulars and prices, to 136, Fleet-street.

BEE-HIVES.—GEORGE NEIGHBOUR & SON beg to inform their Apiarian friends that they have prepared for the season a large stock of "Nutt's" Patent Bee-hives" (for the sale of which they are the only authorised agents), in which are embodied all the recent improvements. Their selection now comprehends most varieties in general use at the present time, including the "Single Box Hive," the "Ladies' Observatory Hive," the "Improved Cottage Hive," with glasses, &c., from either of which the produce may be taken at any time of the gathering season, without destroying the Bees.

G. N. & Son have also Glass Hives, and other articles connected with Bee management, a catalogue of which, with drawings, may be obtained. Letters of inquiry must have postage stamps inclosed.—Apiarian Depot and Honey Warehouse, 127, High Holborn, London.

NUTT ON BEES, Fifth Edition, now Published.

SILVER PLATED DISH COVERS. — A. B. SAVORY and SONS, Manufacturing Silversmiths, 14, Cornhill, opposite the Bank of England, submit for choice in their Plate-rooms, many patterns of SILVER PLATED DISH COVERS, of Sheffield manufacture, from 15 to 20 guineas the set, viz.:—

Double Dome Pattern.	Size.	£	s.	d.	*The Melon Pattern.*	Size.	£	s.	d.
1 Pltd. Dish-cover,	20 in.	5	13	6	1 Pltd. Dish-cover,	20 in.	5	17	0
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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 16.—1844. SATURDAY, APRIL 20. [PRICE 6d.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK.—EXHIBITIONS of PLANTS, FLOWERS, and MICROSCOPES in the Garden of this Society, for 1844.

TUESDAY, April 30.
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50 do. do.	. .	2	5
50 Superior Herb. plants	.	2*s*	6
100 do. do. do.	.	4	5

HARDY CLIMBERS FOR PLANTING OUT.

		s	*d*
Aristolchia Sipho, each	1*s*	6	
Atragene Austriaca, each	1	0	
Bignonia radicans, each	1	0	
Do. do. major, each	1	6	
Ceanothus, 2 species, each	1	0	
Calampelis scabra, each	1	6	
Clematis azurea grandiflora, per dozen	24	0	
20 varieties of Roses, each	1	6	

		s	*d*
Clematis Sibboldii, p. doz	12*s*	0	
Do. Montana, p. doz	12	0	
Pyrus Dutzia and Cotoneaster, each	1	0	
Wistaria consequana, each	1	6	
Honeysuckle, 6 vars., each	1	0	
Jasminum 4 vars.	1	0	
Sollya, 2 vars., each	0	9	
Passifloras, 4 vars., each	1	0	

HALF-HARDY or SUMMER CLIMBERS.

		s	*d*
Cobæa scandens, each	0*s*	9*d*	
Maurandia, 3 vars., each	0	9	
Lophospermum, 3 var each	0	9	
Scypanthus elegans, each	1	0	

		s	*d*
Thunbergias, 4 vars. each	1*s*	6*d*	
Loasa and Tropæolum Car. each	0	6	

. The above Plants carefully packed and forwarded to any part of the United Kingdom. A post-office Order or reference for payment in Town. Persons erecting Greenhouses or Conservatories can be well supplied with the choicest and best of Plants for furnishing, including the many handsome Climbers recently introduced.

N. B.—Plants securely packed for exportation.—Albion Nursery, Stoke Newington, London.

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg to inform their Friends that they can supply all the new varieties of Fuchsia, Petunia, Verbena, Calceolaria, Geranium, Dahlia, &c. &c. now out, either in Collections or by the single plant.

Plants of the New Black *Nemophylla*, 9*d.* each. Potter's Liquid Guano, in quart bottles, 1*s.* 9*d.* each. Super-phosphate of Lime, in 7 lb. packets, at 1*s.* each. Whitney's Chemical Transparent Waterproof Composition, with directions for use; in pints, 2*s.* 6*d.* each, quarts, 4*s.* 6*d.* each.

For their Advertisements of new and choice Flower and Vegetable Seeds, see their lists in Harrison's "Cabinet" for April, and the preceding Numbers of the *Gardeners' Chronicle*.

MESSRS. MARNOCK and MANLEY beg to inform their Friends and the Public, that their DESCRIPTIVE CATALOGUE OF FUCHSIAS, VERBENAS, CINERARIAS, DAHLIAS, &c., with a Treatise on the best and most successful Modes of Cultivation, is now ready, and may be had on application.

N.B.—Their beautiful Fuchsia, MARNOCK'S PRINCESS SOPHIA, is now ready to be sent out; the stock is not large, therefore early orders will prevent disappointment.

Messrs. Hurst and M'Mullen are Agents for their Fuchsias and Cinerarias. Nursery, Hackney, April 19, 1844.

SPLENDID LARGE, DEEP-BLUE ANAGALLIS and SUPERB CINERARIAS.—Plants of that large, splendid deep-blue, full and complete round-petalled ANAGALLIS BREWERII, being of a strong and vigorous habit, are well adapted for bedding out; 12*s.* per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light-blue, at 2*s.* 6*d.* per packet. Strong flowering plants of the above, 12*s.* per dozen. Applications, including Post-office orders, will be immediately executed.—Direct to MICHAEL BREWER, Sen., Cambridge Nursery.

MAY'S "QUEEN OF MAY" CINERARIA.—The above new and beautiful Cineraria is now ready to be sent out by post, or otherwise, at 5*s.* 6*d.* each, including case, prepaid. It is confidently recommended as being one of the most splendid novelties that has been offered in Cinerarias; the colour being a beautiful light sky-blue; the flowers large and of good form; the plants compact, shrubby, and dwarf in growth.

W. M. begs to state that his descriptive List of new, superb Calceolarias may be had on application to WILLIAM MAY, Hope Nursery, Bedale, Yorkshire.

W. M. also begs to intimate that he cannot supply any more Eucharidium grandiflorum.

MANGEL WURZEL.—MR. ROBERT BAKER, of Writtle, has for Sale a quantity of Mangel Wurzel Seed, warranted, from transplanted roots, and which he has carefully selected and improved for upwards of 30 years, until he has obtained perfection equal to that of any other Stock in the kingdom. Globe Orange, 1*s.* 6*d.* per lb.; Globe Red, 1*s.* 3*d.* per lb., Long Red, 1*s.* 3*d.* per lb. Upon receiving a Post Office Order the Seed will be forwarded to any part of the kingdom.

SEEDLING VERBENAS.

E. H. FULLER respectfully informs the Public that he intends sending out in April the following new and distinct Varieties of VERBENAS, which have been universally admired, and submitted to Dr. LINDLEY.—Vide *Gardeners' Chronicle*, Oct. 14, 1843, p. 721.

E. H. FULLER, No. 2 (INCOMPARABLE), "brilliant rich purple, with a white eye, the best of its colour we have seen."—Plants in April, 5s. each.

No. 3, LUCASII, "delicate pink, clear and good."—2s. 6d. each.

No. 4, LOUIS-PHILIPPE, "rosy-purple, clear and steady in colour, a good Variety."—Plants 3s. 6d. each.

"These flowers are characterised by having the colours very clean, not dirty nor uncertain, as it frequently happens. The flowers are rather small, but this may arise from want of better cultivation."

The usual trade allowance if three or more plants are ordered. All orders will be sent post-free, or by coach, paid to London. A Catalogue of Fuchsias, Geraniums, &c. &c. will be forwarded by post on application.—Worthing, April 19, 1844.

PELARGONIUMS, AURICULAS, CARNATIONS, AND LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by APPOINTMENT FLORIST TO HER MAJESTY, begs to inform the Nobility, Gentry, and Amateurs, that in consequence of the success he has had in the cultivation of the above Flowers at his new Garden (where he requests an inspection of the quality of his plants), he can offer them at very moderate prices. His Catalogue of PELARGONIUMS, AURICULAS, and NEW PLANTS, is now ready, and will be forwarded by post on application. The Trade supplied.

KEYNES' STANDARD OF PERFECTION; DODD'S ORANGE SUPERB, DOWDING'S EMMA NOKE.—Nurserymen who can supply fine plants of these first-rate varieties, the first week in May, 1844.

Low and Co., Clapton	GARRAWAY, Bristol
HURST and M'MULLEN, London	MEAD, Lewisham
NUTTING, Cheapside, London	WEEKES, Westminster
GIRLING, Stowmarket	HEALE, Devizes
RENDLE, Plymouth	DRUMMOND, Bath
FOSTER, Stroud	GREADY, Bristol
MITCHELL, Maresfield, Sussex	MAULE and Co., Bristol
LODGE, Manchester	PINCE and Co., Exeter
APPLEBY, York	VEITCH and Co., Exeter
HARRISON, York	HANDASYDE, Edinburgh
EDWARD, York	MOUNTJOY, Ealing
WATKINSON, Manchester	WIDNALL, Cambridge
SPARY, Hungerford	BROWN and ATTWELL, Uxbridge
PONTEY, Plymouth	HODGES, Cheltenham
BROWN, Slough	

WIVERY, FLORIST, Peckham, near London, begs most respectfully to offer after the 23d inst. the following beautiful Seedling PETUNIAS, FUCHSIA, and VERBENA.

PETUNIAS.

FAVOURITE.—Large, light, with a fine blue pencilled eye, 3s. 6d.

MAGNA CHARTA.—Large, light, shaded with rose, and a very fine pencilled eye, 5s.

OVID.—Very large, purple, and good shape, 3s. 6d.

PRINCE ALBERT.—A very distinct, bright rose, 3s. 6d.

RELIANCE.—Large, light, with a beautiful pencilled eye, and good shape, 5s.

THE PET.—Small, light, with a beautiful rose edge, and striped eye, 5s.

FUCHSIA.

PRIDE OF PECKHAM.—Tube flesh-coloured, sepals tipped with green, corolla scarlet, very distinct, and fine habit, 7s. 6d.

VERBENA.

PURPLE QUEEN.—Extra fine in colour and shape, 5s.

N.B.—A select Catalogue of Geraniums, Fuchsias, Verbenas, Cinerarias, Petunias, Phloxes, &c., may be had on application

CROSS LANES NURSERY, near BEDALE, YORKSHIRE.

WM. JACKSON AND CO., beg to state that they can still supply the following Plants, strong and well-established:—Veronica speciosa, 12s. 6d.; Tropæolum azureum, 12s. 6d.; Clematis Sieboldii, 1s. 6d.; Clematis azurea grandiflora, 2s. each; Fuchsias, 12 of the most approved and distinct varieties for 12s. 6d., including Exoniensis, Prince Albert, Standwellana, Prince of Wales, and their Seedling "Conqueror," a very fine variety, with long tube and sepals, of a fine bright scarlet, corolla salmon colour; an abundant bloomer.

A reference or remittance from unknown correspondents is respectfully solicited.

SEEDLING FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to inform his Patrons and Friends that his SEEDLING FUCHSIA CYLINDRICA SUPERBA (a singularly interesting flower), he regrets to say, will not be sent out until May 20th, 5s. each, post-free; but respectfully solicits early commands for the following Splendid FUCHSIAS and VERBENAS, which are now ready for delivery: Fuchsia London Rival, a noble and warranted first-rate show-flower, 7s. 6d. each; Globosa grandiflora, the finest Globe ever offered, 5s. each Verbena excelsa, extra large, of exquisite form, new in colour; no collection can be complete without it, 5s. each; Delecata, large and extra fine show-flower, 3s. 6d.: Array, a fine free neat variety, 3s. 6d.; Striata, a novel striped kind, 2s. 6d. For further description, see this Paper of March 23d. The following Nurserymen and Florists can supply plants of them: Messrs. WARNER, 28, Cornhill; Messrs SMITH, Hackney; Messrs. HENDERSON, Pineapple-place; HOGGARD, Edgware road; D. SYRIA, Bloomfield Nursery, Edgware road; W. MILLER, Providence Nursery, Ramsgate; Messrs. YOUELL, Great Yarmouth Nursery; STEWART, Saltbill Nursery, CRIPPS, Tunbridge Wells; E. TILLEY, Bath; Messrs. WOOD, Maresfield; J. RALLEY, Blackheath; F. H. FULLER, Worthing; Messrs. WHITE, Pool Nursery, Dorsetshire; Messrs. SLATER, Exeter, J. FORSYTH, Anlaby, near Hull; R NEWBERRY, Upway Nursery, near Dorchester.—*** Discount to the Trade.

Tollington Nursery, Hornsey road, Islington, near London.

IMPORTANT TO GARDENERS and Others.

J. G. WAITE, Seedsman, 1 & 4, Eyre-street-hill, Hatton Garden, London, respectfully offers his Incomparable Hardy Green COLEWORT, as by far the best in cultivation, it turns into heart sooner than any other, stands the frost well, and continues in use till the Spring Cabbages come in; its colour is extremely dark, and flavour most delicious. Time of Sowing, April till July. Price 5s per lb.

J. G. W. has a large supply of Mangold Wurzel, Turnip and Carrot Seeds, Swede from true Stocks, and of genuine quality, at reduced prices. Catalogues may be had on application.

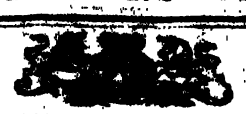
Cash, or Reference in London, is required from unknown Correspondents.

NEW MIXED GRASS SEEDS for PERMANENT PASTURE and LAWNS.—The above Seeds, containing the best sorts, with a suitable proportion of the Perennial Clovers and Trefoliums, are sold at 5s. per bushel, allowing four bushels per acre, by Mr. ROBERT SMITH, Eastling, Faversham, Kent.

Gentlemen are requested to describe the soil.

GRASS SEEDS.

HENRY D. CORMACK, SEEDSMAN, &c. begs to inform Agriculturists in general that they can be supplied with every variety of the Natural Grasses, adapted to the soil, properly apportioned and combined, from his Wholesale and Retail Seed Warehouse, 106, Dean's-gate, Manchester.

FLORIST TO HER  MAJESTY THE QUEEN.

PETUNIA PUNCTATA.

W. MILLER refers the readers of the *Gardeners' Chronicle* to his full advertisement of this beautiful flower—just remarking that its *Strong, Dwarf habit*, and *Glossy Dark Green* foliage, contrasted with its lovely, large, spotted flowers (far surpassing any Petunia yet out), render it a desirable object for any greenhouse, and especially to all Exhibitors. He will commence sending out the plants on the 22d inst., at 7s. 6d. each, packed in strong tin cases, to insure their safety, to any part of the United Kingdom, post paid.

The following Nurserymen have ordered plants, and will be enabled to supply them true:—

Messrs. Henderson and Co., Pine-apple-place, London	W. Masters, Canterbury
Low and Co., Clapham, London	A. Milan, Doncaster
Wood and Son, Maresfield, Sussex	J. Ingram, Southampton
Marnock and Manley, Hackney	E. Perkins, Leamington
Veitch and Son, Exeter	W. Ivery, Peckham, nr. London
Hancock and Son, Durham	J. Cook, London-rd., Worcester
Mountjoy and Son, Ealing	E. Collaneby, Tunbridge Wells
Sage and Son, Southampton	E. J. Lowe, Leuton, Nottinghamshire
Jeyes and Co., Northampton	C. Noyes, near Manchester
White and Son, Poole	W. Scirving, Liverpool
Garraway, Mayes, & Co., Bristol	S. Wain, Blackley, Manchester
Fisher, Homes, and Co., near Sheffield	S. Parsons, Brighton
Rogers and Son, Uttoxeter	E. Henderson, Wellington-road, London
Whitley and Osborn, Fulham	E. H. Fuller, Worthing
T. and J. Backhouse, York	J. Webber, Merrish, near Crewkerne
W. Catleugh, Sloane-st., Chelsea	J. Kitley, Bath
J. Benton, Birmingham	H. Pope, Birmingham
W. E. Rendle, Plymouth	J. Griffan, Cowley, Exeter
S. Girling, Stowmarket	G. Wheeler, Warminster, Wilts.
W. Foster, Stroud, Gloucestersh.	W. White, Swansea
J. Hally, Blackheath, nr. London	W. Potts, Shrewsbury
R. Henbrey, Croydon	T. Lyle, Isle of Man
R. Coopér, Croydon	W. Gansall, Hereford
Ch. Van Gert, Antwerp	T. Pullen, Midhurst
A. Stewart, Salthill, nr. Windsor	J. Charl, Peckham, Surrey
H. Silverlock, Chichester	Rogers and Son, Southampton
— Bunner, Kings-land	Jeffries and Son, Ipswich
E. Bartlett, Sidmouth	J. and H. Baycroft, Patrick-street, Cork
W. Bell, Thirsk, Yorkshire	T. Davis and Son, Wavertree, near Liverpool
T. Appleby, York	Metropolitan Union
J. Carden, Westmoreland	J. Frazer, Lea Bridge-road
H. Major, Leeds	J. Chas. Otley, Peckham
R. Glendinning, Chiswick	F. Hood, Plymouth
— Harrison, Downham, Norfolk	W. H. Homes, Sunbury, Derby
R. Pettit, Bury St. Edmunds	J. Gill, Blandford
J. Smith, Dalston	A. Standsfield, Todmorden
G. Smith, Hornsey-rd., Islington	J. Fryer, Camberwell
Mrs. Blencowe, Dawlish, Devonshire	C. Hale Jessop, Cheltenham
J. Slater, Versailles, France	J. and C. Lee, Hammersmith
J. Backway, East Dereham, Norfolk	T. Miller, Battle, Sussex
M. Brewer, London-road, Cambridge	S. Walters, Hilporton, Trowbridge
H. Groom, Clapham	Burgess and Co., Newcastle, Staffordshire
J. Edwards, New Bridge-street, York	D. Barkeville, Bristol
W. Gregory, Cirencester	J. Salter, Bath
W. Day, Oxford	Fisher Godwin, Sheffield

LONDON AGENTS.

Messrs. Warner and Warner, 28, Cornhill
Hurst and M'Mullen, Leadenhall-street
Flanagan and Sons, Mansion House-street
Noble and Sons, Fleet-street
Mr. Kernan, Seedsman, Great Russell-street
Mr. Corstein, 19A, Davies-street, Berkeley-square

*** This List will not appear again. We shall commence sending out the plants on Monday the 22d instant.

☞ A few strong plants yet remain.

Providence Nursery, Ramsgate, April 18, 1844.

SUPERIOR NEW SWEDISH TURNIPS.

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg to introduce to their Friends the following New Swedish Turnips, which for their general good qualities stand unrivalled; growing to a large size, being small in the top, of a dark yellow flesh, and may be grown as close to each other as a Stone or Stubble Turnip.

WARNER'S RUSSIAN SWEDE . . 2s. 6d. per lb.
WARNER'S EMPEROR SWEDE . . 2s. 6d. per lb.

Also WARNER'S Purple-top Yellow Hybrid, 2s. 6d. per lb., with all the varieties of Norfolk and Tankards, of the most genuine and selected stocks, from 9d to 1s. per lb.

SKIRVING'S IMPROVED SWEDE TURNIP.

W. SKIRVING, SEEDSMAN, Queen-square, Liverpool, begs to acquaint his Agricultural Friends and the Public, that the price for the present season of the Genuine Seed of his improved Swede Turnip is 1s. 6d. per lb.; the sort warranted the same as that for which he received the Premium of the Royal Agricultural Society of England. All other sorts of Turnip-seeds of the common kinds at the usual prices; also the most approved varieties of Mangold Wurzel, large White Belgian and Altringham Carrot.

For permanent Pasture, W. SKIRVING begs to offer his Selection of the most useful Perennial Grass-seeds. The sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental Grounds at Walton. On this system he has supplied within a few years, Seeds for many thousand acres, which have given every satisfaction. Orders stating quantity and quality of land to be laid down, will be correctly executed, with a suitable mixture.

For alternate Cropping, W. S. can recommend Seed of pure Italian Rye-grass, grown and carefully saved on his own farm.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3s. 6d. per quart.

SHADES FOR GREENHOUSES.

J. WEEKS & Co., ARCHITECTS, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND. SEEDSMEN.

THOMAS GIBBS and Co., corner of HALF-MOON-STREET, Piccadilly, London, having had the honour of being officially appointed the SEEDSMEN to the "*Royal Agricultural Society of England*," beg to assure the Members of the Society, and their Agricultural Friends in general, that this renewed mark of confidence will stimulate them to continued and fresh endeavours to merit so high a distinction. It has been the endeavour of the firm ever since their appointment as Seedsmen to the late Honourable Board of Agriculture, in 1799, and to the Honourable Board of Agriculture of Sweden, to devote their attention to supplying no seeds but such as they consider to be of the best quality; and they feel assured, that by strictly adhering to this principle, they shall be enabled to secure a continuance of that support which they have now received for 40 years.

THOMAS GIBBS and Co. beg to call the attention of Agriculturists to their general Stock of Seeds, to the selection and saving of which they have devoted the greatest care and attention. Among others, they beg to call particular attention to the following, viz.:—

GRASS SEEDS,

For forming permanent Meadows and Pastures.

Mixtures of Selected Natural Grass Seed for the purposes above mentioned, proportioned and adapted to suit the nature of different soils. T. G. and Co., having formerly had their attention particularly called to this peculiar department of the business, in a scientific point of view, by the Honourable Board of Agriculture in 1799, have ever since that time continued to make the Grasses a matter of particular study and attention. From the long experience in laying down land in all parts of the country, they confidently rely upon their being able to give entire satisfaction in their selections.

Mixtures of the above especially adapted for field-lawns and parks.

WHITE BELGIAN CARROT.

Large white Belgian (or Flemish) Carrot (of which extraordinarily heavy crops are obtained).

Large Field Altringham (Red) Carrot an excellent field Carrot.

MANGOLD WURZEL.

Long Red Mangold Wurzel (producing very large crop).
Yellow Globe ditto, ditto (highly approved to shallow soils).
Red Globe ditto, ditto (adapted to light shallow soils).
Long Yellow ditto ditto.

TURNIPS.

Purple Top Swedish Turnip (combining large produce with beauty of form and smallness of top).

Green Top ditto ditto (hardy and useful variety).

Gibbs's Green Top Yellow Hybrid (strongly recommended—will bear sowing later than Swedes, and next to the Swede in hardiness).

Gibbs's Red ditto ditto (same as the above, with red top).

Green Globe Turnip.

Early Stubble Turnip, and other varieties of known good qualities.

All kinds of Agricultural and other seeds; different varieties of Grass seeds; Italian Rye Grass, Improved Perennial Rye Grass, Clovers, &c. &c.

Please address

THOMAS GIBBS and Co., the Seedsmen to the "Royal Agricultural Society of England," and to the Hon. Boards of Agriculture of England and Sweden, corner of Half-Moon-street, Piccadilly, London.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will submit to public competition, at the Auction Mart, Bartholomew-lane, on THURSDAY, April 25, 1844, at 12 o'clock, a splendid assortment of GERANIUMS, and other Plants, in bloom, choice DAHLIAS, the newest varieties of FUCHSIAS, HEARTSEASE, &c. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, America Nursery, Leytonstone.

AN EXTENSIVE SALE OF VALUABLE SHORT-HORNED CATTLE, CHEVIOT SHEEP, FARM HORSES, IMPLEMENTS OF HUSBANDRY, &c.

MR. CHRISP will SELL BY AUCTION, at KILHAM, in the parish of Kirknewton, County of Northumberland, on THURSDAY, the 9th day of May, 1844, all the Valuable STOCK on the above Farm belonging to Mr. HUGH BOAG, consisting of about 18 Short-horned Cows and Heifers, Calved and to Calve; 18 Two-years-old Steers and Heifers, fit for grazing; 27 Yearlings, 15 Milk Calves, and 1 Young Bull; 900 Ewes and Gimmers, with their Lambs; 350 Ewe Hogs, 450 Wedder Hogs, 24 Rams, and 30 Ram Hogs, all of the pure Cheviot breed; and 36 Draught and Young Horses.

Mr. CHRISP can with confidence call the attention of the public to this splendid Stock of Cheviot Sheep. For size, constitution, aptitude to fatten, and symmetry of form, they are equalled by few, and surpassed by none in the Kingdom. This affords an opportunity to any one desiring to lay the foundation of a first rate Cheviot or Half-bred Stock rarely occurring. The Short horns are bred from the Stock of Messrs. Hunt, Crofton, Chrisp, Smith, Rennie, &c., and are well worthy the attention of the public. Mr. BOAG has used for the last two seasons Mr. Hunt's celebrated Bull, "Guy Faux," by Gainford, 2044 Coate's Herd book.

The Farm Horses are nearly all Young, combining strength and Activity with good form, and have been bred with great care and attention by the present owner and his father, the late Mr. JOHN BOAG, of Trewit, for many years. The Implements and Harness, suitable for the improved Northumberland Husbandry, are numerous and good.

As the Sale is extensive, it will commence precisely at Ten o'clock, with the Ewes. Gentlemen from a distance desirous of possessing some of this valuable Stock can have them shipped at Berwick, Leith, Glasgow, Annan, or Newcastle, to all of which ports there is easy and convenient access from Kilham, which is eight miles from Wooler, five from Coldstream, sixteen from Berwick, and twelve from Kelso, through which place coaches from Newcastle and Edinburgh pass daily.

*** The above Stock is offered to the public, without reserve, in consequence of Mr. BOAG leaving his Farm.

The usual discount or credit.

6, Hinde-street, Newcastle, April 6, 1844.

MESSRS. LAHEE and SON are instructed by Mr. SPRAY, of Isleworth, to submit by Public Auction in June next (unless previously disposed of by private contract) his extensive and superb Collection of Stove and Greenhouse Plants, consisting chiefly of Specimen and Hybrid ERICAS, AZALEAS, CAMELLIAS, &c. &c., comprising in the whole more than Two Thousand Plants. Further particulars will be announced in a future Advertisement, and, at the same time, if not sooner disposed of, the LEASE of the House, Gardens, and Paddock.—Auction Offices, No. 65, New Bond-street.

TO GROWERS OF ORCHIDACEÆ.

MESSRS. J. C. and S. STEVENS beg to announce they will sell by Auction at their Great Room, 38, King-street, Covent-garden, on WEDNESDAY, April 24, at 12 o'clock, the valuable collection of ORCHIDACEOUS PLANTS, the property of Valentine Morris, Esq., of the Retreat, Battersea; amongst them will be found many fine examples of the rare varieties in the finest health: they number about 200 specimens. May be viewed the day prior and morning of Sale, and Catalogues had of the Gardener on the premises, and of Messrs. J. C. and S. STEVENS, 38, King-street, Covent-garden.

THE ANNIVERSARY MEETING, for the Election of Fellows, Council, and Officers, for the year ensuing, and for receiving the Annual Report of the Auditors, will take place at the House of the Society, No. 21, Regent-street, on Wednesday the 1st of May next. The Chair will be taken precisely at One o'clock. Horticultural Society, 21, Regent-st.

UNDER THE PATRONAGE OF HER MAJESTY.
ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—The First Grand FLOWER-SHOW of the Season will be held at the Horns Tavern, Kennington, on TUESDAY next, April 23, 1844. Open from One till Half-past Six. Admittance, 1s. R. H. CUMMING, Hon. Sec.

The Gardeners' Chronicle.

SATURDAY, APRIL 20, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, April 23	South London Floricultural	1 P.M.
WEDNESDAY, May 1	Horticultural Anniversary	1 P.M.
FRIDAY, May 3	Society of Arts	8 P.M.
	Botanical	8 P.M.

IF the great HORTICULTURAL SOCIETIES of Europe have produced much good for Gardening by the assistance and stimulus they have given to cultivation, we suspect that a still greater amount of beneficial action would be found to result from the feebler efforts of local institutions of a similar kind, provided those efforts are as well directed as they might be. The great Societies are few in number, and they chiefly tell upon the great; their operations are necessarily on a large scale; small details are missed in the extensive field over which their attention is directed; to apply their power to trifling objects is like harnessing an elephant to a pony carriage, or introducing the paraphernalia of the Queen's Bench into a parish vestry.

It is by local Associations, with smaller means at their disposal, and a more limited sphere of action, that the minute details of Gardening can best be cared for, and more especially those which relate to the objects of the poor. In a country village the principal person, or at least the resident clergyman, knows, or should know, the wants and character of every individual within its limits. He is able to judge correctly what the aim of a Horticultural Society there should be, to devise the best manner of inducing the poor to interest themselves in it, and to frame judicious and practicable rules for its governance. Moreover, his station enables him to maintain authority, without which no Society, great or small, can effect real good. If powers like these are well administered the establishment of little village Societies would be productive of very extensive benefit; for they would be at once the means of increasing the comforts of the cottager, and raising his mind to something higher than the beer-shop, or at best the keep of a pig and the growth of a few Potatoes.

Happily the effect of village Gardening associations, well conducted, is by no means a matter of speculation, but has been most successfully put to the test of experiment.

This is sufficiently proved by the case of the village of Pytchley, in Northamptonshire, an account of which is now before us*. The population of this village is 600; the inhabitants have no Conservatory, nor any forcing buildings beyond Cucumber frames; there is no garden larger than those of the farmers; and the little vicarage garden. Pytchley is in fact what a gardener, accustomed to the splendid forcing-houses and Conservatories of the great, might possibly regard with pity for its Horticultural helplessness. And yet it has its Shows, and its Prizes; and we will engage to say that they produce as much real enjoyment as the splendid gatherings round London. They have been of great use too in the parish, by increasing the produce of the cottage gardens, and by spreading moral good among the poor.

The poor man may be as happy in his frieze jacket as the noble clad in ermine; his little show of vegetables and fruit excites as much interest in his breast as others take in the St. Leger; his penny paid for admission is as large a contribution from his little funds as the guinea of the fine gentleman of May Fair; he experiences as much gratification in winning a sixpenny prize for a nosegay, as the "great growers" of the metropolis when they get a gold medal for a van-load of rare exotics—and perhaps more. Success encourages him to persevere, defeat may excite him to exertion; if neither influence him, the sneers and jeers of his rustic companions will rouse him to a trial—if he is worth the rousing. That accomplished, the course of improvement will not quickly stop.

To us it seems that the rules of the Pytchley Society are upon the whole the best that we have seen; and we would recommend our country friends to take them for a model. One of these rules is, that every exhibitor shall be a member of the Society, paying his annual subscription; and in order to enable the cottagers to do so, this subscription is fixed at sixpence. This, we have reason to believe, produces the best effect, and is better than where, as in many town Societies, prizes are given to cottagers, simply as such. Not that such prizes are without their use; but the poor certainly do not feel the same interest in them as in those which give them a *personal* stake in the Institution, and in which part of the prize comes from their own money.

We wish we could find room for the very interesting description given by Mr. Brown of one of the Pytchley meetings. A scrap or two from it will, we trust, induce our readers to procure his work for themselves.

"On Tuesday, after school was over, two or three who managed the Show began to prepare the school-room, which is about twenty feet square. They set up the stages, which consist of green painted shelves and benches, long but light; some meant to be fitted above each other round the room, and some to be piled into a little scaffolding in the middle, leaving a wide passage all round for the company. They ornamented the walls with green Asparagus-tops and small boughs mixed with Dahlias and other large flowers; adding an archway of the same outside the door, and a crown with V. R. made of Dahlias inside. The Society's name, made by fixing small flowers in the shape of the letters upon green painted boards, was hung against the wall inside. According to the season this is made of Daisies, Primroses, blue Cornflowers, Damsons, Chesnuts, &c.——

"Some of the Members had been at work by day-break in their own gardens, gathering their fruits and vegetables, washing their roots, and tying their nosegays. The managers also were very early in the Show-room, and at length the specimens began to be brought to them. The first who brought his basket of specimens was perhaps a cottager. His name was entered in the Show-book, with a list of everything he had brought; his Potatoes, Kidney-beans, Onions, bunch of Pot-herbs and Currants were put upon separate plates. The next perhaps was a child with a large tastefully-made wild nosegay of field and hedge-flowers; gathered the day before and kept fresh in water all night. In this way about 150 specimens were brought by 23 cottagers and children; to each of which was fixed a red ticket with a number on it, which referred to the order in which its owner had been entered in the Show-book. It is surprising how many plates there were of beautiful Potatoes, Peas, Beans, Kidney-beans, Currants, Gooseberries, Plums, Apples, Radishes; how many nosegays both of garden and wild flowers; and how many flower-pots with Fuchsias, Geraniums, Carnations, Calceolarias, Balsams, &c. There were Cauliflowers and Cabbages, Parsnips and Carrots, Rhubarb and Celery, Filberts, Mushrooms, &c., &c. Some cottagers brought a dozen or more specimens all different; some had but a single nosegay or a Balsam from their cottage window.

"At three o'clock the room was opened to visitors, and a person stood at the door to receive the admission money. All members (and their wives also, if married), are admitted free. A half-penny is charged for the admission of children if they are not members, one penny for cottagers, and sixpence for other visitors; but kind friends have often paid a shilling in order to help the funds. Six shillings and fivepence was received at the door that day, but on a fine day four or five times as much is found in the bag at night. When visitors came in there was many an anxious search made, many an eager look cast round to see which numbers had the prizes; and many a busy knot of members, young and old, gathered together to talk over the matter. None, however, touched even their own specimens until the Show was quite done.

"When dusk was drawing near, the room was cleared of visitors, and the members stayed with their baskets and received back their specimens, the tickets showing to whom each article belonged. Many of the prize specimens, however, had been already sold by their owners to different visitors, and were now given up to them. Many also of the members (some even of the cottagers) left all or part of their fruits and vegetables to be sold for the good of the Society; which was accordingly done (at whatever price they would bring) to the crowd round the door. This sale, which is always much counted on by such villagers as have no gardens, produced 6*s*. 7*d*., but it sometimes produces much more. One or two who had gained prizes, gave a portion of their gains to the Church Missionary box.

"Early next morning the stages were taken to pieces, and along with the plates and tickets, put back into the store until next Show; the schoolroom was cleaned, and by the usual hour the scholars were in their places, as if nothing had happened, except that along with the whole village they had enjoyed a holiday the day before at the FLOWER SHOW.

"The money which had been spent for the Show (that is, the prizes really paid, and the little expenses) was 2*l*. 4*s*. But there had been received at the door either for admission or by the sale, 12*s*.; so that the Show only cost the Society 1*l*. 12*s*. Had the weather been fine there would have been more money received, and the expense would thus have been less. The spring Show only took 5*s*. 6*d*. out of the Society's stock."

Surely there will be a blessing on these things. Surely such simple yet effectual means of raising the character and condition of the village poor will meet in all directions with imitators. We can well believe that it was indeed "delightful and cheering to see the beautiful rows of large and fine fruits, vegetables, and roots, shelf above shelf; the numerous flower-pot plants in full blossom piled up on the middle scaffolding or stage; the various handsome nosegays made up of every flower that grows in garden, field, or hedge. And the inhabitants could point to them and feel that all this show of useful food and natural beauty was grown within their own parish and by themselves."

The English villager is easily managed by kindness; but he is brutalised by ill-treatment. Help him to rise and he will aid your efforts with all his energy—which is not small; encourage him and his natural good feelings will sprout forth and flourish; but beware of trying to crush him, for he *can* become his own avenger. Nothing is more likely to gratify him than little well-conducted village meetings, maintained out of his own funds and decorated by his own hands; they are all that can now be offered in exchange for the fairs and holidays that are passing away for ever. To support them is the best kind of charity, for they tend to assist the poor man in acquiring an honest independence, and they offer a just basis on which to raise both character and feeling. Those are the truest friends of their country who, like the Vicar of Pytchley, give their leisure and their influence to the support of such meetings, which we firmly believe to be so many foci from which rays of moral improvement may spread in all directions.

RIPE PEACHES on the 7th of April! The thing seems impossible; and yet it is really so; for on the 16th a late gathering was exhibited to the Members of the Horticultural Society.

This feat has been performed by Mr. Wm. Hutchison, gardener to E. J. Shirley, Esq., M.P., of Eatington Park, near Shipston-on-Stour, in Warwickshire; and, considering how cold the months of February and March have this year been, is certainly a very remarkable one. In a note which accompanied his specimens, Mr. Hutchison gives the following account of his operations:—

"The Peaches *were grown in pots* in the Pine-house. My first trees were put in on Nov. 25th, 1843; and on Good Friday, the 7th of April last, I gathered the first fruit. Those sent were gathered from the 7th to the 10th. They are superior to what I sent last year, and five days earlier. My trees look better than they did last year, having made very fine wood, *which shows that the Peach-tree will stand hard forcing annually*, if judiciously managed. *I have little doubt of being able to ripen Peaches in March.* A valuable lesson may be learned from this example in making borders for Peach-trees. *To make them wide and deep with rich manures is a mere waste of money.* Six feet wide and eighteen inches deep is what I would advise, the border being thoroughly drained and filled up with good loam from a pasture of medium strength, put in as rough as possible. This would grow the Peach well, and if the trees are well managed would secure a good crop. This may be the more readily believed, from what my specimens prove can be done with a tree growing in the compass of a pot, where a small quantity of soil suffices to produce perfect fruit. I never fumigate my trees. The syringe is all that is required to keep them perfectly clean, if you begin with it in time."

We recommend these statements to the consideration of Peach-growers.

FUCHSIAS.

(*Continued from page 227.*)

The stages of growth in Fuchsias may be considered, 1st, as primary; 2d, intermediate; and 3d, mature. The first stage includes the period of the first shift (March to May and June), from 60*s* to 32*s*, or 24*s*, and where plants have previously been badly managed this may be regarded as the starting point for an attainment of accumulative vigour, previous to the final shift. The highest degree of artificial heat is maintained during this period, and decreased as the plants advance to their mature growth. As the plants acquire vigour, and form their low side-shoots, attention is required to the uniformity of their growth, which is essential, according to the habit they are intended to assume.

The perfect growth of Fuchsias and similarly habited plants depends in a great measure upon the accumulation or secretion of sap in their first stages of growth, and its due exposure to the agencies of light, heat, &c. &c. An accumulated growth differs from an attenuated one, in the former being rendered capable, by a uniform appropriation of the agencies which are essential to growth, of forming a due succession of leaf-buds, which are essential to bloom; whilst the latter, by an inefficient application

* The History and Rules of a Village Horticultural Society, at Pytchley, Northamptonshire; with Rules of the Pytchley Land Allotment for Labourers. By the Rev. Abner Brown. Parker; West Strand, London. 12mo.

of these agencies, is incapable of either, beyond a given extent, in consequence of the abortion of its leaf-buds.

To produce an accumulative vigour from the base of young excitable plants, in 32s or 24s, after the plants have been potted a week, insert a central stake and tie the lower part of the stem; then insert a second at some distance from the first, towards the margin of the pot on that side which is best furnished with low branches or leaf-buds, and bend the leading shoot towards the second stake, so as to admit its being tied as low as possible without danger, after which, if any of the low side shoots admit of being placed in a more uniform and horizontal position, secure them at stated distances with hook-pegs. If any branches have reached an irregular length, and are not forming leaf-buds towards the base, pinch off the top bud; but where the side shoots are very young and excitable, carefully give them an inverted or horizontal position, as before stated. A vertical or upright flow of sap being unfavourable to the formation of side growth, an inverted position of the branches will favour an opposite tendency. The leading shoot may remain inverted for three or four weeks, or longer if it still easily admits its erect position; and whilst in this position it may require a second tie or additional hook-peg. During this process, the plant should be so placed as to expose that side of the plant which is most deficient of low branches to the sun. Another method, favourable to the formation of the lower leaf-buds, is as follows:—When shifting plants from thumb-size, or 60s to 24s, instead of planting them in the centre in an upright position, place each in a horizontal direction, with the bottom of the ball or roots close to the side of the larger pot, which, to a small extent, will leave the upper side of the small ball uncovered, care being taken not to fill up the cavity by the base of the stem; after a few days the leading shoot should be kept in its horizontal position by a hook-peg, for three or four weeks, by which time the lower leaf-buds will be formed as branches, when the peg may be removed, and each plant be allowed to regain its partially-erect habit. During this process (for six weeks) the leading shoot of each is placed contrary to the influence of the sun. Having thus attained an accumulative vigour from the base, the plants are restored to their central and upright position in the next and final potting. Such varieties as Conspicua arborea and Toddiana, &c. &c., which are naturally attenuated in habit when artificially excited to growth, should have the top bud removed whilst young, and repeated, if requisite, to maintain an accumulative and dwarf habit. Also, such varieties as are subject to premature bloom from excessive fertility, as F. tricolor, rosea alba, &c. &c., and any other casual specimen manifesting a similar tendency, should have the blooming shoots cut off to the buds which are forming in the bosom of the lower leaves; care being taken that any process, which has for its object a greater accumulation of sap for future vigour, should be performed when the plant is established in growth, either some time previous or after an intended removal to larger pots. A reason for such a precaution is, that the vigour of all plants is in proportion to the non-disturbance of their vital functions up to a given period.

All varieties of Fuchsias whose habit is naturally favourable to the formation of leaf-buds,—of which F. gracilis may be considered the type, and F. formosa elegans, F. Stanwellians, F. tricolor, &c. &c., as hybrids—are cultivated most perfectly by an annual renewal from cuttings, and such up to a certain period of growth are benefited by a repeated removal of terminal or top buds, so as to induce a prolific growth and bloom. All varieties which appear favourable to the formation of leaf-buds, but manifest a more luxuriant habit, with a sparing disposition to bloom, should also be encouraged to form uniform leaf-buds, but should on no account be subjected to repeated or late shiftings. Vigorous young plants (from 60s to 48s), should be removed to 12 and 8-size, with due attention to attaining an accumulated growth. All those which partake of the F. fulgens habit, by their formation of terminal racemes of bloom, (rather than of laterals), such as Smith's Defiance, Magnifica, Robusta, Rogersiana, &c. &c., should be especially induced to form leaf-buds in their first stage of growth, as the perfection of their bloom entirely depends upon an early formation of branches, and a luxuriant terminal growth in each. Fuchsia splendens, in common with F. corymbiflora, may be said to depend rather upon an accumulated secretion of sap from the previous season's growth, for successive bloom, than upon its simultaneous production.

With regard to the last species, it may be observed, that a repeated interference with the vital functions of plants marked by an excessive exuberance of growth, is very often the principal cause of the absence of bloom; from which it may be inferred, that any process which operates as a stimulus upon their organs, beyond a given period, is unfavourable to its production.

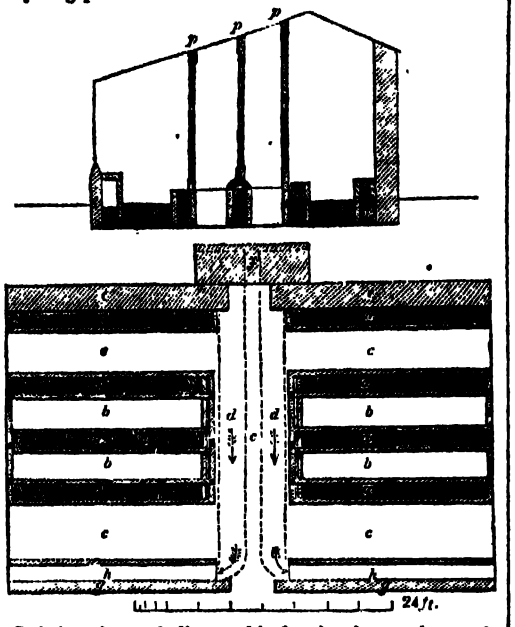
The importance of an early formation of side-shoots (or branches), and of dispensing with all shifts to larger pots, beyond a given period, in all varieties and species of Fuchsia, is exactly in proportion to their limited and exuberant growth; hence the importance of this rule to the growth of F. splendens, fulgens, and corymbiflora. The last-named species may be bloomed with the greatest certainty and profusion, as middle-sized plants, by limiting the effect of the first season's growth to the production of leaf-buds (as side-branches), and by making the last shift (to whatever sized pot) large enough to dispense with any other throughout the following flowering season. This result will be in proportion to the mature and accumulated growth of each previous autumn. The foreshoots are shortened in the spring, and a top-dressing of rich soil added to each plant, other fertilising materials being applied, if requisite. Such is the method which may be followed in order to obtain the greatest amount of bloom from gross-habited species and varieties in an artificial state of culture.—*William Wood, Pine-apple Place.*

ON THE CULTURE OF THE GENUS CITRUS,

As Practised by Mr. DURDEN,

Gardener at Hurst House, Prescot, Lancashire.

In the *Chronicle* some time ago, Mr. Beaton speaks highly of the Oranges he saw at Hurst-House in 1832, and requested an account of the mode of culture there, which I now give. Since that time a new range of houses has been erected, and the Orangery removed. There are but two of the large trees from the old house planted in the new one; the rest in the latter house are all young plants.



It being almost indispensable for the clear understanding of what follows, that a plan of the Orangery should be given, the above figures represent its ground-plan and section. Measured inside, this house is 14½ yards long, 8 broad, and 6 high. In the centre of the house are eight borders, in which the Oranges, &c., are planted; these borders are all marked *a*. The two borders against the back wall are 16 inches broad, and 3 feet deep. The six borders more immediately in the centre of the house are 14 inches broad and 3 feet deep. The paths are marked *c*, the front wall *d*, and the back one *e*. *p*, *p*, *p*, represent ornamental cast-iron pillars, which, besides supporting the roof, serve also to support light wire trellises: there is one of these pillars in each row for each rafter. The house is entirely heated by smoke flues, two furnaces being placed at *f*. The dotted lines along the central path show the direction of the flues beneath, from the back to the front entrance, where they diverge, the one entering a raised flue (*g*) on the right, the other also entering a raised flue on the left. These flues again cross the house at each end, and the smoke escapes by the back wall; it being found inconvenient to place the furnaces in any other situation. Two stoves immediately connected with each end of the Orangery contain the collection of tropical fruit-bearing plants. The communication between these stoves and the Orangery is uninterrupted by any glass, or other division, so that the Orange tribe are subjected to nearly as high a temperature as the tropical plants. The central borders of the Orangery, as may be seen in the section, are raised a little above each other, as they recede from the front of the house. The Oranges, Citrons, &c, are all trained as espaliers; a light wire trellis being stretched from pillar to pillar, parallel with the borders, and about 8 feet high. The spaces (*b*) between the borders being about 3 feet wide, permit a person to walk along between the plants for the purpose of pruning, watering, &c. These spaces are of the same depth as the borders, and were originally filled with tan; but part of this is now removed, and its place is filled with good soil. In this some fine climbing plants have been turned out, amongst which are several plants of Passiflora quadrangularis, which bear an abundant crop of fine fruit. Besides these, there are also two fine plants of the beautiful new Gardenia Sherbourniæ. These and other climbers are trained up the rafters, &c., in such a manner as not to materially intercept the light from the Oranges. The great advantage of having the trees trained on the trellis system is, that every part of the tree is fully exposed to the light; and by planting them in rows one behind the other, a larger surface is obtained for the trees to cover than could be got by adopting any other plan, and, consequently, for the space, a larger quantity of fruit is procured. The trees being hung loosely and irregularly to the wires, assume as natural an appearance as circumstances will permit; and the introduction here and there of large plants in pots, has a tendency to prevent formality. Two plants are placed in each border.

Soil.—Too much attention cannot be paid to the soil; its principal features ought to be lightness, richness, and openness of texture; and unless it possess these qualities it is unfit for the Orange tribe. It must be considered, in preparing the soil for the pits, that when once the plants have established themselves in it, it cannot, if it ultimately turn out faulty, be removed and replaced by better soil, without very materially injuring the trees, and thereby causing the loss of two or three crops of fruit. The soil in this neighbourhood being of a heavy clayey quality, and very unfit to be used alone, Mr. Durden mixed with it half its bulk of peat-earth and sand, which rendered it all that was desirable. This prepared soil was put into the pits in a rough state, and the plants are succeeding admirably. If the soil used is of a too close or clayey nature, the roots will have great difficulty in penetrating it; water will not pass through it, and air will be excluded. On the other hand, if it is of too permeable or light a texture, the frequent drenchings it must receive to prevent the plants drooping, will wash away all the soluble parts; and the plants in either of these extreme cases suffer.

Temperature.—It is doubtless an erroneous opinion that if the atmospheric temperature is 8° or 10° above the freezing point during winter, and is never allowed to rise above 70° or 80° during summer, that the Orange tribe, other circumstances being favourable, may be cultivated successfully. Mr. Durden never allowed the temperature of his house to fall below 50° during the winter season, and during summer he frequently shuts up the house with a moist atmosphere of 80° or 90°. Mr. Durden has followed this practice through the course of a long life, and with great success. If the temperature be kept high during the growing season, it must necessarily be kept comparatively high during the season of rest; the growth of the Orange-tribe never being totally stopped if they are not starved or otherwise mismanaged.

Water.—This must at all times be sparingly administered, especially if the trees are kept in a high moist temperature; for, if the soil is kept continually saturated, the young shoots will be weak, the plants will present a drawn and debilitated appearance, and the fruit, if they do not drop off, will be small and tasteless. Mr. Durden occasionally gives a little weak liquid manure; but as the plants are young, they have not yet much exhausted the soil, and to give them too much stimulating matter would be to make them grow too exuberantly.

Pruning—thinning the Fruit.—In pruning, if the plants are trained on trellises, the branches should be kept thin, to allow the greater part of the leaves to be exposed to the sun. The fruit is generally produced at the tips of the small spurs or branchlets; therefore, it would be a positive injury to the crop to shorten any of these spurs, except it is desirable to increase their number. It sometimes happens that the most unpromising and naked-looking spurs produce the finest fruit. It is not a rare circumstance to see, at Hurst House, one of the Pink-fruited Shaddocks four or five pounds in weight, hanging on the end of a small spur no thicker than a common goose-quill. The operation of pruning is performed at any time when it appears to be necessary, always, however, taking care to have a succession of young wood coming in. In thinning the fruit, particular attention ought to be paid to the state of the tree, for the quantity of fruit must be entirely regulated by the vigour of the tree; no better rule can be laid down than that, for governing the operation of thinning. If a tree appears debilitated in the extreme, it must not be allowed to carry any fruit for an entire season. One great cause of debility is allowing the fruit to hang on the trees after it is ripe. When green fruit is required for confectionery purposes, a larger quantity of fruit may be left on the trees, but the quantity must always be proportioned to the capabilities of the tree.

Varieties.—Those who wish to cultivate the Orange-tribe for the sake of the fruit, ought to be very careful in making a selection of sorts—especially of sweet Oranges. The best way, perhaps, is to procure grafts, or young plants, from such varieties as have proved themselves to be good in other establishments, or proved plants from a nursery. Nothing is more likely to discourage a beginner than to find, after three or four years of careful culture, that his attention and expense have been thrown away on worthless varieties. In this case it will be found cheaper to graft, bud, or inarch better sorts on the worthless varieties, than to replace them by young plants.

Cleaning the Plants.—The greatest attention should be paid to cleanliness; the consequences of allowing insects to overrun a collection of plants, are familiar to every one acquainted with gardening. The Aphis attacks the tender shoots and young leaves; the Red Spider the more advanced foliage; and the Coccus hesperidum every part of the plant. Almost every gardener has his peculiar nostrum for destroying these animals; but a good preventive is cleanliness in everything about the plants. The Coccus may be brushed off, using a brush that is no harder than is just necessary to remove the insect. For the Thrip, Red Spider, and Aphis, a sponge and clean water will remove them all, if used before the insects have become very numerous. Fumigation should never be resorted to except in extreme cases. Cleanliness and attention will ultimately be found to be best and cheapest; as any mixture that destroys the insects, in general injures the plants.

Such is Mr. Durden's practice of managing Oranges, &c., and if it were more generally known and followed, there would be few complaints about the difficulty of cultivating this tribe.—*J. W. Jones, Knowsley.*

ENTOMOLOGY.

Agromyza Violæ (*the Pansy-fly*).—The genus of minute Diptera to which this fly belongs is distinguished from neighbouring groups by the neuration of the wings; and, as it does not accord with any of Meigen's or Macquart's descriptions, I have named it after the pretty plants it appears to be most attached to. Many of the Agromyzæ are undoubtedly inhabitants of aquatic plants, since I have found the pupæ of some floating on the water and of others fixed to reeds; but nothing of their economy

appears to be known to any author I have consulted. The pupæ to which I allude are like little shining shells; some are colourless, others are of a pitchy colour, irregularly oval, and ringed, the incisures deeply cut, causing each ring to be convex. Something, however, is known of the habits of allied genera, the larvæ of Chlorops feeding upon seeds *in situ*, and those of Phytomyza residing in the receptacles of syngenesious flowers,* or under the cuticle of the foliage.† Is it not, therefore, probable that the little maggots of the Pansy-fly may live amongst the seeds in the germen of that flower, or is it a miner, feeding on the parenchyma of the leaves? It is to be hoped that the gentleman who has furnished us with the materials for this essay may be induced to pursue its history until he discovers the entire economy of this active and mischievous little animal.

What has already come under his observation is interesting to the florist, since he has ascertained that these minute flies deprive some of our most lovely flowers of their beauty. It appears that last May they were abundant, and subsequently became still more numerous, so that in August there were always three or four on each flower, and they did not disappear until the frosty nights of September cut them off. With the following account, was transmitted a Pansy-flower, which, when held up to the light, exhibited innumerable white and pale dots, of course most visible in the dark purple parts:—"During the last year a small fly made its appearance in the gardens about Manchester, which completely spoiled the more delicate flowers, by discharging the colours, and spotting the blossoms. The flowers I noticed which suffered the most, were those of the Pansy and Phlox Drummondii; whole beds of the former were so extensively attacked, that I could not gather a perfect bloom after an hour of sunshine. The appearance thus caused is not dissimilar to that of the Thrips, which was also plentiful that year. For a long time I was unable to find out how the mischief was effected, so insignificant in itself is the culprit. I first noticed these flies on a flower of the Carlo Dolce Pansy, which has the upper petals of a dark blue, and the lower ones white; it had just passed from the blue to the white ground, when it secreted a blue liquid, upon seeing which I immediately suspected that the mischief was owing to the operation of the flies, and subsequent examination proved I was correct. The manner in which the fly effects its purpose is by puncturing the flower with a small sting situated at the tail, and, afterwards drawing its head to the hole it has made, it sucks up the juice, and by this means completely extracts the colouring matter."



Before entering upon the description of the fly, it is necessary to state that neither sex is armed with a sting, but the female is furnished with a tubular oviduct for depositing her eggs, and the mouth is formed of a bilobed fleshy lip for sucking, similar to that of the house-fly, with two minute palpi, and a horny labrum; I therefore cannot explain the reason of the flies applying their tails first to the petal, as above stated.

Agromyza Violæ is shining black, and slightly bristly; the eyes are of a beautiful green when alive; the head and antennæ are of a bright orange colour; a spot on the crown inclosing the three ocelli, and the simple bristle of the antennæ are black; sides of thorax and scutellum sulphur colour, the latter black on the sides; wings ample, iridescent and transparent, the subcostal cell short, divided by a transverse nervure; three following longitudinal nervures nearly parallel, and extending to the outer margin; 4th longitudinal nervure greatly divaricating, connected with the 3rd at the middle by a transverse one, 2nd and 3rd united nearer to the base by a very short nervure: poisers yellow; legs pitchy; anterior tibiæ and tarsi variegated with rust colour; thighs of a sulphur colour on the underside in some specimens. The natural size is given at fig. 1; fig. 2 is the female in profile; fig. 3 the same flying: the males are rather smaller than the females, and the abdomen is narrower and more obtuse.

It is scarcely possible to suggest any mode for destroying these flies, especially until it is ascertained where the eggs are deposited; but prize Pansies might perhaps be preserved from their attacks by gauze-frames to cover over the pots, similar to those used for protecting meat against flesh-flies; but they ought to be made of more open materials, and of a suitable form: if the flies be bred from the plants, this would not prove efficient in many cases; a trial, however, might throw some light upon that part of their economy.—*Ruricola.*

* Curtis's Brit. Ent. fol. and pl. 300.
† Royal Agri. Journ., v. 3, pl. D. pp. 31 to 33.

Home Correspondence.

Asphalte Paths.—I saw last year in the *Chronicle* a plan of making a good path. It was by levelling the ground, and putting upon it coal or gas tar, and sifting upon the tar some very fine road-dirt, or sand. Having a yard which is given up chiefly to the play of some very rough lads, I was very desirous of knowing a plan by which a part of it might be kept in good order, at a cheap rate; for, not having a very sound bottom, in winter and in all wet weather it was a complete puddle; and as the kitchen-door opened into it, there was no possibility of any member of the family setting foot beyond the door-step without being almost over shoes in mud. As soon as possible after seeing the plan in the *Chronicle*, I availed myself of a dry day, to smooth a good large piece all round the door-way, and put on it a good coat of tar, and sifted very thickly on it some road-dirt; a few days after, when the weather permitted, I repeated the operation, and did so until it had in all four coats of coal tar, and as many of road-sand sifted on it. The whole time it was in hand was about six weeks, but it only occupied an hour or two each time, and was left about a fortnight after each coat, to settle. The path was never out of use—we could not spare it; but I had it so thickly covered with sand, that the tar never was trodden about; most of this sand was trodden into the tar in a few days. Perhaps I ought to say that every time I did it rain fell, and good quantities, always within twenty-four hours, and twice, as soon as it was done, but it did it no harm. It has stood the autumn, and winter weather has made no difference in it at all; it is always dry and always clean. It has been the subject of many inquiries, as to why that part of the yard was "so clean," "so dry," "so hard," "so different" from all the rest. I am so pleased with it, that I should use it as a flooring for any sort of shed or outhouse, in preference to any other materials with which I am acquainted. It has the advantage of cheapness, and the further advantage of being so easily done, that in tool-houses, greenhouses, and sheds, the flooring may be the work of the gardener himself (where only one is kept), or a common labourer. One gallon of tar will do well about two square yards; and as tar seldom costs much, it can never be dear. One thing more in its favour is that it is never cold to the feet.—*Cardinal Wolsey.*

Birds' Eggs.—For preserving the colour of these, in answer to "Egg," allow me to offer the following extract from "Waterton's Natural History." I have tried the plan and found it to answer:—He says, "In selecting eggs for your cabinet, always choose those which are newly laid; make a medium-sized hole at the sharp end, with a pointed instrument. Having made the hole at the sharp end, make one at the blunt, and let this last hole be as small as possible; this done, apply your mouth to the blunt end, and blow the contents through the sharp end. If the yolk will not come freely, run a pin or wire up into the egg, and stir the yolk well about; now get a cupful of water, and immersing the sharp end of the shell into it, apply your mouth to the blunt end, and suck up some of the water into the empty shell; then put your finger and thumb upon the two holes, shake the water well within, and after this blow it out. The water will clear your egg of any remains of yolk, or of white, which may stay in after blowing. If one suck up of water will not suffice, make a second, or third. An egg, immediately after it is produced, is very clear and fine; but by staying in the nest, and coming in contact with the feet of the bird, it soon assumes a dirty appearance. To remedy this, wash it well in soap and water, and use a nail-brush to get the dirt off. Your egg-shell is now as it ought to be, and nothing remains to be done but to prevent the thin white membrane (which is still inside), from corrupting; take a wine-glass and fill it with the solution of corrosive sublimate in alcohol, then immerse the sharp end of the egg-shell into it, keeping your finger and thumb, as you hold it, just clear of the solution; apply your mouth to the little hole at the blunt end, and suck up some of the solution into the shell; you need not be fearful of getting the liquor into your mouth, for, as soon as it rises in the shell, the cold will strike your finger and thumb, and then you cease sucking; shake the shell just as you did when the water was in it, and then blow the solution back into the glass. Your egg-shell is now beyond the reach of corruption; the membrane for ever retains its pristine whiteness, and no insect for the time to come will ever venture to prey upon it. If you wish your egg to appear extremely brilliant, give it a coat of mastic varnish, put on very sparingly with a camel-hair pencil; green or blue eggs must be done with gum arabic: the mastic varnish is apt to injure the colour." If farther information is required, I would refer your correspondent to the work itself, in which there is much that is useful on this subject.—*J. McI., Hillsborough.*

Heckfield-pit.—The proposed improvement of this pit, mentioned at p. 181 of this year, will certainly give a more direct heat into the bed, but in this the detached pier possesses no advantage over the cavity wall, through which a mean temperature sufficiently warm for the growing of Melons is constantly conveyed to the bed, and into the earth on which the plants grow. Heat finds its way through the front wall to the outside border of a hothouse, having a flue or hot-water pipe inside. On the same principle it finds its way from the cavity into the bed, where a kindred heat already exists; the highest degree is given out along the top of the cavity in the back, against which the roots and the earth press, and where, by heightening the lining, the heat is increased. After four years' trial of the pit, I find that it possesses all the useful advantages, and none of the disadvantages, attendant on the detached pier; which, if adopted, would destroy the close-box form of the pit, so well adapted to general convenience. However, to accommodate the pit to purposes where a more direct heat is requisite, instead of the cavity-front wall have hollow piers, and attach the piers with brick on edge, through which a direct safe heat is conveyed to the bed. By this alteration the pit will retain its present proportion; and it may be found an improvement; but I consider the detached pier the reverse.—*Thomas Berry.*

Rats.—(How to clear premises of any number, by catching them alive in box-traps that open and shut at each end by a trigg or baiting board in the centre).—Feed the rats for three or four nights successively, leaving the traps fixed open and baited with the following paste, so that they may go in and out and feed at their ease. This they will do regularly; and if there is a considerable number they will fight, quarrel, and look as anxiously for the bait as domesticated animals would do. If the rats are numerous and the premises extensive, take 4 lbs. of bread crumbs, 4 lbs. of flour, half-pint of treacle, one tea-spoonful of essence of Anise, and half a tea-spoonful of essence of Musk; mix the whole well together, and bait the traps as above recommended for three or four nights. If the rats are numerous, several traps should be so prepared. On the night the rats are to be taken, bait as usual, having the traps set for catching; fix a wire-cage over the end of the box-traps (which should be all of one size), for the purpose of driving them into, out of the box-trap, when they are caught. This is done by raising the end so covered with the cage-trap; when all is quiet, and these things attended to, I have seen a great number caught in three or four hours. Baiting and setting the traps again for two or three nights in this way, with strict attention, a great number may be caught.—*Observer, J.*

Bees.—I beg to inform Bee-keepers that I can vouch for the truth of the statement that the Polyanthus yields more nectar which the Bees convert into honey than any other plant. I cultivate them round all the borders, as they are the earliest and most valuable Bee-flower we have.—*W. W.*

Rabbits—Game Laws.—The correspondent who recommends arsenic as a remedy against rabbits, &c., may be a very sagacious person, though sufficiently unacquainted with the law. As he may lead others into the infraction of it, I inclose an extract from the Game Act:—"And if any person, with intent to destroy or injure any game, shall at any time put or cause to be put any poison or poisonous ingredient on any ground, whether open or inclosed, where game usually resort, or in any highway, every such person shall, on conviction thereof before two justices of the peace, forfeit and pay such sum of money, not exceeding ten pounds, as to the said justices shall seem meet, together with the costs of conviction."—*A Sportsman.*

Rabbits.—Visiting, some time ago, in Ireland, I observed numerous patches of Cauliflower plants growing in the shrubberies and pleasure grounds. These patches, the gardener informed me, were for the purpose of destroying rabbits. He powdered the under sides of the leaves with arsenic, which, he said, answered the purpose very well. If fresh gathered leaves of Parsley, or of any of the Brassica tribe are powdered with arsenic, and if the ground on the sides of the fence is also strewn with it, numbers of the rabbits will soon be destroyed; this should be done in the evenings before they come out to feed.—*J. G.*

Whitney's Composition.—Having lately visited Shrewsbury, I saw the house which was erected by Mr. Whitney. It was covered with book muslin, coated over with his chemical waterproof composition. I was struck with the bright, clear light admitted, which I imagine is quite sufficient for plants generally. The house has two compartments, one a stove, the other a greenhouse; both are heated by a hot-water apparatus. In the stove were Pines, Vines, Melons, Cucumbers, and various other things, all of which were looking remarkably strong and healthy. The day being very hot, the thermometer stood at 110°, but there was not the least appearance of flagging in anything. There were cuttings of various plants in the pit, which were lately put in, but they scarcely appeared to droop. In the greenhouse were Pelargoniums, Heaths, Fuchsias, and other plants, all of which were also looking equally vigorous. A few pots of Mignonette were standing on the floor at least seven or eight feet from the roof, yet the plants seemed to be as strong as if they had been growing on a shelf near the glass of a common glazed roof. Such a composition will prove of great value to gardeners, and it will in a short time, to a great extent, supersede the use of glass. For protecting wall trees, covering temporary pits, houses, &c., this material will be found very useful. The cottager will also be enabled, by means of this, to raise Potatoes, Radishes, Cucumbers, and many other things early.—*S. Barnes, Upby Park, Bridgenorth.*

Covering for Flower-beds.—In the Calendar of Operations, "W. P. A." advises covering the clumps in flower gardens with short Grass, to prevent the soil getting dry in hot weather. It is an excellent plan to cover clumps in summer, but Moss is far superior to short Grass for this purpose, where it can be procured; as Grass soon gets yellow, and has an unsightly appearance, whereas Moss, if skinned off in large patches, and laid neatly down, has a fine effect. By occasionally watering it in dry weather, it will keep fresh for a season, and preserve the ground moist under it, which is very essential for plants when they are growing.—*K.*

Vitality of Pollen.—In the spring of 1840 I devoted my attention to the fertilisation of Rhododendrons. I gathered pollen from the early flowering hybrids, and folded it up in small pieces of red blotting-paper; with this I impregnated the common sorts as they came into bloom, and the result proved that the pollen would retain its fertilising principle for a period of two months. In 1841, by way of experiment, I gathered pollen from Rhododendron Smithii tigrinum, and folded it up in the way above described, taking care to keep it in a dry place. In the spring of 1842, I prepared a truss of flowers of Rhododendron ponticum, and fertilised it with the pollen gathered in 1841, and, to my astonishment, the capsules swelled and

perfected seed. As I took the precaution to cut off every other bloom that was in the Nursery at the time, the fact is fully established that pollen will keep good for at least twelve months.—*T. Jackson, Cross Lanes Nursery, near Bedale.*

Luculia gratissima.—In propagating this I take a piece of light peat and break it quite fine, I then add about one-third of fine silver-sand; I mix this well together, and taking some small thumb-pots I place one crock at the bottom of each pot, and fill them with the above compost about three parts full; I press this down firm, and take some little sticks and put down in the centre of the pots. I then select cuttings of the half-ripened wood, and pulling one in each pot I tie them up to the sticks in the centre of the pot, and fill the remainder of the pot with silver-sand. When this is done I give them a good watering, to settle the cuttings. I then take a large pot and fill it half-full of draining and the remainder with sand or gravel, and then plunge four of the little pots in this large one, and place a bell-glass over them. The whole is then plunged in bottom-heat, and in about a month the cuttings are rooted and fit for potting off into small 60-pots. I then keep them close for about a week or so. There is a second species that has lately been raised from seed, sent to this country by Dr. Royle, which strikes much readier than gratissima. The habit of the plant is strong, and the foliage is dark-green; but judging from a native specimen of the flower, I should say it was very inferior to L. gratissima. It has also been raised from seeds sent to Chatsworth by Mr. Gibson, and although they have had the plant four or five years, it does not show any symptoms of blooming.—*Amicus.*

Wireworms, &c.—Having occasion to set a common brick-trap for birds, I have accidentally discovered a readier method of trapping the wireworm, and other destroyers of a similar nature, than by the "skewer-trap" recommended some time ago. Either the shelter of the bricks, or the proximity of the bread-crumbs intended for the birds, have attracted the reptiles amazingly; for I find both wireworms and snake-millipedes under the bricks day after day in great numbers. I could not have conceived the ground sheltered so many, and I am no longer surprised at the great destruction of plants (particularly Brussels Sprouts) that I have sustained by their means.—*Senex.*

Vines, their habitudes.—There is a Vinery at Enfield which was planted 10 years ago. The Vines grew very strong during the first two years; they were allowed to bear half way up the rafters the first year after they were planted. In the second year they carried a full and heavy crop, and every year since they have continued to produce good crops. This year he commenced to force on the 1st of February, which is about six weeks later than usual. The Vines broke very strongly, and apparently showed well for fruit, but all the expected bunches became flat Cockscomb, and barren shoots. Enfield lies very wet. Two or three times every season the water comes up to the roots of the Vines, and even over the surface of the border, and this cannot be remedied except the house is raised. The border is only 2 ft. deep at the back, and 1 ft. 6 in. in front.—*A. Parsons, Enfield.* [We presume that the cause of failure is perhaps partly owing to the Vines not having heat at their accustomed period of breaking; but most probably the wood of last season, though apparently good, has been imperfect from excessive moisture, the quantity of rain having been nearly one-third more than usual.]

Vines.—In a late Number there is a curious statement respecting the unfruitfulness of a branch which is trained horizontally to the next rafter of "R. P.'s" Vine, while the main stem, which is trained upright is prolific. I conceive the unfruitfulness must be owing to some other cause than merely a difference in the temperature, which cannot be great on an adjoining rafter. I have seen shoots from Vines that were trained on a wall introduced into a house without injuring the fruitfulness of the outside branches, even although weeks intervened between the bursting of their buds. I have also had Vines in a Pine-stove from which I have trained a young shoot (proceeding from a hole in the wall where the Vine entered), to the top of the house before a bud broke; yet when the buds did break they showed no disposition to become tendrilar. I suspect "R. P.'s" rod, which is unfruitful, must have borne too heavy a crop last season; possibly it was a young rod then, and exhausted itself in bringing its burden to maturity. I have a Vine trained in the same manner, which is this season unfruitful, because it was allowed to bear all it would last year, as it was to be cut out. I agree with Mr. Roberts in the points he recommends "R. P." to observe; but I think he attaches more importance to disbudding than it has any claim to. I tried it on some Vines in pots, and likewise on the shoots on one side of several old rods that were trained up the rafters and pruned on the spur system; but I did not find that it caused the lower eyes to swell more on that side than they did on the other, nor have they burst with more "giant strength." I imagine that the whole mystery of Grape-growing consists in having a warm rich soil, houses that will admit plenty of light, no more nor longer shoots than can be exposed to it, and a sufficiency of air to harden and mature the wood.—*J. Murdoch.*

Potatoes.—In the *Chronicle*, some time ago, there is a notice respecting a cottager who raised four crops of Potatoes on the same piece of ground during the past season. Part of these were exhibited at the Norwich Horticultural Show. I saw the Potatoes, and could find no fault with them. They were an early kind, and were planted about the usual time, in rich soil. A few days before the tubers were fit for use, the tops of the stems were laid in the ground, and when they had struck root they were cut off from the original, and became fresh plants, which produced the second crop. This was again repeated twice during the season, and made up the four crops. This plan of laying Potatoe-tops is a better way to increase scarce varieties than by cuttings. The last crop may be left in the ground as a substitute for early Potatoes during winter and the following spring. Respecting Potatoes raised in this way, "G. M." says, at p. 102—"I sent three-quarters of a peck to Norwich Market, expecting that a high price would be given for such rarities; but to my disappointment I was informed that 'sprout Potatoes would not sell.' It was said they were of too dark a colour to be new Potatoes. How is this to be remedied? They are fair as May roots when properly boiled." Possibly they might be a little injured by the carriage; but those erroneously called new Potatoes are not equal in quality to those produced in the regular manner.—*J. Wighton.*

Miscellaneous.—*P. Lawson* remarks, that he had two seedling Fuchsias growing in the south window of a room. The pot in which they were was accidentally knocked over, and both plants were broken off by the roots. He states that he put them in again as cuttings, and placed them in the same situation, where they are now both in a healthy growing state. The leading shoot of one of them was also broken off, and the plant, in consequence, is sending out shoots all round, which he imagines is preferable to a single stem.

Functional Disease.—"Der Greif's" assignment to so small a type is sufficiently significant of the Editor's resolve to bring the discussion to a conclusion, in which, as Rasselas says, "nothing is concluded." "M. D.," with thanks for many courtesies, will take heed to this gentle notice of "diminuendo." "M. D.'s" respect for the argumentative ability of his opponent, suffers no abatement because that argument does not bring conviction. The love of truth above all other things he believes to be reciprocal: but what is truth? Certainly not that which any man troweth, unless supported by evidence which no other can gainsay. "M. D." admits the full force of the objection to a purely or rather solely mechanical exposition of the action of living organism; and in his last article he endeavours to reply to that objection; still maintaining, that for functional purposes, such organism is ruled by the ordinary laws of mechanics, having superadded a provision for supply and waste, independent of, and having no relation to the offices in which it is engaged,—machinery, like Milton's chariot-wheels,

"Self moving,
Itself instinct with spirit,"

ever wearing away, and ever renewed, but always the same. All the organs of the body are officially automatic,—so many furnaces, alembics, churns, spinning-jennies, with a life, that is, a motion, superadded, with which their functions have no, or only a secondary concern, the materials may change, but fixity of form ensures continued function. How healthy organs may do unsound work, and how change of condition may differ from change of structure, respect for "Der Greif's" forbearance, and the Editor's recommendation, forbids farther discussion.

Societies.

HORTICULTURAL SOCIETY.

April 16.—R. W. Barchard, Esq., in the chair. A. Bayley, W. R. Browne, T. Coventry, and E. N. Buxton, Esqrs., were elected Fellows.—Mr. H. Hunt sent specimens of his patent flower-pot; the advantages of which consist in affording an excellent drainage and allowing air to circulate freely about the roots. This is effected by means of a deep rim, which is notched out, leaving only as much as the pot will stand on attached to the bottom, which has also holes in it. By this contrivance worms are also effectually kept out.—From Messrs. Henderson, of Pine-apple-place, was a collection of plants containing Camellia Bruceana, a pretty dark rose-coloured variety; Cestrum roseum, which in habit something resembles Habrothamnus fasciculatus; Daviesia Frazeri; Dillwynia glycinifolia, Indigofera australis, an old plant, which is very suitable for early forcing; and Erica lactiflora, having beautiful small pure white blossoms. From the same collection was a specimen composed of Azalea lateritia, and A. Gladstanesii, which were inarched upon the old A. indica. By means of this a very pretty dwarf plant was obtained, which was covered with showy red and white blossoms. There were also from the same place a plant of the double white Azalea, fifty varieties of Hyacinths in pots, Melia Azedarach, and Jacaranda mimosifolia, not being more than 18 inches high, which is very seldom seen in flower in such a young state. It was stated that during winter this plant had been kept in a cool house, and received no water for about three months. It was then placed in a brisk heat, and soon afterwards the flowers began to appear. A Knightian Medal was awarded for the Camellia, the Azalea, and Hyacinths.—Mr. Kennington, gardener to F. G. Cox, Esq., sent Epidendrum machrochilum, the showy Dendrobium nobile, Cymbidium lancifolium, the well-known Cattleya Skinneri, a good specimen of Phaius grandifolius, the rare Peristeria Humboldtii, with curious chocolate spotted flowers, and a pretty plant of Oncidium altissimum. From the same collection were also a small but well-grown plant of the old Eutaxia myrtifolia, likewise plants of Chorozema Henchmanni, Broughtonia sanguinea, Platylobium formosum, and a Cineraria, named Haywardii. A Certificate was awarded for the Cattleya Skinneri.—From Mr. Hally, of Blackheath, was a seedling Epacris, which was raised from seed that had been received from Van Diemen's Land, where this tribe abounds in a wild state. It was imported under the name of E. grandiflora alba; but was slightly different from E. nivalis. Along with this were two boxes of Camellia blooms and a seedling Cineraria, called Princess Royal.—Mr. Dawson, of Brixton-hill, sent a large beautiful specimen of Erica Hartnelli, for which a certificate was awarded.—From Mr. Robertson, gardener to Mrs. Lawrence, were Pultenea subumbellata, in good condition; a pretty plant of Boronia pinnata; Epacris attenuata alba; a very large showy specimen of the purple Azalea indica; Gastrolobium speciosum, a pretty greenhouse plant, quite newly introduced from Swan River; a large specimen of Callonema tenuifolium, and a small plant of Eleocarpus denticulatus, having small white drooping blossoms. From the same collection were also Oncidium altissimum, an enormous specimen, having six tall flower-stems covered with yellow and brown blossoms; Coryanthes speciosa, having curiously-shaped flowers, which are smaller but very like those of C. macrantha; likewise plants of Cattleya Skinneri, Satyrium cucullatum, Crinum undulatum, Aeridas virens, and Epidendrum bicornutum. A Knightian Medal was awarded for the Oncidium altissimum, Coryanthes speciosa, &c.—Messrs. Youell and Co. sent two seedling Cinerarias, named Perfection.—From Mr. Standish, of Bagshot, were four pretty spotted Calceolarias, named Speculum, Phenomenon, Virtuoso, and Preceptor.—The Very Rev. the Dean of Manchester sent seven specimens of Camellia blooms, named Pieta, Candor, Pumila or Circe, lactescens, Ulantha, Victrix, and Proteus. Of these, Candor was the best, having the petals well arranged; the colour was pure white; a Certificate was awarded for it.—From Mr. Hutchison, gardener to E. J. Shirley, Esq., was a dish of excellent Peaches, which were forced on small trees growing in pots. They were apparently the Noblesse, and were very remarkable specimens, at this season, considering the late and unfavourable spring; a Knightian Medal was awarded for them. O. F. Meyrick, Esq., sent a dish of fine looking ripe Cherries; a Banksian Medal was awarded for them.—From Mr. J. Davey, gr. to G. Smith, Esq., were four fine large specimens of Citrus medica.—From the garden of the Society were, Oncidium luridum guttatum, O. Carthaginense, Epidendrum selligerum, the old Illicium floridanum, Acacia hispidissima, Azalea indica phœnicea, and Berberis pallida, which is a rare species that was sent from Mexico by Mr. Hartweg. It is not hardy, and requires to be kept in a greenhouse. From the same place were, Cypripedium pubescens, a hardy North American Orchis, which grows abundantly in the woods of Canada and about Montreal; Clerodendrum hastatum, having large halbert-shaped leaves, the undersides of which are of a fine purplish brown, and Spiræa Reevesiana, a handsome hardy shrub, introduced from China, having pretty white blossoms. It grows freely in the open air, and will form a good addition to arboretums.

COUNTRY SHOW.

Hampshire Horticultural Society, March 14.—This was the first meeting for this year. There was an excellent supply of plants, consisting of Camellias, forced American plants, Roses, Cut Flowers, Hyacinths, &c. From Sir T. Baring, Bart., a fine collection of Camellias (small plants, but well grown), and other flowers from C. Deane, Esq.; Stove Plants, Hyacinths, and a Miscellaneous Collection from J. T. Waddington, Esq.; Tree-Violets from the Hon. Mrs. A. Legge; a fine Collection of Stove and Green-house Plants, Amaryllis, &c., from the Rev. G. C. Rashleigh; Cinerarias, Tree Violets, &c., from Mr. Wickham; a fine Specimen of Chinese Azalea, from J. B. Wall, Esq.; a Specimen of Dendrobium, from J. Fleming, Esq.; Hyacinths, from W. Barnes, Esq.; a Miscellaneous Collection, from C. Seagrim, Esq.; Fuchsias, Anemones, Cinerarias, Violets, Seakale, &c., from the Rev. the Warden; Rhubarb, from W. J. Campion, Esq.; Stove and Green-house Plants, a Miscellaneous Collection, and a brace of Cucumbers, from the Rev. F. Beadon; Pine Apple, Cucumbers, and Seakale, from W. Stride, Esq.; Green-house Plants, Cinerarias, and Apples, from the Rev. C. Bonnett; Miscellaneous Collection of Fruits, in which were some well-kept Pears, Potatoes, Seakale, and three varieties of very fine Cucumbers, H. F. H. Holloway, Esq. Plants.—*Single Specimens.*—*Camellia reticulata*, D.S. medal, Sir T. Baring; *Chorozema cordatum*, B.S. medal, *Tropæolum brachyceras*, G.S. medal, Rev. G. C. Rashleigh; *Azalea Smithii coccinea*, ditto, J. B. Wall, Esq.; *Fuchsia splendens*, B. medal, Rev. the Warden; 6 *Stove Plants*, B.S. medal, Rev. G. C. Rashleigh; 6 *Green-house Plants*, G.R.B. medal, Rev. F. Beadon; 4 *Ericas*, B. medal, Rev. G. C. Rashleigh; 4 *Camellias*, G.S. medal, Sir T. Baring; 4 *Epacris*, B. medal, Rev. G. C. Rashleigh; 6 *Hyacinths*, G.R.B. medal, Sir T. Baring; 6 Ditto, B. medal, Mr. W. Barnes; 12 Ditto, B. medal, J. T. Waddington, Esq.; *Cut Flowers*, B.S. medal; 4 *American Plants*, G.R.B. medal, Sir T. Baring; 3 *Climbers*, G.R.B. medal, Rev. G. C. Rashleigh; *Anemones*, in collections, B. medal, Rev. the Warden; 2 var. *Bulbous Plants*, G.R.B. medal, Rev. G. C. Rashleigh; 4 var. *Cinerarias*, B. medal, Mr. Wickham; *Roses*, in pots, G.R.B. medal; *Azaleas*, B. medal; Ditto, B. medal, Sir T. Baring; *Violets*, G.R.B. medal, Mr. Wickham; *Miscellaneous Collections*, G.S. medal, Rev. F. Beadon; Ditto, G.R.B. medal, Mr. Raife; Ditto, B. medal, C. Seagrim, Esq. Fruits.—*Pine Apples*, G.R.B. medal, J. T. Waddington, Esq.; *Miscellaneous*, ditto, H. Holloway, Esq.; Ditto, ditto, Rev. the Warden. Vegetables.—*Cucumbers*, G.S. medal, H. F. Holloway, Esq.; Ditto, G.R.B. medal, Mr. Stride; Ditto, B. medal, Rev. F. Beadon; *French Beans*, ditto, J. T. Waddington, Esq.; *Potatoes*, ditto, *Seakale*, ditto, H. F. Holloway, Esq.; *Rhubarb*, ditto, W. J. Campion, Esq.—The medals awarded to the successful candidates are denoted by initials in the foregoing list, and signify as follows:—S.G., silver gilt, 15*s.*; D.S., dead silver, 12*s.* 6*d.*; B.S., bright silver, 10*s.* 6*d.*; G.S., German silver, 7*s.* 6*d.*; G.R.B., gilt rimmed bronze, 5*s.* 6*d.*; B, bronze, 2*s.* 6*d.*

Reviews.

Scenes and Tales of Country Life, &c. By E. Jesse, Esq. 8vo. Murray.

What a store of pleasant anecdotes, from the pen of so agreeable a writer as Mr. Jesse, does this title promise! What golden legends of trees, and birds, and beasts! What curious anecdotes of all that moves and lives upon the earth! The very vagueness of the book provokes a curiosity which our experience of the author's ways assures us will be amply satisfied. We will not attempt to analyse that which defies analysis; but we shall occasionally borrow Mr. Jesse's anecdotes for our own pages, and if they do not lead the reader to desire a better acquaintance with him, why, nothing that we can say will do so. He is a capital gossip upon subjects ever fresh and ever new. His architectural jackdaw's nest is, in itself, a theme for the comment of a volume.

On Fertilisers. By C. W. Johnson, Esq. 2d Edition. 8vo. Ridgway.

The 1st edition of this work was published in 1839, and it proved one of the most useful books of reference in the Agricultural library. Five years, however—and especially

five such years of experiment as the last—have very considerably altered the views of farmers as to some matters, and have introduced to their notice others, the very names of which were till lately unheard of. What he regards as the most important facts connected with the advance of this branch of knowledge, the author has collected into 150 new pages, of which between 30 and 40 are occupied by guano. There is also a new chapter on the means of rendering manures more portable and applicable by the drill, and another on the manures adapted for different soils.

A thoroughly good work on manures cannot yet be written. The subject is too new, notwithstanding its antiquity; years of well-directed inquiry are demanded from farmers to solve some of the most simple problems; and chemists must labour hard on their part, to investigate the causes of the conflicting results which farming experiments are sure to produce. It is worth the consideration of the Agricultural Societies, whether the solution of such important inquiries would not be much advanced if a series of well-arranged questions were printed and circulated among farmers, who would thus be led to work with a unity of purpose that at present is greatly needed. In the meanwhile, Mr. Cuthbert Johnson's work will maintain its ground as the best collection of facts that has yet been compiled.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

STEPHANOTIS FLORIBUNDA. Free-flowering Stephanotis. (*Evergreen climber.*) Asclepiadaceæ. Pentandria Digynia.—No plant could have been more properly called "free flowering" than this most enchanting climber, for it bears a large cluster of flowers from the axil of every leaf, and these are developed on plants not more than six inches high, while there is an almost interminable succession of them. Indeed, there is scarcely any of our stove favourites which can compete with it in the profuseness of its blossoms. We find, from the "Botanical Magazine," that its native country is Madagascar, and that Mrs. Lawrence, of Ealing Park, whose celebrated collection is so rich in really ornamental plants, had the pleasure of introducing it to England. It is next to impossible to overrate its merits, they are so essentially sterling. Besides having a most elegant climbing habit, it bears dark shining foliage of a pleasing order, and from the axils of this the delicate, creamy-white blossoms are protruded in large umbels. The texture of the flowers being very firm, they last a considerable time, and their odour is exceedingly delicious. As a plant for training over the roofs of stoves, and especially of Orchidaceous houses; or for growing in a pot, and twining round any kind of trellis; or for keeping in a small state supported by a stake, as an erect shrub, it is almost equally interesting. But, though we have said that it flowers abundantly while very dwarf, thus is only when it is appropriately treated; as some cultivators can hardly get even large specimens to bloom well. To ensure an early and continued display of flowers, the young plants should be raised from the upper shoots of the specimens that have exhibited high blooming propensities. A cutting taken from a luxuriant plant which grows vigorously and flowers but seldom, will not so speedily make a free-blooming specimen as one taken from a plant that has already manifested a disposition to bloom freely. The soil is another of the things which affect fertility. It must not be rich; nor should the pot be deep or large. If the roots lie near the surface of the soil, the blooming power will be increased. No conditions suit the plant so well in summer as a warm, moist, close atmosphere, like that of an Orchidaceous-house. But it is indispensable that it be kept cool and dry through the winter, otherwise it will not blossom well. The species is increased by cuttings, which, as before hinted, should be made from the points of the young flowering shoots. —*Paxton's Magazine of Botany.*

ERANTHEMUM PULCHELLUM. Pretty Eranthemum. (*Evergreen Shrub.*) Acanthaceæ. Diandria Monogynia.—Combined with the disposition for winter flowering, this species has an erect bushy habit, without any tendency to become straggling, or naked in the lower part of the stem. On the contrary, it is clothed with leaves of a full deep green, and of considerable breadth, down to the very edge of the pot, if any attention at all is paid to its culture. The intense brightness of its sky-tinctured blossoms lends a showiness during the first three or four months of the year, which is the more acceptable from having fewer competitors than if they were produced at a more advanced period. To realise its highest character it must be grown in a roomy pot, or planted in a border. When grown in pots, it must be planted in a more retentive soil than is usually employed, and nothing can be better adapted than a strong loam, such as is procured from the decayed sward of a pasture. A liberal supply of water is indispensable to its vigorous growth. But perhaps it is seen to the greatest advantage when planted in the border of a stove, where its roots are unconfined, and it can grow without restriction. At Chatsworth it is planted in the borders of the large stove conservatory, where it forms bushes several feet in circumference, and produces a profusion of flowers for several successive months. After flowering, the shoots should be pruned back to within an inch or two of their base. It is a native of the coast of Coromandel, in the East Indies, from whence it was sent to Kew gardens towards the close of the last century. It may be increased readily from cuttings, put in sand, in a slight bottom-heat; and if allowed sufficient pot-room, these will make handsome bushes in the course of a season.—*Paxton's Magazine of Botany.*

GARDEN MEMORANDA.

Spofforth near Wetherby.—A lovely new flower is blown this morning, of which only one was raised, from Narcissus poeticus by N. moschatus minor, the N. candidissimus of Redouté. The leaves are now nine inches high, ¼ in. wide, glaucous; the stalk 6 in.; the peduncle precipitately curved down; the tube green, ⅛th in. long, equalling the spathe, and hanging at the distance of a quarter of an inch from the stalk; the limb white, acute, ⅞ths of an inch long, forming a horizontal star; the cup at first opening faintly tinged with yellow, ⅓ths in. long, ⅔ths in. wide, irregularly six-lobed, and so much indented as to look almost fringed; anthers slender, all standing out of the tube, equalling the style, shorter than the cup; pollen yellow, abundant; scent agreeable, but weak. It would have served Mr. Haworth for a new genus, if he had been alive. Also just expanding a dwarf robust male from Asia minor, (the least daffodil) by Narcissus, States-General of the shops, with two large creamy pale-yellow flowers, genus Diomede, of Haworth. Several editions from the Yorkshire Daffodil by different varieties of N. poeticus, all yielding a smaller and paler form of N. incomparabilis, which comes from a larger and deeper coloured Daffodil of the South of Europe. Seedlings from Asia minor, by Narcissus, not clear in flower, exhibiting great diversity from the same pod, the largest having the cup long, and not in the least recurved.—*W. Herbert, April* 11, 1844.

Collier's Wood, Tooting.—The heath-house, at this place is filled with many fine young plants of that handsome tribe. On the stage, among them we particularly observed a bushy well-grown plant of Pimelea spectabilis. It measured about 7 feet in circumference, and 1 foot 9 inches high, and Mr. Bruce, who is gardener there, informed us that the plant was only two years old. It was grafted on P. decussata, which appears to make an excellent stock for this species, which is one of the most handsome of our Swan River Shrubs. The plant was not in bloom; but its large well-swelled flower-buds promised an abundant display of its showy blossoms. This species is not difficult to cultivate; it thrives better, however, and grows faster when grafted on some of the other kinds than on its own roots. With regard to soil a mixture of peat, loam, leaf-mould, and sand suits it well. When it is grown in a pot to the same perfection as this plant, it forms a fine object for the stage of a greenhouse; but it does best to be planted out in the bed of a conservatory, where we have seen it in great perfection. The young wood is sometimes topped after it has advanced a little in growth, in order to make the plant bushy; but this is a bad practice as the shoots come weaker, and do not produce such large flowers. In this house also were specimens of Aphelexis humilis, which, when well grown, are showy greenhouse plants, requiring nearly the same treatment as Heaths, and like them succeeding best in an airy situation. A plant of Tropæolum brachyceras, trained over a wire trellis, was producing its bright-yellow flowers in abundance; and here Erica grandinosa, which is an excellent Heath, was blooming profusely. The greenhouse was gay with Acacias, Azaleas, Camellias, &c. In the stove, among others, were in bloom, Dendrobium pulchellum, the showy D. nobile, a well-grown plant of Euphorbia splendens, and the useful E. jacquiniflora, which cheers us during the whole winter with its fine bright scarlet blossoms.

Miscellaneous.

The Chemistry of Cultivation. By Professor Liebig.—How is it possible, it may be asked, that there could ever be any doubt as to the part which the soil and its principles perform in the development of vegetables? or that the mineral principles of the plant could ever be regarded as neither necessary nor essential? There has also been observed on the surface of the earth the same circulation—a continual exchange—a perpetual disturbance and restitution of equilibrium. The observations in Agriculture show that the augmentation of vegetable substances, on a given surface, increases with the introduction of certain bodies which *were originally principles of the same surface of land*, which the plant has removed from it; the excrements of man and animals proceed from plants; and these are precisely the substances which in the vital act of the animal, or after its death, resume the form which they possessed as principles of the soil. We know that the atmosphere contains none of these substances, and that it cannot restore them; we know that their abstraction from the soil entails an inequality of production, a want of fertility; and that we can, by the addition of these substances, re-establish and increase fertility. After such numerous and striking proofs relative to the origin of the principles of animals and plants, to the utility of the alkalies, of the phosphates, and of lime, can the slightest doubt exist as to the fundamental principles of rational Agriculture? In fact, has the art of Agriculture any other basis than the re-establishment of the disturbed equilibrium? Can it be imagined that a rich and fertile country, possessing a flourishing commerce, which for ages has exported the products of its soil under the form of cattle and corn, can retain its fertility, if the same commerce do not return to it, under the form of manure, the principles removed from its fields, and which the atmosphere cannot replace? Would not such a country suffer the same fate as the lands, formerly so rich and fertile, of Virginia, where neither Wheat nor Tobacco can any longer be cultivated? The large towns of England consume the products of English Agriculture, and, besides, that of foreign countries. But the principles of the soil indispensable to the plant, and which are derived from an immense surface of land, are not returned to the soil. Regulations which have their source in the manners and customs of this people, and which are peculiar to this country, render it difficult, and, perhaps, impossible, to collect the immense quantity of phosphates (the most important of the mineral principles of the soil, although their proportion in it is very small), which are daily conducted into the rivers under the forms of urine and solid excrements. We have seen the English fields thus exhausted of phosphates present a very remarkable case; we have seen the exportation of bones (phosphate of lime) from the Continent double their product, as by enchantment. But the exportation of these bones, if it continue on the same scale, cannot fail gradually to exhaust the soil of Germany; the loss is so much the greater, as a single pound of bones contains as much phosphoric acid as a *quintal* of cereals. The Thames, and the other rivers of Great Britain, carry away every year thousands of quintals of phosphates. Thousands of quintals of the same substances which come from the sea, are returned into the country, in the form of guano. The imperfect knowledge of the nature and properties of matter gave rise, in the days of alchemy, to the opinion that the metals proceeded from a seed. The crystals and their ramifications were regarded as the leaves and branches of the plant-metal, and all efforts tended to find the seed and the earth appropriate to its development. Without giving anything in appearance to an ordinary vegetable seed, it was considered to produce, by its development, a stem, and a trunk bearing flowers which produced other seeds. If the seed-metal had been possessed, similar hopes might have been entertained. These ideas could arise only in a time when the knowledge of the atmosphere was next to nothing, when the part which the earth and air take in the vital acts of plants and animals was unknown. The chemistry of the present day prepares the elements of water, compenses this water with all its properties by aid of these elements, but it cannot create them; it can only extract them from water. The artificial water has been water before. Many of our agriculturists resemble the ancient alchemists. If the latter sought for the philosopher's stone, the former seek for the wonderful seed which, without the addition of nourishment to their soil, scarcely sufficiently rich for indigenous plants, should produce a hundred-fold. The observations made for ages, for thousands of years, cannot preserve them from the illusions always arising. The knowledge of true scientific principles alone can give the power of resisting such errors. In the earliest age of natural philosophy, it was water alone that developed organic substances: then, it was water and certain principles of the air; now, we know with the greatest certainty that it is necessary to add other principal conditions furnished by the earth, to the latter two, in order that the plant may have the power of being reproduced and multiplied.—*From the Chemist.*

(To be continued.)

New Water-colour.—A lady at Palermo wishing to make a drawing of the beautiful Bougainvillæa spectabilis, was at a loss for a rose-colour that would match it. It struck her, however, that the juice of the Opuntia fruit would do, and upon trial she found it yield a most beautiful rose-colour, which was as readily worked as if it had been prepared in a colour-shop; and now, after a year, it is as fresh as ever. It would be worth while to get the Sicilians to make up the juice of the Opuntia into cakes.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

THE general potting is now about finished, and many of the first potted plants have made a considerable growth; climbers and specimen-plants, also, have received the direction and shapes they are intended to fill up this season; propagation and seed-sowing are nearly over in this department, and all the bulbs and other plants at rest through the winter are now in growth, so that only the common routine of watering, giving air, smoking, or otherwise cleaning plants, and training them, will be necessary for some time. Be very sparing of the fires, and keep the atmosphere very moist in fine sunny weather. The thermometer may have a range of 30° or 40° in the 24 hours—say, from 55° to 60° in the morning, 90° and upwards at noon, and from 70° to 75° at 6 P.M.

Conservatory.—This is a good time to cut back duplicate climbers, so as to get them into flower in succession. Where new Conservatories have been lately planted, or old ones rearranged, a totally different management to the common rule must be pursued for the next two months: the object is to get the plants to make a vigorous growth early in the season, and take a strong hold of the new soil, afterwards there will be plenty of time to ripen them off long before winter. For this end, you ought to keep the house more like a stove or forcing-house from this time, only giving air from 11 A.M. to 3 P.M.; syringe heavily in the afternoon, with rain-water, if possible; and after thus chilling the house, you may give a little air till dark, if the day has been hot, and you may expect the thermometer to be about 50° in the morning. I have pursued this plan with more than one new Conservatory at this stage, and I know of no way better.

Greenhouse.—After the middle or end of April gardeners begin to change the spring treatment for these plants; hitherto, every means have been taken to keep back early growths, and now that all the plants are in active growth, and the season so far advanced, that any necessary amount of air and moisture can be given in hot weather, the plants may be more encouraged to make a rapid growth, especially young plants. When the evenings are cold, the house should be shut up close, and air should not be given in the morning until the sun-heat warms it considerably.

Forcing-pit.—Where Cockscombs, Balsams, and other tender annuals are used, this is a good place to bring them forward through their early stages. Neriums ought now to have a gentle forcing. Camellias, to flower early, should also be forced, to form their buds, as well as the Chinese Azaleas which have done flowering. A few Crassula coccinea, now put into heat, will flower some weeks earlier. In short, where there is a good conservatory to be kept gay all the year round, and plenty of plants for the purpose, the forcing-pits need never be at rest, and may always be usefully employed.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

The weather is now so inviting, that it requires a strong resolution to resist the temptation to begin planting out the half-hardy plants in the flower-garden. I would, however, advise my friends to be particularly cautious on this head, as I am quite certain there is nothing gained by planting out before the middle of May, while there is every probability that between now and that time we may have some severe frosts. A friend of mine was tempted by the fine weather of last April to turn out his Calceolarias, and the consequence was he lost several hundreds of the plants, while those which survived were very materially injured, and did not bloom until late in the season. In another place nearly 5000 plants had to be reinstated, through being planted out too early; so that, though we can effect but little good, it is quite possible to do considerable injury. Keep the soil of the beds moved once or twice a week, and on strong soils a little short grass or half-decayed vegetable refuse will do no injury, if well mixed with the soil. I am trying experiments with a variety of the new manures: so far as I am at present able to judge, superphosphate of lime is the best, next to it Potter's guano, and then bone-dust. Nitrate of soda is good, but requires to be used with great caution. A small quantity frequently repeated is, I think, the safest method of using any of these manures.

Reserve Garden.—In answer to "G. O. F." the following may be regarded as a good selection of "moderately-tall" biennials and perennials: Alyssum saxatile, Amphicome arguta, Aquilegia formosa, glandulosa, grandiflora, sibirica, speciosa, arctica, and canadensis; Calliopsis Atkinsonii, Campanula carpatica, c. alba, persicifolia, pyramidalis, p. alba, Medium, alba, m. flore-pleno, Centaurea atropurpurea, Cynoglossum glochidatum, Delphinium azureum, chinense, c. album, elatum, grandiflorum, gratum, speciosum, Dianthus hispanicus, h. splendens, chinensis, plumarius, Digitalis new spotted, Echium grandiflorum, Iberis Tenoreana, Lupinus arboreus, elegans, grandiflorus, plumosus, polyphyllus, p. albus, Lychnis fulgens, chalcedonica, Œnothera macrocarpa, speciosa, taraxacifolia, Pentstemon campanulatum, gentianoides, coccineum, speciosum, Potentilla formosa, atrosanguinea, Mackayana, splendens, Hoy-mediana, Stachys speciosa, Stenactis speciosa, and Polemonium grandi-

blossom. Most of those will throw the bloom after cooling, but many of them, as the Cattleyas, Dendrobiums, Oncidiums, Vandas, &c., may be propagated with so much facility at the present time, if placed under a hand-glass on a warm border, that it is scarcely worth while to wait for seedling plants.

Pits and Frames.—Many of the pinasels which were potted off early may now be planted out, and all plants for the Flower-garden must be hardened off preparatory to being planted out next month.

Chrysanthemums.—Where a large stock of dwarf plants is required for Flower-garden purposes in the autumn, the old stools or plants must be planted out in rich soil at about four feet apart, so as to leave room for their being layered in August. Old plants planted now at the foot of a wall in very rich soil, will cover a wall six or eight feet high by the autumn, and if properly trained will flower splendidly. I do not know any thing more interesting in the dull months of November and December than a well-covered wall of these fine plants.—*W. F. A.*

III.—FLORISTS' FLOWERS.

Great care and attention must now be directed toward the Auricula, in order that the trusses may not be drawn up weakly. They should be able to stand erect without support, and "carry their heads" in a bold and graceful style. Continue to thin out all mis-shapen pips. The truss may consist, according to the strength of the plant, of from seven to fifteen, though in some parts of the country they are exhibited with three, which is decidedly too small a number.—*Polyanthuses*, in exposed dry situations, have suffered during the past hot weather; they require but little sun, and that early in the morning. Now is a good time for cross-breeding, by impregnation; and, though the operation is a delicate one, still it may easily be accomplished, and especially as pollen will keep (as we have lately read in the *Chronicle*) for some time between two pieces of glass, as surgeons preserve their vaccine matter for inoculation. With a camel-hair brush of the smallest size, remove the farina from the anthers of the variety wished to cross from, and apply it to the stigma of the one from which seed is desired, taking great care to have both sorts of the best possible form. The operation may be repeated, to ensure the proper fecundation; and it will be advisable to place a gauze cap over the bloom, to prevent the "busy visits" of the humble-bee, who in cases of this kind is often a "Marplot." Thousands of honey-bees fly over my Polyanthus-beds in the course of a day, yet I have not on any occasion seen them alight or work on them.—*Tulips.* As we may expect hail-storms, nets ought to be constantly over the advancing blooms. In the lace-making counties, the florist will often stretch a spoilt piece of "point net" over his bed, through which hail-stones cannot pass.—*Ranunculuses* are fast coming up. Riddle some leaf-soil or very rotten cow-manure over the beds; and, as the plants get fairly above ground, press the soil (on a dry day) closely round the neck of each.—*Pansies* are now making rapid growth; and, as they are often exhibited at spring shows, they ought to be carefully shaded and attended to. The florist who intends winning, will visit his beds with candle and lantern, in order to detect "midnight marauders," in the shape of slugs, earwigs, &c. &c.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—As many of the Pines will now be rapidly swelling their fruit, take care to support such as require it, as the shape of the fruit is sometimes spoiled by their being permitted to hang to one side. If more suckers appear than it is desirable to retain on the plants, their growth may be stopped by cutting out the hearts with the point of a sharp budding-knife, as recommended by Mr. Barnes to be done to the crowns when they show a tendency to become too large, taking care however not to perform the operation while there is any water standing on the leaves of the crown or sucker. Pot any of the successions that may require it, and replace them in their former situations in the bed. They can be properly arranged according to their height when the tan is renewed. Shade in hot sunshine any plants not well rooted. Give air freely to growing plants to keep them stocky. Much humidity during dull close weather draws the leaves up weak and slender, which must be guarded against by giving air, and keeping a drier atmosphere.

Vinery.—As this is the season for tying and regulating shoots, both in the Vineries of large establishments, and in the green-house of the amateur (for whose benefit this Calendar is principally intended); I may mention that it is a great point in Vine-culture to expose as large a surface of foliage to the action of light as possible. The bearing shoots should be trained nearly at right angles with the stem. Where the Vines are pruned on the spur system the strongest shoot on the spur should be preserved. The spurs should be at such a distance apart as will allow the leaves to expand without crowding each other. In thinning the "shows" regard must be had to the strength of the Vine.

Peach-House.—During dull close weather admit plenty of air and keep the house a little drier, that the young wood may be more vigorous, and the leaves have more substance than would be the case if grown rapidly in a close moist heat.

Fig-house.—Fig-trees in pots often fail to produce good crops when forced early; but by plunging the pots over the rim in tan or leaves mixed with chopped turf, and allowing the roots to run into it, supplying them plentifully with water, and keeping them clean, they may be made to produce a good second crop. During dull weather light a small fire to air the house where fruit is ripening, letting down the lights a little at the same time, to allow any superabundance of vapour to pass off.

Melons.—It is often found necessary to grow several kinds of Melons in one pit, which occasions a difficulty in saving seeds true. No more blossoms should be suffered to expand except what are necessary to set the fruit. The fruit blossoms should be set as soon as they expand, and immediately tied up with a piece of soft thread, to prevent the ingress of insects. This trouble need only be taken till a fruit or two is set of each kind of which it may be desirable to save seeds.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

If the present dry weather continues it will be advisable to water those trees against walls, which have a steep sloping border, as if the roots become too dry the blossoms will not set well. Previously to watering, fork over the border, repeating the operation at short intervals in warm days, until it become necessary either to mulch the border, or, in cold late situations, to cover part of it next the wall with tiles, for the purpose of causing more heat to be radiated against the trees, so as to forward the ripening of the fruit and young wood. Proceed with disbudding Peaches, &c., never losing sight of the fact that it is from your summer management, and not from any treatment you can give in winter or spring, that you can assure healthy fruitful trees.

Cucumbers, for Ridges, *Vegetable Marrow*, *Gourds*, &c.—Sow seeds of these in a Cucumber-box, if you have plenty of convenience for forwarding them, if not defer sowing another fortnight or three weeks. Small healthy plants will succeed better than larger ones, stunted and half-starved.—*Beet*, *Scorzonera*, *Salsafy*.—Sow the main crops; sow again in the beginning of May, where such roots are in demand. Almost all seeds are coming up very thick this season.—*Routine.*—Keep the water-barrel and the Dutch hoe in motion, and dread the idea of being named "a sloven," by any one being able to point out a seed-weed.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Works previously recommended should still be done where they have not been completed. Prepare for felling and peeling Oaks and other trees, of which the bark is valuable, so that no time may be lost, when the bark separates freely from the wood.

Coppices.—When the cutting of saleable and useful produce is completed, it would be advantageous to go over the coppices and regulate the stools, cutting away all useless small spray, brambles, thorns, &c. Train the young rods, poles, &c. to one stem. Shorten some of the side branches, and take clean off others that are very strong.

Young Plantations.—Fasten firmly recently planted trees that have been loosened by the wind and frost; dig and hoe down weeds in all young plantations. This should be attended to in time, before the weeds, &c., get "a-head," as it saves much labour, and prevents the young plants from being injured. Now is the best time to commence training Scotch, Spruce, and Larch Firs; break out the central leading bud of the longest lower side branches, and shorten the last year's growth of other branches of large size, particularly those of the Scotch Fir, when the branches are extending too far from the stem, and getting over strong, which prevents the stem from advancing in height and becoming of a regular thickness. This is necessary where Firs are wide apart, to keep the lower branches in due bounds. This method is far superior to taking off periodically the lower tiers of branches too soon. It is what Nature herself effects in close natural Pine forests.

Hedge Rows.—Proceed with what has been previously recommended under this head.

Nursery.—Attend carefully to the preserving of young plants as they appear in the newly sown beds, from birds, mice, &c.; shade, shelter, and water occasionally in dry weather the beds of Firs and small seeds. Large Nuts, Acorns, &c., do not require it. Water also in dry weather young plants that have been lately transplanted, and shade and shelter occasionally any tender or delicate kinds: hoeing and weeding should be particularly attended to at this season.—*W. B.*

State of the Weather near London for the week ending April 13, 1844, as observed at the Horticultural Garden, Chiswick.

April	Moon's Age	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri. 12	24	29.983	29.805	62	45	53.5	S.W.	.22
Sat. 13	25	29.792	29.489	59	47	53.0	W.	.02
Sun. 14	26	30.026	29.882	60	41	50.5	N.W.	.02
Mon. 15	27	30 117	30.019	66	43	57.0	S.W.	
Tues. 16	28	30.107	30.111	70	36	53.0	S W.	.01
Wed. 17	●	30.208	30.095	71	36	53.5	E.	
Thurs. 18	0	30.226	30.194	61	30	45.5	N.W.	.01
Average		30.075	29.944	64.1	40.6	54.2		.29

April 12—Fine; cloudy; rain at night
13 Cloudy throughout the day; windy, with rain at night
14 Cloudy; hazy; showery
15 Hazy; very fine; cloudy and sunshine; overcast and fine
16 Hazy; slight rain in forenoon, cloudy and warm; clear and fine
17 Foggy; very fine, with hot sun; exceedingly clear and fine at night
18 Slightly clouded; very slight shower; fine; clear
Mean temperature of the week, 6 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending April 27, 1844.

April	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. 7 A.M.		2 P.M.		10 P.M.			
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 21	57.1	40.1	48.6	8	0.80 in.	1	3	4	1	1	3	6	—
Mon. 22	58.2	40.6	49.7	11	0.32	3	4	2	1	1	2	5	—
Tues. 23	57.9	39.7	48.8	11	0.58	1	2	1	—	1	4	3	5
Wed. 24	58.2	38.8	47.5	8	0.55	2	1	2	4	1	3	1	2
Thur. 25	58.8	39.2	49.0	7	0.67	2	3	3	2	4	2	1	2
Fri. 26	59 1	37.6	48.3	7	0.12	2	1	2	1	3	2	2	1
Sat. 27	60.7	37.8	49.3	8	0.12	5	1	3	2	4	1	1	—

The highest temperature during the above period occurred on the 25th, 1840 —therm. 69°; and the lowest on the 26th, 1827, and 26th, 1838—therm. 28°.

Notices to Correspondents.

Althæa frutex.—*R. I. M.*—This plant, which is also called Hibiscus Syriacus, may be propagated by layers.

Anemones.—*A.*—Rosalia, Reine d'Anemones, Rose Jolie, Triumphant, Rose Surpassant, Couleur de Sang, Rose Mernette, Olympia, Cour de France, Regina Rubrorum, Superbe Royale, Regina Augusta, Remarkable, Imperatrice, Rose parfait, Bellona Rose, Agreeable, High Admiral, Agnita, Reine Candale, Grand Duke, Belle Hortense, Incomparable Azure, Cramoisie Superbe, Reine des Fleurs.*

Bees.—*J. B. H.*—You had better begin your apiary with a strong new swarm, which ought to be removed as soon as the Bees settle in the hive; say the evening of the same day they have left the stock. In removing an old hive to the distance of eight miles it is apt to be injured, especially at this time of the year, when the cells are full of brood. The safest way to remove a common hive is to carry it by the tied ends of a cloth put round the hive. *J. W.*

Books.—*J. N. C. H.*—There is no such book as you inquire for, nor is it likely that there will be. Books can only give hints and general directions. After all, a man must trust to the knowledge he gains by actual practice. Books with large plates are very costly to publish; and in these days they meet with little encouragement.—*Constant Reader.*—Books on Entomology, with coloured plates, are very expensive. Mr. Curtis's, which relates only to British genera, costs 30 or 40 guineas. You had better procure Kirby and Spence, or Westwood, on Insects, or both. We never give prices; that is the business of the booksellers.—*S. B.*—Read Bevan on the "Honey-Bee."‡ —*G. E.*—Is the book you want to be on the Theory or Practice of Horticulture? There has been no supplement to Loudon's "Encyclopædia of Gardening" since the last edition, which was published in 1838.‡

Broccoli.—*Falcon.*—The Walcheren Brocoli, or Cauliflower as it is sometimes called, is an excellent variety; and by sowing at different times it will produce heads throughout the greater part of the season, provided the winter is not too severe. Not without just cause, many complain of spurious seed having been sold instead of the genuine.‡

Cedars of Lebanon.—*A Lady.*—Why prune these fine trees at all? If you must, why, either autumn or winter may be taken.

Coniferæ.—*C. R. D.*—Pinus Hartwegii becomes a large tree. All such plants like a sandy peat to grow in; but they will succeed in any soil which is neither clay nor chalk. As to *P. palustris*, we should not anticipate any success from planting it. It might grow for a few years, but we fear it would die suddenly at last. Such, at least, is often its fate in situations much more favourable than one of clay on chalk, 550 ft. above the sea.

Crossing.—*Subscriber.*—Cut out of one flower the anthers before they open, and then dust the stigma which is left with the pollen of another variety.

Fruit-trees.—*M.*—If your soil is well drained, all you can do with your fruit-trees which are beginning to canker is to remove them in autumn, concrete the bottom of the border, and replant them, taking care that the roots are spread out near the surface. All the cankered parts should be cut clean out, and the wounds covered with clay.‡—*J. K.*—You will do well by thinning greatly the excessive quantity of blossom on your Pear trees!—*H.*—You can only plant with advantage, against a wall which faces the north-east, Morello Cherries and Currants, with some of the hardiest Plums and Apples. It is too late for this season.‡

Fuchsias.—*P. Lawson.*—You may plant out these in the open border about the middle of May, when there will be little danger of their being injured by frost. Allow your seedlings to grow without topping the first year. The second year they may be treated in the usual way. Plants damp off from being kept without air.‡

Grapes.—*K. R. F.*—Your deformed Grapes are curiosities in their way. What has happened is that the growth of the berries has been arrested, but that of the seeds has gone on. The latter have in consequence burst through the sides of the berries—have become green, and now resemble green Peas. We wish you would allow a bunch to hang in order to ascertain whether, under these curious circumstances, the seeds will ripen. The mischief has no doubt been produced by a cold current of air jacting on the surface of the bunch and arresting its formation. It is a pity, because the bunches are good ones.

Insects.—*Z.* is referred to our columns this day for the history of the Fanny-fly, and we shall feel obliged by the transmission of the insects which may be suspected of injuring the Pansies in any way. *R.*—*W. H. K.*—Your mixture for the trunks is very good, and if the eggs of the insects be destroyed on the bark it will destroy them if well brushed in; but to derive any benefit from washing the trunks, it must be done without further delay, and it may be repeated in a week; the same operation should also be performed in the autumn. It is the want of perseverance which renders so many remedies ineffectual. *R.*—*A Sea-side Gardener.*—Trombidium holosericeum; we never heard of its doing any mischief. How does this Acarus injure your Carnations? *R.*—*R. M. T. B.*—The insect supposed to be hurtful to sheep is the larva of a beetle, and probably of the Staphylinus olens, Lian. It is exceedingly useful in destroying injurious worms in gardens and fields. *R.*—*John a Gardener.*—We have had no opportunity of ascertaining the effect of guano upon slugs and snails, and hope you will try the experiment with some pulverised, and report its effects. Without seeing a specimen or a drawing of the black slug we cannot determine the species, but it is to be presumed that it is by no means useful in a garden. *R.*—*J. H.*—The snail eating the roots of the Pines, and breeding on Cucumber beds we believe to be an English species, but cannot tell you the name at present. *R.*—*S. Webb.*—The weevil destroying your Peas appears to be the Curculio tibialis; we will shortly figure and describe the species, and endeavour to suggest some remedy. *R.*—*J. N.*—Your insects are the same as the last. *R.*—*Isle of Wight.*—Your beetle is the Curculio lineatus, as well as we can make out from the crushed specimen. Strewing soot or lime along the rows is the best remedy. Please in future to inclose more than one example in a quill well stopped.—*R.*

Lichens on Fruit-trees.—*Majores.*—It is impossible to prevent the growth of these plants by scraping the branches. The Danaids themselves would lose their patience in the attempt. Lay the ground dry by draining, cause air to circulate freely among the branches, and the scraper will not be wanted.

Moss in Lawns.—*C. M. I.*—As it is the ammonia in gas-water that kills Moss, it is probable that a solution of sulphate of ammonia, say 1 lb. in two gallons of water, would produce the same effect. It *must* be pretty strong. Your Grass will be scorched, but it will soon recover.

Names of Plants.—*L. M. S.*—Euphorbia Characias? and a form of Vicia sylvatica? but what specimens! *Mr. Douglas* was killed by a wild bull, in a pitfall used for trapping wild cattle in the Sandwich Islands.—*M.*—Epidendrum phœnicoum.—*Derwent.*—Apparently Gardenia campanulata.—*Annandale.*—Kennedya rubicunda.—*K.*—Indigofera australis, Gorteria ligens.—*Gramen.*—Phalaris arundinacea.—*Tgnoramus.*—Cunninghamia sinensis.—*M.*—Eryaimum Perofskianum.

Onions.—*A Subscriber.*—There is no better plan of fastening these in very light soil than that of rolling the beds. We have seen beds rolled quite firm, even after the plants were 6 or 7 inches above ground. The Onions afterwards grew away quite strong, and were not injured by the rolling.‡

Orange-trees.—*J. A.*—If you syringe or over-steam any plants when in flower, they will not set their fruit. We explained the reason in a leading article two or three years ago. If your Orange-trees are kept in warm soil and a warm sunny atmosphere, their fruit ought to set freely. You will probably find that an account of some Orange-houses, which we shall publish to-day, will supply you with information as to the best way of getting bottom-heat. If not, inquire again. If tan is used, you must take care that the roots do not come into contact with it. The ground temperature of 70° is high enough for Oranges.

Rabbits.—If the person complaining of rabbits will write to C. A. A. Lloyd, Whittington, Oswestry, he will send him a plan for their total destruction.

Roses.—*H. P. I.*—The following will answer your purpose, viz.: Amie Vibert, Noisette, corymbifera, Juan Desprez, Triomphe de Plantier, Madame Desprez, Bourbon, and Phœnix.‡

Vegetable Respiration.—*Ignoramus* says it is well known that the leaves of plants are very powerful agents in purifying the air for us, by imbibing carbonic acid and exhaling oxygen; and yet the winter season, in which there are comparatively no leaves, is proverbially more healthy than the summer; and he asks us how that is? The reason is obvious. During the cold months of winter the decay of animal and other matter goes on very slowly; consequently the air is less deteriorated, and therefore, if there are fewer plants to purify the air, there is also much less need of their presence.

Whitney's Composition.—*A Lady.*—This is applied warm, with a painter's brush. The person who sold it you should have furnished printed directions. Would it not be better to apply to him for them?

Miscellaneous.—*Querist.*—We presume that your Pears were never ripe, or they must have been some very bad sort. For Strawberries and Asparagus, use guano, mixed with water, in the proportion of a double handful to 3 gallons, stirring it well, and leaving it all night. Apply it when they are beginning to grow. The only rule in thinning plantations, is to take care that every plant can grow without touching its neighbour, and to preserve the handsomest plants. It is for you to judge what should be left; that depends on your ultimate objects. If you want scaffold-poles, why then, the Larches must not be thinned so much.—*A Subscriber.*—Much obliged, but No. 23 has been sent; the other Numbers we do not require.—*Falcon.*—We will bear your request in mind.—*A. G.*—All your seeds must be raised in bottom-heat, and will then require a stove, with the exception of 11, 18, 21, 24, which may be grown in a green-house. The only plants which will be handsome are 23, 29, 31, 35, 49, 52, 55, 65, 70; but many of them will be difficult to flower.—*E. M. S.*—All the Indian seeds in your list require the damp stove, when they may be treated like other plants in the same situation. They are not much worth having, except Convolvulus umbellatus.—*Dilemma* will find a select list of evergreen shrubs given at p. 757, 1843. For plants for bedding out, see p. 40 of this year.‡—*J. M.* is answered at p. 184, 1844.‡—*T. C.*—We are unable to state farther particulars respecting the slate wall than what are mentioned in the Report of the Horticultural Society of April 2d.‡—*Bath.*—Address, the Secretary, 20, Bedford-street, Covent Garden.‡—*A Subscriber from Andover* should explain his meaning; we do not know to what he alludes.—*T. P., Midhurst.*—We do not know. We printed the report as we received it.—*Amateur.*—We really cannot spare the time; personally, with pleasure, but not otherwise.

SEEDLING FLORISTS' FLOWERS.

Camellias.—*A Subscriber.*—We should like to have seen your blooms in a fresher state; the colour is good, and the flower well filled up. It is too much like some that we have,—we recommend you to keep it.*

Cinerarias.—*R. N. L.*—Your seedling is one of the largest we have seen, and good in colour; the fault in the flower is in the petals being so long for their substance that it does not retain a compact form.*—*R. and S.*—Both your seedlings are well-formed flowers, and they appear to be free bloomers. No. 1 is the best, but both of them are weak, and common in colour.*

Pansies.—*Y. and Co.*—Lady Alice Peel is a large, showy, well-formed flower, of considerable substance; the eye good, and the belting, though rather broken, is uniform. There is a slight roughness on the edges of the lower petals, and also a dash of yellow in the lip, which injures the uniformity of the ground-colour.*—*J. R.*—No. 1 is a seedling of very fine properties; its only fault is that it is too small; the other specimens are border variation only.*

Polyanthus.—*J. R.*—Your seedlings are very poor indeed.*

*** As usual, many communications have been received too late.

Ramsgate.—In last week's Number, in the article "Cultivation of Grapes in Pots," page line 4 from the end, for "Mr. Tillens," read "Mr. Pilmore."

A RESPECTABLE YOUNG PERSON is willing to hire himself for three years to any respectable Farmer who would consider himself repaid for the board and lodging afforded throughout the term, and for the Agricultural Instruction afforded during the first half of it, by the assistance of the Advertiser during the remainder. The Advertiser is already possessed of considerable knowledge of Agricultural practice, such as is derivable from books, and is anxious to fit himself for the situation of responsible Manager of a Farm or Estate.—Apply to A. B., at the *Gardeners' Chronicle and Agricultural Gazette* Office.

The Agricultural Gazette.

SATURDAY, APRIL 20, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, April 24, Agricultural Society of England.
Thursday, April 25, Agricultural Imp. Soc. of Ireland.

Wednesday, May 1, Agricultural Society of England. Highland and Agricultural Society.
Thursday, May 2, Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

April 25, Grove Ferry.
April 26, Debenham. Hadleigh. Wrentham.
April 27, Cardiff. Gloucester. Chepstow.
April 29, Fairford.
April 30, Rayleigh.
May 1, Mirleston.
May 2, Isle of Thanet. Richmondshire.
May 3, Halesworth. Nesse Ferry.
May 4, Cullumpton.

We have to direct the attention of our readers to the valuable paper in another page by Dr. Smith, of Manchester. It is unnecessary here to refer in detail to the various tables there given in illustration of the COMPOSITION OF AGRICULTURAL PLANTS, but there are one or two points connected with them to which we may advert. Dr. Daubeny, in his Lecture to the English Agricultural Society, some years ago, spoke of a system of scientific book-keeping capable of adoption by farmers in manuring their land. The principle of it lay in this: that with each crop, whether of Corn, Roots, or Grass, grown upon and carried off the land, a certain quantity of various substances was removed from the soil. If all those crops were consumed on the land, the greater part of these ingredients would be returned to it in the manure derived from their consumption; and it would be long before the loss of the small portions, amounting, perhaps, to a 150th part of the whole; which go to market in the shape of beef, mutton, bacon, &c., would have any defertilising influence. But in many cases, Hay and Roots, as well as Wheat, Oats, Barley, &c., are sold off the farm, which would thus soon be run out, were we unable to return to it in other forms—those of farmyard manure, and various other fertilisers—the materials of which these crops consist. A perfect balance, in which no waste on either side occurs, can only take place when the exact amount of all the ingredients of the produce removed from the farm is thus returned to it in other shapes.

Now, before we can adopt this perfection of cultivation, so far as the application of manures is concerned, *i. e.*, before we can adopt Professor Daubeny's suggestion, and balance the debtor and creditor sides of our manure and crop account in his system of scientific bookkeeping, we require a knowledge, first, of the composition of all Agricultural plants; and secondly, of the composition of all known manures. All the evidence* existing on the first of these subjects is given in a tabulated form in another page by Dr. Smith. By means of these tables, we can ascertain, within the limits between which plants vary in their composition, the amount of all the substances removed from the soil by a given weight of any crop grown by the farmer: and it only requires a perfect knowledge of the second of these subjects—a knowledge of the composition of manures—to enable us accurately to supply the losses which the soil thus sustains. A table of analyses might be compiled of these, and we may perhaps hereafter be able to present one; but a consideration of the daring extent to which their adulteration is carried, and of which most of them are susceptible, must convince any one that such a table would be of little value compared with the system recommended for adoption by W. H. Hyett, Esq., in his article on "The Fertilisers of Commerce," (page 218). Means generally at hand, such as, with Mr. Gyde's assistance, he proposes to establish in Gloucestershire—means, at the farmer's command, for obtaining cheap and punctual analyses of manures before purchasing them, would be of the greatest use, not merely to a scientific farmer, who would thus be enabled to adopt Professor Daubeny's system of scientific bookkeeping, but more especially to the practical and economical tenant-farmer, who would thus be saved all risk of the losses to which, as Mr. Hyett has clearly shown, he is at present exposed.

Besides the mineral ingredients of plants, allusion is made in Dr. Smith's tables to their organic constituents also; and we refer to this now, in answer to several correspondents who have applied to us upon the subject. The gluten, the most nourishing part of vegetable food, upon which, therefore, the quality of a crop in a great measure depends, requires for its formation the presence of nitrogen in the food of plants. Liebig has shown that nitrogen is useful to a plant only when presented to it in combination with other substances, as in the form of ammonia, and its salts; and he has also shown that a supply of ammonia exists in the air. It is not necessary, as some of our correspondents appear to suppose, to assume that this ammonia is absorbable only by the leaves of plants; the probability is, that it is mostly taken up by their roots, being brought to the ground in rain-water. To the practical Agriculturist, however, speculations as to the offices of the several parts of plants are of *comparatively* small importance; whenever we have ascertained by actual experience the effect of certain manures, the mode of their action is nearly immaterial. We *know* that salts of ammonia, the sulphate (essence of soot), muriate, phosphate, &c., do possess, under certain circumstances, extraordinary fertilising influence. These circumstances are, the non-existence of them already in the soil, and the absence of anything there, such as caustic lime, which would volatilise them, or otherwise spoil their efficiency. If we know the state of our soil with regard to these circumstances, then, knowing the value of these manures, we have sufficient to guide us in their application, independently of any theories as to the mode of their action.

But ammonia is obtained from other sources than these; it is evolved during the decomposition of animal matter, and it is therefore impossible reasonably to suppose that the animal matter of fresh bones, which is a source of it, can be useless. Some experiments have apparently shown that the simple phosphate of lime is superior as a manure to bones which contain a good deal of animal matter; but Experience is a safe guide to follow only when we are able to read aright what she tells us, and when we know the circumstances under which an appeal has been made to her. In a soil already sufficiently supplied from other sources with ammoniacal salts, the simple phosphate of lime, which is a necessary element in the food of plants, whether it be obtained by boiling bones or burning them, might be equally efficacious as a manure with the unboiled bones full of animal matter; but the result would be reversed, and with perfect consistency too, in the case of another experiment in which the boiled and unboiled bones were tried on a soil deficient in organic matter, and therefore likely to be benefited by the application of animal manure.

In the remarks annexed to these tables, Dr. Smith has very satisfactorily explained how the experience of a farmer, when read aright, may inform him as correctly of the wants of his soil as the chemist could, though assisted by sensitive tests and accurate balances.

* Since Dr. Smith wrote his paper, Mr. Solly's valuable Report on "Experiments on the Inorganic Constituents of Plants" has been published by the Horticultural Society.

GEOLOGY AND AGRICULTURE.

(Continued from page 234.)

The connexion, which the Geologist had observed, of certain plants with certain formations, was explained, for he knew the constituents of the rocks from which the soils in which they grew were derived, and he saw that those substances abounded in the ashes of the plants which flourished on them. From his knowledge of the chemical composition of a given variety of rock, which its external characters often indicated to his experienced eye, he was enabled to give a much better estimate of the proportion of substances essential to vegetable life which would be found in a soil derived from its disintegration, than could be obtained from the analyses of soils made by eminent chemists of the old school, who confined their investigations to the amount of silica, alumina, lime, and humus. A soil, for instance, derived from the detritus of granite abounding in feldspar he will expect to be friable, from the large quantity of silica present in all granites, and to be rendered fertile by the presence of a fair proportion of alumina and potash. In the detritus of a rock containing hornblende as well as feldspar, he knows that there will be an increase in the proportion of the fertilising ingredients, potash, magnesia, and oxide of iron.

Geology is said, again, to be useful to Agriculture, by leading to a more systematic classification of soils. Of this there is great need, for the Agricultural nomenclature with regard to soils and mineral manures, is lamentably defective. From this cause arises much of the contradictory results we hear of, from experiments with the saline and mineral manures. The farmer of West Norfolk tells you that he improves his light sandy soil by claying it; the farmer of East Norfolk produces the same results, on the same soil, by the use of marl. In each case the substance applied is nothing more than chalk detritus, mixed sometimes with a little clay; sometimes it is the solid chalk itself. In Scotland marl consists of masses of fresh-water shells, accumulated in the beds of ancient lakes. In Cheshire it is the red marl of the new red series, which contains much peroxide of iron, and is often gypseous and saliferous. In Cornwall, disintegrated hornblende rock is applied to the land, under the name of "marl." In Germany the marls used for the improvement of soils contain much magnesia. In describing such mineral manures, greater precision will be attained by stating from what group of rocks they are derived, and by adding to the usual names of soils, that of the geological formation to which they belong; stating, for instance, whether our sands are those of the new red series, the plastic clay, the green sand, or the crag; and whether our clays belong to the new red series, the coal measures, or the lias. But the value of such a geological classification of soils depends upon the chemical information conveyed by it. The composition of a given rock being known, that of the soil derived from it may be approximately inferred.

There are modifying circumstances which will disturb conclusions as to the fertility or sterility of a soil, drawn from the nature of the rock on which it rests. These arise from the effects of the transporting power of water during the existing geological epoch, or that which immediately preceded it. In the first place, there are alluvial deposits—some of them now in the act of formation—composed of the fine earthy matter brought down by rivers in a state of suspension, and deposited in estuaries and sheltered bays, where there is still water. Such deposits contain, in a state of fine division—a circumstance in itself highly conducive to fertility—particles derived from all the formations drained by the river and its tributaries. From the variety of ingredients contained in them, they are invariably productive. There are, however, degrees of fertility among them dependent on the geological structure of the whole district through which the rivers depositing them have flowed, by which, more than by the nature of the adjoining rocks, their chemical characters are affected. 2dly, there is that more generally distributed detrital deposit, long called diluvium, and now known by the names of northern drift, moraine, and boulder formation, which appears to have been formed during a geological epoch immediately preceding that in which we live, partly by the trituration of ice, partly by the transporting power of water. This deposit consists principally of detritus derived from the subjacent or neighbouring rocks, mixed, however, with much that has been transported from distances of several hundred miles, which may be traced with precision to its parent rocks. It is of very variable depth, frequently covering the rocks with only a thin film, and within very short distances attaining a depth of several hundred feet, composed of clay, sand, loam, coarse gravel, and boulders—the clay usually in the lower part. The clay, particularly where calcareous detritus is mixed with it, affords the means of improving the sandy portions which generally constitute the surface. A large portion of the county of Norfolk is covered with this deposit, furnishing soils varying in value in their natural state from 3*s.* to 40*s.* the acre. The district of Holderness, in Yorkshire, likewise consists of it; and it occupies extensive areas on the skirts of all the principal mountain chains and hills of these islands. It is obvious that such a deposit must not only modify the characters which the soil would derive from the detritus of the subjacent rocks, but must often completely make them. In some cases, as in Wales, it covers hard and barren rocks with a deep soil, either fertile in itself, or capable of being rendered fertile; in others, it has overwhelmed rich tracts of red marl with coarse gravel and boulders. In any geological classification of soils, therefore, we must not only note on what formation they rest, but whether they are alluvial, or belong to this northern drift, diluvium, moraine, or whatever name we choose to adopt out of its numerous synonymes. The altered character impressed upon sedimentary strata in the vicinity of igneous rocks is another circumstance which must greatly modify conclusions derived from the position which they hold in the series of deposits. The mere induration thus produced must materially influence the character of the soil derived from them. A well-burnt tile will not fall to pieces after a shower, like sun-dried clay; and ground tiles would produce a soil very different from the clay of which they were formed.—*J. Trimmer.*

(To be continued.)

WOODEN SHOES.

BY MARTIN DOYLE.

(Continued from page 226.)

The wages of French labourers, male and female, may be stated generally as the same in amount with those paid in Ireland, and therefore the people of each country may be said to have the same limited funds for the purchase of shoes. Yet, while the poor Irishman and his wife and children are in continual discomforts in this particular, the meanest beggar in France, from the infant to the grandsire, has the feet perfectly dry and warm. The wind is blowing keenly from the north-east; the Frenchwoman has her window open; she sits spinning away merrily in a temperature in which one of my countrywomen would be codling over the fire, or tramping to the bog for baskets of turf. The French children under the same circumstances are playing about indifferent to the cold; the Irish children are cowering with the dog and cat over the ashes on the hearth, and shrugging up their shoulders to their ears in the attitude of misery; and why this difference?—because the French have their *feet* dry and warm in their wooden shoes, and the toes of the others are cold and wet, and therefore causative of chilliness the whole day.

I have seen an old Norman woman of 80 sitting at her fruit-stall in the streets during frost and snow, when the thermometer stood at 15°, and apparently very comfortable, because with good woollen clothing, her feet were in wooden shoes, resting on a little pan containing no more charcoal than would roast a tom-tit. I have remarked hundreds of delicate-looking females sitting in their shops, plying their needles with the doors open, in the severest weather, with no other covering on their heads than a muslin cap, and without a cloak, while I was muffled up in a heavy coat, and yet trembling with cold. They did not feel it because they had their feet comfy covered up in wooden shoes, and had a dish on the counter to warm their fingers now and then, or to supply heat to the lower extremities at intervals. Wooden shoes, with the lower orders in France, are a substitute for the warmth of fuel, which is terribly dear in most parts of that country; and this consideration should with our philanthropists be

a very influential motive for dispensing sabots through the length and breadth of Ireland.

The sufferings of thousands of our poor in winter, in various localities, from the combined want of fuel and covering for the feet, are horrifying. Of these two deficiencies, one is directly remediable by the use of wooden shoes. They cost from 3*d.* to 10*d.* a pair, exclusively of the leather strap, which is drawn across the instep, and nailed at each side near the bottom. A working-man will wear out in the year from two to three pair; and his sabots are usually made not to require any straps, though the sabots of the females are generally furnished with them. He must have two pair of strong well-knitted worsted stockings at 1*s.* 3*d.* a pair; and this cheap supply is sufficient for those farm-labourers who have not occasion to walk much upon the roads. From early and constant familiarity with the sabot, the French do not find them impediments to motion; and, in summer, wear them without stockings, from early habit, without any unpleasant sensation to their feet.

But to be comfortable in winter, every one who can afford the indulgence has list slippers, which, besides imparting warmth, prevent even the tenderest feet from feeling any inconvenience from the sabot: it keeps them so firmly fixed in it at the heel, which would otherwise often slip out, that a person, when a little accustomed to sabots, can walk rapidly, or run in them,—children dance in them. These shoes are bought in France for about half-a-crown a pair. I think they would cost in Ireland (or Scotland) little more than half this, on account of the much greater cheapness of our woollens. The whole average annual expense, including leather shoes for three months in the summer, to the French labourer or farmer's boy for preserving his feet, may be estimated at 10*s.* His wife and children are rendered really comfortable in the same respect the year round, and without any interruptions, for a far lower sum.

To women, they answer all the purposes of the English patten, with the advantage of much greater warmth. In wet and sloppy weather, they may be instantaneously taken off on entering the house, and are slipped on again in a moment on going out.

Women break stones for the road very frequently in France, and do much of the labour which with us is performed exclusively by men; wooden shoes to persons standing or sitting all day on wet soil are invaluable.

(To be continued).

On the INORGANIC and other CONSTITUENTS of VARIOUS AGRICULTURAL PLANTS.

By B. Smith, Esq., Ph. D., Royal Institution, Manchester.

Remarks in Connection with these Tables. — The following Tables contain all that we at present know, with any degree of certainty, of the organic and inorganic ingredients in field and garden crops, and they will, we believe, be found of great service to the farmer, as data either for calculating the value of any quantity of food, for choosing manure, or for determining on the crops to be cultivated, provided it is combined with a knowledge of the soil and the constituents of various manures. We have given first the results of Professor Sprengel, as arranged by Professor Daubeny, being fuller than those of any other analyst; and although, in several instances, they differ from those of other chemists, the great difficulty attending such an inquiry has hitherto deterred any one from pursuing it further than he has done.

We have in Tables II. and III. given the analyses of several substances by others—Table II. being by Dr. Playfair, and Table III. made in the laboratory of Liebig; which being done later, and under greater advantages from the progress of chemical knowledge, may probably be preferred by many as data for calculation. We will first direct attention to Table I. and its uses.

TABLE I.—Showing the Constituents of Field and Garden Crops.—Arranged from the Analyses of Sprengel and Boussingault, by Prof. Daubeny.

100,000 parts of	Glutea.	Total insoluble matter	Potash.	Soda.	Lime.	Magnesia.	Alumina.	Oxide of Iron	Oxide of Manganese.	Silica.	Sulphuric Acid.	Phosphoric Acid.	Chlorine.
Wheat contain	14734	21127	215	540	98	690	90	trace	trace	400	80	400	10
— straw	1800	85510	200	50	2000	300	100			2870	57	170	200
Barley	13464	20440	278	250	100	180	25	trace		1183	50	210	10
— straw	1610	89840	180	40	5540	700	140	140		30300	110	160	70
Oats	12704	20250	120	330	200	97	14	40		1970	35	70	10
— straw	2700	97000	370	0	1500	230	0	0		2,44000	70	10	5
Maize	38400	1319	900	200	35	180	10	trace		434	17	254	11
— straw	14120	3987	220	0	8530	2200	0	0		20 2700	100	54	0
Rye	14100	1000	450	77	190	44	94	42		34 164	28	46	9
— straw	12600	2700	60	11	1700	150	0	0		2697	170	50	17
Potatoes	2200	614	2000	1000	200	80	91	92		0	64	40	15
Beans	31200	31200	415	410	1800	1200	24	trace		190	180	390	41
— straw		31121	1650	80	6000	2000	10	7	5	270	84	220	80
Vetches		2000	2000	200	1400	1400	200	0	0	500	50	140	45
— straw		8101	12810	60	1050	500	15	5	5	444	122	280	64
Peas	23000	9600	8100	700	80	1200	100	10		410	83	190	200
— straw		4071	600	trace	2200	540	60	20	7	980	387	240	4
Lucerne { dry	10000	2480	2000	100	1800	240	0	0		80	100	350	100
Lucerne { green		1000											
Sanfoin		1071	400	100	327	60	10	trace		120	61	220	38
Red Clover { dry	17174	1571	419	112	884	70	3	trace	trace	60	94	110	70
Clover { green	10618												
Flax		2340	600	0	840	200	0	trace		1200	80	220	12
Beet-root, dry	1810	5000	14011	14170	2410	1200	90	40	20	3000	1200	1000	2000
— leaves do.		1543000	4000	2,00	2510	4000	1000	800	800	4100	2000	1000	10000
Cabbage		88000	1947	570	1892	900	11	151	40	3000	970	600	810
Turnips		1080											
Swedes			7040	3051	1164	825	365	40	20		475	600	600	2000
Turnips			1000	300	78	400	97	11	0		84	30	120	110
Carrots		1000	2000	17110	700	500	1000	20	20	40	1000	800	800	50
Meadow Catstail		6572	1811	901	180	150	351	11	trace		700	80	60	
Rib-grass		6979	1000	300	190	990	80	10	trace		800	110		7

The quantity of gluten is here given, and the amount of inorganic or mineral ingredients in 100,000 lbs. of each crop. By looking at column 3d, we see that the quantity of mineral constituents differs very much in various plants, i. e., that plants vary much in their power of absorbing matter from a soil; and again, that the quantity of each individual constituent varies much. The seed of Wheat requires 400 of silica, the Straw 2870, whilst Potatoes require only 8, for 100,000 lbs. It will be seen that the Straw of corn requires a large proportion of silica; it is necessary, therefore, that this should be supplied in the soil. Although silica is the chief ingredient in every soil, it does not follow that every soil can give to the plants a sufficient supply, as they cannot absorb it unless presented to them in the form of silicate of potash, or at least in a disintegrated form, and not as hard gravel or sand. The question might now be asked, How are we to know when there is sufficient silicate of potash in the soil of any field on which we wish to sow? It would be impossible for farmers to have every variety of soil analysed, which in a large farm they are obliged to deal with, and we would suggest the possibility of obtaining a correct knowledge of a soil and its ingredients by a mere consideration of what crops have previously grown well upon it, and what have failed. Suppose the Wheat Straw has been bad, has been stunted in its growth, both in a wet and dry season, we have good reason to suppose that the supply of silicate of potash has been deficient, and in manuring for future crops, we must choose some substance which will supply this deficiency. We must choose one rich in silicates, or allow the land to remain without removing from it a crop of corn, until the silicates contained in the soil have become soluble. Supposing we choose the latter course, we might either allow it to remain fallow, or take from it some crop which would diminish in a very small degree the amount of silica. Potatoes seem the lowest in this column; they require, however, a considerable quantity of potash and soda; so that a manure containing these is next required. Supposing, again, the produce in grain has been small, the effect has probably been owing to the want of phosphoric acid, magnesia, and the alkalies, which by the Table will be seen to compose a great part of the constituents of the ear of Wheat, as well as of every other nutritious substance. In this case a manure containing phosphoric acid, magnesia, and potash, is to be sought for. The same reasoning may be applied to Beans, Peas, &c., and the experienced farmer will probably see various applications of it. As the gluten requires the phosphates of magnesia, lime, potash, and soda, we cannot expect any part of a plant rich in nutritious matter to grow without a supply of those substances. In every case, therefore, in which a crop containing much gluten is to be reaped, there is the greatest necessity for attending to these salts, as they are more frequently wanting in a soil than any of the others, soluble silicate of potash excepted. A deficient crop of Peas or Beans might be caused by this circumstance alone. But in this case both the Straw and the seed would be deficient, as we see from the Table that both require a considerable supply of phosphates. As it is not our object here to treat of the rotation of crops, but merely to give some explanation of these Tables, and to show their practical use, we shall leave the details for the present. Correct analyses of various manures would be of great importance to the farmer, in giving him the power of choosing one which would supply that ingredient in which he considers his land deficient.

The quantity of gluten and inorganic ingredients subtracted from 100,000 leave the quantity of starch, water, &c., in Wheat and other grain; but as the nature of this remaining portion has not been so minutely examined, the information on this subject has not been tabulated.

Table II. gives the per centage of water, unazotised matter, &c. according to Dr. Playfair. The unazotised matter in grain is chiefly starch, and it varies inversely as the amount of gluten in Wheat varies. Wheat, in favourable circumstances, especially from warm countries, contains as much as 33 per cent. of gluten; in this case the per centage of starch is less than when the gluten amounts to 14 only. If abundance of phosphates are supplied to the soil, for example, in the form of human urine, Wheat has been found to contain 35 per cent. of gluten; if a small supply of phosphates has been present, less than 12 per cent. has been the produce. We have very little distinct information on the nature of the substances in col. 3; it must, however, be remembered that the great object of a farmer is to obtain in his crops a large proportion of gluten (col. 2), this being the principal nutritious substance.

The quantity of Starch has been estimated as follows:—

Wheat	56·72	per Cent.	Vauquelin.
Usually	71	"	
Oatmeal	59	"	Vogel.
Rye meal	61	"	Einhof.
Barley meal	66 (about)	"	
Rice	85	"	Braconnot,
Peas	52	"	Einhof.
Beans	35	"	
Potatoes	15	"	Einhof and others.

The constituents given in Table II. agree very closely with those given by Sprengel, especially in the amount of gluten.

TABLE II.—Showing the proportion of the organic and inorganic constituents of certain plants, by Dr. Lyon Playfair.

100 lbs. contain of	Water	Albumen	Non-azotised matter	Total Organic matter	Ashes
Peas	16	29	51½	80½	3½
Beans	14	31	51½	82½	3½
Lentils	16	33	48	81	3
Oats	18	11	68	79	3
Oatmeal	9		89	89	2
Barley meal	15½	14	68½	82½	2
Hay	16	8	69½	76½	7½
Wheat Straw	18		78½	78	4
Turnips	89	1	9	10	1
Swedish Turnips	86			14	1
Mangold Wurtzel	89			10	1
White Carrot	87	2	10	12	1
Potatoes	73	2		27	1
Red Beet	80	1½	6½	19	1
Linseed Cake	17			79	4

Table III. is a collection of analyses by various chemists. Here we have a composition different from that given by Sprengel, a larger quantity of phosphoric acid, an absence of silica from the grain of Wheat, and a large proportion of it in the Straw. There is, however, no necessity for any hesitation in using the Tables on account of this discrepancy, as from each of them we may draw the conclusion, that to obtain a good crop of Wheat, *i. e.* both ear and straw, the presence of phosphates and silicates is indispensable. We may, however, add that as these analyses have been done very lately, and with great care, they are probably the most accurate we have; it is only to be regretted that there are too few from which to form a Table similar to that of Sprengel. The analysts have not given here the per centage of ashes which they found; this is, however, an unimportant point, as they vary sometimes several per cent., the proportion of each ingredient remaining the same, according to Liebig.

TABLE III.—Analyses of 100 Parts of the Ashes

Wheat-straw.	Rye-straw.		Clover (trif. pratense.)	Potato-haulm.	Pea-straw.	Bean-straw.	Lucerne.	of
13.	16.69	Silica, with Potash.	9.09	12.728	4.18 4.84 4.69	13.82	23.47	Carbonate of Potash.
0.4	1.73	Sulphate of Potash.	17.16	13.528	8.37	16.04	8.16	Carbonate of Soda.
3.2	0.35	Chloride of Potassium.	3.87	3.069	11.99	33.4	3.33	Sulphate of Potash.
	0.56	Chloride of Sodium.	2.37	1.67	3.72 2.98	10.75 4.63	2.27	Common Salt.
	trace	Lime, with Silica.	33.55	33.216	49.73 43.06	47.81	41.81	Carbonate of Lime.
0.6	1.93	Magnesia.	9.11	4.16	1.39 3.76	1.92	6.41	Magnesia.
2.3	2.5	Phosphate of Lime.	15.37	11.97	1.15 3.73	6.43 5.15	11.5	Phosphate of Lime.
	1.28	Phosphate of Magnesia.	3.91	6.79	7.93	4.57	0.01	Phosphate of Magnes.
	3.2	Phosph. ox. of Iron.	0.64	1.24	3.61	0.0	0.81	Phosphate of Iron.
	0.94	Carbonaceous matter.	0.36	0.16	1.3 carb. mat.	1.3		Phosphate of Alumina.
71.5	63.69	Silicic Acid.	2.79	5.438	28.61	15.54	2.26	Silica.
Berthier.	Fresenius.		Liebig.	Do.	Hertwes, at the Glessen Laboratory.			

Meadow Hay			Beans	Peas	Wheat (Red). Do. (White) Rye		
69.1		Silica.	64.59	53.74%	53.01	52.96	36.51
16.1		Phosph. of Lime.	6.57	8.67	6.27	5.06	33.13
5.		Perphosph. of Iron.	9.35	18.77	5.51	5.35	5.06
3.7	8.9	Lime.	10.11	13.72	25.91	25.96	9.07
		Magnesia.		2.48	1.85	1.85	3.04
1.3		Phosphate of Iron.					
2.3		Gypsum.	1.94	3.09	3.09	trace	trace
1.5		Sulphat. of Potash.					
2.	0.8	Chloride of Potassium.	1.11		0.94		
		Carbonate of Soda.				.15 .50	4.09
		Loss.				0.83	
	Haidlen.		Bucheer.		Will.	Fresenius.	Will.

Table IV. almost explains itself. It is unnecessary here to explain the nature of gluten, as it has already been done in the *Gazette*; sufficient to say that, as it is the chief element of nutrition, we have calculated the quantity of certain field crops which are required in order to obtain 100 lbs. of it. The great quantity in Peas and Beans will be remarked at first sight, as only 314 lbs. of the latter are required in order to furnish the same quantity of gluten which is contained in 4359 lbs. of Potatoes. Column 4 gives the quantity of gluten in an average crop upon one *acre*, by which the value of food in this particular may be estimated.

Table V. will give a very good comparative view of the constituents of some of the most usual field-crops. The salts there mentioned are never absent from articles of food, being all necessary in the animal economy. The silica appears to be used chiefly, if not entirely, in giving firmness to the stalk, as from the analyses of Berzelius and Will, only a trace is to be found in the grain.

TABLE IV.—Showing the amount of Gluten in the following substances, their comparative value as food, and the price of 56 lbs. of excised nutriment in each.

	Weight of each substance containing 100 lbs. of Gluten.	Amount of Gluten per acre—	Price of 100 lbs. of Gluten in each substance.	Estimated value to the Farmer—the data of these calculations.
	lbs.	lbs.		
Wheat	677	212·7	2l. 18s. 11½d.	7s. per 56 lbs.
Do. Straw	5376	45·8	5l. 11s. 6d.	2s. 6d. .. cwt.
Barley	798	199·2	2l. 0s. 2½d.	6s. .. 56 lbs.
Do. Straw	6288	27·	4l. 2s. 9½d.	1s. 5d. .. cwt.
Oats	736	230·3	2l. 8s. 4½d.	2s. 8d. .. 40 lbs.
Do. Straw	4480	50.	4l. 0s. 0d.	2s. .. cwt.
Maize	886			
Potatoes	4359	513·	2l. 14s. 8½d.	28s. .. ton.
Beans	314	488·5	1l. 6s. 2d.	5s. .. 64 lbs.
Peas	396		1l. 13s. 0d.	
Lucerne, dry	973			
Do. fresh	5376			
Red Clover, dry	482	481·	16s. 7d.	60s. .. ton.
Do. fresh	916			
Beetroot	6203	918·	1l. 7s. 8½d.	10s. .. ton.
Turnip	2487	566·6	1l. 13s. 10½d.	
Carrot	5376	750·	1l. 8s. 9½d.	12s. .. ton.
Buckwheat	672			
Meadow Cat's-tail, and Rye-Grass	1491			

TABLE V.—Classification of Plants according to their Mineral Constituents.

	Salts of Potash and Soda.	Salts of Lime and Magnesia.	Silica.	Authorities.
SILICA PLANTS.				
Oat-straw and seed	34.00	4.	62.00	Wiegmann & Polstorf.
Wheat-straw	22.	7.30	61.05	Saussure.
Barley-straw & seed	19.	25 7	55.03	Fresenius.
Rye-straw	15.65	16.52	63.89	Hertweg.
LIME PLANTS.				
Tobacco (Havannah)	24.74	67.44	8.3	—
,, (Dutch)	23.07	62.28	15.25	—
Pea-straw	27.82	63.74	7.81	—
Potato haulm	4.20	59.44	36.40	Berthier & Braconnot.
Sainfoin	33.23	61.65	2.79	Hertweg.
Meadow Clover	39.20	56.	4.90	Wiegmann & Polstorf.
POTASH PLANTS.				
Maize-straw	71.	6.5	18.	Saussure.
Turnips	81.6	18 4		
Beetroot	89.	12.		
Potatoes (tubers)	85.81	14.19		
Helianthus tuberosus, sun-flower	84 3	15.7		Braconnot.

TABLE VI.—ANALYSIS OF WOOD ASHES, BY BERTHIER.

Analysis of 100 parts of portions soluble in water.

	Birch	Chesnut	Fir (3 analyses)	Oak	White Beech	
1st	—			0·83	2·8	Per centage of ashes.
2d	14·6	38·4		55·7	12·1	Part soluble in water.
3d	84·1			44·6	87·8	Part insoluble in water.
4th	19·75	5·75	0·5	15·5	26·	Carbonic acid.
5th	5·8			6·9	1·1	Sulphuric acid.
6th	3·9	1·		0·	0·1	Muriatic acid.
7th	1·		2·75	1·	0·5	Silica.
8th	75	51·0	90·25 (soluble in the water. 7·50 of pot-ash	25·5	9·4	Potash and Soda.
9th	13·0	4·3	4·5 (soluble in dilute acid.	3·13	25·5	Carbonic acid.
10th	4·3	3·5		1·6	0·8	Phosphoric acid.
11th	0·5	0·8		0·8	0·8	Silica.
12th	0·5	0·5		2·3	0·5	Lime.
13th	0·8	0·3		0·8	0·4	Magnesia.
14th	0·3	0·5		1·3	0·1	Oxide of Iron.
15th	0·3			0·8	0·4	Oxide of Manganese.

Analysis of 100 parts of portions insoluble in water.

ON THE CULTIVATION OF FLAX.—No. III.

THE next process in the cultivation of Flax is weeding, which is one requiring much care and attention, although the previous preparation of the land for the crop should have been so conducted as to have left few root-weeds in the soil. Annual weeds will, however, spring up among the crop, and these also must be removed. This is usually done when the plants are a few inches in height, and can be readily distinguished from the weeds, which will be between the third and fifth weeks after sowing. It is performed by women and children, who, with coarse cloths around their knees, creep on all-fours, which injures the young plants less than walking on them, and enables them more readily to distinguish the weeds. They work also facing the wind, so that the plants laid flat by their pressure upon them, are thus at once blown up again, or at least assisted to regain their erect position. This precaution may appear unimportant, though it is invariably practised by the Continental farmers, and shows, in a striking manner, the minute attention which they pay to every process connected with the culture of the plant.

When, from any cause, it is wished to lay down the land to Grass, on which Flax has been grown, the preparation of the land for the Flax renders it a favourable opportunity to sow the Clovers and Grasses; and this is a common course of cropping in districts in which that crop is grown. In this case the seeds of the forage and herbage plants are either sown with the Flax-seeds, or just before the weeding of the crop; the treading of the weeders, and pulling up the weeds, in the latter case, affording the necessary covering. Flax, however, is too close a growing crop to admit of the Clovers and Grasses being grown among it, without interfering with their growth; nor does the admixture take place without injury to the Flax-crop itself; still it is supposed that what is thus lost on the one hand, is gained on the other. The Flax-crop is but a short time on the land, being pulled while vegetation is still active; and the pulling of the crop loosens the soil, and causes the Clovers and Grasses to push forward afterwards with increased vigour. But this early pulling of the Flax also admits of the other seeds being sown afterwards, when a slight harrowing only is required, to prepare the land for their reception; and this, indeed, seems the preferable practice, though the former is that most frequently adopted.

These, then, are the principal details connected with the cultivation of Flax which should come within the province of the farmer to perform. So far, no difficulties have presented themselves in the way, and no departure from the ordinary operations of husbandry has been required; but the after management involves a degree of minute attention to details which the other labours of the farm rarely admit of being devoted to it. Flax has not hitherto been cultivated to any great extent in this country, and however great the returns from it may be, so long as the preparation of the crop for market devolves on the grower of it, the quality will be inferior and the crop unremunerating. Even in those districts on the Continent where its cultivation is best understood, the grower does not prepare it for market, but very wisely leaves that department to a class of persons who devote themselves solely to that business. These Flax-factors, therefore purchase the crops while growing, paying the farmer at the time, so that he is relieved from all further trouble with it. From the superior management which continued practice enables this class of persons to adopt, they can afford to give the farmer even a better price for his crop, while growing, than he would probably obtain after preparing it for market himself; and the advantage of having the return from his crops in less than three months after sowing it is, of itself, too important to be overlooked. It is to this system of management that the superior quality of the Continental Flax is chiefly to be attributed, and before Flax can be grown advantageously in this country, a similar practice must be introduced. The state of Flax culture in Ireland affords a striking illustration of the truth of this remark. The crop has been cultivated there almost from time immemorial, and a public Board has been in existence in that country for upwards of a century, enjoying a Parliamentary grant of over 20,000*l.* per annum, exclusively devoted to the encouragement of the linen manufacture; but notwithstanding all this, the preparation of the crop for market was conducted in such a very inferior manner, and the prices thence obtained so low, that the growth of the crop, a few years ago, was all but given up altogether. The fact is, ordinary farm labourers can never be expected to conduct this work in a proper manner, it being so different from any other part of their labours. Not, indeed, that the operations connected with it are in themselves difficult of execution, or not easily understood; but to insure success, and produce fibre of good quality, the peculiar manner of performing them, and the precise time at which they should take place, require such a degree of experience as long and continued practice alone can give. The watering, for example, is a very simple process, yet the water itself may contain matters incompatible with the production of Flax of a superior quality; and a short time either too long or too short in the steep will prove equally, if not more injurious. The grassing, too, is an exceedingly simple operation, the intention in this case being to remedy any defects in the watering, and to get any impurities which may be carried from the ponds washed off by the rains; and further to improve the colour of the whole by exposing it to the sun, or, to use the familiar phrase, to get it bleached. Yet, simple as is the latter process, and indispensable as it must appear on the slightest reflection, it is not a little singular, that until the Belfast Flax Improvement Society directed attention to the subject, its proper performance in Ireland was to be regarded as the exception—not the rule—notwithstanding the degree of attention which Flax culture has for such a lengthened period attracted there. The Irish Flax was uniformly characterised by its want of uniformity both in colour and texture, circumstances which are attributable to defects in grassing.

These observations are made not so much with a view of preventing the more general culture of Flax in this country, as to guard the cultivator against failure in making the attempt. Flax is, beyond question, either a very profitable, or a very unprofitable crop, according to the course of proceeding adopted. It is, no doubt, often found unremunerating, when the different items of expense are taken into account, but in such cases it may be presumed that the management has been defective, seeing that experience has so fully confirmed its value in other cases.—*J. Sproule.*

(To be continued.)

Home Correspondence.

The Potato.—Notwithstanding the attention the Potato has received from its cultivators in field and garden, it is lamentable to observe how frequently a failure of the crop takes place, either intimating that a proper mode of culture has not been ascertained, or if known, has not been adopted with sufficient care. It is generally acknowledged that the chief source of failure exists in the tuber used for seed, and much anxiety is usually entertained amongst Agriculturists in order to obtain seed with germinating qualities unimpaired; but here can be as little doubt that other circumstances also enter into the realisation or disappointment of the farmer's hopes. A few remarks on these two topics of seed and circumstances, may find a place in your columns, as extensive and repeated observations have shown that there seldom or ever would be a complaint of failure if proper means were taken to avoid it. Potatoes intended for planting in the spring should not be dug up until the spring, but allowed to winter in the soil where they grew. This advice is a matter not of opinion, but of fact. On many farms, there is no doubt, this plan cannot be adopted, because the Potato-land is wanted for winter Wheat; but there are abundance of farms where it can, particularly hill-farms, where no Wheat is cultivated, and from which situations seed-Potatoes are in general procured. The practice, so far as I am aware, first took place accidentally. Frost and snow had set in early, before the Potato crop had been secured, and the consequence was, that a portion of it could not be got at again till winter had passed over. The farmer conceived that his undug crop would be totally destroyed by the frosts of winter, but he found that only the surface Potatoes were gone,—all others, even with a light covering of earth, escaped unhurt. These were used for seed, and sprouted without a single failure. Here it may be necessary to combat a common notion, that a very slight frost is sufficient to injure the tuber: it will only do so under certain circumstances; and these are, sudden thaws after exposure to frost. Every one knows that a frozen limb, if brought suddenly near a fire, would be killed outright; but if first rubbed with snow, then plunged in cold water, and the natural temperature afterwards gradually restored, it will live, and probably escape without injury. As with animal beings, so with plants; a sudden elevation of temperature is more disastrous than the mere exposure to frost, unless that is intense. This fact, with regard to the Potato, could be borne out by many examples—two may suffice. A quantity of Potatoes in an open shed were accidentally exposed to frost, so that they adhered in lumps by its influence; a portion of them was, immediately when noticed, covered thickly with straw, and allowed to thaw very gradually; the remainder were brought into a warm sun: the former, after the frost had by slow degrees gone out of them, were found to be uninjured, or nearly so; while the latter were very nearly useless. The other example is rather a curious one, although a verification of the proverb, that "too much kindness may kill." In the severe winter of 1814, the Potato-pits of the cotters and other labourers were for a protracted period frost-bound and inaccessible, so that on the accession of fresh weather there was a general move to get in a portion of the hoarded roots. It was found on this occasion, that in a number of the pits the Potatoes were frosted, and strange to say, these were in general found in those lots most deeply and carefully covered with soil! The frost storm had lasted so long and been so severe, as to penetrate even the most thickly-earthed pit. The thaw came with a very moist S.W. wind, and of course penetrated most readily into the shallowest pits. The thaw in these had been completely yet gradually effected, while in the others more thickly coated the frost was not displaced, when the Potatoes contained in them were exposed suddenly to the influence of a very mild wind. The plan recommended of keeping seed potatoes undisturbed in the soil wherein they have grown, is practised on a few farms in this vicinity (S.E. of Perthshire) with the desired effect of preserving unimpaired their vegetative properties. The same thing is practised by the natives of New Zealand, with this difference that the seed is left in the soil when grown to grow again another crop; this plan, of course, will not suit the farmers of Britain, but may sometimes be witnessed in gardens where a last year's Potato sprouts up, is allowed to stand, grows with great vigour, and generally furnishes an enormous crop. Where Potatoes are allowed to remain in possession of the soil which grew them, it is advisable to take up every other row or drill, and earth up the residue more deeply: this is the mode of procedure in the instances noticed, and the crop is almost as secure as if pitted or housed; in many cases more so, for there is no risk of dry rot. If farmers suitably circumstanced were to carry the above recommendation into effect, an adequate supply of seed Potatoes might be furnished for the market, and the hazard of failure almost cease to annoy us. Where Potatoes are kept over winter in the above natural manner, they may in general be cut into eyes with safety, which is not commonly the case with such as are taken up in autumn. If the latter are planted whole, a failure does not often occur. An extensive Potato-grower in this immediate vicinity never cuts a root, and scarcely ever fails of an excellent crop; he gives more room in planting both in the breadth of space between drills and in distance between the seed roots. We shall inquire into the circumstances suitable for the Potato in another communication. —*Vidimus.*

Bones.—"A. H., Aberdeenshire" states at page 188, that his "boiled bones were about 12 lbs. per bushel heavier than the unboiled." This is singular, as the unboiled bones which I used weighed 56 lbs. per bushel, whereas some boiled bones offered me for sale weighed only 28 lbs. per bushel. There is an extraordinary difference in these statements; I can only account for it by "A. H." having purchased his boiled bones "whole," whereas mine had been boiled after crushing, which would no doubt have the effect of extracting a much greater amount of grease, and probably cause a great difference both in weight and quality. It is very evident that there

a great variety in the bones offered for sale, and it is only by repeated experiments that their respective merits can be ascertained. It has, however, been clearly proved, in several instances, that land feels the good effects of unboiled bones for many years. Is this the case with boiled bones?—*E. R., Hadsor.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY Council was held, at the Society's House in Hanover Square, on Wednesday last, the 17th of April, present, David Barclay, Esq., M.P., in the Chair, Thos. Raymond Barker, Esq., John Raymond Barker, Esq., W. R. Browne, Esq., Colonel Challoner, Capel Cure, Esq., James Dean, Esq., A. E. Fuller, Esq., M.P., Humphry Gibbs, Esq., Brandreth Gibbs, Esq., C. Hillyard, Esq., Fielder King, Esq., James Marmont, Esq., Townshend Mainwaring, Esq., M.P., William Miles, Esq., M.P., Alexander Ogilvie, Esq., Henry Putland, Esq., John Read, Esq., Joshua Rodwell, Esq., William Shaw, Esq., Professor Sewell, Richard Trench, Esq, Thomas Turner, Esq., Thomas Tweed, Esq., and Henry Wilson, Esq. The following new Members were elected :—

Byre, Robert, Lyndhurst, Hants
Gray, Rev. James, Rector of Dibden, Southampton
Spear, William, Totton, Southampton
Smith, Rev. Alfred, Old Park, Devizes, Wilts
Frampton, John, Cerne-Abbas, Dorchester, Dorset
Hall, Joseph, Cailington, Bromyard, Herefordshire
Clutterbuck, Rev. James Charles, Long-Whittenham, Abingdon, Berks
Napier, Peach, Mousehole Foundry, Millbrook, Southampton
Mountain, Rev. Thomas, Baighton Vicarage, Chesterfield, Derbyshire
Bottomley, Joseph, King's Villa, Pontefract, Yorks.
Stanbey, J. Barnard, Fetcham, Leatherhead, Surrey
Wight, James Lane, Ledstone Court, Bromyard, Herefordshire
Cotton, Charles Robert, Broughton Hall, Worthenbury, Malpas, Cheshire
Worthy, Samuel, Temple-Coombe, Wincanton, Somerset
Brown, John, St. James's Street, London
Lloyd, J. A., Leaton-Knolls, Shrewsbury

PRIZE ESSAYS.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the adjudication of the Society's prize of 50*l.*, for the best Report on the Agriculture of Wiltshire, to Mr. Edward Little, of Lower Sheldon Farm, near Chippenham, Wiltshire ; and the adjudication of the Society's prize of 50*l.* for the best Report on the Agriculture of Norfolk, to Mr. R. N. Bacon, of Norwich. These Reports, containing a statement of the ordinary course of cropping adopted in the different soils of each county respectively ; the breeds of cattle, sheep, and pigs, most generally bred or fed within them ; the state of their drainage ; the implements used ; the number of horses or other cattle employed in the different operations of husbandry ; the tenure on which the farms are generally held ; the wages of labour ; the average amount of the Poor's-rate ; and whether any and what alterations and improvements have been made in the system of Agriculture pursued within the county of Wilts, since the Report made to the Board of Agriculture by Thomas Davis, and published in the year 1811 ; and within the county of Norfolk since the Report made to the Board of Agriculture by Nathaniel Kent, published in 1796, and by Arthur Young, in 1804. Mr. William Stace, of Berwick, near Lewes, in Sussex, announced himself as the author of one of the four essays on the Discrimination of Soils, which had been "highly commended" by the Judges ; and expressed the satisfaction it gave him to place his essay in the hands of the Council for any use to which the Journal Committee might consider it as available in promoting the objects of the Society, "thinking that any essay on that subject might contain some fact or description of appearances that might be found of service to the chemical inquirer, and assured that every assistance ought to be rendered to the scientific man that the practical man could possibly afford." The Council ordered their best thanks to be returned to Mr. Stace for the permission he had granted, and his letter to be referred to the Journal Committee.

SEEDSMEN.—Messrs. Thomas Gibbs and Co., of Half-moon-street, Piccadilly, addressed a letter to the Council in acknowledgment of their official appointment as the Seedsmen of the Society, assuring the Council the mark of confidence the Society had conferred upon them in that appointment, would stimulate them to persevere in their endeavours not only to promote the interests of Agriculture in general, but to introduce all such seeds as appeared to them most likely to be useful, and to supply those only in every branch of their stock, which they could guarantee to be of the purest and most genuine description.

NATURAL MANURE.—Mr. W. R. Churchill, of Colliton, near Dorchester, Dorset, transmitted to the Council a specimen of soil which on exposure to the air had become changed into a powerful manure for Grass-land, with the following account of its occurrence :—"I took the specimen now forwarded to the Council from a very high bank thrown up about six years since in a strong, sour kimmeridge clay soil, producing a coarse sedgy Grass and English Furze, not worth more than five shillings a-year rent. This bank was formed by a very deep ditch used for a drain as well as a protection to a hedge planted upon it. The substance in question appeared at a distance similar to white stone, and on inquiry I found had not existed in the bank when originally thrown up ; there was a stratum of it about the middle of the bank in different stages of formation extending more than four hundred yards. The bailiff, in removing a bank in similar soil, but of better quality, found a large quantity of this substance, and on putting it over some good meadow land of a loamy soil on a clay bottom, he found it produce wonderful fertility, far superior to other manures. How this substance is formed is a mystery yet to be solved ; at all events, it is not an original product of the soil, but is in a progressive state of formation. It is full of fairy filaments, with a cineroous white, soapy marl. It does not effervesce in sulphuric acid, and is of a fatty nature, not tasting of saltpetre, although generated by exposure to the atmosphere. The great question would be to ascertain whether any artificial process would expedite its formation ; for if by throwing up heaps of this poor soil such a manure could be generated, the surrounding barren land might be greatly meliorated and become worth cultivation : it is within three miles of Weymouth, far removed from the chalk formation.

ARTIFICIAL MANURES.—Mr. Miles, M.P., called the attention of the Council to the desirableness of including in the model experiment, proposed to be tried this year by various members of the Society, and which would be brought before the Council for final consideration and adjustment of detail at their next meeting, a comparative trial of the respective merits of the South American and African Guanos, applied in equal quantities to the land. An interesting discussion then took place on the facility with which artificial manures of every kind could be adulterated, the various modes in which this practice was systematically conducted in the metropolis and elsewhere, the importance of the strictest scrutiny into the quality of such manures, and if possible the application of some simple and efficient test, by which the amount of adulteration in the sample of each of the different manures intended to be purchased could at once be estimated.

SWEDISH TURNIPS.—Mr. Alexander Ogilvie informed the Council that during the nineteen years he had lived as agent with the late P. L. Brooke, Esq., of Mere Hall, Cheshire, he had experienced very great and uniform success in the management of his Turnip crops, a result which he attributed to the quality and amount of manure he had employed, and the early growth he had given to the plant by sowing the seed in immediate contact with it in a state of active fermentation. One of his fields, from which in 1840 he had obtained no less an amount of Swedish Turnips (cleared of tops and bottoms) than 43 tons per statute acre, was a clayey loam with a retentive subsoil, effectually drained with tiles some years ago by cutting the drains not more than from five to six yards apart. In 1839 it was broken up from pasture for oats, the crop being good, and as soon as the oats were cut and removed from the field, he had the stubble skim-ploughed from three to four inches deep ; in that state he allowed the field to remain a month or five weeks, and then had it ploughed from sixteen to eighteen inches deep with Smith's subsoil plough. After this operation, the field was not again disturbed until the spring of 1840, when he had it harrowed as soon as it was sufficiently dry. Between the end of March and the third week of May, he had it ploughed and harrowed three different times. From the subsoil ploughing in the autumn, the ground was very mellow in the spring ; and after it was three different times ploughed and harrowed, the soil was very fine. The next operation was forming the drills, which were about 30 inches apart. While this was going on, he had the dung, in a moist state, carted out, and spread in the hollow between the drills, with some bone-dust sown over it and covered in immediately (to prevent evaporation) by having the drills split out over them. The quantity of dung per statute acre applied, was from 26 to 28 tons ; and over this dung, he had sown with the hand about half a ton of the best raw-bone-dust per statute acre. After the dung and bone-dust were covered in, from two to three inches from the surface by the splitting of the drills, he immediately, while the dung and ground were moist, had the seed sown by a machine, at the rate of 3lbs. weight per statute acre, taking care that it was deposited in the dung ; and thus, by being so deposited, it vegetated immediately, and grew out of the way of the fly in the course of 8 or 10 days. The moisture of the dung and soil, and the heat occasioned by their admixture with the bone-dust, forced the plants for the first fortnight as favourably as if placed in a hot-bed. At the end of this period, the plants were almost ready for singling out, which, as soon as they would bear the operation, he had done with the hand-hoe from 14 to 16 inches apart.—Mr. Ogilvie stated, that this was the method he had adopted in Cheshire, during a period of 18 years, and had never once missed a crop. He believed the lightest crop he ever had during the whole of that period, exceeded 36 tons per statute acre. He never sowed later than the last week in May, and whenever weight of crop was wanted, he thought it absolutely necessary to sow during that month. The seed was obtained of Mr. Skirving, of Liverpool. The plants were twice horse-hoed, and once hand-hoed after singling. In the previous season all the crop was removed from the ground by the latter end of October. It was ploughed and sown with Wheat during the first week of November ; and it was in reference to this grain crop that the unusual amount of manure applied to the Turnips was found, in the result of produce in both cases, to be both advantageous and economical.

DRAINING LEVEL.—Mr. W. B. Webster, of Hounsdown, near Southampton, presented to the Society one of his newly-invented Levels for the purposes of draining. This level is formed of an oaken rectangular rod, turning upon an axis placed at the middle of its lower surface, and by means of a plate and screw secured firmly at a horizontal level or any given inclination. On its upper surface, immediately above this centre of motion, is placed a small spirit-level ; and at each end of the rod an upright plate of brass, containing the cross wires. At the end nearest to the observer, is placed an additional sight moveable by means of a screw within a graduated groove, which indicates by the value of its divisions not only the line of horizontal level, but the rise and fall of distant objects above or below the place of observation. Mr. Webster claims for this instrument the advantages of cheapness, great simplicity, and its requiring no skilled person for its use ; in addition to its capability of giving by inspection the rise and fall of land intended to be drained.

HORSE WHEAT-HOE.—Mr. John Bowers, of Westdean House, near Chichester, expressed his intention of exhibiting at the ensuing Southampton Meeting in July, an instrument invented by the Rev. L. Vernon Harcourt, for hoeing the drilled Wheat on his own farm, which had been found practically useful for that purpose ; and Mr. Bowers had no doubt, from the experience he had himself had in the employment of the implement in question, that it would be found of great use, being very simple in its construction, and different in principle from all implements hitherto invented for the purpose of hoeing.

SMALL FARMERS.—Mr. Nicholls, as one of H.M.'s Poor-law Commissioners, having become extensively acquainted with the condition of the small Irish farmers, during his official connection with that part of the kingdom, and convinced of the great advantage they might derive from the cheap circulation among them of a compilation on farming topics, adapted to their comprehension, requirements, and actual condition, undertook the task of preparing a work of that character, under the title of the "Farmers' Guide," which had passed through two large editions. The success of that publication, compiled with the view of imparting useful information to the small Irish farmer, and stimulating him to the adoption of improved methods of cultivating his land, had induced Mr. Nicholls to undertake, with the same disinterested motives, a work which might prove advantageous to the same class of farmers in England, exceeding in number, and he believed in extent of occupancy, the larger and more intelligent class of farmers, taking the country from end to end. In this compilation, Mr. Nicholls had endeavoured to form a compendium of all information essentially necessary, in a practical sense, to the parties for whom it was intended—excluding everything of a speculative or dissertational character, and recommending to their notice those points and details only, which had stood the test of experience : having been careful to be as brief, simple, and clear as possible on every topic. As he had given the copyright of the work to Mr. C. Knight, he had no further interest in its distribution than a desire that the small farmers for whose use it was compiled, might be enabled to reap whatever benefit it was calculated to confer ; and in order to render its publication as cheap as possible, Mr. Knight had included the work under the title of "The Farmer," in his series of "Guides to Trade, Service," &c. ; circumstances which he hoped would facilitate its circulation, and induce landed proprietors to purchase it for distribution among their tenantry, as had been done to some considerable extent in Ireland, with Mr. Nicholls' previous publication. Mr. Nicholls concluded his communication by hoping that, as the efforts of the Royal Agricultural Society of England were unceasingly directed to the promotion of improvements in every shape, they would grant him the satisfaction of finding that his little work, intended within its own sphere to accomplish the same object, would not be considered altogether unworthy of their approbation.—The Rev. John Barlow, Secretary of the Royal Institution, communicated to the Council a general invitation to the Members to accept a free admission to Professor Solly's Lecture, in the theatre of that establishment, on the ensuing Friday evening, the 19th of April, on the Chemistry of Vegetation and its general application to Agriculture.—Mr. Ermen, of Manchester, addressed a letter to the Council on the subject of the prevalent disease in Potatoes.—Mr. Shaw communicated a letter from Viscomte de Secqueville, on the subject of a monument intended to be erected in honour of M. Dombasle.—Sir Charles Morgan presented copies of the prize-sheets of his show at Court-y-Bella, on December 18, next.—Mr. Hutchinson presented a copy of his work on the Practical Drainage of Land.—Messrs. Gibbs and Myers, copies of their collection of results in the trials of guano by their correspondents.—Mr. Purchas, copies of the Reports of the Monmouth Farmers' Club.—Professor Bernays, copies of his Lectures on the Theory of Agriculture.—The Statistical Society, Labourers' Friend Society, and Guernsey Agricultural Society, copies of their proceedings ;—and Mr. Nowell, a copy of his work on Self-supporting Schools of Industry and Mental Discipline ; for all which, and other communications, the best thanks of the Council were ordered. The Council then adjourned to Wednesday next the 24th of April.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

AT the meeting of the Council, on the 10th inst., upon considering the premium sheet, and the rules and regulations of the approaching Cattle Show, it was ordered that the article offering premiums for male animals, should be so framed as to require that the animal should remain in the country for a definite period, and at a proper season after the Cattle Show ; and also that it be an instruction to the judges of breeding stock to give a decided preference to such as shall appear in a healthy but not over-fed condition ; the Society being anxious to mark strongly the evil effects both upon the utility of the individual animals and upon their breeds, of keeping bulls in too fat condition. The half-yearly meeting of the Society was fixed to take place on Friday, the 19th inst.

FARMERS' CLUBS.

Beccles.—At the last meeting the subject under discussion was Mr. Stace's Prize Essay on the Rotation of Crops for Heavy Lands. The rotation therein recommended was a continual course of cropping ; this, at first, appeared so extraordinary, that it was thought impracticable ; but, upon

mature consideration, the objections were not so great, and it was argued by some members that the rotation might be pursued upon what we here call good deep heavy lands; though upon the generality of wet soils it was agreed as not being desirable to depart from the long-established course, commonly called in Suffolk the four-course shift, viz. fallow or Turnips, Barley the following spring, then Clover or Beans, followed by Wheat. This has been the system for many years in both Norfolk and Suffolk upon wet heavy lands, though of late a proportion of Tares have been grown upon the Wheat stubbles —some part for soiling with horses in the summer, and the remainder fed off with sheep; the land being then broken up, and fallowed for Barley. It has, however, been found that such Tare-land is not kind for Clover; it is, therefore, usual to grow the Tares upon that proportion of the quarter intended for Beans, after the Barley crop is removed.—*C. Gibson.*

Probus.—At the last meeting of this Club, a lecture was delivered by one of its members on the Various Insects affecting the Turnip Crop. The lecturer confined himself chiefly to three of the most formidable enemies which infest the Turnip crop—the Turnip fly or beetle, the caterpillar, and the wire-worm. Respecting the first, the Turnip flies, it appears that the history of these little pests for a long time puzzled, not only the practical Agriculturist, but the man of science likewise; but it is now better understood. They hybernate, or live through the winter in a torpid state, and may be found under the bark of trees, &c.; but, inactive as they are during the winter, on the first indication of spring, they quit their winter quarters for sunny situations, and feed in gardens on Cabbage-plants, as early as March, and in April they get away to the fields. May and June are the periods when they are to be most dreaded by the farmer, just as the young Turnips are coming into leaf. The sexes pair between April and September, and the female beetle lays her eggs (about one egg daily) on the under side of the leaf. It requires about 30 days to carry the insect through its various stages, up to the time when it becomes a perfect fly or beetle. It remains an egg about 10 days, a maggot 6 days, and a chrysalis 14 days. It is, however, in their last and perfect stage that these insects are most to be dreaded. It is the beetle that destroys the two first smooth leaves of the Turnip by piercing them like a sieve, destroying the cellular tissue, and stopping the growth of the plant. It was at this stage of their existence that the lecturer recommended an instrument now frequently used by Cornish farmers, called the fly-catcher—a board newly painted or tarred—which, while the flies are numerous, should be passed over the same ground three or four times a day; by which means myriads may soon be destroyed. The lecturer then alluded to the effect of lime, sulphur, soot, fumigation, and many other remedies, but did not think they could be depended on. He believed that thick sowing, and the use of artificial manures, drilled in with the seed, were more effectual, as the Turnip, when in rough leaf, is not in any danger from the attacks of the beetle; therefore, it must be evident that our first care must be to force on the young plant, and this can only be done by proper manures, or using such means as he had recommended to destroy or drive them away. Just after the Turnips have outgrown the attacks of the fly, they are liable to the ravages of the caterpillar, which the lecturer considered as only a less formidable enemy, because there are fewer seasons which produce them in sufficient abundance to injure a crop materially; for when they do become numerous, there is no greater pest. With respect to the remedy, the lecturer said that the only one which he knew was picking them by hand. He knew of some fields that had been cleared of caterpillars by means of a flock of ducks driven on them; but there are some kinds which ducks refuse. About the same stage of its growth the roots of young Turnips are exposed to another formidable enemy—the wire-worm, which is the most troublesome of all insects to the Agriculturist. It appears that we are yet very imperfectly acquainted with these insects: it is stated that there are upwards of 60 different species of them. It is probable that a very considerable portion of these feed upon our most valuable cultivated plants. The rooks will destroy them, but these birds, while searching for other prey, pull up sound and mutilated plants indiscriminately, so that both worms and Turnips are united in one common distinction. In this case we should say, "Save me from my friends." The lecturer considered that the rooks were increasing too fast; their numbers were so great, that they frequently caused much trouble to the farmer. He would diminish them, but certainly not destroy them altogether.

Reviews.

On the Evils arising from the existing Irregular and Unreasonable Division of Land into Fields (der Flurswang.) By Prof. Knaus. Stuttgard, 1843, Cotta, 8vo.

A SHORT notice of this work will show our readers the minute attention which our continental neighbours pay to every branch of Agriculture. It may also be useful to those engaged in parcelling out land in the many extensive inclosures that are taking place; and still more so to our Agriculturists in the Colonies. Amongst the many impediments which check the exertions of the small farmer, the "field-constraint" * occupies a prominent place, preventing, as it does, the owner of small plots of land from cultivating or otherwise using his ground in the best manner. The above work, intended to obviate this inconvenience, begins with an exposition of the origin and the disadvantages of the "field-constraint," to which an inappropriate parcelling out of the fields, the want of proper by-roads and a proper direction of the drains, the shapeless form of single fields, and a constant interference and collision of neighbouring farmers, are owing. In several parts of Germany (especially in Nassau) means have been taken to obviate this inconvenience by a systematic division of the fields, and Prof. Knaus contends, that it is only by relieving the small farmer of every such restriction that Agriculture can reach its highest degree of perfection. This new parcelling out of fields is to be made on the following principles:—1. That the tithings or estates should be intersected by regular by-roads, in accordance with the nature of the lands. 2. That all fields, or at least the greater part, should have such a regular form, that all encircling or crooked-shaped fields be as much as possible avoided. 3. That all the fields should abut with their smaller extremity, if not with both, on a by-way, so that every owner, even of the smallest plot, should be able to approach his field without intruding on other people's ground; and it might thus be also possible that the ploughmen could turn on the by-way, being neutral ground. 4. That all fields situated within the same natural boundary, being nearly all of the same length, should differ only in breadth, and that irregular forms be avoided in all possible cases. 5. That a division of single plots should only be permitted as far as their breadth is concerned, and this merely to a certain extent; no division to take place so as to isolate a plot altogether from the by-way, by which that vexatious right-of-way system would be again unavoidably introduced. 6. In all cases where a new parcelling out of plots of land takes place, care should be taken that each farmer should take his plot next to one he already possesses, the necessary regard being paid to the quality of soil, &c. 7. The above, however, are not to prevent, but rather to facilitate, the exchanging of land between owners of fields on the same, nay, even on different plots of land, so that the number of subdivisions on the same plot should be decreased as much as possible. 8. The limits of anciently-established plots should by no means be respected, especially if they be based on unnatural demarcations; and their number should be decreased as much as possible; also all unnecessary by-ways, ditches, drains, &c., should be abolished. 9. The new by-ways should be so macadamised with stone, that they would be passable in every season, especially in winter, by dung-carts or waggons. 10. The drains, as well the open as the covered ones, after having been properly laid out, should be kept in repair at the expense of the hundred or tithing.

The author does not shrink from acknowledging the many difficulties in the way of his plans (especially in plots of land much cut up by differently-owned fields); yet he shows from experience that such difficulties may be overcome by an earnest desire to be useful to ourselves and posterity, and points out the best means to effect it. The impediments hitherto thrown in the way of abolishing "field-constraint" appears to Dr. Knaus to be capable of the following arrangement:—1. Want of instruction and encouragement; 2. Deficiency of good surveyors acquainted with the circumstances of agriculture; 3. Want of harmony in the farmers; 4. Financial impediments; 5. Objections raised by landed proprietors, mortgagees, surveyors, &c.; 6. The fear of the instability of such improvements, on account of the legislature not paying sufficient attention to the evils produced by irrational parcelling out of fields. The author therefore proposes that the assistance of the law should be given to such transactions, in so far that the owners of every hundred should have an absolute right to decide about the future demarcation of their ground, according to a majority of votes, the number of votes to depend on the quantity and quality of land possessed. As the votes would not only give rights, but also imply obligations, the author thinks that the interests of the minority would be secure from any undue encroachment. By these means, also, we should avoid regulations being laid down on a too general basis, which would not tally with the nature and circumstances of special localities. If, therefore, the law would leave these particular arrangements to the owners of land themselves, it is not to be apprehended that they would do anything contrary to their own interest. In a legitimate decision of a legitimately-chosen majority, every owner of land would, whilst he may, to a certain extent, sacrifice a portion of his unbounded territorial rights, yet be sure that he has done so for the great good of the whole, which would, in the long run, turn to his own individual advantage.

Dr. Knaus proceeds, in the subsequent parts of his work, to establish the following rules, in relation to the doing away with "field-constraint:"—1. That the question, whether and by whom the hitherto faulty field-division of land should be rectified, is to be decided by a general meeting of the owners, and be binding even on those of the minority. 2. That the law should only regulate the minimum of each parcelling-out of fields, in the most general terms, the special stipulations to be left to the owners of fields in every hundred, tithing, or plot; this to be done, moreover, in accordance with the circumstances of locality, quality of soil, &c. He then states the advantages which have been derived in Nassau from similar arrangements (the so-called consolidation of land), on about 80 plots of land, and an area of more than 100,000 Berlin acres, and corroborates his assertion of the necessity of a somewhat stipulated minimum in the parcelling out of land, by the conviction that without it the beneficial results of a rational and judicious subdividing of landed property could not have been accomplished. He states some striking examples, how the value of property has increased by the abolition of the hitherto existing boundary restrictions, in which all care has been taken duly to compensate the small owners. Amongst others, he points out the case of a plot of meadow land, which, being properly arranged, according to the above plan, yields now 30 cwt. of Hay, instead of 3 per acre, as it used to do before, because draining had become possible under the new arrangement. The author states further, that a greater freedom of Agriculture, and the satisfaction of cultivating land properly divided, must follow the adoption of his plan.

The work of Dr. Knaus is furnished with seven maps; Nos. 1 and 2 contain the ancient and new division of fields in the tithing of Wiblingen, in the Electorate of Baden; 3 and 4, the same, in another tithing; the others are ideal plans of a tithing where the ancient faulty division of fields is changed for a rational and judicious one.—*J. L.*

* This is the literal translation of the German word *Flurswang*; the meaning of the word may be gathered more fully from the translation we have made of it in the title above.

Miscellaneous.

Fixing Ammonia.—In dung reservoirs, well constructed and protected from evaporation, the carbonate of Ammonia which forms in consequence of putrefaction is retained in solution; and when the putrefied urine is spread over the land, a part of this Ammonia will escape with the water which evaporates. On account of the formation of carbonate of Ammonia in putrid urine, it becomes alkaline, though naturally acid in its recent state; and when this carbonate of Ammonia is lost by being volatilised in the air, (which happens in most cases,) the loss suffered is nearly equal to one-half of the urine employed. So that, if we fix the Ammonia, (by combining it with some acid which forms with it a compound not volatile,) we increase its action twofold. Now this can be done in many ways *** If, for instance, a field be strewed with gypsum, or plaster of Paris, (in chemical language, sulphate of lime,) and then sprinkled with urine, or the drainings of the cow-shed, a double exchange or decomposition takes place; sulphate of lime and carbonate of Ammonia become converted into carbonate of lime (that is, chalk) and sulphate of Ammonia; and this because sulphuric acid has a greater affinity for Ammonia than it has for lime. This sulphate of Ammonia will remain in the soil—it will not evaporate.—*Smith's Productive Farming.*

Milking Properties of different Breeds of Cows.—From these reports (as may be seen by their summary) it appears that the milk of the Kerry cows was richer in cream than that of either the Ayrshire or the Galloways; but rather inferior to the former in point of quantity.

KING WILLIAM'S TOWN DAIRY.

Experiments on Ayrshire, Galloway, and Kerry Cows, from the 18th day of April to the 17th day of June, 1841.

—	Total Number of Quarts milked.	Number of Quarts set for Butter.	Number of Quarts given to Calves.	Number of Quarts sold.	Number of Pounds of Butter produced from Milk set for Butter.	—
3 Galloway cows	1134½	1115½	17	2	117½	9½ quarts of milk produced 1 lb. of salt butter.
Average number of quarts milked from 3 Galloway cows from the time of calving till the present date, 6¼ quarts per day each.						
4 Kerry cows	1769	1698	64	7	191	8¾ quarts of milk produced 1 lb. of salt butter.
Average number of quarts milked from 4 Kerry cows from the time of calving till the present date, 7¼ quarts per day each.						
9 Ayrshire cows	4313½	3986	1202½	25	302	10 1-8th quarts of milk produced 1 lb. of salt butter.
Average number of quarts milked from 9 Ayrshire cows from the time of calving till the present date, 9 quarts per day each.						

The above 9 Ayrshire cows, when milked the first summer in 1838, having then produced their first calf, and each three years old, gave in the month of July 67½ quarts per day, being an average number of 7½ quarts to each cow per day. The same Ayrshire cows being six years old at May, 1841, each having produced four calves, gave in the month of June, 1841, 93 quarts per day, average number 10½ quarts to each cow per day for the month of June, being an increase of 2 5-6ths quarts of milk to each cow per day for June. The above four Kerry cows had each produced their first calf, and were four years old at May, 1841. The above three Galloway cows had each produced their first calf, and were three years old at May, 1841.

—*English Agricultural Society's Journal.*

Experiments with Manures.—Having used a large quantity of guano in raising green crops at Ballyhidy, and having made a few experiments with different manures, I inclose a table showing the results. The green crops after Oats, the soil an adhesive clay, but all furrow-drained, and subsoil-ploughed 15 ins. deep, and limed, 50 barrels per acre, before the crops were put down—the land is now greatly improved and perfectly dry. A portion of the drained ground was trenched, but the produce was 30 per cent. less than when the subsoil was not brought to the surface.

Quantity of Swedes growing on One Scotch Acre, from different kinds of Manure, sown May 19, 1843.

Varieties of Seeds.	Manure.	Cost. £	s	d	Produce Tns	Cwt
Laing's Swede..	Bones.....30 bushels	3	0	0	26	3
Do. do.	Guano, 2 cwt. Bones, 15 bushels	2	10	0	34	2
Do. do.	Guano..... 4 cwt.	2	0	0	30	16
Do. do.	Farm-yard Manure 40 Tons.	6	0	0	33	15

The guano was mixed with coal-ashes, 4 cwt. ashes to 1 cwt. guano.—*A. Templeton, Dublin Farmer's Gazette.*

Stall Feeding.—Every one will admit the superior value of artificial grasses, who has made a fair trial of the difference between feeding cattle upon them cut green and given within doors, and on the other hand in turning cattle out upon a common pasture. A trial of this kind

was once made in Scotland, and it was found that 27 head of cattle were as well kept upon the same quantity of ground in one method, as 18 in the other. Added to this, there is an immense saving in the making of manure, which process, the most important one of any, may be going on during the whole summer, instead of having what dung falls, scattered abroad, and dried up in the heat of the sun.—*Ransborne's Remarks on Lancashire Farming.*

Sub-soil Ploughing.—The first object sought to be obtained by the operation was deepening the soil; *the second*, facilitating the descent of surface-water where the sub-soil was retentive; and *the third*, to secure the beneficial influence of the atmosphere and manure to a greater depth. The first object is described as mechanical, deepening the soil so as to remove obstructions for the more easy and perfect performance of all the operations necessary to correct cultivation; and the essay points out the advantages of this mode of deepening the soil, over the frequent practice of carrying on earth. "To cover an imperial acre one inch deep with soil, would require a fraction more than 134 cubic yards. It is well known that a cubic yard is a good cart load, and if brought from any distance at all, with filling, spreading, &c., would not cost less than 1s. per yard; this would amount to 6*l.* 14s. 5½*d.*, an expense sufficient to sub-soil plough the land, and leave more than 5*l.* to be applied in manure; this, at the present price of guano and bone, would purchase 7 cwt. of the former, or 40 bushels of the latter, being double the quantities of these manures usually applied to an acre, and undoubtedly sufficient to manure several inches of sub-soil." The second object may also be said to be mechanical; when the sub-soil is retentive, or when "a pan or crust" exists, this does much good, by facilitating the descent of water, and by equalising the supply of moisture during drought, not only by capillary attraction, but by allowing the roots of plants to penetrate freely below the parched surface into a cooler and damper medium. But besides its mechanical operation, it is intimately connected with, and lays the foundation of the third, and most important change, that of allowing the influence of the sun and air to penetrate, and, by the filtration of rain, to make that one of the most beneficial, which had previously been one of the most detrimental of atmospheric agencies; thus producing such remarkable changes as are often seen by the draining and deep cultivating of land, without any visible foreign chemical agent or re-agent being introduced. Then follows a detail of a number of experiments, tending to show the advantages of the operation on various soils—on thin soils with open shelfy killas sub-soil—on blue and other clay sub-soils—on *granite soils when the bottom is retentive*—and in cases in which the actual sub-soil plough had been used, and the soil and sub-soil had been deep ploughed up by the common plough and mixed together. In conclusion, it is stated, "that if the experiments are not held to prove the advantage of sub-soil ploughing, they prove that it is not injurious. In no case where the writer has seen either deep working with the common plough, or with the sub-soil plough, has it had the least injurious effect; but, on the contrary, the crops have turned out beyond his expectation. And if, as will be conceded, a deep soil is better than one of a contrary character, and if it be of importance *permanently* to improve land, this appears to be one of the most feasible and necessary preliminary steps. Not that all land requires such a process; nor should a practice be condemned from having been tried without producing any good effect where it was absolutely not needed. In regard to the expense of the operation, it may be slightly different in different soils and situations; but where four ordinary horses draw the sub-soil plough, with two going before with the common plough, three-fourths of an acre may be a fair day's work. At this rate the cost would be per acre—

One pair of horses and a man 1¼ day, at 8*s.*	.	.	£0 10 8
Two ditto and two ditto, 1¼ day, at 16*s.*	.	.	1 1 4
Tear and wear, say	.	.	0 2 6
			£1 14 8
The land having to be ploughed, at any rate the single plough ought not to be charged against the sub-soiling, therefore deduct	.	.	0 10 8
Leaving	.	.	£1 4 0

as the additional expense for sub-soiling an acre."—*Report of Mr. Peter's Prize Essay, read before the Cornwall Agricultural Association, December*, 1843.

Manures are to farming what blood is to the animal frame; divested of their aid vegetation languishes, as the abstraction of the other leads to dissolution. Of all manures that are in use, commend your friends, I pray you, to that from the farm-yard. Much goes to waste about every steading, that, being otherwise carefully used, with a trifling amount of labour might be made available in superseding the use of artificial or foreign manures. Guano, I have found, under certain circumstances, to be excellent, when of pure quality—an article rarely to be found—producing fine Potatoes and good Oats. Clover treated with it has also done well, and seems to be deeper coloured than that from farm-yard manure; yet, tested on poor ground (recently reclaimed bog-land) compared with the latter, I have found it to fail. I have no doubt it has more of a speedy stimulative than a lasting nutritive quality, and, therefore, ought always to be used in conjunction with farm-yard manure, which it cannot, and should not be allowed to supersede. It perhaps ought not to be used at all, excepting under peculiar circumstances, or in the least accessible situations; certainly not after a sufficiency of green crops can be raised to enable the farmer, by the aid of house-feeding, to make plenty of dung for his land.—*Mr. McArthur, in the Ayrshire Agriculturist.*

Notices to Correspondents.

BARLEY.—*A. S.*—A bushel of good Barley weighs from 52 to 56lbs.

BLOSSOM.—*W. S.*—We know of no application of manure which will hinder a plant from blossoming. Mr. Knight, we believe, ultimately obtained a variety of Potato without blossoms, by repeatedly growing the tubers of plants from which the blossoms had been plucked immediately upon their appearance.

CHEMISTRY OF AGRICULTURE.—*Tropicus.*—Read Johnston's "Agricultural Chemistry and Geology." The advantage of liming land does not depend upon its introducing carbon into plants, except in so far as it is a solvent, so to speak, of humic acid, which contains much carbon. Plants require mineral as well as organic substances in their food, and among these is lime. See Dr. Smith's article in another page. The principles of Agricultural Chemistry act independently of climate.

CHURNS.—*Toby.*—The small metallic churn is useful for families.

CLOACINE.—*W. C. A.*—You are right in mixing it with an equal bulk of vegetable mould; throw over every cubic yard of the mixture about 10 lbs. of sulphuric acid, diluted with such a quantity of water or other matter, as will enable you to mix it thoroughly. Sulphate of soda is useful as a manure, where there is a deficiency of it in the soil, but as it will not decompose the carbonate of ammonia, it would not fix ammonia in cloacine. Where it is needed, it may be spread broadcast on Grass or young Wheat, now, at the rate of 1 to 2 cwts. per acre; unless, however, you have a special reason for selecting it, you would probably obtain a greater crop by the application of guano.

DISEASES OF COWS.—*W., Sheffield.*—If you will favour us with your name and address, we will forward to you information on the subject.

FIELD-BEET.—*H. C. S.*—The Globe Mangold Wurzel is preferable to the other on shallow soils. You had better try it instead of Turnips, after Swedes. The seed can be easily sown by one of the Suffolk drills, with or without a mixture of sand. Potter's guano will probably suit you.

FOOD FOR COWS.—*A Tirgaide Cow Fancier* will be much obliged to a "Cow-fancier" for information as to the kind of Carrot he uses, and whether he feeds his cows on hay or straw besides.

GUANO.—*Cor.*—Your specimen is good guano.

GYPSUM.—*S. R. S.*—Mix it with farm-yard manure; spread, and plough or dig it in. Salt and soot may be more beneficially applied along the tops of the drills, just as the Potatoes are coming through, than in the drills along with the sets.

LIQUID MANURE.—*J. X.*—You may have a roughly-made filter, of considerable size, filled with fragments of gypsum, through which the runnings of the stable must pass before reaching the tank, and renew the gypsum now and then; this is Professor Liebig's suggestion. The surest, and when near the factory, the cheapest plan is to pour in it, say every week, as much sulphuric acid as will fix the ammonia in the quantity added each week.—*Subscriber.*—Water will not dissolve all the guano; a portion, and a very valuable one, is left behind. It is a better plan to apply it as recommended by Mr. Booth. (See Home Correspondence.)

MANURE.—*J. Ridge.*—If you have enough good manure to put on your land at the rate of 30 cubic yards per acre, you do not require anything else. If you have not got sufficient for this, you had better mix with it 4 cwt. of guano for each of the acres for which, at the above rate, you have no manure, and then divide the compost equally over the land.

MOSS.—*B. K. M. S.*—A sufficient application of lately-slaked lime is said to act beneficially, but there is no certain remedy except breaking up the pasture, cropping it for a year or two, and laying it down again.

SOOT.—*Anon.*—The red soot you allude to probably differs from the black in being ferruginous; but we never saw it. In what chimneys, and in what parts of them, does it accumulate?

TRANSPLANTING.—*A Reader* informs "W. S." that Beet can be transplanted with perfect success, if watered with a very dilute solution of nitrate of soda immediately after sowing.

URATE.—*G. S.*—Peat charcoal would fix the ammonia of the stable-runnings, and would be a valuable manure.

WINDMILLS.—*A. H.*—Steam will, in the end, prove a more economical power than wind. Windmills were at one time erected in considerable numbers, to work threshing-machines, in the Lothians; but steam-engines are now being substituted for them. The uncertainty to which you allude renders windmills unfit for Agricultural purposes. We should be glad to know your experience and analyses connected with Mr. Campbell's processes.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, April 15.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	8	to 4s	0	Best Downs & Half-breds	4s	2 to 4s 6
Best Short Horns	3	4	3	8	do. shorn	3	8 4 0
Second quality Beasts	3	0	3	4	Best Long-wools	4	0 4 4
Calves	4	0	4	10	do. shorn	3	8 3 10
Lambs, small	0	4	0	8	Ewes and second quality	3	8 3 10
large	5	4	6	0	do. shorn	3	4 3 8
Pigs	3	4	4	0			

Beasts, 2725; Sheep and Lambs, 24,040; Calves, 80; Pigs, 850.

We have to-day a very short supply, the time of year considered, and the trade for everything is improved. The town is very clear of meat; the supply to the dead markets has been very limited of late, consequently everything meets a very ready sale. The best Scots, &c., readily make 4s, and the best Short-horns from Norfolk 3s 10d per 8 lbs; those from Lincolnshire make about 3d per 8 lbs less. The trade for Mutton is still brisker than the Beef, at an advance of fully 2d per 8 lbs. The shorn Sheep are getting more in request every week as the weather gets warmer. Lamb, also, is in greater demand, and trade for it is brisk, at prices above quoted. Veal maintains its price, but not very active. Pork is rather heavy, but neat Porkers maintain their price.

FRIDAY, April 19.

There is a slight depression in the trade to-day, and a small decline in prices. The best Scots do not make quite 4s, and the best Norfolk Short horns hardly 3s 8d. many from Lincolnshire make very little over 3s 4d, per 8 lbs. The Mutton trade is hardly so good, the best Downs only making 4s 4d, the best Longwools, 4s 2d, shorn Downs about 3s 10d, and shorn Longwools about 3s 8d, per 8 lbs. We cannot notice any alteration in Lamb, Veal, and Pork. Monday's trade has caused many to be sent in by the various railroads, which has given a dullness to trade in all kinds of stock.

Beasts, 163, Sheep and Lambs, 7700; Calves, 102; Pigs, 363.

41, West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, April 15.

THE weather during the early part of the week was oppressively hot, and it being the holiday week, a further depression in the trade has been the result; the best samples went off heavily, and our last quotations have not been maintained since our last Report there have been arrivals from most of the shipping districts, and the supply may be considered rather liberal. Some cargoes of Whites from Holland are selling at 80s per ton. The weather towards the close of the week has been favourable for the consumption, and the demand a little better—notwithstanding, the annexed prices have been barely supported.

York Reds	90s	to	95s	Essex and Sussex Blues	70s to 75s
Leith	70		75	Wisbeach Kidneys	75 80
Early Devons	—		—	Blues	60 65
Late Devons	75		80	Whites	55 60
Cornwall	80		90	Jersey and Guernsey Blues	70 —
Kent and Essex Whites	60		70	Prince Regents	— —
Kidneys	60		80	Shaws	70 75

HAY.—Per Load of 36 Trusses.

SMITHFIELD, April 18.

Prime Upland Hay	70s	to 76s	Clover	80s to 103s	Straw 26s to 32s
Inferior	60	65			

JOHN COOPER, Salesman.

CUMBERLAND MARKET, April 18.

Superior Meadow Hay	72s	to 76s	Superior Clover	100s to 105s	Straw 26s to 28s
Inferior	60	66	Inferior	86 90	

JOSHUA BAKER, Hay Salesman.

WHITECHAPEL, April 19.

Hay	65s	to 68s	Clover	90s to 98s	Straw 26s to 32s
— fine	65	76	— fine	100 105	

HOPS, FRIDAY, April 19.

Mid & East Kent Pocks.	0	to 10	10s	Sussex Pockets	6l — to 6l 6s
Choice ditto	11	0	— —	Choice ditto	6 10 — —
Weald of Kent Pocks.	6	6	6 15	Farnham	8 8 10 10
Choice ditto	7	0	— —		

FARNHAM & SONS, Hop-Factors.

COVENT GARDEN, APRIL 19.—The market has been well supplied this week with most articles. Hothouse Grapes are becoming more abundant, and are in consequence getting cheaper. Pine Apples of good quality are sufficient for the demand; they are offered at the same prices as requested in our last report. Apples do not meet with a ready demand; dessert varieties are a little reduced in price. Little alteration has taken place in the price of Pears since our last Report. Oranges, although not quite so plentiful, are sufficient for the demand. Lemons are not altered in price. Chesnuts are getting scarce, as are also Spanish Nuts. During this fine weather Vegetables improve rapidly, and are, generally speaking, becoming lower in price. Good Broccoli is offered at from 6d. to 1s. 6d. per bundle. Greens are becoming scarcer, and are a little advanced in price. Carrots and Turnips continue good and plentiful. Seakale and Asparagus are very abundant. French Beans are becoming cheaper. Rhubarb is very plentiful. Cucumbers are now becoming more abundant, and they are good in quality, as are also Strawberries; the latter are somewhat reduced in price. Frame Potatoes are selling at from 2s. to 3s. per lb.; they are more plentiful. Cut Flowers chiefly consist of Erica rubra-calyx, Hovea Celsii, Nemophila insignis, Gaidia pinifolia, Lily of the Valley, Pelargoniums, Cinerarias, Fuchsias, Epacrises, Acacias, Camellias, Azaleas, China, Provence, and Moss Roses.

FRUITS.

Pine Apple, per lb., 6s to 12s	Almonds, per peck, 8s to 7s
Grapes, Portugal, per lb 2s to 4s	Sweet Almonds, per lb., 2s6d to 3s
Hothouse Grapes, 12s to 20s per lb.	Nuts, Spanish, per bushel, 14s
Apples, dess., p bush. 2s to 36s	— Brazil, 16s
— Kitchen, p bus. 4s to 12s	— Hazel, 2s to 4s
Pears, per half-sieve, 4s to 12s	— Barcelona, 20s to 24s
Oranges, per dozen, 9d to 2s	— Cob, 14s
— per 100, 5s to 14s	Walnuts, per bushel, shelled, 16s to 20s
Lemons, per doz. 1s to 2s	Chesnuts, per peck, 2s to 3s
— per 100, 6s to 10s	Strawberries, 6d to 1s. per pint.

VEGETABLES.

Rhubarb, per bundle, 6d to 2s	Spinach, per sieve, 1s to 1s 6d
Broccoli, per bundle, 6d to 1s 6d	Leeks, per doz. bun., 2d to 4d
Red Cabbages per doz. 2s to 3s	Garlic, per lb. 6d to 8d
Sorrel, 3d to 1s p. bk. ev.	Onions, 3d to 6d p. bush.
Asparagus, per 100, 2s to 5s	— Large, per bushel, 1s 6d to 2s
Seakale, per punnet, 9d to 1s 6d	— Spanish, per doz., 1s 6d to 4s
French Beans, 1s to 2s per 100	— pickling, p. bl.-ev., 2s to 4s
Autumn Potatoes, 3d to 6d per lb.	Shallots, per lb., 4d to 6d
Greens, per doz. 2s 6d to 4s 6d	Lettuce, p. score, 1s to 2s 6d
Potatoes, per ton, 60s to 90s	Celery, per bun., 6d to 2s
— per cwt., 2s to 4s	Mushrooms, per pottle, 9d to 1s 3d
— per bushel, 1s 6d to 3s	Small Salads, per punnet, 3d to 6d
— Kidney, p. bush., 2s 6d to 3s	Watercress, per doz. sm. bun. 6d to 9d
Frame Potatoes, 2s to 3s per lb	Parsley, per bl.-ev., 1s to 2s
Turnips, per doz. bunches, 1s 6d to 2s	Tarragon, Green, per bun. 3d to 6d
Turnip tops, per bushel, 6d to 9d	Endive, per score, 1s to 2s
Red Beet, per doz., 6d to 1s 6d	Green Mint, 3d to 4d per bunch
Horse Radish, per bundle, 1s to 6s	Marjoram, p. bun. 4d to 6d
Radishes, spring, 3d to 1s 6d per dozen bunds	Chervil, per punnet, 2d to 3d
Carrots, p. doz. bun., 2s 6d to 3s	Salsafy, per bundle, 1s to 1s 3d
Cucumbers, 6d to 2s 6d each	Scorzonera, per bundle, 1s to 1s 3d

SEEDS, April 19.

Canary	per qr	50s to 54s	Linseed Cakes, Foreign, p. ton	£6	to £7 10s
Carraway	per cwt	56 60	Mustard, White p. bush.	5s	6
Clover, Red, English	60	74	— Superfine	6	8
— Foreign	64	74	— Brown	14	16
— White, English	100	120	Rapeseed, English, per last	£21	£22
— Foreign	84	125	Rape Cakes per ton	—	—
Coriander	12	18	Saintoin	—	—
Hempseed per last	34	36	Tares, Eng. winter p. bush.	3	5
Linseed per qr	—	—	— Foreign	3	5
— Baltic	—	—	Trefoil per cwt	—	—
— Cakes, Eng. per 1000	10l 5s	10l 10	Turnip (too variable for quotation).		

RICHARDSON AND LAY.

WOOL.—BRITISH, FRIDAY, April 19.

There has been rather more doing in our English Wool Market during the last few days; this may be accounted for by the large number of Manufacturers who are in Town attending the Colonial Wool Sales. Prices are stationary, but there is a disposition on the part of most to effect sales, though at a shade lower price. The Colonial Wools are selling briskly, at prices fully as high as the last.

	per lb.				per lb.	
Long-wooled Wethers	1s 1d	to 1s 2d	Southdown Hoggitts		1s 1	to 1s 6d
Do Hoggitts	1 1	1 2½	Kent Fleeces		1 2	1 3
Southdown Fleeces	1 0½	1 2	James Passam, Wool Broker.			

MARK LANE, FRIDAY, April 19.—We have no fresh arrivals of English Wheat offering on Market this morning, but its value may be considered quite equal to our quotations of Monday; in free Foreign there has been an increased business doing, both on Wednesday and to-day, particularly in low qualities to country buyers, and late prices are fully supported—the fact of so small a quantity entered at the 16s. duty having given confidence both to buyers and sellers.—Barley is a very dull sale, and barely supports its late value; several cargoes are being landed, the want of demand rendering them almost unsaleable.—In Beans and Peas we observe no alteration.—The supply of Oats is good, and they meet a fair sale, at quite as good terms.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk White	40	56	Red	40	54
—— Norfolk, Lincolnshire, and Yorkshire	39	57	White	—	—
Oats, Lincolnshire and Yorkshire	20	24	Potato	21	25
—— Northumberland and Scotch	20	23	Feed	19	22
—— Irish	18	23	Potato	19	24
Barley, Malting and distilling 28s to 32s	Chevalier	32	36	Grind.	24	30
Malt, pale, ship		60	62			
—— Hertford and Essex		60	62			
Rye		32	34			
Beans, Mazagan, old and new 22 to 29	Tick	22	31	Harrow	26	30
—— Pigeon, Heligoland 28 to 32	Winds.	—	—	Longpod	—	—
Peas, White 30 to 33	Maple	27	30	Grey	26	27

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March 8 per Quarter.	56s 0d	33s 0d	19s 11d	32s 0d	31s 0d	31s 6d
— 15	56 3	33 3	20 1	33 6	31 3	31 6
— 22	56 5	33 1	20 0	34 1	31 2	31 3
— 29	56 5	32 7	19 6	33 2	31 2	31 0
April 5	56 5	32 10	20 1	33 0	30 11	31 6
— 12	55 1	33 1	20 1	32 4	31 2	32 5
6 weeks' Aggregate Aver.	56 11	33 1	20 0	33 6	31 1	31 5
Duties on Foreign Grain	17 0	5 0	6 0	9 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	5110	3580	4580	3030 Sks
Irish	—	20800	—	—
Scotch	—	—	—	—
Foreign	3100	16940	—	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	4869 Sks.	5178	4750	9182	6232	—	998	198
Irish	— qr —	—	—	14	9667	—	—	—
Foreign	— qr 5351 qr	3053	12011	—	2110	—	—	92

RICHARDSON AND LAY.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 240s per ton	—	Phosphate of Ammonia, in fine powder, 24s per cwt.	65
Bleaching Powder, 28s per cwt.	—	— of Ammonia, in crystals 2s 6d per lb.	—
Belmstone, 200s per ton	—	Rape Cake, 115s to —s per ton	—
Bone-dust, —s and 12s per quarter	45	Dust, 110s per ton	—
— Half-inch, 10s ditto	42	Salt Ammoniac, 56s per cwt.	—
— Calcined, 8s per cwt	—	Salt, Agricultural, 50s per ton	60
Carbonate of Ammonia, 74s per cwt	84	— clean, 90s per ton	80
— of Lime, 1s to 1s 6d per cwt	—	— Hids, 80s per gallon	64
— of Soda, 30s to —s per cwt	—	Saltpetre (Nitrate of Potash) 28s 6d per cwt., duty paid	80 to 84
Chloride of Lime, 30s per cwt	—	Silicate of Potash, in powd., 60s per cwt.	—
Graves, —s to —s per ton	—	Soap Ashes, —s per ton	—
Guano, S. American, 21os per ton, with charges extra	—	Soda Ash, 10s to —s per ton	65
— African, 160s to 180s p. ton, with charges extra	—	Sulphate of Ammonia, —s to 300s per ton	70
— Potter's, 90s per ton	65	— of Copper, 25s to 26s p. cwt.	—
— Potter's Liquid, 12s p. doz.	—	— of Magnesia (impure) 9s per cwt.	65
Gypsum (Sulphate of Lime), —s to 85s per ton	80 to 84	— of Magnesia (pure crystal) 12s p. cwt.	65
Humphreys's Compound for Plants in Pots, 12s per doz.	—	— of Potash, 16s per cwt.	—
— Farmers' Compound, 12s per cwt.	—	— of Potash, 8s per cwt.	—
Muriate of Ammonia, 24s per cwt.	72	Sulphur, 14s per cwt.	—
— Lime, —s to 6s	70	Sulphuric acid, 1os 6d to 16s per cwt., duty paid	80
Nitrate of Soda, 12s 6d to 16s per cwt., duty paid	80	Tanners' spent Bark, 10s per load	—
Phosphate of Lime, 6s 6d p. cwt.	65	Whitney's Composition for Pigeon and Lights, 2s and 4s per bag.	—
— — Bones, 6s to 8s p. cwt.	65		

Expenses of shipping wheat in bags 9d per ton, according to quantity.

HENRY FOTHERGILL.

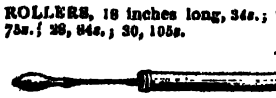
BYRRIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 136, Fleet-street. A Prospectus may be had, detailing the prices, &c.

IRON WORKS.

COTTAM AND HALLEN, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS, 18 inches long, 34s.; 20, 44s.; 22, 50s.; 24, 60s.; 26, 75s.; 28, 84s.; 30, 105s.



GARDEN SYRINGES, 9s. 6d. each.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 3s. 6d.; 20 inches, 4s. 6d.; 22 inches, 5s. 6d. each.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 7s.; 4 ft. 6, 9s.; 5 ft., 11s.; 6 ft., 18s.; 7 ft., 20s. per dozen.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases and Pedestals in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE FENCING, at 4s. 6d. per bundle of 150 to 160 yards each. Uprights for ditto, 8d. each. The Improved continued, and every other kind of Fencing.

Flower-bordering, Trainers, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

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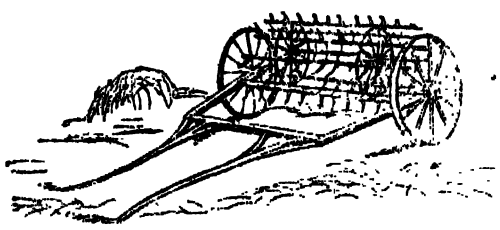
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HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

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BOAST AND CO.'S PATENT INORGANIC MANURES. These strong and productive manures have already proved their superiority over all others yet adopted. It is now thoroughly understood and acknowledged by intelligent agriculturists that each plant requires a distinct manure, and it is upon this perfectly scientific principle that these manures are prepared, being formed so as to supply all the substances taken from the soil by each particular crop. They are immeasurably more efficacious, far more economical than all others, and possess the great advantage of being easily applied to the land.

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PERUVIAN GUANO, of first quality, and in any quantity, direct from the Bonded Stores. Also African Guano and Nitrate of Soda.—Apply to H. ROUNTHWAITE and Co., 6, Cable-street, St. George's Crescent, Liverpool.

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" Magnesia 9s. "
" Ammonia 1s. per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1s.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top-dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

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GLASS SUPERSEDED for HORTICULTURAL PURPOSES by WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION, rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to rain or moisture, admitting light equal to Glass, much warmer, and the plants never burn under it.

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This Association is formed for the purpose of affording to the Agricultural interest, by means of its collective capital, the funds necessary for the THOROUGH DRAINING OF LAND; and of executing and superintending the execution of the works required for this purpose on the most economical and effective principles—repayment of the money advanced to be made, with interest, by such equitable half-yearly instalments as in the several cases may be determined.

Among the various objects to which of late years collective capital has been more or less successfully applied, it is not a little surprising that the one which, of all others, offers the most certain and profitable return, with the soundest security, should have hitherto been almost disregarded. The time, however, has arrived, when an urgent desire for Agricultural improvement on the one hand, and a dearth of safe and profitable investment for superabundant capital on the other, renders such an Association highly desirable to both the landed and monied interest, whilst to the community generally an almost incalculable advantage will be secured by a proportionate increase of labour and food.

At a meeting of the council of the Yorkshire Agricultural Society, held in York, on the 20th of December, 1843, a resolution was passed, approving generally of the objects of this Association, and at the monthly meeting of the Wakefield Farmers' Club held on the 5th January, 1844, a resolution approving of the principle and objects of the Association, was unanimously adopted.

At the meeting of the Royal Agricultural Society of England, at Liverpool, in July, 1841, Lord Stanley remarked—that "there was no bank in the whole country—no commercial speculation—no investment so safe, so sure and profitable, as that in which even borrowed capital may be engaged, by investing it under the ground of your own soil." And in reference to this Association, his Lordship, in a letter to the Committee says:—"I am fully satisfied of the benefits which such an Association is capable of conferring on the country, if confined to its legitimate object—the lending of capital on the security of an investment in draining; and I think it very probable that many landed proprietors would avail themselves of the facilities afforded by an institution lending money on land, repayable by instalments—a condition on which few private parties are willing to lend.

Bearing in mind the important objects of the Association, and the perfect security with which its operations can be conducted, at a comparatively trifling expense (no large expenditure for previous outfit being required), it may be reasonably expected that the return for the capital embarked will be such as to insure the support of prudent and permanent investors, thereby divesting it of that speculative character which has stigmatised so many modern projects, and which it is the especial desire of the Committee to avoid.

Application for prospectuses, and further particulars to be addressed to the Solicitors, Messrs. BLANCHARD, RICHARDSON, and GUTCH, York; or to J. H. CHARNOCK, Esq., the Secretary, Wakefield.

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METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and successful manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE'S Sole Establishment, 130a, Oxford-street, one door from Holles-street.

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BEE-HIVES.—GEORGE NEIGHBOUR & SON beg to inform their Apiarian friends that they have prepared for the season a large supply of "Nutt's Patent Bee-hives" (for the sale of which they are the only authorised agents), in which are embodied all the recent improvements. Their selection now comprehends most varieties in general use at the present time, including the "Single Box Hive," the "Ladies' Observatory Hive," the "Improved Cottage Hive," with glasses, &c., from either of which the produce may be taken at any time of the gathering season, without destroying the Bees.

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The Railway Chronicle.

JOURNAL OF ENGINEERING IMPROVEMENTS, MECHANICAL INVENTIONS, PUBLIC WORKS, &c.

THERE HAS NEW CREATED within the last ten years a PRODUCTIVE PROPERTY IN RAILWAYS amounting to more than SIXTY MILLIONS sterling, with a REVENUE of nearly SIX MILLIONS PER ANNUM. This addition to the wealth and resources of England has been produced by the investment of the funds of nearly Fifty Thousand Individuals, who form the Railway Constituency of Great Britain. It affords employment to a great body of our Workmen, tends to the development of our industrial Capabilities, and is a boon to the whole travelling Population.

It is strongly felt that Railway property, involving interests so extensive, should not be exposed to the injurious effects which the want of sound information and the circulation of erroneous statements for party purposes so constantly produce, and it has appeared, to those most capable of judging, that the mutual interests of the Proprietary, the Managers, and the Railway Executive, and the Public interests with which they are identified, have as yet found no organ in which they can be fairly discussed and satisfactorily adjusted. The Railway Chronicle has been projected to supply this deficiency, by THE ESTABLISHMENT OF AN AUTHENTIC AND IMPARTIAL MEDIUM OF COMMUNICATION BETWEEN ALL THE MEMBERS OF THE GREAT RAILWAY COMMUNITY; having especially in view the free communication of useful information, the promotion of the common interests and the general circulation of sound intelligence in all that [illegible] Railway [illegible].

The Conductors of the Railway Chronicle are men of practical experience, who possess peculiar facilities for obtaining the earliest information, and who will use their unremitting endeavours to advance, in every way, the great interests of Railway property, avoiding all intelligence of personal feeling, the expression of party prejudice, or the advancement of exclusive interests—they desire, in short, to furnish an unbiassed Chronicle of facts, and a fair arena for the discussion of important opinions and principles.

The Railway Chronicle will contain the earliest and most authentic Information on the following subjects —

THE CONDITION AND PROSPECTS OF RAILWAYS NOW IN USE.
POSITION, PROGRESS, AND VALUE OF FOREIGN RAILWAYS.
PROGRESS OF RAILWAYS IN EXECUTION.
PROJECTED NEW RAILWAYS.
THE TRAFFIC AND REVENUE OF RAILWAYS.
THE ECONOMY OF WORKING AND EXPENDITURE.
THE VALUE OF SHARES.
PAYMENT OF CALLS, DIVIDENDS, AND DEBENTURES
THE PROCEEDINGS AT RAILWAY MEETINGS, WITH THE DOCUMENTS LAID BEFORE SUCH MEETINGS.
WEEKLY REPORTS ON THE MONEY AND SHARE MARKETS.
THE PROCEEDINGS OF THE BOARD OF TRADE AND OTHER PUBLIC OR MUNICIPAL BODIES, SO FAR AS THEY AFFECT THE INTERESTS OF RAILWAY PROPERTY.
PARLIAMENTARY RAILWAY PROCEEDINGS.
RAILWAY LEGAL INFORMATION.
CONTRACTS FOR EXECUTION OF WORK.
STATE OF THE IRON TRADE.
ENGINEERING WORKS OF MERIT ON RAILWAYS AT HOME AND ABROAD.
ENGINEERING IMPROVEMENTS ON RAILWAYS AT HOME AND ABROAD.
MECHANICAL INVENTIONS RELATING TO RAILWAYS AT HOME AND ABROAD, ILLUSTRATED, WHEN REQUISITE, BY WOOD CUTS.
LOCOMOTIVE IMPROVEMENTS AND INVENTIONS AT HOME AND ABROAD.
REPORTS OF THE SCIENTIFIC SOCIETIES, WHENEVER ANY SUBJECTS AFFECTING RAILWAYS ARE DISCUSSED.
RAILWAY LITERATURE
RAILWAY PATENTS

To elucidate which, illustrative Maps and Engravings will be given, when necessary.

Arrangements have been made for the purpose of supplying in the Railway Chronicle the earliest information concerning the FRENCH RAILWAYS (*the figures being in English money*), in which so much British capital is now invested, and the other Railways on the Continent which are in progress or in prospect. Intelligence will leave Paris every week in time for insertion in the Railway Chronicle, which will thus contain the transactions in the Paris Railway Stocks, and receipts of the various lines up to the latest hour, and furnish the earliest notice of whatever may affect the British holder.

Weekly Reports from the London, Liverpool, Manchester, and Northern Share Markets will afford the Capitalist the means of judging of the condition of Railway investments.

Another peculiar feature of the Railway Chronicle is to consist in a series of papers on each of the Great British Railways—in which the Past History, Present Condition, and Future Prospects of every Railway will be concisely developed. It is hardly to be presumed, that the great number of persons who have of late years begun to interest themselves in Railway Property, can have had the leisure and opportunity necessary to understand the peculiar circumstances and character of each individual Railway, so as to estimate properly the relative value and prospective profit of these investments. This information will be given in the successive Numbers of the Railway Chronicle. For those who are now becoming subscribers for the first time to a Railway Paper, this feature is important, as it will enable them rapidly to obtain an acquaintance with the whole of the existing lines.

To CAPITALISTS, BANKERS, SOLICITORS, STOCK-BROKERS, INSURANCE COMPANIES, and all who hold Money for investment, the Railway Chronicle will furnish such sound unprejudiced information as shall enable them at once to make a judicious choice for the investment of funds at their disposal.

To ENGINEERS, the Railway Chronicle will afford information on all points of Practical Engineering that may tend to the advancement of the profession, and to the perfection of that Railway communication which their talents have placed in its present admirable condition, and which it remains for their skill to render more available to the Public, and therefore more beneficial to the Shareholder. Through this channel of intercommunication every intelligent person will have an opportunity of contributing to the common stock of knowledge, and consequently to the general welfare.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 17.—1844. SATURDAY, APRIL 27. [Price 6*d*.

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HEARTSEASE SOCIETY.—Under the Patronage of Sir J Sebright, Bart

The next EXHIBITION of the above Society is appointed to take place on Wednesday, 15th of May next, at the "Thatched House" Inn, Hammersmith, when Prizes will be given on the same liberal scale as heretofore It is requested that Exhibitors will have their Stands painted *Green*, and the Committee beg to suggest a *Pea Green* as being the best

For further Particulars, please to apply to Mr Mountjoy, Hon. Sec, Nursery, Ealing Middlesex —April 22

TUNBRIDGE WELLS HORTICULTURAL SOCIETY, 1844 —There will be FOUR EXHIBITIONS during the present year, viz, the first on Friday, May the 24th; the second on Friday, June 28th; the third on Friday, August 2d, the fourth on Friday, September 13th —Wm Maddock, Hon Sec

WARNER and WARNER, Seedsmen, 20, Cornhill, London, beg to inform their Friends they can supply all the new varieties of Fuchsia, Petunia, Verbena, Calceolaria, Geranium, Dahlia, &c &c. now out, either in Collections or by the single plant.

Plants of the New Black Nemophylla, 2*d* each. Potter's Liquid Guano, in quart bottles, 1*s* 6*d* each Super-phosphate of Lime, in 7lb. packets, at 1*s*. each. Whitney's Chemical Transparent Waterproof Composition, with directions for use; in pints, 2*s*. 6*d* each, quarts, 4*s* 6*d*. each.

For their Advertisements of new and choice Flower and Vegetable Seeds, see their lists in Harrison's "Cabinet" for April, and the preceding Numbers of the *Gardeners' Chronicle*.

Petunia Punctata is now ready for sending out, 7*s* 6*d* each

NOW SENDING OUT,

PETUNIA PUNCTATA.—Although the orders for this excellent Plant have been most numerous, a few strong healthy Plants remain yet unbespoke, 7*s* 6*d* each plant, postage free. W Miller, Ramsgate

DAHLIAS —SPARY'S "Lady Antrobus" and "Aurantia"

E SPARY begs respectfully to inform the Trade, and Florists in general, that he has a fine healthy stock of the above now ready for delivery with the select new and old varieties —Hungerford, April 26, 1844.

CHOICE PANSIES.

J HENCHMAN begs to inform cultivators of the PANSY that he is now sending out healthy plants of six good seedling varieties, for 21*s* the set Also a few choice kinds at 18*s*. and 12*s* per dozen —Edmonton, April 1844

NEW HARDY ANNUAL
VISCARIA OCULATA—DARK EYED VISCARIA

T AND J. BACKHOUSE, Nursery and Seedsmen, York, have the pleasure of offering to the Public the above new and beautiful Annual, which is figured at page 53 (No 10), of the "Botanical Register" for 1843 The blossoms are of a bright rose-colour, with a deep crimson eye, and changing to a pale purple It flowers very abundantly through the greater part of the summer and autumn It is a native of Algiers, and may be sown either in the open ground in spring, or raised in pots and planted out.

Packets, 2*s* 6*d*. each, will be sent, on the receipt of a Post-office order, postage free, to any part of the Kingdom

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H GROOM, Clapham Rise, near London (removed from Walworth), by Appointment Florist to Her Majesty, begs to inform the Nobility, Gentry, and Amateurs, that in consequence of the success he has had in the cultivation of the above Flowers at his new Garden (where he requests an inspection of the quality of his plants), he can offer them at very moderate prices His Catalogue of PELARGONIUMS, AURICULAS, and NEW PLANTS, is now ready, and will be forwarded by post on application The Trade supplied

TANSELL has purchased the DAHLIA "Primrose's Perfection," colour dark purple, shown at Bedford in September, 1843, which took the first seedling prize, and at Hitchin, 1843, in the best stand of 12—the only places where shown for competition. Price of plants, third week in May, 10*s*. 6*d*. each.

T. A. regrets that the Dahlias previously advertised by him having done so badly he cannot receive any further orders for them until the time above mentioned,—viz., the third week in May.—Camden Nursery, Camden Town.

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J INGRAM, Nurseryman, Southampton, begs to offer the above named unique FUCHSIA at 7*s*. 6*d*. each, with an allowance to the Trade if three or more are taken Its character is that of Formosa elegans, but far excels it in point of size, colour, and general habit. Should it not turn out as described, no charge shall be made

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Strong plants are now ready for sending out, post-free, at 2*s* 6*d* per plant —Great Yarmouth Nursery, April 18th

NEW HOLLAND SEEDS.

H C. CORSTEN, Seedsman, &c, Centre-row, Hungerford Market, has just received a box of the above Seeds, with Specimens, in collections of 1*l* and 2*l* May also be had of H Corsten, Florist, &c, 19A, Davies street, Berkeley sq

NEW FUCHSIAS

JOHN SMITH, Nurseryman, Dalston, begs to announce that he intends sending out, the second week in May the following fine and showy Fuchsias, good plants in pots, at the prices named, viz —Albion, 5*s*, Coronet, 7*s* 6*d* Expansa, 7*s* 6*d*, Coccinea vera 5*s*, Decora, 7*s* 6*d* Gigantea, 10*s* 6*d*; Hector, 5*s*, Incarnata, 5*s*, Modesta, 5*s*; Neptune, 5*s*, Reflexa, 5*s* Vesta 10*s* 6*d* —A descriptive list may be had on application at the Nursery, Dalston, or at his shop, Covent Garden The price of the collection of 10*s* —April 27th

CHOICE PANSIES, NEW FUCHSIAS, VERBENAS, &c.

JOSEPH FRYER begs to remind his Friends and the Public that he can still supply good healthy Plants of most of the leading varieties of Pansies, from 1*s* to 2*s* 6*d* each, and fine varieties by name, from 6*s* to 9*s* per dozen (If left to J F's selection, likewise the finest varieties of New Fuchsias, from 12*s* to 18*s* per dozen, and good showy varieties, from 6*s* to 9*s* per dozen, good sorts of Verbenas, 4*s* per dozen, and new varieties, 6*s* to 9*s* per dozen

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N.B —Agent for Potter's Guano and Humphreys's Compound. —Clapham Nursery, Camberwell, London, April 26th.

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Delight (Brown's)—Cream, veined and tipped with purple, petal of fine substance and high centre, very distinct to any in cultivation, 4 ft	7 6
Demerara (Brown's)—Shaded buff, quite new in colour, a good show flower 5 ft	7 6
Lady St Maur (Brown's)—White, delicately tipped with violet purple very deep and full high centre, forming a beautiful outline the petals are round, and smooth at the edge, habit of Perpetual Grand it is decidedly the finest light flower ever offered It attracted great admiration at Windsor, and was universally acknowledged to be the finest flower in the Exhibition 4 to 5 ft	10 6
Newmith Brown's)—Bright crimson, a fine open cupped petal, and a good show flower 4 ft	7 6
Rainbi (Brown's —Dark maroon, beautifully shaded with light crimson superior petal, of excellent form a very novel and striking variety, and will be an acquisition to any stand, 4 ft	10 6
Rembrandt (Brown's)—Dark purple, very round and double, rising well in the centre, and a constant show flower It was very successfully exhibited, 4 to 4 ft	10 6
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N.B —Their beautiful Fuchsia, Marnock's Princess Sophia is now ready to be sent out; the stock is not large, therefore early orders will prevent disappointment

Messrs. Hurst and M'Mullen are Agents for their Fuchsias and Cinerarias. Nursery, Hackney, April 26, 1844.

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A List of Dahlias, Pelargoniums, Pansies, Calceolarias, Fuchsias, Verbenas, Auriculas, Cinerarias, Chrysanthemums, &c, containing many New Seedlings of first rate qualities, may be had by application at the Nursery, Surrey-lane, Battersea.

HURST & M'MULLEN, Seedsmen and Florists, 6, Leadenhall street, London, have a few packets left of the following very choice FLOWER-SEEDS, which they can recommend as particularly adapted for being sown at the present time

Anagallis grandiflora (new), flowers as large a crown-piece See description in the *Gardeners' Chronicle*, pp 681 and 698.	Lychnis fulgens Lobelia ramosa " erinoides Martynia fragrans Portulaca, three varieties Primula sinensis, rose red, pink, from a very fine collection.
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H and M'M are Agents for the sale of Mr. Miller's (of Ramsgate), Petunia Punctata, new Verbenas, Fuchsias, &c, &c., Mr Day's (of Oxford), new Fuchsias Mr Pullen's (of Midhurst), Fuchsia Adonis Messrs Rogers and Sons (Uttoxeter), Aquilegia grandiflora and Messrs Marnock and Manley's new Cineraria All the new Fuchsias, Dahlias, Verbenas, Pansies, &c, at advertised prices

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Seeds carefully selected and packed for foreign orders

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W M also begs to intimate that he cannot supply any more Fuchsia fulgens grandiflorum

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"	La Hedoyere		21 0
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Ceanothus, 2 species, each	1 0	Honeysuckle, 6 vars., each	1 0
Calampelis scabra, each	1 6	Jasminum 4 vars.	. . 1 0
Clematis azurea grandiflora, per dozen .	24 0	Sollya, 2 vars., each	. 0 9
20 varieties of Roses, each	1 6	Passifloras, 4 vars., each	1 0

HALF-HARDY or SUMMER CLIMBERS.

Cobœa scandens, each .	0s 9d	Thunbergias, 4 vars. each	1s 0d
Maurandia, 3 vars., each	0 9	Lœasa and Tropæolum Car. each . . .	0 6
Lophospermum, 3 var each	0 9		
Strypanthus elegans, each	1 0		

The above Plants carefully packed and forwarded to any part of the United Kingdom. A post office Order or reference for payment in Town. Persons erecting Greenhouses or Conservatories can be well supplied with the choicest and best of Plants for furnishing, including the many handsome Climbers recently introduced.

N. B.—Plants securely packed for exportation.—Albion Nursery, Stoke Newington, London.

SKIRVING'S IMPROVED SWEDE TURNIP.

W. SKIRVING, Seedsman, Queen-square, Liverpool, begs to acquaint his Agricultural Friends and the Public, that the price for the present season of the Genuine Seed of his Improved Swede Turnip is 1s. 6d. per lb.; the sort warranted the same as that for which he received the Premium of the Royal Agricultural Society of England. All other sorts of Turnip-seeds of the common kinds at the usual prices; also the most approved varieties of Mangold Wurzel, large White Belgian and Altringham Carrot.

For permanent Pasture, W. Skirving begs to offer his Selection of the most useful Perennial Grass-seeds. The sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental Grounds at Walton. On this system he has supplied within a few years, Seeds for many thousand acres, which have given every satisfaction. Orders stating quantity and quality of land to be laid down, will be correctly executed, with a suitable mixture.

For alternate Cropping, W. S. can recommend Seed of pure Italian Rye-grass, grown and carefully saved on his own farm.

SHADES FOR GREENHOUSES.

J. WEEKS & Co., Architects, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

TO FARMERS AND THE TRADE.—

Large White Agricultural Carrot	.	45s. per cwt.
Long Red Mangold Wurzel	. .	60s. per cwt.
Globe Yellow ditto ditto	. .	75s. per cwt.
Globe Red ditto ditto	. .	70s. per cwt.

Field Turnips in variety.

At Clarke's Seed Establishment, 86, High-street (opposite the Town Hall), Borough, London. N.B.—A remittance or reference is required from unknown correspondents.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

SECOND EDITION FOR 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER.

A SELECT CATALOGUE of the NEWEST and VERY BEST VARIETIES OF FUCHSIAS, VERBENAS, PETUNIAS, CHRYSANTHEMUMS, & ANAGALLIS offered by Youell & Co.

Youell & Co., in submitting their Catalogue of Fuchsias for 1844, take the present opportunity of drawing the attention of admirers of the above elegant tribe of plants, to their select and superb Collection. They have spared no expense in forming a selection of such as are really good, to the exclusion of many that are mere nominal varieties; and they would refer to the numerous testimonials of success which attended their mode of selecting, last season, collections for Amateurs, for competition at the various Horticultural Exhibitions throughout the kingdom.

Youell & Co. being the parties who first sent out per post, with safety, three tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms:—

12 Extra Fine varieties, 12s., the Selection left to Youell & Co.
12 ditto ditto 21s., the Selection left to the Purchaser.
50 Fine varieties . . 40s., the Selection left to Youell & Co.
50 Extra Fine ditto . 60s., the Selection left to the Purchaser.
With the exception of those marked thus*.

The plants are strong and healthy, and now ready for delivery, with the exception of those marked thus**, which will be ready the beginning of May: they intrusting to their purchaser fine plants for competition in the ensuing season. Many of the varieties can be supplied now.

NEW AND SPLENDID SEEDLING FUCHSIAS.

* "Fuchsia Lindleyana." This brilliant Fuchsia, the entire stock of which is in the possession of Youell & Co., is now for the first time offered to the notice of the public.

Its exceedingly large tube and sepals are of the most vivid vermilion, and excessively expansive, surpassing in brilliancy any hybrid that has yet been raised. It was exhibited at the London Horticultural Society's Meeting, Regent-street, and greatly admired, and was pronounced by all who saw Youell & Co.'s specimen plant to be the most dazzling object of this tribe they ever witnessed. The foliage and habit exceedingly fine, a most abundant bloomer, and will be found a desideratum to every collection. Plants are ready for delivery, at 7s. 6d. per plant. Usual discount to the Trade, when not less than six plants are ordered.

* "Queen Victoria." Tube and sepals smooth, of a bright vermilion, corolla stout, long, of a fine purple rose colour, forming a good contrast, and of fine texture, price 7s. 6d. per plant.

* "Prince of Wales." Tube and sepals rosy vermilion, the latter tipped with green, expanding well, and showing a fine corolla of maroon purple; price 7s. 6d. per plant.

* "Princess Royal." Tube and sepals bright red, corolla large and peculiarly bright in colour; price 5s. per plant.

* "Marchioness of Normanby." This is a large and showy flower, measuring four inches from the commencement of the pod to the termination of the pistil, tube and sepals scarlet, corolla stout, having a tinge of purple on it; price 7s. 6d. per plant.

* "Lady Alice Peel." A flower of good form and substance, fine rosy red tube and sepals, the latter terminating in a decided green, corolla very large and stout, of a beautiful crimson purple; price 5s. per plant.

* "Lady Walsingham." Tube and sepals smooth, of a rosy vermilion; the latter turn up, and expose the whole of the corolla, which is stout, and of a fine purple crimson; price 5s. per plant. When the six are ordered, they will be charged 1l. 11s. 6d. the set.

**"Fuchsia Queen." Quite new, very beautiful, and not yet out, tube and sepals large and stout, of pure white, showing a dark crimson corolla; price 10s. 6d. per plant. [No discount allowed upon this variety.]

Fuchsia Seed, saved from the best varieties, 5s. to 10s. per packet, with directions for sowing, &c. &c.

FUCHSIAS.

	per plant.—s. d.
Fuchsia affinis, or radicans	1 0
,, arborea . .	1 0
,, aurantia . .	1 6
,, Aurora . .	1 6
Alata (Smith's) . .	2 6
**Albion, (Smith's) in May	5 0
Belladifoliata, Belliana, or Rosea alba . .	1 0
Bullooni	1 6
Bicolor	1 6
Bruccana	1 0
Blanda	2 6
*Boydii, (Hally) . .	5 0
*Bridegroom, (Epps) .	5 0
Brockmanii . . .	2 0
*Beauty (Youell's), fine .	3 6
Britannia (Smith's) .	2 6
**Coronet, (Smith's,) in May	7 6
**Coccinea Vera, (Smith's,) in May . . .	5 0
* Cylindrica Superba, (Smith's) . . .	5 0
Cornuckii	2 6
Curtisii	1 0
Compacta	1 0
Cooperii	1 6
Carnea	1 0
Chandlerii	1 0
Conspicua	1 0
,, arborea . .	1 6
Corymbiflora . . .	1 0
*Countess of Tyrconnel (Youell's), fine . .	3 6
*Countess of Zetland (Youell's), fine .	3 6
*Conservative (Youell's), fine	3 0
Cooperii	1 6
Champion (Smith's) .	3 0
**Constellation (Miller's) to be sent out this season—late . .	12 6
**Candidate (Girling's) in May	5 0
Dalstonii	1 0
Dicksonii	2 6
Delicata	2 0
Duchess of Gloucester (Standish's) . . .	2 0
Defiance (Smith's) .	3 0
**Decora, (Smith's,) in May	7 6
*Duke of Wellington, (Epps) . . .	5 0
Elegans superba . .	1 6
**Expansa, (Smith's,) in May	7 0
*Espartero, (Epps) .	7 6
**Emperor of China, (Epps)	5 0
Excelsa	1 6
Exmia	1 0
Eppsii	2 6
Erectum	1 6
Elegans	1 6
Enchantress . . .	1 6
,, (Harrison's)	2 0
Exoniensis . . .	3 6
*Exquisite (Youell's), fine	3 6
Eclipse (Smith's) .	2 6
*Florence, (Epps) .	5 0
*Fair Helen, (Hally) .	5 0
Floribunda (Standish) .	1 6
Formosa elegans . .	1 0
Fulgens multiflora .	1 0
Floribunda magna .	1 0
**Gigantea, (Smith's,) in May	10 0
Gem	2 6
Globosa variegata . .	2 0
Grandis	1 0
**Hector (Smith's), in May	5 0
Hebe (Standish) . .	2 0
**Hero of Suffolk (Girling's) in May	7 6

	per plant.—s. d.
**Incarnata (Smith's,) in May	5 0
Iveryana	2 6
Insignis	1 0
* Kentish Bride, (Epps) .	7 6
* ,, Hero, (Epps) .	5 0
* King John, (Hully) .	5 0
King	1 6
Lanell	2 6
Longiflora hybrida . .	1 6
* London Rival, (Smith's)	7 6
*Lady Rae Reid (Youell's) fine	3 6
*Lady Sondes (Youell's), fine	3 6
Magnifica per plant—1s.	0
** Magnet, (Pawley) .	10 6
* Marginata, (Hally) .	5 0
** Modesta, (Smith's) .	5 0
* Monarch, (Epps) . .	5 0
* Marie, (Epps) . .	5 0
*Marchioness of Ormonde (Youell's), fine . .	3 6
*Madonna (Youell's), fine	3 6
Majestica (Smith's) .	3 0
Monypennii	1 0
Magnificent	2 0
** Neptune, (Smith's) in May	5 0
Noblissima (Smith's) .	3 6
Pendula (Young's) . .	1 6
Pulcherrima	2 0
Princeps	1 0
*Prince Albert (Youell's), fine	6
* Princess Sophia, (Marnock)	10 6
* Prince of Wales, (Epps)	5 0
** ,, ,, (Pawley's)	10 6
Paragon (Smith's) .	2 6
** Queen, (Pawley's) .	10 6
**Queen Victoria (Smith's), expect to be sent out this season . . .	21 0
Racemiflora . . .	0 6
Racemosa	2 0
Racemiflora elegans .	1 6
Robusta (Smith's) .	3 0
Rogersiana . . .	2 6
Ricartonii . . .	1 0
** Reflexa, (Smith's) in May . per plant—5s.	0
* Sanguinivea (Hally) .	7 6
Smithii	1 0
Splendida	1 0
Standishii	1 0
Splendens (Humboldt) .	1 0
,, (Kyle's) .	1 0
Salmonia	1 6
Stewartii	1 0
Sanguinea	1 6
Stylosa elegans . .	1 6
,, maxima . .	1 6
,, pulchella . .	1 6
St. Clare [true] . .	2 6
*Syringiflora (Youell's), fine	3 6
Stanwelliana . . .	2 6
Transparens . . .	2 0
*Tagliani (Youell's), fine	3 6
Thompsonia superba .	1 6
Towardii	1 0
Triumphans . . .	1 0
Toddiana	2 6
Tricolor	1 0
** Uttoxeter Beauty, (Rogers) . . .	10 6
** Uttoxeter Rival, (Rogers)	10 6
Victory (Smith's) .	3 6
Venus Victrix . . .	1 0
Victoria	2 0
** Vesta, (Smith's) in May	10 6
** Wat Tyler, (Hally) .	5 0
** Winnerii, (Epps) .	5 0
Youellii	1 0

N.B.—With every other new variety worthy of cultivation, that may be advertised by other parties after the publication of this list.

VERBENAS.

*"Monarch" (Youell's) is a delicate creamy white, surpassing in its size and fragrance every other variety; the tufts of bloom measuring from 3½ to 4 inches diameter, and will be sure to give satisfaction. Price 2s. per plant.

* "Salisiana," (Youell's). This fine variety is of the most vivid scarlet, equal in this respect to "Melindria;" the bloom, however, is three times the size, and very fragrant, and will prove most desirable in any collection. Price 3s. 6d. per plant.

* "Elegans" (Youell's), is a most interesting variety, being a delicate lilac, with a distinct white eye; flower large and fragrant. Price 3s. 6d. per plant.

* "Superbum" (Youell's), can be recommended as a variety completely novel, and one that must be cultivated in every collection, the colour being of the richest rosy crimson, or ruby, producing tufts of flowers of 3½ ins. in diameter, and delightfully fragrant. Price 5s. per plant.

The above four varieties have been selected from upwards of 2000 Seedlings, and may be confidently relied upon as possessing superior claims, and will be sure to give satisfaction; are now ready to send out (post-free). If the four varieties are taken, they will be charged 15s. the set.

Amethystina . . .	2s. 0d	Incisa major . . .	1s. 6d.
Arraniana superba .	1 0	Laconii . . .	1 0
Barkerii, extra fine .	1 6	* Longiflora (Girling's) .	2 0
Barnesii . . .	1 0	Melindris major .	0 6
* Beauty . . .	2 0	* Minstrel Boy .	2 0
* Blue Queen (Miller's)	5 0	Picta . . .	0 6
* Boule de Feu .	2 0	Prince of Wales (Wood's)	1 0
* Bridesmaid .	2 0	Princess Royal (Youell's), the best white out	1 6
Delicata . . .	1 6	* Renown . .	2 0
Edmondii . . .	1 0	Rosy Queen (Hally)	1 6
Emperor . . .	1 0	Speciosa (Kyle's) .	1 0
Favourite . . .	1 6	Splendens . .	1 0
Formosa elegans (Croft's)	1 6	Striata coccinea, extra fine	1 0
Formosa . . .	1 6	* Tenerioides rosea, do.	2 6
* Fortune-teller .	2 0	Tweediana . .	0 6
Grandis . . .	1 6	Victory . . .	1 0
Groomiana . . .	1 0	Vivid . . .	1 0
Hendersonii . .	1 0	* Zeuxis (Miller's) .	3 6
Hilalopiana . .	1 0		
Incana . . .	0 6		

Now ready, per post free, at the following prices, viz.—
12 Extra fine Varieties, 6s., the selection left to Youell & Co.
12 Ditto ,, 10s., the selection left to the purchaser.
[With the exception of those marked thus *].
Any other variety worthy of cultivation that may appear, after the publication of this Catalogue, can be supplied at the advertised prices.

PETUNIAS.

Beauty	1s. 0d.	Punctata (Miller's) .	7s.6d.
Bicolor	1 0	Princess Royal (Wood's)	3 6
Grandis	1 0	,, Alice (Wood's)	3 6
Lady Peel . . .	1 6	,, Perfection (Wood's)	3 6
Magna rosea . . .	1 0	Rosea alba . .	1 6
Maculifora . . .	2 6	West Briton (Woods) .	3 6
Medora . . .	1 0		

With every other variety worthy of cultivation that may be advertised by other Parties after the publication of this List.

CHRYSANTHEMUMS.

Achmet Bey, lilac	Formosum, white and yellow	Mirabile, white and buff
Arago, buff and red	Golden Lotus, flowered yellow	Peter, creamy
Beauty, pale lilac	Gem, pink and white	Perspicuum, pink
Belladonna, pink	Goliath, white	Princess Marie, light pink
Bethula, lilac	Gouvain St. Cyr, orange	Pulcherrimum, rose
Campestroni, purple	Hero	Queen, deep rose
Casimir Perrier, small, crimson	Incurved, pink	Quilled yellow,
Chancellor, white and pink	Insigne, pink and red	Rosalind, pink
Changeable, yellow	Imperial, pale lilac	Selters, white
Christophe Colombe, lilac	King, pale rose	Sulphurea
Col. Combes', salmon	Louis-Philippe	Sultana, rose
Conspicuum	Lucidum, white	Superb, clustered yellow
Defiance, white	Marchioness, white	Surprise, white
Duc de Conigliano, crimson	Madame Pompadour, dark rose	Starry, purple
Duchess de Montebello	Marechale Messina, yellow and red	Tasselled, lilac
Duke, extra fine	Marie, red	,, yellow
Elegans, rose	Marie Antoinette	Triumphant, pink & buff
Expanded, purple	Magnet, yellow	Two-coloured incurved, yellow and brown
Empress, lilac	Memnon, pink	Vesta, white
Fleclier, dark rose	Minerva, pink and white	Wheeleriana

Sent post-free to any part of the United Kingdom at 12s. per doz.

ANAGALLIS.

A. Carnea grandiflora	1s. 0d.	A. cærulea grandiflora	1s. 0d.
A. Breweril . . .	1 0	A. speciosa . . .	1 0

The above can be sent free of postage to any part of the kingdom.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name	.	10s. per dozen
12 Extra Fine ditto,	do.	18s. ,,

FINEST CARNATIONS AND PICOTEES.

YOUELL AND CO. beg to refer the Readers of the *Gardeners' Chronicle* to their Extensive List, with Prices, of the above highly esteemed Flowers, which appeared on the Advertising pages, 706 and 707, of this Paper, of October the 14th, and will be found to contain every variety worthy of cultivation.

Prices as follows:		£. s. d.
12 pair of good Show Sorts	. . . . .	1 4 0
12 ditto fine	ditto	1 10 0
25 ditto	ditto	3 0 0
12 ditto extra fine and very superior	ditto .	2 10 0
25 ditto	ditto . . ditto	5 0 0

The selection being left to Youell & Co.

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by Youell and Co.

YOUELL AND CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year-old plants, 8 to 10 inches high, 10l. per 100, or 20s. per dozen.

Fine Plants of CEDRUS DEODARA, in Pots, 2ft. to 2ft. 6 ins., 10s. 6d. each.

FLOWER-SEEDS.—30 Packets of the choicest and newest kinds sent per post free for 5s.

N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

Great Yarmouth Nursery, April 25, 1844.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will submit to public competition, at the Auction Mart, Bartholomew-lane, on Tuesday, April 30, and Thursday, May 2, 1844, at 12 o'clock each day, a fine collection of DAHLIAS, comprising all the new and leading varieties. Also a splendid assortment of GERANIUMS, in bloom; the newest varieties of FUCHSIAS and VERBENAS, and a variety of other flowering Plants. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

HORTICULTURAL SOCIETY OF LONDON EXHIBITIONS AT THE GARDEN.—The First Meeting will take place on SATURDAY the 18th of May; subjects for Exhibition must be at this Office on Friday the 17th; or at the Garden before half past Eight o'clock A.M., on the day of Exhibition.

Exhibitors will be provided with a printed form in which they will state, for the information of the Judges, whether their plants, &c., have been shown previously during the Season. The gates will be open at One P.M. Tickets are issued to Fellows at this Office, price 5s. each; or at the Garden, in the afternoon of the days of Exhibition, at 7s. 6d. each; but only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent Street on the day of Exhibition.—21, Regent Street.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—EXHIBITIONS of PLANTS, FLOWERS, and MICROSCOPES in the Garden of this Society, for 1844.

TUESDAY, April 30.
TUESDAY, June 4.
TUESDAY, July 2, 1844.

When Prizes exceeding 200*l.* will be competed for.

Fellows and Members, and the bearers of Ivory Tickets, will be admitted upon entering their names in the Gate-book.

Visitors may obtain Tickets at 5s. each, except on the days of Exhibition, when they will be 7s. 6d. each, by orders from Fellows and Members of the Society only.

The Gates to be opened at 2 o'clock. CARRIAGES to enter the Inner Circle of the Park by the road opposite the York Gate, to set down in front of the principal Gate of the Gardens, and to take up at the Gate opposite the road leading to Chester-terrace. Should the weather prove wet, a NEW GATE connected with the Tents will be opened.

Tickets and further particulars at the Gardens.

By order of the Council, J. D. C. SOWERBY, Sec.

The Gardeners' Chronicle.

SATURDAY, APRIL 27, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	April 30	Royal Botanic	2 P.M.
WEDNESDAY,	May 1	Horticultural Anniversary	1 P.M.
		Society of Arts	8 P.M.
FRIDAY,	May 3	Botanical	8 P.M.
MONDAY,	May 6	Entomological	8 P.M.
TUESDAY,	May 7	Horticultural	3 P.M.
		Linnean	8 P.M.

IT is the indefeasible privilege of a British subject to be plundered. If a clause to that effect was not inserted in the Bill of Rights, it was only because it is clear and universally admitted. The thing is indeed so natural, and the craving for the privilege so strong, that people will cheat themselves rather than not be cheated at all. It is, no doubt, upon some such point as this that the clever gentlemen who live upon the public satisfy their consciences.

It may be said that when a man is eager to be cheated he sanctions the cheat; that the verb passive includes the verb active, and that "to be done" implies "to do." If a man will procure for himself the pleasure of being robbed, it seems necessary that some kind person should take on himself the office of robber. No wonder, then, that when a gardener or farmer signifies his taste for being plundered by cheating himself of half the manure his garden or farm can make, others should minister to his fancy by cheating him also with that which he purchases. And it must be confessed that we have no lack of volunteers for so agreeable an undertaking. Indeed, the eagerness to pluck the poor cultivator is such, that we wonder he should have a feather left to line his nest with.

A memorable instance of these doings was mentioned the other night by Mr. Edward Solly, at the Royal Institution, during a lecture which we have reported elsewhere. Having procured from a manufacturer a certain manure, he objected to its colour and general appearance, and expressed his doubts of its being genuine. "Oh!" said the seller, "it is not quite pure, but it is *good enough for Agricultural purposes.*" Upon which it was analysed, when it was discovered that the impurities (foreign matter,) amounted to NINETY-SEVEN PER CENT! so that, in the opinion of the seller on this occasion, if a manure is genuine to the extent of 3 lbs. in a hundred it is good enough for a gardener or farmer.

To be sure it is rather expensive to purchase materials at this rate; but, on the other hand, it is extremely convenient to sell them. One man's loss is another man's gain; and besides, farmers and gardeners are not the people to find out the trick; which is an additional comfort to tender consciences.

But to be serious; for this is a very serious matter. Let us compare the selling price of some of the common articles of consumption, with their real price when adulterated to this enormous extent. Rough phosphate of ammonia is quoted at 3*d.* per lb.; but as only 3 lbs. in each 100 lbs. would be genuine, of course the true price paid for it would be 8*s.* 4*d.* per lb.; nitrate of soda sold at 2*d.* per lb. would cost about 5*s.* 6*d.*; and sal ammoniac bought at 6*d.* per lb. would stand the consumer in just 16*s.* 8*d.* Or let us suppose that an acre of land is known to require 4 cwt. of guano, or 20 bushels of bone-dust, or 5 cwt. of superphosphate of lime; the nominal expense of such dressings would be only 2*l.*, but the cultivator, in order to get them, would have to buy about 6 *tons and a half of guano, or* 82 *quarters of bone-dust, or* 8 *tons of superphosphate of lime,* AT THE EXPENSE OF 66*l.* INSTEAD OF 40*s.*

Now is not this monstrous? Is it not an evil, as compared with which all others shrink into insignificance? For manure is the foundation of the prosperity of the cultivator of the soil, and no amount of capital, skill, or prudence, nor any happy succession of good seasons, can supply its place. The market-gardener cannot grow his Cabbages, Asparagus and Lettuces any more than the farmer his Wheat and Turnips, without an abundant supply of this invaluable material; and, skill and soil being alike, the amount of productiveness must of necessity be regulated by the amount of manure at a man's command.

Yet some of the dealers in this substance have the audacity to declare that although what they sell is adulterated to the extent of 97 parts in 100, still it is "good enough for a farmer." In examining some of the samples of manure that have been occasionally sent us, we have been amazed, not more at the impudence of the sellers than at the extraordinary credulity of the buyers. Clay, lime, and a small quantity of smelling salts form an artificial guano; pounded straw and dry loam make Peruvian guano; lime-rubbish, and a small quantity of bone-siftings form bone-dust; dirty rock-salt does for nitrate of soda to a great extent; and even soot is enormously doctored with cinder-siftings. However, in the opinion of the sellers, they are "good enough for farmers and gardeners."

Let us not be misunderstood in this matter. Let us not be supposed to insinuate that all the dealers in manures are rogues; on the contrary, there are among them most respectable men, who are above all suspicion. The facts, however, that have been mentioned are notorious, and sufficiently prove that fraud does exist in the manure trade to a disgraceful extent.

A remedy for this state of things is of the most urgent necessity. Our correspondents cry out loudly to *us* for assistance, as if *we* had the power to redress such grievances. We must, however, tell them plainly, that the remedy lies with *themselves*, and with no one else. We may occasionally give a little help; but to check such an evil is beyond the means of a newspaper. The sale of genuine Peruvian guano last year, by one house alone, amounted to a hundred thousand pounds, and by another to sixty-five thousand pounds. The temptation to a fraudulent participation in such a traffic is so great, that nothing except the good sense of buyers can arrest it. It is in vain to say "Deal only with persons of known respectability;" for the immediate reply is, "Who are those persons?" and that is a question to which, for obvious reasons, no public journalist has the right to reply; the utmost that he can do is to warn people against yielding to the seduction of cheapness, or the temptation of low prices at auctions, got up by nobody knows whom.

There is, however, a remedy within all men's reach, to which we can without impropriety direct attention, and that is, the employment of Chemical Analysis. It is true that people cannot have recourse to this of themselves, because they, in general, want the apparatus, skill, and knowledge required to conduct it. But the country is full of young men whose chemical dexterity is quite sufficient to obtain at least such a rough analysis as will protect a buyer against enormous fraud. The payment of a moderate fee to them would secure their advice. Or, as Mr. Hyett, of Painswick, has recommended, and Mr. Gyde proposed, Farmers' Clubs might give some neighbouring chemist a retaining fee, in consideration of which he would undertake to perform analyses for the Members of the Club at certain small rates of remuneration. Besides which, our advertising columns show that persons are to be found both able and willing to apply their knowledge to this kind of investigation. The utility of this is obvious. Suppose, for instance, a dealer offers guano for sale; if the farmer, before buying a ton of it, pays a chemist 10*s.* for analysing a sample, and finds it of bad quality, although he may lose the ten shillings, yet he will avoid laying out ten pounds upon a material whose only recommendation is its being "good enough for a farmer." In the same way gentlemen might authorise their gardeners to consult the lecturers at Mechanics' Institutions, and thus save themselves many a pound, and much more loss and vexation.

For ourselves, we entertain no doubt that this is the true and only mode of opposing fraud on the part of dealers in manures; and we are perfectly convinced that, if it were once carried generally into effect, the difficulty of putting off adulterated articles would be such as to render the risk greater than the profit; and that would be the end of the system.

AMONG the other EXPERIMENTS now in progress in the GARDEN OF THE HORTICULTURAL SOCIETY are several with heating contrivances, the result of which may now be examined with advantage. The principal of these are, an iron tank apparatus, by Burbidge and Healy, for air-warmth; several sorts of boilers, by different persons; hot-water gutters in a Vinery; bottom-heat obtained in an Orchidaceous house, and elsewhere, by the same means; and bottom-heat derived from iron gutters roofed over with thick drain-pipes split, and converted into arches.

The endless inquiries that are made of us concerning the value of the various modifications of the tank-system now in use, are best answered by a reference to what is going on in the Society's Garden, to which all Fellows and their friends have daily access, except on Sundays. For the information of those who may not have an opportunity of visiting the Gardens, we may state that the operation of the tank-system, in all its forms, is most satisfactory up to the present time, wherever both dampness and warmth are wanted. In an iron Vinery, the health of the foliage of Vines, Kidney Beans, Figs, and Psidium Cattleyanum, cannot be exceeded; and Strawberries have ripened their fruit well. It is, however, still to be ascertained how far the dampness of the tanks can be advantageously counteracted when Grapes and Figs are ripening.

As the season is now at hand when HORTICULTURAL EXHIBITIONS will be again held all over the country, we should be obliged by our readers informing us whether or not they are of opinion that the publication of the proceedings at the Country Shows is of any real utility. We have been very often advised to leave them out; and have as often replied that although their publication is attended with some inconvenience and great expense, yet that we are willing to go on with them so long as they gratify the parties concerned.

We are again urged to discontinue them. One of our most able correspondents writes thus:—

"What I dislike very much in your Paper is the account of Provincial Flower Shows, with the Prizes awarded; I never read them, nor can I learn that any one else does in this neighbourhood. They merely increase the bulk of the book when bound up at the end of the year. I except, however, the account of Exhibitions in London and Chiswick. Depend on it you would be more popular by omitting altogether the Provincial Flower Exhibitions."

It is impossible for us in London to judge correctly how far persons in the country, where the Shows take place, participate in these opinions, which we trust will induce our correspondents to express their views very generally. We shall leave the matter in their hands, and form our own decision as to the utility of reporting the Country Shows, by the number and bearing of the letters on the subject, which we may receive during the next fortnight.

THE SWAN.

IT may be interesting to some of your numerous readers to have one more testimony added to those you have already chronicled, in regard of the useful and ornamental character of these noble birds, and that too of a very curious and interesting trait in their habits and manners; and as the hint, at this particular season, may more easily be put to the test, and prove more useful than at any other, I deferred sending it till the March winds should waste the icy barrier from the lakes, and let the Swan go free to show his character.

There are several pieces of water within the inclosure in these gardens, to which the Swans on the lakes have no access; and in the spring of 1840 these waters, within the rabbit-proof fence, and every walk and avenue in their vicinity, was croaked and crawled over with thousands of full-grown toads, and a thin sprinkling of frogs. Seeing this nuisance, I began to think of getting them collected, well knowing that the refuse of fish—to which they bore a strong resemblance—makes an excellent manure; and on that score I thought the carcass would pay for the catching and killing, and by preventing their spawning would abate the nuisance, if not prevent it for the future.

However, on examining the larger pieces of water without the fence in the open pleasure-ground, where I expected the toads had taken up their "head-quarters," I was disappointed, and found their encampments there very few and far between. Seeing this, I began to think that some other cause than a partiality for the picturesque must have induced them to prefer a pond in an inclosed garden, to an open lake outside the fence; and, judging from the array, that such a regiment could not have been mustered in a space of less than a mile circuit, and as much of this mile must have been over land extremely uneven, I could not comprehend the reason why they did not prefer the nearest pond, after travelling such a long and weary way. One morning, however, I had the matter cleared up very satisfactorily, and found that though they had perhaps in the first instance pitched their tents in the nearest pool, the fear of enemies had made them resume their pilgrimage; and though many of them had certainly "come from afar off," they must yet go still farther and find some quiet place, secluded or inclosed, where Swans come not to claim superiority; for there I found, on the open lake, a Swan giving battle to the toads in good earnest, curing the plague by attacking the enemy on the water, chasing them from place to place as fast as oar and sail could steer, and ever and anon the arched neck and bill, armed like a pair of pincers, descended with unerring grapple on the foe; and in one or two places where they had skulked under some branches for safety, he had dragged them out, and not only killed them, but cast them on the bank out of the water, as if he were aware that their remains would corrupt the watery region where he reigned. Now, though the frogs were no doubt acceptable to the Swan as an article of food, he would not eat the toads; and this leads me to infer that his killing

them wantonly, and to such an extent, may be a feature in his instinct and economy, intended by Nature to keep this class of crawling vermin in check by constituting the Swan their natural enemy,—an office for which he seems eminently qualified, although to all appearance but indifferently rewarded. Besides clearing the lakes of toads, &c., I find that Swans shear the grass on the brink, and thus keep it short and neat; and, woe to any aquatics, whether weeds or not, that the strong bill of a Swan can either rend or root up; this noble bird may therefore be regarded as an industrious dresser and keeper of his domain; and whoever has not already banished the frogs and toads, will be glad to hear of so effectual a remedy for this plague as the Swan undoubtedly is; for he seems animated with such a hatred of all vermin, and so determined to drive them either to death or banishment, as has not been seen since the days of St. Patrick. In Laughton's "Guide to the Isle of Man," I see that "Mona's Isle," as well as Erin, is said to have been cleared of this species of vermin by the agency of that celebrated missionary; and the following humorous quotation is given as a sample of the manner in which the laudable deed is handed down to posterity:—

"Success to bold St. Patrick's fist—
He was the Saint so clever—
He gave the snakes and toads a twist,
And banished them for ever.

There's not a mile in Erin's isle where nasty varmint musters,
Where'er he put his blessed foot he murthered them in clusters.
The frogs went hop, the toads went plop, slap dash into the water,
The beasties committed suicide to save themselves from slaughter."

Whilst on this subject I cannot help alluding to the painful practice of pinioning young Swans, by cutting a piece of the flesh of the wing off to prevent their flying. The poor cripple thus mutilated may look like a Swan, but can give no idea of the nobler movements and truly majestic character of that fine bird on the wing and on the water, in the enjoyment of his native liberty. Surely some one will be found humane enough to advocate the cause of the Swans, and induce their keepers to refrain from this barbarous practice, and rather delight to see them in their true and perfect character.

Notwithstanding all the tenderness that Swans show to their young in infancy, when the cygnets are nearly a year old, the old cock begins to give battle to his sons, and makes them take to flight. On one of these occasions, when a cygnet had been obliged to fly away, I saw him coming home to his father soaring in circuitous lines through the haze of gray mist, that made him appear much larger and altogether so changed from the simple cygnet he used to look on the water, that I began to think if gentlemen so much admire the dignified animation that pinioned Swans confer on ornamental water, what would they not feel who have a taste for the sublime, to see these noble birds perfect and free, coming in the clouds of heaven as silently and softly as the flakes of snow.—*A. Forsyth, Alton Towers.*

FAMILIAR BOTANY.

MORPHOLOGY.—No. XII.

THE penetrative sun,
His force deep darting to the dark retreat
Of vegetation, sets the steaming power
At large, to wander o'er the verdant earth,
In various hues, but chiefly thee, gay green!
Thou smiling Nature's universal robe!
United light and shade! where the sight dwells
With growing strength and ever-new delight.
The juicy grapes
Put forth their buds, unfolding by degrees,
Till the whole leafy forest stands displayed
In full luxuriance to the sighing gales.

BEFORE proceeding with a demonstration of the conversion of leaves into the parts of a flower, it will be as well to pause, in order to show another curious change that comes over the organs of plants during their growth, by means of which an apparatus, quite as little like the leaf as the gayest corolla, is plainly proved to be nevertheless no more than metamorphosed foliage.

Evidence of this kind meets us at every step, now that all Nature is struggling once more into active life, and that the wondrous powers of organisation are exerting their force with the most prodigal luxuriance. When the ruin of winter is repaired by the magic hand of spring, the first movement of life that is perceptible among plants is the swelling of their buds, just as the first step towards repose was connected with the formation of those curious organs.

A bud at rest is but a dingy lifeless thing—a point on the surface of a branch—a speck that none but a botanist would know to be pregnant with life. But when it begins to move and be animated with the throes of nature, it swells, divides into scales, and by slow degrees is the mother of a branch. To watch how this happens is most instructive. Take the Horse-Chesnut for examination.

The bud of the Horse-Chesnut, like all buds, consists of hard, dry plates, having no more resemblance to the great fingered leaves of the trees than the scale of a soldier's epaulette to his cuirass. If we cut a bud open during winter, we find these plates all alike in form and structure; but the interior softer and greener than the exterior. When, however, the growth commences, the centre swells and forces the plates asunder. Then the outermost, hard, thin, and dry, retain their first form without change; the next become a little thinner and greener; then follow plates growing at their base and becoming quite green; to which succeed others so green, and thin, and large, that they could not be known to be transformed plates, if a portion of the original brownness did not still adhere to their points. And this is the first stage of change. The hard, dry plates of the bud are gradually metamorphosed into pale green straps.

But the current of change is onward, onward. The force of Nature, once aroused, can no longer be checked; imperfection changes with rapid and restless energy to perfection. The pale green straps lengthen, and become hairy; others are longer, narrower, and more hairy; a third stage, and they are shaggy with wool, and furnished at their points with a deep green appendage or two. The second stage of change approaches; the fingered leaf is begun.

Then arrive more rapid metamorphoses. Just above the plates of the last degree, long narrow, shaggy, and bearing an appendage at their points, come parts still narrower, with more of a leaf at the end; and then, by a further contraction of the first-born plate and enlargement of the last-born leaf, the foliage appears in all its completeness.

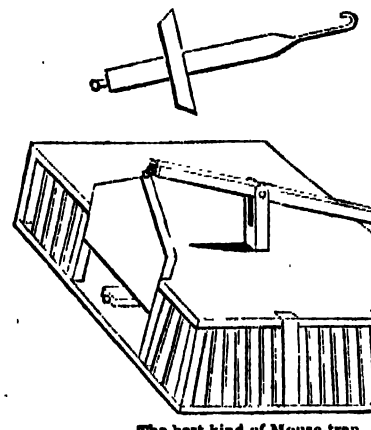
No man in his senses can deny that this curious series of changes from a hard dry brown plate to a large succulent green fingered leaf has been so gradual as to prove, to the most rigorous demonstration, that the whole series of parts consists of the same organ in different stages; and consequently the winter plates in which a leaf-bud is encased, as in defensive armour, are really nothing more than leaves in an incomplete condition.

What is true of one leaf-bud is true of all others; and consequently all leaf-buds are composed of rudimentary leaves. If that is so, why should not a flower be formed on the same plan? And now for the proofs of that.—*R. E.*

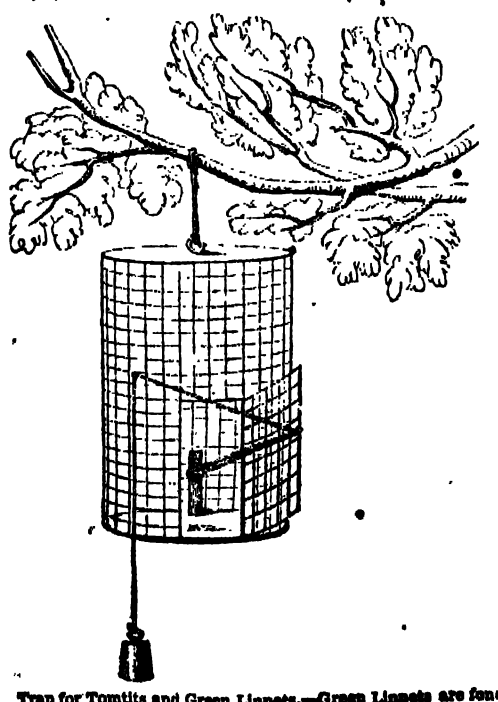
VERMIN.

As it is of great importance to Gardeners and Agriculturists to have vermin destroyed, and as I have been successful in this, I wish to communicate the methods I follow. I am not aware that I have either a rat or mouse in my house or garden, and sparrows are so much diminished in numbers that my currants hang on the bushes until late in the autumn.

Against the rats I have employed the bricklayer, who has spoiled all their runs with brick and mortar, consequently they have left me. With regard to mice, I keep two traps; one under cover in my garden and another in my garret, baited with oatmeal. These traps catch the first mouse in the manner of a rat-box trap; other mice then enter in by two little falling doors which allow a passage only inwards. This kind of trap requires good workmanship in the making, and hard wood, to prevent the mice gnawing a way out.



The best kind of Mouse-trap.
Door, 3¼ inches wide; Top, 8½ inches square; Height, 3 inches.



Trap for Tomtits and Green Linnets.—Green Linnets are fond of Hemp-seed.

As to birds, by far the most mischievous to the gardener is the bullfinch, as its only food in spring is fruit-buds. All gardeners and orchard-owners should keep a male and a female bullfinch and two trap-cages. With this apparatus other bullfinches are easily taken. Tomtits are next in mischief. They are most readily caught in cages having a weight or spring to the door, which shuts as the bird enters. Bait with fat or oats, or both. In June I have a long plank raised from the ground, with narrow edging on each side to keep the food from falling down or blowing away. The plank is 40 feet from some thick bushes, behind which a person fires a gun when the board is covered with sparrows. My gardener has killed as many as thirty at one shot. The plank must of course be in a line with the gun.

In order to keep down wasps in spring I purchase of poor children the large females, by which practice I find fewer nests of this troublesome insect in the autumn. In catching vermin in traps, the first lesson to be taught is, that they should have free ingress and egress until all acquire a confidence. Many more will be caught this way than if the traps were continually set.—*Drewen.*

MEXICAN PINES.

THE following statement of the present condition of some of the Mexican Pines growing at Bayfordbury (Herts), has been delayed in order that I might the better show how far they appear to be uninjured by the late winter, during which they have remained without any protection. It will be seen that Pinus oocarpa, and P. leiophylla were both killed in 1842, and P. pseudo-strobus much injured in 1843, having all its young shoots killed.

MEXICAN PINUS AT BAYFORDBURY.

Planted in 1841.	Total Height.	Year's Growth.	Spread of branches	Girth of Stem.	Observations.
	ft. in	ft. in	ft. in	in.	
Pinus patula . .	6 8	1842..3 9 1843..2 2	6 3	7	Unprotected and uninjured.
P. apulcensis . .	5 2	1842..2 3 1843..2 8	4 9	8	Do. do.
P. Teocote . . .	4 8	1842..2 4 1843..1 9	3 11	7	Do. do.
P. Hartwegii . .	1 1	1843..0 6	1 2	6	Do. do., apparently will be very hardy
P. macrophylla . .	2 3	1843..1 10	1 6	4	Do. do., apparently very hardy, and promising to be very fine, with leaves 10 inches in length.
P. Devoniana. . .	1 10	1843..1 4	1 4	7	Do. do., length of leaves, 1ft. 6in.
P. Russelliana . .	1 10	1843..1 2	1 7	6	Do. do., length of leaves, 1 ft.
P. Montezumæ .	3 7	1843..1 3	4 0	7	Do. do., length of leaves, 10 in.
P. oocarpa . . .	—	—	—	—	Killed in 1842.
P. leiophylla . .	—	—	—	—	Do.
P. pseudo-strobus	3 6	1843..1 4	—	—	Very much injured in 1843; the young shoots killed back to last year's wood in 1843.
Abies religiosa .	2 5	1843..1 2	2 8	—	Protected with single mats, and uninjured.
Juniperus flaccida	3 0	—	3 2	—	Unprotected and uninjured.
Cupressus thurifera	7 6	—	5 0	—	Do. do.

GRAFTED PINUS AT BAYFORDBURY.

Name of Graft.	Name and height of Stock.	Date of Grafting	Year's Shoot.	Total Height.	Observations.
			1843 ft. in	1843 ft.	
Pinus macrocarpa	P. Laricio, 2 ft.	June 1840.	1 9	7	
P. Sabiniana .	P. Laricio, 2 ft.	June 1840.	1 10	6	
P. Lambertiana	P. sylvestris, 4 ft.	May 1842.	2 7	—	Girth of graft, 5 ins. Four shoots were grafted besides the leader, producing in all 16 branches.
P. Lambertiana	P. strobus, 4 ft. 6 in.	May 1842.	2 0	—	Girth of graft, 4 ins.
P. Montezumæ	P. sylvestris, 11 ft. 6 in.	June 1842.	1 10	—	
P. insignis . .	P. sylvestris, 4 ft.	June 1842.	2 8	—	
P. insignis . .	P. sylvestris, 9 ft.	June 1843.	—	—	The leader and lateral shoots of the stock were grafted with 27 grafts on it, all taken well, and grown from 4 in. to 8 in. the same season.
Ten distinct species.	P. sylvestris, 12 ft.	May 1843.	—	—	All of which are doing well. It will have a curious effect.

These plants were raised from seed sent out by the Horticultural Society in 1840, and when planted out in 1841 were not more than from two to four inches high. I have not seen any of the Mexican Pines in any collection approaching to such vigour of growth.

I would particularly call attention to the method of grafting Pines after the manner spoken of by Mr. Loudon, in his "Arboretum Britannicum," in which I have been very successful; some of my specimens may, I think, deserve notice, as being not only very good examples of the success of the system, but as producing shoots of a length and size which I have not seen in others of the same species. I allude to the two Pinus Lambertiana, in which species I have never seen such vigour of growth among the few seedling plants existing in this country. I have also found P. insignis make vigorous shoots, and take more freely than any other which I have tried, growing the same season that it is grafted some inches, which but few of the others are inclined to do. I have grafted most of the hardy species, and find Pinus sylvestris more suitable as a stock than any other for Pinus; Abies excelsa for Abies, and A. Picea for Piceas. The ten distinct species grafted on the same plant of Pinus sylvestris are doing well, and will have a curious and perhaps beautiful effect.

I grafted many species on stocks from 10 feet to 12 feet high, in various places about the park, all of which are promising to make fine trees. By this system of grafting,

a Pinetum of grafted specimens could easily be formed, and at a trifling expense, supposing any one to have a plantation of Scotch, Spruce, and Silver Firs, which might be grafted at various heights, choosing regular distances.

I have found the best time for commencing this operation to be, when both the shoots of the stock and species which you intend to graft, are as brittle as the top of a young Asparagus, which is generally about the middle or latter end of May. But this depends much upon the season. At the time of my proceeding to graft, I endeavour to choose a stock in a suitable situation, where there would be no occasion to remove it after grafting. I break off the top of the stock, and split it down about an inch and a half; then choosing a scion of equal size to the stock, and cutting it very smooth into the shape of a wedge, I insert it into the stock, leaving it an inch above, and tying it neatly as far as the incision was made, grafting both the leading and uppermost lateral shoots. In about fifteen or sixteen days, you may tell if it has taken; and at the end of a month, or five weeks, the tying may be loosened, as the stock will swell fast, and if allowed to remain, would prove injurious to both stock and scion. I have always found it needful to preserve the scions from withering, by keeping them in a little moist grass, or moss, during the time of operating, for which I prefer the morning, evening, or dull days. The branches of the stock should not be pruned off, but only shortened where they grow too vigorously. The Pinetum here is a space of ground of nearly seven acres, adjoining to the Arboretum, on a light sandy loam, facing the south-west, with many fine specimens of Pinus insignis, P. macrocarpa, P. sabiniana, and Abies deodara, from 8 ft. to 11 ft. and 12 ft. high, which are in a most promising condition. In no one instance has there been any preparation made for any of the specimens, beyond a good digging in the ordinary way of planting.—*John Slowe, Gardener to W. R. A. Baker, Esq., Bayfordbury, Herts.*

Home Correspondence.

Morphology.—There are those who deny that in the development of plants those parts which, under certain circumstances, become expanded in the form of leaves, admit of being developed in a different character, viz., as flowers, and as fruit, if the circumstances affecting that development are changed in due time and in the requisite degree. They seem to assume that flowers are pre-organised in the embryo plant, and therefore are developed as a matter of course (a woman's reason—because it is so) as the plant extends its growth. That the production of flowers and fruit, the "seed after its kind," is indeed provided for, in the designs of the Infinite, cannot be doubted; but as those designs are ever carried on by means of natural agencies, there is no atheism or infidelity in believing that circumstances are ordained to exercise influence over the development of plants, and thus to bring about their fructification: neither is there anything unreasonable in such a view, inasmuch as there is an overwhelming mass of natural evidence to prove it; whilst, on the other hand, to assume that these parts are each and all formed in the embryo, and are uninfluenced in their development by the circumstances in which they are placed, is to take up a position which is directly at variance with all natural evidence. It appears to be sufficiently clear that "what would be leaves under certain conditions of growth, would be flowers if those conditions were changed soon enough, and the requisite conditions supplied;" and yet there are those who profess to deny this. As the attention of gardeners has of late been directed to this subject, it would certainly be interesting to those who desire to arrive at the truth, to try a simple experiment, directly bearing on the case. Let two young plants of the same kind (Salvia splendens, for example) be taken, as nearly alike as possible; that is, of equal age and height, having an equal number of leaves of equal size; let their equality be further established by selecting them of equal weight, when the soil is carefully and entirely washed from their roots: let one of these be taken and potted, and let it be placed in a close, moist, deeply-shaded atmosphere, warmed to a few degrees above that to which the plant is naturally adapted; in this situation let it be continued, and assisted in its growth by the application of all the stimulants, except light, which, within the limitation of reason, it may be possible to apply to it; let the other plant be potted in similar soil, and placed in a genial atmosphere, duly regulated with respect to temperature; and in this situation let it, too, receive all the stimulants, including light, which can minister to its growth. The results in both cases should be carefully noted; and though the trial is an easy task, the results would afford strong evidence whether or not "what would be leaves, under certain conditions of growth, would be flowers if the conditions of growth were suitably varied;" and, consequently, whether or not this part, at least, of Morphology is truth or falsehood.—*T. Moore.*

Strawberries.—I have lately seen some very fine forced Strawberries (Keen's Seedling) at Willan-hall, East Barnet; there was probably not less than a thousand pots of them in the Pine-house. The plants were nearly all in full bearing; they had a fine appearance, as the shelves were so regulated that each line of pots was seen distinctly from one end of the house to the other. The number of fruit on each plant was from 18 to 30, and many of them weighed more than half-an-ounce. The gardener, Mr. Halley, attaches great importance to procuring the plants from those that were forced the previous spring. This he can always do, as he invariably turns the forced plants out into the open ground soon after they have done bearing. He says that plants so treated produce excellent runners, and bear an abundant crop late in the season.—*A Visitor.*

Birds' Eggs.—Waterton's plan of preserving birds' eggs, mentioned at p. 245, cannot be improved on, as far as relates to the interior of the egg. If the outside is varnished twice with isinglass, dissolved in gin, the pores of the shell will be closed, and the colour, in a great measure, preserved. The shining properties of the varnish disappear in a few hours, and leave the egg quite natural in appearance, which is not the case with mastic varnish. —*A. C., Leeds.*

Birds.—Would any of your correspondents describe the various notes of the small birds which are now to be heard in all directions. The skylark, blackbird, nightingale, robin and missel-thrush are generally known, but there are many which I cannot discover. What is the bird known provincially as the cuckoo's mate, or cuckoo's harbinger? Bewick does not mention it under that name.—*X.*

Rabbits.—A few miles from the place where I was brought up, a gentleman had a herd of deer, which he allowed to wander about wherever they liked. This greatly annoyed his tenants and neighbours, and, like the gentleman of whom your correspondent "*" complains, he was deaf to all entreaties to kill or park them up; he told all who complained, that if the deer came into their fields they were to lay hold of them, and he would pay for every one that they caught. An old farmer accordingly set to work: he fastened a long rope to the door of an old barn that stood at some distance from the rest of his houses; he then strewed the floor with hay, and also laid some outside, and in a day or two the whole herd paid him a visit. It was winter, and the ground being covered with snow, the loose hay attracted them to the place; they soon eat up all that lay outside, and a good many of them ventured inside: the farmer then shut the door by pulling the rope, and kept them there until the gentleman came and paid dearly for them. If your correspondent will inclose a small space with hurdles, opposite the grounds from which the rabbits enter, then, like the old farmer, fasten a long rope to the gate, so that he may shut it at pleasure, and if he will scatter some Cabbage-leaves, or anything of which rabbits are fond, inside and near the gate of the inclosure, there will be plenty in before 11 o'clock at night, when he may shut the gate. If he leaves it longer they perhaps will have finished the prog and have gone out in search of more. Another plan, equally successful, is, in place of having a gate, have a number of holes all round the inclosure; inside of each of these set a snare, and lay something down that is eatable, to tempt the rabbits to go in. They like to work among fresh earth, and if some parts of the inclosure are dug up with a spade, the temptation will be double. If your correspondent perseveres in this way for a short time, I imagine that his neighbour will become tired of breeding rabbits for him to destroy, and will either destroy them himself, or try to keep them at home. I observe that "J." recommends the use of arsenic for the purpose of killing rabbits; but that might be attended with dangerous consequences, for possibly some poor person might find some of the poisoned rabbits and eat them. In my opinion poison ought never to be used for killing vermin, until all other methods have failed, because there is always danger of poisoning something else.—*J. W., Derbyshire.*

Bees.—These are now collecting quantities of farina and a small portion of honey. The population of strong hives is rapidly increasing. Bell-glasses for flat-topped hives should now be cleaned and made ready for that purpose. Let every glass contain a small piece of the whitest of last year's comb. This should be attached to a thin lath, about one inch wide, which should be fitted into the hole at the top of the glass, extending downward its whole depth. The comb should be fixed upon the farther end of this. By warming the edge of the comb and lath with a lighted candle or hot iron, they will readily adhere. Be careful to place the glasses directly over the centre of the holes, which should be one and a half inch in size in the top of the hive, letting the lath and comb unite to the apertures of communication. As the population increases and the weather becomes warmer, they will soon cluster upon the comb, and commence filling the glasses. Great care must be taken to exclude all light and cold from the glasses, which must be protected by a cover, without a top, made with pasteboard or floor-cloth, of sufficient size to cover all the glasses. Fill the spaces between them and the cover with black cotton wool or wadding, in order to exclude light and cold air from the glasses. By following these directions failure will seldom occur, provided the season is favourable for collecting honey. Quantities of from 2 lbs. to 2½ lbs. are oftentimes gathered during the day; this is of the purest quality.—*W. Savage, Swaffham.*

Insects of the Damson-tree.—A day or two ago I observed some blossoms of a Damson-tree in my garden fallen on the ground, and as there had not been sufficient wind to knock them off, I was induced to examine them, and found that in every case the calyx had been bitten into by some insect, which had doubtless weakened the stalk, and caused the flower to fall on the least wind. I send you this at once, in the hope that some of your correspondents, with more leisure at their disposal than I have at the present moment, may be induced before the blooms are past to examine into the history of the insect in question, of whose operations I have hitherto met with no notice.—*J. O. Westwood, Hammersmith.*

Potter's Liquid Guano.—I cannot speak of this in any adequate terms of praise. I tried its powers on Hyacinths, Narcissus, Crocuses, Snowdrops, &c., both in pots and in glasses, and I may with truth say that the effect was magical. Not only were my flowers the finest, the healthiest, and the most luxuriant that I ever beheld, but they preserved their beauty nearly double their usual time, and gave forth a fragrance of surpassing sweetness.—*William Field, Sander's Cottage, New Road, Hammersmith.*

Figs.—With regard to these, I beg to offer a few remarks on what I have observed and put successfully into practice. The year 1818 was remarkable for abundance of Figs, on account of its long duration of heat and drought. Happening to call during that year at the Duke of Richmond's Gardens, Goodwood, near Chichester, in August, I was much pleased, and at that time quite astonished, to see a row of very large standard Fig-trees loaded with the greatest abundance of fruit, both ripe and unripe, in the highest possible perfection. The soil there is shallow, on a bed of chalk. I likewise observed during the same year abundance of Figs in many of the cottagers' gardens in Sussex, produced on standards that were growing in the same kind of shallow soil, and where the bottom was nothing but chalk. Figs appeared to be no luxury in that quarter. In Kent I have observed good Figs and very fruitful trees on a similar bottom. At the late Lord Audley's Gardens, Belvedere, Erith, I have observed the most abundant crops of fruit, raised for several years in succession in the highest state of perfection, where the soil is shallow and dry, and where the subsoil is nothing but a rock or bed of pebbly gravel, called there pea-gravel; after a heavy rain, scarcely a particle of earth was there to be seen on the surface. I have long observed that shallow dry soils are the best for producing good crops of Figs, and where the trees have been planted without much care, and allowed to grow without much pruning or nailing, which does not at all suit the Fig. Such places as stable-yards, farm buildings, in any dry corner, amongst stones, chalk, brick-bats, or lime-rubbish, where they are well trodden or paved about the trees, are the places to see fine crops of good Figs. Trees in such situations have a number of joints in the length of one inch of young wood. Over-luxuriant trees never bear abundant crops. The wood of a Fig-tree that is long-jointed, pithy, and soft, does not produce Figs in perfection. The growth of the Fig requires to be checked, if fruit is wanted. In preparing for growing Figs, instead of trenching the ground, I should recommend merely forming a flooring under them with concrete, brick-bats, stones, chalk, gravel, lime-rubbish, or with whatever is most convenient to be had, if the bottom is not naturally chalky, rocky, or gravelly. Those that are troubled with over-luxuriant Fig-trees might practise the following method, which I have myself done with good success:—Cut a trench, 3 or 4 ft. wide, in front of the trees (if against the wall, or all round them, if they are standards), below all roots, which should be cut clean off as the trench is dug, then fill up with any of the above materials that can be easily procured, pouring a quantity of grout amongst it as the filling up proceeds, or the roots will soon get through it; otherwise, build a wall, as recommended by Mr. Errington. Figs require to be planted high, and the depth of soil about them should not be more than one foot. If the season is very dry while they are ripening their fruit, the trees will be much benefited by giving them a good soaking of water, as that is the time when they will be benefited by water.—*Observer J.*—1.

Slugs, &c.—To preserve your Annuals, Marigolds, &c., from slugs, and other vermin, scatter long shag tobacco (not pig-tail) round the stems. I have tried it with much success.—*A Sailor.*

Peaches of Leitmeritz.—I have received from a friend at Frankfort some Peach-stones, with the following memorandum:—"I inclose some stones of a curious fruit, cultivated in a part of Bohemia under the name of Peaches of Leitmeritz. To me they seem more like Apricots, with a little of the Plum in them, but less than the bloody Apricots of Naples,—a fruit I have never seen anywhere else. Something of the same sort is said by travellers to grow in Persia, but it is described as more completely a Plum, and to be very good, but it has a downy skin like all those I have mentioned. They would all, probably, preserve excellently." So far my correspondent. The stones appeared to me to resemble the Apricot more than a Peach or Plum. I rather think they had been kept too dry before they came to me (in number, 5 or 6). I planted them immediately in a pot, and placed them in a Peach-house. One of the number only vegetated; it has the decided leaf and character of an Apricot, and is growing well. Do you know anything of this Bohemian fruit?—*W.* [We are entirely unacquainted with it.]

The Season.—The weather the last ten days has been everything we could wish—dry, and growing, and not too hot. The Apricot, Peach, and other wall trees, with the Standard Pears, Cherries, and Apricots, are setting fruit beautifully. In fact, we have always fine weather in England nine months out of the twelve, whenever the column of air over our heads exceeds 30 inches. The power of the atmosphere to dispose of the daily-raised surface water from land, sea, and vegetation, is then so enormously increased, that, whether the dew-point at which the vapour begins to condense into clouds be at the height of 1500, 2000, or 3000 feet from the surface of the earth, the re-evaporation of these clouds by the power of the sun soon dissipates them again, and gives us the solar influence on the ground. Take the register of the weather from about 15th of April, to about the 15th of Oct., with the barometer fluctuating between 29.40, and 29.90; and again between 29.90 and 30.40 for periods of 10 or 12 days together, and the observation will prove my assertion that we have always fine weather with a high barometer, and warm temperature when the barometer is high. Ignorant persons who speak without observation, always cry out whenever the dust flies about in April and May, "Oh! if we could but have a little

more rain now, we should do." My reply always is, "Your desired warm rain will soon end in cold rain, and cold weather."—*W., Worcester.*

Miscellaneous.—*Flora* states that a plant of Abutilon affectum has stood the winter in the Isle of Wight. It was planted against a hothouse-wall, and was only occasionally protected.——*A. C.* informs us that he has tried quick-lime and cheese for preventing Vines from bleeding, and says that "Drewen" is quite correct as regards its efficacy. He remarks, however, that our correspondent might have stated that it was the plan of the late Mr. Knight.——A correspondent remarks that wasps are very early this season. He states that he has already seen four; the first he observed was on the 15th of this month.

Foreign Correspondence.

Frankfort, March 10.—Some time since you had a question as to the possibility of naturalising Fire-flies in England. As far as climate is concerned, I think they might stand the climate of London, as well as that of Cassel, where I have seen them in the latter end of May. I suppose food is as great a controller of animal range as climate—and that one cannot provide. Slugs are scarcely known here—a great advantage in all gardening, and especially in the cultivation of early bulbs: perhaps the very pure sandy soil which covers almost every stratum in Germany, may be the cause. Our Flower Shows are preparing, and promise well this year. Rintz's Bellerophon is one of the finest azaleas I ever saw, and he has raised a hybrid Rhododendron campanulatum, which is very fine. The winter has been very severe, and snow very deep, until the other day, over all Germany, except this part.*

Societies.

ROYAL INSTITUTION.

April 19.—Mr. E. Solly delivered a very interesting Lecture on the Chemistry of Vegetation, and its application to Agriculture. He commenced by contrasting the study of organic with that of inorganic Chemistry; the uncertain and changeable nature of organic substances was compared with the more definite, fixed, and stable characters of inorganic compounds, and the difficulties attending the investigation of organic Chemistry were stated to depend chiefly on the great facility with which the various organic substances change, and are modified in properties and composition by comparatively slight causes. The composition of plants was next inquired into, and the manner in which, by very simple processes, they may be separated into what are called their proximate elements When a plant is macerated in water, so as to remove all the soft or soluble portions, lignin or woody fibre is left; the water in which it has been macerated, deposits, on being allowed to stand, a portion of starch; if after this the liquid is boiled, a scum separates or coagulates, consisting of albumen and gluten; whilst there remains in solution gum and sugar. He stated that, of these six substances the bulk of plants was composed; for though there existed hundreds of other vegetable substances differing in composition and properties, yet these constituted but a small part of the mass of plants, the great portion of them being composed of the six proximate elements just adverted to. When the process of analysis was carried still further, it was found that all these various substances were formed by the combination of three or four elements, united together in different proportions. The analysis of organic matter resembled that of inorganic compounds in the fact that each element was collected and estimated in a state of combination; thus, the quantity of water and carbonic acid gas given off during the combustion of any organic substance being known, it was easy to calculate the proportion of oxygen, hydrogen, and carbon which it contained. In this manner lignin, gum, sugar, starch, and many other vegetable products, on analysis were found to consist merely of oxygen, hydrogen, and carbon; whilst in the same way, gluten, albumen, and a number of other organic compounds, were found to contain, in addition to those three elements, nitrogen—the quantity of that substance present being estimated by the quantity of ammonia formed during combustion. Besides these organic matters, however, all plants were known to contain a small quantity of inorganic matter—substances which remained as ashes when the plants were burnt, and which on analysis were found to consist of various salts of the alkalies and earths, compounds containing phosphorus, sulphur, chlorine, &c. These being the elements of plants, the next questions were, whence and how plants obtained them? The composition of the air and soil was then described, and the probable sources of the food of plants pointed out. Mr. Solly observed, the growth of a plant could not be regarded as a mere chemical process; several powers were at work, which modified and controlled chemical affinity in a most remarkable manner. Foremost amongst these powers was the vital action; what this was we were quite ignorant, for we only know it through the effects which it produced. The vitality of a plant or seed might lie dormant for years or centuries, and when all the other conditions requisite to vegetation were present, the plant would grow and feed itself; the conditions essential to vegetation, or the excitement of vital energy were heat, light, and perhaps also electricity. Plants could not grow, nor seeds germinate, at temperatures below the freezing point of water; a certain degree of warmth was essential; light also was necessary to the process of decomposition carried on in the organs of plants, whereby the elements of organic matter are assimilated; and lastly, though very little was as yet known on this part of the subject, it was hardly possible to doubt that electricity was actively concerned in these operations. Under the influence of these powers plants possessed the means of decomposing water, carbonic acid, ammonia, and nitric acid, recombining their elements in the various forms of organic matter; and it had been concluded from numerous experiments, that plants always absorbed or assimilated these substances in combination, and never in a free or uncombined state. Thus the nitrogen of the air, which constitutes about four-fifths of its bulk, does not appear to enter into the composition of plants, the nitrogen which they contain being probably wholly derived from the ammonia and nitric acid existing in the air and soil. The lecturer then drew attention to the relation which plants bear to animals, and the very important part which the former perform in the economy of the creation. The manner in which all animals, either directly or indirectly, derive their nourishment from plants was shown; and the perfect manner in which plants preserve the healthy and uniform composition of the atmosphere, by removing from it all the noxious gases generated by the respiration of animals, and the decomposition of organic substances was described. Mr. Solly next proceeded to consider the operations of the farm, and defined the object of the farmer to be the production of the greatest amount of food at the least possible cost. He contrasted the condition of natural pastures or forests, with cultivated lands; and described the effects produced by the constant removal of inorganic compounds from the soil, in the crops. If it was attempted to cultivate Wheat year after year on the same ground, it was found that the crops gradually deteriorated, and hence various manures, and systems of rotation or fallowing, had been adopted. By some it had been supposed that plants excreted poisonous matters from their roots, and that the presense of these excretions in the soil, rendered it unfit for the cultivation of the same kind of plant; but that this was not the case was shown by many facts, amongst others, by the circumstance that in some soils Wheat had been successfully cultivated for many years in succession; it was now known that the real obstacle to the constant cultivation of the same crop was, that the soil gradually became exhausted of certain inorganic substances essential to the growth of the plants, and hence it would appear that if the substances annually removed from the soil could be regularly restored to it, there is no chemical reason why a crop should not be grown for any number of years in succession on the same soil. The great question therefore was, How can we restore to the soil those substances on which its fertility depends, and which plants remove? Much, no doubt, might be done by mechanical agency; thorough draining and deep ploughing would greatly assist in keeping up the fertility of the soil; but at the same time a great deal also might be done by chemistry, and more especially in the preservation and application of manure. The loss of manure under the present system, was described as being enormous, and deserving the most serious and careful attention. The lecturer then enumerated some of the most important of the many substances employed as manure, dividing them into those which supplied the elements of organic matter, and those which supplied inorganic substances. In the former class the salts of ammonia were, of course, prominent, and the properties of that substance, and the mode of fixing it by acids, sulphate of iron, gypsum, &c. were considered. In the second class of manures, the value of those containing phosphoric acid, such as bones, was insisted on; and the value of phosphoric acid in a soluble state, as it exists in the excellent manure of Mr. Lawes, pointed out. The use of soluble silicates, and the manner in which silica is absorbed by plants, was experimentally illustrated, by precipitating silica from a solution of an alkaline silicate by a vegetable acid. The alkaline nitrates and common salt were next spoken of; and with regard to the latter, it was stated that though decidedly a good manure under many circumstances, it was highly improbable that it could act as a fixer of ammonia, because the results of its decomposition by carbonate of ammonia, viz. muriate of ammonia and carbonate of soda, are salts which, under ordinary circumstances, cannot exist together in solution; they decompose each other, common salt and carbonate of ammonia being formed. Amongst the substances which existed in many of the best manures was sulphur, an element which was present in most plants, and which was an essential constituent of those which formed the food of animals. Mr. Solly stated that plants in all probability absorbed a portion of the sulphur which they contain, from the atmosphere; his own experiments had convinced him, that so far from sulphuretted hydrogen being poisonous to plants, on the contrary in small quantity it was apparently beneficial, causing them to grow with increased vigour and luxuriance. This part of the subject derived additional interest from the probable influence which sulphuretted hydrogen has on the health of animals, and the connexion which exists between the presence of that gas in the air, and contagion, with various epidemic disorders. Mr. Solly then inquired into the possibility of plants deriving inorganic matter from the atmosphere; he described experiments made on various orchidaceous plants, which showed that they contained precisely the same amount of inorganic matter whether their roots grew in earth, or they were freely suspended in the air. It was unfortunately the case that no ordinary chemical tests would enable us to detect very minute quantities of solid matter in the atmosphere, but little doubt could exist that many solid substances were occasionally suspended in the air. In illustration of this subject some curious experiments were shown. On burning a small quantity of a mixture of nitrate of soda and charcoal, a cloud of vapour arose, which was made to traverse a long tin pipe, and the existence of soda in the air as it came out of the further end of the pipe shown by the effect which it produced on a small gas-light, the blue colour of which was immediately converted to a bright yellow. Mr. Solly stated that one grain of carbonate of soda thus distributed through a room containing 1000 cubic feet of air might be found for some hours after, diffused through every part of it, and hence he concluded that each cubic foot contained not more than the thousandth part of a grain of carbonate of soda; and as the test flame employed to indicate its presence did not occupy more than the thousandth part of a cubic foot, it might be fairly said to indicate the millionth part of a grain of carbonate of soda. By another experiment it was shown that the steam arising from a tolerably strong boiling solution of carbonate of soda contained a very notable quantity of that salt, its presence being proved by the effect it produced on the colour of flame. The manner in which volatile substances confer volatility on otherwise fixed substances, was illustrated by the evaporation of phosphoric acid in contact with muriate of ammonia, a small quantity of the acid rising in vapour, and condensing in large white flocks when heated with sal ammoniac, though when heated alone it was perfectly fixed.

Attention was next drawn to the enormous extent to which artificial manures are frequently adulterated, and the frauds which are too often practised by dealers on unsuspecting farmers. As a strong example of this, Mr. Solly stated, that a short time since he had procured a quantity of a saline manure from a manufacturer, and suspecting from its appearance that it was impure, had been led to analyse it; *on examination, it was found to contain only three per cent. of the salt for which it was sold, the remaining 97 parts being other substances.* If such things were done, it was not to be wondered at that we frequently heard complaints from those who had employed artificial manures, and had found no benefit from the use of them. Amongst the many subjects of interest connected with the application of chemical manures, few have excited more attention than the steeping or manuring of seeds. A number of curious experiments on this subject were described by Lord Bacon two centuries ago. He showed that seeds steeped in certain solutions germinated more rapidly than those soaked in other solutions; and remarks, that it is a very curious subject, deserving of farther investigation. At the present time, this effect is as little understood as it was in that of Lord Bacon, nothing more being known than the effects first described by him. Mr. Solly stated that a series of experiments in elucidation of this subject had recently been commenced at the gardens of the Horticultural Society; and that very remarkable differences were becoming apparent in the effects produced by the various solutions employed. He also described a curious series of experiments on the effect produced by muriate of lime, in increasing the retentive power of the soil for moisture, and suggested the possibility of these experiments leading to useful results in the cultivation of the Turnip crop, in which it is of the greatest importance that the first growth of the plant should be healthy and vigorous, so as to get quickly through that period in which it is most liable to the ravages of the fly. The last subject brought forward was one of considerable interest, and involving speculations of a very singular nature. Mr. Solly drew attention to the remarkable fact that the fossil bones of extinct animals contain a considerable quantity of Fluoride of calcium; thus the bones of the Colossochelys or great tortoise discovered in the Himalaya Mountains by Messrs. Falconer and Cautley, contain 11 per cent. of fluoride of calcium; whilst recent bones on the other hand are found to contain little or no fluoride of calcium. It is reasonable to suppose that the earthy matter constituting the bones of these extinct animals, was originally derived from plants, and hence the question became one of interest—Whence comes this fluoride? It might be supposed that the fluoride had passed into the substance of the bone by some subsequent process. It might be supposed that the plants on which the animals fed contained fluoride of calcium; or lastly, it might possibly be, that some nearer relation existed between phosphorus and fluorine than we were yet acquainted with; and it was not impossible that the one might be converted into the other: this was mentioned merely as a curious speculation—possible, though perhaps not probable. In the meantime it was interesting to observe the action of fluoride of calcium in growing plants; and accordingly experiments had been instituted, the result of which as far as they could be ascertained at this early period, seemed to favour the conclusion that the fluoride was absorbed, and therefore that it might possibly, to some extent, supply the place of phosphate of lime in plants. Mr. Solly concluded with some general remarks on the progress of Agricultural Chemistry, and the probable results of its future study, expressing a regret that many are so sanguine as to the immediate benefits to be derived from it, that they can hardly fail to be disappointed by the results.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

April 23.—This, the first Show for the season, was held in the Horns Tavern, Kennington. Although not superior to the last spring meeting, the exhibition was distinguished by a large number of well grown specimens. Among the Miscellaneous Collections, by gentlemen's gra., that shown by Mr. Atlee contained some fine plants, among which was a very large specimen of Cytisus racemosus, covered with bloom, a Purple Rhododendron of great beauty, a well-grown plant of Boronia denticulata, and a fine showy specimen of Acacia armata. In the same collection were also Correa speciosa, Polygala oppositifolia in good condition, Kennedya coccinea, Boronia pinnata and other plants, including a fine specimen of Erica Willmoreana; for these, a large Silver Medal was awarded.—Mr. Curtis, gr. to J. Allnutt, Esq., sent a beautiful col-

bution of well-grown plants; it was chiefly remarkable for the fine specimens of Heaths it contained, among which were E. Hartnellii in good condition, a large E. depressa, a small plant of the free-flowering E. coccinea minor, together with E. campanulata, a beautiful plant of the showy E. vestita coccinea, and a large specimen of E. translucens, which was completely covered down to the pot with delicate pink blossoms. In this collection were also Epacris grandiflora, the larger variety of E. pulchella, Kennedya coccinea, and several other plants. The Royal Adelaide Cup was awarded to Mr. Curtis for these.—From Mr. Bruce was a collection also containing some well-grown plants. Among them were Acacia diffusa, a pretty plant of Aphelexis humilis, Euphorbia splendens, Clivia nobilis, several varieties of Azalea, plants of Tropæolum tricolorum, and brachyceras, Leschenaultia formosa, covered with bloom; along with Chorozema Henchmanii, and several Heaths. A Gold Medal was awarded for these.—Mr. Plant, gr. to J. H. Schroder, Esq., exhibited Thunbergia aurantiaca, a large plant of Cytisus racemosus, two Gloxinias, Diosma capitata, Oxylobium retusum, and other plants.—A middle Silver Medal was awarded to Mr. Hamp, gr. to J. Thorn, Esq., for a collection containing, among others, Euphorbia splendens, Epacris grandiflora, a pretty plant of Erica hybrida, covered with long flesh-coloured blossoms, a purple Rhododendron, Boronia serrulata, Cytisus racemosus, and the handsome Erica vestita alba, together with Gloxinia rubra, Eutaxia myrtifolia, two Chorozemas, and a good plant of Aphelexis humilis.—From J. H. Schroder, Esq., was a collection of Orchidaceæ, containing among others the beautiful Cattleya intermedia, the fragrant Maxillaria aromatica; also Vanda cristata, which has the good property of keeping long in bloom; a Middle Silver Medal was awarded for them.—Mr. Kennington, gr. to J. Cox, Esq., was awarded a Large Silver Medal, for Peristeria Humboldti, Dendrobium nobile, in good condition, Oncidium altissimum, and O. microchilum. He also exhibited some other Orchidaceous plants, two Chorozemas, a Pimelea spectabilis, and other plants, among which was a specimen of Erica Hartnelli.—Mr. Wood sent a collection of named Alpines.—The Nurserymen's collections were from Mr. Fairbairn, of Clapham, and Mr. Hally, of Blackheath. That of the former contained among other plants Boronia serrulata, Aphelexis humilis, a double variety of Azalea indica rubra, Erica Hartnelli in good condition, and a pretty small plant of E. delecta; a Middle Silver Medal was awarded for them.—In Mr. Hally's collection, which gained the first prize, were Acacia armata, a showy Azalea Smithii coccinea, a well-grown plant of Aphelexis humilis, a Cineraria, named Piper's Princess Royal, and a small dwarf plant of Genista Rhodopnœa. — Mr. Townly, of Camberwell, exhibited among several others, good specimens of Æschynanthus parasiticus, Columnea Schiedeana, Hardenbergia monophylla, Franciscea Hopeana, and Euphorbia splendens. Among single specimens was a handsome Manettia bicolor, which gained the first prize, from Mr. Hamp; a beautiful Tropæolum tricolorum, to which the second prize was awarded, from Mr. Ivery of Peckham; and a Cattleya Skinneri from Mr. Kennington. On the same table were beautiful small plants of Erica aristata major from Mr. Dickson, of Acre-lane, Brixton. There was a good display of Cinerarias; the collection from Mr. Ivery contained many flowers of great novelty and beauty of colour. Red Rover and Washington, bright crimson; Fanny Elsler, a white with crimson tip, a most prolific bloomer; and Black Knight, a deep purple; with Captivation, having mazarine purple tips, upon a white ground; and Criterion, with mazarine blue terminations, appeared to be the most novel and attractive.—Mr. Paul, of Cheshunt, exhibited two seedlings, one a pure white with dark purple disk; the other, a bright rosy crimson having quilled petals with expanded tips, is very good of its kind; the flowers are large and formed with great regularity. The Auriculas, although not so good as they were last year, excited much interest.—For pairs among amateurs, Mr. Schroder of Brixton, obtained the first prize, with Oliver's Lovely Ann, and Page's Champion.—Mr. Lidgard was second, with Smith's Waterloo, and Conqueror of Europe.—Among nurserymen the first prize was won by Mr. Dickson, of Acre-lane, Brixton, with Hedge's Britannia, a very fine flower, and Page's Champion. The second prize was awarded to Mr. Gaines, of Battersea, for Smith's Britannia, and Grimes's Privateer.—Mr. Dickson gained the first prize for the best 12, with Dickson's Prince Albert, Oliver's Lovely Ann, Stretche's Emperor Alexander, Hudson's Apollo, Dickson's Duke of Wellington, Salter's Garland, Dickson's Earl Grey, Taylor's Glory, Dickson's Comet, Lee's Colonel Taylor, Page's Champion, and Dickson's Matilda.—The first prize for the best seedling Auricula was awarded to Mr. Dickson, for one named Brilliant, a gray-edged flower of good properties: it trusses well; the colour is a brilliant purple, and the rings are uniform in width. Mr. Dickson showed another seedling named Richard Headley, a gray-edged flower, young, and very promising. The other seedling was from Mr. Franklin, a flower altogether very brilliant in appearance: the pips remarkably flat, and a good truss, but the colour breaking a little into the edge.—Mr. Lidgard got the prize for the best 6, with Oliver's Lovely Ann, Page's Duchess of Oldenburg, Hedge's Britannia, Grimes's Privateer, Page's Champion, and Dickson's Apollo.—The Silver Cup given by Mr. Dickson to Amateurs, was won by Mr. Lidgard, with Page's Champion, Taylor's Glory, Conqueror of Europe, and Nelson's Funeral Car.—Prizes for Polyanthuses were awarded to Mr. Smith and Mr. Bushell.—The prize for the best seedling was given to Mr. Henbrey. There was no competition. The three seedlings from Mr. Barnard arrived too late for the censors; they were very superior flowers, and were recommended for a prize.—Mr. Plant received a small Silver Medal for 12 Hyacinths in pots.—The collections of Heartsease were numerous and fine, and in strength of colour we never saw them superior; there were many seedlings from Messrs. Thompson, Brown, Buxton, King, &c. Three were noticed by the Judges, and recommended for prizes. One from Mr. Thompson, named Virgil, a large flower of great substance, having a yellow ground, fine eye, with dark-purple maroon upper petals, and a broad margin of the same colour round the lower petals. Brown's Arethusa, has a pure white ground, splendid eye, with rich purple top petals, and a deep margin of the same surrounding the lower; this flower resembles Miss Stainforth, but the purity of the ground colour is a decided improvement. The other seedling was from Mr. Buxton, named Ne plus Ultra; this flower, with a splendid eye, has a bright yellow ground, and the side petals meeting above the eye, the shield is rendered unbroken; the colour of the upper petals and a broad margin round the lower, is of the deepest and richest purple. There were many more deserving of prizes. Mr. Thompson's stand was composed entirely of seedlings, and in Mr. Brown's we observed several new flowers of great merit. We give the names of Mr. Brown's flowers, his being the only stand with the names attached, viz., Brown's Arethusa, Curion, Morpheus, Elect, Prospero, Prior and Cinderella; Thompson's John, Rufus, Warrior, Captain Boldero, Regulator, Cyclops, Eclipse, and Coronation; Hooper's Duchess of Bedford; Silverlock's Prince Albert; Cook's Black Bess and Mulberry Superb; Carpenter's Princess Royal; Earl's William Tell; King's Exquisite, Queen of England, and Sulphurea elegans.—From Mr. Chapman was a dish of Strawberries; and Mr. Kennington sent a plant of Keen's Seedling Strawberry, bearing large, well-coloured fruit. A small Silver Medal was awarded to Mr. Martin, for four sorts of Vegetables.

COUNTRY SHOW.

Ealing Annual Cucumber Show, April 11.—Open to all England. Four brace of *Cucumbers* were put up for competition; they were all remarkably fine specimens of good culture, particularly those sent by E. Leathes, Esq., which won the first prize; they were grown in Mills's improved pit. The 2d prize was awarded to Mr. Humber; the 3d to Mr. Brown, and the 4th to Mr. Bevon; they were judged according to their value, viz.:—the brace that would have brought the most money, if it had been sold in Covent Garden Market, was entitled to the first prize. As usual, the affair ended with a good dinner, and the evening was spent most agreeably.

Miscellaneous.

Botanical News.—Ad. de Jussieu has finished his "Malpighiaceæ," and his little "Traité de Botanique," which is very highly spoken of. He is now at a "Flora of Chili," founded chiefly on Claude Gay's collection.—A. Richard has just read a long memoir on the Vegetation of Mexico, and on Galeotti's Orchidaceæ.—Mirbel is preparing some fine plates on the Anatomy of the Date-Palm.—The 5th volume of Delessert's "Icones selectæ," is being engraved, and the printing of the 9th vol. of De Candolle's "Prodromus," is going on steadily.—Mr. Gardiner, of Dundee, has published a useful list of British Mosses, on a single sheet.—M. Adolphe Brongniart has read to the Institute a paper on the Placentation of Plants, in which he sustains Lindley's opinion, that ovules have both a central and a marginal origin. He, however, appeared to suppose his own views new, which they are by no means.

Guano from the Island of Ichaboe.—The following is an analysis of a sample of guano from the Island of Ichaboe, received from Mr. James C. Kemp, of Liverpool, and which is superior to most samples from other parts of Africa, which we have analysed:—

Ammonia, partly in the state of carbonate	10.0
Bone phosphate of lime, including a portion of oxalate of lime	24.0
Uric or Lithic acid	4.0
Alkaline salts, consisting principally of chloride of sodium	3.5
Phosphoric acid	4.0
Moisture, including a small portion of organic matter, volatile at 212°. F.	24.0
Traces of silica, iron, &c.	0.5
Other organic matter, &c.	30.0
	100.0

The chief portion of the ammonia is in combination with the phosphoric and uric acids, and the remainder with carbonic acid.—*Watt, in the Chemist.*

Syrian Fruits.—Our readers will learn with pleasure that John Barker, Esq., lately H.M.'s Consul at Aleppo, after a residence of more than 40 years in the East, has returned to this country with trees of many new and valuable fruits. Among them are several Peaches, Nectarines, and Apricots with sweet kernels. These, when grown in Syria side by side with the finest of the varieties known in Europe, are said to have proved as superior to the latter as they are to the worst sorts of which we have any knowledge. Mr. Barker also possesses a White Mulberry from Armenia, so sweet that its fruit is dried like raisins, and so juicy that when pressed it produces the syrup in which the delicious butter of Armenia is brought to Aleppo. We shall watch with great interest the period when these fruit-trees yield their first crop in this country.

The Toad.—That the food of the toad consists of insects as well as worms, is a fact with which every naturalist is familiar, though all are perhaps not aware of the extent to which in certain instances it preys upon the larger Coleoptera, chiefly of the Carabideous kind. I once found, during the summer, concealed beneath a very large stone, one of these reptiles, the stomach of which was filled with the detached heads, thoraces, abdominal segments, elytra, &c. of Steropus madidus, Omaseus melanarius, Calathus. These hard parts, more or less broken, and with the flesh dissolved out and digested, had undergone no farther change, so that the species they belonged to could be perfectly well determined. I have since met with toads in chalky districts where these beetles abound, which were literally crammed with them, and among others have found in the egesta the remains of Carabus violaceus, and of some also of the large Curculionidæ, such as Otiorhynchus niger. I have myself forced an ordinary-sized toad to swallow alive successively two of the first-named insect, which it effected without much difficulty, and have known it in confinement to devour two C. monilis inclosed along with it. These observations tend to throw some light upon the explanation of toads being found in holes of rocks and hollows of trees, whither they had probably resorted in search of the abundant store of insect food which these situations afford, and where they might remain until the cavity became closed up. It would be curious to witness in what manner the toad manages to seize and secure such a powerful prey as the Carabus, as something more than the viscid and adhesive secretion of the tongue must be required for this purpose.—*Alfred Tulk, Annals of Natural History.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Hothouse plants in general promise to make a healthy and early growth this season, owing to the summer-like weather we have been favoured with lately; stimulants may, therefore, be applied earlier than usual to such strong growing plants as are known to be benefited in that way. Stove plants, at this stage and under strong sun, can hardly be kept too hot in the day time, providing a slight shade is thrown over the glass, the atmosphere kept moist, and a free supply of air admitted; and under such treatment they can hardly be too cool at night.

Conservatory.—The flowers have faded so quickly of late that blinds have been reluctantly made use of at last, but they are drawn up early in the afternoon; the paths and other parts of the house freely sprinkled over, and the house cooled down as much as possible at night. If we had cold east winds and broken April weather, the treatment of the conservatory must have been very different from this. Camellias now making their growth, require large portions of water daily, if the pots are thoroughly drained. Orange-trees also require more water for the next month than at any other time. Watch carefully the progress of climbers; see that they are properly trained, they soon get out of order now.

Greenhouse.—I never recollect of such fine weather for greenhouse plants at this season; besides the moist heat for encouraging rapid growth, they may have as much air as at any other period. Let them be syringed every afternoon, and the house shut up at night, till the growth of the principal tribes is nearly finished, when they may be kept more cool and dry to ripen them off slowly.

Pits and Frames.—In the first week of April, I sowed a large collection of the more tender and scarce annuals, together with some perennials, which required some careful nursing at first. They were sown in light soil, in a frame without any bottom-heat; the lights were kept quite close till the seeds began to vegetate, then the lights were entirely taken off at night and put on again about 7 o'clock in the morning; no air was admitted all day. The sun heat rose the temperature inside some days to 100°, and early next morning they were in a temperature under 40°. I never saw more healthy seedlings.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

Some of the early-sown annuals will now require thinning out, in doing which remove all but five or six of the strongest plants, and these, if not very strong, may have the terminal leaf-bud removed to make them bushy. Stir the ground around the plants deeply with the hoe, and if the plants are weakly, apply a slight dressing of superphosphate of lime or Potter's guano, and then give a good soaking of water. I rather suspect the former manure possesses the property of giving colour to flowers, as some plants treated with it here are more brilliant than I have ever noticed them elsewhere. Many of the Herbaceous plants will now require a little training; and in regulating them, do not bundle them up like so many Pea-sticks, but tie the branches out separately, as you would a prize Pelargonium. Attend to young growths on climbers before they get crowded, and remove any strong branches which are not likely to produce flowers. The covering from half-hardy plants may now be removed entirely in the day-time, but it will be well for a fortnight longer to stretch a mat over the heads of the plants for fear of frost, which would play havoc after this sunny weather. We had six degrees of frost here on the morning of the 25th. Keep all newly-planted trees well watered; and recently laid turf should be watered, and afterwards covered with old tan to prevent its burning.

Rosery.—Examine the plants, to see that "the worm in the bud" is not at work, and dress them, if necessary, with Tobacco-water and soap-suds, to clear them of the Aphis or green-fly. Many of the strong-growing hybrid China and French varieties will be the better of having some of the strong growths thinned out;—indeed, no more branches should be left upon a Rose than can be properly exposed to the sun and air. Remove the strongest branches, which frequently run into water-shoots; the middle-sized ones generally produce the finest flowers.

Conservatory Walls.—Although these structures are becoming very fashionable in large gardens, they do not accord with my ideas of good taste, as the existence of the plants in the winter is a very precarious matter, and even if they do survive, except in the case of climbers, it is too frequently as miserable and distorted specimens. Fine Roses, Wistarias, and Bignonias, are the plants to cover a wall with, and not miserable greenhouse plants. However, where they have been protected, the covering may be removed in the day time, but replaced at night; and plants for filling up blanks, of which there are generally plenty every spring, may now be planted out.

Pits and Frames.—The plants are of course being removed from these structures to temporary protection as fast as possible. If they are not quite clean give them a good fumigating before they are taken out. Pot off all recently-propagated plants, and see that you have a sufficient stock of everything to plant your beds properly; if not, get in some more cuttings without delay, which will do admirably to fill up gaps in the summer.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas are in most situations fully expanded, with the exception of the Northern Counties, where they are somewhat later. In order to preserve the bloom, the pots must be removed to a cool place having a north aspect, and should be placed on a neat stage, "tier above tier." Covered with an awning of calico, and regularly watered, they will retain their beauty for at least a fortnight or three weeks. The direct rays of the sun have a prejudicial effect on the colours, causing the dark or body colour to start or diffuse itself over the margin. Few spring-flowers are so beautiful, or more worthy of the trouble requisite to ensure their perfection. *Polyanthuses.*—This dry weather is favourable to the attacks of red spider. These pests dislike moisture. Should

a plant unfortunately get affected (which is soon ascertained by the margin of the leaves turning inward, and assuming a yellow hue) I have found that by watering it well, and placing a common garden-pot over it, occasionally discharging some Scotch snuff on the under-side of the leaves by means of a small "puff," made with an Indian-rubber bottle, having a small pipe inserted in the neck, they may be destroyed. When in full possession of the plant they are difficult to dislodge, but by perseverance this plan will succeed.—*Tulips* are rapidly throwing up their blooms. In all probability we shall have some sharp frosts; a few years ago, on the 7th of May, the buds of my Tulips, which happened to be uncovered, touched the ground, and I thought the bloom ruined; I covered them from the sun, and they flowered well. *Carnations and Pinks.*—The sticks had better be inserted in the blooming-pots now, not only to support some varieties that have a tendency to spindle early, but, if delayed longer, pushing them down is apt to injure the roots. Keep the pots free from weeds.—*Dahlias* are in many places already planted out; protect with pots at night. Snails will sometimes eat through the stems; a little chaff or soot spread on the surface of the soil will obstruct them in their ravages. It is the safest plan to plant the first week in May.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Should the bottom-heat in the fruiting-pit fall below 90°, some fresh, moist tan should be put round the pots to the depth of two or three inches. This will soon revive the heat, which will probably not require renewing again for some time, as the natural heat of the season will keep it up. The bottom-heat of any of the pits may be renewed in this way, where the pots stand so far apart as to allow of the tan being put in, levelled, and patted close down, by means of a light, narrow spade, with a short handle. Give a small portion of air in the morning, as soon as the temperature of the pits is affected by the sun; letting the heat rise to 85° or 90°, with air. Shut up early, sprinkling at the same time. Watering, whenever necessary, must be regularly attended to. Shade any sickly plants during sunshine, and if they are in a place by themselves keep them close and moist till they recover.

Vinery.—When the fruit is fully ripe, let the temperature fall to 85° by night, and give plenty of air by day. Endeavour to keep the foliage fresh and green as long as possible. Vigorous Vines will continue to produce laterals after the fruit is ripe. It seems most in accordance with Nature to allow these to grow as much as they will. By so doing the roots are encouraged to extend, and every part of the plant is strengthened. In succession Vineries little fire will be required in fine weather before night or nine at night, if they are shut up early; and if the houses are at 60° in the morning, and the day likely to be fine, none need be lighted. Continue to stop the laterals till the fruit is fully swelled, and thin the bunches as soon as the berries are fairly set. Where the Black Damascus and the Cannon Hall Muscat Vines are in bloom, keep a moderately dry atmosphere till the fruit is set; and as they are rather shy setters, it is well to impregnate the blossoms with the pollen of some other sort, in which it is more plentiful. The best method of performing this operation is to shake the pollen upon a piece of fine paper, and then holding it under the bunch to be impregnated, to blow a little on it with the mouth. Repeat this twice a day till all the fruit is set.

Peach-house.—The Peaches started early in November will now be about changing to ripeness, and will require more air and less moisture; but in all cases avoid sudden changes. Let the fruit be fully exposed to the sun. Continue to encourage the swelling of the fruit in the second house, by keeping a regular night temperature of from 60° to 65°. Give air early in fine weather, and water freely. Keep the latest house at 55° by night, and from 65° to 70° by day, treating the trees in all other respects as recommended at different times for the earlier houses.

Fig-house.—Where Figs are grown in a house by themselves a temperature of from 55° to 60° by night is sufficient. If the first crop is gathered have recourse again to syringing, and water freely at the roots.

Cherry-house.—After the fruit is gathered, wash the trees repeatedly with clean soft water, to clear them of insects. Give plenty of air, and keep little or no fire. Give water as required to enable them to complete their growth. Thin the bloom on trees intended for a later crop; give them plenty of air, and shade from hot sunshine.

Melons.—Let the plants be looked carefully over every day, to ascertain if the thrip has begun its ravages. If it is perceived, let every leaf that is infested be washed with a solution of half an ounce of soft soap in a quart of water, to which half-a-pint of Tobacco-water may be added. It should be applied with a sponge, or a fine-rosed syringe, to the under-surface of the leaves. If a syringe is used one person must hold the leaf while a second sprinkles it. Give air in the morning, as soon as the sun begins to act on the temperature of the pits, or the vapour which will arise will condense on the glass, and dropping on the leaves will cause them to burn and become spotted.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

The remarks made last week with respect to fruit-trees are still applicable. *Strawberries* are now showing their flowering-trusses, and if rain does not fall soon many of the blossoms will run blind, unless water is poured along the rows from the spout of the water-pot, after the ground has been mulched with straw or short grass. *Currants* and *Gooseberries* promise an abundant crop, except where the latter were deprived of their buds by birds, which they have been to a great extent this season, though untouched here previously for years.

Sow *Turnips, Radishes, small salading, Lettuces, pot-herbs,* and *German Greens or Borecole,* and *Brussels Sprouts,* for an early supply. Of these two last truly useful vegetables it may well be said, "Gather and have, cut and come again." *Onions, Parsnips, Carrots.*—The first sowing will require to be slightly Dutch-hoed between the rows, to kill germinating weeds, and prevent the cracking and drying up of the ground. Onions have become a rather uncertain crop in many parts of the country lately. Part of the crop failed here for two seasons: the plant swelled, became spongy at the bottom, and then died off, though no worm or grub was visible. On both occasions the part that failed had succeeded a heavy crop of Cabbages: practice would therefore say, Do not sow Onions in such circumstances;—though nothing succeeds better than Cabbages after Onions. Slightly rolling the ground after the seed is up is a good preventive against this unnatural swelling at the root. *Asparagus.*—There is much variety of opinion respecting the gathering of this vegetable, most gardeners cutting all at first indiscriminately, though theory would seem to say, Leave at least the weaker shoots untouched. *Routine.*—Attend to frames, cold pits, &c. Thin Turnips and Radishes. Prick out Cauliflowers and more Celery for succession; choosing for the latter an open situation, as it is better to shade now than be obliged to shade after the plants are turned into their ridges or beds; which must either be done, or the plants will suffer in consequence, if they are transplanted from the north side of a hedge or wall.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—In early warm situations it is probable that the bark of Oaks will now, or very soon, separate freely from the wood. When it does so, the operation of felling, peeling, and drying the bark, should be forwarded.

Coppice.—The clearing away the produce, and any useless stools, is, in most cases, probably completed by this time; if not, it ought to be done as soon as possible, by way of preparation for felling and peeling Oak poles, where they are to be cut this season. It is now the best time to cut down Birch, where a vigorous after-growth from the stools is required, and it prevents injurious bleeding.

Young Plantations.—In this department most of the operations so often mentioned are, it may be presumed, completed by this time, or progressing quickly. Where Larches are thinned out for the bark, that work should be forwarded when the sap flows freely. As soon as they are in bloom, where the best Larch timber is desired, it would be advisable to mark with a dot, or with a strip of paint, all those with white-blossomed cones, that they may be taken down at future thinnings, as the red-blossomed trees produce the best timber.

Hedgerows.—All newly-planted trees should be frequently examined, to see if they are in a proper state, as to being secure from the effects of boisterous winds, drought, and cattle.

Nursery Work.—At this dry season constant attention should be paid to newly-sown seeds, before and after the plants are up. They should be carefully watered, shaded, sheltered, and protected from mice, birds, slugs, &c. Recently-transplanted seedling and other young plants, should also be attended to by hoeing and destroying all weeds from among them.—*W. D.*

State of the Weather near London for the week ending April 25, 1844, as observed at the Horticultural Garden, Chiswick.

April	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Fri. 19	1	30.351	30.227	66	42	54.0	N.	
Sat. 20	2	30.274	30.168	67	45	56.0	W.	
Sun. 21	3	30 197	30.113	70	38	54.0	W.	
Mon. 22	4	30 252	30.138	70	39	54.5	S.W.	
Tues. 23	5	30.274	30.000	71	39	55.0	W.	
Wed. 24	6	30.178	30.070	71	31	51.0	W.	
Thurs. 25	)	30.198	30.042	75	33	54.0	S.	
Average		30.236	30.111	69.7	38.1	53.9		.00

April 19—Clear; fine, with light clouds; very dry air; slightly overcast and mild
20 Fine, with a few clouds; mild at night
21 Very fine throughout; evening cloudy and mild
22 Exceedingly fine, with bright sun
23 Clear, and very fine
24 Fine; bright sun, and dry air; clear at night
25 Slight frost early A.M.; fine, with scattered white clouds; clear
Mean temperature of the week, 7 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending May 4, 1844.

April	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 28	62 0	38.2	50.1	7	0.10 in.	1	3	3	4	3	2	—	2
Mon. 29	62.1	40 6	51 3	7	0 75	2	2	3	2	4	—	1	4
Tues. 30	63 8	41.5	52.1	7	0.31	2	2	1	3	3	1	1	2
Wed. 1	64 6	43 0	51.8	7	0 51	1	2	2	2	5	2	1	—
Thur. 2	65 3	43.3	54.3	8	0.72	1	3	4	4	2	1	—	1
Fri. 3	63.5	42 0	53.1	9	0.30	1	3	3	1	4	4	—	1
Sat. 4	65.8	42.9	54 1	7	0.70	3	3	3	—	5	2	—	—

The highest temperature during the above period occurred on the 28th, 1840 —therm. 77°; and the lowest on the 27th, 1836—therm. 27°.

Notices to Correspondents.

ALNUS.—*H.*—There is no such plant as Alnus glutinosa oblonga foliis ellipticis; nor is such a name to be found in the printed List of the Derby Arboretum. But there is Alnus oblonga, var. elliptica, which, no doubt, is the plant you mean, and which is the same as Alnus pumila of Messrs. Loddiges' Catalogue.¶

APPLE.—*Mealy.*—Ashmead's Kernel or Dr. Ashmead's Kernel is a Gloucestershire Apple, raised by Dr. Ashmead, and we are not aware that it is known by any other name. In appearance it resembles the Old Nonpareil, but is not equal to it in quality. It is, however, esteemed a good dessert Apple, from November till May.‖

BARK.—*M. B.*—There is no mode of restoring the bark to old Oaks and White Thorns, except encouraging their growth and plastering the wounds with clay and cowdung; but it is a tedious operation. A mixture of cloacine and soot painted on young trees will, without injuring them, prevent their being barked by hares or rabbits.

BEES.—*X.* says that while Bees are described by one person as very fond of the Polyanthus, in the directions for managing florists' flowers we are told they never alight or work on them; and he asks, which is correct? His own experience says the latter.

BOOKS.—*J. T.*—Bevan on the Honey-bee.

BROCCOLI.—*P. Q.*—Your Broccoli is a fine large white variety; and if it comes in, as you state, about the middle of April, it may be found useful; but there are many like it now in Covent Garden Market.‡——*P. M.*—Knight's Protecting is a good hardy Broccoli; or Chapple's Early Cream will possibly suit you.‡

CAMELLIAS.—*A Subscriber.*—The soil best adapted for these is a mixture of peat and loam in nearly equal proportions. When the loam is light and sandy, a less quantity of peat is necessary. The whole should be well mixed together. In potting, the rough turfy parts of the soil should be kept next the bottom of the pot, in order to secure a good drainage, which is very essential to the growth of the plants. The proper season for repotting those that require shifting is when they have made their young wood, and when the blossom-buds for next year can be detected at the ends of the shoots. Camellias are very fond of liquid guano.‡

CEDARS OF LEBANON.—*W. C.*—In replying to a lady, we supposed the question to relate to cutting off large limbs. If it is only the small shoots that are to be pruned, why then you cannot take a better season than when the plant has just begun to harden its new growth; for such wounds will not bleed, and will the sooner heal. Large wounds can never be made with safety, but are least dangerous when the sap is at rest.

CINERARIA.—*W. J.*—The Royal Blue is a good variety.*

FERNS.—*M. A.*—We would willingly recommend some one to supply you with Ferns for a Ward's case, if it were not a fixed rule with us not to name one nurseryman in preference to another. All nurserymen can procure them, if they choose, although they may not have them. There is nothing to say about the soil they require, for if they have but light and moisture they will all do well in peat. We see no use in the paper you propose; as to their size, the seller can always state that.

FUCHSIAS.—*X.*—It will no doubt depend on their parentage whether the new hybrids will bear the winter in the open ground, as decussata, gracilis, and many of the other sorts do. We apprehend that all those bred from fulgens, cordifolia, and corymbiflora, will be more or less tender.

HEATING.—We must refer *A. B.* and several others to observations in a leading article of to day.

HYACINTHS.—*Senex.*—Hyacinths can be only retarded in their growth by shade and a low temperature. We presume that under ordinary circumstances they would be kept back by being planted under a north wall. Cannot you find out what your neighbours do? Certainly plant in November. Superphosphate of lime is formed by mixing sulphuric acid with bone-ashes or bones ground to a fine powder.

INSECTS.—*Mr. Bransby.*—You are, I have no doubt, correct, in assigning the mischief done to the bark of your Roses, &c. to the attacks of the Beetles you transmitted. They are named Otiorhynchus tenebricosus, whose history, &c. was given in the 3d vol. of the *Chronicle*, p. 316, where the best modes of destroying were stated. *R.*——*E. B.*'s Caterpillars were hatched from the ring of eggs formed round the Apple-twig; they will change to a moth called Cluiocampa neustria, which was figured and described in last year's *Chronicle*, p. 244. *R.*

MANURES.—*Guichenet* may apply guano twice or three times while the plants are growing.‡——*Tom.*—Disinfecting signifies depriving of smell. As a manure your filthy horse-pond is not the worse for its offensiveness; you may probably sweeten it by throwing into it charcoal dust, which, when scraped out again, will be a very valuable material. Its smell may also be removed by bleaching powder, but that will perhaps be too expensive.——*A Subscriber.*—As a general rule, it is found that 4 cwt. of Potter's guano is an ample supply for an acre of ground. Sow it on the ground broadcast, and then turn it in. We have, at present, no experience with Humphreys' Peruvian Compound. Put these manures on now that plants are making their growth. You have not a day to lose.——*Northumbria.*—All manure is useful. We have no knowledge of the effect of Rabbits'-dung in particular.‡

MELONS.—*P. P.*—Thanks; we are only waiting for the wood-engraver.

NAMES OF FRUITS.—*Rambler.*—The Apple you sent from a tree about a century old, appears to be a Reinette Grise.‖

NAMES OF PLANTS.—*A. C.*—Xanthorhiza apiifolia. Ornithogalum nutans.——*J. N.*—Catesbæa spinosa.——*H. H.*—To all appearance, Prunus domestica.——*D. V.*—Ruscus racemosus.——*Geo. Plumbly.*—Pinus insignis, true.¶

PLANTS.—*A Lady.*—By means of your forcing-pit you may keep up a succession of bloom in a small greenhouse during winter. The following plants are suitable for the purpose:—Camellias, the different varieties of Azalea, Persian Lilacs, Chrysanthemums, Kalmias, Chinas, Bourbon, and Moss Roses, Lily of the Valley, and of course the various bulbs that are used for forcing, such as Hyacinths, Tulips, Guernsey Lilies, Roman Narcissus, &c. Several Heaths also flower in winter, as E. gracilis, tenella, hyemalis, assurgens, and some others.‡——*A Novice.*—You may plant in your pond Nymphæa alba and lutea, Villarsia nymphæoides, Nuphar minima, Hottonia palustris, and Caltha palustris for rock-plants. See p. 163, 1844.‡

POLYANTHUS.—*W. J.—n.*—Dark ground. Pearson's Alexander, and Lord Nelson, crimson do.; Buck's George IV., and Hollit's Chester Favourite.*

POTATOES.—*A Subscriber.*—If at any horticultural Show Potatoes which gained a prize for being grown in the open ground were grown on a bed of manure, boarded at the sides, and covered over at night with hurdles and matting, or at the edge of a hotbed, that circumstance ought to have been mentioned by the exhibitor, in fairness to others who did not employ such means to bring them forward.

RABBITS.—*L. S.*—Rabbits are not *Game* within the Game Act, and the occupier of land, or any person, by his direction, may destroy them without a certificate. For this purpose he may use poison; but in doing so, he must take care not to infringe the section of the Game Act referred to by "A Sportsman."—*W.*

THORNFIELD PINES.—*J. M'G.*—Have patience. We are inquiring, and the result will be made known. We never make statements for or against a thing without being sure of our facts.

TUBEROSES.—*D. C. M.*—The treatment you have given these is perfectly correct; but they require to be started first in a gentle bottom-heat.‡

VERBENAS.—*W. J.—n.*—Procure the following varieties:—*White*—Youell's Princess Royal, and Ivery's Queen. *Orange*—Croft's Formosa elegans and Kyle's Speciosa. *Purple*—Hendersonii and Ivery's Purpurea perfecta. *Scarlet*—Melindris Major, and Girling's Boule de Feu. *Lilac*—(the nearest approach to blue); Lilacina, and Miller's Blue Queen. *Pink*—Carleugh's Ne plus ultra, and Burleyana. *Flesh*—Julia Grisi and Goliath.*

VINES.—*Guichenet.*—The present year's shoots of these may be inarched as soon as they will bear a slight ligature. A little tallow may be spread over the tying to exclude the air.‡——*Northumbria.*—You must not cut back your Vines now when they are considerably advanced in growth; you should encourage them to make as good wood as possible early in the season, that it may be well ripened by autumn. The shoots should be kept thin and regular, so as to expose as many of the leaves to the action of light as possible. When the weather has become warm, let plenty of air be admitted; it should be given early in the morning, and the house may be shut up pretty warm in the afternoon. In the winter pruning, the shoots should be cut well in, and if the spurs are too thick they should be thinned out. By this treatment, under favourable circumstances, you may expect a good crop next year.‡

MISCELLANEOUS.—*A. B.*—In exhibiting Calceolarias at the Shows round London it is not allowed to put more than one plant in a pot. In watering Heaths soft water must be used; they may be occasionally watered with it overhead after a warm, sunny day. It washes the dust off them and refreshes them.‡——*T. Furleigh* should remit his subscription to the newsman who supplies him with the Paper.——*Mealy.*—You will find a selection of good sorts, affording a succession, at p. 152, 1844.‡——*A Subscriber.*—It is possible that some of your old Cape seeds may still grow; but only Nos. 1, 5, 13, 14, 15, 22, 23, are worth raising. We exclude the Proteas because you will hardly flower them; they are, however, all handsome. To give these seeds a chance you should sow them in *dry* soil, in a damp hotbed, with a bottom-heat of 80°, and trust entirely to the moisture of the atmosphere there till they begin to germinate. They may then have a *very little warm* water, until they have acquired green leaves. After that they will want no further special care.——*J. S.*—We really cannot do the duty of a shipping agent. We know nothing of passage-money, and such things. We advise no man to go to the United States who can at all get on here; and as for Texas, why it is insanity to think of such a country in its present state.——*J. R.*—The Cuckoo was heard near London last Tuesday, April 23. We have not yet heard the Nightingale.——*Ignoramus.*—It is impossible that we can answer your question in ignorance of all the circumstances. The plants probably die off from being too thick, or too damp; but we cannot say this with certainty.‡——*Typo.*—See p. 247 in last week's Paper.‡——*Northumbria.*—Bokhara Clover-seed may be obtained from any respectable Nurseryman.‡

SEEDLING FLORISTS' FLOWERS.

AZALEAS.—*T. C. B.*—There is nothing in your Azaleas to distinguish them from other varieties.*

CINERARIAS.—*A Constant Reader.*—Your seedlings are too small, and like sorts already out; for instance, your best seedling, No. 1, is like one in cultivation called Goodell, but inferior to that variety in size and substance.*——*J. C.*—Your seedling is very attractive; the crimson centre, with mazarine purple termination to the petals, is of the richest colours; the petals are rather narrow, but the flower is a good size, and most brilliant and beautiful in colour.*——*Amon.*—No. 8 is your best seedling, but one similar to it named Fanny Elsler, has been sent out by Mr. Ivery. Your flowers, generally, are inferior to those commonly grown; they have narrow petals, wanting substance, and are generally too small.*

PANSIES.—*W. T. H.*—Your seedling wants substance; it is also deficient in form, the upper petals being too large. To insure their arrival in a fit state to form a just opinion of their qualities, Pansies should be packed in damp Moss.*——*A. B.*—Your seedling Pansies will not rank as show-flowers; their form generally is not good, the top petals being too large and the ground colour uneven; the best is one without a number, a young bloom with a narrow edging of purple round the lip; a flower of good substance, which promises well.*——*Z. Z. Z.*—Your *Dark Defiance* is a large flower of good form, but rather deficient in substance.*

POLYANTHUSES.—*T. C. B.*—Your flowers not being well packed, some of them had escaped from their fastenings, so that it was impossible to tell to which numbers they were attached; they would have travelled much better packed in a little wet Moss. There is one property essential to a fine Polyanthus, which is, that the eye and lacing be of a uniform yellow. In this quality all your seedlings are deficient; in some of the flowers the lacing is good, and the ground-colour fine, but they are all deficient in the quality pointed out. The largest flower is the best.*

RHODODENDRON.—*G. B. S.*—Your Seedling makes a handsome and showy variety for the garden. The heads of flowers are large, compact, rich in colour, and the foliage is very handsome; the flowers individually appear to be a little cramped in opening, their surface not being sufficiently smooth; but this defect may arise from the bloom having been cut

JOHN RIVERS, Sawbridgeworth, Herts, begs to inform Agriculturists in general that the MANGOLD WURZEL and SWEDISH TURNIP enumerated beneath are now sold of his own growth, and can be recommended with confidence. The Russian Swede, with yellow skin and yellow flesh, was imported by him in 1836, it has been since carefully selected, and is recommended for productiveness and superior hardiness, and for its not being so liable to mildew as the Liverpool and other dark-coloured varieties.

Long yellow Mangold Wurzel, growing much out of the ground, fangless, with fine top	1s. per lb.
White-fleshed, purple-skinned Globe, for thin soils,	1s. per lb.
Long Purple, superior stock	9d. per lb.
Russian Yellow Swedish Turnip	2s. per lb.

Carriage paid to London.

Lawn Grasses, mixed with dwarf Clovers, warranted to insure a fine sward (weight 20 lbs. per bushel), price 14s. per bushel; Pasture Grasses mixed for any description of soil, varying in price from 8s. to 12s. per bushel; three bushels per acre recommended upon a clean tillage, to be sown at Midsummer, with a portion of Lucerne, Perennial Clover, and Sainfoin, upon soils that are not too retentive of moisture.

If a description of the soil intended to be laid down is given, J. R. trusts, by attentive observation of the various Pasture-Grasses, both separately and in pasture, upon various soils, to give satisfaction to those favouring him with their commands.

TO PARENTS AND GUARDIANS.

THOS. DIXON, LAND SURVEYOR, AGRICULTURAL ARCHITECT, &c., Darlington, has at present a vacancy for a well-educated Youth as an Articled Clerk or Apprentice.—For particulars apply as above.—Darlington, 24th April, 1844.

The Agricultural Gazette.

SATURDAY, APRIL 27, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, May 1	Agricultural Society of England. Highland and Agricultural Society.
Thursday, May 2	Agricultural Imp. Soc. of Ireland.
Wednesday, May 8	Agricultural Society of England.
Thursday, May 9	Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

April 29	Chepstow.	May 4	Collumpton.
April 30	Fairford. Rayleigh.	May 6	W. Market. Yoxford.
May 1	Harleston.		West Hereford.
May 2	Isle of Thanet.	May 7	Framlingham.
	Richmondshire.		
May 3	Halesworth.		
	Stoke Ferry.		

AT page 79 of Mr. Layton Cooke's excellent work on the value of land, in the course of remarks upon VALUATIONS ON ENTRY, the following passage occurs:—"In some of the southern counties of England the aggregate value of tenants' rights . . . is frequently of serious amount. These valuations recur at every change of occupancy; the amount is payable by incoming tenants, who, notwithstanding they are reimbursed on quitting, are, during their respective terms, deprived of the use of no inconsiderable portion of the money that should be expended in the cultivation of the land. The valuations alluded to include charges for fallows, half-fallows, dressings, half-dressings, leys, fodder, manure," &c. The author then proceeds to say, that if land were better cultivated where this custom prevails than elsewhere, there would be a reason for preserving it; but he states that the contrary is the case, and that thus the many existing reasons which render it the landowner's interest to buy up these tenants' rights, or otherwise terminate them, are doubly strong.

Believing Mr. Cooke to hold an erroneous opinion upon this important subject, and finding that he rests his case upon its connection with that other important subject—on which we have a useful article from a known correspondent in another column—the capital required by the farmer, we intend to make a few remarks upon it.

Clauses of entry in leases of arable land may be regarded in a national point of view, or they may be considered as affecting the interests of the landlord, or those of his tenant; in every point of view, we think that payment to the outgoing tenant of the full value of all his property in the farm he is leaving may be shown to be true economy. The fact that some districts where this practice prevails are badly cultivated, by no means proves the practice to be bad policy. Security for the tenant is only one of at least three things on which good Agriculture depends. These three things are—1st. The possession of sufficient capital; 2d. Enterprise and intelligence sufficient for its profitable investment in cultivation; and, 3d. Security for it from the party in whose land it is thus invested. This last may be perfect, but if not accompanied by the other two, as it probably is not to a sufficient extent in the districts to which Mr. Cooke refers, then its influence is necessarily but small. We say "probably," partly from a personal knowledge of some of those districts, and partly because we can point to other districts which are well cultivated where these entry-clauses are common in leases, and where perfect security for the tenant, insured by them to the very end of his tenancy, is accompanied in greater degree by the other circumstances upon which, as we have said, good farming depends. Security to the tenant for the capital which is invested in another's land is only one of the three things which, when they meet on a farm, necessarily cause its good cultivation, but it is at least as important as either of the others: for if it be absent, the greater the intelligence of the tenant, though he possess capital in abundance, the more clearly will he see it to be his interest to be cautious and parsimonious in its outlay. This security is sometimes insured to a tenant, though necessarily imperfectly, for it can then only last a lifetime, by the known character of his landlord; hence, we sometimes find districts well cultivated where leases are unknown; but where it exists at all, it is more generally insured to him by a conditional grant of the lands he occupies for a certain number of years. Upon the nature of this lease, and especially upon its clauses of entry, depends the degree and the duration of the protection which it affords; and while the fact of its being a private business transaction between two parties—a landlord and a tenant—might in some minds forbid our meddling at all in the matter, nevertheless, its important national bearings, independently of the desire any competent person may feel to be of use to the agricultural part of the community, are such, we think, as justify us in stating and pressing our opinion on the subject.

In leases which require the tenant to leave upon the farm, unpaid for, the manure, the straw, and the cultivation of the last year of his tenancy, for the benefit of his successor, it is certainly the interest of the farmer, and, as he entered upon the farm under similar circumstances, it is his duty also to himself and to those dependent upon him, so long as he can do it without breaking any of the conditions by which he is bound, to take everything out of the land which he has spent upon it. Under these circumstances, of a 14-years' lease, the first four may be considered years of outlay, during which the farmer is engaged in remedying the faults of his predecessor, and in bringing the land into good cultivation, thus investing capital which is to lie dormant during his tenancy; during the next six the land ought to be yielding well, and repaying this outlay, the tenant being then at the comparatively small annual expense of farming land in good cultivation; during the last four the land should still be profitable to the tenant, not because of his continued exertions to maintain its fertility, but because he is now, in justice to himself, busily using all the powers which the conditions of his lease leave to him, in making as much money out of the land as he can before he leaves it. He is, in fact, now engaged in recovering all that capital which he had invested during the earlier part of his tenancy, and which had remained dormant during its continuance; he is doing his best to leave the land in the same state in which he found it. He has no such great interest in growing luxuriant crops either of grain or roots during the last year of his lease, for he is paid for neither the straw of the one, nor the manure made from the other, having already bound himself to leave both upon his land without remuneration.

If, to adopt another system, he were paid the full value of all the produce of the farm,—if he then expected to make as much of all the produce of his capital during the last year as during the others,—he would have no interest in taking it all out of the land before leaving it. If he were paid a full value for the manure and the straw left on the farm, and for the labour spent in its cultivation for the next crop, all which, besides the marketable commodities of grain, beef, mutton, &c. are the produce of his capital, he would have as great an interest during the latter as he had during the former years of his tenancy, in preserving the fertility of the land; and he would leave it for his successor to enter upon, in a condition to which, under the other system, it would hardly have been brought after four years of unprofitable outlay. The incoming tenant under this system makes all the payments—hands over the amount of his dormant capital—in one sum to his predecessor, while, under the other system, it would have required a period of four years at least for its profitable expenditure; and he has this great advantage, that with a 14 years' lease he has 14 years during which he reaps the full benefit of his outlay, while under the other, with a lease of the same duration, he would have reaped the full benefit of his outlay during only six of those years, and but a partial benefit during the last four. And how much better than the other is this system to look at it in a national point of view! The difference between the two in result, is just the difference between two districts, the fertility of the one being maintained and gradually increasing, while that of the other suffers periodical diminutions. Under an arrangement requiring the tenant to leave a large part of the produce of the farm unpaid for to his successor, of every 14 years, supposing that to be the duration of the lease, the central six are highly productive because the land is then in best cultivation, but during the remaining eight its average produce is much diminished, because during one half of them, it is rising from, and during the others, it is falling to the bad state of cultivation in which it is periodically left. If, as it cannot be questioned, the prosperity of a nation depends much upon the amount of its free * agricultural produce, then a state of things such as this must be nationally injurious—the periodically imperfect culture of land under such a system must be productive of great national loss.

And then, to look upon the subject as a landowner would, it must be apparent that under the one system land would always be offered to a tenant in good heart, instead of, as under the other, out of condition; and instead of suffering a diminished rental from (as Mr. Cooke has it) the unprofitable absorption of a portion of the incoming tenant's capital in the purchase of the outgoing tenant's rights, we believe that he would be able to let his land at even a higher rental, because this portion of the farmer's capital, so far from being unprofitable, will yield him a high rate of interest throughout the whole of his tenancy.

We shall shortly return to this subject, and consider its bearings upon the farmer's capital.

* By free produce we mean that which remains, after so much has been deducted from the gross produce, as will pay for the expense of producing.

ON THE FARMER'S CAPITAL.

I HAVE no doubt that in Mr. Morton's estimate of a Farmer's Capital he has all the stock his supposed farm will carry, but I much doubt the policy of consuming all food grown upon it, with sheep, thinking a mixture of stock less hazardous, and more healthy, and that a mixture of dung of different kinds of stock lasts longer as manure, and produces better crops. The best kinds of horses may be had at an average of 30*l.* each; but with the strength of a dray-horse, and the speed of a railroad, I cannot conceive one capable of doing the work required of it by Mr. Morton, except on land where one horse is sufficient for one plough. The farmers of the eastern counties would be very glad to learn how to save one-third of their outlay for working cattle, as it would save one-third of their annual consumption of food, and consequently enable them to keep more stock of other kinds. A case which came under my notice as a valuer last Michaelmas, and to the accounts of which I have since had access, will furnish facts as to the value of a Farmer's Capital in my district. The farm contains a few acres under 500, viz., arable 420 acres, wood 10 acres, pasture 60 acres, waste 5 acres. It is all heavy upland, in a good state of cultivation; the stock and implements very good; farmed upon the Suffolk four-course system; and everything upon it was valued on the 6th day of October last, except the corn-crop of 1843, at the following sums, being the actual stock upon a farm not intended to be left, therefore not farmed out.

To be planted as follows, for 1844.

Wheat	120	acres.
[15 acres sown after roots drawn off November, 1843; 25 acres to be sown down with Rye-grass for feed; 10 acres to be sown with Red Clover.]		
Barley	60	,,
Oats	10	,,
[35 acres to be sown with Red Clover, White Clover, and Trefoil.]		
Beans and Peas	60	,,
[10 acres more than usual, a Clover layer having failed.]		
Red Clover	30	,,
White Clover and Trefoil	25	,,
[This seed sown 1843 was paid for in the Michaelmas valuation.]		
Rye-grass after Wheat	25	,,
[To be fed for a time; the land then fallowed for Barley. This seed also paid for by valuation.]		
Vetches (part sown with winter Oats)	25	,,
[Part to be fed, part mown for horses, and afterwards fallowed for Barley.]		
For Beet and Swedes	40	,,
White Carrots and Potatoes	5	,,
Long Fallow	10	,,
	420	,,

Stock—as valued Oct. 6th, 1844.

Horses—19 working cattle, 1 rider	£480	0	0		
4 cart colts, 1 riding colt	85	0	0	£565	0 0
Neat Stock—11 short-horn cows	140	0	0		
8 heifers	82	0	0		
2 bulls	30	0	0		
8 half-fat beasts	96	0	0		
11 weaned calves	44	0	0	392	0 0
Sheep—129 Southdown ewes	193	10	0		
2 Southdown tups	15	0	0		
140 Down lambs	140	0	0	348	10 0
Pigs—97 (different ages)				87	10 0
Dairy utensils				33	5 0
Implements—6 waggons	132	0	0		
6 tumbrils	96	0	0		
2 turnip carts	8	10	0		
11 swing-ploughs, complete	25	0	0		
2 double Toms and skim plough	2	10	0		
2 drills	35	0	0		
5 rolls	30	0	0		
Harness	72	0	0		
32 sheep and pigs' troughs	19	10	0		
14 Cattle mangers and bins	6	10	0		
Chaff-machine, bean-mill, and malt-mill, attached to a horse-power	45	0	0		
Turnip-cutters	16	0	0		
Cow and bullock ties	3	10	0		
Dressing-machines	11	0	0		
Barn tools	2	5	0		
Corn chests, forks, rakes, picks, mattocks, hoes, and shovels	8	0	0		
Sack and waggon-covers	10	5	0		
Biddell's scarifier and set of Grass-cromes	26	0	0		
6 gangs of harrows	15	0	0		
30 dozen hurdles	10	10	0		
Wheel, hand, and sack barrows	3	0	0		
Water-but and liquid soil-cart	25	0	0	594	10 0
Michaelmas valuation on farm				*850	10 0

* The Straw, Chaff, and Colder, became the property of the incoming tenant on his entry at Michaelmas, he paying for all threshing and dressing the crop, and carting the corn to the usual place of delivery in the neighbourhood. The outgoing tenant was paid in the valuation for all hay and muck made in the last year, all tillage of fallows; also all draining done in the last year, half the expense of draining where one crop only had been taken, for all seeds sown, and the expenses of sowing, all cultivation of the root-crop by hand or horse-hoeing, all rent of land upon clean fallows and fallows for roots, and the root crop became the property of the incoming tenant by his paying for its cultivation.

The foregoing items are from the valuation; those that follow are from estimate and outlay.

Corn for 20 horses (hay being included in tenant's Michaelmas valuation), at 7*l.* 10*s.* each horse	£150	0	0
Corn for beasts and pigs—40 quarters of Beans and Peas, at 32*s.* per quarter, including grinding	64	0	0
	£214	0	0

SEED.

30 quarters of Wheat, for 120 acres, at 50*s.* per qr.	75	0	0
20 quarters of Barley, for 80 acres, at 36*s.* per qr.	45	0	0
5 quarters of Oats, for 10 acres, at 20*s.* per qr.	5	0	0
9 quarters of Beans, for 35 acres, at 36*s.* per qr.	13	10	0
2 quarters of Peas, for 15 acres, at 30*s.* per qr.	10	10	0
Clover (red), seed for 40 acres, at 6*d.* per lb., 15 lbs. to the acre, 600 lbs.	15	0	0
White Clover and Trefoil, for 25 acres, at 9*d.* per lb., 15 lbs. to the acre, 380 lbs.	14	5	0
Beet-root, seed for 20 acres, at 5 lbs. per acre, at 1*s.* per lb., 100 lbs.	5	0	0
Swede and White Turnip seed, for 20 acres, at 9*d.* per lb., 5 lbs. per acre, 100 lbs.	3	15	0
32 sacks of Potatoes, of 3 bushels each, at 4*s.* per sack, for 4 acres	6	8	0
8 lbs. of white Carrot-seed, for 1 acre, at 4*s.* per lb.	1	4	0
8 quarters of Vetches, one quarter winter Oats, for 26 acres	21	12	0
4 sacks of Rye-grass, at 1*l.* 6*s.* per sack, for 25 acres	5	4	0
	£121	14	0

The following items are taken from the outgoing tenant's payments in the past year, and I consider them customary expenses which vary but little in their annual amount.

Gross Rental	£805	18	6
Hand labour	850	0	0
Tradesmen's Bills, paid quarterly	97	13	0

SUMMARY.

No. I. Working cattle, riding horse and colts	£565	0	0
II. Neat cattle	392	0	0
III. Sheep	348	10	0
IV. Pigs	87	10	0
V. Dairy Utensils	33	5	0
VI. Implements	594	10	0
VII. Corn for horses, beasts and pigs	214	0	0
VIII. Seed	221	14	0
IX. Valuation to outgoing tenant	850	10	0
X. Hand labour for one year	850	0	0
XI. Gross rental	805	18	6
XII. Tradesmen's Bills	97	13	0
	£5060	10	6

The tradesmen's bills being paid quarterly, 5*l.* per cent. is taken off them for discount. The sum of 5060*l.* 10*s.* 6*d.* shows the amount of capital employed on a farm of 500 acres in the county of Suffolk, and is rather more than 10*l.* per acre. More stock might be kept upon it, and in some seasons more has been kept, by consuming more corn or oil-cake, which would increase the outlay; for the present year the amount given in head No. 7 is thought sufficient to keep the land in fair trim.

If this account of capital actually employed is thought to be information worthy of your notice, the purpose of the writer will be answered by imparting his mite of practical knowledge upon the subject, to any member of the farming community who may require it.—*A Farmer and Valuer.*

GEOLOGY AND AGRICULTURE.

(*Concluded from p.* 249.)

The action of igneous matter upon sedimentary strata also induces great changes in their chemical properties, sometimes by imparting new substances sublimed from the interior of the earth, but not unfrequently by a re-arrangement of their component parts, without the addition of any new element. Modern chemical research has shown that there are some substances containing the same elements in the same proportions which possess very different properties, dependent probably on the forms in which their particles are grouped. Geology furnishes us with cases in which, without causing actual fusion, the vicinity of igneous matter has produced such freedom of motion among the particles of sedimentary deposits, as to allow them to re-arrange themselves into crystalline products. The case described by Professor Henslow, in Anglesey, in which garnets and analcimes have been formed in a shale of the carboniferous series, near its contact with a dike of augitic trap, without obliteration of the organic remains, is of this kind. Not far from it, on the opposite shore of the Menai, a similar augitic mass has produced changes on the marl and conglomerates of the new red sandstone series, which I have described in the Journal of the Geological Society of Dublin. The changes effected are—1st. The conversion of a loose conglomerate, composed of fragments chiefly felspathic, imbedded in a red argillaceous base with seams of marl, into purple and gray stony masses, undistinguishable in hand specimens from the coarser slates and grauwacke of the least indurated portions of the slate series; 2d. Conglomerates in which the fragmentary character predominates, but the felspathic matter which originally formed porphyrotic crystals in the pebbles of the conglomerate, has undergone a re-arrangement into crystals lining cavities which have been formed in those pebbles, while crystals of glassy feldspar shoot through the originally argillaceous base of the conglomerate. These altered portions resemble some of the felspathic conglomerates of the Cambrian series. 3d. We have the argillaceous portions in close junction with the igneous mass, melting down into augitic rocks finely and coarsely crystallised, and yet retaining traces of their original sedimentary lines. The last stage of the alteration of the coarse conglomerate gives as its result an augitic trap with a concretionary structure, resembling some of the hornblende compounds on the flanks of Cader Idris. It is obvious that, were the altered portions of this rock of sufficient extent its Agricultural character would be very different from that of the unconsolidated red argillaceous conglomerate in its original state.

The slates and sandstones of the Cambrian series yield soils very different from decomposed hornblende rocks; but in the neighbourhood of Dolgelly, we find that the changes represented by the stages of alteration in the conglomerate on the Menai above mentioned, have been produced on a large scale. We have there a considerable extent of rock possessing the lithological characters of greenstone and felstone*, and yet retaining traces of the original lines of deposit; and we have a still larger extent of greenstone and other igneous rocks, with a concretionary structure, resembling the augitic rock which has resulted from the fusion of the red conglomerate on the banks of the Menai. The fossiliferous rock at Bodean, not far from Pwllheli, mentioned by Professor Sedgwick, in one of his recent communications to the Geological Society, is an altered grauwacke sandstone, which has assumed a rude columnar, and jointed structure, like basalt; and like basalt decomposes from the action of the weather, in concentric layers. On a fresh fracture it exhibits a light-blue colour, and subcrystalline structure, the lines of deposit very apparent, and the embedded shells not at all distorted. On exposure to the weather, it changes, in the course of a very few years, to a brown colour, and decomposes rapidly into a sandstone, so friable that I was referred to it, by a person in the neighbourhood, as a case of shells, contained in the sand of the northern drift, of which I was in search. As atmospheric action does not produce such rapid effects on the unaltered fossiliferous sandstones of the Cambrian series in that part of Wales, the metamorphic process to which this rock has been subject, must, in this case, have increased its capability of forming soil, which would possess the characters of that derived from basalt.

As a general rule, the upper parts of the palæozoic series are less indurated, and more capable of forming fertile land, than the lower portions. The old red sandstone, however, of Herefordshire, and the slates of Devon and Cornwall, both belong to the upper, or Devonian division of the series; and the soils derived from the latter are less fertile than the former, principally from the induration they have undergone from the vicinity of igneous masses, which have impressed upon them so much of the characters of the older slates, that they were for a long time classed with them, till their fossil contents established their true relations. In the Alps, in the same manner, we find the argillaceous portions of the oolitic series, so highly inclined, and so much indurated, as to assume the characters of the slate series, and only to be recognised by their organic remains. In Russia, on the other hand, Mr. Murchison found the carboniferous limestone, with its peculiar fossils spread out in horizontal beds over an extent of more than a thousand miles, with the soft, incoherent character of a tertiary limestone. It is clear, therefore, that there are many circumstances besides aspect, elevation, and latitude, which will materially modify conclusions as to the fertility or sterility of soils, founded on the nature of the rocks on which they rest, or the colours which they bear in our geological maps.—*J. Trimmer.*

* Felstone—a happy term recently introduced by Professor Sedgwick, as a substitute for that of compact felspar.

WOODEN SHOES.

BY MARTIN DOYLE.

(*Concluded from page* 250.)

In France, the ploughman walks between his stilts in wooden shoes; the carter travels many miles in them; the gardener never goes without them in winter; and every spade-labourer uses them at his work. The English heavy-soled hob-nailed buskin is not a bad winter article, but in summer it is a dreadful incumbrance; it cannot be kicked off in an instant, like the sabot, leaving a nice light slipper (so comfortable for one's corns) in its stead; nor is it supplied without great expense. The Lancashire clog is very cumbrous and very hard, and admits of no lining shoe inside; and, in my opinion, both on this account and the greater cost, it is very inferior to the sabot. To bring wooden shoes into general vogue among us, the children of the poor should be first familiarised to the use of them: if accustomed at an early age to wear them, they will become unwilling to part with them in the succeeding stages of life.

Young, active, grown-up persons of either age will probably object to them at first, as crippling their movements; and yet, where are more agile persons than the youth of France, most of whom wear them? But if men and women, whose jumping and running days are over, or working people employed at stationary labour, were presented with them, they would in a short time be convinced of their excellence. "Keep the head cool, and the feet warm," is a maxim of health, the correctness of which elderly and delicate persons of all ranks admit; but, alas! at the present price of leather shoes, those who are very poor must neglect the advice, unless they will wear wooden shoes.

I have observed the mode of making the sabot, which is very expeditious. The pieces of wood, cut into the required length and breadth, are taken up, in succession, by a workman, who stands at a strong bench, with a small sharp adze in his hand; with this he rudely forms the outside, leaving the heel high and narrow, like that of a fashionable boot, with a hollow for the centre of the foot underneath. He then completely finished off the whole of the exterior surface with a long sharp paring-knife, fastened at one end of his bench by a joint, and crossing over to the other, and worked somewhat in the way of the blade of a Root-cutter or Hay-knife.

This part being finished, he hands over the blocks in pairs to another workman, who fixes them firmly in wooden vices on his bench, at right angles to his front; he then takes a large gimblet, and screws out the part where the heel of the foot is to rest, and makes another circular opening in the fore part; after which he scoops out with an auger the entire of the interior, and thus forms the shoe in the shape of a child's boat.

The sabots (such as the peasants wear) which are not intended to be furnished with straps across the instep, and are to be worn without any other kind of shoe on the foot, are formed with less opening, like half-decked boats, and from being roofed, as it were, over all the fore part, they do not require the transverse ligature. They are either covered with black varnish, which gives them the appearance of leather clogs, or left in their natural colour, which resembles untanned deer-skin, if the Walnut or Beech of which they are made be much variegated. For ladies' use, (as substitutes for clogs,) they are beautifully made to resemble leather neatly plaited at the toe part. These, upon a small foot, look extremely well.

The wooden shoe has been used in France from a very remote period; it was probably introduced there by the Romans, who were acquainted with the use of it.

This cheap and useful description of shoe having maintained its *footing* in so civilised a country as France for many centuries without disparagement, is a sufficient reason for inducing my countrymen to adopt it also. The only cases in which I can conceive them a decided incumbrance, would be upon a road, or in crossing a shaking bog, where a light pair of heels is indispensable. A heavy person in sabots might be swallowed in a quagmire before he could extricate himself from them, and Captain Starlight's men would often be overtaken by the police if they moved out in their midnight marauding in the sabot, the very noise of which would be an intimation of their movements, which might possibly cause them subsequent inconvenience.

ON AGRICULTURAL EXPERIMENT.

In a late Number I made some remarks upon the quantity of land necessary to be employed in experimenting with artificial manures. There are a few more precautions necessary to be observed, the neglect of which is likely to produce a failure in the results. The substances employed should be pure. The adulteration of manures is carried on to an extent that few are aware of, and the farmer has thus been subject to a most gross system of imposition. I have rarely met with a sample of nitrate of soda in the hands of a farmer, that contained less than 30 per cent. of impurities, chiefly common salt. Guano is adulterated with sand and clay; sulphate of ammonia with gypsum; soot with dust and ashes. The soil that is selected for experiment should be in an exhausted state; salts which produce a remarkable effect on a soil full of dung, have often little effect upon the same soil when poor, and *vice versâ*. When Turnips are the object of experiment, the greatest care should be taken in the preparation of the land. It should be reduced to the finest tilth possible, by ploughing, rolling, &c. Dung has a tendency to lighten the soil, and it also yields, during decomposition, a vast quantity of gaseous matter; when artificial manures are employed, the plant is obliged to procure these from the soil and atmosphere, and the power the soil possesses of condensing gaseous matter depends entirely upon the state of mechanical division.

It would contribute much to advance our knowledge of the action of artificial manures, if the experiments were continued upon the same space of land during successive years. The problem would then be solved, whether a plant can supply itself, year after year, with organic matter, when inorganic matter only is supplied. I found that the ashes from 5 cwt. of dung, produced an equal weight of Turnips, as 5 cwt. of dung unburnt; but whether the succeeding crops will be as good, remains to be proved. The great expense of carriage prevents the dung which accumulates in large towns from being employed, except by those farmers who live within a few miles; but if the ashes proved equally beneficial, the weight would be reduced nine-tenths, and the expense of carriage completely removed.—*J. B. Lawes.*

ON MINERAL AND INORGANIC MANURES. No. XIV.

By Professor Charles Sprengel.

(*Continued from page* 235.)

In some parts, marl is strewed also over pasture-fields, by doing which, it is trampled into the soil by the cattle, and soaked into it by the rain-water.* This process may be safely resorted to, especially with a marl containing much protoxide of iron. The application will improve the pasture, as we have already seen that Grasses and Clover are made by marl more nutritious and palatable to the cattle. At other places, it is conveyed during the winter on fields planted with Red Clover; and in the spring, the marl and the Clover-sward are shallow-ploughed; or it is spread during winter on the Rye-crops in small heaps, then left until the spring, and then strewed over the field. Very often also, old pastures are manured with marl after they have been ploughed. In this case, the marl will find much vegetable matter and coal of humus for decomposition, and thus improve the subsequent crops.

Marl is also placed in large heaps alternately with layers of vegetable mould, in which state it is left for a year or eighteen months, after which the mixture is used for the manure of sandy soils. The long and close contact in which the humus (often very rich in carbon) is placed with the lime of the marl, will cause it sooner to be decomposed, as would more slowly be the case if mould and marl were conveyed separately on the field. It is, perhaps, unnecessary to add, that, for the mixing with

* And buried by the worms.

mould, earthy marl only can be used, and that it is to be brought in the heap in as small pieces as possible, and the layers not to be made too thick. If marl is used conjointly with manure, (as is done in some parts,) the result will be most satisfactory. Still, we must guard against taking too much manure, else the Corn will be laid.

The quantity of marl to be brought on a certain area cannot be stated accurately (see p. 325), for this is to be decided as well by the quality of the soil as by that of the marl, which both vary. Of clayey marls, containing 12 per cent. carbonate of lime, 3000 cubic feet are brought on one Magdeburg acre of sandy soil, whilst 80—100 cubic feet will suffice for the same area if the marl be very calcareous, and, moreover, very powdery. Argillaceous marl will also serve to improve the soil mechanically, whilst calcareous marl has merely to decompose the carbonic humus, and to supply the crops with lime, &c. As by the use of marl large tracts of land may undoubtedly be more speedily improved in strength, and brought to productiveness, it would be well if every large proprietor would examine his land, and see whether there be no strata of marl on it. If it be not too far below ground, its existence may be ascertained by some deep-rooted plants; the natural growth of the Lucerne will indicate it; and at places where there are layers of marl, the following plants also will be generally found growing: Brambles, Coltsfoot, Hawthorn, Blackthorn, Wild Roses, &c. The more certain way, however, to ascertain the existence of marl strata is by boring the ground, and testing the soil brought on the surface by some drops of nitric or other mineral acids, and if there be any effervescence, we may be sure of having found at least a stratum of a calcareous mineral, and further chemical analysis will show whether it has all the properties desired. If a marl stratum has been found, its thickness should be ascertained, for the sake of deciding whether it be worth while to excavate it, as, generally, marl lies so deep, that much soil is to be removed before we can arrive at it. To avoid this, at times, a regular miner's pit may be sunk; which, however, is so expensive, that the marl must be of very good quality to repay the outlay. At other times, marl may lie so deep, and in such a wet position, that the spring-water must be carried off by pumps; which, again, will not pay, if the marl be not very good. In alluvial soils, the quality of marl will generally improve with the depth, and the lower strata will be richer, not only in lime, but also in potash, common salt, gypsum, phosphate of lime, &c. In this case, the deepest will be the best, and will not require so great a quantity to produce the same effect as that of the upper strata.

It is advisable to give to marl-holes as convenient an ingress and egress for the waggons and carts as possible, and the soil cleared away is to be thrown back where the marl has been already taken out. Strong marl may be broken of with pick-axes, whilst earthy marl may be worked off with a strong three-pronged fork, which is thrust into the ground. In making a marl quarry, we must guard against undermining the ground, else by the falling-in of the side-walls the workmen may be injured. In order to be sure that we convey to our fields the substance needed, it is well to examine the different strata chemically, as, at times, the rock may be so worthless that it is better to throw it away on the waste heaps.

ON THE CULTIVATION OF FLAX.—No. IV.

Among the Associations now in operation, for the encouragement and promotion of improvement in rural affairs, Flax cultivation has not been neglected. Allusion has been already made to the Belfast Society, the first of the kind; which, although little more than three years in operation, has already effected a marked improvement throughout the Flax-growing districts of the north of Ireland. That Society wisely sent over a number of intelligent young men to Belgium, whence the finest qualities of Flax had hitherto been procured, and also brought over labourers from that country to introduce the Belgian system of management. The experience of a single season showed the sound policy of this arrangement, and the important change it effected; but, above all, that Society exerted its influence to introduce the Factor-system (if I may be allowed the term), feeling assured that without this peculiar feature the object in view could not be effected—that of enabling the home grower successfully to compete with the foreigner. To this important subject, therefore, the attention of those anxious for the extension of Flax culture in this country should be devoted in an especial manner, as one of the most important means of effecting their object. Nor will this be found difficult to effect, as the Continental factors will readily come over to this country, provided a proper field is before them for the employment of their capital. On this subject the following extract from a recent Report of the Belfast Flax Society is deserving of attention.

"Of the factor system, your committee have the satisfaction to announce, that this peculiar and new branch of business has been commenced amongst us, under the most favourable auspices. The system being, that capitalists purchase the Flax while on the ground from the farmer, who undertake the pulling and all subsequent treatment of it, which is performed under the immediate superintendence of competent persons, and is attended with many advantages. The farmer obtains a fair price for his crop, without the risk of spoiling or losing it. He is thus put in funds; and being relieved of a large portion of his labour and anxieties, he can give undivided attention to the other products of his land, and is enabled to hold over till the most judicious time for selling, instead of being compelled to bring to market whatever was first disposable, which he had to sell at any sacrifice, to meet his outlay in labour, rent, or other pressing necessity. But still greater advantages are opened to him; he has opportunity of seeing how these gentlemen and their experienced agents handle the crops, so as to realise a profit after paying him for it, which he possibly might not have realised for himself, including all his expenses and troubles. The industrious will be stimulated to imitate the improved mode of management they see practised, and the small farmers, more especially, may learn to reap all the benefit of that system they have exemplified to them by the Belgian factors and labourers, by introducing hand-scutching, on right principles, in their families, during seasons that otherwise offer no profitable occupation of their time.

"Gentlemen farmers may also be encouraged to sow Flax, who could not undertake the trouble of superintending its management, or conveniently arrange for its accommodation.

"This new branch of business has been undertaken by two enterprising gentlemen, thoroughly acquainted, by long experience abroad, in every detail of its management; and they have realised this season every expectation of its great advantages to the country, by the trial they have given to the system.

"Mr. Welch, from Belgium, early in the year, located himself at Armagh, and commenced training labourers, under Belgian factors, and he purchased, at the proper season, the standing crops in that neighbourhood; but, losing the services of his principal Belgian superintendent at this critical period of his operations, he limited his purchases to some fifty acres.

"Mr. Galbraith, of Belfast, purchased in the neighbourhood of Lifford and Strabane, some two hundred and fifty acres, which were allotted to the management of Dutch and Belgian factors; and a spirited example has been thus given, which your committee doubt not will be followed up extensively; and so strongly impressed have been your committee with the importance of these gentlemen's undertaking to the interests of the country, and of the great benefits likely to arise therefrom, that it was resolved, at a late meeting, to mark their sense of it, by presenting them with a gold medal each (as a memento of the estimation your committee entertain of it, and of their having been the first parties to introduce this new and important branch of business amongst us), accompanied with their best wishes, that their speculations may turn out as successful as they could possibly anticipate, and more substantially remunerative of their exertions."—*J. Sproule.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XIV.

(*Continued from p.* 235.)

We have seen in the previous pages that the principles of manuring plants must be founded upon the chemical nature of the soil; and on the food wanted by the plant. We have also seen that a plant, to be perfected, must have all, not only part of the elements of organic structure; that as an animal will not live upon either azotised or non-azotised food alone, so the analogy exists in vegetable life, and a plant will not live alone upon nitrogen in ammonia, carbon in Straw, alkali in the nitrates, oxygen or hydrogen in water, silex in sand, phosphorus in bones, or the sulphur and iron in the earth, but that the union of *all* these elements or principles is necessary. We have also seen that plants, especially those destined for the use of man, have the power of depositing certain principles according to the amount of the necessary elements supplied to them.

Now, of all the constituents of plants, that which is deposited in the cells of the seed of Cerealia—Wheat, Barley, Oats; and of the Leguminosæ—Beans, Peas; and in less quantity in the tuberosa, is the most important to man and the animals dependent upon him: I mean albumen, which, in the form of gluten, supplies the azotised constituent of Wheat. Surely then the great object of the farmer is to increase this principle in his Wheat by a judicious system of manuring or feeding his plant. The Straw and the dung of his farm-yard will supply abundance of food for the fabric of the plant; but if he wishes to increase the weight, quality, and quantity of his grain, he will find all the elements necessary for his purpose in urine.

In urine we have almost all the elements of the food of plants. We have, in human urine, urea, containing azote, 3 per cent.; other salts, containing nitrogen, 1.7 per cent.; sulphates of potash and soda, .610 per cent.; phosphates .46 per cent. And yet, is it not astonishing that the collection and use of urine as a manure should be so much neglected—that hundreds and thousands of pounds of Wheat are daily lost and destroyed in the form of uncollected urine. It is equally clear that of that retained by the Straw in the farm-yard, one-half or more of the nitrogen is lost by evaporation during the decomposition necessary to convert the Straw into manure. The phosphates and potash remain, it is true, and their value is great, but the elements of albumen in the urea are lost as carbonate of ammonia by volatilisation.

To increase the quantity and quality of Corn, then, we must collect all the urine we can from every cottage or house or town in our neighbourhood; and, having procured it, we must prevent loss from decomposition by fixing the volatile salt of ammonia.

Ammonia is composed of—

Nitrogen	14	or one equivalent.
Hydrogen	3	or three equivalents.
	17	

To the uninitiated in Chemistry I may observe, that the term equivalent is expressive of the proportions in which bodies unite with each other; and that all bodies unite chemically with each other either in the proportions expressed by their equivalents, or in multiples of them. All simple bodies have a fixed combining proportion or equivalent, as nitrogen, 14; hydrogen, 1. And the equivalent of compound bodies is expressed by the sum obtained by adding the combining numbers of the simple bodies of which it is composed; thus, ammonia formed as above,—of nitrogen 14, hydrogen 3,—has 17 for its equivalent, in which proportion alone it will unite to form salts with acids; thus, carbonate of ammonia is formed of—

CARBONIC ACID:—
Carbon 6, one eq. + oxygen 16, two eq. = 22 eq. of carb. acid.
AMMONIA:—
Nitrogen 14 + hydrogen 3 . . = 17 eq. of ammonia.
39

And 39 is the equivalent or combining proportion of the carbonate of ammonia.—*C. R. Bree, Stowmarket.*

Home Correspondence.

Potato Planting.—It will be found, speaking from years' experience on a small scale, that using the largest size Potatoes, uncut, for sets, and planting them in rows one yard apart, the sets being two feet and a half from each other, is the right way to plant Potatoes; the produce will be one-third greater at least, the small Potatoes will be very few, and the crop escape the effects of drought, should it come early in the spring, and escape, because the skin is not broken, the attacks of wire-worms. The above distances are for the main crop; for an early one the distance should be 27 inches by 18, and the rows not moulded up. Moulding up Potatoes retards the formation of the tubers. Should any one not like to trust his whole crop to such proceedings, let him try a small portion of his Potato plot by way of experiment, and I have no doubt as to the ultimate success.—*W. H., Reading.*

Potatoes.—I think the loss and disappointment from both curl and rot may, in 99 cases out of every 100, be prevented by the exercise of a little management and common sense. In proof of this I will adduce a few instances. In the vicinity of Edinburgh, where excellent Potatoes are grown for the city market, it used to be customary to have seed Potatoes from the southern counties of Scotland every second or third year, to prevent curl; the dry or mealy quality—constituting the excellence of the Potato to most palates for table—being the cause of curl. Again, when a young man, I remember being solicited by a tradesman in a midland town for some seed of a favourite pink-eyed Kidney to plant in his pet-plot of ground in the suburbs. They all curled; the fact was, they were "very mealy," as it is called. 3dly—I knew a market-gardener in a small way, near Edinburgh, who was famed for his early Potatoes. His practice always was to dig up and put away sufficient for next year's seed, before they had completed their growth; they were full of sap and kept so. I have myself had early Potatoes completely stopped in their growth by drought, before the period of natural maturity. They were waxy in quality, not good to eat, but made very good seed. Again, an old master of mine who had lived in a situation on the west coast of Argylshire, told me the practice there, was to dress the ground where the portion of Potatoes intended for the following year's seed were grown with fucus from the sea shore; the quality of the produce was exceedingly waxy and uneatable, but this made them all the better for seed—in fact it was done purposely. So much for curl. Now for rot. A neighbour and friend of mine some years since, happened by chance to have a very good crop of Potatoes that were planted late; but from that he got a crotchet in his head that the lateness was the cause of the superiority of the crop, so that Potato planting afterwards became an habitually protracted process with him. Several years since, about two acres of land was well prepared, well dressed with farm-yard manure, and planted; but on the advance of the season, not above a third of the lots vegetated, and many very weakly. My friend, in a disappointed mood, said to me, "I wish you would examine these Potatoes; they come up very bad, and I do not know what is the matter." The fact was they had been stored in a Potato-house all winter, part of a large mass, that had been turned over and deprived of growths two to three inches long before they were cut into sets for planting. Their vitality was quite exhausted before they were in contact with the earth. Now, Sir, how easy it is to guard against these painful results, I leave any one to judge. Soils, manures, and seasons, no doubt, will affect a Potato crop in various ways; but, in my opinion, will induce neither rot nor curl, if a little care is taken to prevent it. Seed Potatoes should not be of a mealy quality, nor should they be suffered to heat when stored; nor should the planting be protracted till the Potato has exhausted its vital powers in attempts to grow without soil; nor should the sets be kept more than 24 hours out of the ground after they are cut.—*Quercus.*

Potatoes.—I have just taken up some Potatoes which have been kept in the ground all the winter, and which are quite sound, and at the same time very good tasted, at which I am rather surprised, and I think it would be a good experiment for some of your farming readers to try whether they will not keep better in the ground than in the Potato-pits; for in the latter they are, in many instances, one mass of putrefaction.—*H. P. T.*

Glass Milk Pans.—Upon reading Captain Carr's letter, published in the Royal Society's Journal, vol. i., 1840, I was struck with the impression that the idea was not only good, but that glass is a better material for the purpose than any other, and, taking all things into account, less costly, *i. e.*, upon the assumption that the price here would not be more than three times that stated in his letter. I therefore felt but little hesitation in ordering for my dairy, which consists of rather more than

20 eggs, two dozen of them from Messrs. P. Oberf and Co., Hamburgh, through Mr. George Rahu, 4, Crescent, Minories, London, to whom I have much pleasure in recommending any gentleman who may feel disposed to do as I have done. The entire cost to me stands as follows:

	£	s.	d.
Cost price, 1s. 2d. each; Package, Commission, &c. &c., Hamburgh	1	11	6
Duty paid in London on 1 cwt. 26 lbs. of glass, and excise	2	11	9
Agency, Entries, Lighterage, Landing, Porterage, Boatmanage, Wharfage, &c.	0	18	4
Carriage from London to Ipswich by 'Orwell' steamer	0	2	6
Carrier to Wickham Market	0	1	6
	£5	5	7

I have had these pans (which all bore the journey without a flaw) in use about a fortnight, and am convinced that they are better than anything else of the kind in use. Cleanliness, coolness, and economy are the three principal requisites in a dairy—to which I am much mistaken if these pans will not materially contribute. The cost price at Hamburgh is something more than I was led to expect, and the duty excessively high,—much higher than I calculated upon at the time of sending out the order. One material saving is, that they require no scalding—merely washing in milk-warm water, then rinsing in cold, and set in a rack to dry. A good-sized kettle-full of boiling water from the kitchen-fire is sufficient for my dairy, except upon churning mornings.—*C. Welton.*

Books.—The Lytham Agricultural Society has commenced what Lord Brougham pointed out 20 years ago, in his practical observations upon the education of the people and their employers, and it is to be hoped that other Societies will adopt the same plan, so that the ploughman and others employed in the working the land, may read and judge for themselves, upon subjects connected with their business. At a late ploughing-match, at which prizes were offered by this Society, it was resolved to present them partly in the form of books, and partly in money. If this example were followed it would undoubtedly be productive of beneficial results.—*Facile*

Rot in Sheep.—There has been some discussion lately between Mr. Grey and Mr. Doyle respecting the foot-rot in sheep, which is a very injurious disease. But there is another malady still more fatal, to which sheep are liable, called the plyce, or rot in the liver. There are various opinions respecting the real cause of both diseases. Most agree, however, that they are originated somehow or other by damp pasturage. The following is an extract from Mr. Brightwell's lecture, taken from the *Norwich Mercury*, and which refers to the latter disease:—Mr. B. "alluded to the description of animals found within others, principally those which infect sheep; the fluke and sandore were among the number, which destroyed thousands of sheep annually. The general impression was that the rot was contained in certain plants. There was a place near Cossey which he said had the name of having the rot, and nobody would buy a sheep, or hare, or other animal which had been fed upon it." Mr. B. further observed, "there had been three trials about the rot question at Wymondham, which went before a jury three times, and the great point to determine was, whether the sheep had the rot when first sold, or whether the person who bought them put them in a field where the rot existed." I know several fields, or rather parts of them, at Cossey, where it is said the rot exists, and they are all damp; but the question is, in what does it exist? The general belief is that it exists in a plant called the Rot-weed, and that that plant will affect any animals that graze upon it, even pigs. This, of course, is the same weed mentioned by Mr. Brightwell, and so far the belief may be correct. Sheep may eat the weed while it contains the eggs of insects, whose larvæ, being bred in their stomachs, find their way into their livers, and become the plyce or fluke, or in other words, the rot. I cannot say what is the best cure for the disease; mercury is named, but prevention is better than cure. It may be said, why not root out the weed, and cleanse the land of rot? It must be borne in mind, however, that the insects may deposit their eggs on other weeds, even the grass, nay, perhaps the sheep themselves, in a similar way as the insects do which cause the botts in horses. There may be something suitable for the insects in damp meadows, hence drainage must be of great use; but it may be urged that when animals are kept in houses and fed upon much green or wet food, they are subject to the rot in the liver—rabbits, for instance, and perhaps sheep also. In such cases the insect's eggs may be amongst the food, or else the insects find their way to it. It is worthy of remark that much green food renders animals' stomachs more fit to ensure the growth of the larvæ of insects; likewise that there are various opinions respecting how "animals are found within others." The vulgar notion seems to agree with a scientific one, viz., that the eggs or larvæ of insects are drunk in water. The strongest proof of this I know, is in the relation of the woman at or near Cork, who had larvæ of the churchyard beetle in her stomach. By an absurd notion she drank a mixture of water and clay taken from a priest's grave! I believe there are doubts whether the larvæ within animals ever become insects, or arrive at the pupa state. In the case just noticed, I think it is said they did so; if not, that foolish woman must have taken great draughts, at various times, to produce the vast quantity of larvæ which came from her stomach. Although larvæ may come from animals' stomachs with the excrements, and afterwards become perfect insects, still I cannot see how they can pass from the liver. Whether my views on the rot in sheep's livers be right or wrong, I am safe in saying that the animals originally belonged to high and dry districts, and the nearer their pasturage comes to that, the less liable they will be to the rot, both in foot and in liver. If the reader happen to know anything respecting the history of the insects that produce the "fluke and sandore," perhaps he will have the goodness to mention it.—*J. Wighton.*

Mixture of Soils.—In many districts there are varieties of land which, by an equitable exchange, make each other productive, without the addition of manure. For instance, sand and clay: neither of these by itself is so fertile as when they are mixed together. All gardeners know the craving nature of a sandy soil, and the almost impossibility of doing anything with clay in its natural state; yet men are found who obstinately toil on with each separately; when they have both opportunity and facility of bringing them together, thereby saving both present and future outlay.—*Falcon.*

Transplanting Swede Turnips.—Though your correspondent, "C. G. Sidy," page 142, has never had the opportunity of trying the transplanting of the Swede Turnip, he need be under no fear of the result. The Lancashire farmers have found it a plan far superior to sowing the seed on the ground of the future crop, being quite sure of getting a full and heavy crop. When they are transplanted it gives more time in preparing the drills where they are to stand, and less time is taken in planting them than in thinning drills where they are sown to stand, and a great saving is effected in the seed. I saw a field last year of four acres, and the seed was sown in the drills; the whole was attacked by the fly and completely destroyed. The owner of them applied to his neighbours for plants, which he got, and it was supposed that it took about a quarter of an acre seed-bed to plant the drills in the four acres. The upper parts of the leaves were cut off before they were planted, to prevent them being shaken by the wind. These plants were planted in the drills where the seed had been sown and destroyed by the fly, and a finer crop was never produced than grew from them.—*M. S. G.*

Guano.—Having prepared the accompanying directions for using Guano, for the information of Sir Charles Lemon's tenantry, it occurs to me that it might be made serviceable to others by publication. 1. It should never be applied in contact with seeds, as it kills them immediately they begin to vegetate.—2. It should be mixed as equally as possible, with about four times its bulk of finely pulverised earth, burnt clay, turf, or peat-ashes, after they have become cold. If sand is used, about twice its bulk will be sufficient.—3. The quantity per acre may vary from two to four cwt., according to the nature and quality of the land. Recent experiments have shown that a quantity which proved highly beneficial in poor soil, became deleterious upon land previously rich and well manured.—4. The best time for applying it is shortly after vegetation has commenced, and immediately before rain, or during damp warm weather.—5. The best mode of application is, to divide the quantity per acre into two or three equal portions, and sow them broadcast at intervals of about ten days, or a fortnight.—6. For small allotments it may be more convenient to use it in a liquid state—in which case, mix 4 lbs. of guano with 12 gallons of water, and let it stand for 24 hours before being used. The same guano will do for mixing again with the same quantity of water, after the first is drawn off.—*W. B, Booth, Caroleur.*

Dibbling Beet.—I have had garden Beet dibbled, and it has answered well. I should decidedly follow the system myself. I purchased last autumn from a person who had a small allotment, a quantity of field Beet; part had been sown, part was dibbled, being the thinnings of some person's seed-plants. He informed me that the weight of the latter per rod was large, although the roots were not all approaching in size to the seedling plants.—*Toby*

Carrots and Guano.—One of your subscribers asks about guano being a good manure for Carrots. It is good for everything if properly used, but no seed is more easily killed by it than that of the Carrot. The guano must be well worked into the soil to render it safe.—*W. D. F.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's house, in Hanover-square, on Wednesday last, the 24th of April, present, His Grace the Duke of Richmond, K.G., in the chair, Lord Carew, Hon. G. H. Cavendish, M.P., D. Barclay, Esq., M.P., T. R. Barker, Esq., J. R. Barker, Esq., W. R. Browne, Esq., E. Buller, Esq., M.P., Rev. T. Cator, H. Colman, Esq., E. D. Davenport, Esq., J. E. Denison, Esq., M.P., Capt. Forbes, R.N., H. Gibbs, Esq., B. Gibbs, Esq., H. I. Grant, Esq., C. Hillyard, Esq., Rev. E. C. Keene, F. Manning, Esq., A. Ogilvie, Esq., H. Price, Esq., Prof. Sewell, H. B. Simpson, Esq., J. S. Stanhope, Esq., W. R. C. Stansfield, Esq., M.P., Rev. T. S. Turnbull, T. Tweed, Esq., and H. Wilson, Esq. J. Mott, Esq., of Portswood Lodge, Southampton, was elected a Governor, and the following gentlemen members of the Society:—

Woodward, Thomas, Wickstreet, Hailsham, Sussex.
Deverell, John, Purbrook Park, Portsmouth.
James, Edward, Banoch Lodge, Carlisle.
Gearing, Thomas, Brown-Candover, Alresford, Hants.
Stubbs, Henry, Ropley, Alresford, Hants.
Pellatt, Apsley, Knowle Green, Staines, Middlesex.
Vogar, Rev. Thomas S. L., Vicar of Walburton, Arundel, Sussex.
Warner, James, Jun., Curdridge, Botley, Southampton.
Godrich, Thomas, Netley Grange, Southampton.
Harding, James, Upton-Scudamore, Warminster, Wilts.
Parker, Kenyon S., Q.C., 13, New-square, Lincoln's Inn.
Godsal, Philip William, Iscoyd Park, Whitchurch, Shropshire.
Cresney, Thomas, Hampton-Wick, Middlesex.
Collins, Francis, Savernake Forest, Marlborough, Wilts.
Lowe, John, Birmingham.
Atty, James, Penley Hall, Ellesmere, Shropshire.
Plowman, Robert, Beck Farm, Beaulieu, Southampton.
Mott, John, Jun., Portswood Lodge, Southampton.
Winchester, Marquess of, Amport House, Andover, Hants.
Hendy, James, (President of the Cornwall Agricultural Association,) Trethurffe, Truro, Cornwall.
Ware, Samuel, 34, Portland-place.
Warner, James, Harefields, Bishop's, Waltham, Hants.
Saunders, William, Cranbourne Farm, Sutton, Winchester.
Willsher, Robert, Harstgreen, Lambhurst, Sussex.

The names of 21 candidates for election at the next meeting were then read.

EYE DRAINING-TILES.—Mr. Wilson, of Stowlangtoft Hall, near Ixworth, Suffolk, presented a specimen of the tiles used for the "eyes" in under-drains, and made at Woolpit, in Suffolk; along with the two bottoms on which the tile is intended to rest. This tile is nearly a foot and a half long, and 6 inches high, having at one end the common shape in its transverse section of the capital letter U turned downwards, with a middle interior width of two inches and a half. From this wider end, the tile, by lateral compression while in the raw unburnt state, had received a tapering diminution of its width to the other end, where the aperture, being reduced to a vertical slit, six inches high by three quarters of an inch wide, all rabbits, rats, and other animals too large to pass through the opening, would be kept out of the drains, and injury from their operations thus prevented.

MODEL EXPERIMENT.—Mr. Barclay, M.P., reported to the Council the progress made at the last meeting in arranging the plan of the model experiment proposed by Mr. Miles for trial by such Members of the Society as could conveniently join in it. An interesting discussion then ensued, in reference to results obtained in the use of guano and farm-yard manure. The Rev. Thomas Cator, of Skelbrooke Park, near Doncaster, had found an application of 300 lbs. of guano per acre to a Potato-crop, strewed upon the ground when they were ready for earthing, equivalent to 18 loads of fold manure applied in the usual way; and having last year manured a Bean crop with guano, pigeon-dung, rape-dust, and fold-manure, he found now the Wheat had come up this spring, a decided evidence of the superiority of guano, on the five lands of the Bean-field to which that manure had been applied:—he considered it as one of the cheapest hand-tillages, while the fold-manure was most advantageously reserved for the Grass and Clover crops.—Mr. Davenport, of Capesthorne, Cheshire, regarded guano as one of the most valuable manures, having now had three or four years' experience of its use; and he considered, in general, that 3 cwt. of guano was equal to 20 tons of farm-yard manure. He spoke of the guano in its unadulterated state, as imported. His own supply had been of the Peruvian guano, furnished to him by Mr. Myers, of Liverpool, at 10*l.* per ton. He believed that the African guano was substantially the same in its general character, but that it contained 25 per cent. of water, while the Peruvian contained only 10 per cent.; and assuming the Peruvian variety as 10*l.* per ton, Mr. Bernays had stated the relative value of the African guano to be as 7*l.* per ton. Notwithstanding the immense quantities already sold in this country, Mr. Myers had informed him that he had at present orders for 3000 tons, which he was unable to supply. The hardest samples are the best; and as it was known to be frequently adulterated with one-third of an inferior quality, it was most advisable to purchase it from a direct importer of the article, and in the original packages. His practice was to apply a mixture of half a ton of finely-worked bones and 2 cwt. of guano, per acre, to a crop of Potatoes or Turnips. He recommended powdered gypsum to be scattered by handfuls in the farm and stable-yards, and mixed with the straw and liquid manure; or should that not be done, then to put layers of it in the manure-heap every three or four feet: by means of this proceeding the ammonia, instead of escaping into the air in the state of gas, was retained by gypsum. By these new systems of manuring, he was quite sure the same results could be obtained at one-quarter the former expense.—Mr. Hillyard, of Thorpeland, near Northampton, would engage in no trial of new manures unless they were susceptible of being brought into general farming use, and the experiments made after a white-straw Corn-crop.—Mr. Gibbs thought that it was desirable to make the trial after a white Grain-crop, whenever the given weight of the Turnips was the point to be ascertained.—Mr. Barclay, Mr. Hillyard, and the Rev. Thomas Cator, then agreed to undertake the trial of the model experiment proposed, and under such conditions as might hereafter be finally arranged.

OX AND HORSE TEAMS.—The Duke of Richmond having called the attention of the Council to the difference of opinion prevalent on the subject of the employment of oxen in ploughing, thought it would be an important topic of inquiry to be instituted by such of the members, residing in different counties, as would undertake to gain for the Journal Committee, actual facts and results of trial and experience in their use, under different circumstances, both as to the difference of expense, and the amount of work performed. An interesting discussion then took place on the comparative advantages in the employment of horses and oxen in farming work, when the Council resolved, on the motion of Mr. E. Buller, M.P., that the following gentlemen should be requested to make inquiries on this subject, and report their communications to the Journal Committee:—Col. Challoner, H. Blanshard, Esq., Rev. T. Cator, C. Hillyard, Esq., W. R. Browne, Esq. The following are the principal points to which their attention is directed:—

1. The age and breed of both horses and oxen, with the time at which they were first put to work.
2. The working condition of the horses and oxen; whether regularly employed on the same farm; and for what period: with a statement of the nature of the soil.
3. The amount of work, whether on road or field, of each pair of horses and oxen; together with remarks

upon the manner in which that work has been performed, and its separate value.

4. The cost of maintenance and farriery of each pair of horses and oxen; including the separate charge for management.
5. The cost, or presumed value, of each pair of horses and oxen, with their gear, when put to work; and their value at the close of the comparison.
6. The comparative number of oxen or horses which are required to do the same work.
7. Whether there is a general tendency in England to substitute the ox for the horse in Agriculture, particularly in ploughing?
8. Whether this tendency exists more in particular counties; and if so, to what motives it may be attributed?
9. Whether such preference has yet done any evident injury to the employment of horses?
10. Whether there has been remarked any deterioration in the breed of horses generally; or if, on the contrary, the mixture more or less of pure blood in all the breeds, has produced a sensible improvement, and a more easy sale?
11. Whether this branch of commerce is failing or prospering in the United Kingdom?
12. Results of trial and observation on any other topics of the inquiry.

Destruction of Rats.—Captain Forbes, R.N., of Winkfield-place, Windsor, having called the attention of the Council to the fact, that many thousand quarters of grain are annually destroyed by rats, proposed that a premium should be offered by the Society, for the best mode of effecting their destruction.

Copies of Mr. Hannam's Treatise on the Economy of Waste Manures, and on the Nature and Use of Neglected Fertilisers; the American Agriculturist, and the *Jamaica Times*, were presented to the Society by their respective authors.

The Council then adjourned to Wednesday next, the 1st of May.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

The Annual General Meeting of this Society took place on the 19th inst., at 37, Sackville-street. His Grace the Duke of Leinster in the chair. A draft of the Report for 1843 was read by the Secretary. Some important additions were made to the premiums for draining and improving waste land; and, in accordance with the request of John Hawkins, Esq., it was resolved, that the Agricultural College about to be established at Leopard's-town, near Dublin, shall be under the patronage of this Society.

FARMERS' CLUBS.

Bromsgrove.—At the late meeting of this Club, Mr. H. F. Bardon read a second paper on the subject of Manures. After speaking generally of the action of manures, he brought forward some very interesting matter on the use of salt. "Common salt," he said, "has lately attracted much attention as a manure, and upon light soils it is very valuable. I have received two letters on this subject, containing the actual experience of two thoroughly practical Agriculturists. The first I received from Mr. John Wilson, of Aston Claverly, near Wolverhamptom; the second from Mr. Matthews, of Park Hall, near Kidderminster. The following are extracts:—Mr. Wilson says, 'I have used salt for agricultural purposes many years with success, and am thoroughly convinced of its utility. I am now applying it for Barley on all my lightest soils, containing any considerable portion of vegetable matter, at the rate of five to six cwt. per acre; also on my Wheat of the autumnal sowing on the same description of soils, and at the same rate per acre. I did so last year with great success. I gave it, as in other years, a fair trial, by leaving a strip in each field without the salt, which in every case plainly showed itself in the months of May and June, particularly in the Wheat. We consider our land to bear white Wheat better than red, but in the latter end of May and the beginning of June it is very much more subject to the red rust, a disease very detrimental here, but it is completely obviated by the use of salt, and the sample is much finer, the yield better, and much freer from light or diseased grains when salt is applied. I last year salted a twenty-acre field for Barley, at the rate of 6 cwt. per acre, leaving a strip the whole length of the field without; at harvest the greatest novice might have discovered the difference, the salted being very superior in sample and colour. I last week winnowed 300 bushels of it without a single bushel of light,—a circumstance which does not occur with us this year where salt was not used. This was grown on land which ten years ago was considered not worth cultivating, but being wonderfully improved by the use of bones and salt, it now grows as good Turnips and Barley as any land I have. I think the Bromsgrove Club will approve of salt as recommended for trial in fixing the ammonia in manures. I use it for that purpose very satisfactorily.' Mr. Matthews writes as follows:—'If salt were found only on the shores of South America, and imported here at the price of guano, I think it would be in more general use than it is at present. Its value no one attempts to question, but nevertheless its application is very limited. My experience of its effects is confined to light soils; and, upon such, I know of no article so greatly and so generally beneficial. Its copious use to every description of stock I regard as indispensable. For Turnips, Barley, Clover, and Wheat, it is equally beneficial, used either as a top-dressing or worked into and incorporated with the soil. Nor is it of value only as regards an *increase* of produce, for I have always found the *quality* greatly improved where it has been used largely. The foldyard should have an abundant supply; it should be applied at the least once in every week. Upon Grass lands, whether upland pastures or watered meadows, I have found its use alike advantageous. I have generally applied it in the form of a compost with soils, but I do not consider this as necessary. Last spring I dressed a meadow of five acres with salt and soil, putting on about 30 cwt. per acre of salt, (1) the effect was most convincing both in the Hay crop and aftermath. The sheep and cattle I turned into it had access to an adjoining meadow, and their preference for that which had been salted was really ludicrous; they could not be induced to leave it when it was as bare as a common, while the other meadow had abundance of Grass upon it. Pray do the community the good service of urging the more general use of salt, especially in the Ryeland district. I am satisfied that every man whom you can prevail upon to adopt its use largely, will ultimately thank you for the good you confer upon him.'—These letters," Mr. Fardon said, "afford practical evidence of the value of salt, and I hope farmers on light land will try it. Salt may operate in fixing ammonia by converting the volatile carbonate of ammonia into the fixed muriate, being converted itself into carbonate of soda, a valuable constituent of manure. Salt may also benefit light dry soils by its attraction for water, and it has the effect of rendering herbage more palatable to stock."—The reading of the paper was followed by a long discussion, chiefly on the use of salt as a fixer of ammonia and as a manure.—In reply to an inquiry made by Mr Wright, Mr. Elliott stated that when common salt and carbonate of ammonia are brought together in solution a double decomposition takes place.—Mr. Maund quoted Mr. Solly to the effect that such action would only take place in a concentrated solution, and that consequently salt would not be likely to fix ammonia in a manure heap.—Mr. Elliott replied that the action took place in a strong solution, but it was out of the power of any chemist to ascertain whether it had taken place in a weak solution or not. Mr. Elliott considered that the chief merit of salt as a manure, consisted in affording a supply of soda to plants rather than in fixing ammonia. He considered that plants had the power of decomposing common salt and obtaining the soda, but this was merely a supposition which he intended to bring to the test of experiment.—Surprise was expressed at the statement of Mr. Matthews that he had used salt at the rate of 30 cwt. per acre. It was considered that such a quantity would generally prove highly injurious, and that 5 to 6 cwt. per acre was the utmost that should be used.

Blofield and Walsham.—At the last meeting of this club, the Secretary recounted their proceedings during the past year. Among the subjects which had been discussed was, that of Solid and Liquid Animal Manures. The opinion of the meeting was, that the drainings of farmyards, or other liquid manures, are most effectively secured and best applied when taken up by refuse soil or other compost. At the meeting in June, the subject of Carbon in Cretaceous Soils, Vegetables, and Animals, was introduced by the Rev. Edwin Sidney, in a very instructive lecture.

Orkney.—We have had the pleasure of receiving the Annual Report of the Orkney Agricultural Society. We are glad to see that the spirit of improvement, now active on British Agriculture generally, is being excited and preserved in this far northern district, by the annual award of premiums, "for the improvement of the different kinds of stock, the extension of green crop husbandry, the draining of land, and the encouragement and advancement of other Agricultural objects."

Reviews.

Report on the proposed Pauper Lunatic Asylum for the County of Derby. W. W. Pike, Corn-market, Derby.

We spoke last week of Dr. Daubeny's system of scientific book-keeping, as applicable to the balancing of accounts between what is brought on the farm and what is sold off it, so that its fertility may remain unimpaired. Any one who wishes to see an instance of a calculation upon this principle will find one executed with skill, by Mr. Heywood, in his Report, which is appended to this pamphlet, on the best plan for establishing and conducting a Farm, in connexion with the proposed lunatic asylum at Derby.

Miscellaneous.

Guano.—The word guano was an old term, and one which had been imported into this country from South America. It was now, and had been long, given by the Peruvians to the dung of sea-fowl, which, from the remotest era, had been gathered on certain islands on their coast, and was still represented by the deposits collected on the rocky promontories of South America. They were all aware that many of the islands upon the Scottish coasts were frequented by innumerable clusters of sea-fowl; but their droppings did not remain there. The frequent rains which fell in our variable climate was the obstacle to the accumulation of this kind of manure, for by this means the valuable particles were soon washed away and disappeared. But for 500 or 600 miles on the coast of Peru and Bolivia scarcely any rain fell, and the droppings of millions on millions of these sea-fowls had been allowed to accumulate there in deposits of 60, 70, and 80 feet deep, wherever the birds had permanently settled. The value of this substance was well understood by the ancient Peruvians, and so highly was it estimated, that the various islands along the coast, such as Chincha and others, were each allocated to a separate tract of country, the inhabitants of which drew the guano to grow their crops from a certain island, and no district of country was allowed to obtain the manure from any part but that specially allotted to it. Persons were regularly appointed to look after the birds, and it was an offence punished with loss of life for any person to kill one of them—so satisfied were the Peruvian rulers of the necessity and importance of preserving and husbanding this means of raising their corn. At the present day, this substance was not only extensively employed upon the coast, but it was carried on the backs of mules to vast distances along the ridge of the Cordilleras, for the purpose of fertilising the inland soils. Though the guano might well be supposed to exist on our own coast, it was not found there, from reasons which he had already mentioned. Still, a reasonable hope was entertained that it might be found on other coasts, which were similar to Peru, viz., where no rain fell; but it was not until less than two years ago that deposits had been found in other parts of the world—deposits from the effects of which he augured the most beneficial effects to the Agriculture of this country. It was of great consequence that guano should be found in large quantities on the coast of Africa, for the voyage to it was comparatively short, and they might thus entertain the expectation that in the course of a year or two the price would be reasonably reduced, and thus a greater extent of soil brought under its beneficial operation. After this explanation, he would proceed to inquire into what formed the component parts of guano, and as the quality of different kinds varied, he would show to them the result of the analysis of several samples. The first two columns on the subjoined Table contained the result of two different samples brought from Africa by the Levenside. The next two columns contained samples which had been sent to him from the Star of the West, which had come into Plymouth—the one sample being taken from the hold of the ship, and the other from a quantity which had been brought in bags. The next sample was the guano which had been imported into Glasgow from Ichaboe by Mr. Downie; and the last was a sample from Bolivia, which, in many respects, it would be seen, differed from the others. The Table to which he called their attention was as follows:—

	Levenside.		Star of the West.		Ichaboe.	Bolivian.
Water	15.75	22.85	13.30	27.66	17.41	9.84
Organic Matter and Ammoniacal Salts.	58.09	52.66	32.31	32.34	55.33	65.60
	—	—	23.56	9.00	—	—
Sulphate of Soda and Common Salt.	6.94	6.51	—	—	4.92	0.78
	—	—	1.56	2.02	—	—
Carbonate of Lime and Magnesia	3.32	2.77	5.61	4.12	2.64	1.12
Earthy Matter	2.83	3.11	1.30	3.85	0.57	4.46
Phosphate of Lime	15.07	12.10	12.00	20.18	18.33	19.80
	100	100	100	100	100	100

Now, did these substances contain all that was necessary for a perfect manure? They had, in the first place, organic matter and ammoniacal salts, capable of imparting the great essential of nitrogen to the plant. It generally bore a large proportion in the manure. They they had sulphate of soda and common salt, which was also highly necessary to the healthy growth of a crop. Then they had carbonate of lime and magnesia, on the merits and importance of which he need not enlarge. Next, they had earthy matter, which should have been placed last on the list, for the less sand they had in their guano the better—the more valuable it would be. They had also the phosphate of lime, so necessary for the inorganic structure of plants. They all contained water to a greater or less extent; but here, also, the less the better, for in proportion to the quantity contained, one kind of guano might be 10s. per ton superior to another. In the samples before them they would see how much the quantities varied. Even the two different samples of the Levenside varied from each other by 13 to 22—the one sample in this respect being 9 per cent. better than the other. In the Star of the West it varied from 13 to 27—the one sample being 14 per cent. better than the other. In the Ichaboe sample there was 17 per cent., and in the Bolivian only 8. The latter, therefore, so far as the absence of water was concerned, was decidedly the most valuable. He had, however, never seen more than one sample of this valuable manure, and understood that no more was to be had. That which contained the greatest quantity of water was the least valuable, and the value of that which had the largest amount of ammonia was, on the other hand, proportionably increased. That substance, viz., ammonia, would cost the farmer more to buy than any other of the ingredients; it was therefore the most valuable, because to produce it artificially it would be the most costly. The quantity of this valuable substance in the samples of the Levenside varied from 52 to 58 per cent.; in the Star of the West it was 32 per cent.; in the Ichaboe 55; and in the Bolivian 65—showing, therefore, that the quantity in the latter was double the amount of the Star of the West. They would say, therefore, in this point of view, that the Bolivian was the best, and the Levenside the next best. Before coming to this conclusion, however, let them look to the sulphate of soda and common salt contained in each. This was a cheap article, and got in Glasgow, he believed, for 4*l.* a ton—a price much below what they were required to pay for the guano. The proportion in the Levenside was 6 per cent.; in the Star of the West so much as 33 per cent., and in the Ichaboe it was less than 5 per cent. It was still less in the Bolivian, and, always remembering that this was a cheap article, they came to the conclusion that the Bolivian was the best, and the Ichaboe the next best. The small quantity of earthy matter in the Ichaboe, compared with others, also greatly enhanced its value. They came next to the phosphate of lime, which was necessary to make any manure valuable, and might be held as next

of importance to the ammonia. For the proportions in the different samples he referred to the Table. They would see therefore that guano contained almost all that was essential to constitute a perfect manure. The lecturer then alluded briefly to the importance of thus having concentrated in one manure so many substances which the soil was likely to need, and be benefited by. He would now briefly point out the analogy which existed in the connexion between bones and guano. Some might ask, would guano benefit the after crops? This had been done by bones. Then, if bones had improved the after crops, guano should do the same thing; for phosphate of lime constituted a large portion of the one, and it was a valuable ingredient in the other. They had also salts and soda in each. They had the cartilage in bones which produced the nitrogen, and this was represented by the ammonia of the guano. There was this difference in favour of the guano, that when it was applied to the soil the ammonia was ready made, and immediately exerted a beneficial influence on the roots of the plant; but in the case of bones they had to decompose before the ammonia was set free for the uses of vegetation. The manures, therefore, might often be mixed with benefit—the guano for the purpose of acting immediately, and the bones for exerting their influence after it. He would briefly allude to one most important quality which it possessed, viz., its extreme portability. It appeared that from 4 to 6 cwt. per acre might be safely put in if guano was used alone, and this in fertilising powers would be equivalent to 40 or 50 loads of farm-yard dung. Suppose, therefore, that there was a tract of country, which it was impossible to traverse but by means of mules, they would be enabled to fertilise it by guano, when it was impossible to approach it with such a bulky article as farm-yard manure. They had already seen this exemplified in the case of bones to a considerable extent in this country. They had brought a large tract of land into cultivation in the wolds of Yorkshire and of Lincolnshire, where the bones were carried to the tops of the hills, and clothed them with vegetation. But guano was still more easily carried inland than bones, and when once obtained it was a much more perfect manure. It would have another effect. It would enable the farmer to apply large portions of his farm-yard manure to spots which were easily accessible, and be the means of reducing the price of every other kind of manure, in the same way as had already been done with rape-dust, bones, &c. In fact, the introduction of guano was creating quite a sensation in large towns, such as Edinburgh and Glasgow, from the vast reduction which it would effect in the price of the street manure, and the falling off in which would render the imposition of an additional assessment necessary. In Edinburgh in the course of the present year the assessment was expected to be 1700*l.* more than last year, solely on account of the difference in price of the street-dung. He would conclude with one important point,—Was it proper to use guano alone? Would it be good husbandry? He did not think so; and though he had not time to enter into all the reasons for this opinion, he might state that guano did not supply all the substances of farm-yard matter any more than bones did. It would not, therefore, be safe to recommend farmers to use it alone. This year they might get a good crop by its means alone; but if continued alone, it would tell by and by, particularly on the soils which were poor in what was termed vegetable matter. Therefore, he would consider it the best husbandry to recommend a course similar to that which had been generally employed in the using of bones. This had been to raise one crop by means of bones, and the next by means of farm-yard manure, or to use them half and half. He would think it safer, therefore, to recommend that guano should be used half-and-half with farm-yard manure, or that they should be used alternately. —*Professor Johnston, in a Lecture at Glasgow.*—[*Abridged from the Scottish Guardian.*]

Notices to Correspondents.

BURNT CLAY.—*H. P. T.*—Application has been made to the Society for the communication to which you refer.

BARLEY SOWING.—*Querist.*—It is not necessary to reduce the land to a very fine tilth. If the ground is hard you may harrow both before and after sowing Clover-seed among Wheat; if it is soft, once harrowing after sowing, followed by the roller, will suffice.

COUCH, *&c.*—*A. O.*—Try if alternate layers of quicklime and couch will rot together. Cover the heap over with vegetable-mould.

DAIRY MANAGEMENT.—*A. B.* asks any of our readers if they have had any experience of the utility of the new curd-mills, as to whether they get rid of the whey as thoroughly as the old plan of squeezing by hand? also whether there has been time to prove if Mackintosh's nick-cloths, as advertised, are superior, as well as cheaper than Richardson's or Edgington's, and which of these it would be right for him to purchase, his climate being wet?

DRAINING, *&c.*—*T. T. H.*—From the appearance of your specimen, we suppose your soil to be adhesive; if it is so in great degree your drains should be at most one perch, *i.e.*, 16½ feet apart; but it is impossible to advise in this matter merely from the inspection of a specimen of the soil. If your land is a loamy clay, not very stiff, 24 feet may be near enough, but we have, within the last five years, put in, on one farm, about 100 miles of drains, none of them in very stiff land, and they are all only one perch apart. Mind and subsoil-plough your land when it is dry, or you will do it no good. The stone will do very well to fill in the drains; and if the quarry is close by you, stone will be much cheaper than tile drainage. The price of tiles varies much in different parts of the kingdom. Apply to the nearest factories for information on this subject, and compare it with information you may obtain on application to Mr. Sealey, Bridgewater, Messrs. Etheridge, Southampton, &c. The two ploughs, in preparing land for Mangold Wurzel, merely rub the land—they do not plough it. Was not this sufficiently explained in our article on the subject? We then spoke from experience. We shall be glad to purchase your vol. for 1842; please to state its price.

FOOD OF PLANTS.—*J. W. Lloyd.*—Perhaps Dr. Smith's articles in our last Paper may assist you. We do not understand your question.

GOOSE.—*Tonsor* wishes to know whether "F. Davies" attributes the growth of bearded hounds and moustaches to the juice, or to the prickles of the Goose; for he thinks it probable that, unless it was well brushed, it acted more on the principle of a penetrating hair-brush than on that of Macassar Oil.

GUANO.—*Dianthus.*—See this week's Home Correspondence. Sow, in the manner you propose, after the rate of 3 cwt. per acre of the insoluble matter of the guano.—*S. F. W.*—Though, for obvious reasons, we cannot undertake to analyse your specimen, yet from its weight, earthy appearance, &c., we should judge it to be much adulterated.

HORSE-DUNG.—*Subscriber.*—You will preserve it better by mixing it with vegetable mould, and covering with the same, than with oak sawdust; if the latter is used you will succeed better with that which is rotten than with that which is fresh.

LIME-WATER.—*Z.*—Cold water will dissolve more lime than hot water; yet 70 gallons of cold water will only dissolve 1 lb. of caustic lime. You had better put a good many pounds into your hogshead, stir about for some minutes, wait till it settles, and then pour the clear lime-water off. Horse-dung is generally a more powerful manure than that of cows, because horses get better food. Apply it in the solid state, or mixed with earth. If you particularly wish to try a decoction of it, put a bushel of either into a hogshead of water for that purpose.

LIQUID MANURE.—*Z.*—Put one pound of the superphosphate of lime into a gallon of water, and continue using water till the greater part is dissolved. What remains is gypsum.

LUCERNE.—*J. H.*—Please to send a specimen. You had better cut it down as soon as possible for a good seed crop from the second shoot; but you would do better in taking seed from the first shoot.

MANURE.—*Melliborus.*—If your land is not already calcareous, it will pay you to apply lime. After that you may entertain the question—What is the most economical manure? Guano is one of the cheapest and best manures. Lime or guano is not a reasonable alternative. They depend for their efficiency on altogether different circumstances. Your Turnips will need food such as guano would supply them with.

OILCAKE.—*Subscriber.*—Crush it into pieces about the size of lump-sugar for cattle, and rather smaller for sheep. Much preparation of food is not required by animals that chew the cud.

OLD MORTAR.—*Patrick.*—Soot and old lime will not act on each other, but each may be usefully applied. Apply after the rate of 30 bushels of soot per acre, and apply all the old mortar you have on your land, if it be pounded small, up to the rate of 100 bushels per acre. You may mix them or not, just as you please.

PEA.—*S. G.*—We do not know the variety. Its leaf resembles that of a field variety common in some parts of Scotland.

POINTS OF MILCH COW.—*G.* would be greatly obliged to our Guernsey correspondent for information as to where he may meet with a cow for sale, such as he described in this Paper some weeks ago, and as to the probable cost of such a cow. We have made fruitless inquiries after the pamphlet you allude to. What is the name of its author?

POTATOES.—*Delta.*—De Rohan is not the best variety for pigs. The Irish White Apple is better. We *know* of no case in which gypsum has been used as manure for Potatoes. In the instance you refer to, its application appears to have been most beneficial.

REFUSE BARK.—*J. L.*—If rotten it is not injurious. We have used, with most beneficial effect, about 10 cart-loads on an acre of it, after mixing it with an equal quantity of yard manure, and soaking it with liquid manure.

STALL-FEEDING.—*W. J. B.*—Your wish shall be attended to.

STEMPED WHEAT.—*J. R.*—Thank you.

TRANSPLANTING SWEDES.—*J. L.* would be obliged to our correspondent on this subject in the Paper of March 30th, for information about the application of guano to young Swede plants. We think he had better mix it thoroughly with the soil by cultivation, before planting.

WEEDS.—*Alpha.*—Coltsfoot will ultimately disappear if you perseveringly destroy flowers and leaves whenever they appear. The same remedy is effectual, though not so speedily, with the Nettle. You had better use the fork and dig the roots up.—*Querist.*—Your specimen is Luzula campestris. If your land is thoroughly drained, the other Grasses in the pasture should ultimately get the better of it. If they do not, and there is much of it in the Grass, your only remedy is to break it up, fallow, and lay it down again.

WHEAT AMONG VETCHES.—*M. Sayer.*—We shall insert your notice as soon as there is room. Under the circumstances, you had better use the crop, we think, as one of Vetches, and feed it off; if your advice had been followed early in March you might have had a good crop of Wheat.

ERRATUM.—In the paper on the Rot in Potatoes (page 234, col. *c.*, line 6 from top), by Mr. Alb. Bernays, Manchester, an error has been printed; it should have been said—"Care should be taken to set only those with healthy eyes, not with sprouts."

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, April 22.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	8	to	4s	0		
Best Short Horns	3	4		3	8		
Second quality Beasts	3	0		3	2		
Calves	4	0		4	10		
Lambs, small	0	4		0	8		
— large	4	0		4	6		
Pigs	3	4		4	0		

Best Downs & Half-breds	4s	0	to	4s	6		
do. shorn	3	8		4	0		
Best Long wools	3	10		4	2		
do. shorn	3	6		3	8		
Ewes and second quality	3	4		3	8		
do. shorn	3	2		3	6		

Beasts, 2642; Sheep and Lambs, 20,730; Calves, 73; Pigs, 381.

The supply of Beasts to day is small, but trade is dull, and there is a difficulty in supporting our quotations of last week, although it is done for the very best qualities. Many of the second-class Beasts make fully 2*d* per 8 lbs less than last Monday. Mutton is a little more plentiful, but the late short markets having produced a clearance of most in Town, the demand is quite equal to the supply. We notice a decline in price of Sheep in the wool and large fat shorn Sheep, attributable to the warm weather. Selling shorn Sheep remain about the same. Lamb is in demand, at rather lower prices, but no quotable difference: we notice a deficiency of good quality. Veal and Pork remain steady.

FRIDAY, April 26.

The trade to-day was rather lower than Monday, in consequence of the supply being large, and there being many Beasts from Scotland in the market—the best Scots realising from 3*s* 6*d* to 3*s* 10*d*, and best Downs from 3*s* 10*d* to 4*s* per 8 lbs; and it is difficult to support our Monday's quotations for all other description of stock.

Beasts, 620; Sheep and Lambs, 6940; Calves, 183; Pigs, 376.

41, West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, April 22.

THE supply during the past week and those left of former arrivals were more than sufficient for the demand. Several cargoes have been stored: some inferior samples not saleable in the present market, and the holders of others wanted higher prices. There continues to be a quantity of Potatoes brought into this market by railways. Our late quotations have caused many small lots to be shipped from districts not usually supplying this market. Some more cargoes have arrived from Holland, Belgium, and Ireland, and are selling from 45*s* to 80*s*. The weather has been remarkably fine, and vegetables are abundant and unusually cheap.

York Reds	-	-	80s	to	90s		
Perth	-	-	65		75		
Early Devon	-	-	—		—		
Late Devons	-	-	75		80		
Cornwall	-	-	—		—		
Kent, Sussex, & Essex Whites			50		60		
— Kidneys			80		90		

Essex and Sussex Blues			—s	to	65s		
Wisbeach Kidneys	-	-	60		65		
— Blues	-	-	55		60		
— Whites	-	-	55		60		
Jersey and Guernsey Blues			65		70		
Prince Regents	-	-	—		—		
Belgian Reds	-	-	80		85		

HAY.—Per Load of 36 Trusses.

SMITHFIELD, April 25.

Prime Upland hay	70s	to	74s	Clover	-	86s to 100s	Straw - 28s to 30s
Inferior	-	55	65				

JOHN CROWDY, Salesman.

CUMBERLAND MARKET, April 25.

Superior Meadow Hay	70s	to	76s	Superior Clover	100s	to 105s	Straw 28s to 30s
Inferior	-	60	65	Inferior	80	90	

JOSHUA BARNES, Hay Salesman.

WHITECHAPEL, April 24.

Hay	-	-	50s	to	60s	Clover - 90s to 105s	Straw - 28s to 32s
— fine	-	-	61		72	— fine 105 110	

Meadow very dull at the above prices.

COVENT GARDEN, APRIL 27.—As the weather has been very fine for some time past, the Market is well supplied with most kinds of Vegetables; but trade is not brisk. Fine Apples are offered at nearly the same prices as mentioned in our last Report. Hothouse Grapes are becoming much more plentiful, and are a little reduced in price; those of the best quality are selling at about 15*s*. per lb. Apples, although not plentiful, are sufficient for the demand, which is not good; they are considerably reduced in price. Pears are scarce. A few green Apricots and Gooseberries have been brought to the Market during the week. Oranges are slightly advanced in price; Lemons are offered at from 6*s*. to 14*s*. per 100. Among Vegetables, Asparagus of good quality is abundant. Young Cabbages have also been pretty plentifully supplied during the week, and a few Cauliflowers have made their appearance in the Market. New Turnips are offered at from 2*s*. to 3*s*. per bunch. Broccoli is not altered in price since our last Report. Greens are a little cheaper. No alteration has taken place in the price of Cucumbers; of which a few well-formed fruit are in the Market. French Beans, Rhubarb, and Seakale, are abundant. Carrots and Turnips are sufficient for the demand; Radishes, and other Salading, are plentiful. Among Cut Flowers, we noticed Stephanotis floribuendus, Erica aristata, Gnidia pinifolia, Lily of the Valley, Pelargoniums, Cinerarias, Fuchsias, Azaleas, Camellias, China, Provence, and Moss Roses.

FRUITS.

Pine Apple, per lb., 6*s* to 12*s*	Almonds, per peck, 4*s* to 7*s*
Grapes, Portugal, per lb. 2*s* to 4*s*	Sweet Almonds, per lb., 2*s*6*d* to 3*s*
Hothouse Grapes, 10*s* to 15*s* per lb.	Nuts, Spanish, per bushel, 14*s*
Apples, des., p. bush. 4*s* to 20*s*	— Kirsil, 12*s*
,, Kitchen, p bus. 4*s* to 10*s*	— Hazel, 2*s* to 4*s*
Pears, per half-sieve, 4*s* to 12*s*	— Barcelona, 30*s* to 34*s*
Oranges, per dozen, 9*d* to 2*s*	— Cob, 14*s*
— per 100, 5*s* to 16*s*	Walnuts, per bushel, shelled, 16*s* to 20*s*
Lemons, per doz. 1*s* to 2*s*	Chesnuts, per peck, 2*s* to 4*s*
— per 100, 6*s* to 14*s*	Strawberries, 6*d* to 1*s*. p. pot.

VEGETABLES.

Rhubarb, per bundle, 6*d* to 2*s*	Cucumbers, 6*d* to 2*s* 6*d* each
Broccoli, per bundle, 6*d* to 1*s* 6*d*	Spinach, per sieve, 1*s*. to 1*s* 6*d*
Cabbages, 1*s* to 2*s* per dozen	Leeks, per doz. bun., 2*d* to 4*s*
Red Cabbages per doz. 2*s* to 3*s*	Garlic, per lb. 6*d* to 8*d*
Sorrel, 6*d* to 9*d* p. hf.-sv.	Onions, 2*d* to 4*d* p. bch.
Asparagus, per 100, 2*s* to 3*s*	— Large, per bushel, 1*s* 6*d* to 3*s*
Seakale, per punnet, 6*d* to 1*s* 6*d*	— Spanish, per doz., 1*s* 6*d* to 4*s*
French Beans, 1*s* to 2*s* 6*d* per 100	— pickling, p. hf.-sv., 2*s* to 4*s*
Autumn Potatoes, 3*d* to 6*d* per lb.	Shallots, per lb., 6*d* to 8*d*
Greens, per doz. 2*s* to 4*s*	Lettuce, p. score, 1*s* to 2*s* 6*d*
Potatoes, per ton, 60*s* to 90*s*	Celery, per bun., 6*d* to 1*s* 6*d*
— per cwt., 2*s* to 3*s*	Mushrooms, per pottle, 2*d* to 3*s* 6*d*
— per bushel, 1*s* 6*d* to 2*s*	Small Salads, per punnet, 6*d* to 8*d*
— Kidney, p. bush., 2*s* 6*d* to 3*s*	Watercress, per doz. sm. bun., 4*d* to 6*d*
Frame Potatoes, 2*s* to 3*s* per lb.	Parsley, per hf.-sv., 1*s* to 2*s*
New Turnips, 2*s* to 3*s* per bunch	Tarragon, Green, per bun. 3*d* to 6*d*
Turnips, per doz. bunches, 1*s* 6*d* to 2*s*	Endive, per score, 1*s*
Turnip-tops, per bushel, 6*d* to 9*d*	Green Mint, 3*d* to 4*d* per bunch
Red Beet, per doz., 6*d* to 1*s* 6*d*	Marjoram, p. bun. 6*d* to 9*d*
Horse Radish, per bundle, 1*s* to 6*s*	Chervil, per punnet, 3*d* to 6*d*
Radishes, Turnip, 1*s* to 1*s* 6*d* per dozen hands	Salsafy, per bundle, 1*s* to 1*s* 3*d*
Carrots, p. doz. bun., 2*s* 6*d* to 4*s*	Scorzonera, per bundle, 1*s* to 1*s* 3*d*

HOPS, FRIDAY, April 26.

THE reports from the Hop-plantations state that in some young gardens the blue is looking well, but that the fleas are very numerous and doing much damage in the old grounds. The seed trade being now nearly over, our merchants are making more inquiry for Hops of all descriptions, and the market continues very firm, with a few in offer, at the following quotations.

Mid & East Kent Pocks.	5*l*	to	10*l*	10*s*	Sussex Pockets	-	4*l* — to 6*l* 6*s*
Choice ditto	-	-	11	0 — —	Choice ditto	-	6 12 —
Weald of Kent Pocks.			6	0 6 15	Farnham	-	8 9 10 10
Choice ditto	-	-	7	0 — —			

PAYNE, SON & SAVAGE, Hop-Factors.

SEEDS, April 26.

Canary	-	-	per qr	50*s*	to	54*s*	
Carraway	-	per cwt		50		54	
Clover, Red, English		-		60		74	
— — Foreign		-		64		74	
— White, English		-		100		180	
— — Foreign		-		84		125	
Coriander	-	-		10		12	
Hempseed	-	-	per last	34		36	
Linseed	-	-	per qr	—		—	
— Baltic	-	-		—		—	
— Cakes, Eng. per 1000				10*l*	5*s*	10*l*	10

Linseed Cakes, Foreign, p. ton				8*l*	to	7*l*	10*s*
Mustard, White - p. bush.				5*s*		6	
— Superfine ,,		-		6		8	
— Brown ,,		-		14		16	
Rapeseed, English, per last				24*l*			28*l*
Rape Cakes	-	per ton		—		—	
Rainfoin	-	-	-	—		—	
Tares, Essex, winter p. bush.				3		4	
— Foreign	-	-	-	3		4	
Trefoil	-	per cwt	-	—		—	
Turnip (too variable for quotation),							

KINGSFORD AND LAY.

WOOL.—BRITISH, FRIDAY, April 26.

THERE has been rather more firmness in our English Wool Market during the past week than we have observed for some few preceding ones.

	per lb.		per lb.
Long-wooled Wethers	1*s* 1*d* to 1*s* 2*d*	Southdown Hoggitts	1*s* 1 to 1*s* 3*d*
Do. Hoggitts	1 1 — 1 2	Kent Fleeces	1 2 — 1 3
Southdown Fleeces	1 0½ — 1 3		

JAMES PEARCE, Wool Broker.

MARK LANE, FRIDAY, April 26.—The arrivals of all kinds of Corn have been small during the week, and the transactions in Wheat, both English and Foreign, on Wednesday and this morning were very limited, but its value remains unaltered.—The quantity of Barley offered for sale being much diminished, and the duty having advanced to 6*s*. per qr., holders have evinced rather more firmness, but we are unable to report any improvement in prices.—Beans and Peas remain as on Monday.—We have little doing in Oats, and their late value is maintained.

BRITISH, PER IMPERIAL QUARTER.

	s.	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk	46	56	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire	50	57	White	—	—
Oats, Lincolnshire and Yorkshire	20	23	Potland	19	22
—— Northumberland and Scotch	20	23	Feed	19	22
— Irish	—	—	Potato	21	26
Barley, Malting and distilling	28*s* to 31*s*		Chevalier	31	34
Malt, pale, ship				58	62
— Hertford and Essex				60	62
Rye				32	34
Beans, Mazagan, old and new	32 to 32		Tick	32	34
— Pigeon, Heligoland	28 to 36		Winds.	—	—
Peas, White	30 to 33		Maple	27	29

Harrow	26	28					
Longpod	—	—					
Grey	26	27					

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March	15 per Quarter.	46*s* 3*d*	28*s* 3*d*	20*s* 1*d*	32*s* 9*d*	31*s* 3*d*	31*s* 4*d*
—	22	50 5	33 1	20 9	34 1	31 2	31 2
—	29	50 6	32 7	19 8	33 3	31 7	31 6
April	5	48 6	32 10	20 1	33 9	30 11	31 3
—	12	48 1	32 1	20 1	33 4	31 2	30 5
—	19	48 4	32 10	20 3	33 3	31 3	31 5
6 weeks' Aggregate Aver.		48 10	32 11	20 0	33 3	31 2	31 2
Duties on Foreign Grain		17 0	6 0	6 0	9 0	10 0	10 0

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.			Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	4891	sks.	—	Brls.	9674	3456	6348	2092	—	648	320
Irish	-	qrs	—	qrs	10	—	10	21642	—	112	—
Foreign	-	qrs	500	qrs	3144	13647	—	40	—	1840	734

KINGSFORD AND LAY.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 24*s* per ton	—	Phosphate of Ammonia, in fine powder, 24*s* per ozs.	85
Bleaching Powder, 28*s* per cwt.	—	— of Ammonia, in crystals 3*s*6*d* per lb	—
Brimstone, 20*s*6*s* per ton	—	Rape Cake, 110*s* to —*s* per ton	—
Bone-dust, —*s* and 17*s* per quarter	45	— Dust, 113*s* per ton	—
— Half-inch, 10*s* ditto	42	Sal Ammoniac, 56*s* per cwt.	—
— Chicined, 8*s* per cwt	—	Salt, Agricultural, 50*s* per ton	60
Carbonate of Ammonia, 65*s* per cwt	84	— clean, 20*s* per ton	60
— of Lime, 1*s* to 1*s*6*d* per cwt	—	— Hide, 21*s* per ton	84
— of Soda, 25*s* to —*s* per cwt	—	Saltpetre (Nitrate of Potash) 52*s* 6*d* per cwt., duty paid	80 to 84
Chloride of Lime, 25*s* to 28*s* per ton	—	Silicate of Potash, in powd., 65*s* per cwt.	—
Graves, —*s* to —*s* per ton	—	Soap Ashes, —*s* per ton	—
Guano, S. American, 21*s* to 28*s* per ton	—	Soda Ash, 5*s* to —*s* per cwt.	85
— African, 12*s* to 20*s* per ton	—	Sulphate of Ammonia, —*s* to 25*s* per ton	70
— Potter's, 24*s* per ton	60	— of Copper, 25*s* to 28*s* p. cwt.	—
— Potter's Liquid, 12*s* p. doz.	—	— of Magnesia (impure) 10*s* per cwt.	65
Gypsum (Sulphate of Lime), —*s* to 25*s*, in quant., 6*l* per ton	80 to 84	— of Magnesia (pure crystal) 1*l*1*s* p. cwt.	65
Humphreys's Compound for Plants in Pots, 10*s* per doz.	—	— of Potash, 12*s* per cwt.	—
— Farmers' Compound, 12*s* per cwt.	—	— of Soda, 6*s* per cwt.	—
Muriate of Ammonia, 24*s* per cwt.	70	Sulphur, 15*s* per cwt.	—
— Lime, —*s* to 6*s*	70	Sulphuric acid, London, 12*l* per lb.	—
Nitrate of Soda, —*s* to 16*s* per cwt., duty paid	80	— Country made, 1*l*4 per lb.	—
Phosphate of Lime, 6*s* 6*d* p. cwt.	65	Whitney's Composition for Fences and Lights, 25*s* and 40*s* per doz.	—
— — Super, 7*s* to 8*s* p. cwt.	65		

Expenses of shipping about 5*s* to 7*s* per ton, according to quantity.

MARK FENWICK.

Sales by Auction.

AN EXTENSIVE SALE OF VALUABLE SHORT-HORNED CATTLE, CHEVIOT SHEEP, FARM HORSES, IMPLEMENTS OF HUSBANDRY, &c.

MR. CHRISP will SELL BY AUCTION, at KILHAM, in the parish of Kirknewton, County of Northumberland, on THURSDAY, the 9th day of May, 1844, all the Valuable STOCK on the above Farm belonging to Mr. HENRY BOAG, consisting of about 16 Short-horned Cows and Heifers, Calved and to Calve; 10 Two-years-old Steers and Heifers, fit for grazing; 17 Yearlings, 15 Milk Calves, and 1 Young Bull; 900 Ewes and Gimmers, with their Lambs; 350 Ewe Hogs, 450 Wedder Hogs, 24 Rams, and 30 Ram Hogs, all of the pure Cheviot breed; and 26 Draught and Young Horses.

Mr. CHRISP can with confidence call the attention of the public to this splendid Stock of Cheviot Sheep. For size, constitution, aptitude to fatten, and symmetry of form, they are equalled by few, and surpassed by none in the Kingdom. This affords an opportunity to any one desiring to lay the foundation of a first-rate Cheviot or Half-bred Stock rarely occurring. The Short-horns are bred from the Stock of Messrs. Hunt, Crofton, Chrisp, Smith, Rennie, &c., and are well worthy the attention of the public. Mr. BOAG has used for the last two seasons Mr. Hunt's celebrated Bull, "Guy Faux," by Gainford, 2044 Coats's Herd-book.

The Farm Horses are nearly all Young, combining strength and Activity with good form, and have been bred with great care and attention by the present owner and his father, the late Mr. JOHN BOAG, of Trewit, for many years. The Implements and Harness, suitable for the improved Northumberland Husbandry, are numerous and good.

As the Sale is extensive, it will commence precisely at Ten o'clock, with the Ewes. Gentlemen from a distance desirous of possessing some of this valuable Stock can have them shipped at Berwick, Leith, Glasgow, Annan, or Newcastle, to all of which ports there is easy and convenient access from Kilham, which is eight miles from Wooler, five from Coldstream, sixteen from Berwick, and twelve from Kelso, through which place coaches from Newcastle and Edinburgh pass daily.

*** The above Stock is offered to the public, without reserve, in consequence of Mr. BOAG leaving his Farm.

The usual discount or credit.

6, Hinde-street, Newcastle, April 26, 1844.

MR. RAINY respectfully begs leave to acquaint the Nobility, Gentry, and the Public, that in order to meet the times, and in consequence of the pressure of mortgages and other incumbrances upon estates, and the various descriptions of real property, brought into the market for sale by public auction and private contract, it is his intention to adopt for the future a REDUCED and GRADUATED SCALE of COMMISSION, as compared with that which has been generally customary for the last half century. At the same time that the expenses of vendors will thus be materially diminished, he trusts that he shall be able to afford greater facilities to the attainment of their objects, and to the fullest advantage; and, touching these points, he feels it necessary to offer a few words of explanation.

There exists between many solicitors and many auctioneers an understanding, to which the epithet collusive would scarcely be too severe, because by it the interest of their clients, the vendors, is often seriously compromised, and in this manner:—The vendor, instead of himself selecting the auctioneer or agent for the disposal of his property, will, in many cases, confide the choice to his solicitor; and not unfrequently the solicitor (but upon what justifiable plea Mr. Rainy never could comprehend) arrogates to himself the right of such choice; and repeated instances might be adduced to show that that choice has been exercised in contravention, if not in opposition, to the previously-expressed wishes of the vendors, and wholly regardless of old and long-established connexions; those solicitors having usually a secret compact with the auctioneer, by which he is bound to fee the solicitor with a share of his commission and other charges, as the *sine qua non* of his being appointed to the sale. And what is the consequence? In such quarters the auctioneer who is willing to concede to the solicitor the largest share, or, in other words, consents to pay the heaviest bribe he, be he quack or otherwise, and with slight reference to his regular initiation into his profession, or his qualifications or experience, or (what also is evidently an essential consideration) the extent of his connexions and influence, he is preferred. Thus tempted, many solicitors have become reconciled to abuse the patronage they have assumed, and aim at excluding those auctioneers who, like Mr. Rainy, have consistently and uniformly refused to submit to a tyranny subversive of all proper rivalry, and at variance with all independent and honourable feeling.

With respect, however, to what may be considered the legitimate association of the province of the solicitor with that of the auctioneer or public agent, Mr. Rainy, with the desire to obviate jealousies, to produce a more cordial and satisfactory co operation between those parties, and in the hope of entirely abolishing secret and derogatory compacts, would suggest that, as a remuneration to the solicitor of the vendor, for his advice and assistance in the drawing and settling of the conditions of sale, and for his attention to those legal points which are in immediate relation with that part of the transaction, a fair portion of the commission should accrue to the solicitor (but with the full knowledge and sanction of the vendor), in lieu of the charges now made by him for the particular items adverted to. This, however, is not intended to include charges for investigations of title, abstracts, deeds, or papers, or fees to counsel; and Mr. Rainy entertains no doubt that the nobility, gentry, and the public will approve of and support the principle of repudiating altogether any clandestine dealings between parties employed in affairs so important to them. But, in all cases where the vendors do not consent to the appropriation to the solicitor of such portion of the commission; or the solicitor, from that integrity, impartiality, and strict sense of justice, and that delicacy and liberal feeling which fortunately characterise the conduct of a large number of the members of the legal profession, declines the acceptance of it; then such portion will be remitted by Mr. Rainy to the vendor by whom he is employed.

With regard to sales of pictures, or other works of art, jewels, plate, libraries, and other valuables, a considerable reduction will also be made in the commission, as compared with the printed terms of Messrs. Christie and Manson, Mr. George Robins, and most other auctioneers. On this branch, however, no payment is contemplated to any of that numerous class of individuals who perpetually attempt to interfere, as middle-men, and ask to be rewarded for doing nothing; such voluntary interference being wholly useless and absurd, and indeed very often mischievous to the interests of those whom they pretend to serve. The allowance, therefore, which many auctioneers give, and these persons in secret receive, upon what is termed "the reciprocity system" (meaning, in plain language, on the part of the auctioneer, "procure the sale for me, and I will hand over to you a share of the profit"), will be the amount of the reduction in Mr. Rainy's new scale of commission on chattel and personal property, solely and exclusively in favour of the vendor; and where the total gross proceeds may exceed 5000*l.* a still further abatement will apply to the residue.

A similar rule will also govern Mr. Rainy's charges for putting up property to auction, if not sold; for purchases, valuations (including those for probate), references in cases of compensation, or opinions upon cases; obtaining loans upon mortgage (in conjunction with solicitors), and all other matters incidental to property.

In conclusion, he begs to add that, as heretofore, no sale will be undertaken by him, the genuine character of which will not bear investigation, and every exertion will be made to counteract and defeat combinations and deceptions, whether they are directed against vendors or purchasers.

No. 14, Regent-street, St. James's (in the division between Jermyn and Charles streets.)—April, 1844.

WATERLOO-PLACE, PALL-MALL, commanding the view to St James's Park.—The spacious capital MANSION recently occupied by the CLARENCE CLUB.—By Mr. RAINY, on the premises, on THURSDAY, May 30, at One precisely, unless previously disposed of, and with the option of taking the excellent Household Furniture at a fair valuation,

THE capital, spacious, and elegantly-fitted MANSION, No. 12, on the west side of Waterloo-place, held under the Crown for an unexpired term of 70 years at a small ground-rent. Within the last few years some thousand pounds have been expended in improvements to the premises under the superintendence of an eminent architect, and they are at present in perfect condition, peculiarly adapted for a club, insurance office, or any public establishment requiring a first-rate situation. The ground-floor contains a hall, with handsome principal stone staircase and secondary staircase; one room 42 feet 8 inches by 22 feet 9 inches, and another 27 feet by 24 feet. On the one pair, a drawing-room 31 feet 6 inches by 22 feet 6 inches, and a library 42 feet 8 inches by nearly 16 feet, and an ante-library; a billiard room, three other rooms, and four dressing-rooms on the two pair, and six bed-chambers on the upper floor; complete domestic offices on the basement, including spacious kitchen, larders, &c.

To be viewed till the sale by tickets, which may be had of Mr. RAINY, No. 14, Regent-street; printed particulars may be had of him 14 days preceding the sale; also of Messrs. LAWS and PRIDEAUX, Goldsmiths' Hall; at the Auction Mart; and on the premises.

On the same and following days will be sold by auction the plate, linen, books, china and glass, and the valuable cellar of choice wines, further particulars of which will be given in a few days.

PUTNEY-HILL, SURREY.—LIME-GROVE, a spacious Freehold Mansion, let on Lease for a few years unexpired, and the contiguous beautiful Lands, highly eligible for building upon, and containing altogether about 68 Acres.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St James's, in the Division between Jermyn and Charles-streets, about the end of May,

THE spacious and capital detached FREEHOLD MANSION, LIME-GROVE, delightfully situate on the rise of Putney-hill, only four miles and a half from the metropolis. It is approached by carriage drives, and contains suites of noble lofty principal apartments, with numerous bed-chambers, offices of every description, conch-houses, stabling, beautiful lawn ornamented with full-grown timber, pleasure-grounds with extensive walks, walled gardens, &c., the whole about 11 acres, on lease for a few years unexpired at 350*l.* per annum; also the contiguous lands extending from the Putney-hill-road into the road leading from Putney to Wandsworth, and other lands called the Nursery, on the west side of the Putney-hill-road, and fronting on the road leading from Putney to Richmond; a timber dwelling-house, formerly in the occupation of Mr. Howey, some cottages, &c., altogether about 56 acres, and highly eligible for building upon, especially the upper ground, from which the finest views are commanded.

The Mansion can only be viewed by special permission of the tenant, and by cards to be had of Mr. RAINY, 14, Regent-street. Printed particulars with lithographed plans will be ready for delivery 14 days preceding the sale, and may then be had of him; also of Messrs. POWELL, F. and W. BRODERIP, and WILDE, Lincoln's-inn; at the Auction Mart; at the Castle, Richmond; Spread Eagle, Wandsworth; and of the person who will attend daily 14 days preceding the sale to show the lands.

HAMPSHIRE.—VALUABLE CHURCH PREFERMENT, about 12 Miles from Winchester, and 17 from Southampton; the Incumbent is in his 73d year.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St. James's, in the Division between Jermyn and Charles-streets, about the end of May,

THE PERPETUAL ADVOWSON of the PARISH of WARNFORD, in the county of Hants, with the appurtenances thereto belonging. The tithes have been commuted at 620*l.* per annum. There is an elegant modern residence, situate on an eminence commanding beautiful scenery, with 20 acres of glebe pleasure grounds, walled garden, stabling, &c. Warnford is about 17 miles from Southampton, 12 from Winchester, and 60 from London, and the neighbourhood is of the highest respectability.

Printed particulars may be had, 14 days preceding the sale, of Messrs. STONE and TURNER, Jermyn street; at the Auction Mart; at the Dolphin, Southampton; George, Winchester; and of Mr. RAINY, 14, Regent-street.

BUCKINGHAMSHIRE.—THE GRANGE, a desirable Freehold Residence, with Pleasure grounds and Gardens, and about 30 Acres of Land, situate at Chalfont, St. Peter's, the Property of the late General O'Loghlin.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent street, St. James's about the end of May, with immediate Possession,

THE GRANGE, an elegant Freehold Residence, situate in a beautiful part of the county of Buckingham, midway between London and Aylesbury, about 7 or 8 miles from the West Drayton and Slough stations on the Great Western Railway, and within 9 miles of Windsor and 5 of Uxbridge. It is seated on the acclivity of a hill in a park-like paddock, ornamented with fine old timber and plantations, approached by carriage drives with neat lodges, contains hall and conservatory, drawing room 32 feet, billiard-room, library, dining-room, 15 bed rooms, three dressing-rooms, excellent offices and stabling, walled kitchen-garden, farmyard and buildings, ice-house, gardeners' house, &c.

To be viewed till the sale, and printed particulars may be had 14 days preceding; also of Messrs. DENDY and MONCRIEFF, Bramshuttbuildings, Chancery-lane; at the Royal Hotel, Slough; the Inns at Aylesbury and Uxbridge; at the Auction Mart; and of Mr. RAINY, 14, Regent street.

BROMPTON-SQUARE.—Neat LEASEHOLD HOUSE, held for 76 years, at a small Ground-rent.—By Mr. RAINY, at the Gallery, No. 14, Regent-street, about the end of May, with immediate possession,

THE neat and substantial LEASEHOLD HOUSE, No. 3, on the west side of Brompton-square, held for 76 years, at a small ground-rent; comprising two rooms on each floor, two kitchens, and other Offices, and a garden.

To be viewed, and printed particulars had, 14 days preceding, on the premises; of Messrs. METHOLD and PYKE, No. 43, Lincoln's-inn-fields; at the Auction Mart; and of Mr. RAINY, No. 14, Regent-street.

GLOUCESTER-PLACE, PORTMAN-SQUARE, West Side.—Eligible RESIDENCE for a Family, with an extra Story of Bed-chambers and Coach-house and Stabling.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, about the end of May, with immediate possession.

THE Excellent LEASEHOLD RESIDENCE, No. 107, on the west side of Gloucester-place, in the first division from Portman-square; held for an unexpired term of about 44 years, at a ground-rent of only 15*l.* 15*s.* per annum. The premises comprise two Rooms on each floor, the drawing-rooms communicating by folding-doors; an extra story of bed-chambers, stone hall and staircase, good offices, and coach-house and four-stall stable.

To be viewed till the sale. Printed particulars may be had, 14 days preceding, on the premises, at the Auction Mart; and of Mr. RAINY, 14, Regent-street.

OPPOSITE the GREEN-PARK.—To be LET, elegantly and completely FURNISHED, for the season, or for one or more years, a superior and spacious MANSION, in perfect condition, having suites of apartments, bed-chambers, and offices, for a family of rank; and at a short distance is excellent stabling.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street.

ST. JAMES'S SQUARE.—To be sold by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), the capital FREEHOLD MANSION of a nobleman. The premises are of modern construction, with spacious lofty principal apartments, hall, and two stone staircases, with offices for a suitable establishment and capital stabling. A smaller Freehold House, which fronts Duke-street, and was formerly part of the original estate, may also be purchased if desired.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street, St. James's.

HYDE PARK GARDENS, commanding the entire View over Hyde Park.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), one of the best MANSIONS in this much-admired and highly-improving situation. It was finished and completed by the present owner and furnished throughout without regard to expense; and it may safely be affirmed that it is scarcely possible to find a residence of the scale more perfect, both as regards the decorations and the general style and quality of the furniture. The tenure is leasehold for about 90 years at a ground-rent.—To be viewed by a day's previous notice, and by tickets, which with particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

BELGRAVE-SQUARE.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), the noble and spacious MANSION the residence for some years of the late Lord Hill. It stands detached, with carriage-drive, and has a large garden at the back, with communication to stabling for eight horses, a loose box, standing for several carriages, with lofts and rooms over. Leasehold under the Marquis of Westminster for an unexpired term of 80 years, at a ground-rent.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

IN a FASHIONABLE SQUARE at the WEST END.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a MANSION of the first class, equal in all its arrangements to the accommodation of a family of the highest distinction; the offices and stabling extensive and complete. The adapted furniture will be included in the purchase.—Principals only can, in the first instance, receive information, and which may be had on application to Mr. RAINY, 14, Regent-street, St. James's.

PORTMAN-SQUARE.—To be LET, FURNISHED, for the Season, a compact, moderate-sized HOUSE, with coach-house and stabling.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

KENT.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, the very valuable and beautiful Freehold Estate, COMBE BANK, the seat of the late Viscount Templemore, situate in the rich vale between Madam's Court Hill and Sevenoaks, 23 miles from London, and a few miles from a railroad station; comprising the finely-timbered park and woods, about of water, the noble mansion, stabling, gardens, pleasure-grounds, and walks, the capital farm, with complete agricultural buildings, lodges, &c. The whole about 320 acres, land-tax redeemed. Many thousand pounds have been expended in improvements upon the mansion and property during the last few years, and the whole is in the most perfect condition. Little Combe Bank, a villa, with grounds and some houses in the village, form part of the estate, and will be included in the purchase. Part of the purchase-money may remain on mortgage.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

SUFFOLK, on the Borders of Norfolk, and about 80 miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a very important and valuable FREEHOLD ESTATE, especially attractive for a sportsman, having been strictly preserved, and affording shooting equal to any domain in the district. It comprehends the entire parish, of nearly 3000 acres, including thriving plantations; also, a capital family mansion, with offices of every description, gardens, pleasure-grounds, &c.; farm-houses and buildings, cottages, &c. The estate is situated in one of the best neighbourhoods in the kingdom, and it is expected that a railroad station will be fixed within a few miles.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

NORTH WALES.—To be SOLD, by PRIVATE CONTRACT, by Mr. RAINY, a highly improvable FREEHOLD ESTATE, land-tax redeemed, situate in a fine part of the country, and commencing within a mile of a capital market-town. It comprises 2260 acres, with excellent farm houses and buildings, all well tenanted; a moderate residence and offices (requiring repairs), a fine lake stored with fish, very thriving woods and plantations, &c., forming a fine and very eligible property for investment.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

NEAR SOUTHAMPTON.—To be SOLD, by PRIVATE CONTRACT, by Mr. RAINY, with immediate possession, a singularly beautiful MARINE MANSION, upon which the present owner has expended many thousand pounds. It is delightfully situate about four miles and a half from the Southampton, Botley, and Fareham stations, and stands in a park-like paddock of 25 acres, well timbered, with superior gardens and grounds, stabling, lodge, &c., and commands very fine sea and inland views.—Particulars may be had of Mr RAINY, 14, Regent-street, St. James's.

KENT.—Six miles from Canterbury, and near to the Sea.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a valuable FREEHOLD ESTATE, partly exonerated from land-tax; comprising a park of beautifully undulated surface, a moderate sized family residence, and offices, and also three farms; the whole about 610 acres, and may be treated for together or separately.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

NEAR RUISLIP, Middlesex, on the borders of Hertfordshire, and about fourteen miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, the delightful RESIDENCE of the late General Sir Joseph Fuller, G.C.B., with offices, stabling, gardens, pleasure grounds, and park-like paddocks; altogether about sixty acres, with ornamental water and fine grown timber. The elegant furniture may be had or not, at the option of the purchaser.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

BROWNSEA CASTLE and ISLAND, near Poole, Dorsetshire.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, the much admired and beautiful FREEHOLD ESTATE, the Island of Brownsea, about a mile and a half in length, and three-quarters of a mile in breadth, at the entrance of the harbour of Poole, a few hours' sail from the Isle of Wight, and within a few miles of the new and much frequented bathing-place, Bournemouth. The castle is spacious and furnished, has excellent gardens, hot-house, conservatory, &c. The island affords wild fowl shooting in the greatest profusion. The situation is peculiarly desirable for yachting, and the scenery is of a picturesque character. The castle would be let furnished, for three years.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

HAYES COMMON, two miles from Bromley, in the county of Kent, and twelve from London.—To be LET, with Lease, the very desirable RESIDENCE, for many years the favourite retreat of the late Sir Henry and Lady Meux. It stands on a beautiful lawn, with pleasure-grounds, gardens, and paddocks (about 15 acres), and contains accommodation for a family of high respectability, with stabling, entrance lodge, &c. — For particulars and tickets to view apply to Mr. Rainy, 14, Regent-street, St James's

MIDDLESEX, ten miles from Town.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, a capital FARM, part freehold and part copyhold containing about 217 acres of rich land, with an excellent house and buildings, on lease to a most respectable tenant till Michaelmas, 1847.—Particulars may be had of Mr RAINY, 14, Regent-st, St James's.

BUCKINGHAMSHIRE.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, with immediate Possession, a FREEHOLD ESTATE of about 90 acres of Grass and Arable Land, with agricultural buildings, and an unfinished House, situate at Farnham Royal, two miles and a half from the Slough Station of the Great Western Railway.—Particulars may be had of Mr. RAINY, 14, Regent st, St James's

BATTERSEA, Surrey.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, with immediate Possession, a capital spacious FREEHOLD RESIDENCE, on the banks of the Thames, with terrace-walk, pleasure-grounds, kitchen garden, paddock, coach-houses, stabling, &c. Also, some other Freehold Property for investment.—Particulars may be had of Mr RAINY, 14, Regent st., St James's.

CLOSE to SOUTHAMPTON.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, either together or separate, and with immediate Possession TWO capital detached RESIDENCES, with such portion of park like land as may be agreed upon, and either with or without a superior Farm, with excellent farm house and buildings The whole estate is I reehold, and comprises 175 acres; and from its immediate contiguity to the improving town of Southampton, presents a most favourable opportunity for a successful building speculation — Particulars may be had of Mr RAINY, 14 Regent-st, St James's

HANTS.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a capital and spacious FREEHOLD MANSION, standing in a beautiful park of 150 acres, with pleasure-grounds and wilderness, carriage drives, with lodges, capital walled-garden, hothouses, farm buildings, &c &c The mansion is adapted to the accommodation of a family of distinction, is situated in the midst of the rich and admired scenery of the New Forest, its celebrated field-sports and extensive drives, only nine miles from Southampton, and accessible from the Metropolis in about four hours.—To be viewed with tickets, which, with particulars, may be had of Mr RAINY, 14 Regent st, St James's

ENFIELD, MIDDLESEX.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, CHASE LODGE, a substantial and handsome Freehold Villa, with pleasure-grounds, gardens, and paddocks (the latter part leasehold), about 27 acres.—Particulars may be had of Mr. RAINY, 14, Regent-street, St James's.

GROSVENOR-PLACE, HYDE PARK, in front of the Gardens of Buckingham Palace.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a Noble and very spacious MANSION, held for a long term, at a low ground rent, and adapted in all respects to a family of distinction, with detached and detached offices, standing for four or five carriages, and stabling for eight horses. The Mansion has an extra storey of bed-chambers, a suite of superb drawing rooms—viz, 37 feet by 26, 29 feet by 19, 25 feet by 19, and 27 feet by 25, all communicating by folding doors; an eating-room, 27 feet by 25, library, ante-room, two stone staircases, stone hall, screened by a porch, &c.; the whole of the household furniture and fixtures will be included in the purchase, and immediate possession may be had.—To be viewed by tickets, which, with particulars, may be had of Mr RAINY, 14, Regent street, St. James's

EAST COWES CASTLE, in the ISLE of WIGHT, to be SOLD by PRIVATE CONTRACT, by Mr RAINY —This distinguished FREEHOLD MARINE MANSION, of stone, and in the castellated style of the time of Edward the Sixth, was erected, at unlimited expense, by the late John Nash, Esq. It affords the most ample and elegant accommodation for a family of distinction, and is especially suited to any member of the Royal Yacht Club The scenery is too well known and appreciated to render eulogium necessary, and it will be sufficient that the facility of access from the metropolis (the distance being now accomplished in about four hours) gives to the property a much increased value The chief apartments are lofty, and expensively finished, they include a dining room, 28 feet by 20; a drawing-room, 28 feet 6 in by 21 feet 6 in; and a library, 30 feet by 27; a billiard room, 40 feet 6 in by 18 feet 6 in., and an octagon library, 19 feet by 19, numerous principal and secondary bed-chambers and servants' apartments offices of every description, splendid conservatories, a picture or statue gallery, 72 feet by 21; gardens of a superior order, with hot houses, &c. The grounds, which are beautifully undulated, contain, with the gardens, paddocks, &c., about 41 acres, embellished with noble timber and plantations of luxuriant growth, and walks of considerable extent are cut through them —Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

TOTTERIDGE, MIDDLESEX, Ten Miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a very desirable and substantial detached FLASHOLD FAMILY RESIDENCE, held for an unexpired term of upwards of thirty years, at a very low rent, with offices coach-houses, and stabling, pleasure grounds and walks, kitchen and flower-gardens, with fish-pond and park-like meadows, altogether about thirty acres, with three detached cottages, gardener's cottage, and other buildings The premises are in perfect order, a very considerable sum having been expended upon them, and they are in every respect suited to a family. Or the house and gardens would be let on lease —For particulars and tickets to view, apply to Mr. RAINY, 14, Regent-street, St. James's.

DURHAM, within one day's ride of London by the Railroads.—To be LET for three or five years, a spacious FAMILY RESIDENCE, FURNISHED in a superior style, and adapted for a person of fortune, situate in a beautiful part of the country, with good fishing and hunting, and the exclusive right of shooting over about two thousand four hundred acres. The establishment of the best class, and the circumstances altogether peculiarly desirable. Land may be had or not, at the option of the tenant.—Particulars to be had of Mr. RAINY, 14, Regent-street, St. James's.

ACTON, MIDDLESEX, Five Miles from Hyde Park.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a singularly elegant FREEHOLD RESIDENCE of the best class, approached by a corridor and hall, and containing library opening to a conservatory, drawing-room, dining-room, &c., seven best bed-rooms, ample servants' rooms and offices for a family, coach-houses and stabling, capital kitchen-garden, walled pleasure ground, and pasture, about 10 acres. The household furniture may be taken at a fair valuation.—To be viewed by tickets, which, with particulars, may be had of Mr. RAINY, 14, Regent-street, St. James's.

RICHMOND, SURREY, commanding Views of the River Thames and the adjacent Scenery.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, the very beautiful Gothic MANSION, on the rise of the Hill, for many years the residence of the late Mrs. Ellerker, but disposed of on behalf of her representatives, a few months since, to the present owner, who has altered and improved the premises, and made additions at a large outlay It is arranged to afford complete accommodation for a family of the highest respectability The dining room is 30 by 20 and 14 feet high, a library, two drawing rooms with folding-doors, numerous bed-chambers, offices of every description, ice house, coach-houses, stabling, and cottage, pleasure-grounds beautifully laid out and ornamented with handsome timber and walks, &c Or the House would be Let furnished by the year or for six months —To be viewed by tickets, which may be had of Mr RAINY, 14, Regent-street, St James's

STRETTON-STREET, PICCADILLY, overlooking the Gardens of Devonshire House.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, or Let on Lease, a spacious modern RESIDENCE, with hall and two staircases, capital eating room, library, and other apartments, on the ground floor, elegant drawing-rooms and a best bed chamber and dressing room, on the one pair; numerous other bed-chambers and servants' apartments, and ample offices on the basement Coach house and stabling may be rented at a short distance —To be viewed by tickets, and particulars had of Mr RAINY 14, Regent street St James's

NEAR CHRISTCHURCH, HANTS. — To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a MARINE VILLA, situate midway between Lymington and Christchurch, commanding splendid sea views, and also an adjoining farm of about 108 acres, with farm house and buildings, the whole freehold —To be viewed by tickets, and particulars had of Mr RAINY, 14, Regent Street, St James's

HYDE PARK, commanding the entire Park view.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, or Let Furnished for a term, a very elegant FREEHOLD RESIDENCE, in perfect order, suited to a moderate-sized family. The residence has an extra story of bed chambers, good offices, and stabling —To be viewed by tickets, and particulars had of Mr RAINY, 14, Regent Street, St James's

RUTLAND GATE, HYDE PARK.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, a very desirable new built and elegantly finished RESIDENCE, together with the nearly new household furniture. It commands an uninterrupted view over Hyde Park, has an extra story of bed-chambers, a coach-house, and stabling; held for a term of about 90 years, at a small ground-rent —To be viewed by tickets, and particulars had of Mr RAINY, 14, Regent Street, St James's

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick

D and E BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public

D. and E BAILEY were the first to introduce metallic, curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent

D and E BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are quite ready to supply their new BOILER, of every size. They have now fixed a sufficient number to warrant them in stating that what they put forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c, &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 189, Fleet-street. A Prospectus may be had, detailing the prices, &c

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM J MYERS AND CO., LIVERPOOL; And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL. 37, Lime-street, April 26, 1844.

STRETTON ON DUNSMORE, WARWICKSHIRE. [illegible] CONTRACTORS, INDUSTRIAL [illegible] Gentlemen, Builders, and others, [illegible] visits to an Iron Tank now [illegible] which are most decidedly advantageous [illegible] employed for this same purpose. [illegible] Tanks, which are [illegible] ornamental in appearance, [illegible] of any width and depth, [illegible] for any working character [illegible] affording the opportunity to [illegible] employing this much approved material of Building without the assistance of Engineers. The Tanks can be supplied on Rollers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. Also, Reservoirs of Plymouth, has kindly undertaken to receive orders and forward information to any persons in his neighbourhood, and pamphlets containing any size will be forwarded upon application to S. and Co.

WIRE-WORK, HOT WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of IRON-RAILS WIRE FENCE, to resist Cattle, Sheep, and Poultry; Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Greenhouses, Conservatories, Vineries Theeame heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses

PERUVIAN GUANO, of first quality, and in any quantity, direct from the Bonded Stores. Also Africain Guano and Nitrate of Soda.—Apply to H. BENTHWAITE and Co, 6, Cable-street, St George's Crescent, Liverpool.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known It may be had at Mr. Lawes' Factory, Deptford Creek, price 7s per cwt. Phosphate of Potash, 15s. per cwt.
" Soda 12s. "
" Magnesia 9s. "
" Ammonia 1s per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs WARNER, 22, Cornhill, and other Seedsmen, in 7 lb. packets, price 1s

MANURES.

BOAST AND Co.'s PATENT INORGANIC MANURES. These strong and productive manures have already proved their superiority over all others yet adopted It is now thoroughly understood and acknowledged by intelligent agriculturists that each plant requires a distinct manure, and it is upon this perfectly scientific principle that these manures are prepared, being formed so as to supply all the substances taken from the soil by each particular crop. They are immeasurably more efficacious, far more economical than all others, and possess the great advantage of being easily applied to the land

Prospectuses, with full particulars, may be obtained; or will be forwarded by post on application at the Manufactory, Bow, Middlesex

*** By the use of these Manures, any land may be rendered fertile Wheat, &c may be grown on the same land every year with immense advantage to the farmer, and without injury to the soil; whilst all the other crops are greatly increased.

GUANO, superior to the foreign, at a reduced price

Manures prepared expressly for Gardeners and Florists.

THE URATE of the LONDON MANURE COMPANY, 8l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano, Phosphate and Sulphate of Ammonia, Gypsum and every other artificial Manure

EDWARD PURSER, Secretary, 40, New Bridge Street.

TO AGRICULTURISTS

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps, also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor Pumps kept for Hire, for Excavations and Wells, Buildings heated by hot water, for Horticulture, and every variety of manufacturing purposes. The trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c, 63, Dorset-street, Fleet-street, London

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr G HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER, 22, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s 6d each, and in bottles, six times the size, at 7s. 6d The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c. are conducted by Mr MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 6, A., Hawley Road, Kentish Town

N B. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis

HAYMAKING SEASON.—Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 116, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.

Printed by WILLIAM BRADBURY, of Stella Hermitage, and FREDERICK MANSELL BRADBURY, of No 6, Shoe-lane, both in the county of Middlesex, printers, at their office in Whitefriars, in the precinct of Whitefriars, in the City of London; and published by them at the office, No. 4, Crane-court, in the parish of St. Bride, Fleet-street, in the said county, [illegible] Saturday, April 27, 1844.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 18.—1844. SATURDAY, MAY 4. [PRICE 6d.

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ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—The GENERAL MEETING will be held at the Society's House, No 12, Hanover square, London, on Wednesday the 22d of May, at Ten o'clock precisely (instead of 12 o'clock)

By Order of the Council,

London, May 3, 1844 JAMES HUDSON, Secretary

GARDENERS' BENEVOLENT INSTITUTION.—Under the Patronage of His Royal Highness the DUKE OF CAMBRIDGE, and the Rt Rev the LORD BISHOP OF ROCHESTER.

A Grand HORTICULTURAL EXHIBITION, in aid of the funds of the above Charity, will be held, by the kind permission of the Bishop of Rochester in his Lordship's Grounds, adjoining the White Hart Hotel, Bromley, Kent, on TUESDAY, 11th of June next

Further particulars will be duly announced The Committee take this opportunity of earnestly soliciting the aid and co-operation upon this occasion of all persons who are interested in the welfare of the Institution

E R CUTLER, Sec., 97, Farringdon street

THE WEST KENT EXHIBITION will take place in the Grounds of Vanbrugh House, Blackheath,—Tickets of Admittance, and List of the Prizes, may be obtained at Mr BEARD'S Library, Nelson-street, Greenwich; of Mr HAILE, Nurseryman, Blackheath, and at the White Hart Hotel, Bromley, Kent. A Military Band will be in attendance

AN HORTICULTURAL and FLORICULTURAL SOCIETY is about to be formed, on a very considerable scale, in the Peninsula Nurserymen desirous of having their Catalogues of Trees, Shrubs, Plants, Seeds, &c , forwarded to the Committee of Management of the Society, are requested to address them, post paid, to G W HARRISON, Esq , 51, Old Broad-street, City

WHITE HART HOTEL, Bromley, Kent.—The three Splendid FUCHSIAS 'Queen," "Prince of Wales," and "Magnet," as advertised in the *Gardeners' Chronicle and Agricultural Gazette* of last month, are now ready for sending out Also a specimen of each may now be seen in flower at the above Hotel —Bromley, May 1, 1844

A. J. STEWART begs leave to inform his Patrons and Friends that his CATALOGUE for 1844 is now ready, and may be had upon application, inclosing 4 Postage-stamps

A. J S has spared no expense in forming first rate assortments of Camellias, Fuchsias, Geraniums, Verbenas, Petunias, and Chrysanthemums He can guarantee that his Collections of the above mentioned are not far surpassed by any in the United Kingdom, add to which, nearly every variety is, as far as practicable, most fully and faithfully described His Catalogues also contain choice Selections of shrubby Calceolarias, Bourbon and other Roses, Dahlias, &c &c , with the lowest possible prices affixed to the whole

A. J S regrets he shall not be able to execute more orders for his Seedling Petunias, or Verbena "Carnea superba," than he has already been favoured with; but still solicits early commands for Verbenas "Azurea grandiflora" and "Queen of the Whites," (warranted the best of their colours ever seen,) also for his splendid Seedling Geranium "Beauty of Salthill"

Salthill Nursery, May 1, 1844

SUPERIOR NEW SWEDISH TURNIPS

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg to introduce to their friends the following New Swedish Turnips, which for their general good qualities stand unrivalled; growing to a large size, being small in the top, of a dark yellow flesh, and may be grown as close to each other as a Stone or Stubble Turnip

WARNER'S RUSSIAN SWEDE . . 2s. 6d per lb
WARNER'S EMPEROR SWEDE . . 2s. 6d per lb

Also WARNER'S Purple top Yellow Hybrid, 2s 6d per lb , with all the varieties of Norfolk and Tankards, of the most genuine and selected stocks, from 9d to 1s per lb.

SPLENDID LARGE, DEEP-BLUE ANAGALLIS and SUPERB CINERARIAS.—Plants of that large, splendid deep-blue, full and complete round-petalled ANAGALLIS BREWERII, being of a strong and vigorous habit, are well adapted for bedding out; 12s per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light blue, at 2s 6d, per packet. Strong flowering plants of the above, 12s, per dozen. Applications, including Post-office orders, will be immediately attended.—Direct to MESSRS. BROWN, Sen., Cambridge Nursery.

NOW SENDING OUT

PETUNIA PUNCTATA.—Although the orders for this excellent Plant have been most numerous, a few strong healthy Plants remain yet unbespoke, 7s 6d each plant, postage free W MILLER, Ramsgate

EXHIBITION OF TULIPS

H. GROOM, Clapham Rise (late of Walworth), by Appointment FLORIST TO HER MAJESTY, respectfully informs the Nobility, Gentry, and Amateurs, that his superb Collection of TULIPS is now in full bloom, and will continue in perfection until the 21st of May and can be viewed every day from 9 o'clock until 6 Sundays excepted Admission, 1s

ROYAL BOTANIC SOCIETY OF LONDON.—List of PREMIUMS awarded at the EXHIBITION of PLANTS and FLOWERS, on TUESDAY, the 30th ult The successful Candidates are requested to signify to the Secretary within a fortnight, whether they will receive the prizes in Medals, Plate, or Money

For Collections of 40 Stove and Greenhouse Plants —Amateurs — 1st prize, Mr Hunt gr to Miss Traill, Hayes Place, Bromley, 2d, Mr G Clarke, gr to the Earl of Eldon, Shirley Park, Croydon *Nurserymen* —1st prize, Mr Catleugh, Chelsea

For Collections of 20 species of Stove and Greenhouse Plants — Amateurs —1st prize Mr W Barnes gr to G W Norman, Esq, Bromley, 21, Mr Stowe, gr to W R Baker, Esq, Bayford bury, 2d, Mr Cockburn, gr to the Earl of Mansfield, Caen Wood *Nurserymen* —1st prize, Mr Pawley, White Hart, Bromley; 2d, Mr Fraser, Lea Bridge Road 3d, Mr Jackson Kingston

For Collections of 10 species of Stove and Greenhouse Plants — 1st prize, Mr May gr to F Goodhart Esq, Beckenham; 2d, Mr Kyle, gr to R Barclay, Esq, Leyton; 3d, Mr Bruce gr to B Miller, Esq Tooting, extra, Mr Clarke, gr to W Bloch, Esq, Muswell Hill

For Collections of 6 Stove and Greenhouse Climbers —1st prize, Mr Fraser Nurseryman 2d Mr G Clarke

For Specimen Ornamental Plants —1st prize, Mr May, 'Erica aristata major," 2d, Mr Scott gr to Sir G Staunton Bart, Havant, "Cyptopidium punctatum;' 3d Mr Dawson Nurseryman, Brixton Hill, 'Erica propendens ' extra Mr Pamplin, Hornsey Road, "Erica Sprengelii " extra, Mr Kyle, "Bossiea linophylla "

For Collections of 12 varieties of Cinerarias —1st prize, Mr Taylor, gr to J Coster Esq, Streatham; 2d, Mr W P Ayres, gr to J Cook Esq, Brooklands

For Collections of 6 Scarlet Pelargoniums —2d prize, Mr Baile, Florist, Hammersmith

For best specimen of Scarlet Pelargonium —3d prize Mr Baile

For Collections of 12 varieties of Pelargoniums —Amateurs — 1st prize, Mr Dobson, gr to Mr Beck, Slate Works, Isleworth, extra, Mr. Kyle

For Collections of 20 varieties of Roses in Pots —1st prize, Mr Dobson, 2d, Messrs Lane and Son, Nurserymen, Great Berkhampstead

For Collections of 10 varieties of Roses in Pots —1st prize, Mr Stowe

For Collections of 50 Blooms of Pansies —1st prize, Messrs Brown Slough, 2d Messrs Goode, Ponder's End

For Seedling Azaleas (Greenhouse) —1st prize Mr Pawley, for "Carminata" 2d, Mr Falconer Cheam, for 'Emmeline;' 3d Mr Catleugh, for "erecta," extra, Mr Catleugh, for "gloriosa" certificates to Mr Smith, Norbiton, for 'Rosea superba," "pallida," and "elegans superba"

For Seedling Pelargoniums —Certificates to Mr Beck, Slate Works, Isleworth for "Lunida," Master Pearl, and Chastity'

For Seedling Calceolarias —1st prize Mr Standish, Nursery man, Bagshot, for 'Celebration, 1st prize, Mr McOnach, gr to E Vine Esq, Caversham Priory, for "La belle Laura," both being equal

For Collections of 12 species of Papilionaceous Plants —1st prize, Mr Kyle

For Collections of 6 Plants of Tall growing Cacti —1st prize, Mr Barnes

For Collections of 12 kinds of Cape Heaths —Amateurs —1st prize, Mr May 2d, Mr Brazier, gr to W H Story), Esq, Isleworth *Nurserymen* —2d prize, Mr Pawley, 3d, Mr Jackson

For Collections of 6 kinds of Cape Heaths —Amateurs —1st prize, J Allnutt, Esq, Clapham, 2d Mr M Clarke, gr, 3d, Mr W Barnes, extra to Mr Bruce *Nurserymen* —1st prize, Mr Fraser Leyton; 2d, Mr Dawson

For Collections of 12 Plants of Greenhouse Azaleas —1st prize, Mr W Barnes, 2d, Mr Smith, Norbiton, Kingston

For Collections of 6 varieties of Greenhouse Azaleas —Amateurs —2d prize, Mr M Clarke *Nurserymen* —1st prize, Mr Catleugh, 2d, Mr Gaines, of Battersea

For single specimen Plants of Greenhouse Azaleas —1st prize, Mr Barnes, 2d, Mr. Smith; 3d, Mr Maclaren, gr to Dr. Lobb, Woodgreen.

For Collections of 4 varieties of Rhododendrons in Pots —1st prize, Mr Smith, 2d, Mr Gaines

For single specimen Plants of Rhododendrons in Pots —1st prize, Mr Smith.

For Collections of 6 species of Epacris —2d prize, Mr Fraser

For Collections of 15 Exotic kinds of Orchidaceous Plants — 1st prize, Mr Hunt

For Collections of 6 Exotic kinds of Orchidaceous Plants — 1st prize, Mr Bruce, 2d, F G Cox, Esq., Stockwell; 3d, Mr Redding, gr to Mrs Marryatt, Wimbledon.

For single Specimen Plants of Orchidaceous Plants.—1st prize, Mr Scott, gr to Sir G. Staunton, Bart, Leigh Park, Havant; 2d, J. H Schröder, Esq, Brixton.

For Collections of 20 species of British Ferns in Pots — 1st prize, Mr Taylor

For Seedling Rhododendrons.—Extra to Mr J. Wells

Plants not for Competition —Amongst others, a large Collection of Plants from Messrs Henderson, Nurserymen, Pine-Apple Place, Edgeware Road —A Chinese Elm, and Collection of Auriculas, grown without manure, from Mr Read, gr. to E. Wigram, Esq, Walthamstow.—A Collection of Fruit of the Orange, Lemon, and Citron, grown on a south-east wall, from W. Jackson, Esq The Moult, Salcombe, Devon, and a Collection of semi-double Pansies, from an amateur, Chesterfield, merit the best thanks of the Society.

The Society also embrace this opportunity of thanking Messrs Powell and Leland, and Mr Ross, for the many excellent Microscopes; and Mr. Varley for the Graphic Telescope which were exhibited.

GREAT YARMOUTH NURSERY



NORFOLK, 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER

NOW READY FOR SENDING OUT.

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.

FOR 1844

YOUELL AND Co beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of the 27th of April, and will be found to contain such varieties only as are worthy of cultivation

YOUELL & Co being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post office order), to any part of the United Kingdom, upon the following terms —

12 Extra Fine varieties, 12s, the Selection left to Youell & Co.
12 ditto ditto 21s, the Selection left to the Purchaser.
50 Fine varieties 40s, the Selection left to Youell & Co.
50 Extra Fine ditto . 60s the Selection left to the Purchaser.

VERBENAS

12 Extra fine Varieties 6s, the selection left to Youell & Co.
12 Ditto , 10s, the selection left to the purchaser.

PANSIES [Sent postage free.]

12 Fine Show Varieties, by name . . 12s per dozen
12 Extra Fine ditto, do 18s.

CHRYSANTHEMUMS. [Sent postage free]

Fifty of the newest best varieties by name, 12s. per dozen; for list and colours of which, see Advertisement of April 27

FLOWER SEEDS —10 Packets of the choicest and newest kinds sent per post free for 5s

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor and also at the Royal Gardens, Claremont, furnished by YOUELL and Co

YOUELL AND Co, possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms —Fine robust 4 year old plants, 6 to 10 inches high, 50s per 100, or 9s per dozen.

Fine Plants of CEDRUS DEODARA, in Pots, 2ft. to 2ft. 3 ins., 10s 6d each

Great Yarmouth Nursery, May 2, 1844.

N B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

TULIPS; A CHOICE COLLECTION TO BE DISPOSED OF. THOMAS MAY, FLORIST (established upwards of 30 years), George street, Lower road Islington, announces his intention of disposing of his stock at a low price The Collection consists of all the choicest varieties, including many superior Seedlings

SEEDLING GERANIUMS

WILLIAM L RENDLE having raised a few GERANIUMS from seeds procured from some of Mr. Lyne's superior sorts, and considering that many Amateurs would feel interested, and desirous of cultivating a few choice Seedlings, now offers an opportunity to those inclined to speculate and will forward a dozen Seedling Geraniums, securely packed, and forwarded to the Beam bridge terminus of the Great Western railway, on receipt of a Post office order for One Guinea. Strong Plants in 48 sized pots

WILLIAM E RENDLE'S Spring Catalogue of Geraniums, Dahlias Fuchsias, Camellias, New Plants, &c , is just published, and can be had on application

Union road Nurseries, Plymouth, May 1, 1844

NEW DOUBLE WHITE BRUGMANSIA IS KNIGHTII.

THOMAS CRIPPS Nurseryman, Tunbridge Wells, respectfully intimates to his Friends he has now ready for sending out Plants of the above Double and delightfully fragrant dwarf flowering Brugmansia at 21s each, in 48 sized pots, or small in thumb pots 15s with the usual discount to the Trade.

GREENHOUSE AND STOVE PLANTS

LOUIS VAN HOUTTE (Florist to His Majesty the King of Belgium Ghent begs to announce to the Trade and the Public in general that his Price Current, No 16, containing the Greenhouse and Stove Plants, is published The Trade who have not yet received it may find it at Mr. GEORGE RHAM'S, Crescent Minories

N B —L V H would be glad to purchase some bulbs of CALOCHORTUS SPLENDENS and VENUSTUS, and of AMARYLLIS SOLANDRIFLORA —Address to Mr GEORGE RHAM, Crescent, Minories, London

SUPERB SEEDLING DAHLIAS TO BE SENT OUT FIRST WEEK IN MAY.

GAINES'S "PRINCESS ALICE,"—Pure white, very full centre the petals finely cupped; was considered by all who saw it growing the best White Dahlia; gained several prizes a good show flower, 4 ft., 16s. 6d.

GAINES'S TWICKENHAM RIVAL.—Fine yellow, occasionally tipped with red; a superb round thick petal, fine circular form; the best yellow yet offered to the public; gained several prizes; a good show flower, 4 ft., 10s. 6d.

GAINES'S COUNTESS OF ENGLAND —Blush, tipped with lilac fine round thick petals; a good show-flower, 4 ft, 10s. 6d.

GAINES'S ENTERPRISE.—Crimson purple, a superb show-flower, 4 ft, 10s. 6d.

A List of Dahlias, Pelargoniums, Pansies, Calceolarias, Fuchsias, Verbenas, Auriculas, Cinerarias, Chrysanthemums, &c., containing many New Seedlings of first-rate qualities, may be had by application at the Nursery, Surrey-lane, Battersea.

A GLENHOUSE NURSERY, [illegible] Road, [illegible] Middlesex.

PAUL AND SON [illegible] respectfully inform the Nobility, Gentry, and Amateurs, that their Stock of [illegible] is now in a healthy and vigorous condition, and are well worthy the attention of Amateurs requiring specimen Plants. They may be had separately or together, and are as follows:—

Abutilons, a magnificent		Scarlet	3 to 4ft.
,, out Plant, from	7 to 10ft.	,,	2 to 3ft.
Cuphea cirsii	3	Indigofa	3
Fuchsia	27 to 30s.	Salvia (Pradisa)	3
Calceolaria, very fine	3s to 7s.	Antirrhinum, fine alba	4 to 5ft.
Chandlerii	3 to 7s.	Dyschisa	4 to 5ft.
,,	4 to 5s.	Wendell	4
Lady Hume's Blush	6 to 7s.	Anemonefiora	4 to 5ft.
White	6	Fuchsia	4 to 5ft.
,,	6	Cuphea	3
,,	3 to 5s.	Lawsonii	2
Gray's Invincible	3 to 5s.	Colvillii	2
Double striped	3 to 5s.	Dosciliefi	2

The Heights stated are exclusive of the Pots.

Further particulars may be obtained by application to Messrs. VEITCH and Son, Nurserymen, Exeter.

BUSHELL'S Light Seedling DAHLIA, "EMMA."—Plants in May, 10s 6d. Colour white, tipped with deep chalery; the petals, form, and centre good; the largest, most substant, and free in flowering, of any Dahlia yet propagated, and has obtained several prizes "PET RIVAL," plants in May, 5s. Colour, purple maroon; fine cupped petal, and free bloomer, exhibited in several winning stands last season. "KENNINGTON ROSE," plants in May, 5s; most constant rose grown. To be had of Messrs. ANSELL, Camden-town; S. GRATLING, Stowmarket; P. and A. SMITH, Hackney; and J. BUSHELL, 12, Hall place, Kennington lane.

FUCHSIA DICKENS.

J. INGRAM, NURSERYMAN, Southampton, begs to offer the above-named unique FUCHSIA at 7s. 6d. each, with an allowance to the Trade if three or more are taken. Its character is that of Formosa elegans, but far excels it in point of size, colour, and general habit. Should it not turn out as described, no charge shall be made.

J. INGRAM, 9, Above-Bar Street.

MAY'S "QUEEN OF MAY" CINERARIA.—The above new and beautiful Cineraria is now ready to be sent out by post, or otherwise, at 5s 6d. each, including case, prepaid. It is confidently recommended as being one of the most splendid novelties that has been offered in Cinerarias, the colour being a beautiful light sky blue; the flowers large and of good form; the plants compact, shrubby, and dwarf in growth—may be had of the principal Nurserymen in the kingdom.

W. M. begs to state that his descriptive List of new, superb Calceolarias may be had on application to WILLIAM MAY, Hope Nursery, Bedale, Yorkshire.

W. M. also begs to intimate that he cannot supply any more Eucharidium grandiflorum.

R. WHITE & Co. beg now to offer Plants of the following, viz., Achimenes longiflora, strong Plants for shortness on their own bottoms, at 2s each, Do. do., good flowering Plants at 9s. per dozen. Achimenes grandiflora, strong specimen roots, 2s. 6d each; Do., smaller, 2s. A pedunculata, do., 1s. each; A. coccinea, do., specimen, 9s per doz. A. rosea, do. do., 9s. per dozen. ANAGALLIS BREWERII, 1s. each, or 9s. per dozen. CHRYSANTHEMUMS, 40 superb varieties, one plant of each, 21s DAHLIAS, including all the finest old varieties, and the following new ones, viz., Standard of Perfection, Orange Superb, Lady Antrobus, Emma Noke, Madame Chevalu, Essex Triumph, Oakley's Surprise, Antagonist, Miss Bonnet, Queen of the Isles, &c. &c., at very moderate rates, or where the selection is left to us, at 10s 6d per dozen, or 80s per 100, which may include the last-named five new kinds, and will be made up with other really good sorts.

FUCHSIAS—London Rival, Globosa Grandiflora, Espartero, Wellesliana, Prince of Wales, Monarch, Bridegroom, Integri folia, Kentish Hero, and all the other new kinds, at moderate prices, or a Collection of 20 superb kinds, including some of the new ones, and any of the following, viz., Venus victrix, Incomparable, Lisbell, Greenwich Rival, Magnifica, Gigantica grandiflora, St. Clare, Bruciana, Eximia, Woodall, Conspicua Arborea, Devonia, Splendens, Youelli, Formosa elegans, &c., for 21s, or 10 for 10s. 6d.

GERANIUMS in superb collections, 40 good varieties, 6s., 20 do. do., 4s.

PETUNIAS, good sorts, per dozen, 4s. The following new varieties:—Punctata, Beauty Supreme, Celestial, Formosa, No plus Ultra, Splendida, Speciosissima, Multiflora punicea, Gem, Rupert, 21s. the Collection, or separately at moderate rates.

VERBENAS—Finest old varieties, per doz., 4s. The following new seedlings, viz.—White's Wonder, Perfection, Modesty, Venustissima, Cooperii, Surprise, Simperii, Stewart's Queen of the Whites, Aurea grandiflora, Carmen superba, Pearson's Teucroides atrosanguinea, do. Princess Alice, Specionissima, Beauty Supreme, Teucroides celestina, Miller's Blue Queen, Zeuxis, Smith's Excelsa, Array, Delicata, and Striata—the Collection, 24s. 6d.

Scarlet Geraniums, Heliotropes, Calceolarias, &c. &c., for bedding out; and every description of plant at moderate prices.

Orders from unknown correspondents must be accompanied by remittances; and orders amounting to 5l. will be delivered free, at Bond Manure—Dust, 30s., Mixed, 19s per qr; Guano, Tin. per cwt., or 16l. per ton, warranted genuine. Agents, by appointment, for the sale of Whitney's Composition.

Rose Nursery, Doncaster.

JAMES CUTHILL, FLORIST, Denmark-hill, Camberwell, has a large collection of GERANIUMS, VERBENAS, HELIOTROPES, PETUNIAS, and FUCHSIAS for stands or planting out at reasonable charges. J. C. has a few packets of his LISIANTHUS RUSSELLIANUS SEED, with directions, at 2s 6d. per packet. Also, his PRINCE OF DENMARK Nosegay Border CARNATIONS, 12s. per dozen, very fine strong roots. N.B.—J. C. hopes, in the course of the summer, to bloom two or three new Lisianthus, which he will have great pleasure in announcing.

SKIRVING'S IMPROVED SWEDE TURNIP.

W. SKIRVING, SEEDSMAN, Queen-square, Liverpool, begs to acquaint his Agricultural Friends and the Public that the price for the present season of the Genuine Seed of his improved Swede Turnip is 1s 6d. per lb., the first was the same as that for which he received the Premium of the Agricultural Society of England. All other sorts at the usual prices of the common kinds at the usual prices; also the [illegible] varieties of Mangold Wurzel, large White Belgian and [illegible] Carrot.

Permanent Pasture, W. SKIRVING begs to offer his [illegible] most useful Perennial Grass seeds. The parts suitable for personal observation of the growth and habits of the different grasses grown in his experimental Grounds at Walton-[illegible], he has supplied within a few years, Seeds for [illegible] acres, which have given every satisfaction. [illegible] quantity and quality of land to be laid down, will be [illegible] with a suitable mixture.

[illegible] Cropping, W. S. can recommend Seed of pure [illegible] grown and carefully saved on his own farm.

HENRY D. [illegible] Seedsman to the Royal Agricultural Society, begs to inform Agriculturists and Gentlemen about to sow Grass Seeds, that they can at all times supply with every variety of [illegible] Seeds, cheaply and properly apportioned and [illegible], from his Wholesale and Retail Seed Warehouse, 102, Deansgate, Manchester.

WOODLANDS NURSERY, [illegible] NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD and SON respectfully invite the attention of their Friends and Amateurs to their extensive Stock of New Plants, selected for blooming, GREENHOUSE and GREENHOUSE PLANTS, BULBOUS, and CLIMBERS, together with their splendid Collection of the Newest and Best BEDDING of the season, Catalogues of which may be had GRATIS on application.

W. W. & S. have the pleasure of offering the following at moderate prices, the selection of varieties being left entirely to themselves:—

FUCHSIAS, per dozen—Extra fine varieties, 6s. and 9s.; Extra new and fine do., 12s; 24 fine and distinct do., for 40s.

CINERARIAS, per dozen—Fine distinct varieties, 6s. and 9s.; Extra fine and new do., 18s. and 24s.

VERBENAS, per dozen—Good and distinct varieties, 4s.; Extra fine do., 9s and 12s; Extra superb and new do., 18s.

PETUNIAS, per dozen—Extra fine varieties, 6s. and 9s.

The above are now ready for immediate transit, and may be had either in strong plants, packed in baskets, or they will be supplied in smaller plants, and sent by post, at the option of the purchaser.

A FEW SELECT PLANTS.

	per plant—s. d.		per plant—s. d.
Achimen s grandiflora	1 6	Mandevillea suaveolens	2 6
,, edunculatus	1 6	Manettia bicolor	2 6
Asalea elegans	2 6	Maurandya Barclayana alba	1 0
,, Ignescens	2 6	Nymphea oblonga	3 6
,, speciosissima	3 6	Passiflora fragrans	2 6
,, splendens	1 6	,, Loudoniana	1 6
Brachysema platyptera	3 0	,, princeps	3 6
Echites atropurpureus	3s 6	Physolobium carinatum	2 6
Euthalis macrophyllus	1 6	,, Stillingii	2 6
Gesneria Cooperi	2 6	Roellia ciliata	1 6
,, Sutt ali alba	5 0	Scuttellaria splendens	2 0
,, Zebrina	1 6	,, japonica	2 6
Gloxinia maxima	2 6	Silene speciosa	2 6
,, Priestleyana	2 6	Statice puberula	1 6
,, rubra	1 6	,, sinnuata	1 6
Habrothamnus fasciculatus	7 6	Stephanotis floribundus	3 6
Hardenbergia longiracemosa	1 6	Siphocampylos betulæfolius	1 6
,, macrophylla	1 6	Tecoma jasminoides	1 6
Hydrangea japonica	3 0	Trimalium odoratissimum	2 6
Lantana crocea	2 6	Zychia glabrata	2 6
Leschenaultia biloba	1 6	,, linophylla	1 6
,, grandiflora	3 0	,, villosa	1 6

Lilium lancifolium album . . each . 2s 6d
,, ,, ,, flowering bulbs . 10 6
,, ,, punctatum 3 0
,, ,, ,, flowering bulbs . 10 6 to 21s.
,, ,, rubrum 21 0
,, ,, ,, flowering bulbs . 31 6 to 42s

*** Plants will be presented with each order, to defray the expense of carriage, &c.

Agents, by appointment, for the sale of WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION. Sold in Bottles—Pints, 2s 6d; Quarts, 4s 6d. each, with printed directions for use.

NEW AND CHOICE FUCHSIAS, VERBENAS, PETUNIAS, Sold by WARNER & WARNER, SEEDSMEN, 22, Cornhill, London.

FUCHSIAS.

Smith's Albion	5s 0d	Eppe's Kentish Hero	5s 0d
,, Coronet	7 6	,, Duke of Wellington	5 0
,, Coccinea Versa	5 0	,, Winsorii	5 0
,, Decora	7 6	,, Maria	5 0
,, Expansa	7 6	,, Florence	5 0
,, Gigantea	10 6	,, Kentish Bride	7 6
,, Hector	5 0	,, Emperor of China	5 0
,, Incarnata	5 0	Standish's Attraction	7 6
,, Modesta	5 0	,, President	7 6
,, Neptune	5 0	,, Colossus	7 6
,, Reflexa	5 0	,, Antagonist	5 0
,, Vesta	10 6	,, Conductor	5 0
Epp's Bridegroom	5 0	,, Candidate	5 0
,, Espartero	7 6	Miller's Constellation	12 6

PETUNIAS.

Punctata	7s 6d	Pearson's Formosa	3s 6d
Pearson's No Plus Ultra	3 6	,, Celestial	3 6
,, Speciosissima	3 6	,, Splendida	3 6

VERBENAS.

Pearson's Teucroides atro sanguinea	5s. 6d	Pearson's Teucroides Princess Alice	3s 6d
Pearson's Teucroides celestina	3 6	Pearson's T. Speciosissima	3 6
		,, T Beauty Supreme	3 6

WARNER & WARNER beg to inform their Friends they can supply all the varieties of FUCHSIA, PETUNIA, and VERBENA now out, either in single plants or collections. They have also all the new CINERARIAS, CALCEOLARIAS, GERANIUMS, DAHLIAS, &c., now in cultivation.

Catalogues of the above may be had.

Plants of the New Black Nemophylla, 9d each. Potter's Liquid Guano, in quart bottles, 1s 9d each. Super-phosphate of Lime, in 7lb packets, at 1s each. Whitney's Chemical Transparent Waterproof Composition, with directions for use, in pints, 2s 6d each, quarts, 4s 6d. each.

For their Advertisements of new and choice Flower and Vegetable Seeds, see their lists in Harrison's "Cabinet," for April, and the preceding Numbers of the *Gardeners' Chronicle*.

Petunia Punctata is now ready for sending out, 7s 6d each.

CHAPPELL'S New CHELSEA BROCCOLI is now being exhibited by W. & W., heads weighing 9lbs. each. Seed to be had at 6d. per packet.—Agents for the late Mr LOUDON'S Works.

PANSY, "LADY ALICE PEEL."—In every respect one of the best Show Flowers of the present year; raised by Youell & Co. in 1843. Blooms were submitted for the opinion of the Editor of the *Gardeners' Chronicle*, a description of which will be found under "Notices to Correspondents," in *Gardeners' Chronicle* of April 27, page 248.

Strong plants are now ready for sending out, post-free, at 3s 6d per plant.—Great Yarmouth Nursery, May 2, 1844.

PLANTS FOR BEDDING OUT, to be had of MARNOCK & MANLEY, NURSERYMEN, Hackney, London.

	per doz.—s. d.		per doz.—s. d.
Geraniums, scarlet and others, strong plants	6 to 9	Anagallis do.	0 9
Fuchsias, 100 varieties	6 12	Alstroemerias do.	0 9
Verbenas do	4 6	Heliotropium	4 6
Petunias	4 6	Geraniums.	
Salvia Decumbens new	9	Maurandyas, 4 varieties	6 9
Salvias,—in varieties	4 6	Cobæa scandens	0 9
Lobelia Gardinalis do.	6 9	Lophospermum	0 9
Lantanas do.	9	Rhodochiton volubile	18 18
Lobelias do.	6	Kennedya	3 12
		Boltia Lotiformis	0

Whatever other variety of Bed and Creeping Plants, at moderate prices, sent free within 10 miles of London, if to the amount of 20s. and upwards, or packed for the country. A descriptive Catalogue may be had on application.—Nursery, Hackney, May 1.

CUTHILL'S [illegible] Nurseryman, Holloway, begs to call the attention of [illegible] to his extensive collection of [illegible] now in fine condition, and are well worthy the attention of Amateurs requiring specimen Plants. They may be had separately or together, and are as follows:—

Abutilons, a magnificent		Scarlet	3 to 4ft.
,, out Plant, from	7 to 10ft.	,,	2 to 3ft.
Cuphea cirsii	3	Indigofa	3
Fuchsia	27 to 30s.	Salvia (Pradisa)	3
Calceolaria, very fine	3s to 7s.	Antirrhinum, fine alba	4 to 5ft.
Chandlerii	3 to 7s.	Dyschisa	4 to 5ft.
,,	4 to 5s.	Wendell	4
Lady Hume's Blush	6 to 7s.	Anemonefiora	4 to 5ft.
White	6	Fuchsia	4 to 5ft.
,,	6	Cuphea	3
,,	3 to 5s.	Lawsonii	2
Gray's Invincible	3 to 5s.	Colvillii	2
Double striped	3 to 5s.	Dosciliefi	2

The Heights stated are exclusive of the Pots.

Further particulars may be obtained by application to Messrs. VEITCH and Son, Nurserymen, Exeter.

J. G. WAITE, SEEDSMAN, &c., 1 and 2, Eyre street-hill, J. Hatton Garden, London, begs leave to remind the Agricultural community that the seed-time is rapidly advancing, and the following articles will be in requisition immediately after the first fall of rain:—

	Per lb.—s. d.		Per lb.—s. d.
Turnip, Early Stubble	0 0	Turnip, Laing's Improved	
,, White Round	0 6	Swede, the best known	0 0
,, Red do.	0 6	,, Skirving's Liverpool	0 0
,, Green do.	0 6	,, Purple-top Swede	0 0
,, White Globe	0 6	,, Green do	0 0
,, Green do.	0 6	,, Red Tankard	0 0
,, Red do.	0 6	,, Green do.	0 0
,, Purple-top Scotch	0 6	,, New Zealand Golden Mexon Swede	0 0
,, Green do.	0 6	,, New White Decanter	0 0
,, Dale's Hybrid	0 0		
,, Green Barrel	1 0		

Parties wishing to buy by the bushel may have a priced Catalogue on application.

Improved Long Red Mangold Wurzel	0s. 9d.	per lb.
Superior Yellow Globe do.	do. 0 9	,,
Superior Red do. do.	do. 0 9	,,
Fine Selected Altringham Carrot	0 9	,,
Large Green-top White Belgian do.	0 6	,,

Grass-seeds adapted to soils of every description, so as to insure a good sward, either in Lawns, Parks, permanent Pasture, or alternate course of Husbandry.

J. G. W respectfully announces to the Nobility and Gentry that he can supply them with plants of TRINDER'S NEW PINE, he having purchased the entire stock. This is a most delicious Pine, surpassing all others in flavour; has obtained prizes at Bromley and elsewhere. Three fruits were exhibited at the Horticultural Society's Rooms, on the 7th of last Nov., for which a letter of thanks was awarded; Dr LINDLEY afterwards noticed them in the *Gardeners' Chronicle*, and their respective weights were 2 lbs. 12 oz., 3 lbs., and 3 lbs. 4 oz.; they measured 5 inches in diameter, and 7 inches in length. Fruiting plants, 15s. each; Succession do., 10s 6d. each.

ORANGE AND LEMON TREES, 2s. 6d. to 10s. each.

R. HALL begs to advise that he has just received a fresh consignment of 50 TREES, varying from 18 inches to 6 feet in stem, remarkably handsome and very healthy, at his Foreign Warehouse, 63, South Audley Street, Grosvenor Square, facing the Chapel.

JOHN RIVERS, Sawbridgeworth, Herts, begs to inform Agriculturists in general that the MANGOLD WURZEL and SWEDISH TURNIP enumerated beneath are new and of his own growth, and can be recommended with confidence. The Russian Swede, with yellow skin and yellow flesh, was imported by him in 1835, it has been since carefully selected, and is recommended for productiveness and superior hardiness, and for its not being so liable to mildew as the Liverpool and other dark coloured varieties.

Long yellow Mangold Wurzel, growing much out of the ground, fingless, with fine top . . . . 1s. per lb.
White fleshed, purple-skin ed Globe, for thin soils, 1s per lb
Long Purple, superior stock . . . . . 9d. per lb.
Russian Yellow Swedish Turnip . . . . 2s per lb.

Carriage paid to London.

Lawn Grasses, mixed with dwarf Clovers, warranted to insure a fine sward (weight 20lbs per bushel), price 14s. per bushel; Pasture Grasses mixed for any description of soil, varying in price from 8s to 12s per bushel; three bushels per acre recommended upon a clean tillage, to be sown at Midsummer, with a portion of Lucerne, Perennial Clover, and Saintoin, upon soils that are not too retentive of moisture.

If a description of the soil intended to be laid down is given, J. R trusts, by attentive observation of the various Pasture-Grasses, both separately and in pasture, upon various soils, to give satisfaction to those favouring him with their commands.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c (as recommended and practised by his partner, the late Mr. GILBERT SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3s. 6d. per quart.

SHADES FOR GREENHOUSES.

J. WEEKS & Co., ARCHITECTS, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-pla., Chelsea, near Sloane-sq.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public competition at the Auction Mart, Bartholomew-lane, on TUESDAY, May 7, and THURSDAY, May 9, 1844, at 12 o'clock each day, a fine collection of DAHLIAS, comprising all the leading varieties; also a splendid assortment of GERANIUMS and other PLANTS in bloom. The newest varieties of FUCHSIAS, VERBENAS, HEARTSEASE, &c., and a variety of other PLANTS for transplanting. May be viewed the morning of sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

TO NURSERYMEN and OTHERS.

TO BE DISPOSED OF, on moderate terms, with immediate possession, a long-established NURSERY, most slightly situate on the Surrey side of the Bridges, and within four miles from either of them. The premises consist of about Three Acres of Land in a very high state of cultivation, and in the centre of a populous and wealthy neighbourhood; a Cottage, a Greenhouse, a Pit, and a Seed-shop.—For further particulars apply by letter, post-paid, to S. T., 20, Cato, Gold Harbour-lane, Brixton, Surrey.

[illegible] FLOWER AND PLANT [illegible]
[illegible] PHOTOGRAPHIC [illegible]
[illegible] Wholesale Agents: DAVY, MAGNUSSON, and Co. 166, Upper Thames-street, London.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITIONS AT THE GARDEN.—The First Meeting will take place on SATURDAY the 11th of May; subjects for Exhibition must be at this Office not later than the 17th; at the Garden before half past Eight o'clock A.M., on the day of Exhibition.

Exhibitors will be provided with a printed form in which they will state, for the information of the Judges, whether their plants, &c., have been shown previously during the Season. The gates will be open at One P.M. Tickets are issued to Fellows at this Office, price 5s. each; or at the Garden, in the afternoon of the days of Exhibition, at 7s. 6d. each; but only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent Street on the day of Exhibition.—21, Regent Street.

The Gardeners' Chronicle.

SATURDAY, MAY 4, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Monday,	May 6	Entomological	8 P.M.
Tuesday,	May 7	Horticultural	3 P.M.
		Linnean	8 P.M.
Wednesday,	May 8	Society of Arts	8 A.M.
Wednesday,	May 15	Microscopical	8 P.M.

COUNTRY SHOW.

Wednesday, May 15 . Hammersmith Mechanics'.

THOSE who wish to know when *not* to plant, should visit the Nurseries just now, and see the CONDITION OF THE SPRING-PLANTED TREES. They will find them dead and dying by thousands. That this must be so is only what common sense, and a very limited acquaintance with the nature of things, would indicate. Nevertheless experience tells us that many people are as deficient in good sense as in Vegetable Physiology, and that in spite of both they will plant late in the spring. The practice of the Nurserymen, who must, it is said, have much experience, and whose interest it is to perform this operation rightly, seems to sanction the custom. But it is forgotten that Nurserymen plant late in the spring because they cannot help it. They are forced to defer their own operations until their customers discontinue buying; and because their customers choose to procrastinate, till transplanting is all but impossible, the Nurserymen are annually constrained to attempt the impossibility.

This question has been formally discussed in the "Theory of Horticulture," and we are not aware that anything more can be said upon the subject. Nevertheless, as many people will read a newspaper who cannot fatigue themselves with a book, it may not be unprofitable if we again explain the arguments against late spring planting.

Some years since a planter had some rather large Yews to remove. As such plants are hard to preserve, and he was therefore anxious to insure success to the operation, he consulted a person who had had what is called "great experience" in planting, who advised him to remove them by all means in the spring. The advice was followed, the month of March was taken, and five out of six of the trees died. Now, the reasons given by the "experienced" man were, first, that if such trees were planted in the autumn they would be blown about in winter and chafed half through at the ground-line; secondly, that their roots would all be rotted by water stagnating about them in winter; thirdly, that everybody knows spring to be the proper season for planting Evergreens; and fourthly, that in "all his experience" he had never planted Yews in the autumn with success. He forgot that the wind blows in spring as well as at other seasons of the year, that the chafing at which he was so alarmed might be prevented by a dozen simple contrivances, that water stagnating about roots is more mischievous in spring than at any other time; and it is not impossible that the reason why he never planted Yews successfully in the autumn, was that he never tried; which was the more likely, since he was one of a chattering overbearing race which habitually confounds assertions with facts, thinking one perhaps to be as good as the other.

If we search for solid reasons why spring planting should be adopted, we fail to discover the least resemblance to them; or, if resemblances to reason do appear, they vanish the moment they are examined. The great argument in its favour is its occasional success; but this is of all reasons the most unsatisfactory. There are men in this country who drink enormous quantities of wine, and live to a great age, without gout, indigestion, or even a headach; but we should hardly take such cases as favourable to deep potations. In the same way trees have been planted at Midsummer, in June, in August, and they have sometimes lived; but who would dream of selecting June, Midsummer, or August, for the operation?

The cause of death when trees are removed is almost entirely that they lose the fluid contained within [illegible] shall it [illegible] be renewed [illegible] by the [illegible] up of their vessels, which is [illegible] by a loss of vital force. [illegible] circumstances to which [illegible] are exposed are favourable or unfavourable to the final loss of fluid; we find them to be very different degrees. The air is peculiarly dry in the spring, and frequently in rapid motion, at the same time; all objects exposed to a current of dry air must part with their moisture rapidly; and consequently, such a state of things is most unfavourable to plants which require to retain their moisture. At first their young bark is the channel through which the moisture flies off; but as soon as young leaves appear, should the trees live long enough, and the perspiring surface is thus extended, this loss goes on with far greater rapidity, and life is soon extinguished. Evergreens, which have always a very large perspiring surface, are on that account exposed to much more danger, and consequently the losses among them are much greater. That the excessive loss of fluid from the interior is the true cause of death in newly-planted trees was proved, by we think, Mr. Knight, who surrounded their stems with damp moss and thus preserved them.

Established trees suffer nothing from the dry air of spring, because their roots are unmutilated, and restore the moisture as fast as it flies off from the surface. But newly-planted trees, whose roots are necessarily much mutilated, suffer, because they cannot obtain fluid from the soil until the roots are renewed, and before that can happen they are dead; for the feebleness of the stem actually diminishes the capability of the plant to renew its roots.

But it is said that if a tree is just budding when planted it is in the most favourable state, because it will immediately make fresh roots, the act of vegetation upwards being simultaneous with growth in a downward direction; and that is true. There is here, however, a fallacy: it is assumed that the upward and downward vegetation will go on when a plant is transplanted as well as if it is left in its former place; that, however, depends upon the external conditions to which it is exposed. If the surrounding air is damp, and remains so, evaporation being thus prevented for a sufficiently long time, roots will be quickly formed, and the plant will go on growing; on the other hand, if the air is dry, and exhausts the branches of their moisture, new roots cannot be formed, and the plant will die. Life, in such a case, is staked upon the chance of the atmosphere being in a very favourable state; and the chances are ten to one against its being so.

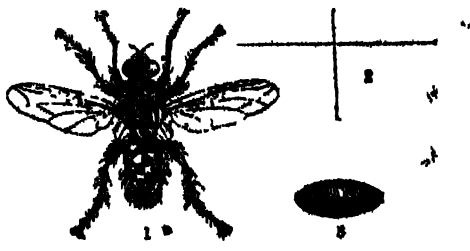
These considerations abundantly prove the spring to be the worst of all seasons for a planter. We shall hereafter consider what the best season is.

NATURALIZATION OF THE CAMELLIA.

THE climate of the west of Normandy being generally as severe in winter as that of considerable portions of England and Ireland, it is reasonable to conclude that plants which are found to thrive in the open air in the former country will succeed in the other two. M. Bataille, the curator of the Botanic garden at Avranches, in the department of La Manche, has about a dozen fine Camellias in his private garden, where they have been seven or eight years, without suffering injury from the influence of winter; they have had no protection from the weather, except a little matting around them in hard frost. The seeds were sown by M. Bataille in the open ground, in August, 1836, these were examined in the following spring and found to be enlarged; the radicles had burst from the envelopes, and were directed inwardly to extract the nourishment necessary to the farther development of the young plants, which then exhibited the primitive leaves. During the summer they attained some vigour; and straw was occasionally laid over them during the ensuing winter, which so completely secured them from the effects of frost, that they were in full possession of their vegetating powers in the spring following. One of them flowered in 1841, for the first time, and last year five flowered; and the same plants are now about to produce their showy blossoms. I have seen Camellias in the open ground in England and Ireland; last year the Earl of Shannon had several at Castle Martyr, but those were raised from seed sown in hot-houses, and the plants were transferred from the greenhouse to the garden, and therefore have a very uncertain existence there. Common sense would lead one to form this conclusion; but besides, actual experiment tends to prove that seeds unnaturally forced into germination, and kept in their subsequent early stages in warm habitations, will ever afterwards preserve a constitutional delicacy that cannot resist severe pressure. The predecessor of M. Bataille, supposing that he might render the Camellia an acclimated shrub in Normandy, removed from the greenhouse a single flowering plant of that kind to the garden, where it matured its seeds, from which many plants were obtained that yielded (by grafting) double flowers; but as he committed the error of sowing the seeds in a hot-bed—which seeds, be it remembered, were the produce of a plant which had been reared in an unnatural state, for such the greenhouse surely is—all the plants raised by him, excepting one, which has a very consumptive appearance, have died. The Camellia, or Rose of Japan, in its native clime, attains the height of 12 or 16 feet, and though we cannot suppose that it can be [illegible] together acclimated in our ungenial country, there is [illegible] element of heat, comparatively, is so deficient, there is reason to hope that, with such nurture as M. Bataille has bestowed on it, this very ornamental plant may in time, in the course of some years, sufficiently harden to obtain a permanent position in the British shrubbery.—*Edwards's Botanical Bouquet.*

ENTOMOLOGY.

THE EARTH-WORM FLY (*Sarcophaga carnaria.*)—There can be no doubt that Earth-worms are exceedingly useful in loosening the soil, and enabling the rain to penetrate to the roots of plants more freely; at the same time they manure the land, and very probably render it more productive by the changes which it undergoes in digestion; for the innumerable casts one sees piled up on the surface have all passed through their bodies. Worms are, however, much complained of as pests on gravel walks and lawns, they do so much mischief by drawing young plants into their burrows, and under those in pots so unhealthy, that the gardener naturally enough considers them a very great nuisance; he has, however, a friend amongst the Diptera, which may assist extensively in their diminution. And this is a fresh instance of the services rendered by that order of insects; for troublesome and even offensive as flies are, often compelling us to protect our food from their inroads, and others destroying the productions of our kitchen-gardens, yet the Muscidæ, in their larva state, are amongst the most numerous and efficient of Nature's scavengers, sweeping away the putrescent matter which is hourly tainting the air we breathe; and there are many others that are eminently useful in keeping under the vegetable feeders in this extensive race of minor animals. Amongst those which may be termed animal feeders is the larva of the fly above alluded to, which is a natural parasite of the common Earth-worm, Lumbricus terrestris. The parent flies are abundant in gardens and fields, on heaths and probably in every place inhabited by worms; in fine weather one sees them flying in pairs, generally along pathways, and alighting at short distances when disturbed; they likewise resort to many umbelliferous flowers, from which they imbibe honey with their large fleshy lips. They are numbered amongst the flies whose larvæ feed upon meat, but there is a part of their economy which was unknown to me until a very ingenious observer of the habits of insects* communicated an interesting fact which came under his own observation. On the 18th of June, after a shower of rain, he found in a garden-path a common Earth-worm, motionless, with several small white maggots crawling over its body; on taking it up the worm began to writhe about, when the little maggots made their way to a hole in the thickened band encircling the body, which they immediately entered, their tails only being exposed, which Mr. Bolt believed was for respiration. The Earth-worm lived about four days, when the maggots had materially increased in size; another live worm was then given to them, but it did not live long; the maggots, however, only six in number, nearly devoured the first before they began the second; by the 20th it seems they had arrived at their full size, for three made their escape, but the others were put into a small box with some damp mould, where in a few days they became pupæ; these were transmitted to me, and in the beginning of the following June I bred three female flies from them. The maggots, De Geer says, are exceedingly like those of the common flesh-fly, or blue-bottle, and the pupæ are oval, corneous, of a chesnut brown; ringed, with two minute points at the head, and an aperture at the tail surrounded by small tubercles.



The Muscæ of Linnæus, which contained a very large portion of the Diptera, have been divided by recent writers into many genera, as may be seen by the arrangement in Curtis's "Guide."† One of these new groups has received from Meigen the appellation of Sarcophaga, in allusion to the larvæ living upon flesh; and to this genus belongs the Earth-worm fly, which was described in the "Fauna Suecica," and is now called Sarcophaga carnaria. The male is black and shining, with a slight blue tinge; it is also pubescent, with numerous long bristles scattered over its whole body; the antennæ are drooping, with a feathery bristle; the lip is long, the palpi distinct and clavate; the head is produced in front, having a silky lustre of an ochreous tint and a broad stripe of black down the crown, near the base of which are placed three minute ocelli; the eyes are not contiguous; they are large, oval, and rusty brown; the scutel is large and semi orbicular, the abdomen is oval, the apex a little incurved, curiously formed, and very bristly; the back is beautifully tesselated with silky gray and chalybeous black; the wings are longer than the body, dirty white, the nervures brown, the two large posterior cells closed at the extremity by oblique sinuous nervures; poisers concealed beneath large pocket-shaped whitish squamulæ, on each side of the scutellum; legs stout, very hairy, and bristly—anterior pair the shortest; hinder tibiæ clothed

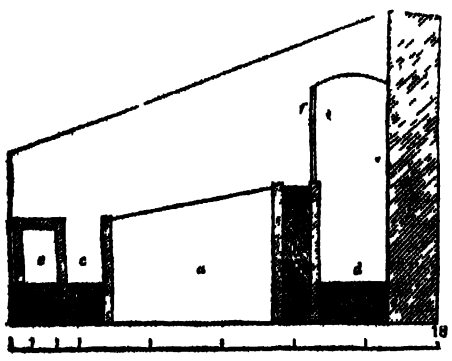
* Mr. John Bolt, of Lyndhurst, Hants.
† See Genera 1269 to 1291, &c.

[illegible] ; tarsi five-jointed ; claws slender, curved, and pointed, excepting the anterior, which are cut off abruptly, and look as if broken ; the pulvilli are very large and bilobed (figs. 1, 2, the natural dimensions). The female is rather smaller, the lip and palpi are shorter, the eyes are further apart, the apex of the abdomen is less bristly, and not tesselated, the hinder tibiæ are not internally hairy, and the claws are alike, being all pointed, and the pulvilli are much smaller.

It may be observed that the economy of this fly was partly known to Scaliger, and has often been investigated on account of the viviparous properties of the females ; and, according to Réaumur, an individual of that sex has been ascertained to contain 20,000 of these little maggots. I see by my journal that the flies were very abundant on the flowers of the Sea holly, on the coast of Kent, the first week in August, and they are met with till the end of that month, as well as during the whole of June and July. —*Burnside.*

PLAN OF AN ORANGE-HOUSE.

The following is a section of a stove at Lee Hall, the seat of W Dakill, Esq There are many persons, amateurs especially, who cannot devote a separate house to the culture of the Orange tribe, that would be glad to be made acquainted with some plan by which they might be enabled to grow a few Oranges without their materially interfering with other things. Mr. Dakill has adopted an excellent plan, by which he can grow Oranges, Pines, and Vines all in one house ; and in this he succeeds extremely well. In the centre of the house stands a



common Pine pit (*a*) eight feet in breadth. At the back of the pit a narrow border (*b*) is made by running a partition, a brick in thickness, along the whole length of the pit, and of the same height as the back retaining wall. The border is 12 inches in breadth, and of the same depth (six feet) as the Pine-pit, with plenty of drainage in the bottom ; *c* is the front path, *d* the back path, *e* the flue, *f* is a light wire trellis, supported by iron rods ; it is arched over the back path, and the Oranges, &c. are trained over it. There is a trifling inconvenience attending the mode of having the Oranges planted at the back of the bark bed, for the back rows of Pines cannot be so readily examined ; but this inconvenience is in a great measure obviated by leaving openings here and there in the trellis, so that the Pines may be better looked over. The trellis offers no impediment in letting down the sashes for air, nor does it materially interfere with the Vines which are trained up the rafters. It would certainly be better to have the Oranges, Pines, and Vines each in a separate house ; but the fact that they can be grown together in one house is worthy of attention. The Oranges in Mr. Dakill's pit are subjected, winter and summer, to a little bottom-heat from the tan ; and it appears to agree with them. With the above exception, the management is much the same as at Hurst House.

The back wall of one of Mr Dakill's houses is covered with Pavidium Cattleyanum, which, though much shaded, bears tolerably good fruit. It is probable, however, that some of the Citrus tribe would suit this place better than any of the Guavas The Oranges, &c , being trained, the path must necessarily intercept a large portion of the sun's rays from the plants against the back wall, and, consequently, the fruit would not be so good ; but if these latter plants served no other purpose than that of covering the wall with fine green foliage, they would be well worth their room ; possibly they might produce such fruit as can be used in an unripe state. In a wild state the Orange tribe are frequently found growing as underwood in large shady forests, which is a proof that if not their proper habitat, they can accommodate themselves to such situations

I am afraid any attempt to grow fine Oranges in pots or tubs will never be attended with success. However large the pots or tubs may be, it is very difficult to keep the plants in health for any length of time. The only argument in favour of growing Oranges in tubs, is their portability, so that they can be carried to any part of the [illegible] to decorate terraces, &c. The uniform supply of [illegible] and the uniform temperature to which the roots are subjected when in pits, doubtless tend greatly towards [illegible] the plants in uninterrupted health. There are, however, two or three varieties which may be grown in pots ; the Myrtle-leaved (two varieties), the Mandarin, and indeed any of the dwarf-growing kinds ; but even these now grown much better in pits Mr. Durden has [illegible] that the fruit of the Myrtle-leaved varieties makes [illegible] marmalade than any other kind.—*J. W. Jones,* [illegible].

NOTES ON AMERICAN PLANTS.

[FROM OCCASIONAL OBSERVATION.]

Hemlock Spruce.—On steep declivities and in ravines crowded with various timber-trees, the Hemlock Spruce is seen in the U. States towering up from 60 to 100 feet, as straight and symmetrical in form as is the finest specimens of common Spruce or Silver Fir in this country, and apparently growing equally as fast as they. In the same localities, where it grows so fine, but in open exposed situations outside the woods, it constantly assumes the bushy habit, seldom rising higher than six or eight feet, and having a stunted sickly appearance. I never found a single plant looking healthy, or having a straight trunk in open places, but always being low spreading bushes, with every appearance of old age, many of them with their branches loaded with cones, and nearly touching the ground. From this it would appear that without good shelter and partial shade, this noble tree never grows to anything more than a mere bush, or at best a dwarf stunted tree. This, in some measure, accounts for the rarity of fine specimens being seen in this country. Although quite as hardy as any of its tribe, even when planted in an open situation with the best of soil, it will never rise to a tree. I have frequently seen single specimens planted on lawns, where they dwindle on for years in a stunted and unsightly state. In some situations, from being accidentally planted in a sheltered spot, we see a thriving tree, when it is much admired for its graceful habit. Any kind of soil that suits the Larch will answer for this, and in old pleasure grounds there are always to be found situations suitable to it. In young plantations, or in making new ones, if it is planted amongst Larch and other fast growing trees, it will grow nearly as fast as they, gradually thinning to give it room.

Cornus Florida.—Of all our flowering trees and shrubs few are more beautiful than this. Having small foliage and large flowers, resembling in shape the bloom of a large single white Clematis, and the involucres being of the purest white, it has a striking resemblance to Magnolia conspicua in miniature. I am not aware that it has ever flowered in England, and I cannot conceive any reason why it should not, unless, as in the case of the Hemlock Spruce, it requires a peculiar situation I have always found it growing on the skirts of woods in the most sheltered and sunny places, frequently with the head projecting from other trees, and having the stem hid by their branches. I never saw it growing out singly in exposed places. It appears to be of very slow growth, reaching the height of from 15 to 20 feet. The young shoots are as flexible and small as those of the common Birch, and, consequently, ought to ripen well in our climate. As flowering plants could be easily had from almost any part of the Northern States, (on the banks of the Skuylkill, near Philadelphia, it is plentiful,) would it not be worth the trouble, by way of experiment, to import a few large flowering plants, which would soon prove whether it would thrive and flower in this country ?

Cercis Canadensis.—Having seen this beautiful tree thrive and flower well, in the south of England, I am surprised it is not planted more generally than it is, as a more beautiful tree, both in flower and foliage, we do not possess ; it is well adapted for clumps in park scenery, and when loaded with dark purple pea flowers, it would form a fine contrast with the white Hawthorn. In its native localities it grows in thinly scattered masses in open situations, and has a beautiful appearance when in flower

Acer rubrum, or Scarlet Maple —This tree, with numberless small scarlet flowers, has a very pretty appearance In the month of April it is in flower, when not a leaf of any other tree is expanded, rendering its minute flowers much more conspicuous at that time than they would otherwise be. It seems to delight in swampy ground, exactly that in which our common Alder thrives, and if it was planted in such situations in this country, it would have a fine effect in spring, where few ornamental trees will grow.

Arbor Vitæ, or Thuja Occidentalis.—On the rocky shores of the Hudson, about a hundred miles above New York, are fine masses of this tree, each mass occupying more than an acre of ground. The trees were growing in the crevices of the bare rock, where there was not soil on the surface sufficient for a blade of grass to grow So situated they are very luxuriant, being from 15 to 30 feet high, and feathered with branches down to their roots, which being wiry and matted, take firm hold in the rocks, and enable them to resist the fiercest storms. The dense foliage and branches prevent the sun from penetrating to their roots in summer, and preserves a sufficient quantity of moisture for their growth, even during the dryest and hottest seasons. Masses of Arbor Vitæ growing amid rocks and woody scenery, with here and there a neat white-walled cottage showing itself amongst them, had a very pleasing effect. This very ornamental section of Coniferæ (namely the Thuja, Cupressus, Juniperus, &c.) and Taxus, might be introduced with advantage on a large scale in ornamental gardening. The various species having such distinct forms and habits, might easily be so arranged and grouped in distinct masses on rockwork, as to have an admirable effect as a whole. Old exhausted stone quarries might be turned to account by planting them with this tribe, as they grow with little soil. Mounds of stone, or rubbish of any kind, might be raised and planted with them, either for the purpose of blocking out unsightly objects, or to give a pleasing variety to the landscape. Near the edge of ornamental pieces of water, mounds of the prostrate, and clumps of the upright species, would look well ; in short, this group might be planted in different ways, and with good effect, both in public and private gardens.—*R. Reid, Noble Thorp.*

Home Correspondence.

Asparagus.—It appears to be a general opinion that new plantations of Asparagus, to have a reasonable chance of success, must be made early in the spring—not later than the end of March. I have reason to think that nothing is lost, if there is not a positive advantage gained, by deferring it to a much later period. In the spring of 1842, having occasion to make a new plantation of Asparagus, the ground was prepared by trenching it to the depth of two feet, and raising the whole surface one foot, with turfy loam, burnt clay, farm-yard manure, and the refuse of charcoal-pits. The beds were then formed three feet and a half wide, with the same space between them, allowing for two rows of plants on each bed. The plants were got up and planted with the greatest care about the middle of March ; but, as I have frequently seen in other gardens, a great many of the roots perished. Now, there is nothing I dislike more to see than gaps in a bed of vegetables of any kind ; and in the case of so valuable a vegetable as Asparagus, it is not only an eye-sore, but also a serious loss. It was, however, June before I could take any decided step to remedy the evil. I then procured several thousands of two-year-old plants, took up those that had not died, and, beginning entirely anew, had the ground dug over again, and re planted with the fresh plants ; and although they had tops eight or ten inches high, scarcely one failed. Many of the tops, indeed, withered and turned brown, but were in all cases succeeded by a fresh growth. The plants were taken up carefully, the roots were immediately covered with moss, and were kept moist until the moment before planting. In the course of the season the beds received several copious waterings with salt water. In the spring of 1843, before the shoots made their appearance, the beds were sprinkled with salt sufficiently thick to make them appear white, and the waterings with salt water were repeated several times through the summer season, and by September the shoots were five feet high. Since the 15th of this month (April, 1844) we have gathered daily a good supply of fine Asparagus from these beds. I should mention, that when the beds were planted the second time, the plants which were taken out (the remnant of the first planting) were put into two beds by themselves, where they grew very well, but not so strong as the others. It may appear that Asparagus planted in March, and having the whole season to grow in, must have a better chance of doing well than that which is transplanted in the middle of its growth ; but I conceive that whatever advantages may arise from early planting, are counterbalanced by the ground being cold and wet, and the roots of the plants being so tender that many of them perish before the vegetative principle is excited , while at a latter period the case is different, as the juices of the plant are in motion at the time, and the soil being in a warm and genial state, is prepared to encourage immediate growth. I planted six more beds last year, also in the beginning of June, which, under the same treatment as the others, seem likely to do as well.—*G. Fleming, Trentham Gardens.*

Mustard Tree of Scripture.—To the very interesting paper on this subject, lately given in the "Chronicle," permit me to add the following remarks.—1st. That the "Salvadora Persica" is mentioned by Sir A. Burnes in his "Travels in Bokhara," vol. iii. p. 122 he adds that he thinks it is mentioned by Arrian. Having looked into Arrian for the passage to which Sir A. B. alludes, I can find only one that is applicable to the subject. In Lib. vi. cap. 22, Exp. Alexandri, he is describing the country of the Gadrosi, a country lying between the mouth of the Indus and the entrance to the Persian Gulf ; and after mentioning the Myrrh and Nard trees growing there, he also mentions another tree, to which no name is affixed, which has a leaf like a Bay (δαφνη), a blossom like the white Violet but sweeter, which grows to the height of 30 cubits, is covered with strong thorns, and grows in places washed by the sea. The account of this tree is unusually long, and full, for a writer who does not abound in long or florid descriptions, and I presume that it is the passage which attracted Sir A. Burnes's attention. 2nd. I would observe that the language of Scripture, when employed on subjects like the present, is not to be interpreted with scientific accuracy, for it is written for the use, and adapted to the capacity of unlearned people ; and further, its manner of expression is oriental throughout. Now, keeping these cautions in mind, we shall find that it is not necessary to suppose the "Mustard-tree" to be a large tree, or even a tree of second size ; the language of the three Evangelists who mention it is nearly identical —"It is the largest of all garden-herbs, and becomes a tree."—Matthew, c. xiii. v. 31. "It is the largest of all garden-herbs, and forms great branches."—Mark, c. iv, v. 32. "It increased, and grew up to be a tree."—Luke, c. xiii. v. 19. On which passages the following observations may be made. That the plant δενδρον is described as a λαχανον, or "Olus," which is a "garden-herb," that our translators of St Luke have interpolated the passage by adding, and "waxed a great tree ;" and lastly, that the expression of the "fowls of the air lodged in the branches thereof," also tends erroneously to add to the impression of the magnitude of the tree ; as to our minds it conveys the idea of large birds, as eagles, vultures, storks, &c., whereas it literally means only birds, and, as this tree is described as planted in a garden (κηπος), such small birds as would frequent the vicinity of man and his dwelling ; but the "fowls of heaven," for such are the words, in the poetical language of the East. I would also observe, that it is not necessary to suppose that the "Mustard-seed" was the smallest of all seeds of any plant, flower, or minute weed, for such is not the case ; but of any plant that would grow to the size of a tree ; and those who heard this parable would thus far admit its truth, when they recollected that the other trees of Judea, or of the neighbouring districts, such as the Cedar, the Palm, the Olive, the Oak, grow from seeds or fruits larger in comparison with

[illegible] any [illegible] to the subject; that the word "tree," as used by the Evangelist, and translated "tree," is not confined in its meaning, but is equally applicable to large shrubs, not only "Arborei," but "Frutices grandiores;" as Virgil applies the word "Arbos" to herbs in his "Georgics." My own opinion on the correct consideration of the expressions used in the parable is, that they have been somewhat misunderstood from the causes I have mentioned, and that this "Mustard-tree" may be considered as a "large shrub" growing from a small seed, where the small birds that frequent gardens, such as Lamartine describes in his "Palestine," could lodge for shelter or for rest. Had it been truly a tree, it would have been so equally, whether young or old, small or large, and would have at no time been with propriety called a "garden herb."—*J. Mitford, Benhall.*

Fuchsias.—These are much hardier than is generally supposed. In several gardens which I have visited in Ireland, I have seen plants, even larger than Gooseberry bushes, of Riccartonii, globosa, gracilis, and others, survive without the least protection in winter; and they flower freely during the summer and autumn months. It is surprising that these graceful shrubs are not more generally cultivated in the open air than they are. Nothing can surpass fine standard Fuchsias planted out singly on a lawn or in groups. I planted out last May the following:—Globosa, g. splendida, tenella, conica, Standishii, gracilis, g. multiflora, expansa, Riccartonii, grandiflora maxima, mutabilis, stylosa conspicua, Youngii, Buistii, and others. These, however, were cut down with the frost, but they are now, April 22d, growing luxuriantly; some of the shoots measure five inches in length. Their roots have had no covering whatever; the borders were rough dug, and fully exposed to the severity of winter. I would recommend Fuchsias to be planted plentifully in pleasure-grounds and flower-gardens, either as standards, which should be at least 4 feet high, or as bushes, along the borders of the principal walks, at equal distances; the standards should be planted 4 or 5 feet from the edge of the walk, and supported by neat stakes, after the manner of standard Roses. Put the dwarfer ones in front. Nothing can surpass a walk of this description. The standards may be grafted with the more dwarf-growing kinds; the operation should be performed in the common way, when the young wood is almost ripe. Fuchsias will grow and flower freely in any kind of soil and situation; but if it is desirable to have fine specimens, the ground should be a rich peat; it cannot be too rich for them. The plants which I put out in May last, into a highly-manured border, produced shoots from 3 to 5 feet in length, quite covered with flowers. If the winter should set in sharp, I would recommend that the standards be protected with a few Fir branches, or any old spare mats, which should be removed on all favourable occasions; the dwarfer plants placed here and there through the grounds, which have been killed by the frost, should have their branches cut close over by the ground; without further trouble they will come again in spring, as vigorous as ever. Plants which are intended to be planted out in spring should be struck in autumn under a handglass, in a mixture of peat and sand, in equal quantities. If peat cannot be easily procured any common loam will answer. As soon as they are rooted pot them off into any rich soil, and place them in a cold frame, giving air plentifully whenever the weather permits. By the end of April they may be planted out with safety. I am informed that Fuchsias are to be met with abroad having stems 7 and 8 inches in diameter; and that they grow and flower well within a short distance of mountains half covered with snow, where the temperature is as low as 32°, yet without the plants receiving any injury. This fact is of importance to cultivators of this interesting and graceful shrub.—*J. M'I., Hillsborough.* [It must be observed that our correspondent judges from the climate of Ireland.]

Glazing.—I beg to offer a method of glazing, which I have never seen practised but by myself, and I imagine it has only to be known to be generally adopted. Its advantages over the old plan are,—greater neatness, durability, economy, and cleanliness, as well as a freer admission of light. Instead of overlapping the panes, as is done in the ordinary way, I cause the glazier to cut each with a perfectly straight edge, and then to place them one before the other, so that they shall all fit exactly. When the light is completed the surface of the glass is perfectly level, and there are no interstices in which the dust, &c. can accumulate, or for the deposit of moisture. By this means one cause of considerable breakage, in frosty weather, is entirely avoided; and if a pane of glass is accidentally broken, as each pane is independent of the others, the fracture does not extend beyond the single pane. The whole is very firm and compact, and the glass is not liable to shake out, as frequently occurs in opening and shutting sashes. I first tried this plan about six years ago, on a 3-light Cucumber frame, and it answered perfectly. About two years ago I had one light glazed in this way, which has been in constant use ever since, and this also answers equally well. At first I applied a little white paint to each joining after the glass was fixed, thinking that some wet might possibly get through; but this I find is not required, and there is certainly much less "drip" by this than by the old method. In the light above mentioned there has not been a broken pane since it was first glazed, while those glazed on the old plan, and placed close beside it, are very much cracked, and several of the panes are ready to drop out.—*J. L. Snow, Swinton Gardens, Yorkshire.*

Auricas.—I have 50 plants of different varieties of Auricula, many of which are large specimens. Only [illegible] here we will bloom this [illegible] are now [illegible] their wood, and are in a very [illegible]. The flower-buds were formed, but they [illegible] and fall off. This is the first year they have so disappointed me. The difference from their usual treatment was in not housing them until mid-December, and in putting them in a dry Vinery that was close but cool, instead of an airy, cold greenhouse. We had no frost before they were housed, sufficient to freeze the earth in the pots. Can any of your correspondents inform me of the cause of their not blooming?—*Flora.*

Sphenogyne speciosa.—This is not hardy. I sowed some seeds last autumn, under a painted canvas cover: they had got about an inch high, when the frost we had on the night of the 2d Dec. killed them, although plants of Schisanthus pinnatus remained uninjured in the same situation.—*Geo. Thompson, Munden.*

Watering Out-door Plants. — In Numbers 26 and 32 of the *Chronicle* for 1843 are letters written on this subject by "J. L., Newburgh." In these the subject has been brought forward, without stating in what situation the plants were placed; but from his statements we may learn that they were fully exposed all day to the sun, and what, I may ask, would be the value of a morning's watering to them in clear dry weather? The dry air, together with the powerful rays of the sun, would dry up the moisture before mid-day, and, consequently, before the plants would have time to imbibe more nourishment than what would merely keep them alive; but even with plants exposed to the sun, evening watering would be more beneficial to them than when given in the morning, for the following reason, viz., that plants, during dry warm weather, always grow most in the night; and if they be watered in the evening, they have more time to store up nourishment, and, consequently, are better adapted to withstand the scorching rays of the sun. At night, when the temperature is lowered, organisable matter is formed, and the plant is extended, while at the same time it is supplied with more nourishment, to supply the place of that which has been expended in the forming of wood, &c.; but to give water in the morning would have a contrary effect; and, as before stated, the plants would receive only a scanty supply, from want of time to imbibe it; and that little would scarcely have circulated through the plant, before the cool night would arrive, when it would be deposited in the plant in a crude state. "J. L." states further, that the soil being made darker with the watering, favours radiation. From this I learn that he does not water his plants with cold well-water, for that would cool the soil down below the temperature either of morning or evening, and surrounding media would radiate heat into them. Then if he waters them with water always exposed in some tank, it will not be often far below the temperature of the night, and if the soil is made warm with the sun it will only radiate until it is cooled down to the same heat as the surrounding atmosphere, and that is what it ought to be. We have comparatively few very dry nights in this country to cause much evaporation, and what arises from the surface of the pots tends to invigorate the plants (in the absence of a damp atmosphere) rather than chill them; but "J. L." seems to think that because the combined influences of evaporation and radiation cause cold or frost, that, in whatever ratio it is given off, it must be in some degree hurtful to plants. By the same way of reasoning I might say, that, because water will drown plants, therefore they should have none at all. "J. L." states facts but draws wrong conclusions from them; he states at p. 556, that if you place a cup of water in a tray of vitriol or dry muriate of lime with a bell-glass over them, the powers of these two substances for attracting the vapour will be seen; and then he infers that the cup of water is like the wet pot or patch of soil, and the vitriol and muriate of lime like the dry soil or other objects surrounding. Now although the vitriol and muriate of lime may absorb moisture with a bell-glass over them, that is no proof that dry earth or other dry objects will do the same—on the contrary, the soil in the pots possesses in itself no power of attracting vapour; it is only when it is watered or comes in contact with vapour ascending from the ground, that it becomes any damper at all. The real question seems to be, Does the amount of vapour caused by the dry nights from evening watering tend to hurt the plants or invigorate them, or does it do neither of them? These remarks apply to plants set in the sun, where they ought to be, but they should be ranged in certain conditions, and not placed in the shade, as is often the case, where the sun never shines on them at all.—*A Practical Man.*

Rats.—(How to poison if it is convenient so to do, considering the disagreable smell afterwards under floors, drains, &c.)—I have several times practised very successfully nearly the same receipt I once observed in the "Gardeners' Chronicle." I take a portion of good sweet oatmeal with a piece of fresh butter, and a small portion of fine lump sugar, along with some nice fresh boiled Potatoes. These I mix and beat up well together until it becomes a tough paste. Forming this into boluses about the size of a filbert, I lay 4 or 5 of them on a crock or piece of clean slate, in convenient places near their holes. Repeating this feed for 2 or 3 nights, I then add a portion of arsenic to the said paste, and repeat the dose if the rats are not all destroyed, but by the first bait I have generally succeeded in clearing the whole. I have occasionally been very successful with arsenic mixed in new milk, or rubbed on a bit of lean beef. With one or the other of these remedies I have always been particularly successful in entirely destroying those artful vermin. During this last season, however, I had no sooner cleared away one batch than I was very quickly annoyed with another, more particularly in a succession Pine pit of a considerable length having hollow walls and pigeon holes—this is wholly formed by a body of fermenting materials inside and out; which I hope to see entirely dispensed with and turned to a more useful account. I resolved one fine day, all hands being busy, to get the whole of the Pine plants out; I threw the tan away from the walls inside, back and front, into a ridge up the middle of pit; I then took a quantity of 32 flower-pot drainers or stands, and placed them 5 or 6 feet apart, back and front, and into each of these I dropped about 2 ounces of flour of sulphur; a man followed with a shovel of red hot embers, and dropped a small portion into each pan of sulphur: this caused a stifling thick cloud of smoke which penetrated into every crevice, and I have neither seen rats or any other vermin there since. There may not be anything new in either of these methods, but I have myself been often perfectly satisfied with the good effects of each.—*Observer J.*

Rats.—(How to decoy, if you are troubled with only one or two old cunning ones used to drains, and having a bad convenience for setting a trap).—Procure some new bran, and throw two or three handfuls into a corner, where you could, after repeating this for two or three nights, and allowing them to scratch about at pleasure, set a spring trap or gin, as it is called by some, covering it well with the above material. I find this to be a never-failing remedy, and nine out of ten get caught by both fore legs, generally high up towards the shoulders, on account of their going eagerly to scratch among the bran as they were accustomed to do.—*Observer J.*

Birds.—In reply to a correspondent, who signs himself "X." I would beg to observe, that it would be a work of great difficulty, and perhaps, after all, unintelligible, were any attempt to be made to describe the various notes of small birds which are now to be heard. Some, for instance the oxeye-tit (parus major), have several spring notes, varying much from each other in sound. The common wren and the hedge-sparrow sing beautifully at this season, and the migratory birds, which are flocking over to this climate for their summer residence, add daily to the music of our groves. Among these the nightingale, blackcap, and sedge-warbler, are the most celebrated songsters. The wryneck (yunx torquilla) is the bird which is known under the name of cuckoo's mate in many parts of the kingdom, because it makes its appearance here shortly before or much about the time that the cuckoo is first heard.—*Oswald Mosley.*

Deformity in the Timber of the Elm.—On March 14, at Stackpole Court, the seat of the Earl of Cawdor, an Elm-tree was felled, with a woody tubercular excrescence encircularing the trunk, the length of which is four feet five inches, and diameter three feet seven inches. The trunk's diameter below is one foot two inches, and above this excrescence one foot—a strong proof that the circulation of sap was to some extent checked at this point. It had a most singular and somewhat ornamental appearance when standing, being 12 feet from the ground; it contained nearly 33 cubic feet, and weighed [illegible] ton 2 cwt. 3 qrs.—*T. Davidson.*

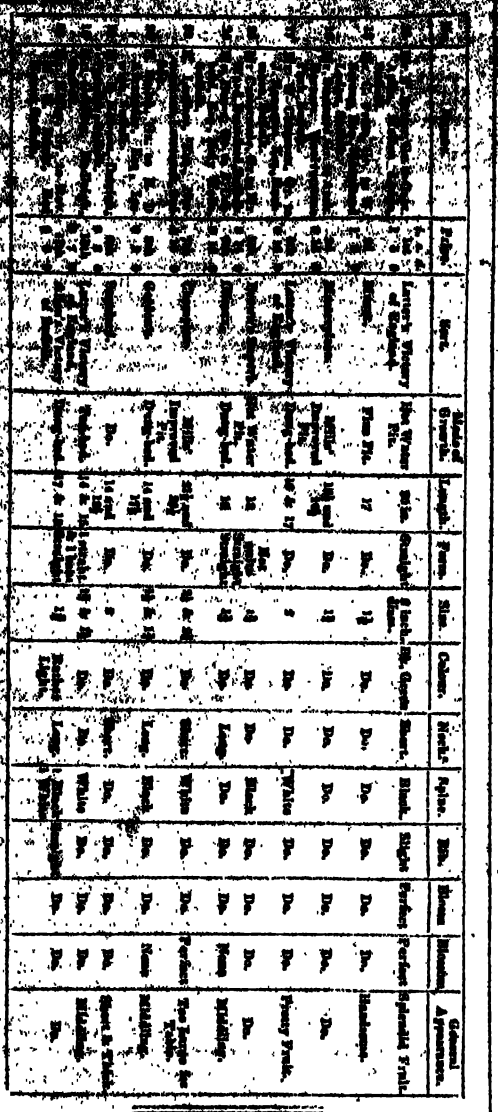
Miscellaneous.—[illegible] of the Thames, near Dorking, finds Berberis trifoliata, trained against a wall, and protected by a mat on severe frosty nights, stand the winter without injury; it is now in bloom. He states that the flowers are inconspicuous, and come out in small clusters from the axils of the leaves on the last year's shoots.——*A Subscriber* remarks that in the present month, and only up to the 27th, fifteen dozen of wasps have been destroyed in a garden in one of the northern counties.——*D. C. L.* inquires if there has been any peculiarity in this season, that may account for the unusual attack made by birds upon Gooseberries? He writes that he has lost nearly all his, and says that to the best of his recollection such a thing never occurred in the neighbourhood in which he resides before.

Societies.

HORTICULTURAL SOCIETY OF LONDON.

May 1.—The 35th Anniversary Meeting was held. From the report of the Auditors it appeared that the Society had succeeded in discharging their bonds bearing 5 per cent. interest, by the issue of promissory notes at 4 per cent.; and that the debt was reduced in the course of the year to the extent of 1428*l.* 5*s.* 1*d.*—Mr. ALLNUTT put some questions to the chairman respecting certain details in the arrangements for the exhibition of plants at the meetings at Chiswick: he was of opinion that a new regulation, which excludes plants that had been previously exhibited elsewhere, was one which required explanation; and he much objected to the practice of stamping their price on the face of the tickets issued to Fellows at 3*s.* 6*d.* each. The meeting being of opinion that mere details concerning the regulations for exhibition were not of a nature suited to discussion at the Anniversary meeting, the VICE-SECRETARY confined his reply to the chief heads of observation. He stated that no regulation existed by which plants previously exhibited were excluded. The words of the regulation were, that the Judges, in making their award, would *take into consideration* whether the plants to be judged had been exhibited previously during the season. The object of this rule was not to exclude previously exhibited plants, but to prevent the same plants taking prizes repeatedly, and to give specimens, produced at the Society's meetings for the first time, the advantage of their novelty. To what extent this would be carried would rest with the Judges, who are the persons to take all such cases *into consideration*. It was well known that certain plants were carried from Show to Show, and exhibited over and over again, thus gaining an amount of reward to which the degree of talent manifested in grow-

[illegible] by the Society [illegible] [illegible] [illegible]



NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

LINUM TARVERSII (Tarvers's Flax). (*Stove Perennial.*) Linaceæ. Pentandria Pentagynia.—Seeds of this attractive species of Linum were received by Major Francis, Madden-hall, and, with many other seeds and bulbs, were presented to his brother, R. Hall, Esq., of *Narrow Water House*, Warren Point, Ireland, in whose stove it flowered about December, 1837. It has, however, been long known in the stoves of this country; for we find, in Dr. Smith's Exotic Botany for 1785, a figure of it, which is stated to have been taken from a plant that flowered a short time previously in the stove of the Hon. Charles Greville, at Paddington. Although it will thus be perceived that the plant has been cultivated in England for more than fifty years, it is at present but rarely met with; yet, as it produces its flowers during the three winter months, and as those are highly beautiful, very abundant, and remain expanded a long time; and as the plant is likewise very easily propagated and cultivated, it merits a much more extended circulation than it has yet received, and is undoubtedly a most desirable and valuable stove plant. It grows freely in a compost of equal parts of heath-mould, decayed leaves, and light loam, provided it be carefully potted, and judiciously watered; for, as the roots are small, they cannot endure any immoderate supply of water. It may be readily multiplied by cuttings of the half-ripened wood, planted in the same or a rather more sandy soil, and plunged in a gentle hot-bed, under a hand-glass. In a communication which we received from Mr. Bateman, while gardener to R. Hall, Esq., he appears to consider it the Turnera elegans of Otto, and also that it has South American species; but it is obviously identical with the *L. trigynum* figured in the Botanical Magazine, t. 1100, where it is distinctly stated to be an East Indian plant; and as we possess specimens of it in full flower at Chatsworth which were introduced from the East Indies by Mr. Gibson, his Grace the Duke of Devonshire's collector, the fact of its being a native of the East Indies is placed beyond all doubt; and though some eminent Botanists have been led to question whether this plant is really a species of Linum, it has never, we believe, been separated from that genus. The generic name is derived from the Celtic word Lin, signifying a thread; most probably in allusion to the well-known useful purposes to which some of the species are applied. The specific name is peculiar to this plant, on account of its flowers being furnished with three distinct styles.—*Paxton's Magazine of Botany.*

GARDEN MEMORANDA.

Easton Hall, Norfolk.—This place, which is the seat of D. Gurney, Esq., is situated two miles from the seaport of Lynn, and commands a fine prospect of the surrounding country. It is kept in good order, and no expense is spared in adding every novelty to the excellent collection of plants already here, that is worthy of cultivation. At this place are two Victoria Regias that were erected and heated by Weeks, about three years ago, and they are very perfect constructions of the kind. The vines are in the highest possible degree of luxuriancy, although this is only the second season of fruiting. The crop of fruit, which is very heavy, is now ripening. Mr. Gurney, Mr. Cresswell, and Mr. Weeks, were also good, [illegible] 20

[illegible] Mr. Weeks [illegible]

in raising [illegible] Chemist. There is likewise here a [illegible] Pheasantry, in which a great number have been reared this season.—*J. Stewart, Colmpleshaw.*

Miscellaneous.

Poisoning by Darnel (Lolium Temulentum), with the Means of Detecting this Seed when mixed with Wheat Flour.—M. Rustini was charged with the analysis of some bread which had rendered ill twenty women employed in a silk manufactory. These women, after having eaten it, were seized with somnolency, with a universal convulsive tremor, accompanied by coldness of the extremities. When this bread was presented to him, it was gray, compact, heavy, and of a disagreeable odour, and reminded the author of the examples of adulteration by means of alum or sulphate of copper with Wheat Flour; but he did not find the characters which these salts present. He then thought of the lime and of the arsenic which agriculturists employ in the operation of liming; then he proceeded to analysis, and he found in the bread a greater quantity of lime than is ordinarily met with, which he attributed to the water used in its preparation. He then asked for a sample of the flour, thinking that it might contain some organic principle which might have been altered or disguised by the action of fire; but he experienced considerable delay in procuring it, and in the meantime the manager of the manufactory in which the women were employed went to the baker, and, after reproaches and threats, obtained from him the avowal that the miller had sometimes furnished to him flour containing Lolium. The physician, thinking that he recognised the symptoms of poisoning caused by this substance, administered emetic and emulsions, and all the symptoms were soon dissipated. The affair rested here. However, says M. Ruspini, in my quality of pharmacien, although I was no longer professionally engaged to make investigations relative to this case, I immediately began to make experiments in order to distinguish pure Wheat flour from that mixed with Lolium. My method of analysis is simple, and capable of being put in practice by persons unacquainted with science. It consists in digesting for half an hour alcohol at 35° at the ordinary temperature, with half an ounce of Wheat flour; the more pure it is the more limpid will the alcohol remain; then it will take only a more or less deep Straw colour, according as the flour contains more or less of the pericarp and embryo passed through the sieve, owing to the carelessness or design of the miller. The alcohol will be coloured yellow by dissolving the peculiar resin which the Triticum hybernum contains, and which resides in the pericarp. The taste of the alcohol thus coloured will not, however, be disagreeable; it will even be rather sweet. If, on the contrary, alcohol be digested with flour mixed with the seeds of the Lolium, the spirit of wine will immediately acquire a characteristic greenish tint, which will gradually become deeper; the taste of the tincture will be astringent and disagreeable to the extent of exciting vomiting. Evaporated to dryness in a porcelain capsule, it will give as a product a greenish-yellow resin, possessing the same characters as the tincture, but more powerful, and so evident as to leave no doubt as to the adulteration in question. Some reflections follow concerning the infamy of such a fraud, and the necessity of punishing it, by publishing the names of the bakers who allow it, in the public journals. In a note, the author says that the arsenic used in the liming is decomposed by the earth, and that the plant cannot preserve any trace of it. In a second note, he announces that this year, the rains having been very abundant, *before* the putting forth of the ears, all the bad herbs, particularly the Lolium, grew abundantly in the fields, rendering it necessary to sift the corn with much care.—*The Chemist.*

Broccoli.—There is now exhibiting in the window of Messrs. Warner and Warner, Seedsmen, 28, Cornhill, two heads of Chappell's New Cream Broccoli. These weigh 9lbs. each; they are in good condition, and are fair specimens of that variety.

Wax.—A theory has been promulgated by the justly celebrated Professor of Chemistry at Giessen, Dr. Liebig, that the constituents of the food of animals, when taken into the system, during the processes of digestion and nutrition, undergo a peculiar modification, the result of which is the production of substances, through the agency of special organs, totally different in the proportions of their chemical constituents from those of the materials from which they have been derived. A proof of this change was pointed out by Liebig as afforded in the production of wax by the honey-bee, as in the experiments of Huber, recently confirmed by Gundlach, in which the bees were fed only on sugar. But it was objected by many distinguished chemists that there was no direct *proof* in these experiments as the constituents of wax might have been collected by the bees before they were confined for experiment, and stored up in their own bodies, or that the wax might be derived from the fat of their bodies, which, in the proportions of its ultimate constituents, is very similar to wax. To put these objections to the test, MM. Milne Edwards and Dumas jointly undertook to repeat the experiments. They first ascertained by analysis the quantity of fatty matter in the bodies of a given number of bees, and the quantity of waxy matter accidentally contained in the honey with which they were fed during confinement. The result of the experiments proved that the quantity of wax produced in a given period by each bee exceeded very considerably the combined amount of the same matter contained in the food, and of fat in the [illegible] like as the constituents of fat still remained [illegible] these experiments [illegible] proved that the constituents of the wax could not have pre-existed in the bodies of the bees, but that wax is a new formation, the result of changes which the constituents of the food undergo, through the agency of special organs, during the process of nutrition.—*Annals of Natural History.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—FORCING-HOUSE, CONSERVATORIES, &c.

Bulbs of the more free-growing plants that were potted early will now want another shift; and you may give them their first rooter now; this is also a good time to try the one-shift system with young or lately propagated plants. Many young plants nursed in pits through the spring will now be getting too high, or the pits may be wanted for other purposes; remove them to the stove, and, for the first week or two, shelter the pit-culture for them as far as your house will allow. Keep them more shaded than the rest of the plants; syringe them twice a day, and keep them as far from the ventilators as you can.

Conservatory.—Now that the season is so far advanced, that many of the older kinds of plants often wintered in conservatories may be removed to temporary shelters, as plants, except in flower, or a fine specimen, ought to find a place in the conservatory from this time to the end of September. As the spring Heaths get out of flower, remove them to cold pits, if they are young plants, this is the best time to prune them. I have seen them in the best nurseries cutting off the tops of young Heaths going out of flower by handfuls. As soon as the growth of forced Rhododendron arboreum is nearly finished, transplant them to a cool shaded place, as this and many of the kinds are early induced to make a second growth, and consequently produce no flowers next season. Keep all plants well-watered, and in good shapes.

Greenhouse.—Encourage your Greenhouse plants to make a rapid growth now; keep the house warmer and more moist than is generally done, and see that this moisture does not deceive you in watering; many pots may look wet on the surface, and yet be dry below. Train, pinch, or prune them as circumstances may direct; and, above all things, keep them perfectly clean.

Forcing-pits.—Most of the spring-forcing plants are now done with in these pits. Roses will now bloom in any cool house, pit, &c. There are many plants, however, that may be assisted less forced for the conservatory all the summer through, especially those called intermediate, or half-stove plants. Camellias, Azaleas, and Rhododendrons that have been early forced may be grafted as soon as the young wood begins to get firm. Before you throw away an overstock of seedlings raised this spring, ascertain whether they can be used as stocks for budding the same tribes, of which you may be short. Of all modes of propagating rare plants, grafting is the easiest, and requires less time and attention.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

The importance of grouping plants in flower-gardens according to their complementary colours has been so repeatedly insisted upon, both in leading and other articles, since this Paper was started, that it would scarcely be worth while to advert to it, if it were not for the great accession of subscribers during the present year. The leading principles of this system of management are—contrast and symmetry. Contrast such as will be produced by placing the complementary colours pretty close together, as scarlet with white, purple with yellow, orange with blue, and so on with the various shades of these colours as definitions; and symmetry such as will result from every bed having a corresponding one in form and disposition, and these beds planted with flowers of the same colour, in borders which are kept throughout in the length and breadth of them, the contrasts should be repeated at regular intervals, as scarlet, white, purple, yellow, blue, orange, and so on to the end; and where beds are placed on Grass, and without a corresponding one near them, they should be belted with the complementary colours, as blue with an orange margin, purple with yellow, and scarlet with white; or as green is the proper contrast for scarlet, beds of that colour may be left without a margin, and white, under such circumstances, used as a distinct bed. Where beds are on gravel, which is a warm colour, cold colour should be the most used, as blue, purple, and white, which for Florieultural purposes takes the place of green; or if warm colours must be introduced, it is indispensable that they be margined with cold colours. In large gardens where there is a great preponderance of green, as large lawns or trees, extensive lakes, and more especially if the trees are sufficiently large to throw considerable shade upon the scenery, nothing but warm colours should be used, as scarlet, orange, and yellow; and these should be planted in large masses, and stand out prominently in the foreground of the scenery, and especially near the water. Whoever has walked through the metropolitan parks will have noticed how much more cheerful is the aspect of the lake in St. James's than it is in the Regent's Park or Kensington Gardens; and this is because the water is surrounded by gravel, which gives warmth to the scenery; and were the islands in the lake in the same park planted with double Furze, white Broom, and the Judas-tree, instead of being studded with little heaps of flints, as an apology for rock-work, and which resemble so many oyster grottos, we should then have in a few years one of the most splendid scenes that can well be conceived. With these sunny days, and parching east and north-east winds, it is impossible to get on with anything in the Flower Garden; but Necessity's stern command compels me to transplant upwards of 100 large shrubs and trees, some of them from 20 to 30 feet high, and in full leaf, and strange to say, not one in ten of them has indicated any check from their removal, although they have now been transplanted nearly a fortnight. In the Flower Garden look to Annuals, which will suffer much if not watered; and get all in readiness to begin planting out directly we get a soaking of rain; but before we get rain it would be madness to think of planting anything out.

Reserve Garden.—Watering and thinning the young plants is the principal work at the present time; but double Primroses, Polyanthuses, &c., which are out of bloom, and being removed from the Flower Garden, must be parted, and planted in rich soil in a shaded situation, and deluged with water.

American Garden.—This is a good time to tie out or peg down the branches of American plants, so that the young shoots may take the right direction when they begin to grow. In March and exposed situations the plants must have water, or they will be unable to expand their blooms properly.—*W. P. A.*

III.—FLORISTS' FLOWERS.

If extreme hot days and frosty nights are favourable to the perfect development of Florists' Flowers, then the last ten or twelve days have been singularly propitious, for we seldom have such Aprils as the past. Exhibitions of the Auricula are taking place, and from most localities we hear favourable accounts; and at some shows in various parts, we have seen splendid blooms of the following first-rate flowers:—Page's Champion, Oliver's Lovely Ann, Waterhouse's Conqueror of Europe, Lee's Colonel Taylor, the last of which, though not exactly to our mind in some of its properties, was, nevertheless, extremely fine, the pips being larger than usual; and that first-rate purple Self, Barker's Optimus, was in excellent condition, though it appears coarse in collections. As we observed last week, all blooming plants ought to be under awnings, in a northern aspect, keep the pots free from weeds. The green fly is often

become at this season, getting into the hearts; examine them daily, and remove the insects with a camel hair-brush. *Polyanthuses* require some attention just now, shading, watering, &c. I watch painting plants, as the blooms pass through their various stages of development and decay, and observe whether the lace or edge keeps its colour (which ought to be similar to the centre) to the last. This is an essential property, often overlooked by young beginners. *Ranunculuses.*—Many people are watering, a practice I would not recommend (if the beds are properly made), as, I am persuaded, it has at the present time, an injurious tendency. Top-dressing with very rotten cow-manure is far more beneficial. *Tulips.*—Some genial showers would be most acceptable to these splendid flowers. In addition to the heavy complaints of the number of bulbs which do not flower, there are a greater proportion of buds with distorted petals than usual, both attributable to the injury they sustained from the spring frosts of 1843, few collections having escaped. Keep the beds free from weeds, and as soon as the buds get sufficiently forward, let the top cloths of the "shed" be put on. *Carnations.*—Cultivators will suffer this spring, who have layers in late, it being more unfavourable than usual. Where the soil has not been well examined, the Florist will often have the mortification of finding his layers gone "past redemption," and on pulling them up, he finds a wire-worm at the root. Layers in pots require well attending to with water, &c. Pink-beds ought to be surface-dressed, in the way recommended for Ranunculuses. Reduce the number of shoots for blooming, according to the strength of the plants, and put small neat sticks to those which are retained.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—It is scarcely possible to keep the atmosphere of the fruiting-pit moist enough during this fine weather. Slight shading during the hottest part of the day will enable the giving of front air to be dispensed with. It is not desirable to give front air if it can be avoided, as it produces a current towards the back apertures, which acts injuriously on the foliage of the plants. Liquid manure may be administered freely this clear weather, whenever the plants are dry; but it should not be given in a muddy state. For successions, see former Calendars.

Vineries.—When young Vines, bearing their first or second crop, have reached the top of the rafters, stop the leading shoot, and continue to stop the laterals till the fruit is fully ripened. Now is the best time in the year for planting out Vines in a new border, as they do best if growing freely at the time of planting out. If the border was made in the winter, it should be fresh turned up. If, after planting, the roots are covered with a little warm litter, they will receive no check from turning out, but advance so rapidly, that they will be sufficiently strong to bear next year. We have here two Vineries in which the Vines were so treated last year, and this season there was an average of 16 "shows" to each Vine; which number, however, was reduced to 8 or 6. The Vines are remarkably strong, and the bunches promise to be very large.

Peach-House.—Give plenty of air to Peach-trees when the fruit begins to change colour, and keep a low temperature, in order to prolong as much as possible the time of maturation of the fruit.

Fig-house.—Keep the syringe in use as much as possible. It is only for a few days, while the fruit is ripening, that syringing is injurious; and it need not be discontinued long. The foliage of the Fig continues a long time on the plant; it is therefore more necessary that it should be kept clear of insects. A little additional attention will be amply repaid by the trees continuing productive till October. Plants which are confined at the roots will require liquid manure, if they are bearing freely, and the wood is short jointed. Where this is not the case, clear water will be better.

Melons.—Look well to the thinning out of laterals and small sickly leaves from the origin of the branches. It is upon the latter that insects generally make their first appearance.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Where water is a scarce commodity many shifts must be resorted to in this dry weather. The best substitute for heavy watering is to mulch with short grass, between the rows of advancing crops. This will save much time and labour, even where water is plentiful, and the utility of the measure may form an extenuating plea to those who delight in finely-raked borders. When this keeping the water in the ground system cannot be adopted for want of materials, the next best method is to keep the surface of the ground well and often stirred. Simple as the operation of watering is, few things are worse performed. One good watering that will saturate the soil, provided the surface is mulched or stirred afterwards, is worth a hundred mere sprinklings, because the one watering will often be sufficient, while the many waterings are generally prejudicial. In the one case the roots are discouraged from coming to the surface; the dryness of that surface prevents rapid evaporation of moisture from below, and the roots are therefore enabled to absorb freely to supply the exhaling foliage. In the other case, surface-roots are for a time encouraged, but are speedily checked, as the sun quickly causes the moisture of the surface watering to evaporate; that watering had previously stopped for a time the capillary action of moisture in the soil; the energies of the lower roots of the plants have consequently become relaxed, and before they can again be roused into activity the plant droops and often dies.

Sow *Peas, Garden Beans, and Kidney Beans*, for succession; *Scarlet Runners* for the main crop, giving the drills a good soaking, and covering on the top with dry soil. *Transplanting.*—The only thing that can be done is to prick out Cauliflower, Lettuce, &c., on beds of light soil, with rotten dung beneath, so that they may be moved with balls when favourable weather arrives.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—The time for commencing to fell and peel Oak, or other trees, should be carefully attended to. Try frequently on some tree, to ascertain when the bark separates freely from the wood, in order that the best part of the season for such operations may not be lost. It would be very beneficial to plaster over the cut part of the stools or young trees that are felled, with fresh cowdung, or at least round the outside edges, to prevent the bark separating from the wood by the action of the sun and wind.

Coppice.—Where the felling of poles or other trees to be peeled is to be done this season, the foregoing remarks are applicable, when a strong vigorous succession of young coppice wood is desired.

Young Plantations.—Now is the best season to train young trees. Thin out some of the strongest side-branches where they are too numerous; take some close off, and shorten others, according to directions formerly given.

Nursery Work.—The dry sunny weather and frosty nights have been very trying to newly-planted seedlings and trees of all sizes and kinds; if, therefore, the precautions and directions so repeatedly given have not been strictly practised, many failures may be expected.—*W. B.*

State of the Weather near London for the week ending May 2, 1846, as observed at the Horticultural Gardens, Chiswick.

April	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometers. Max.	Thermometers. Min.	Thermometers. Mean.	Wind.	Rain.
Fri. 24	8	30.060	29.987	72	45	58.5	N.E.	.03
Sat. 25	9	30.286	30.203	64	39	46.5	N.	
Sun. 26	10	30.350	30.300	60	30	45.0	N.E.	
Mon. 27	11	30.260	30.170	66	36	52.0	E.	
Tues. 28	12	30.277	30.263	61	37	51.5	E.	
Wed. 29	13	30.403	30.361	70	38	54.0	E.	
Thursday	O	30.432	30.336	71	36	53.5	E.	
Mean		30.311	30.220	67.9	38.1	53.0		.03

Very fine; dry air, with slight haze; slight rain
Exceedingly clear and dry throughout; clear and cool
Slight frost early A.M.; clear; fine, with some white clouds
Fine; clouds and dry haze; cloudy and fine
Dry haze; clear blue sky, and excessively dry air; clear and fine
Slight haze; excessively dry; clear and fine
Cloudless; very dry throughout; clear and fine
Mean temperature of the week, 4 deg. above the average.

State of the Weather at Chiswick, from observations taken hourly during the last 12 years, at the morning hour of 10, viz.

May	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	Mean Temp. for the Week in Extend.	Greatest variety in 24 Hours	Prevailing Winds						
Sun. 3	63.7	42.7	53.2	52	5.66–65	E.	3	E.S.E.	1	E.N.E.	2	—
Mon. 4	63.1	41.9	52.5	52	5.35	E.	3	E.S.E.	2	E.N.E.	2	1
Tues. 5	65.2	42.0	53.6	52	5.45	E.	4	E.S.E.	1	E.N.E.	1	1
Wed. 6	64.9	42.3	53.6	52	5.37	E.	4	E.S.E.	1	E.N.E.	1	1
Thur. 7	67.8	43.3	55.5	52	5.60	E.	3	E.S.E.	1	E.N.E.	2	—
Fri. 8	68.0	43.2	55.6	52	5.10	E.	3	E.S.E.	1	E.N.E.	2	1
Sat. 9	68.9	41.5	55.2	52	5.22	E.	4	E.S.E.	1	E.N.E.	1	1

The highest temperature during the above period occurred on the 9th, 1839 —therm. 81°; and the lowest on the 6th, 1841—therm. 29°.

Notices to Correspondents.

Auriculas.—*R. A.*—Very little sun is necessary for ripening the seeds of the Auricula; let them have plenty of air; a north border is a good situation. The seed will be ripe the beginning of August; it should be sown in February, in soil composed of bog, loam, and cow-manure three years old.*

Books.—*Mc L.*—De Candolle's "Prodromus" is in Latin.

Buschellia capensis.—*Inquirer.*—I am aware of the scarcity of this; but if there was a demand for it as a stock for the Luculia, nurserymen could supply it under 10s. a dozen. The readiest way to propagate it is by cuttings of the roots and by seeds, which may be had from the Cape in any quantity. They grow best in very sandy loam and leaf-mould. Gardeners generally complain of their Burchellias growing too fast, and like the Luculia it requires close pruning to keep it in good shape.—*D. B.*

Camellias.—*A Subscriber.*—You may cut down these and place them in a pit upon a damp bottom. They should be kept rather close until they have made their wood. The roots may be reduced in August; and not when the plants are cut down.‡

Chinese Dwarfs.—*E. C.*—Thanks; but pray send us a leaf, that we may be sure there is no mistake.

Country Shows.—*A Scotchman* writes to inform us that his Scotch blood is up at an observation made at the end of a report on the Forres Society, published by us last year; he says that the said report "has caused an ill-feeling to arise among individuals, to the total disruption of the Society;" and he demands an explanation. The paragraph which has exploded among the good people of Forres is the following:—"This is taken from a printed copy with which we have been supplied; but we give up in despair the correction of the blunders in the names." To prove that our statement is unfounded, our correspondent adds a printed report of the Show as published in some Northern Paper. In this report there is certainly not error enough to justify our censure, and if it had been sent us instead of that which we received, it would have passed without remark. We can only recommend our hot-blooded friend to take care in future that the right reports are furnished us; what we did receive was most discreditable either to the education of the person that copied it, or to the care of the printer who set it up. If "A Scotchman" will look to that part of our report in which the plants from Cluny Cottage are mentioned, he will see that the printed copy now sent us could not be the one to which we alluded; for at that part Origanum Dictamnus is introduced, which is not mentioned in "A Scotchman's" report. We have made this rather long explanation in justice to those who have possibly been blamed for the blunders of other people, and because we do not know our correspondent's address. As to the Members of the Forres Society having quarrelled with each other about our half dozen words of censure, we cannot do them the injustice to suppose such a thing possible.

Cypripediums.—*A. H.*—C. spectabile is well known to be quite hardy; so is C. pubescens. It is occasionally imported from Canada. All such things are rare, and difficult to procure when one wants them.

Dionaeas.—*E. T. O.*—There can scarcely be a doubt that your Portugal Laurels have got their roots into soil of bad quality; either undrained, or otherwise unsuitable. No insect is at work. But consider whether this is not possible, notwithstanding the healthiness of others near them.

Garden Pots.—*S. R. P. S.*—There is no restriction as to what the size of pots may be in which plants are exhibited at the Garden of the Horticultural Society of London, except those in which Pelargoniums and Calceolarias are grown. The list given at p. 239 of last year's *Chronicle* will afford every information respecting sizes. They are measured from the outside.‡

Grass seeds.—*C. T. A.*—We recommend for an acre of lawn on a light soil the following:—Cynosurus criatatus, 6 lbs.; Anthoxanthum odoratum, ½ lb.; Avena flavescens, 1 lb.; Festuca duriuscula, 2 lbs.; F. ovina, 1 lb.; F. pratensis, 2 lbs.; Lolium perenne, 10 lbs.; Phleum pratense, 1 lb.; Poa nemoralis sempervirens, 2½ lbs.; P. trivialis, 1½ lb.; Lotus corniculatus, ½ lb.; Medicago lupulina, 1 lb.; White Clover, 10 lbs. As a manure, nothing will beat Liquid Guano for such a place, especially if you add muriate of lime at the rate of ¼ cwt. per acre.‡

Heating.—*Muchaon* asks for information about the "Olmstead Stove." Can any one give it? We do not know the stove.

Hollies.—*A. S.*—We never heard that the best way to get up a stock of common Holly is to stick the cuttings each into a Potato, and to plant them at a proper depth; and we doubt the fact.

Hyacinths.—*G. S. W.*—You are correct in stating that from the commencement of the flowers to the topmost bell the stem should be hidden in a finely-blown specimen; the other matter in dispute, we of course cannot judge of. Double flowers should compete with double, and single with single: it was an error to mix them together.*

Hydrangeas.—*F. W.*—Your plants, in the open air, require exposure to sun and deluges of water in summer, and good matting up in winter. If the old wood be killed, the young shoots will flower notwithstanding. We should not expect them to bloom on a north border.

Insects.—*B. Chilo.*—The beetles attacking your Swedes are the Turnip fly (Altica nemorum). You will find their history, and the best means of destroying them in the Journal of the Royal Agricultural Society, vol. ii. p. 198.—*R.*—*X. Y. Z.*—Your Larch trees are infested with a species of Aphis, called Adelges Laricis, I believe. To suggest a remedy is impossible.—*R.*——*H. K.*—The Beetles eating your Rose-leaves are the Otiorhynchus tenebricosus, a Weevil, which you will find described in the *Gardeners' Chronicle*, vol. ii. p. 216.—*R.*

Manures.—*J. K.*—Cow-dung is the best manure for Rhododendrons. We have had no experience with guano for them.‡——*H. D.*—Neither sample is at all like the superphosphate of Mr. Lawes; whether or not they contain phosphoric acid is a question that must be ascertained by analysis, which we cannot undertake. No. 2 is more like pitch.

Mistletoe.—*H. B.*—Your ripe berries may be used now. They will grow freely on the Apple-tree. Make an incision in the bark and insert a berry or two; then tie a little damp Moss over them; they like to be kept rather moist until they begin to grow.‡

Names of Fruits.—*Thomas Lang.*—Winter Pearmain.‖

Names of Plants.—*G. O. B.*—Pinus Pinaster, Pyrus spectabilis. ——*A Subscriber.*—Blechnum occidentale, Pteris serrulata.‡——*B. T.*—Yellow Banksian Rose.——*Barry.*—It appears to be either Iris pumila, or the yellow variety of it; but the flower has lost all its colour and shape.¶——*T. Davison.*—Naked ladies; neither from the Cape nor the Mauritius, but from New Holland.——*B. T. S.*—Your two species of Mellitis are undistinguishable, either because they were smashed in the letter-bag or because they are alike.——*J. M.*—Carex conoidea.——*J. S.*—How does your Ranunculus differ from Salboosa? It certainly has much paler flowers than usual, but we see no further difference.——*E. T. O.*—Send us your letter by return; if not, the true name will be given next week.——*J. S.*—1 Gruvillea setigera; 2 Templetonia retusa; 3 Mimulus cupreus; 4 not in flower; 5 Hovea purpurea; 6 a Genista; 7 Malva Munroana; 8 Erica recurvata.

Peach-trees.—*Omikron.*—We think we can explain the cause of your misfortunes, and will endeavour to do so next week.

Pelargonium.—*Winton.*—Your case is very vexatious. Waste as much in the dark as ever about the spot-disease of these plants, unless it is cold and over-watering. We will publish your case next week, and so revive the question.

Petunia Punctata.—*W. M.*—The bloom received of this variety agrees with the favourable opinion expressed of it in the autumn of last year.

Roses.—*Limerick.*—Beauty of Billiard will strike from cuttings, but it is more easily increased by layers. Lelieur strikes freely from cuttings. They may be put in as soon as the young wood is ripe enough.‡——*J. K.*—Give your plants plenty of manure. Probably the best would be compost of Guano and six parts or less of cow-dung. Any Roses will grow on your bad soil if richly manured; without manure none will thrive. Farmyard manure may be substituted for cow-dung; but we prefer the latter.

Trees.—*S. W.*—A tree begins to grow when the buds begin to swell; in other words, a tree makes woody fibre as soon as the buds are observed swelling. You may easily satisfy yourself of that by watching the common Lilac.——*A Subscriber* will find his advantage in dusting his seeds well with superphosphate of lime; caustic-lime has also been found useful.

Verbenas.—*J. C. F.*—Bridesmaid, light-blue lilac; Burleyana, pink; Speciosa, orange; Boule de feu, vivid scarlet; Howardiana, pink; Prince of Wales, flesh-colour; Conspicua, light purple; the other three we are not acquainted with; they most probably are new.*

Vines.—*A Subscriber.*—It is quite unnecessary for Grapes to be exposed to the sun; all that is required is that the leaves of a Vine should be so exposed, and that most fully. Nature makes the bunch of Grapes hang down, and overshadows it with leaves. Why should we oppose her will?——*An Old Subscriber.*—Since other plans of stopping the bleeding of the Vine fail, we advise you to try Sir John Sebright's Cement, which consists of four parts rosin, one part bees-wax, and one part fine brick dust, melted and well mixed together. This will stop bleeding in Vines and other plants.——*Beta.*—Most undoubtedly you may remove your Vines with safety, by adopting such means as you describe; and at such time Cover the roots well with litter for the first winter.——*T. H.*—Four sorts for an early Vinery may be, the Black Hamburgh, Black Prince, White Sweetwater, and Royal Muscading. A south aspect.‡——*K. L.*—As you can give no air at top, the extremities of your Vine-shoots have, in all probability, been checked in consequence of too high a temperature, alternating with cold, to which they will be liable, owing to their position close to the glass. You must prevent their contact with the latter.‖

Miscellaneous.—*Zealous.*—We do not know the Botanical name of the New Zealand Stinging Nettle.——*F. W. C.*—Without seeing your Cucumber-bed it is impossible to be positive as to the disease of your leaf. It is, however, probably caused by cold currents of air acting on very tender foliage; but it may arise from very different causes. Is not the soil too moist for the degree of light to which the leaves are exposed? If you water your plants largely, and do not enable them to relieve themselves from it by exposure to sunlight, they are likely enough to be thus affected.——*J. L.*—Take common "oil varnish," such as is employed for in-door work by the paper-hangers and painters. Thanks for charcoal.——*Tyro.*—Double flowers will produce seeds whenever a few stamens and a style or two are untransformed—*e. g.*, Roses.——*S. Snape.*—We will do what you suggest.——*W. H. G.*—We have no experience about manure for Chicory; but should, in the absence of farmyard manure, try guano mixed with soot, or peat, or cinder-siftings.——*Simplex.*—We thank you much for your hint, and will look to it. But we do not see the ground of your complaint. Would it be giving you too much trouble to ask you to be more explicit?——*W. I.*—There is little or no difference between the Tropæolums you mention. The one is just as good as the other.‡——*T. L.*—See Insects above.‡——*J. L. S.*—Pray send your paper on Potting.——*A Subscriber.*—We cannot answer your inquiry about the place where Pine-plants may be bought. We never name sellers.

SEEDLING FLORISTS' FLOWERS.

Calceolarias.—*O. P. Q.*—There is nothing uncommon in your seedling: it is very small, and the outline at the bottom of the flower too much indented.*

Cinerarias.—*J. D. V.*—Light disk, white ground, with crimson purple picotee tip: the flower is a good shape, and it forms a desirable variety in this class.*——*Borealis.*—Your seedling, rich purple with black eye, is a fine and handsome variety.*——*Anon.*—In both varieties the petals are too narrow and thin.

Fuchsia.—*D. C.*—Neither in size nor colour is your flower equal to many of the new varieties.*——*Borealis.*—Your seedling Fuchsia wants brightness; the sepals are narrow, and have a faded appearance; the divisions of the corolla are too narrow; they unfold, and are poor in colour.*——*J. K.*—In the specimens you have sent of Pondil, the sepals do not appear to expand sufficiently; in other respects it is a large, bold, and richly-coloured flower.*

Mimulus.—*R. H.*—Your seedling is a good flower, but not superior to others that have already appeared.*

Pansies.—*Y. and E.*—No. 1 is a large flower of good form, white ground, blue purple upper petals, and broad margin of the same round the lower petals; the petals meet well above the eye; a good flower. 2 is your best flower, the eye large and intensely dark, ground light buff, belting purple, upper petals the same; a brilliant and striking flower. 3, neat and compact, but not equal to others of the same colour. Of the yellows 4 and 6, the latter is the best; the eye is finer, and the colour deeper and more uniform; they are both rather deficient in form and substance, and have a common look; the want of a blotch in the lip to form the eye is a great deficiency; and 7, though a flower of fine form and good eye, wants substance.*——*A Lady.*—The *Brunette* did not arrive in good condition, the blooms being shrivelled up; damp Moss appears to be the best material for packing them in, but neither in form, size, or substance, is your flower to be compared to the Selfs now in cultivation.*——*T. O. G.*—*Scrutiny* is a very fine flower, large, well-formed, and of great substance; ground white, eye fine, rich purple up-petals, with a broad belting of the same round the lower petals; the side petals meet well above the eye, and the form of the shield made perfect.*——*Y. and C.*—*Tippo Saib*, a large richly-coloured purple Self, of considerable substance. *Grand Duke*, fine eye, yellow ground, purple upper petals, and a broad belting of the same colour round the lower ones; a large well-formed flower of good substance. *Compacta.*—There are two points in this flower which injure it; the lines running into the belting from the eye gives it a blurry character, and the weak manner in which the belting terminates above the eye; in other respects it is a very good flower. *Grandis*, large flower, with white ground, deep purple upper petals; the belting is irregular, but uniform on the three petals; eye good, but rather rough on the edges of the petals.*——*J. O.*—The yellow Self, and the one with a dark eye, are good flowers. The other specimens is deficient in the centre; we are not acquainted with the names; they appear to be poorly cultivated from their size, and the material in which they were packed was not sufficiently damp.*

Erratum.—In our report of the Exhibition of the South London Floricultural Society, the exhibitor of the Seedling Polyanthus spells his name "Barnard," not "Burnard," as inserted.*

*** As usual, many communications have been received too late

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c. are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 5, A., Hawley Road, Kentish Town.

N.B. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.

WRIGHT'S STACK PRESERVER. — Hundreds of Stacks of this Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. DEANE, Ironmongers, London-bridge; and of any Ironmonger in the country. Price, in box, with lock and joints, 2l. 5s.

The Agricultural Gazette.

SATURDAY, MAY 4, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, May 8 — Agricultural Society of England.
Thursday, May 9 — Agricultural Imp. Soc. of Ireland. Highland and Agricultural Society.

Wednesday, May 15 — Agricultural Society of England.
Thursday, May 16 — Highland and Agricultural Society.

FARMERS' CLUBS.

May 6 — W. Market. Yeovil. West Hereford.
May 7 — Framlingham.

Some weeks ago we spoke of the *actual* loss sustained by many farmers in permitting the liquid manure from their stables, feeding-stalls, and pig-styes to run to waste; and of the great *danger* of loss to which those of them exposed themselves who allowed this waste to run into their horse-ponds. This is a subject to which we shall not cease directing the attention of our readers until we know our remarks to have had a practical tendency. The completest exposures of bad management in farming are rarely self-applied; and there are two reasons for this: one of them—the natural tendency of the mind to self-justification—is cleverly illustrated in the admirable work on Waste Manures, lately published by Mr. Hannam,* the perusal of which we most cordially recommend to our readers, and especially to such of them as may be conscious that their practice under this head is capable of improvement. Mr. Hannam, who has probably had more experience than any other British farmer of the practical value of our home and foreign fertilisers, was well qualified to make this, the first public attempt to draw attention to the individual and national losses consequent on the careless management of farm-yard manures. We earnestly recommend his book to the attention of Agriculturists; the greater part of it—it is a small octavo volume—may be made practically useful by each of its Agricultural readers, and the rest, on the waste manures of towns, is highly deserving of public attention. We quote as follows:

"Although the economy of these manures is of the highest importance to the cultivator, whose aim is to produce much and cheaply, in few cases is their preservation attempted, much less accomplished. There are those, however, who are apt to attempt an excuse for their carelessness on this head; but, as is generally the case with men who are anxious, when in a difficulty, to save themselves only, they impede each other. Thus the agricultural Triton says, 'This candle-end and cheese-paring economy may do very well for small farmers, to whom a small saving is a great gain, and whose labour, being their only capital, may be safely and profitably invested in attention to this matter. On a farm like mine, however, where every operation is on a large scale, and where everything is done on a system, we cannot attend to these petty cares,—they would interfere with matters of more consequence.'

"On the other hand, the minnow—the man of small means—is apt to say, 'Yes, undoubtedly, this is an interesting question to the large farmer. He must indeed waste as much manure as would serve for a farm like mine. As for me, however, I have but such a small place, and keep so little stock, that it is not worth while to make any fresh arrangements, or to take the trouble of altering my plans.' Thus does each cover the beam in his own eye, while he exposes the mote in his neighbour's; forgetful that, by each exposing the other, we arrive at the truth, and conclude that if the business on a farm be so extensive, an improvement in the system would be equally great; and that if the size of another be small, the effect of a small saving would be more apparent. This the intelligent practicalist sees. 'If,' says he, 'by judicious economy, I save manure for one extra acre on a farm of 50 acres, on one of a thousand I gain, by similar management, manure for 20 acres; and the value of the saving is as great to one farm as to the other. What is saved is gained really, in this case; for if the land which may be dressed with the manure saved be left unmanured, I injure the crop and diminish the fertility of the soil; or if I buy manure, I increase the crop but injure my purse. In either case, I am calling to Jupiter for aid, and am not putting my own shoulder to the wheel; I am paying for that extra produce, which I might by judicious economy obtain at no cost, and am in fact farming badly; since, if I neglect the waste manures on my own farm, and buy no other village, I am not producing as much as possible, and if I buy manure, I am not producing as cheaply as possible.'"

Another cause of the general inefficacy of exposures of mismanagement in this branch of farming has, we think, in the fact that a very inadequate idea is generally held by farmers, especially by those occupying only small tracts of land, of the real value of such parts of their produce as have not been bought or are not saleable for cash in the market. The expense of horse-keep, for instance, though often the subject of calculation by farmers' clubs, is rarely kept in mind by the members of such clubs in the full money-value which certainly belongs to it. If it were, more care surely would be taken to economise the labour of the horse on most farms, not merely by cheapening its food, but by yoking it advantageously to efficient implements more easily worked than those in general use, and more care would also be taken to economise stable manure, which besides labour is an important produce of horse-keep. The sum spent in stable management, though large, would thus be productive of a more profitable return. The value of manure, generally an unsaleable commodity, is another point upon which inadequate views are often held; at least so we must conclude, so long as we see in some districts heaps of it left for months on waste land, till they sink to one-third of their original size, and get thoroughly washed of all their soluble ingredients. Perhaps if, as in some well cultivated parts of this country, the farmer were required on entering his land to pay a full value—3*s.* to 5*s.* per cubic yard—for all the manure left by his predecessor, he might be induced habitually to entertain a higher opinion of its value, and thus to take means for carefully preserving it.

In order to attain this desirable object, we purpose soon laying before our readers two series of statements, the one detailing all published or known *experience* of the value of such portions of manures as are generally wasted—the effects which it has been ascertained they have on the growth of various crops; and the other, detailing the results of inquiries into the composition of that which is thus lost, by comparing which with the composition of various saleable fertilisers, guano for instance, we shall be enabled to put a money value upon the losses which many farmers sustain in this way. Do not let any one wait, however, till he sees what sort of case we make out against him, before he adopts means for economising the manures which he may now suffer to waste. We can safely pledge ourselves to *prove* the great loss he now sustains, and he will greatly profit by at once putting a stop to it; if, however, he require first to be convinced of this, let him purchase Mr. Hannam's little book upon the subject, and read it, and in the meantime we quote for his consideration the following passage from it:—

"I know many farms where the horse-pond is the receptacle of the drainings from the yard, and many villages where the street-sewer receives them. It fell to my lot to witness a fox go to ground in a farm-yard not 100 miles from this place. On examination, a drain was found which led from the centre of the fold to the street-sewer. This drain was large enough for a hound to enter, yet all efforts 'to bolt' the fox were futile, as it was found that there were branch drains from the sewer communicating with most, if not all, of the farm-yards in the village. I was curious enough to trace the main drain to its terminus, and found that a large pond was the place of deposit for the urine, and other fertilising matters, made in the cattle sheds and yards of so many farms. Not one of the parties who cut these drains, I should say, ever considered that by doing so, he cut a hole in his pocket which drained his purse as effectually as the manure heap. The case I mention is but one of many which may be met with daily, and which, too numerous to be particularised, are on that account often overlooked, though they are not the less worthy of consideration. For instance, I have little doubt but that as much fertilising matter is annually deposited in the pond, to which I have alluded above, as would pay the whole of the poor's rates of the parish in which it is located."

* "The Economy of Waste Manures, a Treatise on the Nature and Use of Neglected Fertilisers," by John Hannam, Author of various Agricultural Prize Essays. Longman, Rivington, Green, and Longmans.

AGRICULTURAL IMPROVEMENTS.

I WILL give you a succinct account of my draining operations at Tiptree-hall Farm. The land is of such various qualities and so particularly qualified thereby for the retention of both top and spring water, that the Essex people considered it never could be improved even to become of tolerable goodness. About two-thirds of it was a strong yellow loam subsoil, in a state between putty and bird-lime, according to the season, here and there mixed with a hodge-podge of stones, to which its attachment was so affectionate that there was no separating them, and it was only by the constant use of water that the land drainers could get their spades in or get rid of this adhesive substance; at intervals might be found veins of silt (the reverse of adhesive), and here and there the soil would assume a rusty appearance, indicating iron, with a bluish or slaty character; then a patch of gravel occasionally amongst the loam, in which would rise a small weak spring, sufficient, however, to ruin the crops in its immediate neighbourhood. Over this subsoil and between it and the cultivated soil, was a hard, dry, and impervious pan, formed of the subsoil, but hardened and rendered solid by the heat of the sun and the constant action of the plough-sole. The soil itself partook in some considerable degree of the nature of the subsoil, being, however, ameliorated by mixture of manures and by cultivation. Still so great was the fear of the wretched subsoil that the pan was never disturbed, consequently, there being but nine or ten inches of cultivatable earth with an impervious basis, a dry summer burnt all up, and a wet one ruined the crop by rotting the roots. A showery season was the only suitable one for this description of land.

Now, however, after draining, in the short space of a few months, we are subsoiling to the depth of fourteen or six-inches, and working it like a garden; the water having left it, and the frosty air following the water, it is as mellow and friable as could be desired. In fact, during the last month, whilst our neighbours were unable to move, we were harrowing on our Wheat and Beans as in a rich garden, the earth crumbling down after the drill like sand, very much to the astonishment of the tenant and labourers; and this after so much carting and disturbance, and so much of the subsoil thrown up, that two months previously it was thought a whole summer would hardly suffice to condition the soil. The drains cross, at a very acute angle, the slope of the land; they are four yards apart, with a leader to every fourscore rods—the leader being rather deeper than the other drains, but not wider. Still, as it never runs full, it proves in practice my subsequent proposition, that "the filtration of water, in strong soils, is far inferior to the velocity of its passage through the drains." Each acre contains twelve score rods, and costs ten pounds, requiring 3200 pipes and 360 bushels of stones.

The style of drainage applied to this part of the farm is as follows:—1st, a double turn of the plough takes out nine inches; then a narrow spade (sufficiently wide to admit the drainer's foot) takes out ten inches; then comes a still narrower spade (fourteen inches long, three and one-eighth wide at top, and one and a half at bottom), which removes thirteen inches more—making the whole depth from the surface thirty-two inches. The drain being well cleared out, we first fill in the drains, to the depth of ten inches, with clean gravel-stones, and then place, on the top of these stones, a drain-pipe, thirteen inches long and three inches wide outside, having a two-inch bore. This fits so exactly into the space made by the last or narrow spade, that it not only rests on the stones, but binds against the sides of the drain, thereby preventing the stones being choked by the superincumbent earth, but also forming the earth above it into an arch; which in the stronger soil would, it is presumed, retain its form even if the pipe were broken or decayed. As this is a plan of my own, and contrary to the entertained opinions, that the tiles should be at the bottom, I will give my reasons for so doing. 1st. It is cheaper. 2d. It is more durable, and less liable to choke. 3d. There is a larger area of space for the escape or filtration of the water; this I consider of the utmost importance. It is evident that the filtration of the water must be according to the area of the pores presented to the air in the drains.

This might be illustrated by saying, it is of little use having a large passage unless you have enough sidedoors to admit a sufficient number of passengers to travel down it. The pores, in contact with air, which are constantly admitting the water by its superior gravity, should form a superficial area equal to the sectional surface of the unoccupied space in the pipe or drain (reduced to an area); the velocity of passage in the drain being certainly, in a general way, equal or superior to the velocity of percolation. It must be considered, that in dense subsoils, the continued winter rains expand the particles and render filtration more difficult—especially during the first year or two after drainage; therefore, I prefer deep and narrow stone drains, protected from earth by a pipe over them, because they afford ready access to a large and porous surface; filtration going on both on the tops and sides at the drain.

I would observe, that even on the recently drained strong loam, but little surface water ran away; most of it percolated, except in cases of the ground being frozen hard, and of very heavy and sudden rains. It appears to percolate tolerably clear according to the season—but on this point my observations must be more extended. On cutting across some of the drains that had been made six months, the stones were found to be washed as clean as the gravel in a brook.

The other third of this farm was the reverse of the first two thirds, and required an entirely different system of drainage. It is mostly black, sandy, and boggy soil, with numerous springs rising at various points where obstructed by perpendicular walls or veins of dense clay or hard gravel—sometimes both.

The drainage here has been effected by a person named Pearson, from Warwickshire, a man of extensive knowledge and ability in this department of drainage, who I understand has essentially improved Lord Digby's estates by his judicious sub-draining of the springs. His plan is to take his fall from the lowest point, and gradually work up to where the spring shows itself, having previously ascertained the whereabouts by digging, and by those plants that invariably show themselves over a spring. As springs are generally attended by sand-beds, a single drain will often lay dry a large extent of ground. In one case where there was a swamp of four acres, the drain was opened at two feet, and continued in a trench till it reached eleven feet in depth; the sand boiling up at intervals like water in a caldron, of course it was necessary to shore up the sides; and when his level was accurately taken, he commenced laying his pipes on hay (two half pipes, four and a half inches diameter were put together, being internally nine inches by four and a half), but so strong was the force of the water, it was necessary to have two strongly-made iron skeleton arches with wooden sides, about 30 inches high, and the width of the drain two feet. In these arches the pipes were laid, and firmly loaded to the top of the arch with soil to keep the

pipes from being forced up by the boiling waters and mud; when loaded the arches were removed by a lever, the mouths of the pipe being carefully stopped with hay, till the next length of pipe was laid in the next arch (two always being in use, one in front of the other).

The result is, that one such drain laid four acres of bog perfectly dry (having a smaller spring carried over or across it); the first drain runs permanently 30,000 gallons every twenty-four hours, and several others nearly as much. It has laid our neighbours' wells dry, a quarter of a mile off (being in a bed of sand, below their level). The land (which has been double spitted) is now always perfectly dry, although previously dangerous for cattle, and entirely worthless.

In conclusion, allow me to say, I have derived most valuable information in draining from those excellent and standard works on Agriculture, "Stephen's Book of the Farm," "Loudon's Encyclopædia of Agriculture," and "Mortomon Soils." Ample and satisfactory evidence and matters of fact in every branch of draining may be found there. It is with extreme regret I frequently see money completely wasted by placing tiles without soles, and pipes without stones, and temporary and imperfect draining by bushes. That soil in a few years becomes absolutely much worse than it was originally, for when the drains choke, there is a much larger accumulation of water, to the destruction of the crops.

I hope that in time to come Farming will be treated as a science, and that there will be as much uniformity in cultivating land as there is in manufacturing cotton. That can only arrive by our young farmers deriving a uniform Agricultural education—the mechanism for which does not at present exist.—*I. J. Mechi.*

TRIALS WITH SULPHURIC ACID AND BONE DUST FOR TURNIPS, IN 1842 AND 1843.

The Secretary of the Monmouth Farmers' Club considering it to be of the greatest importance to raise a good crop of Turnips at the least possible expense, has much pleasure in annexing to this years' report a statement of his own and other persons' trials with sulphuric acid and bones, and other manures; and, although these trials have been made upon light soils, he hopes that the suggestion made in the *Agricultural Gazette* as to the probable value of sulphuric acid and bones on clayey soils will be verified; so that it may in the fullest sense prove to be as Mr. Pusey says,—"That these trials of the Morayshire Farmers' Club and the Duke of Richmond afford good hope that this, the most important saving which was ever held out in the use of manure, will be found generally applicable."

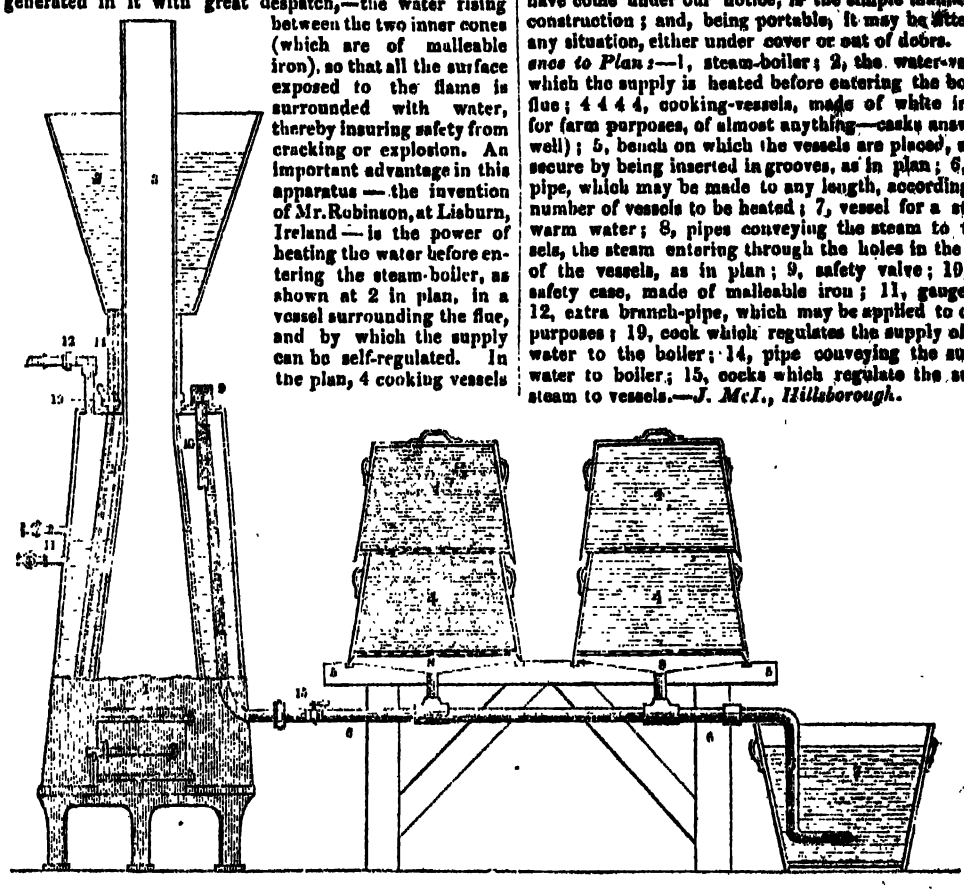
Trial of sulphuric acid and bone dust with other manures, upon a worn-out arable field of a sandy soil, sown in the beginning of Aug., 1843, with improved [illegible] Turnips in lots of a quarter of an acre. The ground [illegible] up at 24 inches, the seed drilled on the ridge [illegible] out to 8 inches; the Turnips were horse-hoed three times, and hand-hoed twice. The measure, weight, &c. are all calculated per imperial standard: one perch of each lot was pulled, topped, and weighed on the 8th January, 1844. The expense and produce per acre are as under:—

No. of Lot.	Manure per Acre.	Expense per Acre. £.	s.	d.	Produce per Acre. Tons.	cwt.	qr
1.	18 yards of Fat Pig's Dung, rotten	3	0	0	18	2	3
2.	2½ bushels of Bone Dust and 80lbs. of Sulphuric Acid	1	0	6	13	1	1
3.	40 bushels of Coal Ashes saturated with human urine in winter 1842-3	1	3	0	12	12	3
4.	20 cubic yards of road scrapings, mixed with 280 gallons of human urine, and twice turned over in 1842	2	3	6	10	12	2
5.	2 cwt. Guano, mixed with 12 bushels of pure Charcoal Dust	1	15	0	10	5	3
6.	7 cwt. Urate	2	1	6	9	11	2
7.	20 bushels of Bones (half dust)	2	14	0	9	1	1
8.	6 bushels of Bone Dust and 20 bushels of Charcoal Dust	1	3	0	8	17	0
9.	4 bushels of Bone Dust and 20 bushels of Charcoal Dust	0	18	0	8	17	0
10.	16 bushels of Bones (half dust)	2	4	0	8	2	3
11.	15 yards of common Straw Dung, half rotten	1	10	0	6	13	1
12.	40 bushels of pure Charcoal Dust	1	0	0	5	4	1

The Turnips on lot No. 2, sown on the 8th of August, came into rough leaf before those on any of the other lots. It is worthy of remark that Nos. 1, 2, and 3, are now (the 8th of January) in a very growing state, the tops weighing nearly five tons per acre. The writer begs to call the attention of farmers to the plan used in lot No. 3, for every one can, if they please, adopt that by having all the chamber lye, soap suds, &c. collected in the house thrown daily upon the coal ashes, by which it will be seen that the crop nearly doubled lot 11 with 15 yards of common dung. The ashes were not kept under cover, but no doubt that would be an improvement, and if a quart or 4lbs. of oil of vitriol diluted with 5 or 6 gallons of water, or 10 lbs. of calcined gypsum, or half a bushel of charcoal dust was sprinkled over the saturated ashes once a week it would prevent the ammonia flying off. In addition to the trial lot No. 2, there were nearly three acres with sulphuric acid and bone dust in the same field. To cover this quantity of ground with the solution two men and two horses were at work for nearly two days, with a water-cart that holds 200 gallons, the water being about 300 yards from the field; but when the men are accustomed to the work and the water is within the above distance, from two to three acres may be done in a day. Almost every farmer to whom I have shown the crop, or spoken upon using sulphuric acid, has exclaimed against the great trouble: but surely it is worth a little extra trouble if we can raise a larger crop of Turnips with this manure, now costing 13s. 8d. per acre, than with 20 loads of horse, nearly four times the expense. Should Mr. Pusey's plan of sowing with manure on the Duke of Richmond's by using only half the quantity of water, answer, it will remove this objection by saving the trouble which is so much thought of. As to a water-cart, every farmer can make one by getting a hogshead upon a pair of cart wheels, and these provide himself with a most valuable machine for taking out his liquid manure, &c. The autumn and winter having been so very favourable for the growth of Turnips, the crops would no doubt have been much heavier, if a larger sort of Turnips had been sown. Another thing which operated very strongly against the crop, was the field being hill-side; the hail and rain accompanying the dreadful thunderstorm of the 9th of August, washed much soil and manure from each lot, so that in the steeper parts of the field there were but few Turnips; so severe was the storm, that the seed that had been planted the day before was actually washed out of the ground, to the extent of about an acre, of the part manured with the sulphuric acid, so that not a single Turnip made its appearance: although, however, this part was not ridged up again and replanted for 9 or 10 days, the Turnips grown upon it were fully equal to those on lot No. 7, having 20 bushels of bones per acre, thus showing that the solution had not been all washed away with the soil. The fact that the storm did not wash away the solution in the last acre sown (although in the steep parts of the field the other manures except the dung were nearly destroyed) shows that perhaps half the quantity will be sufficient, and that the great chemist, Liebig, to whom we are indebted for this valuable discovery, is right when he says that a much smaller quantity of bones and acids (viz. 40 lbs. fine bone-dust and 20 lbs. sulphuric acid per acre) will produce a good crop of Turnips. In the *Mark Lane Express* of January 3rd, 1842, a farmer signing "N. E., Scotland," says he has used for Turnips sulphuric acid and bones at the rate of 60 to 70 lbs. bone dust and 30 to 40 lbs. sulphuric acid per acre, for seven years, and it has in every year produced a larger crop than 30 bushels of bones. The present price of sulphuric acid is about one penny per lb. in carboys or bottles of about 200 lbs. each. The writer will procure and deliver at Monmouth or Chepstow during the first week in May any quantity at one guinea per bottle, provided the order is given before the middle of April; and as he feels most anxious that trials upon all descriptions of well-drained soils, whether sand or clay, should be made in this district, he will be most happy during the ensuing season, to give attendance gratuitously to any gentleman or farmer who may wish for his assistance.—*Pilstone, near Chepstow, February, 1844.* [This is extracted, with Mr. Purchas's permission, from the Report of the Monmouth Farmers' Club. This gentleman's offer in the last paragraph should be followed by the secretaries of other farmers' clubs: the price of useful article is often less the cause of its not being used than a little trouble in obtaining it.]

STEAMING APPARATUS.

The subjoined plan of a steaming apparatus we find in general use in the north of Ireland, and we think it might be of service to the Agriculturists of the south. The boiler is an American invention, known under the name of "Jenning's American Patent;" the steam is generated in it with great despatch,—the water rising between the two inner cones (which are of malleable iron), so that all the surface exposed to the flame is surrounded with water, thereby insuring safety from cracking or explosion. An important advantage in this apparatus—the invention of Mr. Robinson, at Lisburn, Ireland—is the power of heating the water before entering the steam-boiler, as shown at 2 in plan, in a vessel surrounding the flue, and by which the supply can be self-regulated. In the plan, 4 cooking vessels are shown which may be used for any kind of food for steaming, either separate or mixed; the vessels are supported on a bench made of wood, as in plan, but any number and size of vessels may be attached, or the steam may be applied to various purposes of heating. The great advantage of this apparatus, over all others which have come under our notice, is the simple manner of its construction; and, being portable, it may be fitted up in any situation, either under cover or out of doors. *References to Plan:*—1, steam-boiler; 2, the water-vessel, in which the supply is heated before entering the boiler; 3, flue; 4 4 4 4, cooking-vessels, made of white iron (or, for farm purposes, of almost anything—casks answer very well); 5, bench on which the vessels are placed, and kept secure by being inserted in grooves, as in plan; 6, steam-pipe, which may be made to any length, according to the number of vessels to be heated; 7, vessel for a supply of warm water; 8, pipes conveying the steam to the vessels, the steam entering through the holes in the bottom of the vessels, as in plan; 9, safety valve; 10, inside safety case, made of malleable iron; 11, gauge-cocks; 12, extra branch-pipe, which may be applied to different purposes; 19, cock which regulates the supply of heated water to the boiler; 14, pipe conveying the supply of water to boiler; 15, cocks which regulate the supply of steam to vessels.—*J. McI., Hillsborough.*



ON ASCERTAINING THE WEIGHT OF CATTLE BY MEASUREMENT.

The importance of proceeding on correct principles in the rearing and feeding of live-stock, is now so generally admitted, as to require no illustration. With the feeder, it is especially important that a disposition to arrive at early maturity should be encouraged and secured, so far as the acceleration of this desirable property is within his reach. In this respect much has been done of late, but much still remains to be done. Early maturity is not attainable without high feeding uninterruptedly, from the birth of the animals until they have attained to maturity; and this can only be attained where a superior system of cultivation is practised, as it is there only that a proper supply of food is available at every period of the season. In fertile districts the aid of cultivation is not necessary to produce the required supply during the summer season, as this is obtained from the pastures; but even in these cases it is by no means rare to find stunted animals, resulting from the winter treatment. The finest cattle are not by any means universally found in the most fertile districts, especially when early maturity—one of the best tests of excellence—is taken into account; so that improved cultivation is not only followed by superior crops, but also by a superior description of live-stock; and in the mixed system of husbandry of the United Kingdom, it must be recollected that by far the greater portion of the proceeds of the farm is obtained by animal products.

But, however desirable it may be to possess a proper knowledge of the correct principles on which the treatment of live-stock should be founded, it is also important to be able to ascertain their value when ready for market, or to ascertain their progress while feeding. Experience and accurate observation are obviously the essential requisites for obtaining this knowledge; but it is to be kept in view that the opportunities of the farmer in this respect do not bear a comparison with those of the butcher, with whom he has to deal. The latter has a never-failing test, by which he can try the accuracy of his calculations, in having the animals afterwards killed and weighed; and thus, from time to time, he is enabled to modify his views, and correct his more imperfect estimates—opportunities which the farmer rarely or never possesses. Long experience, indeed, will enable the farmer to form a tolerably correct estimate as to the value of his cattle when slaughtered; but, even with the aid of this, it is still important to be able to test the correctness of opinions thus founded. To the young and inexperienced farmer it is still more important to be able to do so. This knowledge may be obtained by measurement, and easy calculation; or from tables constructed for the purpose, for the use of which the length and girth of the animal only are required.

The ascertaining of the weight of cattle by measurement is not a recent invention, tables for that purpose having been long in use. It may not, however, prove uninteresting to those who may not have turned their attention to the subject, to know on what data such calculations are founded. This will also, by explaining the whole process, enable the farmer to determine with more con-

whether the cattle which he should attach to the waggon had obtained. Even in this case a certain exercise of experience is necessary. It is necessary, for instance, to know whether the animals are markedably fat or not; it is also necessary to be able to form an opinion as to the effects of any peculiarity of conformation in the animals, which might affect the results obtained by calculation. The kind of animals, too, must be taken into account, the formulæ on which the calculations are founded being strictly applicable to oxen merely; in the case of bulls, or cows which have had several calves, allowances are obviously to be made.

In calculating the net weight of cattle, it may be mentioned that the weight of the four quarters only is taken into consideration, the remainder being usually considered as offal, including the hide, tallow, and various other matters; and these, taken together, are computed to be equal in value to one of the quarters, or to one-fifth of that of the whole animal. The proportion between the live and dead weight, is the primary object to ascertain in our calculations. This was long calculated at one-half the live weight; but subsequent experiments on the more improved breeds of the country, showed that this was by much too small a proportion, it being more correctly represented by the fractional quantity ·605, the weight of the entire animal being assumed as 1. Having this datum, then, no difficulty is experienced in ascertaining the net weight from the gross weight; the latter being multiplied by ·605 will give the result, in the same denomination in which the gross weight is given. By these means the application of the steel-yard or weighing-machine at once effects the object, and this apparatus is accordingly frequently employed by amateur feeders to ascertain the progress of the different animals while fattening, as well as their value before being sold. In the case of experiments being made with the different kinds of food, their effects are easily tested in this manner; and even when only one description of food is consumed, the progress of the different animals is seen, when such as are not making a suitable return should be disposed of without delay.

This method of calculating the value of cattle is simple, and, were a weighing-machine found on every farm, it would be all that could be desired; but as these useful appendages are not always available, the same object may be obtained by measurement. The dimensions required are the length from the point of the shoulder to the hindermost point of the rump, and the girth or circumference taken immediately behind the fore-legs. That these dimensions may be taken accurately, the animal must be standing in a natural position, in which case they bring the body into the form of a cylinder, the capacity or solid content of which is easily ascertained; and, as in the former case, a certain proportion is found, from experience, to exist between the capacity thus obtained and the net weight. Strictly speaking, the form of most animals is such as to cause the girth to be rather eliptical than circular, but this departure from the cylinder being for the most part constant in all animals is, of-course, taken into account in the formulæ by which the calculations are made. The length and circumference being then given, the rule to find the solid content is, to multiply the square of the circumference by the decimal, ·07958, the area of a circle whose circumference is unity, and this product again multiplied by the length, will give the solid content in the same denomination in which the dimensions were taken, and being usually in feet and inches, their result will be in cubic feet.

The capacity of the animal being ascertained, the next consideration is the estimation of the proportion between it and the nett weight; and this is only obtained by actual experiment, as in the case before under consideration, in reference to ascertaining the nett weight from the live weight, as obtained by the use of the weighing-machine. Suppose an Ox measures 7 feet in girth, and 6 feet in length, the capacity is found by the foregoing rule as follows:—7×7×·07958×6=49×·07958×6=3·89942×6 = 23·39652, which is the number of cubic feet in the animal. Now, let it be further supposed that the weight of this Ox, when slaughtered, was 70 stones, which, after repeated trials, is found to be the weight consonant with these dimensions, then the weight per cubic foot is of course found by dividing the total weight by the product thus obtained. For example, 70 divided by 23·39652, the quotient will be 2·993,—the precise proportion by which such calculations are usually estimated; so that for every cubic foot in the animal, ascertained as before directed, there will be 2·993 stones in the quarters alone. The rule, therefore, is to multiply the square of the girth by ·07958, and the product thus obtained by the length, which gives the capacity in cubic feet, which multiplied by 2·993, the number of stones to a cubic foot of the animal, gives the weight in Imperial stones, as required. It will be observed, however, that the numbers ·07958 and 2·993 are both constant multiplies in the operation, so that they may be multiplied together, and their product only used, which will materially shorten the operation. Thus, ·07958×2·993 = ·23818294; but the number ·238 only may be taken, without incurring any appreciable error. Hence the rule for ascertaining the weight of an animal by measurement is, to multiply the square of the girth by the length, and this product again by the decimal ·238, which will give the weight of the quarters in Imperial stones.

Such is the method of calculating the weight of cattle by measurement, and such are the data on which it is founded. As before observed, these calculations refer only to animals of the ordinary degree of fatness, so that in certain cases allowances must be made. In the case of animals very fat, perhaps one-eighteenth or one-twelfth should be added to the weight thus obtained; and when under the culinary state of fatness, the same proportion should be deducted. A bull, from having more flesh upon the neck, should have probably one-twenty-fifth added; and in the case of old milch cows, for obvious reasons, one-tenth or one-twelfth may be deducted. It will be apparent, however, that the precise amount of these additions and deductions is not subject to rule.

The weight of the quarters being ascertained, there yet remains the tallow, hide, and other offal, to be taken into consideration in estimating the entire value of the animal. These, or a certain portion of them, are allowed the butcher for his profit; but this is chiefly regulated by the custom of the place—a circumstance which, of course, the farmer will not fail to take into account.

The preceding observations have occupied more space than I originally intended, but I hope the minuteness of detail will be excused, and that they will not altogether be uninteresting to those who have not hitherto directed their attention to the subject.—*J. Sproule.*

ON MINERAL AND INORGANIC MANURES.
No. XV.

By Professor Charles Sprengel.

(*Continued from page 267.*)

For the last 15 years I have chemically examined a great quantity of various marls, as far as their Agricultural qualities are concerned, of which the following are the results:

a.—Marl from Lüneberg (very powdery and ochre-yellow). 100,000 parts consist of

5,564	parts	silica and a little quartz-sand
0,412	,,	alumina
4,219	,,	protoxide and oxide of iron
0,006	,,	oxide of manganese
35,444	,,	carbonate of lime
1,255	,,	carbonate of magnesia
0,052	,,	potash and soda (combined with silica)
0,026	,,	common salt
0,666	,,	gypsum
0,318	,,	nitrogenous organic remains
2,328	,,	phosphate of lime (bone-earth)
0,010	,,	lime saltpetre
0,800	,,	bitumen
100,000	parts	

Of this very valuable marl only 100 cubic feet are used on one Madgdeburg acre of sandy heathy soil, containing much coal of humus, and it will yield without further manuring five to six plentiful crops; after which, however, the soil becomes thoroughly exhausted. If we now assume that the cubic foot of marl weighs 100 lbs., by 100 cubic feet, 10,000 lbs. will be brought on one acre, which consist of 8544 lbs. carbonate of lime, 125 lbs. of carbonate of magnesia, 232 lbs. of bone-earth, 32 lbs. of nitrogenous organic remains and lime saltpetre, nearly 7 lbs. gypsum, 2 lbs. common salt, 5 lbs. potash, soda, &c. As heathy soil is rarely deficient in potash and soda (united with silica), and as it also usually contains common salt and gypsum in sufficient quantity, the marl would still be active without any of these substances. We may therefore assume that it acts mostly by the bone-earth, the saltpetre, the nitrogenous substances, and the carbonates of lime and magnesia; which latter, however, are the most active, as they decompose the coal of humus, the more so, as they are found in the state of a very fine powder. It is also very probable that the protoxide of iron contained in the marl (of which there will be 422 lbs. in 100 cubic feet used on an acre), causes the formation of ammonia, as I have found by an experiment, that in a marl which had been left exposed to the air, ammonia has been formed after the lapse of a few hours. This seems not to have originated in the nitrogenous matter, as other experiments have proved that protoxide of iron will form ammonia, even without the presence of nitrogenous substances.

b. Marl from Osnabrück (stony, very hard, and greyish black). 100,000 parts consist of

23,030	parts	silica
9,970	,,	alumina
1,966	,,	oxide of iron and a little protoxide of iron
0,010	,,	oxide of manganese
34,980	,,	carbonate of lime
0,840	,,	carbonate of magnesia
7,272	,,	sulphuret of iron
20,528	,,	coal and a little bitumen
0,500	,,	phosphate of lime
0,843	,,	gypsum
0,060	,,	potash and soda, and traces of common salt
100,000	parts.	

After manuring with this marl, all crops succeed well on a sandy clay soil, but especially Clover, Vetches, Peas and Beans; which is chiefly to be ascribed to its great amount of gypsum and phosphate of lime: 400 cubic feet are conveyed on one acre, and it then acts for 20 years. The sulphuret of iron undergoes during the decomposition of the marl a successive decomposition; it is formed into sulphate of iron, and this is again decomposed by the lime, so that finally gypsum is formed. Consequently, these 400 cubic feet of marl will supply the soil for many years with gypsum. It cannot be doubted that the carbonates of lime and alumina act as a powerful nourishment, as the soil, on which this marl is best to be made, contains but little of both substances.

EXPERIMENTS WITH MANURES.

The following results were obtained last year in Surrey, on the estate of H. A. Aglionby, Esq., M.P., to whom we are indebted for the particulars:—

TURNIPS, 1843, ON A POOR CHALKY HILL.

No. I.—5 bushels of bone-dust			£0	15s. 6d.
1½ cwt. of guano			0	13 6
[Pretty good crop.]				
No. II.—3½ cwt. guano			1	7 6
[Just the same.]				
No. III.—½ ton of Clarke's compost			1	16 3
[Came forward very quickly at first, greener than any in the field; but at last very inferior to either of the others.]				
No. IV.—5 cwt. Trimmer's compost			2	0 0
[So damp, it did not drill evenly; a very bad crop.]				
No. V.—2 cwt. sulphate of ammonia			0	18 0
5 bushels of bone-dust			0	11 3
20 lbs. nitrate of soda			0	2 3
[So damp, it did not drill evenly: the worst crop in the field—worse than if nothing had been used; as bad as the sulphate of ammonia alone on the other field of Turnips.]			£1	12 6
No. VI.—10 bushels of bone-dust			1	16 0
[Pretty good crop; about equal to Nos. I. and II.]				

TURNIPS, Sown May, 1843.—Measured and weighed in December. Land:—Part of field clay, with flints; remainder chalk, very poor.

No. I.—Super-phosphate of lime, 1 ton, 2 cwt., 28 lbs			£1	18 6
[A good crop:—3 tons, 1 cwt, 48 lbs. per acre.]				
No. II.—Sulphate of ammonia, 2 cwt			1	16 0
[Almost destroyed, especially on the chalky part; worse than where nothing was used; not worth weighing.]				
No. III.—Sulphate of potash, 1¼ cwt.			1	7 6
Phosphate of lime, 1 ton, 1 cwt., 15 lbs.			0	14 6
[A good crop:—4 tons, 6 cwt., 64 lbs.]				
No. IV.—Guano, 2½ cwt			1	7 6
[Fair crop:—3 tons, 11 cwt, 48 lbs.]				

TURNIPS in free loam—substratum red sandstone.

One acre: guano, 2 cwt. (crop, 20 tons, 11 cwt.)			£1	4 6
One acre: guano, 2 cwt. / gypsum, 2 cwt. (Crop. 24 tons, 13 cwt.)			1	4 6
			0	2 6

SWEDES, Sown May, 1843.—Measured and weighed in December. Good strong soil:—clay with flint; substratum chalk.

No. I.—Guano, 1½ cwt.			£0	18 6
Six bushels of bones			0	12 6
Saltpetre, 20 lbs.			0	4 6
[Very good crop: 12½ tons per acre.]			£1	14 6
No. II.—Guano, 2½ cwt.			1	7 6
[Very good crop: 13½ tons per acre.]				
No. III.—Watson's compost			2	0 0
[Very bad crop: 6 tons per acre.]				
No. IV.—Dung, about 20 loads			4	10 0
[Very good crop: 14 tons per acre.]				

POTATOES.—2 rods, chalk and clay.

28 lbs. sulphate of soda			£0	2 6
7 ,, saltpetre			0	1 6
28 ,, gypsum			0	0 6
[Exactly double the quantity of the adjoining 2 rods; both had a similar quantity of dung under them; the mixture was strewn on the leaf; 1st had 3 bushels; 2d had 6 bushels.]			£0	4 6

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XV.

(*Continued from p. 267.*)

Carbonate of ammonia is volatile, and is lost during the decomposition of animal matter, urine especially. In order, then, to retain the nitrogen in the liquid, we must either prevent the formation of the carbonate, or we must change it when formed into the sulphate or phosphate, which are not volatile. If sulphuric acid is added to putrefying urine, the carbonate of ammonia is decomposed by the sulphuric acid uniting with the base (ammonia), and forming sulphate of ammonia, the carbonic acid being given off with effervescence. Sulphuric acid is formed of—

Sulphur	16	one equivalent.
Oxygen	24	three equivalents.
	40	

And sulphate of ammonia of—

Sulphuric acid	40	one equivalent.
Ammonia	17	one equivalent.
Water (hydrogen 1—oxygen 8—9)	18	two equivalents.
	75	

which, accordingly, is the combining proportion of sulphate of ammonia.

I have adduced those instances to show how beautifully simple is the law of chemical combination. To a person entirely unacquainted with chemistry, they will demonstrate the truth that the statements of chemists are not deduced from fanciful theories, but are the result of sound induction from uncontrovertible fact.

By a reference to the above figures it will be seen that the relative proportions of ammonia and sulphuric acid in the sulphate, are as 17 to 40. Thus, if in an experiment with sulphuric acid as a fixer of carbonate of ammonia, 40 oz. of acid are used, the experimenter knows from the above law of combination, that 17 ounces of ammonia, 40 ounces of sulphuric acid, and 18 ounces of water will be united together in the form of crystallised sulphate of ammonia, and that the result will be 75 ounces of that salt. If these 75 ounces of sulphate are applied as a manure, the result must be calculated from 17 ounces, if the effects of ammonia are to be proved. But it must be remembered that sulphuric acid contains another singularly constant constituent of albumen, viz., sulphur; and, therefore, sulphuric acid undoubtedly will in this way often act as an efficient manure.

But there is still another mode in which sulphuric acid acts as a manure, in addition to those stated. The inquiries of Liebig render it more than probable that the carbonate is the only salt of ammonia which is appropriated by the plant. Therefore, the sulphate is decomposed in the soil by re-acting upon chalk, and forming, by an interchange of elements, carbonate of ammonia and sulphate of lime, which is so well known as gypsum. Now, gypsum has the power of absorbing carbonate of ammonia just as charcoal does carbonic acid. The sulphate of lime thus formed then becomes a constant reservoir of carbonate of ammonia, which it gives up to the plant. Much discussion has arisen about the *modus operandi* of gypsum, but the above, suggested by Dr. Carpenter, in his "Popular Cyclopædia," appears to be the most rational, and the

most easily reconcilable with the well-known chemical fact, that sulphuric acid has a greater affinity for lime than for ammonia. Whichever view of the case is correct, the utility of gypsum as a manure rests upon evidence too conclusive to admit of doubt. The value, then, of sulphate of ammonia as a manure is very great, always bearing in mind that it must be used in combination with the other elements of plants; and that, given alone, its effects will only be perceptible in proportion as those other elements are present or absent from the soil; and also remembering, that being an azotised manure, it will have a much greater influence over a corn than a root crop.

Having settled this point, our next inquiry is the source from whence the farmer is to obtain a supply of this valuable manure. He has it in soot, but the supply of this article is limited: he has it in Peruvian guano, but this is expensive. The ingenuity and enterprise of Mr. Potter has brought it into the market in large quantities in the form of "Potter's Guano," which is allowed to be the best of all the artificial manures. But the farmer can procure for himself, at little cost or trouble, any quantity of this manure, by the action of sulphuric acid upon urine, or gas-water. Of the latter I shall say nothing, because the supply is naturally limited to large towns; but the former is within the reach of every one, and by its means the farmer can make extemporaneous guano in any quantity he chooses.—*C. R. Bree, Stowmarket.*

Home Correspondence.

Prevention of the Attack of Fly on Young Turnips.—In 1815, I sowed a richly manured field with Turnip seed; the plants at first looked well and thriving, but soon disappeared. The flies were numerous. My second sowing exactly resembled the first; I sowed for the third time, but the season being too far advanced, a poor crop was produced. This unfortunate year led me to make many inquiries, the answers to which are not worth recording. In 1816, the weather was more favourable for our hot stone-brash land; part of my seed was drilled, part sown broadcast; a tolerable crop appeared, but the fly began their attack. Fearful of these destructive insects, I tried different experiments copied from the newspapers, but all were useless. It now occurred to me that a practice which my father formerly adopted with respect to his Cabbage plants might be successful with the Turnips likewise. I began his plan of sowing lime over the plants; and wherever the lime had been dusted, which was in several parts of the field, not one was touched. Year after year I followed up this system, extending my experiment over a large portion of the field, till I found it to answer so completely that I adopted it altogether. But the difficulty of sowing riddled lime upon a large scale now appeared a considerable obstacle. It was a tedious task, and also one which the men set about with great reluctance, as from the heat of the weather and the nature of the lime, their hands were burnt, and in other respects they were greatly inconvenienced. I now turned my thoughts to a machine; my first efforts failed. I persevered, however, year after year, till I completed a machine to my satisfaction, which will sow any given quantity of lime. Four or five days after sowing, should vegetation be quick—the Turnips will begin to appear. Swedes, however, are a day or two later; let the field be examined without fail, every morning, and as soon as there appears a sufficient crop, the lime must be applied. It will not do to wait till all are up, as by this delay the whole may be lost, owing to the great rapidity with which the fly destroys the crop when they once attack it. It must be remarked, that the fly and other insects devour the Turnips as soon as the plant comes up, before the first two leaves can expand. I mention this circumstance as proving the necessity of losing not a day. Lime for dusting the Turnips should be procured some time previous to sowing; let it be kept in the dry; a few days before it will be wanted, let it be slaked and riddled into carts, thus, probably, it will not interfere with the business of haymaking in which the farmer is then engaged. My proportion of lime is six bushels, measured before slaking, to an acre. It must be remarked, that I sow it only on the rows, my system being the drill, but I calculate ten would be sufficient for a broadcast acre with my machine. Hoers can, with much greater accuracy, perform their work in a drilled crop. Another disadvantage of the broadcast system is, that the hoeing cannot take place so soon by five or six days as with a drilled piece. I here subjoin a calculation of expenses for dusting with lime ten acres:—

	£	s.	d.
Eight quarters of lime	0	16	0
Carriage	0	5	0
Two men, slaking and riddling	0	3	0
Beer	0	2	0
Horse, for sowing the lime	0	4	0
One boy, for ditto	0	1	0
	£1	11	0

I would employ, on a large farm, two machines, two horses, and two boys—one to fill the boxes, whilst the other is working the machine. I beg to add, that more than ten acres could be dusted in one day of eight hours by my plan, with one machine, and eighteen or more with two machines.—*Forehead Singer, Frome.*

Good Water.—Water in a state of fermentation caused by the presence of vegetable matter, must be unwholesome, and tend to produce disease; but after this has ceased there is no reason why the water should be injurious. I have often seen, and been surprised, at horses and cows preferring to drink from the pond in a farm-yard or field, instead of quenching their thirst at a running brook. Donkeys, however, show a more delicate taste, and go to the clear stream. The Thames water which is used on board a ship, putrefies in the cask before it becomes fit for use. After it has gone through a process of this description it is considered the best water for a voyage. If opened before it is perfectly settled, after being sick, it is dangerous, and requires a strong stomach fortified by brandy or rum to swallow the high-smelling beverage. Is not this somewhat analogous to the pond?—*Falcon.*

Equivalent Values of Food.—In No. 12 *Ag. Gaz.*, the value of Pea-straw, in comparison with Hay, in point of nutriment, is mentioned. Professor Johnson, in his "Agricultural Chemistry," has given the following table of equivalents, which afford equal nourishment to animals, and may be interesting to some of your readers, if you think fit to insert it. He takes 10 as his standard for Hay, and sometimes gives a varying equivalent.

	Pounds.		Pounds.
Hay	10	Carrots	25 to 30
Clover Hay	8 to 10	Turnips	30
Green Clover	45 „ 50	Cabbage	20 „ 30
Wheat-straw	40 „ 50	Peas and Beans	3 „ 5
Barley-straw	20 „ 40	Wheat	5 „ 6
Oat-straw	20 „ 40	Barley	5 „ 7
Pea-straw	10 „ 15	Oats	4 „ 7
Potatoes	20	Indian Corn	5
Old Potatoes	40	Oil-cakes	2 „ 4

—*J. B. N.*

Incendiarism.—It has often occurred to me that if parties who have insured their property, would be at the trouble of placing, in a conspicuous part of their farm-buildings, "the stamped tins" usually given by the Insurance Companies, there would be less likelihood of incendiarism, as they would, if observed, show how little would be accomplished by the act.—*Ganstead.*

Earth as Food.—A short time since a cow which I had kept during the winter in-doors, got loose, and the first thing it did was to go and eat a quantity of garden-mould. It appears to me that we may obtain a valuable hint from this fact; the natural mode of feeding of the cattle is likely to bring up a quantity, more or less, of earth with the herbage, and this may be as useful to the cow as the ashes recommended in your last Number, are to the pig.—*Toby.*

How to destroy Rabbits.—Sow the headlands of the fields adjoining the woods, and any odd corner in the neighbourhood, or plant the banks of hedge-rows and sides of ditches with rape; every young one that eats of it will become diseased (pot-bellied), and if it be a wet season, will die of the complaint in the liver similar to the rot in sheep. If a few old males are put for about a week into a stable on straw, where a thoroughly-mangy dog has been confined, they will be fully inoculated with the complaint, and when turned out again will spread the malady to the whole warren, thus rendering the skins of the animals valueless; which will, I dare say, be alone sufficient to bring a bad neighbour to a sense of justice, for most likely the keeper is paid by the rabbits fed at other people's expense. I once threatened these measures, and was laughed at; but in a year I had the laugh on my side; an impudent keeper was discharged; I had a liberal allowance for damage, and made a friend of a very bad neighbour. I consider rabbits the greatest enemy the landlord has; they make tenants dissatisfied, they tempt idle boys into their first trial of poaching, and their first theft of their employer's rat-trap; then comes the lying out at nights to watch their ill-gotten property, the disposal of it to publicans for spirits, followed by an introduction to older thieves and ruin. But they are also game destroyers, by enticing cats, the very worst of poachers, from great distances, and which never leave off night hunting, however well fed at home; as for amusement, they will kill young pheasants and partridges when they know their way to the woods. I have killed them ten miles from the house in which they had been fed on the same day. Fox-hunters preserve rabbits in hopes of feeding them; but poachers will set traps for profit, villagers in their gardens for self-defence, and many a cub has in consequence been caught and buried, causing blank days and loud complaints of ill-preserved covers; so that in all cases they are worthless.—*A Sportsman.* —— Another correspondent, *Mudie*, states the following as a means for destroying rabbits: "1. Large vermin-traps—the Norfolk (so called), are best, baited with their most favourite food, Carrots cut up and laid over them. 2. Carrots cut and laid in small heaps in the underwood after having been steeped in a solution of arsenic for 42 hours, but I fear the poor picking up the poisoned ones and eating them. 3. Turn into their burrows from six to a dozen ferrets, and let them run wild. 4. Burn sulphur in their burrows and stop them."

Guano.—In the latter end of December, 1842, I ploughed a lea-field, and sowed it with Wheat; and in the month of May following, it looked stunted and bad. At this period I sowed over it guano at the rate of 2 cwt. to the acre, and in 14 days an entire change had taken place, the Wheat looking green instead of yellow. It continued for some time to improve, and every little piece that was missed in the manuring was seen from the opposite hill; and I am sure, from the application of this manure (costing about 30*s.*), the crop was improved full 30 per cent. Guano had the same effect on Barley on a light soil, and a piece of Oats on a stiff clay soil. In the second week of May last, I tried it in a field of Grass, using 3 cwt. per acre against forty tons of Devonport dung; and I can be positive in stating that the part on which the guano was used produced a far better crop of Grass than where the dung was used. I have found guano very useful as a liquid manure. I have dissolved it in spring water at the rate of 1 lb. to 3 gallons for 24 hours, which has produced a fine piece of Grass; but the best and most convenient plan is (where persons possess tanks for containing the liquid manure from the stables, &c.) to put it in the tank, about 1 lb. guano to 8 gallons of water. This I found to produce a most excellent crop of Grass, which was in six weeks sufficiently high to mow. I likewise sowed a field of white Turnips, one part with dung, the other with guano, 2 cwt. per acre. The guano produced a much better crop than the dunged part, allowed to be the case by several farmers who saw the field.—*William May, Saltash.*

Yew.—Seeing in your Paper some remarks made by a correspondent on the poisonous effects of Yew eaten by cattle in a withered state, and the harmlessness of the same plant if eaten green from the living tree, I am induced, for the benefit of your readers, to offer facts on this subject which have come under my observation. About 12 months since, one of our team-men turned out in the morning with four young good-constitutioned horses to harrow some ground, and having occasion to get his harrows from an adjoining field, across a cart-road, before he could commence work, he incautiously allowed the horses to nip off and eat the most tender living shoots of two bushy young Yews, growing close by; in a few minutes, however, he had them all regularly at work, and nothing unusual occurred for about two hours, when one of the horses suddenly dropped down dead. Being in the field, and not knowing the cause of this catastrophe, I ordered the horses to work a distance off while the dead body was being flayed; but I had not got far on my road to the collar-maker before another horse fell dead suddenly as the other. I was then informed by the man that the horses had been cropping off the tops of the living Yew-trees; we got the other horses home speedily, and administered liberal doses of castor oil, which I supposed proved a good antidote, as they showed no symptoms of hurt afterwards. An experienced farmer, now by my side, bears testimony to the same effect (from what has come under his particular notice) of valuable horses being destroyed from the same cause, under somewhat similar circumstances.—*George Crompton.*

On Marl as a Manure.—Most farmers are aware of the value of marl as a manure on light soils, but it is not so generally known how to apply it to the greatest advantage. It is never safe to make use of marl which has not been analysed, until it has been burned. This process is too well known to need description, I will, therefore, confine myself to stating, as briefly as possible, the reasons which render it necessary. On a late visit in Cheshire I ascertained from the actual experience of many of the farmers of that county, that some descriptions of marl have a tendency to destroy a good soil altogether. At first, I was inclined to believe that this was owing to the mode of its application, which consists in strewing it over the meadows, or arable land, in large moist lumps. It was quite clear to me that such an application must tend to injure the land by excluding the air; but I could hardly think that this could be the sole cause. To ascertain this, I took from the pit a piece of the marl for the purpose of analysis; and on investigation I found it to consist of 60 per cent. of alumina, 30 per cent. of sand, 5 per cent. of gypsum, 2½ per cent. of red oxide of iron, 1 per cent. of protoxide of iron combined with sulphuric acid, and a very perceptible quantity of potash. Now, it is evident that the only substance contained in this marl, which could prove pernicious, was the protoxide of iron, the baneful effects of which on vegetation have been distinctly proved. We know that plants cannot live in soils devoid of oxygen; if, therefore, a salt is present, which consumes all the oxygen of the soil, the roots of the plants will necessarily be deprived of it. Such being the case with all soils containing the sulphate of protoxide of iron, barrenness is the natural consequence. Another cause of barrenness is the putrefaction of vegetable remains in soils in which no oxygen is present. Putrefaction being a highly deoxidising process absorbs the oxygen from all bodies capable of yielding it, thus converting red oxide of iron, a useful ingredient of a soil, into protoxide of iron, which is a deadly poison to plants. I have found that all marls which tend to destroy the fertility of a field, contain protoxide of iron, and the only remedy consists in thoroughly burning the marl which does so contain it. For fields, which have been rendered barren by this means, the only remedy is frequent ploughing and mixing with burnt lime.—*A. Bernays, Manchester.*

On Guano.—The value of guano as a manure is now pretty well established, and it has been owing solely to the high price of the Peruvian guano that it has not been more generally used. It has been asked whether it does not impoverish the soil; but I think that this question is easily answered in the negative. Guano contains nearly all the organic and inorganic ingredients requisite for the healthy development of a plant, in the relative quantities; it contains, therefore, in itself nearly all the nutriment required by a plant, so that as long as it lasts, very little nutriment is required from the soil. It may be improved by the addition of boiled bones, and must be improved by the addition of alkalies, if the soil is deficient therein, as the guano cannot supply the whole demand for alkalies made by the plant; in such cases an equal weight of carbonate of soda added to the guano will prove of the greatest advantage. The arrival of the African guano will, no doubt, bring it into more general use. I believe it is selling at from 6*l.* 10*s.* to 7*l.* per ton at Liverpool, at which price it is cheaper than the Peruvian at 10*l.*; that is to say, 10*l.* worth of African guano will produce more than one ton of Peruvian at 10*l.* The African guano contains from 20 to 25 per cent. of water, and from 12 to 15 per cent. of sand. It would be advantageous to mix it with some pounded chloride of lime, to fix the free ammonia. Sulphate of lime will not do for this purpose, as it requires too much water for solution. Guano thus prepared with chloride of lime should be kept in a dry place. The farmer will do well to buy his guano at a first-rate house, or direct from the ship, as he will otherwise not be certain of obtaining a genuine article; should he, however, be

compelled to buy it at second or third hand, he will do well to put it to the following tests:—1, Weigh a sample and lay it on a piece of post-paper on a warm hob (not hot enough, however, to char the paper) until it appears quite dry; withdraw it and weigh it; the loss sustained is water. 2, Take the sample thus dried, put it into a wine glass, and pour hot water over it; stir well for a minute or two, allow it to settle, and then pour off carefully the supernatant liquor, add hot water again, and proceed as before; then pour a small quantity of muriatic or nitric acid into the glass—the acid will dissolve all the undissolved salts, and nothing will remain of the guano but pure sand; wash this carefully dry, and weigh it. The African guano should not contain more than from 12 to 15 per cent. 3, Take a fresh sample of the guano, weigh it, and put it into an evaporating basin, and heat it over a spirit-lamp, as long as fumes are given off, and the guano appears black. Weigh it again, deduct the water from the volatilised portion, and the remainder of the loss will consist of ammoniacal salts. The greater the quantity volatilised, or the smaller the quantity remaining in the basin, the better is the guano. The admixture of sawdust will be detected by the second test, as it will float on the water in the glass. Guano is best applied as a top-dressing. To increase its bulk, mix it well with sawdust or dry soil. It should be laid on in wet weather. A good artificial guano would be superior to the natural, because we should be more certain of an equal product. The best guano would be carefully evaporated human urine, or a mixture of the salts in the relative proportions as they exist in Nature.—*A. Bernays, Manchester.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover Square on Wednesday last the 1st of May; present, the Right Hon. Earl Spencer, President, in the chair. Duke of Richmond, Earl of Rosebery, Viscount Hill, Lord Braybrooke, H. J. Adeane, Esq., Col. Austen, D. Barclay, Esq., M.P., T. R. Baker, Esq., J. R. Barker, Esq., J. S. Browne, Esq., F. Burke, Esq., Rev. T. Cator, Col. Challoner, F. C. Cherry, Esq., H. Colman, Esq., Sir A. B. Corbet, Bart., G. Cottam, Esq., E. D. Davenport, Esq., J. E. Denison, Esq., M.P., W. Fielden, Esq., M.P., A. E. Fuller, Esq., M.P., B. Gibbs, Esq., H. Handley, Esq., C. Hillyard, Esq., W. F. Hobbs, Esq., J. Hudson, Esq., W. H. Hyett, Esq., Sir J. V. B. Johnstone, Bart., M.P., J. Kinder, Esq., W. Miles, Esq., M.P., A. Ogilvie, Esq., W. W. Pendarves, Esq., M.P., H. Price, Esq., P. Pusey, Esq., M.P., F. Pym, Esq., J. Ransome, Esq., Professor Sewell, W. Shaw, Esq., J. Shelley, Esq., R. A. Slaney, Esq., J. S. Stanhope, Esq., Sir H. Verney, Bart., and H. Wilson, Esq. The Rev. Thomas Cator, of Skelbrook Park, near Doncaster, was elected a Governor, and the following gentlemen Members of the Society:—

Masterson, James, Collingbourn-Ducis, near Marlborough
Powell, Edward Lloyd, Abergavenny
Hudlestone Andrew Fleming, Hutton-John, Penrith, Cumberland
Colbourne, William, Stratford upon-Avon
Buckley, Colonel Edward P., Minstead Lodge, Lyndhurst, Hants
Bedford, John, Woodcote, Shifnal, Salop
Davies, William, Nethertown Farm, Harewood, Ross, Herefordshire
Blundell, Joseph, Maidenstone Heath, Hound, Southampton
King, Richard, Stoneham, Southampton
Minchin, Robert, Earwaker, Sutton Farm, Alresford, Hants
Richards, William Haggett, Lea-Coombe, Axminster, Devon
Foster, Augustus, Warmwell-house, Dorchester, Dorset
Corbett, James, The Sheriff's Farm, Kington, Herefordshire
Grubbe, I. A. Hunt, Windlesham, Bagshot, Surrey
Mechi, John Joseph, 4, Leadenhall street, London
Coles, Henry Beaumont, Middleton-house, Whitchurch, Hants
Thatcher, William, Wackland, Newchurch, Isle of Wight
Harris, James, Alton Farm, Amesbury, Wilts
Phillips, Henry, Coventry
Portal Melville, Freefold Priors, Overton, Hants

The names of 16 candidates for election at the next meeting were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented to the Council the Monthly Report of the state of the funds of the Society, from which it appeared, that on the preceding day the current cash-balance in the hands of the bankers amounted to 1422*l.*, independently of the sum of 1000*l.* remitted from Southampton as a subscription, to meet the heavy estimated expenses to be incurred by the Society at its ensuing annual country meeting at that place in July; and that the stock invested in the public funds amounted to 7700*l.* The Chairman further reported a communication received from Mr. Colvile, M.P., announcing the final and satisfactory adjustment by the Local Committee of the only outstanding claim on account of the Derby meeting.

Prize Essays.—Mr. Pusey, on the part of the Journal Committee, reported the following recommendations in reference to Essays sent in hereafter to compete for the Society's prizes:—1st. That in future, competitors should be required to inclose their names in a cover, on which only their motto and the subject of their papers, and the number of that subject in the Society Prize List, should be written.—2d. That the chairman of the Journal Committee alone should be empowered to open the motto-paper of such essays not obtaining the prize, as he may think likely to be useful for the Society's objects; with a view of consulting the writer confidentially as to his willingness to place such paper at the disposal of the Journal Committee.

These recommendations were unanimously adopted by the Council.

Southampton Meeting.—The Council gave final directions for the completion of the contracts for the various works connected with the Show-yard and Pavilion at Southampton, with Mr. Manning, agreeably with the plans already adopted for those purposes; Mr. Parkes being requested to draw up, as usual, the Report of the implements exhibited and tried at that meeting, the Stewards granting him every facility in effecting that object.

Country Meeting of 1845.—Colonel Challoner, as chairman of the Committee appointed at the last Council for examining the various plans and other documents received from the authorities of Shrewsbury and Chester, and reporting the result of a personal inspection, by a deputation from their body, of the sites respectively offered at each of those places, for the purposes of the Society's country meetings of next year, informed the Council of the careful scrutiny the Committee had instituted into the whole of the details submitted to them; and concluded by laying before the Council the joint and very valuable Report of Colonel Austen, Mr. H. Gibbs, and Mr. B. Gibbs, who, as such deputation, had visited Shrewsbury on the 26th, and Chester on the 27th of April. This Report detailed the critical and minute examination which the deputation had successively made, of the various sites proposed at each place for the accommodation of the Society, and the purposes of the meeting; and having been unanimously adopted, the Council received the deputations then in waiting from the authorities of Shrewsbury and Chester.

Shrewsbury.—Lord Hill and the Hon. R. H. Clive, M.P., introduced the deputation from Shrewsbury, consisting of J. T. Smitheman Edwardes, Esq., the present mayor, and Edward Haycock, Esq., the late mayor of that borough.

Chester.—R. H. Barnston, Esq., Chairman of the Chester Local Committee, appeared on behalf of the authorities of that city.

The President addressed to each of these deputations a series of inquiries on the various points of information required by the Council, in order to enable them to arrive at a just decision on the question before them; and the deputations respectively having made such replies to these inquiries as they were instructed, withdrew; when the Council proceeded to a consideration of the claims of each place, and for the Country Meeting of 1845, and a discussion on the respective merits of the localities proposed for the purposes of the occasion. On the motion of Mr. Shelley, seconded by the Duke of Richmond, it was then unanimously resolved that the Annual Country Meeting of the Royal Agricultural Society of England, for the year 1845, should be held at the town of Shrewsbury, on the condition that the deputation on the part of the authorities of that borough would engage to enter into such stipulations with the Secretary, on the part of the Council, as would embody in writing the substance of what had then passed in conversation during their interview. The deputation from Shrewsbury on again entering the Council-room, and being informed by the President of the unanimous resolution of the Council, returned suitable thanks for the honour thus conferred on the locality they then represented, and cheerfully acquiesced in the condition annexed to the decision.

Annual Elections.—The Council then proceeded, agreeably with the Bye-laws, to nominate by ballot the list of members of Council recommended by them for election at the ensuing General Meeting, on the 22d of May, at ten o'clock (instead of twelve, as formerly) in the forenoon; and to give orders for due public notice of that meeting, by advertisement as usual; as well as to agree to the form of provisional Prize Sheet for 1845, to be submitted in proof to the members present on that occasion, for the favour of suggestions in reference to the nature, amount, and conditions of the prizes proposed,—to be taken into final consideration at the Council specially appointed for that purpose at the end of June.

Special Councils.—The President gave notice that, in order to meet the views of Mr. Shelley in his proposal of an adjournment of the Council over the period of the ensuing Annual Country Meeting, it was his intention to give orders for the summoning of such special Councils, to be held at certain stated dates and places during the period of the Country Meeting, as on due previous consideration might be found requisite.—Mr. Shelley expressed his entire satisfaction at this arrangement, and immediately withdrew the motion of which he had given notice at the last Monthly Council.

American Seeds and Implements.—Mr. Colman, the American Agricultural Commissioner, presented to the Council a most interesting collection of seeds and implements from the United States, with the following memoranda of their respective merits:—

1. *Plough*, made by D. Prouty and Co., Boston, Massachusetts. This plough is used in the United States as a small ox or 2-horse plough, and works well both in sward and old land; it will turn the furrow-slice completely over, and shut in level, or lay them at any desired angle, completely covering in all vegetable matter on the surface. The rod from which the draft is taken is capable of being elevated or depressed, to give the right pitch into the ground, so that it will keep its depth, and yet not bear too hard upon the wheel. It can also be moved at pleasure to the right, to cause the plough to take more furrow; or to the left, to cause it to take less. Upon the arrangement of this will depend much of its success in work. It is very desirable that it should be tried, and a good ploughman made familiar with its mode of working, before a final opinion is passed upon its character. This plough being made on what is called the centre-draught principle, has its standard and land-side inclined so far to the right as to admit of the beam being placed over the centre of resistance and parallel with the land-side, and will take its width of furrow, when drawn from the centre of the beam with such team as we use. To persons accustomed to plough with the land-side and standard perpendicular, this may appear singular, but to make good work it should run level as it stands on level ground.—2. *Plough*, made by Messrs. Ruggles, Nourse, and Mason, of Boston, Massachusetts. This plough is calculated for deep-ploughing, being both higher and longer than any other ploughs in the United States. It had been greatly approved at various trials, and had taken a large sweep of premiums at many of the public Shows.—3. *Grain-Cradles*, for cutting and laying all kinds of grain in a manner to be easily taken up by the binders, and with great expedition. One of the cradles then presented had been long known and approved in New England; the other was of a novel construction, and stated to be on a very improved plan, but Mr. Colman had not seen it before.—4. *Scythe-Snaiths*, made upon an improved and approved pattern; and snaiths made in this way are always alike, the wood being first softened and bent in steam, and then permanently fixed in the desired form, by being allowed to dry in a mould. The nabs or handles are capable of being screwed or unscrewed, so as to be fixed in a desired position without wedges; and a brass socket is sunk in the end of the snaith, so that the hook of the scythe may be held firm, and not become loose by wear, so as to require wedging.—5. *Weeding-knife* for Turnips or other small plants, of a peculiar construction.—6. *Scuffle-hoe*, on a new plan for garden use.—7. *Tree-scraper*.—8. *Hoes*: Two common narrow hoes, made with a socket for the handle, and with the blade neatly riveted.—9. *Manure-fork*, of cast-steel, made by Mr. H. Partridge; very light and elastic, and would be broken only with much ill-usage.

The collection of seeds which accompanied these implements consisted of Millet Seed, Herd's Grass or Timothy Seed, Brom Corn Seed (along with brooms made of the Grass), several varieties of Indian Corn (Maize), Sweet Corn, Tuscarora Corn, and Canada Corn. Mr. Colman stated that another plough was on its way to England, as a further present from himself to the Society.

In addition to these donations Mr. Colman laid on the table several private copies of the first Part of his European Agricultural Tour, for distribution among such of the Members as would accept them; from whom, and all other readers, Mr. Colman expressed an earnest wish to receive both candid criticism and such direction in the acquisition of useful information as would enable him to render the succeeding parts of his Work more calculated to fulfil the object he had in view in its publication, namely, to advance the common cause of Agricultural improvement in both countries, and by an interchange of communication to promote that perfect understanding on every subject which it was so highly important in a national point of view should constantly subsist between two countries so truly kindred.

On the motion of the Duke of Richmond, the cordial thanks of the Council were voted by acclamation to Mr. Colman, for his very important and interesting collection of presents, the value of which in the estimation of the Council was enhanced by the manner in which he had thus testified his respect towards the Society. Mr. Colman, in acknowledging the thanks of the Council, would not have it inferred by the remotest implication that in thus laying before them specimens of the ingenuity of American art in the construction of implements of husbandry, that they were intended as evidences of any triumph over the distinguished implement makers of the old country, but simply as instances of that interchange which he was so desirous to effect and to which he had alluded, of improvements which might prove useful to both countries. He felt deeply grateful for the personal kindness he had everywhere received in his progress through this country. He had now been connected more than 40 years with the pursuits of Agriculture, and he found his satisfaction in its unbounded resources only increase with years, inasmuch as with the extension of the benefits of Agriculture there was also a diffusion of the blessings of moral improvement.

Mr. Shelley and Mr. Miles, as the Stewards of Implements, informed the Council that they had already made arrangements for the trial of the American Ploughs at the Southampton Meeting: a complete and ample trial would be given them in the same fields in which the other ploughs were tried; and they should rejoice at any result in their favour which might lead to further improvement in our own Agricultural implements. The President then conveyed to Mr. Colman an expression of his thanks for the services he had rendered to the Society in his official capacity as the Agricultural Commissioner of the United States, and in that of an Honorary Member of the Society in favouring the Council so often with his personal attendance at their Meetings.

Model Experiment.—Mr. Miles communicated to the Council the following arrangement for the Model Experiment, which Mr. Barclay, Mr. Hillyard, and the Rev. Thomas Cator had consented to try, and in which he hoped other members of the Society would be induced to join.

Seed: Skirving's Swedish Turnip (to be procured of Messrs. Thomas Gibbs, and Co., Seedsmen to the Society, corner of Half-Moon Street, Piccadilly), to be sown after a White Straw Corn crop.

Manures. Common dung, 20 tons per acre.

Peruvian Guano,	1 cwt. mixed with	2 cwt. of Ashes.	
African Guano,	do.	do.	do.
Potter's Artificial Guano,	do.	do.	do.

Distances between the rows, 18 inches and 27 inches.—If it be desired to allot half-an-acre to each kind of manure, and the half-acre be divided into two lots for the two breadths of rows, there will be eight trial lots, each of one quarter of an acre. Where the rows are at 18

inches distance, if they are 146 yards in length, there will be 22 such rows in each single lot; to which one-quarter of the above quantities of manure will be severally applied. Where the rows are 27 inches distance, 14½ rows will be the extent of each lot, which will receive the same quantities of manure. Numerous presents were received, and thanks ordered for them.—The Council then adjourned to Wednesday next, the 8th of May.

Miscellaneous.

Selection of Forest Trees.—It should always be borne in mind, that trees, unlike crops, are to remain for an unlimited time, so that, when once planted, they are expected to thrive for perhaps upwards of a century, and on this account, proprietors are willing to lay out a considerable amount of capital upon plantations, in the hopes of abundant returns after the lapse of many years. How important, therefore, must it be in all cases to take every precaution against failure, which, in this instance, must be attended with great pecuniary loss. It is well known that very few, if any, forest-trees confine their roots to the soil, by far the greater quantity extending more or less deeply into the subsoil; and what is exceedingly interesting and important, it has been proved, that trees growing in an unkindly soil either die out, or, if the soil contains a minute supply of all that they require, they send nearly their whole strength to the roots, which travel to great distances in all directions, in search of a sufficiency of those ingredients of which they can obtain only a very minute supply at each particular spot; since, however, it is the stem and not the root which is in most cases turned to a profitable account, the strength of the sap being expended upon the root must, at all times, be attended with loss. Very little has hitherto been done regarding the chemical analysis of forest-trees, but what has been accomplished goes to prove that the ashes of different trees differ so much from each other, that soils capable of bringing one kind to the greatest perfection may entirely fail to support others. This being the case, it is surely a want of foresight in a proprietor to plant, perhaps, hundreds of acres of certain trees, before he has determined by a chemical analysis of the soil and subsoil, whether they are calculated to produce a thriving plantation, or whether some other tree might not be better suited to the soil and climate."—*Dr. Madden on the Advantages of Extended Chemical Analysis to Agriculture.*

Real Value of Crops.—"A circumstance most particularly to be attended to in the estimation of crops, and one far too apt to be neglected, is, that bulk and weight are not necessarily true indices of the real value, as they do not always represent correctly the amount of nourishment contained, and we need scarcely remark that the latter is the true object for which every crop is cultivated. * * * In some experiments related in Professor Johnston's "Elements of Agricultural Chemistry," the results are stated in two tables; 1st, The number of bushels of Wheat, Oats, and Barley, obtained for each bushel of seed sown; and, 2d, The amount of starch and gluten contained in 100 parts of each of the samples. The real value of the crop is, therefore, closely approximated by comparing the two tables together. * * * In the experiments alluded to, cow-dung produced 16 bushels of Oats for each bushel sown; whereas night-soil (generally esteemed much the strongest manure) produced only 14½ bushels. Arguing from this alone, therefore, one would be apt to suppose night-soil inferior to cow-dung for Oats, and in fact, without the aid of chemical analysis, such would have been the legitimate conclusion. When, however, the Oats were analysed, it was found that that grown with cow-dung contained 3½ per cent. of gluten only, whereas the night-soiled specimen contained 5 per cent. Comparing these together, therefore, we arrive at the important conclusion, that whereas, by measure, the night-soil was to the cow-dung as 14½ to 16; when the real nourishment was ascertained, the proportions were 72½ to 56, or as 12 to 9 nearly, showing a real increase of ⅓, where, by the ordinary method, a deficiency of about ⅛ was apparently proved.—*Dr. Madden, on the Advantages of Extended Chemical Analysis to Agriculture.*

Ballinasloe Union Farming Societies.—The following is the return from the model farm which it will be recollected is, with the exception of a couple of acres, and which two acres were recently a rushy marsh, deep bog:—

1842. Kind of crop raised.	Quantity of Land under these crops.	Realised return from the land.	1843. Kind of crops sown.	Quantity of Land under these crops.	Realised return from the land.
	A. R. P.	£ s. d.		A. R. P.	£ s. d.
Turnips	2 2 0	28 12 0	Turnips	2 0 0	36 0 0
M. Wurzel	0 1 20	7 10 0	M. Wurzel	1 1 0	25 0 0
Cabbage	0 0 20	2 10 0	Cabbage	0 1 0	3 0 0
Rape	1 0 0	5 7 1½	Clover & Grass	1 2 0	11 4 9
Oats	0 3 0	2 5 9	Oats	1 0 0	6 0 0
Potatoes	3 0 0	57 10 0	Potatoes	2 0 0	42 0 9
Turf	0 0 0	20 0 0	Turf	0 0 0	15 4 1
			Under Rape	1 1 9	5 0 0
Totals	8 3 0	123 14 7½		10 2 0	143 8 10

Expenditure for labour in 1842 . . £55 0 0
Expenditure, up to Sept. 20, for labour in 1843 . . 41 1 9

We saw the root crops on the model farm, and on reference to our notes, find that we estimated the crops fully up to the amount for which credit is taken in the above account; but it would have been satisfactory, as affording useful information, to be informed with respect to the data upon which the value of the crops has been based.—*Dublin Farmers' Gazette.*

Loss of Time in Ploughing.—When ridges are 78 yards in length, no less a space of time than 4 hours and 39 minutes is spent in turnings in a journey of 8 hours whereas when ridges are 274 yards long, 1 hour and 19 minutes is sufficient in the same length of time.—*Code of Agriculture.*

Notices to Correspondents.

Rural Chemistry. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4s. 6d.

Guano.—*W. H. Harwood.*—We shall be glad to receive your proofs of the value of this manure; we cannot, however, promise always to publish them.

Potato.—*Constant Reader.*—Next week.

Potato-rot.—*J. Mcl.*—We think that over-ripening is more likely to be the cause of the disease than under-ripening; but please to send your paper. There is nothing like a well-conducted discussion for eliciting truth. There is a letter for you at our office; if you will forward your address, it shall be posted.

Potter's Guano.—*Amateur Gardener.*—Mix it well with the soil before sowing the seed.

Profits of Farming.—*X. Y.*—They depend on the amount of capital employed. We may safely say with Mr. Cooke, in his work on the "Value of Land," that no one should invest his capital in farming unless he expected a profit equal to, at least, ten per cent. on its amount.—Guano will suit Carrots, Parsnips, and Cabbages perfectly. Mix it well with the soil. Carrots and Parsnips ought to have been sown nearly a month ago.——*A. B.* says, "A Farmer and Valuer" would confer a great obligation upon our readers, if he would state, in addition to his valuable article on "The Farmers' Capital," at page 253, what the average annual outgoings might be fairly set at; these to include, besides rent, rates, labour, seed, &c., a fair sum for wear and tear, and interest on capital. Also what the average annual Grass produce might be set at.

Prickly Comfrey.—*Subscriber.*—The prickly Comfrey is propagated by dividing the roots and planting them in good rich soil, in rows 2 feet apart, and about 18 inches from plant to plant. We never can procure seed of it. It was first brought into notice at Lewisham sometime ago, and was reported as very superior fodder for cattle. When *quite young*, cattle will eat it, but not if they can get anything better, such as Tares, &c.; but after a while it gets tough and prickly, and nothing will touch it. If you wish any, you can have plants at the nurseries for 11s. or 12s. per 100. The crop is very abundant.—*S.*

Soil.—*A. J.*—Your specimen appears to be a very poor ferruginous sand, the application of which would benefit no soil but stiff calcareous clays.

Turnips.—*M. A.*—The Aberdeenshire yellow bullock Turnip is one of the best kinds. Skirving's, Drummond's, Watson's, and Laing's Swedes are all good varieties; the last is perhaps the best. Your crop will not be so good under the trees.

*** As usual, many communications have been received too late.

Markets.

MARK-LANE, Monday, April 29.

We had a liberal supply of Wheat this morning from Essex and Kent; that from Suffolk was small; the Essex was nearly all disposed of at the prices of last week, but a great part of the Kent remained unsold at the close of the Market. The transactions in Foreign Wheat were limited, but there appeared to be a few country buyers at lower prices, which factors generally were not disposed to comply with.—English Barley must be written rather cheaper; the demand for Foreign has increased, and a considerable clearance has been made, at fully the rates of last week.—Beans are 1s. per qr. dearer.—Peas are unaltered in value.—The supply of Oats being small, and the demand good, late rates are rather exceeded.

British, per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	46	56	Red .	46	54
—— Norfolk, Lincolnshire, and Yorkshire . .	50	57	White	—	—
Oats, Lincolnshire and Yorkshire . . Potatoes	20	23	Feed	19	22
—— Northumberland and Scotch . . Feed	20	25	Potato	21	25
—— Irish . . . . Feed	16	23	Potato	19	24
Barley, Malting and distilling 30s to 31s	Chevalier	51	54	Grind.	24	28
Malt, pale, ship		58	62			
—— Berkhard and Essex		60	63			
Rye		32	34			
Beans, Maragan, old and new 24 to 31	Tick	24	29	Harrow	27	34
—— Pigeon, Heligoland . 29 to 33	Winds.	—	—	Longpod	—	—
Peas, White . . 30 to 33 .	Maple	27	29	Grey	26	27

Friday, May 3.

There are no fresh samples of English Wheat offering this morning, and the Kentish left over from Monday have met a dull sale at barely that day's quotations. The demand for free Foreign has somewhat increased, but without leading to more extensive business; prices, however, are firmly maintained.—Notwithstanding the large arrivals of Foreign Barley, there is not a great deal offering on the Market, the larger proportion having gone direct to the Distillers'; its late value is supported, but the sale is rather slow. English remains without alteration, and the same may be said of Beans and Peas.—The Oat trade is firm at Monday's prices.

Imperial Averages.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March 22 per Quarter.	56s 5d	33s 1d	20s 2d	34s 1d	31s 2d	31s 2d
— 29 . . .	56 5	32 7	19 8	33 3	31 3	31 0
April 5 . . .	55 8	32 10	20 1	33 0	30 11	31 8
— 12 . . .	55 1	32 1	20 1	32 4	31 9	32 5
— 19 . . .	55 4	32 10	20 2	32 3	31 8	31 5
— 26 . . .	55 6	32 7	20 1	31 9	31 4	30 8
6 weeks' Aggregate Aver.	55 8	32 10	20 0	32 10	31 2	31 4
Duties on Foreign Grain	17 0	6 0	6 0	10 0	10 0	10 0

Arrivals this week.

	Wheat	Barley	Oats	Flour
English . .	4040	610	1080	3560 Sks
Irish . . .	—	60	2310	—
Scotch . .	—	—	—	—
Foreign . .	4470	19710	490	—

Arrivals in the River last week.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 4660 Sks.	— Brls.	6360	2207	6740	2218	—	783	261
Irish . .	,, — ,,	—	550	50	9720	—	—	—
Foreign . .	,, 300 ,,	6350	8006	—	—	—	—	—

Kinnersley and Lay.

Potatoes.—Southwark Waterside, April 20.

We believe the extraordinary fine weather that we have had for some weeks past has been unprecedented at this season of the year; and it bears heavily on the holders of Potatoes, lessens consumption, and rapidly forces vegetation. The supplies during the past week have been greater than the demand, and there are a number of former arrivals unsold. There continues to be some cargoes from Belgium, Holland, and Ireland, selling from 40s to 45s per ton. The demand for the best samples is limited, and there are several inferior samples that have been put into the stores. Although the holders were anxious to forne sales at low prices, further reductions have been submitted to, and many of our present quotations are merely nominal.

York Reds . . .	70s to 90s	Essex and Sussex Blues	65s to —s
Perth	55	70	Wisbeach Kidneys	65	70
Early Devons . .	—	—	— Blues	50	—
Late Devons . .	75	—	— Whites	45	50
Cornwall . . .	75	—	Jersey and Guernsey Blues	65	70
Kent, Sussex, & Essex Whites	40	60	Prince Regents	—	—
— — Kidneys	70	80	Belgian Reds	—	—

Hay.—Per Load of 36 Trusses.

Smithfield, May 2.

Prime Upland Hay	65s to 70s	Clover	85s to 105s	Straw	21s to 26s
Inferior . .	55 60				

James Cooper, Salesman.

Cumberland Market, May 2.

Superior Meadow Hay	70s to 75s	Superior Clover	100s to 105s	Straw	23s to 25s
Inferior . .	60 65	Inferior	90		

Joshua Banks, Hay Salesman.

Whitechapel, May 3.

Hay . . .	48s to 60s	Clover .	90s to 95s	Straw	30s to 32s
— fine .	61 72	— fine	100 105		

Smithfield, Monday, April 29.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	4s 6d to 5s	0	Best Downs & Half-breds	4s	6	5s 0
Best Short-Horns . .	4 2	4 8	do. short .	3	8	3 10
Second quality Beasts .	3 10	4	Best Long-wools .	3	10	4 0
Calves . . .	4 0	4 4	do. short .	3	4	3 8
Lambs, small . .	4 2	4 6	Ewes and second quality	3	4	3 8
— large . .	3 6	4 0	do. short .	3	0	3 4
Pigs . . .	3 2	3 4				

Beasts, 2613; Sheep and Lambs, 24,420; Calves, 103; Pigs, 270.

We have again a short supply of Beasts, which has caused the trade to recover the depression that was experienced on Friday last, and our prices today are about the same as last Monday; in some instances the very best qualities have rather exceeded our highest quotations, but these instances are very rare. Second-class Beasts have fallen a little. We have a large market of Mutton, which causes a worse trade; the demand, however, is still very considerable, and almost everything is sold. Big Sheep have suffered a reduction of nearly 2d per 8 lbs; the trade is also heavy for shorn Half-breds, which are rather numerous, and can hardly be quoted at more than 3s 6d per 8 lbs. Selling pulled Sheep are quoting new prices in season, and have experienced less reduction than any other description. Lamb is getting more plentiful, and prices are a little lower. Veal also suffers a small reduction, owing to increase in numbers. Pork is lower.

Friday, May 3.

The supply of Beef is moderate, and our quotations of Monday are well supported, but we cannot discover any advance. There is a fair quantity of Sheep in market, and a pretty good demand for sizeable qualities of shorn Downs, &c., at about 4s, and of shorn pulled Sheep at about 3s 8d per 8 lbs. Trade is very heavy for large fat Sheep, and cannot be said to make more than 3s 4d out of the wool. The best Lambs maintain their price, about 5s 6d, but there are plenty of middling quality in market to-day which are sold with difficulty at about 5s. We have a large supply of Calves, but the best are still making about 4s 8d per 8 lbs. Pork remains steady.

Beasts, 2691; Sheep and Lambs, 9230; Calves, 223; Pigs, 260.

41, West Smithfield.

COVENT GARDEN, May 4.—There is a considerable improvement this week in hothouse Grapes; they are both more abundant and finer in quality. A few Portugals are in the market, but they are becoming scarce, and there is not much demand for them. Pine-apples are nearly the same as last week. Apples of good quality are scarce, and there are only a very few Pears in the market. Green Apricots and small Gooseberries continue to be supplied; the latter are offered at from 10d. to 1s. 8d. per pottle. Oranges are somewhat advanced in price since our last report, as are also Strawberries; the latter are selling at from 6d. to 1s. 6d. per ounce. Vegetables, in general, have not altered much since our last report. Although the continued dry weather begins to be felt, yet most articles are good in quality, and sufficient for the demand. Considerable quantities of young Cabbages have been supplied during the week; a few Cauliflowers are also in the market. New Carrots bring from 9d. to 1s. 6d. per bunch. Young Turnips are a little reduced in price. Broccoli is becoming scarce. Greens are nearly the same as last week, and there is little alteration in Rhubarb, Seakale, French Beans, or Asparagus. Lettuces and Salading of all kinds are sufficient for the demand. Cut Flowers consist chiefly of Erica hybrida, E. aristata, Ceanothus azureus, Stephanotis floribundus, Pelargoniums, Lily of the Valley, Cinerarias, Auriculas, Calceolarias, Tulips, Azaleas, Fuchsias, China-Provence, and Moss Roses.

Fruits.

Pine Apple, per lb., 6s to 12s	Lemons, per 100, 6s to 14s
Grapes, Portugal, per lb. 1s to 1s 6d	Almonds, per peck, 6s to 7s
Hothouse Grapes, 6s to 15s per lb.	Sweet Almonds, per lb., 2s 6d to 3s
Apples, dessert, p. bush. 6s to 20s	Nuts, Spanish, per bushel, 14s
,, Kitchen, p bus. 4s to 10s	— Brazil, 16s
Apricots (green) p. doz., 1s 3d to 1s 6d	— Hazel, 3s to 4s
Gooseberries, 4s. 6d., 10d to 1s 3d	— Barcelona, 20s to 21s
Strawberries, 6d to 1s. p oz.	— Cob, 14s
Oranges, per dozen, 2d to 3d	Walnuts, per bushel, shelled, 16s to 20s
— per 100, 5s to 8s	Chesnuts, per peck, 3s to 3s
Lemons, per doz. 1s to 2s	

Vegetables.

Rhubarb, per bundle, 6d to 2s	Cucumbers, 6d to 1s 6d each
Broccoli, per bundle, 6d to 1s 6d	Spinach, per sieve, 1s to 1s 6d
Cabbages, 1s to 2s per dozen	Leeks, per doz. bun., 3d to 1s
Red Cabbages per doz. 2s to 3s	Garlic, per lb. 6d to 8d
Sorrel, 6d to 9d p. hf.-sv.	Onions, 2d to 4d p. bush.
Asparagus, per 100, 1s to 6s	— Large, per bushel, 1s 6d to 2s
Seakale, per punnet, 3d to 1s 6d	— Spanish, per doz., 1s 6d to 4s
French Beans, 1s to 2s 6d per 100	— pickling, p hf.-sv. 2s to 4s
Autumn Potatoes, 3d to 6d per lb.	Shallots, per lb., 6d to 8d
Greens, per doz. 2s to 4s	Lettuces, p. score, 1s to 2s 6d
Potatoes, per ton, 80s to 90s	Celery, per bun., 6d to 1s 6d
— per cwt., 2s to 3s	Mushrooms, per pottle, 6d to 1s
— per bushel, 1s 6d to 2s	Small Salads, per punnet, 3d to 3d
— Kidney, p. bush., 3s 6d to 4s	Watercress, per doz. sm. bun. 6d to 9d
Prime Potatoes, 1s to 2s per lb.	Parsley, per hf.-sv., 2d to 3d
New Turnips, 1s 6d to 2s 6d per bunch	Tarragon, Green, per bun. 3d to 4d
Turnips, per doz. bunches 6d to 9s	Endive, per score, 1s
New Carrots, 9d to 1s 6d	Green Mint, 2d to 4d per bunch
Red Beet, per doz., 6d to 1s 6d	Marjoram, p. bun 6d to 9d
Horse Radish, per bundle, 1s to 2s	Chervil, per punnet, 2d to 3d
Radishes, Turs., 1s to 1s 6d p doz. bds.	Salsafy, per bundle, 1s to 1s 3d
Carrots, p. doz. bun., 2s 6d to 3s	Scorzonera, per bundle, 1s to 1s 3d
Basil, 6d to 9d per bunch.	Savory, 6d per bunch

Hops, Friday, May 2.

The late cold nights and easterly winds have checked the growth of bine, and is thought will greatly encourage vermin; the flea is already very numerous, and doing considerable injury, in many of the plantations. Several planters have, in consequence, withdrawn their Hops from sale, and buyers begin to feel some anxiety, as, should we get an attack of fly this month, with the small stock on hand, prices must advance considerably on our present quotations.

Mid & East Kent Pocks	87s to 100s	Sussex Pockets .	62s to 67s
Choice ditto . .	11 0 — —	Choice ditto .	6 12 —
Weald of Kent Pocks.	6 0 6 15	Farnham . .	9 0 10 10
Choice ditto . .	7 0 — —		

Patterson & Sarre, Hop-Factors.

Seeds, May 3.

Canary . . per qr	48s to 52s	Linseed Cakes, Foreign, p. ton	6l to 7l 10s
Carraway . per cwt	50 54	Mustard, White . p. bush.	5s 6
Clover, Red, English	60 74	— Superfine	6 6
— — Foreign	64 74	— Brown . .	5 10
— White, English	100 120	Rapeseed, English, per last	24l 28l
— — Foreign	84 125	Rape Cakes . per ton	— —
Coriander . .	12 16	Rainfoin . .	— —
Hempseed . per last	34 36	Tares, Kng. winter p. bush.	2 5
Linseed . . per qr	— —	— Foreign . .	2 5
— Baltic . .	— —	Trefoil . . per cwt	— —
— Cakes, Eng. per 1000 10l	to 10l 10	Turnip (two variable for quotation).	

Kinnersley and Lay.

Wool.—British, Friday, May 3.

Sales have been limited during the past week, but prices continue firm, and we cannot report any alteration from our last Report.

	per lb.			per lb.	
Long-wooled Wethers	1s 4d	to 1s 8d	Southdown Hoggits	1s 1	to 1s 3d
Do. Hoggitts	1 1	1 3½	Kent Fleeces	1 2	1 3
Southdown Fleeces	1 0½	1 2			

James Fannin, Wool Broker.

Principal Manures.

	Weight per bush., about lbs		Weight per bush., about lbs
Alum, 240s per ton .	—	Phosphate of Ammonia, in fine powder, 28s per cwt. .	65
Bleaching Powder, 20s per cwt. .	—	— of Ammonia, in crystals 2s 6d per lb . .	—
Brimstone, 200s per ton . .	—	Rape Cake, 105s to —s per ton .	—
Bone-dust, —s and 17s per quarter	45	— Dust, 110s per ton .	—
— Half-inch, 16s ditto . .	42	Sal Ammoniac, 56s per cwt. .	—
— Calcined, 8s per cwt . .	—	Salt, Agricultural, 80s per ton .	80
Carbonate of Ammonia, 70s per cwt	84	— clean, 80s per ton .	80
— of Lime, 1s to 1s 6d per cwt	—	— Hide, 91s per ton . .	84
— of Soda, 35s to —s per cwt	—	Saltpetre (Nitrate of Potash) 28s 6d per cwt., duty paid	80 to 84
Chloride of Lime, 50s per cwt .	—	Silicate of Potash, in powd., 65s p.cwt.	—
Graves, —s to —s per ton . .	—	Soap Ashes, —s per ton . .	95
Guano, Bolivian, —s to 35s p. ton	—	Soda Ash, 14s to 16s per cwt. .	95
— African, —s to 30s p. ton	—	Sulphate of Ammonia, 580s to 600s per ton . . .	72
— Potter's, 240s per ton .	95	— of Copper, 38s to 40s p. cwt.	—
— Potter's Liquid, 18s p. doz.	—	— of Magnesia (impure) 10s per cwt. . . .	65
Gypsum (Sulph. of Lime), 35s p. ton	—	— of Magnesia (pure cryst.) 12s p. cwt. .	65
Hallett's Dry Fertiliser, 200s p. ton, or 12s per cwt. .	—	— of Potash, 12s per cwt.	—
— Concentr. Liquid, 7s 6d per qt. bottle, or 7s 6d large bot.	—	— of Soda, 8s to 9s per cwt.	—
Humphreys's Compound for Plants in Pots, 18s per doz. . .	—	Sulphur, 12s per cwt. .	—
— Farmers' Compound, 12s per cwt. . . .	—	Sulphuric acid, London, 9d per lb.	—
Muriate of Ammonia, 84s per cwt.	70	— Country made, 12d per lb.	—
— lime, 6s to 8s . .	70	Whitney's Composition for Frames and Lights, 24s and 40s per doz.	—
Nitrate of Soda, 14s 6d to 16s per cwt., duty paid . . .	80		
Phosphate of Lime, 6s 6d p. cwt.	65		
— — Super, 7s to 8s p. cwt.	65		

Expenses of shipping about 2s to 7s per ton, according to quantity.

Mark Postmaster.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system, with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

IRON WORKS.

COTTAM AND HALLEN, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS, RICK-STAND, or STACK STATHEL, at very low prices.

GARDEN SYRINGES, 9s. 6d. each,

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 20 inches, and 22 inches.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 4 ft. 6 in., 5 ft., 6 ft., and 7 ft.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases, in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE-FENCING, at 6s. 6d. per bundle of 150 to 160 yards each.

Flower-bordering, Trainers, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

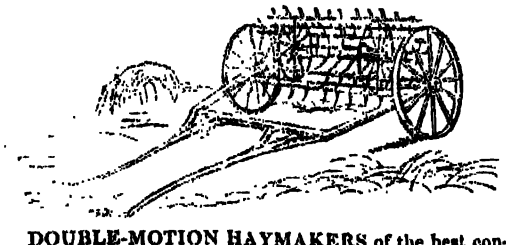
HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time,

RENDLE'S TANK SYSTEM on an improved simple plan.

Show Rooms at their Manufactory, No. 2, Winsley-street, where estimates and every information may be obtained.

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DOUBLE-MOTION HAYMAKERS of the best construction, made almost wholly of iron, and containing the double Cylinder, and all the latest improvements, are now ready.

CAST-IRON HAY-RICK.—Pigtroughs at very low prices.

IRON HURDLES AND FIELD-GATES, of all sizes, at exceedingly low prices.

PLOUGHS, DRILLS, Sheep and Cattle Weighing Machines, Improved Prize Harrows, Field Rollers, Turnip-cutters, Chaff-cutting Machines, Threshing and Winnowing Machines, Oil-cake Breakers, and every description of Implements used in Agriculture.

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THE CONICAL HOT-WATER BOILERS, [illegible] by J. ROGERS, Esq., may be obtained of any size [illegible] SHEWEN, Ironmonger, &c., Sevenoaks, Kent.

J. SHEWEN having had every opportunity afforded him [illegible] extensive practice to bring this apparatus to perfection, [illegible] offer it as most efficient and economical; it may be [illegible] at Messrs. Chandler & Sons' Nursery, Vauxhall; Messrs. [illegible], Hackney; Messrs. Henderson's, Pine-apple [illegible]rs. Veitch & Son's, Exeter; Mr. Pontey's, Plymouth; [illegible] Botanical Society's Gardens, Regent's Park; and at the Gardens of the Horticultural Society of London. Considerable improvements have been effected since last season, particulars of which are in course of preparation.

BURBIDGE AND HEALY beg respectfully to inform the Horticultural world that they are [illegible] to supply their new BOILER [illegible] very size. They [illegible] to apply cient number to [illegible] them in stating [illegible] forth as the qualities of their Boiler and Furnace arrangement may be perfectly relied upon: they have put up one at the Horticultural Gardens, where B. and H. believe it is considered to answer as represented; they have also fixed it in connection with a new description of Iron Tank, which combines the qualities of the round pipe and the open tank, which may be pronounced the perfection of a Heating Apparatus for Horticultural purposes, particularly for Graperies, Epiphyte-houses, Melonpits, &c., &c. The arrangement is such that any gentleman or gardener may have the whole constructed so as to be put together with the greatest facility by the gardener, first sending a correct plan to 139, Fleet-street. A Prospectus may be had, detailing the prices, &c.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,

COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, April 25, 1844.

PERUVIAN GUANO, of first quality, and in any quantity, direct from the Bonded Stores. Also African Guano and Nitrate of Soda.—Apply to H. ROUNTHWAITE and Co., 6, Cable-street, St. George's Crescent, Liverpool.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash, 18s. per cwt.
" Soda 12s. "
" Magnesia 9s. "
" Ammonia 1s. per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs. WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1s.

MANURES.

BOAST AND Co.'s PATENT INORGANIC MANURES.—These strong and productive manures have already proved their superiority over all others yet adopted. It is now thoroughly understood and acknowledged by intelligent agriculturists that each plant requires a distinct manure, and it is upon this perfectly scientific principle that these manures are prepared, being formed so as to supply all the substances taken from the soil by each particular crop. They are immeasurably more efficacious, far more economical than all others, and possess the great advantage of being easily applied to the land.

Prospectuses, with full particulars, may be obtained, or will be forwarded by post on application at the Manufactory, Bow, Middlesex.

*** By the use of these Manures, any land may be rendered fertile. Wheat, &c. may be grown on the same land every year with immense advantage to the farmer, and without injury to the soil; whilst all the other crops are greatly increased.

GUANO, superior to the foreign, at a reduced price.

Manures prepared expressly for Gardeners and Florists.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURKIS, Secretary, 40, New Bridge Street.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2s. 6d. each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNERS, 28, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s. 6d. each, and in bottles, six times the size, at 7s. 6d. The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

WHITNEY'S CHEMICAL, TRANSPARENT, WATERPROOF COMPOSITION, for rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to Rain or Moisture, admitting light equal to Glass, the *burning* rays of the *sun alone* being obstructed. Houses or pits covered with Calico, &c., prepared with this Composition, embrace important advantages over Glass. The light being equally diffused in every part of the house, plants placed on the floor have as much light as those close to the covering, consequently they are not drawn up as under Glass, while they continue much longer in *bloom*, and preserve their *delicate tints unfaded* till the *blossom falls*.

Whitney's Substitute for Glass.—I have had screens of calico rendered transparent with Mr. Whitney's invaluable varnish, and used them last winter, with a success far exceeding my most sanguine expectations, though my anticipations had been considerably excited. Indeed I consider Mr. Whitney's discovery as an invaluable boon to the horticulturist, one that will bear competition with any invention connected with the art and mystery of Horticulture in modern times. My screens were about 9 feet long each, and were inclined to the wall separated about 12 inches below, and as my object was to ascertain the value of the screens, in reference to *radiation*, they were left open *at each end*. Suffice it to say, the Fuchsia, Pomegranate, Passion-flower, Japan Honeysuckle, and others still more delicate and susceptible, were effectually preserved, and that without the slightest check to their growth, or any injury whatever. I am of opinion that in this *new aspect*, it possesses a protecting influence *infinitely superior to glass*, because the effects of radiation, a most powerful source of cold, are *not intercepted by glass*, which so materially counteracts the artificial temperature within: I cannot, therefore, but conclude, that for the protection, not merely of the early blossom, but the maturation of the fruit, as in the case of the Peach, Nectarine, Apricot, and Grape, these transparent screens, thus prepared, are invaluable, and their triumphant success certain. Add to this, for cucumber and melon frames, their superiority over glass is undoubted for preventing flagging of the foliage (sometimes being scorched) by day, and the chilling effects of radiation by night. Screens prepared with Whitney's Transparent Varnish should be also used as shades in the intensity of a summer's sun, and for protection against radiation in winter, for the stove, greenhouse and conservatory. Even in the *economy of fuel* the value of such screens is demonstrable, as less will be required to maintain an equable warmth, its escape by radiation being thus effectually checked.—J. M., 16*th April*, 1844.

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Further particulars, and a note of prices, may be obtained by addressing Mr. ALEX. SHANKS, Machine-maker, Arbroath, North Britain.

Letter from the Right Hon. Lord Kinnaird to Mr. Shanks.

[Copy.] "Rossie Priory, Inchture, June 12, 1843.

"SIR,—I shall have much pleasure at all times in recommending your Mowing Machine, as answering most perfectly in every respect, as I have had some months' trial of it, and find that a man and horse and one woman can cut and clean up upwards of two acres and a half in seven hours, while it formerly took four men and three women nearly three days to put the same ground in order. "Your obedient servant, &c.,

"Mr. Shanks. KINNAIRD."

Letter from Mr. Taylor, Factor to the Earl of Camperdown.

[Copy.] "Camperdown, 20th April, 1844.

"SIR,—After using your Grass cutting and Rolling Machine for the last season, I am glad to state, it has given us every satisfaction, and the Earl of Camperdown is much taken with it. I think we can cut nearly two acres in three hours with a pony, a man, and a boy. It answers well for green roads and walks; we can cut, in a morning, two to three miles in two rounds. If you wish it, the Earl of Camperdown will give you a certificate.

"I am yours, &c., THOS. TAYLOR."

Letter from Mr. Lindsay Carnegie.

[Copy.] "Kinblethmont, Arbroath, July 31, 1843.

"SIR,—I am quite ready to testify to the utility and correct working of the Grass cutting Machine you made for me two years ago. It has now been at work the whole of last season, and up to the present period of this one, cutting a space of three imperial acres once a week regularly, in about four hours each time, the force employed being one man and a pony only. The Machine has not yet required sharpening, and I am satisfied it will continue to work the remainder of this season without doing so. I am, your obedient servant,

"Mr. Shanks. W. L. LINDSAY CARNEGIE."

Letter from Mr. Lindsay Carnegie.

[Copy.] "Kinblethmont, April 25, 1844.

"SIR,—Two years' experience of the Grass-cutting Machine you originally made for me have fully confirmed the opinion I have already expressed to you of its efficiency and economy.

"I am, Sir, your obedient servant,

"Mr. Shanks. "W. L. LINDSAY CARNEGIE."

AGRICULTURAL COLLEGE, &c.

AT A PUBLIC MEETING for establishing a system of education adapted to Agricultural pursuits, held at Cirencester, the 22nd instant, Earl Bathurst in the Chair, the Report of the Provisional Committee of the Cirencester and Fairford Farmers' Club, and the Prospectus of a Plan for establishing an Agricultural College, issued by that body was read.

1st Resolution, moved by Earl Ducie, and seconded by Mr. Kearsey.—That it is expedient to provide an Institution in which the rising generation of farmers may receive instruction, at a moderate expense, in those sciences, a knowledge of which is essential to successful cultivation; and that a Farm form part of such Institution.

2nd Resolution, moved by Sir John Paull, and seconded by A. Goddard, Esq.—That the following gentlemen be a Committee, with power to add to their number, to determine on a Plan of such an Institution—the best means of carrying the design into effect—and whether by Act of Parliament, Royal Charter or otherwise; and report to a future meeting; and that the Prospectus submitted at this meeting by the Cirencester and Fairford Farmers' Club be referred to the Committee:—

Earl Bathurst	Mr. Charles Lawrence
Earl of Ducie	James Kearsey
Sir Michael Hicks Beach, Bart.	Charles Edmonds
W. H. Hyett, Esq.	Thomas Stone
Edward Holland, Esq.	Richard Iles
T. H. S. Sotheron, Esq., M.P.	Thomas Arkell
Colonel Kingscote	Matthew Edmonds
Ambrose Goddard, Esq.	Robert Beman
Dr. Daubeny	Henry Washbourn
C. R. Smith, Esq.	Jonas Newman
R. S. Holford, Esq.	Thomas Iles
J. H. Langstone, Esq., M.P.	John Arkell
Rev. J. M. Prower	William Crouch
Rev. T. Maurice	David Bowley
Mr. Edward Bowly	William Woodward
Raymond Cripps	John Rayer
Thomas Wells	Thomas C. Brown
Giles Edmonds	Henry Howell
Peter Matthews	H. Fowler
Edmund Ruck	Robert J. Brown

3rd Resolution, moved by Dr. Daubeny, and seconded by C. Lawrence, Esq.—That a subscription be immediately entered into to defray the expenses of Printing, Advertising, &c., already incurred, and the current expenses of the Committee; and that the Banks in Cirencester be requested to take charge of the lists, and receive subscriptions at their different branches.

Subscriptions announced:

Earl Bathurst	£20	Sir John Paull	£2
Earl of Ducie	10	Charles Lawrence	2
T. H. S. Sotheron, Esq., M.P.	5		

YORKSHIRE LAND-DRAINING ASSOCIATION Capital, 500,000*l.*, in stock of 25*l.*—Deposit, 5 per cent.

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The Right Hon. Lord Viscount Morpeth.
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This Association is formed for the purpose of affording to the Agricultural interest, by means of its collective capital, the funds necessary for the THOROUGH DRAINING OF LAND; and of executing and superintending the execution of the works required for this purpose on the most economical and effective principles—repayment of the money advanced to be made, with interest, by such equitable half-yearly instalments as in the several cases may be determined.

Among the various objects to which of late years collective capital has been more or less successfully applied, it is not a little surprising that the one which, of all others, offers the most certain and profitable return, with the soundest security, should have hitherto been almost disregarded. The time, however, has arrived, when an urgent desire for Agricultural improvement on the one hand, and a dearth of safe and profitable investment for superabundant capital on the other, renders such an Association highly desirable to both the landed and monied interest, whilst to the community generally an almost incalculable advantage will be secured by a proportionate increase of labour and food.

At a meeting of the council of the Yorkshire Agricultural Society, held in York, on the 20th of December, 1843, a resolution was passed, approving generally of the objects of this Association, and at the monthly meeting of the Wakefield Farmers' Club held on the 5th January, 1844, a resolution approving of the principle and objects of the Association, was unanimously adopted.

At the meeting of the Royal Agricultural Society of England, at Liverpool, in July, 1841, Lord Stanley remarked—that "there was no bank in the whole country—no commercial speculation—no investment so safe, so sure and profitable, as that in which even borrowed capital may be engaged, by investing it under the ground of your own soil." And in reference to this Association, his Lordship, in a letter to the Committee says.—"I am fully satisfied of the benefits which such an Association is capable of conferring on the country, if confined to its legitimate object—the lending of capital on the security of an investment in draining; and I think it very probable that many landed proprietors would avail themselves of the facilities afforded by an institution lending money on land, repayable by instalments—a condition on which few private parties are willing to lend.

Bearing in mind the important objects of the Association, and the perfect security with which its operations can be conducted, at a comparatively trifling expense (no large expenditure for previous outfit being required), it may be reasonably expected that the return for the capital embarked will be such as to insure the support of prudent and permanent investors, thereby divesting it of that speculative character which has stigmatised so many modern projects, and which it is the especial desire of the Committee to avoid.

Application for prospectuses, and further particulars to be addressed to the Solicitors, Messrs. BLANCHARD, RICHARDSON, and GUTCH, York; or to J. H. CHARNOCK, Esq., the Secretary, Wakefield.

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HAYMAKING SEASON.—Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.

BERDOE'S SUPERIOR LIGHT WATERPROOF FROCKS for the present season.—An extensive variety of the above, in NEW and greatly improved materials (in lieu of the unsightly rubbish made by Slopsellers, now ready; guaranteed to exclude any rain whatever, and confidently recommended to those who regard a respectable appearance, or wish to avoid disappointment and vexation. First-rate Clothing of every description upon the lowest terms possible, consistent with true economy and ultimate satisfaction.—W. BERDOE, Tailor, Waterproofer, &c., 69, Cornhill (North side).

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EXTRACT FROM OLD MOORE'S ALMANACK for MAY, 1844.—"CARE OF HEALTH.—The human frame often suffers greatly during this season, the hurtful influence of which is assisted by the premature adoption of the dress of summer. Those on whom the blight of consumption has fallen, frequently sink under it about this period, though the disease had commenced its ravages many weeks or months anterior to its fatal close. All unnecessary exposure on the part of such delicate persons to the morning and evening chills, should be carefully avoided. Also the full and plethoric will be benefited by the use of cooling medicines as PARR'S LIFE PILLS, and very temperate diet; as a tendency of blood to the head is not uncommon among such, giving rise to apoplexy and other fatal diseases of the brain. Young and stout persons even require some cooling purgative, as PARR'S LIFE PILLS, which will lessen the heat of the skin, and perfectly cleanse the system."—PARR'S LIFE PILLS are sold by all respectable Medicine Vendors. See the words PARR'S LIFE PILLS, in White Letters on a Red Ground, on the Government Stamp.—Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets 11*s.* each.—T. ROBERTS and Co, 5, Crane-court, Fleet-street.

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GREAT WESTERN RAILWAY.—On Wednesday, the 1st May, 1844, the Railway was completed to Exeter, and the alterations for the Summer Trains commenced.

Trains will leave Exeter at

8.15 A.M.
10.15 A.M.
11.30 A.M.
3.15 P.M.
10.15 P.M., Mail
} For London, Cirencester, Bath, and Bristol.

7 A.M.
5.15 P.M.
} For Bath and Bristol.

And the following changes will also take place:—

The 2.45 P.M. Goods Train, from Bristol to London, will leave Bristol at 2.30 P.M.

The 7.30 A.M. Train, from Bristol to Exeter, will leave Bristol at 7 A.M.; and the 7 P.M. Train will leave Bristol for Exeter at 6.50.

On Sunday the 9 A.M. Train will leave Bristol for Exeter at 7 A.M.; and the 10.50 A.M. Train will leave Bristol at 9.30 A.M.

On Week-days there will be an additional Train from Paddington to Slough at 8.30 P.M., and on Sundays at 8.30 A.M.

The 3.45 Maidenhead departure for London will be altered to 6 P.M. from Slough.

The 7.30 Maidenhead Train will leave at 8.30 P.M. for London.

The Train from Cirencester at 3.50 P.M. will start for London at 6.45 P.M.

Time-bills may be had at any of the Railway Stations on and after Saturday, the 27th April.

By order, C. A. SAUNDERS, Secretary.

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THE GARDENERS' CHRONICLE
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No. 19.—1844. SATURDAY, MAY 11. [PRICE 6d.

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Agr. Chemistry Association	297 c	Herds grass, or Timothy	300 a
Agricultural education	291 a	Horticultural Society	296 c
— Imp. Soc. of Ireland	297 c	Hothouses, building and managing of, by M. Neumann, rev.	297 c
Agri. Soc. of England	293 c	Leaves	304 b
Agricultural Weeds	302 a	Lectures on Agriculture, by A. J. Hennays noticed	302 c
Amateurs' Maloney	293 a	Linkum wanted	297 a
Aquaria, management of	300 a	Mangold Wurzel	305 b
Bath Hort. Soc.	297 c	Manures, experiments with	298 a
Bigg's Sheep-dipping Composition	304 b	— to adulterate	301 c
Bone-dust	297 b	Microscopical Society	297 a
Bush Honeysuckle	301 b	Milk-pans	306 c
Botanical Society of Edinburgh	297 b	Millet, culture of	306 a
Bromheadia palmeris	298 a	Moles	304 a
Broom Corn	306 a	Morphology	296 b
Calendar of Operations	299 b	Neumann on Building and Managing Hothouses, revd.	297 c
Carnations, culture of	300 a	Northampton Agric. Book Club	302 b
Charcoal	295 c	North British Gardeners' Soc	297 c
Chepstow Farmers' Club	300 c	Peach trees, disease in	295 b
Chemistry and Agriculture	300 c	Peat drains	301 b
— to apply to Agri.	303 c	Pelargoniums, spot in	293 c
— of cultivation	300 c	— seedling	295 c
Culture of Chicory 293 a	294 a	Pendarves, Chanthus puniceus at	298 b
Cirencester Agri. Coll.	303 b	Phlox pratense	300 a
Climbing-plants	300 b	Pipe tiles	307 a
Conifers, remarks on	300 b	Potatoes, curl in	305 a, c
Cows, to stall-feed	304 c	— to preserve	305 c
Cuckoo, remarks on	298 b	— rot in	306 a
Curl in Potatoes	305 a	— to mould up	293 b
Dickson (Mr.), his Tulips noticed	296 b	Potting, remarks on	293 a
East Lothian Husbandry	302 b	Pulham Farmers' Club	300 a
Entomological Society	297 a	Seedling Pelargoniums	294 c
Erica floribunda	296 a	Sorghum saccharatum	306 a
Experiments with Manures	293 a	Spot on Pelargoniums	294 c
Familiar Botany	294 b	Sprengel on Manures	303 a
Farm Bailiff	305 a	Stall feeding Cows	304 c
— Fences	305 a	Superphosphate of lime	306 a
Farmers' Capital	305 b	The Robin	298 c
"Farmer," by G. Nicholls, Esq., rev.	300 b	Thornfield Pines	301 a
Flax, culture of	303 b	Toad or true Swan	298 b
Fuchsias, to graft	295 c	Turnip fly, to kill	295 b
Gas-water	305 a	Vines for a Greenhouse	300 c
Gorse	304 b	Weeds, Agricultural	302 a
		Wheat crop	304 c

EXHIBITION OF TULIPS.

H. GROOM, Clapham-Rise (late of Walworth), by Appointment FLORIST TO HER MAJESTY, respectfully informs the Nobility, Gentry, and Amateurs, that his superb Collection of TULIPS is now in full bloom, and will continue in perfection until the 21st of May, and can be viewed every day from 9 o'clock until 6, Sundays excepted. Admission, 1s.

EXHIBITION OF AMERICAN PLANTS.

H. AND J. WATERER beg to acquaint their numerous Patrons, that as they are not able to have their Show in the King's Road this season, the display at the Knap Hill and Bagshot Nurseries is very splendid. The Azaleas are now in high perfection, and may be seen any day except Sunday. Admittance gratis. The Knap Hill Nursery is 24 miles from the Woking Station, South-Western Railway, from whence conveyances may always be obtained by application to STEPHEN MOORE.—May 12, 1844.

CAMELLIA LOWII, at 5*l.* 5*s.*; GUTHRIANA, at 3*l.* 3*s.*; ALEXINA, at 3*l.* 3*s.*, are now ready for delivery. HUGH, LOW, AND CO.—Clapton Nursey, London, May 9, 1844.

NEW AND SUPERB CHRYSANTHEMUMS.

YOUELL AND CO. beg to call attention to the following select List of CHRYSANTHEMUMS: the plants are strong and healthy, and ready to be forwarded per Post free to any part of the United Kingdom, at 12*s.* per dozen, the selection being left to the purchaser or to Y. and Co. They will be found very desirable to those who intend exhibiting at the Autumnal Exhibitions.

Achmet Bey, lilac
Arago, buff and red
Beauty, pale lilac
Belladonna, pink
Bethula, lilac
Campestroni, purple
Cassimir Perrier, small, crimson
Chancellor, white and pink
Changeable, yellow
Christopher Colombo, lilac
Col. Combes, salmon
Conspicuum
Defiance, white
Duc de Conigliano, crimson
Duchess de Montebello
Duke, extra fine
Elegans, rose
Empress, lilac
Expanded, purple
Flechier, dark rose
Formosum, white and yellow
Golden Lotus, flowered yellow
Gem, pink and white
Goliath, white
Gouvain St. Cyr, orange
Hero
Incurved, pink
Insigne, pink and red
Imperial, pale lilac
King, pale rose
Louis-Philippe
Lucidum, white
Marchioness, white
Madame Pompadour, dark rose
Marechale Mesnum, yellow and red
Marie, red
Marie Antionette
Magnet, yellow
Mammon, pink
Minerva, pink and white
Mirabile, white and buff
Peter, creamy
Perspicuum, pink
Princess Marie, light pink
Pulcherrimum, rose
Queen, deep rose
Quilled, yellow
Rosalind, pink
Salters, white
Sulphurea
Suitana, rose
Superb, clustered yellow
Surprise, white
Starry, purple
Tasselled, lilac
,, yellow
Triumphant, pink and buff
Two coloured incurved, yellow and brown
Vesta, white
Wheleriana.

Sent Post-free to any part of the United Kingdom, at 12*s.* per doz.
Great Yarmouth Nursery, May 9, 1844.

SUPERIOR NEW SWEDISH TURNIPS.

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg to introduce to their Friends the following New Swedish Turnips, which for their general good qualities stand unrivalled; growing to a large size, being small in the top, of a dark yellow flesh, and may be grown as close to each other as a Stone or Stubble Turnip.

WARNER'S RUSSIAN SWEDE . . 2*s.* 6*d.* per lb.
WARNER'S EMPEROR SWEDE . . 2*s.* 6*d.* per lb.

Also WARNER'S Purple-top Yellow Hybrid, 2*s.* 6*d.* per lb., with all the varieties of Norfolk and Tankards, of the most genuine and selected stocks, from 6*d.* to 1*s.* per lb

A GRAND HORTICULTURAL EXHIBITION,

Under the Patronage of His Royal Highness the DUKE OF CAMBRIDGE, K.G., and the Right Rev. the Lord Bishop of ROCHESTER, in aid of the Funds of the GARDENERS' BENEVOLENT INSTITUTION, will be held in the Grounds of the Bishop of Rochester, adjoining the White Hart Hotel, Bromley, Kent, on TUESDAY, 11th June next.

LIST OF PRIZES TO BE AWARDED, IF CONSIDERED WORTHY BY THE JUDGES:—

GEORGE CHARLWOOD, Esq., of Covent Garden, has kindly offered as a Prize to the Best General Collection of Plants (to be awarded by the Judges) a copy of the late Mr. Loudon's celebrated Botanical Work, the "Arboretum Britannicum," value Ten Guineas.

		£	s.	d.
Miscellaneous Collection of Stove and Greenhouse Plants	best 50	12	12	0
,, ,,	2d best 50	10	10	0
,, ,,	3d best 50	8	8	0
,, ,,	best 24	7	7	0
,, ,,	2d best 24	5	5	0
,, ,,	3d best 24	4	4	0
,, ,,	best 12	4	4	0
,, ,,	2d best 12	3	3	0
,, ,,	3d best 12	2	2	0
,, ,,	best 6	3	3	0
,, ,,	2d best 6	2	2	0
,, ,,	3d best 6	1	1	0
Twelve Geraniums	best	4	4	0
,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
Twelve Heaths	best	5	5	0
,,	2d best	4	4	0
,,	3d best	3	.	0
,,	4th best	2	2	0
,,	5th best	1	1	0
Twelve Fuchsias	best	4	4	0
,,	2d best	3	3	0
,,	3d best	2	2	0
Twelve Calceolarias	4th best	1	1	0
,,	best	4	4	0
,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
Six Orchideous Plants	best	5	5	0
,, ,,	2d best	4	4	0
,, ,,	3d best	3	3	0
,, ,,	4th best	2	2	0
,, ,,	5th best	1	1	0
Collection of Roses, unlimited, in bunches—Nurserymen	best	5	5	0
,, ,,	2d best	4	4	0
,, ,,	3d best	3	3	0
,, ,,	4th best	2	2	0
,, ,,	5th best	1	1	0
Collection of 36 varieties, by Amateurs and Gentlemen's Gardeners	best	2	2	0
,, ,,	2d best	1	1	0
Cut flowers, not less than 20 genera	best	2	2	0
,, ,,	2d best	1	1	0
Fruit, not less than six sorts, exclusive of Pines and Grapes	best	3	3	0
,, ,,	2d best	2	2	0
,, ,,	3d best	1	1	0
Pansies, not less than 36 varieties		1	1	0
Pine-apple, not less than 3 lbs. weight	best	2	2	0
,, ,,	2d best	1	1	0
Basket of Grapes	best	3	3	0
,, ,,	2d best	2	2	0
,, ,,	3d best	1	1	0

The Committee take this opportunity of earnestly soliciting the aid and co operation of all persons desirous of promoting the interests of the Institution.

E. R. CUTLER, Secretary.

CAMELLIAS.—A Gentleman in the West of England who has for many years successfully cultivated the CAMELLIA, wishes to dispose of his Stock, as enumerated below. The Plants are handsome well-grown specimens in a high state of cultivation, and are well worthy the attention of Amateurs requiring specimen Plants. They may be had separately or together, and are as follows—viz.

Imbricata, a magnificent cut Plant, from	7 to 8ft.	Fordii	5 to 6ft.
Imbricata	3	,,	2 to 3ft.
Eximia	7 to 8ft.	Insignis	6
Reticulata, very fine	6 to 7ft	Eclipse (Presses)	6
Chandlerii	6 to 7ft	Anemone, flora alba	4 to 5ft.
,,	4 to 5ft.	Speciosa	4 to 5ft.
Lady Hume's Blush	6 to 7ft.	Woodsii	4
White	6	Anemoneflora	4 to 5ft.
,,	5	Florida	4 to 5ft.
,,	5 to 6ft.	Corrallina	3
Gray's Invincible	5 to 6ft.	Lawsonii	2
Double striped	5 to 6ft.	Colvillii	2
		Donckiarii	2

The Heights stated are exclusive of the Pots.

Further particulars may be obtained by application to Messrs. VEITCH and Son, Nurserymen, Exeter.

PLANTS FOR BEDDING OUT, to be had of MARNOCK & MANLEY, NURSERYMEN, Hackney, London.

	per doz.—*s.*	*d.*		per doz.—*s.*	*d.*
Geraniums, scarlet and others, strong plants	6 to 9		Anagallis,—in varieties	6	9
Fuchsias, 100 varieties	6	12	Alstromerias do.	9	
Verbenas do.	4	6	Heliotropium	4	6
Petunias	4	6	CREEPERS.		
Malva Decumbens, new	9		Maurandyas, 4 varieties	6	9
Salvias,—in varieties	4	6	Cobœa scandens	6	9
Do. do.	6	9	Lophospermums	9	
Lantanas do.	9		Rhodochiton volubile	12	18
Lobelias do.	6		Kennedya	9	12
			Sollya heterophylla	9	

With every other variety of Bed and Creeping Plants, at moderate prices, sent free within 10 miles of London, if to the amount of 20*s.* and upwards, or packed for the country. A descriptive Catalogue may be had on application.—Nursery, Hackney May 2.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER.

NOW READY FOR SENDING OUT.
THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.
FOR 1844.

YOUELL AND CO. beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of the 27th of April, and will be found to contain such varieties only as are worthy of cultivation.

YOUELL & Co. being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms:—

12 Extra Fine varieties, 12*s.*, the Selection left to Youell & Co.
12 ditto ditto 21*s.*, the Selection left to the Purchaser.
50 Fine varieties . . 40*s.*, the Selection left to Youell & Co.
50 Extra Fine ditto . 60*s.*, the Selection left to the Purchaser.

VERBENAS.

12 Extra fine Varieties, 6*s.*, the selection left to Youell & Co.
12 Ditto ,, 10*s.*, the selection left to the purchaser.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name . . 10*s.* per dozen
12 Extra Fine ditto, do. . . 18*s.* ,,

CHRYSANTHEMUMS. [Sent postage free.]

Fifty of the newest best varieties by name, 12*s.* per dozen; for list and colours of which, see Advertisement of April 27.

FLOWER SEEDS.—30 Packets of the choicest and newest kinds sent per post free for 6*s.*

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND CO., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms.—Fine robust 4 year old plants, 8 to 10 inches high, 10*l.* per 100, or 30*s.* per dozen.

Fine Plants of CEDRUS DEODARA, in Pots, 2ft. to 2ft. 8 ins., 10*s.* 6*d.* each.

Great Yarmouth Nursery, May 9, 1844.

N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

MESSRS. J. and H. BROWN, respectfully offer to the Nobility and Gentry the following Plants for Bedding Out, &c.

	s.	*d.*
Alstromerias, 10 vars, each	1	0
Auriculas, fine, per dozen, 12*s.* to 18	0	
Cinerarias, 6 best varieties, per dozen	4*s* to 6	0
Calceolarias, 12 best varieties, per dozen	4*s* to 6	0
Campanula grandis, and others, per doz.	6	0
Dianthus Goethaalsii, do.	6	0
Euthalis macrophella, fine for beds, per doz.	12	0
Fuchsia exoniensis, each	3	0
,, ,,		
Fuchsias, 25 of the newest and most approved, 6*s* &	12	0
Galardia Picta, per doz.	6	0
Gazania, 3 vars., ,,	9	0
Gentiana acaulis, Asclepedia and Septemfida, per dozen	4*s*, 6*s*, & 9	0
Geraniums, Scarlet, Variegated, &c.	4*s*, 6*s*, & 9	0
Geum coccineum, per doz	6	0
Heliotropium, per doz.	4*s* & 6	0
Ipomea rubra cerulea, per doz.	6	0
Lobelias, 6 vars., per doz.	6	0
Lilium, 6 newest varieties, per dozen	12	0
Linum flavum, p doz.	6*s.* to 9	0

	s.	*d.*
Mimulus elegans, a very beautiful variety, and others, do.	6	0
New Border Pinks, per doz	4	0
Œnothera macrocarpa, cispatosa, 4 others, p. doz	12	0
Pentstemon, 6 best varieties, per dozen	6	0
Phlox Drummondi, and new dark, per doz.,	4*s* & 6	0
Phlox omnifora, & 6 other varieties, per dozen	6	0
Potentilla, 6 fine species	6	0
Rosa Devoniensis, p. doz.	9	0
White and Yellow China, and Yellow Noisette Rose, per doz.	9	0
Salvias, 6 vars., p. doz,	4*s* & 6	0
Petunia punctata, each	5	0
,, ,,		
Petunias, 6 new varieties, per dozen	6*s* & 4	0
Scutellaria splendens, fine for beds, per dozen	9	0
Trillium grandiflorum, per doz.	12	0
Tropæolum tricolorum, and pentiphyllum, each from	1*s.* 6*d.* to 10	6
Verbenas, 12 newest vars. per dozen	6*s* & 4	0

ROCK PLANTS.

25 Superior sorts	15*s*	50 Sup. Herbaceous plants	25*s*
50 do. do.	25	100 do. do. do.	45

HARDY CLIMBERS FOR PLANTING OUT.

Aristolochia Sipho, each	1*s* 6*d*	Clematis Sibboldii, p. doz	12*s* 0*d*
Atragene Austriaca, each	1 0	Do. Montana, p. doz	12 0
Bignonia radicans, each	1 0	Pyrus Dutsia and Cotoneaster, each	1 0
Do. do major, each	1 6	Wistaria consequana, each	1 6
Ceanothus, 2 species, each	1 0	Honeysuckle, 6 vars., each	1 0
Calampelis scabra, each	1 0	Jasminum 4 vars.	1 0
Clematis azurea grandiflora, per dozen	24 0	Sollya, 2 vars., each	0 9
20 varieties of Roses, each	1 6	Passiflora, 4 vars., each	1 0

HALF-HARDY OR SUMMER CLIMBERS.

Cobœa scandens, each	0*s* 9*d*	Scypanthus elegans, each	1 0
Maurandia, 3 vars., each	6 9	Thunbergias, 4 vars. each	1*s* 0*d*

The above Plants carefully packed and forwarded to any part of the United Kingdom. A post office Order or reference for payment in Town. Persons erecting Greenhouses or Conservatories can be well supplied with the choicest and best of Plants for furnishing, including the many handsome Climbers recently introduced.

N. B.—Plants securely packed for exportation.—Albion Nursery, Stoke Newington, London.

PANSY, "Lady Alice Peel."—In every respect one of the best Show-Flowers of the present year; raised by Fennell & Co. in 1843. Blooms were submitted for the opinion of the Editor of the *Gardeners' Chronicle*, a description of which will be found under "Notices to Correspondents," in *Gardeners' Chronicle* of April 27, page 248.

Strong plants are now ready for sending out, post-free, at 2s. 6d. per plant.—Great Yarmouth Nursery, May 9, 1844.

WILLIAM E. RENDLE can supply the following at the Manufacturers' prices, having been appointed Agent for the sale of them:—

WHITNEY'S TRANSPARENT COMPOSITION, in bottles; quarts, 4s 6d.; pints, 2s. 6d.

HUMPHREYS'S COMPOUND, 1s. 9d. per bottle.

CAMPBELL'S CORN-PRODUCING LIQUIDS.

HENRY HUNT'S PATENT GARDEN-POTS and STANDS, in fancy or common ware.

POTTER'S GUANO.

STEPHENSON'S CONICAL BOILERS.

WILLIAM E. RENDLE'S BOOK-CATALOGUE of GERANIUMS, DAHLIAS, FUCHSIAS, CAMELLIAS, NEW PLANTS, &c., has been just published, and can be had on application.—Union Road Nursery, Plymouth, May 6, 1844.

WARNER AND WARNER, Seedsmen, 28, Cornhill, London, beg to inform their Friends they can supply all the new varieties of Fuchsia, Petunia, Verbena, Calceolaria, Geranium, Dahlia, &c. &c. now out, either in Collections or by the single plant.

Plants of the New Black Nemophylla, 9d. each. Potter's Liquid Guano, in quart bottles, 1s. 9d. each. Super-phosphate of Lime, in 7lb. packets, at 1s. each. Whitney's Chemical Transparent Waterproof Composition, with directions for use; in pints, 2s. 6d. each, quarts, 4s. 6d. each.

For their Advertisements of new and choice Flower and Vegetable Seeds, see their lists in Harrison's "Cabinet" for April, and the preceding Numbers of the *Gardeners' Chronicle*.

Petunia Punctata is now ready for sending out, 7s. 6d. each.

SPLENDID LARGE, DEEP-BLUE ANAGALLIS and SUPERB CINERARIAS.—Plants of that large, splendid deep-blue, full and complete round-petalled ANAGALLIS BREWERII, being of a strong and vigorous habit, are well adapted for bedding out; 12s. per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light-blue, at 2s. 6d. per packet. Strong flowering plants of the above, 12s. per dozen. Applications, including Post-office orders, will be immediately executed.—Direct to Michael Brewer, Sen., Cambridge Nursery.

MAY'S "QUEEN OF MAY" CINERARIA.—The above new and beautiful Cineraria is now ready to be sent out by post, or otherwise, at 5s. 6d. each, including case, prepaid. It is confidently recommended as being one of the most splendid novelties that has been offered in Cinerarias; the colour being a beautiful light sky-blue; the flowers large and of good form; the plants compact, shrubby, and dwarf in growth—may be had of the principal Nurserymen in the kingdom.

W. M. begs to state that his descriptive List of new, superb Calceolarias may be had on application to William May, Hope Nursery, Bedale, Yorkshire.

W. M. also begs to intimate that he cannot supply any more Eucharidium grandiflorum.

PETUNIA PUNCTATA.—Flowers of this Beautiful Plant were last week submitted to the Editors of the *Gardeners' Chronicle* and *Gardeners' Gazette*, and noticed as follows:—

Dr. Lindley.—"*W. M.*—The bloom received of this variety agrees with the favourable opinion expressed of it in the autumn of last year."

Mr. Glenny.—"We have received two flowers of this beautiful variety, and we must admit that it is everything good that has been said of it. The flower is very large; a very beautiful purple, with blotches of white towards the centre and in the throat, and it makes some of the others look very poor."

Good Plants may still be had, 7s. 6d. each, post free, or in pots, as desired. The usual allowance when three or more are taken at once.

N.B.—A Large Specimen may now be seen in bloom at William Miller's, Providence Nursery, Ramsgate.—May 9.

GLOXINIA ROSEA ALBA; Figured in the present Number of the "Florists' Journal."

Extract.—"Our present illustration, G. rosea alba, is an hybrid obtained from seed of *candida*, impregnated with the pollen of *rubra*. Its beautiful intermediate colour at once proclaims its origin; and we have no doubt it will speedily become a favourite."—*Florists' Journal*, May 1, 1844, by the Editor.

The flower is of a lovely and delicate rose colour, with a carmine throat; habit of G. rubra, and a prolific bloomer.

Strong Plants now ready for sending out, at 7s. 6d. each; discount to the trade, if three plants are taken. Apply to Wm. Rendle, Union Road Nursery, Plymouth.—May 6, 1844.

WM. JOHN CORMACK, Agricultural Seedsman by Appointment to His Royal Highness Prince Albert, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. George Sinclair, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 2s. 6d. per quart.

SHADES FOR GREENHOUSES.

J. WEEKS & Co., Architects, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-pla., Chelsea, near Sloane sq.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Stives	
Paving	Orange Tubs, Flower Boxes, &c.

Apsley Edging

Mr. Lane-acre, Ruck will be happy to answer any inquiries, either personally, or by post.

in this *Gardener's* [illegible] superior quality for Cottages Orné, Swiss [illegible] Lodges, Dairies, Meat-safes, Aviaries, Farm [illegible] other Horticultural and Agricultural Purposes, [illegible] on application to Mr. Laker, Ramsey, Hunt-

R. WHITE & Co. beg now to offer Plants of the following, viz., Achimenes longiflora, strong Plants for specimens on their own bottoms, at 2s. each; Do. do., good flowering Plants at 9s. per dozen. Achimenes grandiflora, strong specimen roots, 3s. 6d. each; Do., smaller, 2s. A. pedunculata, do., 1s. each; A. coccinea, do., specimen, 9s. per doz. A. rosea, do. do., 9s. per dozen. Anagallis Brewerii, 1s. each, or 9s. per dozen. Chrysanthemums, 40 superb varieties, one plant of each, 21s. Dahlias, including all the finest old varieties, and the following new ones, viz., Standard of Perfection, Orange Superb, Lady Antrobus, Emma Noke, Madame Chevain, Essex Triumph, Oakley's Surprise, Antagonist, Bliss Bonnet, Queen of the Isles, &c. &c., at very moderate rates, or where the selection is left to us, at 10s. 6d. per dozen, or 80s. per 100, which may include the last-named five new kinds, and will be made up with other really good sorts.

Fuchsias—London Rival, Globosa Grandiflora, Repartero, Stanwelliana, Prince of Wales, Monarch, Bridegroom, Integrifolia, Kentish Hero, and all the other new kinds, at moderate prices, or a Collection of 20 superb kinds, including some of the new ones, and any of the following, viz., Venus victrix, Exoniensis, Lancil, Greenwich Rival, Magnifica, Gigantica grandiflora, St. Clare, Brucinana, Eximia, Woodsii, Conspicua, Arborea, Devonia, Splendens, Youngii, Formosa elegans, &c., for 21s., or 10 for 10s. 6d.

Geraniums in superb collections, 40 good varieties, 63s.; 20 do. do., 42s.

Petunias, good sorts, per dozen, 4s. The following new varieties:—Punctata, Beauty Supreme, Celestial, Formosa, Ne plus Ultra, Splendida, Speciosissima, Multiflora punicea, Gem, Superb, 21s. the Collection, or separately at moderate rates.

Verbenas.—Finest old varieties, per doz., 4s. The following are seedlings, viz.:—White's Wonder, Perfection, Modesty, Variabilis, Cooperii, Surprise, Simperii, Stewart's Queen of the Whites, Azurea grandiflora, Carnea superba, Pearson's Teucroides atrosanguinea, do. Princess Alice, Speciosissima, Beauty Supreme, Teucroides cœlestina, Miller's Blue Queen, Zeuxis, Smith's Excelsa, Array, Delicata, and Striata—the Collection, 31s. 6d.

Scarlet Geraniums, Heliotropes, Calceolarias, &c. &c., for bedding out; and every description of plant at moderate prices.

Orders from unknown correspondents must be accompanied by remittance; and orders amounting to 5l. will be delivered free.—Bone Manure—Dust, 20s., Mixed, 19s. per qr.; Guano, 11s. per cwt., or 10l. per ton, warranted genuine. Agents, by appointment, for the sale of Whitney's Composition.

Poole Nursery, Dorsetshire.

JOHN RIVERS, Sawbridgeworth, Herts, begs to inform Agriculturists in general that the MANGOLD WURZEL and SWEDISH TURNIP enumerated beneath are new and of his own growth, and can be recommended with confidence. The Russian Swede, with yellow skin and yellow flesh, was imported by him in 1836, it has been since carefully selected, and is recommended for productiveness and superior hardiness, and for its not being so liable to mildew as the Liverpool and other dark-coloured varieties.

Long yellow Mangold Wurzel, growing much out of the ground, tapless, with fine top	1s. per lb.
White-fleshed, purple-skinned Globe, for thin soils	1s. per lb.
Long Purple, superior stock	9d. per lb.
Russian Yellow Swedish Turnip	2s. per lb.

Carriage paid to London.

Lawn Grasses, mixed with dwarf Clovers, warranted to insure a fine sward (weight 20 lbs. per bushel), price 14s. per bushel; Pasture Grasses mixed for any description of soil, varying in price from 8s. to 12s. per bushel; three bushels per acre recommended upon a clean tillage, to be sown at Midsummer, with a portion of Lucerne, Perennial Clover, and Sainfoin, upon soils that are not too retentive of moisture.

If a description of the soil intended to be laid down is given, J. R. trusts, by attentive observation of the various Pasture-Grasses, both separately and in pasture, upon various soils, to give satisfaction to those favouring him with their commands.

SKIRVING'S IMPROVED SWEDE TURNIP.

W. SKIRVING, Seedsman, Queen-square, Liverpool, begs to acquaint his Agricultural Friends and the Public, that the price for the present season of the Genuine Seed of his improved Swede Turnip is 1s. 6d. per lb.; the sort warranted the same as that for which he received the Premium of the Royal Agricultural Society of England. All other sorts of Turnip-seeds of the common kinds at the usual prices; also the most approved varieties of Mangold Wurzel, large White Belgian and Altringham Carrot.

For permanent Pasture, W. Skirving begs to offer his Selection of the most useful Perennial Grass-seeds. The sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental Grounds at Walton. On this system he has supplied within a few years, Seeds for many thousand acres, which have given every satisfaction. Orders stating quantity and quality of land to be laid down, will be correctly executed, with a suitable mixture.

For alternate Cropping, W. S. can recommend Seed of pure Italian Rye-grass, grown and carefully saved on his own farm.

THIS DAY IS PUBLISHED, PRICE SIXPENCE, STAMPED TO GO FREE BY POST,

The FOURTH NUMBER of

The Railway Chronicle.

JOURNAL OF ENGINEERING IMPROVEMENTS, MECHANICAL INVENTIONS, PUBLIC WORKS, &c.

There has been created within the last ten years a Productive Property in Railways amounting to more than Sixty Millions sterling, with a Revenue of nearly Six Millions per Annum. This addition to the wealth and resources of England has been produced by the investment of the funds of nearly Fifty Thousand Individuals, who form the Railway Constituency of Great Britain. It affords employment to a great body of our Workmen, tends to the development of our industrial Capabilities, and is a boon to the whole travelling Population.

It is strongly felt that Railway property, involving interests so extensive, should not be exposed to the injurious effects which the want of sound information and the circulation of erroneous statements for party purposes so constantly produce; and it has appeared, to those most capable of judging, that the mutual interests of the Proprietary, the Managers, and the Railway Executive, and the Public interests with which they are identified, have as yet found *no* organ in which they can be fairly discussed and satisfactorily adjusted. The Railway Chronicle has been projected to supply this deficiency, by the establishment of an authentic and impartial medium of communication between all the members of the great Railway community; having especially in view the free communication of useful information, the promotion of the common interests and the general circulation of sound intelligence in all that relates to Railway property.

The Conductors of the Railway Chronicle are men of practical experience, who possess peculiar facilities for obtaining the earliest information, and who will use their anxious endeavours to advance, in every way, the great interests of Railway property, avoiding all indulgence of personal feeling, the expression of party prejudice, or the advancement of exclusive interests;—they desire, in short, to furnish an unbiassed Chronicle of facts, and a fair arena for the discussion of important opinions and principles.

The Railway Chronicle will contain the earliest and most authentic information on the following subjects:—

THE CONDITION AND PROSPECTS OF RAILWAYS NOW IN USE.
POSITION, PROGRESS, AND VALUE OF FOREIGN RAILWAYS.
PROGRESS OF RAILWAYS IN EXECUTION.
PROJECTED NEW RAILWAYS.
THE TRAFFIC AND REVENUE OF RAILWAYS.
THE ECONOMY OF WORKING AND EXPENDITURE.
THE VALUE OF SHARES.
PAYMENT OF CALLS, DIVIDENDS, AND DEBENTURES.
THE PROCEEDINGS AT RAILWAY MEETINGS, WITH THE DOCUMENTS LAID BEFORE SUCH MEETINGS.
WEEKLY REPORTS ON THE MONEY AND SHARE MARKETS.
THE PROCEEDINGS OF THE BOARD OF TRADE AND OTHER PUBLIC OR MUNICIPAL BODIES, SO FAR AS THEY AFFECT THE INTERESTS OF RAILWAY PROPERTY.
PARLIAMENTARY RAILWAY PROCEEDINGS.
RAILWAY LEGAL INFORMATION.
CONTRACTS FOR EXECUTION OF WORK.
STATE OF THE IRON TRADE.
ENGINEERING WORKS OF MERIT ON RAILWAYS AT HOME AND ABROAD.
ENGINEERING IMPROVEMENTS ON RAILWAYS AT HOME AND ABROAD.
MECHANICAL INVENTIONS RELATING TO RAILWAYS AT HOME AND ABROAD, ILLUSTRATED, WHEN REQUISITE, BY WOOD-CUTS.
LOCOMOTIVE IMPROVEMENTS AND INVENTIONS AT HOME AND ABROAD.
REPORTS OF THE SCIENTIFIC SOCIETIES, WHENEVER ANY SUBJECTS AFFECTING RAILWAYS ARE DISCUSSED.
RAILWAY LITERATURE.
RAILWAY PATENTS.

To elucidate which, Illustrative Maps and Engravings will be given, when necessary.

Arrangements have been made for the purpose of supplying in the Railway Chronicle the earliest information concerning the French Railways (*the figures being in English money*), in which so much British capital is now invested, and the other Railways on the Continent which are in progress or in prospect. Intelligence will leave Paris every week in time for insertion in the Railway Chronicle, which will thus contain the transactions in the Paris Railway Stocks, and receipts of the various lines up to the latest hour, and furnish the earliest notice of whatever may affect the British bolder.

Weekly Reports from the London, Liverpool, Manchester, and Northern Share Markets will afford the Capitalist the means of judging of the condition of Railway investments.

Another peculiar feature of the Railway Chronicle is to consist in a series of papers on each of the Great British Railways—in which the Past History, Present Condition, and Future Prospects of every Railway will be concisely developed. It is hardly to be presumed, that the great number of persons who have of late years begun to interest themselves in Railway Property, can have had the leisure and opportunity necessary to understand the peculiar circumstances and character of each individual Railway, so as to estimate properly the relative value and prospective profit of these investments. This information will be given in the successive Numbers of the Railway Chronicle. For those who are now for the first time becoming subscribers to a Railway Paper, this feature is important, as it will enable them rapidly to obtain an acquaintance with the whole of the existing lines.

To Capitalists, Bankers, Solicitors, Stock-brokers, Insurance Companies, and all who hold Money for investment, the Railway Chronicle will furnish such sound unprejudiced information as shall enable them at once to make a judicious choice for the investment of funds at their disposal.

To Engineers, the Railway Chronicle will afford information on all points of Practical Engineering that may tend to the advancement of the profession, and to the perfection of that Railway communication which their talents have placed in its present admirable condition, and which it remains for their skill to render more available to the Public, and therefore more beneficial to the Shareholder. Through this channel of intercommunication every intelligent person will have an opportunity of contributing to the common stock of knowledge, and consequently to the general welfare.

To Contractors, Manufacturers, Inventors, and Practical Engineers and Mechanics, the Railway Chronicle will afford the means of bringing before the Influential Part of the Railway Proprietary, such Inventions, Discoveries, Practical Works, Mechanical Improvements and Articles of Manufacture, as they may desire to introduce into Railway employment; and it will afford the means of ascertaining where their practical assistance can be required either on lines projected or in execution. Thus the columns of the Railway Chronicle will open a market for the labour of the Contractor, the inventions of the Mechanist, and the commodities of the Manufacturing Engineer.

The Railway Chronicle

Will be published EVERY SATURDAY, in time for the Morning Mails.

☞ Orders received by all Newsmen.

Office for Advertisements and Communications, 14, Wellington-street North, Strand, London.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 279, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

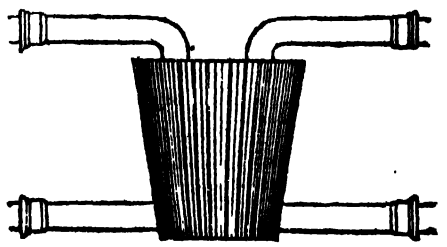
D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 279, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.



BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES. Registered under 6 & 7 Vict., Cap. 65. 130, Fleet-street, London.—BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in.	ft. s.	s.	s. d.	s. d.	s. d.	
10	1 5	20	7 0	6 6	2 6	30 feet.	12 to 20
Ribbed Boiler.						
10	2 2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	30	12 6	7 6	3 6	80 to 125 feet.	40 to 65
14	3 10	35	17 5	8 6	4 6	150 to 250 feet.	65 to 100
18	5 5	42	25 0	8 6	5 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft
21	8 15	50	35 0	8 6	7 6	600 to 800 feet.	

If 3 inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

WIRE-WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,

COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, April 25, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 46, Upper Thames-street.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substances known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt. Phosphate of Potash, 12s. per cwt.

" Soda 12s. "

" Magnesia 9s. "

" Ammonia 1s. per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs. WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1s.

MANURES.

BOAST AND Co.'s PATENT INORGANIC MANURES.—These strong and productive manures have already proved their superiority over all others yet adopted. It is now thoroughly understood and acknowledged by intelligent agriculturists that each plant requires a distinct manure, and it is upon this perfectly scientific principle that these manures are prepared, being formed so as to supply all the substances taken from the soil by each particular crop. They are immeasurably more efficacious, far more economical than all others, and possess the great advantage of being easily applied to the land.

Prospectuses, with full particulars, may be obtained; or will be forwarded by post on application at the Manufactory, Bow, Middlesex.

*** By the use of these Manures, any land may be rendered fertile. Wheat, &c. may be grown on the same land every year with immense advantage to the farmer, and without injury to the soil; whilst all the other crops are greatly increased.

GUANO, superior to the foreign, at a reduced price.

Manures prepared expressly for Gardeners and Florists.

THE URATE of the LONDON MANURE COMPANY, 5l. per Ton. It is with the greatest satisfaction, after three years' experience, the Company are enabled to recommend the above as one of the best manures for Barley, Oats, Spring Wheat, and more especially Turnips. By promoting a rapid growth of the latter it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. The Urate may be sown broadcast, or which is preferable, by the drill, at the rate of one ton to three acres, and it is desirable it should not be placed more than two inches below the surface. As a top dressing for Wheat the Urate has been used with great advantage. Gardeners and Florists will find it very useful for Dahlias and other roots. Full particulars and Testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate of Ammonia; Gypsum and every other artificial Manure.

EDWARD PURSER, Secretary, 40, New Bridge Street.

FOR TURNIPS.

THE Urate of the London Manure Company, 4 guineas per ton. The London Manure Company have great pleasure in acquainting their friends that they have this day reduced the Urate from 5l. to 4 guineas per ton, at the same time pledging themselves that the quality shall be fully maintained. The Urate will be found most valuable for Turnips, by promoting a rapid growth; it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. It may be sown broadcast, or, which is preferable, by the drill, at the rate of one ton to 3 acres; and it is desirable it should not be placed more than 2 inches below the surface. Gardeners and Florists will find it very useful for Dahlias, and other roots. Full particulars and testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate Ammonia; Gypsum, and every other artificial manure.—EDWARD PURSER, Secretary, 40, New-bridge-street.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2s. 6d. each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden Ship, and Barge Pumps, also, those for Distillers, Brewers, Soap boilers, and Tanners, for hot and cold liquor. Pumps kept for Hire, for Excavations and Wells, Buildings heated by Hot-water, for Horticulture, and every variety of manufacturing purposes. The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset street, Fleet-street, London.

YORKSHIRE LAND-DRAINING ASSOCIATION. Capital, 500,000l., in Stock of 25l. Deposit 5 per Cent.—The Provisional Committee have determined to limit the time for receiving Applications for Stock in this Association to THURSDAY, the 30th instant, on which day the List will be closed, preparatory to the allotment being made. Prospectuses may be obtained from the Solicitors, Messrs. Blanchard, Richardson, and Gutch, York; or from the Secretary, J. H. CHARNOCK, Wakefield.—May 7, 1844.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 28, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s. 6d. each, and in bottles, six times the size, at 7s. 6d. The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c. are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 5, A., Hawley Road, Kentish Town.

N B. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.

HAYMAKING SEASON.—Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.

PULVERISED PURE CHARCOAL for Mixing with COMPOSTS. The above can be had in bags, containing four bushels, at 5s. per bag, including bag, and carriage paid to London. — Apply to JOHN RIVERS, Sawbridgeworth, Herts.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

WHITNEY'S CHEMICAL, TRANSPARENT, WATERPROOF COMPOSITION, for rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to Rain or Moisture, admitting light equal to Glass, the *burning* rays of the *sun alone* being obstructed. Houses or pits covered with Calico, &c., prepared with this Composition, embrace important advantages over Glass. The light being equally diffused in every part of the house, plants placed on the floor have as much light as those close to the covering, consequently they are not drawn up as under Glass, while they continue much longer in *bloom*, and preserve their *delicate tints unfaded* till the *blossom falls*.

Whitney's Substitute for Glass.—I have had screens of calico rendered transparent with Mr. Whitney's invaluable varnish, and used them last winter, with a success far exceeding my most sanguine expectations, though my anticipations had been considerably excited. Indeed I consider Mr. Whitney's discovery as an invaluable boon to the horticulturist, one that will bear competition with any invention connected with the art and mystery of Horticulture in modern times. My screens were about 9 feet long each, and were inclined to the wall separated about 12 inches below, and as my object was to ascertain the value of the screens, in reference to *radiation*, they were *left open at each end*. Suffice it to say, the Fuchsia, Pomegranate, Passion-flower, Japan Honeysuckle, and others still more delicate and susceptible, were effectually preserved, and that without the slightest check to their growth, or any injury whatever. I am of opinion that in this *new aspect*, it possesses a protecting influence *infinitely superior to glass*, because the effects of radiation, a most powerful source of cold, are *not intercepted by glass*, which so materially counteracts the artificial temperature within, I cannot, therefore, but conclude, that for the protection, not merely of the early blossom, but the maturation of the fruits as in the case of the Peach, Nectarine, Apricot, and Grape, these transparent screens, thus prepared, are invaluable, and their triumphant success certain. Add to this, for Cucumber and Melon frames, their superiority over glass is undoubted for preventing flagging of the foliage (sometimes being scorched) by day, and the chilling effects of radiation by night. Screens prepared with Whitney's Transparent Varnish should be also used as shades in the intensity of a summer's sun, and for protection against radiation in winter, for the stove, greenhouse and conservatory. Even in the *economy of fuel* the value of such screens is demonstrable, as less will be required to maintain an equable warmth, its escape by radiation being thus effectually checked.—J. M., *16th April*, 1844.

Prepared by GEORGE WHITNEY, Chemist, Shrewsbury; and sold in Bottles, 2s. 6d. and 1s. 6d., with ample directions for use; and, as a protection to the public, the signature of the inventor is on each bottle. Sold by the principal Seedsmen in London and throughout the kingdom Merchants, Seedsmen, and Florists supplied by Mr. Bailey, North-street, Wolverhampton

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Conservatories and Greenhouses, being calculated, from its extreme hardness, to resist the wear incident to ordinary Plastering. For Floors it has a threefold advantage over Stone-paving. 1st, in its lightness, one inch in thickness of KEENE'S CEMENT sufficing where 2 to 3 inch flagging would be employed. Next, in its appearance, combining, as it does, the hardness of stone with a uniform colour and even surface free from joints; and lastly, in economy, being one-third the price of Portland paving.

The most conclusive evidence can be given of the utility of KEENE'S CEMENT for these purposes by the Patentees and Manufacturers.—JOHN BAZLEY WHITE and SONS, Millbank-street, Westminster.

WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. DEANE, Ironmongers, London-bridge; and of any Ironmonger in the country Price, in box, with lock and joints, 2l. 5s.

CLEAR WHITE GLASS MILK PANS.

APSLEY PELLATT, FALCON GLASS WORKS, Holland-street, Blackfriars-road, having made further experiments, is able to reduce the price of the Milk-Pans—as described in the *Gardeners' Chronicle*, of clear white flint glass, which is far superior to the foreign green glass—to 5s. 6d. each, or 3l. per dozen.

DRAINAGE OF LAND.—WORKMAN'S LEVEL. Invented by Mr. HAILEY DENTON. This Level is constructed on a new principle, without a spirit tube, and cannot be put out of adjustment. It enables workmen to preserve a uniform fall, and, without the complexity of a spirit-level, has all its accuracy. Price 30s. Address, WM. ROBERTS, Land Surveyor, 8, Edward-street, Hampstead Road, who tests each instrument before delivery.

SOMETHING QUITE NEW in PAPIER MACHE. MECHI, 4, Leadenhall-street, London, has just completed some extraordinary specimens of Tea-trays, Work-tables, Dressing-cases, Ink stands, Writing desks, Envelope-cases, and Work-boxes, in Papier Mache, richly inlaid with pearl landscapes, and ornamented in a most attractive manner. A few elegant Tables, Cabinets, and Jewel cases, of the same material; and a first-rate assortment of Papier Tea-trays, Pole-screens, Card-racks, Tea-caddies Card-cases, Ladies' Companions, Portfolios, Cake and Note-baskets, Vases, and every description of Tortoiseshell and Ivory work.—A visit to MR. MECHI'S Establishment will gratify, by exhibiting the most brilliant display of art in fancy manufactures. Catalogues gratis. The regular assortment of Plated Dessert-knives, Sheffield Plate, Table Cutlery, Strops, Razors, Scissors, Penknives, &c.

FOREIGN WINES, Greatly Reduced in Price, for CASH, in quantities of One Dozen and upwards, and which, if not approved of, will be exchanged, or the money returned.

Sherry (pale or brown) at	21s.	25s.	30s. 35s. and 40s.	per doz.
Port from the wood		23s.	26s. 30s. and 34s.	ditto.
Ditto, crusted		26s.	30s. 36s. and 40s.	ditto.
Madeira			27s. 40s. and 48s.	ditto.
Claret		30s.	40s. 50s. and 60s.	ditto.
Champagne (in pints, 2s. extra)			40s. 54s. and 70s	ditto.

Barcelona 27s., Vidonia 24s., Lisbon (dry or sweet) 24s., Marsala 24s., Cape 15s. per dozen; hampers 9d., bottles 1s. 6d. per dozen, if not returned. Payment to be made on or before delivery in town, and orders from the country must be accompanied by a remittance. Samples can be tasted at the office.—DARNELL and Co., 14, Walbrook, City.

100 CUCUMBER AND MELON BOXES AND LIGHTS for Sale. One, Two, and Three-light Boxes and Lights of all sizes ready for immediate use—boxed materials: packed and sent to all parts of the Kingdom by JAMES WATTS, Sash Manufacturer and Hothouse Builder, Clairemont-place, Old Kent-road. Garden Lights glazed and painted complete, from 1s. per foot.

HORTICULTURAL SOCIETY OF LONDON.—LIST OF PRIZES

OFFERED AT THE EXHIBITIONS IN THE GARDENS, IN 1844.

MEDALS AND REWARDS.

The Society distributes the following Medals and Rewards; viz.:

	value—£	s.	d.
C. The Certificate	0	10	0
SB. Silver Banksian Medal	1	0	0
SK. Silver Knightian Do.	1	5	0
LS. Large Silver Do.	1	15	0
SG. Large Silver Gilt Do.	4	0	0
GB. Gold Banksian Do.	7	0	0
GK. Gold Knightian Do.	10	0	0
LG. Large Gold Do.	20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate. In case an Exhibitor shall receive a First Prize in any one Letter, he shall not be entitled to receive any other Medal in the same Letter, except in *CC*, *DD*, and *EE*.

CLASS I.—FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A. Pelargoniums, in collections of 12 new and first-rate varieties, cultivated with superior skill, in pots of 24 to a cast. GB—SG—LS—SK.

B. Pelargoniums, in collections of 12 varieties, in pots of 12 to a cast. SG—LS—SK.

N.B. Persons exhibiting in *B* cannot also exhibit in *C*.

C. Pelargoniums, in collections of 6 varieties, in pots of 8 to a cast. LS—SB.

D. Rhododendrons, in pots; not fewer than 6 plants, in 6 varieties. LS—SK—SB.

E. Roses, in pots; Amateurs show in collections of 12, Nurserymen in collections of 25, distinct varieties. GB—SG—LS.

N.B. It is the wish of the Society in a future season, to require Roses to be shown exclusively in pots; and not to allow cut specimens to be exhibited at all.

F. Moss Roses in loose bunches, so as to exhibit, as far as possible, the habit of the variety; in 12 varieties. SK—SB—C.

G. Other Roses, exhibited as in the last letter, and in 50 varieties. LS—SK—B—C.

N.B. No one who exhibits in this letter can also compete for the following.

H. Other Roses, exhibited as in the letter *F*, and in 25 varieties. SK—SB—C.

N.B. Higher medals than those here offered for Roses cannot be given by the Judges. And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to be placed on the tables.

I. Cape Heaths, in collections of 20 distinct varieties. GB—SG—LS.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion.

K. Cape Heaths, in collections of 6 distinct varieties. SG—LS—SK.

N.B. No person who shows in *I* will be allowed to exhibit also in *K*.

L. Calceolarias, in sizes; in pots of 12 to the cast. LS—SK—SB.

M. Carnations, in pans of 24 distinct varieties. LS—SK—SB.

N. Picotees, in pans of 24 distinct varieties. LS—SK—SB.

O. Pinks, in pans of 24 distinct varieties. SK—SB.

CLASS II.—FLOWERS; for which all persons are admitted to equal competition.

P. Stove or Greenhouse Plants, in collections of 30 plants. GK—GB—SG—LS.

N.B. Heaths, Calceolarias, Fuchsias, Greenhouse Azaleas, Rhododendrons, Orchidaceæ, Cacti, and Pelargoniums, to be excluded from *P*, *Q*, and *R*.

Q. Stove or Greenhouse plants, in collections of 15 plants. GB—SG—LS.

N.B. Persons exhibiting in *P* not to compete in *Q* also.

R. Stove or Greenhouse plants, in collections of 6 distinct species. SG—LS—SK.

N.B. Persons exhibiting in *P* or *Q* will not be allowed to compete in *R* also.

S. Greenhouse Azaleas, in 12 distinct varieties. GB—SG—LS.

T. Greenhouse Azaleas, in 6 distinct varieties. SG—LS.

N.B. No one can show in both classes of Azaleas.

U. Stove or Greenhouse climbers, in collections of 6 species. SG—SK.

V. Exotic Orchidaceæ, in collections of not fewer than 20 species. LG—GK—GB.

N.B. Exhibitors cannot show in more than one of the classes, *V*, *W*, and *X*.

W. Exotic Orchidaceæ, in collections of not fewer than 6 species. GK—GB—SG

X. Exotic Orchidaceæ in single specimens. SG—LS—SK.

Y. Plants in glass cases, grown on Mr. Ward's plan. SG—LS—SK.

N.B. It is highly desirable that these cases be made with a movable door, so as to prevent the condensation of the water on the inner face of the glass during the time of exhibition.

Z. Distinct varieties of Tall Cacti in flower. GB—SG—LS.

N.B. The GB and SG Medals are not to be given if fewer than six varieties are exhibited.

AA. Fuchsias in collections of 12 distinct varieties. LS—SK.

BB. Cinerarias, in pots, in collections of 12 distinct varieties. SK—SB.

CC. Single specimens of new or extremely rare ornamental plants. SG—LS—SK—SB—C.

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Gardens in a previous season.*

DD Miscellaneous subjects. SK—SB—C.

N.B. Cockscombs, Heartsease, Hydrangeas, and cut flowers, are altogether excluded from exhibition. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

EE. Seedling Florists' flowers. SK—SB—C.

N.B. Every seedling must be shown singly, and must be marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. Pelargoniums are to be shown in pots, and not in a cut state. No person will be allowed to exhibit more than five seedlings at each meeting. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

IN ADDITION to any medals assigned to the classes *I*, *P*, *Q*, and *W*, the SK and SB medals are offered for the two collections in those classes which shall be best named by the Exhibitor.

N.B. The Society's officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy of the spelling, and the neatness of the writing.

CLASS III.—FRUIT, for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the market, and private growers, exhibit independently of each other.

N.B. All Fruit must be FULLY ripe and WELL-COLOURED; if the contrary it will be disqualified.

FF. Miscellaneous collections of Fruit, consisting of at least three different kinds, Peaches and Nectarines being considered as only one kind. GK—GB—LS.

N.B. Cucumbers, Tomatoes, Gourds, and similar Kitchen Garden produce, are excluded from this letter.

GG. Grapes. SG—LS—SK—SB.

HH. Pine-apples. SG—LS—SK—SB.

II. Peaches or Nectarines, in dishes of six specimens. SK—SB.

KK. Other kinds of Fruit. SK—SB—C.

JUDGES.—The Judges have the power of *increasing* or *diminishing* the number and value of the silver medals offered by the Society for particular objects, and also of *conferring* Silver Medals or Certificates in cases not contemplated in these regulations, if they think it necessary to do so.

The Judges are also required to bear in mind that the Society's Medals are offered less for new and curious objects, than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the collector as to reward the skilful Gardener; they are also not to make any award in cases where the objects exhibited do not appear worthy of a Medal; otherwise a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

Copies of the above list may be obtained at 21, Regent-street, upon application to the Secretary.

SLOUGH NURSERY, NEAR WINDSOR, CHOICE SELECTION OF NEW DAHLIAS, 1844.

THOMAS BROWN directs attention to his beautiful SEEDLINGS, particularly that unrivalled light flower, "LADY ST. MAUR," the superiority of which over every other of its class is too well known to need further comment. Strong and healthy plants will be ready for delivery early in May,

AURANTIA (Spary's)—Orange buff; fine form and petal. A very desirable show flower; obtained numerous prizes; 3 ft. 10s 6d

ALEXANDER (Brown's)—Maroon and crimson mottled; full and constant, centre well up, and a very useful show flower; 5 ft. 7 6

DELIGHT (Brown's)—Cream, veined and tipped with purple; petal of fine substance and high centre; very distinct to any in cultivation; 4 ft. 7 6

DESIRABLE (Brown's)—Shaded buff, quite new in colour; a good show flower; 5 ft. 7 6

LADY ST. MAUR (Brown's)—White, delicately tipped with violet purple; very deep and full, high centre, forming a beautiful outline; the petals are round, and smooth at the edge; habit of Perpetual Grand: it is decidedly the finest light flower ever offered. It attracted great admiration at Windsor, and was universally acknowledged to be the finest flower in the Exhibition; 4 to 5 ft. 10 6

NUTWITH (Brown's)—Bright crimson; a fine open-cupped petal, and a good show flower; 4 ft. 7 6

RAPHAEL (Brown's)—Dark maroon, beautifully shaded with light crimson; superior petal, of excellent form: a very novel and striking variety, and will be an acquisition to any stand; 4 ft. 10 6

REMBRANDT (Brown's)—Dark purple, very round and double, rising well in the centre, and a constant show flower. It was very successfully exhibited; 3 to 4 ft. . 10 6

EMMA NOKE (Dowding's)—Blush white, good general form and centre: a good useful show flower; 4 ft. . 10 6

ESSEX BRIDE (Turville's)—Delicate peach lilac, of excellent petal and form; 5 ft. . . . . (*no discount*) 10 6

LADY ANTRONUS (Spary's)—White and lilac, mottled; good form, constant, and very useful show flower; 3 ft. 10 6

NONPARREL (Proctor's)—Ruby scarlet, of first-rate properties; extra show flower, 4 ft. . . (*no discount*) 10 6

STANDARD OF PERFECTION (Keynes')—Crimson; of very superior form; 4 ft. . . . . (*no discount*) 10 6

SIR J. STEWART RICHARDSON (Union)—Brown ruby, great depth, and excellent show flower; 4 ft. (*no discount*) 10 6

T. B. has also Selections of fine Carnations, Picotees, and all other Florists' Flowers; Plants, Fruit-trees, Shrubs, and general Nursery Stock.

A general Catalogue of Dahlias, with a List of Superb New Pansies, to be had on application.

WOODLANDS NURSERY, MAKESFIELD, NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD and SON respectfully invite the attention of their Friends, and Amateurs, to their Extensive Stock of New Plants, adapted for bedding, CAMELLIAS, GREENHOUSE and HERBACEOUS PLANTS, SHRUBS, and CLIMBERS, together with a Splendid Collection of the Newest and Best ROSES of the season. Catalogues of which may be had GRATIS on application.

W. W. & S. have the pleasure of offering the following at moderate prices, the selection of varieties being left entirely to themselves:—

FUCHSIAS, per dozen—Extra fine varieties, 6s. and 9s.; Extra new and fine do., 12s; 50 fine and distinct do., for 40s.

CINERARIAS, per dozen—Fine distinct varieties, 6s. and 9s.; Extra fine and new do., 12s. and 18s.

VERBENAS, per dozen—Good and distinct varieties, 5s.; Extra fine do., 9s. and 12s.; Extra superb and new do., 18s.

PETUNIAS, per dozen—Extra fine varieties, 6s. and 9s.

The above are now ready for immediate transit, and may be had either in strong plants, packed in baskets, or they will be supplied in smaller plants, and sent by post, at the option of the purchaser.

A FEW SELECT PLANTS.

	per plant—s.	d.
Achimenes grandiflora	1	6
,, pedunculatus	1	6
Azalea elegans	2	0
,, Ignescens	2	6
,, speciosissima	3	6
,, splendens	1	6
Brachysema platyptera	5	0
Echites atropurpurens	3	0
Euthalis macrophyllus	1	6
Gesneria Cooperii	2	6
,, Suttoni alba	5	0
,, Zebrina	1	6
Gloxinia maxima	2	6
,, Priestleyana	2	6
,, rubra	1	6
Habrothamnus fascinatus	7	6
Hardenbergia longiracemosa	1	6
,, macrophylla	1	6
Hydrangea japonica	5	0
Lantana crocea	2	6
Leschenaultia biloba	1	6
,, grandiflora	5	0

	per plant—s.	d.
Mandevillea suaveolens	2	6
Manettia bicolor	2	0
Maurandya Barclayana alba	1	0
Nymphæa oblonga	3	6
Passiflora fragrans	2	6
,, Loudoniana	1	6
,, princeps	2	6
Physolobium crinatum	2	6
,, Stillingii	2	6
Ruellia ciliata	1	6
Scutellaria splendens	2	0
,, Japonica	3	6
Silene speciosa	3	6
Statice puberula	1	6
,, sinuata	1	6
Stephanotis floribundus	3	6
Sipnocampylos betulæfolius	1	6
Tecoma jasminoides	1	6
Trimalium odoratissimum	2	6
Zychia glabrata	2	6
,, inophylla	1	6
,, villosa	1	6

Lilium lancifolium album . each . 3s 6d
,, ,, ,, flowering bulbs . 10 6
,, ,, punctatum . . . 5 0
,, ,, ,, flowering bulbs . 10 6 to 21s.
,, ,, rubrum . . . 21 0
,, ,, ,, flowering bulbs . 31 6 to 42s.

*** Plants will be presented with each order, to defray the expense of carriage, &c.

Agents, by appointment, for the sale of WHITNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION. Sold in Bottles—Pints, 2s. 6d.; Quarts, 4s. 6d. each, with printed directions for use.

SUPERB SEEDLING DAHLIAS NOW READY FOR SENDING OUT.

GAINES'S "PRINCESS ALICE,"—Pure white, very full centre, the petals finely cupped; was considered by all who saw it growing the best White Dahlia; gained several prizes; a good show-flower, 4 ft., 10s. 6d.

GAINES'S TWICKENHAM RIVAL.—Fine yellow, occasionally tipped with red; a superb round thick petal, fine circular form; the best yellow yet offered to the public; gained several prizes; a good show flower, 4 ft., 10s. 6d.

GAINES'S COUNTESS OF ZETLAND.—Blush, tipped with lilac; fine round thick petals; a good show-flower, 4 ft., 10s. 6d.

GAINES'S ENTERPRISE.—Crimson purple, a superb show-flower, 4 ft., 10s. 9d.

A List of Dahlias, Pelargoniums, Pansies, Calceolarias, Fuchsias, Verbenas, Auriculas, Cinerarias, Chrysanthemums, &c., containing many New Seedlings of first-rate qualities, may be had by application at the Nursery, Surrey-lane, Battersea.

CHEAP GERANIUMS, FUCHSIAS, CALCEOLARIAS, CHRYSANTHEMUMS, PANSIES, DAHLIAS, &c.

The *Best Market* you can send to for all the *Best Varieties* of the above popular tribes of plants is at "APPLEBY'S NURSERY," Holdgate-lane, York.

THOS. APPLEBY is now prepared to send out (not post-free, as they are generally advertised) *Strong Plants*, in the finest health, at the prices quoted below:—

Geranium-Thurtell's Pluto, at 15s. to 21s. each, and the following at 7s 6d. each: Foster's Favourite, and Sir R. Peel Lyne's Sunrise, and Duke of Cornwall; Garth's Constellation, and Symmetry.

At 5s. each:—Garth's Wonder, Lyne's Princess Royal, Bassett's Glory of the West, Wilson's Comte d'Orsay, Foster's Nestor, Low's Queen of Sarum.

At 2s. 6d. each:—Wilson's Enchantress and Superba, Foster's Evelyne, Gipsey, Fair Maid of Devon, Grand Monarch, Madeline, Rising Sun, Queen of Fairies, Wonder of the West, Queen of Beauty.

At 1s 6d. each:—Wilson's Anne, Foster's Beauty, Circassian, Cyrus, Comte de Paris, Evadne, Hebe, Flash, Hannah, Jessie (Foster's), Jubilee, Jupiter, Lady Cotton Sheppard, Mr. Garth, Nymph, Prince of Waterloo, Ruby, Selina, Witch, &c. Every approved older variety at very moderate prices.

FUCHSIAS.—The very best of those sent out *new last summer* at 1s. to 2s. each, or from 10s. to 15s. per dozen, and all too large to go by post. St. Clare (true!), and all the older varieties, at 6s. per dozen.

CALCEOLARIAS.—A choice collection of *really good* kinds (including Lady Constable, and many of equal merit), at 1s. to 2s. 6d each, or from 9s. to 20s. per dozen; older kinds, for bedding, at 6s. per dozen.

CHRYSANTHEMUMS.—The very best kinds in cultivation may be selected at 1s. each, or 9s. per dozen. Or a *very choice* Collection of 54 Varieties will be supplied for 30s.

PANSIES.—T. A. has selected (with care) all the *most successful* Prize-flowers of this popular tribe, and consequently his Collection is very choice. They will be supplied (with but few exceptions), at 1s. each, or from 6s. to 10s. per dozen.

DAHLIAS.—T. A.'s Collection of those contains every variety worth growing, and strong Plants are now being sent out at 5s. to 20s. per dozen.

MISCELLANEOUS PLANTS.

	Each—s.	d.
Achimines hirsuta	7	6
,, grandiflora	2	0
and others	1	0
Brugmansia floribunda	2	6
Cactus, Conway's Giant	5s. to 10	6
Hibiscus Cameroni		
Zichia inophylla floribunda		
Lilium eximium		
Paulownia imperialis		
Scutellaria splendens		
Sipnocampylus betulifolius		
Statice Dicksonii		
,, foliosa		
Tropolum Jarrattii		
,, tricolorum		
Campanula grandis		

	Each—s.	d.
Glorioso superba	5	0
Gloxinia rubra	1	6
Habrothamnus fascicularis	5	0
Chorozema macrophylla	2	6
,, elegans	2	6
Cholone centranthifolia		
Delphinium Barlowii		
Dodocantheon elegans		
,, integrifolium		
Epimedium macranthum		
,, violacea		
Mimulus McLeanii		
Penstemon splendens		
Phlox picta (fine)		
Lisyrhichium grandiflorum, &c		

A *descriptive Catalogue* of T. A.'s *general Collection* of Plants may be had gratis on application, and all Orders with which he may be favoured will be executed with the *utmost accuracy* and despatch. Extra Plants will be added to compensate for long carriage, and when an order amounts to 5l. and upwards, a discount will be given. N.B.—A few strong Plants of that *splendid new Hardy Annual*, at 5s. per dozen. A remittance or reference is respectfully requested from strangers.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus; and B. and H. can safely recommend it from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices, to 130, Fleet street.

METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and successful manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE'S Sole Establishment, 130a, Oxford-street, one door from Holles-street.

Caution—Beware of the words "From Metcalfe's," adopted by some houses.

EXTRACT FROM OLD MOORE'S ALMANACK for MAY, 1844.—"CARE OF HEALTH.—The human frame often suffers greatly during this season, the hurtful influence of which is assisted by the premature adoption of the dress of summer. Those on whom the blight of consumption has fallen, frequently sink under it about this period, though the disease had commenced its ravages many weeks or months anterior to its fatal close. All unnecessary exposure on the part of such delicate persons to the morning and evening chills, should be carefully avoided. Also the full and plethoric will be benefited by the use of cooling medicines as PARR'S LIFE PILLS, and very temperate diet; as a tendency of blood to the head is not uncommon among such, giving rise to apoplexy and other fatal diseases of the brain. Young and stout persons even require some cooling purgative as PARR'S LIFE PILLS, which will lessen the heat of the skin, and perfectly cleanse the system."—PARR'S LIFE PILLS are sold by all respectable Medicine Vendors. See the words PARR'S LIFE PILLS, in White Letters on a Red Ground, on the Government Stamp.—Sold in boxes at 1s. 1½d., 2s. 9d., and family packets 11s. each.—T. ROBERTS and Co, 9, Crane-court, Fleet-street.

DRYING BOTANICAL SPECIMENS.—The great inconvenience experienced by Botanists from the want of suitable PAPER FOR DRYING PLANTS, has induced W. and T. BENTALL to direct their attention to the Manufacture of an article expressly for the purpose. They now have the pleasure of offering a Paper which they hope will be found to possess all the requisite qualities, and to be peculiarly adapted for the purpose.

The numerous flattering Testimonials W. and T. B. have received from their friends enabling them to recommend it with confidence, they respectfully solicit the patronage of the Botanical public whose interests they are endeavouring to serve.

To be had of the Manufacturers, price, per ream, 20s.; half-ream, 10s. 6d.; delivered free in London—size of sheet, 20 inches by 12, when folded. Specimens of the Paper will be forwarded on application, and all orders promptly executed.—Paper Mills, Halstead, Essex, April 30.

LYNDON'S PATENT GARDEN SPADES.—These excellent Spades, warranted to bear a knife edge, and wear as long as three Spades made in the usual way, are sold by JOHN SHEWEN, Ironmonger, Sevenoaks, to whom orders may be addressed, and will receive prompt attention.

NEW DOUBLE WHITE BRUGMANSIA, B. KNIGHTII.

THOMAS CRIPPS, Nurseryman, Tunbridge Wells, respectfully intimates to his Friends he has now ready for sending out Plants of the above Double and delightfully fragrant dwarf-flowering Brugmansia, at 21s. each, in 48 sized pots, or small, in thumb pots, 15s., with the usual discount to the Trade.

The Gardeners' Chronicle.

SATURDAY, MAY 11, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, MAY 15	Microscopical		8 P.M.
	Society of Arts		8 P.M.
SATURDAY, May 18	Horticultural Gardens		1 P.M.
TUESDAY, May 21	Linnean Anniversary		1 P.M.

COUNTRY SHOWS.—THURSDAY, May 16. Tottenham and Edmonton.

WHEN, during the last war, the united efforts of French excisemen and English sailors succeeded in depriving our continental neighbours of Sugar and Coffee, the attention of ingenious men was directed to the possibility of substituting articles of European growth for such produce. Hence arose the preparation of Beet-sugar and the cultivation of CHICORY: the former is a well known branch of modern French industry, excluded from this country; the latter, not being objected to by the Excise, is coming into cultivation with us, and promises to be an article of considerable importance. We therefore gladly avail ourselves of the kindness of a friend to publish, in another column, some practical information respecting the details of its management. The many inquiries that have been made of us lately assure us that the subject will prove interesting to our readers.

Chicory, or, as the French call it, *Chicorée*, is the Cichorium Intybus, a way-side plant, with beautiful blue flowers, resembling those of the Dandelion, except in colour. It has a stout tap-root, which, like that of the Wild Carrot, seems to improve rapidly in the hands of skilful gardeners. In the winter the French force its roots to produce blanched leaves in Mushroom-houses, cellars, and other dark places, when it forms a salad called *Barbe du Capucin*, much too bitter for English tastes; they have even a variety which forms as good a heart of leaves as Batavian Endive. It is also, with the French, a common field-crop for the sale of the leaves, which are described as being excellent for cows, when laid down with half Red Clover.

The Chicory that is cultivated as a substitute for Coffee is a variety of this plant, with long fleshy roots, like White Carrots; the French call it *Chicorée à café*. These large fleshy roots are what the cultivator desires to obtain; and a part of his business is to take care that all the plants which indicate a disposition to form woody roots are carefully eradicated. When fit for use, the roots are washed and cut into dice, which are dried, roasted, and mixed with Coffee—to which, in the opinion of many persons, they communicate a very agreeable flavour. This, at least, is certain, that they do no harm; on the contrary, their bitterness will probably render them wholesome.

In an early publication we shall state the duty on Chicory, and the Excise regulations, when the change, which we understand they are likely to undergo, is determined upon.

IF there were no other reasons for multiplying experiments, they would be of the utmost value as a means of giving gardeners the habit of observing more things than they are accustomed to look after. If it were possible to infuse a taste for investigating Nature into the minds of those who have, of all men, the best opportunities of interrogating her, it would be at once a gain to science and an unceasing source of gratification to themselves. The habit of experimenting is one of the most likely means to effect this object, provided the experiments are conducted with scrupulous accuracy, because they necessarily fix attention upon minute details and train the mind to observation.

Every man probably thinks himself an observer, and yet it is surprising how few really understand what they see. Compare the meagre pages of nine-tenths of modern travellers with those of Humboldt, and the difference between those who know how to use their eyes and those who do not is at once made evident. The truth is, that knowledge is necessary before correct observations can be made, and that knowledge must be gained by slow and patient study—not of books alone, but of things, explained by books. Carefully-conducted experiments render an acquaintance with both indispensable, and are sure to entice people to use their reasoning and observing powers.

There is no limit to the field of experiment; on the contrary, its horizon recedes as we advance; and hence, one of its peculiar charms. It is alike open to the occupant of a cottage, with a rod or two of ground, and to the holder of many acres. The chief expense it necessarily incurs is that of time and attention. If success brings its gratification, failure produces no disappointment, for something useful is learned in either case; some fact being obtained which may be afterwards applied in other experiments.

As a specimen of a good experiment of a simple kind, and which it is desirable to work out more fully, we will take the following singular results, obtained by a friend near St. Albans.

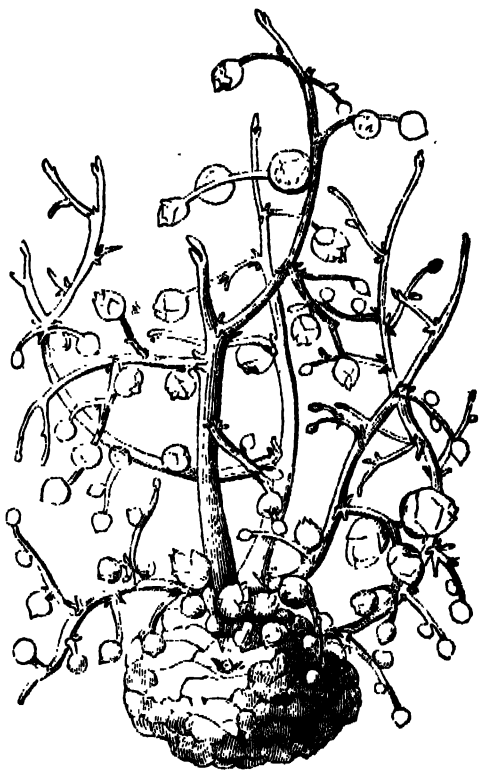
His object was to ascertain whether or not the enormous expense of carting manure could not be diminished. All those who live near London know that, except within a few miles of the metropolis, stable litter is not worth carriage, and that a distance of 20 miles is as effectual a barrier to its use as 100 miles would be. But that would not be the case if its bulk could be materially reduced. Our correspondent, therefore, tried the effect of burning it; and, if his experiment can be trusted, the results are of considerable importance, because it shows that stable litter burnt to ashes is nearly as effectual as the common bulky material.

The trial was made, as all trials should be, *on an exhausted soil*, consisting of a heavy loam. Turnips were sown on the 21st of last June in drills, 27 inches apart; and the space occupied by each experiment was exactly the same; viz., about the thirtieth of an acre.

	No. of Turnips	Gross Weight.
No. 1.—No manure	230	88lb.
No. 2.—Horse dung, 4 cwt.; lime, half a bushel; the lime was slacked, and mixed with the dung 6 weeks before it was put into the soil; this was for the purpose of driving off the Ammonia	308	462
No. 3.—Horse dung, 4 cwt.; sulphuric acid, 2 lb.; applied 6 weeks before it was put into the soil; this was for the purpose of fixing the Ammonia	323	444
No. 4.—Horse dung, 4 cwt.; thrown into a heap about 6 weeks before application	261	392
No. 5.—Horse dung, 6 cwt.; same as last	306	429
No. 6.—Horse dung, 8 cwt.; same as last	321	518
No. 7.—Horse dung, 5 cwt.; burnt to ashes, with free access of air	285	429
No. 8.—Dung, 5 cwt.; burnt with a very limited supply of air, until the vegetable matter was converted into charcoal	202	455
No. 9.—Dung, 5 cwt.; sulphuric acid, 5 lb.; the acid was mixed with the dung, and it was then carbonised like the last	267	417
No. 10.—No manure	180	70

Now, if these results can be relied on, we shall come to the conclusion, 1st, That 5 cwt. of stable litter when burnt is as good for Turnips as 6 cwt. of raw manure; and 2, that after all that has been said about the importance of ammonia in manure, the crops are as good where that principle is driven off as where it is retained by fixing. We do not in this case say that we trust the results that were obtained; but as we know that they are perfectly genuine, we would recommend a repetition of the experiment to others, especially to gardeners, who can easily renew it on the crops under their care.

Another useful experiment is suggested by the observation of a correspondent at p. 267, that "moulding up Potatoes retards the formation of the tubers." Is that true? We think not. But, if it be true, then a great deal of labour is annually expended unprofitably. The theory of earthing up Potatoes is this: Potatoes are stunted and swollen branches proceeding from the sides of the main stems, which alone rise into the air, clothe themselves with leaves, and so convey their food to the underground progeny. This is sufficiently proved by such instances as that represented below, where, owing to accidental causes, all the growth was effected in the dark, and the formation of the tubers took place in every direction among the branches. Now the quantity of lateral branches will be in proportion to the quantity of earth through which the main stem passes; tubers are lateral branches, and therefore the quantity of tubers will be regulated by the same cause. Moulding up is a contrivance to increase the quantity of earth through which the main stems have to pass, and should therefore, according to theory, be a beneficial operation. Nevertheless, the correspondent above alluded to denies its utility, and, in fact, pronounces it to be disadvantageous. Experiment must be the judge between him and others.



We do not find in books anything very positive upon this point. Mr. Towers,* indeed, mentions a case in which, after carefully layering the haulm, and covering it with soil as the shoots advanced in their growth, he obtained no tubers from the layers, although from the main stem he collected 7¼ lbs; but then his layers grew with excessive rankness—a circumstance most unfavourable to the produce of the Potato, that is, to the formation of those stunted branches which become tubers. Had he stopped or checked his layers, the result might have been different.

And this leads us to suggest another experiment with the Potato, which is the pinching off the end of the stems for a quarter of their length, when they have made about half their growth. This would indeed destroy a portion of the leaves, whose action swells the tubers and causes their starchy contents to form; but then it would also temporarily arrest the flow of sap, and might compel it to direct itself towards the lateral buds of the underground stems, forcing them into the state of Potatoes. The question is, whether the plants would suffer more by the loss of their leaves than they would gain by the stoppage of the sap. It may be that many small and useless tubers would be the consequence of the operation. It may be that the other tubers would become larger. It may be that no effect would be produced. This, then, is also a fair subject for experiment.

THE SPOT ON THE LEAVES OF THE PELARGONIUM is one of those diseases which nobody seems to understand. Last year our columns contained some discussion upon the subject, but nothing satisfactory was elicited. Cold, bad soil, the attacks of insects, are all suggested; the former appearing to gardeners, though not to us, the more probable. Mr. Ayres stated that he stopped it by pricking the infected part with the point of a penknife (p. 428), and Dr. Ingle mentioned his having recovered his plants by watering them with a dilute solution of nitro-muriatic acid (p. 541). This evidently leaned to the correctness of our own view that it is the soil which produces the mischief. We should be much obliged to our correspondents for the result of their observations since that time; and we are sure that hundreds of Pelargonium growers would be equally grateful.

In the meanwhile, for their guidance, we beg to give the following case, which has occurred to our correspondent "Winton:"—"This season I have generally adopted the one-shift system into No. 16 pots, in a mixture of leaf-mould, loam, and peat, with a somewhat liberal proportion of charcoal. About six weeks since I applied, according to your advice, a wine-glass of superphosphate of lime as a top-dressing. Nothing could exceed the beautiful appearance of the plants, until about ten days ago, when I first perceived a few spotted leaves, since which the disease has been rapidly advancing throughout my collection. I may say I have scarcely one plant, out of about one

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* Domestic Gardeners' Manual, p. 207.

hundred and twenty, free from infection. I looked over them this morning, and removed more than seven hundred infected leaves. I should have left many without a leaf if I had determined to remove all that had a speck on them. I have syringed rather freely, and closed my house early these last seven or eight weeks, acting upon last year's experience, and nothing could exceed my success then.

When (at p. 182. 1844). we noticed Mr. Hamilton's work on the Pine-apple, we expressed a wish to have some evidence as to the quality of the fruit obtained by his system of cultivation. Our reason for making the inquiry was, that unfavourable reports on the subject had reached us. If we had acted on those reports, or upon the information communicated anonymously by persons from Manchester, we should have done Mr. Hamilton great injustice; but, fortunately, our experience of the world has taught us to be very cautious how we credit assertions made to the disadvantage of any man, and also how to estimate detraction when it comes before us.

We have now to say, for the information of Pine-growers, that no doubt can be entertained respecting the good quality of the Thornfield Pines. Mr. John Parkinson, of Manchester, states that they are well known to be delicious; that the Montserrats are excellent at all seasons; but that the Enville and Providences are inferior when ripened in winter (and where are they not?). Mr. Jas. Worth, gardener to the Rev. E. T. Leigh, of Cheadle, speaks to the same effect, and expresses his unqualified approbation of all that he has seen of Mr. Hamilton's management. And finally, we can assert, upon the evidence of one who has seen the Thornfield Pines weighed, that there is no exaggeration in the reports concerning them on that head. We may add, that the guests at Mr. Philips's table have, as we know, repeatedly remarked that they never tasted richer or more juicy fruit.

We hope that Mr. Hamilton's calumniators are satisfied.

CHICORY.

The increasing practice of mixing Chicory with coffee, and the high duty imposed on its importation, have attracted attention to its growth in this country: and it may be interesting to your readers to be acquainted with the mode and cost of cultivation. With this view I send you the result of inquiries made in the neighbourhood of York, on the correctness of which you may rely. I hope that this communication may induce gentlemen, residing in other parts of the kingdom, to send you further information on the subject.—*J. W. S.*

Q. What sort of soil appears best suited for its growth? *A.* The soil best adapted for the growth of Chicory appears to me to be rich, deep, and loamy; but it will grow upon any favourable for Turnips or Potatoes, or intermediate between cold stiff clay; or a poor thin sandy land; some favourite fields are close upon gravel; others are more of a black peaty moor land.

Q. What preparation as to fallowing or manure is best? *A.* No fallowing is absolutely required; but it is better that it should be winter-ploughed, and prepared as for Turnips; it must be as clean as possible, and if of a friable light character, not over much wrought or "loosened" in spring. The quantity of manure will depend on the condition of the land; say about 4 loads of good short dung (ashes, night-soil, &c.), laid on broad-cast, as an average to the acre when ready for rowing up, which will prevent the ridges being twice turned, as in Turnip sowing.

Q. What is the period of sowing? *A.* This will depend upon the season, and the condition of the land, the latter end of April or beginning of May are preferable.

Q. If drilled, at what distance between the rows? *A.* The double drill is in use here. The rows should be 16 to 18 inches in width, the drills 3½ inches apart. Very great care must be taken that the drills are kept clean, and not suffered to choke, or much ground may be lost, as it is difficult to tell how far they may have "missed delivery." They, and the roller attached to follow, may be worked by a quiet old pony.

Q. Does it require hoeing, and how frequently? *A.* About three weeks or a month after sowing, it will be requisite to hand-pull and weed. No hoe is ever permitted. If necessary, you may employ the pony and a light scruffler between the rows. Particular care must be paid to the cleaning and weeding. Women or young persons are generally engaged in this purpose, at 1*s.* per day. The "how frequently" will depend upon circumstances. If the land is "clean," 16 or 18 women and children may go over it twice in a season; an acre may occupy them properly about two days.

Q. At what distances ought the plants to stand in the rows? *A.* The drills must be 3½ inches wide, and the plants should be singled 2 or 3 inches apart from each other. Dibbling, where seed has failed, does not appear to succeed. Those plants which "run to head" must be immediately and carefully drawn when they show flower, or at the first taking up they will prove woody and worthless, like as Radish run to seed. They can be carried home and prepared for sale, in the same manner as if taken up in November.

Q. When is it ready for getting up? *A.* This depends on the season. In November, if considered ripe. Experience alone can enable you to fix the precise time. Those who have much will commence sooner than those who have less to take up.

Q. How is it harvested? *A.* The mode of harvesting here is to let the taking up to a man and his family, or a gang of men, at about 2*l.* per acre (which is considered "very bad pay," or "minimum" allowance). The spades are like dock-drawers, 18 inches long, by 2½ or 3 broad; each plant must be "lifted" with the spade, and drawn by the hand. The followers pick up the plants, and carefully twist off the tops, or leaves, throwing the roots on heaps. Here I might as well observe, that cattle of all sorts are exceedingly fond of these leaves; and it is the practice, after getting the roots away as quickly as possible, to turn a large quantity of sheep into the field, to devour the relics; or to cart them away to the pastures, whilst they are still pretty fresh. From the field the roots are taken to the most convenient washing-place; a running stream, easy of access, with a good gravelly bottom, is invaluable for this purpose. Last year a spot was cleared where a bridge crossed a stream, having a waste piece on each side, so that a cart having deposited the dirty load above, could take a clean ready-washed one below bridge; of course, a dam and wire-work was erected to prevent the Chicory floating away. When washed, it is conveyed to the manufactory, and there cut by a machine into pieces or lengths, of ¼ or ½ an inch; these again are riddled to separate the smaller from the larger (the thin from the thick ends) which take more drying. They are then placed on a kiln, in bags, about 1*C* at a time, until ready for roasting—managed in a similar way to coffee; then ground or crushed with shelling-stones, and made up for sale. When cut, it must not be allowed to remain in heaps for more than a day. Two cutters are worked by one horse; each has one knife only, and two women to feed it.

Q. What is the average crop per acre? *A.* From 3 to 5 tons.

Q. What is the estimated expense per acre? *A.* Rent, 8*l.* to 10*l.*; seed, 2 lbs. per acre, at 5*s.*; hoeing, 1*l.* 16*s.* to 2*l.*; getting up, 2*l.* The rent named is for a field ready prepared for that crop only, manure excluded.

Q. Is it cultivated by contract at so much an acre, or a ton, or by labourers at daily wages? *A.* The former answers will explain this. The preparation of the land is done by daily labourers, and the drawing of runners and the weeding; the taking up by contract; the land is let for the purpose in different ways.

Q. What is the price when cut and dried? *A.* This cannot be answered satisfactorily: it is seldom disposed of in that peculiar state. Small growers send it to the great growers ready washed, at about 5*l.* per ton. The grocers retail it in catty packages at 8*d.* per lb.

Q. Is it supposed to be profitable? *A.* If rumour is correct, and to judge from increased quantity of land cultivated, it must be a very profitable business; but many have wit enough to grow Chicory who cannot succeed in preparing it for sale.

Q. Does the crop impoverish the land? *A.* It appears certain it does not. Wheat grows very luxuriantly after even two successive crops of Chicory. It will succeed crop after crop. A field is now preparing for the fifth crop; the fourth, last year, being superior to any of the preceding ones.

FAMILIAR BOTANY.

Morphology.—No. XIII.

The gaudy masquerader, thus equipped,
Out sallies on adventures.

Quo tendam vultus mutantem Protea nodo?

It would be difficult to find two things more unlike each other than the leaf of a Peony and its petals. The one tough, green, many-lobed, and durable; the other delicate, rosy, round, and fleeting. If I can succeed in proving that they are both the same organ in different states, the case of the Morphologists, so far as those parts are concerned, is established.

The lowest leaf on the specimen before me has 15 divisions, each about 3 inches long. The next leaf above it has 9 divisions of the same size, and the stalk is much shorter. A third, as you ascend the stem, has only 5 such divisions, and the stalk is shorter still. The last leaf consists of but one such division, with a very short and flattened stalk; this is placed directly under the flower, and is the Bract. Next follows a transition leaf, with its green part reduced to a narrow strap, and its stalk greatly widened and rounded into a thin green red-edged scale; this forms a sepal or division of the calyx. Immediately within this is another sepal, exactly like the last, except that it is broader, rounder, larger, thinner, yet more red-edged, and has no strap. Thereupon immediately follows a third sepal, precisely like the last, but larger; a fourth succeeds still thinner, larger, and having a considerable quantity of red upon its edges; lastly comes the fifth sepal, stained with green at the back, and thinned away at the sides into the texture of the petal, of which it has the red colour; here is a transition to the petals. The petals themselves differ from the last sepal in nothing, except having no green at all, and being still larger and more thin. Nothing can be more complete than these natural gradations. The leaves gradually change through a bract into sepals, without the smallest break in the chain of transition: the sepal then is a modified leaf, and, consequently, the calyx is composed of leaves. On the other hand, the sepals gradually change into petals, also without a break in the links of evidence; the petals, therefore, and, of course, the corolla, consist of modified sepals. Now, as the petals are modified sepals, and the sepals are modified leaves, the petals also are modified leaves.—*C. E. D.*

I do not conceive what objection can be taken to this kind of reasoning, which holds good with a large number of plants. And as what is true of a given organ in one plant, is also true of the same organ in all other plants, it follows that the calyx and corolla are always composed of modified leaves.

Men wonder how it should be possible for leaves to assume the gay colours of the flower. They forget that this happens every year in the autumn, with

Those bright leaves whose decay,
Red, yellow, or ethereally pale,
Rivals the pride of Summer.

In such instances there is no change in the form or other attributes of the leaf; it is the colour alone that alters.

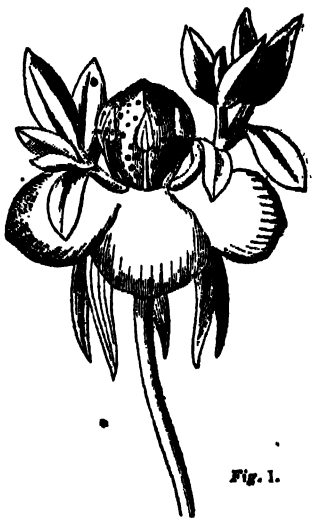


Fig. 1.

One of the properties of the leaf is to produce branches from its axil. This is so constantly happening with the sepals as to require no proof. It also occurs in the petals, as for example in the common Pimpernel, for an example of which I am indebted to Mr. Boughton Kingdon. Fig. 1. In this instance two of the petals produced young shoots from their axil: and thus, without direct evidence, there would be a grave suspicion of the petals being nothing but modified leaves.

These facts enable us to account for the appearances very often presented by the flowers of plants. The common Hop occasionally bears leaves among its flowers. Fig. 2.



Fig. 2.

Upon examination we find that this is caused by the bracts, which are usually thin and greenish-white, reverting to the form of leaf, of which they are, under ordinary circumstances, a modification. Fig. 3.



Fig. 3.

In like manner the Rose will often have a ring of leaves instead of sepals. A Sheffield correspondent ("L.") has

sent me a Rose de Meaux, in which the petals are surrounded by five pinnated leaves exactly like those of the stem. In that instance the sepals had returned from their ordinary condition to that of leaves, of which they are always a transformation.

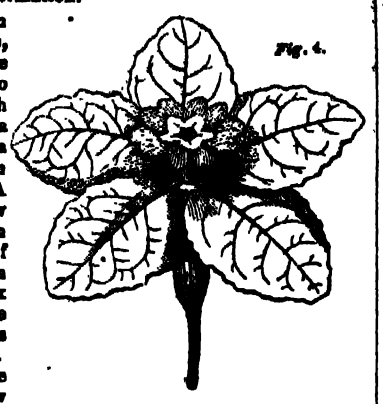


Fig. 4.

And again, in the Polyanthus, what is more common than to see a flower with its brown corolla surrounded by a ring of common leaves? Fig. 4. A specimen is now before me from Mr. Whiting, of the Deepdene, in which both calyx and corolla have undergone this transformation.

We should like to know how such an appearance is to be accounted for, except upon the supposition that the sepals, or leaves of the calyx, and common leaves, are the same thing in different states.

But it is useless to pursue this argument further.—*R.E.*

AN AMATEUR'S MELONRY.

The following description of a Melon-pit which has been for some time in successful operation may be acceptable to the readers of the *Gardeners' Chronicle*. Few persons, not professionally acquainted with the subject, know with what ease, and by how small means, a plentiful supply of Melons may be obtained, even rather early in the year. At the tables of little people this fruit is not much in request till the supply of Strawberries begins to decline; but before that time they may be well furnished with Melons, and so continue till long after the late Vinery sends in its own abundant crop. From time to time we have had details of the best methods of heating by hot water and by steam; and doubtless these are the best and perhaps the most economical where Melons are to be forced out of season and in large quantities; but where these means are precluded on the score of expense, or because well qualified persons are not kept to manage them, a perfect method of making the heat of fermenting materials available is still a desideratum. In the invention of the pit here to be described the writer's intention was to form a Melon-bed assimilating as much as possible to the natural habitat of the plant; to insure a steady supply of warmth, a body of earth not very quickly exhausted of moisture, and an atmosphere free from noxious effluvia. These objects have been attained by very simple means,—so simple and obvious as to make it matter of wonder that they have not been long in operation. The nearest approach to them has been the plan practised by Mr. Mills, with which the writer was not acquainted till his own had been some years at work. But Mr. Mills's pit is open to the objection of allowing the dung to come near to, if not in contact with, the bottom of his bed, and implicates the necessity of care in the administration of the heating materials; whereas the one in question requires no such care; the ranker the fermentation, and the coarser the materials, the better. All inequalities in the heating process are made even by the thickness of the mass of earth, and the preservation of heated air beneath the false bottom on which it rests.

Beside the pit now to be described, the writer's means are, the stable-dung of three horses,—two, or even one, eked out with leaves, Grass, or other vegetable rubbish, would serve; a labouring gardener, only employed to bring in and take out linings, and to open and shut, in the absence of the principal, or a servant who occasionally takes charge; and a thermometer, to measure bottom-heat. Nothing is to be done without a thermometer for bottom-heat. The linings require to be turned, and to have some fresh mixed in, two or three times in the season, when the thermometer indicates a declension of bottom-heat. Last summer being a wet one the fermentation went on so constantly that the linings were only turned once, when the second crop was put in. All the quackeries of compost, gradual earthing up, and so forth, may be dispensed with. The plants are taken out of the seed-bed, and put in like any Cabbage, and require no more artificial culture than sufficient pruning and the maintenance of an artificial climate implies. With these means the writer has grown Melons of the Rock and Cantaloupe and large green varieties, of from 3 to 6 lbs. weight, which have been pronounced "excellent." This year he means to try the Rockwood, and when he is better acquainted with them, some of the Persian or Cabul sorts. Were his pit to be re-constructed, he would make it square instead of oblong, for the better concentration of heat, and less exposure of surface to the cooling effect of surrounding media. At first he covered in the linings with Oak-slabs. But this is unnecessary, except for tidiness. It is probable that the addition of a trellis within the bed for the branches to spread on would be an improvement, but it is a refinement he has not yet thought worth adopting. With good stiff loam, a moderate supply of water, and progressive healthy vegetation, neither canker, parasite-fungus, nor insects, are to be dreaded.

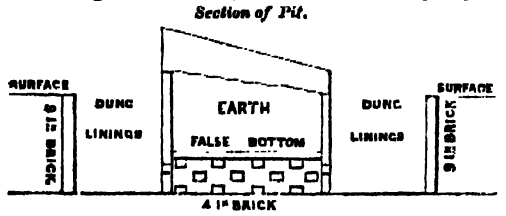
The seedling-bed or starting-frame is put down in the usual style of a Cucumber-frame; but it would be better to put it *en suite* with the fruiting frames in the same pit. This is a two-light box, used for advancing Melon and Cucumber plants and tender annuals, and afterwards applied to the growth of two late Melons.

The Pit.—An excavation, 40 feet in length, 10½ in breadth, and 3½ in depth, being made, and lined with 9-inch brick-work, is bottomed with small chalk, rammed hard (any good material for a shoveling surface would do as well.) Within this area three frames are constructed, one of two and two of four lights, in the following manner:—The outline being marked out, four courses of 4-inch brick-work, with cross-courses of the same, are built pigeon-hole fashion; on this is laid a platform of thick slates, for a false bottom, on which the earth rests; six courses of close brick-work then follow, capped by a thick curb of Oak. On this curb the wooden framework rests, constructed in the usual way, but only deep enough to allow of sufficient space for the plants to respire, all the earth-bed being contained within the brick-work. The length of the lights, or otherwise the width of the beds, is a little more than five feet. More room would be better; but a narrow bed is convenient for the amateur who wishes to train his plants himself; and this leaves ample space for working the dung linings round the frames.

It is obvious that Melons growing in such beds as these know nothing of the dung that surrounds them, but by the warmth they receive through the brick sides and slate bottom; and 18 or 20 inches of earth secures their roots from sudden changes of temperature, and affords a steady supply of moisture. The same body of earth being dug and treated like an open garden bed, will serve for two or three years without change.

If the Editor thinks this plan of cultivating Melons worthy of imitation, he will, perhaps, say that it is feasible, and so give the sanction of a better name than the writer's.—*P. P.* [No doubt can be entertained about the good sense and practicability of this plan.]

Section of Pit.



Home Correspondence.

Disease in Peach-trees.—I send part of the branch of a young tree, planted only last autumn, as a specimen of the state of my trees, and of the disease by which they are affected. From this, too, you will be enabled to see the nature of the disease in its several stages, at least in three of them; for "the last stage of all, which ends this sad eventful history," is almost like the wind-up of poor human nature, "*sans* everything." The specks, like pustules, which you will perceive on the bough, about one-third of the way up, exhibit the first visible symptoms of disease; in time this speck spreads into blotches, eating its way into the fibre, as may be seen by inclising the part; the next form assumed resembles that of a running sore, *i. e.*, an issue of gum from the wound; lastly, death ensues. I need scarcely say that during this progress the leaves become the seat of attack from aphides; they, in their turn, being attended by their ever-constant nurses, the ants. My garden is surrounded by a capital wall, covering about an acre, the aspect good and thoroughly open, on a plain, not absolutely low, though relatively somewhat so, in comparison with the neighbouring hills; these latter are not, however, by any means close to the garden, nor can I perceive one circumstance connected with the situation capable of accounting for the unhealthiness of the Peach and Nectarine-trees. The soil naturally is clay, not very stiff, approaching to clayey loam; the greater part having been burnt, and other means having been taken to lighten it, it works freely and well. On my coming to the place three years ago I found the trees (I speak always of the Peaches and Nectarines) old and straggling, and what would generally be termed worn out, and I have since learned from my predecessor's friends, that for the first three or four years the trees did very well, and bore tolerably; but that afterwards they began to go off, and showed symptoms of decay. My first measures to counteract the evil were to open the borders, and at the depth of about one spit to lay a foundation of compost cement, sloping outwardly, and terminating transversely with a drain. I then planted young trees, the roots near the surface. This was the work of the autumn and winter of 1842. The result last summer was far from satisfactory, still not so bad as appearances indicate at present. Desirous of persevering in what I conceived to be a right course, I removed more trees last autumn, replacing them with young ones from a distance of seven miles: from one of these the specimen I now send was cut. Perceiving, when the old trees were removed, that they had but little root, at the suggestion of my gardener I removed much of the old soil, which was burnt clay, and substituted good virgin loam, free from a particle of clay. Of all my trees, those planted last year in the new mould decidedly exhibit the worst appearance; and having gone to the expense of having my wall newly pointed, I have now for my trouble and cost the melancholy spectacle of a long range of brick-work, studded with young trees, which exhibit every appearance of premature decay. I own I am baffled both for a cause and a cure. The only possible course to pursue which now suggests itself to my mind, is to try the experiment of applying different sorts of mould to several different trees, varying the application in every conceivable way within my power. These experiments, however, must necessarily abide the approach of autumn and winter, and in the mean time I tremble for the fate of my trees. Gloucestershire is my county; the situation of my house a few miles from Cheltenham. —*Omikron.* [We publish this curious case, in the hope that it may excite the attention and elicit the opinions of some of our correspondents. It is clear that the soil is not in fault. The climate will not account for the case. It is worthy of remark, too, that the trees planted *last autumn* are already diseased. The malady cannot, then, have been caught in "Omikron's" garden. Judging from the specimen sent us, we should say that the mischief is all traceable to ill-ripened wood, insufficiently pruned, and suddenly transferred to a hot situation. The shoot sent us is green, and by no means firm. It looks like the upper part of the branch of a tree from the open quarter of some nursery. When the Peach is grown fast, in shady places, its wood wants the hardness and dark red colour that are natural to it, and becomes filled with imperfectly elaborated sap. If a plant in such a state is transferred to a south wall, some change, both chemical and organic, takes place, and the over-abundant sap finds its way through the surface in the form of gum, causing wounds which rapidly mortify. The remedy in that case is to cut the wood back even further than ordinary, so as to have nothing more than what is thoroughly ripe. "Omikron" would do well to consult a paper on the Peach, by Mr. Knight, read to the Horticultural Society, May 6, 1817—and also published in his "Horticultural Papers," p. 227. If he can, by laying his branches in thin, contrive to get his wood well ripened, and in winter-pruning will cut away all that is not so, he will, we think, get rid of his trouble.]

Grafting Fuchsias.—Your readers may exercise their taste in combining very opposite groups of blossoms, if they take the present opportunity of grafting or inarching the strong young growing shoots of the Fuchsia. For this purpose a warm moist atmosphere is necessary. I find the readiest mode is to select two plants, and within three inches of the heads to cut away half the thickness of the shoots, extending about 1½ inch; the two mutilated heads are firmly bound with soft bast, and the intended scion is then nearly severed just below the junction; within three days the scion may be cut clean through, and no check to its growth will be perceived; the head of the stock is now removed, the scion takes the lead, surrounded by laterals of the other variety. The best stocks are the strong growing kinds, as Fulgens, Cormackii, &c.; this latter, in combination with Conspicua arborea, is very effective.—*M., Deptford.*

The Robin.—In the latter end of the year 1841 a robin flew into the cottage of Mrs. Wilkinson, in the neighbourhood of Overton, near Lancaster; being winter season, it was kindly treated, and did not offer to leave its quarters; it was without hesitation accommodated with bed and board. When spring time came, it resumed its free denizenship of the air, but not ungratefully, for it was always seen about her garden, and even came fluttering around its kind mistress when she went out. Being the male bird, it chose for itself a mate; a nest was built in a hawthorn bush, wherein four little ones were reared; some time after they were fairly on the wing, a gentle tapping was heard one evening at Mrs. Wilkinson's casement window. On being opened, to her surprise, in flew her favourite robin, with his family. They all received a hearty welcome, and remained there until the spring. This conduct has been pursued every year since, to the present year; and no less than eight robins have taken up their winter quarters in Mrs. Wilkinson's kitchen. If the window be not opened, the old robin will perch upon the latch of the door, and, fluttering with his wings, jingle it until he is let in; he perches upon her shoulder or her hand, if she holds it out to him, and will sing his merry song as if in grateful acknowledgment of the hospitality shown to his co-mates and himself. This fact is well known to every one in the neighbourhood.—*S. G. Garstang.*

Charcoal.—The following method of making charcoal, which I have adopted with complete success, may be useful to some of your amateur readers, who, like myself, want the article, and can find nobody in the neighbourhood who understands how to make it. I cut up a quantity of wood into billets of about 18 inches long, and placed three or four wheelbarrowfuls upon a handful of straw and a few dry sticks, and set fire to the straw. As the wood began to ignite I surrounded it with sods from the side of the road, tolerably dry, and common road dirt (throwing on the latter in lumps, so as not completely to exclude the air), until the wood was covered all over. Soon the whole heap was burning together, and as the fire made its appearance through the dirt, or rather as the dirt became burnt, I threw on more dirt. At night I added as much as I thought would be burned by the morning, and thus the heap was kept burning for several days. Upon clearing away the burnt earth I found the wood I had used for lighting the fire completely charred, but not a stick consumed. Thus, I have accomplished two objects by one operation: I have made charcoal as well as a regular professor of the art; and have also prepared a capital compost of burnt earth and sods, which I intend to enrich by dosing it with liquid manure. I have made several heaps since I first made the attempt, and have not failed in a single instance. The wood I used is Black Poplar, as I happened to have a quantity by me, which was cut last winter. I also gave the preference to this material, from having read lately in the *Chronicle*, that the lightest wood made the best charcoal.—*John Lowder.*

Seedling Pelargoniums.—In "The Gardener and

Practical Florist," (!) for the present month, is an article, by a Mr. J. Heriot, On the Management of Seedling Pelargoniums, wherein he says that he had inquired of one of the leading nurserymen in London how long he took to flower his seedlings, and the answer was *two years*. This period Mr. H. imagines to be a little too long; and he has taken some pains to describe a method which, he says, "originated from his own ideas," and by which he is able to flower his seedlings in the short space of fourteen or fifteen months. Perhaps Mr. H. and his friend, the nurseryman, will be not a little surprised when they hear that Seedling Pelargoniums can be flowered in eight months. I was lately in the garden of C. Gyde, Esq., of Painswick, who showed me some seedlings in flower, and a great many were showing strong flower-buds; they were all raised from seed sown on the 22nd of August last; their dwarf stocky habit appeared particularly beautiful; several of their stems, from the surface of the soil to the base of the flower-stalk, measured only from 1½ inch to 4 inches high. Mr. H. recommends Pelargonium seed, saved after the 1st of August, to be kept unsown until the following spring, when, by adopting his mode of treatment, he says they will generally be brought into flower in the course of the second summer, or about fifteen or sixteen months after the seed has been sown; whereas, by Mr. Gyde's method, plants, from seed sown after the middle of August, will be producing their flowers at the time Mr. H. is sowing his seed.—*A. N., Painswick.*

Potting.—There is perhaps no condition to which the roots of plants that are cultivated in pots are liable to be exposed, which is more injurious to them than that in which the interior part of the mass of soil in which they are growing is suffered to become thoroughly dried; and, being a condition which is entirely precluded from direct observation, it is far more frequent than at first might be thought to be the case. Saturation of the soil soon becomes evident, and on that account it is far less likely to exist to any extent, in cases where even the most ordinary attention is bestowed; and, therefore, although in itself equally injurious, it is far less to be dreaded than the state of desiccation: indeed, in almost all cases, the drainage, and the mechanical texture of the soil, are so specially attended to, in the case of plants which are at all esteemed, that the saturation of the soil in which they are grown is of very rare occurrence. It is not, however, so with the condition of drought in the interior of the soil; it is on soil which lies buried and unseen, until its effects render it apparent; and this may be, perhaps, when too late to prevent its injurious consequences. Now, it is the insidious nature of this peculiar state of the soil which renders it so highly dangerous: evaporation, the mechanical action of the drainage, and the vital action of the plant, exerting a united and powerful influence, may, and do, silently deprive the soil of its moisture; and the application of water, repeated and renewed though it be, may appear to restore this element to the soil, but in reality may fall very short of doing so. Peat earth enters very largely into the compost in which most valuable plants are grown, and every gardener knows that peat earth is peculiarly subject to dryness, on account of its being favourable to the process of evaporation, and that when in this state, it is with difficulty wetted. The continual evaporation going on from the soil, the continual abstraction of moisture by the roots, and its free downward passage among the drainage, all acting at the same time, and acting most powerfully when the natural condition of the atmosphere by no means retards or prevents evaporation from the plants themselves, very soon reduces the soil to a dry and parched state. The elevation of the ball of earth too, in re-potting plants, (a process in itself to a certain extent desirable, and perhaps even necessary,) and the lowering of the soil close by the rim of the pots, both tend to conduct the water which is applied, most liberally to the sides, or exterior portions of the soil; and, under ordinary circumstances, the interior is but slightly moistened, if not, in many instances, left in its dry and parched condition. It must be evident that if these causes render the soil dry in the first instance, and continue afterwards in operation, the same result may be expected; and thus the centre of the mass of soil is rendered perpetually dry—that is, if not positively, at least comparatively, void of moisture. The injury which is done to the majority of plants, by this desiccated condition of the soil, is by no means inconsiderable; it is, in fact, a clog and impediment in the exercise of their vital functions. The most rational method of cultivating plants is to supply them uninterruptedly with *all* the elements of their nutrition and development: no one part should be unduly predominant—no one part should be altogether absent, but all should be present in their due proportions. These proportions, however, vary: the conditions of infancy are not the conditions of maturity, but each are a modified state of the same elements, peculiarly adapted for that particular period of development. Thus it is, that whilst moisture may be regarded as the element which especially influences the growth and extension of plants, so heat may be taken to have a similar influence on their fructification; but, nevertheless, heat as well as moisture is necessary to produce a perfect state of growth, and moisture as well as heat is required to produce a perfect state of fructification: it is not the elements or conditions of growth that vary, but their proportion each to the other. It has been said that the desiccation of the soil acts as an impediment to the vital functions, and this it does by serving to contract those portions of the roots which are surrounded by unvarying drought. It is true that plants are supposed to take up their fluid food only by the extremities of the roots, and therefore in this point of view they are not the less bountifully supplied, than would be the case if the whole bulk of the soil surrounding them was of a medium degree of moisture; but from a substance such as the roots of plants, formed principally of cellular matter, and surrounded only by a covering which is the same cellular substance in a somewhat more compressed state, we cannot but believe that a dry surrounding medium will abstract moisture which would otherwise be conveyed through the channel of the roots and serve to nourish the plant. It cannot be that in the transmission of fluids the vegetable root is like a metal pipe, totally uninfluenced by the circumstances which may surround it. What, then, is the condition of a plant thus circumstanced? Its main roots, the channels of its nourishment, are enveloped by a medium which is never, or but rarely moistened; its spongioles, the parts by which it takes up its food, are frequently submitted to alternations of aridity and saturation; for these spongioles exist most abundantly in the exterior part of the soil, and this it is which becomes so often dried, and alone is moistened when water is applied; what is taken up by the spongioles cannot readily and uninterruptedly pass onwards in the structure of the plant, because the dry soil causes the contraction of the principal roots, and lessens their capacity for transmitting fluids. By-and-bye an increased degree of evaporation, both from the soil and the plant itself, is induced by exterior circumstances; the supply is exhausted, the plant suffers, its leaves curl or change colour, no refreshing draught is administered, the vegetable being dies. But dangerous as this condition is in its consequences and effects, and frequent as it is in its occurrence, it does not appear to be one which admits of no palliation, nor one for which a remedy may not be applied. With respect to the spongioles, a perfect system of cultivation must be one which never submits them either to saturation or desiccation—which presents them with a gradual and progressive increase or decrease of moisture whenever these are requisite—which never submits them to sudden or constantly recurring changes—which, in short, presents them with food in a fluid state, so regulated that they cannot either become surfeited or lack a continual supply. But still the internal moisture of the soil is unprovided for. I have elsewhere stated* that "a few pieces of charcoal placed perpendicularly in the soil, and kept continually moist by some little capillary contrivance, would perhaps be the very best method of transmitting moisture, and distributing it throughout the soil;" and by the application of this to the pot culture of plants, I have no doubt the evil spoken of might be altogether avoided. I should propose it to be effected thus:—Whenever a plant (most particularly a valuable specimen-plant) is repotted, either in its infancy or maturity, I would introduce a few sticks of charcoal perpendicularly into the pot; these should be long enough to extend from the bottom of the pot to the top of the soil; about three might be placed at regular intervals, and they should be as close to the roots, and as near to the centre of the pots as possible. Thus, if a plant is shifted but once, it will be provided with some channels for moisture, extending throughout the soil; and if it be frequently repotted the number of these channels may be increased. When these are once introduced into the soil they are permanent; for, being of a material which is not subject to rapid decay, they will serve at least the lifetime of a plant, and by occasionally making use of a simple siphon—a mere worsted thread—in contact with moisture, a slow, moderate, and constant supply of moisture may be conveyed at pleasure to and through the centre of the soil, and the whole mass may thus be kept regularly and equably moistened.—*T. Moore.*

Toad versus Swan.—"There is no accounting for tastes," probably Mr. Forsythe will say; but as one fond of animals as well as a garden, I must say a few words in favour of the poor toads. Mr. F. will find that the nuisance he complains of, of "the garden and walks being croaked and crawled over with thousand of toads and frogs," would only last two or three days at most, and I doubt not that at this time his beautiful walks are occupied by much fairer forms this fine weather. The poor toads have each betaken themselves to some favourite and sheltered spot, or to the water to deposit their spawn. Now I will undertake to say, that this numerous family of toads are the best friends Mr. F. has in the garden. Let him kill one toad about midnight, and count over the worms, woodlice, ants, and beetles in his stomach; multiply their amount by the number of days between April and October; and that again by the supposed number of the toads; and I imagine Mr. F. will be satisfied that his garden will look all the greener, and flourish all the better, for the absence of what the toads have devoured. The spawn in ponds certainly is unsightly if neglected; but a boy with a rake on a hot day, will clear out a large extent of water in a few hours. The toad is really a most unobtrusive fellow, except upon the very day Mr. F. met with them, when once a year they do sally forth. If the spawn is left, the young ones again do so for about three days, or possibly a week. But excepting these times, the toad never seeks man, but lies under some stone or leafy plant, waiting till the dewy eve comes, when out he sallies, and destroys an immense number of the gardener's greatest enemies. I knew a lady who had all the toads and frogs upon her premises destroyed because she once trod upon one. It is certainly disagreeable to do so, but still more so for the toad to be trodden upon. And how many worms does he destroy, which otherwise we might tread upon also! The toad is also really a very pretty creature in his way, and we lose much gratification from being so prejudiced against them and their neighbours the snakes, when we turn away with disgust, as most do from them. I always encourage in every way the toad, frog, snake, and slow-worm, in my garden, and know few things more beautiful in nature than the bright golden eye of the first, the agile leap of the second as you disturb him in the garden, or the graceful glide of the snake; and even the slow-worm, coiled at the root of an herbaceous plant, enjoying the sun, is to me a great addition to a flower garden. My children handle all, and admire them equally with myself. If Mr. F. will place a frame of plants, and inclose a toad, and put another without, he will, I hope, like my friends better.—*W. D. F.*

Exhibitions in the Garden of the Horticultural Society.—As I intend showing Grapes at the May Show at Chiswick on Saturday, the 18th inst., probably you will say as much. I intend it as a challenge to all England. My basket will be 8 or 10 lbs. of Black Hamburgh Grapes, which will not be beaten.—*John Wilmot, Isleworth, May 9.*

Miscellaneous.—*J. W.*, a known correspondent, states that he agrees with the opinion of "*" regarding the Polyanthus as a bee-flower. He says that bees seldom or never work upon it. "J. W." further observes, that as bee-hives are now in full bustle, Apiarians will do well to follow the advice given by Mr. Savage, at p. 261 of the present year.

* Theory and Practice, applied to the Cultivation of the Cucumber. 1844. London. Groombridge.

Societies.

HORTICULTURAL SOCIETY OF LONDON.

Sir C. Lemon, Bart., M.P., in the chair. The Earl of Leicester, P. Greenall, Esq., M.P., and J. Shepherd, Esq., were elected Fellows.—From Messrs. Loddiges, of Hackney, were Dendrobium Heyneanum, in good condition; Masdevallia infracta; a fine plant of Camarotis purpurea, in excellent health; together with the beautiful Cattleya Skinneri and a remarkable specimen of Dendrobium densiflorum, having many bunches of beautiful Orange-blossoms. A Knightian medal was awarded for these.—Mr. Plant, gr. to J. H. Schroder, Esq., sent a fine Aerides crispum, producing a fine spike of purple-and-white flowers. A Banksian medal was awarded for it.—From Mr. Robertson, gr. to Mrs. Lawrence, was a collection of plants, containing a dwarf bushy specimen of Chorozema Dicksonii; a beautiful large Hovea Celsi, with very bright-coloured blossoms; Dendrobium aggregatum, in good condition; Tetranema Mexicanum, a pretty greenhouse herbaceous plant; and a good Russelia multiflora, which is one of the gayer of tender greenhouse plants. In the same collection were also a large Pimelea hypericifolia; Lalage hoveæfolia; Epacris lavigata, covered with white blossoms; Adenandra amœna; Daviesia saligna; and a variety of Hardenbergia monophylla. A Knightian medal was awarded for the four first-named plants.—From S. Rucker, Esq., was a variety (!) of Angulos Clowesii, having large yellow flowers richly spotted in the interior with brown. This is a rare species of that hitherto almost unknown genus. A Banksian medal was awarded for it.—Mr. Carson, gr. to W. Farmer, Esq., sent a variety of Epidendrum macrochilum roseum, having a fine raceme of pale violet blossoms. A certificate was awarded for it.—From Mr. Glendinning, of Turnham Green, was a small plant of Pentas carnea, which is a scarce greenhouse plant, from South Brazil, having pale green leaves and delicate lilac blossoms; also an Indigofera, apparently incana, a plant with trailing stems, covered with gray foliage, which contrasts well with the deep purple flowers. — Mr. W. P. Ayres, gr. to J. Cook, Esq., also sent Pentas carnea, for which a certificate was awarded.—From J. Allnutt, Esq., was a good plant of Chorozema varium.—Mr. Pawley, of Bromley, sent a Seedling Azalea, named carminata, having large rather dull red blossoms.—From Messrs. Veitch & Son, of Exeter, was an Oxalis that was sent from Chili by their collector, Mr. Lobb. It is new to gardens, and will, no doubt, be an acquisition, as it is stated to be hardy, having survived all last winter, planted out on rockwork. A certificate was awarded for it.—Mr. Mountjoy, of Ealing, sent a Seedling Calceolaria, considered to be an improvement on Lady Constable, two Seedling Pansies (named Princess Alice and Prince of Wales), and a collection of Pansy blooms.—From Mr. Errington, gr. to Sir P. Egerton, Bart., was a series of flowers of Seedling Cacti, in which one, named Regalis, resembling Conway's Giant, was a very large fine flower; another named longissima, on account of the length of the tube, was a flower of considerable size and beauty; and several others gave great promise; a certificate was awarded for these.—Mr. Chapman, of Clapham, sent a basket of Dutch Sweetwater Grapes, some bunches of which weighed three-quarters of a pound; a certificate was awarded for them.— From R. W. Barchard, Esq., was a Strawberry-plant, exhibiting a curious instance of monstrosity in the fruit, most of them being fingered; some had three fingers, others had four, and in one case as many as five fingers were produced. By this singular malformation the fruit was of a very unusual shape.—Mr. Fish, gr. to H. H. Oddie, Esq., sent a Cantaloupe Melon, stated to be a seedling of his own, together with a green-flesh variety. These were good early fruit, particularly the former: they were said to have been grown in a three-light box, on a bed formed of billet and rubbish wood, about two feet deep, with six inches of long litter spread regularly over them. Above this were placed 18 inches of leaves and dung. The soil was the top spit from a common, and was strong loam. It was put in as rough as possible, and trod quite firm. The plants were watered twice with the drainings of the dunghill, and once with guano mixed with water, at the rate of one ounce to a gallon of water. No manure whatever was used in the soil; a certificate was awarded for these.—From Mr. Cuthill, of Camberwell were three fine

specimens of his Black Spine Cucumber, and another variety, raised by him, that was stated to be a good forcer. It was a handsome fruit, measuring about 18 inches long. —From the Garden of the Society were Oncidium divaricatum, a variety of Epidendrum macrochilum, Chorozema varium, two Cinerarias, Gloxinia speciosa, and a white Azalea; together with Clematis Sieboldi, Comarostaphylis arbutoides, and Arctostaphylos nitida. The two last are pretty half-hardy Mexican shrubs, having some resemblance to an Arbutus.

ENTOMOLOGICAL SOCIETY.

Monday, May 6.—George Newport, Esq., in the chair.—A paper was read from Captain Hutton, of the Native Indian Infantry, on a large and beautiful species of Moth, with a description of the peculiar mode of its escape from its cocoon, which was unlike that of any other known species, and was effected by transverse slits.—A continuation of Mr. Saunders' paper on the Chrysomelidæ of New Holland was read.—Mr. Evans presented a notice of the eggs and young larvæ of Sialis lutaria, or May-fly, which was accompanied by drawings.—A paper was read from Mr. Frederic Smith, on the habits of a species of Osmia (Wild Bee), which selected the shells of snails as a situation for forming their nests and depositing their eggs.—Mr. Saunders exhibited a specimen of gum from South America, which contained encased within it the larva of a species of Cerambyx.—Mr. Ingpen exhibited a specimen of Poecillus cupreus, which was taken in the act of devouring a common Pea. This beetle belongs to the family of Carabidæ, which were all, at one time, supposed to be carnivorous; but this, and some other species, forms a transition to the vegetable feeders among the Coleoptera.—Mr. J. F. Stephens exhibited a Moth, which was caught at Norwood, and was new to Great Britain, belonging to the genus Yponomeuta.

MICROSCOPICAL SOCIETY.

April 17.—J. F. Bowerbank, Esq., in the chair. Mr. G. L. Fitzmorris, Dr. Trueman, and Dr. Salt were elected members. Mr. J. Quekett read a paper on Ciliary Motion; he first gave an account of the discovery of cilia, which was made by a Dutch physician in 1684, and of the subsequent observations which had been made upon these organs. He also alluded to the various opinions that had been formed as to the nature of the force by which the movements of the cilia were effected. He then described the nature of the movement of a single cilium in the common musole: all observers had agreed that this was a rotatory, or up and down movement, so that when a row of cilia were in action, as in the branchiæ of the muscle, they gave it a waved appearance. But, in addition to this movement, the author had observed a secondary movement, which was a partial twist of the cilium on its own axis, and which might be compared to that motion of the oar of a row-boat, which is called "feathering the oar." This motion is very evident when the cilia are moving slowly. It had not before been observed, and was undoubtedly of importance in those animalcules which moved through water by means of their cilia. Dr. Lankester pointed out the probability of the dependence of ciliary motion on the same force as produced muscular contractility, and referred to the observations of Professor Sharpey and Professor E. Forbes on this subject. Although Mr. Bowman and Dr. Todd had, in their late work on Physiology, endeavoured to object to this theory, he thought it at present much the most rational theory of ciliary motion. He had seen single separated cilia move, and he believed that in some instances they were mistaken for animalcules. He thought the moving cells which are found on the mucous membranes of animals ought not to be called animalcules. They were cells thrown off from a living organism, but entirely incapable of self-subsistence or self-generation. The chairman referred to the minute animalcules found between the teeth, and thought perhaps they ought not to be considered as independent animals. There was no doubt, however, that the moving bodies found in the thecæ of some Mosses were animalcules.—Dr. Lankester denied that either these or Spermatozoa were true animalcules.—Mr. J. Quekett described the nature of the Spermatozoa in the cuttle-fish, in which there was a large Spermatozoon, with several little ones inside.

LINNEAN SOCIETY.

Apr. 16.—E. Forster, Esq., in the chair. A letter was read from Mr. Edwin Lees, accompanied with specimens of rare British Rubi. Amongst these was a variety of Rubus idæus, with a ternate foliage, of which Mr. Lees had seen many specimens, and which he proposed to call R. i. fragariæsimilis.—A collection of 140 species of plants, including several rare forms of Myrtaceæ, collected by Mr. Drummond at Swan River, was presented by Mr. Hugh Low.—Mr. J. Allcard was elected a Fellow.—A continuation of Mr. Newport's paper on the Myriapoda Chilopoda was read. The theoretical structure of the head and the organs of nutrition in these animals was minutely examined, and the identity of the complicated organs of these parts with the simpler ones of the segments of the body was pointed out. The organs which constitute the best means of distinguishing the genera and species of the Myriapoda were next examined, as the ocelli, the form of the legs, the spines on the legs, &c. The dental plates had not hitherto been employed as a means of specific distinction; but in the Scolopendræ, the denticulations found on these organs were of great importance. The character of the dorsal plates was of most importance in the Sarmentidæ, the segments of the body in Geophilidæ, the ocelli in Lithobius, and the number of the joints of the antennæ in Cryptops.

Tuesday, May 7.—Edward Forbes, Esq., in the Chair. Professor Agassiz, of Neufchatel, and Dr. M. J. Schleiden, of Jena, were elected Foreign Fellows. Dr. Hugh Falconer, and Mr. G. B. Sowerby, Jun., were elected Fellows. Dr. Francis Boott, M. D. Professor Edward Forbes, and the Rev. Wm. Hinckes, were elected Auditors of Accounts at the ensuing anniversary.—A paper was announced from J. Curtis, Esq., being descriptions of Insects brought from the Straits of Magellan by Captain King.—A paper was read from Mr. Joseph Woods, on the species of Carex found in Middle Europe. The author commenced with some general remarks on the necessity of a natural classification, and pointed out its application to the various groups which had been proposed of the extensive genus Carex. Where single characters had been the basis of subdivision, the groups thus formed became unnatural. The subdivisions of Koch were undoubtedly the best that had hitherto been offered, and the author pursued the same plan. The author then entered into a minute account of the structure of the various parts of the genus Carex, pointing out their characterising value; this included a consideration of the Nut, the utriculus, the glume, the spikes, the bracts, the culm, the leaves, and the root. The remaining part of the paper was deferred till the next meeting. The Chairman reminded the meeting that the anniversary of the Society would take place on the 24th inst.

BOTANICAL SOCIETY OF LONDON.

Apr. 12.—J. Reynolds, Esq., treasurer, in the chair. Various donations were announced, including a very large collection of East Indian plants, presented by the Royal Horticultural Society of Cornwall. Mr. D. Moore, of the Dublin Botanic Garden, presented numerous specimens of Carex paradoxa (Willd.), collected in Ireland. Mr. W. L. Notcutt presented many duplicates of Statice rariflora (Dreger), collected in Hants. Various other specimens were presented for the Society's herbarium, in illustration of the varieties recorded in "The London Catalogue of British Plants."—Read, "A Synoptical View of the British Fruticose Rubi, arranged in groups, with explanatory remarks" (Part 2), by E. Lees, Esq. This Paper was accompanied by drawings and specimens.

BOTANICAL SOCIETY OF EDINBURGH.

Thursday, the 11*th April.*—Professor Graham, President, in the chair. Donations to the library and herbarium were announced from Dr. Gottsche, Altona, Mr. W. C. Trevelyan, Mr. C. C. Babington, Mr. Parker, Mr. Ogilvie, Mr. Jackson, and Mr. Ewans. The following papers were read.—

1. On four genera of Desmidieæ, by Mr. Ralfs. In these papers, which were illustrated by beautiful sketches, 14 species are described, 9 of which belong to Euastrum—2, each, to Tetramorus and Micrasterias—and 1 to Berkleya. Mr. Ralfs remarked that—"The species of Euastrum are not well defined; plants of this genus vary greatly in form, and it is not unlikely that young fronds have been described as distinct. Whenever it is practicable the frond should be examined in four different directions, namely, in the front or usual position, at the side, at the end, and by a transverse or junction view, after the segments have been separated;" and again, in describing E. gemmatum, he says—"Whilst engaged in examining this species I was first struck with the advantage to be derived from the figure of the transverse view in the discrimination of nearly allied species. I have since obtained Meneghini's Synopsis of this family, and find that he has extensively availed himself of it in forming his specific characters of this genus."

2. Note on a Monstrosity of the Pistil of Primula vulgaris; by Mr. C. C. Babington. This curious monstrosity was sent to the author by Mr. J. H. Walton, of St. Bees College. Flowers of the usual form and structure were found on the same root, with two flowers possessing the anomalous organ, which Mr. Babington describes as follows—"Within the base of the corolla is situated a small fleshy cup, from the centre of which springs a cylindrical stem, capped with another shallow fleshy cup, having a wavy margin. An exposed conical placenta, covered with peltate ovules, is seated in the centre of the latter cup. Thus the true ovary is converted into a cup-shaped body, and the capitate stigma has become an open fleshy ovary."

3. On the Fructification of Cutleria, and continuation of the Marine Algæ of the vicinity of Aberdeen. By Dr. Dickie. In this communication, (in which the remainder of the olive-coloured Algæ, hitherto observed on the Aberdeenshire coast, are enumerated) the author discusses at considerable length the characters which have been assigned to various species by different writers on Algæ, and states his own views respecting them. He also notices the comparative paucity of the marine flora of Aberdeenshire, ascribing the absence of the more delicate species, partly to the unsheltered nature of the coast, and partly to the influence of temperature, and says, "Scarcely one half of the Melanospermous Algæ, enumerated in Harvey's Manual as occurring in Britain, are found here—the proportions being as 34 to 80."

4. On some British species of Œnanthe; By John Ball, B.A. In this paper three species of Œnanthe are described as natives of Britain; viz., Œ. pimpinelloides, Linn.; Œ. Silaifolia, Bieb. (peucedanifolia, Sm.); and Œ. Lachenalii, Bab. The first is stated to be very rare, the author having only seen one specimen wanting fruit, which was gathered near Forthampton, in Gloucestershire, by Mr. E. Lees. He is, however, fully of opinion that it is the true pimpinelloides of Linnæus and the continental botanists, and proposes that the plant should resume its place as a species in the English Flora; the last is stated to be the commonest of the group,—he having received it from several parts of England, from the coast of Galloway, and from near Dunbar in Scotland. The paper concludes with the following remarks on the value of the characters of these species:—"The position and size of the tubers of the root are, I suspect, of doubtful constancy. The general disposition and proportions of the leaves are probably much to be depended on here, and throughout the order. The hollowness or solidity of the stem depends, I believe, almost wholly on the place of growth, and is of no moment. The petals vary somewhat in size, but scarcely in form, those of the outer sterile florets being always compared with each other. The form of the fruit seems not so constant as might be expected. The presence or absence of the incrassated summit of the pedicel I have never seen to vary."

COUNTRY SHOWS.

We shall, next week, state our intentions as to reporting these meetings. In the meanwhile we may as well announce our decision not to publish those details of Shows which merely state the winner's name, without the names of the plants he exhibited. This will account for some omissions in the following.

Bath Royal Horticultural Society.—This was the first Exhibition of the Society for this season. The numbers who attended the gardens during the afternoon were not less than 2000. The following prizes were awarded:—Class I.: Nurserymen.—*Stove Plants*, 1, Mr. Drummond, for Euphorbia splendens, E. fulgens, two Gesneras, and two Amaryllises. *Best* 12, 1, Mr. Carpenter, for Azalea indica alba, A. Woodii, Acacia armata, Epacris pungens, Camellia Donkelæri, C. Bealii, Cytisus racemosus, Erica multiflora, Kennedya Marryattæ, two Cinerarias, and Chorozema varium nanum. *Cinerarias*, 1, Mr. Carpenter, for Medora, Eclipse, Carmina, Unique, Lavingtonensis, and Black-eyed Susan; 2, Mr. Drummond, for Enchantress, Prince Albert, Unique, Eclipse, and two seedlings. *Camellias*, 1, Mr. Carpenter, for pulcherrima, alba, and lepida. Extra Prizes.—*Roses in Pots*, 1, Mr. Carpenter, for Devoniensis, Yellow Noisette, Yellow China, Napoleon, Prince Albert, Lee's Crimson Perpetual, Pink Moss, Spong's William Jesse, Blush Provence, Flora, and Madam Laffay. *Greenhouse Plants*—1, Mr. Carpenter, for Azalea indica alba, A. smithii coccinea, Acacia armata, Chorozema varium nanum, Erica tricolor, Camellia Donkelæri, a Cineraria, and Kennedya cærulea. Class II. Amateurs—*Orchidaceæ*, 1, J. Jarrett, Esq., for Maxillaria aromatica, Cattleya elatior, Epidendrum selligerum. *Single specimen*, Mr. Jarrett, for Maxillaria Harrisoniæ. *Stove Plants*, 1, J. Jarrett, Esq., for Plumbago rosea, Philibertia gracilis, Ceropegia stapeliæformis; 2, Mr. Jarrett, for Ceropegia elegans, Gloxinia speciosa, Scutellaria splendens. *Greenhouse Plants*, J. M. Yeates, Esq., for Azalea indica alba, Tropæolum grandiflorum, Chorozema spectabilis, Leschenaultia formosa. 3 *varieties*, 1, J. Jarrett, Esq., for Kennedya inophylla, Pimelea spectabilis, Kriostemon buxifolius. *Pelargoniums*, 1, Dr. Kay, for May's Hermit, May's Bacchus, Erectum, and Wizard. *Ericas*, 1, J. M. Yeates, Esq., for E. suaveolens, E. spiciflora, and E. echiiflora. *Single specimen*, 1, J. M. Yeates, Esq., for E. Templeana. *Hardy Plants*, 1, J. Jarrett, Esq., for Rhododendron roseum, Kalmia latifolia, and Pæonia officinalis. *Pelargoniums*, 1, Mr. G. Shaw, for Nymph, Jehu, King, Cyrus, Clarissa, Bridegroom, Sultan, Sylph, Jewess, Acme of Perfection, Coronation, Britannia, Comte de Paris, Queen of the Fairies, Gipsy, and Lilia. *Cacti*, 1, Mr. G. Shaw, for C. speciosissimus, C. Ackermannii major, C. speciosus, C. Ackermannii minor, C. Milleri, and C. speciosus coccineus. *Amaryllises*, 1, Mr. G. Shaw, for A. virtata, Johnsonii, Ackermannii, Brasiliensis, and a Seedling. *Roses*, 1, Miss Bayly, for Devoniensis, Madame Laffay, Yellow Noisette, Yellow China, Queen of Bourbons, Princess Augusta, White Moss, Red Moss, Belle Henriette, Odorata, and Rosa-gere; 2, J. M. Yeates, Esq., for Prince Albert, Madame Laffay, Devoniensis, Charles Duval, Banksiæ, and Boule de Nanteuil. *Cinerarias*, 1, Miss Bayly, for Lavingtoniensis, Eclipse, and 2 Seedlings. *Ornamental Plants*, 1, Mr. G. Shaw, for Azalea indica alba, A. Smithii, A. pulcherrima, A. Phœnicea, Yellow China Rose, Fuchsia Cortusii, F. Monoypenuli, Amaryllis Brasiliensis, A. Johnsonii, Erica ampullacea, Calceolaria splendida, C. tricolor, some Cactus, Hoven Celsi, Vinca rosea, V. alba, Lantana mutabilis, Gloxinia speciosa, G. Youngii, Pelargoniums, Gipsy, Jehu, Victory, Bridegroom, Grand Duke, Zenobia, Jessie, Cineraria unique, Lavingtoniensis, and Carmina. Extra Prizes.—*Greenhouse Plants*, 1 J. M. Yeates, Esq., for Azalea Smithii coccinea, A. indica alba, Correa speciosa major, Cytisus canariensis. *Pelargoniums*, 1, J. M. Yeates, Esq., for Coronation, Nymph, Victory. Florists' Flowers and Cut Flowers.—Class II.—Amateurs.—*Polyanthuses*, 1, Miss Bayly, for Buck's George the IV., Pearson's Alexander, Princess Royal, Nicholson's King. *Pansies*, 1, Miss Bayly, for Prince of Wales, Eclipse, Curion, Belinda, Sylph, Earl of Clarendon, Duke of Beaufort, Dorothy, and a Seedling; 2, Mr. G. D. Fisher, for Limpley Stoke, Princess Royal, Earl of Clarendon, Jehu, Regulator, Bellissima, Duke of Richmond, Phœbe, Silverlock's, Prince Albert, Sulphurea elegans, &c. Extra Prizes.—*Auriculas*, R. Godfrey, Esq., for Wood's Lord Lascelles, Hughes's Pillar of Beauty, and Warrow's Union. *Pansies*, J. M. Yeates, Esq., for Delight, Virgil, Curion, Prince of Wales, Unrivalled Yellow, Dorothy, Duke of Beaufort, Mary Anne, Trevarne, Laura, Beauty of the Village, and Queen of Beauties.

North British Professional Gardeners' Society.—This was the first meeting for this season. All the articles that were brought forward for competition have rarely, if ever, been surpassed at any former meeting. The following prizes were awarded:—*Auriculas*: Laurie's Hertfordshire Hero, Moon's Violet, Waterhouse's Conqueror of Europe, Leigh's Talavera, Taylor's Glory, and Lord of Hulmshire; Mr. J. Young, gr. to *I.* Oliver, Esq. *Best three Selfs*: Smith's Incomparable, Gordon's Statesholder, and Martin's Mayfield; Mr. J. Young. *Polyanthuses*: George IV., Collier's Prince Royal, and Steel's Petegraph; Mr. Alex. Forester, gr. to Capt. Falconer. *Camellias*: Imbricata, Donkelæri and speciosa; Mr. Robert Watson, gr. to D. Anderson, Esq. *Cinerarias*:—Macnabiana, a seedling, and ovata, Mr. J. Addison, gr. to the Earl of Wemyss. *Epacrises*: Grandiflora, and two seedlings, Mr. D. Fowlis. *Pears*: Chaumontel and Beurré Rance, Mr. J. Goodall. *Dessert Apples*: Blenton Pippin, Nonpareil, Lord's Pearmain, Mr. J. Goodall. *Baking Apples*: Yorkshire Green, Fail's Kingston, Mr. J. Goodall. *Asparagus*: Mr. J. Goodall. The following plants were sent for exhibition:—A new Cineraria called Warristoniana, from Messrs. Carmans, Kelly, and Co.

Reviews.

The Art of Building and Managing Hothouses, &c. (Art de Construire et de Gouverner les Serres). By M. Neumann. Paris, 1844. Long quarto.

M. Neumann is chief gardener in the Jardin des Plantes at Paris, and has the management of the hothouses there. He is a clever man, and acquainted with English establishments. In this work he describes the manner in which hothouses, greenhouses, forcing-houses, conservatories, and all the varieties of glass structures, are built and managed in France; and he illustrates his subject with 21 plates of plans, elevations, sections, &c.

among which are views of the Conservatory at Chatsworth.

It did not strike us, when we knew Paris five-and-twenty years ago, that we had much to learn from our clever neighbours in this department of gardening; nor does the perusal of M. Neumann's work alter that opinion, or the reports made to us by our correspondents. *Good* gardening *under glass is essentially* English; and so, we suspect, it is likely to remain. The Dutch, indeed, beat us hollow in forcing Lettuces and winter vegetables; nor is it much to our credit that they do so; and the private collections of the Continent contain more species than those of England; but, as a general fact, nobody can doubt that the Horticulture of artificial climate is better understood in this country than elsewhere. In this sense M. Neumann's work is of more importance to his own countrymen than to us. It is, however, interesting to examine the views respecting cultivation, of so well informed a man as the author; and, therefore, we shall make a few extracts from his work.

What M. Neumann says about repotting, affords a clue to the whole of his views of what hothouse cultivation is to do. He considers the process necessary in most cases every year, not for the purpose of renewing the soil, but to keep the plants within bounds; and accordingly he directs the roots and branches to be annually reduced. By this means plants will doubtless be kept small, and a crowd of specimens may be preserved in a hothouse; but it is the practice of mere botanic gardeners, and is at variance with good gardening. He directs the process of re-potting to take place after winter, at the very moment when plants are beginning to push; and particularly insists upon the necessity of preserving a due balance between the roots and the head. The strongest plants, he observes, are liable to die if the roots, reduced to half their former quantity, are left to support an undiminished head. The plants which bear root-pruning worst he finds to be Clusias, Chrysophyllums, Laurascous plants, Cloves, and Nutmegs.

In speaking of watering plants, we find no allusion to the use of evaporating-pans; but great importance is very properly attached to using the water in a warm state. We also find the following fact, which may be new to some:—"It has frequently happened that gardeners, having washed in a tank of water their pruning-knife and hands, after having been dressing certain poisonous plants, the fish in the tanks have immediately died, and the water has speedily become putrid. This has been more especially observed with the Hippomane biglandulosa, the Manchineel, the Tanghin, Sapium laurocerasus, and Comocladia dentata. These plants are as dangerous to man as to fish. Gardeners frequently, after merely rubbing the leaves of Comocladia between the fingers, have had their whole body swelled the next day, and been struck with temporary blindness. The juice of such plants is excessively dangerous; the slightest scratch with a pruning-knife smeared with it may be as fatal as the wound of a poisoned arrow. One of the old gardeners at Malmaison lost an eye by the Sapium."

The water of storms and thundershowers is preferred to all others—an additional reason for catching what falls on the roofs of garden buildings; next comes snow-water; then the water of rivers and running streams; the worst is well-water.

M. Neumann is of opinion that pots should never be plunged, but should trust for the necessary warmth to the air that surrounds them, instead of receiving it from the soil heated by artificial means. He insists strongly (p. 18) upon the advantage of this practice, for reasons which to our mind are singularly inconclusive. But our narrow space compels us to defer the consideration of that most important question.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

BROMHEADIA PALUSTRIS. Marsh Bromheadia. (*Stove Epi*, plants.) Orchidaceæ. Gynandria Monandria.—"When Mr. Finlayson was in the Malay Archipelago, he found a curious Orchidaceous plant at Singapore, with the habit of Epidendrum elongatum; and from specimens of it, almost destroyed by insects, which I examined some years since in Dr. Wallich's herbarium, I referred it with great doubt to Grammatophyllum, under the name of G.? Finlaysonianum, (Gen. and Sp. Orch. t. 178.) This plant has flowered at Pantlegare, in South Wales, with J. D. Llewelyn, Esq., who received it from Cuming, with the memorandum that it had been 'dug out of a bog in Sumatra.' Having now had the advantage of examining a perfect specimen in flower, I find that although nearly allied to Grammatophyllum, it is in fact very distinct. I therefore avail myself of the opportunity of adding to the list of genera the name of Sir Edward Ffrench Bromhead, Bart., F.R.S., whose investigations of the natural affinities of plants are well known to systematical Botanists." In appearance the plant has the aspect of Epidendrum elongatum, as has been already stated; and like it has the whole of the upper part of the stem provided with closely pressed distant sheaths, instead of leaves, on which the spike of flowers is arranged. The latter is very rigid, between two and three inches long, regularly zigzag, with a short hard tooth-like bract at each bend, so that the spike without the flowers resembles a coarsely-toothed narrow double-edged saw. The flowers are about an inch long, white, and rather drooping, spreading quite open. The labellum, in which alone any colour resides, is straw-coloured on the middle lobe, and violet at the tips of the lateral lobes; along the middle, as far as the separation of the lobes, it is cushioned and covered with purple down; while the disk on the middle lobe is broken up into yellow granulations.—*Botanical Register.*

ERIA FLORIBUNDA. Many-flowered Eria. (*Stove Epiphytes.*) Orchidaceæ. Gynandria Monandria.—Although the flowers of this plant cannot boast of large size and rich colours, they are by no means destitute of beauty. Arranged as they are in loose drooping racemes, glossy in texture, and delicately touched with crimson, they are among the prettiest of the smaller kinds. It is a native of Singapore, whence it has been received by Messrs. Loddiges. Along with E. polyura, bipunctata, pannea, and stenophylla, it forms a small group of species, which are very different in habit from such plants as E. pannea, armeniaca, &c. It is a stove plant, and succeeds best when potted in turfy peat, mixed with a few potsherds. During the summer a liberal supply of water should be given, and the house be kept as moist as possible. In sunny weather the plant will be much benefited if slightly shaded, for although it enjoys a high temperature, yet its leaves will become pale and contracted if too much exposed to the rays of the sun. In winter very little water is required, especially if the house can be filled with steam once a day, which is always preferable to syringing.—*Botanical Register.*

GARDEN MEMORANDA.

Penderves near Truro.—There is now in flower here a most beautiful plant of Clianthus puniceus, occupying a wall 35 ft. long, and 12 ft. high. It is one sheet of crimson, and forms as magnificent an object as can well be imagined. This specimen was cut in the winter of 1837-8, when it was much damaged by frost, and by mice, who made a feast upon the branches.

Mr. Groom's, Clapham Rise.—The magnificent collection of Tulips at this establishment is now in great perfection; the protected bed, containing about 2000 bulbs, makes a splendid show, and seldom have they been seen in finer condition. In point of colour they are very superior, and there is less flushing or running in this respect than we have been accustomed to see in so large a bed. Among the Roses—Rosa blanca, we noticed in unusually fine condition; Aglaia, a lovely flower; and Cerise a belle forme, good throughout the bed. This is the case also with a superior strain of Triumph Royale, Lady Crewe, a very delicate flower, with several other Roses of Mr. Groom's breaking, such as the Duchess of Sutherland, Lady Douro, the Countess of Blessington, &c. In Byblœmens, Victoria Regina appears to be the most perfect, the cup is so beautiful in form, and the marking so precise and uniform. The Duchess of Buccleugh, Ambassadeur de Hollande, Lawrence's Friend, Bijou d'Amateurs, Perle Blanche, and Michael Angelo, we noticed as being very superior in this class. Platoff, the Duke of Norfolk, and Duke of Devonshire, are three fine bizarres, and Everard, a high-coloured and bright flower, forms a very desirable variety. Pompe Funèbre is grand; Polyphemus is very fine throughout, and Nourri Effendi, with its bright ground and intensely dark marking, is particularly striking; a single visit is not sufficient for this bed: the flowers require stricter examination than can be given at one time. The Pelargoniums are looking well, and the Japan Lilies are in vigorous health and condition.

Mr. Dickson's, Acre Lane.—This bed, though small, contains very choice varieties. They are well grown, and bloomed in very fine condition; the cups are larger than usual, but the ground-colour is fine and clear, and the markings very clean and decided. One of the first flowers that attracted our attention was a fine bloom of Pandora, with its perfect cup and rich flower; this is still a very scarce variety. It is most amusing to visit collections of this elegant flower; independent of the pleasure derived from viewing such beautiful objects, every bed contains beauties of its own, and varieties that are poorly bloomed at one place, in another are seen in perfection. Among the choice Roses, Catalani, Claudiana, Andromache, and Mason's Matilda and Rose Charlotte, a superior strain of Triumph Royale, were particularly fine. Holmes' King, byb., is always first-rate in this bed, full of colour: this is a most desirable flower, being constant and perfectly distinct. Violet Quarto is also a very superior variety. The Bizarres are very choice: that noble variety, the Duke of Devonshire, broke by Mr. Dickson, is a grand specimen, large and fine. Glencoe Charbonier Noir and Platoff are attractive varieties. These are a few of the choice sorts particularly worthy attention. The bed is altogether unusually fine; and its condition reflects great credit upon its owner.

Miscellaneous.

The Cuckoo.—To no bird is the gift of prophecy more commonly attributed than to the Cuckoo, whose loud measured voice resounds in the woods just clad with fresh verdure. The old German saying, "Wann der *gauch gukes*," denotes the beginning of the spring,* just as, according to Hesiod, the song of the Cuckoo announces the time of the spring rains. Two old poems describe the contention of Spring and Winter about the Cuckoo, and the lament of the herdsmen for him; the Spring praises, slow Winter—*tarda hiems*—reproaches the bird; the herdsmen represent him as taken away or drowned: the line is remarkable:—

Tempus adest veris, ceculus modo rumpe soporem.†

He announces by his song the loveliest season of the year, but it is not stated in these poems that he predicts to man. The Anglo-Saxon Codex Exoniensis, 146, 27, lately published by Mr. Thorpe, ascribes likewise to this bird the announcing of the year:—

geacas gear budon; cuculi annum nuntiavere.

The popular belief still exists that whoever hears the cry of the Cuckoo for the first time in the spring, may ask him how many more years he has to live. In Switzerland the children cry, "*Gugger*, wie lang lebi me?" In Lower Saxony,

"Kukuk vam hüven
Wo lange sall ik leven?"

and then they listen and count; as many times as the bird cries after it is questioned, so many years has he who asks the question to live. In other places the saying is as follows:—

Kukuk, heckenvogel,	Cuckoo, hedge-bird,
Sag mir recht,	Tell me true,
Wie viel jahr ich leben soll?	How many years shall I live?

The bird is said to be a bewitched baker or miller-boy, and thus has pale or meal-coloured feathers. In a dear season he robbed poor folks of their dough, and when God blessed the dough in the oven, drew it out, plucked some off, and every time cried out as he did so, "Gukuk!" (Look, look!) God therefore punished him, and turned him into a thievish bird, who continually repeats this cry. This legend, which is of great antiquity, and resembles that of the Woodpecker, may at an earlier period have been otherwise told; and connected with it may have been the notion that the cry of the Cuckoo, if heard after St. John's Day, betokens scarcity. In Sweden he prophecies to unmarried lasses how many years they shall remain single.

Gök, Gök, sitt på quist, &c.
Cuckoo, Cuckoo, that sits on a bough, &c.

If he cries oftener than ten times they say that he sits upon a silly bough, and give no heed to his prophecies. Much depends upon the direction in which the Cuckoo is first heard; if from the north (that is the unlucky side) you will have mourning during the year: from the east or west his cry portends good fortune. In Gœthe's "Frühlingsorakel" the prophetic bird announces to a pair of lovers their approaching marriage and the number of children. It is remarkable enough that our poets of the 13th century do not mention the cuckoo as prophesying: the thing was doubtless commonly known, for we find in Renner, 11,340,

Daz weiz der gouch, der im für war
Hât gesatzet hundert jâr.

And we have a story related by the abbot Theobald of a certain novice who, assuring himself of living 22 years longer, from having heard the Cuckoo repeat its cry just so many times, concluded that it was needless for him to pass so long a period in mortification, and resolved to return and lead a jolly life for 20 years, thinking the remaining two quite enough for penitence. From the regularity of the time of his appearance, the Cuckoo is probably the bird designated *ástvogel* in an old proverb, in accordance with the passage of Pliny, "Cantus alitis *temporarii* quem cuculum vocant." It is said that he never cries before the 3d of April, and never after the festival of St. John. But he cannot cry before he has devoured a bird's egg. If you have money in your purse when he first cries, all will go well during the year; and if you were fasting, you will be hungry the whole year. When the Cuckoo has eaten his fill of Cherries three times he ceases to sing. It portends misfortune to the Servian haiduken when the kukavitza appears early and comes out of the blackwood, but good luck when his cry comes from the greenwood. The froth in the meadows caused by the Cicada spumaria is called Cuckoo spittle; *Germ.* Kukkuksprichel; *Swiss*, Guggerspeu; *Dan.* Gögesnyt; otherwise Hexenspeichel, Witches-spit; *Norw.* Troldkiringspye; thus connecting the bird with supernatural beings. The names of some plants confirm its mythic character: Oxalis acetosella; *Old German*, Gouches-ampfera; *Swiss*, Guggersauer; *Anglo-Saxon*, Geaces-aure; *Dan.* Giogemad, Giogesyre. It was believed that the bird liked to eat these: *Modern German*, Kukkukabrot; *Fr.* Pain de Coucou, Panis cuculi. Cuckoo-flower, Lychnis Flos-cuculi, *Germ.* Kukkuksblume. The Slavonians do not attribute anything bad or devilish to this bird, which they always represent as a female. Zezhulice, sitting on an Oak, bewails the transitoriness of spring. The Servian kukavitza was a maiden who long bewailed her brother's death, until she was changed into the bird, "Sinja kukavitza" (the gray): so also in Russian songs it is a bird of mourning and melancholy; and Russian traditions speak of her as a young maiden changed by an enchantress.—*The Annals and Magazine of Natural History.*

Chemistry of Cultivation. By Professor Liebig. [Continued from p. 247.]—The quantity of aliments of plants contained in the atmosphere is limited; but it should be quite sufficient for covering the whole surface of the earth with a rich vegetation. Let us consider, that under the tropics, and in the countries of the earth where the most general conditions of fertility—moisture, an appropriate soil, light and an elevated temperature—are united, that in these places vegetation is scarcely limited by space, that when the soil is inefficient, the plant, dying, itself with its bark and branches become a part of the soil. It is clear that the plants of these countries cannot be deficient in atmospheric aliment; neither are our cultivated plants deficient. It is the continual motion of the atmosphere that furnishes to all plants an equal quantity of the aeriform aliments necessary to their development. The air at the tropics does not contain more than the air at the torrid zones; and yet, what a difference is shown in the power of the production of equal surfaces of land in these different countries! All plants of the tropical regions, the wax and oils, palms and the sugar cane, contain, compared with our cultivated plants, only a small quantity of the principles of the blood, properly so called, necessary for the nourishment of the animal. The tubercles of the Chili Potato, which resembles a high shrub, gathered from a whole acre of land, would scarcely suffice for one day for the sustenance of an Irish family (Darwin). The plants which serve for nourishment, and which form the object of culture, are only intermedia for the production of these principles of the blood. In the absence of the elements which the soils should furnish for their production, wood, sugar, and starch, may, perhaps, be formed in the plant, but it is not the same with the principles of the blood. If we wish to produce more of these or a given

* Looking forward to the return of fine weather in spring, the Norfolk people say, "When the Cuckoo has picked up the dirt."—E. T.

† Both poems are ascribed to Hedy in Diemer's Amphitheatrum.

surface, than the plant in the free, natural, normal state, on this surface, can derive from the atmosphere, or receive from the soil, an artificial atmosphere must be created; the principles which are deficient must be added to the soil. The nourishment which should be furnished to different plants, in a given time, in order to allow of free and uninterrupted development, is very unequal. On arid sand, on a pure calcareous soil, and on naked rocks, but few kinds of vegetables grow; these are only vivacious vegetables; only very small quantities of mineral substances are required for their slow growth, which the soil, sterile for other kinds of plants, may still furnish to them in sufficient quantity: annual plants, especially those of summer, grow and attain their complete development in a proportionally short time; they do not thrive on a soil which is poor in the mineral substances necessary to their development. In order to arrive at a maximum of size, in the short period assigned to their life, the nourishment contained in the atmosphere is not sufficient. In order to attain the objects of culture, it is necessary to create for them, in the very soil, an artificial atmosphere of carbonic acid and ammonia. This excess of nourishment, which is wanting to the leaves, must be furnished to the organs contained in the soil, which correspond to them. But ammonia and carbonic acid are not sufficient for producing a principle of the plant, an alimentary substance for the animal. The formation of albumen is not possible without the alkalies, nor can vegetable fibrin and casein be produced without phosphoric acid and earthy salts. We know that the phosphoric acid of the phosphate of lime, which is separated in great quantity under the excrementitial form in the barks of ligneous plants, is indispensable to our cereal and leguminous plants for the formation of their seeds. What a difference between summer plants and evergreens, fatty plants, Mosses, trees with acicular leaves, and the Ferns! Summer and winter these latter plants assimilate every moment of the day carbon, by means of their leaves, by the absorption of carbonic acid, which the sterile soil cannot furnish to them. Their coriaceous or fleshy leaves retain the water absorbed with great force, and lose by evaporation very little of it compared with other plants. How small, indeed, is the quantity of mineral substances which they remove from the ground in the whole course of the year, during the almost uninterrupted duration of their growth, if we compare it with the quantity which a crop of Wheat, of equal weight, for example, takes from the soil in three months! From the foregoing it results that the advantages of appropriations are based on the fact that cultivated plants remove from the soil unequal quantities of certain aliments. In a fertile soil the plants should find all the inorganic principles indispensable to their development, in sufficient quantity, and in a state which allows of their being absorbed by the plant. A field prepared by art contains a certain amount of these principles, as well as of the vegetable substances in putrefaction and ammoniacal salts. We make succeed to a plant containing potassa (Turnips and Potatoes), a plant containing silica, and to the latter a plant containing lime. All these plants require alkalies and phosphates: a plant containing potassa requires the greatest quantity of the former, and the smallest quantity of the latter. The plant containing silica requires, with the soluble silicic acid which the plant containing potassa leaves, a considerable quantity of phosphates. The plant containing lime, which follows, (Peas, Clover, &c.,) may so exhaust the soil of this important principle, that there does not remain more of it than is sufficient for permitting the formation of the seed of a crop of Oats or Rye. The number of the crops obtained depends on the quantity of alkaline silicates and phosphates, or of the calcareous and magnesian salts which are found in them. The provision of these salts may suffice for two crops of a plant containing potassa, or lime, for three or more crops of a plant containing silica, and even for five or seven crops; but, after this time, all the mineral substances which we have taken from the soil, under the form of fruit, stems, leaves, and straw, must have been removed: the equilibrium must be re-established, in order that the land may recover its primitive fertility. This is effected by *manure*. It may be admitted that—in the roots and the stubble of cereal plants, in the fallen leaves of ligneous plants—the soil recovers as much carbon as it received at the commencement of vegetation, under the form of carbonic acid, produced by the destruction of humus. The stalks and leaves of Potatoes, and the roots of Clover, remain in the ground. These remains putrefy, and are destroyed during the winter, and the young plant and the seed find in them a natural source of carbonic acid. The soil is not exhausted of humus by these plants. Finally, it may be concluded from theoretical reasons, that the soil receives from plants, during their life, quite as much, or even more, of matters rich in carbon than it furnishes to them; that an act of excretion, which is operated at the surface of the fibres of the roots, enriches it with substances which putrefaction, during the winter, again converts into humus. The existence of an act of secretion and excretion has been maintained by some physiologists, and denied by others, so that at present the opinions on this point are divided. No one doubts, however, that the oxygen which separates from the leaves and green parts, is an excrement. The vital activity of the plant assimilates in its organs the carbon of the carbonic acid, the hydrogen of the water, whilst the unassimilated oxygen is separated. We have in flowers volatile oils, combinations rich in carbon and hydrogen, which have, likewise, ceased to belong to other vital acts. We see exude from the bark, resins, balsams, milk, gum; from the leaves, and from their hairs, sugar and mucilaginous matters. On the surface of the barks, roots, and all parts of plants which are not green, oxygen is not separated. We observed then, on the contrary, the separation of substances rich in carbon which, produced in the vital act of the plant, have undergone no alteration. If we compare, for example, the bark of Fir, of Pines, of the Beech, of Oak, of Hazel-tree, and wood, we find essential differences in their properties and composition. Whilst wood, properly so called, leaves only ½ to 2 per cent. of ash, the bark of the Oak, the Fir, the Willow, and the Beech, gives 6·10, and even 15 per cent.; the ash of the wood and that of the bark have a very different composition. The inorganic principles of the bark are evidently substances which the living organism has rejected. A similar origin should be admitted for the organic principles of the bark. That of cork contains nearly half its weight of fatty substances or analogous matters, which we find, but in smaller proportion, in the barks of the Fir and Pine. The solid principle of these barks, insoluble in alcohol or ether, is perfectly different from the substance of wood. The barks of Fir and Oak almost completely dissolve in a solution of potassa, forming a liquor of a deep brown colour, from which the acids precipitate a matter which has the greatest resemblance to the substance called ulmic acid. Wood is not attacked by a solution of potassa. These barks are true excrementitial substances, since they arise from the living plant, and no longer take any part in its vital functions. They may be removed from the plant without putting its existence in danger. It is known that most of the plantains are annually deprived of their bark. Taking, therefore, this fact in its true signification, it is evident that there are formed in this ligneous plant, by aid of certain combinations produced in its vital act, substances which, not having to undergo any further change, are eliminated. We have every reason to believe that this elimination takes place all over the surface: we observe it not only on the trunk, but also on the smaller branches: and we should conclude that this act of excretion is operated also in the roots. We see that rain-water, in which a branch of willow vegetates, is gradually coloured of a deep brown. We observe the same phenomenon with bulbous plants (Hyacinths), which are grown in pure water. It cannot, therefore, be denied that there is an elimination of excrementitial substances in plants, although it may not take place to the same extent in all. The enriching of the soil with organic substances by the culture of perennial plants, such as Sainfoin and Clover, which are distinguished by the abundant ramifications of their roots, as well as by the great development of their leaves, is considered as a positive fact by most agricultural writers, and which is perhaps explained in the preceding. We cannot operate the formation of ammonia on cultivated lands, but indeed an artificial production of humus. It is the latter which should be considered as one of the objects of appropriations, and as a second cause of their advantages. It is by sowing a field with Clover, Rye, Lupins, Buckwheat, &c., and by incorporating in the ground plants ready to flower, by tillage, which we create in consequence of an act of destruction of the new-sown seed and of the young plant which is developed, a maximum of nourishment, an atmosphere of carbonic acid: all the nitrogen which the first plant took from the air—all the alkalies and phosphates which it received from the soil, serve to render more beautiful and more luxuriant the vegetation of the plant which follows.—*From the Chemist.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

The usual routine of watering and keeping the plants clean and properly trained, is all that is necessary here for some time. Some few plants may want shifting now and then, and all the young stock must be shifted by degrees, as they advance; but no precise time can be pointed out for this work; the whole depends on the state of the plants, and means of the cultivator.

Conservatory.—Keep down the temperature here by all possible means, in order to prolong the flowering of the plants; and as the syringe would soon injure the appearance of plants in flower, the rose watering-pot must take the place of it to flood all spare parts in the house morning and evening. Conservatories with fixed roots for growing Stove and Half-stove Climbers, in addition to the usual collection, are beginning to come into fashion rapidly, and I am promised some account of how far they shall be approved of before the end of the season.

Greenhouse.—Continue to encourage these plants to make rapid growth during all this month, and keep the atmosphere always moist at night during this stage. As few plants are allowed to flower in this house, where there is a conservatory, the syringe may be used freely in the afternoon of fine days. Training and regulating the growth of all pot-plants, as well as watering and killing insects, must be attended to while the plants are growing.

Forcing-Pits.—This is just the critical time when a little oversight may cause a good deal of murmuring next winter. Look over the lists of forcing-plants in the previous volumes, the very first opportunity you have, and consider how many you may want of those most esteemed by the family, always making allowance of 20 per cent. for failure among those forced in December. All the Roses you intend to force before Christmas, should be worked on the Boursault, or some variety of Noisette; but a number of Bourbon, Tea, and China Roses are better forced on their own roots. This is about the right time to get them from Nurseries. The great growers can always tell the best sorts for particular purposes.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

A correspondent writes, "Supposing the present parching weather should continue for a month or six weeks longer (as some prognosticate it will), how do you intend to set in relation to bedding out your Verbenas, &c.? Do you not think it would be better, as the ground is a little warm, and all danger of frost past, to plant out at once? as, though the plants will make but little progress towards covering the beds, it is probable that, if they are properly watered and mulched, they will make a little root, and will therefore be ready to rush into luxuriant growth as soon as rain falls." To this I answer, there cannot be any objection to planting out at once, providing the following rules are observed: first, have the soil properly moistened, and in a free open state; secondly, keep the plants moist at all times; and, thirdly, afford them a little shade during bright sunshine, until we are surrounded by a more genial atmosphere. My own method of procedure will be as follows:—I shall draw the earth from the middle of the beds, so as to form an embankment round the sides, and then having filled this basin with water, shall proceed to turn the plants out as soon as the ground is in a fit state. After they are planted, I shall mulch the beds with short Grass, and shade the plants with branches of evergreens until they become established, and when one gets rain, shall cover the Grass with the soil from the sides. In this manner I hope to counteract the parching effect of east winds, and to get the beds covered in pretty good time. This method of planting will be rather untidy for a time, but this we must put up with.

Rustic Baskets and Vases may now be filled with soil, which should be of a rather retentive nature, and the plants turned out,—placing a few branches round them, as adverted to above. *Flowers of a drooping habit* are the best suited for baskets, as Fuchsias and the like; and Calceolaria viscosissima, with Anagallis carnibæ grandiflora, depending round the sides of the basket will not be an unsightly object.

Reserve Garden.—Watch closely for insects on your young plants, which are making sad haves at the present time; destroy them by either lime or soot, or drive them away by means of spirits of tar. Prepare a piece of rich light ground for Violets, and part and plant them out as soon as we get a shower.

Pits and Frames.—These structures will almost be done with for this spring's planting, but they must not be idle, as it is time to commence propagating for next year. Cuttings of dwarf Phloxes, Alyssum saxatile, Arabis, &c., must now be got in, and those who are very enthusiastic in flower gardening may try their hands at preparing such plants as Leschenaultia formosa, biloba nana, and Baxterii; Genista rhodopnea, Cytisus racemosus, canariensis, &c. for bedding out next season. They will root freely now, and will make strong plants by the autumn. I yet hope to see masses of our finest Chinese Azaleas, such as lateritia, variegata, and Gladstonesii, turned out for the spring decoration of the flower-garden.

Shrubberies.—Attend closely to the watering of newly-planted trees, and keep all neat and clean; but the mowing of Grass-lawns had better be dispensed with until we get rain. The Grass is burning very much in this neighbourhood.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Tulips are now in full splendour; the hot weather is bringing them on with amazing rapidity. Where cultivators have not the convenience of an awning, the flowers ought to be covered with square boards, having a hole in one of the sides for the admission of the stick; after the flower has fully expanded, it will be advisable to tie it round with some worsted to prevent its full expansion again: under a canvass cover this precaution is not so necessary. The amateur will now make memoranda as he looks over his bed, marking their heights, sorts of bloom, their defects or good properties, bearing in mind that no other good qualities will compensate for foul or dirty cups. We are glad to find that the standard of perfection, or the properties which constitute a first-rate flower, are now much better understood, and we look forward to a proportionate improvement in collections. It is now a good time to cross-breed—mind to choose flowers with well-formed cups, and clear bottoms on both sides; just as the flower opens the anthers must be taken out; and when the flower expands, apply farina with a camel-hair brush to the stigma; never cross a Rose or Byb with a Bizarre, as the progeny would most probably be the greater part "tricolours," which are not so much esteemed as those of pure breed."

Auriculas.—Are fading fast, the majority of collections being out of flower; where seed is not required, the heads may be cut off, not too low: put the plants in a shady situation, giving them the requisite attention of water and cleanliness, they are too often neglected after blooming-time. We once knew a very valuable collection ruined, by being placed under the drip of some trees for about six weeks. *Ranunculuses.*—The late dry weather has been very trying for these flowers: mind that the soil is close round the stems. If the beds have plenty of decayed cow-manure in their composition, and on a cool subsoil, they will do without watering. On the contrary, if the situation and other circumstances render watering imperative, let it be done in the evening, and avoid wetting the foliage as much as possible. *Carnations.*—Tie them up as fast as they require it, and as green-fly makes its appearance, dust flowers snuff slightly over them, or brush them off with a large camel-hair brush; keep the pots free from weeds, which now spring fast. *Pinks.*—Tie up to sticks, and observe last week's directions.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—If the hot sunshine, accompanied by cold drying wind, which we have experienced for the last few days, continue, shade slightly all the Pines, excepting where Vines are grown in the houses. Sprinkle the paths frequently; this will keep the foliage in a green healthy state, and is better than that they should acquire a brown hue at this early period of the season. Many of the successions will now require re-potting; and to prevent the plants receiving any check, let this be done immediately that it is needed. Cease watering the plants in fruit as soon as there is the least indication of the fruit ripening, as from that time the soil or tan and the atmosphere will supply all the moisture needed.

Vinery.—If the outside borders have been kept covered with warm litter, as recommended from time to time in this Calendar, they will not require water, except in very dry situations. It will be proper, however, to examine them, and if water is found necessary, use liquid manure from the farm-yard, or guano-water, in the proportion of 2 oz. of guano to a gallon of water. If the heat is declining, let the litter be turned, and fresh added if necessary. Continue to syringe in the afternoon, and shut up early at 90° or 95° in Vineries where the fruit is swelling; but avoid wetting the Grapes after they begin to ripen. Give air early in the morning during bright sunshine, beginning with a little, and increasing it gradually as the sun approaches the meridian.

Peach-house.—If the Peaches now ripening have the leaves that shade them removed, and a plenty of back and front air is given during the day this fine weather, it will greatly improve both the flavour and the colour of the fruit. In the succession-houses but little fire will be required at night, if the sun-heat is properly economised by shutting up early. Tie in the advancing shoots frequently, and keep the foliage free from insects. Trees that are not vigorous should only be allowed to bear a light crop, while those which are growing too luxuriantly may be checked by leaving on a larger number of fruit, according to the strength of the tree.

Cherry-house.—Give more air, and keep a drier atmosphere, when the fruit is ripening. Give plenty of water to those trees now swelling their fruit, syringe well, and keep the foliage and fruit free from insects.

Fig-house.—So much air may now be given to Figs, that the ripening fruit will acquire a good flavour without keeping a very dry atmosphere during the night. Avoid, however, wetting the fruit after it begins to soften. Watering, as the plants may require it, and checking the increase of insects, must be duly attended to.

Strawberries.—If these are not kept well supplied with water this warm weather they will ripen prematurely, without attaining their full size. Look them over twice a day, watering only those that require it.

Melons.—Do not let the heat in the beds decline, but add fresh linings as required. If the plants require water, give it in the morning, that the vapour arising from the soil may pass off during the day. Avoid wetting the leaves, keep the shoots thin and regular, and if more than three Melons are swelling on a plant, reduce them to that number, taking care that those selected to remain are near or as large as possible.—*C. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Wall-trees.—Proceed with disbudding and removing young shoots from Peaches and Apricots. Where the fruit of the

former is too thick, a number may now be cut off; those of the latter will be useful as tarts. In disbudding, use a small sharp knife, as pinching the shoots off is apt to cause the wound to gum and canker. Where wood is wanted, pinch off the tops of strong shoots, as several good bearing shoots may be thus obtained. Where a shoot will be too strong and only one is wanted, cut it back so as to secure one good lateral. Where strong shoots appear where they are not wanted, or the tree is over-luxuriant, allow a number of them to run their full length, taking off the leaves from the under parts of the shoots as they advance. They will thus form channels for the extra sap, and will not shade unnecessarily the wood you intend for bearing. In removing shoots at this season, thin them gradually, so as ultimately to leave no more than can be exposed to the sun and air. Many will now be busy, with their snuff and *nux vomica* dusters, for banishing, if not exterminating, the green fly. It is certainly a good amusement for those who have the patience to like it. Commend me for dispatch, execution, and economy, to the fingers and thumb of an active man, Reid's patent syringe with the one nozzle for expelling the water, or a good garden engine.

Sow small salading Lettuces, and the different sorts of Broccoli for the main crop, not forgetting as the most useful the Early Purple Sprouting. Chappell's Cream and Rowle's Sulphur, &c., are fine sorts, when got true, and Knight's Protecting for earlier supply. I have never been able to procure the white Broccoli that appears in Covent Garden during the winter months; it must be much hardier than Grange's. Sow likewise Cabbage and Cauliflower for succession. *Routine.*—Tie up Lettuces, stop the shoots of the earliest Beans and Peas, prick out sweet herbs, Celery, &c.; harden off Tomatoes and Capsicums, attend to frames, water what you can, and stir the soil where you cannot.—*R. F*

VI.—ARBORICULTURE.

Old Woods.—The timber of oak trees is acknowledged by most persons to be much better if the trees are peeled in the proper season. Where timber of good quality is particularly requested, it would be advisable to lop off the principal branches, peel the bolls standing, and fell them in the following autumn or winter. This method is extensively practised in some districts. As the season for drying and securing the bark is so fine, no precautions on that head appear necessary.

Coppice.—The felling and peeling of coppice poles and other wood should be put forward with as much expedition as possible, as vegetation is rapid during this fine weather. As there is so much clear sunshine this season, it would be highly advisable to plaster over the cut part of the stools with fresh cowdung, as recommended last week.

Young Plantations.—The principal work in these, is to attend to all trees planted last season: water any that require it. Shade choice plants and keep them from waving by wind. Keep down and extirpate weeds, Fern, and other stuff, that would overgrow and injure young plants. Training and summer management of such trees as require it, should be attended to. Shorten previous years' shoots, and when those of this season are advanced in length and strength, use your finger and thumb in pinching off the ends, which increases the number of small branches, and prevents them from becoming too strong for the stem.

Nursery.—Attend assiduously to the seed-beds and transplanted young stuff. Water and shade them. Train young plants in rows similar to what I have just described in young plantations; but when the side branches are very numerous on young plants, thin out the strongest of them. The progress young plants make in nursery rows is astonishing, when they are judiciously trained during spring, summer, and even autumn. The summer and autumn training require only finger and thumb work: no knife should be used.—*W. B.*

State of the Weather near London for the week ending May 9, 1844, as observed at the Horticultural Garden, Chiswick.

May	Mean's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Fri. 3	15	30.218	30.136	68	45	55 0	N E.	
Sat. 4	16	30.134	30 090	59	48	53.5	N E.	.01
Sun. 5	17	30 090	29.913	72	42	57.5	N E.	
Mon. 6	18	29 907	29.701	72	36	54.0	E.	
Tues. 7	19	29.800	29.722	76	43	59 5	N.W.	
Wed. 8	20	29.947	29 946	70	44	57 5	E.	
Thurs. 9	(	29 939	29.943	78	49	63.5	S.W.	
Average		30.007	29.965	71 5	44 0	57.8		.01

May 3 Hazy; somewhat dry air; cloudy, with dry air even at night
4 Slight rain; cloudy; overcast
5 Uniformly overcast; fine; clear and fine at night
6 Light clouds, and fine throughout; clear
7 Very fine; light clouds and variable winds; cloudy and mild
8 Very fine; dry haze; slightly overcast; mild and fine
9 Very fine; sultry, with dusky white clouds; overcast; clear
Mean temperature of the week, 4½ deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing week ending May 18, 1844.

May	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds N	NE	E	SE	S	SW	W	NW
Sun. 12	66.0	40.7	53.3	7	0.40 in.	1	4	4	1	2	2	1	3
Mon. 13	64.3	39 1	52 0	6	0.10	2	4	2	3	2	3	1	1
Tues. 14	64.4	41.5	52 9	7	0.09	2	3	1	2	1	2	2	1
Wed. 15	65 2	41 2	53.7	5	0.41	1	4	1	1	7	2	2	—
Thurs. 16	67 3	43.2	55.3	5	0.17	2	3	1	—	2	6	1	1
Fri. 17	67 3	43 7	55 5	6	0.53	—	4	2	—	1	3	4	6
Sat. 18	66.6	46.5	56 5	5	0.14	1	4	2	1	4	2	1	—

The highest temperature during the above period occurred on the 15th and 16th, 1834—therm. 89°; and the lowest on the 16th, 1838—therm. 29°.

Notices to Correspondents.

Aquatics.—*W. T. Walkin.*—There is no difficulty about growing tender aquatic plants, if you keep the water warm, say from 70° to 75° in summer, and leave them nearly dry in winter. Nelumbium speciosum requires a water-heat of 84°. Cyperus Papyrus, Nelumbiums, Nymphæas, Limnocharis, Hydrocleys, Sagittarias, and Pontederias will furnish you with variety enough.

Books.—*L. D.*—A large library, and long study of Botany, are required to gain a *full* knowledge of the classification of plants, according to the Natural System. Such knowledge as can be compressed into a single volume will be found in Lindley's "Natural System of Botany," a work full of references to other sources of information. You will probably find it to be what you want. Sweet's Catalogue is the best we have.——*A Syrian* had better get "Tenore's Corso delle Botaniche Lezioni" if he wishes for an Italian introduction to Botany.—*C. C.*—It is impossible to say what second-hand books are worth. You should inquire of a bookseller.

Camellias.—*T. A. N.*—We really cannot say why your Camellia, brought into the house from a frame, should, when it flowered and began to make its wood, upon being frequently sprinkled whilst growing with soft tepid water, have become sickly and yellow, except the old leaves, which remain fresh and green. It is clear that the water had nothing to do with it.

Carnations.—*R. P. H.*—The luxuriance of your Carnations may be attributed to two separate causes. Your seed may have too early, and your soil is too rich. It is best to sow the seed the latter end of May, so that your plants will not get to very strong before winter. It is not a necessary consequence that your flowers will be all single because they flourish up many stems. Seedlings are always more vigorous than those that have been in cultivation for a length of time.——*W.*—*A Subscriber.*—It is not usual for Carnations and Pinks to bloom the first season. When the seed is sown early, many strong tufts will considerably throw up into the autumn, and are destroyed by frost. The better system now to adopt will be, to plant them out as soon as they have six leaves (choosing a damp day for the operation) in beds, about 6 inches plant from plant. The soil ought to be poor, and, if possible, a north east aspect, in order to counteract the luxuriance which early sowing has a tendency to promote. In these beds they may remain till next year, when they will bloom.—*W.*

Climbing Plants.—*W. T. W.*—You cannot have finer climbers than Clematis azurea grandiflora, Dolichos lignosus, Hardenbergia macrophylla and monophylla, Mandevilla suaveolens, Bignonia Pandorea, and Bougainvillea spectabilis; but you will probably not be able to flower the latter.

Coniferæ.—*Deodar.*—You may add to your collection of Coniferæ, Pinus taurica, nigricans, Laricio, Pinea, excelsa, and Cembra, Abies Cephalonica, and Morinda, which ought not to be expensive. The new kinds are necessarily very dear, because they are in few hands, and difficult to multiply. Why not apply to some respectable nurseryman for his price list, and take what you do not think too dear? We should be happy to advise you more particularly if we knew how.——*J. K.*—You may easily get a new leader to your Deodar to supply the place of the injured one, by tying up one of the best shoots near it. The Deodar grafts well upon the Larch. It may be done now, or in August. If done now, it will probably begin to grow before autumn; but if done in August, the scions may remain dormant until next spring. The scion and stock should be pared, so as to fit together accurately, and should be bound together firmly, without being crushed, by a piece of worsted thread.‡

Flowers.—*Lockhart and Co.*—Your Lupinus formosus is too like L. tomentosus to be worth preserving.

Garden-Ground.—*Tyro.*—You will find some information about converting peat into garden-ground, at pp. 678 and 787 of vol. 1843, to which we must refer you. Three or four inches of clay will make a great difference in the condition of the soil, especially if you can add a good dressing of lime. As for manure, one never has too much of that in a garden. In turning over your soil, take care that the good upper soil is not mixed with the lower stratum of gravel; but be sure that there is not a hard pan below the peat. If there is, you must break that through, so as to secure a free communication for water both upwards and downwards.

Greenhouse.—*A Lady Gardener.*—Peaches are so excitable that it is impossible to keep greenhouse plants with them in winter without injuring the former, if fire-heat is used more than is necessary to exclude frost. But you do not want artificial heat beyond this, for Geraniums and such things. The same observations apply, though in a less degree, to a Vinery.——*Cavanensis*—Your house is hardly wide enough for a conservatory. You will probably find it best suited for a greenhouse, especially if it has a lean-to roof, as we presume.‖

Hard Water.—*Cambriensis.*—We cannot answer your question as to whether the constant use of carbonate of soda in tea-water will injure the constitution. It is possible, but your medical attendant alone can judge of that. It *may* be advantageous to the constitution.

Heating.—*P. K.*—On no account use open tanks; you will be parboiled. A slate cover is better than one of tiles. It does not matter how the connection is made between the tanks and boiler, provided it is a sound joint, and the return-pipe goes into the lower part of the boiler, while the flow-pipe passes out from the upper.——*Markham*—The Olmstead Stove is on principle a modification of Dr. Arnott's stove, but professing to expose a much larger heating surface to the air.—*J. S. Winton.*

Hyacinths.—*Senex.*—You will find excellent practical directions for their management at p. 107, for 1842. There can be no doubt that it is better to prevent a hyacinth flowering 2 years successively, if the bulbs are to remain very strong; but, by observing the directions given in the place above alluded to, they will flower well year after year without considerable deterioration. Gentianella prefers very stiff soil.

Insects.—*R. T.*—The brown Caterpillars, so destructive to the Cherry blossoms this spring, will change to small moths; the species we hope to determine by rearing them. *R.*——*M. W. K.*—If the ants come from under a wall pour down boiling water, and by repeating it they will soon disappear. If a phial containing some crumbs of bread and brown sugar be afterwards laid down near the spot, the stragglers will congregate in it, and may be easily destroyed. *R.*——*A Sussex Farmer.*—If you will send us specimens of the Hop flea we will make it the subject of an Essay. Great numbers might be collected by a trap made of canvass, and strained on a frame, like an umbrella reversed, with an open space in the centre, and a slit on one side, to admit of its encircling the whole, or a large portion of the Hop-plant; the inside should be painted with tar, or some adhesive liquid, whenever it is to be used. Where this trap has been placed round the plant the poles should be struck, or the leaves may be brushed with a few birch twigs, when the insects will leap off and stick to the tar. It would be undoubtedly a tedious operation, but very effectual. *R.*——*C. T's* little pest belongs to the genus Podura of Linnæus. It is a species often complained of by Floriculturists, but little of its economy is known to naturalists. It delights in damp places, it is believed, and retires by day into the loose earth. *R.*——*K. O*—We regret not being able to suggest any remedy beyond those we published last year, in describing the different scale insects, and all that we know relating to the Aphis lanigera has lately appeared in this Journal, when we described and figured that insect. Surely by repeating the remedies already employed the Aphides must be extirpated. *R.*

Manures.—*A. E. F.*—Bone-black consists of bone earth coloured black by charcoal; when mixed with sulphuric acid, superphosphate of lime is obtained, which has a black colour from the charcoal. The value of such a superphosphate will of course depend on the quantity of superphosphate of lime which it contains; the more charcoal the less valuable will it be. Ordinary bone-black contains about 10 per cent. of charcoal—*E.*——*A Lady.*—Guano is best used in a fluid state. Superphosphate of lime should be dug in; the others may be used in the way most convenient. They will probably be found useful to all plants except Coniferæ; but no fluid manure will act well on clay. Before manuring it, you should improve it by acting on its mechanical texture. First drain it well, then apply plenty of cinder-siftings and old plaster-rubbish, or the refuse mortar, and other calcareous matter, to be obtained where houses are pulled down. When these are well incorporated, and the land is in good tilth, fluid manures will act; still then, you had better employ stable manure, or such coarse materials as will loosen the soil as well as enrich it. If stable-manure is scarce, it would be that case be necessary to make a compost-heap of refuse-vegetables, leaves, cinders, charcoal-rubbish, bits of half-rotten sticks, &c., and rendered stronger than natural by incorporating guano with them. Soot is a good substance to add, but the others are better. For immediate effect, the siftings of house-cinders, soaked with *any* strong manuring liquid, may best be used.

Names of Plants.—*R. H.*—It will be labour in vain to search for solid distinctions between Prunus cerasus and laurocerasus, which are doubtless the same species, notwithstanding that Botanists separate them. Their fruit affords the only sure difference.——*B. T. S.*—Lisbon, cream, or Tyne-mouth. *R. W. S.*—We do not attach importance to slight varieties; there is not a plant in which some deviation or another from the habitual condition may not be found occasionally.——*Tyro.*—Dolichos purpureus.——*E. T. O.*—Either Hyacinth of other origination, or a new species.——*Hippeastrum.*—We should regret if such a plant as Malor de Mer——[illegible]

Onions.—*Cumbriensis.*—The wet season—your ground being naturally loose, and rendered too much so by trenching and the application of stable manure—has probably prevented the formation of bulbs, *thick-necks*, or *scallions* only being the result.‖

Pine-Support.—*Youell and Co.*—Mr. Hatch's invention in its present form, appears to be admirably adapted for supporting Pinks and keeping them in form. It could no doubt be easily applied to Carnations and Picotees: the wire in this case would require to be firmly fastened to the stick.*

Polianthes tuberosa.—*A Reader.*—If the soil is damp and warm you need not water these until they begin to grow.‡*

Roses.—*T. A. N.*—You may syringe your Roses in the evening. Do not yet cut away the "sap buds" close to the buds that were inserted last year, but top them a little above the latter, leaving a few leaves to draw up the sap. When the buds become established, and fully able to support themselves, then that part of the stock above the buds may be deprived of leaves and used to tie the new shoots to till they harden.‡

The Strawberry.—*A.B.C.*—In taking runners for new plants, it is of no consequence whether you take them from plants in bloom, or from others.——*Cavanensis.*—It is advisable to cut off the runners from Strawberry rows, composed of such free-growing sorts as Keen's Seedling, Old Pine, Downton, Elton, &c.; but with regard to those of shy growth, and of which the old plants are apt to die off in winter, it is best to follow the plan by which you state you obtained good crops of Myatt's Pine—that of allowing a sufficient number of the first runners to strike root, and remain to produce the crop in the following season.‖——*J. K.*—Water to the roots, not the flowers, is all that Strawberry plants want now in order to make their fruit swell. Manure will not now act on that, but will merely invigorate the plants against another flowering season. No sort of manure seems to come amiss to Strawberries, but they are particularly fond of bone fragments.

Vines.—*An Old Friend.*—If your gardener planted his Vines on the top of his border, the raising it to the level of the sill would have been an advantage rather than a disadvantage; but if he planted them in the usual way and then heaped earth over the roots and stems till he brought the border up to the level of the sill, that would account for your Vines being uniformly barren, because of the coldness of the soil at a distance from the surface, and the great exclusion of air from the roots. It is possible, however, that we have misunderstood you; and if so, it would be as well to state the case very exactly, mentioning the way in which the drainage of the border was provided for, and how the border was made, when we will either advise you again, or print the statement, in the hope that it may catch the eye of some one acquainted with some other instance of the same sort. Roberts's book on the Vine is excellent of its kind.—— *Cavanensis.*—Varieties for growing under the nine rafters of your greenhouse should be such as will bear with close pruning—5 Black Hamburgh, 1 Black Prince, 2 Royal Muscadine, 1 Sweetwater. Your other plants will not be much injured if you dress the Vines so as to extend but as little as possible under the glass. The border for the Vines need not be more than 6 feet wide at present, and 2½ feet deep. 6 feet more should be added to the width of the border as the roots extend. You may plant the Vines turned out of pots in the end of this month.‖

Miscellaneous.—*Orchis.*—Both Orchis mascula, morio, and latifolia vary very much in the colour of their flowers, from white to deep purple.——*Cambriensis.*—If you will watch our Notices you will see that we do exactly what you wish, in a quiet way. The difficulty about giving questions as well as our answers lies in the want of space. "Bevan on the Honey-Bee" will probably answer your purpose best. Some day we will think about a glossary, but fear it will be, much too long for a newspaper. Other answers elsewhere.——*Simples.*—We are really very *much* obliged to you; such things do not strike us as they strike others. There are, however, many tastes to consult. We shall keep an eye upon the points you mention; one of them is nearly brought to a close.——*J. Smythe.*—It is impossible to answer your question without seeing the excrescences you mention. Violets, like other plants, are subject to various organic deformities and changes.

SEEDLING FLORISTS' FLOWERS.

Auricula.—*J. C.*—Your Self is a neatly-formed and prettily-shaded flower, and will do for the borders; the yellow paste excludes it from Show varieties.*—*J. H. F.*—Your collection of *Alpines* is extremely good; they are large and showy flowers, very varied in colour.*

Calceolaria.—*J. B.*—There is nothing in your seedling to distinguish it from a great many raised by other growers.*——*T. C.*—No. 1 is pretty from its marking; 2, very common; 3, curiously and very prettily marked,—it is also an approach to a good form; they are all defective in the outline of the flower, being deeply indented at the bottom.*——*R. J.*—No. 1 is a pretty Self, and a well-formed flower; but your seedlings do not differ sufficiently from the varieties raised by other growers.*

Cereus.—*C. J.*—"Flowers of a Cereus originated between speciosissimus and flagelliformis, the former species bearing the seed, and the plant also having its furrowed habits, with the pendulous growth of the male parent." The flowers of this hybrid are of a deep bright crimson, enriched in the inside by a beautiful tinge of blue; if a free bloomer, it will make a desirable variety in this class.*

Cineraria.—*J. B.*—Your best seedling, the *Fairy*, is of a rich colour and a good size. *Village Maid*, *Aurora*, and *Gipsy* are small, and in colour they have all been anticipated by other growers.*

Pansies.—*B.*—Your seedling is extremely pretty, but deficient both in form and substance.*——*R. B.*—Neither of your Pansies are worth preserving; they are small, common in colour, and poor in substance.*——*F. S.*—A large well-formed flower, of good substance, large purple eye, white ground, deep purple upper petals, with a broad belting of the same surrounding the lower ones; the belting breaks off rather too soon, but it is uniform in the three petals.*——*H. B.*—Some of the seedlings you have sent are good in form; generally they are too long and under-sized.*——*C. U.*—Your bloom was injured by being too much pressed. It appears to be of good form and substance, upper petals and broad belting of the deepest purple, with large eye of the same, nearly filling up the shield.*——*C. H.*—No. 1, white, with a fine dark eye; petals too much puckered at the edges; 2, a large flower, of good substance; three lower petals remarkable fine; the upper are rather large, and not disposed to lie flat; 3, a large, compact, and flat flower; the edges of the petals are too much serrated, and the ground colour wants uniformity; 4, a fine deep purple Self.—These flowers are all large, and of good substance.*

Errata.—In "Taxodia," p. 275, line 24, for "leaves" read "larvæ."——In "Notices to Correspondents," p. 284, under the head "Pinaria," by a mistake in the punctuation, a line of *Aquatics* was called Rock Plants. The full point, instead of being placed after "plants," should be put before it, and the sentence should be read, "For rock plants, see p. 188, 1844."——In p. 281, line 36, under the head "Gladiolus," for "and," read "Lord Anson," and "Lord Anson,"

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—The GENERAL MEETING will be held at the Society's House, No. 12, Hanover-square, London, on Wednesday the 22d of May, at Ten o'clock precisely (instead of 12 o'clock).

By Order of the Council,

London, May 3, 1844. JAMES HUDSON, Secretary.

SOUTH HAMS AGRICULTURAL ASSOCIATION.—The Sixth ANNUAL MEETING and CATTLE-SHOW of the above Association will be held in the Barrack-Yard at Modbury, on WEDNESDAY, the 5th day of June, 1844. For List of Premiums Regulations for Entry, Certificates, and other particulars, application is to be made (free of expense) to Mr. KELLY, the Secretary, at Modbury.—May 2, 1844.

ANY one having a BUDDING'S PATENT MOWING MACHINE to dispose of, second hand, but perfect, may hear of a Purchaser on applying to X, Post-Office, Kirkby Lonsdale.

The Agricultural Gazette.

SATURDAY, MAY 11, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 15 Agricultural Society of England.
THURSDAY, May 16 { Agricultural Imp. Soc. of Ireland. Highland and Agricultural Society.
WEDNESDAY, May 22 Agricultural Society of England.
THURSDAY, May 23 Agricultural Imp. Soc. of Ireland.
FARMERS' CLUBS.—May 23 { Gloucester. Cardiff.

ERRATUM.—At p. 283 there is an important error in the account of "Experiments with Manures," on the estate of Mr. Aglionby. By some slip of the transcriber, the quantity of superphosphate of lime used per acre is stated to have been 1 *ton* 2 cwt. 20 lbs The reader is requested to erase the words 1 *ton* The quantity employed was 2 cwt. 20 lbs.

We have great pleasure in directing the attention of our readers to the account in another page of what is believed to be the first public meeting held in England, for the special purpose of promoting AGRICULTURAL EDUCATION.

Last year, the importance of educating the Agricultural classes, and the importance more especially of giving farmers' sons an *Agricultural* education, was pressed upon the attention of the Cirencester Farmers' Club, at one of their monthly meetings, by Mr. R. J. Brown, of that town. A committee was on that occasion named for the purpose of carrying into effect resolutions approving of Mr. Brown's views. The members of this committee have since then been unremitting in the advocacy of their cause, and the public meeting held on the 29th ult. at Cirencester, was called by them in order that they might lay their plans before the Agriculturists of the district, and report the progress they had made in carrying them into execution. The resolutions which they suggested, proposed and seconded as they were by landowners and practical farmers, were carried all but unanimously in a full meeting of the Agriculturists of East Gloucestershire the Earl of Bathurst being in the chair. The heartiness and activity which seem to characterise their proceedings, augur well for the success of their plans The first resolution is one which, were it entertained and adopted by every Farmers' Club in the kingdom, would, when worked out, be productive of great national good. It was moved by the Earl of Ducie, and seconded by Mr. Kearsey, a tenant-farmer, that it is expedient to provide an institution in which the rising generation of farmers may receive instruction at a moderate expense in those sciences, a knowledge of which is essential to successful cultivation; and that a farm form part of such institution.

This, when established, will be the first Agricultural College in England. It has long been the shame of our country that it possesses no Educational Institution for farmers, such as those which benefit almost every Continental state. There is an Agricultural school at Templemoyle, in Ireland, and there is a Professorship of Agriculture at Edinburgh, the chair of which is occupied by a practical farmer, but these are the only cases of the kind that we know of in Great Britain. If, however, the Cirencester farmers and landlords succeed in establishing, as they propose, their College on the Cotswold Hills, we may hope that their example will induce others to attempt the establishment of similar institutions in other districts. The success of this attempt at Cirencester—the first, it is believed, of the kind in English history—thus possesses national interest; and we do hope that Agriculturists of all classes in the country, whether lords or merely tenants of the land, will prove the reality of this interest by affording substantial assistance in furthering the object of it. Much assistance would be given by the mere expression of feelings on the matter. Let the Agricultural periodicals and newspapers of the day be filled with communications from all who feel interested in the subject of Agricultural Education. It is certainly the most important subject which can engage the attention of Agricultural writers—let it be that on which they most frequently and usefully wield their pens. An interest would thus be excited in the matter throughout the extensive and rapidly widening circle of Agricultural readers, and men would be prepared readily to follow the example so well set at Cirencester. Let a great effort be made to give the character of the Society as high a station intellectually as it already holds morally and physically. Were there, as there ought to be, a national sympathy with the promoters of the Agricultural Institution at Cirencester, no difficulty would be found in the way of expressing it usefully. We have no authority to say so, but we have no doubt that letters, whether merely of inquiry as to the nature and prospects of the proposed Institution, or expressive of the writer's anxiety to be of assistance to it, would meet with immediate attention if addressed to Mr. Brown, who, we believe, acts as Secretary to the Committee appointed at the late Public Meeting.

The value of the object at which the Cirencester Farmers' Club is aiming, is unquestionable. The following extract from the Report to which we have alluded, states the advantages which would follow the establishment of Schools of Agriculture:—

"So long as observation and experience were deemed all that was requisite to the successful pursuit of Agriculture, very little education, or knowledge of any sort, was deemed an essential preliminary. The son had only to follow the father about the farm for some three or four years, and to observe the mechanical operations for the preparation of the land for the various crops—the seasons of the year at which they were performed—and the feeding and general management of the live stock. This slight degree of information, together with the means of purchasing a sufficient stock, was then considered sufficient to constitute the farmer.

"But when the attention of men of science was turned in this direction, it became apparent that the then existing practice of Agriculture had no sound foundation to rest on;- that the composition of the various soils was unknown;—that the composition of the manures applied to them was unknown;—that the elements of the crops sought to be produced by the agency of the one and the other were unknown;—that the mode in which those crops assimilated the food provided for them, and therefore the state in which such crops would be placed under the most advantageous circumstances for the reception of such food, was unknown. In truth, that little more was known, than that on certain land, tilled in a given manner, so much grain and feed, in ordinary seasons, had, in fact, been produced, and therefore that under similar circumstances the same results might be anticipated.

"The principles and facts, however, promulgated from time to time by scientific men—the analyses published of various soils, manures, crops, &c.—the obvious advantages which attended the adoption of draining, upon more scientific principles—the introduction of implements of various kinds founded on more just conceptions of the laws of Mechanics, and the more effective application of power—all combined to convince teachable minds that much was yet to be learned by those who were interested in obtaining from the soil the utmost that it was capable of yielding, without deterioration, and at the lowest scale of expense.

"Hence arose an appetite for such knowledge, and a feeling of the necessity for some better medium of communication with one another on these subjects. The formation of Farmers' Clubs and the establishment of the Royal Agricultural Society of England may be traced to these causes

"The result of the intercourse to which these institutions led, particularly from the occasional attendance of men of superior acquirements, was a general conviction that a great variety of knowledge was essential to the successful pursuit of Agriculture, which the existing race of farmers did not possess, and much of which they could not hope to attain for want of a suitable preparatory education.

"The Members of this Club, deeply impressed with this conviction, felt the importance of securing for the rising generation of farmers the advantage of early instruction in all those branches of knowledge, and that the time had arrived at which various circumstances conspired to indicate the necessity of rendering land as productive as possible, at the least expense of time and capital. This became the subject of discussion at many of their meetings On the necessity of an establishment of a School of Agriculture upon some plan or other, all were agreed. They found that institutions, having this object, existed in most parts of Europe—in France, in Italy, in Switzerland, in almost every province of Prussia, in Sweden, at Wirtemberg, Bavaria, Bohemia, and other parts of the Austrian dominions, and in Ireland.

"The Club eventually came to the resolution that the establishment of Agricultural Colleges, with example farms attached, in which young men having received an ordinary education should be instructed in those branches of knowledge which would best qualify them for the pursuit of Agriculture, would be the most desirable course; and they determined that an effort should be made to found a College in in their own district."

In another part of this day's Paper our readers will find Professor Johnston's Address to the Agricultural Chemistry Association of Scotland. Any of them, who with the individual dissentient at the late Cirencester meeting, may doubt the advantage of teaching farmers the sciences on which the success of their practice depends, should read that Address. The Association, through Professor Johnston, are doing a great deal of good among Scottish farmers. In Ayrshire and many other districts where lectures have been delivered, the excitement that has been produced is taking a right direction; text books of Agricultural Science are being published for use in the parish schools, and the young are being instructed in Agricultural Chemistry.

We hope and believe that the effort now making at Cirencester will succeed, and that the means of acquiring a knowledge of the practice and science of Agriculture will be placed before the young—not merely there, but, under the influence of example set there and in Scotland, in many other districts of our country.

Now that so great A DEMAND EXISTS FOR MANURES imported from other countries or manufactured in this, it is important that the farmer should be supplied with efficient means of insuring himself against that to which he is so liable—LOSS FROM ADULTERATION. We have, therefore, great pleasure in giving all possible prominence to the following communication from Mr. Lawes, in which a valuable suggestion is made on this subject:—

"In the article on Guano, taken from Professor Johnston's 'Lecture,' (page 270), there is a very important error, viz.:—that of considering the whole of the organic matter as ammonia; the quantity stated is from 32 to 65 per cent. The quantity of ammonia in the best guano varies from 10 to 15 per cent.; a great deal only contains 2 or 3. It is not unusual now for samples of guano to be offered for sale, the analysis of which is guaranteed in the following manner:—

Organic Matter and Ammoniacal Salts . .	60 per cent.
Water	10 " "

This is opening a great door for adulteration, as there is an abundance of organic matter in England worth little or nothing, which might be mixed with guano; and still such an analysis might hold good. I should recommend those who purchase guano to have an analysis from the agent, giving the per centage of real ammonia, quantity of phosphates, &c.; then let them take a small portion of it and inclose it in a sealed bottle; if after harvest they have reason to suppose, from the smallness of effect, that the guano has been adulterated, they could then have the sample in the bottle analysed by a good chemist, and recover damages from the agent who supplied it. The analysis of guano is exceedingly difficult, and can never be undertaken by the Agriculturist; and if all farmers refused to purchase the guano unless the quality was insured to them by a written analysis, they would stand a better chance of procuring a genuine article."

ON BLACK HORSEPONDS.—No. I.

IN these days of agricultural advancement, when our great Societies, by offering every sort of encouragement to improve the breed of our domestic animals, have called universal attention to the advantages of keeping them in the highest state of health, strength, and condition; when our Farmers' Clubs, by instigating extensive and endless experiments on the efficiency of foreign manures, and by drawing the most careful deductions of profit and loss from their application, have satisfied themselves of their value, and having enlisted the merchant into their service, have induced him at great cost to freight his ships with bones and nitrate of soda from South America, or guano from Africa or Peru, it is surprising to notice a common custom in many towns, by which not only the health, and sometimes the life of the most valuable animals, but also a manure as rich in quality and far greater in quantity than any which is imported, is year after year sacrificed carelessly, and without reflection. The slovenly and improvident habit of allowing the liquids from the farm-yard and from the dung-heaps to ooze out into the horsepond, where the cattle are compelled to drink, meets with frequent animadversion; but the extent of the evil is calculated by few. Observations on this subject in the *Agricultural Gazette* have lately called my attention more particularly to it. I have obtained from two of the many black horseponds within my reach samples of the usual beverage of the cattle of the farm, the occupier of which has this year lost three valuable cart-horses. The death of the first he attributed to having drunk too much water after a hard day's work; but the symptoms, as I am informed, were at least as strongly indicative of the quality as of the quantity of the water being the cause of death, and I am strongly inclined to think that no other more probable reason can be assigned in the case of the other two. I have since analysed these waters: in one case, in an imperial gallon there were 168 grains of dry solid contents, and in the other 108 grains of dry ingredients; both waters gave an alkaline reaction and were nauseous and saline to the taste, and emitted a disagreeable odour. The solid matter of an imperial gallon of each consisted of the following organic, earthy, and saline ingredients, stated in grains,—

Organic matters and salts of ammonia .	112	No. 1.	44	No. 2.
Soluble saline matter, consisting of sulphates and chlorides of potash and soda	23	„	34	„
Phosphates of lime and magnesia and carbonate of lime	24	„	30	„
	159	„	108	„

These substances, with a trifling exception, must have been obtained from the urine and fæces of the animals of the yard, and are, in fact, identically the same as those found in guano, which is the dung and urine of sea birds; and though they differ in proportions from guano, still the fertilising agents in the two are alike, with this exception, that the *former* contains its organic or animal matter in a fresher and more actively putrefying condition, and is just as much better as a manure as it is more dangerous to take as food.

Now, only let any farmer, who, every time that he passes the horsepond where his cattle drink has the misfortune to see his face reflected on a dark-brown slimy surface, imagine that it speaks to him thus:—"Why do you talk or think of guano? Here am I, full of the very essence of guano, yet totally neglected by you! In fact, I am actually as if you had expended so many pounds sterling in the purchase of guano, and had thrown it all into water, and stirred it well up so as to compound the richest of liquid manures; yet neglecting me as a manure for your Grain-crops or Grass-land, you allow me to be taken as food by your horses, for which, on the other hand, I am a slow consuming poison; you give me as drink—a black, disgusting, nauseous draught—for cows, from whose milk you make butter and cheese for sale, or for oxen, upon whose healthy flesh and rapid growth your profits depend. Your folly in thus neglecting me is self-evident and would be sufficiently obvious, though I should say nothing of the exhalations from my surface, which poison your family, your labourers, and yourself, which are now known to carry by the lungs into the system the seeds of most of the fevers and agues which human flesh is heir to, and which are also shrewdly suspected by many to be one of the causes of the inaccurately-so-called Epidemic, which has so often decimated the herds of this country, and from which you have probably suffered yourself."

Such an imaginary address on the part of the horsepond may, doubtless, appear overcharged and ridiculous to some; but, unfortunately, it is in many instances lamentably and literally true. If future space in these columns be allowed, I hope to make this apparent to many not yet aware of it, by showing in the first place, by a few simple calculations, the money value of the lost ingredients, measured, as nearly as may be, by the same ingredients contained in guano; and this, I think, will tend to open the eyes of the farmer to the great amount of valuable manure he in this way habitually throws away; and, secondly, by showing the positive mischief done to cattle by allowing such large quantities of deleterious and putrefying matter to find its way into the stomach of the living animal.—*Alfred Clyde, Painswick.*

AGRICULTURAL WEEDS.

ALLOW me to call the attention of farmers to the weeds which may occur in their crops during the present season. It is quite unnecessary to occupy valuable space with showing that the neglect of weeds is sure to be followed by a less plentiful crop, and that as the valuable produce is decreased so is the number of weeds sure to be increased during each successive season. Most weeds perfect their seeds before the crop is ripe, and thus, filling the soil with them, provide a plentiful supply of their progeny for many successive years; for, although the crop may be so changed as not to allow the seeds to vegetate in the two or three next seasons, still, when the rotation brings favourable culture on the land, then the seeds of the farmer's pests, which have lain dormant during the unfavourable interval, spring up in abundance. Thus it is clearly for the farmer's benefit to expend present money in clearing his fields of weeds, as by such an expenditure he will insure a long succession of better crops, and by producing a cleaner sample in the market, command a higher price for his grain. But the object had in view when commencing this communication was to remind the farmer that it often happens that the weeds which are amongst the most troublesome in his crops are brought on to the land with the seed. The seeds of many weeds are mixed with the seeds of Corn, Clover, Lucerne, Flax, and other crops, as sold by the importer (for it is chiefly foreign seeds that are in this dirty state, more care being usually taken with those of English growth), and it is strongly recommended that all such seeds should be removed by means of a sieve, for happily many of them are smaller than the valuable seeds with which they are mixed. Should, however, this not have been done, it is much to be wished that farmers would carefully note down the name of the person and the exact time when the seed was obtained, and also its origin, either English or from what continental country. This is the more desirable in the cases of Clover and Flax, since both of these crops are infested with peculiarly destructive weeds, which there is every reason to believe is derived from dirty foreign seeds. I refer chiefly to the Dodder, which has already been noticed in the *Agricultural Gazette*, but not to that alone. It is probable that the dirty seeds all come from particular foreign parts, and that by ascertaining the origin of the seeds which have produced crops infested with weeds, we may be enabled to supply farmers with such information as will prevent them from purchasing the dirty instead of the clean seeds. I venture to recommend the co-operation of farmers in this endeavour, and trust that those who may be inclined to assist in obtaining the above information will have the kindness to preserve a small portion of the prevalent weeds in the above crops, and send them to me for examination and botanical determination, together with all the information that they may possess concerning the origin of the seeds from which the crop was raised. A sample of the seeds themselves should also be preserved. It is only by obtaining extended information of this kind that we can expect to derive valuable hints for the guidance of the farmer. The parts of the weeds required are, the flowers, a few leaves, if the plant has any, the Dodder being without them, and, if possible, the seeds. They may be sent to me by post, addressed to St. John's College, Cambridge.—*Charles C. Babington.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

AGRICULTURE is improved either by the more general diffusion of information already existing, or by addition to the stock of information on the subject, by discovery. The comparative importance of either is determined by circumstances. When the various improvements in the science and practice of husbandry are already made available to the fullest extent, the attention will necessarily be directed to the adoption of further improvements, resulting from discovery. But there are few farms in the kingdom, and still fewer districts, of which this can be said; so that the more general diffusion of information already existing will long continue an important means of improving the Agriculture of the country. The practice of husbandry is, perhaps, nowhere so perfect that it would not be further improved by the introduction, to a greater or less extent, of the system of management elsewhere adopted; and the intelligent farmer, who is anxious to render his practice as perfect as possible, will, so often as opportunity offers, not fail to examine the practice of other districts for that purpose, and compare it with his own. One district may be famous for the rearing of stock, another for fattening them; while the manufacture of butter or cheese, or the cultivation of grain crops, may be the chief characteristics of others. Each, it may be supposed, will present the most favourable examples of superior management in its own peculiar department; and an inspection of each will not fail to instruct the farmer, whose labours are more varied, and whose attention is necessarily directed in a greater or less degree to them all.

But acquiring information in this manner is attended by a very considerable sacrifice of time and money—so great, in fact, that few farmers are inclined to encounter it; and, in consequence, it is not unusual to find many of the most intelligent farmers in the country, whose information, from personal examination, is confined to perhaps from 20 to 30 miles round the farms which they occupy. The same object is no doubt effected, although in an inferior degree, by a perusal of the reports of others in the various publications on the subject, which now happily so much abound. However inferior instruction communicated by means of the press may be to that acquired by personal observation, it is in the majority of cases the only means available; and of the value at present attached to it there cannot be more conclusive evidence than the existence of such publications as the *Agricultural Gazette*.

Premising these general remarks, it may be further observed, that as the practice of Agriculture is so much regulated by local circumstances, it seems manifestly unwise to recommend the system of any particular district, however excellent, for general adoption. Local circumstances alone must determine the value of any peculiarity of practice, although the details of the practice of any well-cultivated district may afford useful hints in some department to almost every reader. It is with these views that I conceived an account of East Lothian husbandry might be perused, not only with pleasure but also with profit by the readers of the *Gazette*. Even under the most dissimilar circumstances, instruction may be derived from contrast as well as from analogy. I am most anxious to confine myself to facts, leaving the reader to draw his own conclusions.

The Lothians have long been celebrated for their superior cultivation. There are no doubt other districts in England and Scotland in which the breeding and management of live stock are better understood; but it is to be recollected that East Lothian in particular is chiefly a Corn-growing district, the rearing and fattening of live stock being generally a secondary consideration with most of the East Lothian farmers. It is here also that the thrashing-machine, now so essential on tillage farms, was first employed; and it is well known that the ploughs, grubbers, and many other agricultural implements, have been here so much improved, that they are taken from this to the most remote parts of this and other countries. It is here, too, that the quality of the cereal grains has been brought to its state of greatest perfection. No shire in Scotland can compete with this in the quality of its grain—none gives a larger return when milled, or brings a higher price in the market.

In presenting the readers of the *Agricultural Gazette* with a series of plain articles, descriptive of East Lothian farming, I wish it to be understood that I am by no means desirous of representing the system there pursued as approaching perfection in every respect. Science has shown, and its greatest admirers must admit, that the tillage husbandry of certain districts in this county, however deserving of the reputation which it has already acquired, and to which its present comparatively advanced character entitles it, is still susceptible of great improvements, and that its best farmers have yet much to learn in almost every department of their profession.

Before entering into minute details of practice, a few statistical particulars, together with a brief description of the soil, climate, &c., of this interesting county may not be unacceptable to the general reader, and will form a necessary preliminary to the more practical subjects which are afterwards to be noticed. The era of agricultural improvement in this shire is said to have commenced at the period of the Union in 1707. Fanners were introduced from Holland by Andrew Meikle, in 1710. John Walker, tenant-farmer at Beanstone, near Haddington, was the first who practised and showed the utility of fallowing; and as early as 1724 summer-fallowing became common on all strong clay-soils throughout the county. The first park or pleasure-ground was one containing 500 acres, inclosed by the Duke of Lauderdale, at Lennox-Love, about the same period; but it was not till towards the beginning of the present century that farms were subdivided by thorn hedges or stone dykes as at present. It appears also that horse-hoe husbandry and Turnip culture were introduced and practised by Wight of Ormiston, in 1736; that the Potato was first introduced in 1740, but that this invaluable esculent was not grown in the open fields till about the year 1760. After the Union the celebrated Cockburn, of Ormiston, by introducing and granting long leases, did much to promote the agricultural interests of the county, and to disseminate the spirit of improvement amongst the tenantry. Since that period East Lothian may be regarded as one great experimental farm for the advancement of husbandry, under the care of a series of spirited individuals, who emulated each other in the introduction and practice of useful agricultural improvements.

This county has the honour of being the birth-place o some of the most distinguished Scotch agriculturs authors and mechanics; of whom, however, I shall here mention only the names of two,—Robert Brown and Andrew Meikle,—the former author of a well known "Treatise on Rural Affairs," and original editor of the "Farmers' Magazine;" and the latter the ingenious inventor of the threshing-machine.

The extent of East Lothian, according to the most accurate admeasurement, is 282 square miles, or 180,480 acres, of which 104,530 acres are arable, the remainder being occupied in permanent pasture, woods, wastes, &c.

The number of farms, of all sizes, in the county is at present computed at 418.

The annual value of real property, as assessed in 1815, was 251,126*l.*, and the annual rental as assessed for the year ending 5th April, 1843, 244,856*l.* 6*s.* 9½*d.*

The population of East Lothian, in 1831, was 36,145, and in 1841 it was 35,781, showing a decrease of about one per cent. The number of agricultural families in 1821 was 3009, and in 1831, 2840, showing a decrease of 169 in these ten years; arising, doubtless, in consequence of the gradual enlargement of the farms, which took place during that period.

General appearance.—East Lothian is divided into highlands and lowlands,—the former inland, and the latter adjacent to the Frith of Forth. The highland district is part of the extensive range of the Lammermoor hills, which separate this county from Berwickshire. From these hills the land slopes in the most pleasing manner towards the sea; Nature has elegantly disposed the surface of this shire into ranges of hills and fertile dales, traversing the county from east to west, and presenting a beautifully varying surface. On account of this, its undulating appearance, East Lothian is said to bear some topographical resemblance to Northampton. The entire aspect of the county bears the stamp of long continued and judicious improvements, and their inseparable effects of general opulence and prosperity. When viewed off any considerable eminence, such as the Lammermoor and Garleton hills, or North-Berwick-Law—the latter being an isolated, conical hill, near the town of that name—the scenery all around is truly picturesque, and the beauty of the landscape almost unrivalled. Elegant seats of the nobility and gentry, surrounded and adorned with well-kept policies, plantations, &c.; compact and well-arranged farm-steadings with their elevated steam-chimneys, extensive stack-yards, and other appurtenances, meet the eyes of the observer in every direction.

Soil.—The soil of East Lothian is, like the appearance of its surface, much diversified. Its general character is a strong stiff tenacious clay, naturally very fertile, but most difficult and disagreeable to labour; commonly requiring four or five ploughings, and an endless number of harrowings, rollings, grubbings, &c., even in favourable seasons, before it can be sufficiently pulverised and prepared for a Turnip crop; while in wet adverse seasons, such as the last, it is almost impossible to labour it to any degree of perfection. Skilful and extensive thorough-draining has, however, very materially improved its character in this respect. In its natural state this soil retains water like a sponge, and when once thoroughly saturated with it, requires a long time to become dry and ready for working. When ploughed in a wet state, the soil adheres to the plough like mortar, the work is improperly executed, and the land greatly injured from the poaching or tramping of the horses; while, on the other hand, if ploughed when too dry, the soil turns up in large obdurate cakes, frequently defying the united forces of all the usual tillage implements to reduce them, until it receives a days' rain; after which the clods crumble, and break down with the action of the harrows. Difficult and disagreeable to labour as the strong clayey soil of this country undoubtedly is, yet in favourable seasons it produces very abundant crops of Wheat, Oats, Barley, Beans, Swedish Turnips, and Clover. These

remarks do not, of course, apply to all the arable land in East Lothian, there being some excellent light Turnip soil in several parts of the county, particularly in the neighbourhood of Dunbar, and generally along the coast of the Firth of Forth. The greater part of the shire lies upon beds of coal sandstone, whinstone, limestone, and granite. The prevailing colour of the land is brownish-red.

Climate.—The climate of East Lothian, though variable, is naturally mild and salubrious. It has been much improved of late, by the extension of thorough-draining, and by the high state of cultivation to which the county has been brought. Compared with that of England and Ireland, it is much colder, with a longer continuance of frost and snow during winter; but dryer, and less frequently deluged with rain, throughout the other seasons, than the latter country. As an instance of what is here considered early ripening, I may mention that a quantity of new Barley was sold in Haddington market on the 22d of July, 1842. We frequently experience some very chilling east and north-easterly blasts from the German Ocean; our heaviest rains come from that quarter, often continuing for three consecutive days. The lowlands of East Lothian are, however, supposed to receive less rain throughout the year than any other district of a similar extent in Scotland. This circumstance, combined with a strong fertile soil, and good management, renders it peculiarly adapted to the production of its staple crop—Wheat.

Woods and Plantations.—The most of the land being very valuable for the production of Corn, there are few extensive plantations in the county. Binning Wood, at Tyningham, the seat of the Earl of Haddington is, however, one of the most magnificent forests of hard wood—chiefly Beech and Oak—in the lowlands of Scotland. The most remarkable circumstance connected with this Wood, is the great size to which many of the trees have attained, considering the apparent unsuitableness of the soil and situation. Tyningham is situated on the north bank of the river Tyne, at its junction with the sea; the fields around the house consist chiefly of light blowing sand, and before being planted were of no use but as a rabbit-warren. The plantation, however, proved strikingly successful, the trees growing to the water's edge. What its noble planter, Thomas, sixth Earl of Haddington, has said of the Oak, is worthy of notice:—"As the Oak is my favourite tree, I have planted it everywhere; and I can shew them very thriving on rich, poor, middling, heathy, gravelly, clayey, mossy, spouty, and rocky ground; nay, even upon dry sand." There are some excellent plantations and much fine timber in other parts of the county, but they need not be noticed here.

Size of Farms.—The farms vary in size according to their locality. Near the towns 250 to 300 acres is considered a good size, and in more remote situations, 300 to 500; while in some parts of the county it is not uncommon to find them as large as 700 or 900 acres; but the average size of farms in East Lothian ranges between 300 and 350 acres. In medium soils suited to the five-shift rotation of cropping, a man and pair of horses are considered to be capable of working, in ordinary seasons, from 60 to 75 acres, and, where the soil is light and free, 70 acres. By a recent county regulation, 60 Scotch acres are denominated a Ploughgate. I may here mention, that on this and all future occasions, when the word acre is used without any explanation, the imperial measure is meant; the Scotch acre is above one-fourth larger than the English.—*T. Sullivan.*

ON MINERAL AND INORGANIC MANURES. No. XVI.

By Professor Charles Sprengel.

c. Marl from East Friesland (loamy). 100,000 parts consist of

75,998	parts	silica and quartz sand
1,950	,,	alumina
5,008	,,	oxide and protoxide of iron
0,480	,,	oxide of manganese
4,560	,,	lime
0,927	,,	magnesia
0,200	,,	potash combined with silica
0,540	,,	soda combined with silica
2,940	,,	sulphuric acid, combined with lime as gypsum
2,131	,,	phosphoric acid, combined with lime and oxide of iron
4,246	,,	carbonic acid, combined with lime and magnesia
1,000	,,	coal of humus
0,320	,,	humic acid, combined with lime, magnesia, alumina and iron, traces of common salt

100,000 parts.

If considerable quantities (say 1000 cubic feet per acre) of this marl are used, especially if along with some dung employed (for the sake of nitrogen), the moors and heath soils will produce all sorts of crops, as every one admitting the influence of mineral substances on vegetation will easily understand. 1000 cubic feet, equal to 100,000 lbs., of this marl, will bring on the Magdeburg acre the following quantities of important mineral substances:—4560 lbs. lime, 927 lbs. magnesia, 1950 lbs. alumina, 2040 lbs. sulphuric acid combined with lime as gypsum, 2131 lbs. phosphoric acid, and 740 lbs. of potash and soda. As this is more than he required for many crops, 500 lbs. per acre would be quite sufficient. The above soils, however, require also to be improved physically, on which account more rather than less is to be taken. This marl is deficient only in chlorine, on which account, as well as on account of nitrogen, a simultaneous manure of dung will be necessary, unless a chlorate salt be used.

d. Marl from Magdeburg (clayey). 100,000 parts consist of

58,251	parts	silica and quartz sand
8,450	,,	alumina
6,670	,,	oxide and protoxide of iron
0,360	,,	oxide of manganese
18,201	,,	carbonate of lime
3,794	,,	carbonate of magnesia
0,520	,,	phosphate of lime
2,139	,,	gypsum
1,575	,,	potash and soda united with silica and traces of common salt

100,000 parts.

This marl is used with the best possible result on dry sandy soils, and as an alterative of their texture. 5000 or 6000 cubic feet were used per Magdeburg acre. It has been impossible hitherto to grow Lucerne here. Since, however, this marl has been used, it grows luxuriantly, which is easily explained, by the marl supplying these soils with a great quantity of gypsum, which is soon conveyed by the rain water to its deep roots. Even if only 80,000 lbs. of marl per acre be used, still this acre would receive thereby 1240 lbs. of potash and soda, which, although they are combined with silica, are still gradually washed down to the subsoil; for the silicate will be gradually decomposed by the carbonic acid of the rain water and the air. This marl being deficient in phosphate of lime and common salt, cannot be called the very best, and therefore quantity must make up for quality.

ON THE CULTIVATION OF FLAX.—No. V.

Although the duty of preparing the Flax for market should not devolve on the grower, for reasons stated at length in my last paper, yet under the most favourable circumstances the manufacture will still be performed by the farmer for some time to come. Our account of the cultivation of the crop would not, therefore, be complete without also presenting the reader with some information as to the management necessary to be adopted in the subsequent processes before it is ready for market.

The period of pulling the crop obviously depends, in a great degree, on the intention of the cultivator. When it is wished to procure fibre of fine quality, in which case the crop will have been thickly sown, it is necessary to pull green; but when the saving of the seed is a principal object, a greater degree of ripeness is required. As the saving of the seed should never be neglected, a sort of compromise, if the term may be allowed, should be made with regard to the precise degree of ripeness of the crops; it should not be pulled so early as if no value were placed on the seed, nor should it be allowed to become so ripe as if the quality of the seed were the chief consideration. To judge of the proper time for pulling, the best criterion is when about two-thirds of the stalk is observed to turn yellow and to lose its leaves; and also when by cutting the seed-pod across with a knife, the seeds have changed from their fluid state. The quality of the Flax, as well as that of the soil on which it is grown, must be taken into account in determining the precise period at which it should be pulled, and on all these points some experience will be required.

It is here necessary to observe that when, through any circumstance, any portion of the crop is lying, it should be pulled without delay, without any reference to its state of ripeness, as in that position it would speedily be destroyed. This it is important to keep by itself; the mixture of different qualities producing an inferior sample, besides being at variance with economy, as regards quantity alone, as in undergoing the after process of manufacturing, one part will be broken and carried away in the manipulation, before the other is sufficiently reduced. In like manner, and for a similar reason, the long, middling, and short Flax should be tied up separately, each variety requiring different treatment. Great diversity of quality before pulling is, however, a sympton of defective cultivation, as unless in the case of a diversity of soil the quality should be uniform throughout. Under all circumstances, taking up the crop in a wet state is to be avoided if possible.

In Ireland, Flax is usually taken up by women and girls, who also attend to the grassing, turning, and lifting, after being watered. In districts where the common Rush can be procured, bands for the Flax are formed of Rushes, having been previously beaten with a mallet, and dried by exposure to the sun. They are also formed into bands before coming to the harvest-field, each person supplying herself with two or three dozens of them, which are fastened round the waist, and used as the pulling goes forward. The pullers are particularly to observe that the different handfuls are regularly placed, so that the stalks may lie even at the ends, and should any long weeds, as Thistles or Rag-weed occur through the crop, they must not be pulled with the Flax. When Rushes cannot be procured the bands are formed of the Flax itself. Straw is not suited for this purpose, being rotted by the watering process.

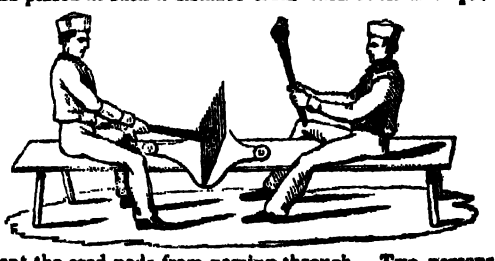
The management of the Flax after pulling, in some degree depends on the course which is afterwards to be adopted. In Ireland, and also in certain districts on the Continent, the crop is made to undergo the watering process a few days after it has been pulled, or so soon as it can be conveniently rippled; while in other cases it is dried in the field and afterwards stacked up, to undergo the subsequent operations in the ensuing season, when the weather is favourable for the purpose. Until lately the saving of the seed was generally disregarded in Ireland, but it is obviously of too much value to be neglected in any case.

When the Flax is to be watered in the autumn, the rippling should be carried on almost simultaneously with the pulling of the crop. In this case the puller should place the handfuls of Flax slightly crossing each other on the bands, as the pulling goes forward; and their handfuls should be of such a size that they can be grasped readily afterwards by the hand in rippling. The purpose gained by placing them in some degree crossing each other, is to facilitate the separation of the handfuls afterwards, which, by careful handling, may be easily done, and thus not only save trouble, but prevent the Flax from being injured by rough treatment. The bunches should be small, and the several handfuls laid loosely together, so that the Flax may be slightly seasoned after pulling, before rippling. Where a large quantity is to be manufactured, the number of hands employed at the respective operations of pulling and rippling should be regularly apportioned, so that they can keep pace with each other, and the rippling may commence the day after the pulling, and thus allow a day to intervene between the performance of the two operations, for the purpose of drying the Flax.

The importance of the foregoing arrangements will be manifest on a little reflection, and much inconvenience is often occasioned by not attending to them. Frequently in the hurry of pulling, the Flax is at once bound up into bunches, in which it remains on end a few days before rippling; but then when the latter process comes to be performed, great loss of time is experienced in the separation of the Flax again into handfuls, besides being productive of much injury to the Flax itself. These minutiæ may appear irksome to the general reader, but the Flax-grower must remember that attention to these will, in most cases, constitute the difference between success and failure in his operations.

Before the rippling process is commenced, the capsules should be so much hardened, and the seeds themselves have attained such a degree of ripeness, that the former will readily break down on being subjected to pressure, and admit of the separation of the seeds from the matter with which they are surrounded. This is necessary to prevent fermentation actively setting in among the capsules after being taken off the Flax, which it would at once do if any excess of moisture be present. The saving of the seed is, indeed, at all times difficult, when the crop is watered in the autumn, and even with the greatest care fermentation will set in, unless the capsules be thinly spread on a dry floor and repeatedly turned over.

The rippling machine is an instrument like a comb, the teeth being of iron, usually fastened in a wooden block, and attached to a plank or long seat, as shown in Figure 1. The teeth should be round, smooth, and tapering, standing about twelve inches out of the wood, and placed at such a distance from each other as to prevent the seed-pods from passing through. Two persons are usually employed in rippling, each alternately drawing his handful of Flax through the machine, which is placed in the centre of a large winnow-cloth, on which the seed-pods are collected and carried to the barn or other place in which they are to be preserved. The cloth and rippling machine are moved from place to place, through the field, as the work goes forward; and after rippling, the Flax is again bound up into bunches or sheaves, to be taken to the water. To preserve uniformity in the watering, the produce of each day's rippling should be placed in a separate pond.



The capsules containing the seed are now to be spread thinly over a boarded floor to which the atmosphere has free access, and turned repeatedly until thoroughly divested of their natural moisture, when they may be stored up in any quantity required. In moist weather, and when the quantity of seed on hand is large, it is extremely difficult to save the seed properly, even under the most careful management. When the seed is intended for crushing or feeding, a slight kiln-drying will not be injurious, and will save much labour in preserving it; but when intended for sowing, this process would manifestly be injurious, as interfering with its vitality. —*J. Sproule.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XVI.

(*Continued from p.* 284.)

In the beginning of last year I performed a comparative experiment with sulphuric acid and gypsum, as fixer of the nitrogen in urine.

This experiment has been related by Professor Henslow, in the first Number of this Paper; but as I consider the subject of extreme interest, I will detail some parts of the experiment which he omitted, more especially my notes of the manner in which the fixing media acted upon the liquid. I procured three barrels, each holding 54 gallons, which were gradually filled with human urine, between the 27th of Jan. and the 6th of April, the same quantity having been added to each alternately every morning.

Barrel No. 1 (A.)—*Jan.* 27. Put into the tub 5 ounces, by measure, of concentrated sulphuric acid of sp. g., 1.850, and one gallon of water.—*Feb.* 14. The

urine had no acid re-action upon litmus. I therefore added 3 ounces more acid (by measure.)—*Feb.* 17. About 20 gallons collected, which had a strong acid re-action.—26th. The urine of a dark colour, but not putrefied.—*March* 20. Barrel full, no putrefaction.—*April* 6. Solution nearly neuter, but slightly acid; no putrefaction. Applied to the land, as stated by Professor Henslow. (*Vide* "Agricultural Gazette," No. 1.)

Barrel No. 2 (B.)—*Jan.* 27. One gallon of water, and 5 lbs. of gypsum, which, by mistake, was burnt plaster of Paris.—*Feb.* 17. Acid re-action; no putrefaction.—26th. No acid re-action. I then added 5 lbs. of the hydrated gypsum, and, curious enough, five minutes after, the solution re-acted upon the litmus; no putrefaction; 30 gallons collected.—*March* 11. Solution neutral.—24th. Barrel quite full, and beginning to putrefy. Alkaline re-action. Added 5 lbs. more gypsum.—*April* 2. Urine putrefying, and ammonia escaping in considerable quantity. Solution alkaline. Added 5 lbs. of gypsum.—6th. Ammonia escaping. Applied it to the land.

Barrel No. 3 (C.)—*Jan.* 27. Added only 1 gallon of water. The solution began to decompose about a fortnight or three weeks from the commencement, and the ammonia escaped freely until the day of application.—*April* 6. By direct experiment I found that 16 gallons of this urine in a state of decomposition, required 60¼ ounces, by weight, of concentrated sulphuric acid of sp. g., 1.850, for neutralisation; producing, according to previous calculation, about 112 ounces of sulphate of ammonia.

In the first barrel it is clear the urea in the urine did not decompose, and therefore no ammonia was generated. The action of sulphuric acid upon fresh urine produces a compound of urea, the nature of which is still undetermined; but the result of my experiment proved that the nitrogen was supplied to the plant, probably by its conversion in the soil into carbonate of ammonia. The action of the gypsum was unsatisfactory. 20 lbs. of gypsum contain about 12 lbs. of sulphuric acid. If chemical action had taken place to any extent, the ammonia ought to have been fixed; for although 54 gallons of putrefied urine require 16 lbs. of sulphuric acid to neutralise the carbonate of ammonia, it will be perceived that the urine in Barrel No. 2 did not decompose until about 12 days before the liquid was applied, in consequence, probably, of the anti-septic quality of the gypsum; but that, when decomposition took place, the ammonia escaped as freely as in Barrel No. 3, which it ought not to have done had the gypsum acted upon the carbonate. It would have been more satisfactory certainly, had double the quantity of gypsum been used. The experiment was performed on what the farmers call a light loam, which had been cropped with Turnips, and fed off with sheep the preceding winter.

The analysis of 400 grains of the soil, obtained 3 or 4 inches from the surface, and kept dry for a week, gave the following result:—

		Grains.
Specimen (400 grs.), ...	Sp. Gr. 1.57	
Moisture		17
Siliceous and Calcareous Coarse Sand . . .		27
Fine Sand		249
Impalpable Matter, which contained—		
Carbonate of Lime and Magnesia . .	17	
Animal and Vegetable Matter . . .	8	
Oxide of Iron	6	78
Alumina	20	
Silica	27	
Loss		25
		400

Of this field I had 7 patches carefully measured by a land surveyor. The first 6 contained exactly 8 perches each, the last had unavoidably $\frac{1}{10}$th of a perch more, and this we accordingly gave to the benefit of the unmanured crop. As the field was not in my own occupation, I had not that control over the sowing which I should like to have had, and the consequence was that the seed (Barley and Clover) was sown the same day that the liquid was applied. The proportion used, and the important results obtained, will be seen by a reference to the First Number of the "Gazette," from which I deduce the following facts:—

1. Ten gallons of urine, equal to 80 lbs., fixed with sulphuric acid, produced over and above the same quantity of land without any manure, 37 lbs. of grain, and 41½ lbs. of straw—78½ lbs. of produce; being an increase per acre of 1580 lbs. of produce. By measure the increase was 15 bushels per acre.

2. Fifteen gallons of urine, equal to 120 lbs., produced 32 lbs. of grain only, and 8 lbs. of straw—40 lbs. of produce; being an increase per acre of 800 pounds. The liquid was in this case evidently too strong for application the day of sowing. Had it been used a week or fortnight before, the result would probably have been different.

3. Ten gallons of urine and gypsum, equal to 80 lbs., produced 13½ lbs. of grain, and a loss of straw of 27 lbs.

4. Fifteen gallons of urine and gypsum, equal to 120 lbs., produced 12 lbs. of grain, and a loss of straw of 14 lbs.

5. Ten gallons of urine, equal to 80 lbs., not fixed with anything, and the ammonia allowed to escape before application, produced 9 lbs. of grain, and a loss of straw of 18 lbs.

6. Fifteen gallons of urine unfixed, equal to 120 lbs., produced 19 lbs. of grain and 10 lbs. of straw—equal to 29 lbs. of produce; being an increase of produce per acre of 580 lbs. With regard to the Clover, that which was mown with the Barley was of course taken account of in the straw, and the layer has still to be noticed.—*C. R. Bree, Stowmarket.*

Home Correspondence.

Gorse.—I have used Gorse 14 years this season for dairy cows, fattening cows, and horses, all of which it suits equally well.—Sheep I have not tried it with. I doubt whether they will easily be got to eat it,—they do not like anything which has been much bruised with iron. Whins must be bruised, and my machine is iron.—Three bushels and a half per day, unmixed with any other fodder, is sufficient for each cow. I have 24 cows in one house; besides the Whins, they eat per day one hundred weight of hay and eight bushels of Swedish Turnip amongst the 24 cows; being about four pounds and a half of hay per cow per day, and 20 pounds of Swedes per cow per day. On this, dairy cows are kept in excellent condition, and the butter is remarkably good; fattening cows will feed fast. When Swedes fail or are scarce, I substitute about four pounds of oil-cake per day to each cow, and as the fattening cows get forward, I increase the quantity of oil-cake gradually; the most I give is 12 pounds per day to large cows, and that only for the last month.—The Gorse is first put through a common chaff-cutter, then bruised in a mill similar to the old cider-mill; the revolving wheel surrounded with fluted iron; at the bottom of the chase a plain iron plate.—It is sown as Clover seed, with a crop of Barley or Oats—is fit to cut the November 12 months after sowing; it is then mown every year during the winter, as wanted, with a common scythe, close to the ground; on good dry land will cut from seven to ten tons per acre.—The plant I use is called French Furze, but is very common in England.—I grow it on an old woodland, stocked up, part a burning gravel, part a strong clay, but very dry at bottom, and very hilly. Half an acre of this land is on the average sufficient to keep a cow 20 weeks. On rich loamy dry land I have no doubt nearly double quantity may be grown.—There is no danger in using it if it be well ground, and mixed with salt in the proportion of four ounces per cow per day.—The mowing, carting, cutting, and bruising, costs not quite a penny a bushel.—It requires no manure, but in its consumption creates a great deal. Will grow on poor hilly land, if dry, which will not pay for cultivating. When once sown and well rooted, it yields a great quantity of food for cattle at no other expense but the one above stated. I have cut the same ground now for 14 years—have done nothing to it, and with the exception of some parts of the burning gravel which the hot weather has this year affected, it seems to promise as good a crop as heretofore. I generally begin to mow it as soon as Grass is gone, and it lasts till Grass comes again. If there is an appearance of snow, I mow some quantity beforehand, and it will keep thrown down in heaps in the rick-yard; but it must not be bruised till it is wanted, as it will not keep after bruising.—The quantity of seed to be sown per acre, is 20 pounds. Mine is sown broad-cast, but I should recommend it to be drilled as near in the rows as will admit hand-hoeing for the first year or two, if the land is inclined to run to Grass. I do not feed with Furze on a Sunday, as the cows do not like it unless it is given them fresh from the mill.—*Richard Spooner, Worcester.* [The above is a connexion of the answers in a short catechism on this subject which has been published in various papers, and also as a placard.]

Peat-Drains.—Allow me to state, as a further proof of what is said in Nos. 30 and 48 of the *Gardeners' Chronicle* of last year, as to the durability of peat draining, that I saw some peat-draining a few days ago which had been made 30 years ago at Nateby, Lancaster, and they were as perfect and as sound as they were when laid down in the drains; they are laid in the same way as those described in No. 48 of the *Gardeners' Chronicle* of last year, on shoulders; that is, there being a bearing of about 2 in. on each side of the drain for the covers to rest upon, so that there was a drain of 6 in. clear in width, and about 6 in. deep for the water. The peat-draining covers are 10 in. long, 7 in. broad, and 2 in. thick. Inert peaty matter remains for years exposed to water and air without undergoing any change as to decay, but it grows stronger after having been some time inserted in the drain. At the present time there is a difference of opinion as to which is the best sort of peat for the purpose of draining with. The black peat appears to me to be the best, as in the drains alluded to, some of the lighter coloured sorts I found were not so stiff as the black, and they appeared almost as hard as stone when taken out of the drain. I am informed by the man who made those drains, that those peat covers had not been made on purpose for draining with, but were taken from the stock which had been made for the firing of the farm-house.—*Facile.*

Leases.—Would it not be a much wiser plan for landlords, instead of tying down their tenants as to the rotation of crops, &c. &c., to fix what amount of stock should be kept upon the farm, in thriving condition? If a farm was kept stocked with a proper number of horses, cows, sheep, and pigs—all well kept—and no straw or manure sold off, a farm must improve. It would be easy to have a fixed fine, as is now the case if the terms of a lease are broken, for non-fulfilment of the agreement as to stock.—*W. D. F.*

Bigg's Sheep-dipping Composition.—I should be very glad to call the attention of such of your readers as keep sheep to this plan of dipping them. I tried it first five years since, and most of my neighbours now use it from seeing the benefit to my flock. Every one who wishes for the comfort of his animals would, if this were all, use it; but I find it improve the health and wool of the sheep very much; it frees them from all cutaneous disorders, kills the ticks and lice, and inasmuch as they never lose time and strength and temper by rubbing and scratching themselves, they use much less food, and have more time to sleep.—*W. D. F.* [A known correspondent.]

Moles.—Your correspondent "B. W." has been misinformed; "The tenants of the Duke of Buccleuch" never resolved to destroy no more moles. His tenants in this and the adjoining counties form two classes, viz.: tillage farmers, and sheep-masters. "W. B.'s" information could refer only to the latter class, who pasture sheep on the Cheviot hills. A former Duke of Buccleuch had his pastoral grounds extensively surface-drained. It was soon found that the Moles rendered these drains useless, by working peaty-soil in, which stopped the water. Moles had been caught on the tillage-grounds from time immemorial; but till now, they had been allowed the full range of the hill pastures. The Duke, to prevent the waste of his expenditure on drains, ordered an extensive destruction of the Moles. The Cheviot pastures were extensively improved by this draining, and enabled to support much heavier stocks; but in many places the herbage proved unwholesome, and induced a disease known to shepherds by the name of "Pining." The pasture, especially in dry seasons, became too astringent, and inflammatory diseases caused serious loss. Sheep are known to require a portion of saline or alkaline matter, and the surface on which they tread requires to be rough enough to prevent over-growth of their hoofs. But the want of Mole-hills, and the increased smoothness of the pastures, which soon followed the draining, both prevented their access to portions of fresh earth, and allowed their hoofs so to grow, that their overgrowth, aided by the inflammatory character of the herbage, induced foot-rot. Some of these sheep-masters, about 15 or 20 years ago, ascribing the disease of their flocks to the want of succulent herbage, which they imagined was produced by the Mole-hills, dismissed the Mole-catcher from their pastures; but as the quality of the herbage was much more altered by the drainage than by the want of Mole-hills, this remedy was found inadequate in dry seasons, while in wet seasons the pasture was so injured by the Moles stopping the drains, that, as far as I can learn, in every case they soon recalled the "moudie-man." The man who catches Moles for me told me, to-day, that he spends ten weeks every summer among the Duke's hill-tenants. On tillage-land, which is naturally so dry as to need no artificial drains, I never saw Moles very numerous; but where under-draining has been needed and effected, Moles multiply rapidly, and if not destroyed, soon render the drains useless, and greatly injure the drilled green crops. My farm had formerly been well drained, and had lain several years in pasture. Mole-catching had been neglected. The drains gradually became useless. I drained anew, and in cutting through numberless old drains, I found all choked with mud, wrought in by the moles. As mole-hills were chiefly on the top of old drains, this often aided me in discovering the course of a drain. My first drilled green crops were so overrun by moles that about a third of the plants were thrown out, when in rough leaf, and, but for the aid of the "moudie-man," I might have harrowed them over. The earth-worm is truly the farmer's friend. As the mole lives on the earth-worm, he is the farmer's foe. Let "B. W." look over to the "*green* Isle," where Moles do not exist, and the view will convince him that we need not their aid.—*G., Dumfriesshire.*

Wheat-crop.—A neighbour of mine has a field of about 6 acres, which was sown with Wheat in the autumn of 1842. The following spring it was an early and luxuriant crop, and continued so until the straw began to change colour, when it fell, from its great bulk, and, never having been able to rise again, became flat on the ground, and was with difficulty cut by the reapers. Before its removal from the field the greater portion of the grain was left on the ground. The land is of excellent quality, capable of producing from 30 to 40 bushels of Wheat or Barley per acre. At the proper season the stubble was ploughed, and sown with winter Vetches; the self-sown Wheat also came up, and at this moment a most luxuriant prospect appears for a Wheat-crop next harvest. My recommendation was, at the end of March, to graze it with sheep as close as possible to the ground, and keep it as a Wheat-crop for the ensuing harvest, instead of cutting it as green food for horses. The owner prefers the latter.—*M. Sayce.* [Perhaps if our correspondent's advice had been taken sufficiently early, it might have been advisable to take the chance of a crop of Wheat; but now, as the Vetches must be pretty strong on the ground, we should advise the cutting of the crop for horses, &c. It is well to abide by the principle of an alternate system of husbandry.]

Stall feeding Cows.—I observe many of your correspondents speak in high terms of the advantages of stall-feeding cows; and if increase of manure and the profitable employment of green crops are the only points to be considered, they are probably right. But are they aware that after a time all these animals are found to have tubercles on the lungs, and would, if not killed, die consumptive? In the commencement of the disease they yield more milk, fat kindly, and the meat is said to be sweeter; but can either the milk or the flesh be so wholesome? Every medical writer cautions us against employing as a wet nurse a person who shows the slightest tendency to consumption; is it not reasonable to reject likewise the milk of animals kept in confinement and deprived of three of the great essentials to health, pure air, plenty of light, and exercise? Some practical chemist might be found who would analyse the milk, and inform us in what it differs from the milk of animals who are fed in the open air.—*X.*

Superphosphate of Lime.—One of your correspondents complains that bones will not dissolve in sulphuric acid unless they are previously reduced to powder. Either his sulphuric acid was not good, or he had not continued

to wait the event. It takes many days to dissolve broken bones in sulphuric acid. Muriatic acid only dissolves the earthy part of bones, but sulphuric acid will speedily dissolve what the muriatic has not accomplished. What I write is from my own experience.—*C. A. A. Lloyd.*

Curl in Potatoes.—I do not recollect having seen it noticed in your valuable Paper that Sea-weeds spread in very moderate quantities on land are an unfailing preventive of curl in a Potato-crop. This is perfectly understood on the coast of Ireland, and such is the value set upon these plants for the purpose, and for manure, that I have known it to be a practice with humble cottiers to get out of their beds at night to collect them on the shore previous to the return of the receding tides, afterwards bringing them up steep cliffs in baskets on their backs. In the west of England, too, the value of the Sea-weed is appreciated; but it may be noticed with surprise on the coast of the Isle of Wight, that this species of manure is much neglected. Here it grows and flourishes generally untouched. I never above once have seen it used in this island, and then it was thrown in a heap to rot (and consequently lost most of its valuable properties), instead of being spread when fresh over the land. I am enabled from my own frequent observation to state that a moderate manuring of Sea-weed will cause land of middling quality to yield two good crops; viz., a crop of Potatoes followed by Wheat, Oats, or Barley, according to the nature of the soil. I may here observe the disease of rot or taint in Potato-seed was formerly little known. Forty years ago, while living in the "land of Potatoes" I never heard of it; and probably this was owing to the manner of preparing the seed. There it was the invariable custom to spread the cut sets on a dry earthen floor of a house, in shallow heaps, until the action of the air dried and healed, or hardened the parts wounded by the knife.—*A Gardener, Isle of Wight.*

Gas-water.—Within the last two or three months, I have analysed several samples of water from different gas-works, taking it as soon as generated, and using every precaution to protect it from atmospheric influence; but in no instance have I found it require more than 24 grains of the acid to neutralise half-an-ounce of the water; in most cases one scruple was sufficient, or 1-12th of the weight of the ammoniacal water acted upon. Now there is a great difference betwixt this and "Govyn's" statement in your Notices to Correspondents a few weeks ago. There appears to be something in gas-water injurious to vegetation, although the ammonia acts as a transient stimulant after the effects of the other matter has subsided.—*J. T.* [In answer to a portion of our correspondent's letter which is not inserted here, we beg to inform him that we are responsible for the answers in the Notices to Correspondents; the parties whose signatures are given above each notice are those who ask for the information, not those who give it. The advice in this case was given upon data furnished by "Govyn," which, however, were so extraordinary, that we think he was mistaken, and we told him so.]

Farm Bailiff.—In page 201 of the *Agricultural Gazette*, your correspondent, "Martin Doyle," is sanguine as to the benefits to result from the Land Commission now acting in Ireland. It is truly admitted by all, that there has been, and is to an alarming extent, a neglect on the part of the land proprietors of Ireland of the Agricultural and social conditions of the people. Let that calamitous epithet of your correspondent, "Bad Landlord," be annulled by putting an end to the justice of it. This is what I call the "chief want" of Ireland, and not the importation of men into a country where their equals, like the beauteous hyacinth of our lovely vales, are unprized only because they are native. I trust it will not be inferred that I am intolerant as to strangers. I am not, but my plan would be, and I think my friend Martin Doyle will concur in it, to foster and encourage the indigenous, and bring their energies into active exertion, and I assert from my own experience that a sufficient number competent to act as bailiff are to be found in Ireland. I do not think that my friend should be surprised at the means of men of my class in England. Your correspondent knows full well that

> "Order is Heaven's first law; and this confest,
> Some are and must be greater than the rest:
> More rich, more wise; but who infers from hence
> That such are happier, shocks all common sense."

What but the wisdom and knowledge of your correspondent's "sporting-looking, shooting-jacketed, cob-mounted bailiff" gives him and maintains him in that enviable position, with his very "snug salary?" Knowledge is power, and wisdom is security; and I am of opinion that both, hand in hand, cannot be too well recompensed. I do not believe, with Martin Doyle, that a feeling of jealousy exists among the labouring classes of Ireland towards strangers. I speak now from experience and facts, that no class of men on earth pay more respect to strangers than do my countrymen, when those strangers prove themselves adequate to the undertaking in which they have embarked.—*A Horti-Agriculturist.* [From want of room we have been obliged considerably to abridge this communication.]

Farm Fences.—Inclosing farms with fences, and dividing them into convenient fields, is considered the first step towards substantial improvement. If a farm could always be kept in tillage, and no pasturing animals allowed, fences would be of little importance. But if a farm must be partly in tillage, and partly in pasture, fences are indispensably necessary to defend the tillage crops from the inroads of the cattle on the pasture. Even where land is devoted solely to pasture, it is proper to have it divided into separate inclosures, as the different animals can then be accommodated with the most suitable pasture by shifting them from one inclosure to another. The most ancient, and perhaps the most simple of all fences, are walls made of turf. These walls, however, are much injured by the atmosphere, and the rubbing and butting of the cattle. To guard against this, they should be planted or sown with the Ulex Europæus or Furze. The roots of this plant will soon penetrate the turf, and tend to bind the wall. The plants not only afford shelter as well as food for the cattle, but add to the height of the wall, and give it a formidable appearance. When walls are made for this purpose, they should be built at least three feet thick at the foundation, and tapering to 15 inches at top. The seeds should be sown on the top, and as the plants advance in growth, they should be regularly trimmed with the shears; by proper attention to this, they will be prevented from growing too tall and thin at the bottom. If this is annually repeated, the plants will be longer preserved in a healthy and vigorous state; clipping has also a good effect in checking the furze from spreading over the field. A good and substantial fence may thus be quickly formed, even on a soil that will not produce a living fence of any other kind. The Prunus spinosa or Sloe, is also well adapted for fences, either alone or mixed with other shrubs, and will sooner make a fence on a poor soil than the Hawthorn. The seeds should be sown on a prepared bed or mound where the future hedge is to be. It should be annually trimmed with the shears, and kept free from weeds, as should all living fences. It will grow on all soils, from the cohesive to the friable. The Spartium scoparium, or common Broom, a very common but beautiful shrub, is also well adapted for hedges. The seeds (which can be easily procured on any common) should be sown as mentioned above for Furze, and kept regularly trimmed; if not, it is apt to grow very tall and slender. The young shoots, when laid in the dung-pit to rot, make excellent manure. It is said that, when its twigs are eaten by sheep, a temporary giddiness, like intoxication, ensues, and its flowers are said to excite vomiting. Though the Hawthorn alone will form a sufficient hedge, when planted with care, it has been found to contribute greatly to the strength and closeness of the hedge to intervene some other kinds with it, as the Beech, Elm, Yew, Privet, Holly, and the Laurel. These plants, however, make excellent and durable hedges of themselves, and will bear any kind of trimming that may be thought proper to give a hedge, and one of them to every third of Hawthorn, makes an excellent hedge. Again, there are many other plants, though feeble of themselves, by mixing them with others of more robust habits, add greatly to the strength and closeness of a hedge. But where there are plenty of stones at command, stone walls, in point of real utility, are the most substantial and secure. The erection of a stone wall will be much more expensive than any kind of hedge, but when the ground to be inclosed contains many stones, which must at any rate be removed before it can be properly cultivated, a stone wall, either built with cement or not, considering its superiority, will be the most economical fence in the end.—*J. McI., Hillsborough.*

Mangold Wurzel.—Though the season for planting this most valuable root is now nearly past, I feel disposed to offer a few suggestions, the result of my own experience. I consider the distance of 26 inches between the rows (as proposed in a late Number) to be insufficient for thoroughly working the intervals, and I would recommend 30 inches, as fitting more accurately the distance between the cart-wheels for carrying out the manure; and also as being likely to give an increased weight to each individual root, and there is no question but that a heavy root is, in every respect, preferable to a lighter one. At 30 inches by 12, 17,420 plants (the number per acre) at 6 lbs. each, will produce 46 tons 13 cwt., and as we know Mangold Wurzel roots frequently weigh from 14 lbs. to 20 lbs. each, it is reasonable to expect them to average 6 lbs., at the above distances. Again—at 26 inches by 12 inches, the distance you recommend, an acre will contain 20,104 plants, which, say at 5 lbs. each, produce only 44 tons 17½ cwt.; and surely with the increased facility for working 30 inch intervals over those of 26 inches, an additional pound per root may be fairly calculated on. I think also the earthing plough is much more proper for forming the furrows for the manure, and covering it, than any other; the manure is more perfectly covered, the ridges better formed, and the work in every respect much neater. It was always my practice to manure five rows at once, by which means two of the rows escaped the consolidation of the bottom of the furrow, from the treading of the horses, and pressure of the wheels. With regard to the method of sowing the seed, I found, after trying different methods of dibbling, that the drill was far preferable. It may be set so as to distribute the seed with great regularity, and much more speedily than can be done by hand. I used only two lbs. of seed per acre, and always found plenty of plant, with greater facility of singling, as the plants never came up in bunches.—*Lusor.*

The Farmer's Capital and his Profits.—I thought, after reading the article under this head by "A Suffolk Farmer and Valuer," in your Paper of last week, it would be interesting to make an estimate of what the farm he describes, and which requires a capital of 5000*l.*, would produce in return. I have therefore taken his figures as correct for the outgoings, and I think I have put the income quite as high as I am justified according to present times. There are many other small items I know might be added on both sides, but every farmer is aware that it is impossible to make a very faithful estimate of what any farm will either cost or produce in the year, and also that the unexpected items are generally on the wrong side. I think I have sufficiently shown our occupation is not a very profitable one.

Acres.	£	s.	d.
120 of Wheat, at 4 qrs. per acre—480 qrs. at 50s.	1200	0	0
80 of Barley, at 5 qrs. per acre—400 qrs. at 30s.	600	0	0
35 of Beans, at 5 qrs. per acre—175 qrs. at 30s.	262	10	0
11 Cows, to pay 10*l.* each per annum	110	0	0
130 Ewes, to pay 2*l.* each per annum	260	0	0
	£2432	10	0
Outgoings as below	2295	5	6
Profit	£137	4	6

	£	s.	d.
Rent	805	18	6
Labour	850	0	0
Bills	97	13	0
Seed-Corn	221	14	0
Rates and Taxes	70	0	0
Loss upon live and dead stock	50	0	0
Interest upon Capital	200	0	0
	£2295	5	6

I allow the 10 acres of Oats, and 15 acres of Peas as required for horse Corn. I am not acquainted with the custom of Suffolk as regards seeds and Vetches. I believe they sell some; but of course a great part, or an equivalent, must be consumed upon the farm. I think, therefore, I must allow little for them, particularly as I shall debit nothing for either artificial food or manure.—*A Norfolk Farmer.*

Potatoes.—From the obervations published from time to time in your *Gazette*, it should seem as though the causes of the curl and the rot in Potatoes are very imperfectly understood. I believe that certain varieties only, of the Potato, are subject to the curl. When I was young, a very excellent kind of white Potato was imported from Scotland, into the neighbourhood of Bristol annually, for seed; many growers attempted to save their own seed from the crop, for next year's planting; but, although the imported seed never showed any inclination to curl, the produce, when planted the next year, invariably curled. About 8 years ago I raised some Potatoes from seed, which produced five or six tolerably distinct varieties. Before these were separated, the whole being planted on one bed, I observed one variety infected with the curl, so that none of the foliage expanded, whilst all the others were, and still continue, quite free from the disease. I have been a Potato grower, on a large and small scale, for 45 years, and, although I never used any precautions to prevent curl, I never, during this period, had one crop in the least injured by the disease. I have planted seed of all qualities, both ripe and unripe; generally kept during winter, in ridged pits about 5 feet wide, sometimes cut and planted immediately, at others kept for two or three weeks, but never suffered from rot or curl: I always took the precaution to secure as good a tilth as possible; used sets taken from the finest Potatoes, cut with two eyes in each, and, which is of more consequence than many suppose, always placed the manure *upon* the sets. I think the rot is often produced by imperfect tillage.—*Lusor.*

Potato Preserving.—In reference to this subject, noticed by "H. P. T.," a short time since I raised some few Potatoes that remained in the ground during the winter, which were of a perfect good taste, and no doubt equally so as his own; but I attribute this solely to the very mild season we then had. I cannot myself find any better way of keeping Potatoes through the winter, than by storing them away in a grave of sufficient depth, laying the bottom and sides with long Wheat-straw, and having layers of a proper distance apart, each layer of Potatoes being closed over with a board lodged in the sides of the pit, and, above all, well covering in the top and sides. I recommend wooden boards as partitions between the layers, in preference to straw, which causes too much confinement and heat, thereby injuring the Potato. This, after some trial, appears to me the best method for the above object, and if used with a little prudence and good management, it will be found to succeed well.—*W. H., Reading.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square on Wednesday last the 8th of May; present, the Rt. Hon. Earl Spencer, President, in the chair; Lord Camoys; Hon. R. H. Clive, M.P.; T. R. Barker, Esq.; W. H. Barrow, Esq.; T. W. Bramston, Esq., M.P.; W. R. Browne, Esq.; E. Buller, Esq., M.P.; F. Burke, Esq.; Rev. T. Cator; Col. Challoner; H. Colman, Esq.; E. D. Davenport, Esq.; J. Dean, Esq.; W. Fielden, Esq., M.P.; A. E. Fuller, Esq., M.P.; J. Grant, Esq.; B. Gibbs, Esq.; G. Kimberley, Esq.; Sir C. Lemon, Bart., M.P.; A. Ogilvie, Esq.; J. Parkes, Esq., C. E.; E. W. W. Pendarves, Esq., M.P.; W. J. Pickin, Esq.; H. Price, Esq.; E. A. Sanford, Esq.; Prof. Sewell; W. Shaw, Esq.; R. A. Slaney, Esq.; J. Spencer Stanhope, Esq.; T. Tweed, Esq.; and F. Woodward, Esq.

John Manners Sutton, Esq., of Kelham, near Newark, Notts, and William Arthur Cherry, Esq., of Andover, Hants, were elected Governors; and the following gentlemen Members of the Society:—

Wooldridge, Richard, Titchfield Park, Fareham, Hants.
Tancred, Sir Thomas, Bart., Brighton.
Lee, Peter, Winchester.
Read, John Offley Crewe, Laverton House, Milbrook, Southampton.
Parker, Thomas, Martyr-Worthy, near Winchester.
Savile, Albany B., Oakhanger, Oakhampton, Devon.
Whitcombe, John Aubrey, Gloucester.
Helps, Richard, Gloucester.
Pipon, Captain Thomas, (Queen's Dragoon Guards), Langtons, Alresford, Hants.
Hall, George, Governor's House, Parkhurst, Isle of Wight.
Pryse, John B., Trefnanney Hall, Oswestry, Salop.
Urry, Barnabas, Newport, Isle of Wight.
Clayton, Henry, 21, Upper Park Place, Dorset Square, London

The names of 22 candidates for election at the next Meeting were then read.

American Seeds.—Mr. Colman, the Agricultural Commissioner from the United States, favoured the Council with the following account of the American seeds he had presented to the Council at the former meeting; and which had been distributed among 30 Members of the Council for trial, and their reports respectively on the results of their cultivation:—

"The *Millet* is cultivated both for its seeds and its use as Hay. I have never myself cultivated it for any other purpose than as Hay; and when well grown and cured, no fodder is more relished by cattle. Of its nutritive properties I have no doubt; but I do not know that it has, for this object, been subjected to any chemical analysis. It requires a rich, well-tilled soil. The advice is to sow a peck of seed to an acre; but the produce, in that case, is coarse. I advise a bushel to an acre, and the crop is much finer, stronger, and better. It is sown broadcast, as other Grass seed is sown. It is an annual. It should be sown in May, and the earlier the better. I have sown it on good land in May, at the rate of one bushel of seed to the acre; and having cut and well-made the Hay, have had the land cultivated, exactly measured, and the product weighed by a sworn measurer, at the public scales. The crop was at the rate of three tons of 2000 lbs. (which is our customary ton) per acre of as good fodder as I could place before my stock. In another case, when the crop of Grass was very short, I ploughed up a Clover ley, from which a crop of Clover had been taken, and sowed it with Millet, and obtained a very good crop, as well as I can remember, of more than a ton per acre. The Hay, however, in this case, was of the nature of rowen or second crop. If I could have had access to my Farm Journal, I could have given the exact amount in either case. I cannot see any reason why it may not be a good crop in England; though I will not say that it has preference over other Grasses already cultivated in England, and especially over the Italian Rye-grass, which I never saw until I came here, and of which, last year, I saw the surprising growth of thirteen feet in three successive cuttings, samples of each cutting being shown together.

"The *Broom Corn* (*Sorghum saccharatum*) is a plant much cultivated in New England for its brush or seed-head, which is used in the manufacture of brooms, especially for carpet-brooms. A good deal of this brush is imported into England, to be manufactured into brooms. It is a beautiful and hardy plant, an annual, but requiring in order to ripen its seed rather a long season. The average yield of seed is about 35 bushels per acre, and of brush about 700 lbs.; half a pound or more being the usual complement for a single broom. I have known more than 100 lbs. of seed obtained per acre—but this was a very extraordinary case—and 1000 lbs. of brush. The seed for feeding stock is estimated at two-thirds the value of Oats. By some of the best farmers in New England the blades and stalks are saved for feeding their young stock in winter, and the produce of an acre in this way is estimated as equal to a ton of Hay. I do not think that the plant can be ripened in England; but the brush, if gathered and dried in a green state, is deemed to make better brooms than when gathered in a perfectly dry and mature state. I am inclined to believe that to this state it may be grown in favourable situations in England; and if so, it would add to her useful products, and in the manufacture of brooms furnish much useful occupation. The Society will understand, however, that I express no strong confidence in the case. My knowledge of the average temperature of England would not justify me in doing that; but the experiment may be worth making, as it may be made in this case with little trouble and no expense. The customary way of sowing it is in drills 2 feet apart, and to drop the seed in the drills about 18 inches apart, putting 30 or more seeds in a place; and if it comes up well, allowing 8 or 10 plants to stand. It requires to be kept clean from weeds, and the land should be rich, dry, and friable, with a warm aspect. It is gathered by breaking off the stem bearing the brush about 2½ feet from the top; and when it is well dried, the seed is scraped off, usually by a machine for that purpose, but it may be easily done by drawing it through a common Flax-comb or hatchel. The brush is then made into brooms, and the remainder of the plant gathered for fodder. Many farmers, however, in my opinion, with culpable improvidence, suffer it to lay waste, and when dry enough, burn it upon the ground.

"*The Herds-Grass or Timothy* (*Phleum pratense*), is certainly not unknown in England; but I have not seen it cultivated in those parts which I have visited. It is a hardy Grass, perennial, and, in good land, yields well; and, as Hay, ranks among the most valuable Grasses. It delights in a strong soil, and should be sowed at the rate of half a bushel or three pecks of seed to an acre. With us in the United States it is sown with Clover and Red-top, a species of Agrostis, mixed with it; but while the others pass away, this retains its place. I have known more than four tons obtained upon an acre; and in one case, 29 tons and a fraction, chiefly of Herds-grass, well made into Hay, were obtained from six acres in one season. The principal objection to it is that it does not return again as soon after it has been cut as other Grasses; but probably this is somewhat owing to very sparse sowing.

"Of the several kinds of *Indian Corn* (*Zea Mays*) which I present to the Society, I can have little hope of any of them being brought to maturity in England, unless peculiarly favoured by a warm season. The sweet Corn, with a shrivelled kernel, is deemed in the United States a most delicious vegetable, eaten in a green state; and so is the Tuscarora (so called from the tribe of Indians among whom the seed was first obtained), but they require a long season for ripening; yet they may be sufficiently advanced to be eaten green. In this case the ears are gathered when in the milk, and being boiled the grain is eaten from the cob with butter and salt. As it would be difficult for an Englishman to eat Oat-meal porridge with, if I may so express myself, a Scotch accent, it may be equally difficult for him to relish boiled Indian Corn as a new Englander would do; but I know no better vegetable. The Parker Corn, a large yellow ear, is an earlier variety than either of the two above mentioned, but the small yellow ear is a Canadian variety, and very early, coming to perfection in from 60 to 70 days. It is possible that this may succeed. This plant requires rich, warm land, strongly siliceous, and may be cultivated like the Broom Corn, in drills two and a half feet apart, and 18 inches apart in the drill, depositing five or six kernels in a place, covering it about an inch or two deep, and leaving about four plants to stand. The ground should be well enriched with manure spread, or the progress of the plant would be hastened by putting a small parcel of manure in the spot where the seeds are deposited, under them, and covering it before planting with a little of the soil. After that the ground requires to be kept clear of weeds, and occasionally stirred with a hoe. I am strongly inclined to believe that Indian Corn might be cultivated in the more southern parts of England as a crop to be fed to cattle and horses, green, as here Vetches are fed to them. No plant yields more stem and leaves, and no fodder can be better. With us it is often grown in this way for milch cows, and the quantity of green feed obtained is absolutely amazing. I have it on the most credible testimony, that 39 tons of green feed have been obtained in this way to an acre; and one gentleman, who measured a small parcel, has stated that much more could be obtained. This supposes the plant, however, to have arrived at nearly a perfect state. It may be cut to advantage a long time before this. I consider the experiment as well worthy of being made. In such case, I would advise it to be sowed on warm friable land, well manured, in drills, sprinkled quite thickly in the drills; the drills about 18 inches apart, and at the rate of more than a bushel per acre. It may be sowed early in April, judging from what I have seen of the climate of England, the present spring, and so on through May, or even later; and though its yield would be very much larger after it has come into blossom, and the ears are formed, yet it may be cut as wanted, when two and three feet high; and in general, this first cut, in such case, will start again, and yield a second cutting. No feed ever placed before cattle, according to its weight, is more nutritious and healthful. The Society will do me the justice to believe, that in presenting these seeds to them, I am not led away by any unreasonable presumption of their success; but simply from a conviction of the great value of the plants in my own country, and a hope that an experiment might result favourably, as it sometimes and often has happened, that valuable plants become naturalised by cultivation, to climates and localities very different from those where they are first found. In any event, I know that with that liberality which belongs to the intelligent and public-spirited everywhere, and nowhere more than in England, they will kindly appreciate even the most humble efforts to advance the highly useful and most important objects of their Association."

Turnip-Fly.—Mr. Beards, Agent to his Grace the Duke of Buckingham, communicated to the Council the result of his experience in the destruction of the Turnip-fly:—"The Turnip-sowing season is fast approaching, and with it, no doubt, that continual pest, the Turnip-fly, will also make its appearance, for the destruction of which, a great deal has been said and written, without much good resulting therefrom; for, during thirty-five years' experience in various districts, I have given fair and repeated trials to numerous recommendations for its destruction, without experiencing the effect sought, until eight years ago this season, being then engaged extensively in a Turnip district, when the insect began to make dreadful havoc on a fine plant, in a field of thirty-four acres. I then tried an experiment, which I had not before heard of, and which was simply as follows:—I took an old sack, had it ripped open into the form it was when cut from the roll of canvass, had it nailed to a pole, the thickness of a pitching-fork handle, leaving the pole about eight inches at each end, longer than the sacking. I then had one side smeared over with tar, made two men, one at each end of the pole, draw the sacking (the tarred side downwards), regularly over the field, letting it sweep the ground, carrying it at an angle of about forty-five degrees, fresh tarring with a brush every "bout," or oftener if required; on examination I found great numbers of flies sticking to the tarred sacking; I repeated the operation once a day, for four days, and saved the plant of Turnips. Since that time, when I have discovered flies on the plants, I have pursued the same plan, and have not, from that time till this, had occasion to plough up a single acre from the effects of the fly. I have several years past used gas-tar, in consequence of its leaving a stronger scent in passing over the plants than common tar; and which prevents the flies that are not caught from devouring the same; I do not mean to assert that once going over a field will prevent the destruction of a crop; it must be persevered in according to the strength of the fly, and the state the land is in. To force the plant into rough leaf, with good farming and this preventive, I do believe if a farmer lose his plant of Turnips by fly, it is in a great measure his own fault."

Mr. Jas. Sherring, farm-bailiff to Mr. Henning, Frome-House, Dorchester, Dorset, also favoured the Council with the following communication on the same subject:—"A great deal has been published, and many experiments tried, to prevent that ravenous of all other insects, the fly, from devouring that valuable root, the Turnip. After 20 years' experience with the greatest success, I beg to submit to your notice the following receipt:—A month at least before I begin sowing my Turnips, I purchase the different sorts of seeds I may require; I provide vessels for the reception of such, adding to every 20 lbs. of seed half-a-pint of linseed-oil, taking care to have it well mixed; I add 1 lb. of the flour of sulphur every morning, I have the whole rubbed between the hands to get the seed in a proper state for drilling; the drillman must be apprised of what seed he has to use, or he will not drill a sufficient quantity, as the sulphur will choke the cups; this of course must be looked to. As I before stated, I have practised this experiment for the last 20 years, without a single failure, and I believe I can safely say without losing a plant. The early part of last season the fly made great ravages in some parts of this country, but not one did I perceive in a field of my employers. For the benefit of those of my Agricultural friends that may be inclined to try the experiment, I lay the same before your most honourable Society, trusting it may be tried with the greatest success."

Colonel Challoner informed the Council of the unbounded success which had attended his management of the Turnip-crop, since the year 1830, by the adoption of the following simple process in the manipulation of the seed, previously to sowing. He procured double the quantity of seed required, under ordinary circumstances, for a single sowing; one-half of this seed he steeped in diluted tank-water for 18 or 24 hours, and sowed it on the land in the usual way: in about a week afterwards, he sowed the other half of the seed (which had undergone no preparation) over the same land. The result proved that, by this arrangement, a tendency to germinate one fortnight earlier was given to the Turnip-seed, by being thus previously steeped, over the remainder sown in its dry state, and the consequence was that a full crop of Turnips was uniformly secured; for if the soaked seed came up in dry weather, it was devoured by the fly, which being thus apparently satiated with the first supply of green food, was found to leave the succeeding plants arising from the dry seed untouched; if, on the contrary, the soaked seed came up in wet weather, it remained the standing crop, as the fly, from the uncongeniality of the atmosphere for its development, had not then made its appearance, and consequently reserved its ravages for the plants of the second sowing. Colonel Challoner had, by this simple but effectual application of the principle of early germination, found the means of preserving, in a natural and comparatively very economical manner, crops of Turnips varying from 50 to 70 acres in extent.

Mr. Woodward, of Little Comberton, near Pershore, Worcestershire, thought that every fact which increased our knowledge of the destruction effected by the Turnip-fly, and the circumstances under which its development and ravages were effected or retarded, was most important. He had, in his own case, experienced a most singular result in reference to this subject. He had last year prepared a field for Turnips, and brought the whole of it into the same state of cultivation; but having sown one-half of the field on the 1st of June, and the other half on the 2d of June, with the same seed, in the same condition, he had the surprise and mortification to find, without any obvious solution of the mystery, that the first sowing went, while the second only stood.

Milk Pans and Syphons.—Mr. Apsley Pellatt, of the Falcon Glass Works, Blackfriars, presented to the Council an English specimen of glass milk-pans, made at his own manufactory, of the strength and dimensions of those sent over to this country, at Sir John Lubbock's suggestion, by Captain Stanley Carr of Lübeck, but made of the ordinary transparent flint-glass, instead of the dark-coloured bottle-glass, which constituted the material of the German ones. He had already had half a dozen of them made for use at his own dairy at Knowle Green, and would report on their merits and advantages in due time. With regard to the price at which they could be supplied, under the present Excise restrictions, he found that, allowing a very moderate profit, they might be made at 5*s.* 6*d.* each, or for 5*s.* each, provided the order extended to a dozen to be made at one time.—Mr. Swinburne, director of the extensive glass-works of Messrs. Cookson, Cuthbert, & Co., of South-Shields, Durham, requested leave to inspect the model of Captain Carr's glass milk-pan, in order that they might, with the concurrence of the Society, take measures for manufacturing similar articles in England, at so low a price as to bring them within the means of ordinary farmers. Being himself an amateur farmer of 300 acres, he should have much interest in trying the glass milk-pans on an extensive scale in his own dairy; and would feel happy at all times to undertake the trial of any experiments or contrivances suggested by the Society in which glass might in any way be connected with agricultural convenience or improvement.

Mr. Henry Overman, of Weasenham, near Rougham, Norfolk, informed the Council, that he was not aware whether the use of milk trays made of lead was generally known among the dairy farmers of the country. He had reason to believe that so serviceable and economical a material might be very advantageously employed for that purpose, he himself not having heard any practical objection made against such trays by persons who had adopted them, either on the score of impurity from the metal, or on that of any chemical action which might

prevent the cream rising; and if they were furnished with a tap in the bottom, the milk might be drawn off from below, and the cream, instead of being skimmed off the surface, allowed thus to subside to the bottom of the trays and afterwards drawn off separately. In his own dairy of 30 cows, he used no other trays but leaden ones so constructed; and he had a model in preparation, which, if the Council would allow him, it would give him great pleasure to present to the Society.

Mr. Greaves, of Bakewell, Derbyshire, stated to the Council, that having paid a visit, some 20 years ago, to the dairy of the late Duchess of Rutland at Belvoir, he was much struck with the plan adopted for obtaining the cream without skimming it from the surface of the milk. The milk-room was lined with porcelain laid on in squares; and in order to preserve it cool and fresh, as well as to create a gradual ventilation, a fountain of cold water was kept constantly flowing in the middle of the dairy; the current rising through an upright pipe in the centre, and having attained its height, rolling back in sheets of water over a cone of successive basins, increasing in size from the top to the bottom, where the water entered a drain and was carried away. All the pancheons were of china-ware, and very shallow; it having, he believed, been satisfactorily ascertained, that the amount of cream thrown to the surface by a given quantity of milk was dependent to a certain extent on the breadth of surface given to it by such shallow vessels, the same measure of milk poured into a vessel, allowing it to stand at two inches deep, casting nearly twice as much cream as it would do if its depth were eight inches. In the experimental part of the dairy, the pancheons containing milk from various cows of the different breeds, were arranged in distinct order, and duly registered with every circumstance of condition supposed to affect the quality and quantity of the milk and cream obtained in each case; but the greater bulk of the milk was kept in leaden cisterns, about 3 feet long, 2 feet wide, and 3 inches deep, the bottom of each cistern inside having a slight concavity, in the centre of which was an aperture connected with a tap underneath, for the purpose of drawing off the milk, and leaving the cream behind untouched in the cistern. Mr. Greaves considered this to be on every account an admirable plan; and he had found in his own dairy, that a piece of saltpetre about the size of a hazel-nut, dissolved in warm water, and mixed with every gallon of new milk as soon as strained, not only caused the milk to cast its cream better, but had the effect of removing from it every disagreeable flavour arising from the herbage of particular pastures: such small addition to the milk of so well known and simple a saline substance, imparting to it a wholesome character, rather than otherwise, in a dietetic point of view.

Lord Camoys, of Stonor Park, Oxfordshire, stated, that while on a visit last winter with his friend Mr. Tollet of Betley Hall, Staffordshire, it occurred to him, on inspecting that gentleman's dairy, without being aware of the contrivance then brought under the notice of the Council, that the milk might with great ease and nicety be drawn off from beneath the cream on its surface by means of a syphon inserted into the milk over the edge of the pan. On his return home he carried out the idea; and having found the plan to answer perfectly, he now used nothing else but the syphon for separating the milk from the cream. The syphons were made of block-tin, with a tube of about a quarter of an inch bore, and cost two or three shillings each: one great advantage in their use was, that they were self-acting, merely requiring to be inserted in the milk and set at work, the stream continuing to flow by such decantation for about a quarter of an hour, until the cream presented itself for admission into the lower orifice of the tube, when its greater body and less fluidity prevented its free passage, and the syphon gradually stopped of its own accord. This complete draining of the milk from the cream, rendered the latter very superior in its keeping properties. His own dairy cows were Alderneys, and the cream therefore of greater body; but he believed the same effect of perfect separation would result in the case of ordinary cream, especially if the bore of the tube were diminished accordingly. —His Lordship, at the request of the Council, expressed his willingness to present a specimen of the syphons to the Society.

Pipe Tiles.—Mr. Read, of the Regent's Circus, Piccadilly, addressed to the Council the following statement connected with the cylindric tiles of small bore, referred to in various portions of the "Journal" of the Society:—"In consequence of numerous applications from gentlemen respecting the efficiency of the small pipe tile for surface-draining of clay lands, and whether the Tweeddale or horse-shoe tiles could be made with the new pipe-tile machine; in order to answer these questions satisfactorily to myself, in the beginning of March last I went through the counties of Surrey, Sussex, and the Weald of Kent, for the opinion of my old experienced draining companions, during the last 40 years. I have the satisfaction to find they have proved that the tiles of one-inch bore are sufficient if properly laid, and a free passage for the water at the end of the drain. Nay, more; some of the most experienced practical men are of opinion that a still further reduction in the size of the tile may yet be made. It is well known that the greater the declivity, the more rapidly the water will pass off. But there is a great portion of land nearly or quite level —as, for instance, the valley of the Medway, in Kent (and in almost every county in the kingdom); this land is of a deep, wasy loam, two or three feet deep, which, I have been told, cannot be drained; but I have found no difficulty in draining such land, where the channels could be kept open at the end of the ditches. If the drains were three feet deep and two rods apart, there would be three feet fall from the surface to the bottom of each drain in one rod from the centre between them. In such situations the telescope tiles may be used with good effect; for instance, suppose a field, 40 rods long, the upper end (or the 10 rods laid down with No. 4 tiles, of smallest bore), can receive but one-fourth of the water that must pass through at the lower end (or the 10 rods of No. 1 tiles, of largest bore). The pipe-tiles made by Mr. Clayton's new machine may be all brought into use in the same field; they may also be placed in half the compass in the kiln and carriage, and burnt with half the expense of fuel, &c.—N.B. These pipe-tiles are all made with separate dies, any size of which may be had, so as to give every person a choice of the size he prefers for his own use."

Mr. Woodward stated that with him the cylindric form of tile had not answered in Worcestershire, where he had drained 1000 acres up every furrow with tiles of that shape and two or three inches bore; the drains becoming stopped up, as he supposed, from the loose dust being washed by storms down the fissures, where the ground had cracked, into the drains below, where a puddle accumulated, which the force of the current was eventually insufficient to overcome.

Mr. Slaney had employed the small-bore cylindric tile with signal success on his estate in Shropshire. His pipe-tiles varied from 2¼ to 1¼ inches in width, and had run quite clear after two or three years' use. He believed that a great deal depended upon the mode of filling-in drains; and referred to the papers in the Society's Journal on that point. By allowing the clay to crack, and then filling-in with a proper material permeable to the water, he conceived that the finest natural sieve was obtained to prevent future stoppage. His mode was to cut the drains three feet deep, and cover them over with the clay to the depth of about three inches, allowing such bed of clay to crack into fissures before proceeding further; when the clay had cracked, he then filled in the drains as he had just stated. He had employed the draining-plough, introduced by Mr. Law Hodges into the Weald of Kent, with great success. —Colonel Challoner thought green-sod turf formed the best material for filling-in drains. It was not, however, always at hand. He hoped at some future time the subject of draining sandy soils, to which he had on a former occasion called the attention of the Council, would engage the serious consideration of the Society. He considered that part of the general question of draining to be the one at the present time the least understood, and to which practical attention had not yet been sufficiently drawn. We were well informed on every point connected with strong land draining, but knew nothing of the draining of sandy land.

Bones and Guano on Waste-Land.—Sir Charles Lemon, Bart., M.P., called the attention of the Council to the following facts, adduced by Mr. Karkeek of Truro, in his prize essay read before the Cornwall Agricultural Association, connected with results obtained from the use of bones and guano on the very poorest waste-lands of that county.

Bone-dust.—In 1835, Carnwinick farm was a barren waste, heath and furze being the only covering of the soil; let at two shillings per acre: north-west aspect, and clay-slate soil of loamy character. Experiment I. A common field was broken up, and the larger portion manured with bone-dust at the rate of 3 quarters to the acre; the other portion being merely dressed with the ashes obtained from the breaking and burning of the land. The Turnip crop was completely carried off by the fly. In the years 1836 and 1837, it was cropped with Oats, and then laid down to permanent pasture. There was more than double the quantity of Oats on that portion where the bones had been applied, and at the present time their effect can be plainly distinguished as if a line of demarcation had been drawn between rich and scanty herbage, or between a green meadow and uncultivated land. Experiment II.—In 1836, another piece of the waste was broken, which was sown to Oats, and on the following year a similar crop was taken. One portion of the field was manured with bone-dust only. The Oats on this part were equal to those in the first experiment. After this the whole was laid down to pasture; and at the present date the line of distinction can be plainly seen where the bones were applied, at more than four miles' distance. The same beneficial effect is also plainly seen in two larger patches, broken up in 1837 and 1838. They have been sown with Turnips, and manured with bone-dust only, which produced most excellent crops; after which, a crop of Oats was taken; it was then pastured up to the present time. In another piece of about six acres, which was broken in 1839, and sown with Swede Turnips, an excellent crop was produced; since which other crops have been taken, and the Clover very luxuriant, the land being equal to that let at 40*s.* per acre. In 1840 another piece was broken and sown to Turnips, with bone-dust as before, and Oats in the following year; both crops were excellent. In November 1841 it was ploughed once only, and without any other cultivation sown to Turnips in June 1842. This crop was also good, and in Mr. Karkeek's opinion plainly proved that Turnips after grain may be produced without either spring or summer ploughing. In 1841 another large portion was broken, sown with Swedes, and afterwards cropped with Oats, using the bone-manure only, which answered as well as before. From the year 1835 to the present time Mr. Trethewy had thus successfully broken and cultivated patches of waste to the extent of 60 acres. His usual method of cropping had been, first Turnips, then Oats, seeds, and permanent pasture. In 1842 Mr. Karkeek witnessed a crop of Swedes on this improved waste land, which he considered as decidedly the finest crop of the kind grown in the parish that season.

(To be continued.)

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the late Half-Yearly General Meeting of this Society, the Secretary read the Annual Report of the Council for 1843, from which it appears that the funds of the Society, and the number of its annual members, have progressively increased since its first formation. The number of annual members who paid their subscriptions during the past year amounted to 581, from whom the sum of 997*l.* 6*s.* was received. By an original rule of the Society, all the donations, which now amount to 4859*l.*, have been strictly funded, and will continue so to be, in the names of the trustees, the interest alone and the annual subscriptions being applied to the general objects of the Society. These latter sums, together with the balance from year to year, and the sum of 500*l.*, hitherto received from the locality, on account of the Cattle Show, constitute the available annual income of the Society, and are vested in the finance committee, for the general purposes of distribution. The funds at the disposal of the Society, for 1843, amounted to 1838*l.* 1*s.* 8*d.* The most gratifying feature in the proceedings of the Society, is the progress that has been made in the formation of local farming societies in communication with the central one. In the year 1841 there were only 23 of these local bodies in existence; in the year ending December, 1842, they had increased to 50; in the year ending December, 1843, they amounted to 80; and now there are no less than 100 of them in connection with the central Society, and the applications are still increasing. This increase has been most gratifying, particularly when we consider the vast benefit which these local institutions have afforded in carrying out the original views and objects of the central body, and in enlisting the co-operation and support of the farming classes. In the two former years it was the custom to divide the premiums equally between husbandry and stock; but it was found that the prizes given for stock were only duplicates or repetitions of the same premiums given by the local societies themselves. In consideration, therefore, that as more than half the available funds of the Society were distributed in premiums for the encouragement of stock, at the Society's annual Cattle Show, the Council thought it more desirable to confine their premiums in local Societies to purposes of husbandry alone, and to leave the stock premiums to be furnished by the local funds, according to the circumstances of each particular locality. This arrangement has enabled the Society to devote a larger proportion of its funds towards encouraging an improved system of husbandry in the local societies in connection with it.

At the last weekly meeting of this Society, Mr. Smith, of Deanston, attended the Council on his return from Sir Richard O'Donnell's, of Newport House, in the county of Mayo, and stated that he had just completed his tour of inspection of the lands of the different competitors selected for the Society's Gold Medal, for the greatest quantity of thorough-draining in Ireland—that he had examined the different localities most attentively, and had taken notes carefully of the work done, and of the circumstances connected with each particular operation, which he would embody in his report, to be laid before the Council at the earliest opportunity—that his visit through Ireland was a most agreeable one to him, as he saw evident marks of industry and improvement in every quarter of the country—that Sir Richard O'Donnell deserved great credit for the example he had set in that remote but interesting part of the country; for even already were the small farmers beginning to imitate him, and it was pleasing to see the operation of thorough-draining rapidly extending up the sides of the hills, and through the moors in the west of Ireland. The quantity of employment thus afforded to the labouring classes was incredible; and, in most cases, where the landlord paid the small tenantry by task-work, at the rate of twopence per perch, they seized on it greedily, as they calculated that it would benefit their land more than double that amount eventually.

AGRICULTURAL CHEMISTRY ASSOCIATION.

On Wednesday the 24th ult., Professor Johnston delivered a public address in the Museum of the Highland Society, On the Improvement of some of the Counties where Lectures have been given, and on the Results of Investigations of Soils, Manures, and Guanos, in the Laboratory of the Association. He began by reminding the meeting that the Association had two objects in view,—to diffuse knowledge in Agricultural Chemistry, and to add to that knowledge by investigations in the laboratory. In pursuance of the first of these objects, he had visited a great many districts in Scotland, and delivered lectures there to farmers. Another means which the committee of management expected of great service in diffusing knowledge was through the press. There were now six periodicals in circulation, and two others had just commenced. A third mode which the committee adopted for furthering the objects of the Association, was to secure the aid of the schools. Much had been done in Ireland in this respect—the study of Agriculture having been introduced into the national schools of that country. In Ayrshire, also, much had been done. Being applied to by the farmers there, he had written an elementary book for the schools, and the subject was now introduced into the schools of Ayrshire and of the adjoining counties. From all these circumstances—the lectures, periodicals, and schools—it could easily be inferred that great desire

had been excited to obtain the information which it was the wish and object of the Association to spread over the country. The learned Professor then referred to a remark by Mr. Pusey, in regard to the cultivation of Scotland, which appeared in the journal of that Society:—"I cannot (says Mr. Pusey) place the general farming of Southern Scotland or of Northumberland on a level with the farming of our southern counties, such as Buckinghamshire, but rather with that of North Devon; nor the general farming of East Lothian on a level with the general farming of Lincolnshire; nor the best farming of East Lothian on a level with the best farming of Lincolnshire, because it is the best land only of East Lothian on which such noble examples of farming are given, while in Lincolnshire the barren heath and wold have been taught nearly equal luxuriance." Mr. Pusey's opinion was not so complimentary as might have been anticipated; but the reason he had assigned was good, for in Scotland the excellence of cultivation diminished in proportion as you approached the interior; as, for example, land brought only 1*l.* per acre at the Lammermoor hills. When he first visited Scotland he entertained an opinion similar to that which he believed had formerly been entertained by Mr. Pusey. In some parts of Scotland farming was in as high a degree of excellence as in any part of the world, but still a great deal remained to be done which had hitherto been neglected. In passing from Edinburgh to Lanark, the quantity of uncultivated land was enormous, and between Lanark and Glasgow there were great tracts in the same state, which, if put under the care of a skilful East Lothian farmer, would yield a greatly increased return. There were also several straths throughout the country lying uncultivated, which were as good land as much of that which had undergone cultivation. In passing from Edinburgh to Lanark, and thence to Glasgow, he had observed that want of draining was most conspicuous. The cultivation of this land was objected to on the ground that the climate was so very bad that no remunerating prices could be obtained. But draining would improve the climate. There were two objections to deep draining, viz., the expense and the imperfect drawing of the drains. In regard to the expense, he knew that in Roxburghshire deep drains had been adopted, and in three years the capital was returned; very rarely it required five years to do so; and, besides, the land was permanently improved. In reference to the drawing of the drains, he might state that in a recent Number of the *Royal Agricultural Journal*, a gentleman, who had drains three feet deep and puddled at the top, offered a reward to any one who would keep the water out. As to the effects of draining, by looking at the geological map to the tract of country up the Frith to Crieff and Strathearn, and to the east over Kinross and Fifeshire, Grass-land was seen which was covered over with Moss. Now, practical agriculturists were aware that, in order to extirpate Moss, they applied lime. But it was impossible to overcome thoroughly this difficulty, unless the climate were ameliorated. Deep ploughing was another great means of improving much of the land he had seen, rendering crops much more prolific. In many parts of the Highlands certain geological deposits were found, such as mixtures of gravel and sand, leaving only a small quantity of soil on the surface. This existed always on the hill sides in the straths. It was the practice not to tear up the stones beneath the soil, but simply to plough the thin surface covering it; and he believed that if the subsoil plough was applied, and the stones ploughed up, the land would be improved. Gentlemen in the neighbourhood of Stirling had taken up stones as deep as 10 or 14 inches, and the increase compared with former crops was enormous. He had been told by a farmer, in the neighbourhood of Edinburgh, that the dung had gradually sunk into his land far beyond the reach of the plough; and, on having recourse to deep ploughing, he was astonished at bringing to the surface whole deposits of town dung which had accumulated for generations, and which of course increased his crops greatly.

He would now pass to the second object which the Association had in view—the increase of knowledge by investigation in the laboratory; time, however, would not permit him to detail one-tenth part of what had been done. He had received some soils from Sir George Macpherson Grant, for the purpose of inquiring into what was generally called overliming the land. Overlimed land produced Barley and Turnips, but not Oats. In order to clear up the mystery, whether this arose from overliming, Sir George had sent him six soils to be examined. Thirty years ago these soils had produced very good crops, but since then they had failed to produce anything except Barley and Turnips. The result of this investigation was, that the soil being unfit for Oats did not arise from the presence of too much lime. If it was kept in view that Barley required a light soil, and that Clover and Oats required a soil close and stiff, it would be admitted that it was not the chemical constitution but the mechanical condition of the land that was at fault, and that a remedy was to be found in the application of some heavy instrument to compress the soil, so that the roots of the plant might get that close soil which it required. He would caution all farmers against using large doses of lime at once on such land, and before it was drained; perhaps, also, it might in many cases be better to put on lime in the shape of compost. Mr. Proudfoot, of Pinkiehill, had a field which, 60 years ago, was a moor, and which, having been drained and limed for four rotations, where the land was still marshy, Turnips exhibited a peculiar disease, the rest of the field being pretty good. There was a large fungus or wart that gradually reached the head of the Turnip, and destroyed it. On examining the soil, he (Mr. Johnston) found the composition of the Turnip and of the soil itself to be as follows:—

Comparison of Ashes of Swedish Turnips and the Soil in which they were grown.

	Turnips.	Soil.
Chloride of potassium	4.42	0.02
Sulphate of potash	31.37	0.87
Phosphate of ditto	5.72	..
Carbonate of ditto	24.39	0.11
Phosphate of magnesia	1 05	..
Ditto of alumina	0 06	6.45
Ditto of iron	..	..
Ditto of lime	2.64	..
Alumina	..	..
Carbonate of lime	10 97	0.29
Oxide of manganese	3.70	0.92
Silica	1.32	78.79
Organic matter	..	6.24
Water	..	6.61
	96.64	99.10

By looking to the carbonate of lime, it would be seen that in the ash there was upwards of ten per cent., while in the soil itself there was less than one-third per cent. The soil had also as large a quantity of manganese as of lime, and to this circumstance he attributed the cause of the disease. In order to remove noxious substances from the subsoil, the best way was to drain even when there was no spring water, because the rain washed out and carried away any of those noxious ingredients in the subsoil, which did great mischief to the plant. He had been making several investigations in regard to the failure of the Potato crop, but he had not yet been able to come to a conclusion as to the cause. He then referred to those gravelly or ochrey masses which formed one, two, or three feet below the surface, and were an impervious impediment through which no water could penetrate, and to which the roots of plants loathed to come. Besides these, there were other formations of the same kind; they were very thin layers, and formed like cups. It was impossible to improve such land, without breaking the pans. In many districts marl was to be found in great abundance while lime was scarce, and it was therefore of importance to know the relative value and qualities of the two, in order that farmers might judge which would be the most useful and economical for their individual use. Upon this subject he had drawn up a table, of which the following is a copy:—

Composition of Marls.	Banks of the Boyne.		Caithness.		Logie Marl.		
			Wet.	Dry.	Wet.	Dry.	Brk.
Water	1.5	2.0	45.04	....	62.50	....	..
Organic matter	1.4	1.0	2.57	4.49	5.42	14.61	1.0
Carbonate of lime	92.2	10 7	46 56	84.71	28.76	77 50	82.2
Do. of magnesia	1.1	0 6	0.0	0.0	0.0	0 6	0.0
Gypsum	0.0	0.0	0.0	0.0	0 0	0.0	8.0
Alumina and earthy matter	3.1	85.1	6.04	11.29	2.90	7 81	7.5
	99.3	98.9	99 15	100 45	96 58	99 08	98.7

One of the kinds in this table from the Boyne was best for heavy soils, and another for such as were light. It was of great importance to get marl in a dry state, in order to save the expense of conveyance. It was also advisable at times to mix it with quicklime. In regard to steeping seeds, he had no doubt that every kind of seed grown would be greatly benefitted, and he had drawn out a table which he thought contained all the elements which a steep for Grain ought to contain:—

Steep for Corn and Beans.

Phosphate of soda, Sulphate of magnesia, Nitrate of potash, Common salt,	1 lb. of each in 10 gallons of water to steep 300 lbs. of seed.
Sal ammoniac, or Sulphate of ammonia,	To be dried with gypsum or quicklime.

After referring to the great loss which the Association had experienced by the death of Mr. Oliver, of Lochend, the learned Professor concluded his address.

CIRENCESTER AGRICULTURAL COLLEGE.

An influential meeting was held on the 29th ult., at Cirencester, Gloucestershire, in furtherance of a plan recently projected for the establishment of an Agricultural College and Example Farm. Many of the first agriculturists of the Cotswold district were present, both landlords and tenants, amongst whom were Earl Bathurst, Lord Sherborne, Earl Ducie, Ambrose Goddard, Esq., T. H. S. Sotheron, Esq., M.P., Sir J. Paull, D. Ricardo, Esq., Professor Daubeny, and many others. Lord Bathurst took the chair, and Mr. Brown, of Cirencester, to whose exertions, his lordship stated, it was chiefly owing that the scheme had reached its present position, read the Report of the committee of the Cirencester and Fairford Farmers' Club, which had been appointed to carry out resolutions passed by that Club last year, on the subject of Agricultural education. The report, which detailed the reasons which had actuated this Society in taking measures for the establishment of an Agricultural School, and which specified the circumstances on which the success of the scheme depended, having been read, the Earl of Ducie rose to propose the first resolution, which referred to the propriety of establishing an Agricultural College. His Lordship said, that upon the subject of education a great change had taken place in opinion within a few years; the farmers had begun to see more clearly than before—at least such of them as had sons—the necessity for establishing an institution like the one proposed. He did not suppose that there were any agriculturists present, who did not contemplate that one or two of their sons should follow farming as a profession. But how did they propose to get them educated? At present they were compelled to send them to school, where they, no doubt, learned much that was useful, but not in the line of life in which they were destined to work their way in the world; the only opportunity they had of teaching them their business, was when they returned home from school, perhaps at 14 or 15 years of age; farmers then instructed them in what they knew themselves, or, it might be, placed them, with a large premium, with some neighbouring agriculturist, of whose practical and scientific knowledge they entertained a higher opinion than of their own. But no man could teach more than he knew himself; the person to whom they sent their sons might know a great deal—he might be a good farmer and breeder of stock—but still unable to communicate the degree of scientific knowledge which is necessary for the successful prosecution of Agriculture; and although a farmer qualified in all respects might be found, was it to be supposed that he could accommodate as many pupils as required his instruction? In all points of view, therefore, it was necessary that they should support this college, which would afford them an opportunity of giving their sons a sound practical education on all subjects relating to their occupation.—Mr. Kearsey, tenant-farmer, of Tarlton, seconded the resolution. He sincerely hoped that an institution which was calculated to be so extensively useful would meet with the necessary support: if it did, he was sure that those who came after would be grateful to them for their exertions.—Sir John Paull moved the second resolution, which named a committee to determine on the plan of a suitable educational institution, and to carry the design into effect. He said it frequently appeared to him as a most remarkable circumstance, that farming was the only thing which was supposed to come without education. If a young man were put to any other trade, either ironmonger, grocer, lawyer, or surgeon, it was deemed requisite that he should be trained to that particular vocation in which he was to exercise his talent; but a man hesitated not to take a farm without previous instruction, presuming that, being the son of a farmer, it must, as a matter of course, follow that he can be a farmer likewise.—The resolution having been seconded, Dr. Daubeny, Professor of Rural Economy at Oxford, rose to propose the third resolution, that a subscription be entered into to defray expenses. During his travels on the Continent, he had visited several colleges in France, Germany, and Italy, established by the respective Governments for the instruction of youths intended for Agriculture, and from their general distribution was led to infer that the necessity of imparting an education to young farmers adapted for their future occupation, was felt in every other civilised country in Europe. He moreover observed, that in several of these colleges young Englishmen were found, proving that the want of some institution of this kind was felt also among ourselves. He had even been applied to by strangers with respect to the regulations and terms of admission to some of these colleges, and particularly by one person, who was anxious to learn whether any and what provisions for the religious instruction of a Protestant existed in the Agricultural College of Grignon, near Paris; a circumstance showing that misgivings were entertained by parents on that head, in sending their sons to a foreign Agricultural College, which might be removed by the establishment of one at home. Since, then, a demand for the kind of instruction which may be imparted at such an establishment exists both here and elsewhere, is there anything in the circumstances of this country which forbids us supplying it? Is there not, on the contrary, a stronger reason for giving to British farmers a good education than exists elsewhere? This was not the place for any political discussion; but those who, like himself, cherished the hope of seeing the population of the country mainly supplied with the necessaries of life from its own soil, must of necessity assume that the latter can be rendered capable of yielding a much larger produce than it does at present; for as the population is increasing at the rate, it is said, of about 700 a day, the produce of the soil must go on increasing in an equally rapid ratio, if we are to continue to depend upon our internal resources for food. But as the industry of the nation is already taxed to its utmost, this increase can only be obtained by increasing skill, increasing intelligence, increasing knowledge on the part of the cultivator. The farmer might in this respect take a lesson from the manufacturer, who, though it is acknowledged that in point of mechanical skill Great Britain takes the lead of all other nations in the world, is so far from imagining that he is arrived at perfection, that he is constantly aiming at improving his machinery and his processes; whilst the farmer, who in some districts has gone on from time immemorial on the system of his forefathers, fondly imagines that there is no further room for advancement. It is not expected, however, that by the foundation of the proposed College, every farmer should be rendered a practical chemist, or capable of originating discoveries; but that in each agricultural district there should be a few persons capable of suggesting improvements, whilst the great majority should at least be sufficiently well informed to understand the principles upon which the approved practices in husbandry are founded, and the conditions on which they depend for their success. Thus, for instance, if the plan of preserving the liquid manure be introduced in a given district, it should be understood by the farmers who adopt it, what elements it imparts to the soil, how these elements may be best prevented from escaping, and why their loss is so injurious. The professor concluded by expressing his satisfaction, that the first Agricultural College in South Britain should have been projected by the inhabitants of a town and neighbourhood in which, from early associations, he felt a personal and lively interest, and confessed that he entertained a stronger desire to see the institution established on this account, than for the sake, even of the great cause

involved, being convinced, from all that he had heard and seen, that such a demand exists for education among the farming classes generally, that means will be provided in some part of the country or other for supplying it; so that the principal question is, whether Cirencester shall have the credit of taking the lead in this great movement, or whether it will be left in the background by other places in the kingdom.—Mr. Lawrence, solicitor, seconded the resolution. He entertained the opinion that this country was capable of producing the muscle, bone, and even the fat of all her Majesty's subjects, if it were properly cultivated; and, looking at the great increase which was taking place in the population, he must say, if he might use the expression without profaneness, that God never sent mouths without food to put into them, and he was inclined to think that the finger of Providence directed the exertions which were now making to supply food for the increasing population. All were interested in the question—manufacturers among the rest—for if they would look at the immense proportion of their productions which was consumed at home, in comparison with what was exported abroad, they would see that they had an equal interest in increasing the productiveness of the land. He himself was no farmer, nor did he own land worth speaking of; but he felt strongly the advantage of promoting agricultural improvement. He believed that if the proposed institution were supported by the farmers generally, there need be no fear of assistance from the owners of the soil; and he did hope, after the meeting of this day, that no difficulty would be found in raising the funds. Some individuals had asked the rate of interest which was to be allowed; but he had to state that those persons who were looking for interest must go into the various stock-exchanges, both British and foreign, where they would find ample investments for their money, and not look to the proposed institution as likely to serve their purpose, for he hoped that its supporters would not bestow one thought on the question of interest. He should invest his money with purer motives, and feel that in doing so he was advancing the prosperity of agriculture, which interest he believed to be the chief and most important of all others to the country at large, and should consider that it was yielding him greater interest than he had ever received from any other investment. After thanking Lord Bathurst for his kindness in taking the chair, the meeting separated.—*Abridged from Cirencester Paper.*

FARMERS' CLUBS.

Probus.—At the monthly meeting of this Society, a lecture was delivered by Mr. Whitley, of Truro, On the Practical Importance of Geology to the Agriculturist. Mr. Whitley said, that the physical features of a country, its productions, and the employments of its inhabitants, were influenced by its geological structure. To know more of the causes which produced these effects was therefore desirable, in order that the resources of a country might be developed, and its industry directed into useful channels. Soil is generally derived from the geological formation on which it rests; and thus the various formations have different and peculiar soils resting on them, agreeing in composition with the rock beneath, being good or bad in their texture, according as the rock has a tendency to crumble into a gritty or clayey state. A knowledge of the nature and properties of soils is requisite, in order that the farmer may raise the greatest amount of valuable produce at the least possible expense, and in such a manner as not to impoverish the land. This knowledge may be obtained by chemical analysis, but this is a difficult and expensive process. But Geology affords essential aid in this respect. Soil being derived from the rock beneath it, if we have an analysis of the parent rock, we shall have a very near approximation to the mineral composition of the soil. Thus, while the chemist is spending hours in his laboratory in delicate and intricate researches, a geologist infers at once that a granite soil contains much potash—that the soil on the serpentine contains a large amount of magnesia and iron—that soils on greenstone, hornblende-slate, and sienite, are rich in the inorganic food of plants, &c. &c. Geology will, in fact, give such a general insight into the composition of the soil, that its capabilities may be understood, and directed into the channel most profitable for the farmer.—*The West Briton.*

Chepstow.—The following is extracted from a paper, by an anonymous writer, read at the last meeting of this club:—"I have had some experience in growing Turnips. The first thing to be considered is the fallow; for without a clean fallow, thoroughly pulverised and properly manured, a crop cannot be expected. The deep ploughing before winter should never be omitted, and after it is completed, the hedges round the field should be kept in good order, and the gates locked, to prevent stock of all kinds from treading it in wet weather. The land thus treated will be thoroughly pulverised by the action of the frost; and in cross-ploughing the land in the spring, it should be stirred as deep as the previous ploughing. If stirred any deeper it will cause a bad tilth; because the fresh land brought up, when exposed to the sun and wind, will bake into clods. Though I am speaking particularly of our stiff limestone-land, yet soils of all kinds would be improved by having a deep furrow before winter. With regard to manures, the only artificial one I have tried is bone-dust. In 1840, I drilled 6 quarters of neat bones on 2 acres, sown with white globe Turnips; the field was 6 acres, and the crop by no means a good one. In 1841 I sowed a field of Swedes, and manured it with 2 quarters of bones and 2 quarters of soot per acre. This was nearly a failure; as, wherever the soot came in contact with it, the seed died. In 1842 I sowed a field of Swedes; the manure was bones and coal-ashes, over three-fourths of the field, at the rate of 4 quarters to the acre. I divided the field into four parts of 2 acres each:—

To lot No. 1,—3 quarters bones and 1 quarter ashes,
" No. 2,—2 " bones and 2 " ashes.
" No. 3,—1 " bones and 3 " ashes.
" No. 4,—8 " ashes, per acre.

The crop on No. 1 was very strong, and the leaf luxuriant. No. 2 was a heavier crop with a small top. No. 3 was not far short in weight of No. 2. No. 4 was not a quarter of a crop. The field was drilled the first week in June. From what I have stated you will perceive there was a waste of bones in No. 1; and that if the bones had been equally divided over the field, there would have been an even and a good crop. I think coal ashes mixed with bones is better than bones alone. Two quarters of bones and two quarters of coal ashes will grow a better crop than four quarters of neat bones. The bones and ashes should be mixed 36 hours previous to sowing, because the mixture gets into a high state of fermentation, and when drilled it decomposes very fast, and causes a much more rapid growth of the plants than if sown in a dry state. The next thing to be considered is seed. Every farmer should prove his seed by putting 40 seeds into a pot, and covering them one inch deep with fine mould; should they all vegetate, 2 lbs. per acre would do; but if one fourth fail, which is often the case, then 2½ lbs., and so on. Mr. Coke, the late Earl of Leicester, made it a rule to drill 3 lbs. of good seed per acre, and his crop never failed. He used to say there was plenty for the fly, plenty to hoe, and plenty for a crop. Mr. C. Blunt says, the best time to sow Swedes is from the last week in May to the middle of June. In 1842 I sowed three drills on the 5th of May, and the rest of the field the first week in June, and there was more weight of Swedes on these three drills than on nine of the others. The manure was twelve loads of dung to the acre, ploughed in before Christmas. Last year I repeated the same experiment on the same dates, and the whole of this field was a good crop, but the three May drills were double the weight of those sown in June: the manure the same as for the first trial. It should be borne in mind that a Swede is a much slower growing plant than a common Turnip; the latter will grow as much in one month as the former will in two. In the report of the Monmouth Farmer's Club for 1843, at page 31, we read of a liquid mixture applied to the soil as a manure for Turnips, but I do not approve of the plan of application there suggested; it is a broad-cast application of manure, and a drill system with the seed. If farmers would take the trouble to collect the urine made by the stock that is housed in the winter months, they would be able to let the bones remain quiet in their graves.

Northamptonshire.—At a late meeting of the Agricultural Book Club of this county, it was resolved that the best methods of improving the condition of the English agricultural labourers are by establishing and encouraging, in every village, daily and Sunday schools for useful and religious education; by promoting the establishment of clubs upon a sound and permanent basis, for providing funds, clothing, &c., for the relief of the sick and superannuated; by procuring cottage gardens, not exceeding one rood of good land, as near as possible to the residence of the occupier; by providing them with comfortable cottages, containing not less than two bedrooms; by paying the labourers weekly on a Friday, instead of Saturday, thereby giving them an opportunity of laying out their earnings to the best advantage; by adopting every possible means of giving constant employment to the agricultural labourers throughout the year, and of paying them according to the work performed, and not according to their necessities; by pressing upon the attention of the members, composed of landlords, land agents, and tenant farmers, the importance of carrying out the spirit of the 6th Resolution; by devising means of increasing labour in such a manner as will secure to the employer a return equivalent to the additional outlay, without which the occupier cannot afford the expense consequent upon such increase of labour.

Reviews.

The Farmer. Compiled by George Nicholls, Esq. Charles Knight and Co.

This work details in very simple language the practice of the farmer on the subjects which successively engage his attention during the course of the year. It was written with the view of being useful to small farmers, by placing before them, in a simple and condensed form, the results of a wider experience, and of a larger amount of scientific research than they would else, probably, have the means of access to. A similar compilation by the same author has been extensively circulated in Ireland, and has been useful there in stimulating to the adoption of improved methods of cultivating land; and the present work is well calculated to produce similar results in England.

We are often asked to recommend simple and yet complete works on Agriculture, suitable for small farmers; in future, we shall answer all such inquiries by referring our correspondents to Mr. Nicholls's compilation, "The Farmer." We cannot give a better specimen of the style and general character of this work, and at the same time be more seasonably useful to our readers, than by quoting the following passage on the Artificial Grasses:—

"*The Artificial Grasses.*—No farming can be well conducted, in which the artificial Grasses are not cultivated; for without them there cannot be a proper rotation of crops, nor the requisite supply of manure for the land. Clover and Rye-grass are the chief artificial Grasses in use in British husbandry. They require the land to be in good condition, and are generally sown with the corn crop immediately following a fallow crop of Turnips, Potatoes, or Mangel-wurzel. In choosing Clover seed, be careful that it is clean, and not mixed with other seeds, which may afterwards spring up and become troublesome weeds. The sorts of red, white, and yellow Clover seed, may be easily distinguished from each other. The two latter are perennial pasture Grasses, and the red Clover is biennial and grows tall and luxuriant. Of Rye-grass there are two sorts—the Italian, and the common perennial kind, and there is no certain mark by which they can be distinguished. The farmer ought, therefore, to purchase his seed from a respectable dealer, in order to guard against mistakes in this respect. When the ley is only intended to stand two or three years, the Italian Rye-grass is preferable, from its giving a more abundant crop than the common variety; but the latter should chiefly be sown for permanent pasture.

"When land is to be sown for permanent pasture, with white Clover and Rye-grass, the quantity of seed will vary a little, according to the condition and quality of the land, poor soil requiring most seed. White Clover should only be sown in land intended for permanent pasture, for which it is well adapted; but it is wasteful to introduce it into alternate cultivation. The red Clover is not adapted for permanent pasture, although in its proper place, and for soiling purposes, it is decidedly the best plant in alternate husbandry, and its growth cannot be too extensively encouraged. The yellow Clover, or Trefoil, is more permanent than the red, but not so much so as the white, neither is it so much relished by cattle. Grass and Clover seeds are occasionally sown with all sorts of grain crops, but they succeed best with Barley. In high situations, where neither Wheat nor Barley prosper, they may be sown with Oats. The state of the weather, of the ground, and the mode of sowing, all influence the successful vegetation of the crop. A rough uneven surface will require a greater quantity of seed than a finely pulverised soil. If the weather is wet at the time of rolling in the seeds, they will be apt to adhere to the roller. Calm weather should be selected, if possible, for the sowing of these seeds; and the time of sowing must be regulated by that of the crops along with which they are sown, or any time in March, April, or May. The white Clover and common perennial Rye-grass, judiciously intermixed and properly cultivated, will ever rank high as a nutritive and wholesome herbage. Through the agency of these Grasses, extensive tracts of land have been converted into rich pasture, and the produce of the dairy has thereby been greatly augmented. Lime is the manure which has chiefly been used, and its application has improved the soil and adapted it to the habits of the plants, and the land has become progressively enriched. Indeed, in the improvement of waste land, and as a preparation for pasturage of white Clover and Rye-grass, the most liberal application of other manure will not always insure their successful growth, without the application of lime. Surface applications are now largely used around Edinburgh, for procuring crops of white Clover and Rye-grass. Soot is applied to a great extent, and has uniformly the effect of forwarding the crop. Liquid manures are also extensively used, and urine is collected with great care, for the purpose of being applied to the soil. Liquid manures are much more lasting in their effects than soot, and seem better adapted for Clover. Saltpetre is likewise used occasionally, and forms an excellent top dressing for seeding Grasses. It is by the judicious use of such means as these, that the agriculturists of the Netherlands have been able to obtain abundant crops, and to keep up the fertility of their lands during so long a period.

"When perennial Grasses are fed or cropped very close in autumn, they do not rise with such a vigorous growth in spring, owing to the removal of that part of the stalk which would have afforded sap for the first nourishment of the Grass; and even in spring, when the first shoots are fed very close, the Grass does not again grow so vigorously, and is found to yield a considerably less produce during the season than when it is allowed to attain a good growth before it is eaten, and then is not eaten too close."

Lectures on the Theory of Agriculture, and on the Practices of Farming adopted in Cheshire. By Albert J. Bernays. Roberts and Powlson, Manchester.

These lectures were lately delivered by Mr. Bernays, at Siddington, in Cheshire, to the tenants of Mr. Davenport's estate. They are well calculated to impart a knowledge of the theory of cultivation, and of manures, to those who are unacquainted with the science of chemistry.

Miscellaneous.

Connection between Chemistry and Agriculture.—I have noticed with regret that almost all the popular works hitherto written upon agricultural science have fallen into the one common error of endeavouring to make a chemist of the practical farmer; the authors all seem to think it necessary that, in order to the improvement of Agriculture, every farmer must study chemistry. In this respect, however, I hold a totally different opinion. It appears to me that it would be a precisely analogous case, if writers on climate had said that, in order to preserve health, it were absolutely necessary that every individual should study medicine. It is not an extended knowledge of chemistry that is required—it is only a confidence in the results obtained by chemists that is absolutely necessary. If the farmer becomes acquainted

which the facts as they apply to his practice, and if he has such confidence in these facts that he is willing to act in accordance to them, there is not the least necessity that he should occupy his time and burden his mind with all the abstruse processes of reasoning and experimental proof by which the chemist has been enabled to trace out their connection with the complex phenomena which they serve to illustrate.—*Lecture by Dr. Madden, of Portdown, Edinburgh.*

Paint or Dry Rot in the Potato.—From the experience I have had in the cultivation of the Potato, I have come to the conclusion that the taint or dry rot owes its origin entirely to an injudicious method of planting the seed; and after mature consideration, I have adopted a system of planting, which I have practised for 20 years with such success, as never once to have had an instance of dry rot among my Potato crops during that time, although they were sometimes growing in direct contiguity to other Potatoes, which, from being planted in a different manner, were labouring under the effects of the disease. It shall now be my endeavour, in as simple and concise a manner as possible, to lay this system before my readers, convinced that they will in practice find it a most effectual remedy for the disease in question. The chief cause of this disease I consider to be the prevalent error in planting the Potato, of placing the seed in a quantity of dung laid in the middle of the drill. Any one who knows anything of the qualities of dung, knows that it is of itself incapable of promoting vegetation, or sustaining vegetable life, until decomposed, and incorporated with a portion of earthy soil, and it is not therefore to be wondered at that disease and failures in the Potato crops are so prevalent. The wonder is, that, while such a system of planting is persevered in, any of these crops should succeed at all under such treatment; and indeed this is only to be accounted for by the small quantity and inferior quality of the dung applied, which is generally found mixed with great quantities of half-rotten straw and other extraneous substances, such as coal-cinders, &c., and were it not that the fresh earth is laid immediately on the top of the dung after the seed is planted, the failure of the crops would be to a much larger extent; of this I have no doubt. The ground too, if in a very impoverished state, may by speedily digesting and drying up the dung prevent to a great extent a total failure of the crop, although the seed were planted thus injudiciously in the midst of the dung; for it will be observed that in such ground the rot is not so destructive as in rich deep soils. The first and great point, therefore, in setting the Potato, is to have the manure properly commingled with the soil before introducing the seed, the plan I adopt in planting, which is briefly as follows:—In preparing a parcel of ground for the reception of the Potato seed, I proceed to have the manure spread regularly over the surface, and evenly dug in. I then either drill the ground, after the manner of gardeners in sowing peas, and plant the Potatoes in the drill, or plant them with a dibble, without drilling, about two or three inches beneath the surface, the dibble being formed with a broad point, so as to insure the Potato having no open space left beneath it, when dropped into the hole. For large fields, which cannot well be dug or planted in this manner, I would recommend the ground to be prepared and the dung spread exactly as for Oats or Barley. Then have the ground drilled, and in planting place the seed Potato in the clean soil, on the back of the half drill, formed by the return of the plough, which half drill should be made larger than ordinary, to bring the seed as near to the centre of the drill as possible, so as to afford it every advantage of the fresh soil to vegetate in. In this way the fructifying earth, in which the seed is embedded, will secure it healthful vegetation, and as it progresses in its growth, and so soon as it throws out roots, it will reap the full benefit of the manure contained in the surrounding soil. It is of the utmost importance to have the seed planted, so as it may have the earth both below and above it when put in; for in keeping the seed free from the dung, I apprehend, lies the whole secret, which should be particularly attended to.—*From a work on this subject, by J. Smith.* Blackie and Sons, Glasgow.

Notices to Correspondents.

Rural Chemistry. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

Analysis.—*Subscriber.*—Thank you. We may possibly hereafter give directions for detecting adulterations, but our views of the subject of your letter you will gather from an extract of a lecture by Dr. Madden, in our miscellaneous section on the proper connection between the chemist and the farmer.

Banbury Guardian.—*W. B.*—We always insert quotations in our miscellaneous section, and are careful to acknowledge the source of them. "W. H., Reading," is a known correspondent of ours: his communications reached us in the form of a manuscript letter. If he copied that communication from you, without acknowledgment, he was much to blame.

Books.—*Beginner.*—The author is Mr. Warnes, of Trimingham, Norfolk. Apply to any bookseller.

Horse-ponds.—*Reader.*—If the pond is not large, and the water very black, fling charcoal dust in, and stir about till the water is nearly muddy; then lift the water all out by buckets or otherwise, and soak heaps of leaves, weeds, earth, &c., with it; you will thus make a good compost.

Liquid Manure.—*A Subscriber.*—Measures should be taken either for hindering the formation of volatile salts of ammonia in it, (see Mr. Bree's paper in another page,) or for fixing them as soon as they are formed. Where it is preserved on a large scale, the cheapest plan of applying it is to soak the dung-heap with it, and to gather together composts of all kinds of rubbish, weed, and soil of any kind around the tank, for the purpose of being soaked with the urine daily collected in it. The expense and labour of applying the liquid to the land are very great, and it is thus much cheaper to soak heaps of solid materials, and cart it to the land with the compost; but then it must not be allowed to lie there long before being ploughed in. You will find lengthened remarks on this subject in this paper during the course of the next few weeks. Allow us to recommend Mr. Mechem's work on Waste Manures: it refers to the subject of your inquiries. We shall be better able to answer your questions about carrot clay next week.—*A Young Rural.*—Apply it diluted with an equal weight of water, at a little distance from the plants. Put on at the rate of 40 bushels, and guano at the rate of three or four cwts. per acre, are useful manures, and you may advantageously apply them, mixing them well with the soil near the plants, by hoeing or digging. Beetroots will increase in size by stirring the earth round them, not by pulling the leaves.—*X. C.*—If it is not much diluted, 500 gallons will require 200 lbs. of gypsum or 120 lbs. of sulphuric acid to neutralise it, (see Mr. Bree's paper in another page). Gypsum, if in solution, will be decomposed by the carbonate of ammonia. If you can ascertain that there is any of the latter salt in the waste of your kitchen, it will be useful to add gypsum to that waste, as the carbonate, a volatile salt, becomes the sulphate, a fixed salt, of ammonia, by the decomposition which will ensue.

Lucerne.—*J. Heaton.*—There does not appear anything in your specimen, except its luxuriant growth, to distinguish it from the ordinary variety; but you will be better able to judge of this when it is in flower.—*G. P.*—You cannot do better than grow Lucerne for your purpose. We only know of one variety.

Manures.—*C. T.*—Bleaching powder is chloride of lime. Willey dust is the refuse separated from wool during the process of cleansing. We do not know what Scutch is.

Milch Cows.—*G.* is informed that the purest plan to procure Guernsey cows genuine, is in the island itself. The price varies from 12*l.* to 18*l.*—*G. E. D.*—We have not "G.'s" address; and your notice is an advertisement.

Potatoes.—*X. Z.*—There is nothing like good farm-yard manure for Potatoes; there is not that necessity for its being well rotted in the case of the Potato that there is in the case of the Turnip. Apply about 30 cubic yards per acre. The Irish White Apple is one of the best pig Potatoes. The names of other varieties for consumption will be found in a leading article in a late Number of the paper.

Steeping Seeds.—*A. Huxtable.*—Rapidity in the vegetation of seeds is often very advantageous; and so far the more rapid the growth of doctored seed, the greater is the value of the steep employed. Thanks for your letter.

Transplanting Swedes.—*L. L.*—A seed-bed of 20 or 30 perches should suffice for 7 acres of land. Sow about 2 or 3 lbs. of seed upon it.

Turnips.—*Rusticus.*—An acre of good Turnips may be worth 10*l.* or 11*l.* to carry off the land; and the consumption of them on the land may be equal to a manuring of 10 or 12 tons of good dung, equal in value to 3*l.* or 4*l.* per acre.

Miscellaneous.—*T. I. H.*—We have mislaid your address; if you will forward it, you shall hear about your vols. of the *Chronicle*.—*A. B.*—A typographical error occurred last week in our notice of the question you put to "A Farmer and Valuer." What you ask for is the average *gross* produce, not the produce of the *grass* land.

*** As usual, many communications have been received too late.

Markets.

MARK-LANE, Monday, May 6.

We had a moderate supply of Wheat this morning from the home counties, the finest samples of which realised an advance of 1*s.* per qr., and the secondary qualities fully the prices of this day se'nnight.—Free Foreign met an improved inquiry, and a fair extent of business was done in retail sales at our quotations.—Barley maintains its late value, the dry weather inducing holders to ask rather more money, but the sale is limited for both English and Foreign.—Beans and Peas are fully 1*s.* per qr. dearer.—There has been a good sale of Oats at an advance of 6*d.* per qr.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk White	46	56	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire	50	57	White	—	—
Barley, Malting and distilling 30s to 34s	Chevalier	41	44	Grind.	24	28
Oats, Lincolnshire and Yorkshire	Polands	20	24	Feed	19	22
—— Northumberland and Scotch	Feed	20	25	Potato	21	25
—— Irish	Feed	18	23	Potato	19	24
Malt, pale, ship		58	62			
—— Hertford and Essex		60	63			
Rye		32	34			
Beans, Mazagan, old and new	25 to 32	Tick	28	34	Harrow	27	35
—— Pigeon, Heligoland	30 to 38	Winds	—	—	Longpod	—	—
Peas, White	30 to 34	Maple	27	30	Grey	26	28

Friday, May 10.

The arrivals of English Wheat during the week have been moderate, and the few samples fresh up for this morning's market, sell readily at our Monday's quotations; there was a fair attendance of country buyers, apparently with the intention of purchasing Free Foreign Wheat, but as they offered generally 2*s.* less than the factors were disposed to accept, and that for retail quantities only, but little business was done.—There was some inclination shown to purchase Dantzig f. o. b. and also Polish and Marionopoli afloat.—Barley is very dull, the great bulk of the importation is going direct to the distillers; for that offering on the market (a great proportion of which is in bad condition,) great difficulty is experienced in effecting sales.—Beans and Peas fully support the advance noted on Monday, and Egyptian are selling at 29*s.* f. o. b. including freight and insurance.—The Oat trade is rather heavy, buyers holding off in anticipation of better supplies.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March 29 per Quarter.	55*s.* 8*d.*	33*s.* 7*d.*	19*s.* 8*d.*	33*s.* 3*d.*	31*s.* 2*d.*	31*s.* 0*d.*
April 5	55 5	32 10	20 1	33 9	30 11	31 8
12	55 1	33 1	20 1	33 4	31 2	32 5
19	55 4	32 10	20 2	32 3	31 3	31 5
26	55 0	32 7	20 1	31 2	31 4	30 8
May 3	55 3	31 9	20 1	30 11	31 9	31 3
6 weeks' Aggreg. Aver.	55 6	33 7	20 1	32 3	31 3	31 5
Duties on Foreign Grain	17 0	6 0	6 0	10 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	4980	1340	1280	2930 Sks
Irish	—	700	7080	—
Foreign	6690	9010	1450	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	6060 Sks. — Brls.	5021	1455	2756	1114	—	709	42
Irish	" — "	—	62	—	9409	—	—	—
Foreign	" — "	7915	27904	—	400	—	—	115

SEEDS, May 10.

Canary	per qr.	48*s.* to 52*s.*	Linseed Cakes, Foreign, p. ton	8*l.* to 7*l.* 10*s.*
Carraway	per cwt	50	54	Mustard, White - p. bush.	5*s.*	6
Clover, Red, English		60	74	— Superfine "	6	8
—— Foreign		64	74	— Brown "	14	16
—— White, English		160	180	Rapeseed, English, per last	24*l.*	28*l.*
—— Foreign		84	126	Rape Cake - per ton	—	—
Coriander		12	16	Rapeseed, Foreign - per last	—	—
Hempseed	per last	34	36	Tares, Eng. winter p. bush.	3	5
Linseed	per qr	—	—	— Foreign -	2	3
—— Baltic		—	—	Trefoil - per cwt	—	—
—— Cakes, Eng. per 1000 of 10s		9*l.*	15	Turnip (too variable for quotation).		

Kingsford and Lay.

WOOL.—British, Friday, May 10.

We cannot report any alteration in the English Wool Market since our last. Our advices from the manufacturing districts inform us of a limited amount of sales, but prices have not materially receded, nor do we think it likely they will do so, if the present demand for yarn continues.

	per lb.			per lb.
Long-woolled Wethers	1*s.* 1*d.* to 1*s.* 2*d.*	Southdown Hoggets	1*s.* 1	to 1*s.* 2*d.*
Do. Ewetts	1 1	1 1½	Kent Fleeces	1 2	1 3
Southdown Fleeces	1 0½	1 2			

James Peasnee, Wool Broker.

COVENT GARDEN, May 11.—The market during the week has been well supplied with most articles. Grapes are more plentiful, and continue to improve in quality. Pine-apples are sufficient for the demand; they are offered at the same prices as last week. Apples and Pears are scarce, particularly the latter. Green Apricots and Gooseberries are more plentifully supplied, the latter are selling at from 8*d.* to 7*d.* per pottle. Oranges are good in quality; but they are becoming scarce, and are a little advanced in price. Strawberries are getting more plentiful. Chesnuts and Lemons are not plentiful. Vegetables are, for the most part, of good quality; but the dry weather begins to affect them; they have, generally speaking, not altered much in price since our last report. A considerable quantity of Potatoes imported from Lisbon are in the market; they are said to be good in quality. Brocoli is somewhat advanced in price. Cabbages are offered at from 10*d.* to 1*s.* 6*d.* per dozen. Cauliflowers are becoming more plentiful; they are also improving in quality. Carrots and Turnips are selling at nearly the same prices as last week. Greens are rather cheaper, as is also Rhubarb. Seakale, French Beans, and Asparagus bring nearly the same prices as are mentioned in our Report for last week. Green Peas have been offered, but only in very small quantities. Lettuces and other salading are sufficient for the demand. Among Cut Flowers we noticed Erica hybrida, E aristata major, and E. rubra-calyx; Epacris grandiflora, Gardenia radicans, Fabiana imbricata, Verbenas, Fuchsias, Pelargoniums, Calceolarias, Pansies, Auriculas, Cinerarias, Lily of the Valley; Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb., 6*s.* to 12*s.*		Lemons, per 100, 6*s.* to 14*s.*	
Grapes, Portugal, per lb. 1*s.* to 1*s.* 6*d.*		Almonds, per peck, 6*s.* to 7*s.*	
Hothouse Grapes, 6*s.* to 12*s.* per lb		Sweet Almonds, per lb., 8*s.* 6*d.* to 8*s.*	
Apples, dess., p. bush. 6*s.* to 20*s.*		Nuts, Spanish, per bushel, 14*s.*	
" Kitchen, p. bus. 4*s.* to 10*s.*		— Brazil, 16*s.*	
Apricots (green) p. pot, 1*s.* 3*d.* to 1*s.* 6*d.*		— Hazel, 3*s.* to 4*s.*	
Gooseberries, do. do, 3*d.* to 7*d.*		— Barcelona, 20*s.* to 24*s.*	
Strawberries, 6*d.* to 1*s.* per pint.		— Cob, 14*s.*	
Oranges, per dozen, 2*d.* to 3*s.*		Walnuts, per bushel, shelled, 18*s.* to 20*s.*	
— per 100, 6*s.* to 8*s.*		Chesnuts, per peck, 4*s.* to 6*s.*	
Lemons, per doz. 1*s.* to 2*s.*			

VEGETABLES.

Rhubarb, per bundle, 4*d.* to 1*s.* 6*d.*		Savory, 6*d.* per bunch	
Broccoli, per bundle, 1*s.* to 2*s.*		Cucumbers, 4*d.* to 1*s.* 6*d.* each	
Cabbages, 10*d.* to 1*s.* 6*d.* per dozen		Spinach, per sieve, 2*d.* to 1*s.*	
Red Cabbages per doz 2*s.* to 3*s.*		Leeks, per doz. bun., 2*d.* to 1*s.*	
Sorrel, 6*d.* to 9*d.* p. hf.-sv.		Garlic, per lb. 6*d.* to 8*d.*	
Asparagus, per 100, 1*s.* to 6*s.*		Onions, 2*d.* to 4*d.* p. bush.	
Seakale, per punnet, 9*d.* to 1*s.* 6*d.*		— Large, per bushel, 1*s.* 6*d.* to 2*s.*	
French Beans, 1*s.* 6*d.* to 2*s.* 6*d.* per 100		— Spanish, per doz., 1*s.* 6*d.* to 4*s.*	
Autumn Potatoes, 3*d.* to 6*d.* per lb.		— pickling, p. hf.-sv., 2*s.* to 4*s.*	
Greens, per doz. 2*s.* to 3*s.* 6*d.*		Spring Onions, 6*d.*	
Potatoes, per ton, 60*s.* to 90*s.*		Shallots, per lb., 6*d.* to 9*d.*	
— per cwt., 3*s.* to 5*s.*		Lettuce, p. score, 9*d.* to 1*s.* 6*d.*	
— per bushel, 1*s.* 6*d.* to 2*s.*		Celery, per bun., 6*d.* to 1*s.*	
— Kidney, p. bush., 2*s.* 6*d.* to 3*s.*		Mushrooms, per pottle, 3*d.* to 1*s.*	
Frame Potatoes, 1*s.* to 2*s.* 6*d.* per lb.		Small Salads, per punnet, 3*d.* to 6*d.*	
New Turnips, 1*s.* to 2*s.* per bunch		Watercress, p. doz. sm. bun. 6*d.* to 9*d.*	
Turnips, per doz. bunches 1*s.* to 2*s.*		Parsley, per hf.-sv., 6*d.* to 1*s.*	
New Carrots, 9*d.* to 1*s.* 6*d.*		Tarragon, Green, per bun 2*d.* to 6*d.*	
Red Beet, per doz., 6*d.* to 1*s.* 6*d.*		Green Mint, 2*d.* to 4*d.* per bunch	
Horse Radish, per bundle, 1*s.* to 2*s.*		Marjoram, p. bun 6*d.* to 9*d.*	
Radishes, Tur., 2*d.* to 1*s.* 6*d.* p doz. bchs.		Chervil, per punnet, 2*d.* to 3*d.*	
Basil, 6*d.* to 9*d.* per bunch		Cauliflowers, 2*s.* to 14*s.* per doz.	

POTATOES.—Southwark Waterside, May 6.

The weather during the past week (Saturday excepted) has been, like several preceding, oppressively hot, which continues to depress our Market, there being many lots of inferior samples from former arrivals unsold, and where it was necessary to clear vessels coming on demurrage further reductions were submitted to, and other lots have been put into the stores in cases in which sales could not be effected. The best samples moved off heavily at former quotations, the dealers only buying for present consumption, and thus being considerably lessened by the heat of the weather. Potatoes from Belgium, Holland, and Ireland are selling from 40*s.* to 42*s.* The supplies during the past week have been limited, but are fully equal to the demand, and the annexed prices have been barely supported.

York Reds	-	-	80*s.* to 90*s.*	Essex and Sussex Blues		60*s.* to 65*s.*
Perth	-	-	55 70	Wisbeach Kidneys	-	70 75
Early Devons	-	-	— —	— Blues	-	50 —
Late Devons	-	-	75 80	— Whites	-	45 50
Cornwall	-	-	75 —	Jersey and Guernsey Blues		60 65
Kent, Sussex, & Essex Whites			60 80	Prince Regents	-	— —
— — Kidneys	-	-	70 80	Belgian Reds	-	— —

HAY.—Per Load of 36 Trusses.

Smithfield, May 9.

Prime Upland Hay	65*s.* to 74*s.*	Clover	75*s.* to 100*s.*	Straw	29*s.* to 33*s.*
Inferior -	50 60				

Trade heavy, with lower prices.

James Cousins, Salesman.

Cumberland Market, May 9.

Superior Meadow Hay	72*s.* to 77*s.*	Superior Clover	100*s.* to 105*s.*	Straw	27*s.* to 33*s.*
Inferior -	60 66	Inferior "	80 94		

Joshua Baker, Hay Salesman.

Whitechapel, May 10.

Hay - -	50*s.* to 90*s.*	Clover -	80*s.* to 98*s.*	Straw -	26*s.* to 32*s.*
— fine - -	63 72	— fine	100 105		

HOPS, Friday, May 10.

We hear from several parts of the Hop plantations that the fly has made its appearance, and our Market this morning is very animated, buyers offering from 2*s.* to 5*s.* advance, whilst holders are expecting much more; it would therefore be difficult to quote prices.

SMITHFIELD, Monday, May 6.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3*s.*	10	to 4*s.*	2	Best Downs & Half-breds (shorn)	3*s.* 8 to 8*s.* 10
Best Short Horns -	3	6	3	10		
Second quality Beasts -	3	0	3	4	Best Long-wools (shorn)	3 4 3 8
Calves - - -	4	0	4	8	Ewes and second quality	3 0 3 6
Lambs, small -	6	0	6	4	Pigs - - - -	3 0 3 8
— large -	5	4	6	0		

Beasts, 2560; Sheep and Lambs, 29,770; Calves, 104; Pigs, 402.

We have to day a still shorter supply of Beef, which has caused a rise of full 2*d* per 8 lbs. Mutton is in plentiful supply, though not quite so many Sheep as last week, and we notice also there is a falling-off in quality. The best Downs are heavy on hand, which is usually the case on the setting-in of warm weather; our top qualities of all descriptions are barely supported. We have not named Sheep in the wool this week, they being almost out of the market; indeed, as the weather gets warmer they will hardly be saleable. The supply of Lamb is on the increase, the prices rather lower. Veal and Pork remains steady.

Friday, May 10.

In consequence of a very large supply, both of Beasts and Sheep, there was a considerable depression in the trade this day, and the prices lower than on Monday.

Beasts, 788; Sheep and Lambs, 11,440; Calves, 248; Pigs, 422.

41, West Smithfield.

PRINCIPAL MANURES.

	Weight per bush., about lbs		Weight per bush., about lbs
Alum, 80*s.* per ton	—	Phosphate of Ammonia, in fine powder, 28*s.* per cwt.	65
Bleaching Powder, 28*s.* per cwt.	—	— of Ammonia, in crystals 2*s.* 6*d.* per lb	—
Brimstone, 20*s.* per ton	—	Rags, per ton	—
Bone-dust, —*s.* and 17*s.* per quarter	45	Rape Cake, 6*s.* to —*s.* per ton	—
— Half-inch, 16*s.* ditto	42	— Dust, 90*s.* per ton	—
— of Lime, 1*s.* to 1*s.* 6*d.* p. cwt.	—	Sal Ammoniac, 6*s.* per cwt.	—
— of Soda, 20*s.* to 24*s.* p. cwt.	—	Salt, Agricultural, 12*s.* per ton	80
Chloride of Lime, 20*s.* per cwt.	—	— — clean, 18*s.* per ton	85
Graves, —*s.* to —*s.* per ton	—	— Hide, 21*s.* per ton	56
Guano, Bolivian (S. American), 25*s.* to 28*s.* per ton, in dock	—	Saltpetre (Nitrate of Potash) 22*s.* 6*d.* per cwt., duty paid	80 to 86
— African, 20*s.* to 21*s.* p. ton do.	—	Silicate of Potash, in powder, —*s.* per cwt.	—
— Potter's, 24*s.* per ton	65	Soap Ashes, —*s.* per ton	—
— Potter's Liquid, 12*s.* p. doz.	—	Soda Ash, 14*s.* to 15*s.* per ton	65
Gypsum (Sulph. of Lime), 20*s.* to 25*s.* per ton	—	Sulphate of Ammonia, 26*s.* to 26*s.* per ton	70
Hallett's Dry Fertiliser, 20*s.* p. ton, or 12*s.* per cwt.	—	— of Copper, 22*s.* to 24*s.* p. cwt.	—
— Concrete Liquid, 16*s.* p. doz.	—	— of Magnesia (impure) 10*s.* per cwt.	65
Humphreys's Compound for Plants in Pots, 16*s.* per doz.	—	— of Magnesia (pure crystal) 12*s.* per cwt.	65
— Farmers' Compound, 12*s.* per cwt.	—	— of Potash, 16*s.* per cwt.	—
Muriate of Ammonia, 24*s.* per cwt.	70	— of Soda, 5*s.* to 6*s.* per cwt.	—
— Lime, —*s.* to —*s.*	70	Sulphur, 14*s.* to 15*s.* per cwt.	—
— Potash, 14*s.* - -	—	Sulphuric acid, London, 6*d.* per lb.	—
Nitrate of Soda, 15*s.* 6*d.* to 16*s.* per cwt., duty paid -	80	— Country made, 1½*d.* per lb.	—
Phosphate of Lime, 6*s.* 6*d.* per cwt.	65	Whitney's Compositions for Furnaces and Lights, 3*s.* and 4*s.* per doz.	—
— — Super, 7*s.* to 8*s.* p. cwt.	65	Willey Dust, —*s.* per ton	—

Expenses of shipping about 4*s.* to 5*s.* per ton, according to quantity.

Mark Pennington.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to public competition, at the Auction Mart, Bartholomew-lane, on Tuesday, May 14th, and Thursday, 16th, 1844, at 12 o'clock each day, about three hundred DAHLIAS, comprising all the leading varieties; also a splendid assortment of GERANIUMS in Bloom. The newest Varieties of FUCHSIAS, VERBENAS, PANSIES, HEARTSEASE, &c., and a variety of other Flowering Plants. They may be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers.—American Nursery, Leytonstone.

SPLENDID COLLECTION OF PLANTS.

MESSRS. ENGLISH AND SON have the honour to announce for SALE the WHOLE COLLECTION of ORCHIDACEOUS and STOVE PLANTS, &c. &c., from the extensive Conservatories of JOHN JARRETT, Esq., of Camerton Court, near Bath, which they will sell by Auction, at their Rooms, Wilson-street, on THURSDAY, MAY 16th, at Twelve o'clock, punctually.

In offering this rare and beautiful Collection the Auctioneers feel that any of the usual superlative expressions in its favour, however well merited, would be unnecessary—the highly-respected Proprietor having long been well known as a connoisseur of the most liberal expenditure, and of the highest taste and judgment in its selection and culture, adding, by his extensive contributions, more highly than any to the interest of the Bath, Bristol, and other Horticultural Exhibitions, and the most successful in obtaining the first-class prizes.

This genuine and splendid Collection comprises about 200 ORCHIDACEOUS PLANTS, including many very fine Specimens of CATTLEYA, IN VARIETY; several magnificent ARAUCARIAS EXCELSA; about 500 RARE STOVE PLANTS; and about 100 of the finest ERICAS, &c. &c. The whole will be found to be one of the very choicest assemblages of Floral varieties ever offered to public competition in the neighbourhood of Bath, there being not a production among them but would be an acceptable addition to the garden of any gentleman in the kingdom.

Catalogues are in preparation. Further particulars in next Advertisement.

MR. RAINY respectfully begs leave to acquaint the Nobility, Gentry, and the Public, that in order to meet the times, and in consequence of the pressure of mortgages and other incumbrances upon estates, and the various descriptions of real property, brought into the market for sale by public auction and private contract, it is his intention to adopt for the future a REDUCED and GRADUATED SCALE of COMMISSION, as compared with that which has been generally customary for the last half century. At the same time that the expenses of vendors will thus be materially diminished, he trusts that he shall be able to afford greater facilities to the attainment of their objects, and to the fullest advantage; and, touching these points, he feels it necessary to offer a few words of explanation.

There exists between many solicitors and many auctioneers an understanding, to which the epithet collusive would scarcely be too severe, because by it the interest of their clients, the vendors, is often seriously compromised, and in this manner:—The vendor, instead of himself selecting the auctioneer or agent for the disposal of his property, will, in many cases, confide the choice to his solicitor; and not unfrequently the solicitor (but upon what justifiable cause Mr. Rainy never could comprehend) arrogates to himself the right of such choice; and repeated instances might be adduced to show that that choice has been exercised in contravention, if not in opposition, to the previously-expressed wishes of the vendors, and wholly regardless of old and long-established connexions; whose solicitors having usually a secret compact with the auctioneer, by which he is bound to fee the solicitor with a share of his commission and other charges, as the *sine qud non* of his being appointed to the sale. And what is the consequence? In such matters the auctioneer who is willing to concede to the solicitor the largest share, or, in other words, consents to pay the heaviest bribe, he, be he quack or otherwise, and with slight reference to his regular initiation into his profession, or his qualifications or experience, or (what also is evidently an essential consideration) the extent of his connexions and influence, he is preferred. Thus tempted, many solicitors have become reconciled to abuse the patronage they have assumed, and sign at excluding those auctioneers who, like Mr. Rainy, have consistently and uniformly refused to submit to a tyranny subversive of all proper rivalry, and at variance with all independent and honourable feeling.

With respect, however, to what may be considered the legitimate association of the province of the solicitor with that of the auctioneer as public agent, Mr. Rainy, with the desire to obviate jealousies, to produce a more cordial and satisfactory co-operation between those parties, and in the hope of entirely abolishing secret and derogatory compacts, would suggest that, as a remuneration to the solicitor of the vendor, for his advice and assistance in the drawing and settling of the conditions of sale, and for his attention to those legal points which are in immediate relation with that part of the transaction, a fair portion of the commission should accrue to the solicitor (but with the full knowledge and sanction of the vendor), in lieu of the charges now made by him for the particular items adverted to. This, however, is not intended to include charges for investigations of title, abstracts, deeds, or papers, or fees to counsel; and Mr. Rainy entertains no doubt that the nobility, gentry, and the public will approve of and support the principle of repudiating altogether any clandestine dealings between parties employed in affairs so important to them. But, in all cases where the vendors do not consent to the appropriation to the solicitor of such portion of the commission; or the solicitor, from that integrity, impartiality, and strict sense of justice, and that delicacy and liberal feeling which fortunately characterise the conduct of a large number of the members of the legal profession, declines the acceptance of it; then such portion will be remitted by Mr. Rainy to the vendor by whom he is employed.

With regard to sales of pictures, or other works of art, jewels, plate, libraries, and other valuables, a considerable reduction will also be made in the commission, as compared with the printed terms of Messrs. Christie and Manson, Mr. George Robins, and most other auctioneers. On this branch, however, no payment is contemplated to any of that numerous class of individuals who perpetually attempt to interfere, as middle-men, and ask to be rewarded for doing nothing; such voluntary interference being wholly useless and absurd, and indeed very often mischievous to the interests of those whom they pretend to serve. The allowance, therefore, which many auctioneers give, and these persons in secret receive, upon what is termed "the reciprocity system" (meaning, in plain language, on the part of the auctioneer, "procure the sale for me, and I will hand over to you a share of the profit"), will be the amount of the reduction in Mr. Rainy's new scale of commission on chattel and personal property, solely and exclusively in favour of the vendor; and where the total gross proceeds may exceed 600*l.* a still further abatement will apply to the residue.

A similar rule will also govern Mr. Rainy's charges for putting any property to auction, if not sold; for purchases, valuations (including those for probate), references in cases of compensation, or opinions upon cases; obtaining loans upon mortgage (in conjunction with solicitors), and all other matters incidental to property.

In conclusion, he begs to add that, as heretofore, no sale will be undertaken by him, the genuine character of which will not bear investigation, and every exertion will be made to counteract and detect combinations and deceptions, whether they are directed against vendors or purchasers.

No. 14, Regent-street, St. James's (in the division between Jermyn and Charles Streets.)—April, 1844.

WATERLOO-PLACE, PALL-MALL, commanding the view to St. James's Park.—The spacious capital MANSION recently occupied by the CLARENCE CLUB.—By Mr. RAINY, on the premises, on THURSDAY, May 30, at One precisely, unless previously disposed of, and with the option of taking the excellent Household Furniture at a fair valuation,

THE capital, spacious, and elegantly-fitted MANSION, No. 13, on the west side of Waterloo-place, held under the Crown for an unexpired term of 29 years at a small ground-rent. Within the last few years some thousand pounds have been expended in improvements to the premises under the superintendence of an eminent architect, and they are at present in perfect condition, peculiarly adapted for a club, insurance office, or any public establishment requiring a first-rate situation. The ground-floor contains a hall, with handsome principal stone staircase and secondary staircase; one room 42 feet 8 inches by 22 feet 9 inches, and another 27 feet by 24 feet. On the one pair, a drawing-room 31 feet 6 inches by 22 feet 6 inches, and a library 42 feet 8 inches by nearly 16 feet, and an ante-library; a billiard room, three other rooms, and four dressing-rooms on the two pair, and six bed-chambers on the upper floor; complete domestic offices on the basement, including spacious kitchen, larders, &c.

To be viewed till the sale by tickets, which may be had of Mr. RAINY, No. 14, Regent-street; printed particulars may be had of him 14 days preceding the sale; also of Messrs. LANE and PRIDEAUX, Goldsmiths' Hall; at the Auction Mart; and on the premises.

On the same and following days will be sold by auction the plate, linen, books, china and glass, and the valuable cellar of choice wines, further particulars of which will be given in a few days.

BUCKINGHAMSHIRE.—THE GRANGE, a desirable Freehold Residence, with Pleasure grounds and Gardens, and about 80 Acres of Land, situate at Chalfont, St. Peter's, the Property of the late General O'Loghlin.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St. James's; about the end of May, with immediate Possession,

THE GRANGE, an elegant Freehold Residence, situate in a beautiful part of the county of Buckingham, midway between London and Aylesbury, about 7 or 8 miles from the West Drayton and Slough stations on the Great Western Railway, and within 9 miles of Windsor and 5 of Uxbridge. It is seated on the acclivity of a hill in a park-like paddock, ornamented with fine old timber and plantations, approached by carriage drives with neat lodges, contains hall and conservatory, drawing-room 32 feet, billiard-room, library, dining-room, 15 bed rooms, three dressing-rooms, excellent offices and stabling, walled kitchen garden, farmyard and buildings, ice-house, gardeners' house, &c.

To be viewed till the sale, and printed particulars may be had 14 days preceding; also of Messrs. DENDY and MORPHETT, Breams-buildings, Chancery-lane; at the Royal Hotel, Slough; the Inns at Aylesbury and Uxbridge; at the Auction Mart; and of Mr. RAINY, 14, Regent-street.

BROMPTON-SQUARE.—Neat LEASEHOLD HOUSE, held for 76 years, at a small Ground-rent—By Mr. RAINY, at the Gallery, No. 14, Regent-street, about the end of May, with immediate possession.

THE neat and substantial LEASEHOLD HOUSE, No. 3, on the west side of Brompton-square, held for 76 years, at a small ground-rent; comprising two rooms on each floor, two kitchens, and other Offices, and a garden.

To be viewed, and printed particulars had, 14 days preceding, on the premises; of Messrs. METHOLD and PYKE, No. 43, Lincoln's-inn-fields; at the Auction Mart; and of Mr. RAINY, No. 14, Regent-street.

PUTNEY-HILL, SURREY.—LIME-GROVE, a spacious Freehold Mansion, let on Lease for a few years unexpired, and the contiguous beautiful Lands, highly eligible for building upon, and containing altogether about 68 Acres.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St. James's, in the Division between Jermyn and Charles-streets, about the end of May,

THE spacious and capital detached FREEHOLD MANSION, LIME-GROVE, delightfully situated on the rise of Putney-hill, only four miles and a half from the metropolis. It is approached by carriage drives, and contains suites of noble lofty principal apartments, with numerous bed-chambers, offices of every description, coach houses, stabling, beautiful lawn ornamented with full-grown timber, pleasure-grounds with extensive walks, walled gardens, &c., the whole about 11 acres, on lease for a few years unexpired at 350*l.* per annum; also the contiguous lands extending from the Putney-hill road into the road leading from Putney to Wandsworth, and other lands called the Nursery, on the west side of the Putney-hill-road, and fronting the road leading from Putney to Richmond; a timber dwelling-house, formerly in the occupation of Mr. Howey, some cottages, &c., altogether about 56 acres and highly eligible for building upon, especially the upper ground, from which the finest views are commanded.

The Mansion can only be viewed by special permission of the tenant, and by cards to be had of Mr. RAINY, 14, Regent-street. Printed particulars with lithographed plans will be ready for delivery 14 days preceding the sale, and may then be had of him; also of Messrs. POWELL, F. and W. BRODERIP, and WILDE, Lincoln's-inn; at the Auction Mart; at the Castle, Richmond; Spread Eagle Wandsworth; and of the person who will attend daily 14 days preceding the sale to show the lands.

ST. JAMES'S SQUARE.—To be sold by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), the capital FREEHOLD MANSION of a nobleman. The premises are of modern construction, with spacious lofty principal apartments, hall, and two stone staircases, with offices for a suitable establishment and capital stabling. A smaller Freehold House, which fronts Duke-street, and was formerly part of the original estate, may also be purchased if desired.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street, St. James's.

HYDE PARK GARDENS, commanding the entire View over Hyde Park.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), one of the best MANSIONS in this much-admired and highly-improving situation. It was finished and completed by the present owner and furnished throughout without regard to expense; and it may safely be affirmed that it is scarcely possible to find a residence of the scale more perfect, both as regards the decorations and the general style and quality of the furniture. The tenure is leasehold for about 90 years at a ground-rent.—To be viewed by a day's previous notice, and by tickets, which with particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

HAMPSHIRE.—VALUABLE CHURCH PREFERMENT, about 12 Miles from Winchester, and 17 from Southampton; the Incumbent is in his 73d year.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St. James's, in the Division between Jermyn and Charles-streets, about the end of May,

THE PERPETUAL ADVOWSON of the PARISH of WARNFORD, in the county of Hants, with the appurtenances thereto belonging. The tithes have been commuted at 620*l.* per annum. There is an elegant modern residence, situate on an eminence commanding beautiful scenery, with 20 acres of glebe pleasure grounds, walled garden, stabling, &c. Warnford is about 17 miles from Southampton, 12 from Winchester, and 60 from London, and the neighbourhood is of the highest respectability.

Printed particulars may be had, 14 days preceding the sale, of Messrs. STONE and TURNER, Jermyn-street; at the Auction Mart, at the Dolphin, Southampton; George, Winchester; and of Mr. RAINY, 14, Regent-street.

BELGRAVE-SQUARE.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), the noble and spacious MANSION the residence for some years of the late Lord Hill. It stands detached, with carriage-drive, and has a large garden at the back, with communication to stabling for eight horses, a loose box, standing for several carriages, with lofts and rooms over. Leasehold under the Marquis of Westminster for an unexpired term of 80 years, at a ground-rent.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

IN a FASHIONABLE SQUARE at the WEST END.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a MANSION of the first class, equal in all its arrangements to the accommodation of a family of the highest distinction; the offices and stabling extensive and complete. The adapted furniture will be included in the purchase.—Principals only can, in the first instance, receive information, and which may be had on application to Mr. RAINY, 14, Regent-street, St. James's.

PORTMAN-SQUARE.—To be LET, FURNISHED, for the Season, a compact, moderate-sized HOUSE, with coach-house and stabling.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

Gloucester-place, Portman-square.

MR. RAINY respectfully begs leave to acquaint the Public that the LEASEHOLD RESIDENCE, No. 107, Gloucester-place, Advertised for Sale by Auction, is DISPOSED OF BY PRIVATE CONTRACT.—No. 14, Regent-street, May 9, 1844.

OPPOSITE the GREEN-PARK.—To be LET, elegantly and completely FURNISHED, for the season, or for one or more years, a superior and spacious MANSION, in perfect condition, having suites of apartments, bed-chambers, and offices, for a family of rank; and at a short distance is excellent stabling.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street.

HAMPSHIRE, between Fareham and Gosport, and within a mile and a half of the Railway Station.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, a very delightful modern FREEHOLD VILLA, with park-like grounds, garden, pleasure-ground, lodges, &c., and the surrounding lands of about 100 acres, part extending to a river, and offering every inducement to any gentleman partial to yachting.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

HAYES COMMON, two miles from Bromley, in the county of Kent, and twelve from London.—To be LET on LEASE, the very desirable RESIDENCE, for many years the favourite retreat of the late Sir Vicary and Lady Gibbs. It stands on a beautiful lawn, with pleasure-grounds, gardens, and paddocks (about 15 acres), and contains accommodation for a family of high respectability, with stabling, entrance lodge, &c.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street, St. James's.

MIDDLESEX, ten miles from Town.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a capital FARM, part freehold and part copyhold, containing about 317 acres of rich land, with an excellent house and buildings, on lease to a most respectable tenant, till Michaelmas, 1847.—Particulars may be had of Mr. RAINY, 14, Regent-st., St. James's.

BUCKINGHAMSHIRE.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, a FREEHOLD ESTATE of about 90 acres of Grass and Arable Land, with agricultural buildings, and an unfinished House, situate at Farnham Royal, two miles and a half from the Slough Station of the Great Western Railway.—Particulars may be had of Mr. RAINY, 14, Regent-st., St. James's.

BATTERSEA, Surrey.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, a capital spacious FREEHOLD RESIDENCE, on the banks of the Thames, with terrace-walk, pleasure-grounds, kitchen-garden, paddock, coach-houses, stabling, &c. Also, some other Freehold Property for investment.—Particulars may be had of Mr. RAINY, 14, Regent st., St. James's.

TOTTERIDGE, MIDDLESEX, Ten Miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a very desirable and substantial detached LEASEHOLD FAMILY RESIDENCE, held for an unexpired term of upwards of thirty years, at a very low rent, with offices, coach-houses, and stabling, pleasure-grounds and walks, kitchen and flower-gardens, with fish-pond and park-like meadows, altogether about thirty acres, with three detached cottages, gardener's cottage, and other buildings. The premises are in perfect order, a very considerable sum having been expended upon them, and they are in every respect suited to a family. Or the house and gardens would be let on lease.—For particulars and tickets to view, apply to Mr. RAINY, 14, Regent-street, St. James's.

DURHAM, within one day's ride of London by the Railroads.—To be LET, for three or five years, a spacious FAMILY RESIDENCE, FURNISHED in a superior style, and adapted for a person of fortune, situate in a beautiful part of the country, with good fishing and hunting, and the exclusive right of shooting over about two thousand four hundred acres. The neighbourhood of the best class, and the circumstances altogether peculiarly desirable. Land may be had or not, at the option of the tenant.—Particulars to be had of Mr. RAINY, 14, Regent-street, St. James's.

NEAR CHRISTCHURCH, HANTS.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a MARINE VILLA, situate midway between Lymington and Christchurch, commanding splendid sea views; and also an adjoining farm of about 108 acres, with farm-house and buildings, the whole freehold.—To be viewed by tickets, and particulars had of Mr. RAINY, 14, Regent Street, St. James's.

GROSVENOR-PLACE, HYDE PARK, in front of the Gardens of Buckingham Palace.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a noble and very spacious MANSION, held for a long term, at a low ground-rent, and adapted in all respects to a family of distinction, with attached and detached offices, standing for four or five carriages, and stabling for eight horses. The Mansion has an extra story of bed-chambers, a suite of superb drawing-rooms—viz., 27 feet by 20, 22 feet by 19, 25 feet by 19, and 37 feet by 23, all communicating by folding doors; an eating-room, 37 feet by 25, library, anteroom, two stone staircases, stone hall, screened by a porch, &c.; the whole of the household furniture and fixtures will be included in the purchase, and immediate possession may be had.—To be viewed by tickets, which, with particulars, may be had of Mr. RAINY, 14, Regent-street, St. James's.

ENFIELD, MIDDLESEX.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, CHASE LODGE, a substantial and handsome Freehold Villa, with pleasure-grounds, gardens, and paddocks (the latter part leasehold), about 27 acres.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

EAST COWES CASTLE, in the ISLE of WIGHT, TO BE SOLD by PRIVATE CONTRACT, by Mr RAINY —The unexpired FREEHOLD MARINE MANSION, of [illegible] style of the time of Edward the [illegible] erected, regardless of expense, by the late John [illegible] Esq, and subsequently occupied by the late Sir [illegible] Bart, and is especially suited to any [illegible] of the Royal Yacht Club The scenery is [illegible] unrivalled for regatta purposes necessary, and it will be [illegible] from the facility of access from the metropolis (the [illegible] being now accomplished in about four hours) gives to [illegible] property a much increased value The chief apartments are [illegible] and magnificently finished, they include a dining room, [illegible] feet by 20, a drawing-room 28 feet 6 in by 21 feet 6 in and a library, 20 feet by 27; a billiard room 30 feet by 18 feet [illegible], and Pennington library, 19 feet by 19 numerous principal and secondary bed-chambers and servants apartments, offices of every description, splendid conservatories statuary [illegible] 70 feet by 21; gardens of a superior order, with hot [illegible], &c The grounds which are beautifully undulated [illegible], with the gardens paddocks &c amount to 45 acres, are [illegible] with noble timber and plantations of luxuriant growth and walks of considerable extent are cut through them —Particulars and tickets to view may be had of Mr RAINY, 14, Regent street, St James's

CLOSE to SOUTHAMPTON —To be SOLD by PRIVATE CONTRACT by Mr RAINY either together or separate and with immediate Possession TWO capital detached RESIDENCES, with such portion of park like land as may be agreed upon, and either with or without a superior Farm with excellent farm house and buildings The whole estate is Free hold, and comprises 178 acres, and from its immediate contiguity to the improving town of Southampton presents a most favourable opportunity for a successful building speculation —Particulars may be had of Mr RAINY 14 Regent st, St James's

KENTS.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY a capital and spacious FREEHOLD MANSION, standing in a beautiful park of 150 acres with pleasure grounds and wilderness, carriage drives with lodges capital walled gardens, hothouses farm buildings &c & The mansion is adapted to the accommodation of a family of distinction is situated in the midst of the rich and admired scenery of the New Forest, its celebrated field sports and extensive drives, only nine miles from Southampton, and accessible from the Metropolis in about four hours —To be viewed with tickets, which with particulars, may be had of Mr RAINY 14 Regent st St James's

NORTH WALES —To be SOLD, by PRIVATE CONTRACT, by Mr RAINY a highly improvable FREEHOLD ESTATE, land tax redeemed situate in the first part of the country, and commencing within a mile of a capital market town it comprises 2000 acres, with excellent farm houses and buildings, all well tenanted; a moderate residence and offices (requiring repairs), a fine lake stocked with fish very thriving woods and plantations &c forming a first and very eligible property for investment —Particulars may be had of Mr RAINY, 14 Regent-street, St James's

RUTLAND GATE, HYDE PARK.—To be SOLD by PRIVATE CONTRACT by Mr RAINY a very desirable new built and elegantly finished RESIDENCE, together with the nearly new household furniture It commands an uninterrupted view over Hyde Park has an extra story of bed chambers, a cumfortable house, and stabling; held for a term of about [illegible] years, at a small ground rent —To be viewed by tickets and particulars had of Mr RAINY, 14 Regent Street St James's

RICHMOND, SURREY, commanding Views of the River Thames and the adjacent Scenery —To be SOLD by PRIVATE CONTRACT, by Mr RAINY, the very beautiful FREEHOLD MANSION, on the rise of the Hill for many years the residence of the late Mrs Ellerker, but dispensed of on behalf of her representatives, a few months since to the present owner who has altered and improved the premises and made additions at a large outlay it is arranged to afford complete accommodation for a family of the highest respectability The living room 30 by 20 and 24 feet high, a library, two drawing rooms with folding doors, numerous bed chambers, offices of every description, the house, coach houses, stabling, and cottage pleasure grounds beautifully laid out and ornamented with handsome timber and walks, &c Or the House would be let furnished by the year or for six months —To be viewed by tickets which may be had of Mr RAINY 14, Regent street, St James's

NEAR SOUTHAMPTON — To be SOLD, by PRIVATE CONTRACT by Mr RAINY, with immediate possession, a singularly beautiful MARINE MANSION upon which the present owner has expended many thousand pounds it is delightfully situate about four miles and a half from the Southampton, Botley, and Fareham stations, and stands in a park like paddock of 15 acres, well timbered with superior garden and grounds, stabling lodge &c and commands very fine sea and inland views —Particulars may be had of Mr RAINY, 14 Regent-street, St James's

KENT. — Six miles from Canterbury and near to the Sea —To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a valuable FREEHOLD ESTATE, partly encompassed from land-tax; comprising a park of beautifully undulated surface, a moderate sized family residence and offices, and also three farms, the whole about 640 acres and may be treated for together or separately —Particulars may be had of Mr. RAINY, 14, Regent-street, St James's

KENT.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, the very valuable and beautiful Freehold Estate, COMBEMARE, the seat of the late Viscount Templemore, situate in the rich vale between Maiden's Court Hill and Ravenoaks, 22 miles from London, and a few miles from a railroad station; comprising the finely-timbered park and woods sheet of water, the noble mansion, stabling, gardens, pleasure grounds, and walks, the capital farm, with complete agricultural buildings lodges, &c The whole about 500 acres, land-tax redeemed Many thousand pounds have been expended in improvements upon the mansion and property during the last four years, and the whole is in the most perfect condition Little Combe Bank, a villa, with grounds and some houses in the village, form part of the estate, and will be included in the purchase Part of the purchase-money may remain on mortgage—Plans and leave to view may be had of Mr. RAINY, 14, Regent-street, St James's.

STRETTON-STREET, PICCADILLY, overlooking the Gardens of Devonshire House.—To be SOLD by PRIVATE CONTRACT, by Mr RAINY, or Let on Lease, a [illegible] MODERN RESIDENCE, with hall and two entrances, [illegible] cellarage, library, and other apartments, on the ground floor; splendid drawing-rooms and a boat bed-chamber and dressing-room, on the one pair; numerous other bedchambers and servants' apartments, and ample offices on the basement Coach-house and stabling may be rented at a short distance —To be viewed by tickets, and particulars had of Mr RAINY, 14, Regent-street, St. James's.

SUFFOLK, [illegible] and about 80 miles from [illegible] PRIVATE CONTRACT, by Mr RAINY, the FREEHOLD ESTATE, [illegible] FREEHOLD ESTATE, [illegible] having been [illegible] perfectly preserved [illegible] and domain in the district. It [illegible] the estate consists of nearly 5400 acres, [illegible] [illegible] [illegible]

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 20.—1844. SATURDAY, MAY 18. [PRICE 6d.

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Gentiana verna	317 b	Turnips, culture of	321 c
Gooseberry caterpillars	317 c	Vine leaves, disease in	324 a
— seeds, to sow	320 a	Weather, state of, at Adelaide in 1843	310 b
Grass lands	324 a	Wheat, young, advantage of mowing	321 a
Guano, experiments with	321 a	Wheat, culture of	321 c
		Westhrie Farmers Club	322 c
		Yew, p isonous	321 a

ROYAL BOTANIC SOCIETY, REGENT'S PARK

EXHIBITIONS of PLANTS, FLOWERS, and MICROSCOPES in the GARDENS of this SOCIETY, for 1844

TUESDAY, June 4

TUESDAY, July 2

Fellows, Members, and Bearers of Ivory Tickets will be admitted upon entering their names in the Gate Book. Visitors may obtain Tickets at 5s each, except on the days of the Exhibitions, when they will be 7s 6d. each, by orders from Fellows and Members only

Should the weather prove wet, a New Gate connected with the Tents will be opened, so that Company may view the Plants without being incommoded by Rain.

Tickets and further particulars at the Gardens

GLOXINIA ROSEA ALBA; Figured in the present Number of the "Florists' Journal."

EXTRACT.—"Our present illustration, G rosea alba, is an hybrid obtained from seed of *candida*, impregnated with the pollen of *rubra*. Its beautiful intermediate colour at once proclaims its origin; and we have no doubt it will speedily become a favourite."—*Florists' Journal*, May 1, 1844, by the Editor

The flower is of a lovely and delicate rose colour, with a pure white throat; habit of G. rubra, and a prolific bloomer.

Strong Plants now ready for sending out, at 7s. 6d each; discount to the trade, if three plants are taken. Apply to Wm. E BEADLE, Union Road Nursery, Plymouth.—May 16, 1844.

CHEAP GERANIUMS, FUCHSIAS, CALCEOLARIAS, CHRYSANTHEMUMS, PANSIES, DAHLIAS, &c.

THOMAS APPLEBY begs to refer the Readers of the *Chronicle* to his Advertisement of the above popular tribes of plants, in this Paper of the 11th inst, and regrets that in the hurry of the moment he should have omitted to attach the prices to some of the miscellaneous plants, which omission is now added, as below.

	each.—s. d.		each —s d.
Hibiscus Cameroni	2 6	Chelone centranthifolia	1 6
Lilium eximium	1 0	Delphinium Barlowii	1 6
Paulownia imperialis	1 6	Dodecatheon elegans	1 6
Scutellaria splendens	1 0	,, integrifolium	1 0
Siphocampylus betulifolius	1 0	Epimedium macranthum	1 0
Statice Dicksonii	2 6	,, violaceum	2 6
,, foliosa	1 6	Mimulus M'Leanii	1 0
Tropæolum Jarrattii	3 6	Pentstemon splendens	1 0
,, tricolorum	2 6	Phlox picta (fine)	1 6
Zichia inophylla floribunda	1 6	Saxyrinchium grandiflorum	1 0
Campanula grandis	1 0	Viscaria oculata—a splendid new hardy annual—per dozen	5 0

T. A. takes this opportunity to intimate to the Trade that he can supply the following DAHLIAS at 10s. per doren —Antagonist, Beauty of Sussex, Hero of Stonehenge, Mrs J Richardson, Perpetual Grand, Sir R Sale, Sultana, Vivid, and Lady Antrobus at 6s per dozen.—York, May 14, 1844

SPLENDID LARGE, DEEP-BLUE ANAGALLIS and SUPERB CINERARIAS.—Plants of that large, splendid deep-blue, full and complete round-petalled ANAGALLIS BREWERII, being of a strong and vigorous habit, are well adapted for bedding out; 12s. per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light blue, at 2s 6d per packet. Strong flowering plants of the above, 12s. per dozen. Applications, including Post-office orders, will be immediately executed.—Direct to MICHAEL BREWER, Esq., Cambridge Nursery.

LUCOMBE, PINCE, AND CO. have fine strong Plants for Sale of ACHIMENES MULTIFLORA and ACHIMENES HIRSUTA, at 2s. each; they can be sent in stout tin cases, free by the post, at an extra charge of 1s. If both these plants are ordered, they will be sent by the post for 10s. free of all other charge. Their Catalogue of New and Choice Plants and New Geraniums, for 1844, is now ready, and may be had on application to them.—Exeter Nursery.

H. CORSTEN, 18A, Davies-street, Berkeley-square, Florist to HER MAJESTY, &c., has for sale the splendid GLADIOLUS GANDAVENSIS for all Vegetation. Strong Plants in Pots, 15s. each; discount to the Trade. See "Paxton's Magazine of Botany" for March 1844; also *Gardeners' Chronicle* of Feb. 24, 1844.—(Miscellaneous.) LILIUM LANCIFOLIUM, all sorts, from 7s. 6d. to 2l. Sibthorp's new Petunia purpurea, 7s. 6d. Fuchsias, Pines, Cupressus, &c., in Variation. Orders for the best Dutch Hyacinths (named sorts), 2l. 10s. per 100.

CINERARIA COMPACTA.

H. LANE AND SON beg to announce that their New SEEDLING CINERARIA, which was awarded a Prize at the Royal Botanic Society's Show, at the Regent's Park, on the 24th of May last, is now sending out by post or otherwise, as ordered, at 5s. a plant.

COMPACTA is white, tipped with lilac-pink, dwarf, and throws out very large trusses of bloom, and is, in fact, a first-rate flower.

Messrs L & Son's Spring CATALOGUE of GERANIUMS, FUCHSIAS, HEARTSEASE, DAHLIAS, VERBENAS, &c &c, may be had on application

Nurseries, Great Berkhampstead, May 17, 1844.

GREAT YARMOUTH NURSERY

NORFOLK, 1844.

YOUELL AND CO,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS MAJESTY THE KING OF THE BELGIANS, NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER

NOW READY FOR SENDING OUT.

THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.

FOR 1844.

YOUELL AND Co beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of the 27th of April, and will be found to contain such varieties only as are worthy of cultivation

YOUELL & Co being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post office order), to any part of the United Kingdom, upon the following terms —

12 Extra Fine varieties, 12s, the Selection left to Youell & Co
12 ditto ditto 21s, the Selection left to the Purchaser
50 Fine varieties . 40s, the Selection left to Youell & Co
50 Extra Fine ditto . 60s, the Selection left to the Purchaser

VERBENAS.

12 Extra fine Varieties, 6s, the selection left to Youell & Co.
12 Ditto ,, 10s, the selection left to the purchaser

PANSIES [Sent postage free.]

12 Fine Show Varieties, by name . . 10s per dozen
12 Extra Fine ditto, do. . 18s ,,

CHRYSANTHEMUMS. [Sent postage free]

Fifty of the newest best varieties by name, 12s per dozen, for list and colours of which, see Advertisement of April 27.

FLOWER SEEDS —30 Packets of the choicest and newest kinds sent per post free for 6s

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co, possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms —Fine robust 4-year old plants, 8 to 10 inches high, 10s. per 100, or 30s. per dozen.

1 fine Plants of CEDRUS DEODARA, in Pots, 2ft to 2ft 6 ins, 10s 6d each.

Great Yarmouth Nursery, May 16, 1844.

N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

R WHITE & Co. beg now to offer Plants of the following, viz., Achimenes longiflora strong Plants for specimens on their own bottoms, at 2s each; Do do, good flowering Plants at 9s. per dozen. Achimenes grandiflora, strong specimen roots, 3s 6d each; Do, smaller, 2s A pedunculata, do., 1s. each, A coccinea, do, specimen, 9s per doz A. rosea, do. do, 9s. per dozen. ANAGALLIS BREWERII, 1s each, or 9s per dozen. CHRYSANTHEMUMS, 40 superb varieties, one plant of each, 21s. DAHLIAS, including all the finest old varieties, and the following new ones, viz, Standard of Perfection, Orange Superb, Lady Antrobus, Emma Noke, Madame Chevain, Rose Triumph, Oakley's Surprise, Antagonist, Blue Bonnet, Queen of the Isles, &c &c, at very moderate rates, or where the selection is left to us, at 10s 6d per dozen, or 80s. per 100 which may include the last named five new kinds, and will be made up with other really good sorts.

FUCHSIAS—London Rival, Globosa Grandiflora, Espartero, Stanwelliana, Prince of Wales, Monarch, Bridegroom, Integrifolia, Kentish Hero, and all the other new kinds, at moderate prices, or a Collection of 20 superb kinds, including some of the new ones, and any of the following, viz, Venus victrix, Exoniensis, Lancil, Greenwich Rival, Magnifica, Gigantica grandiflora, St Clare, Bruciana, Eximia, Woodsii, Conspicua, Arborea, Devonia, Splendens, Youellii, Formosa elegans, &c, for 21s, or 10 for 10s 6d.

GERANIUMS in superb collections, 40 good varieties, 61s; 20 do do, 42s

PETUNIAS, good sorts, per dozen, 4s. The following new varieties —Punctata, Beauty Supreme, Celestial, Formosa, Ne plus Ultra, Splendida, Speciosissima, Multiflora punctata, Gem, Superb, 21s the Collection, or separately at moderate rates.

VERBENAS —Finest old varieties, per doz., 4s. The following are seedlings, viz. —White's Wonder, Perfection, Modesty, Variabilis, Cooperii, Surprise, Simperii, Stewart's Queen of the Whites, Aurea grandiflora, Carnea superba, Pearson's Teucroides atrosanguinea, do. Princess Alice, Speciosissima, Beauty Supreme, Teucroides celestina, Miller's Blue Queen, Zenxis, Smith's Excelsa, Arrayi Delicata, and Striata—the Collection, 21s. 6d.

Scarlet Geraniums, Heliotropes, Calceolarias, &c. &c., for bedding out; and every description of plant at moderate prices.

Orders from unknown correspondents must be accompanied by remittance; and orders amounting to 5l. will be delivered free.—Bone Manure—Dust, 20s., Mixed, 15s. per qr.; Guano, 15s. per cwt., or 10l. per ton, warranted genuine. Agents, by appointment, for the sale of Whitney's Compositions.

Scots Nursery, Dorsetshire.

A GRAND HORTICULTURAL EXHIBITION, Under the Patronage of His Royal Highness the Duke of CAMBRIDGE, K.G., and the Right Rev. the Lord Bishop of ROCHESTER, in aid of the Funds of the GARDENERS' BENEVOLENT INSTITUTION, will be held in the Grounds of the Bishop of Rochester, adjoining the White Hart Hotel, Bromley, Kent, on TUESDAY, 11th JUNE next.

LIST OF PRIZES TO BE AWARDED, IF CONSIDERED WORTHY BY THE JUDGES.—

GEORGE CHARLWOOD, Esq., of Covent Garden, has kindly offered as a Prize to the Best General Collection of Plants (to be awarded by the Judges) a copy of the late Mr. Loudon's celebrated Botanical Work, the "Arboretum Britannicum," value Ten Guineas.

		£	s.	d.
Miscellaneous Collection of Stove and Greenhouse Plants	best 50	12	12	0
,, ,,	2d best 50	10	10	0
,, ,,	3d best 50	8	8	0
,, ,,	best 24	7	7	0
,, ,,	2d best 24	5	5	0
,, ,,	3d best 24	4	4	0
,, ,,	best 12	4	4	0
,, ,,	2d best 12	3	3	0
,, ,,	3d best 12	2	2	0
,, ,,	best 6	2	2	0
,, ,,	2d best 6	1	1	0
,, ,,	3d best 6	1	1	0
Twelve Geraniums	best	4	4	0
,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
Twelve Heaths	best	5	5	0
,,	2d best	4	4	0
,,	3d best	3	3	0
,,	4th best	2	2	0
,,	5th best	1	1	0
Twelve Fuchsias	best	4	4	0
,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
Twelve Calceolarias	best	4	4	0
,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
Six Orchideous Plants	best	5	5	0
,,	2d best	4	4	0
,,	3d best	3	3	0
,,	4th best	2	2	0
,,	5th best	1	1	0
Collection of Roses, unlimited, in bunches—Nurserymen	best	5	5	0
,,	2d best	4	4	0
,,	3d best	3	3	0
,,	4th best	2	2	0
,,	5th best	1	1	0
Collection of {36 varieties, by Amateurs and Gentlemen's Gardeners	best	2	2	0
,, ,,	2d best	1	1	0
Cut Flowers, not less than 20 genera	best	2	2	0
,, ,,	2d best	1	1	0
Fruit, not less than six sorts, exclusive of Pines and Grapes	best	3	3	0
,, ,,	2d best	2	2	0
,, ,,	3d best	1	1	0
Pansies, not less than 36 varieties		1	1	0
Pine-apple, not less than 3 lbs. weight	best	2	2	0
,, ,,	2d best	1	1	0
Basket of Grapes	best	3	3	0
,, ,,	2d best	2	2	0
,, ,,	3d best	1	1	0

The Committee take this opportunity of earnestly soliciting the aid and co operation of all persons desirous of promoting the interests of the Institution.

E R CUTLER, Secretary, 97, Farringdon street.

PLANTS FOR BEDDING OUT, to be had of MARNOCK & MANLEY, NURSERYMEN, Hackney, London.

	per doz.—s	s		per doz.—s.	s.
Geraniums, scarlet and others, strong plants	6	to 9	Anagallis,—in varieties	6	9
Fuchsias, 100 varieties	6	12	Alstroemerias do.	9	
Verbenas do.	4	6	Heliotropium	4	6
Petunias	4	6	CALCEOLARIAS.		
Malva Decumbens, new	9		Manrandyas, 4 varieties	6	9
Salvias,—in varieties	4	6	Cobœa scandens	6	9
Houvardias do.	6	9	Lophospermums	9	
Lantanas do.	9		Rhodochiton volubi	12	18
Lobelias do.	6		Kennedya	9	12
			Solly's heterophylla	9	

With every other variety of Bed and Creeping Plants, at moderate prices, sent free within 10 miles of London, if to the amount of 20s. and upwards, or packed for the country. A descriptive Catalogue may be had on application —Nursery, Hackney May 8.

PANSY, "LADY ALICE PEEL."—In every respect one of the best Show Flowers of the present year; raised by Youell & Co in 1843. Blooms were submitted for the opinion of the Editor of the *Gardeners' Chronicle*, a description of which will be found under "Notices to Correspondents," in *Gardeners' Chronicle* of April 27, page 248.

Strong plants are now ready for sending out, post-free, at 3s 6d. per plant —Great Yarmouth Nursery, May 16, 1844.

GLOXINIA CERINA.

MESSRS. MOUNTJOY AND SON have much pleasure in offering fine strong plants of this beautiful variety, at 21s each. It is a Seedling between Gloxinia rubra and Maingia guttata, partaking of the habit of the latter parent, with large, downy foliage. The flowers are of a delicate, waxy flesh colour, with a dark pink throat. It was awarded a Certificate of Merit at the Horticultural Society's rooms last summer, and received a Prize at the July Exhibition of the Royal Botanic Society, Regent's Park. An allowance to the Trade.—Ealing, May 15, 1844.

T. & C. LOCKHART & DUNCAN, FLORISTS, &c., 156, Cheapside, London, beg to announce that they can supply strongly-rooted plants of Paulownia imperialis or Fox-Glove Tree, at 2s. each, package included. This plant, from Japan, is perfectly hardy, and highly ornamental.—May 17, 1844.

SUPERIOR NEW SWEDISH TURNIPS

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg to introduce to their Friends the following New Swedish Turnips, which for their general good qualities stand unrivalled, growing to a large size, being small in the top, of a dark yellow flesh, and may be grown as close to each other as a Stone or Stubble Turnip

WARNER'S RUSSIAN SWEDE . 2s 6d per lb
WARNER'S EMPEROR SWEDE . 2s 6d per lb

Also WARNER'S Purple-top Yellow Hybrid, 2s 6d per lb with all the varieties of Norfolk and Tankards, of the most genuine and selected stocks, from 9d to 1s per lb

NEW AND SUPERB CHRYSANTHEMUMS

YOUELL AND CO. beg to call attention to the following select List of CHRYSANTHEMUMS; the plants are strong and healthy and ready to be forwarded per Post free to any part of the United Kingdom, at the prices named. The selection being left to the purchasers (if only one sort, they will be found very desirable to those who intend exhibiting at the Autumnal Exhibitions

Achmet Bey, lilac
Aragu, buff and red
Beauty, pale lilac
Belladonna, pink
Bethula, lilac
Campestroni, purple
Cassimir Perrier, small, crimson
Chancellor, white and pink
Changeable, yellow
Christopher Colomb, lilac
Col Combe, salmon
Conspicuum
Defiance, white
Duc de Cambridian, crimson
Duchess de Montebello
Duke, extra fine
Elegans, rose
Empress, lilac
Expanded, purple
Fischier, dark rose
Formosum, white and yellow
Golden Lotus, flowered yellow
Gem, pink and white
Goliath, white
Gouvain St Cyr, orange
Hero
Incurved, pink
Insigne, pink and red
Imperial, pale lilac
King, pale rose
Louis Philippe
Lucidum white
Marcellinus, white
Madame Pompadour, dark rose
Marechale Messina, yellow and red
Marie, red
Marie Antonietta
Magnet, yellow
Memnon, pink
Minerva, pink and white
Mirabile, white and buff
Peter, creamy
Perspicuum, pink
Princess Marie, light pink
Pulcherrimum, rose
Queen, deep rose
Quilled, yellow
Rosalind, pink
Salteri, white
Sulphurea
Sultana, rose
Superb, clustered yellow
Surpasse, white
Starry, purple
Tassilled, lilac
" yellow
Triumphant, pink and buff
Two coloured incurved, yellow and brown
Vesta white
Wheelriana

Sent Post free to any part of the United Kingdom, at 12s per doz
Great Yarmouth Nursery, May 16 1844

MESSRS J. and H BROWN, respectfully offer to the Nobility and Gentry the following Plants for Bedding Out, &c

	s d
Alstrœmerias, 10 vars, each	1 0
Auriculas, fine, per dozen, 12s. to	18 0
Cinerarias, 6 best varieties, per dozen 4s to	6 0
Calceolarias, 12 best varieties, per dozen 10s to	16 0
Campanula grandis, and others, per doz	6 0
Dianthus Goethaelsii, do	6 0
Euthamia microphilla, fine for beds, per doz	12 0
Fuchsia exoniensis, each	3 6
Fuchsias, 25 of the newest and most approved, per dozen 6s &	12 0
Galardia Picta, per doz	6 0
Gazania, 3 vars,	9 0
Geraniums, Scarlet, Variegated, &c 4s, 6s &	9 0
Geum Coccineum, per doz	6 0
Helictotrichum, per doz 4s &	6 0
Ipomœa rubra cerulea, per doz	6 0
Lantanna, per doz	9 0
Lobelias, 6 vars, per doz	6 0
Lilium, 6 newest varieties, per dozen	12 0
Linum flavum, per doz for tops	9 0
Mimulus elegans, a very beautiful variety, and others, do	6 0

A Miscellaneous Collection of 100 Stove and Greenhouse Plants the selection named by the purchaser (in the order) 100 0
New Border Pinks, per doz 1 0
Old fashioned ditto, ditto 12 0
Pentstemons, 6 best varieties, per doz 12 0
Phlox Drummondii, 6 best varieties, per dozen 6 0
Phlox 12 new perennial species, per dozen 12 0
Phlox Drummondii, and new dark, per doz, 4s & 6 0
Phlox Drummondii, per doz 6 0
Potentilla, 6 fine species 6 0
Thalictrum anemonoides, Gentiana Asclepiadea, Gentiana Pneumonanthe, Gentiana Saponaria, Gentiana Septemfida, Gentiana Villosa, each 2 6
White and Yellow China, and Yellow Noisette Rose, each 2 0
Salvia Grahamii, per doz 4s & 6 0
Petunia punctata, each 5 0
Petunia " new varieties per doz 6s & 12 0
Tropæolum tricolorum, and Lobbianum each from 2s 6d to 10 0
Verbenas, 12 newest varieties per dozen 6s & 9 0

ROCK PLANTS

25 Superior sorts	10s	50 Sup Herbaceous plants	25s
50 do do	25	100 do do	45

HARDY CLIMBERS FOR PLANTING OUT

Aristolochia Sipho, each	1s 6d	Clematis Sibboldii, p doz	18s 0d
Akebia quinata, each	1 0	Do Montana, p doz	12 0
Bignonia radicans, each	1 0	Pyrus Japonica and Cotoneaster, each	1 0
Do do major each	1 6	Wistaria consequana, each	1 6
Cobœa scandens, each	1 0	Honeysuckle, 6 vars each	0 6
Calampelis scabra, each	1 0	Jasminum 4 vars	1 0
Clematis azurea grandiflora, per dozen	4 0	Solanum jasminoides, each	0 6
20 varieties of Roses, each	1 6	Passiflora Cœrulea each	1 0

HALF-HARDY or STOVE CLIMBERS

Cobœa scandens, each	0s 9d	Dipladenia splendens, each	1 0
Maurandia, 2 vars., each	0 9	Thunbergia, 4 vars each	1s 0d
Lophospermum, 3 var each	0 9		

The above Plants carefully packed and forwarded to any part of the United Kingdom. A particular Order or reference for payment in Town Persons creating recommendations of Conservatories can be well supplied with the choicest and best of Plants for furnishing, including the many handsome Climbers recently introduced

N. B —Plants securely packed for exportation — Albion Nursery, Stoke Newington, London.

WILLIAM E. RENDLE can supply the following at the Manufacturers' prices, having been appointed Agent for the sale of them:—

WHINNEY'S TRANSPARENT COMPOSITION in bottles, quarts 4s 6d; pints 2s 6d.
HUMPHREY'S COMPOUND, 1s 6d. per bottle
CAMBELL'S CORN PRODUCING LIQUIDS.
HENRY HUNT'S PATENT GARDEN POTS and STANDS, in fancy or common ware.
POTTER'S GUANO
EIPHINSTON'S CONICAL BOILERS
WILLIAM E RENDLE'S BOOK-CATALOGUE of GERANIUMS DAHLIAS, FUCHSIAS, CAMELLIAS, NEW PLANTS, &c., has been just published, and can be had on application.—Union Row Nursery, Plymouth May 17, 1844

SHADES FOR GREENHOUSES.

J. WEEKS & Co., ARCHITECTS, Hothouse Builders, &c., Gloucester place Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. It may be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-pla., Chelsea, near Sloane-sq.

LYNDON'S PATENT GARDEN SPADES.—These excellent Spades, warranted to bear a knife edge, and wear as long as three Spades made in the usual way, are sold by JOHN BROWN, Ironmonger, Stevenage, to whom orders may be addressed, and will receive prompt attention

JOHN RIVERS, Sawbridgeworth, Herts, begs to inform Agriculturists in general that the MANGOLD WURZEL and SWEDISH TURNIP enumerated beneath are new and of his own growth, and can be recommended with confidence. The Russian Swede, with yellow skin and yellow flesh, was imported by him in 1836, it has been since carefully selected, and is recommended for productiveness and superior hardiness, and for the not being so liable to mildew as the Liverpool and other dark-coloured varieties.

Long yellow Mangold Wurzel, growing much out of the ground, fingless, with fine tops . . . 1s. per lb.
White fleshed, purple-skinned Globe, for thin soils, 1s per lb.
Long Purple, superior stock . . . . . 9d per lb
Russian Yellow Swedish Turnip . . . . . 2s. per lb.
Carriage paid to London.

Lawn Grasses, mixed with dwarf Clovers, warranted to insure a fine sward (weight 20lbs per bushel), price 14s per bushel; Pasture Grasses mixed for any description of soil, varying in price from 8s to 12s per bushel, three bushels per acre recommended upon a clean tillage, to be sown at Midsummer, with a portion of Lucerne, Perennial Clover, and Sainfoin, upon soils that are not too retentive of moisture.

If a description of the soil intended to be laid down is given, J R trusts, by attentive observation of the various Pasture Grasses, both separately and in pasture, upon various soils, to give satisfaction to those favouring him with their commands

WM JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis") Upwards of 45,000 acres have been converted to permanent pasture by this establishment with the greatest success Parties requiring Seeds are respectfully requested to state the nature of the soils Mangold Wurzel, Carrot, and Turnip seed of excellent sorts, saved from transplanted bulbs Garden and Agricultural Seeds of the best quality and most approved kinds

N B —Cormack's British Queen and Prince Albert Peas, at 3s 6d per quart

WOODLANDS NURSERY, MARLSFIELD, NEAR UCKFIELD, SUSSEX

WILLIAM WOOD and SON respectfully invite the attention of their Friends, and Amateurs, to their Extensive Stock of New Plants, adapted for bedding, CAMPHILIAS, GREENHOUSE and HERBACEOUS PLANTS, SHRUBS, and TIMBERS together with a Splendid Collection of the Newest and Best ROSES of the season, Catalogues of which may be had GRATIS on application

W W & S have the pleasure of offering the following at moderate prices, the selection of varieties being left entirely to themselves —

FUCHSIAS per dozen—Extra fine varieties, 6s and 9, Extra new and fine do, 12s 18 fine and distinct do, for 10s
CINERARIAS, per dozen Fine distinct varieties, 6s and 9s, Extra fine and new do, 12s and 18s
VERBENAS, per dozen—Good and distinct varieties, 3s; Extra fine do, 9s and 12s, Extra superb and new do, 18
PETUNIAS, per dozen—Extra fine varieties, 6s and 9s

The above are now ready for immediate transit, and may be had either in strong plants, packed in baskets, or they will be supplied in small plants, and sent by post, at the option of the Purchaser

A FEW SELECT PLANTS.

	per plant—s	d
Abimenes grandiflora	1	6
" longiflatus	1	6
Azalea indica	1	6
" lateritia	1	6
" speciosissima	1	6
" splendens	1	6
Brachysema platyptera	2	0
Begelia atropurpurea	1	6
Euthalis macrophylla	1	6
Gesneria (in pots)	2	6
" Sutherlandia	1	0
" Zebrina	1	6
Gloxinia maxima	2	6
" Princessiana	2	6
" rubra	1	6
Habrothamnus fasciculatus	1	6
Hardenbergia longiracemosa	1	6
" macrophylla	1	6
Hydrangea japonica	3	0
Lantana crocea	1	6
Leschenaultia biloba	1	6
" grandiflora	3	0
Mandevillea suaveolens	2	6
Manettia bicolor	2	0
Maurandya Barclayana alba	1	0
Nyphœa oblonga	3	6
Passiflora fragrans	2	0
" loudoniana	1	6
" princeps	1	6
Physolobium carinatum	2	6
" stillingii	1	6
Roellia ciliata	1	6
Scutellaria splendens	2	0
" japonica	3	6
Silene speciosa	1	6
Statice puberula	1	6
" sinuata	1	6
Stephanotis floribundus	3	6
Siphocampylos betulæfolius	1	6
Tecoma jasminoides	1	6
Trimalium odoratissimum	2	6
Zychia glabrata	2	6
" inophylla	1	6
" villosa	1	6

Lilium lanciifolium album each 4s 6d
" " punctatum flowering bulbs 10 6
" " " 5 0
" " " flowering bulbs . 10 6 to 21s
" " rubrum . . . 21 0
" " " flowering bulbs 21 6 to 42s.

*** Plants will be presented with each order, to defray the expense of carriage, &c.

Agents, by appointment, for the sale of WHINNEY'S CHEMICAL TRANSPARENT WATERPROOF COMPOSITION. Sold in Bottles—Pints, 2s 6d; Quarts, 4s 6d each, with printed directions for use

TO GENTLEMEN, GARDENERS, AND THE PUBLIC

CHEAP PLANTS for turning into the BORDERS.—Fragrant Scarlet and other Geraniums, 90 varieties of Fuchsias, Verbenas, Petunias, Calceolarias, Heliotropes, Lobelias, Salvias, Calceolarias, Mimulus, Lophospermum, Ageratums, Cuphœa, Musk Damask and other China Roses—all at the low price of 4s per dozen and also all the new Fuchsias, Verbenas, &c as they come out, at moderate prices.—P PORTER, Nursery, Sussex place, Loughborough road, Brixton, Surrey.

N B —An omnibus, from Gracechurch-street, passes the Nursery six times a day.

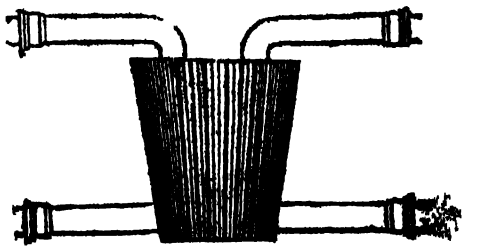
SPLENDID NEW SEEDLING LOBELIAS.

F. C BALL, Nurseryman, Taunton, (successor to Mr JOHN YOUNG,) begs to offer the following as decidedly the best scarlet Lobelias known, viz —

Lobelia fulgens multiflora.
" " variety.
" " pyramidalis

All partaking of the free growth of L. fulgens, particularly the first which is also very desirable from its robust habit and long continuance in bloom Last season in the greenhouse its flowers were conspicuous for four months Plants are ready for immediate delivery, price 3s each May 16, 1844

BURRIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict, Cap. 65.
No. 140, FLEET STREET, LONDON.



BURRIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors In very numerous cases where they have been fixed, they have the highest testimonials of their complete success for the further assurance of those who may require this apparatus, BURRIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices —

Plain Boiler.		Patent Door and Frames.	Fire bars & Dead Plate.		Flue Door.		Damper		Will heat of Pipe.	Forcing Pit, Length by feet.
in	£ s	s	s	d	s	d	s	d		
10	1 5	20	7	6	6	6	2	6	30 feet.	12 to 20
Ribbed Boiler										
10	2 2	20	10	6	7	6	2	6	50 to 70 ft 4in	Under 25 to 40
12	2 15	30	12	6	7	6	2	6	90 to 125 feet	40 to 65
14	3 10	35	17	6	8	6	4	6	150 to 250 feet	65 to 100
18	5 5	42	25	0	8	6	5	0	300 to 400 feet	Warm a grapery 35ft long, and a pit 50ft.
24	8 15	50	35	0	8	6	7	0	600 to 800 feet	

If 3 inch pipe be used, one third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel The above proportions can be generally relied on as a near approximation to what is correct

WIRE WORK, HOT WATER APPARATUS, GREENHOUSES, &c

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit proof WIRE WORK in Trainers, Arches for Walks, Bordering, Flower stands, Pheasantries, &c HORTICULTURAL BUILDINGS, Greenhouses, Conservatories, &c. The same heated by HOT WATER APPARATUS, on improved and economical principles

Parties waited on in Town or Country, and Drawings and Estimates free Work for the Trade as usual
Ward's Cases, or Domestic Greenhouses

Sales by Auction.

ARNDISH TOWN —10 GENTLEMEN, FLORISTS, & Others.

MESSRS. PROTHEROE & MORRIS will submit to public competition, on the premises, Hawley Place, Kentish Town, on MONDAY, May 20, 1844, at One o'clock, (by order of the Executrix of the late Mr Archer,) the entire Stock of choice TULIPS, consisting of most of the approved kinds; also Iron Hoops and Canvass, excellent Tulip Boxes, and other Effects. May be viewed prior to Sale Catalogues may be had on the premises, and of the Auctioneers, American Nursery, Leytonstone

10 GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to public competition, at the Auction Mart, Bartholomew-lane, on TUESDAY, May 21st, and THURSDAY, 23d, 1844, at 12 o'clock, each day, a fine Collection of DAHLIAS, comprising all the leading varieties. Also a splendid Assortment of GERANIUMS, the newest varieties of FUCHSIAS, VERBENAS, HILARIESAKE, &c., and a variety of other Flowering Plants. May be viewed the morning of Sale Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone

FLORICULTURE

TO BE SOLD BY AUCTION, By Wm. WILDE, On Saturday, May 25, 1844, at Eleven o'Clock precisely, at the Artists Room, Exchange street, Norwich, TWO BEDS, consisting of upwards of 1,200 of the most RARE AND CHOICE TULIPS They will be sold by Catalogue in small Lots, offering a fine opportunity to Amateurs and Florists to complete their Beds

TO NURSERYMEN AND FLORISTS

TO BE SOLD by Auction by W. FISHER, without Reserve, for the benefit of Creditors, on TUESDAY, the 28d day of May, 1844, on the Premises in Rose-lane, near the Botanic Garden, the STOCK of Mr. JOHN BIRCH, consisting of a Bed of 48 Rows of TULIPS, including Garrick, Shakspeare, Wilmer's Duke of York, Violet Alexander, Princess Sophia of Gloucester, Fabius, and other fine Varieties; about 200 Pairs of CARNATIONS and PICOTEES, now planted in their blooming-pots, comprehending most of the leading Varieties; 100 Pots of AURICULAS, including Lee's Colonel Taylor, Imperator, Booth's Freedom, Conqueror of Europe, Fletcher's No Fine Ultra, Othello, Blue Bonnet, Jupiter, &c.; about 30 Plants of fine named Varieties of POLYANTHUS; Bed of choice PINKS, and a Collection of PANSIES The Flowers may be viewed the morning of Sale, which will commence exactly at eleven. Catalogues will be ready three days prior to the Sale, and may be had of Mr HAYES, Summer Town; the Auctioneer, Littlegate; and Mr HOBBS, 21, St. Giles's, to whom all persons having any claim on Mr. BIRCH are requested to send particulars by the 27th instant, or they will be excluded the benefit of a division

TO LET, A FARM OF 170 ACRES.—PRIORY FARM, Warbleton, Sussex; comprising a large Farm House, fit for a respectable family, with workmen's Cottage, Barns, Stables, and all necessary Agricultural buildings; together with about 170 Acres of Arable, Meadow, Pasture, Hop, and Orchard land; with Gardens; and about 12 Acres of good Marshland, in Pevensey Level. Possession at Michaelmas next To view the same, apply to JOSEPH PATTENDEN, Warbleton; and for terms, to Messrs. PATTENDEN and SMITH, Mayfactors, 247, High-street, Borough.—The right of Sporting over the above, as also some extensive Woodlands adjoining, may be had if required

TO BEE-KEEPERS.

A. PETTIGREW, Wretham Park, Estreet, wishes to inform Bee-keepers that he will privately, for 10s. each, give them a hint on Bee-management, worth 10l. The hint is of prime importance to all, but A. P. will not bind himself to communicate it to fewer than 100 agiarians.

N.B. If any say that the hint is too dear, or that it will not enable him to make 5l. extra of his Bees this year, A. P. will return his money.

The Gardeners' Chronicle.

SATURDAY, MAY 18, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, May 22 . Society of Arts . . . 8 P.M.
FRIDAY, May 24 . Linnean Anniversary . . 1 P.M.
COUNTRY SHOW.—FARNAY, May 24 . Tunbridge Wells Horticultural.

THE statement by Mr. Baker's gardener respecting the HARDINESS OF THE MEXICAN CONIFEROUS PLANTS, cultivated at Bayfordbury, in Hertfordshire, (see p. 260) will, we doubt not, have been read with interest; more especially since it will be a guide to those who wish to plant these beautiful trees in the open air. In the Garden of the Horticultural Society similar conclusions have been arrived at in most cases; but as all the specimens there have been slightly protected during winter by hand-glasses, it would not have been safe to form any decided opinion from that evidence, while standing alone. We have now, however, before us, along with this evidence, the experience of Mr. Frost, at Dropmore, and may therefore venture to speak on the subject with some confidence; more especially since the return of Mr. Hartweg, by whose indefatigable exertions our Mexican Pines were principally discovered, enables us to ascertain more exactly the natural stations of the species in their own country.

We know that PINUS LLAVEANA is hardy, because it endured the sad winter of 1837-8. Its locality may therefore be taken as an indication of what may be expected from others. Mr. Hartweg saw it on the mountains near Zimapan, Cardonal, and San José del Oro, (lat. 21°) at the height of 8000 feet above the sea; and also found it near Real del Monte (lat. 20°) growing within two miles of Abies Douglasii, and at the same elevation. The habits of the two may therefore be taken to be similar. It has died, indeed, at Dropmore, in consequence of having been damaged in 1837-8; but that seems to be an exceptional case.

In the Horticultural Garden it has been found that P. OOCARPA is very tender; and the same result has been observed at Bayfordbury. Mr. Hartweg gathered it on the western declivity of the high Table Land, towards the Volcano of Jorullo, near Morelia (lat. 19°), a very warm situation, and in places not more than 3000 feet above the sea. He did not see it higher than 5000 feet, which is 3000 feet lower than P. Llaveana. P. oocarpa may therefore be regarded as tender.

P. LEIOPHYLLA is found below P. Llaveana, not ascending higher than 7000 feet on the mountains of Mechoacan (lat. 19° 30″). This plant has perished at Dropmore and Bayfordbury, but has only lost the points of the shoots and some of its leaves in the Garden of the Horticultural Society, although unprotected. Hopes may therefore be entertained of it in warmer situations in this country.

P. PSEUDOSTROBUS was greatly injured at Bayfordbury, perished at Dropmore with the first frost, and has also suffered in the Garden of the Horticultural Society. Its station is as low as 7000 feet near Angangueo, in lat. 19° 30′, but as it was seen 1000 feet higher, it may possibly bear our climate in some districts.

P. TEOCOTE, from Oaxaca and Real del Monte, at the height of 6-8000 feet; MACROPHYLLA, of which one tree only was seen in a Pine wood, called the Ocotillo, between Real del Monte and Regla, at the height of 7000 feet; and DEVONIANA from the same place, but a thousand feet higher, have proved hardy at Bayfordbury, and have not suffered in the garden of the Hort. Society. The two last have, however, died at Dropmore; while the first has stood. Neither have P. RUSSELIANA, APULCENSIS, and MONTEZUMÆ, all Real del Monte species, occurring at the elevation of 8000 feet, that is to say, at the same height and in the same latitude with P. Llaveana, been found tender. They stood at Chiswick, Dropmore, and Bayfordbury, and may all be regarded as hardy.

According to the Dropmore and Bayfordbury observations, P. PATULA is also hardy; and its natural station, about Real del Monte, 1000 ft. higher than any of the last, would seem to render that certain. It has, however, been found, in the Horticultural Society's garden, without the guard of a hand-glass, to sustain injury in its leaves and partially in its shoots.

There remain the PINUS HARTWEGII and AYACAHUITE, which are both Mexican and Guatemala species. The former is found on the Campanario, near Angangueo (lat. 19° 30″) at 9000 to 10,000 ft. of elevation; and on the Volcan de Agua, near the city of Guatemala (lat. 14° 30″), as high as 12,000 ft. It has been found hardy both at Bayfordbury, Dropmore, and in the Hort. Soc. garden. This is perhaps only what might have been inferred from its mountain habits; but it is not a little curious that P. Ayacahuite, which goes as far to the south as the town of Quezaltenango (lat. 15°), where its upper limit is full 2000 feet lower than the last, and which died at Dropmore, should have suffered nothing from the climate of Chiswick. In Mr. Baker's collection it is not mentioned. Perhaps its apparent hardiness may be explained by its being also found near Real del Monte.

CUPRESSUS THURIFERA, from Angangueo and Tlalpuxahua (lat. 19° 35″), at the height of 8000-9000 ft., and JUNIPERUS PLACIDA, from Regla, in the district of Real del Monte, at from 6500-7000 feet above the sea, appear to be everywhere indifferent to cold.

How strange, then, it is that ABIES RELIGIOSA, a most noble tree, found as high on the Real del Monte mountains as 10,000 feet, that is, 2000 feet higher than Llaveana, should be very tender. At Bayfordbury, indeed, it is reported as being uninjured when protected by single mats; but in the garden of the Hort. Soc., and at Dropmore, all its young wood was killed by the first slight frosts of autumn. The species grows very fast and very late; its young wood is as brittle as ordinary Firs in May, and is evidently incapable of enduring cold. Those, therefore, who happen to possess it should plant it in high dry situations, where its growth will cease early in the season, so as to ripen before winter. That being effected, it should be the hardiest of the whole Mexican race.

ON the 27th of April we solicited the opinions of our readers as to the utility of publishing accounts of COUNTRY HORTICULTURAL EXHIBITIONS, and expressed our intention of shaping our future course by the number and bearing of the letters on the subject which we might receive during the succeeding fortnight. On that day our circulation was 7741; we have now received 55 letters, and therefore we conclude that 7676 of our subscribers are indifferent upon the subject. Among the writers of the 55 letters which are before us, 33 object to the insertion of the Country Shows, which it would therefore seem have but 22 advocates out of 7741.

This would certainly justify our relieving ourselves from the trouble and expense of introducing the Provincial Shows, which, as our correspondents truly allege, are always reported in Provincial Papers. Nevertheless, we admit the force of the arguments of some of their advocates, and most especially of those who regard them as a criterion of the real state of Horticulture in different localities. It is certainly not a valid, though a common argument against their insertion, to say they are unreadable. They are not intended to be read—their use is for reference at a future period; and for that reason their record in country Papers, which are never filed, is insufficient. One of our correspondents rightly observes that, "although the report *to-day*, of *yesterday's* Flower Show may not be very interesting, yet some 20, 30, or 50 years hence, that part of a Journal which consists of a *record of facts* will, I suspect, be the most interesting part of it. If a *Gardeners' Chronicle*, dated 50 years back, were now placed in my hands, I should consider the advertisements of the 'Youell and Co.' of that day, and the records of the Flower Shows, exceedingly entertaining at least, perhaps instructive, and certainly valuable. Some nine or ten years ago, I used to consider the long accounts of Flower Shows, which were occasionally copied into the 'Gardeners' Magazine,' as a bore; but I now find them becoming more interesting and valuable in proportion as they become older."

We admit the justice of these and similar observations, and therefore we have decided to continue our reports. We shall not, however, burthen those who dislike them with their appearance, to the exclusion of other matter, but shall print them from time to time in double Numbers, like that of last week.

There is, however, one rule which we propose to adopt, to which no person should object; and that is, to omit all names of persons, rewards, &c., where the names of the plants for which the rewards are given are not distinctly specified. When, however, reports of Shows are sent to us without any such information, we shall not wholly omit them, but merely insert a short paragraph explaining the general nature of the Exhibition.

FUCHSIAS.

(*Continued from page* 243.)

The second or intermediate stage of growth in Fuchsias is from the period of the second and last potting in May or June (whilst in the forcing-house) to their final position in a well-ventilated greenhouse.

A pulverised sandy loam having been recommended for the first potting, it should, in their last shift for mature growth, be exchanged for a yellow, turfy loam, of stronger texture, using nearly one half of well-decomposed leaf-mould or cow-dung, in a partially dried state, with one fourth portion of sand; or if the loam is of a sandy texture, one sixth will be sufficient.

Occasionally there exists a great difference in the material used as leaf-mould. Pure leaf-mould is generally found in a coarse and partially decomposed state. Another kind has the texture of highly-decomposed black manure, in a loose state, without any apparent remains of leaves. Both should be used in a relative degree of coarseness, to maintain an increased circulation of water for a given period after the last shift.

The following process of obtaining leaf-mould (in common with any other material for potting) of a uniform texture, is repeated for its intrinsic interest and suitability to soils in general.

Supposing a portion of pure leaf-mould to be so much decomposed as to resemble dust, so that when water is applied it becomes close and retentive, place portions of it in a sieve, one or two eighths of an inch wide in the wire, and by slightly sifting the material, it will pass the small portion through, and the remainder, by being entirely rubbed through a sieve of four or six eighths of an inch, will leave the whole material in a uniform state for heavy potting in more delicate plants than Fuchsias. For the last-named plants, any pulverised material will be best prepared by the hand. In highly-decomposed vegetable matter, like dung in a friable state, there is always found a certain portion in a coarse, close, and unbroken state; such, on being examined and divested of stones, earth, &c., will always be found to contain the decomposed vegetable part in its coarse and unmixed state, for application in heavy shifts. This material should be broken throughout, and divested of worms, &c., by the hands of the cultivator, and on no account be passed through a sieve. It is best obtained when laid in quantities upon the ground, previous to being housed, or round the sides of a heap, and not unfrequently amongst the refuse in ordinary siftings.

Where the loam is of inferior quality, owing to the absence of vegetable fibre, or is too sandy, obtain a portion of the siftings of strong, turfy, yellow loam; divest it of stones and other refuse, and rub it entirely through a sieve six eighths of an inch wide in the wire; after which, by being well mixed with the remainder, it will render the whole more uniform and porous.

Though a pulverised condition of the turf in soils is, to a certain extent, essential in all cases, it is less so in proportion to the agencies of heat, &c. to which it is exposed, and also in proportion as the roots of plants are capable of assimilating food from nutritive material in a gross form; hence the application of these conditions to the present genus of plants in their first and intermediate stages of growth. The less pulverised or decomposed is the fibre in loam or peat, the more essential it is that their component parts should be so separated and broken as to permit the uniform action of those agencies which cause decomposition.

From the foregoing remarks, it may be inferred, that in shifting plants for the attainment of mature growth, the soils, &c., should be so arranged as to secure a strictly uniform circulation of moisture consistent with the greatest amount of material. This result does not necessarily depend upon suitable soils, nor yet upon the situation in which plants are placed, but on the general conditions upon which the successful growth of plants depends. Of what avail are the best materials apart from their appropriate "arrangement and proportions," by the hand that applies them? And of what avail is even a correct application of potting materials, apart from the knowledge and means of maintaining the agencies of light, heat, moisture, &c., which are essential exactly in proportion to the effects sought for? If a cultivator were asked to define the means necessary for transferring a plant of Fuchsia from a 60 to a No. 1 sized pot, with success, it might be as follows:—Give me suitable soils, with a perfect command of exposure to intense atmospheric and solar agencies, and I will show the highest possible effects under those conditions, and such are the necessary conditions for the highest effects of cultivation generally.

In the process of shifting Fuchsias from 32s and 24s to Nos. 8, 6, and 4 pots, the bottom drainage should be large in proportion to the pots, and uniformly placed, not exceeding 2 inches in a No. 6, and so on in proportion; the sub-drainage of coarse partially-dried turfy peat, with leaf-mould, or flakes of cow-dung, in a similar state, to the depth of 2 inches, each firmly pressed. The mixture is then filled in till the ball of the plant may reach within half an inch of the top level, and when the ball is made firm by a portion of soil around it, apply a few handfuls of coarse leaf-mould, or broken cow-dung, with charcoal, or crocks intermixed, and finish by filling up to the level of the ball. The ball of each plant having been in a sufficiently moist state previous to the operation, the plants are removed back to the platform of the forcing-house, without air for two days, but well shaded from sun-light, and heavy syringings substituted alternately for waterings, during the following week (allowing for casual instances).

The conditions of growth above stated, are those by which a collection of Fuchsias was grown by the writer, in the summer of 1843, the unexpected success of which has led to the present remarks. As previously stated, the growth of the plants commenced in March and April. F. formosa elegans, was, at the first mentioned period, 6 inches in height, and by the first week in August, attained nearly 7 feet, forming a perfect pyramid

of uniform growth and bloom, the lateral branches extending 2 feet from the main stem, thus giving a circumference of 8 feet. F. Rogersiana (a cutting of the current year), was also as much in circumference. F. racemiflora elegans (a cutting) formed a very graceful plant from 7 to 8 feet in height; F. conspicua arborea (a cutting) reached 6 feet; F. tricolor (cuttings) of uniform growth and bloom, was 6 feet in circumference; F. magnifica (a cutting) was the same size; F. St. Clare (a cutting), removed the third week in May from a 60 to an 8 pot, was 2 feet in diameter by the first week of August. F. rosea elegans, and Cooperi were each 12 feet in circumference. A plant of F. magnifica (a cutting) was selected from very beautifully-formed plants of the same variety grown in pits, and subjected to the above treatment, and was found to exceed the latter by nearly double their extent of growth and bloom.—Smith's (of Dalston) varieties were received in May about 9 inches in height, and by August nearly the whole were 2 feet in diameter (in 12s and 8 sized pots), and exceeded all others by their uniform vigour and bloom.

Those who wish to speculate in dispensing with intermediate shifts, by removing from 60s or 48s to 12s, 8s, or 6s, must bear in mind the following conditions:—1, a slight elevation of the ball of the young plant, above the level of the soil around it; 2, an exposure upon a shelf, or lofty platform, to intense sunlight; 3, alternate syringings, in the place of waterings, for a few weeks; 4, the essential proportion and texture of the sub-drainage; 5, the leaf-mould, or decomposed manure, in a partially dried state; 6, the surface of the soil to be but slightly compressed until the plants are established. The importance of the last condition is in proportion to the increased size of the pot, and the diminutive vigour of the plant.—*William Wood, Pine-apple Place.*

FRENCH ROSE CULTIVATION.

The following are a few remarks on the mode of rearing Rose-trees in France:—No French nurseryman engrafts his Dog-Roses (Eglantines) on other persons' hedges; for if so, he would require, for the many thousands of them which he plants, the command of a great deal of spare ground. He has not inclosures sufficient to maintain the number of them which he would require according to his system of culture. He employs, therefore, boys to provide him with them; and where the culture of Roses is extensive, as in the vicinity of Paris, there are people in the season who make a regular trade of gathering them wherever they can find them; so that the gardener who would engraft Rose-trees on the hedges and in the woods would only give himself trouble for the benefit of other people; he would in such a case have undoubted reason to apply to himself the "sic vos non vobis" of the poet.

According to our system, the Rose-trees which we have for sale have been nourished in our gardens before they are grafted, and brought to exhibit the beautiful varieties which we produce. If Rose-trees exported by us are ill-furnished with small roots, this deficiency has been caused by the quality of the soil in which the wild stocks have been reared. Those which are grown in strong heavy land produce but few capillary roots, while those reared in light soil produce them abundantly. The truth is, that Rose-trees are transferred from our nurseries so soon, that they have not time to multiply their roots to any great extent. It often happens that Dog-Roses planted in autumn may be sold with a very strong head at the same period of the following year, which is easily accounted for by the manner in which we cultivate them.

We procure early in autumn stocks that are at least two years old, those of one year old being too thinly wooded, and liable to injury from frost; and we plant them and support them by stakes. In the beginning of February, the cuttings for grafting are cut from those sorts which we wish to multiply, and stuck into the ground, numbered, and opposite the north, in order to retard their budding.

In March and April we take them up, and graft them on the Dog-Rose Briers; and it is important that this operation should be performed when the sap of the stock Brier is in circulation (which is ascertained by the shooting of the buds). The operation of grafting, *en fente* (by cleft), as we term it, is too well known to require explanation. I shall merely remark that the stocks which, from the smallness of their diameter, can only bear one graft, should only be split at one side, and that opposite the bud nearest the upper surface of the stock, where it has been cut evenly across. This bud is designed to draw the sap into the upper part where the scion is, and to impart life to it. Two grafts may be placed opposite each other on stocks of sufficient diameter. Two buds are sufficient to have in any graft, and when this is cut in the proper wedge-form, it should be inserted in such a sloping direction as will bring the lower part of the wedge into contact with the second bark of the stock; and the lower bud of the graft should evidently be kept on the outside of the slit. Unless the graft be the termination of a branch, its upper part, to which the knife has been applied, will require to be protected by a little ceraunt; and, if the stocks be not sufficiently large to receive the grafts completely and firmly, these ought to be tied and covered at the point of union with cement. Our composition for cement is made of rosin and pitch in equal quantities, with half as much of white wax as of the other ingredients, properly melted and mixed together.

Grafts thus placed on strong and healthy plants cannot fail; and will form a superb head in autumn, if care is taken to pinch them off to the height of from 4 to 6 inches, to make them branch. It is also necessary not to leave too many buds at the lower part, but those on the top cannot be too numerous. By this kind of grafting, a Rose-tree in full flower may be obtained in six weeks or two months.

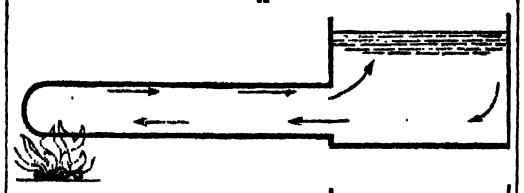
Dog-Roses, if planted as stocks in pots, should be taken into a greenhouse early in the season; and, as vegetation soon begins there, the stocks will be fit to be grafted in a month or six weeks, and flowers will be obtained from them much sooner than from Rose-trees in the open air.—*Baltaille, Curator of the Botanical Gardens at Avranches.*

BOILERS.

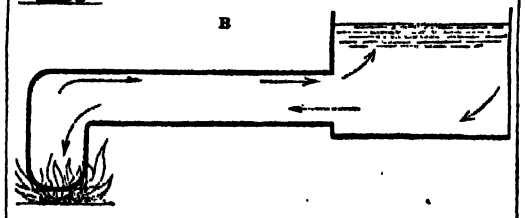
I have a large garden, and many sorts of boilers, from the old waggon-form down to that of Messrs. Stephensons. But when I want to heat some new building, I find that the cost of even the cheapest of them is a very serious difficulty. For example, I wish to force some Seakale in an open bed. A few drain-pipes will enable me to do so; but then there is the boiler—and really it is too bad to be forced to pay 5*l.* or 6*l.* for an instrument which is to produce me a crop not worth half the money. I see, too, by your Notices to Correspondents, that many others are in a similar difficulty with myself; and well they may be. Let us then see whether a cheaper kind of boiler than any on sale may not be readily contrived.

In the section A we have a common 4-inch iron pipe, placed with one end over a fire, and the other in a tank of water. When heat is applied the water circulates in the direction of the arrows, and the heating effect is just as well gained as if the most complicated boiler were employed. But there is no setting A in brickwork advantageously.

A

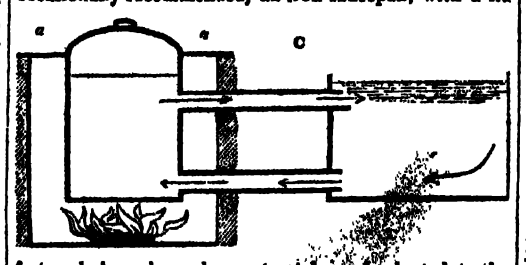


B



But if the pipe has an elbow over the fire, as at B, the setting is more easy, and all the effect that we desire is obtained.

Nevertheless, people may complain of the waste of fuel and of the awkwardness of these contrivances, and with some reason, though not with a great deal, because it is to be recollected that such an apparatus is only for a temporary and slight purpose. However, to satisfy them, let us take the section C, which represents what you have occasionally recommended, an iron-saucepan, with a lid



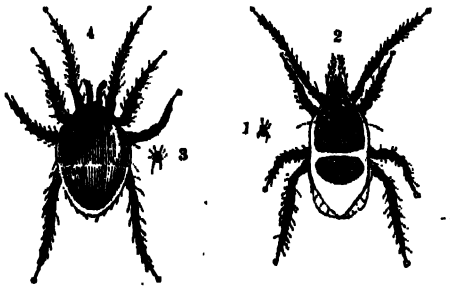
fastened down by a bayonet-catch, and adapted to the tank by a flow and return pipe. Now here, by casting a flange, *a*, *a*, upon the upper edge of the saucepan, six inches deep, a sufficient means is offered of setting such a contrivance in brick-work, and thus a good boiler is at once furnished. I find that a common 6 gallon iron pot costs in the shops 10*s.*, and I see no reason why such a boiler as this, which is nothing but a pot with a flange and a fixed lid, should not be sold for 15*s.*, instead of four or five pounds, which is the lowest price of the hothouse boilers now in use. It would certainly answer the purpose of any dealer to sell such things, or if they will not do so, an ingenious blacksmith could make them out of an old saucepan and a piece of sheet iron, and thus the means would be afforded of applying heat efficiently to purposes in which it cannot be employed at all, so long as there is no refuge from the costly boilers of the day.—*Dion.*

ENTOMOLOGY.

Acarus hortensis (*the Garden Mite*).—When I lately had occasion to reply to a correspondent respecting this mite, I had no doubt in my own mind that it was identical with that which infests and lives upon various beetles; but upon relaxing and setting out specimens of both varieties, it appeared at once evident they were totally different, although nearly related. I therefore take an early opportunity of correcting my error; and it may serve as a lesson how unsafe it is to take things for granted, and at the same time be admitted as a convincing proof, to those who are engaged in Agricultural pursuits, that in the investigation of these abstruse subjects it is indispensible to exercise the greatest caution in the discrimination of the insects supposed to affect and injure the crops. From the communication above alluded to, it appeared that some mites abounded to such an extent in the Cucumber frames that they destroyed one set of plants, by eating off the roots, which compelled the owner to turn out the infested plants, and the soil likewise. Having done so he put in fresh soil and new plants, but these were getting as bad as the first, by the middle of March.

This Acarus differing from any of those I have seen named and described, I have called it Acarus hortensis, from its inhabiting gardens. It is oblong, shining, and of an ochreous colour, but the body is of a semi-transparent white, with a large thoracic crustaceous plate or shield of a deep ochreous tint, separated from a smaller one, of a somewhat transverse ovate figure, merely by a narrow white suture; the head is small and trigonate, with two points in front, and on each side is a slender palpus of 5 or 6 joints, and slightly hairy; it has 8 legs, the 1st and 4th pairs being long, the four intermediate ones shorter and perhaps a little stouter; they are all bristly or hairy and taper; they are, I believe, only 6-jointed, if the tarsus be not included, the last joint being the longest and most slender; from the extremity of this projects a fine whitish thread which forms the foot, and appears to be biarticulate; the apex is dilated and semi-circular, forming a pulvillus, with 2 divaricating dark rays, which may be the claws. Figs. 1, 2, the same magnified.

I have added figures of Acarus coleoptratus (3 and 4), the species I at first supposed the above mite to have been; the body is more oval and broader, the horny shields are larger, with a much narrower transverse suture, and there are a few bristles scattered over them; the head is not so prominent, and it is of a darker ochre colour. These mites are generally seen running over the underside of beetles that live upon putrid animal and decomposing vegetable substances, more especially a genus of Silphidæ, called Necrophorus or grave-diggers, and of Scarabæidæ, named Geotrupes or dung-beetles,* and it not unfrequently happens that one finds a wretched individual of the latter genus sprawling on its back, or with scarcely strength to crawl, the entire contents of the body having been eaten out by this dreadful scourge.



Labouring under the mistaken impression that these were the mites which infested the Cucumber plants, I imagined they had been introduced by the infested beetles, which were conveyed into the frame with the hot manure, or had crept in whilst the glass was off; if such had been the case, a single beetle would soon have established a colony extensive enough to do the mischief complained of. But as it proves to be a distinct species of Acarus, which probably only feeds upon decomposing vegetable substances, we must trace its presence to other causes. I therefore think it very likely that it is generated in the manure, and in that case it would be advisable to sprinkle unslaked lime between the layers when it is turned over, which I expect would kill the Acari, or gas-water might be equally effective. There is also another important point to be attended to, and that is neatness and cleanliness in the frames. If the woodwork, as it frequently happens, be rotten and crumbling away, it forms an acceptable harbour for woodlice, mites, earwigs, and every kind of animal destructive to frame plants; after a crop is cleared off, and before the frames are again used, boiling water should be poured upon the parts coming in contact with the soil; they ought to be well scrubbed with soft soap, and afterwards washed with spirits of turpentine or painted on the inside; then, again, after the crop is off, whether of Cucumbers or Melons, none of the fruit should be left to rot, or the stalks to decompose there, as it cannot fail to attract and harbour Acari, &c., which when once established are frequently not readily exterminated.

I am, however, surprised to hear of "the Acari eating off the roots of the Cucumbers," and shall be glad of any information which may throw light upon the subject; for whilst the roots are healthy I should not expect that these little animals would attack them. I have detected large nests of Acari in the putrescent clubbed roots of Cabbages and in Turnips suffering from anbury, but never in those which were not diseased. I believe, however, that these Acari are scattered through the soil, and are consequently ready to fix upon any sickly plant, which speedily becomes a nidus for them, and falls a sacrifice to their attacks. It is, therefore, always prudent not to allow drooping and weak plants to remain, but to dig them up at once and burn them, or at least remove them to a distant spot, where they cannot communicate disease to the rest of the crop.—*Ruricola.*

* Curtis's Brit. Ent. folios and pl. 71 and 696.

THE ROSE-GARDEN.—No. VIII.

(Continued from page 165.)

Roses for Budding, with a pushing eye (à l'œil poussant.)—The sorts most likely to succeed in this way are Chinese Roses and Hybrids, &c. Amongst which are the following:—

Du Roi	Greville
Blush ditto	Multiflora
White Noisette	Double Purple
Purple ditto	Banksia
Sanguinea	&c.

Different sorts of Roses on the same Stock.—It may be observed here, that buds from Roses of different sorts may be freely placed on the same stock; but not if their manner of growing be different; that is, one free, the other delicate and slow; as the free-grower famishes the other, and, at any rate, the tree grows and looks lop-sided; but if more than one Rose be put upon the same stem, reference should first be had to the similarity of growth, both in habit and vigour; secondly, to the appearance and size of the leaves; and lastly, to the habit, shape, and colour of the flowers.

Choice of Shoot and Bud.—The shoot from which the bud is taken should be healthy and vigorous, of the autumnal growth, and should look as if it were in its full strength, and on the point of finishing its growth; the wood of it also must be sufficiently ripened. The words *autumnal* and *spring*, are not intended to refer to the periods when the shoots first began to push, but to their actual state at the season of budding. The sense in which the former of these words is to be here understood, is, "continuing in a growing state during the autumn," in opposition to those shoots termed spring-shoots, which, having borne flowers at their summits, or from any other cause, are comparatively dormant at the time when the buds are required for use. The terms *flower-shoots* and *wood-shoots* may be substituted for spring and autumnal, provided we bear in mind that Chinese Roses and Hybrids form a half-exception to the rule laid down, as their buds may occasionally, and, indeed, sometimes must be, procured from flower-shoots. When, therefore, the species to be propagated is a free flowerer, and, like the Damask and du Roi, produces upon every shoot, grafting (with the exception of such sorts as may not be found to produce scions sufficiently woody) is the most eligible mode of propagation, both for the purpose of avoiding waste and insuring success. When this is objected to, those shoots should be chosen, the flowers upon which are forming, in contradistinction to such as have full-blown flowers, or their remains, at their summits.

If a spring shoot be taken, it is fifty to one but the bud is quite inactive, or else has imperceptibly opened; in which latter case, evaporation would take place before the junction became effected, and the bud would perish; of the former, the bud is not in the state required, being too torpid to effect a union.

The autumnals, also, part better from the wood, and are larger in girth, from having the strength of the sap spent upon themselves, instead of upon the flowers, (besides the circumstance of the tree being at that period in full action,) and they frequently start the same year with success; whereas the buds of the spring, in a similar case, generally fail. If the shoots are in the operator's garden, they should be cut as nearly as possible at the moment of use; if from a friend's, the ends may be placed in a watering-pot to keep them moist, and care taken to keep them from the sun, using them as soon as possible after they have been cut, which ought to be at sun-rise in the morning.

As it is frequently necessary to carry buds a considerable distance, the following mode may be adopted: trim off the leaves and points of the shoots as usual, and envelope the remainder in wet moss until an opportunity occur of plunging the shoots as above directed. The bud is found in the axil of the leaf, which ought to be cut off a third of an inch from the bud, on separating the shoot from the parent plant, in order to avoid the evaporation from it, which would weaken the bud. The look of the bud should be round, full, quite closed, and healthy; those from the centre of the shoot are preferable, as base buds are more likely to lie dormant, and those at the top are not so safe, being sometimes a little open and unripe. The leaf under the bud should be healthy, and shoot, buds, and leaves, appear of even and luxuriant growth.

Home Correspondence.

Spring Planting.—About the 20th of March I transplanted upwards of four dozen standard Roses; and they are all doing well, excepting one with which I tried an experiment. About the same time I removed Portugal Laurels, common Laurels, Aucubas, Rhododendrons, and other plants, amongst which was a Yew; all of which are doing well. These have only been watered twice, and the Roses once since they were planted; and it is scarcely possible to discern which were removed, and which were not, while those planted in the months of November and December are nearly all dead. I am not an advocate for spring planting, far from it; I only mention this in order to show that if the operation is rightly performed, plants may be removed with safety in spring. In planting, the following method has given me every satisfaction:—After inserting the plant in the pit, filling it about half-full of soil, and giving it a good watering, then putting in some more soil, I trod it firmly, and on this I put about two inches of rotten dung all round, and covered it with a little soil, in order to prevent birds scraping it about. By following this plan, I have not lost a single plant.—*Peter Lowe, Portobello House.* [We do not see how this affects our argument.]

Salt v. Asparagus.—The observations you made in your Leader (No. 15, April 13), induced me to delay sending you the following observations respecting Asparagus and salt, as I wished to make as correct a statement as I possibly could. No vegetable deserves greater attention than it, and I suppose the more experiments made in its culture, if faithfully watched, the more likely are we to succeed in its improvement. Ever since you mentioned salt as likely to be beneficial, I commenced applying it, and in consequence formed an idea that Asparagus could not be injured by it; but I have bought my experience too dear. I have two beds of Asparagus. The first year I sparingly covered them in spring, and some time in summer. The second year I think I applied the salt twice, but more copiously; and last year I laid it on four times, rather thickly each time, especially the last time. Some half-dozen times I have constantly watered the beds with manure-water, from June to August. The Asparagus certainly improved, and last autumn it had attained the height of six feet, so that I anticipated a noble crop this spring. After cutting down the haulm, I gave my last and strong dose of salt (!), and perhaps three weeks after, covered the beds with long litter. The beds were uncovered early in March, and well stirred with a broad-pronged fork. It was long before any heads made their appearance, and they were of the most puny kind. Suspecting that all was not right, and fearing that my most strenuous advocacy for the salt system might come to nothing (for a friend of mine in the winter declared to me that salt had killed his Asparagus, and I had asserted that it could not do so), I commenced an examination of the beds from beginning to end; and I assure you that at least one-fourth were quite dead, quite decayed, and I never met with a single root which was not more or less injured. The upper portion near the crown of the roots was rotten: this, I say, was the case with every root, more or less. About this time, a gentleman residing in Louth informed me that much of his beds was also injured by the application of salt. These beds were not old ones—7 or 8 years old, like mine; but he had only applied the salt once. Up to this time I have carefully watched my beds, and the heads cut from them have been very mean indeed. I ought to have mentioned that the last time I examined the crowns, they were putting up very thin heads; and since they have appeared, they have presented only the same mean appearance. Upon these beds also I see several Sycamore plants coming up, so that the salt could not have been, I think, so very strong. Shall we, therefore, conclude that salt must not be very strongly applied? Of this I am quite certain, my beds are ruined, for this year at least; and I can conceive no other cause than the salt. Should I be wrong in taking one of these beds up, and mixing the soil with sea-sand and a due portion of guano, and then re-planting the roots upon the first appearance of rain? [We cannot suggest a better remedy for the mischief than that which is here proposed. But as to the mischief itself, there can be no doubt that the last dose (!) was what did the mischief. Salt should only be applied when the plants are in full growth. To put it on when the haulm is dead, is to pickle, not to manure. The following memorandum has come in while we are writing these remarks:—"I have tried salt on my Asparagus-bed, both last year and this, with the greatest advantage. I mention this to add my testimony to its value, in case it should be doubted by any of your readers who have hesitated to try it."—*T. T. H.*]

Gentiana verna.—This is a plant of great beauty, but it is very much neglected. Being easily cultivated, it is well suited for forming edgings round the margin of flower borders, where its bright blue flowers have a fine appearance. About 300 yards of this was planted as an edging to flower beds here in April, 1843. It flowered tolerably well the first season, but during this year it has been the most striking feature of the garden, and has been admired by all who have seen it.—*R. T., Hornby Castle, Yorkshire.* [Is it not Gentiana acaulis that is here spoken of?]

Hybrid Rhododendrons.—As the blooming season is arrived, would it not be desirable for the readers of the *Chronicle* to communicate, through the medium of its pages, a description of any new and striking varieties that have fallen under their notice? Much remains to be accomplished by the growers of this most exquisite tribe, as, notwithstanding the beauty of numberless hybrids, a fresh race is required, which would unite the glowing tints of the Indian species with the hardness and freedom in flowering that characterise both R. Maximum and Ponticum. At Highclere this has been done; as by crossing the finest varieties of Altaclarense with a variety of Ponticum, known as Lee's Late Purple, a collection of perfectly hardy sorts has been raised, on which no severity of the winter has any effect, and which adorn the grounds of that noble seat with flowers of a most beautiful description. These Rhododendrons combine every requisite quality, being abundant bloomers, and productive of immense trusses of large flowers, of every shade of pink and rose, crimson and dazzling scarlet, and purple, in some instances dark as the fruit of the vine; with the additional recommendation of being in perfection from the middle of May to the beginning of June. I believe that these fine varieties are not in the possession of the trade, which is to be regretted; and the object of this paragraph is to stimulate both nurserymen and amateurs to embrace the present season, and cross such varieties as may, by an intermixture of habit, colour, and size of their flowers, render their progeny equal to those I have been describing. It cannot be doubted that the union of some fine, high-coloured hybrid, with such kinds as Lee's Late purple, Ponticum, Lee's Grandiflorum (a very large flower), a rose-coloured or purple Maximum, would produce such shrubs and flowers as would not only be suited to our uncertain climate, but be the admiration of all who saw them.—*A Devonian.*

Chicory.—It has been my opinion these ten years that Chicory would become as common as Endive. It is much more easy to grow and preserve than the latter, which requires continual covering, and is very liable to rot. About three years ago I grew a quantity for Covent-Garden Market; the first lot I sold to Mr. Steptoe, and made 9*s.* 6*d.* of it; it was the first that had ever come into the market. The next market morning Mr. Steptoe shook his head, and said he had sold but two bunches, and those to a Frenchman. I, however, gave him the next lot, and the third time, having no better success, I never attempted to grow it since. For market-gardeners I would recommend them to take out a trench just in the same way as they do for Rhubarb, and to plant it in the trench, covering it over with mats and straw. No farther trouble is necessary. The best time to sow it is about the 1st of June, so that it may become very large, and not run to seed. I have grown the roots as fine as the largest Horseradish; but to do this the plants ought to be thinned out to a foot each way. The following article on this subject was sent to the "Gardeners' Magazine," in 1837:—"It is with much pleasure that I have to notice the success that has attended my cultivation of that most valuable salad-plant, the Chicory, which was brought into notice last year by Dr. Lippold. I am well aware that Chicory has been known in this country for many years, and also that it has not been cultivated to any extent; but I may safely say, that a more valuable salad-plant for winter use never was introduced. Our autumns are so changeable, that the gardener finds great difficulty in keeping Endive in a good state of preservation for winter use; while Chicory can be taken up and put into a pit for forcing at pleasure. The pit which suits it best if one flued all round, on account of damps; and it must be planted in very dry mould; the mould, indeed, cannot be too dry, as the roots are sure to imbibe moisture enough for their support. I planted them six inches apart, and found it quite enough; the heat required is very little, but that must be regulated by the quantity of Salad to be raised. In place of taking the outside leaves, I cut the head close down, though not so low as to injure the second cutting. Some of the heads produced enough for one salad each, along with other small salads. Every gardener who has to produce good salads during the winter ought to provide himself with Chicory, and if he has not got flued pits, the next best place is any shut-up or inclosed shed; if there is a stoke-hole with fire so much the better, but no light must get at it, as it must have a fine cream colour when fit for table. Market-gardeners would also find Chicory a most valuable salad when their Endive was all over."—*James Cuthill, Camberwell.*

Sparrows.—People complain of the loss of their Gooseberries this year by birds—for birds, I imagine, we should read grubs. I had a tree loaded with blossoms, and it is now all blank; I saw six or seven sparrows on it at a time, and was induced to watch them closely. I saw one knock his bill against a leaf and eat something; at last he knocked one of these somethings to the ground, when I ran and frightened him away, and found his lapsus humi was a green caterpillar. I now examined the tree, and found that sparrows did not eat the Gooseberries. Every third or fourth leaf contained one of these depredators—of a sort that let themselves to the ground by a gossamer thread. Black Currants are all gone by the same marauders.—*F.*

Rabbits.—These are easily taken alive, by soaking their favourite food, Parsley, in strong rum or brandy. A similar method is employed in catching small birds with steeped seed. They, like the rabbits, are so intoxicated by the spirit, that there is no difficulty in obtaining as many as you wish.—*J. R. L.*

Morphology.—It is due to the genius of "R. E." to express gratitude to him for his very instructive letters on Familiar Botany; his plain, unvarnished exposition of the gradual changes that the organs of plants undergo, must ultimately lead the most sceptical to embrace the doctrine of Morphology. It appears to me as reasonable and as possible that flowers should be metamorphosed leaves as that many insects change first from the (ovum) egg into the (larva) caterpillar or maggot, then into the (pupa) chrysalis, and lastly into the (imago) fly, or perfect state. While the butterfly lies in the body of the caterpillar, its wings are long and narrow and wound up into the form of a cord, and the feelers are rolled upon the head; the trunk is also twisted and laid upon the head, but in a very different manner from what it is in the perfect animal, or indeed in the pupa state. How similar that is to the leaf of a Pæony and its petals, the same organ in different states, as is clearly proved in the last letter of "R. E." That a tadpole should become a frog appears more wonderful than that leaves should be metamorphosed into flowers; the egg of the frog being laid in the water produces that lively little animal the tadpole; after some time legs and feet burst through the skin, the tail drops off, and he is a perfect quadruped. The amusing and useful letters of "Ruricola" have given to the readers of the *Gardeners' Chronicle* many examples of the various metamorphoses by which insect life proceeds from the ovum to the perfect state. As another instance, in confirmation of the change of leaves into sepals and petals, so clearly explained by "R. E.," I beg to direct the attention of the unbelieving, or those doubtful on the subject of Morphology, to a bed of Tulips, where is frequently to be seen at this season of the year that

the leaf is marked with streaks and colours similar to the flower. There is one of that sort in our Tulip-bed, which is confirmation strong that flowers are metamorphosed leaves. These are phenomena rejected as absurdities by those persons who repudiate every discovery in Nature which does not come within the scope of their own pre-conceived notions, and who exhibit a degree of violence in their opposition to it, proportioned to their ignorance of the subject. The investigation of Morphology should be pursued with an earnest and honest desire to elicit truth, rather than a determination to find some flaw in the operation, by which they might raise a clamour against the principle and its supporters.—*W. P. Keane, Leybourne Grange.*

Seedling Pelargoniums.—I have flowered plants of these three weeks ago, that were raised from seed sown August 28, 1843. The size of the plants will show that they are not stunted specimens. They stand 18 inches above the surface of the pots, and are 2 feet in circumference. The thickness of the stems is 1½ inch, and numbers of the leaves measure either way 6 inches.—*J. Sherriff, Lodge Road, Hockley.*

De Candolle's Prodromus.—Having just received the eighth volume of De Candolle's "Prodromus," I am sorry to find the Monograph of the Primulaceæ by Duby very inferior in its execution to the others, and it is a pity to see so many omissions. For instance, amongst many others, what has he done with Primula helvetica (Don.), fig. in the Bot. Cabinet, t. 348? Is it Primula microcalyx? No mention is made either of the name, or figure. What has he made of Primula Simsii, Botanical Magazine, t. 1161? This is passed unnoticed, like P. helvetica, as is also P. nivea (Fisch.) These probably are only varieties of P. villosa, but they ought to be taken up. When a Monograph is written in such a valuable systematic botanical publication as the "Prodromus," it ought to be done with extreme care, and, if possible, without the omission of any described plant; but these omissions, in my opinion, arise from extreme carelessness. Indeed, the details seem very indifferent when compared with the other Monographs. In the same volume, Sir J. E. Smith's "English Flora," which is our standard authority for British Plants, is passed over, and not quoted for the three Primulas—which belong to Britain—as is also English Botany. It will be beneficial, I imagine, if you will notice these omissions; and if you will examine the Monograph you will find many more. By noticing these omissions, M. De Candolle may be induced to supply the deficiencies in the Appendix to the next volume. Should Mr. Duby be engaged to write any more articles, it is to be hoped he will bestow more care, and not suffer so valuable a work to fall off in public estimation.—*F. B. W., Cambridge.*

A Full Trap.—Mr. Marsden lately found in a small common iron spring rat-trap, in his shop at Cabus, near Garstang, no less than four full-grown rats; two of them were held by the tail, and the other two each by a leg. I saw them in this pleasant position.—*Facile.*

Miscellaneous.—"Delta" remarks, that he never saw a honey-bee extracting either honey or pollen from the Polyanthus. He writes, that he has long been both an apiarian and a large grower of Polyanthuses, and that he has taken particular notice of the fact.——*Mr. J. Linton, of Hulme, Manchester*, informs us that he lately cut a Cowslip out of his garden, with a bloom consisting of 180 pips, and a stem 1 foot long. This, he considers, is rather remarkable.——*A Gardener* states that Sphenogyne speciosa stood the winter of 1842 with him, under a wall having a south aspect, and flowered in March, 1843. He has this year sown seed in the open ground, and says that the plants are about half an inch high.

Societies.

SOCIETY OF ARTS.

May 15.—Sir J. J. Guest, Bart., M.P., V.P., &c., in the chair. The Secretary read a paper on the Improved Management of Bees; the materials for which were partly obtained from the Society's Transactions, but chiefly from Mr. Milton, Mr. Neighbour, and Mr. Sholl, apiarians. Several bee-houses and hives, as recommended by the above-named, were placed before the meeting.—Mr. Sholl's bees have been at work on the Society's premises since April 17, and the results of their labours were shown to the meeting. The first accounts of bees are contained in the writings of Varro, Pliny, Columella, and others. By Columella, the celebrated writer on husbandry in the reign of Claudius Cæsar, the subject is treated at considerable length, and contains all the information on the subject known in his time. About the 16th century this subject attracted the attention of many eminent persons in various parts of Europe. Gervase, Markham, Gawson, Stephens, Suffiet, and others translated the "Maison Rustique" in 1529. In 1539, Rucellai produced his beautiful poem "Api;" following these, Mr. Thomas Hyll and Edmund Southorn, were busily engaged on the subject. In 1609, Charles Butler, the father of English apiarians published his "Feminine Monarchie," containing valuable observations on the instinct and habits of bees. In 1654, we find that great architect, Sir Christopher Wren, while at Oxford, engaged in the delightful study of bees, (a large drawing of whose storified hive, consisting of three tiers of octagonal boxes, was shown to the meeting). In 1655 Mr. S. Hartlib drew the attention of apiarians to the subject of glass hives and boxes. Dr. Butler, and all before his time, used only common hives, made either of reeds or straw. Moraldi in France, Swammerdam in Holland, Mons. De Gelieu (1675), Dr. Warder, and the Rev. John Thorley in England, all paid much attention to the subject. The Rev. John Thorley's bee apparatus was presented to the Society by Sir Charles Whitworth, in 1763, and was the model recommended to be followed by apiarians, the Society having at that time offered 200*l.* to the persons who should collect the largest amount of merchantable wax without destroying the bees; and from that year to 1821 the Society continued to encourage, by their rewards, every real improvement in the management of bees. In Varro, "De re Rustica," Book III., chap. 16, a curious account of the profit to be derived from bee-keeping, beginning with "De fructu authorem habeo," &c. &c., the translation of which is as follows:—"Of the fruit (profit) I have not only a witness who says he lets out his bees for 3000 lbs. of honey by the year, but also our friend Varro, who had with him in Spain two rich brothers, soldiers, to whom their father left a small country-house, and a little field of about one acre; near to the house they formed an apiary, and also a garden, which was planted with Thyme, Cytisus, and Balm. Taking one year with another, their profit from bee-keeping never amounted to less than 10,000 sesterces, equal to 83*l.* 6*s.* 8*d.* English money." The following bee-houses and hives, &c. &c., were placed on the table, but their description would occupy too much space, viz.: Espinasse's Bee-house — Milton's Common-straw Hive; Do., with cap; Do., with revolving-top; Miniature Apiary; Box Hive, with interior cases; Huber or Leaf Hive; Unicomb Observatory Hive; Storified Box Hive; American Transparent Bee Palace—Nutt's Improved Hive, with pavilion and collateral apartments, having a thermometer and ventilator attached—Neighbour's Improved Single Box Hive; Cottage Hive, with ventilators and thermometer; Ladies' Glass Observatory Hive; Simple Cottage Hive—Sholl's Bee Castle, with pavilion, &c.; Hive of Glass; Portable Barrel Hive—Thorley's Bee Apparatus.

Reviews.

The Cryptogamous Plants of Dr. Roxburgh, forming the Fourth and last Part of the Flora Indica.
By W. Griffith, Esq.

The name of Roxburgh stands first among those of the botanists who have investigated the vegetation of India. Although not a man of high scientific attainments, and living at a time when the true principles of classification were little known, yet his extraordinary diligence, zeal, and good sense, more than compensated for such deficiencies. It is not much to the credit of other botanists that so little justice should have been done to his labours. For years a manuscript copy of his "Flora Indica," in the library of Sir Joseph Banks, was, in this country, the only accessible record of his labours; his Indian editors of the work, Drs. Wallich and Carey, carried it no further than a second volume, out of many that would have been required; and when, at last, the bulk of his manuscripts was published by his sons, in justice to their father's memory, no botanist revised the sheets, so that the work appeared with all the blemishes arising from ignorant Indian transcribers. Yet it is a monument of industry that Dr. Roxburgh's relations might well be anxious to raise, and the foundation of the systematical botany of the peninsula of India. Mr. Griffith, the acting superintendent of the Botanic Garden, Calcutta, has now stepped forward, and, in a manner worthy of his distinguished rank as a botanist, has rescued from oblivion Dr. Roxburgh's account of the Cryptogamic vegetation that was known to him.

The Cryptogamic plants described by Dr. Roxburgh were chiefly Ferns; and Mr. Griffith hopes, by the present publication, to secure for his name the authority to which they are justly entitled. He calls upon botanists to "exert themselves, and determine that his MS. names shall not be passed over in favour of any other MS. names, given in neglect of Roxburgh's characters, descriptions or drawings; any more than zoologists will show countenance to similar names in the most marked case of the zoological labours of Buchanan;" and adds, "I wish here to call the attention of the scientific world to the fact, that no explanation has been yet given by Mr. John Edward Gray, of the appearance of copies of Buchanan's zoological drawings, without the slightest acknowledgment, in the 'Illustrations of Indian Zoology' of General Hardwicke."

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

Cymbidium Pendulum, var. brevilabre. Short-lipped thick-leaved Cymbidium. (*Stove Epiphyte.*) Orchidaceæ. Gynandria Monandria.—As far as our experience goes, the ordinary variations to which Orchidaceæ are subject, are in all respects analogous to what is met with in other plants, and as is exemplified by the plant before us from Singapore, in which, while the lip becomes shorter, broader, and with a much blunter middle lobe, everything else remains so exactly the same, that nobody can entertain a doubt about the specific identity of the plant with Cymbidium pendulum. The vertical plates of the lip, in particular, are quite unchanged, showing, as we find it always shown, that the elevations and processes of the surface of the lip are of the utmost importance in considering the limits of species. Eria bracteascens and longilabris, furnish the converse of the rule. They are much alike, and their labella vary in form in a manner not unlike that of C. pendulum and C. p. brevilabre; but with a change in the form of the lip occurs in these plants a most material alteration in the form of the labellar processes, and both are connected with other peculiarities in the appearance of the two species. This plant was received by Messrs. Loddiges from Mr. Cuming, who found it at Singapore. It should be grown in early heath-mould, of rather closer texture than that commonly used for Orchidaceous plants. The pot should be well drained, in order that all superfluous water may pass off freely, otherwise the roots will perish. Like some other species of the genus, this requires an ample supply of water at all times, and the atmosphere to be kept as moist as possible, especially during the growing season. To prevent the leaves from being scorched, the house should be slightly shaded in sunny weather. In summer the temperature should never be allowed to rise much above 80° by day, nor to fall below 65° at night; but in winter it should never be raised higher than 64° by artificial means.—*Botanical Register.*

Erica Murrayana Mr. Murray's Heath. (*Greenhouse Shrub.*) Ericaceæ. Octandria Monogynia.—This plant is another worthy result of experiment in the intermixture of properties. It was reared from seeds by Mr. A. Turnbull, of Bothwell Castle Gardens, near Hamilton, Scotland, and has been named by him after his friend Mr. Murray, of the Glasgow Botanic Garden. Mr. Turnbull favours us with the following:—"E. aristata minor being a dwarf compact grower, and E. vestita coccinea a rambling grower, my object in crossing them was, if possible, to get a variety with the dwarf habit of the former, and the brilliant flowers of the latter. With this view I impregnated E. aristata minor with the pollen of E. vestita coccinea, in the spring of 1837. The seeds ripened freely, and were sown in the autumn of the same year. A few of them vegetated the following spring (1838), and the remainder twelve months after. As I could not spare room for keeping them all, so soon as I could form some idea of their habits I destroyed all those that approximated most nearly to the male parent, reserving only six or eight of those that appeared most dwarf. Of these I bloomed four in the autumn and winter of 1842, three of them being very nearly the same in every respect as the specimen sent, while the other one is very different, being contracted at the mouth of the corolla, in the way of E. spiciflora. None of the plants exceeded eight inches in height when they bloomed, and I think they are likely to continue dwarf in their habit, while their general appearance will certainly bear a considerable resemblance to the Vestitas." E. Murrayana appears quite to have realised Mr. Turnbull's wishes; for its habit is very like that of E. aristata, and the flowers are as rich as those of the male parent. It is a most beautiful hybrid, and other similar ones, which we have received from Mr. Turnbull, are almost equally good. The specimens evinced the highest state of health, and Mr. T. cultivates his plants according to the well-known treatise of Mr. M'Nab.—*Paxton's Magazine of Botany.*

GARDEN MEMORANDA.

The Arboretum at Derby.—Amidst the benefactors of the human race, none stand more conspicuous than the late Joseph Strutt, Esq., who, with an effective liberality and determined kindness, was spared to commence, carry on, and complete the (emphatically speaking) garden of the poor. I visited this place on Sunday evening, the 21st of April last. The gardens open only in the afternoon. I observed a happy seriousness on the countenances of the visitors—a subdued enjoyment which spoke volumes in favour of the judgment of the noble-minded man who had thus provided the means of bringing the works of the Almighty under the eye of those who, all the week, are busily engaged in earning their daily bread. Parents, with their children of various ages, might be seen quietly sitting on the many substantial seats provided for them under the shade of trees, or strolling on the walks, admiring the early flowers on the shrubs; all the shrubs have a name attached to them, very conspicuous, yet not so as to be offensive to the fastidious eye. Bricks are made for the purpose; they are set on end, the upper angles being bevelled off. The name is painted on the angle and covered with glass which keeps off the wet effectually; I only observed two in all the garden but what were as legible as the first day they were put down. It was amusing to see the children of ten years trying to read, no doubt to them hard names, and puzzling their little heads to make them out. I remarked the good behaviour of those "children of the poor," as amidst the many hundreds that were in the garden, I only observed one instance of rudeness, in two boys throwing stones at each other. It was instantly checked by the elder people, and the boys slunk away ashamed of their conduct. The garden was, as is generally known, laid out by the late Mr. Loudon, and the execution of his task does credit even to him. Broad substantial walks lead down the centre, branching off diagonally, and returning up each side in a serpentine form. They are hid from each other by raised mounds of various forms, sufficiently high to prevent persons seeing over. The named specimens stand singly on the Grass, at such a distance from each other as their various habits, as to size and form, will require when fully grown. They are, consequently, conspicuous objects, and draw attention even from the most heedless. In the ground, previously to its being laid out, there were some large trees; these are judiciously preserved, and seats are placed under them. It is, I think, however, an oversight that these our common trees are not named. That the people pay attention to the names, was evident from the fact that the early flowering shrubs, such as Ribes, Prunus, &c., were crowded by even well-dressed elderly persons, who were reading the names, and, in some instances, copying them. I would just observe, *en passant*, that the labels contain the botanical name, English name, native country, and year of introduction. As a means of refining the manners, elevating the taste, and subduing evil propensities, giving the lower orders an innocent and rational amusement, and even instruction, the Derby Arboretum is much to be admired; I came away delighted at the good effect it produced even already. The garden is well kept; the walks were smooth and free from weeds, the Grass was short and of a good colour, and the beds were newly raked. Many of the Ribes are fine specimens, although the gardens have only been finished three years.—*T. A.*

Miscellaneous.

Mr. Fortune.—Letters dated Hong-Kong, Jan. 31, have been received by the Horticultural Society. At that time Mr. Fortune was well, and had lately arrived from Shanghae and other northern parts, with a considerable number of plants, a portion of which he was able to despatch by the Cornwall, a fine ship just about to sail. It is hoped that many valuable acquisitions will be the result of this first trip. Mr. Fortune had travelled far inland, visiting the gardens of the Mandarins, and generally receiving the greatest civility from the inhabitants. Nine glazed cases, a large number of seeds, and various objects of natural history, are now on their way to Europe.

The Deodar.—The largest plantation of this magnificent and useful tree, of which we have yet heard, is that

of William Ogilby, Esq., Secretary of the Zoological Society, who, on his estate of Altmachree, in Tyrone, has this spring planted *eleven acres*, the trees for which he raised from Himalayan seeds in the same manner as Larches are raised. Has any one heard the like of this?

Experiments on the Cultivation of Plants in Charcoal. (By J. E. Teschemacher).—The first view I took of the value of charcoal in Horticulture, arose from the arguments on the different powers of well-rotted and of fresh manure; my prejudice, from constant practice, being rather in favour of the former. And one of my imaginary reasons for this prejudice (for proof was not to be expected), was that the carbon of the vegetable part of the old manure was reduced by fermentation and complete decomposition (combustion, Liebig) to the finest possible state of comminution, such as it is totally impossible to imitate by the most laborious mechanical pulverisation. In this finest of all states, carbon, if used at all by the living vegetable, could be most easily appropriated. My experiments were, therefore, all made with the finest pulverised wood charcoal I could procure, such as is used in making gunpowder:—1st. I planted a young, thrifty plant of Daphne odora in this charcoal altogether; in 13 months it was alive, the leaves quite yellow. On examining the roots they had not in the least increased or altered. I then repotted it in loam with one quarter charcoal, and watered with a very weak solution of nitrate of soda; in four weeks the leaves had become of a dark blackish green, and the plant was beginning to push vigorously. 2d. I planted a fine root of Fuchsia fulgens, with a stem, in charcoal alone. It immediately began to vegetate; the leaves were, however, extremely diminutive, and soon dropped off; the flowers appeared also diminutive, and finally dropped off likewise just after opening. It then, with the others, went to rest; but to my surprise, in August it again began to vegetate, and went precisely through the same process as in spring—others which were by its side remaining dormant; after this it went again to rest. 3d. I potted several seedling Camellias in one quarter charcoal, one quarter old manure, one half loam; these grew with great luxuriance, and the colour of the foliage was dark, healthy green. 4th. I potted several young Pelargoniums with various quantities of charcoal, never exceeding one quarter, often very much less. In these the effect was the same, both coming very near to the luxuriance and size of foliage of those treated with guano. In August last, I made up my mind to repot and top-dress a large number of exotic plants, of various kinds, many of which were in a bad state from neglect; of these the chief number were Camellias. I made up a compost, consisting of about two-thirds Roxbury fresh loam, and one-third a compost, chiefly consisting of old manure; to this I added about one-fortieth part of charcoal, and had the whole very carefully and intimately mixed; with this I operated. In September, when I thought the earth had got well settled round the roots, I began to water, every Saturday, with water in which guano had been mixed, in the quantity of about one ounce to ten gallons. I was perfectly astonished at the alteration which appeared in about four weeks, in the general health of all the plants—it seemed to me like magic; and many who visited the Public Conservatory, previous to the late calamitous fire, can bear testimony to their beauty and luxuriance. The earth of one large Camellia, (double white,) with about 250 blooms, was nearly altogether changed, the tub having fallen off with much of the earth. I hardly expected to save the blossoms, but they opened in as great splendour as the others. It seems to me that the period of the opening of the flowers was also generally accelerated. We had 20 or 30 out the first week in November, and the first week in December, just previous to the fire, I counted above 500 in full beauty; this was certainly earlier than we had them in previous years. Passiflora Loudoni, which, under the best of common cultivation, has always yellow and unhealthy-looking leaves, was placed in this mixture with the addition of charcoal drainage. The rapid change in its appearance was surprising, and although, from unavoidable circumstances, it was removed into this soil just previous to flowering, yet instead of being checked, fresh flower-racemes shot forth, and, with the others, opened their beautiful blossoms in the greatest splendour; the foliage becoming of a fine healthy green and spread open, not curled in at the edges. I had several other experiments in progress on the use of charcoal, some of which I had hoped would have thrown light on its immediate action on the roots of plants—a subject on which we are at present in the dark; unfortunately, these with many others were destroyed by accidental fire. My impression from these trials is, that although charcoal alone is nearly useless, yet when mixed in due proportion with the earths and salts, usually found in soils and manures, its presence is highly beneficial, and greatly promotes the luxuriance of vegetation, as far as regards stems and leaves. Of its value in the production of flowers and seeds, I am not, for the reasons before stated, able to give an opinion of any worth. It may be thought, and probably is in part true, that much of the luxuriance of the last-named experiments arose from the use of guano water; but from other experiments with charcoal, instituted for the purpose of making comparisons with guano, and in which of course none was used, I cannot hesitate to believe that some portion of this luxuriance was also due to the charcoal.—*Hovey's Magazine of Horticulture.*

Thapsia gargonica.—M. Guyon brought some roots from Algiers, in the spring of 1843, for the Museum of Natural History. He states that the roots possessed strong purgative properties, and that it is much used among the Arab tribes, and likewise in the interior of the Mauritide country, south-east of Algeria. This very fine umbelliferous plant, it appears, has been long in the collection of the Museum of Natural History. Its roots are white, large, and tapering, often extending to a depth of more than three feet in light soil. Its leaves are divided, erect, and shining; but it suffers from the cold of severe winters, consequently against such it requires protection. The young plants should be kept in an Orangery or greenhouse.—*Revue Horticole*, 1843, p. 327. ‖ [This is supposed to be the silphion of the ancients].

Hydrangea Japonica.—It has been stated that the Hydrangea japonica has produced seed, an advantage not afforded by the Hydrangea hortensis, which it was also hoped this new shrub would surpass in beauty. This hope has not, however, been realised. The finest plants of Hydrangea japonica which have been seen in flower, are very inferior to the one which has embellished our gardens for more than 40 years. It now remains a question whether finer flowering plants may be obtained from seed. It appears to form a bush of considerable size.—*Revue Horticole*, 1843, p. 327. ‖

Abstract of Tables kept by W. Wyatt, Esq., showing the Highest, Lowest, and Mean Temperature, &c. &c., in Adelaide, South Australia, for the year ending 31st October, 1842.

Months.	Highest Temp.			Lowest Temp.			Mean Temp Noon.	Winds.		
								Hot	Warm	Cool.
November	85	99	82	58	65	59	78	..	15	25
December	90	102	89	56	66	65	85	3	15	23
January	80	97	78	67	75	69	84	..	8	27
February	82	100	87	75	72	65	87	2	8	27
March	84	99	82	61	64	62	81	..	12	29
April	70	80	66	52	62	56	70	..	13	15
May	67	81	68	54	60	52	66	..	14	17
June	59	73	58	34	54	54	63	..	24	6
July	60	76	62	54	58	50	61	..	23	13
August	68	77	67	45	51	43	61	..	18	21
September	69	84	71	50	52	51	66	..	22	15
October	85	90	82	55	61	57	73	..	14	22

—*From the Tasmanian Journal.*

The Franconia Raspberry.—(See p. 103, 1844.)—This shrub has been cultivated in this place for several years; the first winter they were covered; the second year one half of the plants only were protected. Those left exposed to the winter bore as well, if not better, than the protected ones, and appeared in perfect health the summer following. This year the bed contains about 1000 stems, after pruning out; every one in sound condition, and wholly exposed to the winter, which has been a very trying one. Other beds, in different locations, were left unprotected the past winter, and have proved perfectly hardy. If it is unnecessary to protect them, there is a saving of labour spring and autumn, seasons of the year when gardeners are very busy. Any one in the country cultivating them by thousands, can the next winter leave a part, in an exposed situation, unprotected, and prove the thing, sending you the result for publication. It may be that the protection afforded by houses in the city may be sufficient, and the plant be killed in the open field. They also force well. I tried a few pots of them in the greenhouse last winter, with different treatment. The result was in favour of those grown in the greatest heat, with a dry atmosphere, and watered with carbonate of ammonia, in the proportion of 300 parts water to one of ammonia; next, those watered with liquid manure; and last, those watered, simply, which were nearly a total failure, the fruit not swelling off. They were taken up with a ball of earth, before severe frost, and all put in same sized pots, with as much rich soil as could be added. —*Hovey's Magazine.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Many stove plants would do better in an intermediate house from this time until the end of August, where they would get less confinement than in a regular stove. For want of such a house, gardeners often make use of Vineries, &c. for this purpose, and distribute their stove plants in summer through the different forcing-houses; and, if only for the benefit of finishing and ripening their growth, without being crowded, this is a good plan. Air, moisture, and cleanliness are now such matters of course, that I need not insist on them.

Conservatory.—It may be useful to know that the Echites suberecta, and Alamanda cathartica graft freely on the Beaumontia grandiflora; and these two beautiful stove-climbers may therefore be got to flower in a conservatory with a fixed roof, as the Beaumontia is hardy enough to live in a common greenhouse, if it is planted out in the borders. The Beaumontia itself, however, is one of our very finest climbers. One in the conservatory here has just begun to flower, and will probably continue to do so until August. It has a greater multitude of blossom-buds on it than many would imagine. In the hurry of watering it often happens that the centre of the balls of large specimen plants, Orange-trees, &c., get very dry, the water finding its way down near the outside, where the soil is looser. Gardeners on the Continent make a provision against this, which we seldom see done in this country. They scoop out a little of the soil round the stem, and raise it towards the edge of the pot, or tub, thus forming a shallow basin, so that a large portion of the water passes down the centre. In summer, this is a good plan for many plants; and in winter, the surface could be levelled over in the usual way.

Greenhouse.—Be in no hurry to turn out of doors fine greenhouse plants; but all coarse and common things, and many soft-wooded plants, whose tops may be considered, in a manner, to be annual, may be turned out any time about the end of spring; and the finer portion of the plants will by this means have all the room, air, and light to themselves. Of all plants, those in the greenhouse are most apt to get too dry in summer; and therefore, besides the regular watering, they may be well syringed every afternoon, in such fine weather as we have had this season.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.—Since I last wrote, multitudes of tender plants have doubtless been planted out, and as the weather is as ungenial as it can be for such operations, nothing but assiduous attention to watering and shading can give them a chance of success. The importance of properly mulching the beds cannot be too much insisted upon, and where it is inconvenient to use short Grass because of its untidy appearance, the beds should be surfaced an inch thick with leaf-mould, or fresh light soil, or where neither can be used hoe the beds over so as to form a loose surface. The soil in the American beds here, which was mulched with short Grass two months back, is in the finest condition imaginable, though we have not had any rain for the last 47 days—a proof that mulching is calculated to effect considerable good, for had these beds not been mulched they must have been watered repeatedly to have kept the plants alive. Mulching is advantageous not only from saving labour, but also, where cold spring-water has to be used, *from* preventing the soil *from* being unnaturally cooled, by the frequent application of water from a *cold* medium. The indispensability of using water, as warm or even warmer than the soil, is well known to practical men; and a few experiments will soon satisfy the amateur of its advantage. After planting out your beds make a reserve of a few plants of each kind to fill up gaps, and also, if you fill any beds with Annuals, reserve some plants in pots to replace them as soon as they get shabby. Last year, after planting the beds, I had some small scarlet Pelargoniums left on hand; these stood about in a half-starved condition in small pots until the end of July, when they were potted into 24s and the bloom buds taken off. They began blooming in November, and were in bloom in the temperature of the greenhouse throughout the winter.

Rosery.—The "worm i' the bud" is making considerable havoc in some gardens. Look carefully over the plants, and destroy them between the finger and thumb; at the same time, you may also regulate the growth of the plants where necessary. The Cloth of Gold Rose is a very vigorous grower, and, like some of the other Noisette varieties, will probably grow to the length of 10 or 15 feet before it blooms.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Seedlings may now be pricked out into pans or boxes, of leaf-soil and sand, at regular distances, keeping them in a closed frame for a few days, till they have got fresh root, when they may be placed in the shade, and protected from drenching rains. *Tulips.*—Still continue to be the centre of attraction. The reports from various quarters describe the bloom as generally good, but those which miss flowering are very numerous. Bees are apt to get inside the flowers disturbing the farina. The careful florist, with a Camel-hair brush, will remove it, so that the purity of the cup may be apparent. *Ranunculuses.*—Are growing fast, but are in much want of rain. If they have been top-dressed with very rotten manure, as previously recommended, they will in some measure have escaped the effects of the drought, which has been detrimental to many. *Carnations.*—As these continue to grow, keep them regularly tied up to their flowering stakes; the pots must also be well attended to; all weeds must be removed, and the plants top-dressed. *Pinks.*—Continue to remove exuberant shoots, and thin the buds, removing those which are small or malformed. Both Pinks and Carnations are now much infested with insects; these must be carefully brushed off; avoid bruising them on the bud or stem of the plant, as it appears to have a prejudicial effect. *Dahlias*—May now be planted out with safety.—*T. F. B.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Do not let the bottom-heat of the plants intended for fruiting in the autumn fall below 85°. Let the watering be attended to with the utmost regularity, or the present hot weather will be likely to throw some of the plants into fruit prematurely. On the other hand, if you wish to induce any of the plants to fruit sooner than they appear likely to do with regular treatment, it may be done by withholding water; but it will be at the expense of size and quality. It is an excellent plan, where practicable, to let the stools from which fruit has been cut remain in the house for some time, and to supply them liberally with liquid manure, in order to encourage the growth of the suckers.

Vineries.—As soon as the Grapes are cleared from any of the rafters in the early house, let the foliage be well washed with the syringe, and repeat this twice a week, till the leaves begin to change colour. Vines planted inside the house must be kept well supplied with water. In the succession-houses, thin the bunches, stop laterals, and use the *syringe freely in the afternoons.* To those who are about to plant Vines for early forcing, I would confidently recommend the Muscat Muscadine, as one of the best kinds, combining the flavour of the Muscat with the good forcing properties of the Muscadine. It also succeeds well in pots.

Peach Houses.—Although a dry atmosphere is required for giving flavour to Peaches and Nectarines, it is not well to withhold water from the roots, while the trees are in the midst of their growth. Water the inside borders freely with liquid manure. I find guano-water to suit them remarkably well. Let the watering be done in the morning, and in clear weather, as vapour is prejudicial to the ripening fruit. The outside borders also should be watered as far as the roots extend; and if they are afterwards mulched, it will be a great saving of labour during hot, dry weather.

Fig house.—See former Calendars.

Cherry-house.—Attend carefully to the trees from which the crop has been gathered, till the wood is perfectly matured. Watering at the roots, syringing frequently, and giving plenty of air both front and back of the house, will be the principal things to attend to for several weeks.

Strawberries.—Encourage, by watering and mulching round the old plants with decayed manure or leaf mould, the growth of the Strawberry runners intended for forcing next year; as success depends in a great measure on obtaining strong plants. Any spare lights and frames may now be usefully employed, in forwarding part of the crop of Strawberries out of doors, to succeed those in the houses or pits.

Melons.—As it is not necessary that Melons intended for preserving should be of large size, to thin them much will not be required. Endeavour to preserve the foliage of the early Melons clean and healthy, and they will produce a second crop. Plant out for succession in frames where Potatoes have been forced. Let the soil be good, and 18 inches or 2 feet deep; and procure, by means of linings, a bottom-heat of about 80° to start the plants.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Pear and Apple-trees, &c., on Walls.—There is generally so much to do in other departments at present, that Pears, &c., on walls are apt to be neglected. How else can we account for the unsightly hedge-like appearance, which in a short time they will generally present; or for the different theories respecting their summer management, put forth by men of great ambition, and experience—theories which seem sometimes to be based upon a desire to excel a plausible apology for the exhibition of unsightliness. Many imagine a Pear-tree would be ruined if its shoots were removed before they became sufficiently ripened, so as to prevent any of the buds left in the base of the shoot from starting. In such a case the buds left have had little opportunity of concentrating for themselves the elaborated juices; the fruit is often injured by the simultaneous removal of shoots, that previously shaded it from the sun; the relative action going on between the fruit and the top receives a sudden check, but a check calculated to the benefit of the cultivator, as already there will be sufficiency of crude sap in the vessels and roots, to cause those buds left at the base of the shoots to break again into shoots next season; instead of those desirable small spurs, the forerunners of fruit-buds. Others again with more reason and science advocate the partial breaking of the shoots, so that they may be placed in a pendent position, contending that thus the buds intended to be left are not unnecessarily stirred, and but an seldom check is given. But even in this case, the shoots left at the base of the shoot will seldom become fruit-buds, until after another summer's maturation, while the pendent shoots shoot from the

influence of light those leaves upon the small spurs, from which you expect to obtain fruit-buds next season. The existence of a mass of branchwood indicates that the plant commands more nourishment such as it is, than the circumstances in which it is placed will enable it to appropriate to fruitful purposes. In checking this luxuriance, would it not be a preferable method to limit at once the pump-handle action of the shoots upon the root-suckers, by pinching out their points when from four to six inches in length? It will require to be repeated during the season, but there will be no danger of the lower buds breaking, no sudden check will be given to the system, no unnecessary shade afforded to those parts which ought to be fully exposed, and if persevered in, and the tree is otherwise favourably situated, there will be little occasion for resorting to the modern panacea for most fruit tree ills—root pruning. It must be adopted with caution in the case of weak trees and those new sorts which bear freely, and chiefly on the two or three years old wood.

Cucumbers—Vegetable Marrow.—Prepare for getting these planted out, forming beds of short Grass, refuse from Sea-kale beds, &c., or any other littery rubbish. *Routine.*—The same as formerly. I almost envy those who write about flooding the ground before planting, as water is water here. Cauliflowers, &c., are thriving, however, with the protection of short Grass.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Proceed as speedily as possible with the felling, peeling, drying, and housing, or stacking of Bark, while weather is favourable; and clear away all branches, timber, &c., as soon as possible.

Coppice.—The foregoing observations apply to Coppice woods, when felling and peeling is going forward. Attend to the directions given last week.

Young Plantations.—The directions given in last Number should be attended to, and followed up regularly. It is of the greatest advantage to proprietors of plantations to see that these things are done properly.

Nursery Work.—As the weather continues dry and sunny, constant attention to young seedlings in beds, or transplanted ones in rows, is necessary, and to thinly planted trees of all kinds; weed, water, shade, and fasten them firmly from wind waving, &c.; and put in practice the directions given last week regarding the training of young plants in nurseries.—*W. B.*

State of the Weather near London for the week ending May 16, 1844, as observed at the Horticultural Garden, Chiswick.

May	Moon's Age.	Barometer Max	Barometer Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Frid. 10	21	29.942	29.910	62	38	53.0	W.	.07
Sat. 11	24	30.000	29.931	61	52	56.0	N.E.	
Sun. 12	25	30.000	30.122	70	41	56.5	N.E.	
Mon. 13	26	30.355	30.309	72	42	57.5	N.E.	
Tues. 14	27	30.392	30.272	70	39	54.0	N.E.	
Wed. 15	28	30.365	30.295	69	41	55 5	N.E.	
Thurs. 16	29	30.282	29.991	65	40	52 5	N.E.	
Average		30 218	30.121	66 1	41 8	54 7		.07

May 10 Overcast, partially clouded, and fine; clear at night
11 Very fine throughout; densely overcast at night
12 Overcast; very fine; clear
13 Very fine; dry and sultry; clear at night
14 Very fine throughout; uniformly overcast at at night
15 Fine, with light clouds; brisk N.E. wind: clear and cool
16 Light clouds; very dark air; overcast at night
Mean temperature of the week, 2 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending May 25, 1844.

May	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 19	66.1	44.8	55.5	7	0.80 in.	1	4	5	1	1	4	2	—
Mon. 20	66.6	45.2	55 9	5	1.14	—	3	6	3	3	1	—	1
Tues. 21	67.0	44.4	55 6	6	0.38	2	2	7	1	5	1	—	1
Wed. 22	66.0	45.0	55.5	9	0.10	4	1	3	2	3	2	1	1
Thur. 23	67.8	47.4	57.6	6	0.31	1	3	2	4	1	2	1	3
Fri. 24	68.5	46.7	57.1	8	0.86	2	2	5	—	2	3	1	1
Sat. 25	69.1	45.8	55.9	6	0.64	1	2	—	1	1	4	2	—

The highest temperature during the above period occurred on the 25th, 1832—therm. 88°; and the lowest on the 19th, 1809—therm. 29°.

Notices to Correspondents.

APPLE PIPS.—*F.*—These should be treated in the same way as the Gooseberry seeds mentioned below: probably the reason why the seed failed is, by keeping it dry during winter in paper. The seed should either be preserved in the fruit or in dry sand during the winter, otherwise it becomes mouldy and soon perishes.¶

BOOKS.—*M. G.*—The division of "Mackintosh's Practical Gardener," relating to Conservatories.

BOX-EDGINGS.—*A Subscriber.*—You had better lift your Box-edging that is 1 ft. high, and replant it with fresh box, which will form a better edging than if the old Box was cut down.‡

DISEASES.—*A. B.*—The cause of white variegation in leaves is unknown. It is often unaccompanied by ill health. Probably the appearance in your Rhododendron will be removed by a good dressing of cowdung, and being fully exposed to light in a warm greenhouse. Treat Azalea Smithii in the same way.——*Vitis* and *J. T.*—The production on Vine leaves is a diseased state of the cells of the under surface, immediately beneath the cuticle, which become much elongated and multiplied, with a vertical arrangement, the cuticle being sometimes wholly, sometimes only partially obliterated. We do not observe any trace of an acarus, as is the case in a similar production on the leaves of the Pear and mountain Ash. The leaf is evidently discoloured and withered in consequence of the absorption of the neighbouring chlorophyll by the diseased and multiplied cells. It is very difficult, if not impossible, in the present state of our knowledge of the diseases of plants, to say what is the cause, and consequently to assign a remedy. The whole leaf, whether sound or diseased, abounds in raphides, perhaps more than is usually the case; at least, more than in a leaf pinched for comparison. Though so strongly resembling one of the epiphyllous fungi outwardly, it is of an entirely different nature.—*M. J. B.*

FLOWER-DRAWING.—*A Subscriber.*—If your daughter knows how to draw other things, she may acquire the art of drawing plants, provided she will study attentively their exact structure, and attend to the minutiæ of the matter. But it cannot be done well except by those well acquainted with Vegetable organization. We have some thoughts of giving a series of articles on the subject. Almost all flower-drawings are miserable things. Lindley's "Introduction to Botany," or his "Elements of Botany," will teach as much as books can teach, which are not written with a special view to flower-drawing.

GOOSEBERRY SEEDS.—*F.*—Sow these as soon as possible, in pots filled with a light sandy loam, and place them in a shady situation. The proper time to have sown the seed would have been about the end of February: it will probably not vegetate now before next spring. The seeds should be preserved in sand during winter, otherwise they become dry, and frequently will not vegetate for twelve months after sowing.¶

HEATING.—*H. C.*—The very circumstance you name of brick tanks, lined with cement, losing 24 gallons of water a day, is a proof of their excellence for bottom-heating. Flues may be built under an edge, and covered with a flat tile. Cover your frame with either glass or calico. The nearer the ground you can get your flue the better. It cannot be too low to be under ground. A common foot flue will do perfectly well. There is no reason that we can see why the ascending flue should not run up the back wall; you may put a damper in it in any convenient place. You cannot cement an iron boiler to a wooden tank, but must employ a union joint. Let your tank be 3 feet wide, and 2 inches deep; or 2 inches if it suits you; for the larger the body of water the better for the purpose of propagation.

HORSERADISH.—*Two Misses.*—Use the charcoal in small pieces, such as are usually sifted; it does not matter whether dust or small fragments. No doubt a good deal will be necessary to produce an effect; but it will be valuable manure afterwards. If, however, you can get the offensive water on like land, it will benefit that land, as soon ceases to smell. The detestable odour is its most useful part, if you can but get it absorbed by earth, or other substances. Cinder-siftings, small coal, peat, all act something like charcoal. It is very difficult for us to give the best advice concerning these matters, without actual inspection, which is impossible.

INSECTS.—We wish we could impress upon correspondents the utility of securing specimens from the pressure of the Post-bag, by inclosing small objects in quills, *well stopped with cork*, and larger ones in *flat boxes*. It is often very desirable to breed the insects transmitted. It is a mere waste of money and time to send Ranicula leaves dried up, and beetles and flies reduced to powder. As our great objects are to communicate information beneficial to the cultivator, and to obtain data for the advancement of science, we must beg as a favour that this request may be attended to.——*A Constant Reader.*—The greatest benefit has been derived from dusting the Gooseberry-trees with hellebore-powder; but if hand-picking be resorted to in good time, and be persevered in, it is a certain remedy. *R.*——*A Lady Subscriber.*—The animal is a snake-millipede, called Julus terrestris (?) It is believed to injure the roots of plants. *R.*——*Devoniensis.*—I do not remember to have seen Rose-buds affected as yours are; but the specimen was so much crushed, that it is impossible to form any opinion concerning the disease. Soap-suds and Tobacco-water make an excellent wash for the aphis, but fumigation is better where it can be applied. *R.*——*W. P.* is referred to the advice already given to "A Constant Reader."*R.*——*G. S. Winkle* is correct in attributing the destruction of his Raspberries to the weevils transmitted. They are named Curculio picipes; he will find their economy given in the 1st Volume of this Journal, p. 392. The best mode of destroying them is to shake the bushes over sieves *by night*, when they are feeding, by which means vast numbers have been collected. *R.*——*Iquotus.*—Your Pear-leaves seem to be diseased by some fungus, but the brown spots are caused by a Caterpillar, whose history was given in the 1st Volume of this Journal, p. 261; it will produce a beautiful little Moth, called Argyiomiges Clerckella. The most effectual means of stopping its ravages, is to pick off all the spotted leaves and burn them; at the same time the earth at the base of the trees, or of the walls against which they stand, should be stirred a few inches deep, and lime-water or liquid manure poured down to destroy the pupæ. *R.*——*X. Y.*—If you will transmit us, in a box well protected, specimens of the caterpillars or grubs infesting your Gooseberries and Apple-trees, we will with pleasure answer your queries; but without such materials it is out of our power to do so. *R.*

LIME-WATER.—*Z.*—One pound of lime will dissolve in about 100 gallons of water. But it is nonsense to apply exact chemical proportions to rough operations with the cheapest of all materials.

MANURES.—*A. B.*—Camellias like a rich loam, abundantly manured. Guano and cow urine have been found to work wonders, especially if one-eighth of fine charcoal-dust be added to the soil. Potter's guano seems to suit everything. ——*Z.*—Horse-droppings are of little value. There are no proportions worth mentioning for such mixtures as liquid manure. Everybody exercises his own judgment. The stronger the fluid, of course the less is used and *vice versâ*. Instead of applying to druggists for superphosphate and such articles, you should inquire of the advertisers in our columns.

MARTYNIA FRAGRANS.—*Andover.*—If Balsams are well managed, the same treatment that suits them will also suit this; but it is one of those plants with which nothing can be done except the house is damp as well as warm. It requires a rich soil and frequent potting; it should also be well attended to with water.‡

MORPHOLOGY.—*G. J. T.*—You are perfectly right. If you fertilise the pistil of a double flower with the pollen of a single one, the seeds will be more likely to produce double flowers than seeds raised from single ones.

NAMES OF PLANTS.—*J. C. L.*—Maxillarias cannot be determined by single flowers; the leaves are requisite. This seems to be M. platypetula. The Oncidium is bifolium.——*W. T.*—Asplenium Adiantum nigrum.‡——*W. D. T.*—Isatis tinctoria; probably Ribes petræum. It is worthless as a currant.‡——*A Subscriber.*—Doronicum Pardalianches.——*Flora.*—Lunaria biennis.——*Elisa.*—Kennedya rubicunda, Erica togata.——*J. D.*—1, Pteris longifolia; 2, Aspidium pectinatum; 3, Pteris hastata; 4, Serissa fœtida.‡——*M. A. G.*—1, Indigofera australis, var. gracilis; 2, Saxifraga granulata plena; 3, Erysimum Perowskianum; 4, Gnidia juniperifolia; 5, Pimelea decussata.‡——*A. B.*—1, Indigofera australis; 2, Gondia pubescens; 3, Leptospermum juniperinum; 4, Cytisus albus; 5, Acacia verticillata; 6, *A. tristis.*‡——*H. A.*—1, Shepherdia canadensis; 2, *S. argentea*; 3, Lonicera villosa; 4, Cynoglossum; 5, Hamamelis virginica; 6, Acer tataricum.‡——*Cupis Discors.*—1, Amelanchier ovalis; 2, Amygdalus pumila; 3, Andromeda calyculata; 4, Amelanchier vulgaris; 5, Salix cordata (?); 6, 7, 8 are so small specimens, that no one can tell what they are.‡——*W. R. M.*—Coronilla Emerus.‡——*W.*—1, Epidendrum selligerum; 2, Bletia hyacinthina; 3, Bletia sp.; 4 and 5, Oncidium Carthaginense; 6, Pentstemon, too much dried up for any one to know what species; 7, Carex ovalis; 8, C. sylvatica; 9, C. præcox.‡——*J. G.*—1, too small a specimen for any one to know it; 2, Nemophila insignis var., inferior to the common sort; 3, Spiræa lævigata.‡——*Annandale.*—A. Smilax, very like *S. glabra.*——*Kate.*—Rosa rubella, apparently.——*P. C.*—Reticularia atra, Fr., a species which has hitherto been very rarely noticed in Great Britain. It is the Lycoperdon fuliginosum of Sowerby, who found it on floating deals in the Thames, near Battersea. It is very well figured by Albertini and Schweinitz. *M. J. B.*

OAK GALLS.—*Rural Ch.*—You have inclosed *nothing*. Gall nuts are mentioned at p. 170 of Lindley's "Natural System." Kermes are insects, and have nothing to do with Botany.

ORCHIDACEÆ.—*C. F. S.*—The woods around Bahia abound in Orchidaceæ. Little is known of them; but Epidendrum cinnabarinum, Catasetum Hookeri, Cattleya Loddigesii, and Oncidium ramosum are rare and fine species to be met with there.

PANSIES.—*S. M. H.*—A perfect bloom of a Pansy should be circular in form, the petals individually large, with even edges, and of considerable substance; the side petals should meet above the eye, and the eye be distinctly marked; the ground-colour uniform, and the marking or belting should be uniform also.*

PELARGONIUMS.—*J. N. J.*—The following 12 varieties will much improve your collection:—Matilda, Coronation, Annette, Privy King, Hodge's Commodore, Queen of the Fairies, Rhoda, Nestor, Gaines's Rising Sun, Grand Monarque, Madeleine, and Garth's Witch.*

TRANSPARENT CALICO.—*J. R. L.*—If you can prevent your birds from picking and tearing this material, you may employ it for an aviary; but we should think it very unsuitable. Remember that you cannot see through it. If, however, your object is to give them some protection from cold, it might be used on the outside of the wires.

TREES.—*A Constant Reader.*—Had you not better look about you, and see what common trees and shrubs succeed best in your neighbourhood? To give you a complete list would be to print a catalogue. Besides, you give neither soil nor climate. Of course, Yews and Hollies must be employed in connexion with the style of an old English mansion. Indeed, for such a place, the common wild trees should be employed in preference to exotics, if they are to be in keeping with the architecture.

VERBENAS.—*B—g.*—The only yellow Verbena with which we are acquainted, is an old variety named *sulphurea.**

WOODEN ROOFS.—*Hibernicus.*—If boards are *nailed* upon a wooden roof, all the pitching to the world will not prevent their splitting by the action of the sun. Wooden roofs should be made with loose boards, placed crosswise, not lengthwise, and secured by fixed rebated, which house in the joints. Your best way would now be to cover it with Croggon's Asphalte felt, which is excellent for such a purpose.

MISCELLANEOUS.—*X. Y. Z.*—We never give prices. As to gas-water, its value varies from place to place. We must refer you to previous Numbers for the manner of using it.——*Nhol.*—Water that has been standing over tar (not gas-tar), is not likely to be injurious to plants; but we should not anticipate any advantage from its use.——*J. B., Kew.*—The Botanic Gardens at Kew are open to the public *gratis* every day after one o'clock.‡——*Maria.*—You may cut the first Grass on your lawn when it is about 6 inches high.‡——*B. g.*—Much obliged; but the Numbers would be useless.——*S. M. A.* will find a list of plants suitable for rockwork given at p. 152 of this year.‡——*Felix.*—You must excuse us. We cannot undertake to teach Latin, or to discuss the goodness of such as botanists employ. With them it is, in some respects, a conventional language, and necessarily so. There is no inaccuracy in the instances you mention, and we cannot understand your meaning. Jussieu's "Genera Plantarum" is written in good Latin.——*Sambucus.*—Your variety of the Elder is a most beautiful variegation. We never saw one so handsome. From what you say, we should expect the variety to be permanent. Let the wood ripen before you take cuttings from it, unless you prefer the half-ripe wood of midsummer. ——*A Beginner.*—Your Pelargoniums that are in too small pots may be shifted now. If you find book-muslin too weak, you may use calico for your purpose.‡——*W. D. T.*—Ribes aureum and sanguineum produce fruit in the neighbourhood of London; but it is not esteemed.‡——*A Subscriber.*—A scythe should last one season, at least.‡——*E. C.* may remove Laurustinus about the beginning of November.‡——*M.*—Cinerarias are occasionally sweetscented.*

SEEDLING FLORISTS' FLOWERS.

CALCEOLARIAS.—*J. W.*—Nos. 1 and 2 are not at all uncommon; 3, light buff ground, covered with maroon blotches, is a good variety; 4 is pretty, but no novelty. In packing them for post, damp blotting-paper should be placed over the flowers before you apply the cotton-wool.*——*G. S.*—Nos. 1 and 2 are not novel; sorts similar, but stronger in the marking, have already been sent out. So many of these flowers are annually raised, that it requires some decided novelty in colour or marking to make them worthy attention; we like the Selfs best in your collection, being bright and clear colours.*——*H. G. W.*—Nos. 1 and 3 are worthless; 4, pretty, but not good in form; 2 wants more of the yellow seen; 3 is the best flower, but similar sorts are now not uncommon.*——*W. P.*—*Delicata* is your best seedling, but they are none of them equal to the present race of flowers; *Cardinal Wolsey* is large, but the blotch is too blurred and undecided.*——*Z. Z. Z.*—Great numbers are raised similar to *Unique*; *Majestica* is large and delicate, and forms a pretty variety; but this is also similar to other varieties we have seen.*——*T. L. T.*—No. 151, spotted varieties are now not uncommon, and they require to be large and well formed; your specimen is much too small; all the others have the same fault, and they are no improvement upon seedlings raised years since.*

CINERARIAS.—*Y.*—Your seedling is rather narrow in the petals, but good in size, and very beautiful in colour.*——*A Constant Reader.*—The seedling sent is pretty in colour, but the petals too narrow, and wanting substance.*——*G. S.*—Your white seedling with purple disk, is decidedly the best white we have seen.*——*A. S.*—Your seedling, a rich and brilliant deep blue, with black disk, is a very beautiful variety.*——*J. B.*—*Carminata* is a rich coloured variety, better than either of the old varieties sent with it. *Mertonia* is a very pleasing colour, large and good; a single pip of each is not sufficient to form an opinion from. No. 3 we could not find.*——*J. H. Rimhurst.*—Neither of your crimson varieties have any qualities to distinguish them from a great many other varieties of similar colour. The white one tipped with delicate blue is a pleasing variety.*

FUCHSIAS.—*S. S. J.*—*Favourite* is a very good flower; tube and sepals stout, of a rich rosy scarlet; with stout corolla, of a crimson purple.*

PANSIES.—*Z A.*—No. 1, a fine large flower, of great substance; eye large and fine, lip large, and side-petals meet well above the eye, joining the belting, which is broad, of a deep purple, upon a yellow ground. No. 2, same in form as No. 1, three degrees lighter in colour, the petals not of so great a substance, and where the belting joins the ground-colour it is not so decided. No. 3, pretty, but not so good as the last. No. 1 is a very fine variety.*——*L. and D.*—*General Pollock* is a flower of good form, great substance and firmness, white ground, eye deep blue, with darker lines; belting, deep blue in the centre, gradually becoming lighter and brighter each way; top petals blue purple; there is a slight degree of roughness on the edges of the lower petals in the specimen sent.*——*Y.*—*Helen* is very pretty in colour; but we doubt the constancy of the flowers. *Tilian* fails in the ground-colour, and wants substance. *Patroclus*, very large, but wants form and compactness. *Harry* is a fine bright flower, of good substance, bright yellow ground, belting joining well above the eye, broad, and with top petals of a deep rich velvety purple. *Sulphurea superba*—of no use.*——*J. L. M.*—No. 1, a large and well-formed flower, of a deep mulberry colour, having a small centre, occasioned by the breadth of the belting. No. 2, a large flower, of good form, novel, blue belting, rather too faint. No. 3, very large, petals meet well above the eye, ground colour a bright pale yellow, eye fine, belting and upper petals of a very deep rich velvety purple, joins the ground-colour with a decided edge—a fine flower, of peculiar brightness. No. 4, fine eye, deep yellow ground, upper petals and broad belting of the same; wants a little more substance. No. 5 was rather too much gone. No. 6, a flower novel in appearance, the eye being a lighter blue than usual, very little deeper than the margin; large and well formed; rather defective where the side-petals should meet above the eye. No. 7 wants the dark eye. No. 8, with a fine eye, has a slight variation in the ground-colour between the lip and side petals. These are a fine set of flowers, large, with the petals in fine proportion, the side-petals generally meeting well above the eye.*

PELARGONIUMS.—*Anon.*—*Flora* is a flower of good form, rather too veiny in the under petals, and requiring a white centre to relieve the flower from a monotonous appearance.*——*S. W.*—*Beauty of Kilperton*: a large, delicate, and showy flower; trusses large; the upper petals are rather crumpled, and too veiny.*

PETUNIAS.—*F. W. K.*—Your pencilled varieties are the best; and of these No. 8 appears to be the most decided; and No. 16, a rich purple of a peculiar tint, with dark throat, is worth preserving. Nos. 2 and 3 are common; these flowers alter so much after being cut and placed in water, that it is difficult to decide upon their particular tint.*

VERBENAS.—*J. M., Rimhurst.*—Both your specimens are good varieties; the flowers are large, and they expand well.*

ERRATUM.—In the article on "Potting," by T. Moore, in last week's Paper, p. 301, col. 2, line 31, instead of "it is on soil," read "it is an evil."

AGRICULTURAL COLLEGE, &c.—At a Meeting of the Committee, held the 6th May, 1844—Earl Bathurst in the Chair, Resolved, "That having determined on applying for a Royal Charter, to limit the responsibility, and alter the profit of shareholders, it is desirable to fix on a site for the Institution. The Committee therefore invite Tenders of Farms, of from 300 to 600 acres, addressed to the Secretary."—Signed, by order of the Committee, ROBT. J. BROWN, Hon. Sec. Cirencester, 17th May, 1844.

The Agricultural Gazette.

SATURDAY, MAY 18, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 22 Agricultural Society of England.
THURSDAY, May 23 Agricultural Imp. Soc. of Ireland.
WEDNESDAY, May 29 Agricultural Society of England.
THURSDAY, May 30 Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

May 24 { Gloucester. Cardiff.
May 27 { Chepstow. Westcott.
May 28 { Fairford. Rayleigh.
May 30 Richmondshire.
May 31 { Stoke Ferry. Hadleigh. Wrentham.
June 1 { Debenham. Collumpton.

WE do not intend to detail the facts, experiments, and arguments, which induce those who study the subject to believe that much of the solid matter, the carbon of vegetables, enters them through their leaves from the air, as well as through their roots from the soil. We allude to the subject generally, because it explains the advantages which are derived from many Agricultural operations, and more especially because it so clearly explains the benefit which, as many farmers know from experience, often follows the practice of MOWING YOUNG WHEAT at this season of the year.

The food which plants absorb by means of their leaves from the air is contained in a gas existing there, called *carbonic acid*—so called, because it is known to be composed of carbon, the substance of wood, and of oxygen, the life-giving element of the atmosphere. Now, it has been ascertained that under the influence of solar light, plants absorb this carbonic acid gas, and decomposing it in their leaves retain the carbon and exhale the oxygen. Light is the agent in this process; on whatever part of a vegetable it falls, there it effects a decomposition of this gas, causing a deposition of carbon, the basis of *wood*. Its tendency is thus to convert an herbaceous into a woody substance. Deprive a plant of light, and, to speak technically, you blanch it; it becomes soft, juicy, colourless; give light free access to it, and it hardens, assumes a colour, and in fact becomes woody.

Now, at this season of the year, on our best Wheat lands, the plants, owing to the luxuriance of their growth, completely hide the ground; this, in dry weather, such as we have at present, is certainly an advantage, but the foliage of the Wheat plant, where it has grown luxuriantly, hides not only the ground but also the stem of the plant. After a shower at this season, when every leaf is bowing under the weight of rain-water, look towards the sun at a promising field of Wheat, and you will see its light reflected towards you in an unbroken sheet; none of it can find access to the lower parts of the plants—the leaves get it all to themselves, and as a natural consequence, they grow most luxuriantly, increasing in number, length, and breadth, until, with the load of water which the weather sometimes lays upon them, they ultimately become too heavy for the weak herbaceous stalks below them, and the plants are laid flat on the ground, to the great injury of the crop.

The remedy for this, as farmers well know, is to mow these broad leaves off. There is no chance as yet, with ordinary care, of injuring the young ear; its position in the plant may be easily ascertained by dissection, and except where the crop is very forward, it is still very near the ground. The leaves should be cut as high as possible, and for this purpose the scythe must be very sharp. The Grass cut off should be allowed to remain where it falls: it will soon wither and disappear.

Why is this process beneficial? The practical man will say that the plant is thus relieved from the weight of leaf above it, and also from the load of water which it carried, and which bowed it to the ground. Doubtless, the plant does derive an immediate advantage from the process in this respect; but this is a very meagre answer to our question. The true answer depends upon that chemical process in which, as we have said, light is an agent. The leaf of the plant being cut off, light has access to the stalk, and renders woody that which before was soft and herbaceous. The stem of the Wheat-plant thus hardens, and becomes strong and able to bear the weight of leaf and ear in a future stage of its growth. And, unquestionably, upon the strength of the stem the ultimate productiveness of the crop in a great measure depends.

Now, what good can be derived from the perusal of these observations? No plan has been suggested which ordinary common-sense, under the circumstances, would not at once indicate, and the advantage of which experience has not long ago confirmed. But, here is a case in which a practical man, who may be prejudiced against, as he thinks them, the officious suggestions of scientific men, may fancy that he has full scope for his sarcasm. "Well! after all your laboured efforts, after invoking all the aids of Chemistry and Vegetable Physiology, you have got no farther than the stage to which I, and my predecessors for generations back, had long ago attained. You have elicited nothing new—you have suggested nothing by which I can hope to *profit*—you have but confirmed me in the opinion that farmers must put their own shoulders to the wheel as heretofore, and not stand calling on science, theory, or Jupiter, for assistance."

Let us, nevertheless, simply state a useful inference, which may fairly be drawn from what has been said, to impress the truth of which upon our readers these remarks have, in fact, been made.

Here is an instance in which the deductions of science, independently of the farmer, entirely agree with and confirm a practice of which the experience of farmers has long ago approved. This is, in fact, an instance in which, had it not been forestalled by experience, the suggestions of science might have been adopted with great advantage. Let this one instance be added to the many now existing, the tendency of which is to excite and increase the confidence of farmers in the results obtained by scientific men. If a knowledge of these results were generally diffused, and if confidence in them really existed in the minds of the great body of the tenants of land, the practice of Agriculture would undoubtedly *improve* with rapidity, in the true sense of the word; the expenses of cultivation would diminish, and its returns increase.

ROOKS.

[A CORRESPONDENCE regarding the injury supposed to be done to the farmer by the Rooks has lately been published by J. M. Hog, Esq., of Newliston, Midlothian. It was occasioned by the presentation of a memorial to that gentleman, signed by 54 farmers, including some proprietors of land in that neighbourhood, requesting him, as the proprietor of a very large rookery, to allow means to be used for its diminution. Mr. Hog says, in the course of his answer—

"It is the result of my own deliberate conviction, formed from an observation of the habits of the bird from my earliest infancy, that the injury done by it to the farmer is of the most trifling nature. I believe it is a fact in which all naturalists will confirm me, that the almost entire food of the Rook is grubs and insects—that they prefer these by much to grain of any kind—and that it is only when hard pressed by hunger that they attack this species of food. I think I may call the attention of every observing farmer to what all who have watched their habits must have noticed, that at seed-time they *follow* the harrows, picking up the worms which are dislodged from the broken clods, not *preceding* them, as they would certainly do were their object GRAIN instead of GRUBS."

Towards the close of his letter he states his intention of applying for information as to the food of the crow to Charles Waterton, Esq., the celebrated naturalist. The following is a portion of that gentleman's letter, in answer to Mr. Hog's application.]

"I hold the Rooks in great respect. We have innumerable quantities of these birds in this part of Yorkshire—and we consider them our friends. They appear in thousands upon our Grass-lands, and destroy myriads of insects. After they have done their work in these inclosures, you may pick up basketsful of grass-plants, all injured at the root by the gnawing insect. We prize the birds much for this; and we pronounce them most useful guardians of our meadows and our pastures. Whenever we see the Rooks in our Turnip-fields we know then to our sorrow what is going on there. We are aware that grubs are destroying the Turnips; and we hail with pleasure the arrival of the Rooks, which alone can arrest their dreaded progress. I have never seen the least particle of Turnip, or of Turnip-tops in the craws of the Rooks, either young or old. If these birds feed on Swedish Turnips in Scotland, they abstain from such food here; so far as I can learn by inquiry. Perhaps they may be taking insects at the time that they are seen perforating the Turnip. Dissection could set this doubt at rest for ever. No farmer in our neighbourhood complains that his Swedish Turnips are injured by the Rook. The services of the Rook to our Oak-trees are positively beyond estimation. I do believe if it were not for this bird, all the young leaves on our Oaks would be consumed by the Cockchafers. Whilst the Ringdove is devouring the heart-shoot of the rising Clover in spring, you may see the Rook devouring insects in the same field.

"The faults of the Rook, in our imperfect eyes, are as follows:—It pulls up the young blade of corn on its first appearance, in order to get at the seed-grain still at the root of it. The petty pilfering lasts about three weeks, and during this period we hire a boy at threepence a-day, sometimes sixpence, to scare the birds off. Some years we have no boy at all. Either way, the crops are apparently the same in quantity every year. In winter the Rook will attack the corn-stacks which have lost part of their thatch by a gale of wind. He is a slovenly farmer who does not repair the damaged roof immediately; and still we have farmers in Yorkshire of this description. The Rook certainly is too fond of our Walnuts; of course, it requires to be sharply looked after when the fruit is ripe. In breeding time, it will twist off the uppermost twigs of the English and Dutch Elms, and sometimes those of the Oak in which its nest is built, for the purpose of increasing it. This practice gives the tops of the trees an unsightly appearance, and may injure their growth in the course of time. Sycamores, Beeches, Firs, and Ashes, escape in great measure the spoliation. It ought to be generally known that, in former times, the North American colonists having banished the Grakles, (their Rooks), the insects ate up the whole of their Grass, and the people were obliged to get their stock of Hay from Pennsylvania and from England. And in the island of Bourbon, the poor eastern Grakles disappeared under a similar persecution. The islanders suffered in their turn; for clouds of Grasshoppers consumed every green blade, and the colonists were compelled to apply to Government for a fresh breed of Grakles, and also for a law to protect them. Thus it appears from history that the sages of the East, and the wise men of the West, did wrong in destroying their Grakles. They were severely punished for their temerity, by the loss of their crops. They repented and repaired the damage; and, so far as I can learn, things have gone on well betwixt themselves and the Grakles, and betwixt the Grakles and the crops ever since. In 1824 I saw immense flocks of these birds in the low meadows of the Delaware. I defend my sable friends, the Rooks, here in England, on account of their services to the land. Should the adverse party effect their extirpation from Scotland, and then suffer by the ravages of the grub, I will, at any time, be happy to send you a fresh supply of these useful and interesting birds.—*Charles Waterton.*" [In a separate communication Mr. Waterton refers to what he has already written on the Rook, in his "Essays," to which I would request attention. As he is now engaged in writing a second volume, for the benefit of Mrs. Loudon, it is to be hoped he will find a place for this subject—as indeed he gives me reason to expect.—*J. M. H.*]

TURNIP CULTURE.—No. I.

THE system which it is our intention to describe is in full operation, and has been in practice in various parts of the kingdom for many years, so that it *is* no new thing, no mere fancy.

The science of Agriculture is founded on those fixed principles which regulate the operations of Nature, and whether the farmer knows them or not—whether he endeavours to carry out these principles or not—Nature will constantly proceed in her own way acting upon them; and any striving against her, whether in ignorance or not, must result in loss. It is then of the greatest importance for us to know the principles which regulate vegetation, and, before proceeding to describe the mode of cultivating the Turnip crop, it may be well first to inquire into the nature and habits of the plant itself. We shall thus be likely to ascertain the kind of cultivation and the condition of soil which it requires to make it grow in perfection.

The leaves of the Turnip plant are large, with thick fleshy veins, rough and prickly, having the power of evaporating or imbibing a large quantity of moisture; and it is said that the plant, by virtue of these large leaves, receives a great part of its nourishment from the atmosphere. The roots, which are sent out laterally from the tap root, present a fine silk-like appearance, and extend to a great distance, till they meet with the obstruction either of other roots or of uncultivated land. When the soil is well cultivated, they extend to the distance of two or three feet from the centre of the plant, ramifying in every direction, crossing and re-crossing each other, forming a complete net-work over the whole of the cultivated soil. This may be observed in the soil between the rows, when it has been deeply and repeatedly horse-hoed or ploughed and harrowed; but when the soil has not been well pulverised between the rows, the fine filaments of the roots cannot push themselves in search of nourishment.

The bulb is that part of the plant for which it is cultivated; it generally takes a globular form, sometimes more of a cylindrical shape, conical at the root, and globular or even flat at the top. The bulb, when it is ripe and fit for use, has a fleshy substance full of juice, generally of a sweetish though sometimes of an acrid taste. When fresh, the Turnip bulb contains about 89 per cent. of water.

The roots of all plants that are cultivated by the farmer push over a large horizontal extent in search of nourishment; an extent which is limited generally by the distance at which the plants are placed on the ground, *i. e.* provided Nature do not fill up the space between them by natural plants (weeds). When this distance is great, the roots are most extensive, and the plants are proportionably luxuriant; but when the plants are thick on the ground, their roots extend and intermingle with the roots of those that are nearest, and are limited in their growth and bulk. Hence a necessity of having only the plant we cultivate growing in the field, and of extirpating weeds of every description, during the whole process of the growth of any crop.

The spongioles which are at the termination of the small fibrous roots, take in nourishment from the soil; and as the fibrous roots spread over the whole of the cultivated land, it is evident that if we give to this active soil a regular and equal supply of manure, and at the same time make and keep it in as perfect a state of cultivation, and the greatest possible depth which circumstances will admit, we may expect the greatest return which the active soil, under its present condition, can produce.

As the size and quality of every vegetable greatly depends on the size and number of the surface of its leaves, the advantages of attending to the growth of the leaves of bulbous-rooted plants must be evident. By increasing the growth of the leaves of the Turnip plant, we furnish it with the means of increasing the bulk of its bulb; for if the leaves be to the vegetable what the lungs and stomach are to the animal—if they are large, the roots will naturally be large also. When, therefore, we have our Turnips so close together, that the leaves have not room to grow, we prevent ourselves of getting a good crop of roots.—*John Morton, Whitfield, Thornbury.*

ON BLACK HORSEPONDS.—No. II.

The office performed by the kidneys in man and animals is that of separating from the blood the soluble saline substances, as well as the nitrogenous matters which are destined to be carried out of the animal system; these substances we find dissolved in water in the urine, and they exist in much larger quantities in it than in the solid excrements of animals; yet how little attention is bestowed by the farmer in collecting and preserving this valuable liquid! The solid matter contained in the urine of man and our domestic animals is at least as rich, if not richer in quality, and capable of supplying plants with as large an amount of nitrogenous, as well as of inorganic food, as the best guano imported, and when judiciously applied to the land is found to produce an effect on the crops in every respect equal to it, giving a large increase both in the quantity and in the quality of the produce. The amount of dry fertilising matter annually lost to the farmer, who allows the water from his cattle stalls and stables to waste, valued at the present price of guano (10*l.* per ton), will amount to a sum of money which few imagine, and from which, under judicious management, and at a trifling cost, the full effect of a powerful manure might be obtained.

The solid matter, both organic and inorganic, as well as water, contained in 10,000 parts of the fresh urine of man, and some of our domestic animals, will be seen by the following table:—

Urine of	Water in 10,000 parts	Solid matter in 10,000 parts.		
		Organic.	Inorganic	Total.
Man	9090	230	76	306
Cow	9300	510	200	700
Horse	9100	270	330	600
Pig	9260	560	180	740
Sheep	9600	280	120	400

From the above table, it is obvious that for every 10,000 lbs. of the urine of the horse that is allowed to run to waste, 600 lbs. of solid dry matter, of high fertilising power, is lost to the farmer, worth 2*l.* 15*s.* at the present price of guano; and for every 10,000 lbs. of the urine of the cow, the loss would be 700 lbs. of dry matter, worth 3*l.* 2*s.* 6*d.* The same calculation might be extended to the urine of the other domestic animals, and to that of man.

But to prove this statement, and convince the farmer of the *great loss he* annually sustains, it will be necessary to enter a little more into detail.

From recent observations, made with every precaution to insure success, it appears that the average quantity of urine annually voided by man, the cow, and the horse, amounts to the following quantities:—

Man, 1000 lbs., containing of solid matter 67 lbs.
Cow, 12,000 ,, ,, ,, ,, 900
Horse, 1000 ,, ,, ,, ,, 60

It may appear rather surprising to many that the amount of urine voided by the horse should not exceed that of man, particularly when the quantity of liquid taken into the stomach by each is considered—the horse often drinking four or five gallons of water in the 24 hours, while man seldom exceeds 3½ lbs. of liquid; the explanation of the cause of this difference is to be sought for in the extent of skin and lungs in the horse capable of giving off large quantities of water as insensible perspiration, while the same function in man seldom amounts to one-tenth part the liquid taken.

It appears also, from the recent experiments of Boussingault, that when a cow is giving milk, a less amount of urine is voided. He found that a horse which drank 35 lbs. of water in 24 hours only gave 3 lbs. of urine; and a cow which drank 132 lbs. of water in the same time gave 18 lbs. of urine, and 19 lbs. of milk. But, besides the amount of water drank, many circumstances tend to modify the amount of water, nitrogenous and saline substances contained in the urine, such as the quantity and quality of the food, the temperature of the air, and amount of exercise.

As an illustration of the loss sustained by a farmer who allows his liquid manure to run into his horse-pond or nearest ditch, we will take the case of one occupying 500 acres of land, consisting of 400 of arable, and 100 of pasture; supposing the stock on such a farm to be about 50 head of oxen, 20 horses, and 20 pigs, besides sheep.

If we only take into account the urine of the oxen, horses, and pigs, the sheep not being in the fold-yard, we shall have 45,000 lbs. weight, or upwards of 20 tons, of dry fertilising matter contained in the liquid manure, which, at 10*l.* per ton, would be worth no less than [illegible]. The urine of the horses would yield [illegible] equal to 1200 lbs., or nearly 11 cwt., equal [illegible] 10*s.*; and if the pig only passes 3 lbs. of [illegible] hours, the 50 pigs would produce 4440 lbs., [illegible] tons of solid matter, worth 20*l.*; making a [illegible] equal to 22 tons 11 cwt. in [illegible] solid matter, which in its fast [illegible] is no reason that we can wh[illegible] the price of guano, [illegible] the tank wall; you may be worth no less than [illegible] place. You cannot com[illegible]

If we assume that [illegible] of this valuable manure is annually wasted through bad management, the loss to the farmer of every 500 acres of land is equal to eight to 16 tons annually; and if 2 cwt. of guano is sufficient to keep an acre of land in a high state of fertility, he here loses the means of supporting no less than 105 acres of land at the same rate; and if we extend our calculation to the whole kingdom, the subject becomes far more important. It is estimated that the number of cattle in the United Kingdom amounts to eight millions: hence, if we multiply the dry solid matter contained in the urine voided annually by one ox, by the number of cattle, we have upwards of 3,000,000 tons, which, at 10*l.* per ton, will amount to 30,000,000*l.* sterling, or more than six times the amount of the income-tax of the country, and as much as would purchase 4½ cwt. of guano for every acre of arable and garden land in England, Ireland, Scotland, Wales, and the British Isles!*

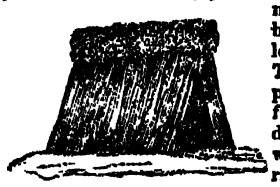
In Holland and Flanders, they well understand the amount, and appreciate the value of these manures; but how little knowledge exists of either in this country!—*Alfred Gyde, Painswick.*

* From Mr. Couling's statement to a Committee of the House of Commons, it appears that 16,000,000 acres are under arable and garden culture in Great Britain.

ON THE CULTIVATION OF FLAX.—No. VI.

When the saving of seed for sowing is an object, it is better that the Flax should be stacked up so soon as thoroughly dried, and the treatment of it can afterwards be resumed when convenient. This is the Courtrai system, so called from the name of the district in the north of France, in which it is so successfully practised. This system is peculiarly deserving of the attention of flax-growers in this country, especially such as can afford to wait for a season for a return from their capital, for which they will be amply repaid.

In the Courtrai district, the Flax, after being pulled, is placed on end in a very peculiar manner, of which the annexed figure will convey a better idea than the most lengthened description. Though apparently loosely placed on end, it is so skilfully arranged, that it is difficult to blow it down by winds, nor do the heaviest rains penetrate it. In a few days, usually eight or ten, according to the state of the weather, it will be sufficiently dried, after which it is bound up into bunches. The Flax is then made up into small wind-stacks, as they are termed, only a single bunch in breadth, and after remaining some time further in this state, it is ready to be at once carried to the barn, or stand in some convenient situation until the further operations of the manufacture are to be commenced. The method of storing in this case will not differ from that employed in the case of grain crops in the stackyard. In this state the Flax may be kept for an indefinite length of time without injury,—nay, indeed, but with absolute advantage,—experience having proved that in the second or third year which it remains in the stack, it will have materially improved in quality. An important advantage gained by this system of treatment is that of being able to have the watering and grassing done in the summer, when the weather is more favourable than the autumn. May or June is the usual time to steep Flax thus treated, but it may be done at whatever period of the summer may be most convenient. In the flax-growing districts in Ireland considerable prejudice exists against this system, it being supposed that allowing the stem to harden before steeping, injures the quality of the fibre; but the superiority of the Courtrai Flax shows that such is not the case.



The seed may also be taken off Flax treated in this manner at any convenient time; but it is usually done during the winter, that the seed may be ready for sowing in the spring; and after the performance of this operation the crop is again stacked up as before. It would obviously be more convenient to take off the seed immediately before steeping the Flax, when the labour of re-stacking would be saved; but the steeping takes place at too late a period of the season to admit of that arrangement. This is not done by the ripple, as in the former case, but by repeated strokes of a stick, the foot being, at the same time, kept on the root end of the Flax, to prevent it from being turned about or disarranged, which would interfere with the after processes of the manufacture.

The next operation in the treatment of Flax is watering, and the mode of conducting this does not vary, whatever the previous management may have been. It is to be observed, however, that when the Flax has been dried, a longer time will be required in the water. The object of this process is to facilitate the separation of the fibre from the stem, the mucilaginous matters causing the fibres to adhere to it, thereby partially undergoing the putrefactive fermentation. The water should be what is termed soft; to insure which it should be collected several days in the pond before being required: nor is it to be changed during the time the Flax is in it, the quantity lost by leakage from the pond and evaporation being, however, cautiously supplied. But, above all, it is necessary to guard against the use of water impregnated with mineral matters, which would prove most injurious to the Flax. This must be guarded against by previous examination; but to prevent any mistakes on this point, if the quality of the water is in any degree doubtful, it will be well to have a cut formed all round the pond, which may be filled up with stones, observing that the cut or trench thus formed shall be considerably deeper than the pond. This arrangement will, in general, prevent the ingress of injurious matters. The water should be at least of sufficient depth to admit of the Flax being placed almost upright. The length and breadth of the ponds will obviously be regulated by the situation and quantity of Flax to be steeped, observing that more than one day's pulling should not be placed in the same pond. The Flax is put into the water with the root end uppermost, and a covering of straw or other matters not liable to rapid decomposition, is found to be advantageous in preserving uniformity of colour, by shading off the light. After being covered in this manner, stones are placed along the surface, to keep all under the water, and in this state it remains until it is ready to be taken out of the pond. Although any considerable current of water passing through the pond has been said to be injurious, such a flow as will carry away the impurities caused by the fermentation is necessary to produce fibre of a good colour.

The time required in the water is variable, being regulated by the state of the weather, the quality of the water employed, and the degree of ripeness or dryness which the Flax had previously obtained. When properly watered it will be observed to sink in the pond, and the fibres will separate freely from the stalk on its being broken and rubbed by the hand. Eight or ten days will in some cases be sufficient, and in others ten or twelve may be required; but repeated examinations of the Flax itself only can be depended on. For this purpose a few stalks of average quality should be taken from bunches in different parts of the pond, and carefully examined, as before directed. While it is important that the watering process should have been continued until the fibre readily separates from the stem on being rubbed, an excess of watering is to be strictly guarded against. It is apparent that carrying the fermentation beyond a certain extent would cause the destruction of the Flax altogether.

After being taken out of the water, the Flax is placed on end a few hours, on the bank, to drain, the bunches supporting each other. It must not be allowed to remain long in this state, as the action of the water would continue unimpaired on the inside bunches, by which they would continue to get softer, while those on the outside, being comparatively dry, would not be affected. This, then, would interfere with uniformity in the watering, and lower the value of the Flax.

Grassing is the next operation in the management of the crop; the intention of which is to remedy any defects in the watering, and to wash and bleach the Flax by exposure to the sun and rains. Pasture-land, on which the Grass is short and close, is the proper place on which to spread the Flax; and in this operation it is important to distribute it evenly on the surface, and to make the rows perfectly straight, to prevent confusion in turning. It should also be rather thickly spread, to prevent the weather from hardening it too much before being properly bleached, and further, to prevent it from being easily tossed about by the winds. After remaining a short time on the Grass, it is turned over by long poles, or wattles, run under the rows, beginning with the first row, and proceeding so that the second falls upon the ground occupied by the first. The object in turning the Flax, is to secure both sides being equally bleached and washed; and with such facility is this process performed on the Continent, that after three or four turnings, the crop is as evenly and regular in the rows as when first spread. The turnings, as far as possible, are performed immediately before rain, so that the Flax may be laid down by it, and obtain a better hold of the Grass—if the phrase be allowed—as it is obviously more easily disturbed by wind after being turned than before. Turning the Flax is never neglected on the Continent, and hence a primary cause of the uniformity of colour of the fibre so treated. Recent trials in Ireland have shown that at least 2*s.* per stone are lost by neglecting this particular alone.

The length of time during which the Flax should remain on the Grass, will depend on the weather and state of the Flax itself. If not fully watered, a greater length of time will be required on the Grass; and in dry weather a longer time will be necessary than in wet weather—the reason of which is obvious. The precise time required, either in watering or grassing, can only be ascertained by careful observation; and to guide the flax-grower on the point, some experience is necessary. Fibre of an inferior quality will be the result of allowing too short a time for these processes; but an excess of either is still more injurious, as effecting the destruction of it altogether. Before taking up the crop off the Grass, it is important that it should be thoroughly dried; to secure which, in a still greater degree, it is usually placed on end for a short time in the field. It is afterwards formed into small stacks, loosely built, in which it may remain without injury for a length of time, until it is convenient to resume the manufacture.—*J. Sproule.*

ON BREEDS OF SHEEP.

The management and selection of any breed of sheep must, after all, become matter of pounds, shillings, and pence. The question the farmer has to consider is, what description of sheep will in the long-run return the most profit; and this question must be viewed in strict relation to the management he will be able to adopt on the particular farm on which he may be located. It is not therefore a simple, but a compound question. It is not merely which breed will make most flesh and fat, but which will make it in the shortest time and on the least food; which can bear the weather, or hard keep, or travelling, or a particular mode of management, with the greatest impunity. All these considerations must enter

into the farmer's mind before he can come to a sound conclusion. From the want of making these considerations many fatal mistakes have been made, and a flock has been selected altogether unsuitable to the soil, and incapable of bearing the severity of the weather.

The two breeds which appear as rivals in their claims on public attention are the New Leicesters and the South Downs. It cannot be doubted that, as far as propensity to fatten and early maturity is considered, the Leicester will not only rival, but eclipse all others; for these qualities the former may justly be considered as a model, and all other breeds will possess these qualities in a greater or lesser degree, in proportion as they possess the similitude of the form and points of the Leicester sheep. The South Down itself will not be an exception to this rule, for if the improved and the neglected specimens be compared together, it will be found that the excellencies of the former consist in those points which approximate most to the Leicester. The wool, too, is also a consideration; for the fleece, from its greater length and weight, will bring in nearly double that of the Down. Where, therefore, the pasture is very fertile, and the sheep can be tended with much care and without exposure, the Leicester may be justly regarded as the most profitable of the pure breeds. Its drawbacks, however, are the incapability of the animal for bearing exposure, or travelling, or living hard; in fact, its weaker constitution, and greater liability to inflammatory disorders. It is thus unfitted for the purposes of folding, or for the exposure of the South Downs, and still more for contending with the severities of the Grampian hills or the Welsh mountains. In such localities these sheep could not endure. Then again, the mutton is by no means so good as the South Down, which, however, is partly, not wholly, owing to the early period (twenty months) at which they are fit for the butcher, and partly to the very large proportion of tallow in proportion to the lean. Thus it is not a favourite in the London markets, and accordingly, of late years, the first cross between the Leicester and the Down has been produced instead of the Leicester; and it is contended that this first cross is the most profitable sheep that can be fattened, making greater and more rapid progress than the Down, and better meat than the Leicester, and possessing, to some extent, the dark faces of the Down, which sign-manual of their origin renders them a greater favourite with the butcher.

The South Down, or rather the improved South Down—for there is a great difference between the two—possesses most valuable qualities; with a propensity to fatten inferior only to the Leicester, but with later maturity (often 32 months, though considerably shorter than what it once was), this breed are excellent travellers, well adapted for folding, hardy compared with the Leicester, and capable of living on short pasture, and perhaps the best of all breeds for the Down farms of the South of England. The mutton, too, is more esteemed than any other, with the exception of the small mountain sheep. Perhaps there is no ancient pure breed of sheep that has undergone so much improvement as the South Down, and it affords the owners of other breeds a proper example, showing what can be done by care and attention, and the application of proper principles. Nothing can afford a better proof of the sterling qualities of this breed than the facts that some 20 or 30 years since, the price of South Down wool rendered the fleece a matter of great importance; and now, although the price is reduced to one-third, and it can never expect to realise much advance, yet, notwithstanding this, the valuable qualities of the animal, and the improvements that have been made, have enabled the breed still to retain a foremost rank in public favour.

With these two valuable breeds, each adapted for different pastures, it may, perhaps, be asked, What need is there of any other? It will, however, be found that in the marshes of Kent and many other places, the superior hardihood of the native breeds has rendered them more profitable than the Leicester, though, unquestionably, crosses with the latter have much improved their value. And notwithstanding the eminent qualities of the South Down, they have been found not sufficiently hardy to endure the severities of the Grampian hills or the Welsh mountains. They have been tried and found wanting: vast numbers have been destroyed by the rigours of winter in these bleak situations, and the losses that have accrued to many parties have deterred others from following their example.

The Cheviot sheep possess many valuable qualities; decidedly inferior to the South Downs in their fattening powers and their early maturity, they are superior in these points to all other mountain sheep, and, in hardihood, even to the South Down, and are thus the best adapted to their native hills, and all other pastures of a similar character. When carried, however, to the extreme north and the islands of Zetland and Orkney, it is said they are not sufficiently hardy for these extra rigorous places, although it is probable, with a little increase of care, they might be rendered so, and they would then be far more profitable than the ungainly forms of the native breed.

These three breeds—the Leicester, the South Down, and the Cheviot—may be considered as the principal pure breeds which this country possesses. They are essential to the variety of pastures which obtain, and without them this country could not be properly stocked. Other breeds, which it may be advantageous to adopt, either possess peculiar qualities which render them valuable, or have been crossed extensively with more improved breeds. [Extracted, by permission, from a forthcoming work on sheep, by Mr. W. C. Spooner, of Southampton.]

LEADING FEATURES OF EAST LOTHIAN HUSBANDRY.

As the subject of tenure appears to be now exciting much attention, a brief account of the connection subsisting between landlord and tenant in this district may prove interesting at the present time; particularly as it is, I believe, generally regarded as incontrovertible, that the prosperity and acknowledged excellence of Lothian Agriculture, the high rentals of proprietors, and the comparative happiness and contentment of the rural population, are mainly attributable to the secure and liberal conditions on which the farmers hold possession. The principal points to which I propose adverting, in my remarks upon this subject are, 1. Mode of letting or renting Farms. 2. Time and conditions of entry. 3. Varieties of tenure and usual covenants of leases. 4. Amount of rent and public burdens. 5. Different modes of paying rent.

1. When a proprietor has a farm to let, his factor advertises the circumstance in the newspapers, stating its situation and extent—also the duration of lease, time of entry, kind of rent, whether a money or a grain rent, or a combination of both, together with any other particulars connected with, or which may enhance the value of the farm. Any individual whom such a farm and conditions may suit, goes immediately to inspect it, accompanied and assisted in its valuation by a few of his cleverest agricultural friends. All the ability and practical skill of the would-be-tenant and his advisers, are of course called forth, and required on this momentous occasion: they carefully examine the fields, fences, buildings, &c. separately and minutely, particularly attending to the nature of the soil and subsoil,—its condition with respect to weeds, wetness, and fertility, besides a great many other considerations which may enable them to arrive at a tolerably correct estimate of the productive capabilities of the farm, its advantages and disadvantages, but above all, the amount of rent which it may be safe or advisable to offer for it. All tenders, or written proposals, are lodged, up to a specified date, (generally a month prior to the period of entry,) with the factor. When a candidate for the farm is well known to the landlord, or his agents, as a man of capital and enterprise, no security is required of him, but in the case of strangers and those whose funds and ability for the payment of the stipulated rent, and the fulfilment of the other obligations of the lease, are unknown or questionable, ample and unexceptionable security is demanded for having the farm "stocked and cropped, and the first rent paid." In the course of a few days after the time limited for receiving proposals, the successful candidate for the farm is announced, and the others apprised of their failure. In the majority of instances the highest bidder obtains the farm, but this is not always or necessarily the case, the highest offer being sometimes rejected and the preference given to some more favoured competitor, although promising an inferior amount of rent.

2. Possession is given almost invariably throughout Scotland at the Whitsunday and Martinmas Terms (May 15 and Nov. 11), but the former is the usual period of entry in this county. The straw of the last or away-going crop is sometimes left by the out-going tenant in "steelbow," according to previous agreements, that is, it descends without purchase to the new tenant, he, in like manner, having to leave a similar provision for his successor. This evidently useful regulation is not, however, so common in this as in some of the adjoining counties. In the majority of instances the whole of the dung made from the penult, or last crop but one, must also be left for the use of the new tenant, for which he pays his predecessor according to the valuation of arbiters mutually appointed. The incoming tenant has likewise to pay for the young Grass (the previous year's sowing) and fallow, if any; but he is entitled to compensation from the old tenant, or from the landlord, should the former neglect to leave in Grass of different ages, and in bare or summer fallow, the precise proportion of the farm stipulated in the lease, the amount of compensation being estimated by mutually appointed arbiters. He is in his turn, of course, subject to similar obligations at the expiration of his lease.

3. Although the system of leasehold tenure for a limited number of years may be said to be universal in the Lothians, there are still, I understand, a few lingering instances of life-rent leases in the parish of Ormiston, and in one or two other places; but this ancient mode of tenure is deservedly hastening to utter extinction. Life-rent tenure has almost invariably been found highly detrimental to the progress of improvement, and the interests of the landlord, without communicating any corresponding advantage to the tenant. Tenancy-at-will, so prevalent in England and Ireland, is happily altogether unknown here. An East Lothian farmer would consider that individual as insane, who would take a farm, and expend his money on its improvement, on the mere good faith of any man; he must have everything down in "black and white," before he lays out a shilling on the farm. The general duration of leases in this county is for a term of either 19 or 21 years, and as many crops. The restrictive clauses in East Lothian leases are neither numerous nor very stringent, and as referring chiefly to the latter period of the lease, are by no means obstructive to improvements, or prejudicial to the interest of the tenants. No farmer is restricted by the terms of his lease to any particular system of cropping, it being merely stipulated that he is to "cultivate and manure the land according to the rules of good husbandry, and that he must not take two white grain crops in succession during any period of his lease." Sub-letting all or any part of the farm for any unexpired period of the lease, is strictly prohibited. It is also stipulated that no straw or dung will be permitted to be sold, or taken off the farm. The only other restrictions on the farmer's management relate chiefly to the last four or five years of the lease. The tenant is then required to have a certain number of acres in Grass, and frequently also a certain proportion in fallow, dunged or limed, every year towards the conclusion of the lease. With respect to the farm-buildings, it is generally agreed that when the houses are put into a proper "tenantable and habitable state" by the proprietor, the tenant accepting of them as in such a condition, "binds and obliges himself to support and uphold them, during the continuance of the lease, and to leave them at its conclusion in a like tenantable and habitable state." The tenant is bound to have, at the termination of the lease, a certain proportion—usually a sixth part—of the farm in Grass of different ages, and generally also a similar quantity uncropped, as a Turnip or fallow break. He is likewise bound, as before observed, to leave the whole dung of the penult crop upon the premises, for the use of his successor. For the dung and the land that is uncropped, "value is to be paid him according as the same shall be ascertained, by neutral men of skill and capacity mutually appointed." It is perhaps needless to remark, that the chief object of these restrictions is not so much to compel the tenant to observe a certain rotation of crops, or to cultivate the farm "according to the rules of good husbandry"—this he will do from a regard to his own interests—as to preserve the farm undeteriorated in condition, and thereby to enable the tenant upon a new lease to proceed with its cultivation as if the former lease had not expired at all.

According to the law of Scotland in reference to landlord and tenant, the latter cannot sublet or assign the portion of his lease to run, unless expressly entitled by the terms of his lease so to do, which is never the case here. The tenant acquires a right to the use of the fixtures attached to the farm when he made his bargain, and cannot remove any of them, though put up at his own expense, at the end of the lease. Any article, the removal of which will tend to injure the premises, is considered as a fixture. Machinery is generally looked on as moveable. No building erected by the tenant can be removed by him; the landlord, if he think fit, may compel him to remove it, but cannot compel him to leave it in repair. When a tenant runs the amount of a year's rent in arrear, or deserts the farm, the landlord may compel him either to find security for the arrears, and for the rent of the next five years, or to remove. When the tenant is in arrear for two years' rent, he may be compelled to remove.

Sometimes the tenant has what is termed a breach in his lease, generally at the end of the first seven years, whereby he is enabled, should the farm disappoint his expectations, or prove a losing concern, to throw it up altogether to the landlord, after this seven years' trial, or otherwise get such a reduction in the rent as will afford him some remuneration for his capital and industry. A very few farms are, however, given up at this period, the landlord generally preferring to reduce the rent considerably.

The proprietor usually engages *to render the dwelling-house and offices suitable*, and the fences "that they may be able to keep in cattle and sheep," at the commencement of the lease; and likewise to make such other repairs and additions (the tenant always driving the materials), as may be agreed upon. Generally speaking, the East Lothian landlords give much encouragement to all useful improvements, particularly draining, for which some of them allow a considerable sum annually to the tenant, or pay half the expenses; others, again, have tile-works erected in some convenient part of the estate, at which the tenants obtain tiles either altogether free, or at very reduced prices. When the lease of a wet, dirty, impoverished farm expires, the landlord not unfrequently retains it in his own possession for a few years, in order to drain, lime, manure, and clean almost every field, and effect any requisite repairs in the fences and farm buildings, after which he seldom fails to relet it again, at a considerably augmented rent.—*T. Sullivan.*

Home Correspondence.

Culture of Wheat.—In the county of *Suffolk*, where Agriculture is carried on in a style perhaps not inferior to any county in England, the agriculturists appear to me to manage their heavy-land Wheats in the spring somewhat erroneously; for instance, about the middle of March they are harrowed for the purpose, I suppose, of loosening the top, so as to give the young plants fresh vigour; but after having been harrowed for two or three days they roll them down, consequently what few small clods are left after harrowing are crushed to powder; then after a shower the land runs together, and when the weather sets in dry it cracks in all directions. My idea is, that if the roller had not passed over the land, it would have been left in a much better state, either for wet or dry weather. I am fully aware Wheat likes solid land, and that rolling light and loose lands is very beneficial. Should this meet the eye of any of your experienced agricultural readers, perhaps they would be kind enough to state why Wheat, on heavy lands, should be rolled and harrowed, and what period of the Wheat's growth may be considered the best time for performing these operations.—*D. S.*

Rot in Sheep.—"J. Wighton," in your last Number, requests information concerning the worm that causes the rot in sheep. The "fluke" is the Distonia, or Fasciola hepatica of authors on the subject. I copy the following paragraph from one of the translations of Cuvier's great work. "This species is very common in the hepatic vessels of sheep, and is also found in those of other Ruminantia, and of the hog, the horse, and eve-

of men. Its form is that of a small oval leaf, pointed posteriorly, and a narrowed portion anteriorly, at the end of which is the first sucker, communicating with a sort of œsophagus, from which arise canals that ramify throughout the body, conveying the bile on which the animal feeds. The species that infest sheep become greatly multiplied when they graze in low, wet grounds, rendering them dropsical, and finally killing them." With regard to the "Sandore," I cannot find it under that name in any book; but a species is mentioned of similar habits as the D. hepatica, namely, D. lanceolata, which may be the one in question. Neither the one nor the other are the "produce of insects." They are perfect animals, forming a genus of the second class of the Radiated Animals. Whether they arise from spontaneous generation, owing to circumstances of diet and habitation of the sheep, or from any other source, is a question which has not, as far as I am aware, been answered with certainty as yet. I have read somewhere that a creature of analogous nature to the fluke infests the marshes of the Neva, near St. Petersburg, which, climbing on the stems of the rushes, fastens upon the uncovered parts of the legs of men, horses, or cattle, and eats into the flesh, causing insufferable torment. The fluke might have a similar origin, but that it has never been found out of the sheep's liver or that of other animals.—*N. D. D.*

Grass Lands.—In several works on farming considerable stress is laid on not allowing cattle to be turned into the Grass-fields in winter, for fear of poaching the ground with their feet. There is an idea in this neighbourhood that this is rather beneficial than otherwise, as we find that several fields which are trampled on every winter are in the dry weather rendered level by the same means; and all the moss being killed, and the surface of the ground broken up, they produce better Grass than the rest of the land, even when equally manured. It is a common saying that an old pasture is hide-bound. I hope your more able correspondents will give us their experience in this matter.—*J. R. Pearson, Nottingham.*

Yew.—In your Paper of the 13th inst., it is said by one of your correspondents, respecting the Yew, that, "if it is withered, it is a deadly and quick poison—if green, perfectly harmless." With the first part of this observation I agree, but my experience contradicts the opinion that, "if green, it is harmless;" as some winters since, during a severe frost, my sheep having crossed a frozen ford into a plantation abounding with Yew, several having browsed upon it, died in the course of a few hours. I think it probable, as snow covered the ground at the time, and nothing green was visible excepting the Yew, the sheep being fat, and consequently in a pampered state, were tempted to devour food that animals more in a state of nature would have rejected.—*A Subscriber.*

Potatoes.—Your correspondent, "H. P. T.," in No. 17, expresses his surprise that Potatoes should be so good as he found them, having been left in the ground all the [illegible]; why, it is the only way to have them good in the spring! I mentioned some weeks back that all root crops to be preserved in their natural state must be left where they grow. The few Swedes I earthed up this season in the rows, after cutting off the top to prevent sprouting, are good now, retaining all their properties; so also are the carrots.—*S. C.*

Sea-weed as Manure.—A few questions having been addressed to a very intelligent correspondent in the Isle of Thanet respecting the mode of using sea-weed as a manure in that district, and the supposed results, the substance of the answers may, perhaps, be acceptable to such persons as are interested generally on the subject of manures; and through the same quarter it is hoped that we shall be enabled to give a chemical analysis of the substance resulting from the decomposition of the algæ. Sometimes the weed is merely brought to the top of the cliff and laid in a heap, where it is allowed to rot. The more approved plan, however, is to put a layer of mould, then a layer of sea-sand, and then one of stable-dung. These lands profit most from the dressing which have had the least of it previously; but, perhaps, most benefit is obtained in stiff soils, *cæteris paribus*. It is good, indiscriminately, for any crop. It does not appear that after a series of years the land is deteriorated by the presence of magnesian salts, because the farmers are always eager to use it when it can be obtained; and many lands adjoining the shore have had it applied constantly from time immemorial, and it is still used and found to be beneficial. Sea-weed hastens very decidedly the decomposition of other manures when mixed with them; neither salt nor soda do good to land which has had the sea-weed manure. It is never applied alone, but if rotted separately is mixed with other manure. Nothing will grow for several years on the spot where a pure sea-weed heap has rotted, except it be a few species of Atriplex.—*M. I. B.*

Turnip Fly.—To prevent the attacks of fly on Turnip plants, sow by hand 12 bushels of the finest road-dust early in the morning; this will coat over the plants with mortar, and it as efficacious as lime. Plenty of it may be obtained just now, which should be collected and kept dry for use. Your correspondents often mention the application of ashes with mixtures for manures, without saying whether they are coal or wood ashes. See p. 305, "Model Experiment."—*E. B.*

Societies.

AGRICULTURAL SOCIETY OF ENGLAND.

(*Continued from page 307.*)

—Experiment I.—Tywarnhayle Farm: aspect [illegible]stern, protected from the sea-winds; soil, argil[illegible] character, with deep retentive clay subsoil. Mr. Karkeek considered it almost impossible to find a more barren spot than this part of St. Agnes Common exhibited previously to its inclosure; there being scarcely turf enough left to make the hedges, and the greater part being chiefly subsoil. The following Table exhibits the method of cropping and manuring adopted by Messrs. Davey and Redruth, in their first experiment:—

A. R. P. 6 3 12 Statute.	When sown.	Manure per acre.	Produce per acre.	Second Sowing.	Manure per acre.	Produce per acre.	Third Sowing.	Manure per acre.	Produce per acre.	Seeds & Manure.	Present appearance.
Broken in 1839.	Wheat in Autumn.	3 qrs. of bone. ½ acre had 30 bushels of lime.	Fit only for pigs and fowls.	Oats in 1841.	Nitrate of Soda 1 cwt.	36 bushels imp. of Oats per acre.	Barley in 1842.	Truro Town-dung, 9l. per acre, including carriage, &c.	18 bushels per acre.	Seeds. 2 cwt. guano.	Very superior Grass.

It will be seen from this experiment, that the soil was not sufficiently powerful to produce a crop of Wheat, manured over with bone-dust 3 qrs. to the acre. In the Oat crop the following year, manured with 1 cwt. of nitrate of soda, we have 36 bushels of Oats and no seeds; in consequence of which the field was tilled to Barley in 1842, and dressed with Truro (scavengers') dung, at a cost of 9*l.* per acre, including carriage. Here was another failure, the produce being only 18 imperial bushels per acre. The crop of seeds in the early part of the spring of 1843 made but little progress, in consequence of which it was dressed with 2 cwt. of guano per acre; and its growth shortly after this was surprising. So abundant was the Grass during the summer, that it was a wonder to the neighbourhood how so much stock could have been kept for so great a length of time. Where the lime had been employed for Wheat, the Grass was by no means so thick as in other parts.

Experiment II.

A. R. P. 4 0 2 Statute.	First crop when sown.	Manures used p. acre.	Produce per acre.	Second crop when sown.	Manures used p. acre.	Produce from guano per acre.	Produce from dung and compost.	Seeds.	Manures.	Present appearance.
Broken in 1840.	Wheat in November.	Bone-dust, 3 qrs.	None.	Oats in 1842.	[illegible] of guano.—10 loads of compost-dune, earth, &c.	[illegible] bushels of White Oats.	[illegible] bushels of Black Oats.	1843.	2 cwt. of Guano.	Very superior.

In this second experiment it will be seen that the Wheat failed as in the first, evidently showing, in Mr. Karkeek's opinion, that Wheat was not adapted to the new soil; whilst in the following year a beautiful illustration was afforded of the effect of guano on a crop of Oats. Messrs. Davey had now, it appeared to him, learned by experience that the method of cropping and manuring which they commenced with, was not such as would be likely to prove successful; and accordingly, in the succeeding experiment, they began cultivating the next piece of waste by taking a green crop first, following it by a crop of Oats.

Experiment III.

A. R. P. 4 1 0	First Crop. Turnips, sown in June.				Second Crop. Oats, sown 1842.		Seeds, 1843.	
	Four separate acres, manured each with				Manure, per acre.	Produce per acre.	Manure, per acre.	Present appearance.
Broken in 1841.	Dung, 25 loads.	Sea-weed.	1 ton of horn, &c.	4 qr. of bone-dust.	2 cwt. guano.	72 bshls. of Black Oats.	15 loads farm-yard dung.	Very superior
	Produce.							
	Pasture, 15 tons	None.	None.	Swede 18 tons				

In this experiment Mr. Karkeek considered the trial between bone-dust and the Truro dung as the first thing worthy of attention, the result showing a profit in favour of the bone-dust, and a loss of 5*l.* 15*s.* on the dung; the horn, &c. (being the sweepings of a button and comb manufactory, consisting of filings of bone, horn, and ivory), and the sea-weed, producing no effect whatever. The difference per acre in the expenses in this trial between bone and dung might be estimated as follows:—

Dung.	£	s.	d.	Bones.	£	s.	d.
25 loads dung, at 5s.	6	5	0	4 qrs. bones, at 22s.	4	12	0
Carriage of do., at 4s. per load	5	0	0	Carriage do.	0	6	0
Spreading do. on land	0	10	0		4	18	0
	£11	15	0				

Value of Manure.	Produce.	Value per ton.	Value of Produce.	Difference between value of Crop and Manure.	Profit and Loss.
£ s.	tons		£ s. d.	£ s. d.	
Dung. 11 15	Pasture, 15	6s.	4 10 0	7 5 0	Loss.
Bones, 4 18	Swedes, 18	8s.	7 4 0	2 6 0	Profit.

Again, in the second crop as much as 72 bushels of Oats were produced by 2 cwt. of guano per acre. Where the horn and bone sweepings had been used previously for Turnips, the Oats and seeds were decidedly the better part of the field; bone next, dung next, and sea-weed the worst part of the piece. Where the horn had been employed the land has at the present time a far better appearance than any fields in the neighbourhood. The three fields on which the previous experiments were made kept 30 ewes, 30 lambs, 4 oxen, 3 horses, and 30 pigs, from the commencement of May until the harvest. The Grass was cut and carried into the stable for the horses, the field having since that time been well stocked with sheep.

Experiment IV.—This experiment was made on a piece of waste, similar to the former ones, and adjoining to them.

Statute A. R. P. 4 0 23	First crop sown.	Manure per acre.	Produce per acre.	Second crop sown.	Manure per acre.	Produce per acre.	Seeds.
Broken in 1842.	Swedes in July.	4 qrs. bone-dust and one cwt. guano.	20 tons Swedes.	Barley in 1843.	10 cwt. of hoofs of animals (16*l.* per ton at the farm), and one cwt. of guano.	18 imperial bushels only.	The Clover and Barley early choked by the Rye-grass.

The circumstance considered by Mr. Karkeek as most worthy of notice here, is the powerful effect produced by the hoofs of animals, in conjunction with guano, on the Oats and Rye-grass; the latter growing in such an astonishing degree, that it completely choked the Clover, and very nearly the Barley. The field has now the appearance of an old coarse pasture. The effect of guano and bone-dust mixed is also seen in an excellent crop of Swedes, 20 tons to the acre. Experiment V.

Statute A. R. P. 8 2 37	First crop sown 1842.	Manures per acre.	Produce per acre.	Second sowing 1843.	Manure per acre.	Produce per acre.	Present appear-ance.
Broken from the common, 1842.	Turnips and Swedes sown late.	4 qrs. bone; one cwt. guano.	18 tons.	Oats.	2 cwt. guano.	60 bush. per acre.	Very superior.

In this experiment we have a similar effect produced by a mixture of bone and guano manures on Swedes; and in the following year another excellent crop of Oats, with only 2 cwt. of guano per acre.

The expenses incurred by Messrs. Davey in cultivating an acre of waste were nearly paid by the two first crops, leaving the value of the straw, about 1½ ton per acre, to pay for incidental expenses. Mr. Karkeek estimates their expenses per acre in cultivating for the first crop as 11*l.* 17*s.* 6*d.*, and for their second crop 15*l.* 10*s.*, and the value of the produce on the two first crops only as 14*l.* 8*s.* The profit arising from the feeding of stock on the seeds is not considered in this account; but he thinks an idea may be formed of their luxuriancy from the circumstance, that during the summer Messrs. Davey received sevenpence per week for the keep of fat sheep belonging to butchers, and at Christmas last sixpence per week, the fields being now equal in appearance to others let at 20*s.* per acre in the same neighbourhood, it having also been found that the expenses incurred in picking and carrying off the stones from the different inclosures, were more than repaid by the sale of the stones for the purpose of repairing the turnpike roads.

The following communications were referred to the Journal Committee:—Sir Charles Lemon, on the Medical Treatment of sickly Trees; Mr. Rodwell, on the Cultivation of Italian Rye-grass; Mr. James Haywood, on Excretionary Manures; Reports on Ox and Horse Teams, from the Rev. Thomas Cator and Mr. Frederick Manning; and a Letter from Mr. Meyer, on the Destruction of Rats. Mr. Charles Knight presented a complete set of his industrial Guide Books on agricultural, mechanical, economical, and other subjects; Mr. Bencraft, specimens of his patent Hames and Spring-saddle; Mrs. Loudon, a copy of the Complete Supplement to the Encyclopædia of Agriculture; Mr. Thompson, a copy of his Prize Essay on Manures; Mr. Shaw, the Farmers' Magazine for May; Mr. Jopling, his Treatise on Field Gates; and Mr. Meehi, copies of his Statement on Agricultural Improvements,—for all which communications and presents, the best thanks of the Council were ordered.

The Council then adjourned to Wednesday next, the 15th of May.

A WEEKLY COUNCIL was held at the Society's House in Hanover-square, on Wednesday last, the 15th of May; present, the Right Hon. Earl Spencer, President, in the Chair; Marquis of Downshire, Lord Bridport, Lord Camoys, Hon. Capt. Spencer, Hon. G. H. Cavendish, M.P.; Hon. Capt. Dudley Pelham, Col. Austen, T. Raymond Barker, Esq.; J. Raymond Barker, Esq.; Burton Borough, Esq.; F. Burke, Esq.; Sir C. Burrell, Bart., M.P.; Rev. T. Cator; Col. Challoner; J. Evelyn Denison, Esq., M.P.; T. Ellman, Esq.; R. Etwall, Esq., M.P.; J. H. Hodgetts Foley, Esq.; A. E. Fuller, Esq., M.P.; B. Gibbs, Esq.; H. Hall, Esq.; Sir J. Johnstone, Bart., M.P.; Rev. R. H. Locke; Col. MacDonall; Sir C. Morgan, Bart.; A. Ogilvie, Esq.; J. Parkes, Esq., C.E.; E. Parkins, Esq.; H. Price; J. Read, Esq.; E. A. Sanford, Esq.; Prof. Sewell; W. Shaw, Esq.; R. A. Slaney, Esq.; T. Tweed, Esq.; T. Walmesley, Esq.; and G. Wilbraham, Esq., M.P.

The following new members were elected:—

Parker, William, Ware Park, Herts.
Comins, James, South Molton, Devon.
Brine, William, Tolpuddle, Dorchester, Dorset.

Kinsey, Joseph, Stourton Hall, Horncastle, Lincolnshire.
Prince, Musgrave, M.P., Coghurst Hall, Hastings.
Baker, Baker, Hastings.
Fielder, Charles, Sparsholt, Winchester.
Marfleet, John, Mattingly Farm, Easton, Hants.
Walker, Charles, Sutton, Tenbury, Worcester.
Wayne, Thomas Moore, Manor House, South Warnborough, Odiham, Hants.
Hood, Daniel, Whitabury, Fordingbridge, Hants.
Patient, Ambrose, Jun., Corton, Heytesbury, Wilts.
Hilder, James, Bodiam, Staplehurst, Sussex.
Hoper, John, Shermanbury, Horsham, Sussex.
Powles, James, Woollaston Grange, Chepstow, Monmouth.
Arnold, Thomas, Tamworth, Staffordshire.
Rawson, Richard, Wheathill, Liverpool.
Wingfield, William (Master in Chancery), 72, Eaton Square.
Cotton, Benjamin, Afton House, Isle of Wight.
Hallett, John James, M.D., Upper Holloway, Middlesex.
Faulkner, C. F. Allen, Bury Barns, Burford, Oxon.
Neville, Ralph, M.P., 5, St. James's Place, London.

The names of 22 candidates for election at the next meeting were then read.

The proceedings of the Council at this meeting were of a most interesting description, and in order to give the report of them as fully as circumstances will permit, we shall, in our present Paper, confine ourselves to the valuable remarks on the subject of *Ashes* and *Pipe Drain-tiles*, made to the Council by Josiah Parkes, Esq., the consulting-engineer to the Society; and in our next week's Paper conclude the report.

Guano and Ashes.—Mr. Hillyard having called the attention of the Council to the difference in the quality of ashes proposed to be mixed with the guano in the model experiment, Mr. Parkes apprehended that the quality of the ashes used by the different experimenters when mixed with guano might occasion discrepant results, as ashes alone were a manure, but of various efficacy, and the quantity of this substance proposed to be employed in the compost was large as compared with that of the guano. The ashes of different peats were well known to possess extremely variable properties and powers; some were comparatively rich, and others poor. The opportunities he had had of noticing the very feeble effects of peat-ashes derived from a particular bog in Lancashire had induced him to carbonise that peat, instead of burning it to ashes. He had found this charcoal dust to be a powerful fertiliser of the bog in question, although the application of ashes obtained from the same peat produced little else than weeds. He was of opinion that if all farm weeds, such as couch, and the cuttings of hedges, trees, &c., were reduced by charring instead of by incineration, that product might be more beneficial to soils and plants in general than the ash. He had charred the dried diggings of bog drains, &c., in clamps formed of peat sods; the operation was as simple as that of charring wood. Clay earth may be advantageously washed in the same clamps with the peat, and he had found the mixture produce excellent effects; but his experiments were principally confined to its use as a fertilizer of bog soil. He had procured some very pure peat-charcoal, and sent it to Mr. Graham for trial. There could be no doubt as to the value of the presence of carbon in soil, and charcoal is known to act both chemically and mechanically, with advantage to many soils. Charcoal, too, was perhaps the very best of all substances to absorb the urine of cattle, &c.

Pipe Drain-tiles.—Mr. Parkes produced some specimens of small cylindric pipes for drains, and desired to address a few remarks to the Council on the observances necessary to ensure complete success in their use. In all arts there were successful and unsuccessful operators, and failure was usually traceable to some neglect of necessary conditions, or precautions, when the many succeeded, and the few failed. In the isolated accounts he had heard or read of ill success with pipe tiles, he found that sufficient regard had not been paid to the proper form and dimensions of the excavation which was to receive them. It appeared, in these cases, that a perpendicular ditch (or nearly so) had been generally dug, many inches broad at bottom, to receive a pipe of small diameter; whereas, in Kent, and in the other counties which gave birth to this system, and where it had hitherto been most used, every one knew that the bottom of the drain should be formed of such size that the pipe may fit and fill it. The proper section of the trench was a wedge, being about 14 inches broad at top, tapering down to the diameter of the pipe at bottom, whatever might be the depth. The bottom was cleared out by a scope drawn towards the workman, having the same diameter, or nearly so, as the external diameter of the pipe. The particular tools used for forming the trench had already been described in the Journal (Vol. iv. p. 28). A series of pipes thus laid could not be disturbed, but there was nothing to ensure a true unbroken line of pipes, if they were laid in a trench of larger dimensions than themselves; and hence failure by stoppage would certainly arise. After diligent and extensive inquiry he had not heard of a single pipe-drain failing, in any respect, in the districts where this system of drainage has established itself; nor could he see any valid reason to object to it. The use of inch-bore pipes was rapidly extending, and he believed it to be the best and cheapest practice known. He had been enabled to demonstrate, in the most satisfactory manner, that an inch-bore pipe far more than sufficed to receive and carry off the water of rain, according to the usual system of parallel drains; these experiments would appear in the forthcoming Journal. He would now advert to an occasional cause of failure incidental to drains in clay soils, which he conceived to be attributable chiefly to insufficiency of depth. Clay is a substance which may be said never to be at rest; it shrinks and swells according to its state of wetness or dryness; a mass of clay soil is, therefore, in continual movement. In addition, it was well known that clays can only be drained through the instrumentality of cracks produced by their drying. If a drain or conduit be placed too near the surface, and the cracks descend below it, such a line of drain would be liable to derangement, particularly in parts of unequal tenacity, from the contraction and expansion of the bottom or floor, arising from its varying state of wetness or dryness. It was well known to builders that the foundations of a house in clay should be laid at a depth greater than the reach of the cracks, or at least as deep as their usual penetration. The force of expansion in clay, and of subsidence from contraction, was well known to produce fissures and rents in buildings. It was enjoined in old treatises on building, and he found it to be the practice about London, to sink foundations in clay four feet below the surface, and to drain them below that level. He considered that agricultural drains two feet or even two feet six inches deep, in clays, were subject to derangement, and even to stoppage, from this cause alone, and that their depth should not be less than three feet, or from that to four feet, where an outfall could be obtained. Deep drainage in all soils was also consistent with economy of outlay, as they may be placed further asunder, of which he had given several instances in Kentish practice, and now adduced others. He earnestly entreated the Members of the Society, who might be draining their farms, to reflect well on the advantages of deep over shallow drainage. Many persons had beneficially drained lands over again to a greater depth, which had been substantially drained 2 ft. and even 2 ft. 6 ins. deep, 30 to 40 years since. As regards continuous good action, he believed that deep drains would be much more durable than shallow ones, as they were removed below disturbance from the pressure of horses, carts, or implements. Also that deep drains were less liable to choke than shallow ones, as the water reached them better filtrated. He was of opinion that the sharp wedge-shaped form of the sides of the trench in which pipe-drains were laid, was eminently conducive to their durability, as the little pipe at the bottom was thereby protected from undue superincumbent pressure. The water entered such drains at the level of the floor in a thoroughly-filtered state, and the velocity of the current kept the line of pipes at all times clean; nor could any vermin enter them. He had heard of, or read, a statement that the floors of drains in clay soil became so soft, that tiles sunk in them, or that the bottom stuff was protruded upwards and choked them. It was likely this might occur when tiles were used without soles. It did not happen with pipe-drains. The opinion, indeed, prevails in Kent, that the floors of pipe-drains are drier and firmer than other parts of the field at the same depth. He had no doubt of the truth of this opinion, and it was confirmed by experiment as well as observation. It appeared that if a pipe of 1 inch bore, 12 ins. long, and ½ inch thick, were hermetically closed at each end, and placed in water just covering it, it would become full of water by absorption in about five hours; and if hung up horizontally, it would let all the water pass out of it in about the same time. This experiment was first communicated to Mr. Parkes by Mr. Putland, of Saylherst, Sussex; and he had repeated it with nearly similar results. This fact, which is in strict accordance with the known porosity of unglazed earthenware, showed, that after the free water of rain had permeated a soil, and passed off through a drain, the pipes would still continue to act as absorbers of moisture, to some extent, from the earth in immediate contact with them; by which means, and in consequence of the indraught of air through the drain, it was reasonable to conclude that the earth adjacent to the pipes would become somewhat drier and harder after a cessation of rain than the more distant parts. This was an additional reason with him for the preference he had always given to tiles rather than to broken stones, or any other materials which filled a drain, as a free circulation of air was thereby better established; and it must be recollected that a drain served the double purpose of a conduit of water out of the soil and of air into it, the latter function being, perhaps, quite as important as the former.

In answer to inquiries from several members respecting the adaptation of small pipes to the drainage of soft soils and sands, Mr. Parkes showed, that by inserting a small pipe into a larger one (nearly fitting) for about a third of its length, or 4 inches, a perfect continuity, or chain of pipe, would be formed, which could never sink. It was well known that some of the most plastic and pure clays were troubled with what he might term faults; *i. e.*, sand-beds occurred. He knew of such at Mr. Handley's and other places, and in them the ordinary tile-stones, wood, &c., would sink, and the drain was thus marred. He would apply this arrangement of pipes as a perfect remedy in such spots, and even in much more unsound and troublesome bottoms; but it was clearly impossible to prescribe the exact mode of proceeding in every difficulty, as the particular case must be inspected, in order to know how to deal with it in the best manner.

(To be continued.)

FARMERS' CLUBS.

Mosspaul.—The Wisp Club.—The annual meeting of the Wisp Club took place here on the 19th ult. This club, which takes its name from a high range of hills in the counties of Roxburgh and Dumfriesshire, was established in the year 1826; its leading object is to ascertain and record the average prices of the cattle, sheep, and wool of the district during the past year—a species of statistical information most useful to both landlords and farmers, as will be readily perceived when we state that the farms are let, not at so much per acre, but at so much per head for the number of sheep grazed. The usual calculation is, that in the North Highlands five acres of pasturage are required for two sheep, whilst south of the Frith of Forth three acres will carry two sheep. Scarcely any hill pasture in Scotland, in its natural state, will carry one sheep to the acre. The extent of land thus occupied by many farmers is immense,—many of them counting "hirsels" to the number of from 3000 to 5000, and even 10,000, whilst some go much beyond this; Cameron, of Corriehoyle, for instance, whose holding lies in the Lochiel country and away by Glencoe, counts his 40,000 bleaters on the wild mountain sides and deep valleys of the far north. Mr. Cameron, who was once a common drover, may thus be reckoned as, next to Prince Esterhazy, the greatest flock-master in the world. Farms of the kind of which we are speaking, are nearly all let upon leases of nine or thirteen years, whilst the leases of the arable farms in Scotland run from 15 to 19 years. The locality of Mosspaul is wild, stern, and rugged—the Wisp itself rising immediately behind the inn, to a height of 1950 feet above the level of the sea, whilst "Alps upon Alps arise," all around, closing in a narrow valley, at the foot of which there runs a mountain stream called the Ewes, and along which lies the road to Edinburgh, hemmed in on each side by immense hills which rise almost perpendicularly, and strongly remind the passenger of the accounts he has read of the far-famed Khyber Pass. The inn of Mosspaul itself, a solitary dwelling amidst the mountains, stands at an elevation of 620 feet above the level of the sea, and is built on the very confines of Roxburghshire—the stables, barns, &c., which adjoin being in the county of Dumfries. For miles and miles around and along the road, the property is owned by the Duke of Buccleuch, and is divided into holdings, such as we have already indicated—many of the farmers being owners of from 3000 to 5000 sheep. The members of the Wisp Club are mostly pastoral farmers, and may be reckoned amongst the most substantial men of their class in the several counties of Dumfries, Roxburgh, Selkirk, Peebles, &c. Its meetings are held at Mosspaul in the spring of the year, and one of its rules directs that a record shall be made of "the average prices obtained the preceding season for one and two-year old short-horned Galloway cattle, all descriptions of Cheviot and black-faced sheep, and their relative wools, produced in Scotland south of the Frith of Forth." Each member is required to state what he conceives to have been the average prices of the season, and the prices named by the majority are recorded in the secretary's book. The following is a copy of the prices for 1842 and 1843:—

	1842 £	s.	d.	1843 £	s.	d.
Short-horned stirks (each)	5	0	0	5	5	0
,, two-year olds	8	10	0	7	15	0
Galloway stirks	3	10	0	3	17	6
,, two-year olds	5	10	0	6	0	0
Cheviot rough wethers (each)	1	1	0	1	0	6
Dinmonts ,,	0	15	0	0	15	0
Wether hogs	1	1	0	1	2	0
September wethers	0	16	0	0	17	6
Cheviot draught ewes	0	11	0	0	11	6
Black-faced ,,	0	9	0	0	9	6
Cheviot top wether lambs	0	5	3	0	5	9
,, mid. ,,	0	3	6	0	4	3
,, do ewes	0	4	9	0	4	9
Black-faced top wether lambs	0	4	6	0	5	6
,, mid. ,,	0	3	6	0	4	0
,, do ewes	0	3	6	0	3	6
Cheviot tarred wool per stone of 24lb	0	13	3	0	11	0
,, buttered and boiled	0	17	6	0	16	6
,, pure white	1	0	6	0	19	0
Black-faced washed tarred wool	0	7	0	0	6	0

—*Carlisle Journal.*

Westfirle.—At the last meeting of the Westfirle Farmers' Club, the subject for discussion was, The Best Method of Turnip Culture. The Chairman, Mr. G. Ellman, said that having proposed the subject it was his duty to open the evening's discussion. He considered it by no means the least essential point that the ground intended for Turnips should be well prepared; he would broad-shear the land as soon as harvest was over, in preference to ploughing it in the common way, as the furrows being laid up so high have a much greater chance of drying in the spring than if ploughed plain, and come to hand much more readily, affording more crumb, which is so essential to Turnip culture, as keeping the ground loose and at the same time moist, without being water-bound under the furrow, which he thought should always, if possible, be avoided. As to the number of times the ground should be ploughed, that must depend on the soil, which should never be ploughed in wet weather. The sort of manure best to be applied he should leave to them to decide that evening. He had had good Turnips by using bones, soot, and bran, where the expense of carting heavy manures was too great; but within a moderate distance of the dung yard he very much preferred using good rotten dung, as more beneficial to succeeding crops than the best artificial manures.—The system of a member, who said that he always had good Turnips, was to plough frequently, and to furrow the land up to allow the water to run off, and to carry out his manures during a frost; if the land was clean he was then sure of Turnips. He was of opinion no one would use bone dust if he could get good yard manure.—A conversation here ensued as to the value of bones applied in their raw state, or after they were boiled; and it appeared to be the opinion of the meeting that in their natural state the oil preserved them for a considerable time, so that they were of no immediate value to the crop; but in their manufactured state they decayed more easily, and, of course, were of more value to the land, especially if wet ensued, which would hasten their decomposition.—The Chairman said he had tried 20 bushels of Clark's black manure upon an

acre and a half. The field was sown with Rape, and the crop was quite equal to the other part of the field, which was manured with dung and mould.—*Sussex Agricultural Express.*

Crieff.—Professor Johnston delivered two interesting lectures here lately on the Composition of the Soil, and on the Use of Manures. The following are short extracts:—By a geological map and analytical tables, the Professor illustrated the composition of soils, entering into a detailed account of the substances found in them, and in the crops they produced; thus showing that a soil might be quite capable of producing one sort of crop, while inadequate to produce another. Soils often contain noxious matters, such as oxide of iron, &c., in too great quantity, rendering them barren; and he instanced a district in Fife, that he had visited some days before, where the crops for a time succeeded well, but at a certain stage of their growth suddenly gave way, and on examining the subsoil he found it impregnated with oxide of iron, and thus whenever the roots of the plants penetrated the subsoil they were poisoned. Though the soil should appear dry, he recommended draining and subsoil ploughing as the cheapest way to get rid of such noxious matters. Professor Johnston well illustrated the relation between the soils and the crops they produced, showing that however small the inorganic substances the crops contained, yet they were just as requisite for the maturing of the plant as the glue and the nails, though small in bulk, were necessary in the construction of a box. The application of manure, therefore, its kind, amount, and the frequency of it, must depend upon the presence or absence in the soil of the chemical substance referred to, and the kind of crop to be raised, so that there may be given to the land the elements that the crop requires. In his second lecture, the Professor spoke of the exhaustion of the soil. Whether by a succession of different crops, or by a succession of a particular sort of crop, the elements forming the crop will show the elements that have been taken from the soil, and which it will be necessary again to add, in order to restore it to a condition of fertility. But the soil may also be exhausted otherwise than by cropping. A considerable number of the substances composing the soil, such as potash, chlorine, &c., are soluble in water; and hence it will be manifest that the rain must wash much of these elements away. By means of draining, the rain, instead of trickling away over the surface of the soil in a few channels, is diffused equally through the ground, carrying with it to feed the crops the substances that would otherwise be carried away and lost. The waste of manure from other causes was then alluded to. It is notorious that, under the present mode of managing it, the rain washes a great portion of the soluble substances of farm-yard manure out of it; the waste thus needlessly encountered is greater than the advantage gained from all the guano used in this country. The portion of the manure so lost would, if it were saved, and converted into grain, be more than equal to the value of all the foreign Corn that is annually imported into this country.

Miscellaneous.

Good Farming.—It may be laid down as a standing rule, and as a guide to direct our exertions, that all good farming, the whole of that process by which bad land is to be converted into good, or land naturally good and productive is to be continued in that state, is comprised in the three following operations of husbandry. 1. To carry off all stagnant and superfluous water by means of judicious draining. 2. To return through the medium of manure, the strength and fertility which has been extracted from the land by cropping. 3. To eradicate all noxious weeds, that the strength of the manure may be thrown into the crops and not into the weed.—*Rawstorne's Remarks on Lancashire Farming.*

We understand, in reference to the *Yorkshire Land-Draining Association*, that an amply sufficient amount of stock is already taken to insure the commencement of active operations at the earliest opportunity, and that the applications are daily increasing.

Notices to Correspondents.

Rural Chemistry. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

Bone-bruising.—*W. H., Reading.*—The paragraph you send is extracted from a previous No. of the *Agricultural Gazette.*

Bone-dust and Sulphuric Acid.—*H. C. Shomberg.*—To fine bone-dust apply about half its weight of sulphuric acid, and dilute it with its volume of water. See an article by Mr. Lawes on this subject a few weeks ago.

Buttercups in Pastures.—*Cheshire Farmer.*—We do not know for certain any plan of eradicating these weeds, but we have *heard* that geese will root them up to feed on them, and that depasturing with geese is a cure for them. Can any of our correspondents inform us on this subject?

Colt's-foot.—*Atticus.*—There is no off-hand way of eradicating it. Perseverance in pulling the flowers, and hoeing up the leaves as deeply as possible, will ultimately prove successful in destroying it.

Sooo cur Cows.—*E. Barnard.*—The Swedish Turnip is more nourishing than the Mangold Wurzel, but it is apt to taint the milk; and therefore you had better give your cows the latter. Apply wood-ashes as a manure for Turnips. The more vegetable the mould on which these roots are grown, the greater the effect the ashes will have. Guano is deficient in alkali, and will be greatly improved by mixing with wood-ashes. 3 cwt. of a mixture of equal weights of the two will be more productive if spread equally over two acres than 4 cwt. of each separately on the same extent.

Enquiry about Guano.—*W. M. F.*—Thanks for your published account. Where were these experiments tried? and by whom?

Correspondents.—*T. Boynton.*—Thanks. We may publish your communication hereafter, when on the subject of Agricultural Implements.

Manure.—*J. C. T.*—Get all your manure into a heap, made as hard as possible by the carts employed in bringing it together wheeling over it every time, and cover it all up with a coat of vegetable earth, about 4 inches thick. It may more perfectly secure your heap if you mix this earth, when wet, with powdered gypsum before applying it. By all means apply the manure to the land in autumn, and plough it in deeply then, rather than keep it till spring.

Peach-blossoms.—*W. K., asks*, Are the young shoots of Peaches and Nectarines injurious to cattle? Probably; for they yield prussic acid in abundance.

Professor Johnston.—*C. T. R.*—Thanks: you will see your communication has been anticipated.

Soot.—*R. P.*—It will not injure by keeping, but you will injure it by mixing lime with it. The best way of using it, unless by previous experiment you have ascertained that it is successful alone, is to mix about 20 bushels per acre with as many cubic yards of manure, and apply it in that way to Turnips, Carrots, and Parsnips, about which you ask. It contains the sulphate of ammonia, and *therefore* is a source of suitable food to all crops; and if a sufficient supply of that food is not afforded otherwise, its application will be beneficial. Plants, however, require other food besides that which is afforded by soot, and therefore it *may* be unsuccessful as a manure, unless accompanied by other kinds of vegetable food, such as are found in ordinary farm-yard manure.

Steeping Seeds.—*Dupa.*—Was it our advice that you followed? We acted according to it ourselves, and the Wheat so treated now looks blooming.

Tares.—*X. Z.*—Sow them early in July, to be ready at the time you specify. Use farmyard manure, or if you have it not, apply 2 cwt. of guano and 3 or 4 bushels of old wood-ashes mixed together, per acre. About Beans, see a Leading Article in a March Number of the *Gazette.*

Turnip-Fly.—*New Subscriber.*—Mr. Forehead Singer would add to the obligation conferred on our readers by his letter on this subject (page 284) if he gave us a description and account of the cost of his machine for sowing the lime.

Miscellaneous.—We have to apologise to three correspondents for delaying answers to their questions.——*A. B.*—If he looks again at the article to which he alludes by a "Farmer and Valuer," he will see that any speculative statements are carefully avoided; this was purposely done. Those he has made are from practical experience in valuation. A Norfolk farmer has ably dealt with the produce of the farm, but *if* it is *possible* to come at the actual amount sold off by the out-going tenant, the "Farmer and Valuer" will, at some future time, be most happy to supply it to the Editor.——*G.*—We are sorry we have not got a Paper of the Number you ask for.

*** As usual, many communications have been received too late.

Markets.

MARK-LANE, Monday, May 13.

Having a good supply of English Wheat from the near counties this morning, Factors were unable to make any progress with sales, until a reduction of 1*s.* per qr. was submitted to upon the finest qualities, and 2*s.* upon secondary descriptions; notwithstanding which, few stands were cleared at the close. Old Foreign met a fair consumptive demand at last week's prices—the new generally comes in too bad condition to admit of its disposal.—English Barley must be written 1*s.* cheaper. Foreign was little inquired for, and held at our quotations.—Beans and Peas are each 1*s.* dearer.—Oats are generally held for late prices, but having a large supply, where vessels are coming on demurrage a trifling reduction is necessarily made to clear them.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . . White	46	55	Red .	46	54
—— Norfolk, Lincolnshire, and Yorkshire .	50	60	White	—	—
Barley, Malting and distilling 30*s* to 30*s* Chevalier	31	33	Grind.	24	29
Oats, Lincolnshire and Yorkshire . . Polande	20	23	Feed	19	23
—— Northumberland and Scotch . . Feed	20	23	Potato	21	25
—— Irish . . . . . Feed	18	21	Potato	19	24
Malt, pale, ship	58	62			
—— Hertford and Essex	60	63			
Rye	29	32			
Beans, Mazagan, old and new 25 to 28	Tick	26	34	Harrow	26	35
—— Pigeon, Heligoland . 30 to 33	Winds.	—	—	Longpod	—	—
Peas, White . . . . 31 to 34	Maple	26	31	Grey	27	29

Friday, May 17.

The supplies of Wheat, both English and Foreign, during the week have been large, and the trade is dull at Monday's prices, with a limited extent of business.—Having a large supply of Foreign Barley, and much of the Danish being in bad condition, it sells slowly, and barely maintains its late value.—Beans and Peas are unaltered.—The show of Oats is large, and quotations scarcely supported.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
April 5 per Quarter:	55*s* 8*d*	29*s* 10*d*	20*s* 1*d*	33*s* 9*d*	30*s* 11*d*	31*s* 8*d*
— 12 . . .	55 1	29 1	20 1	32 4	31 2	32 5
— 19 . . .	55 4	32 10	20 3	33 3	31 5	31 5
— 26 . . .	55 6	32 7	20 1	31 2	31 4	30 6
May 3 . . .	55 3	31 9	20 1	30 11	31 0	31 2
— 10 . . .	55 1	31 5	20 5	31 4	32 5	32 3
6 weeks' Aggreg. Aver. .	55 3	32 5	20 2	32 0	31 6	31 7
Duties on Foreign Grain	17 0	6 0	6 0	10 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . . .	7470	600	3580	4750 Sks
Irish . . .	—	215	20120	—
Foreign . . .	20190	32,70	1700	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 4490 Sks.	— Bels.	6005	1050	2677	2380	—	1155	107
Irish . .	,, — ,,	—	736	—	11823	—	—	—
Foreign .	,, — ,,	21586	26207	—	1453	—	—	210

SEEDS, May 13.

Canary . . per qr	48*s* to 52*s*	Linseed Cakes, Foreign, p. ton	5*l* to 7*l* 10*s*
Carraway . . per cwt	30 34	Mustard, White - p. bush.	4*s* 6
Clover, Red, English .	60 74	— Superfine ,, .	6 8
— — Foreign .	64 74	— Brown ,, .	14 16
— White, English .	100 120	Rapeseed, English, per last	24*l* 28*l*
— Foreign .	84 105	Rape Cakes . per ton	— —
Coriander . .	12 16	Nutcake . .	— —
Hempseed . per last	24 26	Tares, Eng. winter p. bush.	3 5
Linseed . . per qr	— —	— Foreign . .	3 5
— Baltic . .	— —	Trefoil . . per cwt	— —
— Cakes, Eng. per 1000	9*l* 10*s*	Turnip (two variable for quotation).	

Kingsman and Lay.

HOPS, Friday, May 17.

Since last week the accounts received from the Hop plantations state that the Hop-fly has gradually increased, and this morning's letters say from 10*l* to 15*l* are now easily to be found on a leaf; so early and general an attack has seldom occurred without producing a decided failure in the crop: our Market in consequence has advanced 4*s* to 6*s* per cwt. on all sound Hops of last year's growth, and from 8*s* to 12*s* on choice Sussex. On account of that district altogether escaping blight, they have been more sought after by consumers through the season, and are now exceedingly scarce in the Market. The following is our present quotation of prices:—

Mid & East Kent Pocks. 4*l* 4*s* to 10*l* 10*s*	Sussex Pockets .	6*l* 6*s* to 8*l* 18*s*	
Choice ditto . . 11 0 11 4	Choice ditto .	7 0 —	
Weald of Kent Pocks. 6 6 6 15	Farnham .	9 9 10 10	
Choice ditto . . 7 0 7 7	Farnham & Surrey, Hop-Factors.		

WOOL.—British, Friday, May 17.

The English Wool Market continues quiet; there is an average amount of business being done, but prices continue pretty nearly stationary. The appearance of the new clip in the Market is looked forward to with some anxiety; great caution will be necessary on the part of Staplers to prevent prices from ranging too high at first, which, should it happen, will tend to the injury of the trade, as, with the present prospects, we think that the Manufacturers will find it more advantageous to work cheaper time than give dearer fully advanced prices for Wool.

	per lb.		per lb.
Long-woolled Wethers:	11*d* to 1*s* 0*d*	Southdown Hoggets	1*s* 0 to 1*s* 2*d*
Do. Hoggites	1*s* 1 1 4	Kent Fleeces	1 1 1 2
Southdown Fleeces	11 1 0	James Spence, Wool Broker.	

COVENT GARDEN, May 18.—Notwithstanding the long dry weather the market is well supplied with most articles, but trade is not brisk. Pine-apples are offered at nearly the same prices as mentioned in our last report. The best hothouse Grapes are selling at about 12*s.* per lb.; besides these there are also a few Spanish ones in the market. Apples and Pears are becoming very scarce; the best Kitchen Apples bring about 12*s.* per bushel. Gooseberries are supplied in considerable quantities, and a few green Currants are in the market. Oranges are getting scarce, and they are somewhat advanced in price. Little alteration has taken place in the price of Strawberries; they are good in quality, and are becoming plentiful. Vegetables of all kinds are good. Lisbon Potatoes are imported in considerable quantities; they are very good in quality. Brocoli is scarce, and is a little advanced in price; the dry weather begins to affect it as well as Cauliflowers, which are also dearer. Cabbages are sufficient for the demand, and Carrots and Turnips are plentiful. Greens are much the same as last week; as is also Rhubarb. Seakale gets scarce, and French Beans are considerably advanced in price; Asparagus is likewise on the rise. Green Peas have been abundantly supplied during the week. Lettuces and other salading are sufficient for the demand. Cucumbers are nearly the same as last week; they are, however, generally speaking, small in size. Cut Flowers generally consist of Erica hybrida, E. rubra-calyx, Cactus speciosissimus, Gardenia radicans and florida, Epacris grandiflora, Scarlet Pelargoniums, Verbenas, Fuchsias, Calceolarias, Pansies, Auriculas, Cinerarias, Lily of the Valley, Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb., 6*s* to 12*s*		Lemons, per doz. 1*s* to 2*s*	
Grapes, Spanish, per lb. 1*s* to 1*s* 6*d*		— per 100, 6*s* to 10*s*	
Hothouse Grapes, 6*s* to 12*s* per lb		Almonds, per peck, 3*s* to 7*s*	
Apples, doz., p bush. 6*s* to 8*s*		Sweet Almonds, per lb., 1*s*6*d* to 2*s*	
— Kitchen, p bus. 3*s* to 12*s*		Nuts, Spanish, per bushel, 14*s*	
Apricots (green) p. doz., 1*s* to 1*s* 6*d*		— Brazil, 16*s*	
Gooseberries, per half-sieve, 2*s* 6*d* to 3*s*		— Hazel, 7*s* to 8*s*	
Currants, 4*s* per half-sv.		— Barcelona, 20*s* to 21*s*	
Strawberries, 6*d* to 1*s.* per lb.		— Cob, 14*s*	
Oranges, per dozen, 8*d* to 2*s*		Walnuts, per bushel, shelled, 16*s* to 20*s*	
— per 100, 6*s* to 18*s*		Chesnuts, per peck, 4*s* to 6*s*	

VEGETABLES.

Rhubarb, per bundle, 4*d* to 1*s* 6*d*		Savory, 6*d* per bunch	
Broccoli, per bundle, 3*s* to 6*s*		Cucumbers, 6*d* to 1*s* 6*d* each	
Cabbages, 10*d* to 1*s* 6*d* per dozen		Spinach, per sieve, 2*d* to 1*s*	
Red Cabbages per doz. 2*s* to 3*s*		Leeks, per doz. bun., 2*d* to 3*s*	
Sorrel, 6*d* to 9*d* p. half-sv.		Garlic, per lb. 6*d* to 8*d*	
Asparagus, per 100, 1*s* to 7*s*		Onions, 2*d* to 4*d* p. bch.,	
Sea-kale, per punnet, 2*d* to 1*s* 6*d*		— Large, per bushel, 1*s* 6*d* to 2*s*	
French Beans, 1*s* 6*d* to 8*s* per 100		— Spanish, per doz., 1*s* 6*d* to 3*s*	
Autumn Potatoes, 3*d* to 6*d* per lb.		Spring Onions, 4*d* to 6*d*	
Greens, per doz. 2*s* to 3*s* 6*d*		Shallots, per lb., 3*d* to 10*d*	
Potatoes, per ton, 40*s* to 100*s*		Lettuce, p. score, 6*d* to 1*s* 6*d*	
— per cwt, 2*s* 6*d* to 6*s*		Young Celery, 1*s.* 6*d.* per bunch	
— per bushel, 1*s* 6*d* to 3*s*		Celery, per bun., 3*d* to 1*s*	
— Kidney, p. bush., 2*s* 6*d* to 3*s*		Mushrooms, per pottle, 3*d* to 1*s* 2*d*	
Frame Potatoes, 6*d* to 1*s* 6*d* per lb		Small Salads, per punnet, 2*d* to 3*d*	
New Turnips, 6*d* to 1*s* 6*d* per bunch		Watercress, p. doz. sm. bun. 4*d* to 6*d*	
Turnips, per doz., 6*d* to 1*s* 6*d*		Parsley, per sl.-sv., 6*d* to 1*s*	
Peas, per peck, 8*d* to 3*s* 6*d*		Tarragon, Green, per bun. 2*d* to 4*d*	
Red Beet, per doz., 6*d* to 1*s* 6*d*		Green Mint, 2*d* to 4*d* per bunch	
New Carrots, 3*d* to 1*s* 6*d*		Marjoram, p. bun. 4*d* to 6*d*	
Radishes, Turr., 6*d* to 1*s* p doz. bchs.		Chervil, per punnet, 4*d* to 8*d*	
Basil, 4*d* to 8*d* per bunch		Cauliflowers, 6*s* to 21*s* per doz.	
Horse Radish, per bundle, 1*s* to 2*s*			

POTATOES.—Southwark Waterside, May 13.

We have nothing of moment to notice in the state of our Market during the past week. The weather continues very dry, and we learn that the early Peas on gravelly land have suffered severely by the drought; there has been two slight showers of rain, but we are afraid that it has not been of much service to the parched ground. Notwithstanding our Market remains inactive, and the best samples moved off tardily at the terms of this day week; but the middling conditioned sorts met a dull sale, although offered at further reduced prices. Whites from Holland, Belgium, and Ireland are still in the Market, selling from 40*s* to 45*s*. The supplies have been moderate, principally from the northern districts, but are fully equal to the demand.

York Reds	30*s* to 90*s*	Essex and Sussex Blues	—	3	to — 3
Perth	60 70	Wisbeach Kidneys .	70	—	
Early Devons . . .	— —	— Blues .	50	—	
Late Devons . . .	75 80	— Whites .	45	50	
Cornwall . . .	75 80	Jersey and Guernsey Blues	60	65	
Kent, Sussex, & Essex Whites	40 45	Prince Regents .	—	—	
— — Kidneys .	— —	Belgian Reds .	—	—	

HAY.—Per Load of 36 Trusses.

Smithfield, May 16.

Prime Upland Hay	65*s* to 75*s*	Clover . 80*s* to 100*s*	Straw . 24*s* to 28*s*
Inferior . .	55 60		

John Cooper, Salesman.

Cumberland Market, May 16.

Superior Meadow Hay	70*s* to 75*s*	Superior Clover 95*s* to 105*s*	Straw 26*s* to 28*s*
Inferior . .	60 65	Inferior ,, 84 90	

Joshua Hakes, Hay Salesman.

Whitechapel, May 17.

Hay . . .	80*s* to 90*s*	Clover . 90*s* to 95*s*	Straw . 24*s* to 30*s*
— fine .	65 75	— fine 100 105	

Smithfield, Monday, May 13.—Per stone of 8 lbs.

Best Downs & Hereford*s*, &c.	3*s*	6	to	3*s*	8	Best Downs & Half-breds	3*s* 2 to 3*s* 8
Best Short Horns .	3	2		3	6	Best Long-wools .	3 2 3 6
Second quality Beasts .	3	10		3	2	Ewes and second quality	3 0 3 4
Calves . . .	4	0		4	8	Pigs . . .	3 0 3 8
Lambs . . .	5	0		6	0		

Beasts, 3105; Sheep and Lambs, 30,480; Calves, 121; Pigs, 230.

There is a very large increase in the supply of Beasts to this day's Market, which has caused a considerable reduction in price; many remain unsold, notwithstanding the willingness of salesmen to submit to the above-quoted much lower rates. The quantity of sheep is also greater, but we do not think the weight of Mutton much increased, as the Market is largely composed of small and half-meated Sheep; we are obliged, however, to submit to a reduction of about 2*d* per 8 lbs in most things; small Sheep of very good quality in many instances rather exceed our highest quotations;—our prices have reference now only to Sheep out of the Wool. Lamb is rather lower. Veal and Pork remain steady.

Friday, May 17.

Our prices for everything have rallied a little to-day, the supply being but moderate. The best Scotch, &c., are making very close upon 4*s* per 8 lbs, and best Short-horns nearly 3*s* 8*d*. Sheep and Lambs have fully recovered the depression they experienced on Monday, and may be quoted best Downs 3*s* 10*d*, and best Longwools 3*s* 8*d*, and other qualities in like proportion. Some of the best sizeable Lambs are making 6*s* 4*d*, but the average price cannot be stated at more than 6*s* for the best. Calves are rather dearer, the best realising 4*s* per 8 lbs.

Beasts, 744; Sheep and Lambs, 3500; Calves, 200; Pigs, 480.

41, West Smithfield.

PRINCIPAL MANURES.

Weight per bush., about lbs		Weight per bush., about lbs	
Alum, 240*s* per ton . .	—	Phosphate of Ammonia, in fine powder, 20*s* per cwt.	65
Bleaching Powder (see Chloride Lime)		— of Ammonia, in crystals 2*s* 3*d* per lb	—
Brimstone, 200*s* per ton .	—	Rags, per ton . .	42
Bone-dust, 18*s* and 17*s* per quarter	45	Rape Cake, 8*l*s to —*s* per ton	—
— Half-inch, 16*s* ditto .	42	— Dust, 170*s* per ton .	—
— Calcined, 8*s* per cwt .	—	Sal Ammoniac, 42*s* per cwt.	—
Carbonates of Ammonia, 60*s* p cwt.	24	Salt, Agricultural, 25*s* per ton .	20
— of Lime, 1*s* to 1*s* 6*d* p. cwt.	—	— clean, 30*s* per ton .	20
— of Soda, 30*s* to 35*s* p. cwt.	—	— Hide, 31*s* per ton . .	24
Chloride of Lime, 20*s* per cwt.	—	Saltpetre (Nitrate of Potash) 28*s* 6*d* per cwt., duty paid	28 to 34
Cinders, —*s* to —*s* per ton .	—	Silicate of Potash, in powder, —*s* per cwt.	—
Coal Ashes, —*s* per ton .	—	Soap Ashes, —*s* per ton .	—
Guano, Bolivian (S. American), —*s* to 22*l*s per ton .	—	Soda Ash, 14*s* to 15*s* per ton .	60
— Peruvian, —*s* to 22*l*s per ton	—	Sulphate of Ammonia, 12*l*s to —*s* per ton . .	70
— Potter's, 240*s* per ton	66	— of Copper, 32*s* to 40*s* p. cwt.	—
— Potter's Liquid, 18*s* p. doz.	—	— of Magnesia (impure) 10*s* per cwt. . . .	65
Gypsum (Sulph. of Lime), 30*s* to 35*s* per ton . .	—	— of Magnesia (pure cryst.) 18*s* per cwt. .	65
Hallett's Dry Fertiliser, 28*s* p. ton, or 12*s* per cwt. .	—	— of Potash, 16*s* per cwt.	—
— Concentr. Liq., 1*s* 6*d* p. bot.	—	— of Soda, 8*s* to 9*s* per cwt.	—
Humphreys's Compound for Planes in Pots, 10*s* per doz. .	—	Sulphur, —*s* to 14*s* per cwt.	—
— Farmers' Compound, 12*s* per cwt. . . .	—	Sulphuric acid, London, 6*d* per lb.	—
Muriate of Ammonia, 24*s* per cwt.	70	— Country made, 1½*d* per lb.	—
— Lime, —*s* to 5*s* .	70	Whitmey's Composition for Fences and Lights, 20*s* and 40*s* per 2*s*.	—
— Potash, —*s* . .	4—	Willey Bent, —*s* per ton .	—
Nitrate of Soda, 18*s* 6*d* to 20*s* per cwt., duty paid .	66	Response of shipping about 4*s* to 5*s* per ton, according to quantities.	
Phosphate of Lime, 8*l*s 6*d* per cwt.	66		
— — Super, 7*l*s to 8*l*s per cwt.	65		

Manx Publications.

IRON WORKS.

COTTAM AND HALLEN, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS and RICK-STANDS, or STATHELS, at very low prices.

GARDEN SYRINGES, 9*s.* 6*d.* each.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 20 inches, and 22 inches.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 4 ft. 6 in., 5 ft., 6 ft., and 7 ft.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE-FENCING, at 8*s.* 6*d.* per bundle of 150 to 160 yards each.

Flower-bordering, Trainers, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

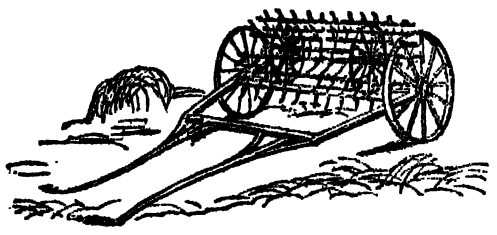
HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time.

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DOUBLE-MOTION HAYMAKERS of the best construction, made almost wholly of iron, and containing the double Cylinder, and all the latest improvements, are now ready.

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PLOUGHS, DRILLS, Sheep and Cattle Weighing Machines, Improved Prize Harrows, Field Rollers, Turnip cutters, Chaff-cutting Machines, Threshing and Winnowing Machines, Oil-cake Breakers, and every description of Implements used in Agriculture.

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HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

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STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

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BOAST AND Co.'s PATENT INORGANIC MANURES.—These strong and productive manures have already proved their superiority over all others yet adopted. It is now thoroughly understood and acknowledged by intelligent agriculturists that each plant requires a distinct manure, and it is upon this perfectly scientific principle that these manures are prepared, being formed so as to supply all the substances taken from the soil by each particular crop. They are immeasurably more efficacious, far more economical than all others, and possess the great advantage of being easily applied to the land.

Prospectuses, with full particulars, may be obtained; or will be forwarded by post on application at the Manufactory, Bow, Middlesex.

*** By the use of these Manures, any land may be rendered fertile. Wheat, &c. may be grown on the same land every year with immense advantage to the farmer, and without injury to the soil; whilst all the other crops are greatly increased.

GUANO, superior to the foreign, at a reduced price.

Manures prepared expressly for Gardeners and Florists.

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GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 40, Upper Thames-street.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

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COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, May 16, 1844.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7*s.* per cwt.

Phosphate of Potash, 15*s.* per cwt.
" Soda 12*s.* "
" Magnesia 9*s.* "
" Ammonia 1*s.* per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs. WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1*s.*

FOR TURNIPS.

THE Urate of the London Manure Company, 4 guineas per ton. The London Manure Company have great pleasure in acquainting their friends that they have this day reduced the Urate from 5*l.* to 4 guineas per ton, at the same time pledging themselves that the quality shall be fully maintained. The Urate will be found most valuable for Turnips, by promoting a rapid growth; it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. It may be sown broadcast, or, which is preferable, by the drill, at the rate of one ton to 3 acres; and it is desirable it should not be placed more than 2 inches below the surface. Gardeners and Florists will find it very useful for Dahlias, and other roots. Full particulars and testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate Ammonia; Gypsum, and every other artificial manure.—EDWARD PURSER, Secretary, 40, New-bridge-street.

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GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, [illegible].

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2*s.* 6*d.* each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of DR. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 28, Cornhill; Messrs. HURST and M'MURRAY'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1*s.* 6*d.* each, and in bottles, six times the size, at 7*s.* 6*d.* The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

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ANALYSES OF SOILS, MANURES, &c. are conducted by MR. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 5, A., Hawley Road, Kentish Town.

N.B. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.

WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. DEANE, Ironmongers, London-bridge; and of any Ironmonger in the country. Price, in box, with lock and joints, 2*l.* 5*s.*

CLEAR WHITE GLASS MILK-PANS.

APSLEY PELLATT, FALCON GLASS WORKS, Holland-street, Blackfriars-road, having made further experiments, is able to reduce the price of the Milk-Pans—as described in the *Gardeners' Chronicle*, of clear white flint glass, which is far superior to the foreign green glass—to 5*s.* 6*d.* each, or 3*l.* per dozen.

PULVERISED PURE CHARCOAL for Mixing with COMPOSTS. The above can be had in bags, containing four bushels, at 5*s.* per bag, including bag, and carriage, paid to London.—Apply to JOHN RIVERS, Sawbridgeworth, Herts.

YORKSHIRE LAND-DRAINING ASSOCIATION. Capital, 500,000*l.*, in Stock of 25*l.* Deposit 5 per Cent.—The Provisional Committee have determined to limit the time for receiving Applications for Stock in this Association to THURSDAY, the 30th instant, on which day the List will be closed, preparatory to the allotment being made. Prospectuses may be obtained from the Solicitors, Messrs. Blanchard, Richardson, and Gutch, York; or from the Secretary, J. H. CHARNOCK, Wakefield.—May 16, 1844.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

WHITNEY'S CHEMICAL, TRANSPARENT, WATERPROOF COMPOSITION, for rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to Rain or Moisture, admitting light equal to Glass, the *burning* rays of the *sun alone* being obstructed. Houses or pits covered with Calico, &c., prepared with this Composition, embrace important advantages over Glass. The light being equally diffused in every part of the house, plants placed on the floor have as much light as those close to the covering, consequently they are not drawn up as under Glass, while they continue much longer in *bloom*, and preserve their *delicate tints unfaded* till the *blossom falls*.

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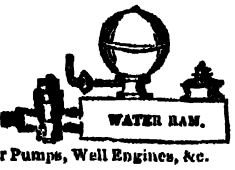
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E. R. Cutler, Secretary, 97, Farringdon-street.

GARDENERS' BENEVOLENT INSTITUTION.

—WILLIAM BARNES begs leave to inform his Friends and the Subscribers to the above Institution generally, that the case which he has ventured to recommend to their notice at the ensuing Election of Pensioners is that of JOHN WELLARD, of Eynsford, Kent, to whose claims, on the score of infirmity, poverty, and past good conduct, he can bear the strictest testimony.—Bromley Common, May 23, 1844.

SPLENDID LARGE, DEEP-BLUE ANAGALLIS

and SUPERB CINERARIAS.—Plants of that large, splendid deep blue, full and complete round-petalled ANAGALLIS FREWERII, being of a strong and vigorous habit, are well adapted for bedding out; 12s. per dozen.

SUPERB CINERARIA SEED, saved from the most esteemed named kinds, and other new and beautiful Seedlings, comprising every shade of dark and light blue, at 2s. 6d. per packet. Strong flowering plants of the above, 12s. per dozen. Applications, inclosing Post-office orders, will be immediately executed.—Direct to Michael Banwell, Sen., Cambridge Nursery

PLANTS FOR BEDDING OUT,

to be had of MARNOCK & BRAMLEY, Nurserymen, Hackney, London.

	per doz.—s. d.		per doz.—s. d.
Geraniums, scarlet and others, strong plants	6 to 9	Anagallis,—in varieties	6 to 9
Fuchsias, 100 varieties	6 12	Alstrœmerias do.	9
Verbenas do.	4 6	Heliotropium	4 6
Petunias	4 6	Cineraria.	
Salvia decumbens, new	9	Maurandyas, 4 varieties	6 9
Salvias,—in varieties	4 6	Cobœa scandens	6 9
Nemophilas do.	5 9	Lophospermums	9
Antirrhinums do.	9	Rhodochiton volubile	12 18
Calceolarias do.	9	Kennedya	9 12
Lobelias do.	9	Sollya heterophylla	9

With every other variety of Bedding and Greenhouse Plants, at moderate prices, sent free within 20 miles of London, if to the amount of 5s. and upwards, or packed for the country. A descriptive Catalogue may be had on application.—Hackney, Middlesex May 24.

GLOXINIA ROSEA ALBA; Figured in the present Number of the "Floricultural Cabinet."

Extract.—"Our present illustration, G. rosea alba, is an elegant variety obtained from seed of the variable, but generally beautiful G. PENDULA. The intermediate colour of most gradations in shade; and the habit is so double it will generally be found to produce a good truss from each bud. Raised by Mr. Gaines, Gardener to Lord Ashburton, Bowood, Wilts, 1844, by the editor.

The plant is 3 inches high, flowers three inches across, with a [illegible] of C. Gaines, Esq., of Bowood, Wilts.

A GRAND HORTICULTURAL EXHIBITION,

Under the Patronage of His Royal Highness the Duke of Cambridge, K.G., and the Right Rev. the Lord Bishop of Rochester, in aid of the Funds of the GARDENERS' BENEVOLENT INSTITUTION, will be held in the Grounds of the Bishop of Rochester, adjoining the White Hart Hotel, Bromley, Kent, on Tuesday, 11th June next

The following Prizes have been kindly offered —

By Mr. George Charlwood, *of Covent Garden* — For the Best General Collection of Plants, a copy of the late Mr. Loudon's celebrated Botanical Work, the "Arboretum Britannicum," value Ten Guineas

By Mr Low, *of Clapton.* £ s. d.

For the 12 best Proteaceous Plants, in or out of flower 1 5 0
For the 2d best do do. 2 2 0

By Mr Denyer, *of Loughborough-road, Brixton.*

For the best Collection of Roses in Pots, to Amateurs and Gentlemen's Gardeners 1 0 0
For the 2d best do. 1 0 0

LIST OF PRIZES TO BE AWARDED, IF CONSIDERED WORTHY BY THE JUDGES —

Miscellaneous Collection of Stove and Greenhouse Plants	best 50	12	12 0
" " "	2d best 50	10	10 0
" " "	3d best 50	8	8 0
" " "	best 24	7	7 0
" " "	2d best 24	5	5 0
" " "	3d best 24	4	4 0
" " "	best 12	4	4 0
" " "	2d best 12	3	3 0
" " "	3d best 12	2	2 0
" " "	best 6	3	3 0
" " "	2d best 6	2	2 0
" " "	3d best 6	1	1 0
Twelve Geraniums	best	4	4 0
"	2d best	3	3 0
"	3d best	2	2 0
"	4th best	1	1 0
Twelve Heaths	best	5	5 0
"	2d best	4	4 0
"	3d best	3	3 0
"	4th best	2	2 0
"	5th best	1	1 0
Twelve Fuchsias	best	4	4 0
"	2d best	3	3 0
"	3d best	2	2 0
"	4th best	1	1 0
Twelve Calceolarias	best	4	4 0
"	2d best	3	3 0
"	3d best	2	2 0
"	4th best	1	1 0
Six Orchideous Plants	best	5	5 0
" "	2d best	4	4 0
" "	3d best	3	3 0
" "	4th best	2	2 0
" "	5th best	1	1 0
Collection of Roses, unlimited, in bunches—Nurserymen	best	5	5 0
" " "	2d best	4	4 0
" " "	3d best	3	3 0
" " "	4th best	2	2 0
" " "	5th best	1	1 0
Collection of 36 varieties, by Amateurs and Gentlemen's Gardeners	best	2	2 0
" " "	2d best	1	1 0
Cut Flowers, not less than 20 genera	best	2	2 0
" " "	2d best	1	1 0
Fruit, not less than six sorts, exclusive of Pines and Grapes	best	3	3 0
" "	2d best	2	2 0
" "	3d best	1	1 0
Pansies, not less than 36 varieties	best	1	1 0
Pine-apple, not less than 3 lbs. weight	best	2	2 0
" " "	2d best	1	1 0
Basket of Grapes	best	3	3 0
" " "	2d best	2	2 0
" " "	3d best	1	1 0

The Committee take this opportunity of earnestly soliciting the aid and co-operation of all persons desirous of promoting the interests of the Institution

E. R. Cutler, Secretary, 97, Farringdon-street.

N.B.—Arrangements have been made at Bromley for the accommodation of exhibitors, horses, and men, at the expense of the Committee.

CARNATIONS.

—Any person having two or three healthy Pans of Colcutt's "Brutus" in pots will hear of a purchaser by applying to Mr. Thomas Rhead Fenton, Stoke-upon-Trent, Staffordshire.

PANSY, "Lady Alice Peel."

—In every respect one of the best Show-Flowers of the present year, raised by Youell & Co. in 1843. Blooms were submitted for the opinion of the Editor of the *Gardener's Chronicle*, a description of which will be found under "Notices to Correspondents," in *Gardeners' Chronicle* of April 27, page 248.

Strong plants are now ready for sending out, post free, at 2s. 6d. per plant.—Great Yarmouth Nursery, May 24, 1844.

SPLENDID NEW SEEDLING LOBELIAS.

F. C. BALL, Nurseryman, Taunton, (successor to Mr. John Young,) begs to offer the following as decidedly the best Scarlet Lobelias known, viz.:—

Lobelia fulgens multiflora, " " variety.
" " " Hendersonii.

All partaking of the free growth of L. fulgens, and in colour and size of flower far exceeding the finest varieties of L. fulgens; particularly the first, which is also very distinct from its robust habit and long continuance in bloom. Young plants in the greenhouse in flower with compliments for their opening. Plants are ready for immediate delivery, price 2s. each.—May 24, 1844.

CLOTH OF GOLD NOISETTE ROSE.

—Mr. Glendinning having a strong Stock of this very desirable novelty, offers it while good Plants at 12s. each. Cuttings of [illegible]

NEW AND SUPERB CHRYSANTHEMUMS.

YOUELL AND CO. beg to call attention to the following select List of CHRYSANTHEMUMS; the plants are strong and healthy, and ready to be forwarded per Post free to any part of the United Kingdom, at 12s. per dozen, the selection being left to the purchaser or to Y. and Co. They will be found very desirable to those who intend exhibiting at the Autumnal Exhibitions

Achmet Bey, lilac
Arago, buff and red
Beauty, pale lilac
Belladonna, pink
Bethula, lilac
Campestroni, purple
Casimir Perrier, small, crimson
Chancellor, white and pink
Changeable, yellow
Christophe Colombe, lilac
Col Combes, salmon
Conspicuum
Defiance, white
Duc de Conigliano, crimson
Duchess de Montebello
Duke, extra fine
Elegans, rose
Empress, lilac
Expanded, purple
Flechier, dark rose
Formosum, white and yellow
Golden Lotus, flowered yellow
Gem, pink and white
Goliath, white
Gouvain St. Cyr, orange
Hero
Incurved, pink
Insigne, pink and red
Imperial, pale lilac
King, pale rose
Louis-Philippe
Lucidum, white
Marchioness, white
Madame Pompadour, dark rose
Mareschale Messina, yellow and red
Marie, red
Marie Antoinette
Magnet, yellow
Memnon, pink
Minerva, pink and white
Mirabile, white and buff
Peter, creamy
Perspicuum, pink
Princess Marie, light pink
Pulcherrimum, rose
Queen, deep rose
Quilled, yellow
Rosalind, pink
Salters, white
Sulphurea
Sultana, rose
Superb, clustered yellow
Surprise, white
Starry, purple
Tasselled, lilac
" yellow
Triumphant, pink and buff
Two coloured Incurved, yellow and brown
Vesta, white
Wheelerians.

Sent Post free to any part of the United Kingdom, at 12s. per doz.

"Hatch's Pine Support."—This admirable invention has been submitted for the opinion of Dr. Lindley, and the Remarks upon it will be found in this Paper of the 11th inst., page 309 It entirely does away with the unsightly appearance of sticks, a vast quantity of unnecessary trouble, and also serves the purpose of carding and keeping the flower in form; and, if with care, the article will last many years. Price 4s. 6d. per dozen Great Yarmouth Nursery, May 24, 1844.

R. WHITE & Co. beg now to offer Plants of the following, viz., Achimenes longiflora, strong Plants for specimens on their own bottoms, at 2s each; Do. do., good flowering Plants at 9s. per dozen. Achimenes grandiflora, strong specimen roots, 3s 6d. each; Do., smaller, 2s. A. patens culata, do., 1s. each; A. coccinea, do., specimens, 6s per doz. A. rosea, do. do., 9s. per dozen. Anagallis Bauwardi, 1s each, or 9s. per dozen. Chrysanthemums, 40 superb varieties, one plant of each, 21s. Dahlias, including all the finest old varieties, and the following new ones, viz., Standard of Perfection, Orange Superb, Lady Antrobus, Rosina Hinks, Madame Chevalin, Essex Triumph, Oakley's Surprise, Admirable, Blue Bonnet, Queen of the Isles, &c. &c., at very [illegible] rates, or where the selection is left to us, at 10s. 6d. per dozen, or 80s. per 100, which may include the last named five new kinds, that will be made up with other really good sorts. 4

Fuchsias—London Rival, Globosa Grandiflora, Superfine, Stanwelliana, Prince of Wales, Monarch, Bridesmaid, Integrifolia, Xantiah Hero, and all the other new kinds, at moderate prices, or a Collection of 20 superb kinds, including some of the new ones, and any of the following, viz., Venus victrix, Exoniensis, Lanch, Greenwich Rival, Magnifica, Gigantea grandiflora, St. Clare, Brucinna, Eximia, Woodsii, Conspicua, Arborea, Devonia, Splendens, Youcilii, Formosa elegans, &c., for 21s., or 10 for 10s. 6d.

Geraniums in superb collections, 40 good varieties, 63s.; 20 do do., 42s

Petunias, good sorts, per dozen, 4s. The following new varieties —Punctata, Beauty Supreme, Celestial, Formosa, Ne plus Ultra, Splendida, Speciosissima, Multiflora punicea, Gem, Superb, 21s the Collection, or separately at moderate rates.

Verbenas —Finest old varieties, per doz., 4s The following are seedlings, viz.—White's Wonder, Perfection, Modesty, Variabilis, Cooperii, Surprise, Simperii, Stewart's Queen of the Whites, Azurea grandiflora, Carnea superba, Pearson's Teucroides atrosanguinea, do. Princess Alice, Speciosissima, Beauty Supreme, Teucroides celestina, Miller's Blue Queen, Zenxis, Smith's Excelsa, Array, Delicata, and Striata—the Collection, 21s 6d.

Scarlet Geraniums, Heliotropes, Calceolarias, &c. &c., for bedding out; and every description of plant at moderate prices.

Orders from unknown correspondents must be accompanied by remittance, and orders amounting to 5l will be delivered free.—Bone Manure—Dust, 20s, Mixed, 19s. per qr.; Guano, 11s. per cwt., or 10l per ton, warranted genuine. Agents, by appointment, for the sale of Whitney's Composition.

Poole Nursery, Dorsetshire.

WM. JOHN CORMACK, Agricultural Chemist

by Appointment to His Royal Highness Prince Albert, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his Combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. George Sinclair, Author of the "Hortus Gramineus Woburnensis.") Upwards of 25,000 acres have been converted to permanent pasture by this establishment, with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurzel, Carrot, and Turnip-seed of excellent sorts, saved from selected bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's Patent Scythes and Prince Albert Peas, at 2s. 6d. per quart.

LYNDON'S PATENT GARDEN SPADES.

—These excellent Spades, constructed to bear a finish edge, and wear as long as any, have been made in the usual way, and sold by Joseph Sherwood, Bermondsey, Newington, of whom orders may be addressed, and will receive prompt attention.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

INSTRUCTIONS TO THE JUDGES AS TO THEIR CONSIDERATION OF THE NOVELTY OF THE OBJECTS EXHIBITED.

In forming your opinion of the subjects submitted to you for examination, you are requested to take into consideration whether they have been exhibited previously or not. The OBJECT of this regulation is to give specimens produced at the Society's Garden Meetings, for the first time, an advantage over others previously exhibited, although of equal merit; and to obstruct the system of exhibiting very fine plants repeatedly, to the disadvantage of others. The EFFECT of this regulation should be,—1. That if two collections should be nearly the same in point of merit otherwise, that in which no previously exhibited specimen shall be found, will be regarded as the better of the two. 2. That in all cases of doubt, the person who had not exhibited previously shall have the benefit of the doubt. 3. That when each of two competitors shall have introduced previously-exhibited plants into his collection, that collection which contains the fewest of them shall be deemed the superior if they are otherwise nearly alike. It is not, however, wished that the previous exhibition of plants should depreciate their value so much as to place a superior collection below one very decidedly inferior. The APPLICATION of this regulation is left to your judicious consideration.

AWARD OF THE JUDGES, MAY 18th, 1844.

LARGE GOLD MEDAL.

1 To Mr. Mylam, Gardener to Sigismund Rucker, Esq., Jun., F.H.S., for a collection of Exotic Orchidaceæ.

GOLD KNIGHTIAN MEDAL.

1 To Mr. Robertson, Gardener to Mrs. Lawrence, F.H.S., for a collection of 30 Stove and Greenhouse Plants
2 To the same, for a collection of Exotic Orchidaceæ
3 To Mr. Brewin, Gardener to R. Gunter, Esq., Esq., F.H.S., for a miscellaneous collection of Fruit.

GOLD BANKSIAN MEDAL.

1 To Mr. Green, Gardener to Sir Edmund Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
2 To Mr. W. Cock, of Chiswick, for 12 varieties of Pelargonium, in pots of 24 to the cast
3 To Messrs. Lane and Son, of Great Berkhampstead, for 25 varieties of Roses in pots
4 To Mr. Dobson, Gardener to Mr. Beck, of Isleworth, F.H.S., for a collection of 12 varieties of Roses in pots.
5 To Messrs. Rollisson, of Tooting, for a collection of Exotic Orchidaceæ
6 To Mr. Kennington, Gardener to F. G. Cox, Esq., for 6 species of Exotic Orchidaceæ
7 To Mr. Green, for 12 Greenhouse Azaleas
8 To Mr. Brazier, Gardener to W. H. Story, Esq., F.H.S., for 20 varieties of Cape Heaths
9 To Mr. Green, for Tall Cacti in flower
10 To Mr. Spencer, Gardener to the Marquess of Lansdowne, F.H.S., for a miscellaneous collection of Fruit

SILVER GILT MEDAL.

1 To Mr. Clarke, Gardener to the Earl of Eldon, at Shirley Park, Croydon, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Bruce, Gardener to Boyd Miller, Esq., for a collection of 6 Stove and Greenhouse Plants
To Mr. Robertson, for a collection of Stove and Greenhouse Climbers
4 To Mr. Gaines, of Battersea, for 12 varieties of Pelargonium, in pots of 24 to the cast
5 To Mr. Dobson, for the same
6 To Mr. Gaines, for 12 varieties of Pelargonium, in pots of 12 to the cast
7 To Mr. Cock, for the same
8 To Mr. Laing, Nurseryman, Twickenham, for a collection of 25 Roses in pots
9 To Alexander Rowland, Esq., F.H.S., for a collection of 12 Roses in pots
10 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of Exotic Orchidaceæ
11 To Mr. Robertson, for a collection of 20 species of Cape Heaths
12 To Mr. J. Dawson, of Brixton, for the same
13 To Mr. T. Jackson, F.H.S., for the same
14 To Mr. Vocken, Gardener to J. J. Wells, Esq., of Bromley, Kent, for a collection of 6 species of Cape Heaths
15 To Mr. Frazer, of Leyton, Essex, for the same
16 To Mr. Falconer, Gardener to Archdale Palmer, Esq., of Cheam, for 12 Greenhouse Azaleas
17 To Mr. Robertson, for 6 Greenhouse Azaleas
18 To Mr. Upright, Gardener to G. C. Ridge, Esq., for Tall Cacti in flower
19 To Mr. Booth, Gardener to Sir Charles Lemon, Bart., F.H.S., for Cereus crenatus
20 To Mr. J. Wilmot, for Grapes
21 To Mrs. Knott, of Bohun Lodge, Barnet, for the same.

LARGE SILVER MEDAL.

1 To Mr. Frazer, of Leyton, for a collection of 6 species of Stove and Greenhouse Plants
2 To Mr. Catleugh, for 12 varieties of Pelargonium, in pots of 24 to the cast
3 To Mr. Staines, for the same
4 To Mr. Bell, of Chelsea Hospital, for 12 varieties of Pelargonium, in pots of 12 to the cast
5 To Mr. Catleugh, for the same
6 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for 6 Calceolarias, in pots of 12 to the cast
7 To Mr. Cole, Gardener to C. Lewis, Esq., of Blackheath, for 12 varieties of Fuchsia
8 To Messrs. Lane and Son, for a collection of Roses, in 50 varieties
9 To Mr. Green, for a collection of 20 species of Cape Heaths
10 To Mr. Bruce, for a collection of 6 species of Cape Heaths
11 To Mr. Gaines, of Battersea, for 12 Greenhouse Azaleas
12 To Mr. Bruce, for Tall Cacti in flower
13 To Mr. Robertson, for the same
14 To Messrs. Veitch and Co., of Exeter, for Hindsia violacea
15 To Mr. Moore, Gardener to R. Hanbury, Esq., F.H.S., for a new variety of Schomburgkia tibicinis
16 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for Plants grown in a Glass Case on Mr. Ward's plan
17 To Mr. Dodds, Gardener to Sir George Warrender, Bart., F.H.S., for a miscellaneous collection of Fruit
18 To the same, for Grapes
19 To Mr. Wortley, Gardener to I. F. Maubert, Esq., F.H.S., for Grapes
20 To Mr J. Davis, of Oak Hill, East Barnet, for the same
21 To Mr. G. Leslie, Gardener to J. Fleming, Esq., F.H.S., for Pine Apples.

SILVER KNIGHTIAN MEDAL.

1 To Mr. Stanly, for a collection of 6 Stove and Greenhouse Plants
2 To Mr. Fraser, for a collection of 6 Stove and Greenhouse Climbers
3 To Mr. J. Mitchell, Pittdown Nursery, Maresfield, for a collection of Roses, in 24 varieties
4 To Mr. Gaines, for 6 Calceolarias, in pots of twelve to the cast
5 To Mr. Catleugh, for a collection of 12 varieties of Fuchsia
6 To Mr. Edmonds, Gardener to His Grace the Duke of Devonshire, at Chiswick, for Peristeria pendula
7 To Messrs. Veitch and Son, of Exeter, for Eriostemon buxifolium
8 To Messrs. Veitch and Son, for Erica depressa
9 To Mr. Green, for Ixora coccinea
10 To Mr. Bruce, for Pimelea spectabilis
11 To Mr. G. Clarke, Gardener to the Earl of Eldon, for Leschenaultia formosa
12 To Mr. Robertson, for Stephanotus floribundus
13 To Messrs. Veitch and Son, for a new species of Centroscma
14 To Messrs. Loddiges, of Hackney, for a species of Gaylussacia
15 To Mr W. Brazier, for the best-named collection, (no error in 20 plants, and well written.)
16 To Mr. Sellers, Gardener to L. V. Watkins, Esq., F.H.S., for Grapes
17 To Mr. Mitchell, of Kemp Town, Brighton, for the same
18 To Mr. Braid, Gardener to H. Peckins, Esq., F.H.S., for Pine Apples
19 To Mr. Ewing, Gardener to O. F. Meyrick, Esq., F.H.S., for Cherries
20 To Mr. Spencer, for Strawberries (British Queen)
21 To Mr. Gadd, of Betchworth, near Dorking, for 5 Melons
22 To Mr. Falconer, Gardener to A. Palmer, Esq., for Azalea variegata
23 To the same, for Leschenaultia grandiflora.

THE SILVER BANKSIAN MEDAL.

1 To Mr. Catleugh, for a collection of 25 Roses in pots
2 To A. Rowland, Esq., F.H.S., for a collection of Roses in 25 varieties
3 To Mr. Ivery, of Peckham, for 12 varieties of Cineraria in pots
4 To Messrs. Veitch and Son, for Xanthosia rotundifolia
5 To the same, for Hindsia (Rondeletia) longiflora
6 To Mr. Forrest, for Statice macrophylla
7 To Mr. Robertson, for Cereus speciosissimus
8 To the same, for Gompholobium polymorphum
9 To the same, for Eriostemon buxifolium
10 To Mr. Noble, Gardener to R. Mangles, Esq., F.H.S., for a new species of Ribbertia
11 To Mr. Robertson, for the second best-named collection (two errors in 36 plants, and very nicely written)
12 To Mr. McLean, Gardener to the Marquess of Downshire, for Grapes
13 To Mr. Atlee, Gardener to H. Beaufoy, Esq., of South Lambeth, for the same
14 To Mr. Snow, Gardener to the Earl de Grey, for Melons
15 To Mr. Dodds, for Strawberries (British Queen)
16 To Mr. I. Davis, of Oakhill, for the same
17 To R. Brook, Esq., F.H.S., for Apples, &c.

THE CERTIFICATE OF MERIT.

1 To Messrs. Lawrence, of Parliament street, for Plants grown under a bell-glass on Mr. Ward's plan
2 To Mr. Bruce, for Adenandra speciosa
3 To the same, for Siphocampylus betulifolius
4 To Mr. Whomes, Gardener to E. Foster, Esq., of Clewer, for a Seedling Pelargonium, (Dr. Lindley)
5 To Mr. I. Ivery, of Betchworth, for a Seedling Azalea (formosa)
6 To Mr. Catleugh, for a Seedling Azalea (conspicua rosea)
7 To Mr. Frost, Gardener to Lady Grenville, for Cunningia trimaculata
8 To Mr. Mylam, for the third best-named collection, (four errors in 36 plants, and beautifully written)
9 To Mr. Rollisson, of Tooting, for the fourth best-named collection, (four errors in 20 (?) plants, and well written)
10 To Mr. W. Davis, of Isleworth, for Strawberries (British Queen)

*** The Judges of the Plants exhibited as new or extremely rare single specimens, expressed their regret that, owing to mis entries, they were unable to confer rewards upon some deserving exhibitors.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS; NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER.

NOW READY FOR SENDING OUT.
THE NEWEST AND VERY BEST FUCHSIAS, VERBENAS, PETUNIAS, ANAGALLIS, &c.
FOR 1844.

YOUELL AND Co. beg to refer the Readers of the *Gardeners' Chronicle* to their Catalogue of the above, which appeared in this Paper of the 27th of April, and will be found to contain such varieties only as are worthy of cultivation.

YOUELL & Co. being the parties who first sent out per post, with safety, these tribes of plants, are desirous of calling attention to their advantageous method of executing orders, namely, that they will deliver them free of postage (on the receipt of a Post-office order), to any part of the United Kingdom, upon the following terms:—

12 Extra Fine varieties, 12s., the Selection left to Youell & Co.
12 ditto ditto 21s., the Selection left to the Purchaser.
50 Fine varieties . . 40s., the Selection left to Youell & Co.
50 Extra Fine ditto . 60s., the Selection left to the Purchaser.

VERBENAS.

12 Extra fine Varieties, 6s., the selection left to Youell & Co.
12 Ditto ,, 10s., the selection left to the purchaser.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name . . 10s. per dozen
12 Extra Fine ditto, do. . . 18s. ,,

CHRYSANTHEMUMS. [Sent postage free.]

Fifty of the newest best varieties by name, 12s. per dozen; for list and colours of which, see Advertisement of April 27.

FLOWER-SEEDS.—30 Packets of the choicest and newest kinds sent per post free for 6s.

ARAUCARIA IMBRICATA IN POTS.

Recently planted most extensively at Her Majesty's Gardens at Windsor, and also at the Royal Gardens, Claremont, furnished by YOUELL and Co.

YOUELL AND Co., possessing the most extensive stock in the country of the above Splendid Hardy Ornamental Tree, beg to offer them on the following advantageous terms:—Fine robust 4-year-old plants, 8 to 10 inches high, 10s. per 100, or 30s. per dozen.

Fine Plants of CEDRUS DEODARA, in Pots, 2ft. to 2ft. 6 ins., 10s. 6d. each.

Great Yarmouth Nursery, May 23, 1844.

N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	Garden Edging
	Orange Tubs, Flower Boxes, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

HORTICULTURAL IMPROVEMENTS. — As Spring approaches the larvæ of destructive insects are propagated in infinite multitudes, and impregnate with millions of insects the very air we breathe, to the great injury of the young shoots of trees, vines, plants, and every species of vegetation put into motion and growth by the genial influence of the season.

J. READ begs to inform Noblemen, Gentlemen, Nurserymen, and practical Gardeners, that he has now a variety of his NEW PATENT HYDRAULIC MACHINES, for the purpose of subduing these destructive insects, which make such deadly havoc on all trees and plants (particularly the Peach and Nectarine), at this season of the year. These machines are made of various dimensions, suitable for every purpose of Horticulture, and are worked with such ease, that a Lady may enjoy the pleasure of watering her plants and flowers without the least fatigue, and the water may be dispersed in the form of a gentle shower or dewfall. The above are so constructed as to require but two-thirds the labour of any other machines now in use, which the Patentee, from thirty-one years' practical experience in the science of Horticulture, and twenty-one years in manufacturing and improving machines, can safely warrant.

Likewise, FIRE-ENGINES made to order, capable of discharging from 20 to 40, 70, or 120 gallons of water per minute, which may be seen and proved at 35, REGENT-CIRCUS, PICCADILLY.

IRON WORKS.

COTTAM AND HALLEN, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS and RICK-STANDS, or STATHELS, at very low prices.

GARDEN SYRINGES, 9s. 6d. each.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 20 inches, and 22 inches.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 4 ft. 6 in., 5 ft., 6 ft., and 7 ft.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE-FENCING, at 8s. 6d per bundle of 150 to 160 yards each.

Flower-bordering, Trainers, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time.

RENDLE'S TANK SYSTEM on an improved simple plan.

Show Rooms at their Manufactory, No. 2, Winsley-street, where estimates and every information may be obtained.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 200 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

SHADES FOR GREENHOUSES.

J. WEEKS & Co., Architects, Hothouse Builders, &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-pla., Chelsea, near Sloane-sq

CHICORY.

THOMAS ABBEY, of Dunnington, near York, Agricultural Implement Maker, begs to call the attention of the growers of Chicory to his DRILLS for SOWING the SEED; and also to his CUTTERS, worked by hand or by horse-power, for cutting the roots into squares, preparatory to Grinding.

The Gardeners' Chronicle.

SATURDAY, MAY 25, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Tuesday,	June 4	Horticultural	3 P.M.
		Royal Botanic Gardens	9 P.M.
		Linnean	8 P.M.
Wednesday,	June 5	Society of Arts	8 P.M.
Friday,	June 7	Botanical	8 P.M.
Saturday,	June 8	Royal Botanic	4 P.M.

The Exhibition of Plants and Fruit last Saturday in the Garden of the Horticultural Society at Chiswick, proved that the skill of Gardeners is in general very visibly advanced since last year, and that the fondness of the public for such meetings is also much upon the increase.

A bitter North-east wind, and occasional squalls of rain, did not prevent 4367 persons from assembling on the occasion. On the 13th of May, 1837, when the day was equally cold, but quite dry, only 750 visitors were present; and on the 16th of May, 1840, the wind being south-west, a few showers prevented the attendance of more than 2471. In fact, the number last Saturday was within 500 of that in May last year, when the wind was westerly, and the afternoon perfectly fine.

A casual observer might not have perceived that advance in Gardening skill to which we have alluded, and might point to sundry very indifferent Pines, and some specimens but ill in bloom, as indicating the contrary. It should, however, be remembered that the plants for this Exhibition have been preserved through the very worst spring, for such purposes, that has been experienced for years. An unclouded sun, sudden heats followed by as sudden cold, and two months' dryness, would have ruined the plants of any except English gardeners. Their resources, however, proved equal to the demand upon them, and enabled them to produce an unrivalled display of beautiful cultivation, even though they had to bring their tender plants into a cold-bath—we had almost written an ice-bath.

What more particularly justifies our opinion that this Exhibition proved a general advance in Horticultural skill to have taken place since last year, was the total absence of bad cultivation. Whenever, on former occasions, such large masses of plants have been collected together, a considerable number of very poor specimens has been found among them. This year we did not observe one. The single specimens, for example, were nicely grown and cleverly managed, and coming in many instances from those who have not the opportunity of producing anything else, clearly showed that the great gardeners of the day would soon find worthy rivals if opportunity occurred. It would be invidious to mention names; but those who examined the plants will readily admit that this our good opinion was deserved by many men as yet unknown to garden-fame.

There was a fine display of fruit, with the exception of Pine Apples; and some highly interesting new things, especially a snow-white Cactus, of wonderful beauty, called Crenatus, invaluable for hybridising, and a Rondeletia-like plant with flowers of a rich ultra-marine blue, which has been named Hindsia violacea. It was also gratifying to see how well and neatly several of the collections were ticketed with their names—a great improvement in such exhibitions, which often lose half their interest from the impossibility of ascertaining what the plants are whose beauty excites attention. We add too, with much satisfaction, that the gardeners who attended were much improved in their personal appearance. We saw none of that dirty slovenly class which we have been formerly obliged to proclaim a nuisance at such meetings, and a disgrace to their brethren. On the contrary, all were dressed respectably, according to their means. There was but one unshaven man amongst them, and to him a pass-ticket was refused. Unthinking people may suppose such matters as dress of very little importance, and may fancy that it does not signify whether a man shaves himself and wears a clean coat on holidays or not, provided he grows his plants well. No stronger instance of false judgment could be given. Gardeners are ambitious of elevating themselves in the eyes of the world, and we are at all times most ready to give them effectual assistance in doing so; but the first step that any man must take who would rise above the crowd is to be neat and clean in his person. It is not enough to *be* respectable—it is necessary to *appear* so. The world cannot examine people's conduct or skill with much exactness, and is therefore of necessity guided greatly by appearances. Besides this, a gardener is brought much in contact with gentlewomen, and nothing is more unpleasant to a lady than to have constant occasion to consult a dirty servant, or to be jostled in a crowd at a flower-show by filthy ill-dressed people, whose faces are as unconscious of a razor as their linen of soap and water. To say that such people have contributed the beautiful objects that are brought together would be a libel upon all respectable gardeners, in the shape of an apology for those who are the contrary; and there are few persons who would not rather be without the flowers, if they have to purchase their pleasure by contact with such disagreeable neighbours.

But there is another reason why all gardeners should be careful to preserve a respectable, neat personal appearance. Dirty gardeners are bad gardeners; that may be taken as a rule to which there are no exceptions. They may do for labourers, but are unfit for anything more. The reason of this is plain. Neatness is indispensable in gardening; in the absence of it weeds run riot, insects swarm, and the trim beauty of a flower-garden is exchanged for the shabbiness of a wilderness. He who is slovenly in his personal habits will be so with the plants he cultivates; while, on the other hand, habitual neatness in one thing renders unneatness in other things too disagreeable to be possible. There is no doubt that much of the difference which exists among gardeners as to skill depends more upon little than what are commonly called great things. An exact attention to minute matters, and great care in details, the practice of which is among the most essential, though often most neglected parts of a gardener's education, will insure to the man of moderate abilities a superiority over him who, whatever is his cleverness, neglects them.

It was therefore, we repeat it, a source of the most sincere gratification to us to witness the highly respectable appearance of the gardeners collected at Chiswick last Saturday.

We once more return to the subject of Landscape Gardening.

Besides the power of vision, properly so called, and which makes us aware of the presence of objects, there exists a peculiar faculty which takes cognisance of colour. We have known persons, who, not possessing this faculty in a sufficient degree, mistook one colour for another, and could not distinguish them. Some persons, again, have so strong a passion for colour as to delight in its contemplation, without any regard to harmony or fitness. The Dutch are examples of this. The Landscape Gardener must possess this faculty in a proper degree; he must have not only a quick perception of mere colour, but of harmonious arrangement, and the effects of shade, and of one colour upon another. The vegetable world presents every variety of colour; but the Landscape Gardener has to do with but a small number, and chiefly with varieties of green, and the varying hues of spring and autumn. Nor is this all; he must be acquainted with the season at which each tree or shrub puts forth and sheds its leaves. This requires not a little study. Then comes the selection of shades of foliage, and styles of growth adapted to various situations and special scenery. Nature tells us not only in what situations certain trees will live and grow, but she suits these to the situation with unerring hand. She has genera and species for every climate, so that few positions suited to the dwelling of man are without something that is gratifying to the eye, and where there is deficiency it is in his power to supply it. Man was not created to be idle, and every inducement has been held out to him for exercising the powers with which he has been endowed. The wildest wastes of our island are capable of improvement, and the only obstacle to its being effected is to be found in the want of means, created by the artificial state of society, leading the rich to squander their wealth on what may produce momentary gratification, but which ends in ruin. Wealth is necessary to reclothe the surface; but, alas! where wealth should most abound, there does poverty extend the farthest. Were riches expended on the improvement and embellishment of the land, instead of being scattered abroad, as they too frequently are, on useless and unsatisfactory luxury and gambling, poverty might disappear, and competency be enjoyed by all.

The variety of green tints is very great, and their disposition of importance. Green is a mixture of blue and yellow, and the predominance of either must be studied. A different suit of colours appears in the autumn, the yellow prevailing, but mixed with red, instead of blue, which seems to disappear from the tints of autumn. Some trees change colour early, as the Horse Chesnut; others late, as the Beech and Oak. Advantage should be taken of this, and trees arranged accordingly. Evergreens should generally be so disposed as to form a mass when other trees are naked; but in some situations, single Pines and Firs, if room be given to them, produce a fine effect.

When a house is to be built where trees already abound, difficulties will occur in choosing a site. It is dangerous to cut down trees before the building has been erected; and yet effects may not be brought out, so as to assist in the choice, without thinning. It is also difficult to conduct roads where trees stand thickly; in such a case the landscape gardener should proceed with great caution, removing first such trees as are not in themselves worthy of a place.

The disposition of water, where sheets of it are to be interspersed with trees and shrubs, has fine effect in certain situations, when managed with judgment. But we cannot teach judgment, any more than taste, both being gifts of Nature.

Of all things connected with Landscape Gardening, buildings are often most offensive; and we find the grossest defects of taste frequently displayed, both in their style and position. Many persons are apt to associate external Nature with the state of society in times long past. This is an error that has led to many trespasses against Nature's rules. A man will build a castle, because the situation he fixes for it is a commanding one, and would have answered all the purposes of defence in a rude state of society. His taste leads him into expense, and to the sacrifice of convenience and comfort. The adoption of former styles shows taste in some instances; but we rather think it an indication of want of invention. The country is covered with new residences in the Elizabethan style, and there is a sameness that is rather tiresome, and far from being so picturesque as the castellated with all its modern incongruities. Dwelling-houses should be arranged for comfort; and where means are at command, also for elegance and grandeur, both internally and externally. The ruins of ancient buildings produce a most pleasing effect; and they ought to be preserved, but it would be preposterous, in our day, to build that which is felt to be impressive only when in a state of ruin. This is a subject not altogether separated from Landscape Gardening. When a professor finds buildings in his way, it is his business either to hide them, or to exhibit them to the best advantage.

We have now touched, though lightly, on most of the subjects connected with Landscape Gardening. On such a subject it is scarcely possible to strike out anything new; and our *Chronicle* is the site of business, and not the field over which Imagination can be permitted to spread her wings. We now, therefore, for a time at least, take leave of the subject, and of the reader; repeating that a man must be born a Landscape Gardener; *poeta, fit, non nascitur*.—*G.*

ON THE MANAGEMENT OF PEACH-TREES.

In answer to "Omikron" (see p.) I am of opinion that the chief cause of the lamentable state of his Peach-trees is to be sought for in the soil, together with the attacks of insects. I have had a very close acquaintance with the Peach-tree, and I am familiar with its habits, both in northern counties and around the metropolis; and the result of my observations has produced in me a decided impression that at least nine-tenths of what is called disease in the Peach, is clearly traceable to deep and stagnant soils, to deep digging over the roots, to over manuring, and to insects and ill-ripened wood. The chambering system, as it was called by Mr. Mearns, together with the mode of forcing employed by Dutch gardeners, of removing their trees every year, or in other words the root-pruning system, tends to illustrate the point I would wish to press.

I will now examine the matter, and afterwards relate what I consider to be principles essential, nay indispensable in the cultivation of the Peach. "Omikron" says, that one consequence of the disease is the attack of aphides. Is he well assured that they do not rather partake of the character of adjuncts to the original cause, instead of being merely an effect? The next point to which I would advert is "Omikron's" plan of placing what he terms virgin loam, and in another place mould, on a bottom of cement. Now, I should have no objection to place chopped turf, fresh from the pastures, on a bottom of cement, but placing an under-spit of friable soil in immediate contact with the cement is quite another thing. In the latter case, stagnation would ensue betimes, nor would the "sloping outwards" by any means perfectly obviate it.

"Omikron" proposes to make experiments with different sorts of "mould." But it is now high time that the grand difference between mere mould and chopped turf were well understood, although Mr. Barnes advises that turf be taken from the road-side, or the margin of a common. I do not mean to assert that what is called "mould," will not grow the Peach. I merely insist on the preference for the chopped turf, where steady durability is the object. As to the presumed change taking place in a tree removed from a shady quarter of a nursery, to a south wall, I am not disposed to doubt it. But what change? From bad to worse? By no means—the change is altogether for the better. Surely, a Peach in

a pot, removed from a damp and cool greenhouse into a Pine stove, could not, by any means, be expected to produce gum and mortification.

The principles I consider of the most essential importance in the cultivation of the Peach, are as follows:—

1st. Shallow borders of chopped turf.
2nd. Planting on mounds of brick.
3rd. Total absence of insects.
4th. Constant stopping during the growing season, all young wood which is disposed to burst into buds laterally.
5th. Liberal, but progressive disbudding of the young wood.
6th. Reasonable cropping.
7th. Top-dressing when necessary.
8th. No young wood reserved at the final disbudding, but what is necessary for the next year.
9th. Early nailing of the young wood.
10th. All young and growing shoots, except the weak and inferior portions of the tree, stopped the moment the fruit begins to change for ripening.

Now, 1st, by shallow borders, I mean from a foot to eighteen inches, although I plant on the mounds, and with great success, for I have neither insect, curled leaf, or gum, and a fine crop of fruit. But be it understood, that the chopped turf, which the trees in the garden under my care are growing in, is the furrowings from old clay pastures—a good and adhesive loam; and this the Peach likes, if mellow. I will pass by the 2nd point, as I have, as it were, included that in my first.

3rd. *Total Absence of Insects.*—I have known in my time a wall of fine trees irrecoverably ruined by aphides in about the space of one week, or little more. Now, aphides in this case were certainly not, as "Omikron" states his to have been, a mere consequence of previous disease; for the trees were in all respects most assuredly in perfect health. However, the cure is simple and cheap. As soon as you perceive aphides, which will be about the period of the "setting" Peach showing itself through the blossom, syringe the trees two days successively with tobacco-water. This has never failed with me to keep off aphides for the whole summer. However, we have another enemy to contend with. The red spider will generally, in a period of drought, commence an attack. For this some recommend sulphur, some cold water. I am quite assured, from experience, that, however natural it may seem to see a tree deluged with the engine some sunny afternoon in May, when perhaps the thermometer at midnight may indicate 28°, it is by no means congenial to the Peach. That the Peach will do well without this ablution, through the early part of spring, I am well assured; for the whole of my Peaches out of doors have this season not received one drop of water, and it has not rained here since about the end of March, and the dews have been rather light.

My plan with regard to the red spider, is to apply with a paint-brush a line of sulphur between every two main shoots on the wall, drawing also a broad band of the same at the bottom of the wall. The sulphur is mixed with a little skimmed milk, and made into a thick paint, by mixing it with thick clay water, and a little soft-soap, to make it adhere. I have tried this scheme for three years, and seldom or never can a red spider be seen in the trees here. Every time the sun shines, the smell of the fumes may be perceived even across the walk in front. About three shillings' worth of sulphur, and a man's labour for four hours, insures in this respect perfect freedom from this pest, and, as far as I have seen, entirely supersedes the necessity of so many cold syringings, which, to say the least of them, are great robbers of the solar heat absorbed by the wall, and which is of great use to counteract the sudden depression of temperature so frequent at night through the month of May.

4th. *Constant Stopping the Young Wood*, or in fact promoting the equalisation of the sap during the growing season.—All that the knife can do in winter pruning is as nothing compared to what may be effected in this way during the period of growth. Strange that so much should be said about systems of pruning, and so little attention paid to summer stopping! Robbers are suffered to take the lead, to the prejudice of the true bearing wood, and after decoying the sap from the profitable wood, and exciting a superfluous action of root, are cut out at the winter's pruning, leaving a preponderating power in the root, leading to a necessity for root-pruning, and causing nakedness in the lower parts of the tree.

5th. *Liberal but progressive Disbudding of the Young Wood.*—By liberal I mean that at the final thinning, about the end of May, no more wood shall be left in the tree than is wanted for the next year; and by progressive I mean that the only true maxim is to thin little and often. Nature does not like to be taken by surprise; and by doing this with a light hand, she is able in the interval to restore the reciprocal and necessary balance between the root and branches. I make no doubt that gum is often excited, certainly increased, by a wholesale robbery of this description, soon after the tree has budded.

6th. *Reasonable Cropping.*—Over-cropping exhausts the energies of the Peach, shortens its life, and renders the fruit inferior in size, and more especially in flavour. As an average rule for a tree in good health, I should recommend the fruit to be at least six inches apart at the final thinning.

7th. *Top-dressing when necessary.*—It is evident that with shallow borders, there will arise a necessity for top-dressing in hot and dry weather. In the early part of summer, those trees which require watering should have four inches of good rotten manure spread over their roots, and a liberal watering once, or it may be a second time; over this mulch will set all to rights. Let no young wood be reserved at the final disbudding, but what is wanted for the next year.

8th. Has been treated on under section 5.

9th. All young wood should be nailed close the instant it is long enough; no pains should be spared to get the wood well ripened, for on this everything in the next year depends.

10th. All young and growing shoots, except the weak ones, and those on the lower portions of the tree, should be stopped the moment the fruit begins to change for ripening. By this time the true bearing wood of the next year will be well formed. All after this, I regard as superfluous, and tending to keep up a late action of the root, which will be of no service to trees in health, or of sufficient vigour. Stopping also tends to concentrate the energies of the tree, at the very time that concentration is most required; for at this period all that is wanted is abundant elaboration, preparatory to the ripening of the wood, and the flavouring of the fruit. However, at this juncture all the lower and weaker parts of the tree should be excepted. This is the commencement of their harvest; and this, with the stopping of the luxuriant wood through the summer, will tend more to equalise the sap, than all the systems of pruning, which have ever possessed undue importance.

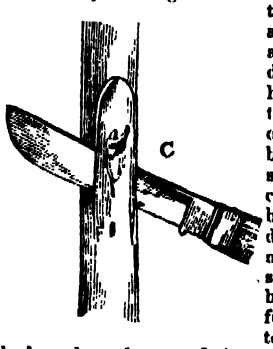
Our kitchen-gardens are all, in my opinion, laid out on wrong principles. Had I the laying of one out entirely according to my own judgment, I should reject the idea of growing vegetables altogether on fruit borders. I would, however, have narrower borders—say six feet wide, which is plenty for any tree, if good chopped turfy loam is used. On the border, across the walk, I would establish table trellises, and very dwarf espaliers; and next to that, at the head of the quarters, a ten-feet wide slope, backed up with turf for all the early crops. There would then be no pining about the loss of the wall-border.

In conclusion, I would assure "Omikron," from experience, that if these directions are attended to, success is the certain result, and he need be under no apprehensions about mildew, aphides, red spider, or any other disease.—*Robert Errington, Oulton Park.* [We have a letter on this subject from "Omikron," for which we hope to find room next week.]

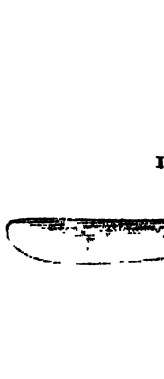
ROSE-GARDEN.—No. IX.

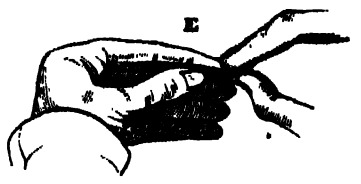
(*Continued from page* 317)

Preparing the Bud for use.—Take the shoot in the left hand, holding the thick end inwards; enter the knife three-fourths of an inch above the bud, and bring it out the same distance below, cutting half through the wood, so that the shield (or portion of bark containing the bud) comes off in the shape of the segment of a circle: this is when the buds are scarce, and it is desirable to procure as many as possible from the same shoot; if the latter be of no consequence, a full inch may be given to the top of the shield. In using buds, only such part of the shoot should be cut off as contains buds enough for the stock under operation: if a shoot be kept long out of water, and the weather be hot, the last buds upon it will sometimes slip with difficulty, and are consequently not be depended upon.

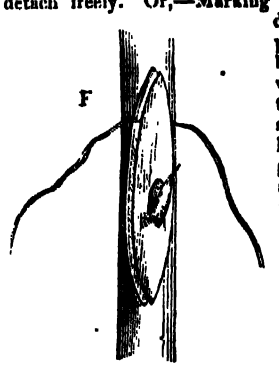


D the knife to bud with, the blades of which must be very thin, three-eighths of an inch wide, and about two inches long; the handle three inches, and the ivory point to turn back the bark with, two inches long, and thin at the end. Take the bud between the finger and thumb of the left hand, holding the point of the bud downwards, press the bud gently to keep it in its place, twist the upper end of the shield, which ought to be nearest you, gently backwards and forwards, and the wood will come loose from the shield. Take out the wood with the right hand, and see that no vacuum be left in the inside of the bud; if there be the root is gone, and it is impossible it should succeed (although the bark uniting might appear to give hopes of it); if not, the shield is fit for use, provided the bud has not been nipped too hard, or displaced by the shield having been incautiously bent; in either of which cases, time must show the defect by the failure of the bud. Or,—Mark out in the shoot by cutting round the shield, and peeling off the rest of the outside bark, the bud desired for insertion; press the bud gently against the wood, with the finger





and thumb of the left hand, and, twisting the wood from side to side, the shoot being in full *sève*, the shield will detach freely. Or,—Marking out the bud, as above directed, place a hair or piece of silk behind it, between the bark and wood, and taking care that the silk, as it were, scrapes the wood that lies behind it, in its progress between the bud and the shoot, pull the two ends of the silk, and the bud will remain uninjured, and the shield fall off safe and sound. If there be the least difficulty in detaching the shield, from its adherence to the wood, the shoot is not in order, and the buds upon it must be rejected, though some might, by a possibility, succeed. In the first of these cases, the separation of the little segment of wood which comes off with the shield, should commence at the end of the shield nearest its summit, which mode, from the slanting position of the bud, hooked, as it were, into its case, will be found less likely to displace the eye, than beginning at the other end; the edges of the bark of the shield should be smooth and clean, particularly where, as subsequently directed, it is cut off to meet the bark of the stock into which it is inserted. If the shoots have been brought from a distance, and the leaves have not been cut off, as above directed, on removal of the shoots from the parent tree, the shield will not slip so easily, and the eye of the bud will be in great danger of injury.





ON THE CULTIVATION OF TEA IN KEMAON AND OTHER PARTS OF THE HIMALAYAN MOUNTAINS.

At an evening meeting of the Royal Asiatic Society, held on the 24th ult., the Earl of Auckland in the chair, a lecture was given by Professor Royle, On the Successful Cultivation of Tea in the Himalayan Mountains. In commencing, Dr. R. remarked, that in order to cultivate any plant successfully in a new situation, careful attention required to be paid to the influence of physical agents, especially if it was desirable that the plant should retain all the properties which render it useful in the arts—in medicine, or as an article of diet or of luxury. To find a suitable situation, it is necessary to observe not only the chemical, but also the mechanical nature of the soil, and the due supply of water, &c. Also the climate, including the course of the seasons, the temperature of summer, and that of winter; the differences of dryness and moisture, with the effects of light, of winds, &c.; and to notice the plants which are associated together. It is hardly ever possible to get minute and accurate information on these points, and least of all in the case of the Chinese Tea-plant, as no competent observer is known to have visited the districts where it is more especially cultivated. From the difficulty of obtaining precise information on all the requisite points, the method adopted for ascertaining, what was required for the successful cultivation of the Tea-plant elsewhere, was to draw inferences, from the extent of its geographical distribution in China, the general nature of the soil, the peculiarities of the climate, with such notices of the vegetation as we were able to obtain from the progress of the British embassies. We know that an inferior Tea is produced near Canton, a good-flavoured Tea in the Ankoy Hills, but most of the Tea of commerce in the Black and Green Tea districts. It also appeared that Tea is cultivated in China from 17° to 36° of N. latitude, but the black Teas of commerce from 27° to 28°, and the green Teas from 29° to 31° of N. latitude chiefly. The soil, from all accounts, appeared to be poor rather than rich. The climate of China being one of great extremes, the Tea-plant must necessarily be subjected to considerable heat in summer, as well as to great cold in winter. There is no regular rainy season, but there would appear to be some moisture of the soil and climate in many of the situations where Tea is cultivated.

Dr. Royle then called attention, on maps sent by Mr. Arrowsmith and by Mr. Walker, to the relative positions of China and India, and especially of the Tea districts and the Himalayan Mountains. These extend from Cashmere to Bootan. From thence a branch stretches east across China to the province of Fokien, &c. The range thus extends over 45° of longitude, but does not make more than 10° of northing. As in ascending from the forest-clad bases of the Himalaya, to their summits covered with eternal snows, we meet with almost every variety of climate that is encountered in proceeding from

the equator to the poles, so there would appear to be no difficulty in finding congenial climates for the Tea-plant, especially as in these mountains are found genera such as Camellia, Eurya and Cleyera, allied to the Teas, as well as other Chinese genera, such as Deutzia, Houttuynia, Stauntonia, Kadsura, Hovenia, &c.

On such grounds Dr. Royle in the year 1827, and again in 1831, when Superintendent of the E. I. Company's Botanic Garden at Saharunpore, recommended to the India Government the cultivation of the Tea-plant in these mountains, in the districts under British influence; that is, in Kemaon, Gurhwal, and Sirmore. In 1832 Dr. Wallich presented a paper to the President of the Board of Control, advocating the cultivation of Tea in the same districts. In 1834 Dr. Royle published an Essay on the cultivation of Tea in the Himalayas, in his "Illustrations of Himalayan Botany," and stated that as in these mountains there existed so great an analogy in latitude, elevation, soil, climate, and the courses of the seasons, there could be no doubt of success in intfoducing its cultivation, with the strongest probability of all its properties remaining unchanged, as every requisite is so similar to what it experiences in its native country, and labour is cheaper than even in China.

In 1834 the India Government, with the sanction of the Court of Directors, determined upon attempting the cultivation of Tea in the British dominions in India. A committee was formed, and reports called for. Dr. Falconer, in reply, recommended the same tract of country as Dr. Royle had done, in a report which is remarkable for coincidence in argument and opinion, with that at the same time published by Dr. Royle, though the two must have crossed each other in their passage to and from India. Mr. Gordon was sent with Mr. Gutzlaff to obtain seeds, and as much information as possible from the Tea districts of China, together with some Tea manufacturers. They visited the Ankoy Tea Hills, obtained a considerable quantity of seeds, and made an unsuccessful attempt to reach the Bohea Tea Hills, when they were recalled in consequence of the discovery of the Tea-plant of Assam.

Dr. Royle then called attention to the specimens of the green and black Teas, and the Assam plants from Mr. Loddiges, to the two former from Sir Wm. Hooker and from Sir G. Staunton, to dried specimens obtained by Mr. Ball from the black Tea districts, and to the Tea-plant of Chusan sent to the India House by Dr. Cantor, but did not give a distinct opinion whether he considered the Chinese plants as distinct species or only varieties of the same, or whether the Assam plant were a distinct species, or a variety, but recommended, as he had done in 1840, that the whole should be subjected to experiments in the Tea districts of Assam and the Himalayas, in different soils and climates.

The seeds obtained by Mr. Gordon having been sent to Calcutta, and sown in the Botanic Garden, numbers vegetated, though many failed. Nurseries having been established both in Assam and in Kemaon and Sirmore, at elevations of from 2000 to 7500 feet, seedlings were sent, but of 12,000 sent to Assam, only 500 arrived alive; and of 10,000 sent to N. W. India, only 1326 reached the hills in the beginning of the year 1836. In December, 1838, Dr. Falconer wrote to Dr. R. that the Tea-plant was thriving vigorously in two, and had flowered in three of the above nurseries. On the 21st April, 1841, Dr. Falconer reported that from the 500 plants originally introduced into the Kemaon nurseries, 5000 had been produced from layers, and from the seeds ripened. Many of them had grown to the size of bushy shrubs, about five feet high.

In the year 1842, nine Chinese Tea-manufacturers, who had been in Assam, were sent to the Tea-nurseries of Kemaon and Gurhwal. On arrival, they united in declaring that the Tea-plants of the Kemaon plantations were the genuine cultivated Chinese plant, and far superior to that grown in Assam, but that they required cutting down before they would be in the best state for yielding good Tea-leaves. On the 12th Oct., Dr. Jameson, who succeeded to the charge on Dr. Falconer having been obliged to leave from ill health, wrote, "The Tea-plantations in the Deyrah Doon and in Kemaon are thriving admirably."

In the early part of 1843, some Tea was prepared from the above plants by the Chinamen. On 20th Jan., a portion was sent to Calcutta, and a small canister to Dr. Royle, at the India House. The former was reported on, on the 11th of May, by members of the Chamber of Commerce, and stated to be a very good marketable article, and valued in London at about 2*s*. 6*d*. per lb.; and the specimen sent to London was, on the 23d May, 1843, reported on by Messrs. Thompson, and pronounced to be of the Oolong Souchong kind, fine-flavoured and strong, equal to the superior black Teas generally sent as presents, and better, for the most part, than the China Teas imported for mercantile purposes.

On the 17th April, Dr. Jameson wrote from Almora, that all the Tea-nurseries were looking admirably; and the Chinamen were busy manufacturing black (Pouchong) Tea, which appears to be of a much superior quality to that already made. On the 30th of August, 1843, a sample, consisting of 16 small canisters of black (Pouchong) Tea was forwarded by the overland route for the inspection of the Court of Directors, covered with wax-cloth, which unfortunately gave a little of its flavour to the Tea, as the canisters got injured, and did not arrive before Dec. 1843. This was reported on by Messrs. Thompson, who observe that the samples are all more or less affected by the wax-cloth. One kind was called a fine Tea of the Oolong class, with a leaf somewhat like that of fine black-leaf Pekoe, value from 2*s*. 6*d*. to 3*s*.; another kind, as a longish, even, rich, blackish leaf, of the usual size of, and like, China Oolong, value 2*s*. 6*d*. to 2*s*. 9*d*.; a third, as a fine Tea, but not esteemed in this market, on account of the paleness of the leaf. Mr. Andrews Hunt, late Inspector of Tea to the East India Company, describes the Tea as well made, smallish, blackish, wiry Tetsong kind of leaf, the smell like that of China Tea, rather burnt, the colour of the infusion very good, and the taste fragrant and true, as Tetsong Tea; value, from 2*s*. 3*d*. to 2*s*. 6*d*., 2*s*. 9*d*., and 3*s*. per lb. The flavour, and other characteristics of the leaf of the Tea-shrub of Kemaon were pronounced identical with the Chinese plant grown in Ankoy, a district which, in Chinese estimation, produces highly-prized Tea. "The appearance and flavour of the best of the four samples are unexceptionable; and, while the former does great credit to the Chinese manufacturing operations, the latter fully justifies their opinion, that the Tea-shrub in the Kemaon plantations is the genuine Chinese plant."

Dr. Falconer having brought a specimen of Tea from Kemaon, submitted it to Messrs. Ewart, Maccaughey and Co., of Copthall-court, who report, 8th Sept., 1843, that it resembles most nearly the description occasionally imported from China under the name of Oolong; it is not so high-flavoured as the fine Oolong Tea; it has been too highly burnt in the preparation, but it is of a delicate, fine flavour, and would command a ready sale here. Dr. Royle, after remarking, that nothing could be more satisfactory than these reports by experienced Tea-brokers, as the first attempts to make Tea in the Himalayan nurseries, called attention to the curious fact, that all the brokers coincided in comparing this Tea with the Oolong and Tetsong Teas of China, which, he was informed by Mr. Ball, were obtained from the Ankoy Tea-district, that is, the very locality where Mr. Gordon obtained the Tea-seeds.

The latest letters from Dr. Jameson continue to give the most favourable accounts of the Tea-nurseries, while others from Captain Cautley speak in the same style of the Tea-nurseries in the Deyrah Doon, where, he says, the plants are looking splendidly, and are growing vigorously. Dr. Jameson states, that though he will be able to send only a few hundred pounds of Teas this year, several thousand pounds will be sent next season. There are about 100,000 plants in all the above nurseries, and they may be rapidly increased. The Court of Directors have ordered that the experiment be continued, and that one-half the produce be sent to this country, in order that its quality may be clearly ascertained and extensively made known.

Dr. Royle concluded his address by recapitulating the heads under which he had given an account of this important experiment instituted by the Court of Directors and the Indian Government, and stated, that as the practical results had in every point been exactly such as had been anticipated from the scientific data procurable before the experiment had been instituted, he felt no hesitation in repeating what he had stated in 1840 in his "Essay on the Productive Resources of India," that he confidently looked forward, not only to having Tea cultivated all along these mountains, but also to its being finer flavoured than the Assam. He now thought that the culture of Tea might be introduced into the villages, and even round the margins of the terraced cultivation of the Himalayas, and that Tea might be manufactured extensively, cheaply, and of excellent quality; though at first, probably, most profitably in the elevated valleys at the foot of the Himalayan mountains.

Dr. Falconer, who was present, then addressed the meeting, and gave his reasons for the opinions he had entertained respecting the fitness of the Himalayas for the cultivation of the Tea-plant. He also called attention to the differences apparent between the Assam plant and that of China, and which it retained in the Northern nurseries as well as here. He then showed how well calculated for Tea-cultivation were the N.W. nurseries, especially in the Deyrah Doon. This valley is particularly eligible for an extensive culture, as there is abundance of cleared land, moderate in rent, with abundance of cheap labour in the vicinity, great facilities for irrigation, easy access to the Ganges and Jumna rivers, by which the produce might be cheaply conveyed to Calcutta, and even by the Indus to Bombay.

BEES.

At p. 53, 1843, is a front view and ground plan, if I may so term it, of the hive I have adopted for my bees. The principle is in every respect the same as is described under the head "Management of Bees," signed C. A. A. Lloyd, p. 118, 1844, with the exception that I do not use zinc ventilators in any shape, as I imagine that that metal is as pernicious to bees as it has been found to be to the human race when milk has been partaken out of zinc dishes.

At p. 101, 1843, I made some observations on bees, and expressed my belief that I had succeeded in making a hive which would insure the health of that interesting insect; as, from the previous autumn to the 13th Feb., 1843, I had witnessed very few dead bees in or near my hive—only about 20, and that it remained perfectly clean and sweet throughout the winter. I have now to add, that I am perfectly satisfied in every respect with my hive up to the present period; as not half the above number died from the autumn of 1843 to the 1st of Feb. 1844, which day being very mild, my bees were flying about as numerous as if it had been a day in May, and carried out all the fragments of wax from the bottom of the hive, as well as their dead, of which I only observed 8 altogether during the past winter and up to the above date. The bottom-board remained remarkably clean, and the hive kept sweet throughout the whole of their second season of repose,—a sure criterion that the inmates enjoyed excellent health, as cleanliness is essential to the preservation of these insects. I have therefore every reason to be satisfied with my success in insuring the health of my bees during the winter season; but I cannot congratulate myself as yet on having derived any profit from them, although I am fully convinced three as fine swarms as could be wished were reared in my hive last summer, but proved ungrateful, and I have no doubt took possession of tenantless hives belonging to other bee-keepers, whose stocks must have suffered severely owing to the long-continued rainy weather which occurred in May and June, 1843. I entirely attribute the loss of my swarms last summer to giving them too much accommodation, which enabled them to make the necessary arrangements for their departure without my having any control over them; the whole of their plans having been communicated to each other in the side-box, as on no occasion did they hang in clusters at the mouth of the centre hive; and when they left the side-box on each of the three occasions, they went off in one continued stream, but not in the usual way as I have seen bees swarm when they previously clustered at the mouth of the hives. I do not, however, regret the loss of my swarms, as other parties must have been benefited by them; and the plan of my hive has enabled me to observe some peculiarities connected with these wonderful insects, which appear to me to have escaped the observation of all the naturalists who have written on their history or management; and in order to convey to your readers the result of my experiments, so far as they have yet been made, I shall continue the history of my hive (I have only one for the purpose of making experiments), from my communications to the *Gardeners' Chronicle*, in February, 1843, to the present period. In February, 1843, I stated that, in consequence of a lady having remarked that her bees kept in boxes generally died during the winter, I lined mine with India matting, and the bees appeared to approve highly of the alteration by running over it. When the weather became very warm in April, I opened the outer entrance to the side box, which is of the same dimensions as the entrance to the centre hive, and the bees went out and in at both places with evident satisfaction that they had such facilities of ingress and egress; as, if interrupted at one entrance by the numbers going out and in, they at once availed themselves of the other. About the latter end of April three of the bees, apparently to me having an officious kind of character, from the manner in which I observed other bees act towards them, commenced running round the entrance to the side-box, endeavouring to run up and down the wood of which the box is made, in the same way as other bees often do on straw hives before swarming; but the wood being painted and smooth, their little claws would not hold, and they fell down as often as they made the attempt, and appeared in a violent passion With the view of humouring them, I fixed a piece of the India matting over the whole breadth of the front of the side-box, and about four inches deep, and it was really amusing to witness the numbers taken out to examine this addition, and the satisfaction it gave to all. On the same evening about 200 bees clustered in the side-box for the first time, and remained during the night. On the following night there were about 500, and on the third night, the weather being very warm, upwards of two thousand. The fourth day the weather changed to be very cold and rainy, and the whole of the bees left the side-box and went into the centre hive. The cold weather lasted three days, and during that period the bees all remained in the centre hive. The weather having again become warm and genial, a small cluster was formed in the side-box, as on the first occasion, and the number of bees in the centre hive daily increasing, the side-box, from the 4th of May, was permanently occupied until the end of the season. During the long period of rainy weather in May and June, 1843, especially if attended with cold winds, the number of bees in the side-box varied considerably, and indeed they might have been referred to as an excellent barometer. About the end of June or beginning of July, the side-box became so full that a space of only about two inches across remained unoccupied, and from the way in which this vacancy was arranged, at various times during the day, and numerous bees being employed fanning at the entrance and in the interior, it was evidently left for ventilation. At this period the movements of the bees at the entrance of the centre hive, and the same at the side-box, and the great number of drones going out and in at the side-box, induced me to set a watch upon them during the day; but, although there could not have been less than from 10,000 to 15,000 bees in the side-box in the morning of one of the fine days, at the commencement of July they nearly all left and never returned, and in the afternoon and during the night there were not above 200 in the side box. The numbers, however, daily increased a second time, until 12 days after the first swarm had left, when the second followed in a similar manner, leaving very few, as on the first occasion. The numbers increased a third time, and, singularly enough, on the twelfth day from the departure of the second swarm, the third left in the same manner, leaving only about 200 in the side-box. On the day after the departure of the third swarm, the numbers again began to increase in the side-box, and I suppose being then aware that no more swarms would take place during the season, they immediately commenced forming combs in the side-box, and there are now three beautiful combs in it of the size of breakfast plates. These combs during the month of August were

filled with most beautiful honey as clear as crystal; but by the end of September the whole of the honey was taken out of them and deposited in the centre hive, and the whole of the bees retired to their winter quarters, leaving the combs for use during the present season. I then closed up the outer entrance to the side-box, and it has remained shut during the winter. The combs appear to be in very fine condition for being re-filled with honey.

Bees have hitherto borne the character of being industrious, and the indolent of the human race have often been urged to follow the example of the "busy bee," and I have no wish to detract from the very meritorious and untiring labours of these interesting insects during the time allotted for their daily labour, which I firmly believe does not exceed six hours, even in the very finest uninterrupted sunshine or pleasant weather, in every way suitable for their tasks. I have come to this conclusion from repeated observation, that in proportion to the number leaving the centre hive or side box, at the early hour of five o'clock in the morning, nearly an equal number came in to the side box to repose at 11 o'clock a. m., and those that left at later hours in the morning, ceased from their field labours at intervals of about six hours during the day. Those that had returned from labour could easily be distinguished from the others that had not been out, as the former occupied particular positions until those that were asleep awakened, and vacated their places to go on duty, and then the other might be seen taking up their positions, and in a short time afterwards were fast asleep. It is worthy of notice, that although bees only work in the fields six hours a day under the most favourable circumstances, they all take their turn of duty, both by night and by day, to protect the hives, and the sentries at the entrance are relieved with as great regularity as in military life. There are also several that never work themselves, but appear to take regular rounds to ascertain that the others are faithfully performing their duties, and the whole government and system of a hive is the most perfect that can be imagined, and were the traits of character in these insects, which I imagine I have perceived, recorded, they would be rejected as incredible; however, they have afforded me great amusement, and I am satisfied with the result of my observations.

I am now fully convinced that the clustering of bees outside the entrance of hives, is no loss whatever to bee-keepers, as has been supposed, the clustering being a natural state of repose, which they cannot enjoy within the hive, in consequence of the state of the weather at the time making the temperature of the interior too warm for them. On this account I am decidedly against adopting any means to assist them in ventilating their hives from the top or sides, as they can regulate the temperature with the greatest nicety, and if they should on any particular occasion suffer from too great heat, it is better they should do so than interfere with their arrangements, as they soon show their displeasure with plans of which they do not approve, by closing up with propolis all ventilators except those at the bottom or entrance of the hive. In closing the details of these European Humming birds, as I may term them, owing to many of their habits, I would observe, that I have never narrowed the mouth of my hive during the two last winters, and during the same period I left the interior communication with the side-box open to its fullest extent. I have never fed them in any shape whatever, as they have ample stores of honey in the centre hive, which is made of straw twelve inches deep and fourteen inches diameter inside. The side boxes are eight inches square inside, and ten inches deep. As a proof of the number, health, and strength of my bees, I may mention that during several of the mild days in the early part of February, of the present year, the perspiration from them was running out at the entrance, in the same manner as it appeared to do in May, last year. They have now commenced their spring campaign, and during several days of the present month of March, hundreds have come home from the fields, well loaded with pollen, and I have not observed one perish of the cold, which is often the case at this season of the year. I had not an opportunity of trying to make artificial swarms last year, as my bees did not form combs in the side box, which I consider essential for success, until after the season of swarming was past.—*John Grant, Editor of the Army and Navy Register; Woolwich, March*, 1844.

Home Correspondence.

Spot on the Pelargonium.—Having taken much pleasure in the culture of the Pelargonium for some years, and having suffered a little from the appearance of a spot upon the leaves during the last two years, I have been most anxious to discover the cause of this disease. Last autumn, when I cut the plants down, I removed every leaf, placed them in a cold frame, where they broke well, with no appearance of the disease; they were then repotted in loam, leaf-mould, and sand, and placed in the greenhouse on a stage 3 feet from the glass. The winter being mild, little fire was needed. In March they were repotted, the large plants in 12s, in loam, leaf-mould, cow-dung three years' old, and a little sand. Having a small house where nothing else is grown, they had abundance of air given them on all occasions; and to guard against boisterous winds, I nailed a piece of canvas-cloth, a yard wide, over the top of the house, which I find most useful, not only in checking the wind, but also in keeping out dust, smut, and in the summer, bees. They were very strong plants, and showed a fine head of bloom. The spring being very warm, and any fires not taking place until the 11th of June, I kept them as cool as possible, drawing an awning of canvas-cloth over the house from 10 o'clock until 2. Every other night they were syringed freely, and the awning the following morning drawn down until the leaves were quite dry; thinking that the spot might be caused by the sun coming upon them when wet, and scorching them. Twice a-week, after they had shown bloom, they were watered with liquid manure made of sheep's-dung. All went on well until the first week in May, when the spot made its partial appearance; and on this occasion, the day having been very hot, I used the syringe at night very freely, and left the front windows a little open; the next day I perceived the appearance of the spot on the most succulent leaves of one or two plants, and those the most luxuriant in growth. I at once concluded that my previous opinion of its arising from over-watering and damp was correct, and it was founded on the following case:—Last autumn I had a large plant of the Dropmore Scarlet in fine health, which flowered all the winter. In March it was cut down, to supply cuttings for bedding out, and placed under the stage, not much shaded, and removed out of the way of drippings from pots overhead. The ends of the shoots were touched with quick lime, which immediately checks all bleeding. It was kept dry for a few days, and then watered; not breaking freely, it was well syringed, and received a good deal of moisture. It broke from 12 eyes, and every leaf was covered with the spot. I removed them all, put the plant in a dry place on the stage, and the next growth of leaves was perfectly free from spot. I have no doubt the disease was caused by over-watering and damp: if it was the soil, the plant would have been diseased the previous year. Since the appearance of the spot, I have ceased syringing, and given less water, and it has not spread or appeared upon the other plants.—*An Old Subscriber.*—Another correspondent, signing himself *J. W.*, states that early last May he placed some of his best plants in a common garden-frame, to retard their flowering. They were placed on coal ashes and kept as cool as possible, and in a short time they were completely spotted. About the middle or end of June the plants were cleaned and placed in a Vinery, where they had plenty of air, and were dry. In due time they recovered, and flowered beautifully. Our correspondent imagines that it was not the soil, but the cold and wet they were subject to in the frame that caused the spot, as May and June last year were cold, wet months; and he writes that plants growing in the same soil, but in a greenhouse, were not at all infected with the spot. He remarks that this year, out of a collection of 500, there is not a spot amongst them, and they are in all situations, from the conservatory to the open air.—*Mr. Parker, of Elm Grove, Rochampton*, writes as follows:—"I conceive that spot is occasioned by sudden transitions of heat and cold, and not by the soil, as is generally supposed; for instance, last September was very hot, and the early part of October was very cold, consequently, the plants received a sudden check. When my plants were housed for the winter, I picked off all the infected leaves, and kept the temperature of the house at from 45° to 50°, by fire heat. The plants were syringed on fine days early in the afternoon, so as to allow the leaves to get dry before night, and air was freely admitted early in the morning. This treatment soon induced the plants to assume a healthy appearance, and they have been perfectly free from spot ever since. They have been re-potted in the same kind of soil that they were growing in last autumn; therefore, if the soil caused the spot, it would have re-appeared before this time. A friend had Pelargoniums very much infected with this disease; the cause of which I attribute to cold and damp, as his plants were removed about the latter end of February, from the house where they had been growing all the winter, into cold damp pits."——"I have lately built," says a *fourth correspondent*, "a greenhouse exclusively for Pelargoniums, with a low roof and a stage raised up well to the glass. It is heated on Mr. Rendle's tank system, and up to April the plants were progressing rapidly. A quantity of Dahlias put in to force were placed over the tank and plunged in a bed of sand, which was kept moist, and had usually from 5 to 6 gallons of water poured on it every day. I keep up fires at night to force the Pelargoniums into flower. The greenfly having made its appearance, I tried, for the sake of experiment, syringing with an infusion of quassia, in the proportion of ¼ lb. to a gallon of water. I continued to syringe them with this for three or four evenings, closing up the house early. In about a week afterwards the plants looked very sickly, and have continued unhealthy ever since; they have nearly lost all their leaves, and those that remain are blotched all over, similar to those I have sent for your inspection. I wish to know whether this is the effect of the quassia, or whether it is caused by the dampness of the house, owing to the evaporation from the sand, together with the syringing, or from some other cause. The house was shut every evening, and in the morning the plants were quite wet, owing to the water becoming condensed on the roof and falling back on the plants; but this was the case before the change took place as well as after.—*C. K. C.* [This is a case of spot; and seems to be explained by the valuable observations of an "Old Subscriber." The quassia had nothing to do with it.]

Chicory.—On reading your Leader and correspondent's remarks on the article of Chicory, I could not resist a smile; for really, to a person unacquainted with the article, it would appear a direct road to fortune. I have been for the last two or three years communicating with several members of the Government relative to the article, and at last, after the many thousands—nay, I may truly say, hundreds of thousands—the revenue has been deprived of by it, I have the satisfaction of seeing the present Chancellor of the Exchequer admit it to be used for adulteration, to the loss thereof. If it was only used as generally understood, as an addition or improvement, as some poor tastes have it, the stuff might be tolerated; but when it is well known that hundreds of tons of low pulse (damaged by fire and water, or any other way to which it is liable) are made into Hambro' Powder, and fifty other matters are all made into coffee by the addition of a tithe of the real article, to the great imposition on our poorer classes, who, from the vile practices of adulteration, generally get but a small portion of their hard earnings, how will it be possible, if coffee is to be a leading article for the benefit of the revenue, to permit its cultivation? No: the Chancellor has found, after giving France that benefit many years, to the serious loss of the revenue, that it must now be stopped; and depend upon it, it will ere long be treated as tobacco—others must grow it, and we get it only by paying a heavy duty. So great a hold has this spurious matter taken of the consumer, that a genuine article of low quality is unsaleable.—*Anti-Adulteration.* [Our correspondent could hardly have used a stronger argument against his own views, than the admission in the last paragraph that Chicory has taken a great hold of the consumer. That shows, conclusively, that Chicory improves the quality of coffee—as indeed is notorious. We submit, with much deference, that there is a wide difference between *mixture for the sake of raising quality*, and *adulteration for purposes of fraud.* French coffee is celebrated for its excellence. Would the French give up mixing it with Chicory? We suspect not.]

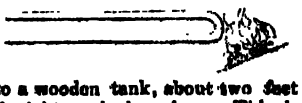
Bees.—I have taken lately a glass of honey weighing 5¾ lbs. (glass included). Before putting on the glass, I laid a sheet of white paper over the top of the hive (one of Nutt's), cutting a hole for the passage; by which means there was scarcely any adhesion to the wooden top. My Bees would have swarmed on the 10th, had I not opened a side-box. I find the drawers under Nutt's hives of the greatest inconvenience. I opened one by accident, and found it full of Bees, mostly dead, having forced their way by the tin covering. I have now pasted them up; as a means of feeding, they are perfectly useless, as I never found the Bees could get back into their hive from them.—*Phin, near Wrotham, Kent.*

Bee flowers.—Some time ago, a correspondent denied the correctness of my statement as regards the Polyanthus being a bee-flower. The Polyanthus is almost the first spring plant in bloom, consequently, the bees, it may be, are under the necessity of making use of it; afterwards, when flowers get plentiful, they may prefer others. I only speak of it as an early bee-flower, for the truth of which I can vouch, having seen thousands of bees on it from my hives, and often been very much in danger of being stung when gathering the flowers; I therefore again deliberately state, that the Polyanthus tribe are valuable early bee-flowers. The following is a list of flowers to which bees are particularly partial:—

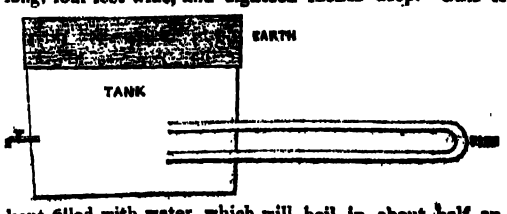
Canterbury Bells.	Mignonette.	Grape Hyacinth.
Wallflowers.	Brassicas.	Marigolds.
Roses.	Sweet William.	Eschscholtzia.
Borage.	Columbine.	China Asters.
Lilies.	Pinks.	Dahlias, and
Beans.	Asperula.	Marvel of Peru.
Stocks.	Penstemons.	

—*Apius.*

Heating.—On reading the article of your correspondent "Dion," in a late Number, I thought I would send the accompanying plan, which I have had in use for nearly two years past. It is on a small scale, and chiefly used for the purpose of having hot water at command to mix with cold for my Vines. My grapehouse is heated with a brick flue; the fire-place is about three feet from the front wall; a cast-iron pipe, about two inches in diameter, is carried through this front wall to the fireplace, thus; the two open ends of the



pipe are introduced into a wooden tank, about two feet long, four feet wide, and eighteen inches deep. This is



kept filled with water, which will boil in about half an hour after the fire is lighted, as here is a constant circulation through the pipe into the tank. Indeed, it is quite a stream out of the top end of the pipe. This tank is covered with a large piece of board (slate would be much better) on which rests a frame made of wood, about one foot deep, and filled with earth, which is always warm enough to strike cuttings or raise seeds in; but if not well attended, it gets too hot, owing to the small size of the tank. I imagine if I had an iron tank the whole length of the house, this small bit of pipe introduced at one end would keep the whole body of water sufficiently warm, to throw out a good heat from the iron sides into the house, and if covered with slate, the earth on the top could be kept at an equal temperature.—*I. S. K.* [To be sure it would.]

Asparagus.—I have an Asparagus bed, thirty feet by five feet, on which I put one cwt. of salt, about the middle of March, last year, and also this year. The increase of crop, both with regard to size and number, is most extraordinary; I intend to continue the one cwt. of salt for this bed every March.—*I. S. K.*

The Robin.—In a late Number appeared a very interesting anecdote of an "affectionate" robin. Your correspondent has, however, I would presume, seen little beyond the "sunny side" of this bird's character. I grant the robin has some very striking good qualities; but "more remains behind." I have made the study of birds a very favourite pastime for the last 14 years, my collection seldom averaging fewer than from 200 to 300 of nearly all kinds, including nightingales, blackcaps, babillards, &c. &c.; and I have had as many as 17 robins in cages at one and the same time. My observation, during the above period, compels me to say that, if of these "affectionate" birds, 20 males were let loose in one room, not three would be found alive the next morning; and even these survivors would be desperately wounded. Their strength alone has saved them (unless indeed they have studied the "whole art of war"); and opportunity alone is wanting for each one of them to receive from the other his quietus, which is inevitable, if they continue together. If robins, confined in cages, are expected to sing, they must on no account whatever be permitted to see each other, for their jealousy exceeds, if it is possible, that of women; and, once provoked, they are nearly as irreconcileable. Thus much for their foibles. I will now give you an instance of their gentler nature. You will thereby see, not only how possible it is to tame a robin, but to mould it to your entire will. In the autumn of last year I took possession of my present residence, and being alone for a week, until the arrival of my family from town, I rose as early as half-past four in the morning, to attend to my cage-birds, which I fed on a table in the back garden. While employed in this operation, I perceived that I was closely watched by a very elegantly formed, fine, stout, robin, who seemed bent on ascertaining whether or not I was a friend to his tribe. Within three days, his mind, on this point, was set at rest, and he became my constant guest, in doors, in the garden, on my shoulder, on my finger; and to sum up all, I taught him, at command, to perch himself firmly on the bridge of my nose, and to take a meal-worm, while thus seated, from my hand. It would often happen, on my return home, that he was in Ravenscourt Park (which adjoins my garden); at such times, I had only to give a peculiar whistle, and he would be at my side in a few moments. Finally, our "engagement for the season" terminated only two months since, when my little friend committed matrimony. He is now teaching his young family, four in number, how to fly, and is in the garden the greater part of the day, singing joyously. His great familiarity, however, is suspended *pro tem.*, and I can scarcely expect that his instinct will permit him to return to his old habits of strict intimacy until August.—*William Kidd, New Road, Hammersmith.*

Sporting Laburnum.—Several years ago I purchased of a nurseryman, and planted in my garden, a purple Laburnum, which was grafted, as I imagine, on a common Laburnum-stock; the tree has never assumed the drooping growth of the common Laburnum, nor has it flowered very profusely, nor the bunches been so long as those of the Laburnum usually are; but this year there are three bunches of yellow flowers, one at the extremity of a shoot of last year, and the other two in that part of another branch which was the growth of the year before last. Just below these bunches, and in the wood of the same year's growth, are three shoots of last year's growth, about twelve or fourteen inches long, having throughout the whole length the small foliage and light purple flowers of a distinct species of Cytisus, the latter being single, of a less faded appearance than the Laburnum, with short flower-stalks; and further up the same bough on the growth of the same year, there are three bunches of purple flowers similar to those hitherto produced on the tree, and further up the same branch, on the growth of last year, another bunch of purple flowers; the whole are certainly the growth from the scion, and no part from a bud below, where the scion was inserted. No seed has ever been produced in former years, and I have always considered the scion with which the tree was grafted to be a hybrid between the Laburnum and some other Cytisus. I think I have read in one of Loudon's publications that the purple Laburnum was a hybrid which has the peculiarity of losing its hybrid characters, and returning to that of one of its original parents; but surely my specimen is still more extraordinary, from the triple character of the flowers. I shall anxiously watch the progress of the yellow and smaller purple flowers, in order to ascertain if they produce any seed.—*C. T. W., Buntingford.* [We must refer our correspondent to the discussion upon this subject, which took place at p. 325, 1841, and at p. 397, in the volume for 1842.]

Transplanting.—Having had considerable experience in transplanting, I shall state the method I have always pursued in the removal of large trees or shrubs. I first form the pit, where the plant to be removed is to be planted; it is generally taken out from 12 to 14 inches wider than I consider the roots will reach. This is of great importance for the welfare of the newly-transplanted plant, as it gives it room to extend its roots until it has again got established in its new situation. In lifting Laurels, &c., I always bind up the plant with strong straw ropes, tying one end of the rope to one of the strong branches in the centre of the plant, and, taking up all the branches, I cause them to be drawn into as small a compass as possible without injuring the plant, and thus the operation of lifting can be performed with more ease. The roots are then cleared; and, suppose the plant to be common Laurel, six or eight feet high, begin as many feet from the main stem (I generally commence as far out as the branches extend,) and cut a trench round the plant at the said distance from the centre, as deep as it may be supposed the roots have gone down. I then reduce the ball by degrees with a three or four-pronged fork, cleaning out the mould with a spade as I go on, and taking care not to injure any of the roots or fibres. These I generally tie up in trusses with matting, in order to prevent them as much as possible from being injured. I very often clear the roots to within two or three feet of the main stem, and then undermine the solid piece that is left; I, however, do not attach much importance to the ball left at the plant; the only thing is, that a small ball helps to keep the plant steady until it has again made fresh roots. When the plant is ready for removal, the strength for lifting it will depend upon its size, and the weight of the ball left, if any. I have, however, lifted larger plants with three or four men, by keeping all the roots as entire as possible, and paying little regard to balls, than I have seen ten and twelve men lift with balls, the plants having no more roots than what the ball contained; and those I planted without balls grew away vigorously, whilst the others remained in a languid state for years. When the plant is brought to the pit and placed in the centre of it, untie the roots, and dress with a sharp knife any that may have been bruised. I generally shorten strong ones, that they may make young fibres, upon which the welfare of the plant in a great measure depends. After dressing the roots I lay them all carefully out round the pit. If there are one, two, or three layers of roots, as is often the case, keep each layer by itself, and lay out the undermost first, taking care to spread out every fibre with the hand. On these spread well broken mould; but in doing this care must be taken not to club the roots together. After the first layer of roots is well covered proceed with the next, and so on until all is finished. After transplanting I never give the plants water oftener than once, which is immediately after the operation of planting is performed. I have sometimes given a plant water in dry weather, merely as an experiment to satisfy myself with regard to its utility, and I have always found it injurious to the plants to which it was applied; they soon began to assume a sickly appearance, and I am convinced that there are many young trees and shrubs destroyed (after having been transplanted) by the frequent application of water in dry weather. My method is, after the roots are all well covered to leave the pit three or four inches unfilled, and I apply the water according to the state of the soil and size of the plant. To a shrub that covers about 4 square yards of ground (if the soil is not very moist), I generally give about eight common sized watering-potfuls, and so on for every square yard of ground covered. Some writers recommend pouring the water over the roots through besoms, &c., but I pour it in at once from the pot, and as soon as it subsides a little, I fill up the pit. The only treading I ever give the plants, is merely what may take place in going round them, in taking away the rope, and spreading out the branches in their original position. The above remarks apply well to the common and Portugal Laurel, and also to deciduous trees and shrubs in general. I shall now mention a few kinds that are difficult to remove without balls, when they are large plants. The Holly is one that is impatient of being removed without a ball, and in free light soils it will not lift with one. The method I adopt with it is this:—two years before removal I generally open a trench round the plant, about two feet from the main stem (more or less according to its size); two feet will do for a plant six feet high. I go as deep as I find roots, and cut clean off all those outside of the ball, and again fill in the mould. In about two years afterwards, the cut roots shall have made firm young fibres, which supply the plant with food when it is transplanted. In lifting them I always try, if possible, to get a good ball at them. By this method I have succeeded beyond expectation. The Laurustinus is not very fond of being removed without a ball, when it is large; but as it is in general not so large as the majority of evergreens, it is more easily lifted with a ball. In one year I transplanted about 100 after they had attained a considerable size, and very few of them had good balls; but I kept all their roots as entire as possible, and by so doing I only lost one plant. There are but very few of the Fir tribe that can be transplanted after they have got to any size. The only kinds I have lifted after they have attained the height of from six to sixteen feet, are the Silver, the Spruce, and the Weymouth Pines; with these I have been very successful. The Silver Fir bears transplanting tolerably well, provided care is taken not to injure the top roots, which run horizontally near the surface. I have lifted and replanted Silver Firs from four to fourteen feet high. The Spruce lifts well; I have transplanted them sixteen feet high. I have also transplanted the Weymouth Pine from ten to twelve feet high; of these kinds I have never lost a single plant. In lifting them I always tried to get as good balls as I could with them. I have, however, transplanted them without balls, and treated them in the same manner as evergreen shrubs, keeping all their roots as entire as possible, and making the pits wherein they were to be planted large, so as to get all their roots spread out as regularly as possible; when covered, they were watered in the same manner as the shrubs. In lifting and transplanting hard wood, such as Oaks, &c., I seldom leave any balls at them; I merely keep their roots as entire as possible, and shorten in any strong ones; they should be well watered. It is very essential to the welfare of plants that have been transplanted, to have them well supported, to prevent them from shaking with the wind, &c. For trees from 10 to 20 feet high, I generally use three poles, set up in the form of a triangle; I roll a straw rope round the stem of the tree (at the height which I consider will be necessary for keeping it steady) for the poles to rest on, as it prevents them from hurting the bark; then, after tying the poles firm to the tree, and fixing them in the ground, the work is finished. For plants of smaller size, I generally use small rope, tied in the same manner to the tree, and fixed to stakes driven into the ground. With regard to the season for transplanting evergreen shrubs, I can scarcely give any correct opinion, as I have transplanted evergreens in every month of the year, and never lost a single plant. No doubt, the summer months are not proper for such work, therefore it should be avoided, if possible. From October to April all shrubs, &c., may be lifted with safety. I prefer the month of November for lifting large plants, if I can get it done, as those planted about that time always send out young roots during winter; I have examined them frequently in February, and found them to have made young roots from 1 to 3 inches long. Nothing need be said regarding American shrubs, &c., as, if care is taken, they can be lifted with propriety at any time. Healthier and finer specimens of tree and shrubs than those I have transplanted are seldom to be met with. —*A Caledonian.*

Spring Planting.—I doubt not that your observations on the superiority of autumn planting are unquestionable; yet, as far as my experience goes, I have always succeeded better with the common Laurel, by planting in spring. In any attempt to move Laurels 3 feet in diameter in the autumn, I have generally lost the greater part of the wood. But, by planting with care, and paying a good deal of attention to moisture in spring, I have invariably succeeded in saving the whole previous growth. I do not notice this fact in opposition to your statement, but with a view to obtain an explanation of the anomaly.—*E. C., Chipperfield House.* [It is not possible to explain this without knowing more about the manner in which the autumn-planting was effected. We can state, that in stiff clay, the worst of all soils for a planter, autumn-moved Laurels are far more successful than the spring-moved.]

Durmast Oak.—"Rufus," in a late *Chronicle* says, that the wood of this is soft and brittle, which is at once a contradiction. The remarks relating to the length of the stalk of the Acorn being indicative of the species, are uncertain; the only correct means of ascertaining this is by the flower. I have frequently marked this species previous to felling, and in no instance have I been mistaken. The superiority of the timber of the white-hearted species over that of the red, for all purposes, except perhaps for furniture, is well known to persons in the habit of purchasing the article. The trunk of the former is generally of larger dimensions, and is of a rough and gnarled nature, admitting of its being split into rails, &c. The red-hearted species, on the contrary, is brittle as glass. Serious losses often occur to merchants, who frequently pay from 60*l.* to 100*l.* for a single stick, imagining it to be the Durmast; but on felling it they find it to be the red-wooded, which at once condemns it, this species being from 50 to 75 per cent. less in value. About 40 years ago the late W. Morrice, Esq., was employed by the Government to purchase Oak timber of large dimensions in Holland. Having to float it down rivers and canals it was found that the Durmast on account of its great weight would not swim, and they had therefore to fasten two pieces of Balk to each stick to enable them to float it along with the red-hearted, which required no such aid. The requisite quantity was collected; but previous to its being imported the French beset the place. Before this occurrence, however, the timber was safely secured in deep mud at the bottom of the canals until 10 or 12 years afterwards, when it was taken out and found to be perfectly uninjured.—*W. R., Stoney Cross, New Forest.*

Rats.—Much has lately been written about rats; I have had troublesome ones to deal with, yet my simple plan has always caught the intruder. Get an iron slam, and should it have been used before, put it on the fire, to remove all smell from rats previously caught, or the smell from the hands of the rat-catcher. Get a piece of new and white calico rather larger than the trap; after setting, place calico all round and tuck in the corners. Place it in their runs. I have caught so many this way, others may do the same. No bait on top.—*G. C.*

Bourbon Roses.—If cuttings of these are put under a hand-glass about the end of this month, and struck with a little bottom-heat, they will be fit to be potted off in August, in large 60-pots; let them be kept in a cold pit till January, and then brought into the forcing or greenhouse; they will continue flowering from beginning of May, till late in autumn. Armosa, Augustine Lelieur, and Prince Albert, are the three best for forcing, as they bloom very freely, and are exceedingly sweet-scented.—*Charltoniensis.*

Morphology. — Having read in the *Chronicle* of plants under certain conditions forming flowers instead of leaves, I beg to state the following, which by accident came under my notice. Having several large Fuchsias in my greenhouse of a very old kind, I resolved to turn some of them into the flower borders. Accordingly the first week in March I took some of them out of a house to make room for other plants, and placed them in an old lodge to protect them from frost, where they were almost entirely excluded from both light and air. Examining them about three weeks since, I was quite surprised to find that one plant was full of flower-buds, with scarcely a leaf on it, whilst those which were left in the greenhouse were in full leaf without flowers; I took it back to the greenhouse again, and in a few days it will be one mass of blossom. Can any of your correspondents explain the cause of this? — *A Young Gardener.* ["R. B." will probably explain this some day.]

Abies Religiosa.—The hardiness of this graceful Fir is a very important and remarkable fact, after so much

experience, and such, I may say, universal belief to the contrary. When at Bayfordbury some months back, I was gratified to find this tree on a very frosty day, and the ground partially covered with snow, quite unprotected, and in as good health as those excellent plants which adorn the great conservatory in the gardens of the Horticultural Society. We may learn from this, that the exposed situation tended to the production of shoots which were shorter and better matured, than on plants placed in sheltered situations, with great depth of soil, which encourages autumnal growth of wood that is quite soft and green, and which, as a matter of course, falls a sacrifice to the first frost. If this tree was planted on exposed situations, or otherwise on raised mounds of stones, with a thin layer of light soil, to control the luxuriant tendency which this has, in common with many other trees at a similar age, there can be but little doubt of its being at least as hardy as the "Silver Fir."—*R. Glendinning.*

Adulteration of Wheat-Flour.—Mention is made in the *Chronicle*, of the adulteration of Wheat-flour with Lolium, and the means of detecting it. There is one mode of examination which I conceive would be infallible. Moisten a very small portion of the flour, and place it between two plates of glass, in the focus of the microscope. The gluten will dissolve from it, and the starch-grains will be seen floating; they are completely round and plain in the surface, rather flat, like a bun, and they are generally of two sizes; they wear the aspect of



the figure here given. If any other grain has been ground with the Wheat, the form of the farinaceous fecula will betray it. I have no difficulty in discriminating Beans, Peas, Oats, or Barley, if they are intermixed. Lolium I have not at the moment the opportunity of examining. But I have been for some time in the habit of testing purchased flour in this way. The grinding does not bruise the substance to an impalpable or amorphous powder, but only separates the farina into its natural constituent particles; and, I doubt not, the Lolium has a peculiar form, different from that of Wheat, which would be at once discernible. If there is any amorphous matter visible in the field of the microscope, it is an adulteration of some kind or other.—*E. C., Chipperfield House.*

Miscellaneous.—*T. B.* states, that by way of experiment he left some of his Dahlias out all winter in open beds without any protection whatever. He finds that they are much more strong and healthy than those under cover in pits. He adds, that most of them in the open border are from a foot to 14 inches high. The same correspondent is of opinion that Dahlias might be rendered hardy without much trouble, and that, by being out all winter, he imagines they would be less liable to be affected by frost early in autumn.——*A Correspondent* informs us that Eccremocarpus scaber has stood the winter with him in a very much exposed situation. He states that it has not had the slightest protection, and that it is now in a very vigorous state.——We have learned from the writer that the Gentiana verna, mentioned by *R. T.*, last week, as a plant well suited for edgings, but neglected, is, as we suspected, G. acaulis. How so common a plant should be called neglected, passes our comprehension.

Societies.

HORTICULTURAL SOCIETY.

The first of the annual series of Grand Exhibitions, under the auspices of the Horticultural Society of London, took place in the gardens at Chiswick on Saturday last. The day, for the 18th May, was singularly unpropitious, the morning being ushered in by a frost registering as much as six degrees in some localities, and a strong north-east wind, increasing at times to a hurricane, accompanied by occasional storms of rain prevailing throughout the day. But notwithstanding this, a great number of very splendid and valuable plants were brought together, and too much praise cannot be awarded to the zeal of those gentlemen and gardeners, who subjected their plants to such inauspicious elements. Such enthusiasm is a proof that the exhibitors are not the mercenary individuals that some would insinuate they are, but that they are desirous of promoting the science of Horticulture, and of ministering to the gratification of the public, even though it be by the sacrifice or material injury of some of their greatest favourites. The gardens were in finer trim than could have been expected after so much dry weather, and the Azaleas and Rhododendrons were blooming more profusely than we have observed them in any other garden this season. This, we are informed, is partly attributable to the plants having been manured or mulched with rotten cow-dung, which by keeping the ground moist and cool, enabled the plants twelve months back to complete their growth and set their bloom before the wet weather of July drove them into a second growth, by which growth multitudes of plants are destitute of bloom this season. The bloom on the large Wistaria, so generally an object of attraction at the first fête, was fast fading away; but in the conservatory the plants were in rude health, and many of the climbers blooming profusely. The large plant of Altingia excelsa will reach the top of the house by the autumn; and the huge bush of Luculia gratissima, the most lovely of our winter-flowering plants, is still progressing in size.

The LARGE COLLECTIONS were less numerous than usual, and also less brilliant—a difference mainly attributable to the rule which prohibits those kinds of plants being exhibited in collections for which prizes are offered in *separate classes*. In the collection exhibited by Mr. Robertson, gr. to Mrs. Lawrence, Ealing Park, was a fine specimen of Tabernæmontana coronaria, evincing excellent management, and densely covered with its pure white deliciously-scented flowers. Another very remarkable plant was Leschenaultia biloba, the pale variety; it was about 3 feet high, and 4 feet in diameter, regularly furnished with branches in every part, and producing a great number of delicate azure-blue flowers; this is not so fine a variety as some that will be adverted to hereafter, but nevertheless is a fine kind. This collection, moreover, contained an immense bush of Pimelea decussata, 5 feet high, and as much in diameter; another specimen of the dark variety of the same plant, 18 inches high, and 9 feet in circumference, in the most robust health; a fine plant of Eriostemon myoporoides, 8 feet high, and covered with bloom; a well-grown specimen of the beautiful Polygala bracteolata, the flowers of which did not expand, owing to the dullness of the day; with fine specimens of Eriostemon buxifolium; Epacris ceræflora, producing spikes of delicate white flowers; Coleonema tenuifolium, very neat; Chorozema macrophylla, in fine bloom; Hovea Celsi, an old plant, which had been cut down and produced a number of branches from the bottom, which formed a dwarf bush; Dillwynia floribunda, dwarf and good; Aphelexis sesamoides, very rich; with a species of Daviesia, with a profusion of orange and dark-red flowers on a very well-grown plant. In the same collection was an immense plant of Erythrina Crista-galli, 8 feet high, and 20 feet in circumference, in the most exuberant health; a well-bloomed plant, 4 feet high, and 5 feet through, of Chorozema Henchmanni; neat plants of Loddigesia oxalidifolia, Cytisus filipes, and Boronia pinifolia, with a large specimen of Pimelea spectabilis, thinly covered with bloom, and bearing evidence of bad management in its infancy. In a collection of fifteen plants from Mr. Green, gr. to Sir E. Antrobus, Bart., was a large bushy plant of Leschenaultia biloba grandiflora, the dark-blue variety, splendidly covered with bloom, and 3 ft. high, and about the same in diameter. A plant of L. formosa was likewise in fine condition, profusely covered with bloom, as were also Daviesia latifolia, trained in a pendent form, with Gnidia pinifolia, and Pimelea rosea and hispida. A specimen of Chorozema varium in the same collection was particularly well bloomed, though the plant was evidently in a declining state. Another plant, bearing some resemblance to a Spiræa, was Acrophyllum venosum, in a very healthy condition, and blooming freely. Aphelexis humilis was produced in a fine state; but the large plant of Rondeletia speciosa was not quite sufficiently advanced. Another collection of fifteen plants was sent by Mr. Clark, gr. to the Earl of Eldon, Shirley-park. It contained a fine specimen of Chorozema cordatum, 8 ft. high by 6 ft. in diameter, profusely covered with bloom, but in a rather loose condition; good plants of Stephanotus floribundus, Zichya inophylla, floribunda, and coccinea, and Hardenbergia monophylla, trained on flat trellises and densely clothed with flowers. There was, moreover, a large and well-bloomed plant of Boronia denticulata, but rather naked in the bottom; a tolerable plant of the double white Primula, with Eutaxia pungens, Chorozema Dicksoni, and Leschenaultia biloba, spoiled by unskilful training. Collections of six plants were shown by Mr. Bruce, gr. to Boyd Miller, Esq., Colliers's Wood, Mitcham; Mr. Frazer, of the Lea-bridge Road, Leyton, Essex, and Mr. Stanley, gr. to H. Berens, Esq., Sidcup, Kent. In the group by Mr. Bruce, was a lovely plant of Aphelexis humilis in the most perfect state; a neat plant of Eutaxia pungens, dwarf, bushy, compact, and profusely bloomed; a large specimen of Ixora coccinea in fine condition, but drooping from the coldness of the day, with well-grown plants of Leschenaultia formosa and biloba, and a charming specimen of the old Adenandra fragrans, covered with its peculiarly-tinted rosy-pink flowers. Mr. Bruce, moreover, exhibited as single specimens very splendid plants of Pimelea spectabilis and Adenandra speciosa, a plant probably better known by its old name of Diosma speciosa. The Pimelea spectabilis was certainly one of the gems of the exhibition, and though not so large as the specimen exhibited last year by Mr. Goode, was in every respect as perfect as a plant possibly could be. It was about eighteen inches high and three feet in diameter, regularly covered with bloom, and so complete in all points that it would have been difficult for the most fastidious to have said "A leaf there or a flower here would improve it." Mr. Frazer's collection contained a very healthy specimen of Boronia serrulata, an immense and profusely bloomed plant of Pimelea linifolia, a neat and very healthy specimen of Epacris pulchella, producing spikes of white flowers, and specimens in rude health of Polygala acuminata, Epacris grandiflora, and Chorozema varium. The best plants in Mr. Stanley's collection were a large and particularly healthy specimen of Chorozema cordifolium, a young but remarkably well-grown plant of Leschenaultia formosa, pretty specimens of Zichya inophylla floribunda, and Achimenes longiflora in fine bloom, and a promising young plant of Gompholobium polymorphum. Mr. Beck exhibited a well-grown plant of Achimenes longiflora in a slate pot.

Collections of CLIMBING PLANTS were shown by Mr. Robertson and Mr. Frazer, and some single specimens by other growers. Mr. Robertson's plants were—Manettia cordifolia, trained on a large globular trellis, completely covered with branches, and liberally flowered; Manettia bicolor, trained spirally to the height of 4 feet, well furnished, and as well flowered as this plant well can be at this season, as it is strictly a winter plant, and one of the most useful we have; an immense plant of Hardenbergia Comptoniana, trained over a barrel-shaped trellis, was in profuse bloom,—a proof that this plant requires age before it will bloom properly in a pot, as small plants have hitherto been shy bloomers, which has caused it to be discarded by some growers. Hardenbergia monophylla, in the same collection, was scarcely less noticeable, and there were also fine plants of Zichya inophylla floribunda and Gompholobium polymorphum. Mr. Robertson also exhibited, as single specimens, a noble plant of Stephanotus floribundus, trained spirally, the trellis covered as thickly as possible with branches, and singularly thickly covered with bloom-buds, though but few of them were open. Another plant, sent by Mr. Robertson, was Echites hirsuta; but it was drooping from cold before it was taken into the tent. From the same place were several plants of Gompholobium polymorphum in good condition, but thinly bloomed; and the whole of the plants of Tropæolum tricolor and Jarrattii, though many of them were well grown, were destitute of that brilliancy of colour for which they are generally so much admired.—In the collection of Mr. Frazer were two exceedingly well-bloomed plants of Hardenbergia monophylla and longiracemosa, trained over cylindrical trellises; good plants of Zichya coccinea and Gompholobium polymorphum in good condition; and a well-grown but thinly-bloomed specimen of Sollya angustifolia; a plant of the singular Philibertia grandiflora, trained on a flat trellis, sloping at an angle of about 60° from the spectator; a most admirable arrangement to prevent the flowers from being seen. The form of the flower in this plant ought to be suggestive of the form of the most appropriate trellis.

Of the singular and universally interesting tribes of ORCHIDACEOUS PLANTS there was a grand display, large collections being exhibited by Mr. Mylam, gr. to S. Rucker, Esq., Mrs. Lawrence, and Messrs. Rollisson, of Tooting. In the collection of Mr. Rucker we noticed a very splendid plant of Dendrobium fimbriatum, studded with hundreds of its beautifully fringed orange flowers; an enormous plant of Acanthophippium bicolor, the surface of the pot among the pseudo bulbs being literally alive with flowers. Dendrobium sanguinolentum, exceedingly neat; Cattleya Mossiæ and several varieties; Cattleya intermedia, strikingly beautiful; a species of Eria very like E. bractescens, and the elegant Phalænopsis amabilis, with a fine spike of bloom. Rivalling the latter plant in beauty, was the lovely Odontoglossum citrosmum, with delicate white and pink flowers; the singular Coryanthes macrantha, with two fully expanded blooms, and others coming on; a fine plant of Brassia maculata, with seven spikes of bloom; and Zygopetalum rostratum, with two fine flowers. There were, moreover, fine plants of Vanda Roxburghi and tessellata; Huntleya violacea, with four blooms; Cymbidium lancifolium, very pretty; Stenia pallida, with pale lemon flowers; a fine plant of Saccolabium guttatum, with four fine spikes not quite in bloom; a new and curious Angulos, of a pale brown colour, the flowers spotted with dark brown; Maxillaria aromatica, and fine specimens of Oncidium sphacelatum, pictum, and divaricatum. The collection of Mrs. Lawrence, though not quite so rich in new plants, contained many admirable specimens; among them, Saccolabium guttatum, with four spikes of bloom in great perfection; Peristeria cerina, with delicate creamy yellow flowers; Maxillaria aromatica, studded with orange-yellow blooms of great beauty; Cattleya Skinneri; Epidendrum cinnabarinum; Huntleya violacea; Zygopetalum rostratum; with the charming Aerides affine, in fine bloom; and a splendid specimen of Aerides odoratum, with eight spikes of noble flowers. In addition to these, there were large plants of Oncidium flexuosum, luridum, ampliatum, the major variety, altissimum, with eight spikes of bloom, each seven feet high, pulchellum, very delicate, with good plants of leucochilum and Baueri. The appearance of this collection, with the Oncidiums waving in the breeze, was very rich; and the plants were in admirable health. The plants in the collection sent by Messrs. Rollisson were generally small; and the most remarkable, not before noticed, were Acineta Barkeri, Vanda teres, very fine; the lovely Aerides crispum, with a fine spike of bloom; Stanhopea saccata, with very delicate flowers; Cattleya Mossiæ superba, a grand plant; and Saccolabium guttatum majus, with two splendid spikes of flowers. There was, moreover, a small specimen of the most lovely of all beautiful plants, Dendrobium Devonianum, the flowers of which are so fragile, and delicately fringed and tinted. From Mr. Kennington, gr. to — Cox, Esq., was a singular plant, with the flowers hanging over the side of the pot, of a dull greenish purple colour, and resembling so many insects, called Cirrhæa viridipurpurea; also a specimen of Vanda Roxburghi var. cœrulea, with Cattleya Mossiæ, Aerides odoratum majus, in fine bloom. Mr. Williams, gr. to C. B. Warner, Esq., sent Odontoglossum Bictonense, Epidendrum bicornutum, and several other plants. Mr. Edmonds, gr. to His Grace the Duke of Devonshire, produced Peristeria pendula; and two new plants, one an Epidendrum, with dull purple flowers, enlivened with pinkish violet sepals; and the other, a most charming variety of Schomburgkia tibicinis, were sent by Mr. Moore, gr. to R. Hanbury, Esq.

After the bright weather which we have had lately, it was not expected that many AZALEAS would be exhibited, and consequently the beautiful plants brought by Mr. Falconer, gr. to A. Palmer, Esq., Mr. Green, Mr. Robertson, and Mr. Gaines, of Battersea, were doubly attractive. A plant evincing the maximum of skill in cultivation was

Azalea indica variegata, exhibited as single specimen by Mr. Falconer. It was about three feet high, and from four to five feet in diameter, the branches depending round the side of the pot, forming a depressed pyramid, and literally one mass of flowers, so dense that scarcely a leaf could be seen. On this plant was a singular instance of a sporting branch, the flowers upon which were Azalea indica Gledstanesii, as true as they could possibly be produced, thus evidencing the origin of that fine variety. On another plant of A. i. variegata we noticed a true flower of A. i. lateritia, so that both kinds may be regarded as mere sporting branches of A. i. variegata. Another noble plant was A. i. rubrsplena, the double red variety, from Mr. Green, a one-sided plant, six or seven feet high, and superbly bloomed, but the flowers, unfortunately, were in a fading condition. Mr. Green also contributed very beautiful plants of A. i. variegata, lateritia, and Gledstanesii in fine condition, with good plants of A. splendens, purpurea grandiflora, Rawsoni concolor, Smithii coccinea, pulcherrima, in fine bloom, with a nice specimen of A. sinensis, the yellow Chinese variety. In the collection by Mr. Falconer, A. i. Rawsoni was scarcely less beautiful than his plant of A. variegata, and there was also a fine specimen worked as a standard, of A. i. Danielsii, another of the double white variety, not very appropriately named, with A. i. purpurea superba, and two seedlings named Bianca and Pulchra. Bianca is a white variety of dwarf compact habit, blooming profusely, of tolerable form, but rather deficient in substance. A group of six plants, contributed by Mr. Robertson, were exceedingly rich, and, what is so desirable in public exhibitions, bloomed almost to the day. They consisted of A. i. alba, a globular plant, three feet high and six feet in diameter; lovely specimens of Rawsoni speciosissima, lateritia, variegata, and the most perfect plant of A. i. Danielsii we ever saw. Mr. Gaines exhibited a number of small plants, principally seedling, and generally deficient in form. The most remarkable were Salmonia, a pale salmon-coloured variety, Brilliant, a much brighter-coloured variety than A. i. Danielsii, and also kinds worthy of cultivation, named Fairy Queen, Ne plus Ultra, Flaminea, and Delicata.

Of New Plants the most remarkable was a new species of Hindsia, exhibited by Messrs. Veitch and Sons of Exeter. It is a very strong-growing plant with the habit of a Melastoma, blooming freely, producing flowers of a bluish lilac colour, and five times as large as Hindsia (Rondeletia) longiflora. It is a fine plant, and when well grown will make a noble specimen. Another new plant from the same gentleman was a species of Centrosema, producing bright scarlet pea-formed flowers, but as there were only a few flowers open upon a large plant, it is difficult to say what it will make until we are better acquainted with it; but should it produce flowers as numerous as they are beautiful, it will indeed be a splendid object. Another new plant was Cereus crenatus, exhibited by Mr. Booth, gr. to Sir C. Lemon, Bart. The plant in habit resembles C. Jenkinsoni, but the flowers are large, and of a palish straw colour, tinged with green, and bears a close resemblance to the old night-blooming Cereus. To the hybridiser this plant opens up a wide field of action, and we shall look forward with some anxiety to the varieties which will be originated from it. A new species of Hibbertia, of shrubby habit, and producing yellow flowers, raised from Swan River seeds, was sent by Mr. Noble, gr. to R. Mangles, Esq., along with what appeared to be the little known Orthrosanthus cœruleus. There was finally, from Messrs. Loddiges, a very pretty novelty, in the form of a species of Gaylussacia—an evergreen greenhouse shrub, with deep rose-coloured flowers, like those of a Vaccinium, to which the genus is nearly allied.

Among Single Specimens, Messrs. Veitch had bushes of Hindsia longiflora loaded with bloom buds; Xanthosia rotundifolia, in fine health and blooming profusely; and immense plants of Eriostemon buxifolium, and Erica depressa. The latter specimen was one of the most remarkable plants in the Exhibition. It was about two feet six inches high, and two feet in diameter at the bottom, forming a cone of verdure densely covered with greenish-yellow blossoms. The plant, we understood, was 28 years old. The rare Cumingia trimaculata, was sent by Mr. Frost, gr. to Lady Grenville. Three plants of Statice macrophylla, in bloom, were communicated by Mr. Forrest, of the Kensington Nursery, and a Schizanthus, like S. Grahami, not very remarkable, by Mr. Green. A very large plant, sheeted with bloom, of Leschenaultia formosa, was sent by Mr. Clark; a splendid specimen of Leschenaultia biloba grandiflora, by Mr. Falconer; another plant with paler flowers, by Mr. P. Tramer, gr. to Lady Alice Peel; and a pretty specimen of the dwarf variety, called L. biloba nana, by Mr. Green. There was, moreover, from Mr. R. Johnson, gr. to J. Mallet, Esq. a well grown plant of Gnaphalium involucratum; Stylidium odoratum, in fine health, from Mr. Robertson; and a new Gloxinia, bearing a close resemblance to G. Cartonii, with crimson flowers margined with white, from Mr. Dobson, gr. to Mr. Beck, of the Slate Works, Isleworth. This is by far the finest hybrid which we have seen, and merits universal cultivation. Mr. Robertson communicated a large specimen, with many noble flowers, of Cereus speciosissimus; very nice plants of Polygala oppositifolia, and Pimelea decussata, were shown by Mr. Hill, gr. to T. Davis, Esq.; Ixora coccinea, with 30 heads of bloom in fine health, by Mr. Green; a well bloomed plant of Siphocampylus betulifolius, by Mr. Bruce; and a large plant of the old Pelargonium tricolor, by Mr. Jackson, of Kingston.

A number of collections of the gaudy tribe of Cacti were communicated by various growers, but the most distinct and remarkable kind, was a variety of Cereus Mallesonii, called C. M. rosea, sent by Mr. Bruce. It produced small compact rose-coloured flowers, and was very neat and pretty. The collection by Mr. Robertson contained fine plants of Epiphyllum Jenkinsoni, speciosus, speciosus major, and Cereus Ackermanni. Mr. Green showed a noble E. Jenkinsoni multiflorum, loaded with bloom; a good plant of E. grandiflorum violaceum, with noble plants of Cereus Ackermanni, with Epiphyllum Jenkinsoni, and speciosum, beautifully bloomed. Mr. Upright, gr. to Mrs. Ridge, sent a very fine assortment, consisting of Cereus Ackermanni, and speciosissimus; Epiphyllum speciosum, speciosum grandiflorum, and Jenkinsoni. These plants were in fine condition.

The beautiful and interesting tribe of Erica was exhibited in great variety, and excited considerable interest among the visitors. Mr. Brazier, gr. to W. H. Storey, Esq., sent a very beautiful plant of E. gelida, covered with pale-green flowers; a fine perspicua nana, in profuse bloom; a good plant of odora rosea, with good specimens of Humeana, campanulata, Cavendishii, in fine health; a large plant of E. ventricosa grandiflora, not quite sufficiently in bloom; and charming plants in excellent bloom of E. intermedia, vestita alba, and vestita carnea. In addition to these, there were of Mr. Storey's seedlings several very fine varieties, especially ventricosa alba tincta, vestita albida, vestita alba superba, both very good, and a remarkable variety, called E. floribunda. In the collection sent by Mrs. Lawrence were good specimens of E. Cavendishii, the finest of all the yellow varieties; depressa, in fine health; E. suaveolens, well bloomed; and good plants of E. perspicua nana, fragrans, Beaumontia, persoluta alba, ventricosa tricolor, a fine plant, and E. ventricosa coccinea minor. Very healthy specimens of E. Humeana, ampullacea vittata, trossula, intermedia, and ovata densely clothed with bloom, were also shown by Mr. Robertson. Mr. Green exhibited another collection, among which we noticed fine plants of E. ventricosa coccinea minor, profusely covered with bloom, ampullacea rubra major, a good plant of Hartnelli, Humeana, Beaumontia, suaveolens, and gelida, in fine health, and good plants of E. propendens and elegans; E. denticulata moschata, though the plant was in bad health, was a neat and very interesting kind; and Mr. Green had also good plants of E. dilecta, mundula, ardens, Westphalingia, echiiflora purpurea, and ventricosa coccinea. Mr. Dawson, nurseryman, of Brixton Hill, sent a noble plant of E. propendens, 3 feet high, and nearly as much in diameter, very profusely covered with bloom, and in exuberant health; good specimens of E. odora rosea, mutabilis, prægnans, primuloides, very dwarf and pretty; splendens, a large plant, with fine flowers, but rather naked in the bottom; and neat plants of E. Bergiana, campanulata, Linnæoides superba, mundula, and hybrida. In the collection sent by Mr. Jackson, nurseryman, of Kingston, was a large, but rather naked plant of E. moschata, in profuse bloom; a very large specimen of E. elegans, in good bloom; the curious E. halicacaba, with pale-green flowers; a fine variety, called E. tricolor speciosa; a good plant of a seedling ampullacea, and neat plants of inflata and Cavendishii. Most of the plants of Mr. Jackson had evidently been crowded together during the winter, by which their lower branches were much injured. Mr. Frazer exhibited a group of six plants, consisting of E. Thunbergia, a neat specimen, in good bloom; E. propendens, perspicua nana, spuria, ventricosa superba, and Humeana. Mr. Bruce contributed a fine plant of E. translucens, with good specimens of E. Cavendishii and Bergiana, and also ventricosa superba and vestita alba. From Mr. Vockes, gr. to J. J. Wells, Esq., was a splendid plant of E. intermedia, a noble plant of E. Cavendishii, and tolerable specimens of E. Hartnelli, Humeana, and ventricosa carnea.

Of Roses in pots, and also cut flowers, there was a superb display from Mr. Dobson, gr. to Mr. Beck; Mr. Laing, of Twickenham, Messrs. Lane and Sons, of Berkhampstead, and A. Rowland, Esq. The plants from Mr. Beck were grown in slate pots, were from one foot six to two feet six inches high, and as regularly covered with bloom and foliage as could possibly be desired. The finest varieties consisted of Earl Talbot, rose colour; Great Western, bright rose, blotched with white; Charles Duval, flesh-coloured; Emerance, white, with yellow centre; Rouge Superbe, dark rose-colour; Armosa, Devoniensis, Madame Neuman, rose-colour; and Triumphant. Many of the plants shown by Mr. Laing were what the nurserymen designate half standards, and consequently did not look so compact as dwarf plants; a number of them too were of the French and hybrid China varieties, kinds more difficult to manage in pots than the Chinese and Tea-scented varieties. They were, however, highly creditable specimens, and though second to Mr. Beck's, but little inferior to them. The most remarkable kinds were General Allard, dark rose-colour; General Lamarque, dark velvety purple; Beauty of Billiard, dark red; Belle Marie, rose-colour, very large; Picotee, rose, striped with white; Nouvelle Bourbon, rose colour; Celestine and La Renommée, a fine white variety. In the collection from Mr. Rowland, the best varieties were Jaune, cream-colour with yellow centre; Richelieu, rose-colour; Vanilla, Eugene, Archduke Charles, Goubault, flesh-colour, and Madame Plantier. The collection from Messrs. Lane and Sons was remarkably well-grown, diversified and interesting. The plants were dwarf, clean, rich and good, and in every respect superb examples of fine cultivation. The most distinct and desirable kinds were Theresa Isabella, cream-colour; Comte de Paris, rose; Edward Jesse, rose; Aricle, flesh-colour; Speciosa, rose; Madame Laffay, rose-colour, very fine; La pactole, light yellow; Barbot, fawn-colour, and Armosa, flesh-colour, very fine. Other good varieties were—Grand Capitaine, Taglioni, Bourbon Theresita, Arago, Triomphe de Flora, Paris, and Psyche. Collections of Cut Roses were shown by A. Rowland, Esq., Messrs. Lane and Sons, and Mr. Mitchell, nurseryman of Piltdown. In the collection of the latter gentleman were unusually fine flowers—Aurora, Belle Allemande, Odorata, Princess Hélène, Archduke Charles, Original, Virginian, and Taglioni. Mr. Mitchell also showed a new Rose, called Lamarque Superbe, and said to bloom as early as the White Banksian. It is a flower of fine proportions, of a delicate creamy white colour, very large, and very double, with a petal of fine substance.

Plants in glass-cases, grown according to Mr. Ward's plan, were sent by Mr. Williams, gr. to C. B. Warner, Esq., and Messrs. Lawrence, of 55, Parliament-street; Mr. Warner's plants had been growing in the City of London for nearly four years, and were in fine health; they consisted principally of Ferns and Orchidaceous plants, but the day being cold there was so much condensed vapour on the glass that they could not be very minutely examined. The case was in the form of a church-aisle glazed with sheet-glass. Messrs. Lawrence's plants were grown in a plain Wardian case; they were very small but healthy, but disfigured by common Cut Flowers being introduced among them. A Fuchsia, some Ferns, and other things grown under a bell-glass, were also exhibited by the same.

The Pelargoniums looked unusually well; in colour they were very fine, and in health and growth, with but few exceptions, very perfect. Mr. Gaines, in his collection, in pots of 12 to the cast, exhibited 12 magnificent plants in perfect health and beauty of bloom; among them was a fine specimen of Nymph, the first large plant that has come under our notice. This having been always considered a shy bloomer, we were glad to see it on this occasion covered with its elegant flowers. Sylph, Victory, Cyrus, Grand Duke, &c., were covered with bloom, many of the plants measuring full four feet across. The following formed this collection, to which the silver-gilt medal was awarded:—Coronation, Nymph, Juba, Grand Monarch, Emperor, Cyrus, Rising Sun, Mabel, Comte de Paris, Grand Duke, Sylph, and Victory. Mr. Catleugh's collection, which took the large silver medal, were the following sorts (and among them a splendid specimen of Garth's Witch excited much attention), Sylph, Unit, Witch, Coronation, Ovid, Una, Jubilee, Madeline, Favourite, Cyrus, Tasso, and Maid of Honour. In Pelargoniums, comprising 12 new and first-rate varieties, in 24-sized pots the amateur exhibitors shone conspicuously, and three better collections, exhibiting more skilful growth and management, it would be impossible to bring together. The *Gold Banksian Medal* was awarded to Mr. Cock of Chiswick; his flowers were Lord Chancellor, Hebe, Emma, Erectum, Symmetry, Sylph, Madame Taglioni, Gipsey, Rachael, Unit, Wizard, and Maid of Honour. The *Silver-Gilt Medal* to Mr. Dobson, gr. to Mr. E. Beck, Isleworth; his collection comprised Flora, Lord Chancellor, Luna, Cleopatra, Leonora, Susanna, Angiola, Favourite, Bella, Matilda, Dido, and Sir R. Peel; these were admirably grown, and bloomed in slate pots. The *Large Silver Medal* was given to Mr. Stains for Ivanhoe, Jubilee, Lady Sale, Queen of the Fairies, Fair Maid of Devon, Superbum, Hebe, Rising Sun, Coronation, Enchantress, Duchess of Sutherland, Priory Queen. From Amateurs there were two collections of 12 varieties in pots of 12 to a cast; the one receiving the Silver Gilt Medal was from Mr. Cock of Chiswick, for 12 finely-grown plants; Lord Chancellor, Nestor, Eclipse, Cyrus, Queen of Fairies, Sylph, Tasso, Jubilee, Madeline, Juliet, Emma, Unit. The other collection, receiving the Large Silver Medal, was from Mr. Bell of Chelsea Hospital, and consisted of Mrs. Sterling, Comte de Paris, Sylph, Coronation, Victory, Priory Queen, Lord Mayor, Grand Duke, Climax, Prince Albert, Una, and Maid of Saragossa.—In collections of 12 Pelargoniums of new and first-rate varieties in pots of 24 to the cast, the Silver Gilt Medal was awarded to Mr. Gaines for the Duchess of Sutherland, Lady Prudhoe, Lady Duncan, Vanguard, Augusta, Rising Sun, Lady Sale, Lydia, Ackbar, Coquette, Lady Mildmay, and Imperiale. And in the same class Mr. Catleugh received the Large Silver for Jubilee, Eclipse, Hebe, Camilla, Madeline, Symmetry, Tasso, Unit, Sir R. Peel, Emma, Duchess of Sutherland, and Wizard.

Fuchsias.—The large Silver Medal was awarded to Mr. Cole, gr. to C. Lewis, Esq., Blackheath, for the following 12 varieties of Fuchsias:—Brockmannii, Victorine, Defiance, Stanwellii, Eclipse, Eppsii, Insignis, Majestica, Britannia, Champion, Gem, and Moneypennii; and to Mr. Catleugh, Hans-place, Chelsea, the Silver Knightian was awarded for Victorine, Champion, Splendida, Spectabilis, Majestica, Gem, Decora, Hutchinsoni, Eclipse, Rosea alba, Cormackii and Exoniensis. The specimen of Exoniensis in this collection sets at rest the difference of opinion regarding the habit of the flower; this plant was about 5 ft. high, with branches at regular intervals diminishing in length as they approached the top, and pendent with its beautiful flowers.

The Calceolarias were not so showy as we have been accustomed to see them. There were two collections; the remainder consisted entirely of seedling varieties. The Amateur's collection, to which the large Silver Medal was awarded, was from Mr. Stanley, gr. to H. Berens, Esq., for six well-bloomed specimens—Ariel, Warrior, Sir R. Peel, Fairy Queen, Village Maid, and Compacta. The Nurseryman's collection was from Mr. Gaines, of Battersea, and received the Silver Knightian for Sunbeam, Ackbar, Magnet, Mag. grandiflora, Candidate, Lady of the Lake. The collection from Mr. Standish, of

England, exhibited another competition, consisted entirely of seedlings, and comprised many beautiful varieties; they were Sir Y., Lawrence, Titian, Celebration, Great Western, Julio, Magna, Claude, Conqueror, Sir R. Sale, Tasso, Guido, and Guercino.

CINERARIAS.—The Silv. Banksian Medal was awarded to Mr. Ivery, of Peckham, for a collection of 12 Cinerarias, which comprised the following sorts:—Regina Victoria, Seedling King of Prussia, Prince of Oldenburgh, True Blue, Pickwick, Emperor, Laura, Nosegay, Eclipse, Triumph, and Pride of Peckham.

The SEEDLING Tent contained but few Pelargoniums; and one only, a seedling of the present year, received a certificate (named Dr. Lindley): this was in Mr. Whoma's collection, gr. to E. Foster, Esq., Clewer Manor; the flower is fine in form, with bright, deep rose-coloured under petals, small white centre, with large dark blotch on the upper petals, leaving but a narrow margin of bright rose. Another seedling in this collection attracted much attention; it is a flower rather deficient in form, but possessing extraordinary depth and richness of colour of a peculiar quality; it was regarded with much interest by amateurs, who speculated upon the influence such a flower would have in future upon this favourite class. In Mr. Beck's collection (which was disqualified from the omission of the names), we noticed two fine seedlings, Arabella and splendens; the former a rosy flower with a white centre, the latter a high and brilliant-coloured variety; the other seedlings in this class presented no improvement. A certificate of merit was awarded to Mr. Ivery for a seedling Azalea named formosa, and the same to Mr. Catleugh for a variety named conspicua rosea; both having large flowers, clean and bright in colour, and expanding freely. A few Cinerarias were exhibited, but none that seemed to be improvements upon those that have already appeared. There were a great many seedling Calceolarias, principally varieties, having small blotches covering the front of the flower; these are now become so common, that, unless the form is fine and the marking peculiar, they are difficult to distinguish from each other. From a careful examination of this part of the Exhibition, we thought the best seedling was one from Mr. Kingborn, named the Duchess of Sutherland. The Fuchsias presented no improvements upon the kinds already in cultivation.

The exhibition of FRUIT, the Pines excepted, was by far the best we ever saw in May. The Grapes, both Black and White, and also the Strawberries and Melons, were as good as could be produced at any season of the year. Two fine baskets of Black Hamburgh Grapes were shown, according to notice, by Mr. Wilmot, of Isleworth; and although they were exceedingly fine, almost as good as could be desired, there were several lots as good from other growers, and one or two baskets considerably better, especially those sent by Mrs. Knott, of East Burnett; these were perfect: fine bunches, large berries, quite ripe, as black as a coal, and beautifully covered with bloom; these were the Black Hamburgh, but some Dutch Sweetwater in the same basket were equally good. Very superior Grapes, both Hamburgh and Sweetwater, were also shown by Mr. Atlee, gr. to H. Beaufoy, Esq., Mr. Dodds, gr. to Sir G. Warrender, Bart., Mr. Wortley, gr. to F. Maubert, Esq., Mr. Braid, gr. to H. Perkins, Esq., Mr. R. Chapman, Mr. J. Davies, of Oakhill, Mr. Spencer, gr. to the Marquess of Lansdowne, Mr. Ball, of Norwich, and Mr. Mitchell, of Brighton. From Messrs. Cridland and Co. were some fine bunches of Black Hamburghs, but they were deficient in colour; and those from Mr. Henderson, gr. to Sir G. Beaumont, Mr. Murray, gr. to the Marquess of Bath, were much injured by being badly packed. In addition to those mentioned above, very good White Grapes were sent by Mr. Gadd, of Betchworth Castle, near Dorking, Mr. Dodds, Mr. Davies of Oakhill, Mr. Mitchell, of Brighton, Mr. M'Lean, gr. to the Marquess of Downshire, and Mr. Brewin, gr. to R. Gunter, Esq.; but the Muscats shown by Mr. Brewin were far from ripe. The only Pines worthy of special remark, in these days of six and seven-pounder Queens, were from Mr. Leslie, gr. to J. Fleming, Esq., and these, though tolerably good for May, were not so good as we have seen exhibited in some seasons by Mr. Dowding. A seedling Pine, apparently a cross between the Queen and Black Jamaica, was sent by Mr. J. Fish, gr. to H. Oddie, Esq.; it was small, but tolerably well swelled. Three kinds of Strawberries, viz. the British Queen, Keen's Seedling and Old Carolina, were sent by Mr. Spencer, and fine dishes of the British Queen, by Mr. R. Kingborn, gr. to A. Murray, Esq., Mr. W. Davies, of Isleworth, Mr. J. Davies, Mr. Spencer, and Mr. Dodd: all these were very fine, but Mr. Spencer's were the largest. A fine dish of May Duke Cherries was sent by Mr. Ewing, gr. to O. F. Meyrick, Esq., and a small dish not quite ripe from Mr. Dodds. Some beautiful White Currants were sent by Mr. Dodds, and some fine Shaddocks came from the garden of the Viscount Dorchester. Peaches and Nectarines were sent by Mr. Spencer and Mr. Henderson, but neither were very fine. A brace of very excellent Melons called Snow's Hardy Green Flesh, and said to produce two and three crops in a season, were sent by Mr. Snow, gr. to the Hon. Mr. Grey; green flesh Melons were also exhibited by Mr. J. Fish, and a brace of Persian Melons by Mr. Spencer. The Cantaloup Melons from Mr. Gadd, of Betchworth Castle, would be considered fine at any season, but for May they were superlatively excellent, and some of them could not have been less than six pounds in weight. Mr. J. Fish sent some Cantaloup Melons, as did also Mr. Spencer. Two good collections of Apples and Pears, in fine state of preservation, were exhibited by Mr. Baldwin, of Turnham Green, and R. Brook, Esq. There is one hint which the reporter may perhaps be permitted to give the exhibitors of fruit, and that is, to point out the necessity of every kind being properly named. Without this it is impossible to do justice to what is shown, and it will account for the omissions of some names in this report.

BOTANICAL SOCIETY OF LONDON.

May 3.—J. E. *Gray*, Esq., *President*, in the Chair. Various donations were announced. Professor Allman, J. T. Mackay, Esq., and T. C. Hunt, Esq., H.M. Consul at the Azores, were elected members.—A specimen of Borkhausia setosa was presented by G. S. Gibson, Esq., which was stated to have been found by Dr. J. B. Wood in corn-fields at Withington, near Manchester.—A specimen of Primula vulgaris, bearing three flowers on a long slender scape, was exhibited from Mr. D. Stock, of Bungay, as an example of the plant usually (though incorrectly) called Primula elatior by the botanists of that part of England. Having been inclosed in a post letter before dried, it was too much shrivelled to admit of its being assigned quite certainly to the variety caulescens of the London Catalogue. The variety intermedia of the same Catalogue usually bears 10 or 20 flowers on a scape, and approximates to the Cowslip in its deep colour and short pubescence.—A monstrosity of Primula vulgaris was also presented by Mr. D. Stock. In this specimen a short peduncle terminated in a funnel-shaped calyx, formed by the adhesion of 15 sepals, and inclosing two distinct corollas; the limb of one corolla being divided into eight lobes, that of the other into seven.—Read, "A Synoptical View of the British Fruticose Rubi, arranged in Groups, with Explanatory Remarks," (Part 2), by Edwin Lees, Esq., F.L.S.

COUNTRY SHOWS.

Alnwick Florists' Show.—The florists of Alnwick held their Annual Exhibition of Auriculas and Polyanthuses on the 7th ult. The flowers exhibited were in fine order, and reflected much credit upon the growers. The prizes were awarded as follows:—*Auriculas*, Green-edged: 1, Page's Champion, Mr. Allan; 2, Empress of Russia, Mr. Cockburn. Grey-edged: 1, Grime's Privateer, Mr. Allan; 2, Grime's Privateer, Mr. Cockburn. White-edged: 1, Leigh's Freight Bonus, Mr. Cockburn. *Self*, Wetherwood's Othello, Mr. Allan. *Alpines*, 1, Queen Adelaide, Mr. Allan; 2, Prince Albert, Mr. Richardson. *Polyanthuses*, 1, Bonny Bess, Mr. Cockburn; 2, George the Fourth, Mr. Allan.

Cork Horticultural Society.—This was the first Exhibition for this season. It took place on Thursday, the 16th of April. The following were the most attractive objects:—From Lord Berehaven, some very fine Shaddocks and Oranges. From J. S. Barry, Esq., a fine specimen of Chorozema varium, and a large Acacia armata, covered with flowers; an Orange-tree, in fruit; and some Hyacinths, &c. The collection from W. M. Reeves, Esq., included a fine specimen of Abutilon striatum, in flower; the sweet-scented Boronia serrulata; several varieties of Cacti, Fuchsia venus victrix; the graceful Tropæolum tricolor, a new variety of Nemophila, and a collection of Mosses.—*Cork Constitution.*

Lancaster Flower Show, May 17.—The Exhibition of TULIPS was remarkably fine, and considered superior to any previous Show. The following prizes were awarded:—TULIPS: 1, Duke of Lancaster, Albion, Black Baquets, Transparent Noir, Roi de Cerise, Roi de Little, Captain Wilkinson; 2, Defiance, Albion, Bonnefaites, Wurtemberg, Roi de Cerise, Bronti, Mr. Richardson; 3, Duke of Lancaster, Albion, Incomparable Surpassant, Do. Prime Noble, Do. Little, Roi de Cerise, Mr. Walmsley; *Feathered Bizarres*: Duke of Lancaster, Captain Wilkinson; Trafalgar, Mr. Marshall; Duke of Devonshire, Mr. Hargreaves; Duke of Wellington, Trafalgar, Captain Wilkinson; Charles the Tenth, Mr. Richardson; Marshal de Sourbaisse, Mr. Walmsley; Priestman's Seedling, Mr. Hargreaves; Cremoise, Mr. Hargreaves. *Feathered Bybs.*: Gaystilla, Mr. Hargreaves; Black Baquets, Mr. Jopson; Victoria, Mr. Richardson; Thompson's Violet, Mr. Hargreaves; Washington, Duchess of Hamilton; Maitre Partout, Mr. Richardson; Violet Rougrete, Mr. Hargreaves; Capt. Flash, Duchess of Hamilton; Incomparable, Mr. Richardson. *Feathered Roses*: Duc de Bronti, Walworth, and Do Little, Mr. Richardson; Triomphe Royale, Mr. Hargreaves; Andromeda, Mr. Walmsley; Holden's Rose and Compte de Vergennes, Duchess of Hamilton; Hero of the Nile, Mr Richardson; Rose Hebe, Duchess of Hamilton. *Flamed Bizarres*: Albion, Captain Wilkinson; Lustre, Mr. Hargreaves; Smith's Alexander, Mr. Richardson; Le Nom, Mr. Richardson; Leopoldina, Captain Wilkinson; Leopold, Mr. Richardson; Liberal, Mr. Richardson; Arcade, Duchess of Hamilton; Grand Cairo, Mr. Hargreaves. *Flamed Byblœnas*: Transparent Noir, Capt. Wilkinson; Voure Holme, Mr. Richardson; Pompey's Pillar, Capt. Wilkinson; Wurtemburg, Mr. Richardson; Sable Rex, J. Stout, Esq.; Buckley's Beauty, Violet Walters, Butler's Louis 16th, Mr. Walmsley. *Flamed Roses*: Roi de Cerise, Mr. Richardson; Lord Hill, Duchess of Hamilton; Unique and Rose Quatre, Mr. Richardson; La Vandiken, Vulcan, and Sanspareil, Mr. Hargreaves; Arbre de Diana, Duchess of Hamilton; Do. Captain Wilkinson. *Best Yellow Tulip*: Mina d'Or, Mr. Hargreaves. *Best Double Tulip*: Marriage de ma Fille, Captain Wilkinson. *Greenhouse Plants*: Tropæolum tricolorum, Cactus Jenkinsonii, and Polygala speciosa, Mr. T. Jopson. *Hardy Plants*; Deutzia scabra, Mr. Bower; Cypripedium spectabile, Miss Ridsforth. *Roses*: Bardon, Mr. Jopson; Queen of Bourbons, Mr. Hargreaves; Yellow Noisette, C. Bower, Esq.; Aubernon, Mrs. Gawthorpe.

The Morningside Practical Gardeners' Society held their first meeting for the season in the new schoolroom, Morningside, on Tuesday the 30th ultimo, when several prizes were awarded. We have only been furnished with a list of rewards, without the names of the flowers for which they were given.

South-Essex Horticultural Society, May 15.—The attendance was equal to that of preceding years. The larger collections were particularly fine, and contained plants many of which would have been considered excellent as single specimens in former years. A variety of prizes were awarded, concerning which we have no details beyond the names of the winners. Several cottagers' prizes were also distributed.

Worcestershire Horticultural Society.—The first Exhibition for the present year took place on Tuesday, and was well attended. Mr. T. Brown sent Azalea indica; Mr. Smith, Azalea Smithii and Fuchsia formosa elegans; Mr. Bennett, Cactus Ackermanni; Mr. Cook, Rosa Devoniensis and a seedling Calceolaria. The prizes were awarded as follows:—*Auriculas*, Green-edged: 1, Page's Champion; 2, Oliver's Lovely Ann; 3, Fletcher's No Plus Ultra, Mr. T. Brown. Grey-edged: 1, Conqueror of Europe; 2, Lord of Hallamshire, Mr. T. Brown; 3, Popplewell's Conqueror, Mr. J. Hooper, jun. White-edged: 1, Mrs. Willoughby, Mr. Biddell; 2, Lily of the Valley, Mr. Brown. *Self*: 1, Bury's Lord Primate, Mr. T. Brown; 2, Dixon's Apollo, Mr. J. Hooper; 3, Gordon's Smithsonian, Mr. T. Brown. *Alpines*: 1, Brown's Queen; 2, Biddell's Queen Victoria, Mr. T. Brown; 3, Fair Rosamond, Mr. J. Hooper. *Polyanthuses, Dark*: 1, Fletcher's Defiance; 2, Manning's Tipped, Mr. T. Brown. *Red*: 1, Seedling, Prince Albert, Mr. T. Burlingham; 2, Bullock's Lancer, Mr. T. Brown. *Heavenlies*. Double red: 1, Mr. Biddell; 2, Mr. T. Burlingham. *Blue*: 1, Mr. Wood; 2, Mr. Biddell. *White*: 1, Mr. J. Hooper; 2, Mr. T. Burlingham. *Single blue*: 1, Mr. T. Burlingham. *White*: 1, Mr. J. Hooper. *Calceolarias*, 1, Seedling, Victoria, Mr. T. Burlingham; 2, Mr. Cook. *Stove Plants*: 1, Cuphea Ackermanni; 2, Cactus Melleanii, Mr. Cook; 3, Euphorbia splendens, Mr. Smith; 4, Cactus flagelliformis, Mr. Cook. *Greenhouse Plants*: 1, Azalea indica, Mr. R. Smith; 2, A. Smithii, Mr. Bennett; 3, Dioama purpurea, Mr. Wood; 4, Fuchsia formosa elegans, Mr. Bennett. *Pelargoniums*: 1, Climax; 2, Pewess, G. J. A. Walker, Esq. *Heaths*: 1, Erica delecta; 2, E. Martnelli, Mr. Stanton. *Hardy Shrubs*: 1, Rosa Devoniensis, Mr. T. Burlingham; 2, Erica mastualis, Mr. Wood. *Herbaceous Plants*: 1, Cineraria grandis; 2, C. Irbyana, Mr. Bennett. EXTRA PRIZES were given for *Azalea indica alba*, to Mr. Bennett; for *Erica inflata*, to Mr. Smith; for *Verbena Princess Royal*, to Mr. Cook.—*Worcester Herald.*

Rebiews.

Species Filicum; being Descriptions of all known Ferns. Illustrated with Plates. By Sir W. J. Hooker, K.H., F.R.S., &c. 8vo. Pamplin. Part II.

IT is extremely satisfactory to find this important work duly published at its allotted time, and executed with all the skill and taste of its predecessor. The Number before us contains the genera Dicksonia, including Balantium, Culcita, Leptopleuris, Cystodium, Patania, and Sitolobium—which Sir W. Hooker does not consider sufficiently distinct—Cibotium, Loxsoma, and the great mass of species included under the names of Hymenophyllum and Trichomanes. The next Part will appear in July.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

BARBACENIA SQUAMATA. Scaly Barbacenia. (*Herbaceous perennial.*) Bromeliaceæ. Hexandria Monogynia.—For the introduction of this plant cultivators are indebted to the enterprising zeal of Messrs. Veitch and Sons, of Exeter, whose collector, Mr. Lobb, forwarded seeds from Brazil, in 1841, from which a number of plants have been raised, which have flowered in the valuable collection of those gentlemen during the spring of the present year. The genus Barbacenia has been long known to the admirers of plants through the B. purpurea, another Brazilian species of considerable merit; and through the more recently introduced B. gracilis. Besides the present, these are the only species which have been received in England. Twelve species are mentioned by Martius in his "Plantarum Brazilliensis;" and engravings and descriptions of six are furnished in the same work; all of which are different from the three above mentioned. They were found growing on arid situations on mountains, at an elevation of from 1000 to 1500 feet, and only between the 14th and 23d degrees of latitude. One of those species, B. tricolor, apparently bears a strong resemblance to this, but is a dwarfer plant, and essentially distinct in specific character. The leaves are shorter than the scape, and the flowers, instead of having the inside of the petals of a deeper colour than the outer, are just reversed. Most of the species—and amongst them the present must be enumerated—have long narrow leaves, collected on a short stem into a tuft, and when without their flowers have an appearance resembling some of our mountain sedges. Few plants are able to bear the want of water for a longer period without sustaining injury. And, except during the period of the most active growth, much moisture appears to be inimical to their welfare. It ought to be sparingly applied at all other seasons; and, even then, it will be necessary to use it cautiously. The soil must be well drained, so that no superfluous moisture may stagnate about the roots. After they have completed their growth, they must be preserved as free from wet as possible. To induce them to develope an abundance of bloom, a dry and cool situation is indispensable during the latter part of summer and throughout the winter. On the approach of spring they must be removed to a warm and humid stove, or placed in a pit with a steady bottom heat. In stoves, where there is the convenience of rockwork, they may be planted along the front, or in some part where they will not be far removed from the eye. But it is as a pot-plant that it appears most likely to succeed best. Propagation will probably be attended with difficulty unless seed can be matured, and we are not aware that any has yet ripened. The generic name was given by Vandelli, in honour of Barbacena, a governor of Minas Geraes, in Brazil.—*Paxton's Magazine of Botany.*

PHLOMIS CASHMERIANA. Cashmere Phlomis. (*Hardy Perennial.*) Labiatæ. Didynamia Gymnospermia.—To those who possess no greenhouse, this good-looking plant, from the valley of Cashmere, will be welcome; for its large, pale-lilac flowers remain for a considerable time in beauty. It is a hardy perennial plant, growing about two feet high, and flowering in July and August. It requires a rich, light soil, and a situation which is rather dry in winter. It is increased, when the plants are old, by dividing the roots in spring, or from seeds; but it grows slowly when young, and will not flower before the second year after the seed is sown. It was raised in the gardens of the Horticultural Society, from seeds received from Dr. Royle.—*Botanical Register.*

Garden Memoranda.

Messrs. Lowes, Clapton.—In the first house a handsome hybrid Rhododendron, with cream-coloured blossoms copiously dotted with yellowish green on the upper segments, is a conspicuous object. The flowers are large, and I counted between 30 and 40 in one truss. Several plants of the old Eutaxia myrtifolia, a handsome New Holland plant, were flowering profusely, together with specimens of Boronia serrulata, with its lovely starry pink blossoms on the tips of the branches, Platylobium parviflorum, with an abundance of yellow flowers, and a seedling variety of Azalea indica, called Woodsii, laden with large rich purple flowers, that were beautifully spotted. The atmosphere was agreeably scented from a number of 10-week Stocks in pots. The house adjoining contained specimens of Platylobium Murrayanum and Chorozema Dicksoni—the latter the handsomest species of its class; the graceful C. cordatum macrophyllum, with orange and purple flowers; Leschenaultia biloba, bearing a profusion of azure blossoms; and Anthocercis viscosa, with large white flowers, having the inside of the corolla tube streaked with numerous green lines. In the house

significant to the cultivation of Cape flowers was a number of excellent specimens of the different varieties of Erica ventricosa, a species possessing a superior habit, and protruding large tubular and lively flowers in profusion; the small but extremely neat-flowering and delicately-scented E. fragrans; the compact-growing and free-flowering E. perspicua; the strong robust E. elegans, with large pink bracts and calyx, and a globular corolla, of the same pleasing hue, tipped with green; E. cistifolia, with ciliated leaves and terminal clusters of small white campanulate flowers, expanding wide enough to show the black anthers which almost fill up the area; E. pinea, a species with bright purple flowers and dense foliage; small plants of E. mundula, and the almost ever-flowering E. mutabilis. Many of the larger specimens, and some of the less delicate smaller ones, have been removed to a shady situation in the open air. A stove devoted to that beautiful tribe of plants, Exotic Ferns, contains a thriving collection: many of the more vigorous-growing species having received a large shift are producing noble fronds. Among the more rare species, the following are distinguished as much for their elegance as their scarcity:—Cheilanthes microptera, Pteris ternifolia, and P. rotundifolia, a handsome species from New Zealand; Cibotia Sobiedii, one of the Tree Ferns, and Gymnopteris japonica. The chief art in the cultivation of this tribe appears to be vested in the regulation of atmospherical moisture, and the maintenance of a diffused light, and at the same time providing against a saturated soil, by securing ample drainage. The generality of Ferns never succeed well exposed to the direct rays of the sun, or in an arid atmosphere. Few of the species require a great bulk of soil, but succeed better when grown in a shallow layer, if the roots have room to spread near the surface; therefore, when planted in large pots, one-half the depth or more ought to be potsherds, or some similar porous material. Mr. Lowe has got a plant of Franciscea hydrangeiformis, a new species that has not yet flowered; also Gardenia Sherbournia, and a new kind of Stephanotus, bearing great resemblance to S. floribundus, but apparently slightly different in foliage: it has not yet produced blossoms. Two or three plants of Wistaria chinensis, which have been planted in the open ground for the purpose of propagation by layers, are flowering with great freedom, and are particularly attractive, notwithstanding the usual pendent position of the racemes. These fully testify the perfect hardiness of the species, as they have received no protection whatever. Vinca herbacea, a useful plant for rockwork, is trailing over a pile of stones at the end of one of the conservatories, and displaying its pretty blue blossoms.—*Q.*

Miscellaneous.

Potato Moulding.—A few years since, I stated the results of experiments I had then for several years made, in order to ascertain the utility or otherwise of the system so universally practised of moulding Potatoes; and if I was then partly convinced of the inutility, if not injury, of moulding, that conviction is now fully confirmed, after ten years' experience on a soil of mediocrity, neither wet nor dry, rich nor poor. I then stated to this effect:—"I am at a loss to know, why ridge up the rows like the roof of a building, the leaves acting as tiles, assisting to throw the genial summer showers off into the furrows, where it cannot benefit the plants, being below the spongioles, or roots?" Piling up the earth thus, causing the production of other roots, and throwing those already formed below out of office, and thereby unnecessarily exhausting the plants, much time is thus lost, and Nature plainly indicates the error of very deep planting or moulding, which, together with hoeing, is generally left so long that many of the tender succulent roots are broken, to the serious injury of the crop. Thus, in the culture of this most essential root, the result of my experience induces me to conclude the moulding a loss of time, and a decided injury to the crop, which to the poor man, for whose benefit principally I write, certainly is an object. I leave the land level, allowing the roots to extend on all sides within the influence of sun and air. I plant the tubers whole, a little deeper than is generally done, forking the soil for a time (the spade being improper for that purpose), and the weeds of course are kept down.—*Wm. Godsall, in the Hereford Times.*

Grafting Coniferous Plants.—The proper time for grafting these is when the young shoots have made about three-fourths of their length, and are still so herbaceous as to break like a shoot of Asparagus. The shoot of the stock is then broken off about 2 inches under its terminating bud; the leaves are stripped off from 20 to 24 lines down from the extremity; leaving, however, two pairs of leaves opposite, and close to the section of fracture, which leaves are of great importance. The shoot is then split with a very thin knife, between the two pairs of leaves, and to the depth of 2 inches; the scion is then prepared; the lower part being stripped of its leaves to the length of 2 inches, is cut, and inserted in the usual manner of cleft-grafting. They may be grafted, also, in the lateral manner. The graft is tied with a slip of woollen, and a cap of paper is put over the whole, to protect it from the sun and rain. At the end of 15 days this cap is removed, and the ligature at the end of a month; at that time, also, the two pairs of leaves, which have served as nurses, are removed. The scions of those sorts of Pines which make two growths in a season, or, as the technical phrase is, have a second sap, produce a shoot of 5 or 6 inches the first year; but those of only one sap, as the Corsican Pine, Weymouth Pine, &c., merely ripen the wood grown before grafting, and form a strong terminating bud, which in the following year produces a shoot of 15 inches or 2 feet in length.—*Loudon's Arboretum Britannicum, vol. iv., p. 2130.*

Peas.—Mr. Shilling has sent us specimens of his New Early Grotto Pea, which were gathered on the 20th ult. He states that these were produced from seed sown in the open ground on the 25th of last November. Judging from the specimens sent, this is a fine large, good-looking Pea, and will, no doubt, be found to be a very useful early variety.

The Late Mr. Loudon.—George Charlwood, Esq., of Covent Garden, London, has offered as a prize, at the forthcoming Grand Horticultural Exhibition, to be held at Bromley, Kent, a copy of the late Mr. Loudon's celebrated botanical work, the "Arboretum Britannicum," value ten pounds, for the best collection of plants that may be there exhibited. We are glad to see that a beginning has been made in offering Mr. Loudon's works as prizes for competition at botanical exhibitions. It is a plan of aiding the subscription for the assistance of the late estimable Mr. Loudon's family, that has often been urged on the attention of Floral Societies, but hitherto they have been heedless of all appeals of this sort. Better things might have been expected from persons pretending to have a love of gardening, and to be actuated by the feelings of benevolence which the beauties of Floral Nature are capable of inspiring in well-regulated minds. It is a sordid and debasing craving for "gold and silver medals" that has hitherto prevented this plan from being generally adopted, to a certain extent, in all Floral Societies; but it is to be hoped committees of management (who ought to be above such avaricious considerations) will at once act in the matter without reference to the wishes of (mercenary) exhibitors. What can be considered so honourable as to win a prize of one of Mr. Loudon's works offered under the circumstances of providing a competence for the independence of that lamented gentleman's bereaved family? Not any "gold or silver medal," we are certain, by any person who has a true love of the elevating and humanising science of flower cultivation! Mr. Loudon was the "gardener's friend" in the true and best sense of the term, and his memory has a claim on their regard which cannot be unheeded by those who have any perception of their duty, and principle to perform it. If every Floral Society were to offer, according to their pecuniary means, but one of Mr. Loudon's publications as a prize for competition during the present season, the object of his friends in making an effort to dispose of his publications for the purpose of supplying a competence for the support of his amiable widow and only daughter, would be effectually accomplished, and an obvious duty would be honourably performed. We hope the Societies in this district will adopt the plan suggested, and will have great competition for the prize they offer, or we shall be half ashamed of their principles and notions as regards the true value of a botanical prize. The subject, we are sure, only wants broaching at Floral Meetings to be instantly acted upon, and accompanied with complete success.—*Newcastle Advertiser.*

Climate of New Holland.

Meteorological Observations made at Port Arthur, during the year 1843. By T. Lempriere, D.A.C.G.

Months.	Barometer.			Thermometer.						Pluviometer.
				Attached.			External.			
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	
Jan	30.280	29.234	29 792	76.2	54	62.7	82	50	63 6	2.87
Feb.	30.362	29.350	30·008	78	55	64.2	85	53.5	66.5	0.28
March .	30.320	29.118	30·027	69.5	51	60.7	77.8	49.5	62.1	0.09
April ..	30.270	29.240	29 793	61	47	54	71.5	44.2	54.8	3.81
May ...	30.300	29.280	29.712	64	41	51.4	71 5	39	51.9	5.87
June ..	30.300	28.918	29 716	69	38	47.2	69.5	35.5	48.4	3.15
July ...	30.260	29.060	29.697	56	40	47.4	62	39	47.6	2.74
August.	30.268	29.184	29.281	56	40.2	47.8	65	35	49.4	4.81
Sept. ..	30.160	29.150	29 694	62	46.8	54.5	72	40	54.7	1.12
October	30.050	29.050	29.565	62	44	52	74	41.5	54.1	4.02
Nov. ..	30.060	29.124	29.641	71.5	41.5	56	78.5	45 5	60.2	3.70
Dec. ..	30.194	29.420	29.872	76.5	53	61.8	79 5	48.5	62.3	0.12
For the Year..	30.320	28.918	29.756	78.5	38	55.3	85	35	56.3	32.56

Latitude of Port Arthur, 43° 9′ 6″ S. Longitude, 167° 51′ 33″ E.

Height of Instruments above the Sea:—Barometer and Thermometer, 65 ft. 5 inches. Pluviometer, 3 ft.

First Swallow seen, 5th Sept. Hailstones 2-3 m. in duration, 7th Oct. First Bees swarmed, 17th Nov.

—*From the Tasmanian Journal.*

Orchidaceæ of New Zealand.—As but little is yet known of the Flora of New Zealand, such examples of its vegetation as have been brought to England being, for the most part, of the plants of the Northern island, gathered at the River Thames, and at the Bay of Islands, and adjacent country, in the parallel of 35 deg., we cannot say to what extent Orchidaceous Epiphytes may be distributed on those islands, for absolutely nothing is known of the vegetation of the middle or larger one, beyond what was observed at Dusky Bay, on its west coast, and Queen Charlotte's Sound, at its northern extremity, in the voyages of Cook and Vancouver; but as the Epidendrum autumnale of Forster, which was originally discovered at Dusky Bay in 45½ lat., is also abundant in humid woods at the Bay of Islands in 35 deg., it is fair to conclude that the intermediate country, stretching through 11 deg. of latitude, is not wanting in other species. I myself, however, met with no other than the plant just named: but it appears, from the report of the Botanical part of the collections formed during the voyage of L'Astrolabe, that Captain D. D'Urville found at a port in New Zealand, to which he has attached the name of the corvette he commanded, Dendrobium biflorum, a plant at that period (1827) only known to exist on the Society group. Besides the two terrestrial plants found by Forster in New Zealand, my visit to the Northern Island in 1826 brought to light other two plants, of most remarkable Port Jackson genera of Mr. Brown, viz., Pterostylis and Acianthus; and to these the French navigator, D'Urville, has added a fifth, a Diuris, which, however, appears a doubtful species; and as the Work in which it has been published is not free from errors, it may be doubted whether it is indigenous to New Zealand at all, as no particular locality is mentioned. The following is an enumeration of the species thus made known to us:—

1. Thelymitra Forsteri, in dry, open Fern-grounds, Bay of Islands, Wangaroa, &c.; flowering in spring (Sept. and Oct.).—2. Diuris Novæ Zealandiæ.—3. Microtis Forsteri. In the open timberless tracts, among Fern, Bay of Islands, &c.—4. Acianthus rivularis. In the rocky bed of a rivulet, in a ravine, in the vicinity of Wangaroa Harbour, North Island, on the eastern coast 1826 (flowering in November).—5. Pterostylis Banksii, on the soft alluvial banks of the Kawa-kawa River, Bay of Islands, 1826.

—*Allan Cunningham.* (Extract from an unpublished Letter).

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Stove-plants now require large portions of air, plenty of room, and as much light as the house will admit, in order to ripen their growth properly. Woody plants and large specimens should not be shaded, if possible; but all the young stock may have some light shading thrown over the glass in the middle of the day, when the sun is strong. Keep the temperature moist, and see that none of the plants suffer from the want of water.

Conservatory.—There are so many plants, and tribes of plants, for keeping the Conservatory gay in summer, that I am at a loss to say which are the best, or what to recommend, except in a general way. I am now visiting the great collections in and near London, and whatever appears to me to be useful information about conservatory plants, I shall mention it in future Calendars. The summer treatment of the Conservatory is so uniform, that I shall have more room for notices of this kind. The grand points to be observed are, never to let the air get very dry, if possible, all the summer; to keep the house as cool as the weather will allow, and to let the plants never be crowded together.

Greenhouse.—A mixed greenhouse is an indifferent place for ripening off the growths of Camellias and Chinese Azaleas, two tribes, whose flowering next year depends on the treatment they receive at this time. Close pits shaded in the middle of the day, and kept moderately moist, suit them best; but large specimens cannot find head-room in these pits; and when these are brought into vineries, or other large houses, where they stand far from the glass, they are better without any shade over them. The greenhouse also requires to be kept moist and cool at night through the summer.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.—Where the planting out of half-hardy plants is completed, the business of the Flower Garden for some time to come will, in a great measure, be merely routine; such as hoeing and raking, tying out and pegging down, removing dead flowers, and keeping everything and every place as it ought to be, clean, neat, and tidy; therefore, lengthened weekly remarks will be unnecessary. Under the protection of a mulching of short Grass, stick a few branches thinly in the beds, and place an inverted pot over the most tender plants; my plants are progressing, though it is certainly but very slowly. The morning of the 18th of May, 1844, will long be remembered by gardeners as one of the most severe on record at that season of the year; at half-past 3 A.M., the plants here were speckled with hoar frost, and the thermometer indicated nearly 0° of frost. The young growths on some of the trees are killed, especially in exposed situations, and most assuredly the greater part of my bedding out plants would have been numbered "among the things that were," had they not fortunately been covered up. Newly-planted things, especially where not mulched, will require strict attention as to watering; and where the planting out is not completed, proceed with it as fast as possible, as I find the plants are making root, and therefore will be ready when the rain falls. Where they are admired late in the season, a few more Annuals may be sown for late blooming, and a few may also be kept in pots as "stop-gaps" in case of need.

American Garden.—Remove the flowers and seed-pods as fast as they get shabby, which will add materially to the strength of the plants. Give the beds a good flooding of water, if, unlike my friend R. F. below, you can afford to be so liberal. The pegging or tying out of the plants should be no longer delayed.

Reserve Garden.—Double Wallflowers, Mule Pinks, and some common Dianthuses, Allysums, Phloxes, Perennial Iberises, and many kinds of dwarf Cistus and Helianthemums may be propagated under hand-glasses in a shaded situation, and will be found very useful next spring.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Keep free from weeds; occasionally watering and stirring the surface. Offsets may be taken off if rooted; place them round the side of the pots, in compost before recommended. *Polyanthuses.*—Where the seed-vessels are swelled, should any decayed floret remain, they must be removed, as they are liable to retain moisture to the detriment of the seed. *Tulips.*—Remove the awning and let the flowers have all the weather; where seed is not required, break off the capsules. Do not neglect the beds because their beauty is over, but remove all weeds as they appear. *Ranunculuses.*—After a shower water between the rows with liquid manure, or with Potter's liquid guano. Do not wet the foliage. *Carnations.*—Unless Carnations are carefully tied, the wind will break or twist off the shoots; worsted is the best material to fasten with. As laterals are thrown out from the sides they may be pinched off in order to strengthen the other flowers. *Pinks.*—Prepare a bed in a shady situation, composed of sandy-peat and leaf-soil, equal parts; cuttings or pipings may be put in under hand-glasses as soon as the Grass is sufficiently firm. *Dahlias.*—Let the stakes be put to the plants as soon as convenient; when delayed much longer the root is often injured by the insertion.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Now is a good time to go through the whole stock of succession Pine plants, beginning with the largest sized. Let them be taken out of the pit without tying the leaves, (which often does more harm than good,) and the roots examined in rotation, to see if they require shifting. Many of them will be for fruiting in the winter or early spring; these, if the roots are plentiful and strong, should now have their final shift. Follow with the smaller plants, putting them into larger or smaller pots according to their vigour. Some of the old tan will probably require replacing with fresh; but it is requisite to use caution as to the depth of fresh tan at this season, for fear of overheating. If the heat of the old bed is not much below 95°, it will be sufficient to turn it over to the depth of two or three feet. In replacing the plants, observe to keep those most likely to fruit in the autumn by themselves as much as possible, in order that they may be removed without disarranging the whole pit. The plants should now be allowed plenty of room, that they may not be drawn up by one another.

Vineries.—The houses in which Grapes are ripening should be kept at 70° or 75°, with sun, and if allowed to cool down to 70°, or even to 65° by night, so much the better, as it will be more in accordance with what takes place where Grapes ripen well in the natural atmosphere. On nights following clear sunny days no fire will be necessary in any of the vineries. I trust it will not be considered presumption to again caution my brother-gardeners to avoid over-cropping their Vines. I have lately seen one instance of the bad effects resulting from this worst of all mistakes in the management of the Vine. Continue to keep the roots of the Vines now ripening their crops warm by mulching and sprinkling, or, if necessary, renewing the litter on the borders.

Peach-house.—The standard trees in pots that have ripened their fruit should be kept in the house till the beginning of June at least, to finish their growth. Give them plenty of water, and syringe once a day. Should cold cloudy days occur, it would be an advantage to fruit now ripening if a little fire was made in the day-time, and some air given at the back ventilators.

Fig-house.—Let Figs have plenty of air during the day in fine weather, with abundance of water, and, except where fruit is ripening, use the syringe freely.

Cherries.—Spare lights placed now over any Mayduke Cherry-trees against walls in favourable aspects would forward the crop very much, without further trouble than drawing the lights a little apart during sunshine, and pushing them close and closing the ends with canvass during the night.

Melons.—This season has been remarkably favourable for early Melons, and with many these will be ripened and the crop gathered in time to admit of a second set of plants being turned out in the same pit. This is much preferable to obtaining a second crop from the same plants; besides these may be better flavoured kinds than those generally planted for an early crop. they will succeed if planted at any time before the middle of June.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Peach-trees.—Examine those that suffered from frost last season, and carefully remove every piece of gum and canker with a sharp knife. Prevent all colonising attempts of the green-fly, and see that the roots are not suffering from want of moisture, or much mischief will be produced by a wet autumn. *Cherry-trees.*—Destroy caterpillars and black-fly by squeezing them, and afterwards give a forcible washing to the trees with clear lime-water, or a decoction of the superabundant shoots of those stone fruit-trees which contain Prussic acid, taking care, however, that the decoction is not too strong. *Raspberries.*—After trying many methods of training, I find no system so profitable as keeping the bearing-shoots at a regular distance from each other in a straight row, and tying them to two slight rails. Whatever system of training is adopted, no time should now be lost in removing all those young shoots that will not be required for bearing wood next season.

Celery.—Plant out the first crop, if not already done. If the plants have been pricked out, as recommended, they will require little shading, and no mutilation of their leaves. If, however, you have made your beds or trenches some time since, and have sown the ridges with Peas, the Celery will thrive all the better in consequence. This will be more observable if we have a dry summer. A little guano or superphosphate of lime will cause it to grow more rampant; but to obtain at an early period large and, at the same time, sweet-flavoured heads of Celery, nothing is preferable to a good coating of old hotbed-dung, or rotted tree-leaves. Plant out *Cauliflower*, *Lettuce*, and *Onions*, *Tomatoes* and *Capsicums*, in favourable situations; and *French Beans* that have been forwarded in pots. Sow Turnips, Radishes, Spinach, Peas, Beans, Cauliflowers, Carrots for pulling young, and Onions for salads. Be guided by no kind of directions which advise having two or three crops in a season; but sow and plant often, and but little at a time, if you wish to have a constant supply, no waste, and to hear of no murmurings loud and long from the inmates of the kitchen. *Routine.*—Stake Peas, earth up Potatoes, thin Carrots, and other spring-sown crops; finish the nailing of Figs, regulate the summer shoots of Vines; and, if favourably situated for ripening fruit, train them on the one rod, or rather the long rod system.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—If it is desirable to manage these well, they should frequently be gone over by a skilful person. Attend to the well-doing and growth of young plants and trees, and see that they are not injured by the overgrowth of other stuff. The commencement of the growing season is the most important time for such work; for to prevent injury is better than cure.

Coppice.—The above observations are as applicable to coppice as to old woods; for spring and summer management is attended with better results, than any winter treatment.

Young Plantations.—Do not neglect to mark the Larch-trees that bear red-flowered cones, which should be left as permanent trees. Attend to the summer-training of young trees and plants, keep down luxuriant weeds, fern, and overgrowth of briers, &c.; cutting off Thistles and Fern when young weakens them greatly, and not unfrequently kills them altogether. The present time is, therefore, the most suitable season for such work. Do not allow any injury to be done through neglect.

Hedge-row Trees should be frequently examined, to see if all is right.

Nursery Work.—Attention to watering, shading, &c., is still necessary. It has been an easy matter to keep down weeds this season. The spring and summer-training of young growing trees and plants must be regularly attended to, where quick and handsome growth is wanted.—*W. R.*

State of the Weather near London for the week ending May 18, 1844, as observed at the Horticultural Garden, Chiswick

May	Moon's Age.	Barometer Max	Barometer Min.	Thermometer. Max.	Thermometer. Min.	Mean.	Wind	Rain.
Fri. 17	●	29.964	29.890	59	32	45.5	N.E.	.01
Sat. 18	1	29 909	29.927	54	44	49 0	N.E.	.02
Sun. 19	2	29.997	29.956	60	43	51.5	N.E.	
Mon. 20	3	30.026	29.994	63	46	54.5	N.E.	
Tues. 21	4	29.994	29.956	66	46	56.0	N.E.	.02
Wed. 22	5	30.104	30.142	67	46	56.5	N.E.	
Thurs. 23	6	30.136	30.096	70	48	59 5	N.E.	
Average		30.054	29 977	63 1	46 0	54 1		.05

May 17 Light clouds; windy, with slight showers; clear and cold.
— 18 Slight frost, with cold N.E. wind; boisterous, with slight showers; clear and cold.
— 19 Boisterous, dry, cold wind; dusky clouds, with clear intervals.
— 20 Dry and cold throughout; overcast.
— 21 Drizzly; overcast and fine; uniformly overcast at night.
— 22 Dry haze; very fine, overcast with slight haze.
— 23 Cold haze; cloudy and cold; clear at night.

Mean temperature of the week, 3.7 deg. below the average.

ERRATA.—In last week's Table, the Max. of Barom on the 11th should be 30.060, instead of 35.060, and on the 13th, 30.268, instead of 30.268.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending June 1, 1844.

May	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 26	67.1	44.0	55.5	6	0.22 in.	1	7	3	1	2	2	—	—
Mon. 27	68.9	48.7	57.3	9	0.44	1	6	4	1	2	1	1	—
Tues. 28	69 7	45 4	57 0	5	0.30	—	4	1	3	4	2	—	—
Wed. 29	68.4	45.7	57 0	7	0 97	1	6	1	3	4	3	—	—
Thur. 30	67.8	46.3	57.1	6	0.32	1	4	—	2	6	2	1	—
Fri. 31	69.1	47.4	58.2	7	0.38	—	5	1	—	3	4	4	1
Sat. 1	69.9	47.5	58.7	10	0.27	2	—	—	2	5	—	3	—

* The highest temperature during the above period occurred on the 27th, 1841—therm. 88°; and the lowest on the 30th, 1836—therm. 33°.

Notices to Correspondents.

MR. PAXTON'S COTTAGER'S CALENDAR.—At the earnest solicitation of many of our Subscribers, we have determined on again reprinting Mr. Paxton's "Cottager's Calendar," in the form of a small volume, for general distribution, price 3*d.* each copy. It may be ordered of all booksellers. Gentlemen wishing to *distribute copies* among their cottage tenantry, may have them *delivered in any part of London*, by remitting a post-office order to this office, at the rate of 4*s.* for every 25 copies.

ANGELICA.—*Q.*—This is a well-known old-fashioned kitchen-garden plant, and what you have appears to be it. It has gone out of general cultivation because other plants are more agreeable to the taste. Besides, it occupies too much space in proportion to its produce. It is, however, still found occasionally in gardens.

BOOKS.—*A Reader.*—Sweet's "Hothouse and Greenhouse Cultivator."——*Ag.*—Knight's "Physiological Papers," a most valuable work, may be had of all booksellers.——*R. S.*—Hooker's "British Flora," Babington's "Manual of British Botany," or Lindley's "Synopsis;" any of these will do.‡——*A Constant Reader.*—The Dean of Manchester has for some time been engaged in examining Iridaceous Plants; but we do not know what his intentions are. The best enumeration of them is in Romer's and Schultes's "Systema Vegetabilium," and a very bad one it is.

CONIFERÆ.—*A Lady.*—Your Stocks are quite old enough for grafting: for the mode of performing the operation see p. 339, of to-day's Paper. ‡

CONSERVATORY PLANTS.—*W. P.*—Good plants for turning out into the beds of a Conservatory are Templetonia glauca, Luculia gratissima, Eutaxia myrtifolia, Pimelea spectabilis, Chorozema varium, Brugmansia sanguinea, Crowea saligna, Cytisus racemosus, Hovea Celsi, together with Camellias, and the different kinds of Acacia, &c. ‡

DAHLIAS.—ΦΙΛΕΑ.—Keyne's Standard of Perfection, Lady St. Maur, Lady Antrobus, Proctor's Nonpareil, Essex Bride, Bourne's Model, Sparey's Aurantia, Brown's Raphael and Rembrandt, and Bushell's Emma.*

DOUBLE TULIP.—*G. L.*—This will make a very pretty border variety; it is cleanly broken, but there is a variety in cultivation similar to it.*

FUCHSIAS.—*B—g.*—*Venus Victrix*, and *Smith's Queen Victoria*, are the only two Fuchsias we remember, that agree with *your* description.*

GRAPES.—*Mrdiensis.*—By Muscats, according to general acceptation in this country, are understood the White Muscat of Alexandria, and the Red Muscat of Alexandria; the latter is, however, rarely seen. The Royal Muscadine is considered the type of those Grapes to which the term Muscadine is applied. Muscadelles or Muscatelles are names applied to Grapes with obovate berries, imported from Malaga, &c., in the state of Raisins. The Frontignan varieties are sometimes included among the Muscats; but they are better known as Frontignans in this country.‖

HEATING.—*Beginner.*—A very small boiler and pipes will be better than flues for your diminutive greenhouse, but more expensive. Always use four-inch pipes if you can afford them; but it would be quite sufficient to set such a thing as Stephenson's stove inside the house, without any pipes at all. ——*A Subscriber.*—In a very small greenhouse the most economical heating apparatus is a small Stephenson's copper boiler.——*H. T.*—We do not conceive that an Orchidaceous house could be advantageously constructed with Whitneyed calico. It would admit light enough, but it would, we fear, be too cold in winter. For heating, use both a tank for bottom heat and piping for air heat. The smallest boilers that are sold will do.——*J. W. S.*—There is no way of destroying Bindweed except that which you have pursued. If you wage *incessant* war with the leaves, the roots *must* die.

INSECTS.—*W. W.*—The weevil infesting your Pine-trees is the Curculio Pini of Linnæus. It is not uncommon in Fir plantations, especially in Scotland. We should feel obliged by the transmission of a small twig with the buds eaten out as you represent, which would enable us to give the history of this insect. Are not the maggots in the buds? Hand-picking is the only means of reducing its numbers, for it clings so fast that shaking the branches will not dislodge the beetles, it is feared; the best period, probably, to search for them would be by night. *R.*——*B. Chilo's* insect is the caterpillar of the Lackey Moth (Clisiocampa neustria), whose history was given in last year's *Gardeners' Chronicle*, p. 244, and the larva of a lady-bird. We shall be happy to receive any specimens, and to return the names. You are quite correct regarding the rarities which your neighbourhood produces in Natural History. *R.*——*Aliquis.*—Your caterpillar appears to be the larva of Bombyx Caja, the garden tiger-moth. *R.*——*Kilmarnock.*—The contents of your letter being unprotected, and squeezed perfectly flat, it is impossible to tell you the name or give you any information. *R.*——*F. H. Sankey.*—Your beautiful Oak-galls are the production of a Cynips, whose specific name I am unable to ascertain with certainty. If it be not the C. Quercus pedunculi, I will inform you on my return to town. *R.*——*J. L. Hendon.*—You are right regarding the root-galls of the Elm; they are the work of an insect called Cynips aptera, figured and described in the 1st vol. of this Journal, p. 732.——*W. Martin.*—From your description, it appears to be the caterpillar of the goat-moth (Cossus ligniperda). In vol. 2, fol. and pl. 60, of Curtis's Brit. Ent., you will find its history and coloured figures. *R.*——*A Beginner* must persevere in hand-picking, if he wishes to save his Gooseberries, and he may try the effect of dusting the bushes with Hellebore powder early in the morning. Other effectual means of preventing the ravages occasioned by Nematus trimaculatus were published in vol. 1, p. 548, of this Journal, where its history was illustrated. *R.*

MANURE.—*Beginner.*—Apply liquid manure to plants in pots by pouring it on the soil when it is damp. Soapsuds require no dilution; but it is better to mix them with urine, letting the whole ferment before being employed.——*A. B.*—Water your Vines in pots with any sort of liquid manure, made by bruising sheep's-dung or guano, or any such substances in water, and allowing the fluid to become clear. The stronger it is the less you need use. Weak and often is the best way of using it. Nothing is better for Celery than good rotten dung. You will find directions for killing woodlice in many previous papers.——*E. R.*—If your manure contained ammonia, as it ought, lime should on no account have been added to it; for the latter expels the former. Lime your garden in the autumn, and apply manure in the spring. ——*A Regular Subscriber.*—We should take a good handful of Potter's guano and strew it over the ground where the roots of the Rose are, and then turn it in with a fork.

NAMES OF PLANTS.—*A Reader.*—We cannot undertake to name Cryptogamic plants, except when they relate to points of cultivation.‡——*M. J. B.*—Bravoa geminiflora.—*Aliquis.*—Irises cannot be named from the roots and leaves alone.——*Zeta.*—All the Lupines are little varieties of L. polyphyllus, of no importance.——*A Devonian.*—The Acacia is determined to be a broad-leaved variety of A. verticillata.——*W. Gardner.*—It is really quite out of the question that we should sit down to name heaps of wild plants. We must beg you to excuse us.——*A. W.*—We can very ill spare the time required in determining dried specimens; but will endeavour to give you an answer next week.——*J. W.*—Cineraria campestris. Your White Veronica Chamædrys must be very pretty.——*W. Mc L.* Ruscus androgynus.——*A. G.*—Acacia juniperina (?)——*B. T. S.*—1, Melittis Melissophyllum; 2, the purple variety of it, Mycenotis versicolor; Euphorbia Paralias.—*J. B.*—Cristata varietates.——*Devonshire.*—Thanks.——*Pinifolia*, Thanks.——*S. T. G.*—Quinces are a great rarity. You must apply to the bookseller, if you undertake such commissions.——*S.*—Lathyrus pubescens, and some Echium. Viscaria oculata is from 1½ ft. to 2 ft. high. We do not know whether it will bear pegging down.——*C. P. T.*—The Sea Anemone is not a flower, but an animal—a Polype of the genus Actinia.—*Rurum.*—Very much crushed; it is hard to say: it looks like a double red *Lychnis dioica*. ——*A. K.*—A male flower of some gourd. We have no other experience of Humphreys's Compound further than that it is an extremely powerful agent, and requires to be used with great caution, or it kills plants.

PASSIONFLOWERS.—*Z. Q. Q.*—We presume that the reason why your fine healthy free-flowering specimens do not fruit is that their flowers require *setting*. There seems to be no other cause. Potter's liquid guano is highly spoken of, but we have not as yet, ourselves, any positive experience about it.

PELARGONIUMS.—*J. L. Hendon.*—It is impossible to account for such sports as you have sent a specimen of; what you call the defective flower is most probably one of the parents of the variety from which the flowers were cut.*

RHODODENDRONS.—*L. B. R.*—The seeds of these should be sown thinly upon the surface, the soil being previously watered. After sowing, press the seeds down gently to imbed them in the surface, and sprinkle a very little white sand over them, not with the view of covering the seeds, but to make a firmer surface, which future watering will not so easily disturb, and which will, in a great measure, prevent dampness. As a further precaution against damp, keep a pot-ful of sand over a hot flue or pipe, and as soon as the young plants make their appearance sprinkle a little warm sand in among them occasionally whenever they show any indications of dampness. If you will follow this plan you will very likely meet with success. The cause of your seeds not germinating is probably owing to their being covered too deep. ‡

WHITNEY'S COMPOSITION.—*A Beginner.*—The material you sent will do to grow Melons and Cucumbers under; but it will be cheaper to employ calico of a closer texture, as in that case less of the composition will be required to render it waterproof.‡

MISCELLANEOUS.—A subscriber had better change his bookbinder; there is plenty of margin for a *good* binder.——*W. Mc L.*—The story in Darwin about the Upas tree is a romance. The tree is very poisonous certainly, but like the Artocarpeous plants, to which it is related.——*J. H.*—Keep your young Date plant in a hothouse, with a bottom heat of 80°, and it will grow fast. It never fruited in this country. ——*A Subscriber.*—We do not know where the Pelargonium seed is to be had.——*Tyro.*—The Dates sold in shops are the fruit of Phœnix dactylifera.‡——*R. P. L.*—A Pansy-flower like the one you have sent, to ascertain its name, is not worth growing.*——*Erica.*—We are not aware that any Society in London awards a prize for a collection of wild flowers, painted from nature.

SEEDLING FLORISTS' FLOWERS.

CALCEOLARIAS.—*A. Z.*—Your seedling is a very pretty spotted variety, but we have already several in the same way.*——*B.*—Nos. 1, 2, and 4 are good Selfs—large and well formed; 3, white ground with maroon blotch, leaving off abruptly, is a good and showy variety; 5, very large, but deficient in form; 6, a very good mottled flower, in the way of Lady Constable.*——*L. and M.*—No. 1 is a large, brilliant, and very handsome flower, the best of its kind we have seen. No. 2 is singularly marked, but the irregularity at the bottom of the flower is too great.*——*C. L. and S.*—There are two flowers with No. 5 attached, one with brown blotches upon a yellow ground, the other dots and blotches upon a light buff ground; the former is the better flower of the two; 3, buff ground, with dark maroon blotches, decidedly worth keeping; 2 and 6 are too small; 4 and 7 are varieties similar to sorts raised some years since.*——*R. C.*—Your three seedlings are extremely good varieties—good in form and fine in texture, and having the large blotch in front of the flower very decided; they will be very attractive when grown as specimen plants.* ——*R. G.*—Spotted varieties are now very common, so that unless the spots are large or peculiar in form or colour, they are not objects of attraction; your kinds are very common.* ——*An Old Subscriber.*—Your seedling, the *Wonder of the World*, too much resembles Lady Constable, nor is it so large as many specimens we have seen of that favourite variety.* ——*Hector.*—No. 3 is a very common flower; 1, 2, and 4 are varieties better worth preserving; 2 is a fine form, but the spot softens off too much; the spotted kinds are both good, but not uncommon.*——*Anon.*—Your spotted seedling is too small.*——*J. M. H.*—The best seedlings in your collection are Nos. 3, 5, 10, 12, 14; the colours are clearer, and the form. of the flowers superior to the others. The five mentioned are very pleasing varieties.*——*P. K.*—Nos. 1, 2, and 3 are your best seedlings with the dark Self; the other varieties are common. They are very small compared to those we are in the habit of seeing.*——*D. B.*—There is too great a similarity in your seedlings, and generally they are not of a good form. No. 7 is the best, but we have seen many like it. They are not equal to the present race of Calceolarias.*——*H. T.*—45 and 46 are your best seedlings; 44 is showy, but not a good form; 43 wants size; 47, bad form; 48, very pretty, but not uncommon.*

CINERARIAS.—*J. M. H.*—No. 1 is the prettiest and most novel of your seedlings, and the best-formed flower; 3 we already possess, with much larger blossoms; 2 and 4 are very common.*

FUCHSIAS.—*Testis.*—There is nothing uncommon in your Seedling No. 30, and the corolla wants colour and substance.*——*J. M. H.*—Your seedling is a very stout flower with good foliage; the sepals are rather coarse. It is of medium quality, being inferior to our best varieties, and superior to many now cultivated; much depends upon its habit.*——*M. D. T.* —Cuttings taken from a branch bearing double flowers, will most probably make your variety permanent. It does not bear comparison with a single flower; the sepals and corolla are very feeble.*

PANSIES.—*R. P. L.*—Your seedlings were in a very dried state when they arrived; the lighter variety is the better of the two; they are rather small and deficient in substance.*

PELARGONIUMS.—*J. S.*—Your seedling is large, but it possesses none of the properties of a fine flower.*——*A Devonian.*—None of your seedlings can be considered improvements upon the varieties already in cultivation; they all appear to lose their proper form when fully expanded. In No. 1 the three lower petals are good, but the upper ones are crumpled and too high. In No. 2, which is very showy, the top petals are too high, and the lower ones narrow, and with a disposition to curl back; 3 is very common; 4 is pretty, but out of form when fully open; 5 is very pretty, but requiring broader under petals; 6 wants form.*——*A Young Beginner.*—The petals of your flower are all too long, and they are also so deficient in substance that the flower cannot retain its form when fully expanded; the spot is bad, being composed too much of lines.*——*J. S.*—"Helen" is an improvement upon the flower previously sent; the under petals are delicate in colour, and well formed; there are too many lines in the upper petals, and the flower altogether is deficient in substance.

PETUNIAS.—*B. B.*—Your lilac variety with green centre is very pretty, and decidedly the better flower of the two; it is well formed, and the surface smooth, and even the lighter variety is not uncommon.*

*** As usual, many communications have been received too late.

YORKSHIRE LAND-DRAINING ASSOCIATION. Capital, 200,000*l.*, in Stock of 25*l.* Deposit 1*l.* per Share.—The Provisional Committee have determined to limit the time for receiving Applications for Stock in this Association to THURSDAY, the 30th instant, on which day the List will be closed, preparatory to the Allotment being made. Prospectuses may be obtained from the Solicitors, Messrs. Blanchard, Richardson, and Gutch, York; or from the Secretary, J. H. CHARGROVE, Wakefield.—May 16, 1844.

CLEAR WHITE GLASS MILK-PANS.

APSLEY PELLATT, FALCON GLASS WORKS, Holland-street, Blackfriars-road, having made further experiments, is able to reduce the price of the Milk-Pans—as described in the *Gardeners' Chronicle*, of clear white flint glass, which is far superior to the foreign green glass—to 5*s.* 6*d.* each, or 3*l.* per dozen.

The Agricultural Gazette.

SATURDAY, MAY 25, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, May 29 Agricultural Society of England.
Thursday, May 30 Agricultural Imp. Soc. of Ireland.
Wednesday, June 5 Agricultural Society of England.
Thursday, June 6 Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

May 27 { Chepstow. Woolcot. Fairford.
May 28 Rayleigh.
May 30 Richmondshire.
May 31 { Stoke Ferry. Hadleigh. Wrentham. Debenham.
June 1 Collumpton.
June 3 { West Hereford. W. Market. Oxford.
June 5 Harlestone.

We referred the other week to the meeting which was lately held at Cirencester, for the promotion of AGRICULTURAL EDUCATION. The efforts of the Cirencester Farmers' Club have been directed—most praiseworthily directed—to the attainment of a scientific and practical agricultural education for *farmers' sons*; but we must not forget, when speaking of education for the agricultural classes, that farmers' sons are not the only parties to be referred to: the labourers constitute by far the most numerous portion of those classes, and the education of *their* children is matter of as vast a personal and national importance as is the education of those under whom they are to live.

A difficulty, independently of what arises from the fact that, as soon as they are able, they are required to contribute by their labour to their own support, has often been suggested as existing in the way of educating the children of the labouring classes,—and that is, the absolute necessity which is said to exist for accustoming them to labour at an early age, in order that they may acquire the strength and aptitude for work which it is said those never acquire who do not commence a life of labour till they have grown up. Now, though this remark sounds very ungraciously, there is, we believe, a great deal of truth in it: it must be read, not as if it emanated from a hard master, anxious or at least active to make free labour amount to something as like slavery as may be, but as if it came—for it most consistently might come, from a real friend of the workman—one anxious to enable him to get through the line of life to which he is called with as much ease and happiness to himself as possible. It is understood that this difficulty has been experienced to a considerable extent in many districts of Scotland, which as a whole is certainly a better educated country than most counties of England. The difficulty in these instances has been partially overcome by the parish schoolmaster (every parish there has an endowed school), opening a class for farm-servants in the winter evenings; and this class is generally eagerly attended by them, in order that they may make up previous deficiencies.

It appears, then, that the kind of education wanted for the labouring classes is such as combines the usual elements with that which may fit them for their situation in life; just, in fact, such an education, relatively speaking, as is wanted for the sons of farmers. The complaint on *their* account, as stated at the Cirencester meeting by the Earl of Ducie, is, that though at the present schools they learn, no doubt, much that is useful, yet it is not specially so in reference to the line of life to which they are destined. So with agricultural labourers: they have access, on terms generally within their reach, to schools at which they can learn what is certainly most useful; but they cannot learn there that which is necessary to fit them for their occupation through life.

Now, we have made these observations for the purpose of bringing more prominently under the notice of our readers a system of schools which has been established by a most benevolent landowner in the county of Sussex. In these schools not only is this additional—and, if we may make so humble a use of the term—*professional* education offered, but the labour of the children, as they are acquiring the habit of usefully applying it, is turned to account by the schoolmaster, so that it is made to cheapen—in fact, almost to purchase—the knowledge of the usual elements of education, which, during one-half of school-time, they are being taught. These public institutions thus well earn the title which is given them of "*Self-supporting Industrial* Schools." We cannot do better than quote from an excellent article in the *Sussex Advertiser*, the following account of a visit to the Self-supporting Industrial Schools established at Willingdon and Eastdean, near Eastbourne. The writer first states the principle on which claim is laid to this title, viz.:—"That the industrial occupation of a few hours in the afternoon upon land, will nearly or entirely discharge the cost of the school-tuition of a given number of pupils, and superadd a branch of instruction not less valuable to the scholars.

"The WILLINGDON SELF-SUPPORTING SCHOOL is a neat little cottage building, combining, in a very small compass, the attributes of dwelling-house, school, dairy, cowhouse, with thrashing floor above, and various conveniences attached. The roof is surrounded by gutters, that convey the rain-water into a large tank, so that it is not only not wasted, but prevented from running away on the land. The cow-house, piggeries, &c., are so constructed, that all the liquid manure runs into a large tank, sunk in the ground and carefully covered over, so as to allow no rain or water to enter. Our visit was made at half-past one, in ignorance of the hours of the school, which we afterwards found to be from nine till twelve—the afternoon work commencing at two, and continuing till five. We first entered the cow-house, where we discovered two little fellows about seven years of age, waiting to go to work. Their proper hour was two o'clock, but there they were, spade in hand, ready for their afternoon's work. These children were the picture of strong and ruddy health and of thorough cheerfulness, and certainly quite reversed the usual order of things by the evident alacrity with which they came to their work before their proper time. They were shortly joined by some more playmates, for though it was work, in one sense, it certainly was not in another, and they proceeded in a body and commenced digging on the ground allotted for their afternoon's employment. On questioning them we found that there was only one boy above nine years old, and he was the eldest son of the master. There were about a dozen children in all, and they were chiefly under eight, one even being but four years of age. We were then joined by the master himself, who, after putting his little band to work, readily replied to several inquiries which we put as to the rent he paid, the proceeds of his little farm, and the various circumstances connected with it. He stated his position to be as follows:—He rents five acres of land, for which, including the house, he has paid 25*l.* a-year; and which latter he reckons at 10*l.* He cultivates this land by the help of his little scholars, who barter their labour of three hours in the afternoon for three hours of his instruction in the morning, they paying him in addition one penny a-week. He finds himself able to cultivate these five acres thoroughly, and to a good profit; to prove which, he took us into the school-room, where he produced his accounts for the previous year. He has no other source of income than that which he derives from this and from the weekly pence of his scholars. He is perfectly happy, and is able to earn a good living off these five acres for himself, wife, and children. These are his comforts; and now let us see how his little scholars fare as to their share of the bargain, and whether they get efficient instruction in return for their labour. We examined their writing and their arithmetic books, and we may honestly state that some of their work would shame the attainments of many children of the same age in a much higher walk of life. It seems that these children are rarely with him after 11 or 12 years of age, for they have been so well trained in agricultural matters that they very readily find situations at that age with the farmers in the neighbourhood. They appear fond of their master, and their fondness for their employment is sufficiently evidenced by their alacrity in coming to their work before instead of at the time appointed."

This appears in every respect worthy of being imitated in country districts: and we submit it to the clergymen of rural parishes, that great good might be done by the establishment of such schools in their villages. We need only add, that should any one be anxious to inquire further into this subject, we shall be most happy to put him in the way of gaining every information.

IT has been suggested that our last week's remarks on air as a source of VEGETABLE FOOD are liable to misconstruction by some of our readers. It is unquestionably true, as was then stated, that the greater part of the solid substance of every plant is obtained by the decomposition of carbonic acid, which is taken from the air by means of its leaves, as well as from the soil by its roots. The farmer must not, however, on that account think that scientific men believe his manuring the ground to be of comparatively little importance to the crop he cultivates. If any one should be found wild enough to insist upon this, he might be referred to an overwhelming amount of evidence against him as to *the facts* of the matter; and if scientific men generally thought so, their statements would undoubtedly be unworthy of a moment's consideration from the practical farmer; but no: science acknowledges the benefit of manuring land as much as practice experiences it.

Carbon is not the only component part of vegetables—earthy matters exist in plants; whence, otherwise, do Grass-fed sheep and oxen obtain the substance of their bones? These earthy matters perform a part in the vegetable, doubtless as essential as that which they perform in the animal economy; and if plants are expected to grow vigorously, the food supplied to them must contain all those substances which every part requires. Farmyard manures, guano, &c., contain these substances, and hence their value and influence as fertilisers.

That part of the food of a vegetable which enters at its root from the soil is as essential to the healthy growth of the plant as that which enters it by its leaves from the air.

To continue our remarks on the THE ENTRY CLAUSES OF AGRICULTURAL LEASES:—We promised to consider the subject in connection with the capital required by the farmer. The system advocated in our last article on this subject, was that which renders it the interest of the out-going tenant to preserve the fertility of the land unimpaired up to the termination of his tenancy, by securing for him full and fair value of all his property in the land. Give him full value for his straw and his manure, &c., and he will keep the land in good heart, so as to grow bulky crops. His successor will require, in the long-run, but very little more capital than if he had entered on a farm without being required to pay the tenant anything for what he may have left behind him. In the latter case, knowing that nothing will be received for straw, manure, &c., care will have been taken so to run out the land, as far as the lease would permit, that there is but little produce for the in-coming tenant to receive, and still less is there for him of that staple, or heart in the soil, which is far more easily lost than acquired; for this, too, was converted into marketable produce before the expiration of the lease.

All this has been done by the out-going tenant in perfect justice to himself, but with great injury to his landlord, to his successor, and especially to the nation at large. His land will not attain its standard of fertility for several years, and its owner must consent to a rental, smaller on that account than he would otherwise have received; and the tenant of it must submit to several years of gradual outlay before receiving the profits he has a right to expect from it—the sum he lays out amounts ultimately, probably to more than he would have spent had he handed it over at once to his predecessor for cultivation, &c. in the land, when he entered upon it, and then these years of unprofitable outlay would have been as profitable as any of the years of his tenancy; and the fertility of the land under this faulty system is, as we pointed out in a former article, subject to periodical failures—for four years at the beginning, and for four years at the end of each lease it is only in a half-cultivated state, for during the one period it is emerging from, and in the other sinking into a state of comparative sterility; and unquestionably this is a state of things nationally injurious, converting it into a question of space instead of time; and supposing the average duration of a lease to be 14 years, it is as if 8 out of every 14 acres in the country were but half cultivated.

But to return to the bearings of this subject on the amount of capital required by the farmer, and see what effect the system of paying the out-going tenant a full value for all his produce and cultivation in the land has on the purse of his successor:—

We are happy to publish the following account of an instance which has occurred this spring on a farm situated in one of the western counties of England, in which the arrangements between the outgoing tenant and his successor have been conducted on this principle by their representatives, who are experienced farmers—not professional valuers. The farm consists of 240 acres of arable, and about 30 acres of pasture-land, including roads, buildings, &c. The out-going tenant, as in the case specified some weeks ago by "A Farmer and Land-valuer," left the farm unexpectedly, and it was in the highest possible state of cultivation. The articles in the inventory, as it was put into the hands of the valuers, were classified as follows:—

a. Working cattle, harness, &c.
b. Live-stock.
c. Implements.

A portion of the stock under each of these heads was left to the in-coming tenant, at a valuation, as agreed upon between him and his predecessor.

f. Labour and cultivation of fallows and young Wheat.

g. Manure yarded up, &c.

None of the roots were consumed on the land, or a valuation of the manure left there in that way would have been required also.

f. Such portion of the labour and cultivation of the fallow or green crop of the previous year, as may be supposed to remain in the soil unexhausted, for the benefit of the young grain-crops now on the land. This was put at one-half.

g. The unconsumed portion of the out-going tenant's roots and straw.

The following is the valuation of the articles thus classified :—

		£	s.	d.
a. Working Cattle:—1 riding mare, 4 horses, and harness		86	4	6
b. Live Stock:—118 ewes with lambs, and in lamb; and 1 ram	£			
	205	0	0	
2 Cows	24	0	0	
Sows and pigs, and 1 boar	32	12	0	
Fowls	2	9	0	
		263	0	0
c. Implements, viz.—3 ploughs, 3 carts, water-cart, rollers, harrows, subsoil plough, horse-hoes, sowing machine, potato-washers and steamer, turnip-cutters, cake-crusher, troughs, hurdles, &c., &c.		171	3	6
d. Cultivation of Wheat, fallows, &c.—123 acres of Wheat cultivated as follows :—				
Ploughings, amounting to 109½ acres once ploughed, at 8s.	£	s.	d.	
	43	16	0	
Cultivations, amounting to 98 acres once cultivated, at 1s. 8d.	2	15	0	
Harrowings, amounting to 259 acres once harrowed, at 6d.	11	18	6	
123 acres drilled, at 2s.	12	6	0	
1230 bushels of seed Wheat, at 8s.	70	4	0	
Fallow ploughings, amounting to 124 acres once ploughed, at 8s.	49	12	0	
26½ acres of young Clover, the seed for which cost, as per bills	16	0	0	
		206	11	6
e. Manures:—In heaps in the fields and yards, 2343 cubic yards, at 3s.*	336	9	0	
Dung dropped last year on 30 acres of Clover depastured, and 4 acres of Vetches fed off	36	0	0	
		372	9	0
Half-cultivation of the previous year's green crops:—96 acres of roots, at £5 13s. 2d.		314	12	4
The whole expense of cultivation per acre was estimated as follows :—				
2 ploughings, at 8s.	1	4	0	
2 harrowings, at 6d.	0	2	6	
1 rolling	0	0	6	
Ridging up	0	4	0	
Hoeing	0	1	0	
2 horse-hoeings	0	3	0	
2 hand-hoeings	0	6	0	
30 yards manure, at 3s. 6d.	5	5	0	
	£7	6	4	
g. Straw, roots, &c., left by the outgoing tenant:—				
20 tons of Carrots, at 18s.	26	5	0	
70 tons of Mangold Wurzel, at 10s.	35	0	0	
22 tons of straw, as per lease	25	0	0	
13 tons of straw unconsumed, at 30s.	22	10	0	
		108	15	0
	£1823	16	0	

This, with additions for certain articles of household furniture, &c., was the sum to which the valuation of the inventory amounted. The amount of capital required for the cultivation of this farm will be ascertained by adding to this the sum required for the payment of labour, and for the purchase of additional live-stock and implements.

The following are the particulars of these additional branches of outlay, as estimated by the in-coming tenant :—

		£	s.	d.
a. 6 horses and harness, 160*l*., making the whole amount of the tenant's capital under this head		245	4	6
b. 80 ewes and lambs, to help to stock the Clover field, 140*l*.; 250 lambs and one-shear sheep, to be bought in September and October, 375*l*.; 30 head of oxen to be bought in October, 456*l*.; making the whole amount of farmer's capital under this head		1126	0	0
c. Implements, 1 plough, 3 frames of harvest carts, harrows, horse-hoes, &c., say 70*l*., making the sums under this head amount to		241	3	6
d. Cultivation, &c.:—Half a year's expenses, horse account, wages, &c., including Wheat and Turnip-hoeing, harvest work, &c., 590*l*., making the capital under this head amount to		766	11	8
e. Manures:—A purchase of artificial manures will be required, equal in value to 5 tons of guano, say 80*l*., making this branch of the farmer's capital amount to		432	9	0
f. Half Cultivation of the previous year's green crops		314	12	4
The half-year's rent and taxes due at Michaelmas are not paid out of capital, the farm being supposed to have produced that amount, but not more, by sales, before that time.				
The total capital required by the farmer in this instance then amounts to	£3065	1	0	

This sum is about 11*l*. 7*s*. per acre over the farm.

There are a great many interesting subjects involved in the particulars of this valuation, as well as in the general principle of it; we shall not enter upon any of them now, but merely allude to the fact in order to invite the criticism of our correspondents.

This is a case in which the tenant apparently requires to invest a large amount of dormant capital; were it really dormant throughout the period of his lease, only re-appearing at the close of it by sale to the next tenant, there would be just cause for fear that the necessity for its outlay would embarrass the farmer, and so by confining competition for tenancy to a smaller number—viz., large capitalists—this system might diminish the value of land to its possessor; but this is not the case; this sum of money, amounting in the instance before us to 1000*l*. and upwards (see clauses *d. e. f. g.* Inventory), is evidently productive of profit as much as any other part of the farmer's capital. The incoming tenant informs us that he is well satisfied that he has got his money's worth; he is satisfied—opponents of this system of entry cannot but acknowledge that outgoing tenants under it have every reason to be satisfied—and for two reasons we think that of all those parties who have any connection with the matter, the landlord has the least reason to complain. At the close of each tenancy his land reverts to him in the highest possible condition—he offers it in the highest state of cultivation; and an arrangement which insists on an immediate outlay of capital by the tenant is the best possible security for his rent.

We were wrong in saying there were but three parties interested in this matter. Besides the interest of the landlord and that of the two tenants between whom the business lies, the prosperity of a whole nation is intimately connected with a system which encourages the investment of capital in land.

* The price was thus low, because the manure was not perfectly made, nor was it of good quality.

† This is left from tenant to tenant unpaid for, as stipulated in the lease.

ON BLACK HORSEPONDS.—No. III.

We have stated that the solid matter contained in the urine of man and animals is equal to the best guano as a fertilising agent, and that it contains all the elements that are found in guano, capable of supplying plants with either organic or inorganic food. That such is the case we are prepared to expect, when we reflect that the herbivorous animal derives its sustenance from the plants used by it as food, and that, after those substances which are required in the animal economy are separated and worked up, the remainder is expelled from the body as excrementitious matter—the urine containing the greater portion of the soluble saline and earthy salts, as well as the principal amount of nitrogenous matters—while the solid excrements are principally made up of undigested woody fibre, with a few salts and a little nitrogenous matters. All these salts having originally existed in the plant, but been separated and rearranged during their passage through the animal, they are capable of again entering the texture of the plant, ministering to its growth, and assisting as a means of perfecting its seed. Before such can be the case, however, these substances must be in a state of perfect solution in water, the roots of plants being incapable of receiving into their texture any solid matter, however minutely divided. Hence the cause of the rapid and marked benefit following the application of soluble saline manures, such as the nitrates of potash and soda; or mixed manures, containing soluble salts in combination with substances which must undergo decomposition before they become soluble, and capable of ministering to the growth of plants. This fact should always be borne in mind, that no substance can enter the texture of a plant except in solution. From the above circumstances it necessarily follows that the liquid portion of the excrements must be of more value as a manure to plants than the solid portion, since the liquid excrements contain by far the largest portion of saline and nitrogenous matters, and in the only state in which they can be serviceable to plants. The composition of the urine of the cow will serve as an example to illustrate this point; at once showing the large amount of potash, soda, ammonia, phosphates, and other saline ingredients lost to the farmer who allows the urine of his cattle to run into the nearest ditch, or, by finding its way into his horsepond to become the disgusting beverage of his farm-yard stock.

The following is the composition of the urine of the cow, as given by Sprengel, and examined under three circumstances, viz., when fresh—after it has undergone putrefaction—and when allowed to putrefy with the addition of its own bulk of water.

	Fresh.	Putrid.	Putrefied with Water.
Urea	4000	1000	500
Albumen	10	—	—
Mucus	190	40	30
Benzoic acid	91	250	120
Lactic acid	816	500	540
Carbonic acid	256	165	1533
Ammonia	205	487	1622
Potash	554	554	554
Soda	554	554	554
Silica	36	5	8
Alumina	2	—	—
Oxide of iron	4	1	—
Oxide of manganese	1	—	—
Lime	65	2	8
Magnesia	36	22	30
Chlorine	272	272	272
Sulphuric acid	405	388	332
Phosphoric acid	70	26	46
Acetic acid	—	1	20
Sulphureted hydrogen	—	1	30
Insoluble earthy phosphates and carbonates	—	180	150
Water	92,694	95,448	95,481
	100,000	100,000	100,000

By far the largest portion of the organic constituents contained in the solid matter of the urine is the *urea*, and this also is the most important, since it contains a larger amount of nitrogen than flesh or blood,—two powerful manures. It is composed of

Oxygen	26.7
Hydrogen	6.6
Carbon	20.0
Nitrogen	46.7
	100.0

When in a state of purity, urea exists as transparent colourless crystals of a slightly pearly lustre. It deliquesces in a moist atmosphere, but otherwise undergoes no change. Its solution in water may be exposed to the atmosphere for several months, or be heated to the boiling point without change; but when the other constituents of urine are present, it putrefies with rapidity, being almost entirely resolved into carbonate of ammonia; this change proceeds at a more or less rapid rate, depending on the temperature of the atmosphere. The carbonate of ammonia thus formed is partly held in solution in the water of the urine, and partly escapes into the air; this escape of ammonia continuing for a considerable time, the solution becoming gradually weaker and weaker until at last a very small portion of the original quantity is left. The ammonia thus generated by the decomposing urea of the urine is sensibly felt on the eyes and nose on entering a stable in the morning that has been closed during the night, and is frequently the cause of those inflammatory affections of the eyes which young horses are subject to, from its acting as a direct and constant irritant on the delicate conjunctival membrane of the eye.

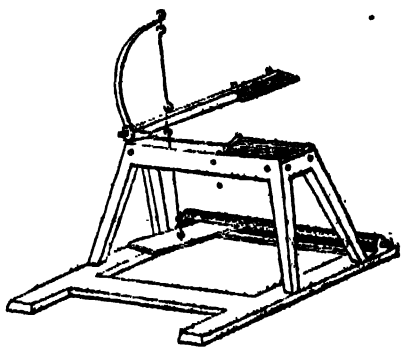
When urine is diluted with an equal bulk of water before it is allowed to putrefy, a much larger quantity of ammonia is retained in solution; thus, on referring to the analysis, we find that when the urine is allowed to putrefy alone, only 487 lbs. of ammonia are found in 100,000 of urine; but when diluted with an equal bulk of water previous to fermentation, the amount of ammonia is found to be 1622 pounds, or upwards of three times the quantity contained in the undiluted urine: but even this is not the whole quantity of ammonia capable of being yielded by the urea, by one-fourth; since 100 parts of urea ought to yield, by their decomposition, 56½ parts of ammonia.

It is to the ammonia generated in the soil by the slow decomposition of all animal manures that much of their effects on the crops are to be ascribed. This is particularly the case with good guano, which contains so large a portion of those substances capable of yielding ammonia to the growing crops; yet how little attention is bestowed by the practical men on the urea, which, as urine, finds its way out of his fold-yard, in solution in water, to the nearest ditch, and often to his horsepond; or takes to itself wings after fermentation, in the shape of ammonia, and, unseen and unheeded, passes off into the atmosphere; and thus the means of realising hundreds of pounds, which in many instances can be but ill-spared, is totally lost to the farmer.—*Alfred Clyde, Painswick.*

ON THE CULTIVATION OF FLAX.—No. VII.

The breaking of the woody part of the stem, for the purpose of separating it from the fibre, is the next process in the manufacture of Flax. Before undergoing this operation, it has been usual in Ireland to dry it by artificial heat; but this, although it makes the stem more brittle, and of course more easily separated from the fibre, is also injurious to the fibre itself; and if proper means are taken to have the Flax thoroughly dried after being taken up from the Grass, no further artificial drying will be necessary. Should the Flax, however, still be damp from defective management, artificial heat must be employed; but it is to be observed that this is only to be continued so far as to dry the Flax, and not to roast it, as is too frequently the case.

Various contrivances for breaking the fibre of the Flax are in use. The machine most commonly employed is represented in the accompanying figure. It consists of



two wooden frames, attached to each other by a hinge, the cross-bars of which are so placed that two of them shall not be opposite to each other, the upper frame having usually a bar less than the lower one. The breaking machine here figured has the upper frame acted on by a spring, which raises it to admit of the Flax being introduced between the bars; and by means of a simple contrivance, also represented in the engraving, motion is communicated to that frame by means of the left foot of the workman. By repeated strokes of the upper frame on the lower one—the handful of Flax being changed and turned between the strokes—the woody part of the stem is at length broken in such a manner that it can afterwards be entirely removed by the subsequent operation of scutching.

The other methods of performing this operation need not be described at length, as they are more or less defective. In several parts of the North of Ireland a sort of large wooden mallet is employed, the effective part of which is the side; and the Flax being spread on a hard even surface, is reduced by repeated blows of this implement. By attention, the work is sufficiently performed in this manner, the only objection to the use of the mallet being the length of time required to effect the purpose by it. It, however, when only small quantities of Flax are grown for domestic purposes, it may be advantageously employed. The Flax is also sometimes bruised by a large

stone being rolled over it, which is put in motion by horse-power; but it performs the work very imperfectly.

The operation of bruising the Flax may also be performed by rollers placed close together, and revolving in contrary directions, similar to those through which the pulled Corn passes in the threshing-machine. When Flax is grown in large quantity, this is perhaps the most eligible plan which can be adopted.

Scutching the Flax may also be performed by machinery, or by manual labour. Hand-scutching is almost universal on the Continent, and when carefully conducted, performs the work in a very superior manner to what it can be done by machinery. Where Flax is extensively cultivated, however, hand-scutching is evidently inapplicable, from the difficulty in procuring the necessary hands for the work; and in this case machinery must necessarily be employed. The construction of the common Flax-mill is exceedingly simple. Scutchers, or vipers, are placed on a horizontal axle, which thus resemble the spokes in a carriage-wheel, having however their edges considerably sharpened; and motion being communicated to this axle by means of a water-wheel or steam-power, the scutchers act on the handfuls of Flax which are presented to their action, resting on a board placed for the purpose. This completes the preparation of Flax for the market; and with the further details of its manufacture to prepare it for the spinner, the farmer is not concerned.

These, then, are the chief details of which it is necessary the farmer should be in possession before entering on the cultivation of Flax; and his success or failure will depend in direct proportion on the manner in which he has carried them into execution. In the cultivation of grain every farmer is aware of the loss sustained by the exhibition of an inferior sample at market, and in a still greater degree will this be experienced by the Flax-grower. Every operation connected with its cultivation and management must be performed with the greatest care, and when this has been done the farmer may calculate on a golden harvest. The defective system adopted by our Flax-growers became apparent on the opening of our ports to the foreigner, and so unremunerating did prices in consequence become, that until lately our manufacturers were in a great degree dependent on the foreign market for their supply. It is to be hoped that in the vigorous measures which are now in operation for the extension of the culture of this crop, the importance of proceeding on correct principles will not be overlooked, otherwise all efforts for the purpose will be worse than useless.

The produce of Flax, even under the best system of management, will vary much according to soil, season, and many other particulars. In those parts of the Continent where its culture is so well understood, it is esteemed their golden crop, and regarded as superior to any other on the farm. The ordinary produce there is from 20*l.* to 30*l.* per acre, independent of the seed, which is worth 5*l.* or 6*l.* more. The seed alone, which has for the most part been altogether neglected in this country, may, at a low calculation, be assumed to repay the cost of the seed sown, with all other charges attending the cultivation and management of the crop, leaving the fibre altogether as net proceeds. The produce in fibre will vary from four to six cwt. to the acre.

In our next paper on this subject, which will conclude the series, the saving of the seed and its application shall be described at length. Meantime, before dismissing the subject at present, another, though perhaps the least important advantage derived from Flax cultivation may be noticed, namely, the value of the water in which the Flax has been steeped, as a manure. Flax water is especially valuable when allowed to run over Grass lands, from the large quantity of vegetable matters, partially decomposed, which it holds in solution. Even the small portion of these matters carried from the pond by the Flax itself, when washed off by rains on the Grass, is found to sensibly affect its growth. After a trial of the fertilising qualities contained in this substance, few farmers will be disposed to allow it to flow, without interruption, to the adjoining streams, in which it generally proves fatal to whatever fish they may contain, as is now too often the case.—*J. Sproule.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

The amount of annual rent paid by East Lothian farmers, depends, of course, entirely upon the locality, quality of the soil, and other circumstances connected with the respective farms. During the reign of high prices, consequent on the French revolutionary war, several farms in this county were rented so high as seven to eight guineas per acre. The rent commonly paid at present in the neighbourhood of Dunbar, ranges between 4*l.* and 5*l.* per acre; but it must be taken into consideration, that this district enjoys very superior advantages for agricultural pursuits; the soil is dry and easily pulverised, the climate mild, and the earliest in the county; limestone and sea-ware, two powerful fertilisers in the hands of the skilful farmer, are obtainable in abundance; and a weekly Corn-market has been recently established there. In the elevated parts of the county, the stock farmers seldom pay more than 12*s.* to 15*s.* per acre; but the general average money-rent throughout the county ranges from 2*l.* to 2*l.* 15*s.* per Scotch acre; and, where Corn-rents are paid, from 6 to 9 bushels of Wheat, computed or converted into money, according to the medium county fiar prices. Mr. Greg, of Hertfordshire, asserts, in one of his letters on the subject of Farming in the Lothians, published some time ago in the *Manchester Guardian*, that "the rent of the Lothian farms is 3*l.* to 7*l.* per acre." And immediately he adds, "And these high rents the farmers not only pay, but thrive upon; indeed, a more thriving set of men I never met with." This statement, it must be admitted, applies solely to the neighbourhood of Edinburgh, to which Mr. Greg's knowledge of the Lothians seems to have been principally confined. I venture to affirm, that the annual rent paid by the Lothian farmers does not, on an average, exceed one-half of the mean between the extremes of rental, mentioned by this gentleman.

The rents are paid either previously to the first crop being taken off the land, when they are termed *fore-rents*, or they are paid at a subsequent period, when they are styled *back-rents*. Thus, if a farmer enters at Whitsunday, 1844, and at separation of crop 1844 from the ground, his first year's crop will be that of 1845; his first term's rent does not become due till Candlemas, 1846, provided the farm is back-rented. The object of this arrangement is to afford the tenant the means of paying his first rent from the sales of his first crop. The general terms for the payment of rent are Candlemas and Lammas—the year's rent being paid in equal proportions, one-half at each term.

Besides what is properly called rent, several public and parochial burdens are borne by the East Lothian, in common with other Scotch farmers. The principal of these are, income-tax, window-tax, poor-rates, schoolmaster's salary, road-money, &c. Tenant-farmers in Scotland, whose annual rental is not below 420*l.*, pay 2½*d.* per 1*l.* on the rental, as income-tax. The profits arising from the occupancy of land in this country, being reckoned at nearly one-third of the rental, farmers whose annual rental is less than 420*l.*, are exempt from this tax. The window-tax is payable by all Scotch farmers whose rental is not less than 200*l.* per annum. Dairies and cheese-rooms are exempt, provided that the words "Dairy" and "Cheese-room" are painted over their respective doors or windows. The amount of tax varies, of course, with the number of windows in the house. It is a generally believed, though a very erroneous supposition, both in England and in Ireland, that there are no poor-rates in this country. It is true, indeed, that Scotland has no large and costly edifices, in which to house her aged and helpless poor. Pauperism is here regarded as a disgrace. Nothing but the most pinching necessity compels even "the poorest of the poor" to seek admittance on the poors'-roll; and hence the poor-rates are generally very moderate. The management of the poor is vested in the minister and Kirk-session of each parish, and the funds for supplying their necessities are derived from voluntary collections at the church doors, and an assessment on the heritors or proprietors of the parish, laid on by themselves, one-half of which is paid by the farmers, according to their rental. Assistance is in general given only to the aged and feeble, who are really indigent, and averages about 5*s.* a month to each person receiving in-door relief. The amount usually borne by the farmer is very moderate, but in some parishes it is increasing to rather a serious extent, arising, no doubt, from want of sufficient employment for the labouring classes. In the parish in which I reside, containing a population of 700, without any town or village, the poor-rates have latterly risen to about 90*l.* per annum. The rental of the parish, as assessed in 1843, is 7339*l.* 6*s.*, that is, at the rate of about 1*s.* 4*d.* per pound on the rental, for the tenant's share.

Scotland has been long distinguished for its parochial schools. The schoolmasters are paid by a fixed salary—one-half of which is borne by the tenants—in addition to small fees which he is entitled to receive from his pupils. The maximum fixed salary is, I believe, 34*l.* 4*s.* 6*d.*; the minimum, 25*l.* 14*s.*

By a recent county regulation, sanctioned by Act of Parliament, every 60 acres of arable land is denominated a ploughgate, being the extent which one pair of horses is supposed to be capable of working. For every 60 acres of arable land, or for every pair of horses, the farmer has to pay generally 2*l.* towards the fund for keeping in repair the roads in the parish in which he resides.

In order to illustrate more clearly—for the subject has been frequently misrepresented—the amount of rent and public burdens borne by tenant-farmers in this district, I give the following example. The farm consists of 350 acres, five miles from Haddington, and 250 feet above the level of the sea: soil a strong clay, very expensive to labour, employing always six and frequently seven pairs of horses.

Rent of 350 acres, at 2*l.* 5*s.* per acre	£787	10	0		
Income Tax				£8	0 0
Window Tax for 16 windows				3	17 6
Poor Rates for current year				4	0 0
Schoolmasters' salary				1	0 0
Road-money (six pairs of horses)				12	0 0
Dog				0	8 0
Public burdens				29	5 6
Rent				787	10 0
Total				£816	15 6

Rents are paid either wholly in money to a fixed amount, wholly in Corn, computed by the fiar prices of the county, rising and falling with the fluctuations of the market, or partly in money and partly in Corn. Each of these modes of payment has its advocates, and much diversity of opinion prevails even among the farmers themselves respecting the comparative utility and safety of the respective modes of payment. They appear to agree only on one point, namely, that of all kinds of rent a fixed money-rent is the worst for the tenant. This mode of payment is, however, very common in East Lothian, and is generally preferred by the landlords.

The Corn-rent system is decidedly the most popular, if not the most common, in this and some other parts of Scotland, being almost universally regarded by farmers as the safest mode of payment in an average of years. But Corn-rents, however popular, are, under existing circumstances, liable to numerous objections. That the rent bears heaviest upon the farmer when, from a bad season, and deficient crop, he is least able to afford it, is certainly a very serious defect in this system. It must be taken into consideration, too, that the landlords' rents would be sometimes nearly doubled, at a time when farmers and others are suffering from scarcity and consequent dearth. On the other hand the Corn-rent plan affords this great advantage to the farmer, viz.: that in years of unusual abundance, when prices are considerably depressed below the general level, they are saved from almost certain ruin, by the comparatively small sums they have to pay, while having, at the same time, an augmented quantity of saleable produce. In such seasons the effect of Corn-rents would evidently be an improper reduction of the landlords' income.

To obviate these and other evils attendant on the Corn-rent system, a simple expedient has been adopted by some landlords, and which has gone far to remove many of its defects: this consists in fixing a maximum and a minimum price for the particular species of grain, payable as rent. It is stipulated, on taking the farm, that a certain quantity of Wheat, or other grain, is to be paid to the landlord, converted into money, according to the fiar or average prices of that year's crop; but to whatever extent prices may rise above the maximum price originally fixed upon, the tenant is not required to pay such excess of price. On the other hand, it is agreed upon, that to whatever extent prices may be depressed below the fixed minimum, the landlord is entitled to receive this minimum price for the quantity payable to him.* By means of this check, the tenant is not compelled to pay up to the average price of grain in very dear and scanty years, which would evidently be ruinous; while on the other hand, in years of unusual plenty and depressed prices, the landlord is preserved from the unpleasant consequences of a greatly reduced rent-roll. Various other schemes have been propounded for averting the evils of Corn-rents, such as taking a seven years' average of the yearly fiar prices, and computing the rent by this average price, &c.; but all of them have been found more or less defective when brought to the test of practice. The species of grain generally adopted in this county for rent is Wheat, but in some of the elevated farms, where this is not grown, Oats and Barley are taken.

The farmers of this county generally prefer a mixed mode of payment—partly in Corn, or rather the price of Corn, and partly in money. This system appears to work very satisfactorily both for landlord and tenant, and accordingly mixed rents are becoming general. One very obvious advantage of this plan arises from the circumstance of Corn not being the only produce of a farm. Although East Lothian is, as has been already stated, essentially a Corn-growing county, yet a large number of the farmers make a considerable portion of their rent from the sale of cattle and sheep, or by letting Turnips and Grass to dealers. The common amount of mixed rent paid at present for medium quality of land is one boll of Wheat, second fiar, and one pound of fixed rent.—*T. Sullivan.*

* I am acquainted with several farmers on the Earl of Wemyss' estate who have a maximum of 72*s.* per quarter for Wheat, and no minimum.

ON THE TURNIP-FLY.

Some years ago I farmed some unineclosed lands, and having a somewhat speculative neighbour having portions in the same open field, we occasionally tried experiments conjointly, the intermixture of these common lands being in some degree favourable for such practices. After reading most of the "infallible remedies" of the day for securing the Turnip-crop from the ravages of the fly, we each selected one of two experiments for one season's trial. My friend's choice was a mixture of some other seeds of earlier vegetation than Turnip-seed, that the fly might have its fill and pass into its change before the Turnips came up; a portion of Radish-seed was accordingly mixed with the Turnip-seed, which certainly came up first, but, contrary to expectation, the enemy left the Radishes untouched, but finished off every plant of the Turnip-crop, according to the regular practice. This left plenty of room for the Radishes to grow, and they produced a very abundant supply for the whole parish. My experiment was a more expensive and laborious exploit; we had been reading Sir John Sinclair's method, which was to burn the land previous to sowing the seed, thereby destroying the grub or chrysalis containing the Turnip beetle in its embryo state. There is but one objection to this system, which most assuredly is a certain remedy, but, from the consumption of the material, it is in a manner impracticable. The author recommends collecting together everything combustible about the farm—the cuttings of hedges, the clearings of ditches, &c., together with what straw can be spared (?); these are to be strewed over the land, and burnt on the ground, a few hours or so before the seed is put into it. The material we got for this purpose by raking off the old Wheat-stubble from the young Clover plant, such being the practice of cropping. Two ridges (called acres) were selected for this roasting—the process much resembles our practice of burning a fat pig for bacon. That season was remarkable for the destructiveness of the fly, but the two ridges were untouched, they flourished amid the desolation of barrenness around them; and it was worthy of notice, as confirmatory of the effect upon the crop, that the half of the next ridge of land to windward was partially secured by the effect of the conflagration.

It has occurred to me, that, as no farmer ought to consume the quantity of straw necessary for this process, whether a less expensive means could not be adopted to bring about the like result; a heated roller, if such an implement could be constructed—even a plain sheet of iron, if heated sufficiently to destroy insect life; the cost of coals would be a trifle, in comparison with the good to be effected.

Looking to the natural history of the insect, it appears to remain in the ground a considerable time, undergoing the different changes of egg, maggot, and chrysalis; it is in this latter stage that the plough and harrow bring certain quantities to the surface, or sufficiently near the surface to be within the influence of the sun's rays, and the hatching of the chrysalis is brought about simultaneously with the appearance of the Turnip-plant. This accounts for the preservation of the plant by early vegetation, for it thus gets sufficiently advanced to be unpalatable to the insect by the time the fly appears.—*S.C.*

ON THE APPLICATION OF CHEMISTRY TO AGRICULTURE UPON RATIONAL PRINCIPLES.—No. XVII.

(*Concluded from p.* 204.)

Now, I must request the observer to remark several points of great interest in the results obtained by the above experiment. I may observe that I superintended the management of the experiment from beginning to end personally; that I took every possible means to prevent the slightest mistake. I saw the land prepared and the liquid applied, and I was present when the crop was mown, carted, threshed, weighed, and measured.

The experiment, I grant, stands at present unsupported by others, and my own duties will not permit me to spare the time and attention it would require for repetition; but I am so confident in the correctness of every step, and the care which was taken to avoid mistake, that until the facts which I have adduced are controverted by other experiments equally sound, I claim for it the credit of being a step in advance, and of proving the truth of chemical induction.

Liebig stated that a pound of urine will produce a pound of Wheat. In the first experiment which I have instituted, I have produced from 80 lbs. of urine 76¼ lbs. of grain and straw. It is true that an additional substance, the sulphuric acid, was introduced, and how much of the increase of crops was due to that, *per se*, future experiments will decide. Its cheapness will rather add than detract from the value of urine as a manure.

Another point of interest in my experiment, is the proof which it affords of the truth of the principles I have advocated—that plants require for food a union of their constituent elements in the proportions in which they exist in the plant—that the straw and grain contain different elements, and require different manures. The liquid in my experiment was applied especially for the grain, and in every case there was an increase of grain, both in measure and weight; while in three of the instances, there was a loss of straw; and in two out of the other three, the increase of straw was only one-half that of the grain in one, and one-third in the other. Now, urine contains some of the elements of straw, and, of course, will produce it to a certain extent; it contains much more of the elements of grain, and much more grain was produced.

Another point of interest in my experiment is, that where chemical means were adopted to retain the nitrogen, the weakest solution had the greatest amount of produce; while, where no fixing medium was used, the strongest solution had the most successful result. I have no doubt but that the strong solutions were injurious to a portion of the grain, and prevented its germination. Guano, if applied too strong, will kill the seed, and so will urine, particularly if the urea is converted into the sulphate of ammonia. In future experiments, it would be advisable to use the fixed urine in different states of dilution. The fact that the sulphuric acid prevented decomposition, is interesting. Whether the urea was decomposed in the earth or not is of no importance in a practical, though of great importance as a chemical question, because it bears strongly upon Liebig's statement, that the carbonate of ammonia is the form in which nitrogen is supplied to plants.

Some light would be thrown upon this subject, by a comparative experiment of the effects of urine with the decomposition prevented or retarded, and that in which the ammonia was fixed with the acid during the process of decomposition. I would propose the following experiment:—

Procure two wooden vessels—old beer casks are the best for experiment, because their exact measure is known. Let them be marked A and B. Into A, for every gallon that it will hold, add, in the first place, half an ounce by weight of sulphuric acid, of a sp. gr. not under 1.7. A gallon or two of water should be put into the bottom of the cask, and the acid had better be added at different times, because if too much is put in at first it will act upon the wood. Let this tub be filled with urine as it can be procured.

Into B let the urine be collected at once, without any acid; but as soon as it begins to putrefy, let sulphuric acid, the same as above, be added, until all effervescence ceases; and let this be repeated until the tub is full. Then let the contents of each tub be applied to the land as follows:—

No. 1. *Half* of A, in the proportion of 100, 150, and 200 gallons per acre, diluted with two, three, and four times its measure of water; and let it be applied to the land a week or ten days before the seed is sown; and let this crop be Wheat.

No. 2. The other half of A in the same proportion, the crop being Beans.

No. 3. Half of B in the same proportion to Wheat.

No. 4. Half of B in the same proportion to Beans.

Let the amount of seed and produce be carefully weighed and measured. For the sake of comparison, a patch of land of the size used in the experiments must be treated without manure of any kind. To those who have plenty of time and land, I would recommend another experiment to be tried, by adding, in addition to the acid to tubs A and B, one bushel or one and a half of well-ground bone-dust.

To a third class of experimenters I would suggest that the urine prepared, as I have advised, should be tried comparatively with good rotten farm-yard manure, using the usual quantity per acre of the muck, and the quantities on different patches I have advised with the urine; and the latter class of experiments might be advantageously tried with Wheat and Turnips, or Mangold Wurzel, instead of Beans. In fine, the experiments which suggest themselves are innumerable, and let no one be cast down by defeat or disappointment. The value of an experiment, if sound, is great even if it fail, for truth is elicited.

I have thus brought the subject I proposed to treat of to a close. At a future time, if anything interesting to the scientific farmer should suggest itself, or if he should attach any value to the observations I have offered, and which I trust have been made in the true spirit of inductive reasoning, I will cheerfully bestow my time and attention upon what I consider one of the most interesting and useful of studies—that of endeavouring to supply the increasing necessities of a great nation, by pointing out those principles which chemical science suggests as most likely to be conducive to the establishment of a rational system of agriculture.—*C. R. Bree, Stowmarket.*

Home Correspondence.

Observations on the Potato.—The papers which have appeared on the failure of the Potato are very numerous. I have read a great portion of them with attention; but as far as I can judge they have not named the true cause. For the most part they say that the failure in this valuable root is owing to the use of over-ripe tubers. Here I beg to differ from them, being of opinion that the great cause of failure lies in improper cultivation, storing, and using unripe tubers for seed. It is well known to every horticulturist that if his tuberous-rooted plants (*i. e.* the tubers) have not been properly matured before the time of taking them up, they become deteriorated, and seldom, if ever, produce vigorous plants the following season, and ten chances to one they rot when replanted; if they do not rot they produce unhealthy plants. Now, this is analogous to the Potato; for if the tuber is not ripe or properly matured, it cannot contain a sufficient supply of suitable nourishment to support the tender buds or shoots until they have become furnished with roots for that important purpose. Another great error is allowing them to grow in the pit or storehouse, before being planted. Whenever Potatoes show the least signs of vegetation, they should be immediately planted, if the season will permit, for allowing them to grow in the pit must naturally exhaust that nourishment which should go to the support of the young buds or shoots when planted; and the second growth of shoots is thus never so healthy and vigorous as those which were produced at first. In regard to culture, nothing can be more at variance to the laws of nature than the present system of cultivating this valuable tuber. The Potato may be cultivated in any soil, and almost every climate, and with much less manure than is generally used, if the land has been properly pulverised. The Potato is, however, subjected to one uniform mode of culture by the British farmer; and why? because in this, as in most all other cases, he still follows in the steps of his forefathers, without inquiring whether the practice is consonant with the nature and habits of his crops. On the first appearance of a plant above the ground, remove the earth carefully from the stem, and it will be seen, even at this early stage, that young fibres are sent out in all directions in search of nourishment, which the tuber or set can no longer supply, being at this time greatly, if not entirely, exhausted of all nourishment. These fibres will be found to grow much more rapidly than the stem, so much so that some of the fibres will have extended 13 or 14 inches in search of food, while the stem has only gained two or three inches in height. Nothing, then, can be more opposed to the future welfare of the crop than the repeated application of the horse and hand-hoe, for, by the too frequent use of these useful implements of husbandry, the fibres are cut and destroyed, and those which remain are, in a great measure, exposed to the influence of a scorching sun and dry winds, which must undoubtedly check their growth. The land intended for Potatoes should be ploughed, as soon as the growing crop is harvested, with a good deep furrow, and after being for some time exposed to the influence of the atmosphere it should be thoroughly harrowed: after remaining thus for a short time, it should again be ploughed and harrowed. In spring it should again be twice ploughed, in contrary directions, and harrowed, hand-weeded when necessary, and rolled. If this was properly attended to, in the preparation of the land for Potatoes, very little after-hoeing and hand-weeding would be required. As the greater portion of the weeds which infest properly-cultivated lands are either annual or biennial, they may be readily pulled up by the hand, and laid on the surface of the soil to rot, without destroying the fibres of the Potato. Farmers may rest assured that the less the soil is disturbed after the Potatoes are planted, the more certain and luxuriant will be the crop. However objectionable the Irish system of lazy-beds may appear, it yields large and fine crops, with very little manure; the fibres or roots of the plant are left to grow and luxuriate at pleasure, with very little, if any, hoeing to disturb them. After the soil has been thoroughly pulverised, and the dung and seed ready, which should be the small whole tubers, commence planting as soon as the season will permit—the earlier the better—by drawing the drills at from three to four feet asunder and seven to eight inches deep; for the wider the drills are from each other, the plants will have the more room to develope their leaves and branches, and the deeper (within proper limits) the seed is planted the more prolific and certain will be the crop, and the less earthing up will be required. In fact, I am of opinion that the Potato crop should be planted in autumn instead of spring, and that pitting and housing are highly injurious to the seed Potato. In proof of this, it must be known to every farmer that those Potatoes which have by accident been left in the field, and at a considerable depth in the soil, produce finer plants and tubers in spring than those which have been pitted or housed; and those tubers which have thus remained during winter in the soil are free from all diseases and failures. I would, however, recommend for autumn planting that the land intended for Potatoes lie in fallow all summer, and be thoroughly pulverised by repeated ploughings and harrowings, to destroy the vegetation of weeds. As soon as weeds make their appearance they should be hand-hoed, or pulled up by the hand, and left to rot on the surface. When the plants have arrived at a proper height they should be earthed up, which should be done only once. When the crop is ripe, those Potatoes which are intended for seed should remain in the ground till the time has again arrived for planting; for, let them be stowed in the most careful manner, they are liable to heat and grow in pits, which, if not the real cause of failure, tends greatly to promote it. For instance, set aside a few tubers which have been gathered in the common way, and it will invariably be found, although they may appear perfectly firm and sound, before many weeks have elapsed, symptoms of decay may be observed. No doubt this is owing to their being bruised by falling one against the other, and by the too common use of the shovel in turning them, to prevent their heating, and to check the growth of the buds. In pitting Potatoes for domestic purposes (for seed Potatoes, in my opinion, should not be pitted), I would recommend alternate layers of sand or charcoal and Potatoes. This will keep them cool, and free from heating and sprouting. After a sufficient quantity of Potatoes, sand or charcoal have been piled together, put a layer of dry straw next the Potatoes; then cover the straw with a layer of six or seven inches of earth, which should not be trod, but receive a gentle clap or two from the back of the spade; then secure all with a coat of thatch, which should be fastened by ropes, to prevent the winds from disturbing it, and they will keep much better, and more secure from frost than in any house. In conclusion, I beg to offer the following suggestions:—Thoroughly pulverise the land by repeated ploughings and harrowings; never use unripe tubers for seed; never pit seed Potatoes if it can be avoided; never cut them if it is possible to procure medium-sized ones; plant Potatoes in autumn, if the season and circumstances will permit; make the drills much wider apart from each other, and deeper than is generally practised; use well-fermented farm-yard manure; employ the horse-hoe and plough as little as possible, after the plants have made their appearance above ground; hand-weed on all occasions, but never remove the weeds from the land, (*i. e.*) if they have been pulled before their seed pods are formed; remove all flowers as soon as they make their appearance. I hope the foregoing observations will be the means of inducing some of your more able correspondents to come forward, and lay their observations on this important subject before your readers; for, as you remarked, in answer to my question on this subject, "There is nothing like a properly-conducted discussion for eliciting truth."—*J. M'I., Hillsborough.*

Substitute for Guano and Bones.—Two facts were obvious to me long ago; viz., that bones owe their powers, more especially with reference to Turnips, to their earthy constituent, the phosphate of lime; and that many years could not elapse ere the light soils of England must once more go out of cultivation, without some succedaneum could be found. The same opinion applies to guano, for no person can anticipate any long-continued supply. It is satisfactory, therefore, to know the substitute for the one is almost identical with, and therefore at least equal to, the other. And it is still more so to know that an inexhaustible supply is at hand, the collecting of which will do more with reference to the sanitary regulations of all large cities, than any other precaution whatever. Twenty years ago I published, under the signature of "De Winterton," in the *Hull Rockingham*, and again, since reprinted in my own name, in the columns of *Bell's Weekly Messenger*, the means of securing such substitute, by collecting human urine, giving to it about fourteen pounds of sulphate of magnesia (Epsom salts) to every hundred gallons, and adding lime in the state of hydriate (that is, slaked). Such a mixture contains all the elements of bones and guano; and although more than one private empiric and public company have adopted the process, for profit, it still remains comparatively unknown. I calculate more than one hundred gallons per month are thrown away in every minor farm-house, while in towns there is great waste in this way.—*W. M. Dinsdale.*

Science of Farming.—The results of the experiments detailed at page 293 of your Journal are most perplex-

ing, not to say discouraging, and lead me to remind you of your promise of giving us a *resumé* of the arguments in support of the generally received idea of the great value of ammonia as a fertiliser. At any rate, pray be good enough to favour us with some clue to the *rationale*, the *modus operandi* by which the favourable result was obtained from the admixture of lime with horse-dung—an admixture against which we are repeatedly cautioned by scientific writers, who also warn us against neutralising the benefits to be expected from guano by bringing it into contact with lime. I had hoped that, at the expense of some labour, I had arrived at something like an acquaintance with the subject; but here I find myself quite puzzled, and the more so, as it must be confessed that similar results are given by Mr. Johnson, in his admirable work on Fertilisers, as at p. 87 of my edition—which is not the latest, "'tis true 'tis pity, and pity 'tis 'tis true." By-the-by, as it is not a book to be purchased over again every now and then, might not Mr. J. print the new matter, in the form of a pamphlet, for the benefit of those possessing the old editions? It is really a hardship to purchase a 12*s.* book one week, and the next to find it very nearly superseded by a new edition, as was my case. But to return to the experiments. May one hope to find one's way to a conclusion, through the medium of the following passage, from the last but one of Mr. Bree's papers, where he reminds us that "the inquiries of Liebig render it more than probable that the carbonate is the only salt of ammonia which is appropriated by the plant, &c. &c.?" If this is the case, then the chief utility of fixing our ammonia, as by sulphuric acid, must be to preserve it from volatilisation, until laid into the ground, and until the carbonate can be used by the plants as fast as it is generated.—*M.D.* [Our correspondent will find that, in fulfilment of our promise, we referred shortly to the subject of his communication some weeks ago (see No. 16). The experiment he alludes to was probably performed in order to ascertain how much the manure would be injured by depriving it of its ammonia; but the evidence existing as to the actual benefits which have been derived from ammoniacal manures appears to us so strong, that rather than regard the results obtained in this instance as militating against this evidence, we should be inclined to explain them, by supposing that the experiment was performed on ground which, while it was deficient in some of the ingredients of farm-yard manure, already possessed such stores of ammoniacal salts as, with what in common with all soils it derived from the air, rendered it entirely indifferent to that which might or might not exist in any artificial application.]

On the Use of Local Terms.—Although custom renders us familiar with local terms and expressions, and even reconciles well-educated men to their use, allow me to suggest to the contributors to your Paper, so valuable in conveying agricultural information throughout the length and breadth of this land—and not of this only, but also to America and the continent of Europe—the propriety of avoiding, or at least of explaining, terms and phrases which are only intelligible to the inhabitants of the districts in which they are used. For example—one valued correspondent from East Lothian, tell us, the landlords in that county are at the expense of erecting the farm buildings, "the tenants always *driving* the materials." This expression is perfectly intelligible to the people who talk of driving their Corn to market as well as their cattle, and does not sound at all strange in their ears; but a tenant in the South of England, who knows very well how to go to work to drive a herd of cattle, or a flock of sheep, would be much puzzled how to commence operations upon such unmanageable articles as stones, timber, and slates. In the North of England, the term is to *lead* such articles—a little more gentle it may be in appearance and manner, than to *drive*, but still inapplicable. In the West of England it is universally to *haul;* and other terms are used in other localties. Now, in a work so widely diffused as the *Agricultural Gazette*, perhaps it might be as well, and it certainly would not be attended with much trouble, to avoid the use of terms so strictly local, and to employ others of more general application; and instead of *driving*, *leading*, or *hauling* manure, coals, stones, &c., (the last is by much the most appropriate of the three,) to *cart*, *carry*, or *convey* them. I have known a foreigner, but one who understood the English language, much puzzled by the use which we make of "the Turnip-drill," applying the term indiscriminately to the machine by which the seed is sown, and the drill-ridge upon which it is deposited. And I confess, at the risk of being ridiculed for my extreme ignorance, that although I have had some experience in the cultivation of land, I do not understand the term that is used in your Number of the 18th instant, in some sensible remarks upon Turnip culture, made by the Chairman of the "Westfirle Farmers' Club," when he says that he would "broad-shear" the land after harvest, in preference to ploughing it in the common way. I think I can guess at the meaning which this term is intended to convey, but am by no means sure that I am right; and, as it comes recommended by good practical observations, and it is just possible that others of your readers may be as ill-informed as myself, perhaps you, or your correspondent, will be kind enough to enlighten us on the subject.—*John Grey, Dilston.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The General Meeting of the Society, for the purpose of electing the President, Trustees, Vice-presidents, and twenty-five general Members of Council, for the year ensuing, and of receiving the Report of the Council for the past half year, was held, agreeably with the terms of the Charter, and due notice required by the Bye-laws, at the Society's House, in Hanover-square, on Wednesday last, the 22nd of May. Present:—The Rt. Hon. Earl Spencer, President, in the chair; Duke of Richmond (Chairman of the General Southampton Committee); Earl of Lovelace, Lord Camoys, Hon. Captain Spencer; Hon. Geo. H. Cavendish, M.P.; Sir John V. B. Johnstone, Bart., M.P.; Sir Richard Jodrell, Bart.; Mr. Pusey, M.P. (Chairman of the Journal Committee); Mr. Divett, M.P.; Mr. Raymond Barker, (Chairman of Finance); Reverends, D. Gwilt, T. Lewis, and J. R. Smythies; Professor Sewell; Colonel Elwood, Captain Forbes, R.H.; and Messrs. John Raymond Barker, S. Bennett, H. Blagshard, H. Boys, W. R. Browne, F. Crisp, W. Daniel, James Dean, Jos. Druce, S. Druce, E. East, John Ellman, P. Fearnhead, Y. Freebody, Brandreth Gibbs, J. B. Glegg, S. Grantham, C. Hillyard, W. Fisher Hobbs, G. Jacson, S. Jonas, G. Jones, G. Kimberley, J. Kinder, T. Knight, Geo. Wyld Lees, C. E. Lefroy, C. Porcher, T. Mount, Josiah Parkes, C.E., E. Parkins, W. T. Pickin, H. Price, Francis Pym, R. Rigg, W. Shaw, W. Smart, James Smith (Deanston), H. Strafford, P. Tillard, T. Tweed, Jonas Webb, and James Wood.

The Members having delivered in their several voting-lists, signed by themselves respectively, for the election of the Council, the President proceeded to nominate Mr. Dean, Mr. Druce, and Mr. Shaw, to be the scrutineers of the ballot; when those gentlemen retired with the lists into an adjoining Committee room for the purpose of making the requisite examination. The Hon. Captain Spencer then rose to propose His Grace Duke of Richmond as the new President for the ensuing year. He was quite sure, in submitting that proposition for the adoption of the Meeting, that it was unnecessary for him to endeavour to pass any encomium on the high character of the noble Duke; his name would be associated with the Society as long as it endured; he was one of the original promoters and founders of the Society, and on all occasions had been found among the most zealous and active of its Members. Mr. Blanshard, in seconding the motion, referred to the steady interest at all times evinced by the Duke of Richmond for the welfare of the Society, and the great advantages which had always resulted from his cordial co-operation in carrying out the details connected with every branch of its business and proceedings.

The motion was then put and carried unanimously. The Duke of Richmond immediately rose to return thanks for the honour the Society had done him, in again electing him their President. He assured the Members that the new election they had then unanimously made in his favour gave him the highest satisfaction, inasmuch as it furnished to him a gratifying proof that his exertions in the cause of the Society, during his former Presidency, had met with their approval. The Society had already conferred the greatest benefits on the country at large: and in supporting its interests, and those of the agricultural community in general, it would be his great object to prove his gratitude, not merely by words, but also by deeds.

On the motion of Mr. Pym, seconded by Sir John Johnstone, the following trustees were unanimously re-elected:—

Sir Thomas D. Acland, Bart., M.P.; Hon. R. H. Clive, M.P.; Marquis of Downshire; Duke of Grafton; Right Hon. Sir James Graham, Bart., M.P.; Henry Handley, Esq.; Sir Francis Lawley, Bart.; Joseph Neeld, Esq., M.P.; Duke of Richmond; Duke of Rutland; Earl Spencer; Duke of Sutherland.

On the motion of Mr. Raymond Barker, seconded by Mr. Kinder, the following Vice-Presidents were unanimously re-elected:—

Duke of Buckingham, Earl of Chichester, Earl of Ducie, Marquis of Exeter, Earl Fitzwilliam, Sir Thomas Gooch, Bt.; Sir Charles Morgan, Bt.; Duke of Northumberland, Lord Portman, Earl Talbot, Duke of Wellington, Lord Worsley, M.P.

Mr. Shaw then reported the following result of the scrutiny of the ballot-lists. He had the satisfaction of stating that the election was perfectly unanimous, not a single vote having been recorded against the house-list as recommended to the General Meeting by the Council.

I. Members of Council not going out this year by rotation:—

Colonel Austen, Hon. W. B. Baring, M.P.; John Benett, M.P.; Samuel Bennet, Esq.; T. W. Bramston, Esq., M.P.; E. Buller, Esq., M.P.; Colonel Challonet, J. W. Childers, Esq., M.P.; Edward Fellowes, Esq., M.P.; Humphrey Gibbs, Esq., Lord Hatherton, John Hudson, Esq.; W. H. Hyett, Esq.; Sir John V. B. Johnstone, Bt., M.P.; Fielder King, Esq.; W. Miles, Esq.; M.P.; E. W. W. Pendarves, Esq., M.P.; Sir R. Price, Bt.; Philip Pusey, Esq., M.P.; Francis Pym, Esq.; E. A. Sanford, Esq.; J. V. Shelley, Esq.; T. H. S. Sotheron, Esq., M.P.; W. R. C. Stanafield, Esq., M.P.; Henry Wilson.

II. Members of Council re-elected:—

David Barclay, Esq., M.P.; T. Raymond Barker, Esq.; F. Burke, Esq.; H. Blanshard, Esq.; John Ellman, Esq.; S. Grantham, Esq.; W. G. Hayter, Esq., M.P.; C. Hillyard, Esq.; W. Fisher Hobbs, Esq.; Sir Hungerford Hoskyns, Bart.; S. Jonas, Esq.; G. Kimberley, Esq.; John Kinder, Esq.; Sir Charles Lemon, Bart., M.P.; Professor Sewell; William Shaw, Esq.; Hon. Captain Spencer; C. Stokes, Esq.; H. S. Thompson, Esq.; Geo. Wilbraham, Esq., M.P.

III. New Members of Council:—

W. R. Browne, Esq., (Wilts and Middlesex); Edward Gough, Esq., (Salop); Viscount Hill, (Salop); J. Allen Ransome, Esq., (Suffolk); R. A. Slaney, Esq., (Salop.)

The President then directed the Secretary to read the following Report from the Council:—

The Council, in laying before the Members at their present General Meeting their Half-yearly Report on the state and prospects of the Society, at the completion of the sixth year from the date of its foundation, have the satisfaction of recording the progressive fulfilment of its various objects. The excitement which attended its original formation, and the rapidity with which the importance of those objects was recognised by the friends of agriculture in every part of the kingdom, at once swelled the list of its Members to an extent unprecedented in the history of any similar institution. That excitement having roused the attention of the cultivators of the soil to the fact of the great resources within their own immediate power, has led them to seek with practical caution, but with an energy also proportionate to the advantages to be gained, those means by which the objects in view have appeared to them most likely to be attained and rendered applicable to their local circumstances. Not only have the leading Agriculturists of the kingdom come forward to aid the Council in carrying out to the best of their power the general collection and discussion of facts having an important bearing on the various branches of agricultural improvement, both personally at their meetings and as contributors through the pages of the "Journal," but within their own local sphere in the country, they have, in many instances, been instrumental in reviving the spirit of existing associations, or of establishing new societies or clubs of practical farmers for the observation, collection, and discussion, of such practical results as more immediately refer in the first instance to the improvement of their own local agriculture, but become afterwards generally applicable to other localities, placed under the same circumstances of aspect, soil, and cultivation. It has been the uniform desire of the Council to avail themselves of every opportunity by which the operations of the Society may extend their influence, and convey sound and practical information, through the numerous classes of its Members distributed over the various districts of the kingdom. While preserving its fixed locality for the transaction of official business in the metropolis as a centre, the Council have the satisfaction of referring, with great confidence, to the signal success which has attended the means of communication afforded by the distribution of the "Journal," the circulation of Cottage Tracts, reprinted from its pages, and the change from year to year of the locality in which the Country Meetings are held. In the more concentrated sphere of its legislative and official duties, the Council have to report the active measures taken by their various Committees to simplify the details connected with their respective departments, and to avail themselves of such results of experience as render the general transaction of business gradually more uniform, exact, and satisfactory.—The Society consists of the following Members; namely:—

Life Governors	95
Annual Do.	314
Life Members	442
Annual Do.	6161
Honorary Do.	15

making a total of 6927 Members on the books of the Society at the present time; and the Council have the satisfaction of reporting the steady accession of Candidates from every part of the kingdom, at each of their Weekly Meetings: no less than 274 new Members having been elected during the last three months and a half. Since the last General Meeting in December, the Council, at the recommendation of the Finance Committee, have ordered the names of 249 Members to be removed from the list of the Society; of these 31 were lost to the Society by death, and 157 struck out, either at their own request, on account chiefly of their having entered the Society at the Country Meetings, for temporary purposes only; or on the decision of the Committee, who have maturely taken each case of exemption, claimed under a variety of circumstances, into their special consideration: while the remaining 61 have withdrawn their names from the Society, for reasons assigned by them at variance with the fundamental rules of the charter.

The Finance Committee will lay before you the Auditors' Balance-Sheet of the accounts to the end of the year 1843, and, at the same time, report the actual state of the funds of the Society at the present time. They have also reported that, at the last General Meeting in December, the arrears of subscription due on previous years, to that date inclusively, amounted in the whole to 572*l.*; since which time they have been reduced by the sum of 112*l.* The Finance Committee having represented to the Council that, in some instances, they found great difficulty in recovering the arrears of subscription due to the Society, the following resolution was passed, namely:—

"That a professional person be appointed to write letters, demanding arrears of subscription, to all such parties as shall be designated from time to time by the Finance Committee; and, in case of such applications not being successful, to take further legal steps for enforcing the payments due." That Committee have accordingly already taken preliminary steps, under professional direction, for the recovery of some of the remaining arrears, but they still trust, that by the prompt payment of what is due, ulterior legal measures may be rendered unnecessary.

The Council feel it their duty distinctly to state, that the charter gives to them the undoubted right of enforcing the demand for any money due to the Society, in a court of law: if they are ever compelled to resort to that extreme measure, it will be with great regret; but it is their positive duty not to permit the useful objects for which the Society was established to be frustrated, by allowing the actual receipts to fall short of the legitimate claims of the Society.

The Journal Committee have reported the unusual excellence and sound practical character of the whole of the numerous Essays sent in this year to compete for

the prizes of the Society. They have announced the decision of the Judges in reference to an outstanding Essay of 1843, namely:—

To Mr. JOHN CLARKE, of Long Sutton, Lincolnshire, the award of the Society's prize of 15*l.* for the best Essay on the Management and Application of Farmyard Manure; and the following awards already made of the Prizes of the present year, namely:—

To Mr. R. N. BACON, of Norwich, the prize of 50*l.* for the best Report on the present state of the Agriculture of Norfolk.

To Mr. ROBERT BAKER, of Writtle, near Chelmsford, the prize of 50*l.* for the best Report on the present state of the Agriculture of Essex.

To Mr. EDWARD LITTLE, of Lower Sheldon Farm, near Chippenham, the prize of 50*l.*, for the best Report on the present state of the Agriculture of Wiltshire.

To Mr. JOHN BRAVENDER, of Cirencester, the prize of 50*l.*, for the best Essay on the Indications of the Fertility or Barrenness of Soils.

The Judges appointed to decide on the relative merits of the Essays in the latter class, have not only awarded the prize to Mr. Bravender, as announced, but have "highly commended" four of the remaining essays; and the Council have received from Mr. W. Stace, of Berwick, near Lewes, Sussex, and Mr. John Arkell, of Hollow Farm, near Gloucester, the authors respectively of two of those Essays, their full permission for the Journal Committee to make any use of them, of which they may be found available in carrying out the objects of the Society, have ordered their thanks for such favour to be returned to those gentlemen accordingly.

There having frequently existed a doubt, how far it has been the intention of some of the writers of the Essays to enter into communication with the officers of the Society in reference to points of detail connected with their Essays, the Council have adopted the following recommendations of the Journal Committee on this subject:—

1st. "That competitors shall be required to inclose their names in a cover, on which only their motto and the subject of their papers, with the number of that subject in the prize list of the Society, shall be written.

2d. "That the Chairman of the Journal Committee alone shall be empowered to open the motto-paper of such Essays not obtaining the prize as he may think likely to be useful for the Society's objects; with a view of consulting the writer confidentially as to his willingness to place such paper at the disposal of the Journal Committee."

The following recommendation of the Journal Committee on the subjects and amount of prizes for the Essays of next year, has also been adopted by the Council, the conditions of which will be announced as usual in the Appendix to the next Journal; the Essays for these prizes being required to be sent to the Secretary on or before the 1st of March, 1845:—

£10: On the advantages of One-horse Carts.
£10: On the best method of Fattening Cattle.
£20: On the best method of Reclaiming Heath-land.
£50: On the Agriculture of Nottinghamshire.
£50: On the Agriculture of Cornwall.
£50: On the Agriculture of Kent.
£20: On the cheapest mode of Establishing a Tile-yard.
£20: On Catch-Meadows.
£50: On the Dutch method of Curing Butter.
£20: On Fences.
£20: For the best Experiment in Agriculture.

The General Southampton Committee have reported their arrangements for the Meeting of the present year at that town in July next; and the Council have ordered an extensive announcement of the Prizes to be awarded on that occasion, amounting to upwards of 1400*l.*, to be made, by publication in the Journal, by the distribution of Prize-sheets, and by advertisement in the public papers. They have the satisfaction of announcing, that the Implements entered for exhibition and trial at the Southampton Meeting, exceed by upwards of 130 the number of those at the Derby Meeting.

The Council have decided that the Annual Country Meeting for the North Wales district shall be held at Shrewsbury in 1845. The Council have unanimously appointed Messrs. Thomas Gibbs and Co., of Half-moon-street, Piccadilly, to be the Seedsmen to the Society. They have also entered into a satisfactory arrangement with the executor of the late Mr. Webb Hall, for the purchase by valuation of the library of the late Board of Agriculture, bestowed upon his father at its dissolution.

The Council think it desirable to state, in conclusion, that all their weekly meetings, excepting that on the first Wednesday of the month, are set apart for the reception and discussion of Agricultural communications; and that all members of the Society have the privilege of being present on those occasions. The experience which the Council have already had of the sound and practical suggestions made to them at those meetings, and the interesting discussions which have frequently arisen thereupon, induces them to invite all the members who may happen to be in London on the days of meeting, to avail themselves of this privilege: begging to assure them, that their attendance on such occasions will be as acceptable to the Council, as it is at all times uniformly desired.

By Order of the Council,
JAMES HUDSON, Secretary.

London, May 22, 1844.

On the motion of Mr. Parkes, seconded by Mr. Knight, this Report was received and unanimously adopted. Mr. Raymond Barker, Chairman of the Finance Committee, then read to the Meeting the following balance-sheet of the accounts from the 1st of July to the 31st Dec. 1843, as examined and approved by the Auditors:—

RECEIPTS.	£	s.	d.
Balance in the hands of the Bankers, June 30, 1843	1309	19	10
Do. do. Secretary do.	1	6	4
Half year's Dividends on Stock	180	16	6
Life-Compositions of Governors	90	0	0
Do. Members	217	0	0
Annual Subscriptions of Governors	183	0	0
Do. Members	1124	3	0
Balance on Sale of Journal, after deducting the charge for stitching 16,000 Copies, and for amount of Advertisements	83	14	1
Sale of Cottage Tracts	9	6	6
Receipts, during the half-year, on account of the Country Meetings	896	14	2
	£4246	0	6

PAYMENTS.			
Permanent Charges	260	12	6
Taxes and Rates	17	1	5
Establishment Charges	498	3	9
Postage and Carriage	12	19	10
Advertisements	13	10	0
Expenses of Printing and distributing the Journal	611	16	3
Prizes	1271	0	0
Miscellaneous Payments	24	5	11
Payments during the half year, on account of the Country Meetings	922	4	1
Balance in the hands of the Bankers, Dec. 31, 1843	657	11	8
Balance in the hands of the Secretary, Dec. 31, 1843	14	2	1
	£4246	0	6

(Signed) C. H. TURNER, CHARLES TAWNEY, } Auditors on the part of the Society.
THOS. RAYMOND BARKER, Chairman of the Finance Com.
C. B. CHALLONER, HENRY BLANSHARD, } Members of ditto.

The President then requested the Chairman to favour the members present with an account of the present state of the Funds of the Society, and an estimate of the probable income and liabilities for the next three months; when Mr. Barker laid before the meeting the following statement accordingly:—The funded property amounted at that time to 7700*l.*; and the current cash-balance, at the disposal of the Society, to 2039*l.* The income for the next three months was estimated at 1613*l.*; the ordinary expenses during that period at 397*l.*; the prizes to be awarded at Southampton at 1400*l.*; and the excess of expenditure over receipts on that occasion at 1000*l.*; so that if a balance were struck three months hence, the Society would hold its invested capital untouched, with a probably correct cash balance of 855*l.* in the banker's hands. There was, however, a large bill on account of the printing of the past year's Journals, in progress through the Journal Committee, which would in due course come under the consideration of the Finance Committee; but whether the whole or any portion of that account would be ordered for payment during the next three months was uncertain. The rate of income was the greatest during the spring, and that of expenditure the greatest during the period of the Country Meetings; so that the income for the next three months proceeded under average and ordinary circumstances; while the expenditure with which it was compared took place under temporary and extraordinary circumstances. It was, therefore, the more gratifying to the Finance Committee to find the funds of the Society so well bear the severe test of such comparison.

On the motion of Mr. Pusey, M.P., the following gentlemen were unanimously elected Auditors on the part of the Society for the ensuing year:—Charles Hampden Turner, Esq., of Rook's Nest, Surrey; Alderman Tawney, of Oxford; and Thomas Knight, Esq., of Edmonton.

The President then congratulated the members on the rapid progress of the Society, and the flourishing condition of its affairs. He regarded it as effecting in a most satisfactory manner the various objects for which it was instituted. There was one point, however, which he had always considered as a blot on the accounts; and that was the large amount of the arrears of subscription. That subject, he was happy to say, had received the very mature consideration and diligent scrutiny of the Finance Committee, whose chairman had addressed to each defaulter a letter, drawing his particular attention to the subject; and the Committee had decided on the line of conduct to be adopted in the particular case of each class into which they had distributed such members in arrear. The Society had no wish to take any unfair advantage of any individual, who indirectly, and without knowledge of the liabilities of attaching himself to a chartered body, had become enrolled a member of the Society at the Country Meetings, and for the purpose only of being enabled, as a member, to be present at the public dinners of the occasion. But, on the contrary, in those cases, where deliberate election and payment of subscription had taken place with a full knowledge of the rule of the Society, and the due notice to be given on withdrawal, and had been followed by intentional neglect, or defiance of the regulations of the Society, the Committee have felt it their duty to recommend, as stated in the Report just read, the most deliberate measures to be taken and followed up for the recovery of the arrears. In enforcing the payment under such circumstances, he thought it quite fair and proper to proceed under the powers of the Charter against such defaulters. He still, however, hoped that extreme measures might remain uncalled for; as he felt assured that the members in arrear, on being made sensible of the undoubted legal claim and power the Society possessed in a Court of Law, would at once pay what was due. Under such a system, he had no doubt that the finance of the Society would rapidly assume a better form, and the blot of its apparently enormous arrears be wiped away from its accounts. From his intimate connection with the Society from its commencement, he had always been most anxious for its welfare; and it was a subject of sincere pleasure to him, at the end of the sixth year of its existence, to witness its continued prosperity, and to find, at the end of every year, that the more it has hitherto done, the more it has still to do. He earnestly trusted that it would continue to go on in the same prosperous state, and prove a national benefit to the farmers and all persons engaged in the cultivation of the soil.

The President announced the preliminary Schedule of Prizes for 1845, to be awarded at Shrewsbury, and of which copies were then laid in proof, to receive the suggestions, corrections, and additions of the Members, to be taken into final consideration by the Council in the last week of June, 1844; previous to which time the President requested the favour of all such remarks for the guidance of the Council to be forwarded to the Secretary, in writing, for such purpose.—The Rev. J. R. Smythies objected to the class for animals of any but the three pure and recognised breeds; and recommended, accordingly, that the fourth division of the classes of prizes for half-bred animals should either be expunged altogether, or the prizes reduced greatly in their amount; he considering it to be a great anomaly to set aside an amount for such animals equal to that assigned for the pure bred stock.

The President remarked that the division to which the Rev. Mr. Smythies had alluded, did undoubtedly admit cross-bred animals; while, however, the Society in their prize-sheets encouraged the selection of pure bred animals of the best breeds; they were also desirous of admitting to competition for their prizes animals of those breeds which maintain a great reputation among the farmers of their respective neighbourhoods. Every locality had some breed that was considered particularly good, and he therefore thought it unfair, when the Society held their successive meetings in such parts of the kingdom not to encourage these local breeds, and give them an opportunity of competing for the prizes in such miscellaneous class as that hitherto adopted by the Society. Although he agreed in the general principle contended for by Mr. Smythies, he thought it would be unjust towards the Shropshire cattle, well known to be of a good and useful kind, to exclude them at the Shrewsbury Meeting. Mr. Hillyard said, that the short-horns and Herefords were superior to every other breed in the world, no doubt; but they required good pastures, and there were localities in this kingdom suited to neither of these breeds; he therefore trusted that the particular breeds best suited to particular localities should continue to be encouraged by the Society.

The Duke of Richmond suggested that prizes for cheese should not be forgotten at the Shrewsbury Meeting, as prizes belonging to the dairy character of the district. The further consideration of the Prize-sheet was then postponed. The Duke of Richmond proposed the best thanks of the Society to be given to Earl Spencer, the President, for his conduct in the chair that day, and for the anxiety he had evinced on every occasion to promote the prosperity of the Royal Agricultural Society of England. Lord Spencer was so well known and estimated by the members of that Society, that it was not necessary for him to detain the meeting with any eulogy on his merits.

Mr. Raymond Barker seconded the motion. He had had the good fortune, during the last six years, to be a fellow-worker with Lord Spencer in attending to the business of the Society; and he stood forward on that occasion to bear his testimony to that noble lord's uniform devotion to whatever he undertakes for the public benefit, and especially for the Royal Agricultural Society of England. The motion was then put by the Duke of Richmond, and carried by acclamation. Earl Spencer, in returning thanks for the manner in which the members had received the proposition just put to them by his noble friend the Duke of Richmond, declared his sincere desire to further by every means in his power a Society so beneficial in every respect to the country.

The President then left the Chair, and the meeting broke up.

[The length to which our present Report of the proceedings of the General Meeting extends, induces us to postpone the continuation of the discussions of the last Council to next week, when we shall be enabled to resume our notice of those interesting topics.]

ERRATA in Report of Mr. Parkes's remarks in our last, page 925: for "washed," read "roasted;" for "Graham," "Graburn."

HIGHLAND AND AGRICULTURAL SOCIETY.

AT the last monthly meeting of the Society Mr. Dewar read an essay by Mr. John Taylor, farm overseer at Corsletown, near Huntly, on the comparative merits of reaping Corn with the scythe and sickle. Mr. Taylor first considers the comparative merits of the implements in reference to the processes of binding, winning, carrying, stacking, and thrashing the crop. In regard to binding, a man can bind and stook 1500 sheaves, cut by the scythe, in 10 hours, as easily as he can bind 1200 sheaves cut with the smooth or serrated sickle: the chief reason for the difference being in the circumstance of the binder to the mower having his work straight before him, without having to move from one side to another. It is allowed on all hands, as remarked by Mr. Taylor, that mown sheaves win in about one-fourth less time—that is, in 9 days, instead of 12—than those cut with the sickle, though there is no perceptible difference in winning

between Grain cut with the smooth and toothed sickles. As to leading and stacking, mown sheaves are closer in the band than shorn, and on this account less Grain is lost by shedding while being carted; and as a stack built of mown sheaves is more open than one of sheaves shorn with sickles, the grain and straw in it not only win sooner, but on that account may be carried with safety from the field in an imperfectly dry state. It is allowed that a stack of mown sheaves has a rougher appearance than one of sheaves cut with the sickle, and that it exposes a greater number of heads of grain to the weather and the depredations of birds; but this difficulty is easily overcome, as a man can dress a stack with a scythe-blade in an hour. It is admitted that shorn sheaves are thrashed about 10 per cent. faster with the flail than mown ones; but as that implement is now in very limited use in Scotland, and as a good thrashing-machine is equally effective and expeditious with sheaves cut in either way, this objection is of little importance. Another question of moment in using the sickle and scythe is the quantity of work performed by each, and its cost. The following are the results of Mr. Taylor's experience in the employment of 7 harvest labourers connected with the operation of each implement, viz., with the scythe, 2 mowers, 2 gatherers, 2 binders, and 1 raker; and with the sickle, 6 reapers and 1 binder:—

	Of Wheat. A. R. P.	Of Oats or Barley. A. R. P.
By the Scythe.....	2 3 0	4 0 20
.. Smooth Sickle	1 1 18	2 2 10
.. Toothed Sickle	1 0 8	2 0 10

From these results, the advantage from the use of the scythe is obvious. According to a statement given by Mr. Taylor, it appears that the cost of mowing is about 4s. per acre—a sum considerably less than the expense incurred by either kind of sickle. Mr. Finnie of Swanston then read a report of experiments made by Mr. Lumsdaine of Lethallan, in Fifeshire, with various fertilisers, on different crops. The crops experimented on were Oats, Barley, Wheat, Tares, Pasture, young Grass, Potatoes, and Turnips. The articles experimented with were farm-yard dung, foreign guano, Johnston's artificial guano, nitrate of soda, sulphate of ammonia, bone-dust, rape-dust, sulphate of soda, chloride of sodium, and gypsum. The following are some of the conclusions which Mr. Lumsdaine has given. *Oats.*—In respect of this article of produce, it is observable that the nitrate of soda gave 608 lbs. more grain and 82 lbs. more straw per Scotch acre, and the sulphate of ammonia 672 lbs. more grain and 118 lbs. more straw after a hay crop, at less than half the expense of farm-yard manure, renewed after Turnips; thus proving the great superiority of both these fertilisers, but especially of the ammonia. It farther appears that the ground in a natural state after hay is much more beneficially acted upon by these mineral fertilisers than by the higher order of animal manures after a Turnip crop. *Barley.*—Here the Rape dust beat the farm-yard manure by an excess of 424 lbs. of grain, and 51 lbs. of straw, whilst the artificial guano and nitrate of soda maintained an equal efficacy, but from the expense attending these being only 2.5ths of the cost of Rape-dust, the preference is due to them. *Pasture.*—Here it is quite problematical whether the earlier progress of the pasture by 10 days would, in upland and late districts, be sufficiently compensatory, supposing the outlay to be essentially necessary, in consequence of the expenditure of the winter keep. *Young Grass for Hay.*—The conclusion here follows that the sulphate of ammonia might be profitably employed as a top-dressing in preference to nitrate of soda, and from its earlier advance of the pasture by 12 days than the patch which got nothing, the aftermath would be sooner available and more productive. *Potatoes.*—The inference in this case is, that the patch with the farm-yard dung, and sulphate of soda, and chloride of sodium, takes the lead. Next, that with the farm-yard manure by itself. Then those with Johnston's artificial guano and farm-yard dung, and farm-yard dung with rape cake; and last of all the two portions with the foreign and artificial guanos by themselves, which are nearly equal in merit with reference to cost and produce. *Turnips.*—Under this head the great superiority of the foreign guano is particularly prominent in the production of 530 stones more bulbs than from farm-yard dung alone, at little more than half the expense. Next comes the mixture of dung with foreign guano, yielding 357 stones more than dung alone, at an expense of a guinea less per acre. Then follows the combination of dung and bone-dust, giving 97 stones more than dung alone, at 14s. less money. The bone-dust by itself comes next, followed by the artificial guano by itself also, and in combination with farm-yard dung. The Rape dust with nitrate of soda and chloride of sodium, may safely be repudiated, both from the scantiness of the produce and the expense incurred. —Dr. Macdonald then read a paper by Mr. Robert Boyd, Lunerkeithen, Peeblesshire, On the Prevention of the Curl in the Potato, and on the best Method of keeping Potatoes intended for Seed. Mr. Boyd says that he has been more troubled with the curl in the Potato than any other disease to which the plant is liable. For 10 years a portion of his garden invariably produced curled Potatoes, although the seed was annually changed, and not unfrequently the manure itself. On examining the tubers of the curled plants, he invariably found them affected with the wire-worm, or a small slug or snail, and although he dusted the sets with quick lime, not a single plant was productive of curl. The next dipped the sets in a mixture of salt and water, and dusted them with quick lime, and though the crop fell far short of an average, it was nearly double of that produced by the sets not dipped in the saline solution. Next year, on the sets being dipped in a solution of lime, salt, and water, they gave a satisfactory result, both in regard of freeness from disease and extent of produce. As to keeping Potatoes for seed, Mr. Boyd tried the planting of Potatoes which had unintentionally been left in the field all winter, in comparison with those which had been pitted in the usual way, the seed, the soil, the manure being alike; and the result was that the plants from the sets which had been left in the soil all winter were hoed before those from the pitted Potatoes appeared above ground, and they also ripened 14 days earlier, and produced nearly a fourth part more of crop. In consequence of this result, Mr. Boyd left some Potatoes in the drill all winter, which he intended for seed, only protected from the frost by a little rough dung sprinkled upon the ground; and he also made a pit of about four feet in diameter of the same kind of Potato which had been left in the drill, the pit consisting of a layer of Potatoes and one of earth alternately, and covered in the usual way. In the spring of 1841, the Potatoes in the pit seemed well preserved, though not so juicy as those left in the drills. On both being planted, the sets from the drills germinated some days earlier, were sooner ripe, and produced a heavier crop than those pitted in the usual way. Latterly, Mr. Boyd tried keeping his seed Potatoes in trenches six inches deep, strewed with salt and covered with rough dung. The Potatoes were taken out fresh and unsprouted in the spring, and the plants from them were equal to those raised from seed kept in the drill all winter.

ROYAL INSTITUTION.

May 17.—Lord Prudhoe, President, in the chair. The Rev. E. Sidney gave a communication On the Diseases of Wheat. Mr. Sidney commenced by stating, that though these evils were but too well known, their causes, as well as the mode of remedying them, had as yet been little investigated. Mr. Sidney then mentioned, that the diseases of Wheat arise, either from parasitic fungi, from insects, or from a yet unascertained cause. Of the parasitic fungi, the Uredo fœtida, or caries, commonly called bunt, or pepper-brand, attacks the grain, of which it fills the interior. It is recognised by its disgusting odour; it is supposed that one grain thus diseased may contain 4,000,000 of its spores, each $\frac{1}{1000}$ of an inch in diameter. These burst, and emit a cloud of sporules, which are absorbed during the germination of the seed. As these sporules adhere to the seed by an oily matter, the dressing by which they are cleansed should be alkaline, so as to convert this adhesive substance into soap, and then wash it off. Mr. Sidney recommended for this purpose lime, matters containing ammonia and potass, instead of sulphate of copper or arsenic. The Uredo segetum, the fungus next named, attacks the flower and its pedicel; it is called smut, or dust-brand. Its spores are smaller than those of Uredo fœtida, and it has no odour, but cattle reject straw infected by it; clean seed is the best remedy, but its extreme minuteness renders it difficult of removal, the spores being $\frac{1}{1000}$ inch in diameter. Mr. Sidney then described another fungus, Uredo rubigo, or Uredo linearis, commonly called robin-rush, red-rag, or red-gum, as attacking chaff, scales, and leaves; he stated, however, on the authority of Prof. Henslow and others, that this fungus is only an imperfect form of Puccinia graminis, or mildew. This fungus appears in the straw in sori, or patches, consisting of multitudes of Pear-shaped spores filled with sporules. As these patches originally appear in the cavities beneath the stomata, it is inferred that they enter them with the moisture they inhale, but are not taken up by the roots. As a remedy for this destructive disease, Mr. Sidney proposed the amendment of the soil, where too retentive of water, to air it well by exposure and freedom from weeds, to repress an over-luxuriance of vegetation, not to manure immediately before Wheat, and to select early varieties in places liable to mildew. In closing this part of his subject, Mr. Sidney demonstrated, from a highly magnified drawing of the Æcidium berberidis, that it was a vulgar error to imagine that the Corn-mildew was produced by the Berberry. But he admitted, that the Wheat might be injured by the odour of the Berberry flowers, or by the ingredients of a soil favourable to that plant. The rev. lecturer then proceeded to injuries inflicted on Wheat crops by insects. He noticed, that about 9 o'clock in the evenings of the month of June, myriads of a two-winged fly, the Cecidomyia tritici, or black midge, appear on the Wheat flowers. The larvæ of this fly cause abortion, so that the grain ceases to advance. It is imagined that the chrysalis is bred on the straw-heaps before the barns. A check to the rapid increase of this fly is providentially provided in two or three species of ichneumon, which feed on the chrysalis; still it is sufficiently abundant to destroy sometimes as much as one-third of a Wheat crop. The remedy against this is in the use of a sieve, of sufficient size to let dust and chrysalides through, and then to burn the refuse at a distance from the barn. This process affords the additional advantage of destroying many injurious seeds. Mr. Sidney mentioned that this plan had been successfully tried for two years on a large farm in Norfolk. That wonderful insect, the Vibrio tritici (eel-cockle, or peppercorn) was next mentioned; it attacks the grain. These extremely minute animalcules enter the stalk from the earth. They turn the grain first green, then black, and round, while the husks and chaff open, and the awns become twisted; 50,000 of these vibrios, according to Professor Henslow, weigh 1 grain. They will live six or seven years dried up in the seed. The remedy suggested is to steep the seeds in water, hot enough to destroy this insect, but not to injure the germinating power of the seed. The last disease noticed was that of the ergot: it is common in Rye, but more frequent in Wheat than is generally supposed. All that can be said of it in the present condition of our knowledge is, that it is a monstrous state of the seed, which in that condition burns like resin. The ergot of Wheat is more intensely poisonous than that of Rye, the qualities of which are well known. It grows freely in clayey, wet soils, and was last year prevalent in Darnel, and several other Grasses. Hence the diseases in cattle may have originated. Mr. Sidney's discourse was illustrated by diagrams, executed by Professor Henslow, and by examples of the various morbid appearances of diseased Wheat.

Miscellaneous.

Manure Tanks.—We understand that the Earl Fitzwilliam has intimated to his tenantry, that he will pay half the expense of providing tanks for containing liquid manure, on the several farms held under his lordship. It would be well if other landlords would follow the noble lord's example.—*Doncaster Gazette.*

Experiments with Manures.—We have in the two following experiments a decided proof of the superiority of bone and guano as fertilisers, compared with dung:—Experiment No. 1.—A trial between bone dust and Truro scavengers' dung, by Mr. George Mason, on Rosmeth farm, in Kenwyn, on a crop of White Turnips, calculating the price of the dung at 4s. per load—the increased consumption of bone and guano having very materially lessened the use of this article, and consequently its price.

Dung, half-acre.	£ s. d.
15 loads of dung from Truro, at 4s. per load	3 0 0
Expense of carriage 3 miles	1 17 6
Expenses of spreading the dung on the land	0 15 0
	£5 12 6

Bone, Half-acre.	£ s. d.
1½ qrs. of bone-dust	1 16 6
Carriage of ditto	0 1 6
Broad-casting, &c.	0 1 0
	£1 17 0

The crop was equal, being about twenty tons to the acre; but the difference in the expense was so considerable that the farmer could have cultivated three acres with bone at the expense of one with Truro town-dung. The estate is situated in a poor district, having a south-east aspect, and lies on the clay-slate; valued about 18s. per acre. Experiment No. 2.—Between dung, bone, and guano, as fertilisers for Grass and Hay, was instituted on land farmed by the Earl of Falmouth, in the present year, by Mr. Rope, upon a piece of permanent pasture, which had not been ploughed up for fifty years. The field had alternately been mown and grazed during this period, and had received no dressing, in the shape of dung, for the last ten years. The soil is a heavy loam, resting on a clay-slate subsoil, having a northern aspect. Three half-acres were carefully selected, measured and manured, on the 24th of March—the Hay cut on the 10th of July, and weighed on the 15th. The result will be seen in the following table:—

Manures, per half acre statute.	Cost of manures, including carriage.	Weight of new hay per statute acre.	Value of hay at 30s. pr. ton	Profit.	Loss.
	l. s. d.	tons. cwts. qrs. lbs.	*l. s. d.*	*l. s. d.*	*l. s. d.*
15 loads of Plymouth dung	4 8 0	1 8 0 0	2 2 0	..	2 6 0
10 bushels bone-dust	1 12 0	1 2 2 0	1 13 0	..	0 1 0
196 lbs. of guano	0 17 0	1 12 3 0	2 0 0	1 19 0	..

Here we have a decided loss on the part of the Plymouth dung, which consists of the sweepings of Plymouth streets, night-soil, rubbish, &c., of 2*l.* 6*s.*, and a decided gain on the guano of 1*l.* 12*s.* per half-acre. There cannot be a question after this and the other experiments which I have related, that guano is a most astonishing fertiliser; still this experiment, valuable as it is, is incomplete, till we see the effect of these manures on the next year's crop, which should be grown without manure, and cut and saved in the same careful manner. The after Grass was very good on each of the pieces, the cattle preferring the part manured with bone. Mr. Rope tried the guano in various ways. On a piece of ground adjoining, he sowed double the former quantity per acre; and on some young Clover also a similar quantity, and the rapid growth of each was extraordinary. The spots where guano was applied could be distinguished at a great distance. In another instance he dressed half an acre of Barley, with which fifteen sorts of Grass-seeds, and three of Clover, had been sown, and at the present period they are looking remarkably well; there was also an increase of about eight imperial bushels of Barley per acre, compared with other parts of the field. I mention this circumstance connected with the seeds, in consequence of its having been stated that guano is injurious to Clover and young Grasses. The next experiment to which I would direct your attention, was a trial between bone and guano, also made by Mr. Rope, of Tregothnan. Upon a field of five acres in Swede Turnips, which was of a very inferior description, valued at 10*s.* per acre, a mixture of 15 loads of farm-yard dung, and 5 loads of calcareous sea-sand (the coralline deposit found in Falmouth harbour), and 22 loads of soil taken from the ditches, was laid per statute acre—at a cost, including carriage and spreading, &c., of 4*l.* 2*s.* Three acres dressed in this manner were measured out—one of them having 2¼ cwts. of guano, and another 2½ quarters bone dust extra. The seed was of the purple top variety, and was drilled in at 18 inches distance, on the 15th of June. The difference between the acre which was simply dressed with the dung, sand, and earth, compared

	Quantity of manures per acre.	Price of manures per acre.	Weight of crop per acre.	Value of crop per acre, at 4s. per ton.	Difference between crop and manures. Profit.	Loss.
	£ s. d.	tons. cwts.	l. s. d.	l. s. d.	l. s. d.	l. s. d.
Bone-dust, wood, &c.	4 2 0	7 tons.	2 16 0	.. ..		1 6 0
Dung, sand, &c.	4 2 0					
2½ cwt. guano	1 14 0					
	5 16 0	32 tons.	8 16 0	3 0 0	.. ..	
Dung, sand, &c.	4 2 0					
2½ qrs. bone	3 0 0					
	7 2 0	25 tons	10 0 0	2 17 6	.. ..	

In this experiment, the advantage is decidedly in favour of bones, since there cannot be a doubt but that the next crop will derive a much greater benefit from them than from the guano. This experiment is chiefly valuable in proving that had it not been for the outlay in these manures, the crop would never have paid for the dung and sand. The next experiment was also a trial between bone and guano, giving the advantage to the latter. It was made by Mr. C. Parks, of Michell. The field was a Wheat stubble manured for that crop with a compost of dung, earth, and sand. When put into Turnips, one part was manured with bone-dust at the rate of 3 quarters per acre, the other part with guano at the rate of 2½ cwt. per acre. The following calculation was made by selecting an average statute yard of Turnips grown with each of these manures, and the result was as follows :—

Manures.	Cost of manures per acre.	Produce per acre.	Value of crop at 4s. per ton.	Difference between crop and manures.
	£ s. d.	Ton. cwt. qr. lb.	£ s. d.	£ s. d.
3 qrs. bone ..	3 12 0	15 4 1 4	6 1 6	2 9 6
2½ cwt. guano	1 10 0	21 15 2 24	8 14 3	7 4 3

I have made as few remarks as possible on the effect of the different manures which we have passed in review, leaving the experiments to speak for themselves; but in this last one, it must be understood that the land was of a heavy loamy character, which is more suitable to the use of guano than bones. The next experiment was one between bone-dust, Peruvian guano, Potter's artificial guano, and bone-dust and Peruvian guano mixed, instituted on a crop of Swedes, on Trelowarren estate, by Mr. Foot, the hind of Sir R. R. Vyvyan, Bart. The land is of a loamy description on a clay-slate subsoil, having a north-west aspect :—

Kinds of manures.	Quantity of manures per acre.	Price of manures per acre.	Weight of Turnips per statute acre.	Price at 4s. per ton of crop per statute acre.	Difference between prices of manure and crop.
	£ s. d.	tons. cwts.	£ s. d.	£ s. d.	£ s. d.
Bone-dust .	2½ qrs.	2 12 0	23 8	9 7 3	6 14 9
Peruvian guano .	350 lbs.	2 9 0	25 .	10 0 0	7 18 0
Potter's guano .	350 lbs.	2 9 0	22 .	8 16 0	6 7 0
Bone-dust and Peruvian guano	¼ qrs. 175 lbs.	1 6 3 / 1 1 0	26 .	10 8 0	8 0 9

From this experiment we see that the bone-dust and guano mixed, gave the heaviest crop, and yielded the largest profit per acre.—*From Mr. Kurkeek's Prize Essay on Artificial Manures.*

Notices to Correspondents.

RURAL CHEMISTRY. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4s. 6d.

BOOKS.—*H. F.*—"The Harleian Dairy System, and An Account of the various Methods of Dairy Husbandry pursued by the Dutch." Apply to your bookseller.

BUTTERCUP.—*Subscriber.*—Try pasturing your park with geese.

FOOD FOR COWS.—*A Lady* will probably find that her quarter of an acre will produce more and better winter food for cows, by sowing half of it to Carrots, and half to Mangold Wurzel, than by any other way of cropping it. Rather less than half might be sown to the latter crop, and the difference might be sown to Parsnips. It is very late for all these crops, but if the land be in fine order, they may succeed yet, if particularly looked after.

CHARRING PEAT.—*An Old Subscriber.*—Probably next week.

DISTEMPER IN DOGS.—*J. Mc I.*—It consists of a specific inflammation of the mucous membranes, particularly that lining the nostrils, throat, and windpipe. It is often fatal, but probably more dogs die of the *remedy* than of the *disease*. There is no infallible cure; it requires as much care and adaptation of treatment as any disease to which animals are liable. If there is any costiveness, give from half a grain to two or three grains, each of viz. :—Chloride of mercury and potassia, tartrate of antimony, with milk, or on a little meat, but refrain from this medicine if there is either purging or much sickness. Afterwards the following pill may be given twice a day :—Digitalis, 1 to 2 grains; antimonial powder, 2 to 4 grains; nitre, 4 to 8 grains, for two or three days. When the discharge from the nose is considerable, or there is much weakness, give the following pill twice a day :—Gentian, 10 to 20 grains; ginger, 5 grains; cascarilla bark, 10 to 20 grains. If there is purging or vomiting, add from ½ to 2 grains of opium till these symptoms cease. If the nasal discharge is offensive, give daily a tea-spoonful of yeast. If the brain appears affected, put a seton in the poll and in the loins; if there is paralysis or weakness, give broths and nutritious food, warmth, and care, and modify the treatment according to the symptoms. *W. C. S.*

LIQUID MANURE.—*P.*—Vegetable mould of the right kind is a fixer of ammonia, on account of the humic acid which it contains. Muriate of ammonia is a fixed salt. But if you spread urine which has already had its urea converted into carbonate of ammonia, by putrefaction, on a vegetable soil, though it be of the best kind for fixing ammonia in this way, a considerable immediate loss must take place by evaporation. If you apply it fresh, and rake it in, probably no other preparation would be necessary. If it is inconvenient to pay daily attention to the matter in this way, and if your soil is not, as Sprengel calls it, a humic soil, then you had better make a sufficiently large tank, put in many gallons of water, and a few of sulphuric acid, to begin with; and always add more acid whenever putrefaction commences, which may be ascertained by smell, and by the effervescence which follows the addition of acid. —*Ex. Cm.*—You had better add the sulphuric acid till effervescence ceases, stirring the mixture up all the while with a long pole, or something of the kind. Dilute the acid with two or three volumes of water before using it. You may apply the compound to Grass at once, provided you have not put too much acid in, which you will know by seeing if the liquid will redden litmus-paper. If too much acid has been added you will have to wait till such additional quantity of urine has been added as will neutralise it. The sulphate of ammonia formed will be in solution, but there will also be a sediment of various matters, worth making use of as manure.

MANURE.—*Ignatius.*—Peaty or black earth will act as an absorbent of the gaseous emanations from a dung-heap, and you may in a measure fix the volatile part of urine with it. The sand you send will not do it. Your Mangold Wurzel, though sown late, will succeed if the land is in good order, and the weather prove propitious. Your proposed application of soot will probably be beneficial; but for a statement of the partial or special effects of the manure, and others of its kind, see previous Papers.—*B. L.*—When animal matters are boiled in alkaline solutions, their value as manure is diminished; a quantity of nitrogen is lost in the form of ammonia. The substance obtained by the process you describe, would, no doubt, be a good manure; but a large part of the nitrogen would be wasted. The process of drying would not of itself be likely to injure the manure. *K.*

MOWING YOUNG WHEAT.—*C. L.*—We shall notice your letter next week.

NITRATE OF SODA.—*I. V. B.*—A skilful sower will scatter 1 cwt. per acre uniformly. If it be mixed with twice or thrice its weight of dry mould, it may be scattered evenly by a bone-dust drilling machine, and then you may in effect broadcast it by fresh harrowing across the drills. Perhaps the best way to scatter it evenly, is to dissolve it in water, and use the water-cart. You can put your Wheat in, by working the Clover-root with the scuffler twice crossing, and then ploughing, harrowing, drilling the seed, and harrowing again.

STALL-FEEDING.—*S. L.*—You will be able to keep more stock on your land than you name, if you choose, provided you cultivate your land as you should (it is of so small an extent) with the spade. Supposing that you have 8 pieces, sow 2 to Wheat, and on one of them sow Clover. Immediately after harvest, break up the stubble of the other, and sow Vetches; digging in manure, and making the land as rich and friable as possible. These will be ready early in spring. As you mow them, and carry them to your horses and cows, dig up the land every day, and plant Potatoes. You may plant another piece to Potatoes besides this, and earlier; plant also 1 acre (2 pieces) to Carrots—a portion the Early Horn, and the rest the White Belgium—and ½ an acre (1 piece) to Mangold Wurzel. Your ground in spring will be thus; 2 pieces Wheat, 1 piece Clover, 1 piece Vetches—to be afterwards planted to Potatoes, 1 piece Potatoes, 1 piece Mangold Wurzel, and 2 pieces Carrots. You will find that, with your hay and these roots, &c. you will be able to keep much more stock than what you say, and you will then be able to turn the laugh at those who now joke you about your book-farming.

TANKS.—*Cockney.*—You had better have your tank out of the stable. It would do well enough in-doors, but as you propose using sulphuric acid, you might be exposed to the hazard of your cattle getting a foot in occasionally. We do not know anything of the prepared Indian-rubber flooring, except that the area in front of the Admiralty is paved with it, and that, in that place, it seems at present to answer the purpose. One thing that gives it value in London is that it effectually deadens sound. Horses do not much like it at first. You had better use paving-stone or bricks for your purpose.

WEEDS.—*J. G.*—Try liming your land; it will sweeten the Grass. You cannot get rid of particular Grasses by the use of any particular manure; but by drying your land and sheeping it, you may gradually destroy aquatic weeds and annuals.

***As usual, many communications have been received too late.

Markets.

MARK-LANE, MONDAY, May 20.

THERE was a fair supply of English Wheat from the near counties this morning, but it met a slow sale, at prices barely equal to those of last week, particularly the secondary qualities, of which some proportion remained undisposed of at the close; in old Foreign a moderate business was transacted, and also such parcels of new as were in good condition at our late quotations, but the inferior continues very unsaleable, although offered rather lower. —English and Foreign Barley are unaltered in value, but the latter meets an improved inquiry.—Beans are 1s. dearer.—Peas remain as last quoted.—Oats meet a better demand, and in some instances a trifling advance is obtained upon the finest qualities.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	46	55	Red .	46	54
—— Norfolk, Lincolnshire, and Yorkshire .	50	56	White	—	—
Barley, Malting and distilling 30s to 30s Chevalier	31	35	Grind.	24	28
Oats, Lincolnshire and Yorkshire . . Potands	20	23	Feed	19	22
—— Northumberland and Scotch . . Feed	20	23	Potato	21	25
—— Irish . . . . . Feed	18	23	Potato	19	24
Malt, pale, ship	78	82			
—— Hertford and Essex	80	83			
Rye	29	32			
Beans, Maragan, old and new 27 to 33	Tick	29	34	Harrow	28	33
—— Pigeon, Heligoland . 30 to 38	Winds.	—	—	Longpod	—	—
Peas, White . . . . 33 to 35	Maple	30	39	Grey	28	30

FRIDAY, May 24.

During the week the arrivals of grain have been small; notwithstanding which, great difficulty is experienced in disposing of the English Wheat left over from Monday, at that day's prices. In Foreign there was a moderate business only; a cargo or two of the foreign arrivals were disposed of in bond at their free value less the duty.—Beans and Peas are fully as dear.—English Barley is unaltered but the foreign meets an improved demand, and such parcels as are adapted for Malting command an advance of fully 6d. per qr., good sweet 53lbs Pomeranian f. o. b. was also enquired. —Oats sell freely, and a slight advance is obtained upon the inferior and middling descriptions.

IMPERIAL AVERAGES.

		Wheat.	Barley	Oats.	Rye.	Beans.	Peas.
April	12 per Quarter	55s 1d	32s 1d	20s 1d	34s 4d	31s 9d	33s 5d
—	19 . . .	55 4	32 10	20 2	33 8	31 3	31 5
—	26 . . .	55 5	32 7	20 1	31 8	31 4	30 8
May	3 . . .	55 3	31 8	20 1	30 11	31 0	31 2
—	10 . . .	55 1	31 5	20 5	31 4	30 5	32 5
—	17 . . .	55 10	31 1	21 0	31 9	30 3	31 8
6 weeks' Aggreg. Aver.		55 4	32 1	20 4	32 7	31 11	32 7
Duties on Foreign Grain		17 0	6 0	6 0	10 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . .	2320	200	1980	2750 Sks
Irish . . .	—	—	5850	—
Foreign . .	1920	3740	—	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English .	6961 Sks. — Brls.	2144	928	7720	3580	—	1075	815
Irish . .	50 — 00	—	235	20	29670	—	—	—
Foreign . .	00 5830 00	21409	41686	—	1720	1160	—	168

Canary . . . per qr.	—	—	—
Carraway . . . per cwt.	30	32	—
Cloves, Bad, Zanzibar . .	2½	2½	—
— — Penang . .	3½	3½	—
— — Fine, Zanzibar . .	3½	3½	—
— — Penang . .	3½	3½	—
— White, Zanzibar . .	1½	1½	—
— — Penang . .	1½	1½	—
Coriander . . . per cwt.	12	15	—
Hempseed . . . per last	24	26	—
Linseed . . . per qr.	—	—	—
— Baltic . . .	—	—	—
— Cakes, Eng. per 1000 of 10s	6	15	—

Mustard, brown, per bush.	4	5	—
— white, per bush.	4	5	—
Rapeseed, English, per last	22	23	—
— Foreign, per last	—	—	—
Rapecake . . . per ton	—	—	—
Turnip, fine, shipping p. bush.	2	3	—
— Foreign . . .	2	3	—
Trefoil . . . per cwt.	—	—	—
Turnip (too variable for quotation).			

KINGSTON AND LEA.

HOPS, FRIDAY, May 24.

THE high winds and extreme cold nights at the end of last and beginning of this week have much checked the Hop bines, causing them to look yellow and unkind, whilst the fly continues rapidly to increase, which causes many experienced planters to anticipate as severe a failure as in 1840; our Market, in consequence, keeps advancing.

PATTENDEN & SIMES, Hop-Factors.

WOOL.—BRITISH, FRIDAY, May 24.

WE cannot report any alteration in our English Wool Market since our last. Very little of the new clip as yet has made its appearance.

	per lb.			per lb.
Long-wooled Wethers :	11½d to 1s 0½		Southdown Hoggists	1s 0 to 1s 2d
Do. Hoggists	1s 1 1 2½		Kent Fleeces	1 1 1 6
Southdown Fleeces	11 1 0			

JAMES PEMAN, Wool Broker.

COVENT GARDEN, MAY 23.—The Market has been well supplied during the week, but many of the articles offered are rather inferior in quality, owing to the long continuance of dry weather. This is particularly the case among Vegetables; Fruit, generally speaking, is good. Pine Apples are, rather more plentiful, and are in consequence somewhat reduced in price. Grapes are excellent, especially the Black Hamburgh, of which we noticed some fine bunches with beautiful large well-swelled berries. Some good white Grapes are also in the Market. Peaches and Melons have been offered; the latter are large, and good in quality. The best Cherries are selling at about 12s. per lb. Apples and Pears are scarce. Gooseberries are plentiful, and are cheaper. Good Oranges are becoming scarce. Strawberries of good quality are to be met with in the market; they are getting more plentiful. Among Vegetables, Cauliflowers are rather scarce, and they are small in size. Broccoli, as well as Carrots and Turnips, is much affected by the drought. Seakale is very scarce; Rhubarb is sufficient for the demand. Asparagus is a little advanced in price; French Beans bring from 2s. to 4s. per 100. Peas are supplied in large quantities, and they are also a little reduced in price. Lettuces and other salading are plentiful. Cucumbers are cheap, but they are for the most part small in size. Among Cut Flowers we noticed Erica vestita alba, E. hybrida, Chorozema varium, Gloxinia rubra, Polygala oppositifolia, Gardenia radicans, Epacris impressa, Pelargoniums, Fuchsias, Lily of the Valley, Calceolarias, Verbenas, Cinerarias, Pansies, Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb., 6s to 10s
Grapes, Spanish, per lb. 1s to 1s 6d
Hothouse Grapes, 4s to 10s per lb
Melons, 5s to 12s each
Peaches, 20 to 40s per dozen
Cherries, 12s to 18s per lb.
Apples, des., p. bush. 6s to 20s
— Kitchen, p bus. 7s to 12s
Apricots (green) p. pot., 1s to 1s 6d
Currants, 4s per bl.-sv.
Strawberries, 6d to 1s. per pt.
Oranges, per dozen, 1s to 2s
— per 100, 6s to 16s
Gooseberries, per half-sieve, 2s 6d to 5s
Lemons, per doz. 1s to 2s
— per 100, 6s to 16s
Almonds, per peck, 6s to 7s
Sweet Almonds, per lb., 2s 6d to 3s
Nuts, Spanish, per bushel, 1 1s
— Brazil, 16s
— Hazel, 2s to 4s
— Barcelona, 20s to 24s
— Cob, 14s
Walnuts, per bushel, shelled, 16s to 20s
Chesnuts, per peck, 4s to 6s

VEGETABLES.

Rhubarb, per bundle, 4d to 1s 6d
Broccoli, per bundle, 2s to 3s
Cabbages, 6d to 1s 6d per dozen
Red Cabbages per doz. 2s to 3s
Sorrel, 6d to 9d p. bf.-sv.
Asparagus, per 100, 1s to 7s
Seakale, per punnet, 9d to 1s 6d
French Beans, 2s to 4s per 100
Autumn Potatoes, 3d to 6d per lb.
Greens, per doz. 2s to 3s 6d
Potatoes, per ton, 40s to 100s
— per cwt., 2s 6d to 4s
— per bushel, 1s 6d to 2s
— Kidney, p. bush., 2s 6d to 3s
Frame Potatoes, 6d to 1s 3d per lb.
New Turnips, 6d to 1s per bunch
Peas, per bshl sieve, 5s to 8s
Red Beet, per doz., 6d to 1s 6d
New Carrots, 6d to 1s 6d
Radishes, Tur., 6d to 1s p doz. bchs.
Basil, 6d to 9d per bunch
Horse Radish, per bundle, 1s to 2s
Savory, 6d per bunch
Cucumbers, 4d to 1s each
Spinach, per sieve, 9d to 1s
Leeks, per doz. bun., 6d to 1s
Garlic, per lb. 6d to 8d
Onions, 2d to 3d p. bch.;
— Large, per bushel, 1s to 2s
— Spanish, per doz., 1s 6d to 2s
Shallots, per lb., 6d to 10d
Lettuce, p. score, 6d to 1s
Young Celery, 1s. 6d. to 2s per bunch
Celery, per bun., 6d to 1s
Mushrooms, per pottle, 1s to 1s 6d
Small Salads, per punnet, 3d to 6d
Watercress, p. doz. sm. bun. 4d to 6d
Parsley, per bf.-sv., 6d to 1s
Tarragon, Green, per bun. 3d to 4d
Green Mint, 3d to 4d per bunch
Marjoram, p. bun. 4d to 6d
Chervil, per punnet, 2d to 3d
Cauliflowers, 6s to 24s per doz.

POTATOES.—SOUTHWARK WATERSIDE, May 20.

THERE has been a considerable change in the weather since our last Report; the earlier part of the week was as hot as usual, but the end was stormy and cold, but without rain; notwithstanding, the Town markets were well supplied with vegetables, selling at moderate prices. At the Waterside Potato Market the same inactivity prevailed, and it was with difficulty that the late quotations could be maintained for the best samples; and the old disease of the dry-rot was visible in many samples, and especially in the Scotch Reds, causing the buyers to be limited in their purchases of second rate qualities. Foreign Potatoes are still in the market, selling at prices previously quoted. During the past week there have been supplies from most of the shipping districts, which are fully equal to the demand.

York Reds	-	-	-	40s to 80s	Essex and Sussex Blues	—s to —s
Perth -	-	-	-	60 70	Wisbeach Kidneys	- - 70 —
Early Devons	-	-	-	— —	— Blues	- - 60 65
Late Devons	-	-	-	70 75	— Whites	- - — —
Cornwall	-	-	-	— —	Jersey and Guernsey Blues	60 65
Sussex Whites	-	-	-	40 45	Prince Regents	- - — —
Kent and Essex Kidneys				30 —	York Shaws	- - 40 50

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 23.

Prime Upland Hay	72s to 77s		Clover	- 90s to 105s	Straw	- 34s to 36s
Inferior - -	63	68				

Short supply, and trade better

JOHN COOPER, Salesman.

CUMBERLAND MARKET, May 23.

Superior Meadow Hay	76s to 80s		Superior Clover	100s to 105s	Straw	32s to 36s
Inferior - -	65	70	Inferior	,, 90 95		

JOSHUA HARRIS, Hay Salesman.

WHITECHAPEL, May 24.

Hay - -	50s to 80s		Clover -	90s to 100s	Straw	- 34s to 36s
— fine - -	68	75	— fine	105 110		

SMITHFIELD, MONDAY, May 20.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	3	3	4	Best Downs & Half-breds	3s	3	4s 2
Best Short Horns	3	3	3	8	Best Long-wools	3	3	4 0
Second quality Beasts	3	0	3	4	Ewes and second quality	3	4	3 8
Calves	4	4	5	0	Pigs	3	4	4 0
Lambs	5	0	6	0				

Beasts, 2701; Sheep and Lambs, 29,880; Calves, 185; Pigs, 270.

Our supply of Beasts to day is very moderate, the trade is brisk, and everything readily sold at the above quotations; in some few instances the very best Scots have made a little over 4s, and the most selling Short-horns nearly 3s 10d per 8 lbs. We have again a very fair supply of Sheep and Lambs, but the demand is quite adequate to it; indeed, we notice a considerable advance on last Monday's quotations, fully 4d per 8 lbs, the best Downs readily making 4s 2d, and the most selling Longwools 4s. Good Lamb is rather in demand, and fully supports former rates. Pork-trade is a little better. Veal-trade is very brisk, at an advance of about 4d per 8 lbs.

FRIDAY, May 24.

Notwithstanding a very limited supply of Beasts, an extreme dulness pervades the trade. Monday's prices are barely maintained: the best Scots hardly make 4s, and the best Short-horns scarcely 3s 8d per 8 lbs. Sheep are not very plentiful, still, a slackness of demand causes us to submit to a reduction of fully 2d per 8 lbs, the best Downs making no more than 4s, and the best Longwools hardly 3s 10d. The late increased demand for Lamb has brought a large supply of that article to our Market to-day, and the trade for it is quite overdone; we notice a large proportion is of very middling quality, and cannot be sold; the very best qualities are still in moderate supply, and realise about 5s 6d per 8 lbs. Veal-trade is rather worse, the best cannot be quoted at more than 4s 8d. Pork, also, is lower.

Beasts, 961; Sheep and Lambs, 12,320; Calves, 251; Pigs, 220.

WRIGHT'S STEEL PENS.—Manufactory of Steel Pens, of every variety of form, temper, and quality, by the use of which all writing instruments, from the finest to the broadest, can be made to write with equal facility, as J. WRIGHT'S Manufactory, Sheffield, is entirely devoted to the finish and perfection of Pens, which have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Sheffield, Essex; J. and G. DUNN, Ironmongers, London-bridge; and of any Ironmongers in the country. Price, in box, with lock and joints, 2s. 6d.

IMPORTANT TO AGRICULTURISTS AND OTHERS.

ANALYSES OF SOILS, MANURES, &c. are conducted by MR. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), No. 5, A., Hawley Road, Kentish Town.

N.B. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2s. 6d. each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 28, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s. 6d. each, and in bottles, six times the size, at 7s. 6d. The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

TO LET, A FARM OF 170 ACRES.—PRIORY FARM, Warbleton, Sussex; comprising a large Farm House, fit for a respectable family, with workmen's Cottage, Barns, Stables, and all necessary Agricultural buildings; together with about 170 Acres of Arable, Meadow, Pasture, Hop, and Orchard land; with Gardens; and about 12 Acres of good Marshland, in Pevensey Level. Possession at Michaelmas next. To view the same, apply to JOSEPH PANKHURST, Warbleton; and for terms, to Messrs. PATTENDEN and SMITH, Hop-factors, 247, High-street, Borough.—The right of Sporting over the above, as also some extensive Woodlands adjoining, may be had if required.

Sales by Auction.

TO FLORICULTURISTS. — To be SOLD by AUCTION, by LANEE and SON, by order of Mr. STORY (retiring to the country), at his residence, Isleworth, on MONDAY, June 17, at 12 o'clock, his extensive and superb collection of STOVE and GREENHOUSE PLANTS, consisting chiefly of specimen and hybrid Ericas, Azaleas, Camellias, &c., comprising more than 2000 Plants; a Span-house, Prepared Soils, Flower-Van; and (if not sooner disposed of) the Lease of House, capital Gardens, and Paddock. To be viewed three days prior, when Catalogues may be had on the premises, and at LANEE and SON'S Offices, No. 65, New Bond-street.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to public competition, at the Auction Mart, Bartholomew-lane, on Tuesday, May 28th, and Thursday, May 30th, 1844, at 12 o'clock each day, a fine collection of DAHLIAS, comprising all the leading varieties; also a splendid assortment of GERANIUMS, the newest varieties of FUCHSIAS, VERBENAS, HEARTSEASE, &c. &c.; a variety of other Flowering Plants. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

PLANTS FROM NEW ZEALAND.

MESSRS. J. C. AND S. STEVENS beg to announce they will sell by Auction, at their Great Room, 38, King-street, Covent-Garden, on FRIDAY, May 31, at 2 o'clock, a small but interesting Consignment of LIVE PLANTS just arrived, after a short and favourable voyage, direct from Wellington, New Zealand. It is believed that they include several species, either quite new or very imperfectly known to European Botanists, including Ferns, Orchideæ, several healthy plants of a new species of Daphne, Taxodium, Aristolochiæ, Clematis, &c. &c. On view Two days prior to the Sale; and Catalogues may be had.

TO BE SOLD—A SPLENDID COLLECTION OF MELOCACTI, EUPHORBIA, AND ALOES. Inquire at No. 22, Park Place, West, Liverpool Road, Islington. Likewise a valuable bed of TULIPS.

TO BE DISPOSED OF, about 200 Fruiting and Succession PINE-PLANTS, principally Queens and Jamaicas, perfectly clean and healthy.—Apply to C. JUDD, Gardener, Bohun Lodge, East Barnet, Herts.

SALE OF LAND.—SWAN RIVER, WESTERN AUSTRALIA.

FOR SALE BY PRIVATE CONTRACT, an Excellent Farm in the district of York, containing 4000 acres of excellent Grazing Land, with two miles and a half Frontage on the Avon River.

The Farmstead comprises a substantially-built Dwelling House, detached Kitchen, spacious Barn and Mill House, with Flour-mill and Wool-press, Stables, Sheds, Stock-yards, &c.

About 65 acres of Land, cleared, inclosed, and in a high state of cultivation, also a Garden and Orchard well stocked with Vines and Fruit-trees.

This Farm adjoins the rising town of York, is close to the high road to Perth, is within ten minutes' walk of a Church, and is in the centre of the best Grazing district in the Colony.

The owner of the above is now on a visit to England for a short time.

For farther Particulars apply to Mr. T. O. POWLES, 13, Austin Friars, where a Map of the Estate may be seen.

TO GARDENERS and NURSERYMEN.—To be SOLD, an excellent GARDEN ENGINE, fitted up in a superior manner, with brass valves; can be worked by either one or two persons; it will project water over the largest fruit-trees, to a distance of about 50 feet. As the Engine is of a superior description, and is offered at a very low price, it is worthy the attention of any person requiring one.—Apply to O. H., 20, Thanet-street, Burton-crescent.

MR. RAINY respectfully begs leave to remind the Nobility, Gentry, and the Public, that in consequence of his retiring from business, and in consequence of the pressure of the times, and other circumstances upon estates, and the various descriptions of real property, brought into the market for sale by public auction and private contract, it is his intention to adopt for the future a REDUCED and GRADUATED SCALE of COMMISSION, in comparison with that which has been generally customary for the last half century. At the same time that the expenses of vendors will thus be materially diminished, he trusts that he shall be able to afford greater facilities to the attainment of their objects, and to the fullest advantage; and, touching these points, he feels it necessary to offer a few words of explanation.

There exists between many solicitors and many auctioneers an understanding, to which the epithet collusive would scarcely be too severe, because by it the interest of their clients, the vendors, is often seriously compromised, and in this manner:—The vendor, instead of himself selecting the auctioneer or agent for the disposal of his property, will, in many cases, confide the choice to his solicitor; and not unfrequently the solicitor (but upon what justifiable plea Mr. Rainy never could comprehend) arrogates to himself the right of such choice; and repeated instances might be adduced to show that that choice has been exercised in contravention, if not in opposition, to the previously-expressed wishes of the vendors, and wholly regardless of old and long-established connexions; these solicitors having usually a secret compact with the auctioneer, by which he is bound to fee the solicitor with a share of his commission and other charges, as the *sine qua non* of his being appointed to the sale. And what is the consequence? In such quarters the auctioneer who is willing to concede to the solicitor the largest share, or, in other words, consents to pay the heaviest bribe, he, be he quack or otherwise, and with slight reference to his regular initiation into his profession, or his qualifications or experience, or (what also is evidently an essential consideration) the extent of his connexions and influence, he is preferred. Thus tempted, many solicitors have become reconciled to abuse the patronage they have assumed, and aim at excluding those auctioneers who, like Mr. Rainy, have consistently and uniformly refused to submit to a tyranny subversive of all proper rivalry, and at variance with all independent and honourable feeling.

With respect, however, to what may be considered the legitimate association of the province of the solicitor with that of the auctioneer or public agent, Mr. Rainy, with the desire to obviate jealousies, to produce a more cordial and satisfactory co-operation between those parties, and in the hope of entirely abolishing secret and derogatory compacts would suggest that, as a remuneration to the solicitor of the vendor, for his advice and assistance in the drawing and settling of the conditions of sale, and for his attention to those legal points which are in immediate relation with that part of the transaction, a fair portion of the commission should accrue to the solicitor (but with the full knowledge and sanction of the vendor), in lieu of the charges now made by him for the particular items adverted to. This, however, is not intended to include charges for investigations of title, abstracts, deeds, or papers, or fees to counsel; and Mr. Rainy entertains no doubt that the nobility, gentry, and the public will approve of and support the principle of repudiating altogether any clandestine dealings between parties employed in affairs so important to them. But, in all cases where the vendors do not consent to the appropriation to the solicitor of such portion of the commission; or the solicitor, from that integrity, impartiality, and strict sense of justice, and that delicacy and liberal feeling which fortunately characterise the conduct of a large number of the members of the legal profession, declines the acceptance of it; then such portion will be remitted by Mr. Rainy to the vendor by whom he is employed.

With regard to sales of pictures, or other works of art, jewels, plate, libraries, and other valuables, a considerable reduction will also be made in the commission, as compared with the printed terms of Messrs. Christie and Manson, Mr. George Robins, and most other auctioneers. On this branch, however, no payment is contemplated to any of that numerous class of individuals who perpetually attempt to interfere, as middle-men, and ask to be rewarded for doing nothing; such voluntary interference being wholly useless and absurd, and indeed very often mischievous to the interests of those whom they pretend to serve. The allowance, therefore, which many auctioneers give, and these persons in secret receive, upon what is termed "the reciprocity system" (meaning, in plain language, on the part of the auctioneer, "procure the sale for me, and I will hand over to you a share of the profit"), will be the amount of the reduction in Mr. Rainy's new scale of commission on chattel and personal property, solely and exclusively in favour of the vendor; and where the total gross proceeds may exceed 5000*l.* a still further abatement will apply to the residue.

A similar rule will also govern Mr. Rainy's charges for putting up property to auction, if not sold; for purchases, valuations (including those for probate), references in cases of compensation, or opinions upon cases; obtaining loans upon mortgage (in conjunction with solicitors), and all other matters incidental to property.

In conclusion, he begs to add that, as heretofore, no sale will be undertaken by him, the genuine character of which will not bear investigation, and every exertion will be made to counteract and defeat combinations and deceptions, whether they are directed against vendors or purchasers.

No. 14, Regent-street, St. James's (in the division between Jermyn and Charles streets.)—April, 1844.

EAST COWES CASTLE, in the ISLE of WIGHT, to be SOLD by PRIVATE CONTRACT, by Mr. RAINY.—This distinguished FREEHOLD MARINE MANSION, of stone, and in the castellated style of the time of Edward the Sixth, was erected, at unlimited expense, by the late John Nash, Esq. It affords the most ample and elegant accommodation for a family of distinction, and is especially suited to any member of the Royal Yacht Club. The scenery is too well known and appreciated to render eulogium necessary, and it will be admitted that the facility of access from the metropolis (the distance being now accomplished in about four hours) gives to the property a much increased value. The chief apartments are lofty, and expensively finished; they include a dining room, 30 feet by 20; a drawing-room, 28 feet 6 in. by 21 feet 6 in.; and a library, 30 feet by 27; a billiard-room, 30 feet 6 in. by 18 feet 6 in.; and an octagon library, 19 feet by 19; numerous principal and secondary bed-chambers and servants' apartments, offices of every description, splendid conservatories, a picture or statue gallery, 70 feet by 21; gardens of a superior order, with hot-houses, &c. The grounds, which are beautifully undulated, contain, with the gardens, paddocks, &c., about 43 acres, embellished with noble timber and plantations of luxuriant growth, and walks of considerable extent are cut through them.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

NORTH WALES.—To be SOLD, by PRIVATE CONTRACT, by Mr. RAINY, a highly improvable FREEHOLD ESTATE, land-tax redeemed, situate in a fine part of the country, and commencing within a mile of a capital market town. It comprises 2200 acres, with excellent farm-houses and buildings, all well tenanted; a moderate residence and offices (requiring repairs), a fine lake stored with fish, very thriving woods and plantations, &c., forming a fine and very eligible property for investment.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

RUTLAND GATE, HYDE PARK.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a very desirable new-built and elegantly finished RESIDENCE, together with the nearly new household furniture. It commands an uninterrupted view over Hyde Park, has an extra story of bed-chambers, a coach-house, and stabling; held for a term of about 90 years, at a small ground-rent.—To be viewed by tickets, and particulars had of Mr. RAINY, 14, Regent Street, St. James's.

CLOSE to SOUTHAMPTON.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, in separate, and with immediate Possession, [illegible] RESIDENCES, with such portion of park-like [illegible] agreed upon, and either with or without a superior [illegible] excellent farm-house and buildings. The whole estate is [illegible] land, and comprises 178 acres; and from its immediate [illegible] only to the improving town of Southampton, presents a most favourable opportunity for a successful building speculation.—Particulars may be had of Mr. RAINY, 14, Regent-st., St. James's.

HANTS.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a capital and spacious FREEHOLD MANSION, standing in a beautiful park of 180 acres, with pleasure-grounds and wilderness, carriage-drives, with lodges, capital walled-garden, hothouses, farm-buildings, &c. &c. The mansion is adapted to the accommodation of a family of distinction, is situated in the midst of the rich and admired scenery of the New Forest, its celebrated field-sports and extensive drives, only nine miles from Southampton, and accessible from the Metropolis in about four hours.—To be viewed with tickets, which, with particulars, may be had of Mr. RAINY, 14, Regent-st., St. James's.

RICHMOND, SURREY, commanding Views of the River Thames and the adjacent Scenery.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, the very beautiful Gothic MANSION, on the rise of the Hill, for many years the residence of the late Mrs. Bilerker, but disposed of on behalf of her representatives, a few months since, to the present owner, who has altered and improved the premises, and made additions at a large outlay. It is arranged to afford complete accommodation for a family of the highest respectability. The dining-room is 30 by 20 and 14 feet high, a library, two drawing-rooms with folding-doors, numerous bed-chambers, offices of every description, ice-house, coach-houses, stabling, and cottage, pleasure-grounds beautifully laid out and ornamented with handsome timber and walks, &c. Or the House would be Let furnished by the year or for six months.—To be viewed by tickets, which may be had of Mr. RAINY, 14, Regent-street, St. James's.

NEAR SOUTHAMPTON. — To be SOLD, by PRIVATE CONTRACT, by Mr. RAINY, with immediate possession, a singularly beautiful MARINE MANSION, upon which the present owner has expended many thousand pounds. It is delightfully situate about four miles and a half from the Southampton, Botley, and Fareham stations, and stands in a park-like paddock of 35 acres, well timbered, with superior gardens and grounds, stabling, lodge, &c., and commands very fine sea and inland views.—Particulars may be had of Mr RAINY, 14, Regent-street, St. James's.

KENT. — Six miles from Canterbury, and near to the Sea.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a valuable FREEHOLD ESTATE, partly exonerated from land-tax; comprising a park of beautifully undulated surface, a moderate sized family residence, and offices, and also three farms; the whole about 640 acres, and may be treated for together or separately.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

KENT.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, the very valuable and beautiful Freehold Estate, COMBEBANK, the seat of the late Viscount Templemore, situate in the rich vale between Madam's Court Hill and Sevenoaks, 23 miles from London, and a few miles from a railroad station; comprising the finely-timbered park and woods, sheet of water, the noble mansion, stabling, gardens, pleasure-grounds, and walks, the capital farm, with complete agricultural buildings, lodges, &c. The whole about 320 acres, land-tax redeemed. Many thousand pounds have been expended in improvements upon the mansion and property during the last few years, and the whole is in the most perfect condition. Little Combe Bank, a villa, with grounds and some houses in the village, form part of the estate, and will be included in the purchase. Part of the purchase-money may remain on mortgage.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

STRETTON-STREET, PICCADILLY, overlooking the Gardens of Devonshire House.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, or Let on Lease, a spacious modern RESIDENCE, with hall and two staircases, capital eating-room, library, and other apartments, on the ground-floor; elegant drawing-rooms and a best bed-chamber and dressing-room, on the one pair; numerous other bed-chambers and servants' apartments, and ample offices on the basement. Coach-house and stabling may be rented at a short distance.—To be viewed by tickets, and particulars had of Mr. RAINY, 14, Regent-street, St. James's.

NEAR RUISLIP, Middlesex, on the borders of Hertfordshire, and about fourteen miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, the delightful RESIDENCE of the late General Sir Joseph Fuller, G.C.B., with offices, stabling, gardens, pleasure grounds, and park-like paddocks; altogether about sixty acres, with ornamental water and fine grown timber. The elegant furniture may be had or not, at the option of the purchaser.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

BROWNSEA CASTLE and ISLAND, near Poole, Dorsetshire.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, the much admired and beautiful FREEHOLD ESTATE, the Island of Brownsea, about a mile and a half in length, and three-quarters of a mile in breadth, at the entrance of the harbour of Poole, a few hours' sail from the Isle of Wight, and within a few miles of the new and much frequented bathing-place, Bournemouth. The castle is spacious and furnished, has excellent gardens, hot-house, conservatory, &c. The island affords wild fowl shooting in the greatest profusion. The situation is peculiarly desirable for yachting, and the scenery is of a picturesque character. The castle would be let furnished, for three years.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

ACTON, MIDDLESEX, Five Miles from Hyde Park.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a singularly elegant FREEHOLD RESIDENCE of the best class, approached by a corridor and hall, and containing library opening to a conservatory, drawing-room, dining-room, &c., seven best bed-rooms, ample servants' rooms and offices for a family, coach-houses and stabling, capital kitchen-garden, walled pleasure-ground, and paddock, about 10 acres. The household furniture may be taken at a fair valuation.—To be viewed by tickets, which, with particulars, may be had of Mr. RAINY, 14, Regent-street, St. James's.

BELGRAVE-SQUARE.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), the noble and spacious MANSION the residence for some years of the late Lord Hill. It stands detached, with carriage-drive, and has a large garden at the back, with communication to stabling for eight horses, a loose box, standing for several carriages, with lofts and rooms over. Leasehold under the Marquis of Westminster for an unexpired term of 60 years, at a ground-rent.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

SUFFOLK, on the Borders of Norfolk, and about 80 miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a very important and valuable FREEHOLD ESTATE, especially attractive for a sportsman, having been strictly preserved, and affording shooting equal to any domain in the district. It comprehends the entire parish, of nearly 5500 acres, including thriving plantations; also, a capital family mansion, with offices of every description, gardens, pleasure-grounds, &c.; farm-houses and buildings, cottages, &c. The estate is situated in one of the best neighbourhoods in the kingdom, and it is expected that a railroad station will be fixed within a few miles.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

IN a FASHIONABLE SQUARE at the WEST END. —To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a MANSION of the first class, equal in all its arrangements to the accommodation of a family of the highest distinction; the offices and stabling extensive and complete. The adapted furniture will be included in the purchase.—Principals only can, in the first instance, receive information, and which may be had on application to Mr. RAINY, 14, Regent-street, St. James's.

HYDE PARK, commanding the entire Park view.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, or Let Furnished for a term, a very elegant FREEHOLD RESIDENCE, in perfect order, suited to a moderate-sized family. The residence has an extra story of bed chambers, good offices, and stabling.—To be viewed by tickets, and particulars had of Mr. RAINY, 14, Regent Street, St. James's.

NEAR WELWYN, Herts.—To be DISPOSED OF, the unexpired LEASE of about four years, at a moderate rent, (with a renewal if desired), of the capital and very desirable Residence, DIGSWELL HOUSE, delightfully situate about a mile and a half from Welwyn, in the vicinity of many mansions of persons of rank, and only four miles from Hatfield, seven from Hertford, and twenty-five from London, and in the neighbourhood of Mr. Brand's fox-hounds. The house is adapted to accommodate a large family, the gardens and pleasure-grounds well laid out, and surrounded by about fifty acres of productive land, the whole about seventy acres, ornamented with fine timber, and in excellent order; or the premises would be let furnished.—To be viewed by tickets, which, with particulars, may be had of Mr. RAINY, 14, Regent-street, St. James's.

WATERLOO-PLACE, PALL-MALL, commanding the view to St. James's Park.—The spacious capital MANSION recently occupied by the CLARENCE CLUB.—By Mr. RAINY, on the premises, on THURSDAY, May 30, at One precisely, unless previously disposed of, and with the option of taking the excellent Household Furniture at a fair valuation,

THE capital, spacious, and elegantly-fitted MANSION, No. 12, on the west side of Waterloo-place, held under the Crown for an unexpired term of 70 years, at a small ground rent. Within the last few years some thousand pounds have been expended in improvements to the premises under the superintendence of an eminent architect, and they are at present in perfect condition, peculiarly adapted for a club, insurance office, or any public establishment requiring a first-rate situation. The ground-floor contains a hall, with handsome principal stone staircase and secondary staircase; one room 42 feet 8 inches by 22 feet 9 inches, and another 27 feet by 24 feet. On the one pair, a drawing-room 31 feet 6 inches by 22 feet 6 inches, and a library 42 feet 8 inches by nearly 16 feet, and an ante-library; a billiard room, three other rooms, and four dressing-rooms on the two pair, and six bed-chambers on the upper floor; complete domestic offices on the basement, including spacious kitchen, larders, &c.

To be viewed till the sale by tickets, which may be had of Mr. RAINY, No. 14, Regent-street; printed particulars may be had of him 14 days preceding the sale; also of Messrs. LANE and PRIMEAUX, Goldsmiths' Hall; at the Auction Mart; and on the premises.

On the same and following days will be sold by auction the plate, linen, books, china and glass, and the valuable cellar of choice wines, further particulars of which will be given in a few days.

BUCKINGHAMSHIRE.—THE GRANGE, a desirable Freehold Residence, with Pleasure grounds and Gardens, and about 30 Acres of Land, situate at Chalfont, St. Peter's, the Property of the late General O'Loghlin.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent street, St. James's; about the end of May, with immediate Possession,

THE GRANGE, an elegant Freehold Residence, situate in a beautiful part of the county of Buckingham, midway between London and Aylesbury, about 7 or 8 miles from the West Drayton and Slough stations on the Great Western Railway, and within 9 miles of Windsor and 5 of Uxbridge. It is seated on the acclivity of a hill in a park-like paddock, ornamented with fine old timber and plantations, approached by carriage drives with neat lodges, contains hall and conservatory, drawing-room 32 feet, billiard-room, library, dining-room, 15 bed rooms, three dressing-rooms, excellent offices and stabling, walled kitchen garden, farm-yard and buildings, ice-house, gardener's house, &c.

To be viewed till the sale, and printed particulars may be had 14 days preceding; also of Messrs. DENDY and MORPHETT, Bream's-buildings, Chancery-lane; at the Royal Hotel, Slough; the Inns at Aylesbury and Uxbridge; at the Auction Mart, and of Mr. RAINY, 14, Regent-street.

BROMPTON-SQUARE.—Neat LEASEHOLD HOUSE, held for 76 years, at a small Ground-rent.—By Mr. RAINY, at the Gallery, No. 14, Regent-street, about the end of May, with immediate possession,

THE neat and substantial LEASEHOLD HOUSE, No. 3, on the west side of Brompton-square, held for 76 years, at a small ground-rent; comprising two rooms on each floor, two kitchens, and other offices, and a garden.

To be viewed, and printed particulars had, 14 days preceding, on the premises; of Messrs. MAYHOLD and PYKE, No. 43, Lincoln's-inn-fields; at the Auction Mart; and of Mr. RAINY, No. 14, Regent-street.

HAMPSHIRE.—VALUABLE CHURCH PREFERMENT, about 12 Miles from Winchester, and 17 from Southampton; the Incumbent is in his 73d year.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St. James's, in the Division between Jermyn and Charles-streets, about the end of May,

THE PERPETUAL ADVOWSON of the PARISH of WARNFORD, in the county of Hants, with the appurtenances thereto belonging. The tithes have been commuted at 620l. per annum. There is an elegant modern residence, situate on an eminence commanding beautiful scenery, with 20 acres of glebe pleasure grounds, walled garden, stabling, &c. Warnford is about 17 miles from Southampton, 12 from Winchester, and 60 from London, and the neighbourhood is of the highest respectability.

Printed particulars may be had, 14 days preceding the sale, of Messrs. STOWE and TYRRELL, Jermyn-street; at the Auction Mart; at the Dolphin, Southampton; George, Winchester; and of Mr. RAINY, 14, Regent-street.

OPPOSITE the GREEN-PARK.—To be LET, elegantly and completely FURNISHED, for the season, or for one or more years, a superior and spacious MANSION, in perfect condition, having suites of apartments, bed-chambers, and offices, for a family of rank; and at a short distance is excellent stabling.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent street.

PORTMAN-SQUARE.—To be LET, FURNISHED, for the Season, a compact, moderate-sized HOUSE, with coach-house and stabling.—Particulars and tickets to view may be had of Mr. RAINY, 14, Regent-street, St. James's.

PUTNEY-HILL, SURREY.—LIME-GROVE, a spacious Freehold Mansion, let on Lease for a few years unexpired, and the contiguous beautiful Lands, highly eligible for building upon, and containing altogether about 66 Acres.—By Mr. RAINY, at the Gallery, No. 14, on the East Side of Regent-street, St. James's, in the Division between Jermyn and Charles-streets, about the end of May,

THE spacious and capital detached FREEHOLD MANSION, LIME-GROVE, delightfully situated on the rise of Putney-hill, only four miles and a half from the metropolis. It is approached by carriage drives, and contains suites of noble lofty principal apartments, with numerous bed-chambers, offices of every description, coach-houses, stabling, beautiful lawn ornamented with full-grown timber, pleasure-grounds with extensive walks, walled gardens, &c., the whole about 11 acres, on lease for a few years unexpired at 350l. per annum; also the contiguous lands extending from the Putney-hill-road into the road leading from Putney to Wandsworth, and other lands called the Nursery, on the west side of the Putney-hill-road, and fronting the road leading from Putney to Richmond; a timber dwelling-house, formerly in the occupation of Mr. Howey, some cottages, &c., altogether about 56 acres and highly eligible for building upon, especially the upper ground, from which the finest views are commanded.

The Mansion can only be viewed by special permission of the tenant, and by cards to be had of Mr. RAINY, 14, Regent-street. Printed particulars with lithographed plans will be ready for delivery 14 days preceding the sale, and may then be had of him; also of Messrs. POWELL, F. and W. BRODERIP, and WILDE, Lincoln's-inn; at the Auction Mart; at the Castle, Richmond; Spread Eagle Wandsworth; and of the person who will attend daily 14 days preceding the sale to show the lands.

ST. JAMES'S SQUARE.—To be sold by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), the capital FREEHOLD MANSION of a nobleman. The premises are of modern construction, with spacious lofty principal apartments, hall, and two stone staircases, with offices for a suitable establishment and capital stabling. A smaller Freehold House, which fronts Duke-street, and was formerly part of the original estate, may also be purchased if desired.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street, St. James's.

HYDE PARK GARDENS, commanding the entire View over Hyde Park.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY (with immediate possession), one of the best MANSIONS in this much-admired and highly-improving situation. It was finished and completed by the present owner and furnished throughout without regard to expense; and it may safely be affirmed that it is scarcely possible to find a residence of the scale more perfect, both as regards the decorations and the general style and quality of the furniture. The tenure is leasehold for about 90 years, at a ground-rent.—To be viewed by a day's previous notice, and by tickets, which with particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

HAMPSHIRE, between Fareham and Gosport, and within a mile and a half of the Railway Station.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate possession, a very delightful modern FREEHOLD VILLA, with park-like grounds, garden, pleasure-ground, lodges, &c., and the surrounding lands of about 100 acres, part extending to a river, and offering every inducement to any gentleman partial to yachting.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

HAYES COMMON, two miles from Bromley, in the county of Kent, and twelve from London.—To be LET on LEASE, the very desirable RESIDENCE, for many years the favourite retreat of the late Sir Vicary and Lady Gibbs. It stands on a beautiful lawn, with pleasure-grounds, gardens, and paddocks (about 15 acres), and contains accommodation for a family of high respectability, with stabling, entrance lodge, &c.—For particulars and tickets to view apply to Mr. RAINY, 14, Regent-street, St. James's.

MIDDLESEX, ten miles from Town.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a capital FARM, part freehold and part copyhold, containing about 217 acres of rich land, with an excellent house and buildings, on lease to a most respectable tenant, till Michaelmas, 1847.—Particulars may be had of Mr. RAINY, 14, Regent-st., St. James's.

BUCKINGHAMSHIRE.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate Possession, a FREEHOLD ESTATE of about 90 acres of Grass and Arable Land, with agricultural buildings, and an unfinished House, situate at Farnham Royal, two miles and a half from the Slough Station of the Great Western Railway.—Particulars may be had of Mr. RAINY, 14, Regent-st., St. James's.

BATTERSEA, Surrey.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, with immediate possession, a capital spacious FREEHOLD RESIDENCE, on the banks of the Thames, with terrace-walk, pleasure-grounds, kitchen-garden, paddock, coach-houses, stabling, &c. Also, some other Freehold Property for investment.—Particulars may be had of Mr. RAINY, 14, Regent st., St. James's.

TOTTERIDGE, MIDDLESEX, Ten Miles from London.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a very desirable and substantial detached LEASEHOLD FAMILY RESIDENCE, held for an unexpired term of upwards of thirty years, at a very low rent, with offices, coach-houses, and stabling, pleasure-grounds and walks, kitchen and flower-gardens, with fish-pond and park-like meadows, altogether about thirty acres, with three detached cottages, gardener's cottage, and other buildings. The premises are in perfect order, a very considerable sum having been expended upon them, and they are in every respect suited to a family. Or the house and gardens would be let on lease.—For particulars and tickets to view, apply to Mr. RAINY, 14, Regent-street, St. James's.

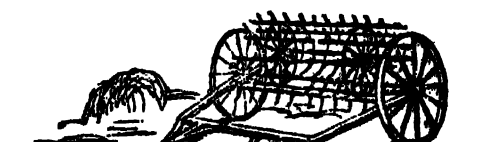
DURHAM, within one day's ride of London by the Railroads.—To be LET, for three or five years, a spacious FAMILY RESIDENCE, FURNISHED in a superior style, and adapted for a person of fortune, situate in a beautiful part of the country, with good fishing and hunting, and the exclusive right of shooting over about two thousand four hundred acres. The neighbourhood of the best class, and the circumstances altogether peculiarly desirable. Land may be had or not, at the option of the tenant.—Particulars to be had of Mr. RAINY, 14, Regent-street, St. James's.

ENFIELD, MIDDLESEX.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, CHASE LODGE, a substantial and handsome Freehold Villa, with pleasure-grounds, gardens, and paddocks (the latter part leasehold), about 27 acres.—Particulars may be had of Mr. RAINY, 14, Regent-street, St. James's.

NEAR CHRISTCHURCH, HANTS. — To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a MARINE VILLA, situate midway between Lymington and Christchurch, commanding splendid sea views; and also an adjoining farm of about 108 acres, with farm-house and buildings, the whole freehold.—To be viewed by tickets, and particulars had of Mr. RAINY, 14, Regent Street, St. James's.

GROSVENOR-PLACE, HYDE PARK, in front of the Gardens of Buckingham Palace.—To be SOLD by PRIVATE CONTRACT, by Mr. RAINY, a noble and very spacious MANSION, held for a long term, at a low ground-rent, and adapted in all respects to a family of distinction, with attached and detached offices, standing for four or five carriages, and stabling for eight horses. The Mansion has an extra story of bed-chambers, a suite of superb drawing-rooms—viz. 27 feet by 20, 22 feet by 19, 25 feet by 19, and 27 feet by 25, all communicating by folding doors; an eating-room, 37 feet by 25, library, ante-room, two stone staircases, stone hall, screened by a porch, &c.; the whole of the household furniture and fixtures will be included in the purchase, and immediate possession may be had.—To be viewed by tickets, which, with particulars, may be had of Mr. RAINY, 14, Regent-street, St. James's.

COTTAM AND HALLEN, AGRICULTURAL IMPLEMENT Makers, &c. 2, Winsley-street, Oxford-street, London.



DOUBLE-MOTION HAYMAKERS of the best construction, made almost wholly of iron, and containing the double Cylinder, and all the latest improvements, are now ready.

CAST-IRON RICK-STANDS and PIGTROUGHS, at very low prices.

IRON HURDLES AND FIELD-GATES of all sizes, at exceedingly low prices.

PLOUGHS, DRILLS, Sheep and Cattle Weighing Machines, Improved Prize Harrows, Field Rollers, Turnip-cutters, Chaff-cutting Machines, Threshing and Winnowing Machines, Oil-cake Breakers, and every description of Implements used in Agriculture.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where every information may be obtained.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

AT THE CORN MARKET, MARK-LANE,
On Monday, 27th inst., at 2 o'clock.

GUANO, a Cargo just arrived from the West Coast of Africa. Particulars and Catalogues to be had of WM. KERKMANN & Co., 2, St. Dunstan's Hill, Tower-street. 24th May, 1844.

GUANO (GENUINE PERUVIAN & BOLIVIAN)
ON SALE, BY THE ONLY LEGAL IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, May 16, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 40, Upper Thames-street.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash,	18s.	per cwt.
" Soda	18s.	"
" Magnesia	9s.	"
" Ammonia	1s.	per lb.

*** Super-phosphate of Lime in a concentrated form may also be procured of Messrs. WARNER, 28, Cornhill, and other Seedsmen, in 7 lb. packets, price 1s.

TURNIP SOWING. — BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day, it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9l. per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town.—Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for Hire, for Excavations and Wells. Buildings heated by Hot-water, for Horticulture, and every variety of manufacturing purposes. The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22.—1844. SATURDAY, JUNE 1. [Price 6d.

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ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND is desirous of receiving TENDERS from innkeepers, or others, to CONTRACT for any one or more of the following SUPPLIES, at the ensuing Annual Country Meeting of the Society, to be held at Southampton in July:—

I.—A Hot Dinner for 400 persons, with Dessert, and a Bottle of Port, Sherry, or Bucellas, to each person, in the Victoria Archery Rooms, Southampton, on Wednesday, the 24th July, 1844.

II.—A Cold Dinner for 1200 persons, with a Pint of Port, Sherry, or Bucellas, to each person, in the Pavilion of the Society, on the Fairfield, Southampton, on Monday, 25th July, 1844.

III.—Refreshments suitable for 800 Ladies, in the Gallery of the Pavilion, on the same occasion.

Printed Forms of Tender will be forwarded to parties applying to the Secretary, and must be returned to him, filled up, on or before Monday, the 10th of June, to the Office of the Society, No. 12, Hanover-square, London; the Society not binding itself to take the lowest tender.—By order of the Council,

James Hudson, Sec.

HAMPSTEAD FLORIST SOCIETY.—The First and principal Exhibition for 1844 will take place on Thursday, June 13, in the grounds of J. Jackson, Esq., near Jack Straw's Castle, Hampstead Heath. The Exhibition will open at One o'clock to Visitors. Admittance One Shilling. A Band will be in attendance. William Goulding, Secretary.

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Great Yarmouth Nursery, May 30, 1844.

A GRAND HORTICULTURAL EXHIBITION,

Under the Patronage of His Royal Highness the Duke of Cambridge, K.G., and the Right Rev. the Lord Bishop of Rochester, in aid of the Funds of the GARDENERS' BENEVOLENT INSTITUTION, will be held in the Grounds of the Bishop of Rochester, adjoining the White Hart Hotel, Bromley, Kent, on Tuesday, 11th June next.

The following Prizes have been kindly offered:—

By Mr. George Charlwood, *of Covent Garden*.—For the Best General Collection of Plants, a copy of the late Mr. Loudon's celebrated Botanical Work, the "Arboretum Britannicum," value Ten Guineas.

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,, ,, ,,	3d best 50	8	8	0
,, ,, ,,	best 24	7	7	0
,, ,, ,,	2d best 24	5	5	0
,, ,, ,,	3d best 24	4	4	0
,, ,, ,,	best 12	4	4	0
,, ,, ,,	2d best 12	3	3	0
,, ,, ,,	3d best 12	2	2	0
,, ,, ,,	best 6	3	3	0
,, ,, ,,	2d best 6	2	2	0
,, ,, ,,	3d best 6	1	1	0
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,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
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,,	2d best	4	4	0
,,	3d best	3	3	0
,,	4th best	2	2	0
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,,	2d best	3	3	0
,,	3d best	2	2	0
,,	4th best	1	1	0
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Basket of Grapes	best	3	3	0
,, ,,	2d best	2	2	0
,, ,,	3d best	1	1	0

The Committee take this opportunity of earnestly soliciting the aid and co-operation of all persons desirous of promoting the interests of the Institution.

E. R. Cutler, Secretary, 97, Farringdon-street.

N.B.—Arrangements have been made at Bromley for the accommodation of exhibitors, horses, and men, at the expense of the Committee.

GARDENERS' BENEVOLENT INSTITUTION.

Notice is hereby given, that the Half-yearly General Meeting of the Subscribers to this Institution will be held on Tuesday, 4th June next, for the purpose of receiving the Report of the Sub-Committee appointed for "the Revision of the Bye-Laws;" also, for the election of Four Poor Persons, Sixty Years of Age and upwards, to the benefit of a Pension of 16l. per annum. The Chair to be taken at Half-past Eleven o'clock precisely. The Ballot will commence at Twelve o'clock, and close at Two o'clock precisely.

LIST OF CANDIDATES.

1. Samuel Lyward, third application, aged 66.
2. John Blaylock, second application, aged 73.
3. Elizabeth Collyer, second application, aged 70.
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5. George Martin, first application, aged 66.
6. Alexander Upton, first application, aged 75.
7. John Wellard, first application, aged 71.

Any Subscriber not having received his Polling Paper, is requested to apply for it immediately.

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Queen, Prince of Wales, and Magnet, are now in full bloom, and the three can be had for one guinea.

NEW DAHLIAS, GERANIUMS, FUCHSIAS, &c. &c.

J. HARRISON, NURSERYMAN, York, can supply fine strong Plants, fit for immediate planting, of the undernamed DAHLIAS, &c., at 6s. each:—Aurantia, Claudine, Constance, Gauntlet, Lady Antrobus, Madeline, Romeo, Vanquisher, Emma Noak, Park's Mount Rival, &c.; at 8s. each, Beauty of Birmingham, Lady Grey, Lord Howden, Lady St. Maur, Rival Rose, Standard of Perfection, Sir J. B. Richardson, Sir H. Pottinger; and at 10s. 6d., Nonpareil, Prince of Waterloo, Spitfire. Every other new variety at the lowest prices. The following at 1s. 6d. each:—Antagonist, Asmodeus, Admiral Stopford, Blanch Shelly, Beauty of Sussex, Colonel Baker, Competitor, Confidence, Essex Triumph, Favourite, Hero of Stonehenge, Mrs. Shelly, King of Lilacs, Mrs. Jas. Richardson, Perpetual (Grand), Surprise (Oakley's), Sir Robert Sale, Sultana, Violet Perfection, Vivid, Virgil, Victory of Sussex. Other good varieties, new last year, at 1s. each, or 8s. per doz. Good older varieties, 6s. per dozen; also a good variety in colours, not named, at 4s. per dozen. New Geraniums, Fuchsias, &c. at the very lowest prices, of which a Catalogue is now ready, and may be had on application to J. HARRISON, Nurseryman, York.—May 30, 1844.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
SEEDSMEN.

THOMAS GIBBS AND CO., corner of Half Moon-street, Piccadilly, London, having had the honour of being officially appointed the SEEDSMEN to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to assure the Members of the Society, and their Agricultural Friends in general, that this renewed mark of confidence will stimulate them to continued and fresh endeavours to merit so high a distinction. Among other Seeds they beg to call attention to the following.

TURNIPS.

Purple Top Swedish Turnip (combining large produce with beauty of form and smallness of top).

Green Top ditto ditto (hardy and useful variety).

Gibbs's Green Top Yellow Hybrid (strongly recommended—will bear sowing later than Swedes, and next to the Swede in hardiness).

Gibbs's Red ditto ditto (same as the above, with red top).

Green Globe Turnip.

Early Stubble Turnip, and other varieties of known good qualities.

GRASS SEEDS,

For forming permanent Meadows and Pastures.

Mixtures of Selected Natural Grass Seed for the purposes above mentioned, proportioned and adapted to suit the nature of different soils.

Please address, THOMAS GIBBS and Co., the Seedsmen to the "Royal Agricultural Society of England," corner of Half Moon-street, Piccadilly, London.

WM. JOHN CORMACK, AGRICULTURAL SEEDSMAN by Appointment to His Royal Highness PRINCE ALBERT, New Cross, Surrey, and Bedford Conservatory, Covent Garden, begs to call the attention of the Nobility, Gentry, and Agriculturists in general to his combinations of GRASS SEEDS for Permanent Pasture, the Alternate Husbandry, Parks, Lawns, &c. (as recommended and practised by his partner, the late Mr. GEORGE SINCLAIR, Author of the "Hortus Gramineus Woburnensis.") Upwards of 35,000 acres have been converted to permanent pasture by this establishment with the greatest success. Parties requiring Seeds are respectfully requested to state the nature of the soils. Mangold Wurzel, Carrot, and Turnip-seed of excellent sorts, saved from transplanted bulbs. Garden and Agricultural Seeds of the best quality and most approved kinds.

N.B.—Cormack's British Queen and Prince Albert Peas, at 3s. 6d. per quart.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING HOUSES, CHURCHES, and **MANUFACTORIES,** upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Metal Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Vineries, Peaches or other Houses where vapour is constantly, or at times required, and which may be seen at their Manufactory.

IRON WORKS.

COTTAM AND HALSE, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS and RICK-STANDS, or STATHELS, at very low prices.

GARDEN SYRINGES, 9s. 6d. each.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 20 inches, and 22 inches.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 4 ft. 6 in., 5 ft., 6 ft., and 7 ft.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE-FENCING, at 8s. 6d. per bundle of 150 to 160 yards each.

Flower-bordering, Trainers, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

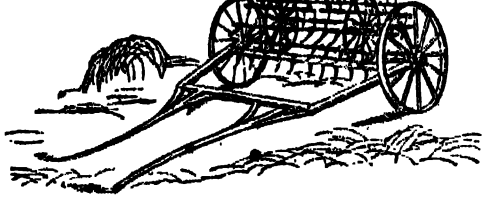
HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of bronze or iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time.

RENDLE'S TANK SYSTEM on an improved simple plan.

Show Rooms at their Manufactory, No. 2, Winsley-street, where estimates and every information may be obtained.

AGRICULTURAL IMPLEMENTS.



DOUBLE-MOTION HAYMAKERS of the best construction, made almost wholly of iron, and containing the double Cylinder, and all the latest improvements, are now ready.

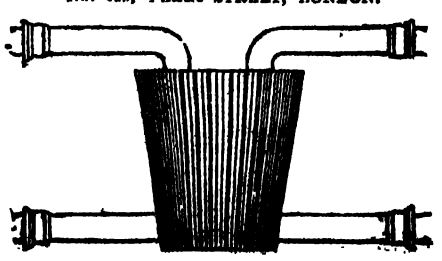
CAST-IRON RICK-STANDS and PIGTROUGHS, at very low prices.

IRON HURDLES AND FIELD-GATES of all sizes, at exceedingly low prices.

PLOUGHS, DRILLS, Sheep and Cattle Weighing Machines, Improved Prize Harrows, Field Rollers, Turnip-cutters Chaff-cutting Machines, Threshing and Winnowing Machines Oil-cake Breakers, and every description of Implements used in Agriculture.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where every information may be obtained.

BURRIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



BURRIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURRIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.			Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door		Damper.		Width best of Pipe.	Forcing Pit, Length by feet.
In.	£	s.	s.	s.	s.	d.	s.	d.		
10	1	5	20	7	6	6	2	6	30 feet.	12 to 20
Ribbed Boiler.										
10	2	5	20	10	6	7	2	6	40 to 70 ft. 4 in.	Under 25 to 40
12	2	15	30	12	6	7	3	6	80 to 120 feet.	40 to 60
14	3	10	35	17	5	8	4	6	150 to 240 feet.	65 to 100
18	5	5	42	25	0	8	5	6	300 to 400 feet.	Warm a grapery 25ft. long, and a pit 50ft.
24	8	15	50	35	0	8	6	6	600 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, 4/5 as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to parties in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. Mr. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

A GREENHOUSE, Calico-coated with WHITNEY'S TRANSPARENT WATERPROOF COMPOSITION may be seen in use at the Grounds of BASS and BROWN, Seedsmen and Florists, Sudbury, Suffolk, appointed Agents for the sale of the Composition. The light is equal to glass; the plants exhibit a strong and vigorous growth, and a longer period for bloom is gained. Sold in bottles, with directions for use—quarts, 4s. 6d.; pints, 2s. 6d.

An extensive assortment of Greenhouse and Hardy Plants for bedding. Catalogues supplied.

TO GENTLEMEN, FLORISTS, and Others.

MESSRS. PROTHEROE & MORRIS will submit to public competition, at the Auction Mart, Bartholomew Lane, on TUESDAY, June 4, and THURSDAY, June 6th, at 12 o'clock each day, a fine collection of DAHLIAS, comprising all the leading Varieties. Also a splendid Assortment of Geraniums, the newest Varieties of Fuchsias and Verbenas, Heartsease, and a Variety of other flowering Plants. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

CAPITAL INVESTMENT.—IMPROVABLE ESTATE IN AYRSHIRE, WITH SALMON-FISHINGS, GROUSE-SHOOTING, &c.—FOR SALE, IN ONE OR MORE LOTS.

THE ESTATE OF BALLANTRAE, extending to about 7164 acres imperial, with the Village and Harbour, and the valuable Salmon-Fishings of the River Stinchar and the adjacent Sea-coast.

The Lands immediately around the village, about 1567 acres, form a compact and beautiful Estate, lying on both sides of the River Stinchar, and nearly two miles along the Frith of Clyde; and they afford many fine situations for a residence. The land in this division is arable, of superior quality, and capable of great increase of value by draining, planting, and better cultivation. The remainder of the estate, about two miles distant, consists of excellent Stock Farms, capable also of great improvement, by surface draining and liming, and affords some of the best Grouse shooting in the south of Scotland. The River Stinchar, and other streams on the Estate, abound with Salmon and Trout.

The present rental is only 1891*l.* 2s.; but the principal Farms are let at very low rents, and a considerable rise may be counted on. The public burdens payable by the proprietor are of trifling amount. The great post-road to Portpatrick passes through the village, and if the proposed improvements on the harbour are completed, Ballantrae will be the Shipping Port of the whole Vale of Stinchar; and, with its valuable Fisheries, must become a place of some trade and importance. Ballantrae is about 15 hours' sail from Liverpool, 6½ hours' sail from Glasgow, and 12 miles from Girvan, to which latter place it is now in contemplation to continue the Ayrshire Railway.

If not immediately sold in one Lot, the Estate will be exposed as follows:—

1st. The MOOR LOT, extending to about 5577 acres, of which the present land rental is £375 0 0
And the shooting for the present season is let at . . 50 0 0

Total rent . £425 0 0

2d. The FARM of LAGGAN and LAGGANHOLM, as at present possessed by Hugh Lockhart, James M'Meikan, John Murray, Mrs. M'Kinna, &c., with 13 acres of thriving young Plantations, extending to about 450 acres, at present let at £416 4 2

There is a neat small modern Mansion on this lot, like a good Farmhouse, and the principal part of the Land is out of lease at Martinmas next.

3d. The REMAINDER of the LANDS of LAGGAN and GARLEFFAN, including the Mill and Mill Lands, extending to about 232 acres, at present let at £175 2 0

4th. The LANDS on North Side of the River Stinchar, with the Salmon-Fishing, Harbour, and Village, extending to about 905 acres, at present let at 87*l.* 14s. 8d., will be exposed along with Lots 2d and 3d, but will not be separately sold till these two Lots are disposed of.

James M'Gregor, Ballantrae, will show the Lands; and for further particulars application may be made to George Guthrie, Esq., factor, Culhorn, near Stranraer; or to Æneas Macbean, writer to the signet, Edinburgh.—Edinburgh, 26th May, 1844.

SALE OF A SPLENDID COLLECTION OF HOTHOUSE GREENHOUSE, AND OTHER PLANTS.

T. M. FISHER respectfully announces that he is directed by Mr. Wm. Lance, to Sell by Auction, on Wednesday and Thursday, the 19th and 20th days of June next, at the Nursery Grounds, Broughton-lane, Lower Broughton, in consequence of his Removing to Broughton Park, Higher Broughton, the whole of his excellent COLLECTION OF PLANTS, consisting of fine specimens of Geraniums, a splendid collection of Fuchsias, Camellias, Ericas, Achimenes, Calceolarias, Cinerarias, Petunias, Verbenas, Chrysanthemums, Roses, Pentstemons, Carnations and Picotees in Pots; about 500 Dahlias, of the best varieties; two Beds of Tulips, and about 600 choice Pansies, all in beautiful condition.

May be viewed six days prior to the sale, and Catalogues had on the Premises or from the Auctioneer, 17, Princess-street. Sale to commence each day at eleven o'clock. Manchester, May 30, 1844.

GREENHOUSES—TO NURSERYMEN AND OTHERS.

TO BE SOLD, separately or altogether, THREE capital GREENHOUSES, in excellent condition; two measuring 40 feet front by 15½ feet deep; one measuring 27 feet front by 11 feet deep. Must be removed before the middle of June next. Apply to Mr. CRAIB, nurseryman, Montpelier-gardens, Walworth, Surrey.

TO BE LET, Furnished, for not less than Six Months, four miles from Hyde Park Corner, and near the river, a HOUSE possessing in an unusual degree the advantages of the country, with well-stocked Fruit and Flower-Garden, Meadow, Cow, and Poultry, Coach-house, Stabling, &c. The House contains three sitting and six bed-rooms, with convenient offices. For Floriculture, or kindred pursuits, it has qualifications rarely met with in a place of equal pretensions.—For particulars apply to Mr. MADDOX, 25, Welbeck-street.

FARM TO LET, on the Borders of Kent and Sussex, containing about 250 Acres of Arable, Meadow, and Pasture Land, of which 8 Acres are Hops in full plant. There is a very good Farm-house very pleasantly situated, ample substantial Buildings, and Five Cottages. The incoming at Michaelmas will be moderate.—Apply to Mr. Aitcheson, Groombridge, Tunbridge Wells.

HORTICULTURAL SOCIETY OF LONDON. EXHIBITIONS AT THE GARDEN.—The Second Meeting will take place on Saturday the 15th of June. The gates will be opened at One P.M. Tickets are issued to Fellows at this Office, price 5s. each; or at the Garden, in the afternoon of the days of Exhibition, at 7s. 6d. each; but only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent Street on the day of Exhibition.—21, Regent Street.

LYNDON'S PATENT GARDEN SPADES.—These excellent Spades, warranted to bear a knife edge, and wear as long as three Spades made in the usual way, are sold by Jony Newman, Ironmonger, Ravensoake, to whom orders may be addressed, and will receive prompt attention.

The Gardeners' Chronicle.

SATURDAY, JUNE 1, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Sunday,	June 4	Horticultural Royal Botanic Gardens Linnean	3 P.M. 2 P.M. 3 P.M.
Wednesday,	June 5	Society of Arts	8 P.M.
Friday,	June 7	Botanical	8 P.M.
Saturday,	June 8	Royal Botanic	4 P.M.

COUNTRY SHOW.—Tuesday, June 11—Gardeners' Benevolent Institution.

AT page 295, a correspondent, signing himself "Omikron," gave an account of a most destructive DISEASE AMONG HIS PEACH TREES, for which he could find no cure. MR. ERRINGTON has since (p. 331) offered some valuable suggestions upon the subject. "Omikron" has furnished us with further information, and we now beg to submit a few observations of our own upon this singular case, which involves a variety of considerations of the greatest interest to gardeners.

The disease in question is "the gum" in a very aggravated state. Both young and old branches are cankering fast from this cause, and it is clear that all the trees in "Omikron's" garden must perish if the mischief is not stopped.

It appears from his statement that—1, the garden is near Cheltenham, in an open aspect, somewhat, but not very low; 2, the natural soil a clay, which by burning and cultivating has been made to work well; 3, the borders thoroughly drained, only a spit deep, and secured from communication with the clay by a cement bottom; 4, the soil of the borders a good virgin loam; 5, the trees planted with their roots near the surface. In all these circumstances there is nothing that can be objected to; the measures which have been taken are judicious; and it seems impossible that the mischief can be connected with them. Mr. Errington, indeed, refers the evil to the employment of loam on a cement bottom; and he thinks that chopped turf would have been better; which is true. But when we consider that the disease appears in a few weeks after trees begin to grow in this loam for the first time, that the borders are only a spit deep, the roots near the surface, and the drainage perfect, it seems difficult to believe that the loam is the real cause of "Omikron's" disasters.

Our own opinion was, as we stated at first, that all the evil arises from the wood not being properly ripened; and that opinion is changed into conviction by a second letter from "Omikron" now before us, accompanied by other specimens of the diseased trees. In all these the old wood is green, soft, and pithy; and he informs us that his gardener, a very observant and intelligent man, had made the same suggestion as ourselves, "from finding that the leaves remain on the branches until very late in the season, retaining their green appearance."

The great questions then are,—1, What is it that constitutes ripeness or unripeness of wood?—and 2, how are the agencies connected with the ripening process to be controlled? Neither of these questions can be answered without, in the first instance, examining the changes connected with Vegetable organisation.

Gum is the basis of vegetation; and he would not be very wrong who should assert that the whole framework of a plant is a skeleton of gum. This substance seems to be formed by the decomposition of carbonic acid amongst water, with whose elements the young carbon combines. The first secretion that we find in a young seedling is gum, and out of that gum the organs of the tender plant are fashioned by the vital force. The first secretion that is formed by a full-grown plant, when it is roused from its winter's torpor and begins to grow, is gum, which in trees oozes out between the wood and bark, as *cambium*, causing the latter to "run," and enabling both those parts to increase in thickness. Gum also lubricates the delicate organs which are formed in the leaf-bud, and lengthen into leaves and branches.

But as plants grow old gum disappears, the proportions of its elements change, and it assumes the new forms of starch and wood, or it simply loses the water that dissolved it, and becomes a hardened coating to the minute cells and tubes of vegetable structure. When it is completely changed, or hardened, wood is said to be ripe: on the contrary, when it remains in the very state of gum, and still retains its water, wood is called unripe. In the former condition it offers great resistance to changes of temperature, suffering but little from either heat or cold, and it gives rise to branches firm and healthy like itself, because they are fed by a healthy mother. In the latter state, (that of unripeness), it is extremely sensible of changes of temperature, its fluid expanding with force on either side of 40° of Fahrenheit's scale, and it brings forth sickly watery branches, because it cannot give them their duly prepared supply of food.

The point to be gained, then, is to secure the conversion of gum into some more dry and solid form of matter, This is the more important in a Peach-tree, because that plant, like all stone fruit trees, naturally produces gum in excess, and wants the power which many plants possess of rapidly converting it into something else. How is this to be done?

Gum is converted into starch or wood by the loss of a portion of the water in combination with it. A loss of 1 part of water in 11 produces starch, and of 3 parts in 11 produces wood. A separation of the water *of combination* is produced by heat and light, and by no other known agents. In proportion as the branches are heated and exposed to bright light are starch and wood formed at the expense of gum; we may also conceive that in a similar proportion unchanged gum is dried off by the evaporation of its water *of solution*, and *vice versâ*. Now, one of the first means to effect this end is to take care that no more wood is produced than can be fully exposed to sunlight; and that all such wood is continually nailed close to a wall, whenever it is long enough to be so secured, in order that the reflected heat of the wall may be absorbed by the branches. All the systems of leaving fore-right shoots, or of putting off summer pruning till the winter, and tucking in the summer growth, according to the ignorant school of Forsyth, are in the most direct opposition to the ripening process, or in other words, to the conversion of gum into starch and wood. This explains why Peach-trees grown in the open quarters of a nursery, where the temperature is low, are so peculiarly subject to gum.

But all the exposure, thin training, and other expedients that can be thought of, in order to place the Peach-tree in a situation similar to that of its own Persian climate, will fail, if the roots are permitted to suck up moisture too abundantly from the soil, or if the air is so damp as to hinder the ready passage of water through the leaves. In order, therefore, to secure the ripening of wood, these points also are to be sedulously attended to. The border must not only be at all times well drained, but in localities where the air is inevitably very moist, and where, therefore, the leaves are incapable of perspiring copiously, the border must be maintained so dry that but little moisture shall find its way into the system of the trees; for by so doing, the leaves, which have little power of action, in consequence of the dampness of the air that surrounds them, will have little occasion to exercise such power as they possess; and thus a due balance will be maintained between the perspiring powers of the leaves and the absorbing powers of the roots.

When these things are neglected, the consequence is that cold, expanding the watery matter of the unripe wood during winter, will force through the sides of the cells in which it is lodged the gummy fluid, which, the moment this happens, loses its vitality and causes a decay of the surrounding parts; or heat, when the sun beats fiercely on the branches, will produce the same effect—the inevitable result of which will be decay. The proximate cause of "the gum" may therefore be, either exposure of unripe wood to the sun, as we suggested (p. 295), or the action of frost upon it, as we observe by our correspondence that "Omikron's" gardener has supposed.

Another cause, distinct from all these, may be the following:—Suppose that neither heat nor cold are sufficient to damage the unripe wood, the new sap will do it; for in unripe wood the cells and vessels are filled unnaturally with crude fluid before the new sap enters them; and the moment that new sap is introduced in addition, they become so distended, that a portion of their contents must escape. That portion flows into the intercellular cavities of the bark, thence finds its way to the exterior, and having lost its vitality, immediately induces the decay of the surrounding parts. Cases like those of "Omikron" will be cured more certainly by reflecting upon these facts than by all the specific remedies which the most experienced plant-doctor could possibly prescribe. We commend them accordingly to all whom they concern—and their name is Legion.

FUCHSIAS.

(*Continued from p. 318.*)

THE general fitness of peat for Fuchsias, is in that state which approaches nearest to their conditions of growth in nature, namely, in a bed or clump in the open ground. Those who hitherto have not seen the surpassing vigour they assume when indulged with the cool and refreshing influence of this material, have yet to enjoy one of the most beautiful features of an English flower-garden.

The advantages connected with this mode of treatment are probably caused by the uniform moisture in which the roots are exposed, and which appears essential to their highest vigour. Under such conditions, the growth is nearly twice as great as when grown in the common borders; by being less exposed to the extremes of drought and moisture, their growth is much stronger, whilst the vigour thus acquired is ultimately productive of a proportionate amount of bloom. Under this mode of management is seen the practical application of a previous remark, viz., that the bloom of Fuchsias generally is commensurate with their annual extent of growth. Thus, their unrestricted vigour when grown in open beds of peat, not only maintains them in beauty for a longer period than when cultivated in pots, but also serves as a most valuable auxiliary in aid of the conservatory, greenhouse, &c., in the autumn months, it being a valuable feature of all plants which are adapted for planting out in peat, that their removal in bloom into pots or tubs may be effected at any period with infinitely less risk than similar plants grown in other soils. Hence the fitness of the present genus for shifting from the autumn situation into pots, &c.

Other advantages may be named. An established plant in a pot, on being planted out, will in many cases attain two and three times as much growth as it would under ordinary treatment (especially if the season is too far advanced for pot culture); hence its value to nurserymen, for the purposes of growth alone. It has also been shown that the bloom of Fuchsias in general is in proportion to the extent of annual growth; hence its value to amateurs, especially for late-flowering varieties. Last and not least, is its value for the object of increase. It is occasionally remarked, that a difficulty exists in propagating the Fuchsia during summer and autumn; and this remark is generally connected with another, which serves very well in the place of a worse, namely, that they are easily enough struck if cuttings can be got in a proper state. The question then is, How may suitable cuttings be obtained under the most unfavourable circumstances, or during that season which is the least adapted to produce them under ordinary modes of culture?

At page 753 (*Chronicle*, 1843), an opinion is offered, that "the vigour of plants is in proportion to the excitability of their organs." Admitting this to be correct, it is further assumed that any system of cultivation which insures a progressive and accumulative secretion of sap, by an uninterrupted supply of the agencies which are essential to growth, is alone productive of the highest vigour at any given period. As such, it follows that all plants whose maturity of growth and bloom has been produced with the least artificial restriction of those agencies, embody a higher amount of constitutional vigour than those obtained *vice versâ*. For example, a Fuchsia plant, subjected to a uniform circulation of moisture, by being planted in a bed of peat, which is the closest approach to its conditions of growth in nature, will possess a higher amount of vigour, for growth and for bloom, than any similar plant which is exposed to the alternations of drought and moisture in a pot. Again, the finest specimen of Fuchsia in a pot would be that wherein the entire growth was rendered subservient to the ultimate effect of bloom; an effect which it produced at the sacrifice, in part, of the natural size of every organ, and generally by a reduction of the highest known vigour of the plant. But the most perfect specimen of Fuchsia, by open ground culture in peat, would never so far either reduce the proportions of its several parts, nor render the plant incapable of forming additional leaf-buds. The general inferences to be derived from these remarks are, 1st. That an approach to the conditions of growth in nature, are capable of higher effects than the conditions of growth by art; 2d. That those conditions which maintain a progressive excitability of the organs, also involve the primary and essential condition of their multiplication by cuttings. Thus, one of the most valuable results of Fuchsias being cultivated in beds of peat is, that the excitability of the plants to a late period offers a state of growth suited for propagation throughout the year.

About seven years ago, the writer had two new varieties intrusted to his care for increase. The plants being in full bloom when received, were in an unsuitable state for the purpose. After removing all the bloom from one of them, it was planted out in peat, where it resumed its growth until October, during which period it yielded a sufficient number of excitable fore and lateral shoots for two store pots of cuttings, which were plunged in a small tan-pit with a very slight heat, and covered with bell-glasses. They were kept in a moist state by sprinkling water over them with the hand, or a fine rose watering-pot. In a few weeks the whole of them began to emit roots from the axils or leaf-buds, and for a considerable period before spring, roots were emitted from every part of each, even up to the terminal leaf; and though the whole of them were afterwards left to perish by exposure in an open frame, the instance is still remembered as one of the most interesting facts in the writer's practice. Plants of one year's growth, when pruned and previously started into growth in a cold pit, are well adapted for the centre, and plants of the current year are suitable for the fore-ground of a peat-bed. If it is fully exposed to the sun, occasional syringing with water will be found beneficial. The principal precautions in the autumn shifting into pots, are to secure each plant firmly to a stake, and its removal to a pot large in proportion to its size. In potting, very little bottom drainage will be required, because the vigour of the plants demands an abundant supply of moisture. If the operation is performed on a wet day so much the better; if not, let the plants be placed in a close shady place for a few days, each in a dish or pan which may be allowed to retain the superfluous water

syringe gently each day, and the continued beauty of the plants will more than repay the attention.

The above directions are equally applicable to plants of Salvia, &c., for the purpose of giving additional effect to a conservatory when plants are wanted to harmonise with Chrysanthemums, &c. — *W. Wood, Pine-apple Place.*

FAMILIAR BOTANY.

MORPHOLOGY.—No. XIV.

Would you, then, learn to dissipate the band
Of these huge threatening difficulties dire,
That in the weak man's way like lions stand,
His soul appal, and damp his rising fire?
Resolve, resolve, and to be men aspire.
Let godlike Reason, from her sovereign throne,
Speak the commanding word—I will!—and it is done.

ALTHOUGH there are many unbelievers in the change of leaves into petals, there are few who doubt that stamens may be transformed into petals. And how, indeed, can it be otherwise when one has once nestled one's nose in a fine, sweet, soft double Rose; or stood admiringly over a bed of Ranunculuses? For we know that the middle of a wild Rose, or Ranunculus, is filled up with stamens, and that when such flowers become double, the disappearance of stamens is always in proportion to the appearance of petals.

But although this familiar fact has the effect of making the change of stamens into petals seem a very possible event, yet, in truth, it is a far more surprising thing than the change of leaves into petals; because there is an entirely new sort of organisation introduced with the change. Let us see how this happens.

If we examine the white Water Lily we find so gradual a passage of sepals into petals, that it is hard to say where the former end and the latter begin. However, at last we come to what are evidently petals, viz., the thin, flat, white, shining plates which form the brilliant rays of that most lovely flower. Now, if we pull away these petals, we shall find them alter as they approach the centre of the flower. They become narrower, smaller, and thicker, till at last their points assume a new form, and become yellow on each side. By degrees these altered petals become very narrow straps; by similar degrees the yellow sides near the end become thicker and larger; and at last we find that they are the seat of pollen—a perfect anther being formed. The sides of the petal near the end have secreted the yellow powder in their inside, and at last they split and allow it to escape. In this instance, in the natural state of things, the formation of stamens out of petals is so very gradual that plenty of instances occur which are neither the one nor the other. The same sort of transitions, but in a less degree, are observable in the Calycanthus.

When flowers become double the reverse of all this takes place. In the common China Rose the filaments become broad and thin, and acquire colour; at the same time the anthers shrink up; and by degrees, the latter having wholly disappeared, the usual condition of the petals is gained. In this, which is called retrograde metamorphosis, very instructive cases of intermediate structure are everywhere observable. Sometimes a stamen is half changed, and then a half anther is found on one side, while the other is expanded into the thin texture of the petal. Sometimes the anther seems to struggle with the filament for mastery, and resolutely maintains its ground at the point, while the filament as resolutely expands and reddens, till at last it rises above the anther on each side, as if to smother that which it cannot otherwise destroy.

Examples of this kind are endless; the Hawthorn, the Cherry, the Peony, Anemone, and Ranunculus, are full of instructive information; not, however, such plants as the Dahlia, which, although called double, owe their doubleness to a cause entirely different from the transformation of stamens into petals.

The progress of growth proves all this still better than the transitions that have been pointed out; but it is difficult to observe. The most accurate observation shows that when a flower is very young, the petals and stamens are little scales, differing from each other in no perceptible degree; but after a certain period those scales take different roads to their final organisation. The petal-scales are continually expanding, and thinning, and acquiring colour; but the stamen-scales seem influenced by some power of contraction that is incessantly acting upon their growth; they get no colour, but expend their vitality in the conversion of a part of the cells of their interior into pollen. This has been observed even in the Lupine, whose stamens and petals are among the most unlike that could be easily found.

The stamens, then, are transformed from petals, the petals from sepals, the sepals from bracts, the bracts from leaves; and therefore the stamens are also transformed from leaves.

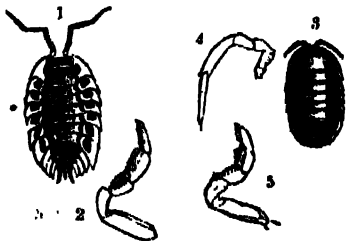
Our next consideration will be the way in which the fruit is made from leaves.—*R. E.*

ENTOMOLOGY.

ONISCUS ASELLUS, AND ARMADILLO VULGARIS; called in England, *Wood-lice, Millipedes, Pigs'-lice, Sow-bugs, Old-sows*, and *Carpenters*; and in Scotland *Slaters*.—Cucumbers and Melons in frames are subject to the attacks of various insects, &c., which by perforating or otherwise injuring the leaves, render them unfit for the elaboration of the sap, and consequently the size and flavour of the fruit are greatly injured. Wood-lice, the Thrips, Aphis, Acari, and a minute Hister, are mentioned amongst the aggressors; and as the first are often complained of as a serious pest, we will now undertake to give their history. There are, it will be found, two sorts that inhabit gardens, which although confounded by many persons are very easily distinguished—one species rolling itself up into a compact ball when touched, and being more convex than the other; indeed they are sufficiently dissimilar to have been formed into two genera, one having eight-jointed, the other seven-jointed antennæ, but I have seen the young of the following species wanting the two end joints of the antennæ, and I believe also one pair of legs.

Oniscus asellus of Linnæus, named by Fabricius O. murarius (fig. 1), does not roll itself into a ball when at rest, and the antennæ are composed of eight joints, the fourth being almost as long as the fifth, the terminal one producing a short bristle; the body is oval and but slightly convex; it is composed of 14 visible segments, including the head, which is broad, with a distinct tubercle on each side before the eyes, which are small, black, and coarsely granulated; the tail is furnished with four styles and a central spine, the two outer ones biarticulated. This species, when young, is sometimes red, or of a lead colour; but when full grown, it is of a yellowish-white; the upper side is rather rough or warty, variegated with brown or lead colour; the antennæ are longish, angular, and pubescent towards the extremity; the two basal joints only are whitish; the head is entirely of a lead colour; the sides of the segments are dilated and acutely serrated; the back is dark, variegated with yellowish spots, leaving the lateral margins whitish; seven of the segments have a large dark spot on each, forming a line of yellowish ones down either side; the legs, of which there are seven pairs, are 5-jointed, beautifully ciliated internally, and terminated by a claw (fig. 2).

This Myriapode principally inhabits chinks in old walls, rotten wood, and dung-hills, and is reported as the most destructive species in the Cucumber, Melon, and Mushroom-frames, and will feed off, in a very short time, a young crop growing near walls, such as scarlet Beans and Peas; the old plants they materially injure by gnawing off the bark. In wet seasons they become very mischievous amongst wall-fruit.



Armadillo vulgaris of Latreille, the Oniscus Armadillo of Linnæus (fig. 3), rolls itself up into a ball when touched, concealing its legs and antennæ; the latter are not long, but pubescent towards the apex, and seven-jointed, the fifth joint twice as long as the fourth; the apex is furnished with a minute bristle (fig. 2); the body is elliptical, very convex, being semicylindrical, and composed of 14 segments; the head is very broad, with a minute eye on each side, coarsely granulated; the tail is not prominent, and the lateral appendages are short and broad; it is of a deep lead colour, and the upper side is punctured; the sides of the segments are not dilated, but droop below the abdomen, and they are obtusely serrated; it has seven pair of legs, which are six-jointed, the 3d, 4th, and 5th joints being shaggy on the inside; the sixth joint is small, and terminated by a minute claw (fig. 5). *Obs.*—Figures 1 and 2 in the cut are rather larger than specimens are usually found. This species is sometimes called the Pill-Millipede, and was formerly employed in medicine to cure agues, consumption, &c.: it inhabits moss and the base of walls; it is likewise found under stones, rubbish, &c. I am not certain that it is not equally as destructive as the Oniscus asellus.

The eggs are first deposited in an oval bag beneath the abdomen of the Wood-lice, and when they are hatched the mouth of the pouch is opened for the young brood to sally forth, and as soon as they have scrambled off, the mother closes it again. The young are brought forth towards the end of summer; and it seems they have only 12 legs at first; but after several moultings they attain another pair; this succession of skins may account for the variation of colour so often perceptible, as well as for their different sizes. When they have just cast off their horny coats of mail they are white and soft, but occasionally I have found a brood of a brick-red colour. The Oniscl walk slowly unless disturbed, when they run fast away; they shun the light and heat of the sun, and therefore are seldom visible by day; they not only feed on plants, but on the juices of animals, and will even devour one another when confined without food.

I believe that neither lime, soot, nor the fumes of sulphur will expel the Wood-lice from frames, unless the latter be applied to an extent which would injure, if not kill the plants; for some by burying themselves in the earth, and others possibly by rolling themselves up, would remain secure during a severe fumigation. I have not long since stated that a toad, the Rana Bufo of Linnæus, if kept in a frame will soon exterminate Wood-lice, Ants, &c.; *but a pan of water should be put in with the animal.* Large quantities may also be caught by placing two tiles or boards over each other, between which they will crawl as the dawn of morning approaches, to conceal themselves; and tiles laid over old Cabbage-leaves form excellent traps.—*Ruricola.*

THE ROSE-GARDEN.—No. X.

(*Continued from page 232.*)

Insertion of Bud.—On the upper part of the shoot of this year, as close as possible to the stock, say, to touch it within the eighth of an inch at its base, make an incision one inch and a half long, in the direction of the length of the shoot, quite (but no more) through to the wood; above that at right angles make a cross cut about 2-5ths the circumference of the shoot, or rather say, wide enough to admit the shield freely. This is of the greatest importance, as the shield would otherwise be raised up in the middle, instead of lying in contact with the wood below it, and the bud, being thus deprived of the sap from the stock, would ultimately perish. In unskilful hands multitudes of buds fail from this cause, both in the time of budding and at subsequent periods.



When the shoot is not ripe, the chance of its being broken off by the wind is much lessened by making the longitudinal incision of a greater length than usual, and omitting the transverse cuts. The difficulty in inserting the bud is but slightly increased, and the success quite as certain. Proceed, then, to prepare the shield as before directed; which done, for convenience sake place the upper end of the shield, (but only the tip of it,) between the lips, then loosen the sides of the bark, within the dotted lines, turning down, as it were, the corners of the bark at the top, with the ivory end of the budding-knife; this must be done without injury to the bark, and clean to the wood, and no difficulty whatever must occur in separating the bark from the wood; if there be, the sap is not active, and the bud inserted would perish. Slip in the shield to the bottom of the incision, and then cut off the piece of bark which was between the lips, even with the cross cut, so as to place the shield in exactly the same position as the bark which now overlays it formerly occupied. The bud is now in the centre of the incision, and in that position is less likely to be injured by wind, when it pushes, as well as more convenient to bind over, than if it were at the extreme point. The first junction takes place at the cross cut, by the sap, in its descent; care must therefore be taken that the shield fits exactly at that place. The shortest possible time should elapse pending these operations, lest the lips of the covering bark or the bud, should get dried; and for this reason, as before mentioned, a dull growing day is far preferable to a windy one, as evaporation is the death of the bud, which, like all cuttings from the mother plant, succeeds best when unexposed to the air.





Some disappointment will at this time be experienced, by the operator finding that the bark of several of his plants, so far from slipping, will not appear to be even plump; and if any attempt be made to move it, by cutting across as usual, the shoot breaks off in his hand, and proves to be little more than pith. Habit alone enables the eye to see at once, from the apparent vigour of the shoot, if it be in a fit state to be worked, and saves the trouble of useless experiments. When a plant is found to be in a stagnated state at the beginning of August, it rarely becomes fit to receive a bud during the current season, and the shoot or shoots upon it should be shortened to six, eight, or ten inches, according to their strength, that the whole vigour of the plant, which was before applied to the entire shoots, may be confined to narrower limits, and the buds, thus left breaking out, will continue to draw up the sap, and maintain all the action the root can afford. Any experiment on such plants during the current season will almost always prove a waste of time, but the ensuing spring will in all probability infuse fresh vigour, and fit the plant either to receive a scion, to take a bud at the base of the shoot left the preceding autumn, (the natural buds upon which should be left at liberty to break,) or if the head be removed, start new and more vigorous shoots fitter for the same purpose. The cause of the defalcation of the plant, arises from its having expended all its vigour in its spring shoots, and having few or no fibrous roots, or their action having been weakened by the soil not being sufficiently light or properly pulverised when the plant was put into the ground, the growth of the stem and branches is suspended, though the root may be slowly increasing. The older the plant, (beyond a certain age,) the more liable it is to this failure, which is sometimes temporary, sometimes total, and generally happens to a proportion of the plants prepared for use, which, it must be remembered, have not received the advantages possessed by other young stocks, being in general much more maimed on their first removal. The best preventives to the inconveniences above mentioned, are early planting, keeping the stocks as short a time as possible out of the ground, taking care that the roots and fibres are extended horizontally, being neither deep enough in the earth to prevent the effects of the sun, nor so near the surface as to be exposed to be too much dried up by it; that they are well covered with a rich, light, well-pulverised soil, and the plants themselves are placed in an open and airy situation, exposed to the meridian sun.

Binding up.—Have a handful of fine bast soaking in water ready at hand, and the moment the insertion is complete in the individual plant before you, place the middle of the bast behind the shoot at the bottom of the incision, and bring the ends across and across each other, back and fore, covering the shoot, all but the bud, which must be left peeping out, unconfined. Continue the crossing till it reaches a little above the bud, and then tie the top in a knot behind; if tied in front, the knot holds the rain, and keeps a drip upon the bud, besides pressing upon the bark, and indenting it there, stopping, to a degree, the current of the sap. The ligature should be as tight as could be borne for a short space of time upon the finger.



A Laurel leaf may be lightly tied to the shoot at both ends of the leaf, so as to form an arch over the bud, to defend it from the sun and rain, both of which are as prejudicial as the air.

Success.—It must be remembered, that final success depends upon the entire exclusion of sun, air, and wet; the shaking of the bud from its position when once fixed in it; continuation of the sap; and the fitness of the shoot and bud to each other—which latter is known by the facility with which each bark strips from its wood.

It will be well to make a few experiments upon a branch of Willow beforehand, which, from its natural succulence, will convey to the operator a distinct idea of the facility he should experience in the separation of the bark, of both shield and subject, subsequently under his hands.

AN AMATEUR'S MELONRY.

Your imprimatur having been given (page 295) to my simple mode of raising Melons by the heat of stable-dung, it may not be amiss to tell those of your readers, who may be disposed to imitate my pit and mode of culture, how they may improve upon the one and avoid the errors of the other; that is to say, the errors which amateurs fall into from want of practice, even with the best written instructions before them. They who have access to, and are in the vicinity of gardens where the fruit is successfully cultivated, will do well to take practical lessons there; but such opportunities are by no means frequent; for, as far as my experience goes and inquiries extend, I am led to believe that in proportion to the pains bestowed upon it, this department of the garden is generally less creditably and profitably conducted than almost any other.

The pit I have described has been in existence some years, and answers my purpose, but if it were now to be constructed, I would (as I before said) put it down in a quadrangular shape, for the better concentration of warmth. I would also make the beds at least seven feet wide; five is much too narrow for strong and healthy plants of the grosser growing kinds; more than seven would make the lights too unwieldly for an amateur's cultivation, unless with a strong labourer at his elbow. There should be about as many cubic feet of dung in the lining spaces as there are cubic feet of frame; but less will do if a fresh supply of material is always at hand.

In the early stages of growth the bottom-heat should not exceed 75°. In consequence of the almost uninterrupted sunshine of the April just past, I was obliged to have my linings partially removed (a thing never before done) to keep down the bottom-heat; this is better than shading. It is not necessary to use the mats in the day-time; if the plants are inured to sunshine from the beginning, they cannot have too much of that after they are well-rooted, air being at the same time freely admitted; but I agree with Mills, that it is well to cover up well at night from first to last.

Water should be liberally supplied, but not without being warmed up to or near the temperature of the earth of the bed. No doubt the waters of the rivers and lakes of Persia or Asia Minor are in the Melon season never much colder when led off for irrigation than the soil in which the Melons are grown.

When the fruit is setting, the bottom-heat, assisted by sunshine, should rise to 80° degrees and 85°; and as it advances in growth, no sun-heat (plenty of air being given) can be too much. If sunshine is wanting, the linings should be turned and freshened, to make up for the deficiency.

In regard to stopping and pruning, I have nothing to add to the ordinary directions given in books. You cannot have good fruit without active growth and strong foliage, and therefore you must prune early and freely, and still follow the directions of "the Bard," and

"Give ample space and room enough."

I have raised Melons under calico, made waterproof with wax and linseed-oil. But the great annoyance was the quick growth of mould on the under surface of such covers. If this evil is not obviated by Whitney's Composition, I apprise all Melon-growers that they had better be at the expense of glass at once.—*P. P.*

Home Correspondence.

Spot on the Pelargonium.—I am a great admirer and a pretty extensive grower of this plant, and in common with others am much interested about the cause and prevention of the spotting of the leaves, which latterly seems to have become so prevalent. After a careful perusal of all that appeared in last year's *Chronicle*, in reference to this disease, my observations lead me to differ considerably in opinion as to its cause from anything there expressed. Some ascribe it to cold, others to bad soil, and others again to the attacks of insects. Though I would not assert positively what is the cause, yet I am exceedingly doubtful about its arising from any of these; at least with me it assuredly does not. The whole of my observations during the last two seasons tend to prove that it originates, not from cold, nor soil, nor insects—from none of these individually or collectively—but from sudden alternations of moisture and drought in the soil, in combination with full exposure to the scorching sun. The following are the facts from which I derive this opinion:—In this place we cultivate upwards of 2000 Pelargoniums in pots; one house—a lean-to, having a nearly due south aspect, and fitted up with an ordinary stage, not more than three feet from the glass—is exclusively set apart for their culture. In this house the disease is very prevalent, every plant being less or more affected by it; those on the top shelves, however, are by far the worst, where they are most exposed to clear sunlight and drought, and the spotting gradually becoming less as the shelves descend, where, from their position, the plants are somewhat cooler, and where, from their having lost fewer leaves, they are of a more bushy habit, and consequently afford considerable protection to the pots from drought and clear sunlight. In the same house, next the front glass, is a horizontal trellis or table for setting plants on, two and a half feet wide, and extending along the whole length, and along both ends of the house. The plants on this table receiving their light chiefly through the perpendicular front glass, get the sun's rays much more obliquely than those on the stage (the angle of which nearly corresponds with that of the roof), and their leaves are also much less spotted. The plants in this house were much affected by the disease last season, up to the end of May, when they began to bloom; they were then shaded every clear day, from ten o'clock a.m. to five p.m., by a light canvass covering over the roof; the house was also kept cooler by shading and admission of plenty of air, and the disease disappeared. In a late vinery joining this house there are at present about 300 Pelargonium plants; these receive a good deal of shade from the Vines, and very little spotting is to be found among them. The plants in both houses are of the same age; they were all shifted at the same time, and in exactly the same kind of mould. The temperature of the vinery, up to the present time, has not been higher than that of the Pelargonium-house; the only point of difference is the shading by the Vine-leaves, and to this I attribute the almost total absence of the disease among the plants in the former house. I am farther confirmed in this opinion by the state of the Pelargoniums in another house—a large circular conservatory, where they have considerable shade from other large plants, and also from the structure of the house. There is little spotting among the plants here, and on the dark side, where the greatest shade prevails, there is no spotting at all. The soil in this case is the same as in the others, but the temperature is much lower than in either of the other houses. Again, in a flat leaden and, consequently, perfectly dark-roofed orangery, the only light of which is derived from ten large upright windows, five on each side, I have never seen any spotting on the leaves of the Pelargoniums, which are entirely shaded by other large plants. The light, indeed, in this house is far too little for the health of almost any plant, if allowed to stand long in it; at the same time the temperature is greatly cooler than in the three last mentioned houses; nevertheless, Pelargoniums immediately begin to recover when placed in this house, from the spotting on the leaves, though much injured by it at the time of their being brought to it. Last June I had between 600 and 700 young Pelargonium plants, chiefly cuttings of the previous August, which, being unable to accommodate in any house, pit, or frame, I was obliged to put out in the open air. They were shifted into larger pots, and plunged up to the rims in two beds of sawdust, in a sheltered situation. One of these beds was fully exposed to the sun from morning to night; the other, being situated on the east side of a high wall, was shaded in the afternoon. The plants in both beds grew luxuriantly till their roots filled the pots, and although they were plunged, the mould in the pots frequently got very dry. About the middle of July the leaves of the greater number of the plants became spotted; those occupying the bed fully exposed to the sun were, however, much worse than those in the other, which was partially shaded by the wall. The soil and every other condition (excepting the shading) was, in both cases, exactly alike. When I cut down my plants after they have flowered, I generally put them into a spare melon-frame to start them again. In this case the disease has always been worst, so much so that many plants have died. I have not observed any spotting on the leaves of some hundreds of Pelargoniums planted in the flower-beds and borders. What, then, is the inevitable conclusion deducible from these facts? Clearly that cold does not produce the spotting of the leaves, for my warmest houses are the worst, and the coolest have none at all. Neither can it be soil alone, for in every case the soil with me was the same. If it is insects, it would appear they can do mischief only in clear sunshine, and shading will banish them. From what I have observed in reference to this disease, I imagine that it must be caused in some way or other from the roots of the plants, and the soil in the pots being powerfully affected by drought and moisture in alternation, through exposure to the strong sun-heat.—*A Connaught Gardener.*

Strawberries.—On the 26th inst. I gathered from the open ground a perfectly ripe Strawberry, (a Grove-end Scarlet,) and the day following a ripe Keen's Seedling. I state this, not so much to show the forwardness of the season, (having gathered a fully matured Grove-end Scarlet on the 19th of May, in a year not long past), as to induce Strawberry-growers, in different parts of the country, to name the time of gathering their first ripe fruit, and thus furnish data for judging how far the climate of one locality differs from that of another. I must not neglect, however, to say that the Scarlet was from a low steep bank, faced with rubble stone, and the Keen's Seedling from a higher bank, faced with the same material; but, being intended for the branches of fruit-trees only, there is only subsoil beneath the stone surface, the joints of which were dashed with mortar, to prevent weeds from springing up, but not so effectually, it appears, as to prevent Strawberry-runners from rooting. I may add that both berries were of the average size of their respective kinds. Runners of the British Queen did not take root in my garden last year, and I observe that some of the two-year-old plants are dead. It is to be feared that this variety must be classed with Wilmot's Superb and Myatt's Pine, neither of which are profitable Strawberries. Swainston's Seedling has proved itself a valuable sort, being hardy, prolific, of good flavour, and ripening its fruit after Keen's Seedling, but before the Elton, another valuable kind.—*Richard Tongue, Forton Cottage, near Lancaster.*

Auriculas.—I have been for many years a successful cultivator of Auriculas, and as this is the season of seeding, I beg to mention a method I have adopted of procuring seed, without the least injury to the most valuable plants. While the flowers are in high bloom, I remove and exchange the pollen through all the trusses of blossom on the stage, with the point of a pen-knife. I leave them until they begin to decline, then I cut off the stalks. Having ready some fine sea-sand, in a vessel that will not admit of leakage, I stick down those stalks rather low, and keep the sand always moist. I leave my vessel of stalks on the stage until the seed is ripe. I always have sowed Auricula seed in September, and never had a failure. If any of your readers will try my method I imagine that they will find it succeed. I am sure the cutting off the trusses before they are decayed benefits the plants, and does not in the least injure the seed, which ripens quite as well in the moist sea-sand as on the plant; it was finding this plan succeed so well with Pansies that induced me to try it with Auriculas. I have had some very fine green-edged seedlings blow this season that have sprung from seed saved in the above manner. I should be glad to learn if my plan has been used by other Auricula growers.—*Elisabeth.*

Root Excretions.—In a late *Chronicle* there are some observations of Liebig on the Chemistry of Cultivation (extracted from the "Chemist"), which have suggested to me a question on the subject of the Excretions of Plants, which I do not think has met with much attention hitherto. It is, I believe, a well-ascertained fact that the composition of all plants of the same species is nearly the same, even though they may have been produced by soils differing in constitution and quality. It is also ascertained that plants have not the power of refusing any substance that may be presented to them in such a state of solution as to be absorbable by their roots. If these premises are correct, it follows that plants must, in some manner, get rid of those absorbed matters which do not enter into their natural composition. The question I would ask, therefore is, How is this effected? Any organic substances, not required by a plant, may perhaps be disposed of by evaporation, but how are the inorganic ones got rid of? To explain this, it appears to me necessary to adopt the theory of excretion by the roots. Perhaps some of the readers of the *Chronicle* will favour us with their views on this subject, to which I have thus briefly endeavoured to direct their attention.—*Dendrophilus, Roxburghshire.* [The best answer to this is, that the most carefully conducted *experiments* show that the excretions in question do not take place.]

Swans.—In a late Number, Mr. Forsyth, speaking of swans, seems to imagine that they will keep lakes and rivers free from weeds, toads, and frogs. When the lakes, &c. are small, that opinion may be correct; but when they are large, and the water shallow, weeds will grow, and toads and frogs will enjoy many a quiet corner amongst them, independently of the swans. There is proof of this where I reside. Mr. F. complains of pinioning swans' wings; but, without doing this, how are the swans to be kept, especially in small ponds—would they not "take the wings of the morning?" When that operation is well performed, the noble bird is not much disfigured; and with regard to cruelty, the same may be said of many other operations that are performed for useful ends. Mr. F. quotes from Langton the story of St. Patrick banishing snakes and toads from Ireland, which is a very popular notion. As the story goes, the frogs were spared, but toads shared the fate of snakes, because they were venomous. Toads are, however, as harmless as frogs, and perhaps more useful, for they frequent cultivated lands more than their yellow neighbours, and destroy more insects that are injurious to vegetation. Lately, I was told by a friend that he once accidentally trod upon a toad on a path in a Corn-field, and that he found 16 fresh beetles in its stomach. These, probably, the patient toad had snapped up while they attempted to cross the path. Respecting toads being introduced into Ireland, it has been said that they would not live; also, that there is something in the soil injurious to them. But I question if ever the thing was properly tested, for there is such a near connection between toads and frogs, that what would be injurious to the one, must, in a great degree, be injurious to the other. In this country, toads

are found in all kinds of places, from the quagmire to the dry land—nay, at times, in the heart of trees, and even solid rock. This would lead one to suppose that the two reptiles never were together in Ireland. Toads are often kept with advantage in hot-beds, for killing insects in this country, and they would, no doubt, be useful for the same purpose in Ireland. With regard to snakes, I may observe that wet boggy land, like many parts of Ireland, does not suit that reptile. Some writers doubt whether the snake gives chase to its prey; but it certainly does. A gentleman, on whom I can rely, informed me that he once saw a snake in pursuit of a frog, and that it swam across a river after it. There has been a story like that of St. Patrick banishing the snakes and toads from Ireland, in the island of Malta, ever since the viper fixed on the hand of St. Paul.—*J. Wighton.* [Toads are perhaps among the most humble of a Gardener's friends; but certainly none are more really useful.]

Guano a Preservative of Flowers.—Those who are lovers of flowers, and delight in having them constantly in their rooms, may continue to keep them fresh for a very considerable time, by putting into the water a pinch of Peruvian guano, which is rendered immediately soluble and taken up by the cuttings. Guano is essentially different from all other manures: it possesses most of the constituents of plants, and contains a great portion of salt and other antiseptic, and yet the most fertilising ingredients.—*J. R., Woolwich.*

The Potato.—The reading of some articles upon the Potato, that have lately appeared in the *Chronicle*, has called to my recollection a circumstance respecting the culture of that important root. Between the years 1795 and 1799, whilst I was at Cluney, in Aberdeenshire, it was the practice there to pull up all shoots but one from the sets, when they were from four to six inches above the soil. As soon as the blossoms made their appearance they were also invariably picked off, for the gardeners had long been aware that both those practices added much to the increase of the crop; and I have since proved that it certainly does. From the result of experiments in various ways with different manures, I am perfectly satisfied that the too common practice of applying recently made manures in immediate contact with the sets is a bad one. In such a dry season as this has been, where the sets have been placed upon the top instead of beneath the manure, it will prove destructive to a very large portion of the sets in light lands; but a simple remedy is at hand, for if those extra shoots which are at most of the sets that have freely vegetated, are carefully planted by the hand, in a coiling form, leaving only the top of the shoot above the soil, they will grow and produce tubers in abundance. At the proper time to divest the set of the superabundant shoots, the plants will all have got so well rooted, that they will stand no longer in need of the assistance of the sets; so that if the whole of the shoots are taken up, and coiled singly in the place where the sets were, a better crop will be produced than if a single shoot was left after it was separated from its neighbours. For an early crop, on a small scale, I strongly recommend raising the plants first in frames, or in a warm border. They should be thickly planted, so as not to take up ground unnecessarily, and when the shoots are from four to six inches high, shake the plants carefully out with a fork, so as not to injure the young roots, and then plant them according to the coiling system. They are best planted in very shallow trenches, if the subsoil is dry, and they should be earthed up by levelling the ground. This is an old practice, that has long gone out of use; as well as that excellent one of using tolerably well decomposed dung, dug or ploughed in, and well diffused in the soil before planting. The coiling of the shoots in a horizontal position causes roots to be freely emitted at all the buried joints, and likewise fine tubers; but there are many varieties that do this much more freely than others; as may be observed even when the shoots are above the soil, when the plants are shaded and kept damp.—*John Mearns, F.H.S.*

Rosa Sulphurea.—I beg to inclose a bloom of the old double yellow Rose (Rosa sulphurea), which is rarely seen to flower well in English gardens. I imagine that my success in this case is mainly owing to judicious finger-pruning and the use of Humphreys's Inodorous Soluble Compound, dissolved in soft water, and applied to the roots as occasion required. This tree has not flowered before, although Busbridge used to be famous for yellow Roses. I have flowered Rosea sulphurea some years back in Northamptonshire (see *Gardeners' Chronicle* for 1841), in a different soil and aspect from this; therefore my experience leads me to infer that much depends on finger-pruning and the free application of stimulants during the growing season, particularly from the time the flower-buds appear until they burst into beauty. The plant here is in a south-west aspect; the soil is a sandy loam; the gardens are in a sheltered valley, contiguous to large sheets of water. The Rose sent is an average-sized specimen from among many flowers that are now open on the same plant. I have no doubt that by paying the same attention to the constitution of the plant in future seasons, I may again have a beautiful show of this delightful novelty.—*Henry Bowers, Busbridge Hall, Godalming, Surrey.*

Chicory.—In a late Number you appear to consider that the well-known excellence of French-made Coffee is owing, in a great measure, to their mixing Chicory with it. This, however, is a mistake; great pains are, on the contrary, taken by all amateurs of Coffee in France, and in all private houses as well as *Cafés* celebrated for the excellence of this beverage, that it should be quite pure, without the admixture of any foreign substance. The good quality depends on the selection of the raw Coffee, on the way in which it is roasted, on its being fresh roasted as well as fresh ground, and on the actual mode of preparation; and to secure the above properties, and to provide against adulteration, most private families buy their Coffee raw, roast it very frequently, even every day, and grind it immediately before it is made. Chicory is, however, a great deal used in France, sometimes and perhaps generally for mixing with Coffee which is sold ready roasted and ground, and very frequently to make up a beverage similar to Coffee, but with a different flavour, which is preferred by some, especially by those who fear the effect of Coffee upon their nerves, or who adopt the Chicory from motives of economy. Chicory, as a cheap substitute for Coffee, has also been long in use in Sweden and other northern countries.—*E. M.*

Chicory.—On the question of adding Chicory to Coffee, allow me to send you the following. An intelligent Tea-dealer told me the other day that a few years ago, he conscientiously gave up the addition of Chicory to the ground Coffee which he sold in his shop. At this time he had a large trade in retail Coffee, but it gradually fell off from year to year, without his being able to assign any cause. In vain did he sell his Coffee below a remunerating price, in the hope of getting up his trade. He at last found out that the great difference between his own and his neighbours' Coffee was that they added Chicory, and he did not; and he resolved on adding Chicory once more. From this time, his sale of Coffee improved; and he now considers it equivalent to the other branches of his trade. How it is that Chicory improves Coffee is a curious question in dietetics, and there is probably something more in it than mere flavour. But at any rate it is improved, as I think "Anti-Adulteration" will allow, if he orders a cup of Coffee with, and another without, Chicory, and tastes them. Can any of your correspondents inform me if Chicory has been analysed? Does it possess an alkaloid? These questions have become of interest since it has been pointed out that the alkaloid of Coffee (caffeine) and the alkaloid of Tea (theine) are identical in composition. It has also been recently stated that the alkaloid of the Ilex Paraguensis, which affords the Paraguay Tea, is identical with caffeine and theine. In connection with the theory of the use of this principle in the animal economy, propounded by Liebig, and which I am not at all disposed to reject as hypothetical, this branch of inquiry is very interesting. The Ilex aquifolium contains an alkaloid; has this a composition similar to the above? Inquiries of this kind may lead to important discoveries, and plants possessing all the essentials for use, of those which we obtain from a distance, may be growing at our own doors. The leaves of the Elm, Sloe, &c. were extensively used a short time since as British Herb Tea, and the sale of it forbidden by the government, because it was supposed to be used for adulterating Tea. There would be no objection to selling Elm-leaves and Sloe-leaves as such, and why should they not contain principles contributing as much to the health of the body as the Chinese Tea-plant? The action of the vegetable alkaloids on the animal economy, is an obscure but interesting question. In medicine they are used, and with decided success, and the successful administration of medicines in most instances depends on supplying the system with principles which it has failed, from some cause or another, to obtain from its food.—*L. E.*

Woodlice.—I observed in the *Chronicle* that these were destroyed by laying down cut Potatoes. Being very much infested by them, and the method being simple, I tried it; but at the same time I imagined that there might be some better way of getting rid of them. I accordingly laid down along with the Potatoes a few Swedish Turnips, cut in two or three parts, according to their size, in order to ascertain whether the Potatoes or the Turnips would answer the purpose best. For the first few days there was no difference between the two; but as soon as the Turnips had got soft, then the woodlice began to be most numerous on them; and now they have almost left the Potato altogether. The longer the Turnips lie the fonder they are of them. As it is at the warmest end of a house that the woodlice are most numerous, the Turnips should be laid down there. In the morning, I have taken out from underneath one Turnip about 100 of these pests. Gold-fishes seem to be very fond of woodlice. In a vinery here is a cistern, in which there is a large fish; sometimes I put in a few woodlice, upon which the fish darts with devouring greediness, and splashes in the water with all the joy imaginable. When only one or two woodlice are put in, it seems greatly disappointed.—*A Gardener.*

Gardeners at the Chiswick Exhibitions.—I perfectly agree with your remarks in your Leading Article in No. 21 of the *Chronicle*, which has reference to the late Horticultural Show at Chiswick. There is no doubt that the appearance of the gardeners at this Show reflected much credit upon them, when compared with former years; and I do trust on all future occasions they will be found equally attentive to their personal appearance. The gardeners and nurserymen ought to have an opportunity given them, at each Show, an hour or half an hour before the public are admitted, to examine the productions offered for competition, and to make their notes on and discuss amongst themselves the improvements which every season brings forth. This would be a great boon to those gardeners and nurserymen who really come to these Shows for the purpose of increasing their stock of knowledge; and it must be admitted that too much encouragement cannot be given to those men, on whom we are so much dependent for the splendour of such exhibitions. The public would feel the advantage of this, as it would do away with the inconvenience which now but too often occurs, by persons, evidently gardeners or nurserymen, impeding the progress of the public round the tents, while they are making their notes and taking the names of whole collections. This was done at the last Show in several instances. I cannot blame these persons for taking their notes—it is necessary for them to do it; but I do hope the Society will give them an opportunity of doing so much more conveniently to themselves, and at the same time relieve the public from the inconvenience alluded to. There is another point to which I wish to call your attention, and which, in my opinion, and in the opinion of many persons who attend the Chiswick Shows, detracts much from their interest. This arises from the award of the judges not being placed upon the successful collections, specimens, seedlings, &c. I really do not believe there is a person who takes the trouble of going round the tents who would not have an increased interest by having the attention called to the successful productions. It is impossible to recollect the names of all the successful parties by merely reading the award over in a hurried way; and to stop to copy it is out of the question.—*J. S. J.* [Our correspondent is perhaps not aware—1, that gardeners are admitted into the garden before half-past 8 in the morning, and remain there till 10, during which time they have every opportunity of making notes; 2, that their passes are given them upon the express condition that they shall not loiter in the tents in the afternoon; 3, that it is apparently impracticable in such crowds to manage the announcement of the awards in any other than the present way. The award cannot be completed before half-past 2 or 3 o'clock, and at that time the tents are so thronged as to render it impossible to get at the tables.]

Covering Fruit-trees with oiled Calico.—In December, 1843, I bought a quart bottle of Whitney's Composition, and applied it in the way directed by him, but could not make it go so far as I was led to expect; it gave two good coats to a frame five feet eight inches long and three feet six inches broad. I prepared five other frames with the composition described by "Devoniensis," at page 301, 1843, at one-fourth of the expense. In the effect produced I could perceive no difference, nor could any one else, although both kinds of material were over the same tree. Both were sufficiently transparent. On the 7th March, I protected one Peach-tree, one Nectarine, and one Apricot, with these frames, none of the trees being large. All three had blossoms in abundance, and the season was more favourable than usual here; but all the trees had less fruit set than last year, in an ungenial season, and without any protection whatever. The Peaches and Nectarines under the frames were covered with blistered and curled leaves and aphides. As I could not have less fruit nor less healthy foliage, I removed the frames in May to try them again next year, when I hope to have more success. Will such of your readers as may have tried these frames for protection, give the results of their experience thus far, whether for or against? —*Rambler.*

Rabbits.—Instead of using such a dangerous substance as arsenic for the destruction of rabbits, in the manner described by "J. G." at p. 245, or resorting to the less objectionable method pointed out by "J. R. L." at p. 317, I would beg to suggest the adoption of another expedient, which will be found quite as serviceable as either of those above referred to. It is nothing more than the fixing of some small twigs around the plants that require protection, and afterwards coating them with coal-tar. This I have practised for several years past, and have found it answer the purpose as effectually for a time as if the plants had been surrounded with a wire guard. Of course, when the tar dries, and the smell wears off, it will be necessary to rub over the twigs a second time; but this is done with very little trouble or expense, and its effects will probably last until the plants are hardened and grown beyond the reach of hares or rabbits.—*M. E. H.*

Oak Bark.—Is the bark of the Levant Oak (Qu. Cerris) valuable? and what proportion of the tanning principle does it afford, compared with the English Oak? —*H. B.* [Can any correspondent favour us with an answer to this question?]

Miscellaneous.—*A Correspondent* states that the finest specimen of a Lemon (?) China Rose which he has ever seen, is in a conservatory near Ryde, Isle of Wight. He writes that the plant is about thirteen feet high, and ten in width, and has at this time bloom and buds ready to expand, to the number of nearly one hundred.——In reference to the statement made at p. 318, *H. G.* informs us that at his last residence, which was in the West of England, he invariably sowed Sphenogyne speciosa in the open ground. He adds that he has done the same this season near Elgin, and remarks that the plants are certainly more than an inch long.

Societies.

HORTICULTURAL SOCIETY.

[We have received the following correction from Mr. Frazer, of Leyton:—In your Report of the climbers exhibited by us at the Gardens of the Horticultural Society, on the 18th inst., we are stated to have exhibited Phillbertia grandiflora, so trained as not to cause its blossoms to be seen. This plant we did not exhibit at all, and do not wish to have the discredit of showing it.]

LINNEAN SOCIETY.

Anniversary, May 24.—The BISHOP of NORWICH in the chair. Mr. Sowerby exhibited specimens of a flowering plant of Leucoria runcinata from Chili, which had been grown in the Royal Botanic Society's Garden, Regent's Park.—Mr. Cameron exhibited a specimen of

Pyrola uniflora in flower, and the front of the Chatham Barometer, both from the Botanic Garden at Birmingham.—Mr. Edward Forster read the Treasurer's account, when it appeared that the Society, during the past year, had received 928*l.* 16*s.* 2*d.*, and expended 963*l.*, including the payment of two 100*l.* bonds. The balance in favour of the Society on the year's account was 192*l.* 1*s.* 1*d.*—Mr. James Bennett, the Secretary, then read an account of the members who had died during the past year, amongst whom were the following:—*J.* B. Hogg, Esq.; G. W. Wood, Esq.; W. Allen, Esq.; *J.* C. London, Esq.; J. M'Cartney, M.D.; Don Jose Pavon, and Baron Vogel. The following is a list of the Members of Council removed:—Arthur Aikin, Esq.; J. A. Hankey, Esq.; Rev. F. W. Hope; John Miers, Esq.; Professor Owen. The following gentlemen were proposed as members of Council:—Dr. Scott; Prof. Forbes; Rev. W. Hincks; D. Sharpe, Esq.; W. Spence, Esq.; C. C. Babington, Esq.; E. J. Puckett, Esq. The five first were elected. The following officers were re-elected:—*President*—Edward, Lord Bishop of Norwich, D.D.; *Treasurer*—E. Forster, Esq.; *Secretary*—J. J. Bennett, Esq.; *Under-Secretary*—R. Taylor, Esq.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

Statice Pseudo-Armeria. False Thrift. (*Hardy perennial.*) Plumbaginaceæ. Pentandria Pentagynia.—Every one acquainted with flowers knows the common Thrift, which grows so abundantly on our marshy sea-shores; and the beauty and desirable properties of which have rendered it a favourite so generally esteemed and so extensively grown, that few gardens are unadorned with its simple and lasting flowers. This species has many traits of a kindred character. Like it, the flowers are collected and arranged together in a dense and somewhat globular head, supported on a scape which raises and shows them prominently above the foliage. They also possess the same pleasing colour and enduring nature, continuing unchanged in beauty for a long time. But it is only in some of the varieties of S. armeria that the colour of the present is equalled, or even approached, for we find many with very pale flowers; and none of them under any circumstances rival it in the magnitude of the flowers. In fact, the plant is altogether of a much larger size, and superior character. The foliage, too, of S. armeria is very narrow, and so thickly arranged that it has become eminent as a desirable plant for border edgings. But a different character is exhibited in the plant before us, and we are not aware of any other species of the capitate flowering section of the genus that has leaves of equal breadth. As an ornamental plant for the greenhouse or drawing-room, it has considerable merit, being easily grown, and always flowering with freedom. And there is little doubt but it will also admit of being gently forced into early bloom; if attempted, however, it will be quite necessary to observe a degree of caution, for too high a temperature produces weak and drawn-out flower-stalks, which are unable to support the cluster of flowers in an upright position; and it has also a tendency to detract from the merit of the blossoms, in causing them to be fainter in colour. To the flower-garden it will likewise be an acquisition of some importance, if planted closely in beds. We have not learned that its hardihood in enduring the severity of our winter without protection has yet been sufficiently tested, but it is not unlikely that it may eventually be found to need little or no shelter. Respecting its native country, we have been unable to gather any information. Messrs. Rollison, of Tooting, received plants of it from the Jardin des Plantes, in Paris, in the summer of 1841; but these were unaccompanied with any memoranda. Probably, with several other members of the genus, it is a native of the South of Europe.—*Paxton's Magazine of Botany.*

Macleania longiflora. Long-flowered Macleania. (*Greenhouse Shrub.*) Vaccinieæ. Monadelphia Decandria.—When Sir William Hooker named a plant Macleania, he not only paid a well-merited compliment, for few British merchants have deserved better of Botany than Mr. John Maclean of Lima, but he founded a good genus. A less accurate observer might indeed have referred it to Thibaudia, a group of plants from the same countries, and very similar in habit; but each anther of Thibaudia is divided into two long tubes, which open at their point; while, on the contrary, in Macleania the anthers have only one tube each. The plant now described is very near M. angulata, figured in the Botanical Magazine, t. 3979, and said to be from Peru. But that species has shorter and broader leaves with manifest stalks, and the flowers are also shorter, contracted at the orifice, and yellow there. Their colour, too, is represented as much more vivid than in our species. A warm greenhouse shrub, which requires to be kept in an intermediate house during winter. It may be potted in a compost, consisting of sandy loam and peat in equal proportions. Owing to its producing very fleshy roots, a large pot or tub will be required, or where there is convenience it is probable it would succeed well if planted out in a conservatory. It requires a liberal supply of water in summer, but very little in winter. To have this plant well furnished with young wood from the bottom for flowering, it is necessary to cut it well back early in autumn, in order to have the plant clothed with leaves before winter. It is rather difficult to multiply, but may be managed under a bell-glass in a bottom heat of 80°. *Note by Mr. Hartweg.*—This is one of the numerous fleshy-rooted vaccinaceous shrubs, frequently met with in dry and exposed situations in the Andes; the present species has been collected on the main Cordillera near Loxa (4° S.) at an elevation of about 8000 feet above the sea, where it forms a neat compact evergreen shrub, five feet high, and is called by the inhabitants Salapa.—*Botanical Register.*

Garden Memoranda.

New Tarbet Gardens.—New Tarbet, formerly the seat of the Earls of Cromarty, is situated about four miles north from Invergordon, and about a mile from the public road. Where the approach branches off the road there are some cottages which, from their being completely covered with Ivy, would not be unaptly named the Ivy Cottages. The Ivy appears to keep the walls very dry at all seasons, and when it is neatly clipped and kept close the healthy foliage has a neat appearance. From these cottages the approach sweeps through thriving plantations, until it reaches the house, which is situated on a level piece of ground, and is a modern structure, built of hewn freestone. It has a flat roof, from which an extensive view of the surrounding country is obtained, and to the lover of Nature in her wildest grandeur the scenery around New Tarbet must afford admiration and delight. On the east is the broad expanse of the German Ocean; on the south-east the Moray Frith; on the north-east Dunrobin Castle, the seat of the Duke of Sutherland, and John O'Groat's coast; Balnagowan Castle overtops the thriving woods on the north; and on the north-west mountainous scenery prevails, in which Ben Wyvis stands pre-eminent, streaked with patches of snow throughout the year. Passing from the house to the garden, we cross a steep declivity by an easy pathway. This bank continues through the spacious lawn for at least a mile, and in some parts it is finely broken into rude natural shelves, that somewhat resemble the artificial terraces of the present day. It is richly decorated with large trees, that rise from among underwood, consisting of Laurels, variegated Hollies, Rhododendrons, and other evergreens. Some of the Laurels measure 30 feet in diameter, and are not more than 6 feet high. Roses and hardy Heaths occupy the front of the borders next the walks, intermixed here and there with patches of Violets. Throughout this bank American plants grow remarkably well, and produce annually young shoots nearly 3 feet long. These are pegged down close to the ground; they are covered with broad healthy foliage, and the flowers are of surpassing richness and beauty of colour. The soil being naturally a mixture of peat, sand, and loam, is particularly suitable for Rhododendrons. The kitchen garden is a parallelogram, and contains about 4 Scotch acres of land. The walls are covered with fruit-trees, many of which, in the middle of April, appeared as sheets of blossom. Apricots, Plums, Figs, Almonds, Cherries, Mulberries, and even the best varieties of Pears ripen well here, and Peaches bear abundant crops of excellent fruit. This is somewhat remarkable, when we take into consideration the fact that Tarbet is 700 miles north from London. The greenhouse was gay with Camellias, Heaths, Pelargoniums, Hoveas, Chorozemas, Pimeleas, and other plants. On the walls were Roses, among which was a fine specimen of yellow China. A slip of ground round the garden is planted with shrubs and trees, among which are some beautiful Weeping Ashes, above 25 feet high, with long streaming branches sweeping the ground. On the east of the gardens is a range of pits, set on arches, and heated by means of hot water, occasionally aided by dung-heat. Mr. Proctor, the gardener at New Tarbet, is a successful grower of Coniferæ, and had, in pots, as many as 500 young plants, which he had raised from seeds. Among these I observed Pinus Gerardiana, P. cembra, P. ponderosa, Abies Deodara, and many other good species. Timber-trees, such as Beech, Elm, Ash, Yew, &c., grow remarkably fine at New Tarbet. Some of the Beeches are nearly 100 feet high, with clean stems. The gardener's cottage deserves notice, as being very ornamental; it is in the Gothic style, and neatly finished both outside and within. Among other books on science and gardening, its library contained three volumes of the *Gardeners' Chronicle*, handsomely bound, having been supplied to the gardener through the liberality of his employers. In conclusion, I would state that the whole place is in good keeping, and reflects much credit on the gardener.—*A Visiter.*

Miscellaneous.

The Upas Tree.—A living plant of this celebrated tree has been lately presented to the Horticultural Society by the East India Company, and is now growing in the Chiswick Garden. It is in perfect health, and, notwithstanding the fables of Dutch travellers, perpetuated by Darwin, may be approached with safety. It is, however, so virulent a poison that no prudent person would handle it without proper precaution. Along with it the Company also presented a new species of Cycas, and a young plant of the Durian fruit.

Singular Tree in New Zealand.—One of the most extraordinary trees of the forest is the Rata, which, originating in a parasite, grows to such a size as to rank amongst the giants of the forest. It first makes its appearance in the form of a tender Vine, clasping the trunk of some huge tree with its long tendrils, and growing both upwards and downwards, and increasing in bulk at the same time. After a while the parasite, having killed the parent trunk, establishes itself upon its roots, sends forth numerous branches aloft, which again send forth aerial roots clasping the neighbouring trees—and, ultimately, the Rata occupies a larger space than any tree of the forest. It is under this tree that the curiosity so well known as the vegetating caterpillar is found; and instances have occurred of natives lying down to sleep under the Rata having been found dead. The tree is now always carefully avoided by them.—*Simmonds' Colonial Magazine.* [The Rata is the Metrosideros robusta, a very handsome plant, and of singular habits, by no means satisfactorily explained. If natives have been found dead beneath it, their death was owing to any cause rather than the Rata, which is as harmless as a Myrtle.]

Rot in the Potato.—We learn from our St. Helena correspondence, that the Potato crop in that island has of late years been visited by a disease of a most destructive character. In a letter now before us, the writer states that "the rot in the Potato continues, but has not been so prevalent during the past year. Many experiments have been tried to arrest the evil, but with very partial success. Deep trenching and planting without manure have in several instances been of great benefit, but in other cases they have failed. Using seed from a crop not ripe has also succeeded; but although these experiments have answered on some grounds, in others they have utterly failed. The guano, as a manure, has been used, but no results have yet been obtained. The rot generally begins when the Potato crop is in flower, the stems being then strongest and apparently out of danger. From the most luxuriant state of vegetation, the crop, when taken with this disease, will dry up and disappear in the course of a few days; and it frequently occurs that not a vestige of the Potato is to be found; when not destroyed, the Potato is generally in a foetid rotten state, and covered with wireworm. Many consider the rot to proceed from the wireworm; I am not disposed to adopt this opinion, but think the incipient rottenness of the Potato attracts it. Two crops of the Potato are obtained annually, the first, sown in July or August (which months are here considered the winter months, the thermometer in the country ranging from 55° to 60°), and gathered in December and January; the second crop is usually planted in January and February, summer months, when the thermometer ranges in the country from 70° to 75°." Does any one know of such a disease in this country?

The King of Saxony.—Our readers may not be aware that His Majesty, now on a visit in this country, is not only a botanist but a botanical author; having published an account of the plants in the neighbourhood of Marienbad. The king is said to have acquired very considerable practical knowledge of the science by long pedestrian excursions on the mountains of Germany.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Rhododendrons, Vincas, and other stove plants intended to flower in the conservatory through the summer, should now be removed to the coldest part of the house, or, what is better, into a late vinery. I hardly know of a stove-plant which may not be thus luxured in summer to flower in the conservatory. All the Orchidaceæ are well suited for this purpose, and as few ladies can endure the close heat of our stoves, unless the inmates of those houses are so managed their beauty is in a great measure lost.

Conservatory.—New conservatories, where a collection of climbers has been planted this spring, should now be kept as hot as a stove, and as damp as water can make them day and night; it is bad policy to use the common routine for such a house the first season. We often hear of large conservatories getting too hot and injuring the plants in summer; but it is the want of moisture in the atmosphere, and not the heat, which causes the mischief; and when this becomes better understood, designers of these structures will make better provision for moisture than has hitherto been done, except in a few instances. All spare places and under the stages in any conservatory, should now scarcely ever get quite dry.

Greenhouse.—Keep this house moist by frequent syringing; turn the specimen plants round from time to time, that they may not get one-sided, and allow them to have plenty of room on all sides, which is the grand secret in growing these plants to perfection. The flower buds of such young plants as are intended to become specimens ought to be picked off, in order to encourage their growth, and few of the best old specimens should be allowed to ripen seeds.

Forcing Pits.—Put in cuttings of Neriums about this time, to be forced next spring for early bloom. Let such as are going out of flower be cut to the second pair of eyes next the bottom, and plunged in bottom-heat. Force them rapidly for two months, and then inure them by degrees to stand the greenhouse, and afterwards out of doors till the frost comes. Keep them as cool as possible, and nearly dry through the winter, and they will come in for forcing early in spring; they may be made to flower all the summer. There is hardly a plant in cultivation more capable of improvement than the Oleander.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.—As we have at length got a soaking, though a very cold one, of rain, it will not be necessary for me this week to do more than direct attention to former Calendars, and urge the necessity of bringing the work up as fast as possible. Where the Grass or lawns is much burnt by the late weather, it will assist it much in recovering its verdant hue to dress it either with liquid manure, or some of the new concentrated manures considerably mixed with light sandy soil. A little lawn Grass and Dutch Clover seed, thrown on previously to covering with soil, will do much good, especially on spring laid turf, where soil to fill up the cracks is indispensable. Mow, roll, and sweep lawns and walks, and keep everything and every place as clean and tidy as possible. Annuals may now be advantageously thinned, and the thinnings if not too large may be used for filling up gaps in the borders.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Seedlings must be shaded from the glare of the midday sun, and especially watch the attacks of Aphi or green-fly, which usually secrete themselves in the heart of the plant, and multiply amazingly this hot weather. If you wish to save yourself a great deal of trouble you will remove them as they appear. Place two or three flat oyster shells on the surface of the soil in the large pots it prevents evaporation, and also saves the roots from being washed bare in watering them. *Polyanthuses* are very subject to attacks of red spider; to keep these pests down, shade your plants, and if on a bed keep the soil moist around them. *Tulips.*—Break off the capsules to strengthen the roots. The bulbs on the offset beds will soon be ready to take up, should dry weather continue. *Ranunculuses.*—Many complaints reach me of roots rotting in the ground. In experimenting this season I have destroyed a valuable bed. I do not, however, consider it all loss, as I certainly have gained some experience, which I trust the readers of the *Chronicle* will profit by, before the next period of planting. *Carnations and Picotees.*—Use every means before recommended, to keep your plants free from Aphis; if they get ahead your bloom will suffer severely. Tie up diligently, and top dress with some very rotten manure. *Pinks* do not appear so liable to the green-fly as the before-mentioned flowers. Watch your seedlings, and those which are single or with serrated leaves "pull up." They are not only worthless, but their removal will benefit those which remain. *Fancies.* Still continue to put in cuttings; those slipped off nearest the root succeed best. The thinner they are the better; strong shoots seldom make good plants. *Dahlias.*—The stakes ought to be put down without delay, and the plants will be better for being mulched with rotten manure.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Whether the plants intended for ripening their fruit, from the beginning of October through the winter, are already in the fruiting-pit, or in a pit by themselves, they should now be carefully examined, to see if any of them are near showing their fruit. Those with which this is found to be the case, will be benefited by being either top-dressed with some rich turfy loam, shifted into larger pots, or turned entirely out into the bed to root into it at pleasure, which they will readily do. The last-mentioned plan is the one which I adopt myself, and with favourable results. I generally put about half a bushel of chopped turf, with a little "flakey" leaf-mould round the ball, for the roots to strike into, and give one good watering, after which they only require to be occasionally syringed.

Vineries.—In removing partially the linings from the borders of the early Vineries, I find that the roots have run considerably into the decayed part below, which has not been regularly turned with the other. As this is not desirable, it will be advisable in turning that on the later Vine borders, to keep the utmost part next to the surface of the border. In removing the covering, leave three or four inches of the part, to serve as a mulching, as the roots will be numerous near the surface, and should be kept only protected from the effects of drought, but encouraged as much as possible to remain there. The berries in the late houses will now require thinning. Let this have timely attention, and stop the laterals as soon as

they are a few inches in length. Be careful not to syringe Grapes after they are stoned, as the bloom is never so fine upon them if syringing is continued too long. Keep a dry night atmosphere.

Peaches.—As the first house of this esteemed fruit is, in many gardens, now beginning to ripen, it may not be amiss to repeat that heat, accompanied by plenty of air during the day, is necessary to give flavour and colour to the crop; and on the occurrence of sunless days, I have made slight fires to raise the temperature, rather than keep the house close. From 65° to 70° degrees by night, with a dry atmosphere, must be maintained. The second house will require the strictest attention to watering the borders, and syringing the trees.

Fig-House.—Continue the treatment recommended in former calendars. Young trees will require constant attention to stopping the more vigorous shoots, so as to obtain a proper supply of side-shoots and spurs.

Melons.—Pay attention to the renewing of linings when required, lest in case of dull weather occurring the plants should receive a check. Be careful to supply them with sufficient water. A few seeds should now be sown for the last crop.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Fig-trees.—Pinch out the points of shoots that are rather rampant; this will cause the young fruit to swell better, and will have a tendency to render the shoots more fruitful. In making a fresh plantation, secure a dry situation, and keep the plant growing from one stem, as the sucker-like appearance which our Fig-trees generally present is a great drawback to their proper management. Vines in favourable situations should have the fruitful shoots shortened an eye beyond the bunch, and these shoots so thinned, that the Vines will be able to perfect the bunches. Hoare's system of management is the best for open walls in general cases. *Cucumbers and Mushrooms.*—Get your ridge Cucumbers out as soon as possible; there is nothing gained by planting them earlier, where you have any frames at command. The beds I have put up consist of 6 inches of long Grass put in a trench, and covered with 4 inches of half-rotted dung. On the dung, Mushroom-spawn was inserted, and the whole covered with 3 inches of soil; 6 inches more soil were placed under each hand-light. The Mushrooms will not appear until the stems of the Cucumbers, &c. will have so extended, that their leaves will shade and keep them cool. I have tried the same plan with beds of Carrots, &c., but the pulling of the crop disturbs the spawn. Many schemes must be tried to obtain good Mushrooms during summer, where materials are scarce, and shady places and cool cellars not to be obtained.

Endive and Chicory.—Sow a little for early use, and a greater breadth of each by the middle of the month. Chicory will make large heads, if transplanted thinly into rich soil. If fine roots are an object, treat it much the same as you would do Carrots.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—If there has been any felling and peeling done this season, after the bark is dried and removed, the timber, faggots, and loose stuff should be cleared away as soon as possible; fences should be repaired, so that the young shoots that spring from the stools may be secure from injury; this is a matter of much importance, and should therefore be strictly attended to.

Coppice.—Where felling and peeling has been performed this season, the woods should be cleared of all the produce as quickly as possible.

Young Plantations.—If quick and profitable growth is wanted, after the plantations are made, the directions which I have so often given respecting their after management should be borne in mind, and, what is of more importance, put in practice, particularly during the growing season.

Nursery Work.—This has been a trying season for transplanted seedlings, plants, and trees; many may, however, yet be saved that are apparently dead or dying, by heading them off, or cutting them well in. Shading and watering should also be attended to.—*W. B.*

State of the Weather near London for the week ending May 30, 1844, as observed at the Horticultural Garden, Chiswick.

May	Moon's Age.	Barometer: Max	Min	Thermometer: Max	Min.	Mean.	Wind.	Rain.
Frid. 24	7	30.078	29.988	66	45	55.5	N.E.	
Sat. 25	D	30.103	30.010	65	40	52.5	N.E.	
Sun. 26	9	30.200	30.136	53	41	49.5	N.E.	
Mon. 27	10	30.190	30.128	56	42	49.5	N.E.	.06
Tues. 28	11	30.028	29.956	59	46	52.5	E.	
Wed. 29	12	29.938	29.867	58	44	51.0	N.E.	07
Thurs. 30	13	30.023	30.003	61	45	53.0	N.E.	
Average		30.091	30.030	60.4	43.7	52.1		13

May 24 Cold, with dusky white clouds; fine; densely overcast.
— 25 Overcast and cold; fine, with white clouds; very clear.
— 26 Cloudy, with cold dry wind; clear at night
— 27 Cloudy and cold, with brisk N.E. wind; cold showers, clear; rain
— 28 Cloud, with very dry easterly wind; rather boisterous; overcast.
— 29 Overcast and cold; slight drizzle; rain at night.
— 30 Cloudy throughout.

Mean temperature of the week, 4.2 deg. below the average.

Rate of the Weather at Chiswick during the last 18 years, for the ensuing Week ending June 8, 1844.

June	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds:						
							N.	E.	S.	W.	N.W.	
Sun. 2	68.9	46.5	58.7	7	0.33 in.	—	2	2	2	5	5	
Mon. 3	69.1	46.9	58.0	6	0.01	—	—	1	4	6	4	
Tues. 4	69.6	46.9	58.2	8	0.70	1	2	2	3	4	5	
Wed. 5	68.3	46.7	58.0	9	0.64	2	2	1	—	3	5	3
Thur. 6	67.9	47.1	57.5	10	0.28	3	3	1	1	2	2	2
Fri. 7	68.9	46.8	57.8	6	0.37	2	4	—	2	1	5	1
Sat. 8	68.6	47.2	57.9	5	0.10	2	4	1	—	4	1	4

The highest temperature during the above period occurred on the 2nd, 1839—therm. 86°; and the lowest on the 3rd, 1837 - therm. 35°.

Notices to Correspondents.

ANEMONE AND RANUNCULUS.—*Rugby.*—It is most probable that the compost used for the Anemones was too rich. The failure in your Ranunculus bed has arisen from the season, the prevailing cold winds, and the long-continued drought*.

BEES.—*Geo. Payne.*—Your letter is an advertisement in disguise.

CHICORY.—*A Subscriber.*—As we obtain more information upon this new branch of cultivation we will give it. The mode of preparing it is merely to cut the roots into squares, the size of dice, kiln dry and roast them. Whether it is an improvement to Coffee is a matter of taste. Those who want to have their nerves excited by the beverage will prefer pure Coffee; but those who wish for wholesome, agreeable beverage, and do not want the excitement, will prefer Chicory, which, in our opinion, greatly improves both the quality and the effects of Coffee upon the system. We do not know anything about Mangel Wurzel beer; but no doubt it would make, when fermented, a strong and harmless beverage.

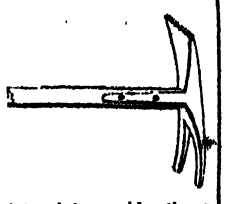
DAMSONS.—*Expansa.*—The Shropshire and Common Damsons may be reproduced nearly of the same quality from the stone.‡

DISEASES.—*Omikron.*—We have fully discussed your case in a Leading Article. The Peach trees from your *stove* are no doubt ill ripened, but in a less degree than those in the open air. Smith's book is useful, but you will find the short instructions in the late Mr. Lindley's "Guide to the Orchard," containing all that need be, or can be said, to any good purpose, upon the management of the Peach tree.

FIGS.—*Thomas Milne.*—Two of the best varieties for planting against a south wall are the Brown Turkey and Brunswick.‡

FUCHSIA SEED.—*Elizabeth.*—As the seeds of Fuchsia do not require more than a temperate heat to cause germination, it is probable that the vital principle has rather been suspended than quickened. They will most likely remain six weeks or even two months longer. Keep the soil in as uniform a state of moisture as possible, and, rather than allow it to become parched, place an inverted flower-pot, dish, or pan, resting it upon the rim of your seed-pot, during intense sun-light, and during all other times allow the pot to be exposed. The above precaution is a good expedient, where external shading is impracticable or inconvenient. Plants, generally, cannot have too much light, when modified with other agencies; but, with seeds, it is *vice versâ* up to the period of germination. *W. W.*

GARDEN TOOL.—*Chemical Jack.*—The accompanying woodcut represents a good description of Garden Tool for rooting up Dandelions, Docks, &c.



GRAPES.—*Dido.*—The extremities of your Vine-shoots have been checked by cold.‖ —— *A Young Grape-grower.* — The prizes awarded for Grapes by the judges at the Chiswick Exhibitions are not solely according to the weight of the bunches; the whole of their merits, as regards handsome bunches, size of berries, colour, and flavour, are taken into consideration.‖

GRASS CUTTINGS.—*C. B.*—It is not so well to fork the short Grass with which you have mulched your American bed into the ground before it is decomposed, as to remove it and leave it in heaps till decayed.

HEATING.—*Cornish.*—There is no reason why you should not use *cloned* slate tanks for heating the air of your house, provided the Delabole quarries will furnish a material that will stand heat. But some kinds of slate split when heated, and therefore cannot be employed instead of pipes, &c. You could easily divide the interior from a tank, by a contrivance like that at p. 804, 1843, from Mr. Beck's garden, and so work the two halves independently of each other.——*N. J. A.*—If a boiler heated with a powerful lamp will keep frost out of a greenhouse, so would the lamp without the boiler, provided the loss of heat can be prevented. We would, however, advise you to take a copper boiler such as we have mentioned. It requires no brick work, or setting, but can be used just like an Arnott stove. Only you must take care to place such a stove in the middle of your tiny greenhouse. Loudon's "Suburban Gardener" would probably answer your purpose.

INSECTS.—*P.*—The bunches of Currants from the Oak, are galls formed by a Cynips, called, I believe, Quercus pedunculi—specimens of which accompanied the Oak-twig. We will take the first opportunity of illustrating this subject. *B.*——*O. L.*—Your insect is the larva of a beetle called Timarcha tenebricosa; it feeds upon Goose-grass very freely *R.*——*B.*—The insects infesting your Cucumber-plants are a species of Thrips, no doubt, but the leaves being quite matted together by pressure, none could be found. They may be extirpated by fumigation. *R.*—*Myrtle.*—The beetles destroying your Peach-leaves are the Curculio tenebricosus. The blighted foliage is either occasioned by aphides or mildew. The Clover is the Trifolium pratense. *R.*——*A Constant Reader.*—At p. 509, vol. II., of this Journal, the history of the Froth-fly was given. The eggs are supposed to be deposited on the young twigs or buds, which are formed to produce leaves the succeeding spring: we hope you will be able to confirm or refute this opinion. *R.*——*T. M.*—We cannot say that the snails do not eat the roots of your Orchidaceous plants, amongst which they, in all probability, breed—but that may easily be ascertained by a little attention at night. If Cabbage-leaves were strewed about the house, we presume these pests might be readily collected and destroyed. The leaves should be first held before the fire, to make them flaccid; and if a little fresh butter or fat be sparingly rubbed over the surface with the hand or a rag, it is said to make them more palatable. *R.*——*A Norman.*—The galls on your Oak-tree being unknown to me, I should feel obliged by your favouring me with your address, as I wish to investigate the subject without delay. The grub is the larva of a Crane-fly. The eggs were laid by a common white butterfly, Papilio brassicæ. *R.*——*A Subscriber.*—Please to send us, in a box, a portion of an infested leaf, with the insects upon it. The fumigation with sulphur must be repeated; and if the chinks be previously stopped, so as to render the frame air-tight, or nearly so, it must destroy the animals. You can place a saucer of spirits of turpentine in your frame; but we have had no experience as to its effects on Cucumber plants, and shall be glad to have your opinion. *R.*——*Delta.*—The only chance of getting rid of the Aphides, as you cannot employ fumigation, will be to put into your greenhouse all the Lady-birds (Coccinellæ) you can find; they will soon increase there, and clear off the enemy. *R.*——*J. D.*—I cannot give you the specific name of the Julus, from Calcutta, for which I am much obliged. *R.*——*K. O.* will find the Apis lanigera figured and described at p. 116, 1844. *R.*

MANURES.—*J. McI.*—It is an incontrovertible principle that the best manure which can be given to a plant is the same species in a decayed state, with the addition of such matters as are lost in the process of decay. Therefore Peach-cuttings are the best manure for Peach-trees, as far as they go. But, since a good deal of matter in the form of fruit and flowers is carried off and cannot be restored, other matter in aid of the Peach-cuttings would be necessary where the soil is exhausted. ——*J. H. H.*—Bone charcoal is a good manure, and is probably better than naked phosphate of lime; only that, as phosphoric acid is the important part of bone manure, much more bone charcoal than pure phosphate of lime would be required to produce a given effect.——*A Subscriber.*—All plants that like manure at all prefer it in its liquid form. They should have it weak and frequently, when in full growth. No coniferous plants will bear manure of any sort.

NAMES OF PLANTS.—*E. T. O.*—Brassavola nodosa. —— *T. Williams.*—Myoporum adscendens—not an Anthocercis. ——*A Subscriber.*—Sagina procumbens. The leaves of bulbs ought to be quite dead before they are removed.——*J. C. L.*—Aspasia lunata.——*A. W.*—1, Tillæa verticillaris; 2, Allium montanum; 3, Trichonema purpurascens; 4, Ruellia pumilio; 5, Pomax hirta. Pray do not send any more dried specimens. ——*C. H. N.*—Some Libertia from New Holland; not a British plant.——*L. T.*—Chimonstoma hispidum.——*Sussex.*—Geneora tubiflora, a very fine thing.——*A. Z.*—Boesiam microphylla.——*A. S. G.*—The pink variety of Hardenbergia monophylla. Depend upon it Kennedya coccinea had nothing to do with its parentage. Your "Moss" is the root of some plant that has found its way into the water.——*J. B.*—Cristaria multifida; the dwarf variety of Schizanthus pinnatus. ——*J. M. Wickham.*—Millia biflora——*A.*—Duranta Plumieri; Anigozanthos bicolor; Fuchsia, not in a state to be named: apparently gracilis.——*C. I. C.*—Cirrhæa saccata. Your Dendrobium speciosum will not flower without more heat than you give it. Moreover, it must be well rested for 3 or 4 months.——*A Lady.*—Ageratum conyzoides. On no account use guano to Coniferæ.

PEARS.—*Expansa.*—Now is the time to cover with soil the branch of your favourite Pear-tree which you have laid down with a view to its rooting; but you would better have the variety budded in July.‖

PELARGONIUMS.—*Nu.* 43.—We do not think decomposed Laurel leaves can injure your plants, because their poisonous qualities are volatile, and must have long since disappeared. Perhaps the leaves turn yellow and drop off in consequence of the house being too cold and dry. Your soil seems quite proper. Are you sure that Red Spider is not at work?

RHODODENDRONS.—*Anon.*—Your plants are dying from drought. They may probably be saved by a good top-dressing of cow-dung.

SUBSTITUTE FOR GLASS.—*N. W. Tanner.*—The specimen of cloth we have received, that has been rendered waterproof by your composition is, in every way, like Mr. Whitney's, and is equally transparent.‡

THE CUCUMBER.—*Ignoramus.*—It is no doubt the fashion among some well-bred persons to call a Cucumber a Cowcomer, but we never heard them assign any other reason for the practice than that they were accustomed so to call it. It was formerly usual to call Birmingham Brummagem, and Asparagus Sparrow-grass; Cowcomer is defensible upon the same ground as they are, and on no other. They are all the barbarisms of a fashion that is passing away.

WHITNEY'S COMPOSITION.—*G. W.*—Parties using this preparation are recommended to employ strong glazed calico or Irish linen, as it is equally transparent as muslin, and much more durable. I have growing under Irish linen Ispahan, Cutheil's, Mills's, and Scarlet Melons, in the greatest luxuriance: on the two former the fruit very fine, and nearly ripe plants, set 16th of April.*

MISCELLANEOUS.—*W. B.*—Of your plants, Nos. 1, 2, 3, and 5, are hardy; 4 is a stove plant. All are worth growing except 5.‡——*A Friend.*—We would recommend you to speak to the party who supplies you with the Paper, as we do not ourselves fold a single copy at the office.——*George.*—We are greatly obliged by your good intentions, but would strongly recommend you to read more before you become an author. The paper would be a fair physiological exercise, but it contains views which more information and experience would alter, and is therefore unfit for publication. The term cambium is only another name for the organic mucus of vegetation. See "Lindley's Introduction to Botany," *passim.*——*Mac-* [illegible] Such a specimen as you describe can be exhibited [illegible] under the letters DD.——*H. G.*—A very dry, [illegible] under a hot south wall must necessarily be unfit for any plant whose roots do not penetrate deep. You had better give up all thoughts of growing Anemones and such plants in it. It would suit bulbs if they were put in by the end of September; but it would be more advantageous to fill it with China Roses and similar ornamental bushes, which will keep the place always gay or green, or both. If you will have herbaceous plants you must give the border every year a good dressing of cow-dung, with which one-sixth part of Peruvian guano is mixed. It would be greatly improved if you could add a good dressing of stiff loam.——*W. H. H.*—Your flowers were noticed last week under the initials "J. M. H."*——*W. K.*—You will find excellent practical directions for the management of Hyacinths at pp. 107, 1842, and 36, 1843.‡——*X. Y. Zy.*—It is very uncertain whether the seed of your Pelargonium will produce a flower like that it was raised from. It is all chance. At the same time, it is probable that a handsome parent will produce a handsome seedling. In trying the experiment remove all the other flowers, so as to throw as much strength as possible into that you leave.——Will a *Connaught Gardener* be kind enough to give us his address?

SEEDLING FLORISTS' FLOWERS.

CALCEOLARIAS.—*R. P.*—Your seedling was too shrivelled.*——*H. N. H.*—Having examined your collection of seedlings, we do not feel justified, from what we have seen, in speaking of them in the terms which some parties have used who have seen them; we consider them rather behind the present improved race of this beautiful flower. Many of your varieties want form, others are common, such flowers as we have looked at years past; and many of them are very small. Such flowers as the Jewess, Dulcinea, Mrs. Coone, Anne, Eliza, are the best; Purity, Amulet, Emma, &c. are too long in form. The progress made this season in the Calceolaria has been very great.*

CINERARIAS.—*J. B. H.*—Of your seedlings, No. 1 is poor in colour; 2, we have much better in the same way; 3, fine blue; 4, fine blue, but petals too narrow; 5, very poor; 6, ditto; 7, ditto; 8, ditto; 9, there are many better of the same colour; 10, petals too narrow; 11, poor colour; 12, very good blue; 13, very common; 14, wants colour and size; 15, a bright and pretty crimson variety; 16, from the peculiar tint of the blue, makes a good variety; 17, disk too large, and petals too narrow.*——*I. D.*—Your seedling is distinct from others we have seen; dark disk, straw-coloured centre, having the petals tipped with crimson purple, with a darker stripe running down the centre of the petal, which gives it the appearance of being striped. We cannot say how it would look in a mass.*

FUCHSIA.—*J. W.*—There is nothing in your seedling Fuchsia to distinguish it from many others. It is large, altogether of a rosy crimson, and wanting the purple in the corolla.*——*W. J.*—As you justly observe, "the flowers of your seedling are not so large as many of the new varieties, but in colour, foliage, and habit, it is greatly superior to most of them." The colour of the tube and sepals are of a bright rich carmine, with a corolla of a beautiful purple.*

PANSIES.—*Z. A.*—Your flower, from not being packed up in wet Moss, was quite dry. From what we could see of it, it appears to be large, and of fine colour, texture, and substance.*——*J. P. Bush.*—The seedlings received with the above initials are magnificent specimens; they are the largest Pansies we have seen; but with their extraordinary size, they possess a certain degree of coarseness. Defiance, Emperor of China, the Great Mogul, have rough edges to the petals, and are not so perfect as stand flowers ought to be. The Sultana is much better in properties, and wants but the ground colour of a clearer yellow in the side petals, to make it a desirable Show flower. They are large, of good substance, and will be a great ornament to the border.*——*J. L. H.*—No. 9, a fair flower, but possessing no qualities particularly to distinguish it; 13 promises to be a much superior variety in form, and in the boldness of the eye. In texture it appears rather thin, but this may in part arise from the peculiar circumstances under which the blossom was expanded. 10 is a very fine flower in substance, colour, and form; there is a very slight dash of sulphur in the bottom petal, which it would be desirable it should lose. 11 possesses fine form, good substance, with a little too much orange in the lip. Your Jewess is also a very fine variety.*——*T. C.*—Your white seedling is fine in colour, and in the precise marking of the eye, but rather deficient in substance: and the edges of the petals have too uneven and fringy a character. No. 7 is a purple of the deepest dye, good in form, the edges of the petals even, thick, and of a velvety character.*——*Clerious.*—A large flower of fine proportion, named the *Marquis of Montrose*; the flower generally is of a rich purple, eye fine, ground colour white but little seen, and where it joins the purple it is mixed with blue, which gives it a blurry character, and the flower appears to want substance.*

PELARGONIUMS.—*P. P.*—The want of form is the great deficiency in your seedlings; the petals are all long, and too narrow, which gives the flowers a very loose appearance. The peculiarity you notice in No. 1 arises probably from its white centre.*——*G. L.*—Your seedling is a fair common flower, but it possesses none of the superior properties of a show-flower.* ——*A Young Beginner.*—Your flower had fallen to pieces, but from the petals it appears to want form and substance. It is pretty from its extreme delicacy.*

VERBENAS.—*J. A.*—Your seedling Verbena, Enchantress, blush or pink, is a beautiful variety; truss large and well-formed, the flowers flat and large, with a fine surface and delicate colour; one of the best of the light varieties.*——*R. P.*—Your Verbena was quite shrivelled up on its arrival, and could not be revived.*

IMPORTANT TO BARLEY-GROWERS.—When the Crops of Barley and other Lent Corn have been injured by the long-continued Drought, they may be Revived by a judicious application of NITRATE of SODA, which may now be bought at a lower price than has been known for many years.—To be had in any quantities of J. SOLLY LISTER, 3, Laurence-Pountney-Hill, London.

The Agricultural Gazette.

SATURDAY, JUNE 1, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 5 — Agricultural Society of England.
THURSDAY, June 6 — Agricultural Imp. Soc. of Ireland.

WEDNESDAY, June 12 — Agricultural Society of England.
THURSDAY, June 13 — Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

June 3.—West Hereford. W. Market. Yeoford.
June 5 — Hatherstone.
June 6 — Monmouth.

THE value of BONE-DUST AS A MANURE has been long acknowledged. On looking over the Agricultural County Reports published by the Board of Agriculture in 1813, we find that in eleven of them mention is made of this manure, and that in some districts it was then used in large quantities. Thus the reporter for Derbyshire states that M. Bunting at Ashover used 100 bushels of bone-dust per acre for his Turnip-crop, which cost 20*d.* per bushel, and that the Rev. Edward Otter at Bolsover used 80 bushels per acre of London bones crushed, costing 2*s.* 3*d.* per bushel. The reporter for Lincolnshire states that Mr. Sutton of Alkborough manured with 60 bushels of bones from Sheffield, at 5*l.* per acre; the first year, the produce of Wheat was increased by them 6 bushels per acre; the Beans, the year after, yielded a quarter of the crop more; and the following year, the land being fallowed, "the Ketlocks (Charlock, or Wild Mustard) were vastly more luxuriant!" In other counties, also, this manure was then gradually coming into notice as a powerful fertiliser. The great point on which farmers who used bone-dust then, differed in practice from those who apply it now, was in the quantity applied. No one would think now of applying 100 bushels,* or three waggon-loads of bone-dust per acre. No wonder that land, as we are informed in some cases, should for years after such a manuring yield abundant crops without any subsequent assistance. But was the application on that account necessarily profitable or economical? By no means. Mr. Waterton, in his essay on "Alkali as a Manure," shows this very clearly. We republish a remark on this subject, to be found at page 157 of this Paper:—"It is a common observation amongst farmers to say, 'I have given such a field a dressing it will not forget for years.' Upon reflection, it must strike any one that this is a most improvident mode of proceeding." It is so, as is immediately afterwards stated by the author, for two reasons—1st, because the manure, if not all absorbed by the crop to which it is applied, is liable to waste during periods when the land is not under crop; and 2nd, because that portion remaining in the soil, after the first crop, is so much capital lying useless till the second and third or fourth, or, as in the instance just mentioned, till the twentieth crop, before which it is not all consumed.

This point seems soon to have come home to the minds of farmers; and now 16 or 20 bushels of bone-dust, or at the most 3 quarters, is the quantity generally applied. Within the last year or two, however, it has come to be known that this quantity may be diminished to an extraordinary extent, without interfering with the efficiency of the manure. The fact so well known that bone-dust has a powerful influence on the grain crop succeeding the Turnips to which it is generally applied, showed that in the condition in which it was ordinarily applied, it was not all at once available as vegetable food; and by altering the mode of this application—by presenting it as Mr. Lawes does in his superphosphate of lime in a soluble condition, one in which it can be immediately absorbed by plants, it is found that a very much smaller quantity possesses the same influence as the large doses of former years in causing luxuriance in the growth of one year's crop.

The fact—for it seems now to be pretty well established—that by dissolving 2 or 3 bushels of fine bone-dust in 40 or 60 lbs. of sulphuric acid, and applying this quantity of the mixture over an acre of land—the fact that as good a crop of Turnips may thus be produced as from 20 bushels of bone-dust applied in the ordinary way cannot be too widely known. Of course we do not pledge ourselves to it that this result will in all cases be experienced, but from the evidence we have already published on the subject, it appears that it may in ordinary circumstances be reasonably expected.

Before directing the attention of our readers more particularly to this subject, we may just state, in continuation of our remarks on the use of bone-dust as a manure 30 or 40 years ago, that farmers then appeared to differ as much as they do now about the most suitable form in which it should be applied. There were those then who advocated the use of fresh bones; some thought they should be boiled, and others again would burn them. Though the conversion of the insoluble phosphate of lime, which is probably the *most* valuable ingredient of bones, into the soluble superphosphate by means of sulphuric acid is certainly the most interesting question connected with our present subject; yet we may just give the following table in illustration of the question of burnt *versus* unburnt bones. It is extracted by Mr. Hannam's permission, and in fact at his suggestion, from the truly valuable report of his experiments on manure, which was published in a late No. of the "Highland Society's Transactions." The crop on which the experiments in these cases were made was Turnips.

	Crop per Acre. Nothing. tns.	cwt.	Crushed Bones. tns.	cwt.	Burnt Bones. tns.	cwt.
Land manured evenly at the rate of 6 loads per acre, and bone-dust on certain parts, at 2 qrs. per acre	16	2	19	2	18	5
Land unmanured, except with bone-dust on certain parts, at 2 qrs. per acre	16	1	24	8	25	17
Land manured evenly at the rate of 6 loads per acre, and bone-dust on certain parts, at 2 qrs. per acre	15	15	20	3	18	11
Land unmanured, except with bone-dust on certain parts, at 2 qrs. per acre	7	0	15	3	9	0

With one exception these results are quite what any one would expect from a consideration of the composition of bones. It is impossible, from what we know of the value of animal manures, to suppose that the grease or jelly which exists in fresh bones possesses no fertilising influence. By its decomposition it yields ammonia, which is well-known to be a powerful manure, and all the advantage of this is lost by those who burn bones before applying them to the land.

We have but little new evidence to adduce on the value of sulphuric acid and bones as a manure. The experiments of the Duke of Richmond, of Mr. M'William and Dr. Manson of the Moray Farmers' Club; of Mr. Lawes of St. Alban's; and Mr. Purchas, of Chepstow, may be found detailed in previous Numbers of this *Gazette*; and they are quite conclusive. We add some of Mr. Hannam's, extracted from the "Highland Society's Transactions":—

Turnips per Acre. Manure.	Crop. Tons.	Cwt.
Bone-dust, crushed, 2 qrs.	15	3
Do. burnt, 2 qrs.	9	0
Bones, 1 qr., and 12 stones of sulphuric acid	13	7
Bones (burnt), 1 qr., and 6 stones of sulphuric acid	17	7
Farm manure, 15 loads	22	10
Guano, 2½ cwt.	22	0
Nothing	7	0

This agrees pretty well with what has been already published on the subject, in pointing out bones treated in this way to be a cheap and valuable manure for Turnips, and we hope that it will be tried very extensively this year.

For the information of several who have applied to us on the subject, we extract from Mr. Purchas's report to the Monmouth Farmers' Club, the following directions for manufacturing the superphosphate of lime:—

"*For one acre.*—Place a tub that will hold at least 60 gallons near the water intended to be used, put into the tub 3½ bushels (28 gallons) of fine bone dust, then put 80 lbs. (about 4 gallons) of sulphuric acid (oil of vitriol) to the bones, adding 24 gallons of water, total about 56 gallons; mix the whole by stirring, which do two or three times in the first twelve hours, and before using it the mixture is to be left for twenty-four hours. Care should be taken not to mix more acid and bones in the tub than will be used each day, for about one-fifteenth part evaporates the first twenty-four hours. A water-cart holding 200 gallons was nearly filled with water, then about 14 gallons of the mixture out of the tub was put into it, the cart filled up with water and the whole well stirred. The quantity put upon an acre was four cart loads, or 800 gallons. The Duke of Richmond put upon an acre only 400 gallons of water and 2 bushels of bones. His grace's trial was *most successful*."

And we republish Mr. Lawes's directions on the same subject; they appear to be suitable more especially for those who do not wish to apply the manure in solution.

"Calcined bones reduced by grinding to a very fine powder, are to be placed in an iron pan with an equal weight of water (a cast-iron trough, such as are sold for holding water for cattle, will do); a man with a spade must mix the bone with the water until every portion is wet: while the man is stirring an assistant empties at once into the pan sulphuric acid, 60 parts by weight to every 100 parts of bone; the acid is poured in at once, and not in a thin stream, as commonly recommended; the stirring is continued for about three minutes, and the material is then thrown out. With four common farm-labourers and two pans, I have mixed two tons in one day, the larger the heap that is made the more perfect the decomposition, as the heap remains intensely hot for a long time. It is necessary to spread the superphosphate out to the air for a few days, that it may become dry. The great mechanical difficulty of reducing unburnt bones to a very fine powder renders the formation of superphosphate of lime from them very difficult, but common bone-dust in a pure state (that which is sold often contains one-third of lime) may be decomposed by boiling it in a leaden pan with half its weight of sulphuric acid and twice its weight of water, which may afterwards be dried up with sawdust or clay-ashes."

ON BLACK HORSEPONDS.—No. IV.

IT is generally believed that the value of all crops chiefly depends on the amount of animal nourishment which they contain,—in the shape of gluten in cereal crops, in that of legumen in leguminous crops, and of vegetable albumen in root-crops. Now, these ingredients differ in composition from those making up the bulk of the vegetable, inasmuch as they contain nitrogen as one of their elements, while the latter, viz. starch, gum, and sugar, do not. These (the starch, gum, &c.) being composed of carbon and water, are evidently intended to supply carbon to the lungs, where, by a singular process of animal combustion going on through the instrumentality of respiration, they are consumed as the means of keeping up the animal heat. This, then, is the use of starch, gum, &c., to the animal economy. But to the formation of muscle, flesh, and blood, nitrogen is indispensable. There can be no doubt, therefore, that the vegetable principles of gluten, &c., are the only flesh-forming principles, in fact, the true substantial nourishment of the animal; and it should, therefore, be the object of every practical man to increase these principles in his crops by every means in his power. This can only be accomplished by the use of such manures as are capable of yielding ammonia; and on the greater or less abundance with which it is supplied to the crops, within certain limits, will depend their nutritive properties. Hence, we find a marked increase of the gluten in Wheat to follow the use of such manures as are capable of yielding ammonia by their decomposition, as flesh, blood, and urine; or those manures which contain the salts of ammonia ready formed in them, as guano. But of all the fertilisers within the reach of the farmer, capable of yielding ammonia, the urea of the urine is the most valuable; and if, as Liebig states, "with every pound of urine a pound of Wheat might be produced, and with every pound of ammonia which evaporates a loss of 60 pounds of Corn is sustained," what must be the number of bushels of Wheat annually lost by the farmer who allows the thousands of pounds of urine voided by his cattle and horses to undergo spontaneous decomposition, without an effort to avail himself of its benefits, or to fix the ammonia generated by the decomposition of the urea it contains? But plants not only require nitrogen for their sustenance, to assist in the formation of gluten and vegetable albumen, they also require a certain quantity of several inorganic substances, without which no plant can perfect its seed; these are potash, soda, lime, magnesia, sulphuric acid, phosphoric acid, and chlorine. Now, these substances are precisely those which are found in the solid matter contained in the urine of cattle, and in such a state as is best adapted to be taken into the texture of plants, and appropriated as food. Of this matter thousands of tons are annually allowed to run to waste as if it were not only useless, but a positive injury to the land; while the farmer goes, "cash in hand," to purchase guano to apply to his crops, the very essence of which he daily wastes with the most perfect indifference; yet, every ton of which is at least equal in fertilising effect, and, consequently, also in money value, to the ton of guano purchased at 10*l.*, and for which he often pays much more, owing to the impurities which it so frequently contains.

To place this part of the subject in a clearer light, and show the practical man that these inorganic substances, which he allows to find their way into his horsepond, are really of value to plants, are found in their texture, and in fact essential to their growth, I will take the amount of inorganic substances contained in the crops, removed in a four year rotation, of Turnips (bulbs only), Barley, Clover and Rye-grass, and Wheat, as given by Professor Johnston. Let the crop of Turnips amount to 25 tons of roots per acre; of Barley, 38 bushels; of Clover and Rye-grass, of each one ton of hay; and of Wheat, 25 bushels. Then we have from the entire rotation in pounds:—

—	Turnip Roots.	Barley. Grain.	Straw.	Red Clover.	Rye Grass.	Wheat. Grain	Straw	Total.
Potash	145.5	5.6	4.5	45.0	28 5	3.3	0.6	233.0
Soda	64.3	5.8	1.1	12.0	9.0	3.5	0 9	96.6
Lime	45.3	2.1	12.9	63.0	16.5	1.5	7.2	149.0
Magnesia	15.5	3.6	1.3	7.5	2.0	1.5	1.0	32.0
Alumina	2.3	0.5	3.4	0.3	0.3	0.4	2.7	10.3
Silica	23.6	23.6	90.0	8 0	62.0	6.0	86.0	290 2
Sulphuric acid	49.0	1.2	2.8	16.0	8.0	0.8	1.0	78.8
Phosphoric acid	22.4	4.2	3.7	15.0	0.5	0.5	5.0	51.5
Chlorine	14.5	0.4	1.5	9.0	0.1	0.2	0.9	25.6
								970.9

* County Reports for Derbyshire and Hertfordshire.

Now, if we compare the quantities of these different ingredients with the same ingredients capable of being yielded to the plant by 100,000 lbs. of ox urine, or 7370 lbs., the dry matter contained in the above quantity of urine, we shall find that the potash contained in it is more than sufficient to supply the wants of all the plants grown during three entire rotations; that the soda contained in it is equal to the demand made by the crops, for more than five years; that the magnesia is more than sufficient to supply the plants for four years, or one rotation. The sulphuric and phosphoric acids are more than equal to supply the necessary quantity for a period of five years, while the chlorine would supply the crops at least ten years.

Thus we find that the urine of the ox contains all the inorganic constituents required by plants, and that in considerable quantities; and although guano is richer in phosphoric acid, and possibly in the elements of ammonia, it is nearly destitute of the salts of potash and soda, two very necessary constituents in the food of plants. Hence we may infer, that the solid matter in urine is at least equal to guano as a fertilising agent. But as a proof of my former statement, that urine, if properly prepared by fixing the ammonia, will produce most decided effects on the crops, I need only insert the following experiments, made with the dry solid matter obtained from urine, by first fixing the ammonia:—

Crop.	Quantity applied	Produce per acre.	
		Undressed.	Dressed.
		Tons. Cwt.	Tons. Cwt.
Turnips.	1 cwt. per acre.	12 17	24 11
Potatoes.	1½ „ „	12 18*	14 10
Wheat.		43 4bushels	51 18bushels
Oats.	100 lbs. „	44 —	54 2

These results are sufficient proof of the advantages to be derived from the use of urine, and certainly ought to stimulate to exertion those farmers who expend money in the purchase of guano, while they witness with the most perfect indifference the waste of a fertilising liquid, capable of producing all the effects of guano, at a fiftieth part the cost of that article; and with which liquid they produce disease, and often suffer the death of many a valuable animal, by compelling it to drink a poisonous solution of its own excrements from its owner's black horsepond.—*Alfred Clyde, Painswick.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

As the method of fixing or striking the fiars prices of grain adopted in this county presents certain peculiarities, as compared with that pursued in other parts of Scotland, a brief account of it may not be here out of place, in connexion with the subject of tenure occupying my two last papers. The authority for the continuance of this peculiarity is immemorial usage, sanctioned by a special judgment of the Court of Session, applicable to the mode of striking the fiars, and bearing date 10th Dec., 1771.

The fiars are generally declared upon the first Thursday of March annually, and the averages ascertained are those of grain of a particular crop or year, sold between the reaping thereof and the second last Friday in Feb. thereafter. On a few occasions, the fiars have been ascertained, and struck a week earlier.

In the beginning of February, annually, a list of from 80 to 100 of the principal farmers in the county, who sell grain within the same for ready money, is prepared; care being taken to select a proper proportion from each district. These are then summoned to appear before the sheriff on the last Friday of February, being market-day in Haddington, there to depose to the quantities, kinds, and prices of grain sold by them respectively of the last-reaped crop, and requiring them to lodge with the proper officer on the previous Friday a note of such sales, including those of that day, under a penalty of 10*s.* Each return from these notes of sales is copied over in the form of a deposition, and upon the day of appearance, the sheriff administers an oath to each seller appearing, to the effect that the note of sales there read over to him is true—that the grain sold was by imperial measure—all raised within the county—of the particular crop for which the fiars are about to be ascertained—and all delivered within the county at the prices stated. From the evidence in these depositions, statements are prepared by the sheriff-clerk, showing the particular quantities or number of quarters sold by each person at each price—the total quantities sold at each price, as shown by the returns—the amount or value of each total quantity sold at one price—the gross amount of the quantities sold, and the gross price thereof.

From the data thus given, the average prices are easily ascertained by dividing the gross price by the number of quarters, the result being the price of one quarter. This produces the general medium, to which an addition of 2½ per cent. thereon is made to form the average or second fiars for the particular grain under calculation. The reason assigned for this addition to the average prices is, that it was long the custom to strike the fiars twice in the year, at the terms of Candlemas and Lammas; but that the average of both fiars was found to be, during a considerable number of years, nearly the same as that struck at Candlemas, with the addition of 2½ per cent. upon the amount. The tenants some time ago, having strongly expressed their dissatisfaction with this method of striking the fiars, had the matter legally investigated, but failed to effect any alteration, as the existing mode had previously received the sanction of the Supreme Court.

* The land on which the potatoes were planted received a dressing of 40 cubic yards of dung per acre.

The fiars of each kind of grain are divided into three classes, in the following manner:—The general medium price, exclusive of the addition of 2½ per cent., being ascertained, the gross value of the grain sold above that price is divided by the total number of quarters also sold above it, and the result, with the addition of 2½ per cent., forms the first or highest fiars. The general medium, as ascertained in the manner already stated, with the addition of 2½ per cent., forms the second or medium fiars. The gross value of the grain sold below the general medium is divided by the total number of quarters also sold below it, and the result, with the addition of 2½ per cent., forms the third or lowest fiars.

As before observed, all the grain in the returns must be the growth of the county, but it will be apparent that only a portion of that sold within the county is included in striking the averages. All grain sold upon credit or for seed, all gray corn, and that not delivered within the county, is excluded; and further, all sold in markets out of the county is also excluded. No fiars of meal, flour, or other articles are struck.

The notes of sales, depositions, and calculations in striking the averages, are preserved by the sheriff-clerk, and a separate record is kept, showing the several fiars prices for each year. This latter record exists from 1627. After the fiars are declared in court, upon the first Thursday in March, extracts are issued by the officer to those requiring them.

The following are the East Lothian fiars, per imperial quarter, for the crops of 1842 and 1843:—

Crop 1842.	First.	Second.	Third.
Wheat	£2 12 0½	£2 8 11	£2 5 8½
Barley	1 10 5½	1 8 3½	1 5 11½
Oats	1 1 7½	0 19 11½	0 18 3½
Peas	1 9 9½	1 7 8½	1 5 6
Crop 1843.	**First.**	**Second.**	**Third.**
Wheat	£2 14 5½	£2 11 3½	£2 8 8½
Barley	1 13 11	1 11 10½	1 9 10
Oats	1 2 1½	1 1 0½	0 19 11½
Peas	No return.	No return.	No return.

In most of the other counties of Scotland the fiars prices are ascertained by a jury of respectable tenants and proprietors. A large number, usually 45, are summoned by the sheriff at the Candlemas term, and a jury of 15 balloted from among them. The fiars are then struck by the jury in the manner already described, with the exception, however, of any per centage being added, as is the case in East Lothian. The ministers' stipends are usually computed by the first or highest fiars, and the rents generally by the second or medium fiars; but this is matter of agreement between the parties.—*T. Sullivan.*

ON THE MANUFACTURE OF PEAT-CHARCOAL.

In reply to your inquiries relative to the methods of charring Peat, &c., alluded to by me at a recent meeting of the Council of the Royal Agricultural Society of England, you are welcome to such knowledge as I possess.

The clamps which I constructed in Lancashire were small, being about 2 yards square within, and the walls about 1½ yard high. These were rapidly and conveniently built of massive sods cut from the superficial bog-earth, which had been recently turned over by a peculiar plough, in slices 18 inches broad by 9 inches deep. The joints of the walls were plastered, where needed, with soft stuff obtained from adjacent drains. I also formed other clamps or kilns, both square and circular, by raising walls with moist bog diggings, on the plan of Pisa work. Since the purport of all ovens is to keep air out, and heat in, it is obvious that any material will serve a temporary purpose which may be handy to the desired spot, cheaply put together, and which does not burn away too quickly. Slabs of unburnt clay would answer well, but my object was to use the materials furnished by the bog itself, and in any part of it. Three or four small holes, say 4 inches square, are left in the walls at bottom to give air for kindling the fire, which is first made pretty strong with dried Peats, in order to establish a mass of red-hot fuel at bottom. These apertures are diminished as the process goes on, and finally stopped up. If the Peat to be charred be nearly dry, the clamp may be speedily filled, always using the driest Peat first, and covering the top with damp sods or diggings. The air-holes must be quite closed when it is judged, by the appearance of the volume and clearness of the smoke, that sufficient heat is acquired below to carry on the operation. As the contents subside fresh stuff is added, care being taken to maintain the kiln quite full, to close all interstices in the walls, and to fill up holes at top as they occur from shrinkage produced by combustion. Flame must never be allowed to appear on the surface. The clamp is known to be sufficiently filled with charcoal when the added stuff settles but little. The operation should be stopped when the charred mass approaches within 18 or 12 inches of the top; otherwise, the incumbent air, particularly in windy weather, may reach the charcoal, which would then be quickly reduced to ashes. The fire will gradually go out on carefully stopping the access of air, and smothering the surface with wet stuff, but the best plan is to extinguish with water, which also prevents the finer dust from being blown away when the clamp is emptied. These are the chief observances to be regarded in the management of such kilns, but there is some skill requisite in giving air, from time to time, at bottom, if the operation proceed too sluggishly, &c., which must be left to the intelligence of the attendant, and which a little practice would soon point out to him. One man can attend to many such ovens, when the stuff to be charred is close at hand; or, if one kiln only be used, it must be looked to twice or thrice in the day time, and be particularly well fed at night. In boisterous weather it is well to protect the windward side with wattles, or some such simple contrivance, especially at the top of the kiln; and in very rainy weather a wattle or reed roof might be useful; but I have known the operation to proceed very well—though of course more slowly—when a clamp was unprotected in the middle of a wild bog, and under heavy snows.

I mentioned that clay might be advantageously roasted in the same clamps with Peat. In my experiments on this earth, in conjunction with Peat, I employed it both in the friable state in which it is found after clearing out ditches, and also in its natural compact state, working the latter into small balls and partially drying them. Clay acts usefully by detaining heat within the kiln, and it is itself torrified by the process. In localities where clay is found contiguous to Peat, the combination of the two substances in the same kiln would be little expensive; but this must be received rather as a suggestion for others to work upon, than as the result of sufficient experience on my part.

As regards the charring of farm weeds, it may not be always convenient to remove them from a field; and it must be recollected that weeds when dried and burned in heaps serve as fuel to roast or burn some of the soil. In cases where this process is desirable and found to be beneficial, it will probably be considered as the best and most economical method of getting rid of weeds, and of converting them to use, as it is done on the spot; but weeds from plantations, the thinnings of fences, small brushwood, the clearings of ditches, &c., (perhaps even leaves) might, I think, be turned to better account than they commonly are, by charring them in clamps, mixed or not with clay, according to the uses for which they are destined. I also conceive that the produce from field weeds would form a still more efficacious manure if they were better dried, covered more thickly with earth, and burned in much larger heaps than is usual, so as to render the combustion very slow, which would reduce more of the vegetable matter to the state of charcoal, and less of it to ash.

There is another species of temporary kiln much used in France, where vast quantities of peat charcoal are prepared and used instead of wood charcoal, for cookery, &c. I have also seen the same somewhere in England or Ireland, but forget he locality. Where bogs are cut away for the purpose of fuel, and that work is judiciously performed by quarrying the bog with a perpendicular face from top to bottom, and by bringing on the floor, or original soil, flat and available for immediate culture, a cheap and excellent charcoal kiln is formed by sinking a cylindric hole (conical towards the bottom like a lime-kiln) in the firmest part of the peat, and within a yard or two of the face of the cutting. A small hole is then pierced through the face into the kiln at the level of the bottom, to draw off any water at first, and to let in as much air as may be necessary when the kiln is at work. These kilns will serve many times in bogs of tolerably firm consistency, if skilfully managed. The sides become charred and hard, and charcoal being a very slow conductor, heat penetrates but a short distance into the surrounding mass, though the hole is of course enlarged each time of use.

If the preparation of peat charcoal for manure were to become an object of such importance and sale, that extreme economy in the cost of its production were of moment, other and very superior methods of kilning it could be pointed out, as practised at Mennecy, Elbœuf, and other parts of France; also at Liverpool, and in Ireland by C. W. Williams, Esq., Director of the City of Dublin Steam Company. I have limited my observations to the construction and management of that species of rough and ready agricultural kiln which is most likely to suit the individual farmer; but where any one possesses a peat to which he might annually resort for his supply of charcoal, it would be more advisable to build an oven of brick, than of the perishable materials above mentioned. Even ashes would be much better prepared and secured in a walled kiln, than as ordinarily exposed to the winds of heaven.—*Josiah Parkes, 7, Great College Street, Westminster.*

ON MINERAL AND INORGANIC MANURES. No. XVII.

By Professor Charles Sprengel.

(*Continued from page 303.*)

e. Marl from Oldenburg (clayey). 100,000 parts consist of

76,383	parts	silica and quartz sand
5,902	„	alumina
5,696	„	oxide and protoxide of iron
0,240	„	oxide of manganese
4,409	„	lime
1,100	„	magnesia
3,339	„	carbonic acid, combined with lime and magnesia
2,856	„	sulphuric acid, combined with lime as gypsum
0,260	„	phosphoric acid, combined with lime.
0,015	„	common salt
0,020	„	potash, combined with silica
100,000	parts.	

This marl is chiefly used for bringing heath-soil into a state of cultivation, which it will improve not only chemically, but mechanically; so much so that Peas, Rape, Rye, and other crops may be raised at once, whilst the same soil manured merely with dung, will only produce Rye, Oats, and Buck-Wheat. This marl, it is true, contains but little potash and soda, but this is of little con-

sequence, as healthy soils contain originally not only much silicate of potash, but also silicate of soda. And then such soils can be also manured with heath-ashes, &c., by which they will also obtain much potash and soda. For a heath-soil, however, which is rich in coal of humus, the lime and magnesia of the marl are always the most important, as generally there is plenty of gypsum, phosphoric salts and common salts in the soil. This is confirmed by the analysis of the next following marl, which is much used in Osnabrück, for the bringing into cultivation and the improving of heath-soils, and is, in fact, nothing else but a sort of lime tuffa.

f. Marl from Osnabrück (granular). 100,000 parts yielded

6,680	parts	silica and quartz sand
0,312	,,	alumina
0,416	,,	oxide of iron
0,880	,,	oxide of manganese
0,030	,,	potash united with silica
0,016	,,	sulphuric acid combined with lime into gypsum
90,541	,,	carbonate of lime
1,092	,,	carbonate of magnesia
0,033	,,	common salt
100,000	parts.	

Of this marl (like that marked *a*) no more than 100 cubic feet are required for the Magdeburg acre, and this will produce a powerful effect for the space of eight or nine years. On heathy soils it will act so powerfully that the farmers convey it (like *a*) from a distance of two to three German miles on their fields. It, however, exhausts the soil very soon, if it be not also manured with dung; and this exhaustion will take place the sooner, the less there is of coal of humus. The above marl is found on the slope of a range of calcareous hills, where it is constantly formed, being, as stated before, nothing but lime tuffa. Used on the spot, it is of no use to the soil. I have found the same to be the case in other places, where a similar marl, or rather lime tuffa, did not produce any effect, the soil containing always enough of lime, whilst there was but a very small quantity in it of coal of humus, gypsum, phosphate of lime, and other important mineral substances, which are required for the nourishment of plants. These not being supplied to the soil by the marl, it could not produce any effect.

g. Marl from Brunswick (loamy). 100,000 parts consist of

73,423	parts	silica and quartz sand
1,880	,,	alumina
3,160	,,	oxide and protoxide of iron
0,272	,,	oxide of manganese
0,750	,,	potash united with silica
0,090	,,	soda ditto
0,120	,,	gypsum
0,710	,,	phosphate of lime
0,012	,,	common salt
1,520	,,	carbonate of magnesia
18,055	,,	carbonate of lime
100,000	parts.	

This marl is a very good manure for both heath and sandy soils. It has not been yet sufficiently long in use for knowing from actual experiment how many years small quantities will act; but this may be ascertained by calculation. Its manuring qualities, as far as gypsum, soda and potash are concerned, cannot go a long way, as it possesses so very little of them. Its contents of common salt are not worth speaking of. It will act best on heath soils, as it will find there a great amount of coal of humus for decomposition. The sandy soils, on which it has been hitherto used, contain, according to my analysis, very little lime or magnesia, somewhat more coal of humus, phosphate of iron, silicate of potash, silicate of soda, and common salt; so that, when the action of the marl has ceased, it will merely require to be manured with gypsum, in order again to become productive, as then the plants will again find all mineral substances in the soil, which they require for their nourishment. As it is, however, chiefly from dung that plants obtain nitrogen, this sort of manure also is not to be neglected.

AGRICULTURAL EXPERIMENTS.

I ALMOST scruple to send you an account of the experiments which I made last year, as to the action of the artificial manures upon root crops, on account of my conviction that they were tried in quantities too small to insure accuracy in the averages on a more extended scale. I mean, the quantities of produce that were weighed; for the influence of accidental circumstances is too much multiplied in calculating the quantity per acre. The anomalous results which have been obtained, at least in the case of Turnips, are the best proof of this fact; the produce of four perches was weighed, and the average computed from these data, together with the expense per acre of each manure, is shown in the following Table:—

	tons.	cwt.	lbs.	£	s.	d.
3 cwt. of guano, and 10 bushels of ashes	8	17	76	1	19	9
6 cwt. of urate, and 10 bushels of ashes	9	5	20	1	13	9
12 bushels of Poittevins, No. 36, and 24 bushels of ashes	9	11	68	1	9	3
10 bushels of Poittevin's, No. 170, and 20 bushels of ashes	9	1	68	1	5	0
18 bushels of Clarke's compost, and 36 bushels of ashes	9	18	44	2	6	6
20 bushels of wood-ashes	9	7	76	0	7	6
Without any manure	9	12	36	0	0	0
Total expense of manures on 6 acres				10	1	9

Is it necessary, then, to conclude that the whole of this 10*l.* 1*s.* 9*d.* has been thrown away, besides a diminution of produce, amounting, on the whole, almost to 2 tons? I think not; for, in the first place, accident may have occasioned a local difference in the growth of the plants which similar experiments on other portions of the same ground would have served to correct; or the unmanured part might chance to be of a better quality, or to have received more manure in the preceding year than the rest; or the various insects which attack the Turnip crop may have been more active in one part of the field than another; in the next place, a portion, at least, of the value of the manures may remain in the soil, to promote the fertility of succeeding crops; lastly, the fault may have been not at all in the manures themselves, but in the misapplication of them; it may be not a defect but an excess of power, for if the plants were forced into full maturity too soon, the texture of their roots would begin to decay before the season arrived when they were wanted for use. An instance of this occurred in some other experiments with the same sort of Turnip (the red Tankard) in another field; two of the same manures were used, and in the same proportions as before, with very little variation of produce:—

	Ton.	cwt.	lbs.
6 cwt. of urate, and 10 bushels of ashes, gave	9	6	68
20 bushels of ashes	9	17	16
But the same quantities applied to other Turnips in the same field, which were sown a month earlier, gave only	6	7	36
and	6	16	108

The roots grew well, and looked well, but the process of decomposition had begun before they were taken up in the autumn, and they had become light and soft. But when applied to Swedes, which are of a much firmer texture, and less liable to decay, the same quantity of one of the same manures was found to be more than equivalent to ten loads of farm-yard dung.

	Ton.	cwt.	lbs.
The latter produced	12	15	80
The urate and ashes produced	13	3	104
In the same field 20 bushels of bone-dust produced	13	12	26

In two other fields two of the salts most beneficial to Wheat were not found to answer at all either with Swedes or with Dale's Hybrids.

	Ton.	cwt	lbs.
Without extra manure the weight of Swedes was	13	19	32
With 1 cwt. of sulphate of ammonia	12	13	104
With 1 cwt. of nitrate of soda	11	1	88
On Dale's Hybrids—			
Without manure the weight was	10	7	16
With 1 cwt. of sulphate of ammonia at 17*s.*	10	7	96
With 1 cwt. of nitrate of soda at 1*l.*	10	6	8
But manured with farmyard drainings it was less, being only	10	0	61

This shows that whatever might be the cause of failure in the other cases, it is not necessary to attribute it to any want of fertilising power in the salts, since the liquid manure, containing nearly all the principles of fertility, failed still more. The uncertainty of these trials was exemplified in two other instances: where 1½ cwt. of guano, 10 bushels of bone-dust, and 5 of wood ashes were applied, the produce weighed 17 tons 14 cwt. 72 lbs.; which seemed to be a considerable increase above another equal portion sown broadcast, without manure, the weight of which was 15 tons 1 cwt. 8 lbs.; but on another portion of the same field where the seed was drilled, and no manure given, the apparent advantage was materially reduced, for the weight was 17 tons 1 cwt. 48 lbs.: the difference in this case would not repay the cost, which was 1*l.* 18*s.* 7*d.*

In two trials, which were made with a view to compare the value of the old Swede with that of Skirving's in the ordinary course of husbandry, the first was unfavourable to Skirving's, the weight being less by 1 ton 4 cwt. 58 lb.; but on a second trial it was more by 2 tons 16 cwt. 8 lb.; the difference, therefore, on the whole, being in favour of Skirving's, to the amount of 1 ton 11 cwt. 68 lb. per acre; but though the bulk of produce was greater, it is material to remark that they were not so firm in their texture, and were less able to resist the frosts of winter. One more experiment was made with these roots, the results of which were equally unsatisfactory.

	Ton	cwt	lbs
2½ cwt. of sugar-scum, with 1½ of guano, gave	15	0	96
2½ cwt. of sugar-scum, with 1 cwt. of sulphate of ammonia	16	16	0
And without manure	16	1	31

Thus, in the first case, with an expense of 1*l.* 1*s.* 2*d.*, the produce was less, and in the second the increase was not enough to pay the expense,—1*l.* 0*s.* 2*d.* But in order to do justice to the sugar-scum, I will now take it first in detailing another series of experiments made on Mangold Wurzel. The produce of the manured portions were in every instance compared with the produce of unmanured portions in adjoining rows, and I shall designate the increase or decrease of weight by the algebraic signs, plus + and minus —.

Sort of root.	Quantity of manure.	Wt. of prod. Ton	cwt	lbs	Difference Ton	cwt	lbs
1 Red globe	4 cwt. of sugar-scum,	9	10	16	+ 1	14	64
2. Long red	4 ,,	12	16	16	,, 1	17	80
3. ,,	4, do. + 90 lbs. of Sulphate of ammonia	12	6	80	,, 1	17	80
4. ,,	4 do. + 1½ cwt. of guano	11	4	80	,, 0	15	80
5. Red Globe	4 do. + do of guano	6	13	64	— 4	4	96

The failure in the last case cannot fairly be attributed to the manure, for the same quantities in the preceding instance produced an increase of weight, small indeed, but more than sufficient to repay the cost, which was 17*s.* 6*d.* The sulphate of ammonia seems to have been utterly useless, and to have produced no effect at all, if it can be taken for granted that the soil was the same, which, though both were in the same field, is not certain, and that no accidents had affected the one part more than the other; but setting aside the last experiment, which from some local peculiarity is inadmissible, the evidence upon the whole tends to show that sugar-scum may be employed with benefit to this crop, and it is no small recommendation that the risk in using it is no more than 5*s.* per acre; it is remarkable that precisely the same loss was incurred from some accidental cause, in one out of these seven trials with guano:—

Sort of root.	Quantity of manure.	Wt. of prod. ton	cwt	lb	Difference ton	cwt	lb
1. Long red	1½ cwt. + bushel of ashes	12	16	16	+ 0	6	52
2. ,,	2½ ,,	16	8	48	,, 0	18	64
3. Yel. globe	2½ ,,	19	1	96	,, 1	11	46
4. Red globe	2½ ,, + 2½ ,, of charcoal	20	0	80	,, 1	10	48
5. Long yellow	2½ ,, ,, 2½ ,, ,,	17	18	64	,, 1	14	64
6. Long red	2½ ,, ,, 2½ ,, ,,	17	16	48	,, 1	5	16
7. Yel. globe	2½ ,, ,, 2½ ,, ,,	13	15	0	— 4	4	96

In this case it so happened that while the manured row produced less than usual, the unmanured produced more; and when we look at the issue of the other trials, it is probable that both were the effect of accident; but when this accidental difference of 27 lbs. in the scale on which the trial was made, becomes multiplied by 350 in computing the average, it is evident that a very erroneous view of the action of the manure must be the necessary consequence; the same objection might be urged against any other single experiment that tells the other way. But the argument in favour of the manure relies upon the number of experiments which show its effects to be so far good, that in general no loss is sustained by using it, if there is not much profit. From four experiments made with bone-dust, it would seem that this manure is far more beneficial to this crop:—

Sort of root.	Quantity of manure.	Wt. of prod. ton	cwt	lb	Difference ton	cwt	lb
1. Red globe	2 cwt. of bone-dust.	17	7	32	— 0	9	48
2. Long yellow	2 ,, ,,	14	1	32	+ 1	2	0
3. Long red	2 ,, ,,	17	18	80	,, 3	0	16
4. Yellow globe	2 ,, ,,	18	3	0	,, 5	3	80

The mean, then, of the differences in favour of bone-dust, is 3 tons 4 cwt. 106 lbs. against which is to be set the loss of 9 cwt. 48 lbs.; but this is evidently the effect of some accidental richness in the soil of the unmanured row which was made the subject of comparison, for the absolute produce falls very little short of that which exceeded, by 3 tons, the produce of the adjoining unbone-dusted row; on the other hand, in another part of the same field, the application of the same quantities of the same manures four times repeated, gave a difference upon the whole, of 23 tons 11 cwt. 48 lbs. in favour of the guano and charcoal.

	tons	cwt.	lbs.
For 4 portions manured with 2½ cwt. of guano and do. of charcoal, gave	102	12	32
For 4 manured with 2 cwt. of bone-dust, produced	79	0	96

The first was more expensive, but not at all in proportion to the increase of produce; it cost 34*s.* 8*d.* per acre—the bone-dust only 7*s.* 6*d.* I have only to add upon the subject of these roots, that the Globe varieties seemed to be much superior to the long; a cartload of the former weighing about a hundred weight more than a cartload of the latter. Poittevin's manure was tried, but its action was so irregular, that it is useless to record the results; so also in its application to Potatoes; in one case it failed, in another it succeeded. The subjoined table will show its effects upon this crop, together with those of three other manures:—

Quantity of Manure.	Cost per acre. £	s.	d.	Produce per acre. tons	cwt.	lbs.	Difference. tons	cwt.	lbs.
1. 2 cwt. of Poittevin's No. 36	0	6	9	10	8	0	— 0	17	56
2. 2 cwt. of Do., No. 170	0	15	0	10	17	56	+ 1	12	0
3. 2 cwt. of Clarke's desic. compost	0	7	5	10	17	56	,, 0	12	90
4. 2 cwt. of nitrate of soda	2	0	0	11	13	88	,, 1	8	68
5. 3 cwt. of guano	1	16	0	12	0	48	,, 2	2	0

These are but contributions towards a more perfect knowledge of the effects of artificial manures upon Potatoes; for it has been already shown that little reliance can be placed upon solitary experiments made on a small scale: in this case the quantities actually weighed were the produce of 10 yards of a row. The last series of experiments which I have to mention was with white Carrots; and, making a similar allowance for possible errors from the same cause, the results appear to be highly satisfactory. Out of 14 trials there is but one failure, and these, the produce of 11 yards without manure, weighed only half a pound less than that of 11 yards manured with nitrate of soda; the respective quantities being 40 and 40½ lbs. computed by the acre, the statement stands thus:—

Quantity of Manure.	Cost per acre. £	s.	d.	Produce per acre. tons	cwt.	lbs.	Difference. tons	cwt.	lbs.
1. 1 cwt. of nitrate of soda	1	0	0	11	12	32	— 0	2	102
2. 21 galls. of Poittevin's, 36	0	4	5	11	18	32	+ 0	2	102
3. 7 cwt. of bone-dust	1	6	3	12	4	92	,, 1	8	102
4. 1 cwt. of sulphate of am.	0	17	0	11	12	92	,, 1	0	10
5. 2½ cwt. of guano	1	10	0	11	1	11	,, 1	0	10
6. Farmyard dung	0	12	0	14	8	0	,, 1	9	10
7. 21 galls. of Poittevin's 170	0	9	10	12	18	102	,, 1	14	102
8. 21 galls. of Clarke's desic. compost	0	4	10	13	13	52	,, 2	6	61
9. 3 cwt. of guano	1	16	0	12	13	10	,, 3	4	0
10. 1 cwt. of oxygen alkali	1	8	0	13	10	61	,, 3	9	92
11. 1½ cwt. of guano	0	18	0	15	14	28	,, 4	16	3
12. 1 cwt. of am. alkali	2	2	0	11	6	102	,, 5	4	82
13. 6 cwt. of guano	3	12	0	16	10	103	,, 5	7	72
14. 3 cwt. of urate	0	15	0	17	3	32	,, 6	0	52

It is remarkable that there are only three instances in which the absolute produce ranges higher than with farmyard dung at a cost of 12*s.*, and that 6 cwt. of guano, costing 3*l.* more, only exceeds it by about three cwt.; and yet relatively, that is to say, compared with the adjoining unmanured portion, it stands only ninth in value. It is also worthy of notice that in the 11th experiment the absolute produce of 1½ cwt. of guano exceeds that from four times the amount of the same manure, by more than a ton, and though the comparative value is less, yet when the expense of each is deducted, the smaller weight of excess gives a much larger profit. The total increase of weight upon 13 acres, after deducting the small loss in the first experiment, and excluding from the calculation the farmyard dung, is 36 tons 6 cwt. 27 lbs., the expense 16*l.* 8*s.* 2*d.* Upon the whole, therefore, it is reasonable

to infer from the evidence of these experiments, that there is no root-crop to which the artificial manures can be more profitably applied than white Carrots, and that they will more than repay the additional cost by increased bulk of produce; but experiments are still wanting to determine which is the most suitable, and what proportions should be used.—*L. Vernon Harcourt.*

Home Correspondence.

Frauds on Farmers.—There is an article vending at this time in Hull, under the name of "*bone ashes, perfectly genuine,*" and finding a ready sale for the Turnip crop, which I have examined, and which certainly does not contain so much as 5 *per cent.* of *real* bone ash! It appears to consist almost entirely of CRUSHED LIME-STONE!! This is a case precisely analogous to that mentioned by Mr. Solly, and reported and commented upon in the *Chronicle* a few weeks since.—Alas for the farmers who happen to get hold of this rubbish! Pray lose no time in warning your very numerous circle of readers against what I must denominate a shameful attempt at fraud, and one that I should certainly have fallen a victim to, had it not been for the assistance of a little chemical knowledge.—*W. P.*

Wooden Shoes.—I remember reading once in an old collection of fables about a town that was either besieged or about to be besieged by an enemy, when a consultation was held to devise means how the inhabitants might best defend themselves against the attacks of their foes. The mason said that nothing was equal to stone and lime; the carpenter declared that timber was far better; while the shoemaker thought that there was nothing so good as leather. Now, in the fortifications of the lower parts of what honest John Bunyan would call the town of Mansoul, your correspondent, "Martin Doyle," recommends timber. Whatever sort of materials should compose the rampart, bastions, ravelins, demilune, vamps, souterrains, &c., and how they should be defended, I will leave it for others to decide; but this I will say, from experience in the matter, that in defending the lower part of the citadel from the dismounting batteries of rheumatism, or the ricochetting batteries of cough, or the breaching batteries of consumption, there is nothing like leather. I have examined many varieties of feet-defenders, from the ditching clog to the satin slipper, Highland brogues and Isle of Man sandals; neither have I confined my examination to the boots and shoes of our own country, but have examined the flag shoe of Russia, the wooden shoes of France and Flanders, the snow shoes of North America, the ornamental cloth-boots of the American Indians, the bone-heeled slippers of Affghanistan, the leopard-skin shoes of Hindostan, the turned-up points of China, &c. I have had, perhaps, as much pleasure in studying the anatomy of an old shoe, as Knight had in the study of vegetable physiology, or Cuvier in organic remains. No doubt the different pursuits are not for one moment to be put in the balance with each other, but a poor man is sometimes obliged to turn his attention to subjects which a rich man would not deign to look at. Upwards of four years ago I purchased a pair of shoes for seven shillings: after using them twelve months at "kirk and market" I turned them into a pair of common working shoes, and they are still my working shoes, and are on my feet at the time I am writing this notice of them; and how long we may remain together, I know not, but if no particular change happen, it may be for years yet. I have made a calculation of the number of miles we have travelled together, and find the average to be about a thousand miles a year, besides the fatigue they have undergone in peat holes, digging, trenching, hedging, &c. I have kept them in repair myself ever since I received them from the shoemaker, and find that it costs one shilling and sixpence a-year to keep them in repair. They afford me a double comfort, namely, that of wearing old shoes, which are commonly easy for the feet, and of being seldom in the shoemaker's shop. Now this is, I think, something better than "Martin Doyle's" wooden shoes, both for comfort and cheapness. About ten or twelve years ago clogs were introduced into the part of the country where I reside, and were for a time in a fair way for supplanting leather shoes. They were recommended by medical men. But the clog mania has now disappeared, and they are scarcely seen except with a few ditchers and dyers; and it is very probable that wooden shoes would share the same fate, unless persons were trained from infancy to use them. When a working man has a wife and family, it is a great saving to him when he can keep their shoes in repair;—the children are more comfortable. The money that is saved in drugs and poultices is sometimes not a little; and good shoes often keep the doctor from knowing the road to the house. It gives me great pleasure to see my wife and family well shod, and I have never yet, nor ever will, I hope, look upon them as an incumbrance, as many advertisers, disciples of Malthus, I suspect, appear to do.—*A Working Man.*

Rooks.—Your correspondent "S." p. 171, states—"It is singular how long men will argue about matters which facts only can decide, and when the facts of the question about rooks might be so easily ascertained, by examining the crops of these birds. It appears to me that it will not be found so easy a matter to ascertain the real quantity of corn that there is in the crop of the crow, because it will require the contents to be analysed before the answer can be proved clearly to the question, What is the quantity of meal from corn, and what is the quantity of other matter from the worms and grubs, in the crop of the crow? My attention was directed to the following interesting fact some years ago, by a Rev. gentleman, who had a large rookery near to the Rectory-house, and who pointed out to me the husks of corn lying upon the ground in lumps, which had been discharged from the mouths of the crows from the top of the trees:—the corn undergoes this operation in the mouth of the crow; the crow performs a similar work to man, in preparing the corn for his food, so that only the real meal passes into the crop of the crow. If any of your readers will examine any rookery in their neighbourhood, where corn is much cultivated, I have no doubt that they will find the husks of the corn as above stated; there is no doubt but the crow destroys a large quantity of grain in seed-time. Though we have now abundance of rooks, they appear not to destroy the Turnip-fly, which is well known as a destructive insect to the farmer. In p. 268, I stated that four acres of Swede Turnips were destroyed by the fly; now, this field was the second field from a rookery, and I consider this to be a proof that rooks are not advantageous to the farmer. I have inclosed the husks of the corn as discharged from the mouth of the rook.—*Facile.* [Certainly, the specimen received from our correspondent is a very interesting and complete proof of the fact, that rooks do feed to a considerable extent on seed—Oats, Barley, &c., at this time of the year.]

Wheat grown on a hard plain surface without Soil, the Seed being covered with Straw.—This has been done on a pane of glass, the decomposition of the straw, (with the exception, of course, of rain, atmosphere, &c.) being its only source of nutriment. This discovery, developed in France three years ago, as reported in a newspaper paragraph of that date, was believed at the time to have been of such importance that a new era was supposed to have arrived in Agriculture; that henceforth there would be no need of tillage, or any artificial stimulants to the soil—nothing would be required but hard smoothly-rolled land, and the covering of straw for the seeds. How is it that we have heard nothing more of this?—*J. R. I.* [We remember the paragraph very well; and the natural inference to be drawn from the subsequent silence which has prevailed on the subject of it is doubtless the true one. The experiment, which was, we think, performed by a member of some Belgian Agricultural Society, gave results, if we may believe the report, which must certainly be interesting to those who delight in testing the great powers which Nature often puts forth on an emergency; but the idea that it could be of the smallest use to Agriculture is utterly absurd.]

Ammonia.—In one of your Leading Articles of last Saturday's *Chronicle*, an account is given of some experiments upon the growth of Turnips with manure in different states, and in one of these, where the ammonia was driven off by the addition of caustic lime before using it, the produce appears to be quite as favourable as where the whole of the ammonia was retained. In the conclusions you draw from these results, you state "that after all that has been said about the importance of ammonia in manures, the crops are as good where that principle is driven off as where it is retained by fixing." This appears to me, hasty and inconclusive, as applied to crops in general; for although in the present case the absence of ammonia is not felt, still, I think, we have no right to suppose that its absence would not be felt by other crops, as it appears from Drs. Daubeny and Playfair's tables of the constituent parts of different vegetables, given in Dr. Smith's paper, published in the *Chronicle* of the 20th April, that Turnips only contain about 1 per cent. albumen, and consequently require little or no nitrogen for their nourishment; such, however, would not be the case with the cereal or leguminous tribes, as Wheat, Barley, and Oats, or Peas and Beans, which, according to the same authorities, contain from 12 to 30 per cent. nitrogen, and would, therefore, require a considerable supply of some substance like ammonia, rich in nitrogen.—*An Original Subscriber.*

Prickly Comfrey.—In answer to the inquiry of a "Subscriber," in a former Number of your Paper—I have always found Symphytum asperrimum (the Prickly Comfrey), as well in a calcareous loam as in a clayey bog-soil, to be abundantly prolific of seed; but from the peculiar habit of the plant, it is a difficult task to collect the seeds. The very numerous flowers grow on a long curved spike, and not more than two or three of them are taken at one time. Those blossoms which open first form and ripen their seed (which drops out of the capsule nearly as soon as it is ripe) long before the flowers on the extremity of the spike have opened; so that there can be no general harvesting of the seed; but, on the contrary, if you cut off the spike even at the most favourable time, you will get only one or two ripe seeds, perhaps none, with several dry and withered capsules from which the seeds have fallen, and many buds quite tender and unformed. But if you have the patience to examine the spikes separately and frequently, you may gather from each of the numerous branches one or two ripe seeds at very short intervals of time, and so collect a considerable quantity of seed in the course of the season; or if you cause the ground for a yard round each plant to be dug up and broken fine, and to be raked over towards the end of autumn, you will have in the succeeding spring an abundant spontaneous growth of seedlings from the fallen seeds. But the seedling plants do not yield a produce much worth cutting before the third year; wherefore the experiment of the value of the plant may be more quickly proved by making a plantation of the cut roots of old plants. Both Symphytum officinale, and Symphytum echinatum, which last has been recommended by a most skilful and well-informed experimental farmer, Mons. Vilmorin, 30, Quai de la Megisserie, Paris, as superior in merit to S. asperrimum, throw up their flower-stems earlier in the year than S. asperrimum. Whether S. echinatum is palatable to cattle, I have as yet had no experience; but cattle never leave S. officinale uncropped in the meadows where it grows, and I have found horses and pigs to eat S. asperrimum with great readiness. I have never tried cows with it. Of the productive powers of S. echinatum, I cannot as yet speak, my plants being only seedlings of 1843, but it appears to promise a considerable bulk.—*W. P., Taunton.*

Scutch.—I beg to inform you that scutch is the refuse of the glue coppers, and consists of fatty matter, with lime and hair. It contains some fertilising properties when used in compost heaps and decomposed, but it is used in very large quantities by the *cheap* sellers of ground bones, who offer at lower prices than any respectable dealer can grind them for.—*Mark Fothergill.*

Yew.—I think it was Mr. Compton who stated such startling facts about the Yew killing some horses when eaten green, two or three Papers ago. I hope your readers will give their experience upon this much-disputed point. I have not the least doubt Mr. Compton states what is a fact; but it seems so completely to oppose what I have always observed, that it quite puzzles me. As soon as I read his note on the subject, I took a friend to the Yews I mentioned about a month since, and there showed him a thick shrubby Yew, some 5 ft. or 6ft. high, with a wall of 3 ft. high between it and the field in which cattle are kept. This tree is browsed quite close, and even as far as cattle can reach it over the wall. It is so at all seasons, by any cattle or horses that may happen to be in the field; and moreover, the stock and sheep have very frequently access to the churchyard in which this and four other shrubby yews grow, constantly eat them, and never have suffered in the least. I write this, hoping that some of your readers will be able to throw light upon this puzzle.—*W. D. F.* [Since this has been in type we have received another letter on the subject from our correspondent, who informs us that at Kingley Bottom, near Chichester, there is a valley full of old Yews. Perhaps some of our readers in that neighbourhood may be able to throw light on a question, the true answer to which will have to reconcile such apparently very contradictory evidence.]

Diseases of Poultry.—I beg to send you an extract on this subject from the lately published work, "Farming for Ladies," which I can recommend to poultry fanciers:—"The common remedy for the pip or gape is to peel off the membrane with the nails, and afterwards rub the tongue with butter and honey. Upon dissection after death, however, there have been found in the windpipe several small red worms, varying in size: they can be removed with safety and facility in the following manner:—Let the operator take a small but firm feather from a hen or pigeon, and strip it from the stem, excepting about an inch and a half from the tip end, according to the size of the chicken, wetting it a little, except at the extreme point." This is to be placed in the mouth of the chicken, and as soon as it breathes, to be introduced into the windpipe and pushed gently down and turned round, "by which means some of the worms will adhere to the feather, and others will be so loosened that the chicken will sneeze them up and throw them from its mouth."—*M.S.*

Bone-dust.—There is now much said about reducing bones as manure by acids, so that the whole of them may be fit for immediate use, as is not otherwise the case. It has occurred to me that they might be reduced at much less expense by means of large Papin's digesters, and much more expeditiously. If this was suggested to the public by means of your Paper, perhaps some person would be induced to make the experiment on a large scale. I have been making trials of various manures on my Grass-plots. I marked out with pegs a great many divisions, each containing 1¼ superficial yards. Upon each division I placed 3 oz. in a state of solution in water. The nitrates of soda and potash have produced more Grass than any other manure. I collect in a tank the dirty waters from my house, and water my Grass ground with it.

The effect this produced was	3d
Muriate of ammonia	4th
Guano	5th
A mixture of the whole (3 oz.)	6th
Carbonate of ammonia	7th
Black water from a dunghill	8th
Common salt	9th
Sulphate of magnesia	10th

Very little or no effect was produced from 3 oz. of each of the following salts, on 1¼ yard of Grass land:—

Superphosphate of lime	Muriate of lime
Carbonate of soda	Phosphate of magnesia—(this is the best among this last list)
Sulphate of lime	
Dissolved bones in sulphuric acid, and another lot in muriatic	Dissolved soap
	Sulphate of soda

The soil on which these experiments were made is a poor gravel. Perhaps several of the salts which did not answer on my land might do so elsewhere.—*C. A. A. Lloyd.*

Stall-feeding Cows.—Surely "X." must have made some mistake in his statement "that after a time all these animals are found to have tubercles on the lungs." If any system of feeding would prevent tubercles on the lungs, it is this, if judiciously practised. The stable they are kept in must be well ventilated and clean, their food properly diversified and in proper quantity; they must be warm in winter, and cool in summer; and if thus kept I think all who, like myself, have any experience in stall-feeding, will say the dairy-cows are far more healthy than those who run in the fields in all weathers; that they give quite as much or more milk, and that richer; that they are in much better condition; and finally, that the economy in food, and the gain in good manure, both

iquid and solid, is very great indeed. As a proof that stall-feeding does not in all instances generate disease, I I can only say, that for the last five years I have seldom had less than from 12 to 20 of all ages up at a time; that I have never had any disease of the lungs in any one instance, when the animal has been kept up; though round me whole dairies have been swept away by the deadly disease in that organ, which has raged this year. I used to lose more when they were in the fields than since I have kept them up, and the same ground will keep above double—I should say treble the number. I ought to have added, that I always let them have two or three hours to rub themselves and walk about in a small yard, and they go to water about 100 yards twice a day. For rearing cattle for dairy management, or for feeding, I feel sure "X." will find it much the best system if he tries it fairly.—*W. D. F.*

New Cause of Failure in the Wheat Crop.—There has been a remarkable failure of some fields of Wheat around North Berwick, which has been ploughed down within the last few weeks. In early spring it promised as fine a crop as any in the country. Plants, however, here and there began to look sickly and to flag, which lay withered in the course of ten days. On examination every stem of the plants attacked were found to contain a small grub, which enters about two inches beneath the surface of the soil, eats its way up the centre of the stem till it reaches the light, when it either dies or becomes transformed. The plants appear to reproduce fresh buds from the joint beneath the door of the grub; but the remaining vitality seems too weak to carry leaves to the air for respiration, far less to yield a crop. Mr. Ross, steward to T. Richardson, Esq., Abbey Mains, called lately with specimens of the plants containing the grubs, which we showed to Professor Low and others, who looked upon them as new evils on the farmers of this country. It, however, shows the importance of Entomology to the agriculturist, as perhaps the most efficient preventive for such would be to detect the insect fly when it appears to deposit its eggs, and keep it from lighting on the field by the application of some repulsive perfume, such as soot, guano, or sand that has been immersed in gas-water, &c., dried and sown over the field. Might not entomologists find it a profitable employment to get up small cabinets of insects injurious to vegetation, in their various transformations, with details of the best known preventives and remedies for the destruction of each species?—*R. Arthur, Edinburgh.*

Indian Corn.—In reference to Mr. Colman's remark upon Indian Corn being well worthy of a trial as green food for cows (see page 306), I feel convinced that this plant might be grown with much advantage for this purpose, even in the north of England, and much more in the south. Last year I grew about a score of plants of seed I brought from the north of Italy, which, from Mr. Colman's description of "the Canadian variety with small yellow ears," I should think were the same kind. These yielded so much excellent food for cows late in September, and they were so fond of it, eating Cob half ripe, leaves and stalk, with the greatest relish; but I have this year sown all the seed I had (two cobs), and am only waiting for rain to transplant it. I should be very glad to induce others to try it in the south, and state the result in the autumn. It comes in for cow food at a time when Vetches are finished, when Clover is much better eaten by sheep than cut again, and when it is wasteful to give Turnips, as they are fast increasing in bulk and goodness.—*W. D. F.*

Manures.—As it appears from Mr. Gyde's calculations in the last *Agricultural Gazette*, p. 222, amply borne out by those of Liebig and Mr. Bree, that the annual urine of each individual contains 67 lbs. of solid matter, equal as to its manuring properties to guano, it follows that its yearly value at the price of the latter (10*l.* per ton) is full 5*s.*, and consequently that, if the urine of the 2,000,000 of inhabitants of London were collected and applied as manure, its annual value would be 500,000*l.*, equal to ten per cent. on a capital of 5,000,000*l.*—a sum amply sufficient to pay for the outlay necessary to have a separate system of drainage-pipes for the metropolis. Why, then, with our superfluity of capital, is not a company organised for this purpose? What folly to send, at vast expense, for guano from Peru and Africa, when we can have at home as good manure for less money; for if the other contents of water-closets be included, the product would be in value far more than 5*s.* per head. Even in the little Italian state of Lucca, the farmers (who rarely occupy more than from 10 to 20 acres of land each) readily give a sum equal to 1*l.* a-year for the contents of the cesspool of a family, and fetch it in large water-carts from Pisa—a distance of 15 miles; and as manure is at least twice as dear here, it follows that the annual value of the contents of the water-closets, &c., of the 5,000,000 of families of the United Kingdom is 10,000,000*l.* sterling, of which full half, or 5,000,000*l.*, is wasted—equal in value to 500,000 tons of guano, of which manure we are actually fretting about the possibility of exhausting the supply, when we voluntarily waste an amount of manure at home equal to 1000 cargoes, of 500 tons each, of it annually! And if to this we add only half of Mr. Gyde's estimated amount of the manure from cattle (30,000,000*l.*) as being wasted, we have 20,000,000*l.* every year thrown away—a sum as large as we could possibly gain even if our exports of manufactures were trebled, and increased from 50,000,000*l.*—their present amount—to 150,000,000*l.*; for every one knows that 20,000,000*l.* on an export of 100,000,000*l.* would be a large profit.—*S.*

Horse Chesnuts.—A traveller writes in the *Elysée* as follows:—"Whilst I was at Geneva, in the autumn of 1837, I observed every one collecting carefully the fruit of the Horse Chesnut; and upon inquiry, I learnt that the butchers and holders of grazings bought it readily at a certain price per bushel. I inquired of my butcher, who himself held an extensive grazing farm, what was the object of this, and he told me that it was given to those sheep, particularly, that were fattening. The Horse Chesnuts were well crushed, something in the way, as I understood, that Apples are, previous to cider being made. They are crushed or cut up in a machine in Switzerland, kept solely for that purpose, and about two pounds weight is given to each sheep morning and evening. Sheep eat it greedily; but it must be portioned out to them, as too much would disagree with them—it being of a very heating nature. The butcher told me that it gave an excellent flavour to the meat—and the Geneva mutton is noticed for being as high flavoured as any in England or Wales." Now, we know that sheep eat the Horse Chesnut even when not crushed; but many thousand tons of it are annually lost in this country, from their having no access to it, or its being uncrushed. Many other fruits and leaves also, doubtless, might be found useful, were they carefully examined, and their properties ascertained. While we are constantly amusing ourselves in crossing Tulips and Roses, it is surprising our horticulturists have never thought of improving the properties of useful plants, many of which might certainly be exceedingly improved. Sheep, for example, like herbs, &c., that are heating in their qualities; as is seen even in the case of the Horse Chesnut. Could the qualities of the Turnip or the Ruta Baga, and the Radish, be in any degree combined, sheep would doubtless prefer this compound to either of the simple plants; and as these are the days of improvement, and the Horse-Chesnut is abundant this year, some inquiries and experiments should, in the proper season, be instituted.—*An Upland Farmer.*

Plantations.—In this country the forester and the farmer ought to go hand in hand; for, owing to the nature of the climate, the first process is to secure shelter by raising healthy plantations, which can only be done by thinning and pruning; and this is easily attainable by industry and perseverance. Perhaps the principal cause of the mean appearance of many plantations and hedge-row timber is to be attributed to the want of due care having been taken with them in their young and growing state; and, indeed, though the soil be of the very best quality, we often find these plantations very improperly laid down, in the manner of distributing the trees in their respective situations. A question naturally arises, What can be the cause of thousands of trees in plantations being wasted in the heart; they being what might with propriety be termed trees in the vigour of their growth, considering their age? The trees of this age ought, in ordinary circumstances, to be in the strength of their growth; and a person acquainted with the growth of timber may, at first sight, have a competent knowledge of the progress they have made in past years. Is it possible that trees thirty or forty years old, averaging 20 or 30 feet in height and 6 or 8 in diameter, and standing only 3 or 4 feet apart, and without the aid of the pruning-knife, can be in a healthy, growing state? Every gardener is aware, and the ordinary laws of Nature will teach the most obtuse observer, that any plant, to be allowed to reach to its natural size, requires a space of ground corresponding to the size it naturally attains under ordinary circumstances; in short, if any plant has not sufficient space, corresponding to its natural vigour of growth, premature old age must overtake it at an early stage of its existence. The general error of planters evidently is, the want of thinning and pruning at all stages of their growth; and all this arises from the mistaken idea that woods will not grow in an exposed situation, unless thickly drawn up together. No doubt the plan may do for a time, but where is the value of the wood thus managed in the end? We often see a good healthy tree standing the storm, unsheltered and alone, in the coldest part of the country; and why should it not, if properly managed, that is, carefully pruned, do so equally well, standing at a convenient distance from neighbours? We see everywhere bare and waste lands growing fair crops of Oats while exposed to sweeping winds; what would it not do if sheltered by woods? I need not answer the question, as it is evident to every one; and it may be anticipated that such will yet be the state of matters in every part of the country. The advantages arising from shelter are—the arresting the progress of impetuous and dangerous winds, maintaining the temperature of the air, regulating the seasons, lessening intense cold, opposing the formation and increase of ice, moderating intense heats, dispersing hail, snow, and watery clouds, and preserving the soil on mountains, by which their external figure is maintained. The profits of planting are great when properly executed, and this idea adds solidity to the enjoyment. Pleasure alone may satiate; but profit and pleasure united seldom fail of producing a lasting gratification. Strength is gained as effectually by a few branches, to form a head, as by many. However much attention be paid to the article of pruning, if the plantation be left too thick, it will be inevitably ruined. A circulation of air, neither too great nor too small, is essential to the welfare of the whole. This should not be wanting at any period of the growth of the plantation; but in cases where it has been prevented by neglect, it should not be admitted all at once or suddenly. Opening a plantation too much at once is a sure way to destroy its health and vigour. Though it has been more or less fashionable for the last 40 or 50 years to form plantations, yet it has been also so generally the custom to neglect entirely their future culture, that by far the greater proportion of the surface covered with trees in Britain may be considered as neglected or mismanaged. The artificial strips and masses have generally never been thinned or pruned; and the natural woods and copse-woods improperly thinned or cut over.—*An Upland Farmer.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY Council was held at the Society's House in Hanover-square, on Wednesday last, the 29th of May; present, the Right Hon. Earl Spencer, President, in the chair; Duke of Richmond; Marquis of Downshire; Earl of Hillsborough; Lord Portman; Hon. R. H. Clive, M.P.; R. Archbold, Esq., M.P.; J. Baines, Esq.; D. Barclay, Esq., M.P.; J. Raymond Barker, Esq.; F. Burke, Esq.; Rev. T. Cator, Col. Challoner; F. C. Cherry, Esq.; E. D. Davenport, Esq.; B. Gibbs, Esq; T. B. Glegg, Esq.; H. T. Grant, Esq.; E. Holland, Esq.; G. Jacson, Esq.; Sir C. Lemon, Bart., M.P.; Rev. T. Lewis; Col. Macdonall; John Mott, Esq.; J. W. Lennox Naper, Esq.; J. Newell, Esq.; T. Newman; Jos. Parkes, Esq., C.E; E. W. W. Pendarves, Esq., M.P.; W. J. Pickin, Esq.; E. S. Chandos Pole, Esq.; H. Price, Esq.; P. Pusey, Esq., M.P.; Prof. Sewell; W. Shaw, Esq.; R. A. Slaney, Esq.; Rev. T. Slapp; J. Manners Sutton, Esq.; T. Tweed, Esq.; Dr. Ure; J. L. White, Esq.; G. Wilbraham, Esq., M.P.; and H. Wilson, Esq. The Right Hon. Lord Beaumont, of Carleton-hall, near Selby, Yorkshire; Col. Jas. Macdouall, 2d Life Guards; and John Boyd, Esq., of the Borough of Southwark, were elected Governors, and the following gentlemen Members of the Society:—

Mackintosh, James, West Stratton, Winchester
Cousmaker, Lanney, Westwood, Farnham, Surrey
Gower, Andrew W., Hook, near Hartford-bridge, Hants
Morison, John Alexander, M.D., Portclew, near Pembroke
Little, R. D., Secretary to the Agri. Soc., Chippenham
Fry, Robert, Tockington, Thornbury, Gloucester
Vivian, George, Claverton Manor, Bath
Hunter, Henry Lannoy, Beech-hill, Reading
Trew, Thomas, Southampton
Aldridge, James, Throop-farm, Christchurch, Hants
Parmiter, Samuel, High-street, Southampton
Rendall, George, Quarr-farm, Ryde, Isle of Wight
Roddam, William, Roddam, Wooller, Northumberland
Leeke, Ralph, Longford-hall, Newport, Salop
Charlton, Philip, Withyford Hall, Shrewsbury
Fennor, J., Vernham, Andover, Hants
Webb, William, Lee, Southampton
Graeme, W., Winchester
Baldero, H., Woolton House, Bedford
Wroughton, Philip, Ibstone House, Stokenchurch, Oxon

The names of 38 candidates for election at the next meeting were then read.

The reception and discussion of the numerous communications laid before the meeting having taken place, the Council adjourned to Wednesday next, the 5th of June.

Reviews.

A Prize Essay on Manure. By George Thompson, Jun. Simpkin, Marshall, and Co.

THE prize offered by the Stewponey Agricultural Society in 1843 was awarded to this essay, by the Royal Agricultural Society of England. In extracting from this pamphlet the following Tables, giving the results of experiments with manures, though they appear to contain valuable evidence on the subject of manures, we must express our entire dissatisfaction with the opening paragraph; the tendency of the opinion which it advocates is most injurious. Let farmers hold a high opinion of farm-yard manure; it will keep them from carelessly wasting it. We do not wish a higher value to be placed upon it than really belongs to it; but certainly the circumstance, stated by Mr. Thompson, that the farmer gets a decent profit on his fattening animals independently of the manure which they make for him, is no argument for putting its value below its usual standard. But this is far from being always the case; in some districts of Lincolnshire, where large quantities of oil-cake are used in feeding sheep and oxen, we are informed that if three-fourths only of the purchase-money of this food be repaid by the increased quantity of beef and mutton produced by its consumption, then the farmer is satisfied; for he knows that the superior quality of the manure produced fully repays the remainder of the purchase-money, with a suitable profit on the whole of it. It is highly important that farm-yard manure should be understood to be what it is—the very sheet-anchor of Agriculture, and that any carelessness in manufacturing or preserving it is a source of great loss to the farmer.

"In preparing the subjoined reports of experiments, (*which have, through the kindness of those who instituted them, come under the immediate inspection and observation of the author,*) a lower price is placed upon farm-yard manure than has been customary. Every money charge made in the following reports, is made at the rate of cost to a farmer. Farm-yard manure has been generally valued at six shillings per ton, but extensive inquiries amongst practical agriculturists convince us that this is too high.

All good managers will, in the average of years, gain a profit upon their live stock, consequently, the manure they make actually costs them nothing. If the converse be true, and the reports of those experiments be correct, which are said to have been instituted by farmers, and which show guano to surpass Farm-yard manure at six shillings per ton, why do not those farmers dispose of their live stock entirely and purchase guano, or other artificial manures? Is not this a proof that farm-yard is cheaper than any artificial manure? But it is indis-

putable, that by good management, the farmer gets a decent profit upon those animals which make his farm-yard manure, hence it costs him little or nothing; and the Author is, therefore, justified in placing it as low as *two shillings per ton*; being the estimated incidental expenses attending it.

The costs of the carriage of manures, in the following reports, are also placed at the *actual amount* incurred by the farmer, and not, as is too common, at the usual rate of hire.

EXPERIMENTS WITH WHEAT.—1841.

No.	Description of Manure.	Quantity applied per Acre.	Cost including Carriage.	Produce in Straw.	Produce in Grain.	Total Value. Straw at £3. 3s. per Ton. Grain at 7s. 6d. per bushel.	Profit by use of Manure.	Loss by use of Manure.
			£ s. d.	c. q. lb.	Bush.	£ s. d.	£ s. d.	£ s. d.
1	Farm Yard	15 Tons, at 2s.	1 13 9	33 1 19	32	5 15 8	2 7 2	..
2	Farm Yard ..... Top dressed with Soot	15 Tons, at 2s. 3 Cwt. at 30s.	2 9 7	34 1 20	34½	6 16 2	2 11 10	..
3	Farm Yard ..... Top dressed with Nitrate of Soda, Mar. 13	10 Tons, at 2s. 1½ Cwt. at 36s.	3 1 9	34 0 1	32½	6 0 0	1 4 3	..
4	Lime ..... Common Salt ..... (Mixed 2 Months before, and kept covered.)	4 Tons, at 9s. 1 Ton, at 7s. 6d.	2 15 0	32 3 27	33	6 1 9	1 15 0	..
5	Lime ..... Common Salt ..... (Mixed 2 Months before, and kept covered.)	4 Tons, at 9s. 1 Ton, at 7s. 6d.	2 15 0	32 1 13	28	5 13 6	1 13 0	..
6	Nitrate of Soda ..... Guano	4 Cwt. at 21s. 1½ Cwt. at 36s.	4 4 6	35 0 7	34½	6 17 9	0 18 4	..
7	The Sandy Marl Subsoil ..... Burned Soil ..... Night Soil ..... Bones ..... Wood	A liberal dressing. 50 Yards ..... 1½ Qrs. ..... 1½ Qrs.	1 15 0	30 1 14	30	5 14 6	0 18 3	..
8	Burned Soil ..... Night Soil ..... Bones ..... Wood	50 Yards ..... 1½ Qrs. ..... 1½ Qrs.	3 13 0	35 3 4	30½	5 15 5	0 16 11	0 1 11
9	Night Soil ..... Bones ..... Wood	50 Yards ..... 1½ Qrs. ..... 1½ Qrs.	..	34 1 5	34	6 11 14	0 13 9	..

EXPERIMENTS WITH TURNIPS.—1842.

No.	Description of Manure.	Quantity applied per Acre.	Cost of Manure including Carriage.	Weight of Produce per Acre.
			£ s. d.	T. c. q. lb.
1	Guano	3 Cwt. at 20s.	3 0 6	16 7 2 16
2	Bones (dust)	3 Qrs. at 22s.	3 0 6	16 9 3 2
3	Bones (½ inch)	3 Qrs. at 20s.	3 0 8	13 1 2 13
4	Farm Yard	18 Tons, at 2s.	2 0 0	15 3 2 27
5	Gypsum ..... Farm Yard	2 Cwt. at 3s. 10 Tons, at 2s.	1 8 10	13 13 1 14
6	Farm Yard ..... Bones, mixed with Seed	10 Tons, at 2s. 1½ Qrs. at 20s.	2 12 10	17 7 1 3
7	None	.. .. ..	.. ..	8 13 3 15

EXPERIMENTS WITH TURNIPS.—1842.

No.	Description of Manure.	Quantity applied per Acre.	Cost of Manure, including Carriage.	Weight of Produce per Acre.
			£ s. d.	T. c. q. lb.
1	Guano	3 Cwt. at 20s.	3 0 6	19 7 1 19
2	ARTIFICIAL MIXTURE. Bones ..... Sulphate of Ammonia	4 Bus. at 2s. 6d. ½ Cwt. at 28s.	1 7 0	18 8 3 14
	Pearl Ash ..... Sulphate of Soda.. Common Salt	3 lbs. at 24d. 7 lbs. at 6d. ½ Cwt. at 3d.		
3	None	.. .. ..	.. ..	10 14 0 1

EXPERIMENTS WITH GRASS.—1842 AND 1843.

No.	Description of Manure.	Quantity applied per Acre.	Cost of Manure, including Carriage.	Value of Hay per Ton for Aftermath, and 70s. for 1st Meadow.	Profit by use of Manure.
			£ s. d.	£ s. d.	£ s. d.
1	Nitrate of Soda ..... Rape Dust	13 Tons, at 2s. Estimated at 8s. 6d. per Acre, per Annum.	1 7 0	5 12 6	3 3 2
2	Nitrate of Soda ..... Rape Dust	13 Tons, at 2s. Estimated at 8s. 6d. per Acre, per Annum.	1 7 0	7 2 8	6 0 10
3	Rape Dust	13 Tons, at 2s. Estimated at 8s. 6d. per Acre, per Annum.	1 7 0	6 10 10	5 0 10

EXPERIMENTS WITH POTATOES.—1842.

No.	Description of Manure.	Quantity applied per Acre.	Cost of Manure including Carriage.	Value of Produce, at 2s. 6d. per Bag.	Profit by use of Manure.	Loss by use of Manure.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	Guano	3 Cwt. at 20s.	3 0 6	20 17 6	3 19 6	..
2	Nitrate of Soda	3 Cwt. at 36s.	3 18 6	16 5 0	..	1 11 0
3	Farm Yard	14 Tons, at 2s.	1 11 6	18 8 9	2 10 9	..
4	Lime ..... Common Salt	1 Ton, at 9s. 1 Ton, at 7s. 6d. Estimated as Two	0 14 6	16 7 6	1 15 6	..
5	Trenched 18 in. deep, as 6d. per Acre	Years' Benefit	3 0 0	19 10 0	2 12 6	..
6	None	..	..	13 17 6	..	..

Miscellaneous.

The *Adelaide Observer* contains the following, under the head of "A New Road to Wealth:"—"It has been found out that by boiling down sheep, both ewes and wethers, from 25 lbs. to 30 lbs. of tallow can be obtained from each sheep; which, at the moderate calculation of 3½*d.* a-pound, will yield from 7*s.* 3½*d.* to 8*s.* 9*d.*, or upwards of a hundred per cent. more than has been realised of late years for the living animal. But adding to this the value of the wool, skin, mutton, lams, &c., the sum total will not be less than 14*s.* 3½*d.* per sheep. 'If this result be too flattering,' says the *Sydney Herald* of the 24th June, 'let the odd 4*s.* 3½*d.* be taken off, and even then it is demonstrated that, in the very depth of winter, when the fleece is in the worst possible state, the intrinsic value of a sheep is 10*s.*; and even deducting a round 20 per cent. from this, we have still the sheering minimum of 8*s.* Contrasted with the nominal value which sheep bore a month ago, this is an advance at once most extraordinary and exhilarating!' It is estimated that there are 4,000,000 of sheep in New South Wales, which yield a surplus stock annually of 1,000,000; and supposing the number which are slaughtered and die to be nearly 600,000, the settlers will be able, without diminishing the number kept in the colony, to boil down 400,000 sheep; which will yield them for exportation every year, at a moderate computation, 6,000,000 lbs. of tallow and 400,000 sheep-skins,—the tallow being reckoned at 100,000*l.*, and the skins at 30,000*l.*, besides mutton-hams! A correspondent of the *Australasian Chronicle*, who had examined some of the tallow produced by boiling down sheep, thus reports upon its quality—'The tallow produced from the kidneys is much superior to any Russia white-candle tallow I ever saw, and would, I doubt not, realise in the London market 4*s.* per cwt. more. The second quality is a good clean article, but would perhaps not realise within 2*s.* or 3*s.* per cwt. of Russian yellow-candle tallow.' We must give the caution which our Sydney contemporary gives to his constituents—'Use the golden opportunity of bettering your circumstances which has so miraculously turned up—use it thankfully—use it promptly—but use it advisedly and with moderation. A sheep shorn may live to be shorn again, but a sheep boiled is gone for ever.'"

Risk attendant on the Possession of different Animals at various Ages.—Losses by fatal accident are different, according, not only to the different species of cattle, but to different ages, as the following Table shows:—

LOSS ACCORDING TO PER CENTAGE OF VALUE.

	Horses.	Kine.	Sheep.	Swine.
From birth till weaning . .	5	3	10	12
— weaning till 1 year old .	4	2	8	6
— 1 to 2 years	3	2	7	3
— 2 to 3 years	3	1.5	5	3
During time of use . . .	5	2	5	4

—*Burger's Economy of Farming.*

Notices to Correspondents.

BOOKS.—*T. L. Y.*—We do not know one work on sheep *and* cattle. On the former subject, see Mr. Spooner's lately published work, Blaskiock's Treatise, &c. On the latter, see the work published by the Society for the Diffusion of Useful Knowledge.—*J. H.*—Swinborne's "Farmer's Complete Account Book," printed in Colchester.

CHARCOAL.—*J. H. Darton.*—It is useful in fixing the ammonia and removing the smell of cloacinæ; it may also be usefully applied by throwing it in a powdered state into the urine tank, and afterwards applying it on the land, as a manure for Turnips.

DRAINING.—*W. C.*—You may certainly, by digging into the clay, increase the efficiency of your drains, and diminish the necessity for having them so near one another; but we think 30 inches is deep enough—it is much more expensive to take out the last 6 inches of depth, than it is to remove the first 6 inches.

DRESSING FOR TURNIPS.—*X. Z.*—Bones and sulphuric acid (see this day's Leading Article). About Hops, probably next week.

FIXING AMMONIA.—*A Subscriber.*—Lime will drive it off. Fresh charcoal-powder mixed with the night-soil, or sulphuric acid, will fix it.

GRASS.—*Jim.*—The specimen you send is not in flower, and therefore cannot be named. It looks like Festuca ovata. Please to explain what you mean by "an unsound bottom." No method short of breaking up the pasture will be effectual in destroying the prevailing Grasses in it. If your land wants lime, and the soil round you speak of is calcareous, its application will be beneficial.

HUMIC EARTH.—*F.*—Vegetable mould generally contains a considerable quantity of free humic acid.

LUCERNE.—*Banks of the Deme.*—It should have been sown in the middle of April. Good farm-yard manure, at the rate of 25 yards per acre, well incorporated with the soil, is as useful a tillage as any, for this, as well as other crops. 3 cwt. of guano, and 2 cwt. of gypsum, per acre, mixed, spread broad-cast and harrowed in a week before sowing, would probably answer your purpose.

MANURES.—*P. Drill.*—Use a tin scoop, and sow the guano and ashes broad-cast by hand; harrow it well in, and afterwards ridge up for Turnips. The best way, perhaps, of applying the sulphuric acid and bones is in solution, before sowing, by means of a water-cart. (See Mr. Purchase's directions, in this day's Leading Article.) The difference between fresh and old wood-ashes is, in the former containing a portion of caustic alkali, which will volatilise any ammonia it may meet with, while in the latter this causticity has been neutralised by the union of the alkali with the carbonic acid of the air. We should doubt the usefulness of applying the solution of nitrate of soda in the way you propose.

NAMES OF PLANTS.—*Jack o' Kent.*—Your plant is Colchicum autumnale, or Meadow Saffron—a virulent poison, quite capable of producing all the mischief among cattle which you describe. We do not know what can be added to the information already given about guano, but will consider.

ROOT CROPS.—*T. P.*—"Fresh-raised clay" will not interfere with the action of the manure, but it is very likely to interfere with your efforts to bring your land to a sufficiently fine tilth for root-crops. We are unable to answer, the same week that we receive them, letters which reach the office after Wednesday.

THE PIP OR GAPES.—*Poultry Fancier.*—See "Home Correspondence."

VICTORIA WHEAT.—*A. G.*—We do not know it.

WOOD ASHES.—*T. M.*—The idea that these will drive off ammonia from guano, when mixed with it, depends for its accuracy upon the presence in them of caustic alkali; you will find that in recommending their admixture with guano we have named always *old* wood-ashes, as in them, after a long exposure to the carbonic acid of the air, there is less likelihood of the presence of any *free* alkali. Perhaps, though a more expensive, it may be a safer way to supply the deficiency of alkali in guano by adding carbonate of soda. We should be sorry to consign the doctrines of the advantage to plants of ammoniacal manures, or of humus either, to the "tomb of the Capulets."

ERRATA.—In the notice by *W. C. S.*, at p. 348, the following errors occur:—for "potassia, tartrate of antimony," read "potassio-tartrate of antimony;" and for "put a seton in the poll and in the loins; if there is paralysis or weakness give broths," &c.—read "put a seton in the poll and in the loins if there is paralysis or weakness. Give broths," &c. And in Mr. Sullivan's paper on East Lothian Husbandry, at p. 343, it is said that 60 acres of arable land are there termed a ploughgate; it should have been 60 *Scotch* acres.

*** As usual, many communications have been received too late.

Markets.

MARK-LANE, Monday, May 27.

There was a moderate arrival of English Wheat from the near counties this morning, but the trade ruled heavy for all descriptions, particularly secondary qualities, which must be written 1*s.* per qr. cheaper.—Of new Baltic a large quantity is offering, duty paid, from the vessels, for which as well as old foreign, there is only a limited demand, and last week's prices are with difficulty supported.—English Barley is unaltered in value; of foreign but a small proportion is offered for sale, and must be quoted 1*s.* higher than this day se'nnight.—Beans and Peas are fully 1*s.* per qr. dearer.—Oats sell freely, and all but the very finest being an advance of 6*d.* to 1*s.* per qr.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . . White	46	55	Red .	46	54
—— Norfolk, Lincolnshire, and Yorkshire .	50	50	White	—	—
Barley, Malting and distilling 30s to 30s Chevalier	31	38	Grind.	24	28
Oats, Lincolnshire and Yorkshire . . Polands	20	23	Feed	19	22
—— Northumberland and Scotch . . Feed	20	23	Potato	21	25
—— Irish . . . . . Feed	18	23	Potato	19	24
Malt, pale, ship	58	62			
—— Hertford and Essex	60	62			
Rye	29	32			
Beans, Mazagan, old and new 20 to 23	Tick	23	24	Harrow	23	25
—— Pigeon, Hollyland . . 20 to 23	Winds.	—	—	Longpod	—	—
Peas, White . . . . 22 to 26	Maple	20	23	Grey	20	21

FRIDAY, May 31.

There is little English Wheat fresh up for this morning's Market, and its value is unaltered; of foreign only a small proportion of the arrivals is offered for sale, for which Monday's quotations are maintained, as well as for old qualities, but business is limited.—During the week a few sales of Rostock Wheat have been made at 36*s.* per qr. f. o. b. freight included, and new Dantzig has brought 38*s.* f. o. b.—We observe that since the Act for Bonding, free flour and biscuit came into operation, 70,000 qrs. have been released under it.—Barley, Beans and Peas fully support their late prices, and meet an occasional inquiry f. o. b.—The quantity of Oats on sale is small, and they meet a quick sale on fully as good terms as of late.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
April 19 per Quarter.	55s 4d	32s 6d	20s 2d	34s 2d	31s 3d	31s 4d
— 26	55 6	32 7	20 1	31 2	31 4	30 8
May 3	55 3	31 8	20 1	30 11	31 9	31 3
— 10	55 1	31 5	20 5	31 4	32 3	31 3
— 17	54 10	31 1	21 0	31 9	32 1	31 9
— 24	55 10	30 7	21 7	32 11	33 11	32 7
6 weeks' Aggreg. Aver.	55 0	31 3	20 6	31 5	32 4	31 6
Duties on Foreign Grain	17 0	9 0	6 0	10 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . . .	2100	240	2520	2440 Sks
Irish . . .	—	—	2760	—
Foreign . . .	10884	8400	2880	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English .	3808 Sks.	— Brls.	6128	1018	2360	1270	— Qrs.	218	253
Irish . .	" "	— "	—	—	40	2020	— "	—	—
Foreign .	" "	20738	12647	—	—	—	1040	—	37

SEEDS, May 27.

Canary . . per qr	38s to 40s	Linseed Cakes, Foreign, p. ton	£7 to £7 10s
Caraway . . per cwt	40	45	Mustard, White . p. bush.	6	8
Clover, Red, English .	62	74	—— Brown . . "	5	6
—— Foreign .	64	74	Rapeseed . . "	14	16
—— White, English .	100	120	Rapeseed, English, per last	240	260
—— Foreign .	96	105	Rape Cake . . per ton	—	—
Coriander . . .	18	22	Silkgrin . . . "	—	—
Hempseed . . per last	24	26	Tares, New, winter p. bush.	3	3
Linseed . . . per qr	—	—	—— Spring . . "	3	3
—— Baltic . . . "	—	—	Trefoil . . . per cwt	—	—
—— Cakes, Eng. per 1000	£109	£118	Turnip (too variable for quotation).		

KNOWLTON AND LAY.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 30.

Prime Upland Hay	80s to 90s	Clover . 90s to 105s	Straw . 30s to 35s
Inferior . .	75	78	

JOHN COOPER, Salesman.

CUMBERLAND MARKET, May 30.

Superior Meadow Hay	85s to 90s	Superior Clover 100s to 105s	Straw 28s to 30s
Inferior . .	70	77	Inferior . . 90 95 New Hay 60

JOSHUA BANNS, Hay Salesman.

WHITECHAPEL, May 31.

Hay . .	60s to 70s	Clover . 90s to 98s	Straw . 28s to 30s
— fine . .	75	80	— fine 100 120

Supply short, and trade brisk.

COVENT GARDEN, *June* 1.—Notwithstanding the changeable state of the weather during the week, the Market has been well supplied; but trade has been rather dull. Little alteration has taken place in the prices of Fruit since our last report. Fine Apples, although not very plentiful, are sufficient for the demand. Grapes are becoming more abundant. Some good Peaches and Nectarines are in the market, and there has also been supplied a few fine specimens of Cantaloupe and Green-flesh Melons. Cherries are considerably reduced in price; they are getting more plentiful. Apples and Pears are scarce. Gooseberries are abundant and cheap. Oranges are not plentiful. Among Vegetables, Cauliflowers have been well supplied during the week, and they are improving in quality. Carrots and Turnips are not good, owing to the long dry weather. Rhubarb is sufficient for the demand. Asparagus is slightly reduced in price. French Beans are good, but not abundant. Strawberries consist of Myatt's British Queen and Keen's Seedling—the former in large and fine; a few from the open ground have also been brought to the market during the week, which were sold about 3*s.* 6*d.* a pint. Peas are abundant. Lettuces and other salading are plentiful. The best Cucumbers are offered at about 1*s.* each. Cut Flowers consist of Erica hybrida, E. ventricosa coccinea minor, E. vestita alba, Boronia denticulata, Eutaxia myrtifolia, Honeysuckles, Pelargoniums, Fuchsias, Lily of the Valley, Verbenas, Pansies, Calceolarias, Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb.,	2*s* to 12*s*	Gooseberries, per hf.-sieve,	2*s* to 3*s*
Grapes, Spanish, per lb.,	1*s* to 1*s* 6*d*	Lemons, per dozen,	1*s* to 4*s*
Hothouse Grapes, per lb.,	4*s* to 10*s*	— per 100,	6*s* to 10*s*
Melons, each,	2*s* to 12*s*	Almonds, per pack,	6*s* to 7*s*
Peaches, per dozen,	20*s* to 30*s*	Sweet Almonds, per lb.,	2*s* 6*d* to 3*s*
Cherries, per lb.,	2*s* to 10*s*	Nuts, Spanish, per bushel,	18*s*
Apples, Dessert, per bushel,	6*s* to 8*s*	— Brazil,	16*s*
— Kitchen, per bushel,	3*s* to 14*s*	— Barcelona,	20*s* to 24*s*
Currants, per half-sieve,	4*s*	— Cob,	14*s*
Strawberries, per oz.,	6*d* to 1*s*	— Hazel,	3*s* to 4*s*
Oranges, per dozen,	1*s* to 2*s* 6*d*	Walnuts, per bush., shelled,	10*s* to 20*s*
— per 100,	6*s* to 18*s*	Chestnuts, per peck,	4*s* to 6*s*

VEGETABLES.

Rhubarb, per bundle,	4*d* to 1*s*	Cucumbers, each,	4*d* to 1*s*
Cabbages, per dozen,	6*d* to 1*s* 6*d*	Spinach, per sieve,	1*d* to 1*s* 6*d*
— Red, per dozen,	2*s* to 3*s*	Leeks, per doz. bun.,	2*d* to 1*s*
Sorrel, per hf.-sieve,	6*d* to 9*d*	Garlic, per lb.,	6*d* to 1*d*
Asparagus, per 100,	1*s* to 6*s*	Onions, per bunch,	2*d* to 6*d*
French Beans, per 100,	2*s* to 3*s* 6*d*	— large, per bushel,	1*s* to 3*s*
Autumn Potatoes, per lb.,	3*d* to 6*d*	— Spanish, per doz.,	1*s* 6*d* to 2*s*
Grapes, per dozen,	2*s* 6*d* to 3*s* 6*d*	Shallots, per lb.,	3*d* to 10*d*
Potatoes, per ton,	60*s* to 110*s*	— Green, per bunch,	2*d* to 4*d*
— per cwt.,	5*s* to 5*s* 6*d*	Lettuce, per score,	6*d* to 1*s*
— per bushel,	1*s* 9*d* to 2*s*	Celery, per bunch,	6*d* to 1*s*
— Kidney, p. bush.,	2*s* 6*d* to 3*s*	— Young, per bunch,	1*s* 6*d* to 2*s*
Frame Potatoes, per lb.,	6*d* to 1*s* 3*d*	Mushrooms, per pottle,	1*s* to 1*s* 6*d*
New Turnips, per bunch,	4*d* to 9*d*	Small Salads, per punnet,	2*d* to 3*d*
Peas, per bushel sieve,	4*s* to 6*s*	Watercress, p. 12 sm. bun.	4*d* to 6*d*
Red Beet, per doz.,	6*d* to 1*s* 6*d*	Parsley, per hf.-sieve,	6*d* to 1*s*
New Carrots, per doz.,	6*d* to 1*s* 6*d*	Tarragon, Green, per bunch,	2*d* to 4*d*
Radishes, Tur., p. 12 bchs.,	6*d* to 1*s* 6*d*	Green Mint, per bunch,	2*d* to 4*d*
Basil, per bunch,	4*d* to 6*d*	Marjoram, per bunch,	4*d* to 8*d*
Horse Radish, per bundle,	1*s* to 2*s*	Chervil, per punnet,	2*d* to 3*d*
Savory, per bunch,	6*d*	Cauliflowers, per doz.,	2*s* to 12*s*

POTATOES.—SOUTHWARK WATERSIDE, May 27.

Since our last, cold winds from the north and north-east have prevailed, accompanied by a good deal of blight; these, together, have proved injurious to fruit-trees and vegetables. The supplies in our Market during the past week have been comparatively small, and the best fresh good-conditioned samples have gone off readily at an advance on our last quotations, but where it was necessary to clear cargoes that were heated and dry-rotted, no advance could be obtained. Whites have remained nominally unaltered, yet the demand continues languid; and some small lots of Foreign remain in the Market, selling at 45*s* to 50*s*. The weather became cloudy toward the end of the week, and our Market resumed a more healthy appearance, and at the close the annexed prices were fully supported.

York Reds	60*s* to 90*s*	Essex and Sussex Blues	—*s* to —*s*
Perth	70 75	Wisbeach Kidneys	70 —
Early Devons	— —	— Blues	50 55
Late Devons	40 —	— Whites	45 50
Cornwall	— —	Jersey and Guernsey Blues	65 70
Sussex Whites	— —	Prince Regents	— —
Kent and Essex Kidneys	— —	York Shaws	— —

HOPS, FRIDAY, May 31.

On account of the late cold weather, up to yesterday, the Hop fly had not increased since last week, and several persons became more anxious to sell; but yesterday being warmer, the accounts this morning state that the fly is again increasing, and our Market very firm.

FATTERMAN & SMITH, *Hop-Factors.*

WOOL.—BRITISH, FRIDAY, May 31.

As is usual at this season of the year, there is but little doing in our English Wool Market. Staplers are, for the most part, desirous of selling out their old stock remaining on hand, to make room for the new Wool. But few clips have, as yet, been bought; the Farmers are asking higher prices than the Staplers, with present prospects, can afford to give.

	per lb.				per lb.	
Long-wooled Wethers	11*d*	to 1*s* 0*d*	Southdown Hoggits	1*s* 0	to 1*s* 2*d*
Do. Hoggits	1*s* 1	1 2	Kent Fleeces	1 1	1 2
Southdown Fleeces	11	1 0	JAMES PEARSE, Wool Broker.		

SMITHFIELD, MONDAY, May 27.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3*s* 8 to 3*s* 10	Best Downs & Half-breds	3*s* 8 to 4*s* 0
Best Short Horns	3 4 3 6	Best Long-wools	3 8 3 10
Second quality Beasts	3 10 3 8	Ewes and second quality	3 2 3 6
Calves	4 4 4 10	Pigs	3 4 4 0
Lambs	5 0 5 8		

Beasts, 2822; Sheep and Lambs, 20,260; Calves, 110; Pigs, 320.

This being Whit-Monday, the commencement of holiday-week, the Butchers are anticipating late trade, and, consequently, are not very eager in their purchases; our supply of Beasts is, however, moderate, and the best qualities make nearly as much as on this day week. Some Scots are making 4*s.* and some of the most selling Short-horns 3*s.* 10*d.* per 8 lbs., but cannot be quoted as average prices. The Mutton trade is very heavy, and suffers a reduction of nearly 2*d* per 8 lbs; the supply is good, but all are sold. Lamb trade is a little more cheerful, at about the same prices. Veal is rather a heavier trade. Pork remains steady.

FRIDAY, May 31.

Since Monday the dead trade has been rather better than was expected, in consequence, quite to-day is also brisker. Good Beef is not very plentiful, and rather dearer; best Scots, &c., 3*s* 8*d* to 4*s*, and Short-horns, 3*s* 4*d* to 3*s* 8*d*, second quality, 3*s* to 3*s* 6*d*. Mutton is also a little improved; the best Downs, &c., make 3*s* 8*d* to 4*s*, Longwools, 3*s* 6*d* to 3*s* 10*d*, and Ewes, &c., 3*s* 4*d* to 3*s* 8*d*, readily, and in some instances a little more. We have a large supply of Lamb, and much of it of very middling quality; the trade for it is very heavy: the weather continuing so cold is greatly against the Lamb-trade: the best are making 5*s* 6*d* to 6*s*, large and second quality, 4*s* 8*d* to 5*s*. Veal is improved, the best Calves being worth 5*s* per 8 lbs. Pork remains at late rates.

Beasts, 863; Sheep and Lambs, 2780; Calves, 864; Pigs, 270.

41, West Smithfield.

PRINCIPAL MANURES.

	Weight per bush., about lbs		Weight per bush., about lbs
Alum, 20*s* per ton	—	Phosphate of Lime, 6*s* 6*d* per cwt.	65
Bleaching Powder (see Chloride Lime)		— — Super, 7*s* to 8*s* p. cwt.	65
Brimstone, 30*s* per ton	—	— of Ammonia, in fine powder, 20*s* per cwt.	65
Bone-dust, —*s* and 17*s* per quarter	45	— of Ammonia, in crystals 3*s* 3*d* per lb	—
— Half-inch, 16*s* ditto	45	Rags, per ton	—
— Calcined, 3*s* per cwt	—	Rape Cake, 10*l*. to —*l* per ton	—
Carbonate of Ammonia, 40*s* p. cwt.	84	Dust, 11*l*. per ton	—
— of Lime, 1*s* to 1*s* 6*d* p. cwt.	—	Sal Ammoniac, 40*s* per cwt.	—
— of Soda, —*s* to 20*s* p. cwt.	—	Salt, Agricultural, 3*s* per ton	20
Chloride of Lime, 20*s* per cwt.	—	— Bay, 15*s* per ton	20
Graham's Phosphated Turnip Compost, 20*s* per ton	—	— Rock, 30*s* per ton	20
Gravel, —*s* to —*s* per ton	—	Saltpetre (Nitrate of Potash) 25*s* 6*d* per cwt., duty paid	60 to 84
Guano, Peruvian, 18*l*. per ton	—	Soap Ashes, —*s* per ton	—
— Bolivian, 20*l*. per ton	—	Soda Ash, 10*s* to 30*s* per ton	65
— African, 12*l*. per ton	—	Sulphate of Ammonia, 24*s* to 30*s* per ton	70
— Potter's Liquid, 15*s* p. doz.	65	— of Copper, 23*s* to 40*s* p. cwt.	—
Gypsum (Sulph. of Lime), 20*s* to 25*s* per ton, at water-side	—	— of Magnesia (Impure) 10*s* per cwt.	65
Hallett's Dry Fertiliser, 30*s* p. ton, or 1*s* per cwt.	—	— of Magnesia (pure crystal) 1*l*. per cwt.	65
— Concentr. 1*l*. 5*s* p. bot.	—	— of Potash, 20*s* per cwt.	—
Humphreys's Compound for Plants in Pots, 1*s* per doz.	—	— of Soda, 8*s* to 9*s* per cwt.	—
Farmers' Compound, 240*s* per ton	—	Sulphur, —*s* to 15*s* per cwt.	—
Muriate of Ammonia, 9*l*. per cwt.	70	Sulphuric acid, London, 2*d* per lb.	—
— Lime, —*s* to 0*s*	70	Country made, 1*d* per lb.	—
— Potash, 10*s* per cwt.	—	Whitaker's Composition for Frames and Lights, 2*s* and 4*s* per doz.	—
Nitrate of Soda, 14*s* 6*d* to —*s* per cwt., in bond	80	Willey Dust, —*s* per ton	—

Expenses of shipping about 3*s* to 7*s* per ton, according to quantity.

MARK PEMBERTON.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,

COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, May 31, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, on the best terms. of MARK FOTHERGILL.

AT THE CORN MARKET, [illegible]

On MONDAY, June 3d, at 2 o'[illegible]

GUANO.—450 Tons Just arrived, per ANNA, from Ichaboe. Catalogues and Particulars to be had of W. KIRKMANN & Co., Brokers, 2, St. Dunstan's-hill, Tower-street.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWRENCE'S, Stamford Creek, price 7*s.* per cwt. Phosphate of [illegible] cwt.

" " [illegible]

" Ammonia [illegible] per lb.

TURNIP SOWING. — BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9*l.* per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town. —Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

FOR TURNIPS.

THE Urate of the London Manure Company, 4 guineas per ton. The London Manure Company have great pleasure in acquainting their friends that they have this day reduced the Urate from 5*l.* to 4 guineas per ton, at the same time pledging themselves that the quality shall be fully maintained. The Urate will be found most valuable for Turnips, by promoting a rapid growth; it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. It may be sown broadcast, or, which is preferable, by the drill, at the rate of one ton to 3 acres; and it is desirable it should not be placed more than 2 inches below the surface. Gardeners and Florists will find it very useful for Dahlias, and other roots. Full particulars and testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate Ammonia; Gypsum, and every other artificial manure.—EDWARD PURSER, Secretary, 40, New-bridge-street.

MOST IMPORTANT TO FARMERS AND GRAZIERS.

GIBBONS' DISINFECTING OINTMENT, a most effectual and perfect cure for Epidemic and Foot-rot in Sheep; also for Epidemic and Foul in Cows' Feet, and for the Grease and Thrush in Horses; prepared only by HENRY GIBBONS, Agricultural Chemist, Wolverhampton.

This Ointment effectually destroys the American grub on Fruit-trees. Sold by all respectable Druggists in Town and Country, in packets at 2*s.* 6*d.* each. Mr. William Bailey, Manufacturing Chemist, North Street, Wolverhampton, is appointed Sole Wholesale and Shipping Agent.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

WHITNEY'S CHEMICAL, TRANSPARENT, WATERPROOF COMPOSITION, for rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to Rain or Moisture, admitting light equal to Glass, the *burning* rays of the *sun alone* being obstructed. Houses or pits covered with Calico, &c., prepared with this Composition, embrace important advantages over Glass. The light being equally diffused in every part of the house, plants placed on the floor have as much light as those close to the covering, consequently they are not drawn up as under Glass, while they continue much longer in *bloom*, and preserve their *delicate tints unfaded* till the *blossom falls*.

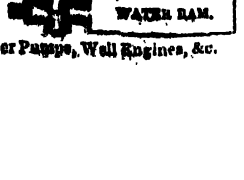
Whitney's Substitute for Glass.—I have had screens of calico rendered transparent with Mr. Whitney's invaluable varnish, and used them last winter, with a success far exceeding my most sanguine expectations, though my anticipations had been considerably excited. Indeed I consider Mr. Whitney's discovery as an invaluable boon to the horticulturist, one that will bear competition with any invention connected with the art and mystery of Horticulture in modern times. My screens were about 9 feet long each, and were inclined to the wall separated about 12 inches below, and as my object was to ascertain the value of the screens, in reference to *radiation*, they were *left open at each end*. Suffice it to say, the Fuchsia, Pomegranate, Passion-flower, Japan Honeysuckle, and others still more delicate and susceptible, were effectually preserved, and that without the slightest check to their growth, or any injury whatever. I am of opinion that in this *new aspect*, it possesses a protecting influence *infinitely superior to glass*, because the effects of radiation, a most powerful source of cold, are *not intercepted by glass*, which so materially counteracts the artificial temperature within; I cannot, therefore, but conclude, that for the protection, not merely of the early blossom, but the maturation of the fruits as in the case of the Peach, Nectarine, Apricot, and Grape, these transparent screens, thus prepared, are invaluable, and their triumphant success certain. Add to this, for Cucumber and Melon frames, their superiority over glass is undoubted for preventing flagging of the foliage (sometimes being scorched) by day, and the chilling effects of radiation by night. Screens prepared with Whitney's Transparent Varnish should be also used as shades in the intensity of a summer's sun, and for protection against radiation in winter, for the stove, greenhouse and conservatory. Even in the *economy of fuel* the value of such screens is demonstrable, as less will be required to maintain an equable warmth, its escape by radiation being thus effectually checked.—J. M., 16*th April*, 1844.

Prepared by GEORGE WHITNEY, Chemist, Shrewsbury; and sold in Bottles, 2*s.* 6*d.* and 4*s.* 6*d.*, with simple directions for use; and, as a protection to the public, the signature of the Inventor is on each bottle. Sold by the principal Seedsmen in London and throughout the kingdom. Merchants, Seedsmen, and Florists supplied by Mr. Bailey, North-street Wolverhampton.

RAMS FOR RAISING WATER WITHOUT LABOUR, WHERE A FALL CAN BE OBTAINED,

FOUNTAINS of every description. Specimens of the Fountain to be seen at the above address.

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Every kind of Garden and other Pumps, Well Engines, &c.

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HAYMAKING SEASON. — Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

SURPRISING EFFICACY OF "PARR'S LIFE PILLS."

Testimonial just received by the Hibernia from America.—Dr. C. STEANE, 184, Fulton-street, sole agent for Brooklyn, L. I.—An instance of the singular efficacy of PARR'S LIFE PILLS, which merits particular notice, occurred in the person of a lady, residing at Brooklyn, of consumptive make, who had been afflicted for upwards of six years with very great and general debility, headache, flatulence, faintings, and all the effects originating in an impaired constitution. Country air was tried, but to little advantage. She complained of weariness and pain on the least motion; her bowels were sometimes constipated, and at other times lax, and never regular. At this period, she was recommended to try PARR'S LIFE PILLS, when no less astonishing than true, before she had finished two boxes, an entire and perfect cure was the result. To such, nothing can equal this antidote, as it imparts tone and strength to the stomach, and operates so mildly, that the most delicate of either sex can take them with the greatest safety.—Your's truly,

To T. Roberts & Co. April, 1844. C. STEANE.

These and hundreds of other cases of decided cures, attested on the highest authority, and already published, occupy upwards of 150 pages of letterpress. These Testimonials are published periodically, and may be had on application at any respectable medicine vendor's. The cures in many instances were effected after all other means had failed, and they thus establish the claims of PARR'S LIFE PILLS in being considered the best medicine in the world.

CAUTION TO THE PUBLIC.—Beware of Spurious Imitations of the above medicine. None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE LETTERS on a RED GROUND, engraved in the Government Stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS & CO., Crane-court, Fleet-street, London," on the directions.

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G. N. & SON have also Glass Hives, and other articles connected with Bee management, a catalogue of which, with drawings, may be obtained. Letters of Inquiry must have postage stamps inclosed.—Apiarian Depot and Honey Warehouse, 127, High Holborn, London.

NUTT ON BEES, Fifth Edition, now Published.

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E. WOLFF and SON beg to apprise Artists and Amateurs that they have, by the introduction of great improvements in their CRETA LÆVIS, enabled it to be used the same as the ordinary pencil; and effects can now be produced equal to water-colour drawings, without the use of water or any other fluid, the various colours blending together with perfect harmony, beauty, and richness. It can be cut to a fine point, and is thus capable of giving a very delicate outline. For sketching from Nature, the great advantages resulting from the adoption of the CRETA LÆVIS must be obvious, as without the use of water, palette, brushes, &c., all the various tints can be obtained with a truthfulness that cannot be surpassed. To be had of all respectable Stationers, and of the Manufacturers, at the following prices:—

Leather box, containing a set of	12	7*s.* each.
"	18	10*s.* "
"	24	14*s.* "
"	36	21*s.* "
In sets as above, without box, at		6*s.* per doz.
Lake and Cobalt		12*s.* "

*** May be had also in crayons, without cedar, in sets as above, at 6*s.* per dozen, box included.

Creta Lævis.—We have inspected an invention of Messrs. Wolff and Son. CRETA LÆVIS are permanent coloured Crayons, of nearly every hue and tint, differing essentially from those in general use, inasmuch as they do not cast off, and are cleaner than chalk, retaining at the same time much softness and delicacy. We think they would be found useful to the sketcher, as they are portable, not easily injured, and can be used upon white or tinted paper. We can recommend them, especially to ladies, as we have seldom seen more charming specimens of flower-drawing than those produced by the CRETA LÆVIS: the line, generally so coarse in chalk, was singularly clear; and many of the landscapes and heads submitted for our inspection proved that Mr. Wolff has made a valuable discovery.—*London Art Union.*

Instructions for Use.—To produce the delicate shades, the chalk must be cut to a fine point, and worked very lightly on the paper, blending the colours until the required tint be obtained. The deep shades merely require a broader point and increased pressure.—Bristol Board, Crayon Paper, or, in fact, any papers with a fine even surface, but not glazed, are well adapted for the CRETA LÆVIS.

WOLFF and SON beg to recommend their newly-invented SKETCHING PENCILS, or Permanent Black Chalks:—

B B, Very black, for foreground; H B, Middle tint; N, Neutral tint, for distance. Price 6*s.* per dozen.

These Pencils are peculiarly adapted for sketching heads and landscapes, and are capable of producing a beautiful effect with very little labour. Having an adhesive quality, the drawings may be transmitted without fear of injury.

*** Wolff and Son are desirous of opening an Agency with respectable Country Booksellers and Stationers for the sale of the above.—Manufactory, 23, Church-street, Spitalfields, London.

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TANNER'S VITREOUS FLUID and CLOTH, being a SUBSTITUTE for the GLAZED FRAMES of HOTBEDS and CONSERVATORIES, &c.

The Inventor, in introducing the above Preparations, feels confident that an important desideratum is presented to the Public, combining [illegible] and economy.

[illegible] house may be built at a very moderate [illegible] advantages of Glazed Frames. A Forcing-[illegible] with it is not only less expensive, but [illegible] places—not requiring the attention of the ordinary [illegible], admitting a more genial light, preserving a uniform dewy moisture on the Plant, maintaining, without any other covering, a moderate temperature under the strongest rays of the mid-day sun, and the atmosphere requires only to be changed from time to time according to circumstances. It affords a certain Protection for Fruit-trees, either from Frost, Blight, or excessive Heat, affording abundance of Light and Heat, for the expansion of the blossom, causing the Fruit to set and swell more freely, and much earlier.

The attention of the Nobility and Gentry is respectfully solicited to the above, which being Waterproof, and varying in texture, will prove equally suitable for Marquees, Blinds, covering Market Carts, Vans, &c.

Merchants and the Trading Classes will also find the above adapted for the Windows of Offices and Workshops, admitting a more agreeable light than glass.

Hand-Frames of various sizes, covered with the Vitreous Cloth, may also be obtained of the Proprietor, and Agents.

Manufactured and sold by N. W. TANNER, Chemist, Exeter.

Directions for Use of Fluid with each Bottle.

Any persons residing in large towns or cities, desirous of becoming Agents, are requested to make early application.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 28, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s. 6d. each, and in bottles, six times the size, at 7s. 6d. The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

TURNIPS, &c.

DR. HALLET'S DRY SOLUBLE FERTILISERS, are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Chicory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10l. per ton, or 12s. per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street; and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertilisers are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford; Norfolk, Messrs. BULLARD and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

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A PRACTICAL TREATISE ON THE IMPORTANT VALUE OF PERUVIAN AND ICHABOE AFRICAN GUANO; the Most Powerful, Portable, and Cheap Manure in the World. Interspersed with Appropriate Rules, and Application of Genuine Guano, arranged for all soils, growth, and rotation of Crops. To be had of the Author only, by letters pre-paid, inclosing 1s., when a Copy will be posted pre-paid.

All letters to be addressed to W. A. HARWOOD, 10, Sparling-street, Liverpool. N.B. Genuine Guano ex Ship, 11l. to 12l. per ton; orders for 2 cwt. and upwards executed.

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PRACTICAL HINTS ON NEW AND OLD MANURES. By JOHN DONDRIDGE HUMPHREYS, Esq., Author of "The Electro-Physiology of Man," &c.

"We can recommend it to our Agricultural friends as a very valuable and interesting work."—*Bell's Weekly Messenger.*

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N.B.—This pamphlet contains the particulars of the New Chemical Manure, HUMPHREYS'S FARMERS' COMPOUND, unrivalled for Turnips, and as a Top-dressing to be hoed in on Wheat, Hops, Potatoes, &c. Price 12s. per cwt. Manufactured by DAVY, MACKMURDO, & Co., 100, Upper Thames-st., London.

Just published, Second Edition, price 6d.,

ON THOROUGH DRAINING, and its immediate Results to the Agricultural Interest, as well as its probable Effects on the General Condition of the People (originally read before the Wakefield Farmers' Club, and by them ordered to be printed), by J. H. CHARNOCK, Secretary to the Yorkshire Land-Draining Association.

LONGMAN and Co., and RIDGWAY, London; ILLINGWORTH and HICKS, Wakefield; and all other Booksellers.

*** The above Pamphlet is being extensively ordered by most of the Farmers' Clubs in the Kingdom, for distribution, at the rate of 1l. 12s. 6d. per 100 copies, and remitted for by Post-office orders to Illingworth and Hicks.

Just published,

THE DICTIONARY of the FARM. By the late Rev. W. L. REAM, Vicar of Winkfield, Berks; and completed by him only a few weeks previous to his death. Price 5s. 6d., strongly bound in cloth; forming a Volume of nearly 600 pages, equal to three ordinary octavo volumes.

London: CHARLES KNIGHT and Co., Ludgate-street.

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SOCIETIES.—ASIATIC (Annual Meeting)—STATISTICAL (Dr. Guy on the Influence of Employments on Health)—INSTITUTION OF CIVIL ENGINEERS (Samuda on the Atmospheric Railway)—SOCIETY OF ARTS—ROYAL INSTITUTION (Rev. Mr. Sidney on the Diseases of Wheat)—OXFORD ASHMOLEAN SOCIETY (Dr. Daubeny on the Natural History of Spain).
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PARLIAMENTARY PROCEEDINGS.
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James Hudson, Sec.

HAMPSTEAD FLORIST SOCIETY.—The First and principal Exhibition for 1844 will take place on Thursday, June 13, in the grounds of J. Jackson, Esq., near Jack Straw's Castle, Hampstead Heath. The Exhibition will open at One o'clock to Visitors. Admittance One Shilling. A Band will be in attendance. William Goulding, Secretary.

GARDENERS' BENEVOLENT INSTITUTION.—At a General Meeting of the Subscribers to this Institution, held on the 4th June, at the Crown and Anchor Tavern, for the purpose of Electing Four Pensioners on the Fund, the following was the result of the ballot:—

Elizabeth Collyer	160 votes.
Samuel Lyward	150 ,,
Alexander Upton	120 ,,
John Wellard	110 ,,
John Blaylock	101 ,,
Robert Cracknell	77 ,,
Charles Martin	56 ,,

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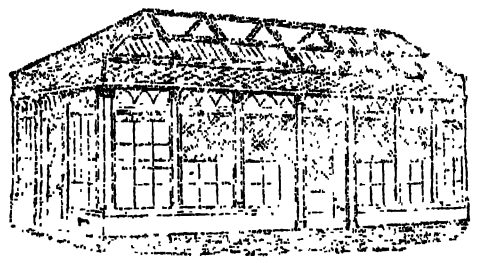
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EDWARD BUCK will be happy to answer any inquiries, either personally or by post.

CHOICE FLOWERS AND PLANTS IN POTS.

HUMPHREYS' INODOROUS SOLUBLE COMPOUND. A few grains dissolved in water, and used occasionally, are effective. Sold in bottles price 1s. 6d. each, by Messrs. FLANAGAN and SON, Mansion-house-street; HURST and McMULLEN, Leadenhall-street; W. CLARK, Bishopsgate-within; SMITH, Islington Nursery; GRIMLEY and Co., Covent Garden; BATT and RUTLEY, 412, Strand; WILLIAM and JOHN NOBLE, Fleet-street; THOMAS GIBBS and Co., Piccadilly; SMITH, Covent Garden; CHARLWOOD, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KENNAN, Great Russell-street, Covent Garden; LOCKHART, 150, Cheapside; SHUTTLEWORTH, Pantheon; MINIER, ADAMS, and NASH, 63, Strand; THATCHER and SON, Islington; J. PAYNE, Clarendon-terrace, Camberwell; THOMAS ANSELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. E. RENDLE, Plymouth; DICKSON and Co., Edinburgh; PONTEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THORNE, Shepton Mallet; and other leading SEEDSMEN in town and country. Wholesale Agents, DAVY, MACKMURDO, and Co., 100, Upper-Thames-street, London.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, Manor-place, King's Road, Chelsea, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. Wire-work in Trainers, Arches for Walks, Bordering, Flower-stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Chase, or Domestic Greenhouses.

TO NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public Competition, on the Premises, Providence Nursery, Park Lane, Clapham Road, Islington, on MONDAY, June 10th, 1844, at One o'clock (by order of the Clients), about 1500 GREENHOUSE PLANTS, consisting of Geraniums of the best kinds, Azaleas, Rhododendrons, Fuchsias, Myrtles, Balsams, Heliotropes, Hydrangeas, &c. Also an excellent Iron Roller, Truck, &c. May be viewed on Saturday, 8th, and morning of sale. Catalogues may be had on the Premises, of the Principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public Competition, at the Auction Mart, Bartholomew-lane, on TUESDAY, June 11th, and THURSDAY, 13th, 1844, at 12 o'clock each day, a fine Collection of DAHLIAS, comprising all the leading varieties. Also a splendid assortment of GERANIUMS, the newest varieties of FUCHSIAS and VERBENAS, HEARTSEASE, and a variety of other Flowering Plants.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

SYDENHAM, KENT.

MESSRS. PROTHEROE AND MORRIS will submit to public competition on the premises, BAYAN COTTAGE, near the Dartmouth Arms, Sydenham, on THURSDAY, 20th JUNE, 1844, at 1 o'clock, the Entire Stock of CHOICE TULIPS, the collection of the late Mr. William Granger Jackson, comprising all the esteemed kinds in cultivation. Also IRON HOOPS and CANVAS, One and Two-Light BOXES, HAND-GLASSES, GARDEN UTENSILS, Sundry HOUSEHOLD FURNITURE, and other Effects. May be viewed one day prior to Sale. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instruction from Mr. RUNNEY, to submit to public competition on the premises, KINGSLAND NURSERY, about the second week in July, in consequence of the Lease having expired, the whole of the RARE EXOTICS and other Plants in pots; also SEVEN GREENHOUSES, PITS, &c. &c., in good condition, a quantity of Bricks, York Paving, and other Fixtures. May be viewed prior to the Sale, and Catalogues may be had of the principal Seedsmen, on the Premises, and of the Auctioneers, Leytonstone. The whole of the valuable Nursery Stock will be submitted to public competition by Auction about the third week in October.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. J. KING begs to inform the public that he is instructed to sell by Auction on the premises, Acre Lane, Brixton, on Monday, 17th June, at 10, by order of Mr. DAWSON, a COLLECTION OF CHOICE PLANTS, viz.:—Camellias, Ericas, Epacris, Barrones, Serulata, Oleanders, Azaleas, Cacti, Crowea, Eucalymus, Daphne, Polygalea, and a variety of other Plants. May be viewed, and Catalogues had on the premises, at Mr. CLERK'S, Seedsman, Bishopsgate Street, and of the Auctioneer, Hackney Road.

SALE OF A SPLENDID COLLECTION OF HOTHOUSE, GREENHOUSE, AND OTHER PLANTS.

MR. FISHER respectfully announces that he is directed by Mr. WM. LOBB, to Sell by Auction, on Wednesday and Thursday, the 19th and 20th days of June, at the Nursery Grounds, Broughton-lane, Lower Broughton, in consequence of his Removing to Broughton Park, Higher Broughton, the whole of his excellent COLLECTION OF PLANTS, consisting of fine specimens of Geraniums, a splendid collection of Fuchsias, Camellias, Ericas, Achimenes, Calceolarias, Cinerarias, Petunias, Verbenas, Chrysanthemums, Roses, Pentstemons, Carnations and Picotees in Pots; about 300 Dahlias, of the best varieties; two Beds of Tulips, and about 600 choice Pansies, all in beautiful condition.

May be viewed six days prior to the sale, and Catalogues had on the Premises or from the Auctioneer, 17, Princess-street. Sale to commence each day at eleven o'clock. Manchester, June 7, 1844.

TO FLORISTS, &c.

FOR SALE, by Private Contract, at a great sacrifice, (for the benefit of the Creditors of John Birch, late of Oxford), a CHOICE BED of TULIPS, consisting of 46 rows, to be taken up by the Purchaser or his Agent.—For Catalogue and price apply to Mr. HOBBS, 23 St. Giles's-street, Oxford.

FARM TO LET, situate in the parish of Great Chart, in the county of Kent, and about three miles from the Dover Railway station at Ashford, consisting of 99 A. 3 R. 19 P., viz.:—

		A.	R.	P.
House, Garden, &c.		1	0	20
Pasture		32	0	0
Wood		1	2	0
Arable		60	2	2
Hops		4	1	30
Outbounds		99	3	12
Inbounds		60	2	0

The Farm is well supplied with buildings. The Landlord finds rough materials, and pays half the expense of workmanship, for Repairs.

Rent, 98l.; Tithe Commutation, 28l. Total, 126l.

No person need apply who has not sufficient capital to cultivate the land well and employ labourers. References required.—Apply to Mr. RICHARD GREENHILL, Ashford.

FARM TO BE LET on LEASE—110 acres—in the County of Wilts, and within a few miles of the City of Bath. It is in the highest state of cultivation, with luxuriant standing Crops of Wheat, Barley, Beans, and Clover, which may be taken at a Valuation, and entered upon immediately.

The Farm has every modern Agricultural improvement, and is adapted for Farming on scientific principles. Fleming Ox-stalls, Sheep-fatting Sheds, Lambing Shillings and Barton, Liquid-manure Tanks, and every other accommodation that can be required for complete Farming. Extensive free-stone Farm-buildings, &c. &c. It consists of about 60 acres of Meadow and Pasture, and about 44 acres of Arable, and is situated in a luxuriant valley, through which a rapid brook passes.

In addition to the above, another Farm of 200 acres, on the hill, and adjoining to it (principally arable) may be had next year, when the present Lease expires.

The Farms are well situated, in the County of Wilts, and within five miles of Bath, in the neighbourhood of Railways, Canals, good Turnpike-roads, and Markets.

No Tenant will be accepted who cannot command good capital.

Apply to Mr. THOS. EVANS, Estate Agent, &c. No. 46, Milsom-street, Bath; or (Thursdays) No. 3, Bridge-street, Bristol.

TO BE LET, a GARDEN & COTTAGE.—Kitchen-Garden, partially cropped, full of Apple, Pear, and Plum-trees, of the best sorts; well covered with Peach-trees; a single room COTTAGE, with Fire-place; Fowl-sties, Tool-house, &c.; with or without about Five Acres of Meadow, situate in the Harrow-road. No Cellars. For a Gardener, employment for two or three months each Summer, the Fruit can be given in the grounds adjoining. For terms and order to view apply at 8, John-street.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN.—The Second Meeting will take place on Saturday the 15th of June; subjects for Exhibition must be at the Office on Friday the 14th, or at the Garden before 4 past 8 o'clock, A.M., on the day of Exhibition.

Exhibitors will be provided with a printed form in which they will state, for the information of the Judges, whether their plants, &c. have been shown previously during this season.

The gates will be opened at One P.M. Tickets are issued to Fellows at this Office, price 5s. each; or at the Garden, in the afternoon of the days of Exhibition, at 7s. 6d. each; but only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent Street on the day of Exhibition.—21, Regent Street.

The Gardeners' Chronicle.

SATURDAY, JUNE 8, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, June 12 . Society of Arts . . . . 8 P.M.
Saturday, June 15 . Linnean . . . . 8 P.M.
Wednesday, June 19 . Microscopical . . . . 8 P.M.

COUNTRY SHOW.—Tuesday, June 11.—Gardeners' Benevolent Institution.

The Tulip Season is now rapidly drawing to a close, although there are collections in Lancashire, Yorkshire, and the northern parts of England, where the bloom is still prolonged. The period of blooming has been singularly propitious. Much less damage than usual has been done by either frost or hailstorms; the flowers have consequently been exhibited in fine condition—and though in many beds a large quantity of bulbs have not flowered, still, on the whole, our accounts from various parts of the country are satisfactory.

We allude to Tulips at this time, for the sake of noticing the sad confusion that has arisen among the new varieties constantly breaking into colour. For many years past great quantities of Breeders have been raised, and in many instances distributed over the country, without even a number being attached to them. The consequence is, that everybody who has one of these in fine character considers himself entitled to name it: such a bulb, so named, in the course of time gets, often at a serious cost, into the collections of buyers, who, after watching the bloom through its progressive stages of growth with intense anxiety, have the inexpressible mortification to find that they have one or two similar varieties, broken from Breeders already in their possession.

That one cannot have too much of a good thing does not justify the system of letting out nameless flowers; and it would be far better if the raisers would name each really good Breeder before they part with it. They would then get that credit of their own flower which they deserve, for it would retain its name if broken in fine character; on the other hand, if not worth growing when come into colour, both the name and bulb would be consigned to oblivion. This plan has been adopted by some growers in both the North and South; and if the far-famed Polyphemus had been named when its good qualities as a Breeder were first developed, we should not now be perplexed with such a string of "aliases."

We allude to this flower as a case in point, and there are numbers of others in a similar predicament, with from two to half-a-dozen names each. We remember a fine rose Breeder raised by Mr. Dixon, of Manchester, which, before he parted with, he styled "Arlette." It is now in the collections of fifty different cultivators, has been broke into colour by the majority of them, is known by no other name, and Arlette is Arlette still. On the other hand, we have purchased bulbs of a florist in the midland counties, known as a successful raiser of seedling Tulips, who when they first flowered numbered them, up to about two hundred and seventy varieties, but then as the stock increased discontinued doing so, and now his Breeders, breaking into colour in all directions, are obtaining fresh names in each locality, and will furnish as inextricable a mass of confusion to the midland as Clark's varieties do to the southern growers. That this state of things is lamentable enough will be allowed on all hands; but the worst of it is, that every season the maze gets more intricate. If, however, these suggestions are well received, they would in a great measure remedy the inconvenience in future. That some plan of the kind should be adopted is not less important to the grower than the purchaser, for there are hundreds of thousands of seedlings coming forward in this kingdom, many of which in the Breeder state cannot be distinguished.

Now that the standard of perfection is well known, and is acted on, even in remote localities, we trust that all stained cups, and varieties with ill-formed petals, will be thrown aside, along with all those varieties which have so long retained a place in collections, although they have such defects. Having lately officiated as corner in various parts of the country, we have had the opportunity of observing how rapid an improvement is taking place in public opinion in this particular, and how generally the correct principles of estimating the properties of a flower are appreciated by the whole body of florists. Growers will save themselves an immensity of trouble by bearing this in mind. For it is a terrible waste of time, trouble, and garden-room, to say nothing of the mortification of it, to break a seedling Breeder, with extra fine flame or feather, and then to find that it is worthless, in consequence of having "prick-eared" petals, a foul cup, or some other defect, which cannot now be allowed in a first-rate flower. We have lately witnessed several instances where seedlings (Feathered Byblomens) have, to all outward appearance, been superb—the cup fine in shape, the white pure as snow, the feathering confined to the edge, and the breadth of the marking on Dickson's Trip to Cambridge Picotee, and of a shining jetty black; but, to our own sorrow, and the mortification of the raiser, the filaments of the authers were as black as ink, and on examining the Breeder the same defect was observable. Had these flowers, after ten years' culture (which is the time, on an average, from sowing the seed to breaking into colour), been of very worthless, undecided character, the disappointment would not have been so great; but their being, as it were, within a hair's-breadth of the mark, and only cast for what, in some people's estimation, would be a trifling blemish, proves the necessity of adhering to first principles in the outset, by destroying, as soon as they bloom, all Breeders which do not come up to the standard.—*W.*

We have before us an official report, by Mr. Griffith, on the state of the Botanic Garden, Calcutta, in 1843, with a complete list of the plants then actually existing in the garden, and of the library attached to it. Considering the reputation enjoyed by this great establishment, the liberal manner in which the East India Company has maintained it, and the glowing terms in which it was spoken of in 1823, by Bishop Heber, who described it as not only a curious but a picturesque and most beautiful scene, which more perfectly answers to Milton's idea of Paradise, than anything which he ever saw *, we were certainly not prepared for such an account of its present condition as we find in Mr. Griffith's statement.

He describes it as having no proper fence, but being accessible from all quarters; as wanting in methodical arrangement; as laid out partly in landscape style, and partly in an old and obsolete artificial style; as being choked with trees, many of them mutilated and some half-blown down; and as having an immense extent of borders which "are neither flower-borders nor shrubberies." The tickets to the few plants which are named, are described as being in Bengalee, intelligible to nobody but the clerk who wrote them, so that they are useless to the students of the Medical College in their weekly visits. Mr. Griffith states that (in Dr. Wallich's absence) the only person in the garden acquainted with the names of the plants is Buxoo, a head Malee—a person of abilities and extraordinary memory; but if any accident were to happen to him no evidence of the contents of the garden would remain. Moreover, the seeds for distribution, and the plants in the nurseries, are said not to correspond in names with those used by Mr. Buxoo; and, finally, it is reported that the collections do not contain above 250 species more than are mentioned in the catalogue published by Dr. Roxburgh 29 years ago. In another place we find the number of species contained in the garden set down at 3500 (p. 108).

This is certainly, if not too highly coloured, a melancholy picture of the decrepitude of a noble institution; it is some satisfaction, however, to know that vigorous measures have been already taken by the Government of India to renovate it. The official publication of Mr. Griffith's report indicates the intention of adopting at least the most essential of the measures of reform which he advocates; and our private correspondence informs us that very considerable improvements have already been introduced.

We learn that a garden on the natural system is preparing; that the beds for cuttings are rearranged and repaired with brick edgings and sand, and that glazed frames have been constructed for the shelter of those tender seedlings which perish during the cold season. A Teak plantation, described in the report (p. 109) as an entire failure, which has been felled with the exception of a few fine specimens, has produced the sum of 4000 rupees, which it is hoped will be applied to the construction of glass-houses, walls for Grapes, and other useful or ornamental buildings. In short, what with the reformation made, and the improvements contemplated, we understand that the whole features of the garden will be changed, and that in another year it will once more resemble the Paradise that delighted Bishop Heber.

We hope to be able, from time to time, to acquaint our readers with what is going on in the Calcutta Garden, which it is to be hoped will receive from Mr. Griffith's report as much advantage as has accrued to Kew from a similar investigation of the management of that institution some years since. Kew has arisen from its slumber with more energy and enterprise than ever. May Calcutta do the same!

* Indian Journal, Murray's Colonial Edition, p. 40.

REMARKS ON SAVING ROSE SEED, AND RAISING SEEDLINGS.

The season is fast approaching when the English Roseries will again present a scene of beauty, and many new and improved varieties of this favourite flower will doubtless meet the gaze of those amateurs who have recently improved their collections, or who may be disposed to visit those of more enthusiastic cultivators. In viewing these continual improvements, the result of continental skill, the question may probably have arisen in the minds of many—How is it that the raising of Roses from seed has hitherto engaged but little the attention of English florists? It is not unfrequently said, that the climate of England is not suitable for this branch of culture, in consequence of the double varieties scarcely ever perfecting their seed here. It may appear that if we can only save seed from the least double varieties—fulness being an essential qualification of a good Rose—we cannot reasonably expect any great measure of success. That our climate is less favourable for saving seed than that of the Continent, is readily admitted; but may we be allowed to ask, if that difference is sufficient to warrant us in concluding that our endeavours would not be reasonably rewarded? Practically speaking we may presume not; for the Rosa Blairii, No. 1 and No. 2, George the Fourth, and numerous others we might mention, are of English origin. But few very double varieties seed here it is true; and this may also be said of some parts where many of our finest Roses were originated. Some of our best and latest new Roses have been produced from seed gathered from hybrids—Athelin and Celine—two varieties which seed abundantly here even in unfavourable seasons; and it is from these have sprung a portion of that beautiful class termed Hybrid Perpetuals. Presuming, then, there are good reasons to believe that varieties of standard merit may be raised here, let us mention a few kinds which seed freely in England, and appear well suited for female parents. First among the hybrid Chinese are—Athelin and Celine, Ne Plus Ultra, Duke of Devonshire, Chatelain, Princess Augusta, Henri Barbet, Globe White Hip, General Allard, Aurora, and others. These might be crossed with some of the freest-blooming Damask Perpetual or Bourbon Roses, to endeavour to obtain an increase of, and an improvement among the hardy autumnal Roses. The Ayrshire and Sempervirens, among which there is a paucity of high-coloured flowers, might be fertilised with the farina of some dark varieties, selected from those sections which approach nearest to them in natural character. Here Ruga, Splendens, and Leopoldine d'Orleans, might form the female parents. Among the Moss, the single Crimson, Du Luxembourg, and Eclatante, occasionally seed. Among the Briers, the Double Yellow and Harrisonii. Among the Bourbons, the Old or de Lisle, Augustine Lelieur, Dubourg, Gloire de Rosaménes, Emile Courtier, and Bouquet de Flore. Among the Chinese, Camellia blanc, Fabvier, Thérèse Stravins, Alba, Belle Elvire, Henri Cinque, and Madame Bureau. Among the Tea-scented, Odorata, Jaune, Hamon, Lyonnais, Hardy, Lady Granville, Caroline, Goubault, Belle Allemande, and Bardon. Many of the least-double Gallica Roses also seed freely. These, and many others, which, by seeding, have doubtless at some time struck their possessors, may be taken as female parents, and crossed with whatever varieties the fancy of the operator may suggest. How far the experiment of crossing the different sections may be carried into effect, it is not easy to determine; but the peculiarity of certain features existing in some varieties, and readily traceable to their parents, leads us to think the scene of action will not be found very limited.

As the female parent will in many cases be but semi-double, we should endeavour to counteract the probable results of this, by crossing with farina gathered from the most double varieties that we can collect it from. The plants intended to seed should be selected in a good state of growth, and never allowed to suffer from drought. Where they bloom in trusses, the backward flower-buds should be cut out, leaving not more than six of the plumpest and most perfect buds on one flower-stalk. We are no doubt indebted to accidental crossing, in a great measure, for the various novelties and improvements in the Rose tribe. Artificial crossing, however, appears the only probable method of obtaining an end in view; and although this is at first somewhat tedious, it will be found to increase in interest as we become familiar with its application. Just as the flowers intended to be crossed are expanding, it will be necessary to remove the anthers, or they will burst, and the flower thus become self-impregnated. They may be removed early in the day, with a small pair of scissors; and in a sunny hour, flowers should be gathered from the variety we intend to cross with, and the pollen dusted on the stigma of the flowers of the opposite parent. A truss of flowers may be crossed with one kind, and a gauze bag drawn over each truss when the operation is completed, to prevent the perversion of our designs by the countless millions which swarm in the air at this season of the year. The dusting of the pollen may be repeated once or twice, to make our purpose sure. If we wish to know the results of our crossing, and whence the seedlings spring, leaden numbers may be attached to each flower-stalk, and corresponding ones with the names of the parents affixed, be written in a book. Probably after crossing,

the seeds have seldom been kept separate, on account of the trouble it would occasion; nevertheless, raisers have been able, by tracing a little, and guessing a great deal, to acquaint us with the progenitors of their seedlings. But what might be known for certainty, thus often becomes a matter of speculation.

In autumn, as soon as the seed is ripe, it should be gathered and placed with the number in the gauze-bags previously used, and left in the seed-vessel till required for sowing. We may sow the seeds as soon as ripe, or, in spring, when some will germinate immediately; but the greater part will not until the year following. If the seed be kept a twelvemonth before sowing, it should be buried in the seed-vessels in boxes of sand or light earth kept moist, and not exposed to extremes of temperature. It may be sown either in seed-pans, in a frame, or in the open border; if the latter, an eastern exposure is most favourable, and, in all cases, the soil in which it is sown should be rich and light. We should sow thin, that the plants when growing may not crowd each other and become weak. The seed should not be sown too deep, and after sowing, the surface of the soil may be strewn with a light covering of Moss; as the seeds break through, this may be removed, and protection afforded against slugs and birds. It will also be advisable to shade and water them, and where too thick to transplant the weakest at an early stage of growth. Transplanting should, however, be avoided if possible, as it ordinarily retards the period of flowering. Some of the seedling Indicas will flower in the autumn of the same year, but for the mass we must wait one or two subsequent seasons. As winter approaches, some plan must be devised to protect them from frost, as the plants, in general being young, are more than usually tender. One advantage gained by sowing in pans or in a frame is, the efficient mode in which we can accomplish this, by removing the former to a pit or greenhouse, and affording protection to the latter in the usual manner. When sown in the border, they must be covered with Moss, or some protecting substance, to shield them from the frost.—*W. Paul, Nurseries, Cheshunt, Herts.*

THE CULTIVATION OF CACTI.

By L. ZAPF, Gardener, Leipsig.

THE treatment of Cacti during summer is simple and generally known. With sufficient water, not sparing it, as generally happens, and free access of air, they will take care of themselves, with the exception of unrooted offsets, Melocacti, and some Mammillarias. They thrive well in summer kept in the open air, without any covering, if they are allowed to have plenty of water. With this treatment there is little danger of the plants being attacked by red spider or scale. But should spider appear, I know of no better means of getting rid of it than by sprinkling the plants thickly with flowers of sulphur; and an abundant washing with clean water with a syringe helps to destroy the scale. The treatment of Cacti during winter is very different from that of summer. In their native country the dry time of year has the same effect upon those plants as winter has on ours, namely, it produces a state of rest. In this state, if they are to remain in health, and flower the following summer, they should not be removed to a cold greenhouse, for in their native country they do not arrive at maturity through cold, but by the dryness of their situation. Indeed, the experience of many years has taught me that they thrive well if they are kept in a hot-house.

When Cacti are removed in autumn from the open air into a hot-house, do not leave off watering them immediately, because that would interrupt vegetation too suddenly; but continue to water them regularly until nearly the end of the year, only not so abundantly as before, and stop it by degrees until the end of December, when it must be discontinued altogether. From this time to the period when the plants can be again placed in the open air they need no water, not even if they should begin to dry up or to shrivel, for there is no danger of their being injured by getting into that state; but great disadvantage would arise from watering them, and many specimens might be lost. No doubt when watering is discontinued roots are apt to die off, because being less succulent than the plant itself they soon lose their moisture, which cannot be replaced out of the dry earth. This, however, does not harm the plants in a dry state, but at a later period, when watering is renewed, it then may have disadvantageous consequences, for it is then found that the dead and withered roots easily decay, and this communicates itself by degrees to the centre of the plant, which then speedily perishes. It is, therefore, indispensable that the plants should be examined in order to see whether rottenness is beginning; for if this is discovered too late there is no remedy, and the decay will extend, and destroy the plants.

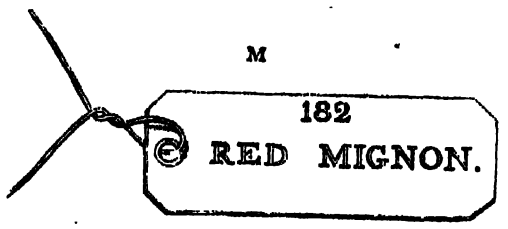
There is no great difficulty in the propagation of Cacti. However, there are many, especially among the better and rarer sorts, that are not easily propagated. If offsets do not in a short time strike out roots, the reason is because the cut surface is woody, and many months, and even years, may elapse before they again form new roots. I have succeeded in propagating Pilocereus senilis (Lemaire), Cereus Uradypus (Lehm), and C. senilis (De Cand.), in the following manner, by offsets: viz., I filled a pot with earth, and put it into a larger one, so that the edge of the outer pot stood nearly an inch above the inner one. The large pot, having the hole at the bottom stopped up, was filled with water until it was level with the earth in the inner pot; in this earth the offsets were planted; the whole was then covered with a piece of glass, and exposed to the rays of the sun. It is necessary to look after it frequently, in order to renew the water, if it should evaporate too much. In this way offsets of these made roots very soon. This treatment can also be applied with favourable consequences to the offsets of other Cacti, whose cut surface is much withered. It is necessary to keep the offsets continually damp; and in order to accomplish this they should be put into pots from 5 to 10 inches in diameter; and after every watering, which should be repeated as often as necessary, the pot should be covered with a piece of glass. The more common kinds propagate easily of themselves, and do not require much trouble or attention.

These observations are the result of 10 years' experience in the rich collection of Cacti belonging to Mr. Kob, in Leipsig, which contains, with the new and undescribed forms, about 450 sorts; amongst them are 150 Mammillarias, 90 Echinocacti, and a part of the most handsome Cerei.—*Abstracted from the Gartenzeitung.*

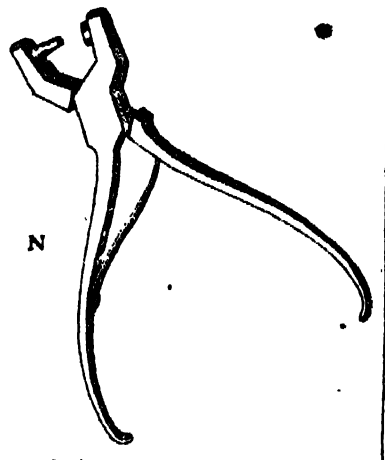
ROSE GARDEN.—No. XI.

(*Continued from page 357.*)

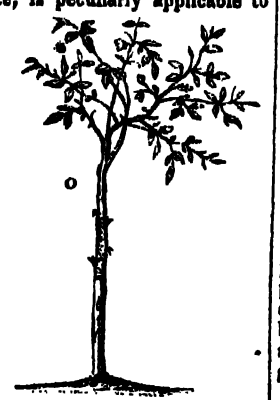
Labelling.—As each tree is budded, a paper or parchment should be fastened upon it, to mark the species;



and when the whole are finished, if they are in lines, the first and last tree of the lines may be marked as follows; if separate, each tree should be so treated:—Procure from the plumber a sheet of lead, the thickness of a sixpence or a shilling; cut it into long squares, upon which stamp the name of the species, and affix the label to the plant by means of a small piece of *copper* wire, which should not be twisted tight round the stock, but half or a whole inch left for it to swell out in. The punch to cut the hole in the label should be a shoe-maker's nipping-punch; and if the lead adheres to it, a little oil should be used—the thinner the lead the less likely to stick. The letters are procurable at any tool-shop, and should be small ones, as in the engraving. A pair of small nippers and pincers should be used to twist the wire, which may be cut into suitable lengths beforehand.



Body-Budding.—Budding upon the body, instead of upon the shoot of the tree, is peculiarly applicable to young and clean stocks, with round fruit, as their bark is less hard. It frequently succeeds half way down the stock, in preference to the upper part, (i. e. below all the shoots better than between them); and is advantageous when the shoots are not large enough to bud upon, or when they cannot be used without running the chance of depriving the tree of its support, which is always the case when they are not very healthy or strong, in which case the tree should be budded low down; and it has this advantage also, that it leaves but one wound to heal instead of two, and that closes over better, from the tendency of the new shoot to rise straight up and cover the injury; whereas, in shoot-budding, the wound is below the bud. It is also useful in case there be but one shoot to work upon, when another may be inserted in the body, opposed to that in the shoot.



In nurseries, where it is desirable to have every sort of Rose, and of every height, the small species of Briar, which is quite green at the age it is used, is planted in long rows, quite free, unsupported, and left almost to itself, entered in the ground with all the upper branches cut off similar to the others, and of a much greater length than desirable to use. These small briars push vigorously at the top; they are left to form what heads they please; and in July the buds desirable are entered, (with great care, for, being pithy, too deep an incision would cause them to break,) with buds of the most delicate sort, any distance desired below the head; and in March these heads are cut off an inch above the bud, the plant being young and growing, and the sap well fitted to the plant to spring from the bud. They generally make more appearance the first season, in proportion to their size, than large ones; and almost always cover their wounds better, but they do not readily attain the same size.

Home Correspondence.

Mexican Conifers.—The Leading Article in the *Chronicle* of May 18th has suggested to me that possibly the following evidence, deduced from observations in the Bicton (near Sidmouth) Arboretum, may not be uninteresting. The results are in some cases different from your own conclusions, but, taking the subject in a general way, are very similar. I have found Pinus cocarpa to survive two winters without injury, merely protected by a large sea-kale pot by night, and removed in the day, except in case of sharp frosts and cutting winds. P. leiophylla, is one of the hardiest, having stood four years without the slightest protection, and has not been the least injured; it now measures 2 feet in height. P. pseudo-strobus was, by the early frosts of last autumn, much injured, and, to complete its destruction, was eaten off by deer and totally killed; I have again planted one for another trial. P. Teocote is quite hardy, having stood three winters unprotected; this appears to be a fast grower, making from 1½ ft. to 2 ft. in its young state, in the course of a season. P. Macrophylla has been planted two years, and has stood the last winter unprotected and uninjured. P. Devoniana has not been sufficiently proved to draw any conclusions as to its hardiness, it having been planted one winter, and covered by Croggon's Asphalte. P. Russelliana, apulcensis, and montezumæ, are equally hardy with macrophylla. P. patula is not in any respect damaged, although it has had no protection for two years, and is now making as vigorous shoots as any in the Arboretum: it stands 5 ft. high. P. Hartwegii would appear to be a Pinus of great promise, taking both its beauty and the fact that it proves hardy in most places; indeed, as far as my knowledge of it extends, I should be almost inclined to say it would rival the Scotch Pine in hardiness. P. Ayacahuite was totally destroyed by the early frosts of last autumn. P. Llaveana has not been fairly tried. Of the beautiful Abies religiosa, if the hardiness could be established beyond a doubt, we might be truly glad. I am quite of opinion that if planted in a rather poor and dry soil, it would so progress as to ripen its wood thoroughly, and, consequently, be so circumstanced as to defy the rigour of our ordinary winters; the plant here is so situated, and from present appearances leads me to believe, if left exposed next winter, would bear it with indifference; the protection of a sea-kale pot was afforded it last winter, which was quite sufficient, as the plant is looking perfectly healthy. Cupressus thurifera and Juniperus flaccida, though placed under similar circumstances, differ a little in their degrees of hardiness. The first is quite hardy, if four years' exposure without the slighest protection warrants the assertion. The latter (perhaps from its lower situation compared with the Pinuses, and consequent liability to earlier and later frosts) is a little cut, but not so as to disfigure the plant. The soil on which these are planted is a dry sandy loam, on a substratum of red sand, sloping to the south-east, and although situated rather low is exposed to every wind, excepting one part, which is a little sheltered from due north. This situation will undoubtedly suit Coniferæ in general remarkably well, as may be inferred from the vigorous growth of some established plants, amongst which may be mentioned Pinus insignis, which has been planted five years and is now 20 ft. in height, and particularly handsome; four cones are showing on its leader. Abies Douglasii, 11 ft.; A. Menziesii, 6 ft.; Picea Cephalonica, 8 ft.—this is undoubtedly one of the finest plants of its kind in this country; and Cedrus deodara, 10 ft. in height. All the species of Coniferæ procurable have been planted here, and are making great progress. This will form an interesting part of the whole collection of trees and shrubs, and every successive year will add greatly to its beauty.—*N. Mitchell, the Arboretum, Bicton.*——Sir Charles Lemon informs us that at Carclew, near Penrhyn, Abies religiosa proves perfectly hardy. On the 22d of May its buds were only pushing off their winter covering, and since there are no autumn frosts in Cornwall, as there are in Middlesex, this beautiful species does not, in the former county, suffer at all from growing late. It is even slower in spring growth than A. Morinda, or Webbiana.

Gooseberry Caterpillar.—This year, owing to the long-continued dry winds, has been particulary favourable to the production of myriads of the Abraxas Grossulariata (the Gooseberry Caterpillar and Currant Moth), which in all parts of the country appears to be more than usually numerous. In general, as yet (25th May), the caterpillars are in the egg state, but in early sheltered places they are transformed into the caterpillar, and are nearly approaching the chrysalis state, so that by the time they are in that condition they are scattered over a considerable extent of the bush, stripping it entirely of its summer foliage, to the utter destruction of the fruit. Now, while all this is going on, very often the owner, much to his loss and disappointment, allows these depredators to carry on the work of destruction, enjoying themselves at his expense, while he inquires of every one if they know of any cure for the caterpillar? But, in general, he is made but little wiser. To such I would offer a few remarks on the safest method of getting rid of these unwelcome visitors. As the eggs of the Gooseberry Moth are laid in lines on the back of the leaves, they are easily destroyed on the bush while in that state, without injuring either the bush or the fruit; and, as there may be a

succession of young larvæ for a considerable length of time, we should need to repeat the cure every other week, which would perhaps be troublesome, as well as expensive. From experience, I have found hand-picking the surest plan in the end, if judiciously done. My plan is this:—I go round and examine the centre or heart of the bush; by this view of the bush you can easily perceive the leaves that are attacked by caterpillars, as they will be seen perforated with small holes, as if pierced with a pin. Yet after these are all off the bush, you have not finished your labour, as there may be a great number of leaves with the caterpillar in the ovum or egg state in hundreds on the back of these leaves, ready to sally forth in a few days and devour the foliage; therefore you must go round and lift up the branches one by one, and look upward, on the back of the largest and most detached foliage; you may there see the eggs laid in great numbers on the back of the leaves. If one single leaf in this state is pulled off, what a saving of labour and vexation is gained! Besides, if the caterpillars had been left undisturbed, perhaps for a day or two, you would have had to seek them throughout the whole, or a considerable portion of the bush. As Necessity is frequently the mother of Invention, I lately fell on a plan which facilitates the work a great deal; the plan is as simple as it is successful, and although it may be thought rather a novel method, yet if one once becomes accustomed to it, it will be found of great service in getting a proper view of many parts of the bush that could not be got at otherwise:—Take a common hand-mirror, or looking-glass, and with one hand hold it under the leaves of the bush, near the ground, and move it in different directions under the branches, and by looking into the glass you will get a view of the back of the leaves on all the bush, where you would not otherwise see under them; then, while looking into the glass, you will see the eggs on the back of the leaves, while by your eye you can direct your other hand to the proper leaf; and by picking off the caterpillars on the leaves in this state, what a world of future labour is saved! as I have frequently counted from 80 to 150 on the back of a single leaf.—*A. Walker, Muiryfold Grange, Banffshire.*

The Weather.—Many years ago, by constant observation, for almost forty years past, that I have kept a weather journal, I have noticed in settled frosty winters, and in dry winds, that there is a more humid cloudy atmosphere on the 4th and 5th days after the new and full moon; and though subject to various modifying causes connected with the phenomena of the weather, I have still been able to trace the existence of more vapours after the subsidence of the great tide of the full and change of the moon. The peculiarity of the present season had induced me, the last change and full moon, to take particular notice; and I predicted, with success, the increased moisture of the air, and sent a communication, signed "W." to the editor of the *Worcester Journal*, a fortnight ago, and again in the publication of this week,* and I should like to hear the opinion of learned Meteorologists on this matter. The surface of the Great tank, the Atlantic Ocean, as Mr. Kirwan has said, is the great arbiter of our seasons, yet no Meteorological Society takes notice of it! From the information I have received of unusual rains in Andalusia and along the coast of Algiers, I attribute to them the long continuance of the N.E. winds in England and France. When the Duke of Wellington was in Spain, about 1809, when his dispatches mentioned the bad state of the roads, owing to rains, I noticed we had northerly winds in England; and I have afterwards recorded in my weather journal, a current of air towards any place where there has been a great precipitation of rain or snow.—*John Williams.*

Pine Apples.—Various experiments have led me to believe that partially intercepting the rays of the sun for a few hours in the middle of very bright days, and occasionally dewing the plants in fruit in the early stages of their growth, does not injuriously affect the flavour of the fruit, provided that water is entirely withheld three weeks previous to the time that the fruit changes colour. The Providence, Enville, and Antigua I never water nor shade six weeks after they have bloomed, and such as the Montserrat, Jamaica, &c., I do not water after seven or eight weeks, as these sorts are longer in ripening. So rapid has been the growth of the three former varieties, that the fruit frequently measured from 18 to 21 inches round in that time, and increased in weight from 16 to 20 ounces per week. I have hitherto made it my study by artificial means to surpass a tropical climate, by imitating a moist and dry atmosphere in the same house, and at the same season. This I accomplish by so arranging the plants that I can sprinkle and shade those that are growing, whilst those that are maturing their fruit have the benefit of all the light and sun, and thus I effect one of the most important objects of Pine culture, namely, encouraging rapid growth in one set of plants, whilst others are ripening their fruit. By thus deviating from a natural climate, I manage to cut at least eleven months out of the twelve, whereas, if I was to imitate a tropical climate, my fruit would be all produced at one particular season. I have tasted a great number of my Pines every season, and have therefore had an opportunity of attesting the results of my experiments. Some seasons I have never shaded nor sprinkled those in fruit, whilst in other seasons both shading and sprinkling were practised, and the fruit in both cases were equally delicious; therefore my opinion is that the flavour does not so much depend on a scorching sun as on the health and vigour of the plant. In this opinion I am borne out by the fact that my largest fruit were invariably the most juicy and delicious in flavour. I may further state, that since I commenced my present system, the flavour of the fruit has been more than ever applauded; and I imagine that the cause of this superiority in flavour arises from the increase of the minute fibres, for the more minute and numerous those agents of absorption are, the more abundantly will the plant be supplied with wholesome food, which will of course aid the swelling of the fruit and lessen the size of the crown. I have cut fruit upwards of 6lbs. with tops not more than 3 inches long. While I have been at Thornfield, I have been so unfortunate as to burn the roots twice during the last six years, owing to the valves of the heating apparatus getting out of repair, and any experienced Pine-grower will guess the consequence, namely, small fruit with immense tops, and of course inferior in flavour. Fruit of this description may be observed at our Manchester Horticultural Exhibitions, and also in the fruiterers' windows: they resemble men's heads with baby faces, particularly the Montserrats, which rarely exceed 3lbs. in that locality. The readers of the *Chronicle* will thus see how it is that I am considered an enemy to gardeners in that neighbourhood, because in publishing my book their ignorance and indolence are exposed by the statement there made, viz., that I have grown the Montserrat from 6 to 7lbs. and upwards. In conclusion, I beg to state that I shall ever feel grateful for the trouble that has been taken in investigating the truth of the affair, and thereby preserving my reputation and character.—*Joseph Hamilton.*

Morphology.—One of the most conclusive proofs of the truth of the doctrine of Morphology, which has ever come under my notice, occurred here last season. Some small branches on an Epacris nivalis flowered to the very extreme point, and in three different instances the pistil or female organ of the most terminal flower reverted into a branch, and for months afterwards the cup of the flower might be seen encircling the young branch. These branches, or if you please, elongated pistils, remained fresh until the branches were gathered, at which time they were from four to ten inches long; and I believe that had they been left upon the plant, they would have continued fresh until the present time. Now, although anti-morphologists admit, that by a proper modification of external agencies, it is in the power of the cultivator to make a plant produce either flowers or branches, yet they contend that when the flower buds are once formed, they never revert into branches. Here, however, is a proof of the contrary: and as the same plant has produced a number of similar examples this season, some of which I forward with this communication, I shall be proud, for the furtherence of science, to allow any one who may think proper to call at this place, to examine for himself as to the truth of this statement. On one of the specimens sent are two flowers with the young branches, each about an inch long, and on the other several branches are just peeping from the flowers, and in others some of the pistils are in the transition state, with the first leaves of the future branch just perceptible. Another singular proof of the truth of Morphology came under my notice a few days back, on a plant of Fuchsia Venus Victrix, one branch of which was so transformed as to produce some of the flowers half leaves, and other leaves half flowers, with petals at the top of the stamens, and another at the top of the petals, and a number of flowers metamorphosed into one. Now if these things do not prove that leaves and flowers are one common organ, and that fruit are stunted branches, how does it come that the flowers of the Fuchsias were part leaves, and some of the leaves part flowers; and that, in the case of the Epacris, the very part that would have formed the fruit reverted into branches, of which I have now about twenty growing specimens upon the plant? There is no disease here, and the plant from which the specimens are taken is as healthy as a plant can be, and the flowers were in every respect perfectly formed before the metamorphosis took place. Can anti-morphologists explain this, not by mere assertion, or declamation, but by sound reasoning? If, as they assert, all things were created perfect, and if those who assert that all things proceed from "imperfection to perfection," are to be stigmatised as Atheists, what kind of persons must Florists be?—for they are not satisfied with the fair forms of Nature, but by hybridising and cross-breeding have brought into existence thousands of varieties in the vegetable kingdom, which most assuredly were not created when all things were "made perfect;" and more especially what an Infidel must that man be who, not content with finding fault, must e'en set up "standards of perfection," which Nature must approach before she can be perfect?—*W. P. Ayres.*

Whitney's Composition.—My experience of Whitney's Composition, and of the effect of covering wall-trees, very nearly agrees with that of your correspondent "Rambler." I did not find the composition go half as far as I was led to expect. I prepared with it one half of a frame, twelve feet long and six wide, dressing the other half with the composition recommended by "Devoniensis," at p. 301 of 1843, adding, however, one ounce more of resin and half an ounce of sugar of lead to the quantities he recommends. Both halves are equally transparent and equally waterproof; the only difference is in the expense, which is very greatly in favour of "Devoniensis." The fruit (Peaches and Nectarines) set abundantly and well, and is swelling favourably; but the leaves are blistered, though not more so than in ordinary seasons. I am much subject to it. I mean to apply the frames again to my trees next spring.—*Lignemont.*

Strawberry.—Observing a notice lately respecting ripe Strawberries gathered at Forton Cottage, Lancaster, on the 26th of May, I beg to say it will, to all appearance, be at least a fortnight before they are ripe in this vicinity, even in the most favoured situations (rubble-stone beds may be an exception). I may also observe, that having cultivated Myatt's British Queen from the first of its being let out, having at this time between one and two acres of that variety, I have now some single plants not two years old, with an average of 20, some 30 trusses of fruit on each plant, and all, even the smallest runners, producing fruit. I feel confident that, with proper culture, they are as prolific as any Strawberry grown, Prince Albert excepted.—*T., Manchester.*

Pea.—On the 7th of December, 1843, I sowed the Prince Albert Pea, Shilling's Early Grotto, and the Old Early May. The Albert was first ready for table. I gathered a good dish on the 20th of May, but the pods were small, with only three or four in a pod. Shilling's Early Grotto was next; it is by far the best, although five days later: it has a good pod, with five or six Peas in it. The Old Early May, which for cropping is preferable to either, was ready on the 28th of May; all the three varieties were sown under a south wall, and had the same treatment.—*Bath.*

Anecdote of a Tomtit.—About three weeks ago a tomtit built her nest in the post-office-box, where letters are hourly put in, and taken out twice a day. Three times was it taken out; the fourth time she was allowed to have her own way, and has now four young ones going out and in regularly at the hole where the letters are put in. The post-office stands close to the school in Frampton, the property of R. B. Sheridan, Esq., and is on the main road leading from Dorchester to Taunton.—*Wm. Brewis, gardener to R. B. Sheridan, Esq.*

Prolific Cowslips.—This season these have produced prodigious heads of full-blown flowers upon single stems. In Forton Cottage Garden I was induced to count the number of full-blown flower-pips upon two separate stems; upon one of them there were 108 pips, and on the other were 120 pips, and several of them were double pips, similar to the one here inclosed; and there has been one grown in the Rectory garden, at Standish, with 146 pips upon it; another, in the garden of Mr. Smith, of Preston, produced the surprising number of 158 pips. These numbers far exceed any I have ever met with before.—*Facile.*

Paper for Drying Plants.—I have had an opportunity of trying the new paper for drying specimens of plants, manufactured by Messrs. Bentall, of Halsted, and advertised at p. 293 of the *Gardeners' Chronicle*, and find it to be excellently suited for that purpose. It is well deserving of the attention of botanists who desire to possess well dried specimens, retaining the colour of their flowers and foliage.—*Charles C. Babington.* [We quite agree in this opinion. The paper is as good as possible.]

Bees and their Nightcaps.—I send a glass of honey in the comb, and beg the opinion of the Editor of the *Gardeners' Chronicle* as to its quality. The weight is six lbs. I also send with it a short account how it was procured. On the 14th of May, 1844, this glass of honey in the comb was taken from a hive of bees, from an apiary about 10 miles from London. I was induced to take it from observing, on the day previous, several drone bees flying about in front of the hive, rolling their eyes about; one in particular winked one or both eyes, which I took to signify that he meant to taste it. As all Entomologists know that the eye, in the bee tribe, is a fixture, this rolling their eye about who quite enough to raise my suspicion. This was seen through a Wrotham telescope. The peculiar flavour of this honey is easily accounted for, that is, if we readers of the *Chronicle* have not been misinformed. The bees have collected the honey from the flowers of the Polyanthus, Roses, Pinks, and Lilies—I forget which of the Lily tribe—perhaps the Lilies of the Valley. This can be known by referring to the catalogue of bee flowers furnished by "Apios." Another, and to me rather a remarkable thing is, that the honey was not collected by slave or factory bees; none of the bees work more

* "I long since came to a conclusion that there is an addition to the moist state of the air on the fourth and fifth days after each full and change of the moon, and that such addition of aqueous vapour often occasions rain, snow, or cloudiness on these days; but there are so many complicated processes instituted by the Great Author of all things, which have an influence on the atmosphere, that the above changes are subject to modification in various ways; and, without taking these into account, the addition of aqueous vapour on the days I have noticed may not be perceptible to a casual observer. I will give one instance: a S. or S.W. wind and damp atmosphere may prevail on the first, second, or third day after each change of the moon, and a N.E. set in on the fourth or fifth day; here it might be said there is no perceptible addition to the moisture; why? because the addition is in mixture with a drier atmosphere. I believe the frequent remarks I have made of moisture occurring on the days I have noticed to be caused by the subsidence of the atmospheric great aerial tides, which have been attracted by the moon's influence, and which accompany her path round the globe, where some portion of warm equatorial air, loaded with vapour from those regions, subsides and rolls down towards the more polar parts of the earth. Whether I may be right or not in my conjecture I have no doubt of the fact.—*W., May 22, 1844.*"

"I beg to draw to your recollection the conversation I had with you some days ago. You asked my opinion of the weather. Instantly I said I expected an addition of moisture to the atmosphere on the following Tuesday and Wednesday, being the fourth and fifth days after the full moon, but that I would not positively assert that it would produce rain. To test my predicted addition of vapour on the day I have named, I tried the dew-point on Monday, and found it at 42°; on Tuesday, it rose to 45°; and this morning to 50°. It produced a slight fall of rain about 6 A.M., but so slight that it soon dried up; otherwise, had the surface of bare land, turnpike-roads, &c. been thoroughly wetted. The dew-point would probably have been above 50°. The barometer fell last night from 29.70 to 29.50; but this last I consider, from long observation, a fair-weather point. Since 8 A.M. this morning, however, it has fallen to 29.56; and should it continue to fall below 29.50, I should then have little doubt of an abundant fall of rain.—*W., June 5, 1844.*"

them six hours a day (I hope soon to introduce them to Lord Ashley.) When I took the honey, half the bees were taking their naps and the officer bees were just relieving guard, so that very few knew it was gone; certainly only those that were wide awake. As a proof that I awoke some, you will find on the paper of the glass some thin waxen caps, such as bees ordinarily use for closing up their cells; but we must now believe them to be nightcaps. I do not recollect if the bees in the neighbourhood of Woolwich sleep in caps, but I am sure my bees do not sleep without caps; and in the confusion I had caused them, they had forgotten to put them away. Perhaps some correspondent will inform me whether they keep bees that sleep, and how, and when, and in what way—whether with their eyes open or shut. —*Mel.* [We and our honey-tasters, of whom several have been consulted, are of opinion that Mr. Mel's honey is perfection. No extract of Roses, Pinks, and Lilies could be better. Some of our apiarian friends will doubtless be curious to know what sort of citadel this six-pounder was taken from, and we hope Mr. Mel will tell us. Either Surrey or Cumberland might be proud of such a garrison.]

Bees.—Your correspondent "Apius," and the party with whom he has been arguing respecting the flowers resorted to by Bees, are, I have no doubt, both correct in their statements relative to the Polyanthus, the one maintaining that his Bees never touched these flowers, and the other that the inmates of his hives always resorted to them in the early part of the season. I am of opinion that there is a great variety of taste amongst the race of hive Bees in selecting the sources of obtaining nourishment for the support of life. In confirmation of this opinion, I may observe that I have a bed of Pansies, and another of Polyanthuses, commencing within one yard of the front of my hive, and although profusely covered with flowers, I never observed my Bees alight upon them for the purpose of collecting honey during the last or any part of the present season, the various species of the Humble Bee having been allowed to ravish their sweets undisturbed. On the 2d of May, from 5000 to 6000 Bees appearing in the side-box of my hive, with plenty of honey in the combs, and drones having become numerous amongst the Bees passing out and in, I thought I would endeavour to make an artificial swarm, by moving the side-box with its contents at night, and attaching it to an empty straw hive about three yards distant. I accordingly moved the box, and substituted an empty one to the parent hive; but the following morning, the Bees, with the exception of a few left as guards, returned to their original residence, and in the afternoon took possession of the empty side-box, the guards joining them in the evening. On the 4th of May the guards resumed their duty at the removed side-box, and in the afternoon the Bees commenced carrying propolis, and joined the side-box to the bottom-board, and if the cold north wind had not set in in the early part of the month I have every reason to believe my Bees would have swarmed in the usual manner, and taken possession of the residence I intended for them, which they may yet do when the weather becomes warmer. At present (May 28) the whole of my Bees have retired into the parent hive for warmth, although they have fine new combs formed this season, and a good supply of honey in their side-box. It is worthy of remark that, on the cold weather commencing, they extracted all the honey out of the combs in the removed side-box, and deposited it in their newly-furnished storehouse attached to the original hive. It was on the 3d and 4th of May, when the Bees on guard in the side-box were attacked by the Bees of a strange hive, and nobly repelled the invaders, killing upwards of 50 of their enemies, that I observed, when watching the movements of the strangers, that they searched my Pansies for honey (the Polyanthus having ceased flowering), and appeared as industrious and persevering on that flower as I have observed my Bees, when collecting their honey from the Crocuses, Columbines, and Canterbury Bells, and other favourite flowers of theirs growing in my garden; and I therefore naturally concluded that the Bees of particular hives are fond of and decidedly prefer particular flowers, and that both your correspondents might be fully justified in their observations regarding their respective industrious winged lassses.—*John Grant.*

Miscellaneous.—*R. A.*, a known correspondent states that, from a bed 5 feet wide and 14 feet 6 inches long, he cut 77 Cucumbers, between the 29th April and the 29th May, measuring in all 1173 inches in length. He remarks that the plants continue in good health, and promise to produce fruit through the whole season.

Societies.

HORTICULTURAL SOCIETY.

June 4.—Sir C. Lemon, Bart., M.P., in the chair. Charles E. Holmes, and S. Lowdell, Esq., were elected Fellows; and Dr. R. Wight, Dr. A. Gibson, Dr. H. J. Reinard, Dr. Riedel, Col. Sheil, Major Rawlinson, W. Griffith, Esq., and G. Gardner, Esq., corresponding members.—Among Orchidaceæ were some remarkable things.—Mr. Rollisson obtained a Knightian Medal for a very fine new Aerides, from Bombay, something like A. crispum, but with branched inflorescence, and many bright purple spots on the petals; it will be named A. maculosum.—A specimen of the rare and curious Oncidium concolor, from W. C. Alston, Esq., of Birmingham, received a Banksian Medal. This remarkable plant has fine yellow flowers, of considerable size, and modestly destitute of spots of any kind.—A good specimen of Oncidium pulvinatum was shown by Mr. A. Scott, gr. to Sir D. Dundas, Bart.—Finally, some glorious things came from Messrs. Lee[illegible], viz. the new Dendrobium Dalhousieanum, with the habit of D. calceolus, but with the labellum stained with a broad blotch of the richest velvety purple; a large mass of Cattleya Mossiæ, and the lovely Lælia majalis, that alpine species which, because it blooms in May on the Oaks of the Mexican highlands, bears among the flower-loving natives the name of *Flor de Mayo*; to these a Knightian Medal was assigned.—Some very remarkable Stove and Greenhouse Plants decorated the tables, foremost among which was Epacris miniata, a most lovely new shrub from Messrs. Loddiges, with rich vermilion flowers like those of E. grandiflora; it was of Van Diemen's Land (Tasmannian) origin, and received the Large Silver Medal. Rivals of this were to be found in some rare plants from the Royal Botanical Garden at Kew, to which, however, by the desire of Sir William Hooker, no Medals were assigned; they consisted of Thunbergia chrysops, a new species from Sierra Leone, with large flowers of the most intense purple, enlivened by a golden-yellow eye; it will be a treasure to gardeners, and beats all the other Thunbergias hollow. Another was the Franciscea hydrangeæformis, a valuable stove shrub, from Brazil, with heads of fragrant violet blossoms; a third was the charming Gloxinia (or rather Gesnera) tubiflora, with long white trumpet-shaped blossoms, the colour of the richest cream; the latter is one of the best of modern greenhouse plants. The old, but beautiful Alpinia nutans, with flowers like white and yellow shells, came from the garden of W. Everett, Esq., of Enfield. And Mr. Glendinning, of the Nursery, Turnham Green, exhibited three seedling Gloxinias, with rose-coloured flowers. For two of them, with a charming mixture of white and deep rose, in well defined limits, the Banksian Medal was given; the third, a Self, was not included in the award.—Nor were Fruit and Vegetables absent. Mr. Chapman sent some good British Queen Strawberries, and Mr. Fleming, gr. to His Grace the Duke of Sutherland, three handsome Cabul Melons, with the appearance of the Hoosainee; they were well grown, but as they were not to be tasted, their quality could not be ascertained. Mr. Fleming reported that they would have been far better had he not allowed them to set before his Vines were as strong as they should have been.—Mr. Fish, gr. to H. Oddie, Esq., of Barnet, produced a capital green-fleshed Melon, highly fragrant and weighing nearly 5 lbs., for which a certificate was given; and a bunch of Grapes that appeared to be quite new; the variety had been obtained by Mr. Fish, between the White Frontignan and Dutch Sweetwater, and exhibited the long narrow bunch of the former with the larger berries of the latter; when tasted it proved to have an agreeable Muscat taste, and was considered a good sort, well deserving the certificate that was allotted to it.—Finally, Mr. W. Dunsford sent from Mr. Everett's garden at Enfield, specimens of a new sort of Kidney Bean, the Dolichos sinensis, with young eatable pods, two feet long; they were described as being of an excellent quality when cooked like Kidney Beans, which is also the reputation they bear among Europeans in India; but to procure them they must be grown in heat (those exhibited were from the trellis of a Cucumber-house), and, therefore, the plant being a climber, and occupying a good deal of room, they could only be regarded in the light of a curiosity. —Among various things from the Garden of the Society, was a French watering-pot, for watering plants in sitting-rooms, or small thumb-pots, where great nicety in the application is required. It consisted of a hollow spindle-shaped tube, open at both points, one point being small, the other larger. When used, it is plunged into water, which drives all the air out; the thumb is then placed over the wider aperture, and the lower is presented to the plant that is to be watered; so long as the thumb is pressed upon the upper aperture, the weight of the atmosphere is kept off, and no water will run out; but as soon as the thumb is lifted up, a stream descends upon the plant, and will continue to do so till the thumb is replaced or the vessel is emptied. It was an ingenious adaptation of an old and well-known principle.

ROYAL BOTANIC SOCIETY OF LONDON.

June 4.—The second Exhibition took place at their garden, Inner Circle, Regent's Park. The plants, generally speaking, were in excellent condition. The Heaths were numerous, and attracted much attention; well-grown specimens of that beautiful tribe composing the greater part of some miscellaneous collections. Orchidaceous plants in general were not remarkable, few specimens exceeding mediocrity. There was, however, a beautiful plant of Barkeria spectabilis, covered with delicate lilac blossoms, from Mr. Brewster, gr. to Mrs. Wray of Cheltenham; a most beautiful dark variety of Stanhopea tigrina, having numerous pendent spikes of large flowers, from Mr. Robertson, gr. to Mrs. Lawrence; and a large specimen of Dendrobium densiflorum, finely in flower, from Mr. Mylam, gr. to S. Barker, Esq. In addition to this, Mr. Mylam exhibited Aerides odoratum in wonderful health, Oncidium pubes, Epidendrum cochleatum, in good condition; Saccolabium guttatum, having four charming racemes of delicate purple blossoms; a small Oncidium Lanceanum, together with a well grown plant of Epidendrum cuspidatum, the beautiful Phalænopsis amabilis, and Oncidium flexuosum. In the same collection were also Maxillaria variabilis, Stanhopea saccata, Aerides odoratum, producing a fine spike of bloom; Odontoglossum luteatum, a Brassia, and two Epidendrums.—Mr. Hunt, gr. to Miss Traill, sent good specimens of Maxillaria arguatum, Aerides odoratum, Oncidium luridum guttatum, Vanda Roxburghi, Calanthe veratrifolia, Oncidium Phillipsianum, having fine spikes of yellow and brown blossoms; Gongora atropurpurea, in excellent condition; altogether with Broughtonia sanguinea, Brassia Humphreysii, a pretty Stanhopea amabilis, and a good Aerides odoratum.—From Mr. Barnes, gr. to G. W. Norman, Esq., were Stanhopea tigrina, S. insignis, and S. quadricornis; also Aerides odoratum, Vanda Roxburghii, and the handsome Cattleya Mossiæ.—Collections of Orchidaceæ were also supplied by Mr. Redding, gr. to Mrs. Marryatt, and G. F. Cox, Esq., of Stockwell.

Of Heaths, Mr. Barnes produced E. vestita alba, blooming profusely; a dwarf bushy E. empetrifolia, E. depressa, well cultivated, and a beautiful E. perspicua nana, together with a large E. grandinosa covered with blossoms, E. mundula, E. Cavendishii, and a dwarf bushy E. tricolor. —Mr. May, gr. to E. Goodhart, Esq., Hackbridge, sent a collection, comprising among others, Erica mutila, E. perspicua nana, in a lovely state; E. odora rosea, small but well-grown; E. propendens, well cultivated; the old E. splendens, and a large bush of E. depressiflora; the handsome E. ventricosa alba, and a good E. hybrida. —In a group contributed by Mr. Bruce, gr. to B. Miller, Esq. was a fine Erica Cavendishii, small plants of E. splendens and tricolor, the beautiful E. ventricosa superba, the small neat-flowering E. Bergiana, and E. ventricosa coccinea minor.—Mr. Jackson, of Kingston, exhibited among others, Erica depressa, in fine condition; E. ventricosa breviflora, well grown; a fine specimen of a new E. tricolor, a well-grown E. elegans, together with E. vestita coccinea, E. inflata rubra (a beautiful variety), and a pretty E. Cavendishii. Mr. Jackson also showed a beautiful large seedling Heath, named E. Rassenianna.—Mr. Brazier, gr. to W. H. Storey, Esq., sent E. ventricosa alba, E. depressa (in excellent health), E. ventricosa superba (blooming profusely), fine plants of E. vestita alba, E. Cavendishii, and E. gelida, the latter covered with bloom. In Mr. Brazier's collection were also E. intermedia, E. floribunda and E. vestita purpurea, the latter very handsome.—The collection by Mr. Green, gr. to Sir E. Antrobus, Bart., contained beautiful specimens of E. perspicua nana and E. depressa; also E. intermedia, in excellent condition, and E. gelida, together with E. ventricosa superba, the beautiful small flowering E. propendens, E. ventricosa carnea, and E. dilecta.—An extra prize was awarded to J. Wells, Esq., Bromley, for four Heaths, in good condition.—Mr. Dawson, of Brixton Hill, showed E. perspicua nana, laden with flowers; also E. Masseni, the almost ever-flowering E. mutabilis, a fine E. prægnans, and E. odora rosea, well cultivated, together with E. Humeana, and E. depressa, the latter in excellent health.—In the collection sent by Mr. Fraser, of Lewisham, was E. mundula, a well-managed E. ventricosa globosa, E. perspicua nana in a lovely state, and many other species equally well managed.—Mr. Beasley sent a collection of hybrid Vestitas in fine condition, in which were some good varieties, especially one named E. floribunda, having long pale-yellow blossoms.—Among single specimens of Heaths, there was a large well-grown E. depressa, particularly noticeable, from Messrs. Veitch and Son, of Exeter.—Mr. Fairbairn, of Clapham, contributed small but well-grown specimens of E. intermedia, E. tricolor in fine health, a beautiful ventricosa carnea, and other varieties of ventricosa, in equally good condition. Mr. Clarke, gr. to W. Block, Esq., exhibited E. dilecta, E. ventricosa superba, in profuse bloom; and a large E. vestita fulgida.—From Mr. Pawley, of Bromley, was Erica mundula, finely in bloom; a beautiful E. perspicua nana, E. vestita coccinea, E. depressa, in remarkable health; and several other species that equally indicated good management.

Of collections, that exhibited by Mr. Barnes contained many good specimens, and among others a thriving plant of Leschenaultia formosa, a fine Boronia denticulata, Aphelexis humilis, in good condition; Ixora coccinea, well managed; a good Rondeletia speciosa, Clerodendrum squamatum, large and fine; Leschenaultia biloba, producing its azure blossoms in abundance; together with Phœnocoma prolifera, and Aphelexis commelinoides, which was rich in blossom.—Mr. Hunt showed, among other plants, a beautiful Leschenaultia formosa, covered with bloom; a good Clerodendrum squamatum, a large Euphorbia splendens, a pretty Pimelea rosea, a fine plant of Ixora coccinea, together with a well-managed Gompholobium polymorphum, trained on a wire trellis; and a beautiful Pimelea decussata. In the same collection were Eutaxia myrtifolia, a beautiful Chorozema cordatum, Clerodendrum squamatum, in excellent health; a pretty Polygala cordifolia; also Oncidium flexuosum, a large Chorozema cordatum macrophyllum, and a good Eutaxia juncea.—Mr. Atlee sent Sprengelia incarnata, a large Boronia denticulata, Ixora coccinea, Polygala oppositifolia, in good condition; Epacris grandiflora, and a pretty plant of Genista rhodopnea.—From Mrs. Thom, gr. to W. E. Baker, Esq., Bayfordbury, was a large Mimulus glutinosus, a fine Selago Gilli, Calanthe veratrifolia, producing several spikes of white blossoms; Cestus Jacquinii in good condition; a well-grown Chironia pyxidiflora, and a well-managed Hardenbergia longiracemosa. Mr. Thom also exhibited Epacris hyacinthiflora, large Vinca alba, Nerium splendens, and a standing Calceolaria, about four feet high.—Mr. Green exhibited, among other plants, Guidia pilifolia, a well-grown Choisianea Ruscifolia, a tolerably good Dillwynia cinerascens, a pretty Kennedya rubicunda, Goodenia ovata, Stylidium graminifolium, trained on an upright circular trellis; Pimelea linifolia, a beautiful Azalea laterita, Chiloglottis cauliflora, a well-grown Leschenaultia biloba, Epacris grandiflora, and a pretty Boronia denticulata.

nastis blooms in good condition; Azalea variegata, covered with flowers, and a beautiful large Coleonema rubra, in fine health.—From Mr. May was a collection, in which was Eschenanthus formosa, particularly good; a well-cultivated Ixora coccinea, pretty plants of Azalea variegata, and A. lateritia; a large Pimelea hispida, and a fine specimen of Cactus Ackermanni.—Mr. Bruce sent Aphelexis humilis, in fine condition; good plants of Oncidium flexuosum, Leschenaultia formosa, and Adenandra speciosa, together with Ixora coccinea, and a noble specimen of Pimelea spectabilis.—From Mr. Clarke was a pretty Gesnera splendens, Oncidium flexuosum, producing fine spikes of flowers; a large Euphorbia splendens, Abutilon striatum, trained over a wire trellis; a pretty plant of Fuchsia fulgens, and a small Aphelexis humilis, densely covered with flowers.—An extra prize was awarded to Mr. Taylor, gr. to J. Coster, Esq., for a good Siphocampylus betulifolius, a large Diplacus puniceus, and some Heaths.—Mr. Pawley sent, among other plants, Aphelexis sesamoides; well-grown Boronia viminea, covered with small pink blossoms; Gesnera reflexa, with large scarlet flowers; and a good Nerium splendens.—In Mr. Fraser's group was Philibertia Cunninghamii, covered with bright-yellow blossoms; a small Boronia serrulata, evincing good management; a good Epacris pulchella, a noble plant of Statice arborea, and a large Euthales macrophylla.—Mr. Catleugh had, among other plants, a beautiful Azalea called Fulgens Superba, with large, showy, bright-red blossoms; a good Azalea variegata, grown as a standard; Plumbago capensis, exceedingly well managed; a fine specimen of Fuchsia exoniensis, about five feet high; and a pretty plant of Cytisus canariensis.—Collections of *Climbing Plants* were shown by Mr. Green, Mr. Fraser, and some single specimens by other growers. Mr. Green's plants were Tropæolum azureum, trained on a wire trellis; a pretty T. tricolorum; T. edule, with pretty yellow flowers; and a good T. tricolorum grandiflorum. Mr. Fraser's were Sollya angustifolia; a beautiful Gompholobium versicolor, twining over a wire trellis; G. polymorphum, Hardenbergia longiracemosa, H. monophylla, exceedingly well managed, and a good Sollya heterophylla.—Collections of *Cacti* were contributed by Mr. Clarke, Mr. Green, and Mr. Upright, gr. to Mrs. Ridge. Mr. Clarke's group contained, among others, fine plants of Cereus Scottii, C. speciosissimus, C. Ackermanni, and C. speciosus.—Mr. Green showed a fine Cereus speciosissimus, a beautiful Epiphyllum speciosum, E. splendens, with very large bright scarlet flowers, and E. Ackermanni, in fine condition.—Mr. Upright sent a noble Epiphyllum speciosum; also E. Jenkinsoni and E. speciosum.—Among *New Plants*, Messrs. Veitch and Son showed Pentas carnea, Hiudsia violacea, and Centrosema coccineum.—G. F. Cox, Esq., sent a specimen of Mimosa on a trellis.—From Messrs. Lane and Son was Hydrangea japonica. Of *Single Specimens* the following were the most remarkable, viz., an excellent Boronia serrulata, in great perfection; a large Pimelea spectabilis, in good condition, from Mr. Hunt; a beautiful large Ixora coccinea, from Mr. Barnes; a good Statice arborea, from Mr. Redding; and a Gesnera tubiflora, with long cream-white blossoms, from Messrs. Henderson, of Pine-apple-place.—Of *Roses* in pots, Mr. Dobson, gr. to Mr. Beck, showed well-grown plants of Madame Nerard, Comte de Paris, Armosa, William Jesse, Triomphe du Luxemburg, Charles Duval, Aubernon, Bourbon Queen, Bouquet de Flore, and Great Western.—The collection from Messrs. Lane and Son contained exceedingly well-grown plants, which were remarkably clean and healthy. The varieties were *Tea*—Diana Vernon, very fine, Niphetos, Caroline, Elise Sauvage, Triomphe du Luxembourg, Devoniensis, La Pactole, and Princesse Marie. *Hybrid Perpetual*—General Allard, Aricie, and Louis-Bonaparte. *China*—Talweier, Augustine Harsent, Napoleon, Miellez, Abbé Mira, and Eugène Beaulavnais. *Bourbon*—Armosa and Boulogne.—Messrs. Paul and Son, of Cheshunt, obtained a 2d prize for a collection of Roses in pots; they also sent out specimens of Roses, as did also Mr. Milne, gr. to C. S. Causuey, Esq., and some others.—From Mr. Dobson, was the larger variety of Oncidium ampliatum, and four species of Achimenes, in good condition.—Mr. Forrest, of Kensington, sent specimens of Martynia fragrans, and three plants of Statice macrophylla, in bloom.—Several groups of British Ferns were contributed; in that by Mr. Smith, gr. to J. Anderson, Esq., we noticed Hymenophyllum Wilsonii, H. Tunbridgense, Trichomanes brevisetum, and T. speciosum, as being rare species.

The *Pelargoniums* occupied a considerable space in the tents, and added much to the splendour of the scene by their gay and lively decorations.—Mr. Parker, gr. to J. H. Oughton, took the first prize in the Amateurs' class, for 12 plants admirably trained and bloomed; they consisted of Belvoy Queen, Lord Mayor, Comte de Paris, Rosalia, Hero, Mrs. Stirling, Ovid, Master Humphry, Annette, Elida, Jupiter, Grand Duke, and Prince Albert. The collection that had to contend with these was very inferior, from Mr. Bull, of Chelsea College; it received the second prize: Comte de Paris, Superb, Belvoy Queen, Coronation, Grand Duke, Enchantress, Una, Camilla, Hesperus, Mrs. Stirling, Gem of the West, and Elida.—The contest in the *Nurserymen's Class* lay between Mr. Gaines and Mr. Catleugh, the former taking the first prize, for Juba, Albion, Pride of Surrey, Hesperus, Mrs. Stirling, Lady Sale, Aurelia, Caroline, Comte de Paris, Magnificissima, Victory Impede, and Rising Sun. Mr. Catleugh's collection contained Ellis, Flamingo, Hannah, Lord Mayor, Queen of Fairies, Coronation, Jessie, Tasso, Madeline, Knight, Helen, Prince of Waterloo, and Salina.—In the class competed for by nurserymen for their collections, in pots of 24 in the next, the 1st Prize for Amateurs was taken by Mr. Dobson, gr. to Mr. E. Beck, of Isleworth, for the following well-selected plants:—Luna, Conflagration, Flora, Blooming Bar., Brocrum, Meteor, Dido, Leonora, Sir R. Peel, Susanna, Matilda, and Cleopatra.—Mr. Cook, of Chiswick, received the 2nd Prize for the following 12 finely trained plants:—Symmetry, Erectum, Emma, Hebe, Sapphire, Rachel, Tasso, Unit, Jubilee, Luna, Sylph, and Maid of Honour. The 3rd prize was obtained by Mr. Stains, Middlesex Place, Edgeware Road, for the following collection, grown in his peculiar style: Coronation, Jubilee, Witch, Vanguard, Beauty, Hebe, Rising Sun, Enchantress, Fair Maid of Devon, Ivanhoe, Superbum, and Duke of Cornwall.—In the *Nurserymen's Class*, Mr. Gaines took the 1st Prize with Clio, Pilot, Orange Perfection, Princess Royal, Hermione, Sir R. Peel, Spartan, Phyllis, Augusta, Rising Sun, Lady Prudhoe, and King of Beauties.—Mr. Catleugh was awarded the 2nd prize for Favourite, Luna, Laura, Rachel, Wizard, Unit, Nestor, Maid of Honour, Madeline, Rir R. Peel, Gypsey, Queen of Fairies.—In collections of 8 for Amateurs a 3rd prize was awarded to Mr. Slowe, gr. to W. R. Baker, Esq., for Annette, Amulet, Evadne, Beauty, Madeline, Bridesmaid, Proserpine, and Evelyne.—Mr. Henderson exhibited a large collection of *Calceolarias*, which were not sent for competition, containing the following sorts:—Queen of Beauties, Corymbiflora, Lady of the Lake, Meteor, Princess Royal, Magician, Milo, Andromache, Royal Standard, Sir R. Peel, Lady Constable, Grandiflora, Sunbeam, Bride, Modesty, Premier Peel, Speciosa. In collections of 8 the 1st Prize was awarded to Mr. Henderson (?) for Sir Robert Sale, Prince Albert, Fruticosa elegans, King, Magician, Lady Sale, Standishii, and Delicatissima; these were well bloomed.—The second collection was from Mr. Gaines, but these were evidently on the decline: Cyrus, Queen, Lady Elcho, Mag. grandiflora, Magnet, Sunbeam, Candidate, and Lady of the Lake.—The *Fuchsias* generally were attractive, although several of them had not attained their full growth, nor were they in full bloom. The 1st Prize was awarded to Mr. Catleugh, for Decora, Eppaii, Unknown, Cormackii, Conspicua arborea, Rosea alba, Monarch, Victorine, Hutchinsonii, Exoniensis, Majestica, Stormontii. 2nd Prize: Mr. Cole, gardener to G. Lewis, Esq., Excelsa, Eppaii, Britannia, Insignis, Defiance, Champion, Majestica, Gem, Curtisii, Venus Victrix, Brockmanni, *Victorine*.—Mr. Smith's collection, of Dalston, consisted of Gigantea, Modesta, Eclipse, Nimrod, Defiance, Alata, Mars, Coronet, Achilles, Magniflora, Vesta, and Floribunda.—An extra Prize was awarded to Mr. Gaines for his collection, for Gem, Decora, Champion, Conspicua, Moneypennii, Ilicifolia, Pulcherrima, Majestica, Rogersonii, Defiance, Enchantress, Britannia.—*Cinerarias*.—The 1st Prize was given to Mr. Taylor, gardener to J. Coster, Esq., for Rival King, Eclipse, Seedling, Dr. Dodd, King of Prussia, Youngii, Emperor, Delicata, Royal Blue, Carmina, Prince of Wales, Miss Emma. 2nd Prize: Mr. Catleugh, for Sinclairii, Enchantress, Violacea, Eclipse, Delicata, Napoleon, Wizard, Royal Blue, Splendida, King of Prussia, Youngii, Marie-Louise. 3rd Prize: Mr. Fairbairn, of Clapham, Decora, Delicata, Emperor, Carmina, Regulator, Enchantress, Regina Victoria, Royal Blue, Pride of Peckham, Splendida, Cerulia grandiflora, Alba purpurea.—Several Stands of *Heartsease* were exhibited; the 1st Prize was obtained by Mr. Brown, of Slough, for a fine stand of the following 36 varieties:—Brown's Prior, Orlando, Julia, Modesty, Morpheus, Carion, Black Bess, Charity, Mulatto, Target, Jeannette, Maid of the Mill, Warrior, Duchess of Beaufort, Eclipse, Success, Arethusa, Cotherstone, Viceroy, Fairy, Hannibal, Cyclops, Prospero, Thompson's Regulator, Sulphurea elegans, Exquisite, Cook's Prince Albert, Mulberry Superb, Hooper's Prince Albert, William Tell, Rufus, Fair Maid, Duchess of Richmond, Hale's Dark, Carpenter's Princess Royal, Bathonia. 2nd Prize: Mr. King; and extra Prizes to Messrs. Parsons and Wren.—SEEDLINGS.—*Seedling Pelargoniums* were exhibited by Mr. Whomes, gr. to E. Foster, Esq.; Mr. Dobson, gr. to Mr. E. Beck, Mr. Gaines, and Mr. Pamplin. Those selected for 2nd Class Prizes were:—Orion, and Miss Peel, exhibited by Mr. Whomes, and Hector, exhibited by Mr. Cook, Chiswick.—A Certificate was awarded to Mr. Smith, of Dalston, for the best Scarlet Geranium, named Eclipse; the same Prize was also obtained by Mr. Whomes for the nearest approach to scarlet in the Pelargonium, for one named Conflagration. A Certificate was awarded for a Seedling Fuchsia, named Princess Alice Maud, from Mr. Wright, gr. to the Hon. Mrs. Rusbout, Wanstead.—A like Prize was awarded to a Seedling Calceolaria, named Guerrim; and an Extra Prize for a Cineraria, named Eclipse, from Mr. Brining, of Stratford.—Mr. Baile, of Hammersmith, received the 1st Prize for scarlet Geraniums, for a variety named Globe Compactum.—Mr. Gaines exhibited a specimen Pelargonium, named Mabel; this plant was admirably grown and trained; the branches were brought down, and covered the top of the pot; the symmetry was perfect; it measured full 4½ feet in diameter, and the plant was regularly covered with large trusses of flowers.

Rebiews.

Monograph of Pelargoniums (Monographie du Pélargonium). By J. de Jonghe. 12mo. Brussels.

This is a little treatise of 144 pages, by a well-known enthusiastic writer on Gardening in Belgium, of whose talents we have occasionally availed ourselves. The object of the author is to give what he regards as the best mode of growing and propagating Pelargoniums in Flanders, to which he has added an extract from Loudon's "Encyclopædia of Plants," explaining the botanical classification of the species. M. de Jonghe does ample justice to the skill of English gardeners in managing this beautiful genus, and we have no doubt his work will be found useful by Amateurs.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

BERBERIS TRIFOLIATA. Thin Ash-leaved Berberry. (*Greenhouse Shrub.*) Berberaceæ. Hexandria Monogynia.—This very rare plant was found by Mr. Hartweg, on his first arrival in Mexico, at a place called Zaquapam, at the foot of Orizaba, and was raised among the first collections that he sent to the Horticultural Society. Considering the warm climate of which it is a native, it was expected to prove tender, and the event has shown it to be so; for we have no species yet in our gardens so impatient of cold. In fact, it must be regarded strictly as a greenhouse plant, to which any amount of frost would be fatal. It is a hard-wooded graceful plant, very apt to run up with a single stem, without producing lateral buds, and when that is allowed to happen, its beauty is much impaired. For some time, indeed, it remained in that state in the large conservatory of the Horticultural Society. At last, by binding it down, so as to check the rise of the sap, the lateral buds were enabled to expand, and now the specimen is well furnished with branches, and is above six feet high. Its flowers appear in the latter part of the year (October to December), and are agreeably sweet scented. So far as experience has gone, it appears to be the most easily propagated by cuttings of the half ripe wood, or by grafting on B. aquifolium. For soil it seems to like sandy loam and peat. *Note by Mr. Hartweg.*—A Mexican plant from the eastern declivity of Orizaba, near the sugar farm of Zaquapam, at an elevation of 3000 feet above the sea, where it is found, though not very plentifully, in the outskirts of the woods bordering on the savannahs, attaining the height of ten feet.—*Botanical Register.*

SCHOMBURGKIA CRISPA. Crisp-flowered Schomburgkia. (*Stove Epiphyte*). Orchidaceæ. Gynandria Monandria.—The yellow-brown flowers of this plant distinguish it from all the other species. In cultivation it demands the same treatment as many of the genus Cattleya. It may either be potted in turfy peat, in the usual way, or tied to a block of wood (with a little sphagnum to retain moisture) and suspended to a rafter in a stove. In any case, care should be taken not to water over-head when the plant is in a growing state, otherwise the glutinous substance on the scales which surround the young shoots will retain the water and cause them to damp off. In summer the plant should be slightly shaded, and the house kept as moist as possible at a temperature of 80° by day and about 68° at night. In winter, when little water is required, the temperature need not be raised above 55° by artificial means.—*Botanical Register.*

LONICERA DIVERSIFOLIA. Various-leaved Fly Honeysuckle. (*Hardy Shrub.*) Caprifoliaceæ. Pentandria Monogynia.—In many respects this Himalayan shrub is much like the common Fly Honeysuckle (L. Xylosteum); from which it principally differs in its flowers being nearly or quite stalkless and much larger. Dr. Wallich first received it from the mountains of Gurwhal; he afterwards procured it from Kamaon; according to Dr. Royle, it is common on the mountains of the north of India. In a wild state it sometimes becomes small-leaved, and approaches the common Xylosteum, but its stalkless flowers still distinguish it. By some mistake it is included by De Candolle among his Nintooea, a set of climbing, 2-flowered species, which belong to the genus Caprifolium. This is a hardy middle-sized shrub, which thrives in any good garden soil, and flowers during the months of May and June. It is easily increased by cuttings of the half-ripe wood, if treated in the same way as those of the common Honeysuckle. It was raised from seeds received from Dr. Royle from the North of India.—*Botanical Register.*

Miscellaneous.

Seckel Pears on the Apple-stock.—At a late Exhibition of the Cincinnati Horticultural Society some very large and beautiful Seckel Pears were exhibited, grown on a tree grafted on the Apple. Specimens were also shown from the Crab-stock. The committee, in their report, state that those from the Apple-stock had the least flavour. In regard to appearance, however, no remark is made, and we are hence to infer that they were equally as beautiful as if grown on the Pear-stock. This high-flavoured Pear can afford to lose some of its aroma, if an equivalent is gained by large size. We should like to see the experiment fairly tested. All large and overgrown specimens of fruit have less of the true character of the variety than when they only attain to an average size; and perhaps large Seckel Pears from a tree on its own stock would be as deficient in flavour as those from the Apple. We would advise amateurs to institute experiments to test this. The only objection to the Seckel Pear is its small size. But if it can be grown to measure 6 or 8 inches in circumference on the Apple, and retain its good qualities, the fact should be generally known.—*Horey's Magazine.*

Horehound.—The value of Marrubium vulgare (Horehound), in some cases of pulmonary disease has not been overlooked by old writers; nevertheless, it has been discarded very unjustly from the Pharmacopœia, while other substances of no utility, or at least of doubtful efficacy, have been retained and introduced. In the rural districts the Horehound has long been a popular remedy for coughs; and whenever the belief in any herb is found general, there are good grounds for presuming it possesses virtue. I have for many years been in the habit of employing the Horehound, in the subjoined form, in cases of troublesome chronic cough, particularly in that species which is found so frequently after attacks of influenza and other severe forms of cold, and have invariably found it has restored the tone of the stomach, and subdued irritation, after other more valued remedies have been employed in vain.

℞—Decoctum Marrubii . . . 1 vss.
Lupuline . . . . . gr.
Acid. Hydrocyan. L. P. . . . . ℥j.
Syrup. Papaveris . . . . . ʒiij.

Misturæ sumat cochl. ampl. i. vel. ij. ter in die. The decoction is prepared by boiling four ounces of the recent plant in a pint and a half of spring water, till reduced to half the quantity.—*W. H. Kittoe, M.D., in the Chemist.*

A Garden Poet.—We learn from a circular that Mr. Joseph Meleny, gardener to W. F. L. Stone, Esq., of Tetsworth, is preparing for publication a volume of Poems, "for the benefit of a tender family."

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Large stoves are difficult to be kept sufficiently moist now that the doors and ventilators are to be kept longer open for ventilation. Among the contrivances to keep up more moisture, some growers throw fresh Moss loosely between the pots; and when this is done neatly, it looks pretty well; and after the Moss is well damped, it gives out a constant supply of moisture, to the great benefit of the plants. Give the plants as much room as possible by removing the hardier and less-esteemed sorts into vineries, &c. for two or three months.

Conservatory.—Mr. Wood's plan (see page 358) of planting out Fuchsias, &c. to be taken up in autumn to furnish the conservatory is an excellent practice, which cannot be too much enforced. This is about the right time to get out such plants. Leonotus leonurus thus treated will produce double the quantity of flowers that it would under pot-culture; the Brugmansias also do well in this way. Luculia gratissima delights in this treatment: but about the beginning of July will be time enough to plant it out. Pot Rhododendrons and Azaleas that are not vigorous, or that do not bloom freely, are often brought round to make fine specimens by being turned out in the same way; and lastly, Gardenia florida and radicans improve more under this system than any plants that I know; turn them out about the beginning of July in peat mixed with one-third of leaf-mould; and they need not be taken up until the appearance of frost in October; then let them be put in a close cold frame for wintering, whence they are brought to the forcing-pits in succession. Watering and training, with attention to shading, are the principal points to attend to now in this house; of course remove all flowering-plants as soon as the bloom begins to fade.

Greenhouse.—I do not recollect anything particular under this head that should be done in the meantime.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-Door Department.—While I am writing the rain is falling beautifully; and with a south-west wind, and a falling barometer, I think that our wants in this respect will soon be satisfied. Where the beds in the flower-garden were prepared for planting out, as directed some weeks past, it will be necessary, after the ground is properly moistened, to hoe them over, distribute the soil from the sides over the surface of the beds, and then regulate the plants for the season. Make good all failures, and in pegging the plants down, place them as much as possible with their heads pointing to the north, which will cause them to be drawn upright by the sun more effectually than if they were pegged out at random. Insects and caterpillars are becoming very numerous, therefore keep a sharp look-out, and frustrate all their attempts at colonisation. Ammoniacal liquor very much diluted is an excellent specific for most insects, but it requires to be used with great caution, or it will destroy the plants also. As the strength of gas water varies very much, it is impossible to give any proper directions for using it; but the most sure plan is to make the experiment of its strength on some worthless plant before using it for the general stock. Fresh planted trees will yet occasionally require a drenching of water, and plants on Grass may be watered by placing large flower-pots filled with water around them, with some gravel in the bottom of the pots, to allow the water to percolate slowly through it.—*W. P. A.*

III.—FLORISTS' FLOWERS.

As soon as the leaves of seedling Tulips become withered, take up the bulbs; great care must be observed not to injure them, as in most cases they push a bulb down several inches into the ground; let them dry gradually in the shade. *Ranunculuses.*—The buds should be frequently examined, as a green caterpillar, scarcely distinguishable from the stalk, often lodges just beneath them. They are also much infested with the Cuckoo-spit (*Cicada spumaria*), both which are seriously detrimental to the blooms. Where the flowers are sufficiently advanced, a light awning may be put over them. *Carnations.*—Still persevere in the extermination of the green fly, either by brushing off, or using Scotch snuff—puffing it on the buds by means of a small Indian-rubber bottle, with a tube in the neck. Take off laterals as they appear, and reduce the stems thrown up by strong-growing seedlings to one, so that the energy of the plant may be directed to the proper formation, and for the purpose of strengthening those buds which are left for blooming. *Pinks.*—If you examine the buds closely, you will find some attacked by a small gray grub, which eats its way through the lower part of the calyx, and devours the inside. We find the ravages of this insect more extensive in our collection this year than usual. If the buds are not reduced in number, let it be done immediately. An infusion of sheep manure will prove highly beneficial to the plants, by being poured on the surface of the bed occasionally. *Pansies.*—Continue to propagate by slips or cuttings, and all seedlings of inferior character, or which are not a decided improvement on the varieties already in cultivation, may be pulled up as they appear.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Where the renewing the beds with tan or leaves, and the repotting the plants, has not already been done, it is now time that it was. It is become a common practice to repot Pines at any season when they require it; and this is far the most rational practice; but as this is not yet the general plan, owing to the inconvenience of it in large establishments, where a great quantity of plants are grown in one pit, I may observe that in such places as the latter, now is a good time to go through the stock. Shading the newly-potted plants will be necessary. Keep the atmosphere as moist as possible during the day. In renewing the tan, care should be taken not to add too much, lest the heat become too great.

Vineries.—Where Grapes are ripening, keep a high temperature during the day, but at the same time a free circulation of air; and to admit of this, it will in dull weather be necessary to have recourse to heating the flues or boilers. Keep a constant look-out for the red spider, which will now be getting numerous if not checked. Thin the Grapes in the late houses. Remove partially the litter from the outside borders.

Peach house.—The trees from which the crop has been gathered should be well syringed once a-day, and supplied with sufficient water to enable them to complete their growth. The trees in the second house will require to be kept free from insects, the shoots regularly tied in, and the borders properly supplied with water till the fruit begins to ripen, when syringing must be left off.

Fig house.—In the early house the second crop will now be advancing, and the trees will require to be well supplied with water, and to be regularly syringed.

Cherry house.—The trees in pots and boxes, that have done bearing, should now be removed to a sheltered place in the open air. Give abundance of air to those planted within the house, and keep them free from insects.

Melons.—If the weather should become dull, renew the linings, and to do this the more readily, there should be some warm litter always in readiness. See that the fruit lays upon a dry surface, and keep the shoots thin.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Filberts.—Remove all suckers from the plants as they appear, examine the young fruit, and look after caterpillars, as they are making sad havoc in some places. *Currants and Gooseberries.*—Shorten and remove the summer's wood in the manner recommended for fruit-trees lately. Allow the leading shoots to grow a fortnight or three weeks longer before stopping them; the result will be superior fruit, finer swelled and better ripened wood for next season. *Peaches and Apricots.*—Give the fruit its light training, nail the young shoots close to the wall, leaving no more than can be fully exposed to light, recollecting that now and not next spring is the period for removing all superabundant shoots. Water and mulch the borders where necessary; as, if now allowed to become dry, and if next autumn should succeed, we may suspect gummy and cankered wood next spring. *Strawberries.*—Water if possible the forward crops, and tie up the fruit-stems to small twigs, which will improve the fruit in size and flavour.

Sow *Cape and Orange's Broccoli*, and any other sorts; Cabbage, Savoys, Scotch Kale, &c., for succession; Marrow Peas and garden Beans for shoot the last time, and a good breadth of Cauliflower for late autumn use. Water the ground after sowing, and cover with bundles or mats. *Routine.*—Keep the water barrel in exercise, stir the soil among all growing crops, and keep the borders and walks neat and clean.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—After the bark season is over and the woods are cleared of the timber, loose branches, &c. there will be little to do for some time.

Coppice.—When these are cleared of all the stuff cut during the winter and spring, and the fences put in good repair, they should be gone over occasionally for the purpose of summer pruning, training, and regulating the young shoots of the present and previous year's growth.

Young Plantations.—Great attention should still be paid to those planted during the last season; keep alive as many as possible, by cutting them in or heading them down; water and shade all that can be done conveniently.

Nursery Work.—Watchfulness and care are still necessary during the present dry parching weather; shade, water, &c. or great losses will be sustained; do not omit the summer training and regulation of the young strong shoots; pinch off a part of some, and rub others off by the finger and thumb; gather Elm seed as it ripens.—*W. B.*

State of the Weather near London for the week ending June 6, 1844, as observed at the Horticultural Garden, Chiswick.

May	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain
Frid. 31	O	30.035	30.001	61	42	51.5	E.	
Sat., June 1	15	29.998	29.949	73	44	59.0	N.E.	
Sun. 2	16	29.971	29.853	61	41	51.0	N.E.	
Mon. 3	17	30.135	30.057	69	41	55.0	E.	
Tues. 4	18	30.147	30.057	79	49	64.5	S.W.	
Wed. 5	19	29.976	29.932	79	53	66.0	S.W.	.06
Thurs. 6	20	29.834	29.714	70	53	61.5	S.W.	.02
Average		30.012	29.930	70.1	44.9	57.5		.08

May 31 Overcast and cold; dusky white clouds and dry air; evening sufficiently clear for the moon being seen eclipsed.
June 1 Clear: fine, with light clouds; clear at night.
— 2 Overcast and cold; slightly clouded and fine.
— 3 Light clouds and dry air; fine; overcast.
— 4 Wind changed to S.W.; very fine; clear and mild; rain at night.
— 5 Lightly overcast and fine; cloudy.
— 6 Slight rain; showery; cloudy and mild.
Mean temperature of the week, ½ deg. below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending June 15, 1844.

June	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 9	71.4	48.7	60.1	7	0.80 in.	1	3	1	1	3	5	2	2
Mon. 10	72.5	49.6	61.0	8	0.24	1	4	—	1	2	5	3	2
Tues. 11	71.7	51.0	61.3	7	0.47	—	5	1	1	3	5	—	3
Wed. 12	72.1	50.5	61.3	8	0.60	—	5	1	1	5	4	1	1
Thur. 13	73.2	50.2	61.7	7	0.55	1	3	2	—	2	4	4	2
Fri. 14	74.0	51.2	62.6	7	0.20	1	1	2	1	3	5	4	1
Sat. 15	72.7	51.0	62.3	8	0.80	1	3	1	1	4	3	1	4

The highest temperature during the above period occurred on the 15th and 13th, 1842—therm. 90°; and the lowest on the 9th, 1838—therm. 35°.

Notices to Correspondents.

Books.—*Killough.*—If you want to know how to conduct chemical analyses in agriculture, you had better procure Johnson's "Lectures on Agricultural Chemistry."

Cuttings.—*Know Nothing.*—We cannot go into a long story about the way to strike cuttings in general. From time to time you get special information upon the subject, and to that we must refer you, or to the "Theory of Horticulture." At the same time, we may perhaps promise hereafter to say something on the subject, useful to "Know Nothing." Full information about the management of Pelargoniums will be found in our volume for 1841, and we shall almost immediately publish the French way of managing such plants. Do not shift your Pelargoniums now. It will be quite time enough before they begin to grow next year. They ought to have been turned out by this time, if they are to flower in the borders during autumn. If you give them too much water you will be very likely to get the "spot." It is a bad plan to fill their pans with water, unless they have to grow for some time in the hot sunshine.

Gardens.—*A Constant Reader.*—As far as we can judge of your case, a geometrical garden would be suitable. If this sort of arrangement is well managed, nothing is prettier; but it requires much taste in the design and the greatest neatness in keeping it. It should, moreover, be assisted by vases, statues, or some such objects, in order to produce the best possible effect. All such gardens should be surrounded with shrubs and trees, which give the requisite finish to their boundary.

Heating.—*An Inquirer.*—A Stephenson's boiler will do, and if you burn coke you will make little smoke. For price, &c., you must apply to the vendors. If your Salisburia does not grow, the soil must be in fault; give its roots a little fresh loam, without manure.

Insects.—*Bernard Saunders.*—I cannot discover the least vestige of an aphis, or any other insect, upon your leaves; and, being unacquainted with the disease, I am unable to help you. The punctures look like those of a Curculio. *R.*—*P. T.*—Your bees are a species of Halictus, possibly the females of H. flavipes; but the specimens are discoloured by grease secreted in their bodies, which prevents me deciding with certainty. Such bees form their cells in the earth; and the history of all the species is admirably given in Kirby's "Monographia Apum Angliæ." *R.*—*Alpha.*—Your insects are the sexes of Aleyrodes Phillyreæ of Curtis's Guide Gen., 1044. 1. The scorpion-like animal is a Chelifer, which lives upon mites and minute insects. *R.*

Liability.—*A Poor Widow.*—The widow who takes the goods of her deceased husband is liable to pay his funeral expenses and debts to the extent of the value of the goods so taken.—*W.*

Morphology.—*J. F. D.*—Your Centaurea offers an excellent illustration of this subject. All the scales that form its involucrum are leaves capable of producing buds in their axils; but in general they do not produce them. Here, however, the natural tendency is resumed, and young branches have sprouted from the axils of many of the scales. The "Hen and Chickens" Daisy is an analogous case, but is not so striking as this of yours.

Names of Plants.—*Zephyrus.*—Ixalis tinctoria.——*W.*—Some Gypsophila, and apparently G. repens.——*Tyro.*—Tourretia lappacea. We find Humphreya's Compound so strong that the less of it which is applied appears to be the better.——*J. R. W.*—Some Plectranthus; but who shall say which, from such a fragment? Gardenia tetrasperma is a dwarf Indian plant, with greenish-white flowers. This is all we know about it.——*Henry Cottrell.*—The chapter on Nomenclature and Terminology, in Lindley's "Introduction to Botany," will give you the information you desire.——*R. T. S.*—Geranium dissectum, and Columbinum.——*A. H.*—Cyclea latifolia and millitaris are perfectly distinct species. We know nothing of Cypripedium bulbosum.——*A. B.*—Some say that the Shamrock is White Clover; but the most probable opinion is that the Wood-sorrel is the plant intended, and we think so. What you have sent is neither one nor the other, but Trifolium minus.

Orange-trees.—*Olivus.*—Keep your miserable Orange-tree in very rich soil, containing one third of charcoal; cut it well in, and give it a smart bottom-heat, if you can.

Strawberries.—*J. Welby.*—Unless your seedling improves very much it will be worthless. The flavour is not good, it is far too acid, and the specimens are pulpless itself.

Sycamore Tree.—*A. P.*—Although the old bark of this tree is always dying and cracking, there is plenty of living bark below it. There is no objection to your scraping off all the old cracked bark if you think it worth while, provided you only remove that which is loose. It is better not to tear off that which still adheres to the living matter beneath it. Now is the right time for the operation.

The Golden Pippin.—*W. T. B.*—It is too true that the Golden Pippin is becoming extinct, and that very many old trees are perishing, so that from natural causes the perpetuation of this variety by grafting is impracticable. But there is no probability that, by protecting the blossoms from the promiscuous inoculation of bees, and the pollen transferred by hand, the seed so obtained would insure the reproduction of exactly the same variety of Apple.

Miscellaneous.—*M. H.*—If your fruit is at 21, Regent-street, by 7 o'clock, P.M. (not later), it will be taken to the gardens on the same evening.‡——*Fidget.*—We really do not possess the gift of prophecy; and, with due submission, we see no kind of advantage in speculating about what *may* happen. All such guesses as you would have us make are better indulged in by each man for himself. In our own neighbourhood there is plenty of fruit, and all such good things, with a fair prospect for everything but Strawberries. Very likely your neighbourhood will tell a different tale.——*Kitty.*—By means of a Pepin's digester, a temperature considerably above 400° Fahr. has been obtained.——*G. Plumbley.*—It is not *necessary* to be an exhibitor, in order to gain admission early in the morning to the Chiswick Shows; but it *is* necessary to be a gardener.——*Falcon.*—We really must beg pardon for our tardiness. Your note is waiting to be made the subject of a Leading Article; for the nature of it will not admit of its being answered briefly.——*Cymro.*—Mosses, when dried between paper, change their colour very little. We do not comprehend what difficulty you can have with them. Certainly no preparation is necessary, beyond that of gathering them when dry.

SEEDLING FLORISTS' FLOWERS.

Cactus.—*A Constant Reader.*—Your seedling is rich in colour, and appears to be a slight improvement upon Jenkinsonii. These are flowers we see under great disadvantages, as they seldom reach us till they have closed, and consequently they are not seen in perfection.*

Calceolarias.—*A Constant Reader.*—Your seedling is a clear bright flower, prettily spotted in front; and the stripes inside the throat improve its appearance; the form is too indented at the bottom.*——*S. H. P.*—Your seedlings did not reach us in a state to enable us to judge of their merits.*——*A. B.*—Your collections of seedlings are very pretty, and very varied in their colour, and in their spots and blotches; but they differ very little from those we are in the habit of seeing. Nos. 1 and 3 are the most distinct.*——*J. N. C.*—The yellow seedling, with blotch in front, is a bold and well-shaped flower. The striped seedling is a very distinct variety, and though not good in form, is the only one we have seen that deserves to be so called; there are a dozen full-blown flowers on the branches sent, every one of which is more or less distinctly striped with bright brown, upon a yellow ground.*

Fuchsias.—*J. N. Y.*—A hybrid between F. cordifolia and corymbiflora, and is thus described:—"The plant is nearly five feet high, of vigorous and luxuriant growth, profusely clothed with fine foliage, producing flowers on every branch, about 50 in number." The flowers very much resemble those of F. splendens; they are about 2¼ inches long, and it appears to blossom freely at the ends of the branches; it is impossible to form an opinion of the general appearance of the plant without seeing it.*——*R. F.*—The dark seedling is a fine showy variety, but it possesses no novelty, and is so like several that we have, that it is difficult to distinguish them. The sepals are disproportionately long in both varieties, and do not appear to expand freely. The light variety is the best, as it is the largest of its colour we have yet seen.*

Pansies.—*I. B.*—None of your seedlings are worth preserving.*——*A Constant Reader.*—Your seedling is a well-formed flower, with good eye; the colour at the edge of the top petals is a defect, as it appears like a stain, and these petals also are rather too high: it is a good flower, but not equal to the best now to be seen in stands.*——*Borealis.*—Ebor is a fine seedling; good form, and firm in texture; eye fine, ground pure, and colours brilliant. The marginal colour is rather weak where the petals meet above the eye, and the edges to the petals want greater smoothness.*——*J. S.*—Your white variety is inferior to many of our flowers; it wants substance. 2 is intensely dark, and quite of a velvety character; it would have been an improvement had the side petals extended a little higher. It is, however, a very fine self.*——*D. D.*—Having examined your seedlings, we find them deficient in the qualities of show-flowers, as they want size, texture, substance, and marking; the best in the collection are a white self, No. 2, and a Primrose-self marked *b*; these are worth trying again. They appear to have more substance than light selfs generally possess.*——*An Amateur.*—Josephine is the most desirable flower; it is a rich bright yellow self, good in form, and of fair substance. No. 1, large purple flower, of velvety texture, the defect of which is the weakness of the ground colour in the side petals, and the want of the blotch in each of these petals to give decision to the eye. The notch in the bottom petal of No. 2 is a great defect: in other respects, it must be considered a large, fine, and bold flower.*——*Borealis.*—Ebor agrees with the description previously given. Aurora is a pleasing novelty, white ground, large dark blue eye, with decided blotches on the top petals, of a light blue purple. No. 3 is a flower of great brilliancy, but the form is not good, nor are the edges of the petals sufficiently smooth.*——*I. H. C.*—Your seedling, neat and pretty as it is, wants form and size.*

Pelargoniums.—*T. H.*—The petals of your flower were all loose; it appears to be a large, showy flower, very much resembling *Garth's Witch*, and is worth keeping.*——*E. J. L.*—The petals of your flowers were shaken from their stalks; and from their shape, *Marianne* must want form very much, both the upper and lower petals being too long. *Flora Macleay* is a very pretty seedling, and is very superior to the other in form, colour, and substance.*——*J. W.*—Your seedling is common in colour and general appearance; we have many in the same way larger and better.*——*J. D. P.*—No. 1 common in colour, and wanting in form and substance: 2, too veiny, and no improvement upon sorts similar in character; 3, deficient in form and substance, and common in colour; 4, pure white, with plum-coloured spot; your best flower, but deficient in form, and not equal to the white already in cultivation: 5, deficient in form and substance; 6, very bad: 7, good top petals, lower narrow and long; they are all very second-rate flowers.*——*E. T.*—The Polygaloides is of no value whatever; it possesses neither form, size, nor substance.*

Petunias.—*E. J. L.*—Your seedling the *Dodd* is a very common flower.*——*J. W.*—Your seedling No. 1 is pretty in colour and good in form, without its having anything particularly attractive about it.*

Erratum.—Page 366, line 46, col. 1, for "fig. 2," read "fig. 4."

TO BE SOLD BY PRIVATE CONTRACT.—A SMALL TITHE-FREE FARM, of 120 Acres, in a ring-fence, in Nassingtonshire, in first-rate condition, with a new Farming Bailiff's COTTAGE, and ample Barn and Farm Buildings, standing in the centre of the Farm.

If bought for an investment, it shall be sold to pay not four per cent. interest from a responsible Tenant; if for occupation, possession may be had previous to harvest, if desired.—Further particulars may be had from Mr. Lawrance, Solicitor, Peterborough.

The Agricultural Gazette.

SATURDAY, JUNE 8, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, June 12 Agricultural Society of England.
Thursday, June 13 Agricultural Imp. Soc. of Ireland.

Wednesday, June 19 Agricultural Society of England.
Thursday, June 20 Agricultural Imp. Soc. of Ireland.

"THERE IS DEATH IN THE POT!" exclaimed the ingenious Mr. Accum, some thirty years ago, and he straightway frightened half the nation into the belief that all the good things they had been eating for years were poison. Would that a new Accum would arise and warn the farmers that "there is a thief in the sack;" for, they may depend upon it, a monstrous deal of what they buy is roguery in disguise. When we touched upon this matter a few weeks since, we showed that in the opinion of some of the worthy gentlemen who deal in manures, *anything is good enough for a farmer*, who is considered by them to be fit for nothing but for plucking.

We did not anticipate another flagrant case of fraud so soon; but a known correspondent has warned us (see p. 864) that people are at this moment selling at Hull, under the name of pure and unadulterated Bone Ash, a villanous preparation of pounded limestone. Farmers are urged to buy this stuff for drilling with their Turnip-seed; for Bone Ash is admitted on all hands to be invaluable as a means of starting the young Turnip quickly into growth; and the honest gentlemen at Hull are so kind as to prepare it specially for use. We know nothing more remarkable than the patriotism of these dealers. Not contented with offering Bone Ash for sale at the moderate price of 90*s.* per ton, they particularly warn their customers that what *they* sell is pure and unadulterated. Five bushels of Bone Ash to ninety-five bushels of pounded limestone is what constitutes a pure article, according to the conscience of a dealer at Hull. We are curious to know what, in such honest people's minds, adulteration really is. Perhaps they claim credit for putting any Bone Ash at all into their mixture; and think the limestone the better substance of the two. To be sure 90*s.* per ton for limestone is rather dear, but what does that signify to a farmer?

We cannot but congratulate our Yorkshire friends upon the advantageous market at which they make their purchases.

We heartily wish we could add that the above is the only case of scandalous fraud that has lately come within our knowledge. A young friend, however, well known for his zeal and scientific acquirements, has just put into our hands the following details, which we do hope will open the eyes of farmers to their true interests, and assist in preventing them from being any longer swindled out of their money and their crops.

A Cheshire farmer, who was recommended to use only a cwt. of ground bones per acre, exclaimed, "A hundred weight! why the least that I can dress my land with is a ton and a half; and that only lasts for four years." "My good friend," said our correspondent, "such a dressing as that ought to last for twenty years; let me look at this bone-dust of yours." A sample was produced, analysed, and found to contain *eighty-five per cent. of carbonate of lime*, or chalk. And this, too, in Cheshire, where bones are the salvation of the old pastures. Here the farmer had been paying 10*l.* for every thirty shillings' worth of his manure; and perhaps seven per cent. interest upon the 10*l.* What can the Cheshire gentlemen be about to stand this?

But bone-dust is also mixed with gypsum, twenty-four per cent. of which has been found in samples, also from Cheshire. In other cases the weight has been increased by soaking bones in water, to the extent of fifteen to thirty-five per cent. It is certainly very obliging of the dealers to give the West-country farmers *seven hundred weight of water with every ton of bone-dust.*

We have already asserted that guano is often an abominable mixture of all sorts of brown ingredients that are worthless. Here is the analysis of some, which a near-sighted gentleman purchased at 12*l.* a ton. It contained *one half per cent.* of ammonia, *not a trace* of urea, *minute quantities of* alkaline sulphates and phosphate of lime; in short, the largest estimate that could be made of the real guano present in the sample amounted to *three per cent.*, including feathers, which, however, appeared to have belonged to sparrows and pheasants. On the other hand, there were *fifty per cent.* of stones and yellow earth. In this case the buyer was near-sighted indeed, for his guano cost him *nearly four hundred pounds a ton.* These must be famous times for farmers, when manure can be bought at such a price.

And these are not solitary cases. A guano sold at Manchester has been found to contain *seventy-five per cent. of brickdust*; another sort from Derbyshire contained *ten per cent. of sawdust and six per cent. of clay*; and another Derbyshire specimen was doctored with *ground bark* to the extent of *twelve per cent.*

Really, with such facts staring us in the face at every turn of the road, it is most incomprehensible why farmers will not throw themselves into the arms of the chemists, who alone can help them. We are urged to publish the names of the people who are swindling the country in this manner. Perhaps we may. But that will never abate such enormous evils as we have now described. Farmers *must* look to themselves, and get their manures analysed before they buy them, or they must purchase under warranty, as they do with their horses.

ON THE TENDENCIES OF THE ALLOTMENT SYSTEM.

I CANNOT help thinking that the sentence which has been of late much before the public—"Property has its duties as well as its rights"—conveys a sentiment which, while it is true of all stations in life, is especially so in its reference to *occupiers* of land; they, as well as their landlords, have very important duties to discharge as well as rights to enjoy. It appears to me, that among the former is the fulfilment of a claim which is naturally preferred by all who have been bred to an agricultural life—a claim to live by agricultural labour.

Though I do not mean to encumber your columns with a proof of the fact, yet it is certainly demonstrable that land under the plough will yield a profitable return for a much higher degree of cultivation than what a great deal of it now receives; and, in such districts, were the sums now paid as poor-rates spent in the employment of labourers in the ordinary acts of cultivation, or in drainage, &c., that which is now paid away as a dead loss to the country would be amongst the most profitable items of the farmer's invested capital. There are many who differ with me on this head, but to them as well as to others the labourers of our parishes look for support; the law countenances them in this claim, and the alternative which is placed before farmers is thus a very simple one—they must support paupers in the workhouse, or grant them the means of supporting themselves out of it. Of what great national consequence it is that a right choice should here be made, we can hardly conceive. The adoption of either of these systems as a commencement tends to strengthen and increase the chance of its continuance; the action of each is conservative of the principles on which the continuance of each depends. The tendency of a system which provides labour for all is to beget an independent spirit in the labouring classes—a pride above being dependent on others for support; and that of a pauper system is necessarily to beget a listless acquiescence in a state of dependent idleness.

Besides the door which the evident profitableness in many districts of a higher degree of cultivation opens for agricultural labour, and thus for diminishing an expensive and most injurious pauperism, there is for those with whom the present outlay of capital in cultivation is a maximum, either from necessity or from an opinion of expediency—there is for such, another means of diminishing poor-rates, and of imparting the healthful spirit of independence to our labourers, which follows sufficient employment. I allude to the allotment system, which, as a mode of bettering the condition of the Agricultural labourer, is now occupying so much of public attention. The county of Worcester has been the first to take up this subject in a public manner. At a large meeting of the county gentlemen, lately held, a committee was named who are busily engaged in arranging a course of operation, by which it is proposed to bring the whole of the county under the influence of this system. Worcestershire is being divided into districts, in which subcommittees are being formed for the purpose of supplying information, &c., which may enable the central committee to direct their efforts efficiently.

As an instance of the influence of allotting small portions of land for spade culture to Agricultural labourers, allow me to bring under the notice of your readers the following extract from the *Worcester Journal*, being a portion of a letter from the Rev. H. P. Jeston to J. Fardon, Esq., of Bromsgrove:—

"Cholesbury is a very small parish, containing 112 acres of cultivated and 44 of uninclosed common land. The population is under 150. My acquaintance with it began in 1830, at which time it was almost exclusively a parish of paupers. The poor rates for the 10 years preceding had averaged 170*l.*, and in 1831 they exceeded 200*l.* The rates (for all purposes) exceeded 30*s.* in the pound.

"In consequence of the excessive burden on the land, the whole of it, except eight acres, was in 1832 forced out of cultivation, and was abandoned by landlord and tenant; the gates of the several farms were taken down, and the fences suffered to remain unrepaired, in order that the owners of property might avoid being rated. There being no longer beneficial occupation, the overseers threw up their books, and the poor were maintained for more than half a year by rates levied on other parishes in the hundred. For many years my predecessor had made no attempt to collect his tithes, the rates upon them far exceeding their value. The glebe land at length became valueless. I was all but starved out of the parish; I had in fact made preparations for leaving it, both on account of my family, as well as to escape the sight of wretchedness which it was in my power no longer to relieve.

"Just at this time the Agricultural Employment Institution, hearing of the destitute state of the parish, purchased in it about 50 acres of arable and wood land; the former (36 acres) they allotted to eight or ten married men with families, in quantities varying from two to four acres, and an acre each to four or five lads. The 36 acres are now all occupied by married men; the rent is 23*s.* per acre, and is paid punctually. The tenants also contribute their quota of all parochial taxation. The good effected by this system has exceeded my expectations, though from the first I anticipated great things from it. In 1831 the money expended on the poor exceeded, as I have already stated, 200*l.* In 1842 it did not amount to 20*l.*

"In 1831 the total number of poor in receipt of parochial relief, and that during the whole of the winter months, was as follows:—

Married men with families	9
The wives and children of the above	29
Single men and boys	12
Aged and impotent	15
Total	65

In 1842 there received relief—

Able-bodied poor	0
Aged and impotent	3
Total	3

"A lunatic in the Peckham Asylum is costing the parish a two shilling rate (26*l.*) in the year. Were it not for this charge, our poor would not cost us 20*l.* a year; in fact, we have not, and have not had for ten years, one able-bodied pauper belonging to the parish. The allotment system has cured that evil. The poor-rates have averaged, these last three years, 4*s.* in the pound.

"The allotment men work for the farmers in the surrounding parishes whenever they can get a job, but it is very seldom their luck to meet with one. Two or three of them are owners of a horse and cart each, and during the winter months they in part maintain themselves by carting flints and firewood from our hills to the neighbouring towns. All the men have pigs, and in summer three or four of them keep also a cow.

"The conduct of the men since they have had allotments has been such as to afford me very great satisfaction. Not one of them has been summoned before a magistrate for any offence these ten years; they are punctual in their attendance at church; they and their wives, and every child old enough to attend the Sunday School, are members of a Clothing Club, and deposit in my hands during the year as much as from 30*l.* to 40*l.*, which is expended at Christmas in clothing; the consequence is, there is not a ragged or ill-dressed person in the parish.

"It is not only the agricultural poor that have been benefited by the allotment system, as carried out in this parish. The owners of property have also equally reaped the advantage of it. The 36 acres now occupied by the allotment men at 26*s.* per acre was let in 1831 for 23*l.* (something under 13*s.* an acre); and a tenant could then be found bold enough to take it only by the landlord guaranteeing to pay all rates above a certain amount. The result of this agreement was a curious one; when rent day came it was ascertained that the rates had so far exceeded the rent that the landlord found himself in debt to his tenant, and the latter returned from the audit with more cash in his pocket than he brought to it. The other property in the parish has also recovered its just value.

"You state that you feel much interested in the allotment system, and that you are about to try it in your own parish. If the land allotted be near the dwelling of the occupiers, and the letting not clogged with many rules or restrictions, I have no doubt of your success. You will soon find yourself surrounded by a grateful and affectionate tenantry."

This is an extreme case: it appears both landlord and tenant had abandoned the land. Under ordinary circumstances it is by no means desirable that such large portions of land as were here allotted should be let to labouring men: it is not wished that they should have enough to support them as farmers, independently of the wages derived from ordinary agricultural labour. A quarter of an acre, or, where a man has a large family, perhaps rather more, is amply sufficient for the purpose to which it is to be applied; viz., to support labourers at periods when labour is scarce—to keep them from the evil influence of idleness during those periods, and to supply them with labour of a kind the most beneficial to them, because it keeps them *at home*, and its results are *their own*. We cannot speak more justly or highly of the tendencies of the allotment system, *where it is properly regulated*, than in the words of Mr. Colman, the celebrated American agriculturist, who is now in England, and engaged in reporting the condition of British agriculture to his countrymen. He says:—"I have treated largely on the subject of allotments, as presenting one of the first and most effective means of bettering the condition of the agricultural labourer. My own convictions are strong on this point; and they are sustained and strengthened by the testimony of many men of large ex-

periences and shrewd observation. The labourer finds in an allotment a means of turning his spare hours to advantage, and in a mode of labour which, from its very character, being in the cultivation of his wife and children, under his own control and management, and for his own immediate and personal benefit, becomes a benefit instead of a toil. He finds it the means of eking out his scanty wages, of providing to a degree for an occasion of sickness or other suspension from his employment, and wages. He is enabled to bring from this source many rare comforts to his frugal table; and has himself, if he is a man of feeling—and why should he not be?—an opportunity of enjoying one of the richest of all pleasures, that of making a small contribution to relieve an unfortunate or a sick neighbour. *It presents a good school of industry for his children, under his own immediate inspection.* It quickens his own intelligence, in making agricultural experiments upon a small and useful scale; and rouses a spirit of wholesome emulation in his crops, even with the master farmers. It removes him from strong temptations to gambling, low dissipation, and intemperance. It gives him an interest in the soil; it attaches him to his home; it involves him in all the risks of the public safety, and makes him the friend of public peace and order. It gives him the spirit of a man, raising him above the sense of slavish dependence, and the dread of becoming a pensioner on public charity. In so doing, it at once exalts him in the community; induces a most wholesome self-respect; inspires a just regard for the rights of property; attaches him the more strongly to his superior."—*M. S.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Drainage.—The peculiar features of East Lothian farming are,—1st. The removal of superfluous moisture from the land by draining; 2d. The thorough eradication of weeds; and, 3d. The preservation of the soil unexhausted, by means of a liberal application of manures, and the general prevalency of the alternate system of cropping: or, in other words, the great leading principles of farm-management assiduously aimed at by every good farmer in this county, are the keeping of his land dry, clean, and in good heart—to use a common but significant expression. Although these primary or fundamental principles of agricultural improvement may be said to stand or fall together, yet draining is universally considered as the first in point of importance, being justly regarded as the basis of all good farming. Draining is one of those means of improvement, regarding the utility of which all practical men are now unanimous. In a previous Number of these Papers it has been stated that the general character of the soil throughout this county is a strong, stiff, tenacious clay, for the most part incumbent on a hard impervious till; from which it will obviously appear that there are few districts in which draining is more requisite, or in which its effects are more apparent and beneficial. It requires no arguments to prove—indeed it is generally admitted—that draining has been the first decisive step towards that improved system of tillage-husbandry for which East Lothian is now deservedly celebrated.

It is only within the last ten or twelve years, however, that the present system of thorough draining or furrow-draining, as it is here more frequently termed, began to be practised to any considerable extent. Before that period, even the most correct and spirited agriculturists contented themselves with the old plan of cutting large cross trenches, or drains, varying from 3 ft. to 7 ft. in depth, through the hollow or low parts of their wet fields, in order to intercept and convey to the nearest convenient channel the water issuing from subterraneous springs or spouts. These large transverse drains, combined with what are provincially called gau-furrows (small open drains, or water-furrows, made through the hollows, and at the headlands, for carrying off surface-water), were previously considered to be the only effectual means at the farmer's command for the removal of superfluous moisture, from whatever causes such wetness might proceed. The consequence of course was, that much land, now perhaps the most valuable in the county, remained in a very wet and comparatively unproductive state; whilst the strong arable land became always so thoroughly saturated with water, after a few days' rain, that ploughing, and other tillage operations, had necessarily to be suspended for weeks together. Furrow-draining having been, like all new improvements, regarded as an innovation on established usage, was very cautiously and diffidently adopted at first; but its simplicity, efficacy, and superiority over the old system soon became apparent and duly appreciated. The immediate and ample remuneration it afforded also naturally excited the self-interest of a wealthy and spirited tenantry, who speedily set about the complete drainage of the wet portions of their farms with all the assiduity and confidence of commercial speculators. A large amount of money has consequently been invested, and is still expending on draining. A considerable extent of the county has been already thoroughly drained, but much still remains to be similarly rescued from the deteriorating influence of an excess of moisture.

The extension of draining in this county is mainly attributable to the ample capital possessed by the farmers, and to the comparative security of the tenure on which they hold possession. Unquestionably furrow-draining has had the effect of bringing much land, previously regarded as mere waste, into profitable cultivation—of greatly diminishing the extent annually under bare fallow—of increasing, in a proportionate degree, the quantity employed in the growth of Turnips, and of augmenting the quantity and improving the quality of the Corn-crops, besides many other advantages, too obvious and too numerous to be noticed here.

Aware of the utility of draining, and fully convinced that it is, not only the basis of all subsequent improvements, but also the source of immediate and lasting remuneration, the first thing which engages the consideration of a tenant, on entering a farm on a new lease, is the condition of the land with respect to moisture. Draining, if necessary, is his first operation; even before the old tenant takes his departure from the farm, his successor, not unusually, has his men actually employed in draining—first, the fallow and Turnip-land, if wet, and next, such of the Grass-fields as he intends to bring earliest under tillage.

Draining is carried on during every season of the year, and at all stages of the rotation, but the spring and summer months are generally preferred. Drains are sometimes made while the land is in Grass, immediately before ploughing it up for Oats; it is, however, whilst a field is in fallow, or in the course of being prepared for a Turnip-crop, that draining is generally executed.

The points which first engage the attention of the farmer on commencing to drain a field, are the situation, direction, and dimensions of the main-drains, or conduits, as they are called, which receive and convey the water from the smaller drains. Their number, situation, and direction, depend, of course, upon the uniformity or irregularity of surface which the field presents. Besides the main-drain, into which the whole or greater portion of the smaller ones are led, every considerable hollow must have a leading or running-drain, so directed along the lowest parts as to insure a uniform and sufficient fall for the water into the principal conductor, or other convenient channel, for its egress. The dimensions are regulated by the extent of land from which the drain is expected to receive water, the comparative wetness of the field, and the materials to be employed in filling. They are always made from 3 to 5 inches deeper than the ordinary or parallel drains, that the water may have a regular and uninterrupted fall from the latter, thereby preventing the lodgment of mud, or the stagnation of water at the junction of the drains. The breadth at top depends on the depth, and the breadth at the bottom on the materials for filling or building. When built of stones, in the manner afterwards to be described, the breadth at top is usually from 1½ to 2 feet, and at bottom 10 to 14 inches. The general way of forming main-drains or conduits is by building a little wall of flat stones at both sides of the drain at bottom, 10 to 12 inches in height, leaving an aperture or channel of about 8 inches wide. It is then covered with strong flagstones prepared for the purpose, care being taken that any interstices between the covers are well filled up with small stones, in order to prevent any earthy particles from getting into the drain. This done, the broken stones are placed on the covers to within 14 or 16 inches of the surface of the land, covered with a little straw, and the earth ploughed in from both sides. Where suitable stones cannot be easily procured, large drain tiles, made for the purpose, are substituted. Two of the common-sized tiles, placed side by side in the drain, are sometimes employed for the same object. When it is intended to make the main drain very capacious, and particularly well-formed, a mason is employed for the purpose; but in the great majority of cases the whole is done by some handy and trustworthy farm servant.

It is a very generally observed rule throughout the county, in laying off ridges, that their direction shall be longitudinal, or with the greatest acclivity of the field. The drains are invariably made in the furrows between the ridges, unless the descent happens to be very rapid, in which case it is customary to cut the drains with a little inclination, in order to lessen the force of the water; but it has been, and I believe is still, a fertile source of discussion amongst English agriculturists, whether surface-drains are more efficacious in removing superfluous moisture, when made up the steepest ascent of an inclined field, than when carried in an angular direction across the slope. If the practice of the best Lothian farmers should have any influence in deciding such a controversy, the advocates for the "fair up and down" drains have unquestionably the best side of the dispute, except where the descent is so great as to endanger the bursting of the drains on account of the increased velocity of the water; but such situations seldom require draining.

Where the land is not very wet, and the farmer's time or capital is limited, he frequently makes a drain only in every alternate furrow at first, with the intention, however, of returning again, if necessary, on the furrows then passed over, at a subsequent opportunity. But when complete and uniform dryness is the object, drains are made in every furrow indiscriminately throughout the field, without regard to wet or dry appearances of certain portions. Ridges on the strong clay soils are almost invariably 17 or 18 feet wide; hence the distance of the drains apart, where made in every furrow, is also 17 or 18 feet, and 34 to 36 feet where made only in every alternate furrow.

The proper dimensions are determined chiefly by the materials used in filling. The depth, when broken stones are employed, varies from 28 to 32 inches, according to the unkormity of the surface. When tiles are used, from 18 to 24 inches is deemed sufficiently deep. The breadth at top is commonly 14 inches, being made as narrow as barely to allow the labourer to work with freedom, and the sides of the drain regularly sloped down, making the breadth at bottom at about three inches when stones are used, or about 6 inches in the case of tiles.—*T. Sullivan.*

[The following typographical error committed in one of Mr. Sullivan's previous articles:—At page 342 it is said that the poor-rates of the parish have latterly amounted to 6d. per annum, whilst the rental being 7350*l.* &c., is a rate of 1s. 6d. for the tenant's share. It should have been said, as any one may readily ascertain by calculation, that this is a rate of 1½d. for the tenant's share.]

ON BLACK HORSEPONDS.—No. V.

In former papers on this subject we have seen that the urine of cattle contains many soluble salts, and also a portion of animal matter, capable of producing the most beneficial results on the crops when applied to the soil, but that in many instances, instead of being thus used, it is allowed to escape into the horsepond, in which it undergoes the putrefactive fermentation.

I have endeavoured to show the *profits* which might arise from applying these ingredients directly to the land. This is the first part of my subject. I now enter upon the second, and point out the *loss* which ensues from allowing the cattle to drink them.

When the animal body is supplied with fresh air, sound food, and pure water, and is not exposed to any extensive cause of injury to the system, a healthy action goes on until the natural decay from age commences; but when any substance is received into the constitution capable of producing disorganisation, disease and death are the consequence.

If a drop of alcohol or sulphuric acid is allowed to fall into the serum of blood, or into an aqueous solution of the white of egg, we quickly see a white curd precipitate thrown down—the proof that decomposition has taken place. Touch the skin with a stick of moistened nitrate of silver, (lunar caustic) and the spot will shortly assume a blueish or violet colour. Immerse a piece of flesh in sulphuric acid or solution of potash, and the flesh will become shrunken and dissolve like a crystal of salt: the tissue has become disorganised. The body of the animal which drinks at these black horseponds is exposed to similar causes of disorganisation, which, without acting so intensely, or with such immediate effect, bring at length, with no less certainty, premature decay; and though the action is slow and gradual, it is frequently the more dangerous and inevitable, as it is more invisible. The cause being unsuspected, no availing efforts are made to check the consummation of the work of death. It is true these causes produce only local diseases when they are confined to the surface, or, when attacking some organ placed at a greater depth, they intercept its communication with the general circulation; and in this case the organ itself may be greatly compromised, without the general life suffering any greater disturbance than the fever which arises from the disarrangement of the equilibrium in the organic functions. But if substances of a more active nature be introduced into the system, disease of an active character, followed by death, is the immediate consequence. Thus, if an inorganic poison, as arsenic, be introduced into the stomach of an animal, disorganisation of the coats of that organ will be the consequence—a portion of the poison passing into the circulation, and destroying life in a very short period; but if organic poisons are introduced into the system through the stomach, little or no appearance of disease is to be detected in that organ, yet death is the consequence, from its producing disorganisation of the vital fluid. The same effects are produced when the poisonous matter is introduced beneath the skin, or placed on a wound; thus, when putrid animal matter is placed on an abraded surface, the absorbent vessels carry the poisonous matter into the system, and vomiting and debility, often followed by delirium and death, is the consequence. This is well illustrated in the disease which often follows a punctured wound received during the dissection of a body in a state of putrefaction. The poisonous effects produced by eating imperfectly prepared sausages, and putrid meats, are of the same class. Liebig states that several hundred cases are known in which death has occurred from the use of this kind of food. These sausages, he says, are prepared from blood, liver, bacon, brains, milk, meal, and bread mixed with salt and spices; this mixture is stuffed into prepared intestines, and boiled or smoked, and, if properly prepared, may be preserved for months, furnishing a nutritious diet; but when the spices and salt are deficient, and particularly when they are not sufficiently smoked, they undergo a kind of putrefaction, which begins at the centre of the sausage. The death following poisoning with these sausages is very lingering, and marked with remarkable symptoms. There is a gradual wasting of the muscular fibre and of all the constituents of the body; the patient becomes much emaciated, dries to a complete mummy, and finally dies. The carcase is stiff, as if frozen, and is not subject to putrefaction. In the *Gazette Médicale de Paris*, of July 2, 1842, is reported an account of a *fête* given in Andelfingen, in the canton of Zurich, in the month of June, at which about 600 persons were present, who all partook more or less of the repast provided, which consisted of cold roast meat and ham. As they returned home, some were seized with vomiting; next day, a greater number complained of general uneasiness, sickness, and diarrhœa, and in about eight or ten days all those who were present were confined to bed; of these many died; others suffered severely from symptoms of fever, of a typhoid character, with diarrhœa in a severe form, accompanied by delirium and loss of the hair during recovery. At the *post mortem* examination of those who died, the mucous membrane of the intestines was found to be softened, and in some cases ulcerated.

Such are the symptoms and effects on the human constitution, when animal matters in a state of decomposition have been received into the system; and when we consider that our domestic animals in many respects have their bodies constituted as those of man, are subject to

many of the same diseases, are relieved by the same mode of treatment, are acted on in a similar way by mineral poisons, and derive their nourishment from food similarly constituted to that which also nourishes man, is it not more than probable that the same causes will produce the same effects in the one as in the other, and that they are both subject to the same organic laws? Such being granted (and I believe no physiologist doubts the fact) it will not be difficult to prove that the amount of decomposing animal and vegetable matter, besides salts of ammonia, potash, and soda, which are held in solution in the water of black horseponds, and which is the cause of their colour, must have a most injurious tendency when received into the constitution of the animal drinking of such water; not that there is sufficient to produce disease or death by once or twice drinking of it; but, when taken in small quantities, and repeated often, it tends as certainly to engender disease, of a more or less formidable character, as if it had been taken in a large quantity at once; and although the effects are not in every case sufficient to produce the death of the animal, and thereby possibly call the attention of the farmer to the cause, nevertheless, by impairing the functions of nearly all the organs of the body, the same injurious effects are produced. The stomach is unable to secrete a healthy gastric juice, hence digestion is imperfect. The secretion of the liver is of an unhealthy character, and this, when mixed with the half-digested food, irritates and inflames the mucous membrane of the intestines, producing a chronic disease of a formidable character—a disease which prevents the system from being supplied with that amount of healthy blood-forming principle, which alone will enable it to perform the various offices required of it.—*Alfred Gyde, Painswick.*

ON THE CULTIVATION OF FLAX.—No. VIII.

(*Concluded from page 343.*)

The importance of saving the seed of the Flax-crop has been incidentally mentioned in the course of these papers on its cultivation. The value of the seed must be apparent, when it is considered what large sums are annually paid to the Dutch, Russian, and American Flax-growers for this article alone, the greater part of which might undoubtedly be produced at home; but this item of the produce of the crop has hitherto been almost entirely neglected by the British and Irish farmers, from an erroneous impression that the saving of the seed is injurious to the quality of the fibre,—what would be gained on the one hand, being thus supposed to be lost on the other. That the saving of the seed is, however, compatible with the production of the finest quality of fibre, is abundantly proved by the Dutch and Belgian Flax-growers. It is from these countries that Flax-seed of the best quality is obtained, and it is well known that it is also from them that our manufacturers have procured the finest fibre for spinning.

The quality of the seed will depend on the management previously adopted in the treatment of the crop—whether it had been thinly or thickly sown, and also whether it had attained a considerable degree of ripeness before pulling. When properly saved it may with propriety be used for sowing, and will not be inferior, for this purpose, to any imported seed. The propriety of sowing seed saved at home, even in preference to that imported, would appear from the practice of the Dutch, whose management in every department of the culture of this crop is so well worthy of imitation. Change of seed would, to a certain extent, still be necessary to prevent deterioration, as in the case of any of our other cultivated crops, but then a change is not required every year. To guard against deterioration, the Dutch Flax-growers occasionally import a part of their supply from Riga, the produce of which, when sown in Holland, is found to grow coarse, and yield a bulky crop the first year, which is generally but little prized. The seed produced from this is always sown a second year, and the seed it then yields is that most prized for sowing again, as producing the best and finest Flax. The seed of the third crop, which is considered unfit for use, is exported, and this is what is so much prized by us. In order to have always ready for use seed of the best quality, many of the Dutch and Belgian Flax-growers sow a small quantity of Riga seed every year, to secure seed of the second year's growth for their general crop. It would, therefore, appear that our farmers might raise at home a considerable portion of the seed required for sowing, and that perhaps of superior quality, instead of using so much from foreign countries, some of which is the refuse of their markets. Even in Ireland some cases have occurred in which the finest samples of Flax brought to market were produced from home-saved seed; and for the first year at least, it is extremely probable that seed of home growth, itself the produce of imported seed, would be the most valuable which the farmer could employ.

But under the best course of management which can be devised, much of the seed saved will be unfit for sowing; nor is it necessary that it should be so, as the demand for this purpose is small when compared with the supply. Large quantities of foreign seed are annually imported for crushing, which could advantageously be produced at home. Flax-seed is also much prized as an article of food for the domestic animals of the farm,—a purpose to which it may always be profitably devoted. The value of oil-cake, which is the portion of the Flax-seed remaining after the oil has been expressed, is well known for its fattening properties; from which the value of even this refuse seed, before expression, may be inferred. The chaff or husk, forming the capsule in which the seeds are contained, is of itself found to be a nutritious article of food for cattle or swine; so that, in fact, under proper management, the cultivation of this crop, from the improved extension, now devoted to the subject, is likely to be much more remunerating than it has hitherto been.

The seed, after being taken off the Flax in the manner described, is carried to the farm-yard, and thinly spread over the floor of the barn or granary, or in open sheds when the floors are not damp. The capsules must not be allowed to remain any length of time in the heaps in the field where the rippling is going on, to guard against heating and fermentation setting actively in, which at this stage proceeds with great rapidity. They must not be spread more than 3 or 4 inches deep on the floors; indeed, wherever space can be provided, the more thinly they are distributed over the floors the better, as this not only secures the seed being saved in a much shorter time, but also saves an immensity of labour in turning it. The intervals of time between the several turnings are regulated by the state of the capsules, and the manner in which they are distributed over the floor; but at first the whole must be turned over at least two or three times a day. Where the quantity of seed to be saved is large, it may probably be necessary to give the whole a slight kiln-drying, which, as already mentioned in a previous article, will not injure the seed either as food for the domestic animals or for the oil-manufacturer; but no artificial heat must be used to dry the seed intended for sowing.

After being thoroughly dried, it will be necessary to pass the capsules through a winnowing machine, to separate the sand, dust, and other matters from them which become mingled with them in the rippling process, and afterwards when spread out on the floors to dry. This refuse would otherwise be incorporated with the chaff after the separation of the seed, and render it worthless as an article of food. A case of the injurious effects resulting from the neglect of this process, and giving the refuse to horses and cattle without winnowing previous to bruising, came under my own observation, in which it proved fatal to the animals simply from its containing a quantity of sand and other matters, which were found in quantities in their stomachs and bowels after death.

The course of management here described is only necessary with Flax treated in the autumn. When the Courtral system is practised, the seed is of course effectually dried on the stem before the crop is stored up; and, on its being thrashed off during the winter, it may be stored in any quantity without any danger of fermentation setting in. To secure seed of the finest quality this is obviously the most eligible mode of proceeding which can be adopted, and the experience of the Continental growers has also proved it to be that best calculated to insure fibre of the best description.

The separation of the seed from the chaff, after the capsules have been thoroughly dried, is easily effected. Where the Courtrai system of management has been adopted, this separation will partially take place in taking the capsules off the flax, which has been already described: the most valuable portion of the seed will at all events be thus disengaged, and when intended for sowing, the seed thus separated should be kept apart from the remainder, which will be of inferior quality. In other cases the work will be performed with facility by passing the capsules through a Corn-mill, the stones being placed as for shelling Oats, after which the separation is completed by the winnowing machine. When the seed, as well as the refuse, is intended for feeding, it will be unimportant whether they be separated by winnowing or not, as the whole may, with propriety, be boiled up together with Turnips, cut Hay and Straw, and other matters. This mixture is highly relished by horses, cattle, and swine, and is not inferior to any other food which can be given to them for bringing them into condition. Experience will soon enable the farmer to determine the quantity which should be given; but it may be here observed that, in the case of no part of the seed being separated from the chaff, the allowance even for the largest-sized animals should be very small—perhaps not more than from two to three quarts for each feed. In the measures for the extension of Flax cultivation at present in progress in this country, this department of the produce seems to be attracting much attention, though hitherto almost entirely neglected in Ireland, where its cultivation has been so long carried on.

Although Flax-seed is much relished by every species of animals on the farm, it is peculiarly adapted as food for calves, the jelly formed of it being, to a certain extent, one of the best substitutes for milk hitherto discovered. The pure seed only is employed in this case, which is boiled for several hours over a slow fire, the quantity of water to be added being such as will make the jelly of the consistence at which it can be taken by the young animals in combination with their milk. Sudden changes of food are well known to be extremely prejudicial to young calves, and in using Flax-seed jelly with milk, the quantity of that article should be small at first, and gradually increased as it is found to agree with them. It is almost superfluous to remark, that any excess of this or any other substitute for milk, is denoted by its action on the bowels of the animals; and when any degree of purging is produced, the quantity of such substitutes should be diminished, and the proportion of milk increased. It would, of course, be an exaggeration to contend for the superiority of jelly over milk; but when it is found necessary to economize the supply of milk, especially in the vicinity of large towns, where it commands a high price, it may be safely said that no better substitute than Flax-seed jelly has been hitherto employed, whether as regards economy, or its adaptation for the purpose. As the young animals advance in growth, other farinaceous matters may be added to the jelly, and the milk still further economized.

These, then, are the principal details connected with the culture and management of Flax, of which it is considered necessary that the intending cultivator should be in possession. They have been given with great minuteness of detail, but it is conceived that without this, practical instructions are of comparatively little value. They have not been intended to raise any false expectations as to the returns which are likely to be obtained, unless under the most skilful treatment; and as, however valuable written instructions may be for the guidance of the farmer, they are not of themselves sufficient, without some degree of practical knowledge being previously acquired, it will be well that those attempting the cultivation of this crop for the first time, should do so on a small scale, and the errors of which they may be guilty in this course of management, while they will not be productive of much loss, will afford more valuable information for the regulation of their future proceedings than any instructions, however accurate or minutely detailed.—*J. Sproule.*

Home Correspondence.

Top-Dressing for Wheat, Barley, and Oats.—For April, May, and beginning of June, for all soils deficient in plant, or in a weakly state, the following application will prevent the wire-worm destroying the roots (as all insects, rats and mice also, will not stay where genuine guano is near), and, in a great many instances, it has destroyed the wire-worm altogether, and prevented mildew. On gravel, sand, and light soils:—2 cwt. of guano, and 2 cwt. of gypsum, or 2 cwt. of guano, with three times the bulk of marl or strong clay. For clay and strong land:—2 cwt. of guano, with three times the bulk of charcoal, coal, turf, sod, or peat ashes. The above, if applied to crops of Corn, in a healthy state, will give additional increase to the same generally, quality finer, bulk of straw greater, and earlier at maturity, than farm-yard manure, or bones, with less labour, and half the expense. For Potatoes on ordinary soils:—3 cwt. of guano, with three times its bulk in ashes or earth, with 10 tons, or half the usual quantity of farm-yard manure, to be strewed at the bottom of the furrows, by hand, before the sets are planted; and the same will not only increase the crop one-third in quantity, but it will be earlier, quality superior, and the disease, so prevalent a few years back, will not return. It must be particularly observed, in drilling guano, or ploughing it in, after being sown broadcast, previous to having it turned over, the depth of the furrow should be calculated, according to the nature of the soil. If cold, nearer the surface than gravel, or light soils: and to those agriculturists that have not experienced the increase, by the introduction of guano, it is advisable, to show the marked alteration, to leave a quarter of an acre of each in its original state, and to notice the difference in produce and quality, also of that on farm-yard manure, and bones, if used in the same field, as an experiment. It is also evident, from the trials I have witnessed, as well as from many others, the results of which have been published, that it should not be applied in immediate contact with the seed. If, therefore, it is applied by the drill, which I believe to be the best mode, it should be applied by a separate coulter, and by the mode adopted in the improved Suffolk drills, by which the manure is deposited in the soil so much deeper, and so much in advance of the seed, as to allow a portion of the soil to be interposed between the seed and the manure beneath it. Like all other concentrated fertilisers, it is decidedly certain that, for the most successful development of its powers, it requires a considerable supply of moisture, and will therefore produce the best results during wet seasons. It is used, it seems, in many situations in Peru, which are immediately afterwards irrigated. In case of crops to be produced from seed, great precaution should be observed that it does not come in direct contact with the guano, as few drop-drills are calculated for the purpose.—*H. A. Harwood, Liverpool.*

[With regard to what is said about guano destroying wire-worm, it is certainly possible that such an effect might follow the application; but we should greatly have preferred a specific account of one instance in which it had been thus successful, to so general a statement as our correspondent gives—"and, in a great many instances, has destroyed the wire-worm altogether, and prevented mildew." Our own opinion is, that it will not have this effect.]

Potatoes.—Might you not exhort the Agricultural Society, or some other body, to undertake some systematic experiment respecting the culture of Potatoes? There is the greatest confusion on the subject, and the most contradictory advice. Nothing but large and careful experiment will settle the many questions on this subject. I should be much inclined to test your friend "J. Mel.'s" advice by planting in autumn; but dare I trust a midland counties' winter-frost? He writes from Ireland; and here a frost will sometimes penetrate nearly a foot deep.—*P.*

[It is certainly much to be wished that Societies or individuals would systematically direct their attention to this subject, and inquire by experiment into the truth of the matter.]

Turnip-Fly.—I have found that half an ounce of sulphur mixed with a pound of Turnip-seed, prevents the ravages of the fly. The experiment is easy, and has not been known in any case to fail. I have used this plan with success for several years, and have not lost a single Turnip. It has been tried on a small scale in my immediate neighbourhood, and in no case has it failed to protect the young Turnip from the fly.—*W. Driffield.*

Rot in Sheep.—I thank "N. D. D." for noticing what I said respecting the rot in sheep. By what he says at p. 323, little is known as to how the fluke gets into sheeps' liver, or, in other words, the cause of the disease. What "N. D. D." has related about the origin of the fluke and sandore is very interesting; but, may I be allowed to make a few remarks on one or two of his observations? He almost hints that the animal called the fluke, which is said to cause the rot in sheep, might arise from spontaneous generation, and "that it has never been found out of the sheep's liver or that of other animals." As regards the latter, there must be a mistake, for he quotes from Cuvier that the "fluke has been found in the eye of man." A friend of mine, who has had much experience in the disease in sheep, told me he has often found the fluke in sheep's gall. As to spontaneous generation, it is a term often applied when a thing cannot be traced to its proper origin. I mentioned a plant called the Rot-weed, which is blamed for causing the rot in sheep, and observed that they might eat the plant containing eggs, or larvæ of insects which produced the animal found in their liver; but it appears that is wrong, for "N. D. D." mentions that the fluke and sandore are not produced from insects—"they are perfect animals forming a genus of the second class of the radiated animals." May not wet food encourage the growth of the fluke, and, as "N. D. D." observes, render them "dropsical and finally kill them?"—*J. Wighton.*

Manures, and Steeping Seeds.—Some of your readers may be amused at the style, as well as at the matter of the following quotations from "The Curiosities of Nature and Art in Husbandry and Gardening," published in 1707. They show that the value of the inorganic parts of manure, and the advantage of steeping seeds, were well known at that time. "The whole secret of multiplication consists in the right use of salts. Salt, says Pallisy, *is the principal substance and virtue of dung.* A field may be sown every year, if we restore to it by stercoration what we take from it in the harvest." . . . . "Seeing all multiplication depends on salts, the main business is to get together a great quantity at little expense, that the profit may be the greater." The author then describes a method of making liquid manure, in three old casks; into which objects are separately thrown, according to the ease with which they decompose. He further urges the importance of burning all wild plants, and of carefully dissolving the soluble parts of their ashes, and then proceeds—'Take as many pounds of saltpetre or nitre as you have acres of land to sow. For each acre dissolve a pound of saltpetre in twelve pints of the water that sanks from the dunghill. When the saltpetre is quite melted, throw in a little of those salts of plants (i. e. ashes) according to the quantity you have of them. This liquor is then called the 'Universal Matter,' because nitre is truly the universal spirit of the elementary world. This is the main point of the whole secret of multiplication. We will for the future call the water that is got ready in the casks, *Prepared Water*, and the water from which the salts are extracted from plants, and the nitre, *Universal Matter*. For one acre, take twelve pints of the prepared water, and mix with it immediately the universal matter, in which there ought to be a pound of dissolved nitre. The vessel into which you put these liquors must be large enough to contain the corn which you design for one acre. Then strew in your corn into these liquors; there must be two inches of water above the seed. Leave the corn to soak for twelve hours, and stir it up and down every two. If by that time it do not swell, let it lie longer till it begin to plump up considerably. One third less of seed than usual will serve for an acre; nay, you may safely use but half as much, and mingle among it some straw cut very small, that the sower may take it up by handfuls and sow it in the ordinary way, as I have said already." The explanation the author offers of the use of soaking seeds is whimsical. He says that the first action is to "cut the covers that infold the sprouts," and that the second action is "to serve each grain of corn, as it were, instead of a loadstone, to attract the nitre of the earth, which the subterranean fires have reduced and driven into steams and vapours in the low and middle region of the air, for the nourishment of vegetables and of animals. This is not a vain imagination, a chimera, or empty notion."—*C. Darwin.*

Agricultural Weeds.—It must be well known to every cultivator of the soil that these are of a more hardy and vigorous nature than the plants which require the care of his fostering hand, and are apt to gain the superiority, and appropriate to themselves vegetable aliment not intended for them. Hence it is of the greatest importance to every cultivator of the soil to prevent, as far as practicable, the growth of every kind of vegetable, except those which he cultivates. The number of plants known as weeds is very great; they are either annual, biennial, or perennial; the first two die the first or second year, *i. e.* as soon as their seeds are perfected, and are propagated by their seeds; the latter are not only multiplied by their seeds, but also by their roots, which remain inactive during winter, and put forth new plants in spring. The seeds of some plants germinate as soon as they get moisture, although they are not in immediate contact with the soil; others, again, do not succeed unless they adhere to some kind of earthy substance, and enjoy the reviving influence of the atmosphere. Many seeds, however—even those of the most diminutive size—will remain inactive for a long series of years, and vegetate afterwards, *i. e.* as soon as any accident has placed them in a favourable situation; seeds which have been proved to be not less than 1800 years old have germinated, and produced thriving plants. Again, many seeds are accommodated with some kind of wing or feather, by which they are conveyed from their place of birth, and disseminated over the fields; for instance, the seeds of the Dock, tribe have little wings, somewhat resembling those of a bat, by which they are often conveyed to a considerable distance in high winds; others are furnished with still better means of travelling, and are able to take advantage of the slightest breeze for shifting their position. It is proper that all Grass-fields, hedge-rows, and waste ground, be kept perfectly free from unprofitable herbage. The negligence which occurs in this respect in many places, is often the cause of the foul state in which neighbouring lands are to be seen. Pastures are sometimes so closely overrun with weeds, that the cattle can scarcely pick up a mouthful of pure herbage, and the vegetable food applied, which should nourish wholesome pasture, is consumed by useless weeds.—*J. McI., Hillsborough.*

Turnips.—I am a dealer in Turnip seeds, and am frequently put to considerable inconvenience by the various names by which my customers are pleased to designate the sorts which they may require. It is this inconvenience, with the view of obviating the same, for the benefit of myself and others similarly situated, that has prompted me to trouble you with the annexed list of names, trusting that you or some one of your numerous correspondents will furnish, in an early Number of your valuable Paper, a descriptive list with definite names (other names being considered as synonymous) of the different varieties; which may be a means of preventing error, to a great extent, both to the seedsman and the sower.—*West Briton.* [With this communication came a list of the names of 48 varieties, which we do not now publish, in the hope that a mere notice of the important subject referred to, will succeed in eliciting from our farming correspondents descriptions of the appearance and merits, with the names of the different varieties they may grow.]

Fencing.—The following method of making, in a very cheap and expeditious manner, a fence to inclose ground, I have observed adopted in this neighbourhood:—First, take some sapling Oak poles, about five or six yards long, cut them into lengths of something more than a yard, and cleave the thickest part into four, and the middle into three, to produce stakes. Dig a trench two spade-grafts deep, and make a bank with the sods, of two spade-grafts high, breaking them as little as possible; cut the sods sloping, not perpendicular to the surface of the ground, and lay them sloping in the same direction for the bank, so that, from the top of the bank to the bottom of the ditch, shall be one sloping line; let the sods of the second spade-graft be placed on the top of those of the first, but let the joinings be like those of bricks in a wall, the joining between two sods above over the middle of the sod below, and let all the earth of the second spade-graft be thrown so as to back the fence. Drive the stakes, well pointed, through the sods of the upper layer, and considerably into those of the under layer, at about the distance of half a yard from each other. Then take the straggling Furze, stubbed for the purpose, and thrust the heads of them very forward into the face of the bank, contriving that the two main branches of the Furze shall be one on each side of the stake. Over all this wind the longest Blackthorns, and the fence will be sufficiently strong without binders.—*W. H., Reading.*

Small Farms.—Seeing by your answers to correspondents in your last, that some questions have been put to you on the best plan of cultivating a small plot of land, so as to keep the greatest quantity of stock, I hope it will not be thought out of place if I detail to you the plan I follow on a field of 4½ acres. The land is good, being a free light soil, on a chalky bottom. Of course I have not neglected Lucerne, but have devoted one half acre to this, sowing it in drills 9 inches apart, and hoed each time of mowing, which I am able to do five times in the season. The remaining 4 acres I divide into four equal parts, and cultivate as follows:—To make my plan clear, however, I must begin my rotation where most rotations end, viz., with Wheat. Say, then, that I have my field well prepared for Wheat; this grain is accordingly sown in drills, with very little seed, and in the following spring has Clover and Rye-grass harrowed in with it; next year these are mown three times, and after the last mowing I give a good top-dressing of well-rotted dung, which produces, next spring, a very early and plentiful crop, chiefly Rye-grass; this is either mown for stock, or for Hay; and on the half first cleared I plant Potatoes, without dung, on the other I sow Swedish Turnips, which have a dressing of guano; the Potatoes are planted from the 1st to the 20th of May, and the Swedes are in the ground in the same month. The following year the Potatoes are succeeded by Mangold Wurzel, dressed with guano, and the Swedes by Carrots, with dung. This forms my preparation for Wheat, as before alluded to, and I do not know that I could raise a greater quantity of more valuable produce for the feeding of stock by any other plan; it is also as little expensive as possible, three diggings only in four years being required. If I introduce Tares, as you recommend, on one half of the Wheat-stubble, another digging is required, and though I am not insensible to their superiority over Clover and Rye-grass as an improving crop, I think it is much overbalanced by the extra digging and the price of the seed. I have also a strong partiality for Rye-grass as food for stock—nothing is so much liked by horses, and on no green crop whatever will they do as much work: I mean this, however, to apply to it in its early growth; when it gets old, and ripens its seed, the ground might as well bear a crop of Corn, and stock would relish straw quite as much. As it seems a general opinion that Potatoes do best when left in the ground all winter, I propose to try the effect of covering them up with stable litter, raking off the long straw when taken up, and digging in the short dung. In such case, a dressing of guano would be saved for the Mangold Wurzel which follows.—*Senex.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

[Report of Proceedings of the Weekly Councils of May 13 and 20, concluded.]

The Right Hon. Earl Spencer, President, in the chair.

Prize Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported to the Council the unanimous decision of the Judges, in assigning the Society's Prize of 50*l.* for the best Essay on the Agriculture of Cheshire to Mr. Wm. Palin, of Stapleford Hall, near Chester; and the liberality of Mr. John Arkell, of Hollow Farm, near Gloucester, who, in announcing himself as the author of one of the highly-commended Essays on the Discrimination of Soils, had presented his Essay to the Society for whatever use the Journal Committee might think proper to make of it, in promoting the objects of the Society.

Shrewsbury Meeting.—The stipulations entered into by the authorities of Shrewsbury with the Secretary of the Society, in reference to the condition of the resolution at the last Monthly Council, deciding on Shrewsbury as the place of the annual country meeting of 1845, were laid before the Council, and having been read were unanimously adopted.

Dynamometer.—Mr. Clyburn, director of the Earl of Ducie's iron-works, in Gloucestershire, addressed to the Council a letter on the subject of the trial of Dynamometers recommended by the Council, on the report of the Judges of Implements, at the Derby meeting, in the autumn of last year, to be entrusted to the Duke of Richmond, the Hon. Capt. Spencer, and Mr. Jaques, with a request that after the successive trials they had each made of the Dynamometers sent to them, they would report to the Council their respective merits when applied to the draught of agricultural implements; the instruments being submitted in the first instance to Mr. Parkes, the consulting engineer of the Society, for the purpose of having their mechanical adjustments, and graduation of scale under the strain of given successive weights, duly ascertained previously to the trial. Mr. Clyburn stated that one of his self-recording Dynamometers having been completed for the trial, was now forwarded to the Society, with printed instructions for its use. The Dynamometer sent by Mr. Clyburn, would record a strain of draught up to 12 cwt. Its principle of action being self-recording, was different from that of other Dynamometers, the box containing the instrument being supported on wheels, which communicated, by their axil, a progressive revolution to the recording cylinder within it as the draught proceeded, and its registration was made continuously by the pencil moving over its ruled surface: the average amount of draught being obtained by inspection of the indications thus obtained of the mometary variations during any given time and space. The Dynamometer of Messrs. Cottam and Hallen had also been duly forwarded for the trial. This instrument in its original form is described and figured in Mr. Handley's paper on Wheel and Swing Ploughs, (Journal, i. 143), and its improvements detailed by Mr. Pusey in his paper on the Draught of Ploughs (Journal, i. 219). Mr. Slaney having informed the Council that he had tried a very simple and cheap Dynamometer, made by Messrs. Drummond, of Stirling, with very satisfactory results, the Council agreed to recommend the purchase of this instrument, at the next monthly meeting, for the purpose of adding it to the others for trial. The Council resolved, that, as much time and care would be required for the proposed investigation into the practical merits of these instruments, and the estimate of their relative value accordingly, the trial should be postponed until the autumn of the present year.

Destruction of Rats.—Captain Forbes, R. N., having called the attention of the Council to the damage and loss sustained by farmers, in consequence of the ravages effected by the common rat and other injurious animals, Mr. Meyer addressed a letter to the Council on this subject. He stated, that having for the last twelve years devoted his attention to the study of the natural history of the rat, as found in different countries of Europe, he had arrived at a complete knowledge of the sagacity, nature, and peculiar habits of that destructive animal, and of the preparations applicable, under all the circumstances, which would lead to its entire extirpation. He proposed to the Council, that various farms infested with rats should be selected for the trial of these preparations, in order that he might have an opportunity of proving their practical value, and of entering afterwards into any general arrangement with the Society or its members. He had already extensive contracts with the principal West India merchants for cleansing their estates and plantations. He referred to the certificates then submitted to the Council, in evidence of the successful result of his proceedings at Buckingham Palace and Gardens, Windsor Castle, and Frogmore Lodge, at the Mansion House, Newgate, Macclesfield Workhouse, and at various other public and private establishments in this country; and to those given to him by the officers of the Royal Households of the Emperor of Russia, and the Kings of Prussia and Denmark.—Colonel Challoner stated that, having received from the Hon. Mr. Murray and other parties connected with Her Majesty's Household, the most unequi-

able evidence of the complete success of Mr Meyer's operations, he had been induced to engage him for the purpose of obtaining through his means the same exemption at his own establishment at Portnall Park, to which an unusual influx of rats had been occasioned by Mr. Meyer's successful dispersion of them from his neighbours in that part of Surrey.—At the succeeding Council, Colonel Challoner, being called upon by the President to favour the members with a report on the result of Mr. Meyer's operations at Portnall Park, he stated to the meeting, that the applications had been perfectly successful in his own case, as in that of others; that the rats never died in the house, the peculiar effect of the preparation causing them to seek the open air, without attempting to return to their former haunts; its odour driving them away, while its substance, if eaten, caused certain death. Colonel Challoner suggested, that as there was a very general complaint among farmers at the present time, of the waste and consumption of produce effected by these destructive animals, it would be satisfactory to many members, whose premises were infested, to hear from Mr. Meyer himself a statement on the subject.—The Council then granted leave accordingly, for Mr. Meyer to attend the ensuing weekly meeting on the 29th of May.—Mr. Meyer, in his personal statement on that day to the Council, explained the general effects of his preparations, and the uniform success which had attended their use. He had several of these preparations, which were applicable in rotation according to circumstances, but not one of them contained a single grain of arsenic or other poison, strong enough to produce death in larger animals, in the quantities in which it was employed. The expense of the ingredients was very trifling; and the ease with which estates or premises, of any extent, could be rendered free from rats, constituted the difference between his own mode of extirpation and that of other parties who professed to accomplish that object. There was, in fact, he believed, no place entirely free from these animals, for any long time together, and the process he employed was so simple that any farmer could follow it out as efficiently as he could himself, on being made acquainted with its principle. His chief secret consisted in the chemical nature of his compounds, and a knowledge of their proper application, employed by his father (a practical chemist in Germany) for 30 years, and by himself for 12 years; the peculiar action of the poison affecting the respiration of the animal and driving him from the house to seek the fresh air, such access of fresh air into the lungs only accelerating the fatal result. In a few days, any premises whatever could be thoroughly cleared of rats, and would remain so for a period varying from nine to fourteen months, according to circumstances. No poultry would be injured by the preparations used, and cats or dogs would be affected by only a temporary sickness. The remedy not only drove away the rats, but by its odour continued to have that effect for several months afterwards. It had the same influence over water-rats as the common rats on land.—On the motion of Lord Portman, seconded by the Marquis of Downshire, the Council returned to Mr. Meyer their thanks for the communication with which he had then favoured them.

Analysis of Limestones and Marls. — Sir Humphry Davy, in his "Agricultural Chemistry," describes a simple and exact mode, by which a person unacquainted with the minute details of analysis may ascertain, by inspection, the volume of carbonic acid gas given out by a limestone or marl, on the solution of a given portion of it in muriatic acid, and thus deduce, with a practical exactness sufficient for all ordinary purposes, the quantity, to the one-tenth of a grain, of carbonate of lime which may be present in any particular soil. Dr. Ure having devoted much of his attention for many years to a general simplification of the apparatus required by practical persons, in the processes of particular pursuits connected more or less with chemical science, attended the Council of the 29th of May, and favoured the members with the inspection of an apparatus similar in its object to that of Sir Humphry Davy, but slightly modified in its construction. In order to prove its accuracy, Dr. Ure performed before the Council an experiment with 100 grains of pounded marble, explaining, at each step of the process, the *rationale* of his proceeding. The equivalent amount of carbonic acid was almost immediately shown by the instrument. In reply to an inquiry by the President, Dr. Ure stated that the apparatus was capable of showing the presence and amount of the carbonate of magnesia contained in the magnesian limestones, but that a special scale would be required, and also a subsequent testing of the acid solution.—Dr. Ure then presented to the Council six samples of real, or normal guano, all of which had been the subjects of his careful analysis. Guano being a substance undergoing a slow but certain chemical change, the various cargoes brought to this country were as various as the conditions of time and climate could make them, and had never been imported in the original or normal condition in which the substances were voided by the sea-fowls furnishing the supply, richly charged with uric acid, the grand permanent pabulum of manure, which would give fertility for years, but in a state of putrefaction more or less advanced. Analyses spoke of ammonia and other results of that decomposition, but such compounds did not exist in the guano in its original state, as voided; while in other examinations of samples, it was found that all the uric acid and rich animal matter had become changed by heat and moisture, and all the combined principle gone off in gas, nothing remaining but a carbonaceous residuum, of no comparative value. He had already presented to the Journal Committee a Paper showing—1st. These changes of uric acid; 2d. An account of guano in its fresh, decayed, or spurious state; 3d. A detailed view of the new methods of chemical research, which, after a period of twenty years' research, he had now brought to a practical result. The specimens of guano he presented were the Bolivian, Chilian, Peruvian, and African. He obtained the Bolivian from Bolivia about a year and a half ago: and because it gave no indications of the presence of ammonia, the cargoes were treated with perfect indifference by the merchants who had been accustomed to the article in its decaying state; but he found, that although dry as Irish snuff, that invaluable guano was rich in uric acid and animal matter, and capable of producing 22 per cent. of ammonia on its decomposition as a manure. It was so highly valued by the natives, that they were so much averse to its leaving the country, that genuine cargoes were now difficult to obtain.—On the motion of the Duke of Richmond, seconded by Mr. Pusey, M.P., the best thanks of the Council were voted to Dr. Ure for the presents he had then submitted to the Society, and for his kindness in making an experiment before the Council.

Draining Tiles and Tools.—Mr. Slaney reported to the Council the result of an inspection which had been made by the Marquess of Downshire, the Hon. Mr. Clive, and himself, of Mr. Clayton's new machine for making pipe-tiles, at 21, Upper Park-place, Dorset-square. They were much struck with the simplicity, cheapness, and effective operation of the machine in question; and particularly remarked the recent improvement in it, by which the clay, in its transit through the cylinder to the die at the bottom, was made to pass through a kind of sieve or strainer. This served to arrest any small stones or hard substances, which would otherwise have impeded the production of perfect pipes. A force of 25 lbs. on the winch sufficed to communicate, through the pinions and wheels, the requisite pressure to the piston; and so easy was the labour of working the machine rendered by this multiplication of power, that a woman might be employed for the purpose. Mr. Clive thought that many clays might perhaps be worked through this machine without pugging.

Mr. Pusey was of opinion that pipe-tiles were likely to come into general use, yet the members of the Society should exercise some caution in their proceedings. He had ordered one of Mr. Clayton's machines, but first thought it wise to send up some of his clay for trial, as he had two sorts. Neither of these clays were found to be suitable for pipes. On the other hand, the Speaker of the House of Commons had one of the same machines in use, which produced excellent pipes from his clays of the plastic kind. He particularly desired to call Mr. Parkes's attention to those points in the treatment of clays which bore on their necessary preparation for pipe machines, as also on the cost of burning pipes with coal. Mr. Pusey mentioned that he had heard from a Worcestershire farmer that pipes for drains had been successfully used for a longer period than had hitherto been imagined; but he had also heard of a case in which drains, formed of pipes and laid in a very soft soil, had failed for want of a method of joining them; and he thought that in soft and irregular subsoils a means of junction was desirable. He had early suggested the employment of a short piece of pipe of a larger size, into which the ends of two smaller pipes might be inserted. Another method had been adopted by tapering one end of a pipe 2 feet long, so that it entered the larger end of another pipe, and so satisfied was a farmer, neighbour to the party whose drains had failed, of the sufficiency of this method, that he had ordered 100,000 of such pipes.

Colonel Challoner desired to know from Mr. Parkes to what extent he considered the density of pipes ought to be carried, as he and others gathered from his previous remarks that Mr. Parkes attributed a considerable part of their action to their porosity and power of suction or absorption of water from soil.

Mr. Parkes stated, that some misapprehension of his meaning on a former occasion, seemed to have arisen as to the amount of the action performed by a pipe in absorbing water from soil. The experiment alluded to, related to the absorbing power of a pipe when immersed in water, and was cited as furnishing proof of porosity; but, under the circumstances in which pipes existed in drains, *i. e.*, embedded in earth, he conceived that, however wet the soil might be, a pipe would not be in a condition to absorb water so freely as in the experiment mentioned. It was easy to show, indeed it must be self-evident, that by far the greatest proportion of the water of drainage entered the conduit through the crevices between each pair of pipes. Nevertheless, he considered a certain degree of porosity to be a valuable property in a pipe, as the continued absorption of moisture must necessarily tend to harden the floor of a drain, and dry the soil in immediate contact with the pipes, after the flow ceased; to this effect alone he intended his previous remarks to apply. It would be impossible to assign, theoretically, what might be the best practical degrees of density and porosity to be given to such an article as a drain-tile. It is probable that its durability, which was very important, would depend on the quality of the clay and its density combined. The old Roman bricks made in this country were well known to have possessed wonderful durability, and they were very dense compared with the more porous and perishable modern English bricks. Yet, even the Roman bricks absorbed water, and he thought it would be very difficult, even were it desirable, to compress clay into the shape of a small cylindric pipe so as to render it unabsorbent. In Mr. Clayton's machine, a pressure of about 60 lbs. per square inch acted on the surface of the clay in the cylinder, in order to express the pipes with sufficient celerity; and he had shown in a former report to the Society, that the Kentish pipes were denser than other machine-made tiles; also, that those of the smallest bore and thinnest substance were denser than the larger and thicker pipes. He imagined that Mr. Clayton's machine would produce them yet denser than these, as he employed greater pressure and made them thinner than the old machine; but the density of a pipe would greatly depend on the texture and fineness of the clay employed in its manufacture.

With respect to the importance of some kind of union between every pair of pipes, Mr. Parkes agreed with Mr. Pusey that such an arrangement was desirable for very soft bottoms, and absolutely necessary, in order to adapt pipes as conduits in spouting sands, &c.; but he preferred, for such cases, the inserting an inch-bore or other sized pipe, according to the discharge required, a few inches into a full-length pipe of a larger size, easily fitting, rather than the using short pieces to form a joint. By the former plan, a great length of pipes could be put together on the surface, and then be let down into the prepared trench, where they would repose on the whole length and have the full bearing of the larger pipes, instead of resting on short pieces. Such a chain of pipes could never sink in places—the whole length must sink together, and equally, or not at all. Excepting, however, in very difficult cases, he did not think a joint necessary, if the trench were correctly formed as before explained. Simple means may be often used to render a soft bottom firm. He instanced Mr. John Taylor, of Mereworth, Kent, who, in draining some of his land with pipes from 3 to 4 feet deep, met with bottoms of soft boggy matter; sods were forced down into these soft places, and a firm bottom was secured, on which to place the pipes. No failure or disturbance had occurred in this work, and the drains ran throughout the year, as they receive the water of springs as well as rain. Clay, rammed down to the bottom of trenches in soft soils, would often answer, and make the work permanent.

In reply to a question from the President, Mr. Parkes said that he had referred, on a former occasion, to the elongation of a pipe, when wet, compared with the same when dry. He had found by nice measurement, that a small extension in length occurred when a perfectly dry pipe was moistened; he deemed it, therefore, of some consequence to keep pipes quite dry until they were placed in the drain, as the subsequent longitudinal expansion in a line of pipes would act as a force to keep their ends firmly pressed against each other, provided they were originally well and closely laid; and this force would contribute to prevent a pipe from sinking, if a small fault should occur in the floor of a drain underneath a pipe. He had found that it required a considerable force to dislocate or separate one pipe from another, when the ends only thus butted one against another.

In compliance with Mr. Pusey's desire, he had collected a good deal of information as regarded the preparation of clay, and the cost of burning pipes with coal. On the latter subject he had found, from personal inquiry of two highly respectable pipe tile-makers in Suffolk, that from 3 to 3¼ cwts. of coal were required to burn 1000 pipes 12 to 14 inches long, weighing from 2500 to 3000 lbs. per 1000; and Mr. Thomas Law Hodges, of Hemputed Park, Cranbrook, Kent, had recently informed him that his experienced potter, Mr. Hatcher, states, "The nearest calculation I can give, from experience, is, that 1 ton of good coals will be sufficient to burn 18,000 pipe-tiles of 1 inch bore or diameter; and 500 common brushwood faggots will produce the same effect." This was equal to about 1 1-9th cwt. of coal per 1000, and per 1000 lbs. weight, as the inch-pipes weighed about 1 lb. each.

As regarded the preparatory operations for rendering clays fit for being made into thin pipes, their nature varied with that of the clay. He believed there were few, if any, beds of clay to be met with which were fit for use without passing through the pug-mill; though he knew of pipe-tileries where washing was not found necessary. The washing of clay was an excellent and cheap process, and was capable of reducing hard as well as stony clays into a state fit for the pipe-machine. It was to be seen at most of the brick and tile-yards about London. The cost of getting the clay and washing here was about 2*s.* per 1000 bricks, weighing nearly 5000 lbs.; or about 5*d.* per 1000 lbs. of burned goods. This included the pumping up of water, which was rarely necessary in country tileries. He had found in Suffolk that getting and washing cost about 6*d.* per 1000 tiles, weighing 2500 lbs.; and Mr. Etheredge had informed him of a case in which it cost him 7*d.* for about 3000 lbs. The cost of washing was, therefore, quite insignificant when reckoned on pipes weighing only 1000 lbs. per thousand, and that of the apparatus would not exceed from 10*l.* to 15*l.*

Mr. Slaney remarked, as regards the porosity of pipes, and their absorption of water, he was disposed to attribute a greater action to them than did Mr. Parkes, the ingenious author of that idea. At the same time he would mention that another description of unglazed earthen pipe had been brought before the notice of the Commission on the Health of Towns, made in Scotland, which had been proved, he believed, to be capable of sustaining a vertical column of water 600 feet high without passing water through them. If he recollected rightly, the experiment had been conducted by Mr. Smith, of Deanston, with a view of showing the fitness of such pipes to convey water into towns.

Mr. Salusbury, of Denbigh, thinking that it did not

appear to be generally known that the pipe draining-tiles were made in Wiltshire, presented four such tiles, of different sizes, to the Society. These tiles varied in internal diameter from 1 to 2½ in., and in price from 21*s.* to 35*s.* per 1000.

The Rev. Thomas Cator presented a tile for the end of drains, having a transverse section made almost through it, near one of its extremities, for the purpose of receiving an iron grating, more or less closed, as may be desired, to prevent the entrance of mice or rabbits into drains.

Mr. William Moffat, of Montpelier Street, Knightsbridge, had leave to exhibit his wood pattern for a drain-tile, intended to possess great power of absorption and a channel for the descending water, as well as a great saving in the material of stone for filling in the drains.

Mr. Hutchinson, of Rylcoll, Rutlandshire, presented three of the principal tools used by him in the process of shallow and deep draining, and manufactured by Messrs. Audley and Son, of Norbrigge, near Chesterfield. Mr. Hutchinson had for a considerable time experienced the advantage of implements such as those he then submitted to the Council both for strength and durability.

Milk Syphons and Pans.—Lord Camoys presented to the Society, as requested by the Council, a specimen of the block-tin syphon he had applied so advantageously to the use of his dairy. This syphon is formed of a tube 18½ inches long, and ¼ inch internal diameter; it is bent in the form of a bow, and by means of a pivot (formed of a portion of similar tubing) 2 inches long, soldered as the portion of a radius inside the arc at its middle, it may be placed conveniently in the socket of an upright cylindric stand, and thus turned round in any direction. That portion of the tubular arch of the syphon intended to be inserted into the milk-pan, is only 9 inches long from the insertion in the socket of the stand, and its curve is circular; the other leg is 9½ inches long, and forms only a slight elliptic curve from the same point of the stand, so that its orifice is 1¼ inch lower than that inserted in the pan. On this part of the tube is inserted, at 2½ inches from the top of the bend, a small stop-cock of block tin, with a small tapering mouth-piece of the same metal. The end of the syphon intended to be immersed in the milk, has four very slight notches filed in it for the purpose of allowing the milk to pass through them sideways into the tube, when the end of it is pressed close to the flat surface of the bottom of the pan; but to prove too minute as a passage for the cream when the milk has all been drawn off. Lord Camoys stated that he had half-a-dozen such syphons in use for his own dairy at Stonor Park, and he found them most convenient for drawing off the milk, and draining every portion of it from the cream. They were almost self-acting. The dairy-maid had only to insert the tube, draw out the air with her mouth through the stop-cock, and the current being thus established, the syphons required no further attendance for a quarter of an hour, when the dairy-maid on her return found all the separation of the milk and cream not only effected with the least possible trouble to herself, but with an exactness not to be attained even with great care by the ordinary process of skimming. —The President suggested glass as a better material for the syphon than block-tin, on account of its transparency, and the consequent facility afforded for ascertaining by simple inspection the perfect freedom of the tube from any impurity on its inner surface.—Lord Camoys had found no solidity form, or impurity collect, in the block-tin tubes, which being pliable, might advantageously be bent and moulded into any convenient shape required. These syphons were made by His Lordship's tinman, at Henley-on-Thames, at 5*s.* 6*d.* each, and the wooden stands cost 2*s.* each. Any tinman could make them, and he should be much gratified to find, that a contrivance of which he only claimed the application, had been useful to the members of the Society.—Sir John W. Lubbock, Bart., informed the Council that he had tried Lord Camoys's plan of skimming by a syphon, and had found it to answer perfectly: he regarded it as a most valuable suggestion. He thought the Society were also much indebted to Mr. Pellatt for the readiness with which he undertook to manufacture the glass milk-pans, of similar shape to those with which Captain Carr had favoured the Society, but of superior glass, and at the lowest possible rate at which, under the present restrictions, articles of such a material could be produced. —Sir John Lubbock thought that these milk pans would eventually supersede all others; and he suggested whether it would not be well for the Society to ascertain whether or not it is dangerous to use lead vats for the milk, or even glazed earthenware, as is stated in some works on the Dairy; as well as the metallic churn lately introduced. He considered that it would be an improvement in the shape of Mr. Pellatt's pan, if without much increase of expense, there was a cup at one end (like that in a venison-dish) to take the last milk for the syphon to dip into. He thought it probable that Mr. Pellatt, if it were suggested to him, would also manufacture glass tubes for syphons, to sell with the pans.

Tussac Grass.—Mr. Pusey, M.P., laid before the Council the copy of a Despatch with which he had been favoured by Lord Stanley, addressed to his Lordship by General Moody, Governor of the Falkland Islands, on the subject of the Tussac Grass of that colony, which had attracted the attention of the Society. This document, after detailing various facts connected with the cultivation of this Grass, and the localities in the United Kingdom where it would probably become acclimatised, announced the collection of a certain quantity of the seed in the Islands, and its transmission to England. His Lordship stated, through Mr. Pusey, that this supply of seed was offered (at the price set upon it by the party who had been at the expense of its collection) to the Society, or to such party as they might nominate.—The Council ordered their best thanks to be recorded for this communication; and allowed Messrs. Thomas Gibbs and Co., the Seedsmen to the Society, the option of becoming the purchasers of the supply of Tussac Seed, thus placed at the disposal of the Society.

Notices to Correspondents.

Rural Chemistry. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

Butter.—*Anonymous.*—It is possible that the taste your butter acquires at this season is owing to the appearance of certain weeds in your pastures at this time. We do not know if buttercups affect the taste of butter.

Cow Cabbage.—*X. Z.*—There is nothing we know of in this plant to hinder farm-yard manure, guano, &c., from having the same fertilising influence on it which they exert on all other agricultural plants. Dig in 20 or 30 yards of the former, or hoe in 2 or 3 cwt. of the latter per acre, between the rows.

Guano.—*A Subscriber.*—Unless your wheat is very late, we should judge it to be too late for sowing guano.

Humic Acid.—*A.*—Most vegetable soils contain it. Water containing it will redden vegetable blues.

Manures.—*W. B.*—That which you point out is surely an error. We have applied to Mr. Karkeek about it.

New Cause of Failure in the Wheat-crops.—As Mr. Curtis is investigating this subject, he would feel obliged to any correspondent for specimens of the Wheat-stalks, and the grubs infesting them, which have destroyed the Wheat around North Berwick. 11, Robert-st., Hampstead-road.

Peaty Soil.—*Tyro.*—Your plan will, in all probability, succeed according to your wishes. The last application you speak of might, we think, be dispensed with; the leaves and charcoal would on so vegetable a soil make the land too rich. The lime will be beneficial. When you require to manure it, use 3 cwt. of guano per acre.

Profits of Farming. — *Plantagenet.*—It is impossible to answer your question; the answer depends upon so many circumstances, among which one of the most important is the amount of capital employed per acre.

Sulphuric Acid and Bones.—*W. M. D.*—The action of sulphuric acid on the phosphate of lime in bones does not liberate the whole of the phosphoric acid; the decomposition is only partial, so that the results of it are gypsum and superphosphate of lime, which is soluble in water. We published a short communication from you a few weeks ago.

Sulphuric Acid.—*T. S.*—1 lb. of acid, according to Mr. Broe's experiments, will fix the ammonia of 2 gallons of urine; that is, equal to 1 gallon of the acid to about 25 of urine.

Tidal Mud.—*Maritimus.*—Tidal mud varies in quality; the practice of warping land shows the opinion held of it on some shores. If you wish to apply it, probably the best mode would be to get it out and dry it in the summer; spread it as well as possible on the land in autumn; the frost, and your harrows in spring, will enable you to complete the spreading of it.

*** As usual, many communications have been received too late.

Markets.

MARK-LANE, Monday, June 3.

The supply of English Wheat by land-carriage samples this morning was moderate, and the quality generally much inferior to what it has been; the trade opened heavily, and where sales were made a reduction of fully 1*s.* per qr. was submitted to, its value being affected by the liberation of Foreign, which is selling proportionably cheaper, and meets a fair demand at late prices. There was some inquiry for Baltic cargoes f. o. b., and also for Barley and Beans.—English Barley is unaltered, but Foreign commands an advance of 1*s.* per qr.—Beans are 1*s.* dearer; Peas remain the same as last week.—The quantity of Oats showing is small, and the sale brisk, at an improvement of from 6*d.* to 1*s.* per qr.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . White	48	55	Red .	46	54
—— Norfolk, Lincolnshire, and Yorkshire .	50	56	White —	—	—
Barley, Malting and distilling 28*s* to 30*s* Chevalier	31	33	Grind.	24	28
Oats, Lincolnshire and Yorkshire . . Polands	20	23	Feed	19	22
—— Northumberland and Scotch . . Feed	20	22	Potato	21	23
—— Irish . . . . . Feed	18	22	Potato	19	24
Malt, pale, ship	78	82			
—— Hertford and Essex	60	62			
Rye	32	32			
Beans, Mazagan, old and new 30 to 35	Tick	30	36	Harrow	32	36
—— Pigeon, Heligoland . 34 to 39	Winds.	—	—	Longpod	—	—
Peas, White . . . 32 to 36	Maple	30	33	Grey	29	31

FRIDAY, June 7.

Since Monday, the arrivals of all descriptions of Corn have been moderate; the value of English Wheat remains as on that day. In Foreign, business has been rather inactive, but the quantity offering being moderate, where sales are effected its late value is fully supported. At low figures there is some demand f. o. b., but buyers are unwilling to comply with the late Baltic quotations.—Spring Corn of all kinds remains as last quoted, but the slight rain has somewhat damped the inquiry for Barley and Oats.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
April 26 per Quarter.	50*s* 6*d*	32*s* 7*d*	20*s* 1*d*	31*s* 2*d*	31*s* 6*d*	30*s* 8*d*
May 3 . . .	55 3	31 9	20 1	30 11	31 9	31 2
— 10 . . .	55 1	31 8	20 8	31 4	32 8	32 2
— 17 . . .	55 10	31 11	21 0	31 8	32 3	31 8
— 24 . . .	55 10	30 7	21 3	31 7	32 11	31 7
— 31 . . .	54 9	30 9	21 7	31 0	34 10	33 4
6 weeks' Aggreg. Aver.	53 6	31 4	20 9	31 9	32 11	31 9
Duties on Foreign Grain	17 0	7 0	6 0	10 6	10 6	10 6

ARRIVALS THIS WEEK.

	Wheat.	Barley	Oats	Flour
English . .	8310	760	1980	3820 Sks
Irish . .	—	—	10080	—
Foreign . .	3700	—	2890	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English .	5177 Sks.	— Bls.	4703	871	4636	733	—	737	208
Irish .	46 ,,	— ,,	—	—	16	12671	—	—	—
Foreign .	,, 1009	,,	12235	6078	—	2016	—	697	—

SEEDS, June 3.

Canary . . per qr	55*s* to 62*s*	Linseed Calcutta, Foreign, p. ton	47 to 47	10
Carraway . . per cwt	30	34	Mustard, White . p. bush.	5	6
Clover, Red, English .	60	74	— Superfine ,, .	6	8
— — Foreign .	64	74	— Brown ,, .	14	16
— White, English .	110	120	Rapeseed, English, per last	235	238
— — Foreign .	81	126	Rape Cakes . per ton	—	—
Coriander . .	12	13	Safflower . .	—	—
Hempseed . per last	34	36	Tares, Essex, winter p. bush.	5	5
Linseed . . per qr	—	—	— Foreign . .	5	5
— Baltic . .	—	—	Trefoil . . per cwt	—	—
— Cakes, Eng. per 1000	10*l*	10*l* 10*s*	Turnip (too variable for quotation).		

Rosenthal & Sharon, Hop-Factors.

HOPS, FRIDAY, June 7.

The Hop Market is firm, and the fly and lice are increasing in Worcester, Sussex, and the Weald of Kent, to such an extent that these districts are now considered to be in great danger of a severe blight. Mid. Kent, at present, is but slightly attacked with fly, but, with damp weather, a little fly has been known to blight this district.

Rosenthal & Sharon, Hop-Factors.

COVENT-GARDEN, June 8.—Despite gentlemen in increase in quantity as well as in improved in quality, extremely fine specimens of Black Hamburghs are in the market, the best of which may be had for about 3*s.* per lb. Pine Apples are reduced in price since our last report; although not so good as they have been lately; there are, nevertheless, a few handsome fruit among them. Melons are good, and they are a little reduced in price; the best are selling at about 10*s.* each. Peaches and Nectarines are also lower in price; they improve rapidly. Cherries are very much cheaper this week. Among Strawberries we noticed some of Myatt's British Queen as being fine specimens of that variety; there are likewise good samples of Keen's Seedling to be met with in the market. Apples and Pears are becoming very scarce, and Oranges are not so plentiful as they have been. Of Vegetables Cauliflowers are somewhat reduced in price; they begin to improve in quality, as do also Carrots and Turnips. Some very large Rhubarb is in the market. The best French Beans are selling at 2*s.* 6*d.* per 100. Asparagus is good and plentiful; and there is an abundance of good Peas in the market, which are selling at low prices. Gooseberries and Currants are liberally supplied; particularly the former, which are cheap. Lettuces and Saladng of all kinds are sufficient for the demand. Among cut flowers we noticed Erica ventricosa superba, E. hybrida, E. Vestita alba, Gardenia radicans and florida, Pinks, Lily of the Valley, Pelargoniums, Fuchsias, Verbenas, Moss and other Roses, in great profusion.

FRUITS.

Pine Apple, per lb., 6*s* to 10*s*	Oranges, per dozen, 1*s* to 2*s* 6*d*
Grapes, Spanish, per lb., 1*s* to 1*s* 6*d*	— per 100, 6*s* to 14*s*
Hothouse Grapes, per lb., 4*s* to 6*s*	Lemons, per dozen, 1*s* to 2*s*
Melons, each, 3*s* to 14*s*	— per 100, 6*s* to 16*s*
Peaches, per dozen, 12*s* to 30*s*	Almonds, per pack, 6*s* to 7*s*
Cherries, per lb., 2*s* to 3*s*	Sweet Almonds, per lb., 2*s* 6*d* to 3*s*
Apples, Dessert, per bushel, 10*s* to 20*s*	Nuts, Spanish, per bushel, 12*s*
— Kitchen, per bushel, 4*s* to 14*s*	— Brazil, 16*s*
Currants, per half-sieve, 2*s* to 3*s* 6*d*	— Barcelona, 20*s* to 24*s*
Strawberries, per pottle, 1*s* to 3*s*	— Cob, 14*s*
Gooseberries, per half-sieve, 1*s* 6*d* to 3*s*	Walnuts, per bush., shelled, 16*s* to 20*s*

VEGETABLES.

Rhubarb, per bundle, 3*d* to 1*s* 6*d*	Cucumbers, each, 4*d* to 1*s*
Cabbages, per dozen, 6*d* to 1*s* 6*d*	Spinach, per sieve, 2*d* to 1*s* 6*d*
— Red, per dozen, 3*s* to 5*s*	Leeks, per doz. bun., 2*d* to 1*s*
Sorrel, per half-sieve, 6*d* to 1*s*	Garlic, per lb., 6*d* to 8*d*
Asparagus, per 100, 1*s* to 6*s*	Onions, per bunch, 2*d* to 10*d*
Artichokes, per doz., 3*s* to 5*s*	— large, per bushel, 1*s* to 3*s*
French Beans, per 100, 1*s* 6*d* to 2*s* 6*d*	— Spanish, per doz., 1*s* 6*d* to 2*s*
Autumn Potatoes, per lb., 3*d* to 6*d*	Shallots, per lb., 6*d* to 10*d*
Greens, per dozen, 1*s* 6*d* to 2*s* 6*d*	— Green, per bunch, 2*d* to 4*d*
Potatoes, per ton, 50*s* to 100*s*	Lettuce, per score, 6*d* to 1*s*
— per cwt., 2*s* 6*d* to 4*s*	Celery, per bunch, 6*d* to 1*s* 6*d*
— per bushel, 1*s* 6*d* to 3*s*	— Young, per bdle., 1*s* 6*d* to 2*s* 6*d*
— Kidney, p. bush., 2*s* 6*d* to 3*s*	Mushrooms, per pottle, 1*s* to 1*s* 6*d*
Frame Potatoes, per lb., 6*d* to 1*s* 3*d*	Small Salads, per punnet, 2*d* to 3*d*
New Turnips, per bunch, 2*d* to 3*d*	Watercress, p. 12 sm. bun., 3*d* to 6*d*
Peas, per bushel sieve, 3*s* to 5*s*	Parsley, per hf.-sieve, 6*d* to 1*s*
Red Beet, per doz., 6*d* to 1*s* 6*d*	Tarragon, Green, per bunch, 2*d* to 4*d*
New Carrots, 6*d* to 1*s* 3*d*	Green Mint, per bunch, 2*d* to 4*d*
Radishes, Tur., p. 12 bchs., 3*d* to 1*s* 6*d*	Marjoram, per bunch, 4*d* to 6*d*
Basil, per bunch, 4*d* to 6*d*	Chervil, per punnet, 2*d* to 3*d*
Horse Radish, per bundle, 2*s* to 3*s*	Cauliflowers, per doz., 2*s* to 3*s*
Savory, per bunch, 4*d*	

POTATOES.—Southwark Waterside, June 3.

The week commenced with cold and cloudy weather, with some slight showers of rain, and since the change of the moon it has set in as dry as before, with a north-east wind, with every appearance of a continuance. The supplies during the past week have been very small, which has caused a further advance in our prices, the best samples being eagerly sought after, and were sold readily at the annexed prices, and a quantity of Potatoes of various samples have been cleared out of the stores, realising a better price than was previously expected. We are still having a supply of Foreign Whites, selling at 40*s* to 55*s*.

York Reds . . .	70*s* to 100*s*		Essex and Sussex Blues	—	to	—
Perth	75	80	Wisbeach Kidneys .	70		—
Early Devons . . .	—	—	— Blues .	55		60
Late Devons . . .	80	85	— Whites .	—		—
Cornwall . . .	—	—	Jersey and Guernsey Blues	70		—
Sussex Whites . . .	—	—	Prince Regents .	—		—
Kent and Essex Kidneys	—	—	York Shaws .	—		—

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 6.

Prime Upland Hay 95*s* to 105*s*	Clover . 90*s* to 110*s*	Straw . 28*s* to 30*s*	
Inferior . . 80 90			

John Cooper, Salesman.

CUMBERLAND MARKET, June 6.

Superior Meadow Hay 95*s* to 97*s*	Superior Clover 115*s* to 120*s*	Straw 30*s* to 34*s*	
Inferior . . 80 85	Inferior ,, 100 108	New Hay 70	

Joshua Baker, Hay Salesman.

WHITECHAPEL, June 7.

Hay . . 80*s* to 95*s*	Clover . 95*s* to 105*s*	Straw . 27*s* to 32*s*	
— fine . . 90 96	— fine 110 115		

WOOL.—British, Friday, June 7.

	per lb.		per lb.
Long-wooled Wethers .	11*d* to 1*s* 0*d*	Southdown Hoggitts	1*s* 0 to 1*s* 2*d*
Do. Hoggitts	1*s* 1 1 3½	Kent Fleeces	1 1 1 2
Southdown Fleeces	11 1 0	James Pearse, Wool Broker.	

SMITHFIELD, Monday, June 3.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3*s*	3	to	3*s*	10	
Best Short Horns .	3	4		3	8	
Second quality Beasts .	2	10		3	2	
Calves	4	4		4	10	
Pigs	3	4		4	0	

Best Downs & Half-breds	3*s*	8	to	3*s*	10	
Best Long-wools .	3	6		3	8	
Ewes and second quality	3	2		3	6	
Lambs . . .	5	0		5	6	

Beasts, 2944; Sheep and Lambs, 22,850; Calves, 189; Pigs, 413.

We have to-day an increased supply of Beasts, and also a large attendance of buyers. We cannot make any alteration in our tabular statement from last Monday's, but the highest quotations are quite the top prices of the market. In Sheep, the supply is much greater, and the trade exceedingly heavy, at reduced prices. The continued dryness of the weather causes many things to come that are scarcely fit for the Butcher; and as, for the same cause, there are but few buyers of that description, many remain unsold; there is, however, a fair demand for the best qualities at the prices above stated. Lamb-trade is a little brisker. Veal and Pork remain about the same.

FRIDAY, June 7.

We have a good supply of Beasts, amongst which we notice about 40 Dutch; the trade is excessively heavy, and several remain unsold. In what sales are effected we do not observe any alteration from Monday's quotations; the best Scots make about 3*s* 10*d*, and the best Short-horns hardly 3*s* 8*d* per 8 lbs. We have again a very large quantity of Sheep and Lambs, and a very small demand; a great many remain unsold, and it is difficult to realise Monday's prices for those that are disposed of. Veal is also lower, and we cannot quote more than 4*s* 8*d* per 8 lbs for the best qualities. Pork is a steady trade.

Beasts, 7164; Sheep and Lambs, 12,000; Calves, 208; Pigs, 320.

41, West Smithfield.

PRINCIPAL MANURES.

Weight per bush., about lbs.		Weight per bush., about lbs.	
Alum, 240*s* per ton	—	Phosphate of Lime, 2*s* 6*d* per cwt.	85
Bleaching Powder (see Chloride Lime)		— — Super, 7*s* to 8*l* p. cwt.	85
Brimstone, 200*s* per ton . . .	—	— of Ammonia, in fine powder, 30*s* per cwt.	95
Bone-dust, —s and 17*s* per quarter	46	— of Ammonia, in crystals 3*s* 6*d* per lb. . .	—
— Half-inch, 10*s* 6*d* ditto .	42	Rags, —s per ton . . .	—
— Calcined, 8*s* per cwt . .	—	Rape Cake, 100*s* to —s per ton .	—
Carbonate of Ammonia, 6*s* p. cwt.	96	— Dust, 110*s* per ton . .	—
— of Lime, 1*s* to 1*s* 6*d* p. cwt.	—	Sal Ammoniac, 8*s* per cwt. .	—
— of Soda, 20*s* to 25*s* p. cwt.	—	Soils, Agricultural, 40*s* per ton	80
Chloride of Lime, 8*s* per cwt. .	—	— clean, 80*s* per ton .	80
Grabham's Phosphated Turnip Compost, 200*s* per ton . .	—	— Hide, 21*s* per ton .	84
Graves, —s to —s per ton . .	—	Saltpetre (Nitrate of Potash) 20*s* 6*d* per cwt., duty paid	80 to 86
Guano, Peruvian, 220*s* per ton . .	—	Soap Ashes, —s per ton . .	—
— Bolivian, 240*s* per ton . .	—	Soda Ash, 14*s* to 16*s* per ton .	86
— African, 200*s* per ton . .	—	Sulphate of Ammonia, 240*s* to 260*s* per ton . . .	70
— Potter's, 240*s* per ton . .	—	— of Copper, 28*s* to 40*s* p. cwt.	—
— Potter's Liquid, 18*s* p. doz.	—	— of Magnesia (impure) 10*s* per cwt. . . .	68
Gypsum (Sulph. of Lime), 20*s* to 25*s* per ton, at water-side	—	— of Magnesia (pure crystal.) 40*s* per cwt. . .	68
Hallett's Dry Fertiliser, 200*s* p. ton, or 12*s* per cwt. . .	—	— of Potash, 8*s* per cwt. .	—
— Concentr. Liq., 1*s* 6*d* p. bot.	—	— of Soda, 5*s* to 6*s* per cwt.	—
Humphreys's Compound for Plants in Pots, 12*s* per doz. .	—	Sulphur, —s to 14*s* per cwt. .	—
— Farmers' Compound, 200*s* per ton . . .	—	Sulphuric Acid, London, 8*l* per ton	70
Muriate of Ammonia, 8*s* per cwt.	70	— Country made, 1*l* per ton	—
— Lime, —s to 6*s* . .	70	Whitaker's Composition for Manure and Lights, 24*s* and 42*s* per doz.	—
— Potash, 60*s* per cwt. .	—	William Rose, —s per ton . .	—
Nitrate of Soda, 12*s* 6*d* to —s per cwt., duty paid . .	96	Imposters of things not fit to be put into land, exceedingly in quantity.	

Agent for Consumers.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by D. and E. BAILEY and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

IRON WORKS.

COTTAM AND HALLEN, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS and RICK-STANDS, or STATHELS, at very low prices.

GARDEN SYRINGES, 9s. 6d. each.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 20 inches, and 22 inches.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 4 ft. 6 in., 5 ft., 6 ft., and 7 ft.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE-FENCING, at 8s. 6d. per bundle of 136 to 150 yards each.

Flower-bordering, Trellises, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

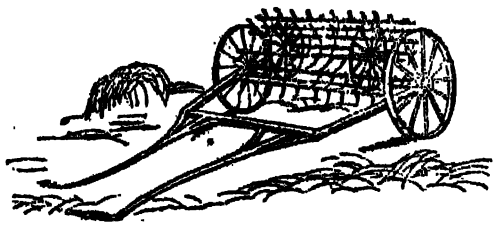
HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time.

RENDLE'S TANK SYSTEM on an improved simple plan.

Show Rooms at their Manufactory, No. 2, Winsley-street, where estimates and every information may be obtained.

AGRICULTURAL IMPLEMENTS.



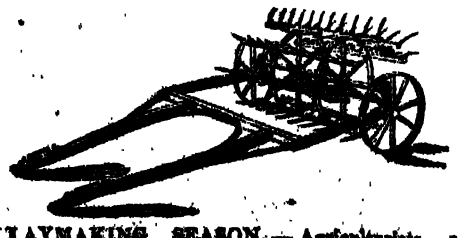
DOUBLE-MOTION HAYMAKERS of the best construction, made almost wholly of iron, and containing the double Cylinder, and all the latest improvements, are now ready.

CAST-IRON RICK-STANDS and PIGTROUGHS, at very low prices.

IRON HURDLES AND FIELD-GATES of all sizes, at exceedingly low prices.

PLOUGHS, DRILLS, Sheep and Cattle Weighing Machines, Improved Prize Harrows, Field Rollers, Turnip-cutters, Chaff-cutting Machines, Threshing and Winnowing Machines, Oil-cake Breakers, and every description of Implements used in Agriculture.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where every information may be obtained.



HAYMAKING SEASON. — Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depot, No. 115, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

TURNIP SOWING. — BRAINE'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9l. per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town.—Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,

COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, June 7, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 40, Upper Thames-street.

GUANO.—At the Corn Market, Mark Lane, on WEDNESDAY, 12th inst., at 2 o'clock, 400 Tons, ex GRATITUDE, Just arrived from ICHABOE. Catalogues and Particulars of WM. KIRKMANN and Co., Brokers, 2, St. Dunstan's Hill.—7th June, 1844.

FOR TURNIPS.

THE Urate of the London Manure Company, 4 guineas per ton. The London Manure Company have great pleasure in acquainting their friends that they have this day reduced the Urate from 5l. to 4 guineas per ton, at the same time pledging themselves that the quality shall be fully maintained. The Urate will be found most valuable for Turnips, by promoting a rapid growth; it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. It may be sown broadcast, or, which is preferable, by the drill, at the rate of one ton to 3 acres; and it is desirable it should not be placed more than 2 inches below the surface. Gardeners and Florists will find it very useful for Dahlias, and other roots. Full particulars and testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate Ammonia; Gypsum, and every other artificial manure.—EDWARD PUGSLEY, Secretary, 49, New-bridge-street.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt.

Phosphate of Potash, 15s. per cwt.
" Soda 12s. "
" Magnesia 9s. "
" Ammonia 1s. per lb.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge [illegible] Soap-boilers, and [illegible]pt for Hire, for Excavations and Wells. Buildings [illegible] by Hot-water, for Horticulture, and every variety of manufacturing purposes. The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and there a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WILSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 28, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s. 6d. each, and in bottles, six times the size, at 7s. 6d. The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

TURNIPS, &c.

DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Calcory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10l. per ton, or 12s. per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street; and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertilisers are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

Agents for London, Messrs. WILSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford; Norfolk, Messrs. BULLARD and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Conservatories and Greenhouses, being calculated, from its extreme hardness, to resist the wear incident to ordinary Plastering. For Floors it has a threefold advantage over Stone-paving. 1st, in its lightness; one inch in thickness of KEENE'S CEMENT sufficing where 2 to 3-inch flagging would be employed. Next, in its appearance, combining, as it does, the hardness of stone with a uniform colour and even surface free from joints; and lastly, in economy, being one-third the price of Portland paving.

The most conclusive evidence can be given of the utility of KEENE'S CEMENT for these purposes by the Patentees and Manufacturers.—JOHN DARLEY WHITE and SON, Millbank-street, Westminster.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade. THOS. J. CRADDOCK, 8, Ingram-court, Fenchurch-st., London.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

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George Johnston, M.D., *Secretary* Berwick upon Tweed
Edwin Lankester, M.D., F.L.S., &c., *Secretary*, London
Professor John Phillips, F.R.S., G.S., &c., York
Hugh E. Strickland, Esq., M.A., F.G.S., &c., Cracombe House
William Thompson, Esq., Pres. Nat. Hist. Society of Belfast
N. B. Ward, Esq., F.L.S., &c., London

Communications on the business of the Society are requested to be addressed to the Secretaries, Dr. GEORGE JOHNSTON Berwick-upon-Tweed, and Dr. EDWIN LANKESTER, Golden square, London. Subscriptions to be sent, by Post office order or Cheque, to J. E. Newman, Esq., 45, Park street, Islington

BROMLEY HORTICULTURAL EXHIBITION, to direct the FUNDS to the BENEVOLENT INSTITUTION for the RELIEF of DECAYED GARDENERS and their WIDOWS. List of the PRIZES awarded there on TUESDAY, the 11th inst.:—

The Extra Prize,—A copy of Loudon's "Arboretum Britannicum," value 10 guineas, given by G. Charlwood, Esq., of Covent Garden, was awarded to Mr. Barnes, Gardener to G. W. Norman, Esq., for the best Collection of 5 ove and Greenhouse Plants

The Extra Prize, 3l. 3s. given by Mr. Low, of Clapton, was awarded to Mr. Henchman, Nurseryman, of Edmonton, for the best 12 Proteaceous Plants

For Collections of 50 Stove and Greenhouse Plants—1st Prize, 12 guineas, to Mr. Barnes for do. to Mr. Hunt, Gardener to Miss Traill of Hayes place Bromley, 2d Prize, 10 guineas

For Collections of 24 Stove and Greenhouse Plants, to Mr. Pawley, White Hart Hotel, 1st Prize, 8 guineas For do., to R. Cutler, Esq., 67, Farringdon at London, 2d Prize, 7 guineas

For Collections of 12 Stove and Greenhouse Plants to Mr. May Gardener to E. Goodheart, Esq. Langley Park, Beckenham, 1st Prize, 4 guineas For do., to F. Perkins, Esq., 2d Prize, 3 guineas For do., to Mr. Atlee Gardener to H. Beaufoy, Esq., South Lambeth, 3d Prize, 2 guineas

For Collections of 6 Stove and Greenhouse Plants, to Mr. Stanley, Gardener to H. Berens, Esq., 1st Prize 3 guineas For do. to Mr. Wilson, 2d Prize, 2 guineas For do., to J. Brandrum, Esq., 3d Prize, 1 guinea

For the best 12 Geraniums, to Mr. Gaines, of Battersea 1st Prize, 4 guineas For do., to Messrs. Henderson, Pine apple nursery, 2d Prize, 3 guineas For do., to Mr. Hunt 3d Prize, 2 guineas. For do. to W. Whitmore, Esq., 4th Prize, 1 guinea

For Collections of 12 Heaths to Mr. May, 1st Prize 4 guineas For do., to Mr. Lainburn Nurseryman Clapham 2d Prize, 4 guineas For do., to Mr. Barnes 3d Prize, 2 guineas

For Collections of 12 Fuchsias to Mr. Lawford Fox, 1st Prize, 4 guineas For do. to Mr. Cole, Gardener to C. Lewis, Esq., Blackheath, 2d Prize 3 guineas For do., to Mr. Pawley, 3d Prize, 2 guineas For do., to J. Brandrum Esq., 4th Prize, 1 guinea

For Collections of 12 Calceolarias, to Mr. Barnes, 1st Prize 4 guineas For do. to Messrs. Henderson, 2d Prize, 3 guineas.

For 8 Orchidaceous Plants, to G. F. Cox, Esq., Stockwell, 1st Prize 3 guineas. For do. to Mr. Barnes 2d Prize, 4 guineas For do. to Mr. Pawley, 3d Prize 3 guineas

For Collections of Cut Roses, in bunches, to Nurserymen, to Messrs. Paul and Sons, Cheshunt, 1st Prize, 5 guineas For do. to Messrs. Dennison and Co., of Chelsea, 2d Prize 4 guineas

For Collections of 36 varieties of Cut Roses, to Amateurs, to A. Rowland, Esq., of Rosenthal, Lewisham, 1st Prize 2 guineas For do. to F. Perkins, Esq., 2d Prize, 1 guinea

For Collections of Cut Miscellaneous Flowers, to Mr. Ford 1st Prize, 2 guineas

For Pansies, not less than 36 varieties, Prize to Mr. Henbury, of Croydon, 1 guinea

For the best Pear Apples, to Mr. Bray, Prize 2 guineas

For Baskets of Grapes, to Mr. Atlee, 1st Prize, 3 guineas For do. to F. Perkins Esq., 2d Prize, 2 guineas

For the best Melons, to Mr. Avery, Prize 1 guinea

Extra Prizes were given to Mr. Fairburn, for his seedling Heath, Wilsonii to J. Ward, Esq., for a green fleshed Melon do., for a fine dish of Keen's seedling Strawberries, and to Mr. Hailes of Blackheath, for a dish of his seedling Strawberry, Princess Alice Maud To all the contributors of plants, flowers, &c., for which Prizes were not awarded, the Committee return their best thanks. They also, on behalf of the Institution, beg to return their best thanks to the Exhibitors who have obtained Prizes, for their great liberality in returning all the Prize money, so justly awarded to them.—By Order, R. Cutler, Secretary, 97, Farringdon street

FLORAL FETE ON WATERLOO DAY
ROYAL SURREY ZOOLOGICAL GARDENS
On Tuesday, June 18th, 1844,

THE ROYAL SOUTH LONDON FLORICULTURAL SOCIETY will hold their FIRST GRAND MISCELLANEOUS EXHIBITION OF FLOWERS, FRUITS, AND VEGETABLES.

On which occasion, in addition to Gold and Silver Medals, and other costly Prizes given by the Society, extra Prizes will be given for the best collection of Miscellaneous Plants, Roses, Heartsease, Grapes, &c.

Dawson's and Teasdale's unrivalled Production of LONDON IN THE OLDEN TIME, and THE MAGNIFICENT MENAGERIE will also be exhibited

THE PROMENADE CONCERTS,

With a most Beautiful and Novel Selection, and an additional Military Brass Band, under the direction of Mr. W. BALDRY, and at Dusk the terrific Exhibition of

THE GREAT FIRE OF LONDON,

with new and startling effects,

Doors open at (one Oclock at 6d. Conflagration at Dusk Admission One Shilling

Nurseries, Sawbridgeworth. Hertfordshire, 2 miles distant from the Harlow and Sawbridgeworth Stations, on the Northern and Eastern Railway.

T. RIVERS, jun., respectfully informs his Friends that his Collection of ROSES will be in full bloom from the 20th inst. There are eleven dozen trains daily to the above stations.—June 12, 1844.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

YOUELL AND CO.,

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN; HIS MAJESTY THE KING OF THE BELGIANS, NURSERYMEN AND FLORISTS BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN DOWAGER.

NEW AND SUPERB CHRYSANTHEMUMS.

YOUELL AND CO. beg to call attention to the following select List of CHRYSANTHEMUMS; the plants are strong and healthy, and ready to be forwarded per Post free to any part of the United Kingdom, at 12s. per dozen, the selection being left to the purchaser or to Y. and Co. They will be found very desirable to those who intend exhibiting at the Autumnal Exhibitions

Achmet Bey, lilac
Arago, buff and red
Beauty, pale lilac
Belladonna, pink
Betulia, lilac
Campestroni, purple
Casimir Perrier, small, crimson
Chancellor, white and pink
Changeable, yellow
Christophe Colombe, lilac
Col Combes salmon
Conspicuum
Defiance, white
Duc de Conigliano, crimson
Duchess de Montebello
Duke, extra fine
Elegans, rose
Empress, lilac
Expanded, purple
Flechier dark rose
Formosum, white and yellow
Golden Lotus, flowered yellow
Gem, pink and white
Goliath, white
Gouvain St. Cyr, orange
Hero
Incurved, pink
Insigne, pink and red
Imperial, pale lilac
King, pale rose
Louis Philippe
Lucidum, white
Marchioness, white
Madame Pompadour, dark rose
Marechale Messina, yellow and red
Marie, red
Marie Antoinette
Magnet, yellow
Memnon, pink
Minerva, pink and white
Mirabile, white and buff
Peter, creamy
Perspicuum, pink
Princess Marie, light pink
Pulcherrimum, rose
Queen, deep rose
Quilled, yellow
Rosalind, pink
Salters, white
Stephanea
Sultana, rose
Superb, clustered yellow
Surprise, white
Starry, purple
Tasselled, lilac
" yellow
Triumphant, pink and buff
Two coloured incurved, yellow and brown
Vesta white
Wheelerianæ.

YOUELL AND CO. are now sending, per post, free to any part of the United Kingdom, the undermentioned highly-desirable Plants, full particulars of which will be found in their Advertisement of the 27th of April.

FUCHSIAS.

12 Extra Fine varieties, 1s., the selection left to Youell & Co.
12 ditto ditto 2s., the Selection left to the Purchaser.
50 Fine varieties . . 4s., the Selection left to Youell & Co
50 Extra Fine ditto . 6s., the Selection left to the Purchaser.

VERBENAS.

12 Extra fine Varieties, 6d., the selection left to Youell & Co.
12 Ditto " 10d., the selection left to the purchaser.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name . . 1s. per dozen
12 Extra Fine ditto, do. . . 1s6. "

PETUNIAS.

Extra Fine Varieties, 12s per doz., including Miller's Fanciful.

FANSY "LADY ALICE PEEL," (for particulars of which see Advertisement of Apr 27.), 2s. 6d per plant.

ARAUCARIA IMBRICATA, 4 years old, 30s. per dozen, or 10l per 100

CEDRUS DEODARA, 2ft. to 2ft 6in., 18s 6d. per plant.

CAMELLIAS.—Extra fine sorts, including Monarch, Tricolor, Elegans, Beali, Leiseveriana, King, Chandleri, &c., 42s. per dozen

N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

*** Hatch's Pink Support, 4s 6d. per dozen; for particulars of which, see their Advertisement of the 25th of May.

Great Yarmouth Nursery, June 13, 1844.

WARNER AND WARNER, SEEDSMEN, 28, Cornhill, London, beg to offer the following SELECT SEEDS, which they can confidently recommend—

Calceolaria, saved by an Amateur, from the most splendid flowers	1s	per paper.
Campanula, double, blue and white, mixed	6d.	"
Delphinium album	6d.	"
Pansy, saved from the finest flowers	1s.	"
Stocks, Giant Brompton, three colours (each)	6d	"
Hollyhocks, double, very fine	6d.	"
Sweet William, double (variegated)	6d.	"
Papaver Verdicaule	6d.	"
Cabbage, Warner's Early Incomparable; very early and fine flavour	3d.	"

ROSES IN BLOOM.—WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD & SON beg leave respectfully to invite the attention of the Nobility, Gentry, and Amateurs to their extensive Nursery Stock, extending over Forty Acres of Ground Fourteen of which are cultivated with ROSES, now coming into splendid Bloom, and will continue in flower during the Rose season.

There is a carriage drive through the Nursery, with arbours fitted up for the accommodation of parties desirous of inspecting the Roses.

Additional Coaches (Sundays excepted). The Lewes Coach passing Maresfield leaves the Golden Cross, Charing Cross, every Monday, Thursday, and Saturday morning, returning the following days

Maresfield is 12 miles distant from Hayward's Heath station of the London and Brighton railway.

THOMAS CRIPPS respectfully offers the undermentioned NEW PURPLE:—

Fuchsia Lowryii	each 2s. 6d.	Fuchsia Stormontii	each 2s. 6d.
,, Prince of Wales (Rose's)	2 6	,, Queen	7 6
,, Duke of Wellington	2 6	,, Prince of Wales (Pawley's)	7 0
,, Bridegroom	2 6	,, Magnet	7 0
,, Kentish Bride	2 6	,, Sanguinivea	3 6
,, Scottish Hero	2 6	,, Marginata	3 6
,, Maria	2 6	,, Boydii	3 6
,, Florence	2 6	,, Fair Helen	3 6
,, Akbar Khan	5 0	,, King John	3 6
,, Transparens (Hardy's)	5 0	,, Giantess	5 0
,, Prince of Wales (Langelier's)	5 0	,, Dr. Noble	5 0
		,, Edwardsii	5 0
		,, Audot	7 6

A selection of 12 from the above, if left to T. C., 31s. 6d., or to the purchaser, 42s. 6d.

Strong plants of the Double White Bregmansia 10s. 6d.; Small ditto 7s. 6d. each.

A remittance from unknown correspondents is requested. Catalogues of Fuchsias and Miscellaneous Plants will be forwarded on application.—Tunbridge Wells Nursery, June 14.

JOSEPH FRYER begs to offer his choice Collection of New Fuchsias, which are particularly fine and healthy, and of which he will supply good showy esteemed varieties at 6s. to 9s. the dozen, and any of the finest varieties sent out last year at 12s. per dozen, such as Exoniensis, Lowryii, Eppsii, Gem, Iveryana, Stanwelliana, Rogersiana, Toddiana, Brockmanii, Lanetii, Cormackii, St. Clare, Tricolor, Speciosa, &c.; and all the new varieties which have been sent out this spring will shortly be ready for delivery at moderate prices, orders for which can now be taken, and will be executed in the priority they are received. J. F. likewise begs to offer his choice collection of Pansies, finest varieties, from 6s. to 18s. per dozen; newest Petunias, 12s. per dozen, including Punctata; finest varieties of Verbenas, 6s. to 9s. per dozen; and fine plants in bloom of Thunbergia Fryerii, 2s. 6d. each; all of which can be sent post free, or stronger plants carefully packed in hampers, and something added to compensate for carriage. Clarendon Nursery, Camberwell, London.

SPLENDID EXHIBITION OF MOSSES.

A. PAUL AND SON'S COLLECTION, comprising all the novelties of the season, is now in full bloom.—Nurseries, Cheshunt, Herts, 13 miles from London, near the Waltham Cross Station on the Northern and Eastern Railway.

LOUDOUN'S COMPOUND for VINES.—It is a well-known fact in Agricultural Chemistry, that the best Manure for Plants is that produced from the decayed vegetable matter derived from the identical leaves and branches of the Plant which is to be improved by Manure. This fact was practically ascertained by those who improved the Vineries and Peacheries in France, long before Liebig had discovered the law which rules over the nutrition of plants. The great difficulty, however, is to obtain, in a country like ours, a sufficient quantity of decayed Vines, so as to employ them as Manure. This difficulty no longer exists; we have imported from abroad a sufficient quantity of this Manure, prepared, which we offer to the cultivators of the Vine, at 80s. per cwt. Any orders will be executed by application to Messrs. LOUDOUN and Co., No. 27, Mincing-lane, City, London.

CHOICE FLOWERS AND PLANTS IN POTS.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains occasionally dissolved in the water used with Plants produce a vigorous growth and splendid flowers. If what is called a "*Liquid Guano*" is desired, a superior article is obtained at half the usual cost, by dissolving HALF A BOTTLE of this powder in a *quart of water*, and using a table-spoonful to a gallon in watering flower-beds. *Sold in bottles*, 1s. 9d. *each*, by Chemists and Seedsmen. Agents, DAVY, MACKMURDO, and Co., 106, Upper Thames-street, London.

DRYING BOTANICAL SPECIMENS.

W. AND J. BENTALL beg to inform their Botanical Friends that they continue to prepare their Improved PAPER for DRYING PLANTS, and hope still to enjoy their patronage and support.

For the convenience of Collectors of Foreign, as well as British Plants, the Paper is now prepared in three sizes, and is delivered free in London, on the following terms: 16 by 10 ins., (folded), 14s. per Ream; 20 by 12 in., 20s. do.; 16 by 20 ins. (double the first named size), 28s. do. Specimens forwarded on application, and all orders promptly executed.

Paper-Mills, Halstead, Essex.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

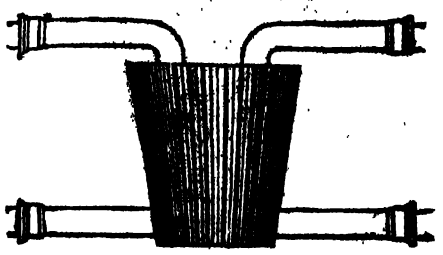
D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 159, FLEET STREET, LONDON.



BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

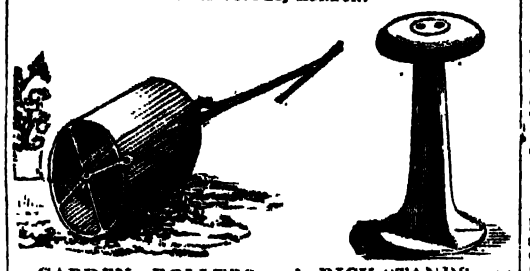
Plain Boiler.		Patent Door and Frames.	Fire-bars & Dead Plate.		Fire Door.		Damper.		Will heat of Pipe.	Forcing Pit, Length by feet.
in.	£ s.	s.	s.	d.	s.	d.	s.	d.		
10	1 5	20	7	6	6	6	2	6	30 feet.	12 to 20
Ribbed Boiler.										
10	2 2	20	10	6	7	6	2	6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	20	12	6	7	6	3	6	80 to 125 feet.	40 to 65
14	3 10	25	17	5	8	6	4	6	150 to 250 feet.	65 to 100
18	5 5	42	25	0	8	6	5	6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24	8 15	50	35	0	8	6	7	6	600 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

IRON WORKS.

COTTAM AND HALLEN, WINSLEY-STREET, OXFORD-STREET, LONDON.



GARDEN ROLLERS and RICK-STANDS, or STATHELS, at very low prices.

GARDEN SYRINGES, 9s. 6d. each.

HAND-GLASS FRAMES for Cucumbers, &c., 18 inches square, 20 inches, and 22 inches.

CAST-IRON FLOWER-STAKES, 4 ft. long out of the ground, 4 ft. 6 in., 5 ft., 6 ft., and 7 ft.

Watering-pots, Garden Engines, Mowing Machines, Garden Chairs, Superior Garden Tools of all kinds, Garden Vases in great variety, and every description of article used in Horticulture.

BEST WIRE, for STRAINED WIRE-FENCING, at 8s. 6d. per bundle of 150 to 160 yards each.

Flower-bordering, Trainers, Garden Arches, Flower-stands, Rose-tree Guards, and every description of Ornamental Wire-work, for Gardens, &c.

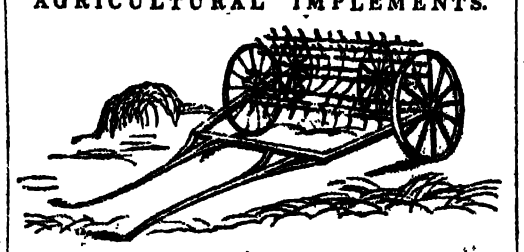
HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT, or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 1500 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time.

RENDLE'S TANK SYSTEM on an improved simple plan.

Show Rooms at their Manufactory, No. 2, Winsley-street, where estimates and every information may be obtained.

AGRICULTURAL IMPLEMENTS.



DOUBLE-MOTION HAYMAKERS of the best construction, made almost wholly of iron, and containing the double Cylinder, and all the latest improvements, are now ready.

CAST-IRON RICK-STANDS and PIGTROUGHS, at very low prices.

IRON HURDLES AND FIELD-GATES of all sizes, at exceedingly low prices.

PLOUGHS, DRILLS, Sheep and Cattle Weighing Machines, Improved Prize Harrows, Field Rollers, Turnip-cutters, Chaff-cutting Machines, Threshing and Winnowing Machines, Oil-cake Breakers, and every description of implements used in Agriculture.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where every information may be obtained.

SHARES FOR GREENHOUSES.

J. WEEKS & Co., ARCHITECTS, Hothouse Builders, &c. &c., Gloucester-place, Chelsea, beg to inform Horticulturists that they have made great improvements in their excellent and simple plan of Shading, whereby the largest or smallest can be instantly covered or uncovered with a sheet of canvas. To be seen in use at most of the London Nurseries, and at the Horticultural Manufactory, Gloucester-pl., Chelsea, near Sloane-sq.

Sales by Auction.

WINDING UP SALES.
TO GENTLEMEN, FLORISTS AND OTHERS.

MESSRS. PROTHEROE & MORRIS will submit to public competition at the Auction Mart, Bartholomew-lane, on Tuesday, June 18th, and Friday, 21st, 1844, at 12 o'clock each day, A FINE COLLECTION OF DAHLIAS, comprising all the leading varieties. Also a splendid assortment of GERANIUMS, the newest varieties of FUCHSIAS and VERBENAS, HEARTSEASE, and a variety of other Flowering Plants, being the last Sales for this season.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

SYDENHAM, KENT.

MESSRS. PROTHEROE AND MORRIS will submit to public competition on the premises, BRIAR COTTAGE, near the Dartmouth Arms, Sydenham, on THURSDAY, 20th JUNE, 1844, at 1 o'clock, the Entire Stock of CHOICE TULIPS, the collection of the late Mr. William Granger Jackson, comprising all the esteemed kinds in cultivation. Also IRON HOOPS and CANVAS, One and Two-Light BOXES, HAND-GLASSES, GARDEN UTENSILS, Sundry HOUSEHOLD FURNITURE, and other Effects. May be viewed one day prior to Sale. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.

MESSRS. PROTHEROE AND MORRIS have received instruction from Mr. BUNNEY, to submit to public competition on the premises, KINGSLAND NURSERY, about the second week in July, in consequence of the Lease having expired, the whole of the RARE EXOTICS and other Plants in pots; also SEVEN GREENHOUSES, PITS, &c. &c., in good condition, a quantity of Bricks, York Paving, and other Fixtures. May be viewed prior to the Sale, and Catalogues may be had of the principal Seedsmen, on the Premises, and of the Auctioneers, Leytonstone. The whole of the valuable Nursery Stock will be submitted to public competition by Auction about the third week in October.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. J. KING begs to inform the public that he is instructed to sell by Auction on the premises, Acre Lane, Brixton, on Monday, 17th June, at 10, by order of Mr. DAWSON, a COLLECTION OF CHOICE PLANTS, viz:—Camellias, Ericas, Epacris, Barrones, Serulata, Oleanders, Azaleas, Cacti, Crowea, Euonymus, Daphne, Polygalea, and a variety of other Plants. May be viewed, and Catalogues had on the premises, at Mr. CLARK'S, Seedsman, Bishopsgate Street, and of the Auctioneer, Hackney Road.

GREENHOUSES and PLANTS to be SOLD by AUCTION, by Mr. JOHN KING, on the premises, Montpelier Gardens, Walworth, on WEDNESDAY, June 19, at Ten o'clock, by order of Mr. Craig (whose Lease expires at Midsummer next) Three capital Greenhouses, 2500 Geranium and other Greenhouse Plants, of the best sorts; Herbaceous Plants, Tools, &c. &c.—May be viewed, and Catalogues had on the premises; of Mr. CLARK, Seedsman, Bishopsgate Street; and of the Auctioneer, Hackney-road.

TO FLORICULTURISTS.

LAHEE AND SON will SELL by AUCTION, by order of Mr. STORY (retiring to the country), at his Residence, Isleworth, on Tuesday, June 18, and following day, at 12, his extensive and superb COLLECTION of STOVE and GREENHOUSE PLANTS, consisting chiefly of Specimen and Hybrid Brieas, Azaleas, Camellias, &c., comprising more than 2000 Plants, a Span House, Prepared Soil, Flower-Van, and, if not sooner disposed of, the Lease of the House, capital Gardens, and Paddock. To be viewed three days, on Thursday, Friday, and Monday preceding. Catalogues may be had on the premises, and at LAHEE and Son's Offices, 64, New Bond street.

CAPITAL INVESTMENT.—IMPROVABLE ESTATE in AYRSHIRE, with SALMON-FISHINGS, GROUSE-SHOOTING, &c.—FOR SALE IN ONE OR MORE LOTS.

THE ESTATE OF BALLANTRAE, extending to about 7164 acres imperial, with the Village and Harbour and the valuable Salmon-Fishings of the River Stinchar and the adjacent Sea-coast.

The Lands immediately around the village, about 1587 acres, form a compact and beautiful Estate, lying on both sides of the River Stinchar, and nearly two miles along the Frith of Clyde; and they afford many fine situations for a residence. The land in this division is arable, of superior quality, and capable of great increase of value by draining, planting, and better cultivation. The remainder of the Estate, about two miles distant, consists of excellent Stock Farms, capable also of great improvement, by surface-draining and liming, and affords some of the best Grouse-shooting in the south of Scotland. The River Stinchar, and other streams on the Estate, abound with Salmon and Trout.

The present rental is only 1891*l.* 2*s.*; but the principal Farms are let at very low rents, and a considerable rise may be counted on. The public burdens payable by the proprietor are of trifling amount. The great post-road to Portpatrick passes through the village, and if the proposed improvements on the harbour are completed, Ballantrae will be the Shipping Port of the whole vale of Stinchar; and, with its valuable Fisheries, must become a place of some trade and importance. Ballantrae is about 15 hours' sail from Liverpool, 6½ hours' sail from Glasgow, and 12 miles from Girvan, to which latter place it is now in contemplation to continue the Ayrshire Railway.

If not immediately sold in one Lot, the Estate will be exposed as follows:—

1st. The MOOR LOT, extending to about 5877 acres, of which the present land rental is £375 0 0
And the shooting for the present season is let at . . 50 0 0

Total rent . £425 0 0

2d. The FARM of LAGGAN and LAGGANHOLM, as at present possessed by Hugh Lockhart, James M'Meikan, John Murray, Mrs. M'Kinna, &c., with 13 acres of thriving young Plantations, extending to about 460 acres, at present let at £416 4 3

There is a neat, small, modern Mansion on this lot, like a good Farm-house, and the principal part of the Land is out of lease at Martinmas next.

3d. The REMAINDER of the LANDS of LAGGAN and GARLEFFAN, including the Mill and Mill Lands, extending to about 232 acres, at present let at £175 2 9

4th. The LANDS on North side of the River Stinchar, with the Salmon-Fishing, Harbour, and Village, extending to about 905 acres, at present let at 274*l.* 14*s.* 9*d.*, will be exposed along with Lots 2d and 3d, but will not be separately sold till these two Lots are disposed of.

James M'Gregor, Ballantrae, will show the Lands; and for further particulars application may be made to George Guthrie, Esq., factor, Culhorn, near Stranraer; or to Æneas Macbean, Writer to the Signet, Edinburgh.—Edinburgh, 24th May, 1844.

PRIZES OPEN TO ALL ENGLAND, will be awarded by the CHAMET HORTICULTURAL SOCIETY, on Tuesday, the 25th inst.

Sum for Gratuities . . . £2 2s. 0d.
Silver Medal . . . 2 2 0
Place of Exhibition, Ramsleigh Gardens, two miles from Margate. J. G. Hodgson, Hon. Sec.
St. Peter's, June 12, 1844.

ROSES.—GREAT BERKHAMPSTED, HERTS.

MESSRS. LANE AND SON beg to announce to their Patrons and the Public generally that their extensive Collection of ROSES are now in FULL BLOOM; and that for the accommodation of parties resident in and beyond town, the London and Birmingham Railway Company have kindly appointed an extra train, which leaves Euston-square at half-past 10 A.M., for which, as well as for other trains, day-tickets are issued at one-third the ordinary fares.

The Nurseries are within about five minutes' walk of the Berkhampsted station.—June 14, 1844.

The Gardeners' Chronicle.

SATURDAY, JUNE 15, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Tuesday, June 18	Linnean	8 P.M.
Wednesday, June 19	Horticultural	8 P.M.
Saturday, June 22	Royal Botanic	4 P.M.

WHAT a curious hallucination that is which supposes the SAP OF TREES TO FALL, or settle, in winter, into the roots! One would have thought that the notorious difficulty of cramming a quart of water into a pint measure might have suggested the improbability of such a phenomenon. For it certainly does require a very large amount of credulity to believe that the fluids of the trunk and head of a tree can, by any natural force of compression, be compelled to enter so narrow a lodging as the root. The idea, however, has established itself in some persons' minds, and, we presume, in connection with that other old vulgar error, that the sap is in rapid motion in the spring time, in the roots of a tree, before it begins to flow in the branches.

These whimsies took their origin in days when the world was contented to accept assertions upon trust, and when hypotheses and vain imaginings formed the debased paper currency of science. But now men have found out the value of a golden standard, both for money and for knowledge; they call for facts before theories; and the result, already, is a wonderful disturbance in the crowded ranks of scientific as well as historical legends.

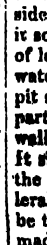
We shall assume the word SAP to signify the fluids, of whatever nature, which are contained in the interior of a tree. In the spring this sap runs out of the trunk when it is wounded; in the summer, autumn, and winter, it does not, unless exceptionally, make its appearance. But in truth the sap is always in motion, at all seasons, and under all circumstances, except in the presence of intense cold. The difference is, that there is a great deal of it in the spring, and much less at other seasons.

When a tree falls to rest at the approach of winter, its leaves have carried off so much more fluid than the roots have been able to supply, that the whole of the interior is in a state of comparative dryness, and a large portion of that sap which once was fluid, has become solid in consequence of the various chemical changes which it has undergone. Between simple evaporation on the one hand, and chemical solidification on the other, the sap is in the autumn so much diminished in quantity, as to be no longer discoverable by mere incisions. The power that a plant may possess of resisting cold is in proportion to the completeness of this drying process.

When the leaves have fallen off, the tree is no longer subject to much loss of fluid by perspiration, nor to extensive chemical changes by assimilation, for the leaves are the principal organs of perspiration and assimilation. But the absorbing power of the roots is not arrested; they, on the contrary, go on sucking fluid from the soil, and driving it upwards into the system. The effect of this is, that after some months of such an action, that loss of fluid which the tree had sustained in autumn by its leaves, is made good, and the whole fabric of the plant is distended with watery particles. This is a most wise provision, in order to insure abundant food to the new-born leaves and branches, when warmth and light stimulate them into growth.

During all the winter period the sap appears indeed to be at rest, for the re-filling process is a very gradual one. But M. Biot, many years ago, proved, by an ingenious apparatus, that the rate of motion of sap may be measured at all seasons; and he ascertained it to be in a state of considerable activity in midwinter. Among other things he found that frost had considerable influence upon the direction in which sap moves. In mild weather the sap was constantly rising; but when frost was experienced the sap flowed back again—a phenomenon which he referred to the contracting influence of cold on the vessels of the trunk and branches, the effect of which was to force the sap downwards into the roots, lying in a warmer medium; then, again, when the frost reached the roots themselves, and began acting on them, the sap was forced back into the trunk; but as soon as a thaw came on, and the ground recovered its heat, the roots out of which a part of the sap had been forced upwards, were again filled by the fluids above them, and the sap was forced to fall. A large Poplar-tree, in the latter state, having been sawed across at the ground-line, the surface of the stump was found to be dry, but the end of the trunk itself dripped with sap. Sap, then, is always in motion; and if it ever settles to the root in a visible manner, that is owing to external temporary causes, the removal of which secures its instant re-ascent.

As to the idea that the bleeding of a tree begins first at the root, and, in connection with this supposition, that what is called the rise of the sap is the cause of the expansion of buds, and leaves, and branches, nothing can well be more destitute of any real foundation. If in the spring, when the buds are just swelling, a tree is cut across at the ground-line, no bleeding takes place, neither will the sap flow for some distance upwards, but among the branches the bleeding will be found to have commenced. Let the line A B represent the trunk and branches of a tree; let incisions be made at *c*, *d*, *e*, *f*; the sap will run at *c* first, then at *d*, next at *e*, and last at *f*, next the roots. This was observed some years ago by Mr. Thomson, at that time the Duke of Portland's gardener, who thought he had discovered that the sap of trees descends in the spring, instead of ascending: a strange speculation enough, it must be confessed. The fact is, that the sap is driven into accelerated motion, first at the extremities of a tree, because it is there that light and warmth first *tell* upon the excitable buds. The moment the buds are excited they begin to suck sap from the parts with which they are in contact; to supply the waste so produced, the adjacent sap pushes upwards; as the expansion of the leaves proceeds, the demands upon the sap near them become greater; a quicker motion still is necessary on the part of the sap, in order to make good the loss; and thus, from above downwards is that perceptible flow of the fluids of trees, which we call the bleeding, effected.



A correspondent remarks that the well-known fact of trees sprouting in the spring, although felled in the autumn, proves that the sap had not at that time quitted the trunk to take refuge in the roots. And we agree with him in considering that such a common occurrence should have put people on their guard against falling into the vulgar errors on this subject.

WE are happy to find from our correspondent that several NEW AND USEFUL BRANCHES OF CULTIVATION are likely to be adopted in some of the most favoured of our West India Islands. Amongst them the small but beautiful island of St. Vincent has recently taken a conspicuous lead in the growth of Tobacco, the Nutmeg, Clove, and Arrow-root, the Maranta arundinacea. It is to this latter production we wish at the present more immediately to call the attention of our readers. For a long time, its scarcity and high price caused it to be considered merely as a medicine; and it was only sold by chemists and druggists at the enormous price of from 2*s.* to 5*s.* the pound; but now, from the vastly increased quantity grown, it may be obtained at a reasonable rate—at 1*s.* 3*d.* to 1*s.* 6*d.* the pound—with an increased facility of getting it genuine.

The starch of this valuable plant has long been recommended by medical men as the most nourishing of all food for children and invalids. It is now coming into general and deserved estimation; and we can hardly doubt that at no very distant period it will become an article of consumption as much in request as either sugar or tea. The Bermuda Arrow-root was at one time considered the finest, and perhaps this was the case as long as the cultivation and manufacture were confined to the black and coloured population; but since the proprietors of Sugar and Coffee estates have given it their consideration as a staple article of export, we think this early prejudice must cease. The soil in our windward and leeward islands is so much superior to anything that Bermuda can boast of, and all of them being amply supplied with the finest streams, wherein Bermuda is unfortunately deficient, we think it must follow as a necessary consequence that the Arrow-root of the before-mentioned islands will eventually prove of the finer quality.

The manufacture of Arrow-root depends materially on the purity of the water with which it is washed; and as the Bermudians have to rest satisfied with such rain-water as they can collect in the marble tanks they appropriate for the purpose, that island cannot maintain its fancied superiority. Many of the negroes throughout the West Indies, having purchased houses and lands in the mountain districts, have no objection to aid in its cultivation or manufacture, although they decline working on the sugar estates, for the labour is lighter; and as it is always grown in mountain situations, in order to be near the heads of springs, the labourers have little or no distance to go from their houses to their work. Its cultivation may thus become the means of reclaiming a portion of the population from the listless and idle habits at present prevailing.

Liebig asserts that 4 lbs. of Arrow-root contain as much nourishment as 15 lbs. of butchers' meat, or, what is the same thing, 1 lb. of Arrow-root contains as much carbon as 3¾ lbs. of meat. The skilful practitioner has already availed himself of this condensation of nourishment, by ordering it as a food for infants. But its use does not stop here; it is extensively used by the metropolitan surgeons in the cure of ulcers, especially those produced by burns. It is also used in the manufacture of English gum.

Treated with nitric acid of density 1.5, it is said to be converted into a most explosive compound—nitramidine, which Pelouze has recommended for the Artillery service. Dumas, a chemist of great celebrity, says that, used in the proportions of 1-6th or 1-4th mixed with Wheat-flour, it renders bread infinitely more nutritious. It is used by biscuit-bakers; and we have the authority of Demetrius Dumadow for stating that it is used in the manufacture of the finest description of cards, as well as by confectioners and pastrycooks. It is extensively consumed in getting up our calicoes, linens, and cottons, not giving them that yellow colour which common starch invariably does. We cannot, therefore, but congratulate our colonists that something like necessity has driven them to the adoption of a cultivation which is likely to become important to themselves as an article of export, as well as to this country by supplying it with a cheap, delicious, and economical food.

PROPAGATION OF ROSES BY CUTTINGS.

IT is generally believed by amateurs and others, that Moss, Provins, French, Damask, and Bourbon Roses, &c., are difficult to increase by cuttings; but by the following method, these sorts may be raised in abundance. Let a bed of well-fermented stable litter and leaves be made by the side of a north wall, and place a one or two-light frame on it so as to face the north. In this put about eight inches of leaf-mould that has been previously well soaked with water; then spread over all about three inches of sharp pit sand, and make the whole firm and level. The back part of a span-roofed pit, running east and west, with a wall in the centre, is also a suitable place for the purpose. It should be filled to within a few inches of the glass with the same kind of material. In selecting the cuttings, moderately weak wood of the present year's growth should be taken, if it is sufficiently ripened at the base or has made one full-formed leaf. Strip the cuttings with the finger and thumb, and smooth the base, reserving the detached portion of the parent bark; cut them close above the first leaf, and insert them in the sand, but not so thick as that their leaves will overlap one another. When this is finished, the bed should be watered, to settle the soil about them, and they should have plenty of air for the first four days; but it ought to be lessened by degrees, so as to gradually inure them to a confined atmosphere. As the preservation of their leaves in a healthy state is essential to success, the bed may be formed, and the cuttings put in on the same day, without waiting until the material becomes heated, as a thin covering of cellular tissue should be formed over the wounded end of the cutting before that takes place. In the third week the greater part will be rooted, and in the fourth they should be potted off into 60-sized pots, in a soil composed of leaf-mould and loam. They should be afterwards removed into a damp frame or pit, without any water being given to their roots; but they may be slightly syringed over their leaves, and when they become well rooted in the new soil, they may be hardened off and either shifted into larger sized pots or planted out in a sheltered border, where they will make fine plants for next year. By again levelling the surface of the beds, and making the cuttings to two eyes—always preserving one leaf, Tea-scented China, Noisette and Boursault Roses, &c., will root freely in it without any further preparation; but if a considerable quantity of the first-named sorts are required, either the old beds should be taken down, and a little fresh fermented dung added, or a new one should be made, using the same sort of materials as are recommended above. The young wood should be taken before the blooms are expanded, and the cuttings prepared similar to what I have already described. The young shoots of what is called the second growth, may also be used for cuttings; they should be taken when two full-formed leaves are made, smoothed at the base, and cut down to the first leaf, then planted in a bed of the same construction as above. When they are rooted they may be hardened off and allowed to remain in the bed until spring. Plenty of air in favourable weather should be admitted. In this way they will occupy less room than when placed in pots, and they will stand the winter better. Cuttings of Roses, like those of many other hard-wooded plants, are more certain of rooting when they are made short, especially if a healthy leaf is attached to them and kept there until they are rooted. This, however, can never be accomplished if the soil in which they are placed is subjected to the alternate action of wet and drought; but by placing wet leaf-mould between the dung and sand, an uninterrupted supply of

moisture is obtained, and no water is required, from the time the cuttings are put in until they are potted in the pots. So suitable for this treatment, that when the bud at the axil of the leaf has been damaged, or otherwise abortive, shoots at the root are excited and suckers are produced. All kinds of Roses will root freely under this treatment. — *R. P. Drummond, Gwernant Park, Cardiganshire.*

A FLORIST REFORMER.—No. I.

THE TULIP.

That there is great occasion for a reform in Floriculture none will deny; but concerning the means by which this may be attained much difference of opinion will exist. Some may say that better regulations at florists' meetings will have a tendency to accomplish this desirable object; and also that by paying strict attention to the appointment of competent and impartial judges, something may be done. But the greatest evil is the selling, as well as exhibiting, one variety under several names, well knowing at the time that the plants are alike. It is astonishing that men, for the paltry sum of a few shillings will hazard their character and reputation in this respect. The dispersion of the late Mr. Clarke's Breeders has been a source of much confusion, each possessor upon breaking one having named it without taking the least trouble to ascertain whether the same variety was ever previously broken.

I have often been surprised that southern growers have not set about reforming this notorious abuse, possessing, as they do, the best means of doing so, as the Breeders were principally in their hands. If this had been the case we should not have had Polyphemus under so many names; and I must say that the parties who have again named it ought not to be classed (even if innocent) amongst those entitled to the highest rank amongst connoisseurs.

Much of this abuse might have been remedied if in catalogues annually published the synonymes had been given. I was the first who noticed in a catalogue the various names which the Tulip, as well as other florists' flowers, was sold under. Now, if this had been done by the southern florists, much inconvenience and mischief would have been avoided. I trust that they will now set about the matter in earnest, and in future, catalogue each variety under what is supposed to be the original name, adding after it the whole of the synonymes by which it is known. It is to aid this object that I give the following list of Tulips, with as many of the synonymes as I know; and if they are not correct I trust I shall meet with the cordial co-operation of good judges in effecting this object.

That the amateur may be benefited in making a judicious selection, I have classed them in three divisions. The First Class contains all that is worthy of a place in any stand of 12 or 24 varieties, and possesses every requisite of a fine Tulip. In the second the varieties have either fine forms, but tinged stamens, or else have rather long cups, and pure bottoms and stamens. Those in the Third Class are such as deserve a place in any collection, but are not calculated for a southern stage.

FIRST CLASS.

Ariela
Athalia
Beauties, *alias* Atlas and Rose Bacou
Carmine de Genix
Catalina, *alias* Ponpeau tres Blanc and Cerise Blanche
Cerise à belle forme
Guiatea (Slater's)
Triomphe Royal, *alias* Heroine, La belle Nannette, and La Cherie
Madame Vestris, *alias* Clarke's Clio and Goldham's Princess Sophia of Gloucester
Ponceau tres blanc (Dutch)
Queen of Hearts (Franklin's)
Rose Brilliant.

Byblomens.

American (Slater's)
Bijou des Amateurs
Byzantium (Lawrence's)
Camarine
Broque d'Amboise
Holmes' King
Invincible (Franklin's)
Mentor, *alias* Reine de Sheba
Musadora
Pandora
Roi de Siam, *alias* Acapulco
Salvator Rosa
Violet Cook
" Sovereign
" Quarto, *alias* Violet Alexander
" Brun
Zenobia (Slater's).

Bizarres.

Catafalque (old Dutch)
Charbonnier
Curion (Slater's)
Duke of Hamilton (Slater's)
Fabius (Lawrence's)
Glencoe
Iago (Lawrence's)
Marcellus
Napoleon (Walker's)
Polyphemus, *alias* Goldham's Albion, Ulysses, and Nourri Effendi.

SECOND CLASS.

Roses.

Brulante Eclatante
Catharine
Cerise Royal, *alias* Mantean Ducal, Ponceau Brilliant, and Moore's Rose
Elizabeth Jeffries
Lady Crewe
Lady Middleton
Lac
Manon
Mason's Matilda, *alias* Strong's French Rose
Pretiosa, *alias* Thunderbolt
Queen Boadicea
Rose Camuse

Byblomens.

Ambassador, *alias* Atlas and Rose Bacou
Bailleu Van Mouvede
Blenfait Incomparable
Beauty (Buckley's)
Buckley's No. 46
Cleopatra
Charles de Provence
David, *alias* David Pourpre
Davy's Queen Charlotte
Due de Bordeaux
General Barneveld
Imperatrix Florum
Incomparable Daphne
" Rowbottom's, *alias* Haigh's
Lancashire Hero (Buckley's)
Lord Denbigh
Lord of the Isle (Slater's)
Lewold
Louis XVI.
Ne plus Ultra
Prince Elie
Queen Victoria (Willmer's)
Rubens
Sir R. Knatchbull
Thalia (Clarke's)
Violet Sovereign

Bizarres.

Charles X., *alias* Waterloo, Bartlett's Pistoff, La Conquerante, Gabel's Glory, Royal Sovereign, and Duke of Lancaster
Catafalque Surpasse
Carter's Leopold
Donzelli, *alias* Wells's Lord Brougham
Leonidas Posthumus
Lord Milton
Lord Lilford
Leonardo da Vinci
Optimus (Horton's), *alias* Surpasse Optimus
Richard Cobden
Sanzio, *alias* Abercrombie, Captain White, Strong's Admiral White, and Strong's Admiral Black
Shakespeare, *alias* Garrick, and Edmund Kean
Strong's King

Roses.

Admiral Kingsborough
Alexandre le Roi
Camilius
Claudiana
Comte de Vergennes
Duchess of Clarence
Emily
Fleur de Dame
Grand Roi de France
Incomparable Hebe, *alias* Iphigenia, and Rose Hebe
Lady Willmot
La Vandyke
Lavinia (Clarke's)
Lilas en Cerise
Maria (Goldham's)
Mary Ann (Lawrence's)
Rose Monty
" Bianca
" Quarto
" Primo bien du Noir
" Unique
Sarah (Lawrence's)
Strong's Daphne, very like if not the same as La Vandyke
Thalestris
Vesta
Walworth, *alias* Glory of Walworth, and Glaphyra

Byblomens.

Alexander Magnus, *alias* Alcon, and Grand Marvel
Angelina
Bagnel, called also Black Bagnel
Baluruc
Black Tabbart
Catharina
Chef d'œuvre
Competitor
Czarine
Ely's Queen Victoria
Fair Flora (Buckley's)
Goodrich (Buckley's)
Gradius
Imperatrice de Russie, *alias* Lady of the Isle, and Valerius Publicola
Impératrice des Beauties, *alias* Duchesse de Modena
Indispensable Premier Noble, *alias* Grand Cadi
La belle Nanene
La Mere Brute Incomparable
Lawrence's Friend
Nectar
Passe Reine d'Egypt
Patty (Lawrence's)
Queen of Beauties
" Charlotte
Reid's Sir John Moore
Reine d'Hongrie
" des Tulips
Roscius
Superb en Noir, *alias* Lysander Noir
Transparent Noir
Washington, *alias* Rodney
Violet à belle forme
" Imperial
" Pompeuse
" Rougeatre
" Triomphant
" Waller's

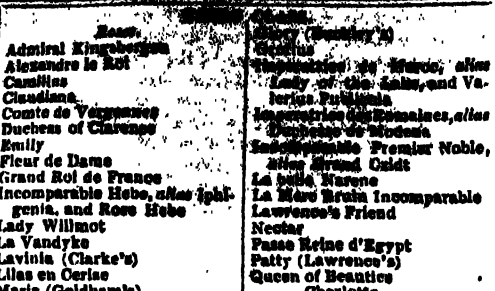
Bizarres.

Bolivar (Lawrence's)
Carlo Dolci
Catafalque Superieure
Duke of Wellington
Emperor of Austria
Jubilee (Rider's)
Sir Sidney Smith, *alias* Magnum Bonum, Trebisonde, Demetrius, and Franklin's Washington
Osiris
Prince Albert (Groom's)

—*John Slater, Cheetham-hill, Manchester.*

ENTOMOLOGY.

CURCULIO LINEATUS, of Linneus, (*the striped Pea-weevil.*)—There is no family of beetles more destructive to the produce of the garden than the Curculionidæ or Weevils, some attacking the Vines, Peaches, and Nectarines, others destroying nuts, seeds, and grain, and we have received from different quarters a species which is exceedingly injurious to the young Peas. This seems to be a favourable season for these beetles, for they made their appearance in thousands the last week of March, in the neighbourhood of Hertford, and for a fortnight caused very extensive mischief to the Peas; in some instances entirely eating off the second and third sowing, when the young plants had grown three or four inches above the surface. At that early period of the year they were observed to come out of the earth about nine or ten o'clock in the morning, and after feeding all day, they retired into the loose ground again as evening approached. At Stafford the same species of Weevil was equally troublesome, eating off the foliage of the early Peas, and it was not less destructive in the Isle of Wight, where it affected the Beans also.



The group to which the striped Pea-weevil belongs has been separated from the old Linnean genus Curculio, and has received from Germar the appellation of Sitona; it contains about 20 British species,* and the one before us is named Sitona Lineata (fig. 1); it is convex, and clothed with minute scales, more or less ochreous, those on the head and thorax often having a coppery lustre; they are also coarsely punctured; the head is elongated and narrowed before the eyes, which are black and not very prominent, and forms a short stout rostrum, at the extremity of which is the mouth, furnished with a pair of strong jaws, &c.; the face is concave, with a line down the centre; the antennæ are ferruginous, brightest at the base, very slender, not long, and inserted at the extremity of a groove on each side of the rostrum, towards the apex; they are geniculated or broken, and composed of 12 joints, the basal one long and clavate, the 2d larger than the six following, which are short, the remainder forming a spindle-shaped club of four indistinct joints; the thorax is cylindrical, with the sides slightly convex, the scales forming a dorsal and two lateral stripes; the scutel is minute; the elytra are long and elliptical, the shoulders prominent, there are ten punctured striæ on each, the spaces being alternately light and dark, forming five pale lines on each, in perfect specimens; but they are frequently partially obliterated, as in the figure: wings ample; legs moderately long, ferruginous; thighs stout and dark, but clothed with fine pale pubescence, and chesnut-coloured at the base; tibiæ simple; tarsi four-jointed, three first joints cushioned beneath; two basal ones elongate-obtrigonate, first the longest, third bilobed, fourth slender and clavate, claws small but strong. It varies greatly in size and colour, some being as long as the line in the cut, deep ochreous, with the stripes very distinct; whilst others are much smaller, and quite black and shining on the back, the scales being worn off.

* Curtis's Guide, Genus 375.

In the month of June, since, a friend showed me a bed of Peas in the garden of the Marchioness of Salisbury, infested by an allied species, called Sitona crinita by Gyllen, which is the Curculio macularius of Marsham (fig. 2); it is very similar to the foregoing insect in size and figure, but as the colouring and markings are different, it will be as well to describe this. Wastil.—It is of a grey tint, more or less ash-coloured, the sculpture and three pale lines on the thorax resemble those of S. lineata, but the elytra are spotted with black, some having a few spots only, as in the figure, others having the same spaces, especially the third from the suture, regularly spotted, and there are series of short bristly hairs down the centre of the furrows, particularly towards the apex; the legs are similar in colour to the other species, but the thighs are not so dark.

Before attempting to find a remedy, it will be necessary to ascertain the economy of these Weevils, and it is very remarkable, that although the Sitona lineata is found in myriads in Clover and Pea-fields, and is a constant inhabitant of the Broom and Furze, yet neither the science of the Naturalist nor the experience of the Agriculturist, has enabled them to detect when or where the eggs are deposited, or upon what the larvæ feed. In all probability, when these maggots are full grown, they retire into the earth, and there undergo their transformation into pupæ; yet I have some reason to believe that the Weevils hibernate and come forth in the early spring, cheered by the sun and impelled by hunger, to feed upon the tender crops; for the vernal specimens, as far as my observation extends, are always rubbed, so that they are much darker than the summer ones, and look like a different species. I should imagine that if soot were strewed tolerably thick along the rows of Peas, it would protect the crop from the ravages of the Weevils, and pulverised unslaked lime, it may be presumed, would be equally serviceable in dry weather. The best time for applying these remedies would be soon after sunrise, before the Weevils come forth to feed; and if any made their way through, they would not be able to return very readily, but in all probability would depart to more agreeable quarters, or would be rendered incapable of farther mischief during the night, for it may be inferred from their retiring into the earth in the evening that they suffer from cold. If the crop is watered, strew the soot or lime half an hour after, and let it lie at least half an inch thick on the surface. These Weevils drop, as nearly all the Curculionidæ do, when approached, and are consequently very difficult to find.—*Ruricola.*

THE ROSE-GARDEN.—No. XII.

(*Continued from page 372.*)

Failing Buds.—Failing buds should always be replaced with others, (but, be it remembered, that not one in ten ought to fail,) as near as possible to the place they were before entered, without mutilating the branch or body of the tree. Two buds in a tree are enough.

Untying the Ligatures.—This operation must mainly depend upon the weather; in general, during rainy weather, a month may elapse. If the weather be hot, six weeks will, perhaps, be scarcely enough; and sometimes it is a matter of indifference if the ligatures be removed or not until the spring. The object of the ligature, in the first instance, is to keep out air, sun, and wet; in the second, to keep the lips of the over-laying bark from turning up with the heat, and disuniting the wound which has barely healed; but care must be taken that in securing these advantages, the bark, swelling with the growth of the stem, is not confined, to the injury of the bud. To avoid this, as well as to secure the benefit of binding up, when you find the buds swelling, cut with the point of the knife, (taking care not to injure the bark,) that part of the ligature which is just behind the bud, leaving the bast on, which will continue to protect the bud from the sun, and three weeks afterwards remove the whole of the ligature. Or, untie the bast, and taking a broader piece, as not so likely to run into the dent created by the first, tie it on lightly to keep down the edges of the overlaying bark. It must be remembered, that injury is as frequently done by removing the ligature too soon, where the supply of sap has been deficient, as by leaving it on too long, where it has been profuse.



Shortening the Wild Branches.—At the end of Oct., or whenever the sap has quite deserted the stocks, but not before, it is desirable to shorten the wild branches, for two reasons; first, because it strengthens the tree against the frosts, &c.; and secondly, because it makes the garden a little less like a thicket. About 8 or 10 inches should be left upon each shoot, and care taken not to bend the branch too much on cutting it in, nor in any way to disturb the buds.

In nursery gardens, the shoots are frequently shortened while the sap is up, with the intention of making the placed buds push, as well as from a mistaken idea of strengthening the plant, by the removal of the very means of its nourishment, viz., the leaves. All such amputations from a healthy stock, where the root and branches are in proportion to each other, must be injurious; how much more so, then, when there is scarcely head enough to work the sap? The produce of the season should be left untouched until

ambient air, the circulation of the sap being interrupted, the roots will continue to increase, and the stock to swell; and when the matured buds receive the stimulus of the sap in the spring, the difference between their length of growth and that of the natural produce of the same stock (provided there be buds enough), is the only disadvantage the tree has to overcome that is worth a consideration. Knight mentions an experiment which he tried upon fruit-trees, of stopping the current of the sap by a ligature after the bud had taken, thus throwing a great part of the vigour of the tree into the newly-placed bud. This is a much more workmanlike experiment, and produces no injury to the tree. There seems to be an advantage gained by shortening the branches in the autumn, which at first sight might be disregarded, viz., preparing the plant to break out at the part desired. If a stock be entered in November, a preparation takes place in the buds at its summit, and they break in March or April, as may happen; but if the top of the same stock be left uncut till the spring, the plant is not prepared to break, and a delay occurs. Placed buds, not having so direct a communication with the channels of the sap as natural ones, require more management; and a very woody shoot that extends a considerable distance beyond the inserted bud, and has not been shortened in the autumn, is frequently induced, with great difficulty and repeated stopping of the sap-buds, to do the work required, viz., to transfer its sap; whereas, moderate cutting in applies the vigour of the plant throughout the winter to the vicinity of the part required; and the first blush of spring finds the inserted bud in a state of preparation to take up the action of the plant when the end of the shoot is cut away.

It will frequently be found that a plant which has been long worked, and carries a good head, will (when that head has ceased to increase for the autumn) employ the excess of the vigour of the plant in throwing out side shoots; it being manifest, in such case, that the head is not robbed by the formation of wood elsewhere, such side shoots may be left to increase with advantage; and if unremoved until their growth be fully terminated, they will help the stem to swell, and when cut off at the end of autumn, will transfer the vigour destined for their support to the supply of the head which remains the ensuing spring.

Home Correspondence.

Disease in Peach-trees.—I have noticed with pleasure the replies to "Omikron's" paper on the disease of his Peach-trees (p. 295), by Mr. Errington; as well as remarks that were given in a Leading Article lately. The generality of garden-walls in England, for the culture of choice and tender fruits, are very improperly constructed, being built what is termed solid walls—more especially in the south-east and west of England, it being well known that with few exceptions to the north of Nottinghamshire, we cannot bring the Peach, Nectarine, and Apricot, to the acme of perfection, without the aid of flued walls; not, however, for the purpose of committing an outrage, or forcing Nature against her will in early spring, but for protection through the blooming season, and more especially for assisting her in autumn, in better perfecting the wood to the well-being of the plant in the forthcoming year; without this being perfect, all science and labour will prove in vain. What a different appearance "Omikron's" trees would have presented had his walls been flued (for I presume that part of the country near Cheltenham will have fine open moist autumns), could he have given his wall a little fire through September and October, as it would in such a climate be quite practicable for one fire to have worked 40 yds. in length of a wall 12 ft. in height, on the split-flue system; or, 20 yds. each way, taking three runs in the wall. He would have been able to have more perfectly ripened the wood, and would not have met with the vexatious disappointment of which he so justly complains. I perfectly agree with the remarks in the Leading Article, viz., that the origin of the disease proceeds from the wood being imperfectly ripened (having had similar cases to contend with), and not, as Mr. Errington thinks, from the construction of the border, and the attack of aphides; for every practical man will have observed that the attack of insects generally proceeds, directly or indirectly, from diseased plants. It is the very reverse if plants are in health, and their wants properly attended to. It may be argued, that the expense of a flued wall is one great objection to its adoption; but that I oppose, as the saving in brick would nearly compensate for the extra expense incurred in pointing, flues, &c; two furnaces would manage 80 yds. in length, and in the course of 5 or 6 years, when the trees had covered the walls by judicious pruning and training, the furnaces might be dispensed with; the trees will have come into full bearing, and consequently will make more uniform wood, which would ripen in better season, having lost that superabundant growth which all young Peach-trees are subject to, especially in a well-formed and suitable border at a more early stage. Within the last 10 years I have erected a hollow wall in the gardens at Ashton Hall, which I think is a great desideratum, as well as a saving of expense, to Peach-walls where flued walls are not in use. Indeed, had I the erection of new walls, I should recommend my employer to adopt the hollow wall for the whole, whether flued for fire or not. The plan I adopted in the building of them is as follows:—After the foundation was put in upon a proper bottom I had it flagged, to start the brickwork or superstructure from; I then set out the wall 18 ins. wide, then run up a course of bricks, headers to each other, the width of the wall. Upon these I started three courses of stretchers lengthways to the line of the wall on each side, and one course up the centre, so that it leaves a vacuum of 2½ ins. betwixt the centre and outside courses. The walls are thus risen five courses. In the following or sixth course one brick was bonded from either side the wall, meeting together upon the centre part; two bricks stretched, and one bonded the whole of this course, rising five courses when bonded and stretched as before, only the bonded bricks come in alternately with those below, so that they range diagonally within three courses of the top of the wall, above which is solid. This plan leaves an uninterrupted vacancy from bottom to top of the wall. In sunny weather, the vacancy becomes charged during the day with heated air, which is given back during the night, and materially assists in warding off our late spring frosts, and in perfecting the fruit and wood in autumn. From such a wall in "Omikron's" climate, there will be no fear of his wood becoming perfectly ripened; again, in winter, when the trees are at rest, it would, *vice versâ*, keep them cool and dry, to say nothing of such a wall being so much drier than a solid one. A wall put up on this principle is built at less expense, per superficial yard, than an 18 inch wall, independent of a saving of one brick in four; of course the workmanship of such a wall requires attention, *i. e.*, well bedding and flushing the joints. I agree with Mr. Errington, as respects the under-spit being of friable loam, on a bottom formed of cement, but disagree with his borders being composed of chopped turf: it might answer well for removing established trees into, but I am of opinion such a border would be too powerful for young trees. In a humid climate they would luxuriate too freely, which would cause them to grow too late in the autumn. Again, I am no advocate for over-cropping the borders, nor yet for narrow borders. In my opinion, if "Omikron" had procured his trees one or two seasons, preparatory to final planting, cut them well in, and had had them in training one or two years before removing them to their final destination—as there is generally spare room upon walls to give young trees a year or two's training,—their roots would have been in a better condition to support the top. As to the formation and depth of the border, and suitable compost, I should say, for a wall 12 feet high, a border should be 16 feet wide, and opened to the depth of 22 inches on a good sound bottom. It should have a fall from back to front of 16 inches upon the bottom, which should be well drained. Lay on, to the depth of 6 inches, well broken stones, filling in with the sward, and 4 inches of good strong loam, which should be previously laid up six months and never turned. This would, in my opinion, form a border for the growth and maturing of the Peach and Nectarine, adapted to the three kingdoms. Mr. Errington's remarks on disbudding are very judicious, and his method of stopping the young wood, at the time the fruit is ripening, might answer for a tree that is fully established, but what effect would it have upon "Omikron's" trees, providing they were in good health? In a border composed of chopped turf, every strong shoot so stopt would throw out a host of laterals, which would have the appearance of a Ling broom. In healthy young trees they would almost break every eye. Would it not be a much better plan to curve the strongest shoots, so as to encourage the weaker parts of the tree? If "Omikron," by way of experiment—say early in September—would rear up a few spare lights from his early vinery, against two or three of his trees, covering the roots beyond their extremities with the same, he would, by ripening the wood more perfectly of those so experimented upon, I think be able next season to partially discover the cause of his present failure. There is likewise another cause of failure in the Peach, Nectarine, and Apricot, as regards their being subject to gumming, which is their not being worked upon perfectly free stocks. The more free-growing kinds, such as the French Mignonne, Royal George, and Noblesse Peaches, Violet Hative, and other Nectarines, worked upon stubborn stocks, dwarfs more so than standards. In a few years there are large excrescences at the point of union of the bud with the stock, so that in that time the trees have shown a premature decay. This arises from the want of reciprocity betwixt root and branch, and all the kind treatment imaginable cannot counteract the consequence. The sap in its downward direction meets a repulse, is propelled upwards into the channels already surcharged, when it procures for itself an outlet, and then gum disease, and a premature decay of the whole plant, is the consequence.—*James Roberts, Hampsthwaite, Ripley.*

Disease in Peaches.—Your Leader lately led me to refer to "Omikron's" letter; I know the case perfectly, having been annoyed for many years by the same disease, and not many miles from the same locality. You have hit the right nail on the head, as I can demonstrate. In addition to your theoretical hints, which are very judicious, I can give him some which have succeeded in practice. I would caution him against chopped turf, as I would a plethoric alderman against turtle, and recommend the water-gruel system. It is very uncommon to meet with good healthy Peach and Nectarine trees in this part of the country; I attributed this to want of care in providing them with suitable nourishment. Accordingly, I saved all the turf taken off about the eighth of an acre bared for buildings, and formed a border of this about 3 feet deep and 9 feet wide. My trees thrived beautifully to my inexperienced eye; I rejoiced in the size and vigour of the shoots, but my visions of melting Peaches were speedily dissipated by the plague which has visited "Omikron." I felt sure the soil could not be in fault, and concluded it must be our ungenial climate, for the enemy was especially active in the spring. The shoots were spotted, as if touched by the spatter of a red-hot shower, with a crimson radiation over the bark from the centre, from which in most cases gum exuded. In my garden, the leaves and fruit were in many instances affected later in the season in the same way. To test my notion as to climate, I got a neighbour, who had a Peach-house, to take one of these trees, and to plant it in precisely the same soil in the Peach-house. There the tree flourished, and bore fruit abundantly, and not a spot was ever seen on it afterwards. I did not then see that the more perfect ripening of the wood was the explanation of the difference. I attributed this to protection from spring frost. Seeing, however, that the strong shoots were most affected, I set to work to check the growth by cutting away roots; that seemed to produce very little effect. I then loosened some of the smaller trees from the wall, lifted them, and re-planted immediately nearer the surface in the same soil. This produced a good effect. I obtained a larger quantity of fruit, and smaller wood. Then it occurred to me that the mischief resulted from the imperfect ripening of the large wood. I have since replanted my wall, and removed the bed of good soil where I planted the trees, and filled up the holes with stones, rubbish, and poor road-scrapings, nearly free from any mixture of dung. On this I laid about one foot of common garden soil, and placed my tree as nearly as may be on the level of the ground, and laid two or three inches of soil over the roots, so that, when eventually settled, the roots would lie a little under the surface. The trees are now looking better than I have ever seen them, with a fine crop of fruit, and generally free from all appearance of disease, though they still throw their wood somewhat stronger than I could wish. I do not dare adopt your suggestion, of taking out, early in the summer, all the wood which would not be requisite for the following year, which would certainly give that the best chance of ripening by free exposure; for the little which would be left would, in my garden, grow as large as faggot sticks.—*C. Lawrence, Cirencester.*

Preserving Seeds from Birds.—I have found it very difficult to keep birds from tree and other small seeds. Every nurseryman knows the uncertainty of depending upon boys, and the expense of nets, which are not always certain of preventing the seed from being injured. This season I adopted the following plan, which has succeeded remarkably well:—I had common hurdles, the same as are used for folding sheep, made the breadth of the seed-beds; they rest upon bricks on each side of the bed; so covered, no birds have got into them; but of those covered with nets, where there appeared to be no place of entrance, they made their way under the nets. Besides, hurdles form a shade that assists small seeds to get up. Would the same covering answer for quarters of Gooseberries, or Currants, by resting them on supporters higher than the bushes? Upon Raspberries, where shade is an advantage, they would not fail to answer. Birds have no inclination to go under hurdles although they are open at all sides. Common [illegible] hurdles, 6 feet long and 3 wide, are worth from 6*s.* to 9*s.* per dozen.—*J. S.*

Bees and their Nightcaps.—"Melissa" requests to be informed how she may ascertain when her bees are napping, and the officers are relieving guard, for should she go when they are on duty, and the others wide awake, she fears she should have but a poor reception; besides, she has no Wrotham telescope to aid her vision, so that she is not likely to observe the working of the drones' eyes, the rolling and winking of which would altogether escape "Melissa's" notice. The habits of insects in many respects are worthy the imitation of man, and, as good examples of industry and short hours, she doubts not but Lord Ashley would most graciously receive an introduction to "Mel's" bees; but his Lordship would not recommend man to sleep away his spare time, but to work for that part of himself which we are told is never to die.

Bees.—Of late Mr. Pettigrew has written a great deal on these insects; and in my opinion, had he been nursed in a bee-hive he could not have thrown more light on the subject. A few weeks ago Mr. Pettigrew stated, by advertisement in the *Chronicle*, that he intended to make his peculiar system of management known for ten shillings, not pledging himself, however, unless he got 100 subscribers. Mr. Pettigrew mentions that it is worth ten pounds instead of ten shillings; and he was fair enough to say that if any person, after getting it, thought it too much, he would return their money. On seeing the advertisement, I was inclined to think it was quackery; but to be certain of the affair I wrote to Mr. Thomson, the gardener at Wrotham Park, whom I have known for a great number of years, and on whom I can place full confidence. Mr. Thomson in reply tells me that Mr. Pettigrew has made him a present of his system, and he confirms the advertisement to the very letter. I am, therefore, very anxious to get it, and I trust this will be the means of many coming forward, who at first, like myself, thought it a catch-penny; only 18 persons have come forward yet.—*J. Addison, Gosford, near Haddington.*

Glazing.—In reply to numerous inquiries I have received respecting my mode of glazing, which was lately described in the *Chronicle* (p. 277), I can only say, that I should not at all hesitate to have a house of any description whatever, glazed in the manner alluded to. Although I have never had an opportunity of trying it on a greenhouse or stove, I cannot see why it should not answer as well for these as for frames or pits, in which the angle is so much less than in the former. The principal thing is to have the work well done, making the edges of the panes fit exactly. If I were about building a new greenhouse, I would procure the glass a little thicker than what is generally sold for gardening purposes, as

good glass is made sufficiently cheap and common.—*J. L. Knox, Mansion Gardens.*

Root Excretions.—In a late No., "Dendrophilus" inquires, What becomes of inorganic matters, which plants are constantly taking up, and which do not appear to be essential to their healthy existence? He is undoubtedly wrong in assuming that there is no other explanation but "the theory of excretion by the roots," but still, the question remains, What becomes of these superfluous inorganic matters? In many instances when taken up in large quantities, they are deposited in the tissues of the plants so profusely as to obstruct the necessary functions for the life of the plant, and death is the consequence. Where these inorganic substances are not taken up in sufficient quantities to destroy the life of the plant, they are deposited in the tissues of the plant, either externally or internally or both, according to its structure. Plants growing on the sea-shore, as Salsola and others, when exposed to the absorption of large quantities of sea water, deposit in great abundance crystals of chloride of sodium in their tissues and upon their epidermis. I have examined Charas growing in pools, where the waters, from the presence of carbonic acid, hold in solution great quantities of carbonate of lime, and I have found this salt filling their large intercellular cavities, and forming a crop of beautiful crystals on their epidermis, whilst those of the same species, growing in ponds, with a less quantity of carbonate of lime, have exhibited a comparative paucity of crystals. The colouring of wood, also, by introducing solutions of the metallic oxides into trees, is a good illustration of the mode in which superfluous inorganic matters are disposed of in the tissues of a plant. The point of practical importance in this question is to prevent, in the supplying of manures to plants, such a quantity of unnecessary inorganic matter entering their tissues as shall either destroy them at once, or render the processes of life less efficient. As an instance of how inorganic matters are got rid of by plants, I may mention that only a short time since, I had a substance almost as hard as iron placed in my hand to guess its source, it was a portion of the trunk of a decayed tree from New Holland, which I make no doubt had grown near a chalybeate spring, the inorganic contents of which, when taken into the tissues of the plant, had been deposited, and formed the indurated substance of which I saw a part.—*L. E.*

The Golden Pippin.—Among "Notices to Correspondents," in a late Number, I observe some remarks (but too true) upon the probable extinction in England of the Golden Pippin. I beg leave to mention that the Golden Pippin flourishes in the neighbourhood of Oporto, Portugal. Some years since, in the garden of a Quinta, upon the left bank of the Douro, belonging to a brother of the present Consul for Portugal, now resident in London, I counted a fine young plantation of Golden Pippin-trees, comprising at least 1000 strong plants. Now, it occurs to me that, for a renewal of the Golden Pippin in England, we might import a quantity of these plants from the vicinity of Oporto, by steam vessels, at the proper season.—*B. D. Greys.*

Gooseberry Caterpillar.—In a late *Chronicle*, p. 372, are some remarks upon the caterpillar, which has this year proved so destructive to the foliage of Gooseberries and Currants. Mr. Walker is, however, wrong in considering it the larva of the Currant Moth (Abraxas Grossulariata), it does not belong to the order Lepidoptera, but is the larva of a hymenopterous insect—I believe Nematus Ribesii, of Mr. Stephens. Abraxas Grossulariata is a common species, but seldom sufficiently numerous to do any serious injury. The caterpillars of this species hatch in the autumn, remain torpid during winter, and feed again in spring. There are two or three broods of Nematus Ribesii in the course of the year. The correctness of my statement can easily be ascertained by preserving a few caterpillars in a box with a little earth.—*Henry Doubleday.*

Grafted Currants.—Standard Currants have a pretty appearance, and this is increased if they are grafted with opposite colours, such as black and white, white and red, or red and white. Allow the stock to reach four feet in height, then let it break two shoots, one of which is to be grafted with the desired variety, when this shoot has grown about six inches let both be stopped, so as to make a bushy compact head. For standards, or espaliers, train either horizontally, or by the fan method, about six shoots or more, according to the space you wish to cover, on either side, leaving one for the centre to be grafted. Train the same number of shoots of the worked variety. Each leading shoot, if kept well spurred in, will bear abundantly, and the fruit will also be of finer quality, and of a sweeter flavour, by being fully exposed to the sun and air, which is better attained by this method, than if the plants were grown in the usual way.—*J. R., Woolwich.*

Swans.—I beg to offer my testimony in favour of Mr Forsyth's recommendation against the cruel disfiguring process of pinioning Swans. Of the cruelty there is no doubt, it classes with docking horses, dogs, &c., upon the strength of vulgar prejudice. If procured young, Swans, like many other birds, have strong local attachments. Who ever heard of pinioning pigeons or other birds, from above?—from necessity there is no plea. Pinioned Swans having repeatedly perished from the attacks of dogs on the stream adjoining my premises, it occurred to me that it must be wrong to deprive this noble bird of any portion of its powerful means of defence and retreat. I therefore procured four years ago a pair of Swans in their second year, unmutilated; here they now remain far superior in appearance, and are now rearing their third brood. Last year, in spite of all danger from a well-frequented footpath on one side of the stream, they reared eight cygnets out of nine. I have known them, as your correspondent "Mr. Wighton" hints, "take the wings of the morning," but "evening shades" found them in their old quarters; this only occurs in very hard weather, when they soar away at a great elevation for a few hours occasionally. As a further proof of their attachment to locality, they invariably "nest" in my garden on the spot where they first turned down, though they have a mile in each direction for further choice. Some remarks have appeared in the *Chronicle* respecting the food of Swans. On a piece of water of 1½ acre in my garden, they make but little impression upon the aquatic weeds; but on smaller waters they must undoubtedly be of service in keeping down these plants. I have tempted them with fish of different species and sizes, but they invariably reject them; young frogs and toads they treat similarly, young Grass and aquatic plants appear to me to be their natural food, and of these they eat largely, if they destroy toads, it is in my opinion from the extreme jealousy they naturally have to companionship with any animal on the water, particularly in breeding time, even the cygnets of the former season should be removed early in the spring, for if they have not room on the stream to retreat to, their remaining on the spot would be fatal to them. The extreme grace of the Swan is its almost only recommendation, and with it a deep poetic feeling has been bound up for ages, and I beg of all who may wish to partially domesticate this bird, not to rob it of its great attribute.—*M., Deptford.*

Coniferæ.—The following is a memorandum of the Mexican Pines growing in the open garden here. They are planted on a high ridge of ground on the north side of the mansion, where there was for some years a mass of Scotch and Weymouth Pines, which grew remarkably well; they are now cleared from a part of the summit. The soil is a light sand, but has probably been enriched with the decayed leaves of the Fir for some years. Pinus pseudostrobus has been out two winters and is not injured, P. patula has been out one year, and is not the least injured, P. apulcensis has also been planted out one year, and is not at all injured, P. Ayacahuite was put out about the same time, and has already grown nine inches, P. Russelliana has been out for a similar period and is not injured, P. Devoniana has been out one year, but the leaves have been injured, it is, however, breaking again and promises to recover, P. Hartwegii is not at all injured, P. macrophylla has been out one year, and is not in the least injured; P. tenuifolia was killed to the ground, P. filifolia was also killed to the ground, but is breaking from the bottom of the stem, P. Teocote was killed by the winter of 1842. I have planted out this season,—Pinus oocarpa, P. oocarpoides, P. leiophylla, and P. Montesumæ; likewise Pinus Caria, P. Gerardiana, P. pithyusa, P. Massoniana, Picea Pindrow, and P. Hudsonii.—*W. Scott, Bury Hill, near Dorking, Surrey.*

Humphreys's Compound.—In these days of deception it is due to those persons who send out a really good article, that those who benefit by it should make it known. A London seedsman some time ago sent me a bottle of Humphreys's Compound to try on our Pelargoniums. On looking over the directions, &c., I found it stated that a single bottle was equal to some hundredweight of rich compost, &c., and, believing it to be an extravagant puff I had very little faith in it. I, however, selected a large stock plant, which, from having been in a cold draught, had become very sickly and yellow. I gave it one teaspoonful of the compound, in a pint of soft water, and being certain that it had a marked effect, I gave it two more doses, allowing a week to elapse between each application. In three weeks it was by far the finest plant in the house. I then applied it to all the plants which showed any symptoms of turning yellow, and in a few days they were all a beautiful green. This was when they were in large bud. Since the dry weather has set in, being short of soft water, I have been obliged to use hard from the brook, this had caused a fine specimen of Euchantress to look much worse than it did a short time ago, in fact, a few of the lower leaves were very yellow, one of them was more than half bright yellow, and I imagined would have dropped off within the week. I procured a second bottle, and gave it one teaspoonful, my man remarking, with a laugh, that if it restored that leaf he should think it worth having, it is now ten days ago, and the plant is in flower. I have seen no effect upon the bloom, which was very good before, but the plant is now a beautiful green, and the above mentioned leaf is now nearly as green as the rest. I observed the green gradually encroaching upon the yellow, till now there is only about the eighth of an inch left. I do not imagine that this manure will make up for the want of rich soil, but if it restores the green alone it will be very valuable. One plant of Sylph, to which it has been applied three times, is now in bloom, and I really think that it is finer in the flower than usual.—*J. R. Pearson, Chilwell Nurseries.*

Whitney's Composition.—I find that this composition upon wall-trees has the same effect as that described by "Rambler" and "Lignemont." I tried a frame of calico prepared with it upon a French Pear-tree, making the frame fit close to the wall at the top, and sloping it off so as to be about a foot from the wall at the bottom, for the free admission of air. While all the surrounding trees are covered with fruit, the one protected by the frame has set badly; its leaves being blistered and much eaten by caterpillars. I have also tried the prepared calico instead of glass for Cucumbers, and for striking cuttings under; for these purposes nothing can be better, and if it can be brought so as to be equally serviceable for wall-trees, it will be one of the most useful inventions of the age. I may also add, that when stretched upon light triangular frames, it affords the most complete protection to young Conifers, from having their branches broken by the weight of snow in winter.—*R. Davis, Millington.*

Toads and Snakes in Ireland.—At p. 357 of a late *Chronicle*, a correspondent, signing himself "J. Wighton," expresses the opinion that toads would live in Ireland, and that the experiment has not been carefully made. In this he is probably correct; but he does not appear to know that the natter-jack toad (*Bufo Calamita*, Laur.) is found in parts of the county of Kerry. This reptile proves to be far from uncommon in many parts of England, inhabiting sandy districts, where it has access to pits or bogs. It is a prettier animal than the toad, and far more active, running with considerable velocity when disturbed. I now come to the snake, which your correspondent says that wet boggy ground does not suit, and that, therefore, it would not, probably, flourish in Ireland. In answer to this, I need only say that the snake (*Natrix Torquata*) is very common in the fens of Cambridgeshire.—*C. C. B., Cambridge.*

Miscellaneous.—A *correspondent*, from Salt-hill, states that a plant of Statice pseudo Armeria was put out into the open border in Nov., 1843, and has stood the winter well. He adds, that it has three fine spikes of bloom, and that it appears perfectly hardy.

Societies.

LINNEAN SOCIETY.

June 4th.—The Bishop of Norwich in the chair.—Sir E. F. Bromhead, Bart., Arthur Henfrey, Esq., and Dr. Potter, were elected fellows.—Mr. Richard Taylor presented to the Museum a specimen of a fasciated branch of the common Ash-tree.—A continuation of Mr. Wood's paper on the arrangement of the European Carices was read.—A paper was read from Mr. Griffith of India, on the genus Sarcophyta. The description of this genus was given from a dried specimen which the author had received from Mr. Harvey. The plant has not a fungiform character, and abounds in a red colouring matter. Endlicher had previously described this genus; the author had not seen the membrane over the pollen-iferous masses described by Endlicher; the anther more nearly resembled that of Rafflesia than that of Balanophora; it resembled that of Rhizophora more nearly than either. The structure of the ovary presented many anomalies. The affinities of this genus on the whole are very doubtful. It had been placed in Cytineæ by Lindley; in Cynomoriaceæ by Endlicher, in Balanophoreæ; but it strongly differed from all, and its parasitism alone could not demand for it such a position. The author believed that the mass of affinities in the plant, pointed towards Urticaceæ.—Before adjourning the meeting, the President appointed Mr. Robert Brown, Sir W. Jackson Hooker, Mr. Edward Forster, and Dr. Horsfield, Vice-Presidents of the Society.—Messrs. Ross, Powell, and Varley, exhibited their microscopes.

ENTOMOLOGICAL SOCIETY.

Monday, June 3.—George Newport, Esq., President, in the chair.—A paper was read from Mr. F. Smith, on the Odynerus Antelope, a species of Hymenopterous insects. Drawings of its structure, with specimens of the perfect insect, its pupa, and of the species of Ichneumon which attacks it, were exhibited.—A paper was read from Mr. Waterhouse, on a new genus of the family Haltucidæ, which Mr. Cuming had obtained in the Philippine Islands. The genus was named Notoliaus, and three species were described. A new species of Blepharida was also described from the same island.—Mr. Thrupp exhibited a specimen of a Lime-tree, which had been attacked by a species of Coccus.—The President drew attention to a portion of the branch and leaves of an Orange-tree, which were covered with a species of Coccus. This was brought from the Azores, where the Orange-trees were suffering greatly from the attacks of this insect. Mr. Ivens, from the Azores, stated that the whole of the Orange-trees on one of the islands were attacked, and that where twelve thousand chests had been before exported, not a single chest had been sent away during the past year. This pest first appeared in this island three years ago, and had been supposed to have been introduced with some Mulberry-trees, which had been brought by the American Consul for the purpose of rearing silkworms. The Orange-trees on the island of St. Michael were now attacked, and the insect threatens, unless its ravages can be stopped, to do the work of extermination there, as effectually as at Fayal. The extent of the possible mischief may be judged of from the fact, that the Orange trade between that island and Great Britain constantly employs 200 sail of fast vessels, and pays a duty to the revenue of upwards of 50,000*l.* It appeared that the insect had been introduced to St. Michael's through the wreck of a vessel, which contained Oranges that had been grown on the first island. The insect attacked all parts of the tree, but the trunk in greatest abundance. It was found on the leaves, the blossoms and the fruit. Many of the trees died as a consequence of the attack, whilst others languished, and bore fruit only partially. The old trees suffered most, but none of them escaped. Most of the trees on the islands were old trees, or trees produced from layers. Various plans had been tried to get rid of the pest, but in vain. In other countries where fruits encounter the insect perish,

but in the Azores there was not enough of the pressure to produce upon it any influence. The principal remedies hitherto applied had been sulphur, lime-water, and tobacco, but these had had little effect. The insect was supposed to be the Coccus hesperidum. These particulars were elicited through Mr. Ivens by the President and members of the Entomological Society, from Messrs. Vieira and Camara, two Portuguese gentlemen, who were present, and desirous of gaining information on the subject from the members of the Society. Mr. Spence stated that he had examined the insect, but did not think it the Coccus hesperidum, but from its exact resemblance to a muscle shell, a species identical with one he had a few years since observed attacking his Apple-trees in Yorkshire, and which he then ascertained to be the Coccus arborum linearis of Geoffroy. With regard to the mode of exterminating it, he feared that the hardness of the scale of the insect would prevent any effectual application of poisonous solutions without injuring the tree. He believed the most effectual way, provided labour was cheap, would be to clear off the insects from the entire tree with the hand. If this could not be done, the trunks of the trees and principal branches might be scrubbed with a brush, so as to remove or injure the insect. The President said that Dr. Cowan had recommended naphtha, but he feared this would injure the tree. He had heard that an infusion of Chamomile flowers had been used with success in killing the Coccus on plants in the greenhouses of this country. This would be perhaps expensive for Orange groves, but he would propose that an infusion of Quassia should be used. This wood was now to be had in almost any quantity, and an infusion of it might be applied to the under surface of the leaves by means of a small engine, in almost any quantity. Dr. Lankester suggested that the attack of the insect might depend on the debilitated state of the trees from age, as it appeared that no new plants had been recently raised on the islands from seed, the trees from the layers being only parts of the old trees; and if this was the case little could be expected from remedies, but the best means of getting rid of the pest would be to grow new trees from seed. Mr. Wright thought the application of manure might have some influence in restoring the trees to a state of health in which they would no longer be exposed to the attacks of the insect. Mr. Camara stated that the Apple-trees and Pepper-plants on the islands were also attacked, but that the greatest destruction was in the Orange-trees. Mr. Spence, in conclusion, proposed that a committee of members of the Entomological Society should be formed, for the purpose of making further inquiries on the subject, through Messrs. Ivens, Camara, and Vieira.—*L. E.*

MICROSCOPICAL SOCIETY.

May 15.—Thomas Bell, Esq., President, in the Chair.—Mr. Bowerbank exhibited specimens of a Conferva, growing between the lenses of an achromatic object-glass. The plant appeared to be composed of tubes, in which, at irregular intervals, were a number of sporuleau bodies. In some places the sporules touched each other, exhibiting a moniliform appearance. Some object-glasses, pasted over with paper, also exhibited the same appearances. Mr. Bowerbank also exhibited specimens of the larvæ of an Ephemeris, in which the action of the circulatory organs could be seen when placed under the microscope.—Mr. J. Quekett noticed the iridescent appearance which glass frequently exhibited after having been buried for some time in the earth. This he ascribed to the decomposition of the surface of the glass, and which by this means is split up into a number of fine lines, which gives rise to the reflection of the various coloured rays of the spectrum.—Mr. Edwin Quekett made some observations on the raphides found in plants. These bodies were sometimes constant, as in the testa of the seed of the Elm, where they are found in the same position in all specimens. He was of opinion that these crystalline bodies were useful as contributing elements for the nutrition of future generations of plants. They were generally composed of oxalate of lime, a substance that contained both carbon and oxygen, and existed in some plants to the amount of 80 per cent. of their bulk.

COUNTRY SHOWS.

Gardeners' Benevolent Institution, June 11.—The Exhibition in aid of the funds of this Institution took place in the grounds of the Bishop of Rochester, at Bromley, in Kent. The day being fine, a considerable number of plants were gathered together, and the place was tolerably well filled with company. The principal features of the show were two collections of 50 plants, from Mr. Barnes, gr. to W. Norman, Esq., and Mr. Hunt, gr. to Miss Trail. That of the former contained the greatest number of well-grown specimens; but, as many of these, as well as some of those in Mr. Hunt's group, were shown at Regent's Park, we shall only notice the plants that were not present on that occasion. Loudon's "Arboretum Britannicum," given by Mr. Charlewood, of Covent-garden, was awarded to Mr. Barnes's collection, in which was a fine plant of Oncidium luridum, a noble Ixora coccinea, a beautiful Aphelexis humilis covered with blossoms, and other plants equally well managed. Mr. Hunt got a second prize for a slightly inferior group. Collections of 12 Stove and Greenhouse Plants were sent from the gardens of E. Goodheart, Esq.; F. Perkins, Esq.; H. Beaufoy, Esq.; and Sir C. Farnaby, Bart. In the first of these, which was the best, was a beautiful dwarf specimen of Polygala acuminata, a large Pimelea hispida, a healthy plants of P. decussata, and a pretty Azalea variegata. The best group of 24 Stove and Greenhouse Plants was contributed by Mr. Fawley, who had a large well-cultivated Euphorbia splendens, a Cereus, named interitus, which was something like Jenkinsoni, but was paler, a pretty Gloxinia rubra, a large Russelia juncea, and several Heaths, among which was a small E. ventricosa, with fine dark-green foliage, that contrasted well with the small white blossoms. A 3d Prize for 24 was awarded to C. R. Cutler, Esq.—Mr. Hanley, gr. to H. Berens, Esq., had 6 Stove and Greenhouse Plants, for which he obtained the 1st Prize. Among these was a pretty Achimenes rosea, and a beautiful Leschenaultia formosa was particularly noticeable. A 2d Prize was awarded to Mr. Wilson, among whose plants was an Eschynanthus speciosus growing on a block, and trained over a wire trellis, in very good health, and by this mode of training finely displayed its orange blossoms. Some Orchideæ were present, but among them there was nothing novel. Messrs. Henderson, of Pine-apple-place, sent a good Epidendrum Stamfordianum, and a pretty Broughtonia sanguinea. Others were from Mr. Barnes and G. F. Cox, Esq., of Stockwell; the latter contributed the beautiful Cattleya Intermedia, Oncidium Wentworthianum, in good condition, and Aerides affine, producing a pretty raceme of purple blossoms. Among these was also a good Stanhopea tigrina. Pelargoniums, in collections of 12, were shown by Mr. Gaines, of Battersea, Messrs. Henderson, and by other growers. Mr. Gaines got the 1st prize, for Rising Sun, Caroline, Grand Duke, Coronation, Lady Isabella Douglas, Emperor, Comte de Paris, Una, Kinghorndi, Erectum, Juba, and Albian, the latter a most beautiful large specimen. Messrs. Henderson were 2d; other groups were very much inferior to these. The 1st prize for 12 Calceolarias was awarded to Mr. Barnes, for Sovereign, Priory Queen, Standishi, Lady of the Lake, Zenobia, Master Walter, Pride of Kent, Prince, Delicata, Mabel, and Emily; 2, Messrs. Henderson, of Pine-apple-place. Of Heaths the best group was sent by E. Goodheart, Esq.; in this, as well as in collections from other growers, were some large well-cultivated specimens, but as they were nearly all shown at Regent's Park, they are fully noticed in the report of that exhibition. Of Fuchsias, Mr. Cole produced good plants of Champion, Victoria, Venus Victrix, Insignis, Brockmannii; Gem, Curtisii, Stanwellii, Eclipse, Paragon, and Britannia; other collections, in equally good condition, also graced the tents. An extra prize was given to E. Lawford, Esq., for 12 plants of Achimenes longiflora. Cut Roses were shown by Mr. Paul, of Cheshunt, and others; nor were Pansies wanting, but as no names were attached to any of the stands, we decline noticing them further. In the fruit tent we observed some black Hamburgh Grapes, 2 Melons, and a few Strawberries.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

LÆLIA SUPERBIENS. Stately Lælia. (*Stove Epiphyte*). Orchidaceæ. Gynandria Monandria.—The admirers of Orchidaceæ have to thank the Horticultural Society of London for many of the most splendid plants of the tribe which they possess, and especially among those of South American origin. The beautiful family of Cattleya, and its kindred genus Lælia, have been greatly augmented by the industry and zeal of their collector, Mr. Hartweg, who gathered and sent over to the Society a great number of species, and amongst them the present. As it was forwarded in considerable quantity, it has found its way into many collections. Mr. Skinner has also the merit of having introduced it very extensively. Till the present season, however, its flowers have only been known in this country through dried specimens, and the plates given in Mr. Bateman's superb work on Guatemalan Orchidaceæ. About the latter end of February last, however, a fine specimen grown by Mr. Brewster, gardener to Mrs. Wray, of Oakfield, near Cheltenham, was exhibited at the rooms of the Horticultural Society. Another specimen, but less perfect, has since flowered in the Society's gardens. We learn from Mr. Bateman's work, just alluded to, that it is found growing out of the crevices of the rocks in the cooler districts of Guatemala, chiefly in places which are sheltered from the keenness of the northern winds. In such situations, the pseudo-bulbs sometimes grow twenty-two inches high, and have flower-scapes four yards long, crowned with upwards of twenty flowers. This immense size, however, is far from being common; and when the plants are not protected on the north side, they are very small, and have an imperfect stunted appearance. In England the flower-stems have been about six feet in length, and the pseudo-bulbs usually rise about a foot. Probably the reason why flowers have not been produced sooner, may be correctly assigned to the fact of the specimens which were first introduced having been subjected to a high temperature, with a close, moist atmosphere. These conditions being more favourable to luxuriant growth, would undoubtedly militate against the production of flowers. And it was not till the plants which have bloomed were treated in a contrary manner, that they displayed any appearance of flower. Cattleyas and Lælias should always be grown in a lower temperature than is required by East Indian genera; and, during their winter season, water should be carefully withheld, and no moisture allowed in the house that can be prevented.—*Paxton's Magazine of Botany.*

Garden Memoranda.

A. Rowland, Esq.'s, Rosenthal, Lewisham.—This residence is well worthy of the name Rosenthal, or the Villa of Roses, being decorated on every side with a profusion of that beautiful flower. The principal entrance to the garden is from the drawing-room, and looking from which down the main walk, we are struck with the magnificent arches of Roses that meet the view; on these the large pink blossoms of the Bengale florida, contrasted with the purple Noisette, have a happy effect. On entering the garden, the rich and varied colours of this first of flowers beset us on all sides; but perhaps the principal object is a small temple on the left of the main walk, covered with Roses, which overtop a circular basin in which is a fountain tastefully decorated with shells. When this is set in action, it imparts a lively appearance to the scene. Many of the Roses are of the first order, and we were informed by Mr. Rowland, that he never had them in better condition, which is a remarkable fact, when we consider the long period of dry weather we have had; they are, however, regularly watered and syringed every evening as soon as the sun is off them, which may possibly account for their superiority. Some choice kinds are also protected from the sun and rain by canopies composed of canvas, spread over circular frames of wirework, from the circumference of which extend across at right angles two other wires, bowed upwards and forming a convex roof, which excludes wet and preserves the colour of the flowers for a considerable length of time. The principal walk leading from the house is terminated by a small piece of water, in which a fountain is continually playing. On the right of this miniature lake is a grotto, built of Derbyshire spar, from which a pleasing view of the grounds can be obtained. Leading from this grotto is a walk, agreeably shaded by an avenue of trees, which terminates in a Rose Garden, the extent of which is about two acres. This is chiefly planted with Crimson Perpetual, Cabbage, and Provins varieties, which, considering the dry season, were in very good bloom. In a collection of Roses that are cultivated in pots we observed Devoniensis, in fine condition, as well as Victoire modeste, which is a beautiful blush, together with Lady Fitzharris, a fine lilac, which contrasted well with the white blossoms of Lady Campbell, that was dwarf and healthy. Throughout the whole Garden we saw no appearance of greenfly; the Roses were all in the most perfect health, and here ample evidence of care and good management.

Miscellaneous.

Abstract of Meteorological Observations, by JOSEPH MILLIGAN, Esq., at the Van Diemen's Land Company's Establishment, Hampshire Hills. Lat. S. 41° 12'; Long. E. 145° 35'. Elevation above the Sea Level, 1340 feet.

1855.	Night. Maximum hail.	Night. Total.	Day. Minimum hail.	Day. Total.	Mornings in any 24 hours.	Total during the month.	Thermometer. Maximum altitude.	Minimum altitude.	Mean range in any 24 hours.	Minimum ditto.	Mean ditto.	Mean diurnal temp. from 9 daily observations.
	Rain.						Thermometer.					
							°	°	°	°	°	°
Jan. ..	776	2.20	.55	2.04	1.21	4.24	74	40	28	5	14.81	55.79
Feb. ..	.52	2.68	1.05	2.80	1.08	5.48	71	28	29	3	7.1	53.29
March.	.60	1.10	.60	1.68	1.26	2.76	73	37	26	7	13.56	54.09
April..	.68	2.96	.73	2.55	1.34	5.54	70	27	39	6	16.2	47.65
May ..	2.50	7.32	1.76	5.90	4.26	13.22	68	27	37	4	11.19	48.79
June..	1.52	3.08	.54	1.59	1.86	4.67	64	22	33	5	12.3	39.95
July ..	3.08	4.17	1.70	3.33	4.78	7.50	62	21	30	2	7.80	39.62
August	1.66	6.13	1.03	2.94	2.14	9.07	63	24	34	5	11.77	47.65
Sept...	.45	1.65	.39	1.62	.67	3.37	58	20	33	3	14.07	43.82
Octob.	.69	8.55	.64	6.18	1.38	9.70	65	32	33	4	12.2	46.82
Nov...	.64	2.94	.59	2.53	.92	5.47	69	32	36	6	12.2	49.76
Dec. ..	.60	2.39	.50	1.84	.91	4.22	62	32	30	2	17.6	52.98
For year 1856	3.08	40.19	1.76	34.07	4.78	75.16	32	21	37	2	13.948	47.69

—*From the Tasmanian Journal.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Besides the daily routine of watering, shading, giving air, and training the plants, with an occasional shift to some more promising specimen, there is little else to be remarked on just now. The great fault in almost all plant-houses is being too full of plants, and consequently the plants injure one another; but as a number of stove plants are much benefited by a change into some of the cooler houses, this house never need be injuriously crowded in summer.

Conservatory.—Of all the great families of conservatory plants, the Chinese Azalea has made the most rapid improvement in size, shape, and colours, and being among the easiest to force in early spring, we may have some sort or other of them in flower for this house from the end of January to this time. In ordering them from the nurseries, amateurs who are not well versed in the cultivation of plants, should order "worked plants," while some gardeners prefer them on their own roots, in order to keep them dwarf for particular situations, &c.; but they are much easier managed when grafted on the Phœnicea, or some strong seedlings from it, and this is a good time to graft them. The best six kinds that I saw in London, and which approached nearest to a florist's fancy, were Triumphans, Magnifica, Eximia, Alba superb, Apollo, and Speciosissima; these are also all cheap plants—the dearest of them may be had for five shillings. Ne plus Ultra, Refulgens, Concinna, Præstantissima, and Exquisita, are still finer kinds, but higher in price, and rather scarce in some of the nurseries. I would strongly recommend, when young plants of these fine Azaleas are bought in, that they should be turned into a bed of sandy peat in a turf-pit, or common cold frame, for the next three or four months; they can always be removed with safety into pots.

Forcing-pits.—The young stock of Gardenias, with all the novelties recently propagated, are the chief occupants here; and now begins the propagation, by grafting, of Camellias, Rhododendrons, and Azaleas: where expedition is preferred, these may be kept in a strong, moist, and close heat till they are united, but they will do perfectly well in a close cold frame, well shaded, only they take longer time in this way.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.—We have been accustomed to complain of bad seasons for flower gardening for years past, but I am not aware that we had ever so much real "ground for grumbling" as in the present one. Plants cannot grow except in very favourable situations, and we have not had any rain worth notice for nearly three months past, and watering, except for the purpose of keeping plants alive, is almost a waste of time, for we have here used, for days together, nearly 100 tons of water, without, in three days afterwards, being able to perceive where it had been used, and I am daily more and more convinced of the inutility of watering, or of expecting growth from its application, except in dull cloudy weather. Out-door gardening at the present time is very disheartening, and the business of the week may be summed up in a few words, viz.—"Do all you can to keep the plants alive until we get rain."

American Garden.—Except where the plants are mulched they must receive a thorough deluging of water, by forming basins round them, and afterwards covering the wet ground with dry soil, or some kind of mulching. They are dying in Kent by hundreds, and, I suppose, in other parts they are scarcely more flourishing.

Rosery.—Those who have Roses in pots may now use them advantageously for budding, and on the Tea and Chinese varieties will obtain a growth, and probably a flower, in the autumn. If, as Mr. Rivers says, roasted turf is a good thing for pot Roses, there will not be much difficulty, at the present time, in laying in a stock of it ready roasted.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auricula and *Polyanthus* seed will now be getting ripe; as soon as the capsules assume a brown colour, and give indications of opening, they must be gathered; dry them well, and put them in small tin boxes, as recommended in an early Number of this year's *Chronicle*. *Tulips.*—Put a glass shade over the seed-vessels which are intended to be saved, to prevent the wet lodging in the apex. Those bulbs the leaves of which have suffered from canker, or have sustained injury from early frost, may be taken up, as they are apt to mildew if allowed to remain in the ground too long. *Ranunculuses.*—Carefully shade those intended for exhibition. Semi-doubles, for impregnation, must not be covered, as the sun and air are essential to the process of fecundation. Water the paths about the beds, so as to make the surrounding atmosphere as moist as possible. Wetting the foliage at this season, especially with spring or hard water, is rather detrimental than otherwise. *Carnations.*—Continue to tie with soft worsted; examine those previously fastened, and mind that the "tie" is sufficiently loose on the stick to allow the stem to elongate. Take out the buds: the crown or topmost bud usually produces the largest and best bloom. If the plant is strong, reserve five; on the contrary, three is sufficient if the plant is weak. Pinks are generally not lacing well this season. Piping must be kept regularly moist, and well protected from the direct rays of the sun. *Pansies.*—Continue to put in cuttings, and pursue the method as recommended above for

Peach. Good varieties are now so plentiful that [illegible] could not now to [illegible] garden whatever. *J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Let plants now swelling their fruit be liberally supplied with liquid manure. Destroy all superfluous gills and suckers as they appear, retaining no more suckers on any plant than can have room to grow strong. Continue to encourage the recently-potted plants to re-establish themselves, by keeping them shaded during hot weather, and maintaining a moist atmosphere. Any ripe fruit requiring to be preserved for a week or two, should be removed, plant and all, to a cool room. Close the houses early in the afternoon, and no fire will be required. By this treatment the plants will also be healthier.

Vineries.—Where the Vine-borders are well drained they will now require a plentiful supply of water. Avoid syringing the fruit after it is half swelled. Keep a moist atmosphere, and close the laterals, except a few at the top of each Vine, which cannot be left to prevent the starting of the principal buds. The latter may now be quite removed from the borders where the Vines have ripened their crops, except about two inches of the rottenest of it, which should be left to serve as a mulching, and to keep the ground from cracking with the drought.

Peach houses.—*Syringe daily* the trees from which the crop has been gathered, and supply them with plenty of water at the roots. The sashes may now remain constantly open. Continue to tie in the shoots in late houses, and stir the surface of the borders before giving them water, which must now be often done. Trees in pots which have been forced should be placed in a sheltered place, and *plunged* to the rim in old tan or ashes: they must have plenty of water, and be frequently washed by means of the garden-engine.

Fig-house.—Keep the shoots thin and regularly tied in, that the fruit may have sufficient exposure to the light. Pinch the young lateral shoots above the third joint. Give plenty of air and water, and syringe daily.

Melons.—Do not let the heat in the beds fall below 80° or 85°, as it is very injurious to the plants; and if water is given in that state it is apt to cause canker. Let the coverings at night be continued throughout the season.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Fruit-trees and Shrubs.—Proceed with thinning, nailing, and tying in of young shoots. There will be a fair crop of Apricots and Peaches in most places this season. Guard against leaving too much fruit and too many shoots. Let the sad havoc among Peach-trees in Feb., 1843, be a warning to us, neither to exhaust the tree by over-cropping, nor to allow more wood to remain than can be properly ripened. In unfavourable situations, after seeing that the borders are not suffering from drought, keep them clean and smoothly raked near the wall, or cover them to the width of a yard with tiles; the reflection of heat from the tiles, and keeping the border rather dry, will insure the earlier maturation of the wood; but in adopting such a course, the roots of the trees must not be soaked with rains in autumn, or all your extra labour will be worse than thrown away. *Asparagus and Sea-kale.*—Fork up the ground of the beds, give them a dressing of rotted manure, a moderate sprinkling of salt repeated at intervals, and a good watering of drainings from the dung-hill, if you can afford it, and your beds are not in a damp situation. The latter vegetable I kept till lately in very fine condition, by covering it thickly with wasted manure, which kept it nice and cool.

Sow succession of herbs, such as *Chervil, Basil, Purslane, Parsley, &c.* It is a good plan to sow plenty of the latter in a quarter of Gooseberries or Currants, as it will be found useful in February and March, when to be scarce of Parsley is to be placed in a very awkward predicament: it may be dug down when all danger of scarcity is over. Sow also *Turnips* and *Radishes* for succession; the last crops of garden Beans, Marrow Peas, Scarlet Runners, and French Beans, for succession. One crop of the latter might last all the season, if the ground were well manured, the plants supplied with water, and no pods allowed to get large for seed. *Plant* out herbs, such as *Basil, Marjoram*, &c., in a warm situation; Cabbages, Savoys, Scotch Kale, Brussels Sprouts, &c.; Celery into trenches, and also in beds for future removal, shading the latter, and covering all the others with inverted flower-pots during the day in this scorching weather. Routine—Protect Cherries and Strawberries from birds by netting; thin Carrots, Turnips, Onions, and water Strawberries, fruit-tree borders, Cauliflowers, &c.; and if, like myself, you have not yet obtained a good soaking rain, you may learn a lesson on watering, by observing the effect produced on your lawn by a slight shower, followed by bright sunshine.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—It would be of great advantage to appoint some person accustomed to such work to go through these during the summer months, in order to keep young plants or trees in brakes or rough places from being injured by the overgrowth of the side branches of other trees, shrubs, brambles, &c.

Coppice.—The same advice is also necessary for coppices. These ought to be regularly attended to, if profit is expected.

Young Plantations.—The summer pruning, training, &c., of these should be annually attended to. This is the practice of Dr. Thackeray, whose success in the management of woods has been so often noticed; and in whose mode of management I entirely agree. I am at present busily engaged in such operations, in a recently made plantation. Persons unaccustomed to such work often cut away the very trees, or plants, that ought to stand, and that could easily be reclaimed by a little judicious management: I have ample proof of that here. It is disgraceful to see the manner of thinning, pruning, and training, that is almost universally practised.

Nursery Work.—Attend regularly and constantly to summer training of young plants in this department, and accelerate their growth as much as possible. Plant out "for good;" it is surprising that this operation should be neglected.—*W. B.*

State of the Weather near London for the week ending June 18, 1844, as observed at the Horticultural Garden, Chiswick.

June	Moon's Age.	Barometer.		Thermometer in the Shade.			Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.		
Frid. 7	6	29.948	29.869	71	50	60 5	S.W.	
Sat. 8	7	29.967	29.903	80	49	64 5	S.W.	.02
Sun. 9	8	29.899	29.826	80	51	65.5	W.	.01
Mon. 10	9	29.110	29.034	77	41	59.0	W.	
Tues. 11	10	29.189	29.145	80	42	62.5	S W.	
Wed. 12	11	29.196	29.089	82	46	64.0	S.W.	
Thurs. 13	12	29.005	29.949	85	52	68 5	S.W.	
Average		29.669	29.607	79.7	48.7	64 2		.03

June 7 Overcast; brisk wind and cloudy; clear at night, with brisk wind.
— 8 Very fine, with light clouds; clear.
— 9 Slight rain; very fine, with scattered white clouds; clear.
— 10 Fine; cloudy; clear and cool at night.
— 11 Clear, and very fine throughout.
— 12 Clear dry air, very fine; overcast and mild.
— 13 Very fine; deep blue sky with light clouds; sultry; clear.
Mean temperature of the week, 4 degs. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending June 28, 1844.

June	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 16	72.0	51.0	61.5	8	0.17 in.	1	2	2	1	1	4	4	3
Mon. 17	70.1	51.1	60.1	11	0.80	1	0	1	1	1	5	5	4
Tues. 18	73.0	52.0	62.5	9	0.35	1	1	1	1	1	4	5	4
Wed. 19	70.4	50.7	60.1	10	0.37	1	1	1	1	1	4	5	4
Thurs. 20	73.0	51.1	62.0	8	0.31	1	1	1	1	1	4	5	4
Frid. 21	73.2	52.2	62.7	9	0.28	1	1	1	1	1	4	5	4
Sat. 22	73.1	52.1	62.6	10	0.34	1	1	1	1	1	4	5	4

Highest temperature during the above period occurred on the 21st [illegible]; and the lowest on the 22nd, 18th, and 20th, 1833.—Chiswick, 20th June, 1844.

Notices to Correspondents.

Union-grafting.—*A Subscriber.*—If you would succeed in this, you must take scions of the last year's-old wood (one-year-old is unripe); take your stock (that is, if you were propagating Apple-trees, cut off your stock from some north aspect of the stem above the ground, as it is less apt to have suckers from the stocks above the root-stalk, so as to leave only the least bud of the scion above the ground.

Books.—*Rusticator.*—Probably Thomas's "Domestic Gardeners' Manual" may answer your purpose. Also Bevan on the "Honey Bee."——*D. S.*—We know nothing of books on the Linnæan system, which is out of the except among children; and it is no compliment to the intelligence of a child to give it such books.——*Claudiocestrensis.*—The best book for a gardener to study, who would understand the principles of his vocation, is the "Theory of Horticulture." The others you name are far too technical for him.——*W. Sadler.*—Bevan on the "Honey Bee."

Climbing Plants.—*J. A.*—You cannot have better climbers than Kennedya Marryattæ, Hardenbergia macrophylla and monophylla, Dolichos lignosus, Mandevilla suaveolens, Clematis azurea grandiflora, and Bignonia Pandorea.‡

Covering for Frames.—*A Subscriber, &c.*—The following is the mode of preparing the composition described by "Devoniensis" at page 301, 1843. "Three pints of old pale linseed-oil, one ounce of sugar of lead, and four ounces of white resin. The sugar of lead must be ground with a small quantity of the oil, and added to the remainder, incorporated with the resin by means of gentle heat. The composition is to be laid on by a brush, after the calico is nailed to the frames. One coat annually is sufficient. It dries in a short time when exposed to the air; and excludes as little light and heat as anything, except glass, and does not become mildewed."‡

Cuttings.—*A. A. A.*—Nothing is better than silver-sand for striking cuttings in. If you use charcoal it must be a very soft sort, and should be mixed with half its bulk of good soil. Geraniums will keep very well throughout the winter in any soil, if frost and damp are kept away.——*A. Y. L.*—Wrap your cuttings in damp brown paper, and then encase them in two or three folds of tinfoil, securely turned in at the ends. This is the safest way of sending them, unless you prefer employing a tin box instead of tinfoil.

Diseases.—*Vitis.*—Your leaves were in high health; and in all probability the appearance of disease is owing to want of sufficient ventilation.—*C.K.*—No one has explained the cause of the loss of whole limbs in Apricots suddenly; but it is possibly owing to the same causes as those which have ruined "Omikron's" Peach-trees (see p. 33, 1844). The disease in Apricots is but too well known. Mr. Andrew Knight thought it was owing to the want of motion in the branches, by reason of which sap was able to accumulate and stagnate; but we doubt the justice of that view.

Grasses.—*R. G.*—Nothing thrives *well* under trees; the best Grasses for the purpose are Poa trivalis and nemoralis, especially the evergreen sort; Agrostis vulgaris, Lotus corniculatus, Cynosurus cristatus, Phleum pratense, and Milium effusum. Festuca elatior, and Aira cæspitosa, will grow in those places, but their herbage is coarse.

Heaths.—*A Lady.*—These may now be placed out of doors There is no objection to setting them inside of a Melon-frame, provided it is taken off the dung-bed and placed in a cool situation. The lights should be kept off as much as possible, as Heaths are very impatient of confinement, and some sifted cinders should be spread inside the frame for the plants to stand on. Wherever they are placed they should be partially shaded, as the burning sun of July and August, with the succeeding heavy dews, has the effect of depriving the plants of their foliage; on the contrary, however, they must not be wholly deprived of the sun, for that would tend to encourage mildew; they must be watered with soft water.‡

Heating.—*A Young Beginner.*—The cheapest of all means of heating a small greenhouse are flues; the best are hot-water pipes. If you merely want to exclude frost, and live in South Wales, the former will do well enough.——*Clodhopper.*—It is generally admitted now, that it is an advantage to have large pipes, containing a considerable quantity of hot water. But 4-inch pipes are large enough; others are needlessly expensive. The tank system is of great use for Pine-houses; but it will not do alone. You must have pipes to heat the air as well as tanks to give bottom-heat. We never recommend tradesmen. The more bones you have for your Vine border the better. Lime is a good ingredient, but unnecessary when bones are used abundantly.

Insects.—*M. Saul.*—Thanks for your specimens: we only wish you had sent more, that we might breed them, for we cannot tell you what the Wheat grubs are, and those transmitted to the Royal Agricultural Society were dead and dried up. *R.*——*B. Chilo.*—The most useful work for young persons is "Samouelle's Entomologist's Compendium," and for those more advanced, "Westwood's Classification" will be of service. If your insects had been numbered, and you had kept corresponding specimens, or rough sketches and descriptions, we could have given you their names if desirable. The insects in quills are the pupæ of a Reduvius and Œdemera cœrulea, Curt. Guide Gen., p. 4276, vol. ii. *R.*——*X. Y.*—We must breed the insects infesting the Apple buds before we can tell you the name. The green-looking Caterpillars produce moths called Halia vanaria and Hybernia brumata, whose histories you will find in the 1st vol. of this Journal, pp. 516 and 812, with the best means of destroying their larva. *R.*——*F. W. Crick* will find both his Woodlice described and figured at p. 356. *R.*——*Lusor's* larva feeding on the Aphides is unknown, but it will change to some dipterous fly. *R.*——*A Subscriber*—As your box was broken and without a lid, the jumping insects had all escaped; you had better secure some in a quill. *R.*——*A Constant Reader.*—It is an Aphis which is destroying your Cucumber and Melon plants. Fumigation or sponging the leaves with tobacco-water will eradicate them. *R.*——*E. S. T.*—We cannot tell you the cause of the metallic hue on the leaves of the Plum-trees, but we have no reason to think that it is produced by insects. *B.*——*Claudiocestrensis.*—The best remedy we know for Aphides is gas-water (see p. 545, 1843); but it has a very offensive smell, and so have all volatile matters likely to destroy them. You might, however, try the fumes of smelling-salts. The grand difficulty is to kill animal life without that of the vegetable.

Lawns.—*C. R.*—Nothing will restore your Grass-plat to verdure except water. When rain comes give it a top-dressing of Potter's guano, at the rate of 2 cwt. per acre. If you can soak the ground with water even now, the Grass will again grow, provided it was in good condition before the drought set in.——*H. D.*—Heavy rains will put your lawn to rights, and nothing else will. It is useless to apply manures in dry weather. Cow-dung is the best manure for Rhododendrons.

Manure.—*Hounslow.*—Collect the chamberley with all diligence, add as much water to it, and let it become putrid; then pour it on a compost-heap, in order to have it soaked up; or the cinder-siftings of the house may be employed for the same purpose; or you may employ it at once; or if you wish to keep it in a fluid state after fermenting, add gently oil of vitriol till it ceases to effervesce. In its fluid state it is best applied to growing crops, provided it has become putrid. ——*A Scottish Agr. Subs.*—The analysis of guano is too difficult to be undertaken by any except chemical analysts. Hellebore-powder is recommended at p. 265, 1843. It must be fresh ground and pure if it is to act.

Names of Plants.—*Tyro.*—1, Agathæa cœlestis; 2, Hibbertia [illegible]; 3, Callistachys lanceolata.——*A Tradesman.*—Mentha villa, not Mignionette.——*W. E. C.*—Leptospermum [illegible]. The tumble-trapper guarded it patiently.——*Newland.*—Your [illegible] leaved." It is well [illegible] and Rose are overrun [illegible] apparently a Botrytis. [illegible] but it is not likely to disappear [illegible] ——*Cynosurus.*—Your Medeola Virginica [illegible] the fruit will not give any further information. It may be hardy in Ireland. Your statement about Potter's guano having been used advantageously in all cases, save one, suggests that the exception was owing to some other cause. Any strong manure will suit a Vine-border. There is nothing better than coarsely ground bones.——*H. T.*—Geranium sibiricum; it is frequently raised from Himalayan seeds, and is only a tall variety of G. tinctorium.——*E. T.*—Rondeletia odorata.——*A Subscriber.*—Centaurea scabiosa (?)

Pelargoniums.—*W. D.*—The mode of cultivation employed by Mr. Catleugh and Mr. Cock is given fully in our columns for 1841, pages 93 and 109. We, however, [illegible] the system of growing huge specimens worthy of being followed.

Roses.—*Querist.*—We shall furnish you immediately with the means of propagating Roses. Fern indicates ill-cultivated land; destroy its leaves incessantly, and it perishes. Clip furze hedges at midsummer; cut them down in the spring when about to start.——*J. S. J.*—If your Roses are growing very luxuriantly let them alone, unless you prefer to stop them so as to get lateral shoots. If you will read "The Rose Garden" with attention, you will get, in time, full information upon all such points. We do not understand how a Lemon-tree can grow so luxuriantly as to fall about the tub. Oranges and Lemons always grow with stiff branches.

Miscellaneous.—*Upstart.*—The object of growing Cucumbers in troughs is not to improve their quality, but their form. Opinions are so divided about bee-hives, that you are not at all likely to get a satisfactory answer to your inquiry. Wooden boxes, made with *very stout* boards and *well*, and well managed, are probably the best. Put salt on Asparagus-beds now, and let the rain wash it into the ground. We will consider whether anything can be added to the instructions already given in forming Asparagus-beds. At all events, this is not the season for the operation.——*A Subscriber.*—We cannot answer your question. We never recommend tradesmen.——*P. T. O.*—We know of no means of reducing mica to powder except by pounding. Finger-pruning signifies pruning by the finger and thumb, and not by a knife, and, of course, therefore requires to be performed when the wood is young and soft. The manner of bottling *unripe Gooseberries, &c.*, has been stated at p. 821 of 1842. We presume that the common painters' varnish is what you want: but your question has no relation to *rural economy.*——*Widget.*—We certainly misunderstood your first communication; but the very circumstance you mention of other newspapers giving Horticultural retrospects would prevent our attempting it. No doubt they are prepared by the editors, with much care and trouble, and often by clever men; and what are they good for? In our opinion absolutely nothing.——*H. F.* will find much information respecting Vegetable Ivory at p. 836, 1842.‡

SEEDLING FLORISTS' FLOWERS.

Cactus.—*W. M. and Co.*—It is impossible to form a satisfactory opinion of your Cactus after it has closed, so much of its beauty and worth depends upon the free manner of its expanding; and this point we cannot ascertain from a closed specimen.*

Calceolarias.—*J. B.*—No. 1 is decidedly your best seedling; it is a good shape, and the blotches are handsome; 3 is good in colour, but fails in form; 4, common; 12, no use, run colour; 19, 23, 26, 27, are too indented at the bottom; Gem is common and Zebrina too indented; 2 is a pretty variety.*——*Calceolus.*—Your specimens are large and bold flowers. No. 2 is the best—good form and decided blotch; 3, good form, with blotch too broken; 4, wants shape; 5, common and too indented at the bottom; No. 1 we could not find.*—*J. Salter.*—The flowers generally are very much smaller than those cultivated in this country; the largest specimen is the size of those commonly grown in England. A few of the spotted varieties are pretty, but this class has received so much improvement during the last two seasons, that both size and beauty are required to make them acceptable. The flowers in this collection are generally deficient, both in size and form.*

Cineraria.—*S. W.*—Your seedling reached us in so dried a state, that it is impossible to give an opinion upon its qualities.*

Fuchsias.—*T. L.*—Your seedling Fuchsia is delicate and pretty; but a variety has lately been exhibited, similar in colour, with larger flowers and smaller foliage.*——*T. S.*—It is the habit of your seedling that will make it acceptable; you describe it as drooping; the flowers are pretty and brilliant in colour.*——*G. S.*—If your seedling *Celsiathus* produces eight flowers at every joint it must be a most prolific bloomer; the flowers bear some resemblance to *Exoniensis*; but they are not so large, nor is the corolla so high coloured.*—*O. R.*—Your three seedlings are alike in colour, though differing somewhat in form; they are stout and handsome, but they bear too strong a resemblance to other varieties cultivated; we could not determine whether the sepals expand well, or whether they were sleepy: much depends on this.*

Gloxinias.—*Rio.*—Your four seedlings very much resemble each other, but none of them appear to be sufficiently distinct from varieties already known. It would be advisable in future to pack your flowers in wet Moss; they travel very well in this material, whereas your specimens were much bruised and dry, and could not be seen to advantage.*

Pansies.—*O. B.*—Your seedling wants form, substance, and a decided eye.*——*J. L. H.*—14, 15, 17, are well-formed flowers of good substance, and the marking very precise; their fault is being too small; these are worth trying again under more favourable circumstances; 13 is too poor in colour; 16 is tolerably good, but not pretty—the eye occupies too large a space.*——*S. T.*—Your seedling wants substance; it is inferior to most of the light selfs.*——*O. R.*—The ground colour of both your darker seedlings is imperfect, and the yellow self is quite second-rate.*——*G. R.*—Your seedling is a large stout flower, imperfect in the ground colour of the side petals, and having the upper petals rather too large.*

Pelargoniums.—*I. M.*—The lower petals are too long in Fleur de Marie, and there is nothing in the flower to distinguish it from many others.*——*C. J. B.*—12 seedlings. Most of these seedlings are common in colour, and deficient in form, the lower petals being too long, and causing a division (when the flower is fully expanded) between the upper and lower petals, which destroys the fine cupped form a good flower should possess. This is the case with 1, 2, 3, 6, 7, 8, 11, 12. 10 is rather better, but common in colour, and too much feather seen at the base of the upper petals. No. 4 is fine in colour, and the best-formed flower in the collection; but the petals curl back too much, and one of the upper petals entirely hides the spot on the other. 7 is good in colour; 9 too coarse and veiny; and 5 wants substance.*——*C. R.*—There is a defect common to all your seedlings—the want of form; they are all long-petalled flowers, and when fully expanded there is a greater division between the upper and lower petals than is consistent with compactness of form; they are common in colour with two exceptions, and these burn very much.*——*I. P.*—There is nothing in your seedlings to distinguish it from many others; the petals were all loose, and the lower ones are too long for a well-formed flower.*

Petunias.—*I. W.*—The [illegible] of your seedling was much injured by the way in which the flowers were sent. Any satisfactory opinion cannot be formed; if the chicory of colour is doubled it will prove an acquisition, but this we cannot judge of from the state of the specimens sent.*

A SHORTHORN BULL COLLEGE, &c.—At a Meeting of the Cirencester, held the 4th of June, 1844, Earl Bathurst in the Chair,—"It [Resolution 1] was proposed by the Committee, with a view to ascertain to what extent the county required the site for the College and Farm; and as to obtaining a Royal Charter, limiting responsibility of shareholders; it is necessary that a General Meeting should be called at the earliest period."

In pursuance of the above Resolution a Meeting of the Shareholders and others interested in the establishment of this Institution is appointed to be held at the King's Head, Cirencester, on Monday, the 1st of July next, at 1 o'clock.

By direction of the Committee,

Cirencester, 4th June, 1844. HENRY J. BROWN, Hon. Sec.

The Agricultural Gazette.

SATURDAY, JUNE 15, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, June 19 Agricultural Society of England.
Thursday, June 20 Agricultural Imp. Soc. of Ireland.
Wednesday, June 26 Agricultural Society of England.
Thursday, June 27 Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

June 24 { Chepstow. Wenlock. Fairford. W. Flrle.
June 25 { Framlingham. Rayleigh.
June 27 { Bishopsstokke. Grove Ferry.
June 26 { Stoke Ferry. Hadleigh. Wrentham. Debenham.
June 27 { Cardiff. Gloucester.

WHEN a London Broker sells substances requiring CHEMICAL ANALYSIS, he has such an examination made at his own expense, and when he offers them for sale he produces the analysis for the guidance of buyers, who regulate their offers by the declared extent of impurity in the samples. Suppose, for example, the substance is nitrate of soda, and that it is worth, if quite pure, 20*s.* per 100 lbs. When the analysis is produced, it may appear that the sample contains 10 per cent. of impurities of one kind or other; the nature of these is declared; the buyer then considers how much it is worth his while to give, and regulates his bidding accordingly. Why cannot farmers compel the venders of their artificial manures to produce authenticated analyses in like manner?

If the buyers of guano, nitrate of soda, bone-dust, oil of vitriol, sulphate of ammonia, and such things, were to form an ANTI-FRAUD League, they might do themselves quite as much good as by means of other leagues now so much in fashion; and if they would hold together steadily, they would soon put an end to the roguery that is so successfully practised upon them. It would not be enough, however, to insist upon seeing an analysis before buying articles capable of adulteration; for there would still be room for cheats to thrive in. What farmers should do in addition would be to put aside a pound of the substance in a glass bottle; to securely cork and seal it up, so that it might eventually become evidence against the seller; if crops fail, or suspicion is aroused, to have it formally analysed; and then, if it turned out to be different from the analysis on the faith of which it was bought, to proceed at law against the seller. We will leave the worthy gentlemen who sell loam for guano, and limestone or chalk for bone-dust or bone-ash, to picture to themselves what sort of damages a jury of farmers would give in such a case. Once caught, they would not like to repeat the experiment.

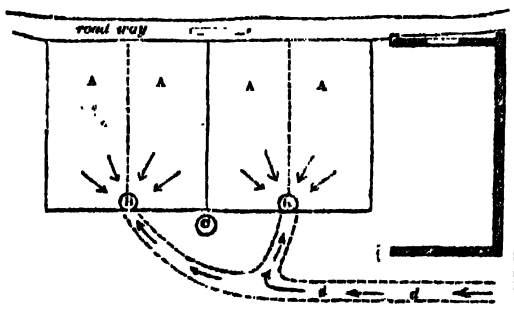
We regard analysis, in some way or other, as an indispensable precaution in making purchases of artificial manure of all kinds. Respectable dealers cannot object to it, and wise purchasers will insist upon it. Bills of lading, certificates from captains of merchantmen, and all such devices offer no guarantee whatever of purity; analysis does, and analysis only. For example, there was sold last week by auction in London, a large quantity of imported guano. The customary analysis indicated from 60 to 70 per cent. of impurity. The whole lot was bought at from 30*s.* to 50*s.* per ton, and, no doubt, will go into the country as guano *genuine as imported*. For this stuff, containing 30 per cent. of water and 30 per cent. of sand, simple people will pay perhaps 10*l.* a ton nominally, while the real price paid will be 30*l.* a ton; and yet it will be genuine as imported. No man acquainted with trade would pay the least attention to any other thing than analysis. Guano is not the better for coming from Africa or Peru, for those countries have plenty of the substance of no value whatever. Its goodness depends not upon its foreign origin, but upon its actual chemical condition; and nothing but analysis can show that.

THE valuable articles by Mr. Gyde, ON BLACK MANAGEMENT, which have appeared during the last three or four Numbers of this Paper, and the results of the experiments detailed by Mr. Bree in his series of papers on the Application of Chemistry to Agriculture, must surely have convinced those of our readers who suffer the liquid manure of their farm-yards to run to waste, of the great loss they sustain by doing so.

There are two modes of applying this manure to the land: it may be carried to the field in a watering-cart, and spread during the growth of the plant, in a diluted state; or, if before the seed is sown, in a concentrated state; and if the land be harrowed or cultivated and rolled immediately, no great loss by evaporation will ensue; or, as this involves considerable labour, it may be applied on the land by soaking the dung-heap with it, and thus carrying it to the fields in the ordinary farm-yard manure. This latter plan is preferred by Mr. Hannam, author of the excellent work on Waste Manures, to which we have already referred. The following are remarks by him on details connected with the carrying of this system of management into execution:—

"Let all the buildings round the farm-yard and strawfolds be spouted, and the delivering tubes so arranged that the water may be made to flow into the yard or not, at the option of the farmer. This may be effected by bringing the end of the spout over a drain, which may be left open or closed, as he may wish the water to escape from the yard or not. Let the farm-yard, if possible, be made slightly concave, so that the liquid may permeate the mass, and make to the centre. Make drains from every stable, cow-shed, &c., and from the kitchen into the manure yard. Select a shady place, if possible on the north side of a hedge or wall, where it is convenient to cart the manure to, when it is removed during winter and spring from the fold. Mark out a surface sufficiently large to hold in a heap all the manure made during winter, and form a compost couch of this size, and two feet deep. Divide this couch into three sections, by two rows of flags or bricks. Make the bottom of each couch incline, so that liquid from the manure may gradually fall to the front side. Next cut a drain alongside, and in front of the couch, with an inlet from each division, through which the liquid may flow into the drain, and fix a sluice at each inlet. Make a capacious tank on any convenient side of the couch, and connect it with the drain which runs alongside the couch, so that the liquid from the couch may run into the tank. Make a drain from the bottom of the farm-yard into the tank, and fix a sluice, so that the liquid from the yard may be let into the tank or not, at pleasure. Fix a pump over the tank, and connect the nozzle with a wooden spout, placed so as to traverse above each division of the couch. Bore a hole through the spout over each section of the couch; in each hole put a plug, on the top side of the spout. Also, over each hole affix on the under side of the spout a leathern nozzle or delivering tube, two or three feet long; by means of which arrangements, the liquid from the tank may be directed to any part of the couch."

The following woodcut represents an arrangement something similar to this:—



A, A, are platforms on which the future compost heap is built; they sink, as represented by the arrows, towards the tanks B, B, into which any soakage from the manure naturally falls, and into which the liquid manure from the stables and feeding-stalls is also conveyed, along the covered drain, *d*, *d*. C is the position of a well and pump connecting with these tanks; the water is by this means conveyed back again over the manure in the heaps as often as may be desired. It would have been better, perhaps, if the tanks (B) had been in the centres of the platforms (A)—these sloping in a basin-shaped manner—instead of being placed at the ends of each; and the pump (c) might then have been in the centre of the whole heap, between the two tanks. The liquid from the stables, &c., might have been conveyed underground just as represented in the figure, and there would thus have been less difficulty in spreading it evenly over the whole heap.

The shed at the side, represented in the figure, is in a convenient position for holding the tools required in the management of the manure—in turning it, &c.; and it is also intended to shelter the materials to be used in fixing the ammonia evolved during the putrefaction of the manure, both liquid and solid. Either gypsum or sulphuric acid may be used for this purpose; the former should be occasionally spread in layers over the dung-heap, the latter should be poured directly into the tank. In Mr. Bree's experiments, 1 lb. of sulphuric acid was required for every two gallons of urine; from this it may easily be calculated how much gypsum would be required for the same purpose, in the event of a complete decomposition taking place, this earth being a compound of sulphuric acid and lime.

ON THE CULTURE OF THE TURNIP.

(*Continued from page* 321.)

HAVING been unavoidably hindered from continuing my remarks on this subject till now, when they are in a measure unseasonable, I shall not enter into that detail upon the proper mode of preparing the land for this crop, and of applying manure for it, which I should have laid before your readers had I been able to send you this paper a fortnight earlier, so as to have it published before the seed-time of the Swedish Turnip. I may, however, just mention two or three points, which I think ought to be impressed on the mind of the farmer, and which, moreover, will serve to render these notes more complete than they otherwise would be.

The opinions you have frequently expressed, and quoted from Mr. Waterton's "Essay on Alkali," as to its being the farmer's interest to use manure so that it may be all available as food for plants the same year that it is applied, while I am ready to adopt it in so far as it is expressive generally of the impropriety of allowing farmers' capital to lie uselessly dormant longer than can be helped, must nevertheless in certain instances in which it might be applied, be taken with some grains of exception. Thus, I should be sorry to suppose, after having harvested my corn crop in autumn, that I had fairly exhausted the land of all the tillage that was in it, and that all my chance of a green crop succeeding it, must depend on the immediate application of additional food for plants. Though in any case such an application is necessary, yet, in my opinion, it is right to make the crop of Swedes depend as much on the general *fertility* of the land, owing to *previous* good cultivation, as on the excellence or quantity of the manure ploughed under in the year of its growth. The quantity of the crop would probably be as great, and its quality much better, where it draws its nourishment from the stores of a fertile soil, than where it has to partake of the crude and fresh materials of the manure just ploughed in. For a similar reason, and in order to give that uniform fertility to land on which the excellence of a green crop, no less than the evenness of a sample of grain, depends, it is, I think, better to apply the greater part of the manure broadcast to the land, as soon as it has been reduced to a sufficient tilth, ploughing it in, and harrowing, and rolling, and then ridging or drilling up at the proper interval, say 26 to 30 inches, for the seed. This ridging may be done by half a bout of the plough, or a mere ribbing of the land, corresponding to what in some districts is termed raftering. The rest of the manure may then be laid between the drills, in the ordinary way, in order especially to give the young plant a vigorous start through the host of foes which belabour it in the first stages of its growth. The mode of applying this manure has, I think, been already described in this Journal. Where but a small quantity is to be applied, say 10 or 15 yards per acre, two men filling carts at the dunghill will, in a field of ordinary length, keep two ploughs opening drills to receive manure, and splitting them again to cover it, and they will keep four boys spreading the dung which is drawn from the cart into every third drill, as the horse at an ordinary pace walks up it. One of these boys makes a rough division of the manure, as he finds it, amongst the three drills, and the other three walking behind him spread it evenly in each. The two ploughs work round and round them, opening fresh drills on one side, as they keep gaining on the field, and splitting them on the other, as the intervals between them are successively filled with manure. The sowing machine and the roller keep up close behind, so that the whole operation is completed at once.

When artificial manure, or guano, or superphosphate of lime is being used, I have generally applied it by a sowing-machine, mixing it with 20 or 30 bushels of old turf-ashes, in the drills, in the same place as I would otherwise have drilled in the ordinary farm-yard manure; and generally, in order to mix it well with the soil before splitting the drills and covering it, I have stirred it well into the soil with the horse-hoe. With regard to the usefulness of these manures, I quite agree with the Editor of the *Dublin Farmers' Gazette* in a remark in a late Paper, that the concentrated manures are valuable chiefly *as a means of creating farm-yard manure*, which will ever prove the farmer's sheet-anchor.

With regard to the quantity of seed to be sown per acre, I quite agree with Mr. Poppy in the expediency of adopting that principle in reference to the fly, which landlords and farmers should adopt towards one another, viz., "Live and let live;" and the only way of carrying out that principle is to sow such a quantity of seed as, supposing them all to vegetate, shall leave a sufficient plant on the ground, though the fly should attack them in crowds. Accordingly, this year, on nearly 30 acres for Swedes and Turnips, I have sown about 1½ cwt. of seed. This, it appears, from the following article communicated by "P. M." to the *Dublin Farmers' Gazette*, is not an extraordinary quantity:—

"*Cultivation of Turnips.*—In sowing for Swedes at the beginning of May I have given 6 lbs. and 7 lbs. to the Imperial acre, without being too thick for insuring a healthy, rapid growth of the young plants, and thereby

setting the fly at defiance. The time at which they are attacked is just after the seed has expended its strength, when they are apt to make a stand, particularly if the weather be ungenial or the ground about them unkindly, and the longer they remain stationary the insects have just so much longer time to prey upon them; the object, therefore, is to keep them growing, and get them into the broad leaf as quickly as possible; and the most certain method of effecting this is, to have a close braird, as young plants grow vigorously for a certain time when thick together. It is not at all surprising that people should have occasion to complain of the fly destroying their young Turnips, when they allow only 1½ lbs. or 2 lbs. to the acre, and that, it may be, sown broadcast or in rows on the plain ground, 12 or 14 inches apart; I only wonder at the mercy of the flies in leaving them any at all. It will be observed that 3 lbs. to the acre, sown on drills or ridges 28 inches wide, will give exactly four times as much to each row as 1½ lbs. to the acre, with 14 inches between the rows. Now, no man of common sense would expect a braird thick enough to withstand the attacks of the fly by sowing drills 28 inches wide, at the rate of ¾ lb. to the acre, which would be the same to each as 1½ lbs. with the rows 14 inches apart. I sow all in drills about 28 inches wide, with the manure, whatever it may be, directly under the seed; and the very least I allow in the finest soil, and under the most favourable circumstances, is 3 lbs. to the acre, and I never suffer by the fly. Last season, owing to the heavy rains that prevailed in May, the ground was rather stale and unkindly for the seed, and I just expected a slow growth of the young plants, and its concomitant, a formidable array of flies. The land I had for Swedes was a sandy loam—exactly that kind of soil which requires the least quantity of seed, but, though previously well prepared, owing to the state it was in at the time of sowing, and the appearance of the weather, I considered it advisable to allow between 4 and 5 lbs. to the acre. I was, of course, laughed at by my neighbours for "throwing away" so much seed; but in a few weeks I was amply compensated by a full growth of healthy young Swedes, while they had a few half-eaten, sickly-looking plants, standing from each other at the most respectful distance. I could scarcely be blamed for laughing at them in return. It may be worth mentioning, that when beginning to sow, something more than half an acre was gone over before I discovered that the machine was depositing considerably less seed than I had ordered, when I had it immediately altered. The flies were over the whole field, but the damage done was not appreciable, except on the part thin sown, which narrowly escaped being completely destroyed, and remained inferior throughout: except that, notwithstanding the complaints of last season, I had not a single failure from the effects of the fly on nearly 30 acres of Swedes; and the common Turnips, sown at a later date, were equally unhurt."—*John Morton, Whitfield, Thornbury.*

ON MINERAL AND INORGANIC MANURES.
No. XVIII.
By Professor Charles Sprengel.
(Continued from p 363.)

h. Marl from Brunswick (stony, yellow, red and green striped). 100,000 parts consist of

71,096	parts	silica
3,978	,,	alumina
6,477	,,	oxide and protoxide of iron
1,080	,,	oxide of manganese
13,385	,,	carbonate of lime
2,604	,,	carbonate of magnesia
0,005	,,	gypsum
1,200	,,	phosphate of lime
0,015	,,	common salt
0,160	,,	potash and soda, combined with silica
100,000	parts.	

Although this sort of marl has been used but very recently on loamy soils (500 cubic feet per Magdeburg measure), it has been already recognised as very superior. Exposed to the air during the winter, it will fall to pieces pretty easily, still it does not yield such a fine powder as the earthy marl of alluvial soils, inasmuch as all stony marls take several years to be converted into earth and soil. It acts (as might be expected) best on those soils which are deficient in lime, magnesia, and phosphoric acid. Used in the above quantity, it will not improve the soil mechanically, as it contains too little alumina, and is not clayey enough.

i. Marl from the subsoil of the marshes of the Weser (in its dry state *powdery*). 100,000 parts consist of

78,910	parts	silica and very fine quartz sand
3,123	,,	alumina
3,800	,,	oxide and protoxide of iron
0,330	,,	oxide of manganese
8,189	,,	carbonate of lime
2,950	,,	carbonate of magnesia
1,230	,,	phosphate of lime
0,490	,,	gypsum
0,080	,,	common salt
0,360	,,	potash combined with silica
0,547	,,	soda ditto
100,000	parts.	

As this marl contains a few marine shells, and is to be found not far from the seacoast, we may assume that the sea-water has much contributed toward its formation. It is much used in the marshes as a manure, inasmuch as it is taken from the ditches, made to a certain depth for the sake of draining, and then conveyed on the moors, which are very rich in humus. The effect of this operation is very great, which is easily explained by the marshy soil obtaining thereby not only much silica and lime, but also all other mineral substances required for crops. The moors, which have hitherto yielded only Oats, after the mixing with this marl, produce the finest Rape, Wheat, &c. The quantity spread on one acre is 100,000 lbs., in which case this soil will receive the different mineral substances just in the proportion mentioned in the above analysis. It is obvious that it will improve the soil for many years to come.

k. Marl from the subsoil of the Elbe marshes (in its dry state powdery and of a gray colour.) 100,000 parts consist of

84,507	parts	silica and very fine quartz sand
2,795	,,	alumina (partly united with humic acid)
2,568	,,	oxide and protoxide of iron
1,240	,,	oxide of manganese
4,258	,,	carbonate of lime (partly also humate of lime)
2,752	,,	carbonate of magnesia
0,005	,,	phosphate of lime
0,249	,,	gypsum
0,050	,,	common salt
0,120	,,	potash united with silica
0,320	,,	organic remains rich in nitrogen
1,110	,,	humic acid
0,022	,,	coal of humus
100,000	parts.	

This marl, which also partly owes its origin to marine shells, is often used in the marshes of the Lower Elbe as manure, where it is called Kuhl, or Wühl-erde. It is dug out of large holes, made on the field itself at a great expense, and then spread over the surface 2 to 3 inches thick, so much so, that about 200,000 lbs. are brought on the acre,—double the amount of the quantities mentioned in the analysis. The soil is improved by this marl for many years; because, poor as it is in phosphate of lime, there is plenty of it in the marshy soil, as I have found by analysis. Wheat, winter Barley, Rape, Oats, and Beans will grow after it most abundantly; Rape, for instance, will yield at times 2200 lbs. of seed per acre, whilst Oats will often bear 2400 lbs. of grain on the same area. But the soil requires to be ploughed to the depth of 18 inches, and manured every 6 or 7 years with 60,000 to 70,000 lbs. of fat dung, without which, such extraordinary harvests would be impossible.

Burnt Marl.—The effect of marl is much improved by burning, but this burning ought rather to consist in a sort of roasting, because if marl was to be burnt like lime, the lime would combine with the silica into a silicate insoluble either in water, or carbonic or humic acid, which would be very disadvantageous. The merely roasting of marl, on the other hand, causes the silicates of potash and soda which may be contained in it to be loosened, which will render them more easy of being decomposed by the carbonic or humic acid. It will also cause ammonia to be formed through the decomposition of water by the oxide and protoxide of manganese. The roasting will also be of use, by changing some of the carbonate of lime into caustic lime. If it be applied soon after roasting, under the ground, it will strongly attack the coal of humus and the vegetable matter in the soil, decomposing them, and if it contains much clay, it will act like burnt clay. As the latter is best when it contains much iron (as we shall see presently), we may assume that roasted clayey marl also will be best when it is rich in iron. By roasted clayey marl, stiff clayey soils may be improved mechanically, because, as its argillaceous parts lose by burning the property of mortaring with water, and will not form tough paste with it, roasted marl will, like coarse sand, keep a clayey soil loose. The roasting of marl is done like that of clay.

ON BLACK HORSEPONDS.—No. VI.

§ The animals that are allowed to drink of these polluted waters, are exposed to the action of poisonous matter in three distinct forms; namely, putrefying organic matters and inorganic corrosive matters, both taken into the stomach, and poisonous exhalations of a deadly character, inspired by the lungs. We have seen, in the last paper on this subject, that when putrefying organic matters are either received into the animal system, through the stomach, or taken into the circulation by the absorbents on the surface of the body, disease of a formidable and often fatal character is produced, and that irritating and corrosive substances, when received into the body, destroy life, by producing inflammation and disorganisation of the parts with which they come in contact.

We have also seen that an imperial gallon of water, taken from one of the black ponds at which the horses of a neighbouring farmer were allowed to drink, contained no less than one hundred and sixty-eight grains of, 1st., putrefying animal and vegetable matter, held in solution by the solvent action of ammonia on organic matters; and 2nd, of potash, soda, ammonia, lime, sulphuric acid, phosphoric acid and chlorine, the saline constituents, in fact, of putrefying animal excrements, holding in solution a large quantity of animal and vegetable matter in a highly putrescent state.

Now it is well known that water, holding even a very small quantity of animal and vegetable matter in a state of decomposition, in solution, acts injuriously on the animal frame, producing dysentery of a very distressing character; even the small quantities mixed with the river water below London, 30 gallons of which, according to Dr. Lamb, contain 28 grains of carbonaceous matter, produce most injurious effects on our sailors, when used in a state of putrefaction, and until it has completed its fermentation, when it deposits a slimy matter, and is then fit to use. The sanitarial effects derived from care as to the qualities of water, supplies, Cholerine, are now proved in the navy, where fatal dysentery formerly prevailed to an immense extent, in consequence of the impure and putrid state of the supplies, and care is now generally taken on this subject by the medical officers of the navy.

Dr. Pereira, in his valuable work "On Food and Diet," relates a case tried at the Nottingham assizes in July, 1836, where it was proved on the trial, that dysentery, in an aggravated form, was caused in cattle by the use of water contaminated with putrescent vegetable matter, produced by the refuse of a starch manufactory. The fish (perch, gudgeon, pike, &c.) and frogs, in the pond through which the brook ran, were destroyed. All the animals (cows, calves, and horses) which drank of this water became seriously ill, and in eight years the plaintiff lost 24 cows and 9 calves, all of dysentery, accompanied by nearly the same symptoms. It was also shown that the animals sometimes refused to drink the water—that the mortality was in proportion to the quantity of starch made at different times—and that subsequently, when the putrescent matter was not allowed to pass into the brook, but was conveyed to a river at some distance, the fish and frogs began to return, and the mortality ceased among the cattle. The symptoms of illness among the cows were as follows:—The animals at first got thin, had a rough staring coat, and gave less milk (from two to three quarts less every day); then they became purged, passed blood with the feces, and at length died emaciated and exhausted. On a post-mortem examination, the intestinal canal throughout its whole length was found inflamed and ulcerated. The water when examined was found loaded with putrescent vegetable matter, and contained chloride of calcium.

Now the symptoms here described, with little exception, were precisely those shown in an instance which has come under my own notice, of three valuable cart-horses that died in a short period, belonging to the owner of the horsepond, the analysis of the water of which I have given above. The first appearance of disease showed itself in the coat of the horses becoming rough and staring out, diarrhœa supervened, and after a time symptoms of inflammation of the bowels set in, which soon destroyed the animals. On a post-mortem examination of two of the three by a veterinary surgeon, extensive inflammation of the mucous membrane of the stomach and bowels was discovered. After the loss of the third horse, the farmer suspected the pool to contain the source of disease, and ordered his horses fresh water, after which all appearance of disease disappeared.

In the case related by Dr. Pereira, as well as that in which the contents of the horse-pool produced such injurious effects, much is to be attributed to the deleterious action of the decomposing nitrogenous matters contained in the water; since it is well known that the most deadly organic poisons contain nitrogen as one of their elements.

In the manufacture of starch, after the first portion of starch is separated by washing, the water in which it has been washed, and which contains the vegetable albumen, gum, and sugar of the grain in solution, is allowed to putrefy, when a fresh portion of starch is deposited; the water is then of no farther value, and is run off as refuse, carrying in solution the putrefying nitrogenous and other vegetable matters of which the cows drank.

In the case of the horsepond, besides the nitrogenous and vegetable matter, in a state of putrefaction, obtained from the urine and fæces, and the decaying straw in the yard, we have a powerfully-irritating poison in the salts of ammonia, acting in conjunction with the organic poison, and tending to bring about a more rapid state of inflammatory action in the mucous membranes. When we consider the state of the black horsepond, can it be a matter of surprise that three horses died from drinking at it; since, if each horse drank 5 gallons of water every 24 hours, it must have received into its system, in the water alone, no less than 840 grains of soluble matter every day, of a highly poisonous tendency, or 31 lbs. annually? Alas, for the health of the animals, and for the quality of the beef, or butter, or cheese, made from animals fed with such materials!—*Alfred Clyde, Painswick.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.
(Drainage, *Continued from page* 378.)

Should the field be in Grass at the time of draining, the breadth and position of the drain are marked off with a spade and line in the usual manner, and the surface-sods laid carefully aside for after use; but in almost every other case the drains are marked off, and partly opened at the same time, by a plough passing up the furrows to be drained, and throwing out a deep furrow-sullen, which materially abridges the labour in casting. The plan now almost universally adopted is to contract with one or more skilful workmen to execute the cutting or opening of all the drains, to be made for a stipulated rate of wages, per rood of 18 ft. The contractor employs as many assistants as may be found necessary for the completion of the work within the assigned period, and is alone responsible to the farmer for the faithful execution of the job. When the drains are not very long, each man takes one to himself, and completes its opening—an arrangement which usually excites the labourers to a kind of competition, thereby securing the proper and speedy execution of the work. Two sizes of spades, a pick and a shovel, are the only tools employed. The workmen in cutting throw the earth to both sides of the drain, in order to facilitate its ploughing in afterwards. It is, perhaps, superfluous to observe in this place that the cutting is in every case commenced at the lower, and the filling at the

higher level, the water, if any happen to be present, thus escapes from that quarter, which not only insures to them a comparatively dry footing, but also points out any deficient in the work already gone over.

The materials used in filling drains are stones, tiles, and, in many instances, both combined; stones are generally preferred, when they can be conveniently and cheaply procured, but the great amount of manual and horse labour necessarily attending their use, together with the injury always sustained by land requiring draining, from much cartage, are insuperable obstacles to their employment to any considerable extent in this district. Tiles are therefore more extensively used, even when stones are available in the same field, the work being with them much more expeditiously and economically performed. In many instances six or seven inches of broken stones are thrown on the top of the tiles—a practice of unquestionable utility, for many obvious reasons. Coal cinders have also been employed very usefully for the same purpose.

When stones are used, they are laid down at regular intervals along the line of the drains, before the cutting is commenced, or while it is in the course of being performed, it being the invariable practice to fill every drain, as soon after its opening as possible, in order to prevent the sides from falling in. The filling being justly regarded as a very important part of the business of draining, and one to which too much attention cannot be bestowed, is invariably performed by the regular farm-servants, under the superintendence and direction of the farmer himself, or his steward. The usual mode of procedure is as follows:—A man or boy first breaks the stones to the size of common road-metal,* 2½ to 3 inches in diameter, and he must be a heap in advance of the women and boys who collect the broken stones into baskets, which, when filled, are handed to the steward or some other careful man in the drain, whose duty, besides emptying the baskets, is to see that every particle of soft earth is previously well cleaned out, that none but the smallest sized stones are used for the bottom of the drain, and that the stones are at the proper distance—commonly 15 inches—below the surface of the land. The small stones collected from the Grass and other fields, are much esteemed for draining; they require little or no breaking, and are generally shovelled out of the carts into the drains. The stones, after being carefully levelled at the top, are covered with the surface sods previously laid aside for that purpose, if the field is in Grass, or with straw.

Tiles, for the reasons already assigned, are most generally used in filling drains. The usual size is 3½ inches wide, 4½ inches in height, and 14 inches in length. When taken out of the carts the tiles are laid along the line of the drains in such a manner as to determine very nearly the number required for any length of drain, and also to enable the man who lays the tiles in the bottom of the drain to reach to them without the aid of an assistant. When they do not meet quite closely, the interstices are filled up by wrapping a short piece of straw-rope around the joinings, in order to prevent any particles of earth from entering the drain. When the bottom of the drain is very soft, soles of some kind or other are employed. Those generally used are made and sold at the tile-works, but being rather expensive, soles of thinly-sawn wood are used in some places, particularly in the neighbourhood of saw-mills. It may be observed here, that there is a general tendency amongst the farmers to adopt smaller sized tiles than those hitherto employed. Small pipe-tiles are also sometimes used with advantage. It is a common practice, contiguous to the sea-coast, and other places where sand and gravel can be easily procured, to lay from four to seven inches of either of these, but especially the latter, over the tiles. The earth is always filled in with the plough, a long swing-tree being used for the purpose of enabling the horses to walk on opposite sides of the drain. The loose friable surface soil is placed next the tiles or stones, and the more tenacious subsoil ploughed out into the ridges, after which a good harrowing completes the operation of draining.

In ploughing drained fields, the furrows are invariably made over the drains, in order to facilitate the ready escape of rain-water; and so useful and necessary is this considered, that when the precise situation of the furrows in which the drains had originally been made, is not distinctly visible, as generally occurs after fallow and green crops, their position is accurately ascertained by digging with a spade until the stones or tiles are reached, and the ridges laid off accordingly. In some places, however, ridges in thoroughly drained fields are altogether dispensed with, a slight rut or mark made with the plough serving to regulate the sowing and reaping.

The system of draining which I have now endeavoured to describe, is that generally practised in the low districts of this county, but many other simple modes of removing surface water are pursued in the Lammermoor sheep-pastures. Sometimes a deep furrow is turned up at regular intervals by a stout plough, furnished with two coulters attached in a peculiar manner to the beam, which is sufficient to collect and void a considerable quantity of water; sometimes a man with a spade pares off the soil from the inverted sod, reducing it to the thickness of about 2½ or 3 inches. It is then restored to its original situation, with the grassy side uppermost, leaving a pipe or hollow beneath it, of 3 or 4 inches in depth, for the conveyance of water. Another very simple kind of superficial draining, much practised in similar situations, is thus made:—When the line of drain is marked off, a sod of about 4 inches deep, and 1 foot wide, is taken out and carefully laid on one side; another man follows with a narrow spade, and further cleans the centre of the drain 6 or 7 inches, leaving what is termed a shoulder on each side; the sods first cut out are then placed so as to rest firmly on the shoulders left for that purpose; an open space is thus left below the turf for the passage of water. This species of draining is extensively practised in some hilly pastures, and where the sward is sufficiently tough, and the work carefully executed, such drains are found to be permanent, and frequently quite efficacious, after a lapse of more than twenty years from the period of their construction.

The expense of draining, according to the system now described as that generally practised in the Lothians, varies, of course, with the nature of the soil, depth to be cut, rate of labour, and other local circumstances. As the farmers are very solicitous to have the work well performed, the plan most commonly adopted by them is to contract only for the opening, or *casting*, as it is here termed—the filling being done by persons paid by the day, as much greater security is thus insured, for having the latter part of the work properly executed; persons working at daily wages, and under the direction of the master, or his steward, having no interest in hurrying over this most important part of the operation. The rate of cutting varies from 2½*d.* to 4½*d.* per rod of 18 feet, according to circumstances. Small draining-tiles cost, until very lately, so much as 34*s.* to 36*s.* per thousand; but, in consequence of the great increase in the number of tile-works in every part of the county, and the general adoption of improved modes of preparing and forming tiles, by steam-driven machinery, the cost has latterly diminished to 22*s.* and 24*s.* for tiles, and to 16*s.* for soles. In most cases the entire expense of draining is defrayed by the tenants; but, in justice to the East Lothian proprietors it must be stated, that many of them contribute a considerable portion of the expense, where the exertions of the tenant seem to merit such a reward. Some landlords pay for the opening of the drains, the tenant doing the remainder. Others of them allow a considerable annual reduction of the rent during the first ten years of the tenant's occupancy. A large number of the proprietors, again, have tile-works erected in some suitable part of the estate, from which the tenants obtain tiles, either altogether free of expense, or at very reduced prices. An arrangement between landlord and tenant of a most useful tendency has been lately adopted by some, which is, that the former defrays the entire expense of draining in the first instance, the latter paying him a certain per centage for the money so expended. Draining, though the first, is not by any means the only indispensable source of expenditure to be undertaken on entering a newly-rented farm; a liberal allowance of lime, and other manures, also becomes absolutely necessary, besides numerous other matters, demanding a considerable outlay of capital at the very outset. Such a loan as that now referred to, must then be of unquestionable utility to the tenant, preventing, in a great measure, the crippling of his resources, and consequent inability to proceed in the cultivation of his farm with spirit and success.—*T. Sullivan.*

* It may, perhaps, be necessary to state that this term is applied here to the broken stones used for repairing the public roads, and employed for filling drains being broken to the same size.

Home Correspondence.

Broad-shearing.—In answer to Mr. Grey of Dilston's inquiry respecting broad shearing, it is simply paring the ground to the depth of about 2 inches, which is sometimes effected by attaching a share of 18 inches in width to the Sussex wheel-plough, which is drawn by two horses; sometimes by the Sussex cultivator, an iron implement of 5 feet in width, with shares 12 inches in width, drawn by four strong horses; this can only be used where the land is level on the surface; if the land is in ridges or otherwise unlevel, the plough is used; after this the land is harrowed, and the rubbish collected and burnt.—*A Sussex Farmer.*

Failure in the Wheat-crop.—Your correspondent "R. Arthur" describes what he supposes a new cause of failure in the Wheat crop, but which is, and long has been, too well known; it is caused in the manner he describes by the wire-worm. Frequently, in March, patches of withering Wheat plants may be seen, which on examination will be found to contain the worm in the centre of the stem; it is hard and very tough, requiring a sharp pinch with the finger and thumb to crush it; it is of a dirty yellow colour, with a black head, is about six lines in length, and half a line in thickness. I have not heard of any method of destroying them; perhaps the rooks and starlings are the farmers' best assistants in this case. I have also met with a worm in the gardens, answering the above description in all respects, except in being about thrice as thick.—*Luser.*

Thistles.—That troublesome species (Cnicus arvensis) which infests our pastures and is so difficult to keep down, may be extirpated in a couple of seasons, by drawing them. For years I tried the usual methods of mowing, spudding, &c., without success, till it occurred to try the effect of drawing; accordingly I employed some women, defending their hands by pieces of old sacking, and taking advantage of a time when the soil was thoroughly softened by a continuance of wet weather; the Thistles were drawn with much ease, bringing up frequently from 12 to 15 inches of the root. The expense was a mere trifle, sometimes under 1*s.* per acre; and in two years the land was pretty well cleared. I think the part of the root left in the earth was at too great depth to vegetate: other root-weeds may be buried, the Couch (Triticum Repens), if buried only six inches deep, will not make its appearance again; probably trench-ploughing is the cheapest and best mode of getting rid of it (?) With regard to Thistles, I do not think every farmer considers them injurious. It once was, and probably still is, the practice with some graziers in the rich Somersetshire marshes, when, in the spring, the young Grass is succulent and laxative, to let the herdman cut a small portion of the Thistles every morning; which, when withered, are readily eaten by the cattle, and are believed to counteract the too aperient tendency of the young herbage, and improve the health and condition of the cattle.—*Luser.*

Yew.—Observing in your last Number an inquiry respecting the poisonous effects of the Yew when eaten by cattle, I have been induced to make a few observations on its effects on the animal economy. The Yew (Taxus Baccata) is a narcotico-acrid poison, producing in animals that have eaten of it a degree of heaviness, increasing to stupor, from which it is with much difficulty that they can be roused, and they ultimately die without any symptoms of pain. It is well known to vegetable physiologists that medical plants possess properties differing in intensity at different periods of the plants' growth; thus the leaves of plants, such as hyoscyamus and digitalis, possess the most active properties when the plants are in bloom, their activity diminishing as the season advances, until they are of little or no value as a medicine when the leaves have reached maturity, and withered on the parent stem. May this not be the case with the Yew? the leaves of which may possibly be eaten by cattle without producing any very serious effects, at one season of the year, while at another they may eat as a deadly poison. It is believed, also, that the Yew is more virulent as a poison when in a withering state, after it has been cut from the tree, than when fresh and growing. May not this possibly occur from the changes going on in the leaf itself? the leaves of plants in the autumn, and also in a dying state, change from a green to a brown colour; this change is accompanied with an absorption of oxygen from the atmosphere, which, acting on the green colouring matter of the leaf (chlorophyle), slowly oxidises it. May not this action in the leaf of the Yew sharpen the activity of the poisonous matter already contained in it? This is rendered probable, since we know that some plants grown under unfavourable circumstances generate a poison, which disappears when the circumstances are altered; thus, the common Potato, when grown in the dark, contains in its stem a deadly poison (solanine), which disappears after it has vegetated in the light for a short time. These hints may possibly assist in clearing up the question, showing that the action of the Yew, as a poison, on the animal economy, may be greater at one period of the year than at another, and that the animal may eat it in the green state without producing death, while in the dry state it may prove fatal.—*Alfred Gyde, Puiuswick.*

Rooks.—Observing, in the *Agricultural Gazette* of June 1, an article calculated to aggravate the sufferings of the poor rooks, you will, I trust, excuse my offering a few words in their favour, more especially as I consider them about to be put in fresh jeopardy, in consequence of a mistake as to one of their most valuable acquirements. Owner of a considerable rookery in a locality where it is the fashion to consider them as pests, I declined joining in a hue and cry against them, at least until I should, by observation and experiment, ascertain whether my predilection for them was merited. Among other tests was the somewhat cruel one of watching them at feed during the spring seed-time, and shooting one or two per diem on their return homewards. I commenced this process with the Oat-sowing early in April, and during the first ten days found the contents of the stomach to be entirely grub, wire-worm, a worm with two rings round its body, a few earth-worms, and now and then a beetle, such as occur in the droppings of cattle. This was the general result until about the 20th of the month, when my faith was staggered by finding in the craw at least a score particles of Oats in the husk; but immediately observing a small whitish streak under the envelope of the husk, I examined it, and found inside, embedded on the kernel, a wire-worm extended lengthwise, gorged with its milky substance, and in colour exactly the same as the juice it was feeding on. Every single particle was similarly occupied, and during the next fortnight, during which the corn was in that state of transition, we found this the principal article of their food. After the first week in May, the wire-worm attained its natural size and colour, and from the same time not one particle of grain of any sort has been found in the stomach of a single rook. My rookery exhibited the same appearance as that described by "Facile"—heaps of chaff, or husk, every one of which, in my case, and I doubt not in his also, was the winding-sheet of a wire-worm.—*Acer.* [We shall be very glad to insert any detail of investigations on this subject, with which our correspondent may favour us.]

Hints on the Use of various Manures.—Guano, when good, ought to be of a light-brown, or fawn-colour, dry and powdery, not sticky or clammy to the touch, and the lumps when broken showing numerous small, clear, shining crystals, and giving out a strong smell of ammonia when mixed with a little quicklime, and moistened with water. Guano should be kept quite dry till used, as damp renders it liable to decomposition and the loss of ammonia; and it should never be brought in contact with quicklime, which, as has been remarked, drives off the ammonia; but guano may be used on land that has been limed a short time before, and the lime well mixed with the soil, particularly after heavy rain. Bone-dust and gypsum are too well known to require any remark. The burned gypsum is the best—costs about 30*s.* per ton. Sulphate of soda and magnesia can be got, the

former at about 2*l.* 10*s.* per ton, the latter from 3*l.* to 7*l.* per ton. In using guano for Potatoes it ought to be applied at the rate of three cwt. per acre, either sown by the hand in the drills, or broadcast just before the drills are formed, and 10 cubic yards of dung spread below the Potato cut, and the whole covered in the usual manner; the Potatoes not, as they are cut, being first dusted with gypsum in powder. Or the guano may be mixed as follows:—3 cwt. guano, 1 cwt. gypsum, 1 cwt. sulphate of soda, ½ cwt. of sulphate of magnesia, and 1 cwt. of common salt, sown broadcast as above mentioned, and 12 cubic yards of dung in the drills. This last mixture appears, after repeated trials, the best for Potatoes, and to give a larger crop than 40 or 50 cubic yards of the best farm manure; and the *after-crops*, as far as can be judged of from trials for the last three years, do not seem to be inferior, and in some cases are better than when farm-yard manure alone had been used. The same mixture as for Potatoes answers well for Turnips with a little dung; but a cheaper one without dung seems to answer as well, viz., guano, 2½ cwt., bone-dust, 6 cwt. or 15 bushels, and of gypsum, common salt, and sulphate of soda, 1 cwt. each, to be sown broadcast on the land, which is immediately to be formed into drills in the usual manner, or with the double-mould plough, and the Turnip-seed sown with the barrow. *Mixture for Top-dressing Hay, Pasture-Grass, and Oats.*—Hay to be cut (*if* top-dressed with the following mixture), viz.:—1 cwt. guano, 4 cwt. or 10 bushels fine bone-dust, 1 cwt. gypsum, and 1 cwt. of common salt, give a third more produce in Hay, and the after foggage, both of that and the succeeding years, is much improved. The same dressing may be applied to old or young pastures with great benefit, and makes the land to carry at least one-third more stock, besides benefiting the after crops. This dressing may also be applied with benefit to Corn, Barley, Wheat, particularly in *poor* lands, and where the straw is likely to be short. All top-dressings of ammoniacal and other salts should be applied in rainy or moist weather, early in the season, *i. e.*, in April, just as the Grass or Corn is beginning to spring. The following are some of the experiments, showing the effects of the manures mentioned above, in 1843:—

POTATOES (Perthshire Reds), planted 25th to 27th April, 1843.

Manures.	Quantity of manure per imp. acre.		Cost of manures excluding cartage &c			Produce per imp. acre		Value of Potatoes at 10*s.* p. boll.		
	cub. yds.	cwt.	£	s.	d.	tons.	cwt	£	s.	d.
Farm-yard	40	—	10	0	0	14	15	29	10	0
Guano	—	3	1	10	0	19	5	33	10	0
Farm-yard	16	—	4	10	0					
Farm-yard	40	—	10	0	0	16	5	32	10	0
Gypsum powdered on cut sets before planting	—	1	0	1	6					
Farm-yard dung	16	—	4	10	0	21	—	42	0	*0
Sulphate of soda	—	1	0	6	0					
Guano	—	3	1	10	0					
Sulphate of magnesia	—	½	0	3	6					
Gypsum	—	1	0	1	6					

* This mixture is sown broadcast upon the land, then drilled up, when the dung is spread, cut sets laid, and covered up.

SWEDISH TURNIPS, sown June 5th, 1843.

Description of Manures.	Quantity of Manure per imp. acre.			Cost of Manures, excluding cartage &c			Produce per imp. acre		Value of Produce p. acre, at 15*s.* per ton.		
	cub. yds.	bus.	cwt	£	s.	d.	tns.	cwt.	£	s.	d.
Farm-yard dung	16	—	—	4	0	0					
Guano	—	—	3	1	10	0					
Sulphate of soda	—	—	1	0	6	0	42	9	31	17	*0
Bone-dust	—	15	—	1	10	0					
Gypsum	—	—	1	0	1	6					
Guano	—	—	3	2	10	0	32	8	24	6	0
Farm-yard dung	40	—	—	10	0	0	33	17	25	7	11
Bone-dust	—	40	—	4	0	0	25	14	19	6	0

* Guano, sulphate of soda, and gypsum, mixed and sown together on top of dung. Bones drilled in, in contact with seed.

TOP-DRESSINGS, sown by the hand, upon three years' old Lea, 1843.

Description of Top-dressings.	Quantities of dressing applied per imperial acre.			Cost of dressings per imperial acre.			Produce in stones, of 22½ lbs. to the stone, p. imp. acre.	Increased produce from the application of the dressings per acre.	Value of Hay per acre, at 6*d.* p. stone.		
	bus.	cwt	lbs.	£	s.	d.			£	s.	d.
No dressing applied	—	—	—	0	0	0	288	—	6	9	0
Guano	—	1	—	0	10	0					
Bone-dust fine	10	—	—	1	0	0	478	220	11	19	*0
Gypsum	—	1	—	0	1	6					
Comma. salt	—	1	—	0	1	6					
Nit. of soda	—	1	56	1	7	0					
Comma. salt	—	1	—	0	1	6	464	176	10	17	†0
Gypsum	—	1	—	0	1	6					

The greater part of this pasture was Timothy Grass.

* Advantage was taken of heavy rain to put on these top-dressings. After-crops good.

† Advantage was taken of heavy rain to put on these top-dressings. After-crops not so good.

—*W. M. F., Barochan, Renfrewshire.*

Destroying Rabbits.—Since writing to you on the means of destroying Rabbits (see page 317), I have heard of a still better plan, which is commonly adopted in Derbyshire, viz., making a covered pit with a trap-door nicely balanced; to this the Rabbits must be enticed by their favourite food, Parsley or Cabbage-leaves, and allowed for a short time to run over the trap; it may then be set, and it is sure to catch them alive. This is an excellent trap too for rats and mice, and in fact all kinds of vermin. —*J. B. C.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE Right Hon. EARL SPENCER, President, in the chair.

NATURAL MANURES.—Professor Sewell presented to the Council, the following analysis, made for him by his friend Dr. Spurgin, of the substance (resembling mouldy peat) transmitted to the Society on the 17th of April last, by Mr. Churchill of Colliton, near Dorchester; occurring in considerable quantities in a sour Kimmeridge clay on his farm, and found to be an excellent manure for his Grass lands:

Silica	70
Organic Matter	13
Sulphates of Lime and Magnesia, Oxide of Iron, &c.	17
Moisture	3
	—100

The Council returned to Professor Sewell their best thanks for the favour of this communication.

KELP ASHES.—Dr. Burgess, of Margaret-street, Cavendish-square, presented a sample of a manure, which he thought might be worthy of the consideration of the Society; namely, the ash of the common kelp of commerce. He thought this application would be found advantageous on stiff clay soils deficient in saline matter. It was very cheap, being delivered in London by Messrs. Adam White and Co., of Leith, at 3*l.* 10*s.* per ton. Dr. Burgess conceived that, although the kelp ash does not contain the volatile alkali ammonia, or possess the animalised properties of guano, it could not fail, on account of the potash, which constituted its most active ingredient, to be useful on such soils, which he believed were always benefited by the vegetable alkalies.

MOISTURE IN MANURES.—Mr. Davenport laid before the Council an interesting communication he had received from Mr. Bernays, of Manchester, on various topics connected with the progress of agricultural improvement in the midland counties. Mr. Hubbersty, of Wirksworth, in Derbyshire, had set apart a portion of his land for the trial of experiments with ten different manures: the soil had been analysed, and the produce when obtained in each case would be separately weighed and also analysed. Mr. Bernays thought it worthy of remark, that although only one slight shower had then fallen since the manures were sown, the land manured with guano and charcoal had not only equalled that on which the other manures had been applied, but totally outstripped the portion manured with farm-yard manure; while the land to which guano alone was applied had not at that time kept pace with the farm-yard manure lot, in consequence of the want of rain. Mr. Bernays thought these facts were worthy of remark, inasmuch as the beneficial effects of charcoal in dry weather, as a retainer of moisture, and an absorbent also of carbonic acid and ammonia, and other gaseous matter, are clearly proved. Mr. Bernays did not hesitate to say, that if the land to which artificial manures were applied were strown in dry weather with a top-dressing of chloride of calcium, the baneful effects of a drought would be unknown, and the crops increase to a marvellous extent. The chemical substance thus recommended by Mr. Bernays has long been known under the name of muriate of lime, as one of the most deliquescent of our salts. It may easily be obtained by the action of spirit of salts on common chalk. When exposed to the atmosphere it remains constantly damp; and, by the French chemists of the last century, was regarded as a powerful stimulant, when applied in very dilute solution to the growth of plants. Professor Solly, in his Agricultural Lecture at the Royal Institution, on the 19th of April last, refers to the deliquescent effect of this salt, and its communication of dampness to soils (or the power of retaining water in their pores), when diffused through them in very minute quantity by means of a solution in water.

GUANO.—Mr. Davenport also communicated the results of his own experiments in Cheshire, with guano, bones, gypsum, and farm-yard manure; and the Rev. Thomas Cator various analyses of guano, and the results of his experiments with that manure, tried along with bone-dust, rape-dust, dove-manure, and fold-manure, on lands of different character; all of which papers were referred to the Journal Committee.—Mr. J. H. Sheppard, of Sparling-street, Liverpool, informed the Council that he was preparing a Treatise on guano, containing 500 trials of its efficacy in comparison with farm-yard manure and bones, which, when complete, he should offer for the acceptance of the Society. He stated that such was the amount of adulteration in the article, that there had been sold in Liverpool, as guano, double the quantity of genuine guano that had actually been imported; and he would, therefore, advise no person to become a purchaser of any of the varieties without having a previous analysis made of the sample offered to him for sale. He recommended parties of agriculturists, who intended to use guano next year, to become at once contractors for the amount required, at 6*l.* per ton, the price at which the genuine Ichaboe variety could now be secured. Mr. Sheppard inclosed in his communication a lithographic print of the Island of Ichaboe, on the western coast of Africa, for the library of the Society.—Mr. George G. Cummings, of Mincing-lane, communicated, through the Marquess of Downshire, a statement in reference to the African guano. He was about to send out several vessels to the Island of Ichaboe, which were expected to return to this country by the first or second month of next year; when all parties, whose orders were received at the present time, would be entitled to have it delivered at 6*l.* per ton; the guano being obtained free of expense on the coast of Africa, and the only charges attendant on the speculation, those of the collection, freight, &c., which last year had amounted to from 5*l.* to 7*l.* The high price of guano at the present moment, and the extensive adulteration of it by fraudulent dealers, were great obstacles to its purchase and efficiency.—Messrs. Carson and Gilgour, of Exchange-buildings, Liverpool, transmitted to the Society a list of the various places in different parts of the world where guano was likely to be found. They conceived that it would occur probably on all islands of a volcanic nature, of good quality; but that beyond the limits of 28 degrees north or south of the equator, its properties were likely to be less valuable. The list comprised the latitude and longitude of 80 distinct geographical positions.

The following communications and presents were received with the best thanks of the Council:—Mr. Jonas Webb—a copy of the printed order of the Privy Council in 1747, containing further rules, orders, and regulations for more effectually preventing the spread of the distemper then raging amongst the horned cattle; Colonel Rawstorne—a letter from Mr. James Dixon on the subject of the present complaint among cattle; Mr. Henry Hudson, of Wick, Worcestershire—a letter on the Turnip-fly; Mr. Christopher Johnson, Lancaster—communications on a grub in Wheat; Rev. T. Cator, Mr. Frederick Manning, and Mr. Tweed—reports on the draught of oxen; Rev. John Barlow—invitation to Agricultural Lectures at the Royal Institution; Mr. Bates, of Kirkleavington—on the appointment of judges; Lord Western—an oil-painting of a Devon ox, by Mr. Vine (an artist destitute of arms, but a most skilful painter, and exact copyist from nature or art); Mr. Bigg—a model of his sheep-dipping apparatus; Mr. Henry Overman—a model of his milk-trays (with an explanatory paper for the Journal Committee); Mr. Graham, of Bersted Lodge, Bognor—the model of an implement for working among drilled Turnips; Mrs. Le Jeune, of Romsey—Wheat-ears of 1844; Mr. Bernays—notice of the Grass on which the Spanish merino sheep are fed; Mr. Fleetwood, 12, East Suffolk-street, King's-cross—gratuitous offer of sunflower plants to members of the Society; Mr. Comins, South Molton—notice of his one-way or turn-over plough; Mr. John Read—notice of his garden and fire-engines; Mr. Abbot, of Gravesend—letters on cheap periodicals; proceedings of the Jamaica Agricultural Society and the Royal Society of Agriculture at Caen.

A MONTHLY COUNCIL was held at the Society's House in Hanover-square, on Wednesday last, the 5th of June: present, the Right Hon. Earl Spencer, President, in the Chair; Duke of Richmond; Marquis of Downshire; Earl of Euston; Earl of Ilchester; Viscount Torrington; Lord Camoys; Hon. R. H. Clive, M.P.; Hon. G. H. Cavendish, M.P.; H. Allen, Jun., Esq.; R. Archbold, Esq., M.P.; Col. Austen; T. Raymond Barker, Esq.; G. Raymond Barker, Esq.; John Raymond Barker, Esq.; T. W. Bramston, Esq., M.P.; F. Burke, Esq.; R. H. Cheney, Esq.; R. Etwall, Esq., M.P.; A. E. Fuller, Esq., M.P.; B. Gibbs, Esq.; S. Grantham, Esq.; Sir John Guest, Bart., M.P.; John Hudson, Esq.; R. H. Hurst, Esq., M.P.; W. H. Hyett, Esq.; G. Kimberley, Esq.; J. Kinder, Esq.; Sir Francis Lawley, Bart.; Sir C. Lemon, Bart., M.P.; W. Miles, Esq., M.P.; Col. Pennant; F. Pym, Esq.; Prof. Sewell; J. B. Simonds, Esq.; T. H. S. E. Sotheron, Esq., M.P.; and W. R. C. Stansfield, Esq., M.P.—The following new Members were elected:—

Pittis, George, Wymoning, Portsmouth.
Washbourn, William, Tillingdown, Tandridge, Surrey.
Ethelston, Rev. Charles W., Uplyme, Lyme-Regis, Dorset.
Michel, Lieut.-Col., Dewlish House, Blandford, Dorset.
Aplin, Henry, Misterton, Crewkerne, Somerset.
Lacon, John E., Ormesby House, Great Yarmouth, Norfolk.
Curtois, Rev. R. G., D.D., Nile Terrace, Rochester, Kent.
Dyke, George Potton, Christchurch, Hants.
Hodding, Edward Davis, Odstock, Salisbury.
Beale, James, Canford, Wimborne, Dorset.
Hart, Thos. Fred., Barham House, East Hoathley, Hurst-Green, Sussex.
Gale, Richard Christopher, Winchester.
Girdlestone, Rev. H., Salisbury.
Young, J. G., Salisbury.
Ellis, Charles, Frankians, Burgess Hill, Sussex.
Blunt, Rev. Walter, Longstock, Stockbridge, Hants.
Lewis, Anthony, Mist, Nether Wallop, Andover.
Elton, Sir Edward Marwood, Bart., Widworthy Court, Honiton, Devon.
Padwick, Wm. Fred., Manor House, Hayling, Hants.
Gamlen, Wm. Hornsey, Hayne House, Tiverton, Devon.
Brooke, Sir Arthur B. de Capell, Bart., Oakley, Kettering, Northamptonshire.
Elliott, Thomas Christopher, Southampton.
Elliott, John, Chichester, Sussex.
Willis, Joseph, Jun., Bucknowle, Corfe Castle, Dorset.
Lankester, Joseph, Southampton.
Lankester, William, Southampton.
Robson, John, East Kielder, Hexham, Northumberland.
Bridger, James Weddel, Belmont, Chigwell, Essex.
Williams, Herbert, Stinsford House, Dorchester, Dorset.
Phelps, John Bryant, Monkton, Dorchester, Dorset.
Jenkins, John, Jun., Caerleon, Newport, Monmouthshire.
Voss, William, West Bucknowle, Corfe Castle, Dorset.
Rowe, William North, Cove, Tiverton, Devon.
Gough, Edward, Gravel Hill, Shrewsbury.
Blachford, Lady Isabella, Osborne, Isle of Wight.
Gater, George Henry, Westend, Southampton.
Halsey, Rev. J. F. Moore, Gaddesden Park, Hemel Hempsted, Herts.
Witham, Henry, Lartington Hall, Barnard Castle, Durham.

The names of twenty-eight candidates for election at the next meeting were then read.

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, presented to the Council the monthly report of the examination of the accounts, and the state of the funds to the end of May. He stated

that 600*l.* having been already paid on account of the Southampton Meeting, there remained in the hands of the bankers the balance of 200*l.* on account of the Southampton subscription of 1000*l.*; and a balance of 1600*l.* on the general account of the Society. He had the satisfaction of announcing to the Council, that in the course of ten days after the recent general meeting, no less than 500*l.* had been received for subscriptions; and, as that amount consisted chiefly of arrears due to the Society—paid up probably from the just representations of the claims of the Society upon its members, made on that occasion—he entertained, in common with the other members of the Finance Committee, a well-grounded trust that extreme legal measures, under the powers of the charter, might, in the greater number of cases, if not altogether, be obviated by the continued and prompt payment of the remaining arrears. Their duty to the Council, however, imposed upon the Committee the painful necessity of recommending immediate legal steps to be taken against certain parties who were in arrear, and they had made the requisite arrangements for such a process accordingly. The Council then unanimously adopted and confirmed the report, and gave the requisite authority for carrying out the recommendations it contained.

Southampton Meeting.—The Duke of Richmond, Chairman of the General Southampton Committee, presented the report of their proceedings. The whole of the arrangements were in a most satisfactory state of progress; and the Committee received from Colonel Henderson, the Mayor, and the authorities of Southampton generally, the most cordial and efficient co-operation in completing the details on every point of the business connected with the ensuing meeting. The numerous entries for the Show, and the interest connected with the occasion, gave a promise that the meeting would be one of a most successful character. Already it had been necessary to enlarge the plan of the Show-yard beyond the limits of that at Derby; it was still, however, found that more space for exhibition was required, and the Committee then applied to the Council for authority to enlarge the Show-yard for implements, by an extra quantity of 756 feet run of shedding, and to purchase no less than 1500 iron hurdles, each 6 feet long, for the Cattle-yard, of Messrs. Cottam and Hallen, the manufacturers, and contractors for that amount. This report was unanimously adopted.

On the motion of Mr. Miles, M.P., seconded by the Duke of Richmond, Mr. A. Fletcher, of Millbrook, Southampton, was unanimously appointed the Auctioneer of the Society for the Southampton Meeting.

A weekly Council was held at the Society's House in Hanover-square, on Wednesday last the 12th of June; present—The Rt. Hon. Earl Spencer, President, in the chair; Marquess of Downshire, Earl of Lovelace, Lord Bridport, Hon. Captain Spencer, Hon. G. H. Cavendish, M.P., T. Alcock, Esq., J. Arkwright, Esq., J. Baines, Esq., D. Barclay, Esq., M.P., T. R. Barker, Esq., G. R. Barker, Esq., J. R. Barker, Esq., J. Benett, Esq., M.P., E. Bowly, Esq., Sir A. B. de Capell Brooke, Bart., T. W. Bramston, Esq., M.P., J. W. Brown, Esq., W. R. Browne, Esq., F. Burke, Esq., Col. Challoner, F. C. Cherry, Esq., H. Colman, Esq., C. Cure, Esq., J. Dean, Esq., J. H. H. Foley, Esq., A. E. Fuller, Esq., M.P., B. Gibbs, Esq., H. Gibbs, Esq., J. B. Glegg, Esq., W. L. Gower, Esq., H. J. Grant, Esq., Sir J. V. B. Johnstone, Bart., M.P., G. Kimberley, Esq., J. Kinder, Esq., J. Kirsopp, Esq., J. H. Langston, Esq., M.P., Col. MacDouall, W. Miles, Esq., M.P., J. W. L. Naper, Esq., A. Ogilvie, Esq., J. Parkes, Esq., C.E., E. Parkins, Esq., E. W. H. Pendarves, Esq., M.P., Col. Pennant, C. Pocock, Esq., Prof. Sewell, J. V. Shelley, Esq., Rev. T. P. Slapp, Rev. T. Staniforth, W. R. C. Stansfield, Esq., M.P., T. E. Thomas, Esq., C. H. Turner, Esq., Sir H. Verney, Bart., and W. Whitmore, Esq.

Francis Popham, Esq., of Littlecott, near Hungerford, Berkshire; and William Bruce Stopford, Esq., of Drayton, Northamptonshire, were elected Governors, and the following gentlemen Members of the Society:—

Fowler, Michael, Little Bushy Farm, Stanmore, Middlesex
Woodrow, William Robberds, The Place, Tombland, Norwich
Crawhall, Wm., Stagshaw Close, Hexham, Northumberland
Crawhall, Isaac, White House, Stanhope, Bishop-Auckland
Tatham, Thomas James, 27, Bedford-place, Russell-sq.
Crawter, Thomas, Cobham, Surrey
Crawter, Henry, 7, Southampton Buildings, Chancery-lane
Marshall, John, Latimers, Chesham, Bucks
Harfield, Robert, Southampton
Apperley, W. H., Hereford
Mellor, John, Little Aston, Lichfield, Staffordshire
Driver, Rolles, Southampton
Lowson, Newby, Wilton-le-Wear, Bishop-Auckland, Durham
Bowser, Richard, Bishop-Auckland, Durham
Bowser, William, Tunstall, Hartlepool, Durham
Herring, T. B., Finchley, Middlesex
Symons, Thomas, Coryton, Launceston, Cornwall
Andrews, Richard, Above-Bar, Southampton
Jacob Jacob, St. Cross, Winchester
Harding, Stephen Toghill, Stinsford Farm, Dorchester, Dorset
Jarvey, John, Milton, Christchurch, Hants
Richardson, William, Southampton
Aldridge, William, Southampton
Rodd, Francis, Trebartha Hall, Launceston, Cornwall
Currie, James, Hillside, King's-Langley, Herts
Sainsbury, George Taylor, Devizes, Wilts

The names of eleven candidates for election at the next meeting were then read.

Bye-Laws.—The President, on the part of the Bye-Law Committee, laid before the Council the draught of new Bye-Laws, recommended for the consideration of the Council.

On the motion of Mr. Raymond Barker, the President was requested to direct a Special Council to be held for the purpose of taking this Report into consideration. The President then ordered that such Special Council should be summoned for Tuesday, the 16th of July, at one o'clock.

Agricultural College.—Mr. Bowly and Mr. Brown transmitted to the Council various documents connected with the establishment of an Agricultural College on an example farm in the oolitic district, including the country commonly called the Cotswold Hills, extending from Bath to Chipping-Camden; also including a great part of Oxfordshire and North Wiltshire, part of Berkshire, &c.

The following were among the communications received by the Council: a drawing and description of the new double cheese-press, invented by Mr. James Adams, jun., of Parks Cottage, Southwell; a Treatise on Adulterations in Artificial Manures, and a Chemical Apparatus Chest, presented by Dr. Robinson; and the Journal of the Agricultural Society of Western Australia. The Council then adjourned to Wednesday next, the 19th of June.

ROYAL INSTITUTION.

May 24.—Lord Prudhoe in the chair. The subject was The Application of Geology to Land-draining, by Wm. Ogilby, Esq., Sec. Zool. Soc. Mr. Ogilby commenced by stating some of the more prominent injuries inflicted on the soil by stagnant water. He explained more especially how the land was rendered cold and late by the great capacity of water for heat, as compared with clay or sand; the same quantity of heat which is sufficient to raise the temperature of earth or mould four degrees of Fahrenheit, and of common air five degrees, being only sufficient to raise that of water one degree; the residue being absorbed by the water and rendered latent. Consequently, when the land is saturated by water, the sun's rays, instead of being expended in heating the soil, are absorbed and rendered latent by the water which it contains, and the soil derives but one-fourth of the warmth which it would do were it filled with common air instead of water. Other injurious effects were, that it soured the land, and gave rise to the formation of substances hurtful to vegetation. These were caused by the exclusion of common air and the oxygen which it contains from the pores of the soil. Vegetable and animal manures thus remained imperfectly decayed, or decay was converted into putrefaction, and acetic, malic, tannic, gallic, and other acids, substituted for carbonic acid and ammonia, the products of simple decay, and which, with the elements of water, are now recognised as the chief agents in the nourishment of plants. Superabundant moisture, likewise, rendered the climate of a country insalubrious; but its injurious effects were more immediately recognised in supplying the roots of growing plants with a greater quantity of moisture than they are able to digest, and thus rendering them weak and dropsical. Mr. Ogilby next proceeded to explain how these injuries might be remedied by efficient draining; and observed that land was rendered wet and unproductive from two sources; first of all by rain falling on the surface of a stiff clay soil, or stagnating within the pores of a loamy soil, incumbent on an impervious subsoil; and, secondly, by springs overflowing the surface from some higher ground, or oozing up from beneath the soil itself. These two different forms of disease required different modes of treatment; the system which would accomplish a radical cure in the one case, might, indeed, alleviate the effect, but could never remove the cause in the other; and Mr. Ogilby stated that the great error of modern writers on draining consisted in not being aware of, or at least not sufficiently distinguishing, these different causes of wetness in land, and the different modes of treatment which were applicable accordingly. The common method of surface-draining, which was so much in vogue at present, and which was necessary and efficient for the discharge of rain-water, would produce but a partial effect in alleviating the injuries caused by subterraneous springs; and that too at an enormous cost, compared with the expense of simple and more appropriate modes. High-lying arable soils, especially in Ireland, Scotland, and the West of England, were frequently injured by both causes; but the greater part of the mischief commonly arose from the rains which fell so abundantly in these localities, and it was to such lands that the system of furrow-draining was peculiarly applicable. The principles of this system consisted in cutting parallel drains at equal distances of from fifteen to thirty or forty feet asunder, according to the tenacity or lightness of the soil, and leading them all into one or more main drains, according to the inequalities and size of the field. Great differences prevailed among practical drainers as to the distance, depth, width, fall, and direction of the parallel drains, which Mr. Ogilby ascribed to the different circumstances of soil, climate, and situation in which the several observers had found particular modes most efficient, and deprecated the idea of any one system or set of rules being universally applicable to all circumstances and localities. The distance of the drains he stated to depend entirely on the nature of the soil, of which it should vary inversely as the tenacity; in the stiffest soils experience proved that the drains were perfectly efficient at 15 feet apart, and in very light soils at from 30 to 40 feet. The depth was not subject to much variation or controversy; from 30 to 36 inches was generally sufficient, it being always understood that the main drains should be at least 6 inches deeper than the parallel. The width of the parallel drains should depend on the quantity of water they had to carry off; if the flow be insignificant the drain should be cut very narrow, generally not more than 2 or 3 inches wide at bottom, otherwise the water will stagnate, instead of running freely off; if the flow be more considerable, the drain must be made wider in proportion, to prevent a too rapid current from tearing up the bottom, and in time choking the drain. As to the fall and direction of the drains, it was stated that great differences prevailed, especially where the land lay on the face of a hill, and had a considerable slope; one party maintaining that they should be run perpendicularly up and down the face of the hill, another that they should be run diagonally across it. Mr. Ogilby believed both opinions to be right, under particular circumstances, but that neither of them was a correct expression of the actual principle upon which the direction of the drains depended, which he stated to be that the parallel drains should cut the different strata of the land perpendicular to the line of strike, whilst the main or leading drains should be across the direction of the dip. This position was illustrated by a large section of the Isle of Wight, and strengthened by the well-known geographical fact, that it is consonant to the system which Nature presents in the direction of large rivers and their tributary streams. After explaining the various methods of filling these drains, by tiles, broken stones, wood, straw, &c., Mr. Ogilby proceeded to consider the case of land injured by subjacent water contained in the bowels of the earth, and forcing itself up in springs from beneath, or trickling down from the tail or outcrop of some overlying strata. This was stated to be the cause of all the great bogs, fens, and morasses, which covered so large a surface in Ireland, Scotland, and some parts of England, and which, when laid dry, produced some of the finest land. This part of the subject was illustrated by numerous geological sections, explanatory of the formation of springs, and the origin of the fens and bogs to which they gave rise. The proper mode of draining such land was discovered and practised extensively during the latter half of the last century, by J. Elkington, a Warwickshire farmer, who had the merit of perceiving the relation which this species of wetness, and the origin of springs in general, bears to the geological stratification of the surrounding country, at a period when the knowledge of stratification was yet in its infancy, and confined to a few inquirers. The great success which attended Elkington's practice, attracted the attention of the Government of the day, and a Parliamentary grant of 1000*l.* was voted to him on condition that he should impart his secret, as it was then considered, to certain individuals appointed by the Board of Agriculture. This was done; and the result, published by Johnstone, one of the persons appointed, displays one of the most beautiful and important applications of scientific principles to practical purposes within the whole range of human knowledge. Yet strange to say, the very memory of Elkington's system seems to be lost at the present day, or remembered only to be condemned as inefficient, though it rests on indubitable scientific principles, and the works of Arthur Young, and the various county reports, are filled with testimonies of its efficiency and success. The truth, however, is, that its application requires a more extensive and scientific acquaintance with the origin of springs, the laws of hydrostatics, and the principles of levelling, as well as a more practical knowledge of the stratification of the earth, than common land-surveyors, or most writers on this subject, can be expected to possess; and of all the practitioners of the present day, Mr. Ogilby stated, that Mr. Stephens, of Edinburgh, was the only individual whom he knew to be aware of the real importance of Elkington's system, or to have practised it extensively. The principles upon which this mode of drainage depends are purely geological. Elkington divides the different strata which compose the globe into two great classes: those which, like sand, gravel, &c. are of a porous nature, and permit water to sink into and percolate freely through them; and those which, like stiff clay, compact rock, and that species of gravel cemented by iron, which is commonly called till, are impervious to water. Suppose, as in the case of the plastic clay, and other geological formations, numerous alternations of porous and impervious strata occur, the rain-water which falls on the outcrop of the porous strata will percolate down through its substance till it arrives at the lowest point, where it will lie upheld by the subjacent bed of pervious clay, and confined by a similar bed above. The porous bed will thus resemble a bent tube, into one or both ends of which water is poured: if one or more holes be bored in the upper wall of the tube at its lowest point, the water will spout out of them like a little fountain; or, if the tube be filled, it will at last overflow at the ends. This is the cause of the wetness which gives rise to bogs and morasses. These swamps always rest immediately on a till or clay bottom, incumbent upon a stratum of sand or gravel filled with water, and cropping out on some high ground in the neighbourhood from which the water descends. The rains of hundreds or thousands of years gradually fill these porous strata, till they at length trickle over the lower edge of the outcrop, forming a continuous line of springs which overflow all the surrounding low lands, or burst up at the lowest point through accidental crevices or weak points of the superjacent clay beds, and give rise to the green welleys and shaking quagmires so frequently met with in fens and turf bogs. The former case happens along the edges of the London Basin, where the clay comes in contact with the subjacent sand beds of the plastic formation; in Kent and Sussex where the weald clay meets the Hastings sand on the one side, and the chalk ranges of the North and South Downs on the other; the latter is almost universally the case in the bogs and fens of Ireland and Lincolnshire. To cure the former species of wetness, it is

only necessary to draw a trench along the line of the springs at a short distance below where they burst out, and sufficiently deep to cut into the porous stratum containing the water, and thus intercept it before it rises to the surface or overflows the land. The line of the drain is determined by the application of the spirit-level, upon the principle that water always stands at the same elevation in the same reservoir or in reservoirs communicating with one another; and in cases where the porous stratum, containing the water, lies too deep to be reached by the bottom of the drain, wells are sunk at intervals, or a large auger is used to make bore-holes in the bottom, up which the water ascends, and of course lowers the spring or reservoir to the level of the bottom of the drain. In the second case, where the bog lies nearly level, and the springs burst up at intervals through accidental crevices in the till or clay bed on which it rests, one or more deep trenches are cut across the bog, in the proper direction to secure a good fall, and wells or bore-holes sunk as in the former instance through the subjacent clay to let the water escape: its level will consequently be reduced to the height of the bottom of the trench, which it is always better to cut down to the clay or till, where the bog is not more than ten or twelve feet deep. Sometimes, when the bog lies perfectly landlocked or surrounded on every side by hills which afford no outlet, the water may still be carried off by sinking a well or bore-holes into a dry subjacent stratum of sand or gravel, and thus letting the water escape beneath. These principles, Mr. Ogilby stated, were applicable to many districts, and afforded the only cheap and efficient system of drainage for lands injured by subjacent water.

FARMERS' CLUBS.

Tiverton.—At the late annual meeting of the Agricultural Society here, which was presided over by Lord Palmerston, his Lordship made the following remarks in illustration of the advantages derivable from Agricultural meetings:—"Each man's experience must inevitably be confined to a small scale—to the range of his own farm, or to the range of his immediate neighbours'; but by these meetings he is able to acquire all the benefits of the experience of a large portion of country. Agriculture has of late years taken an entirely new character. Up to a very recent period Agriculture was a practice; it is now daily becoming more and more a science. In former times men did in Agriculture, as they have been wont at different periods to do in many other departments of knowledge; they groped about very much in the dark. They saw that certain things produced certain results, but they did not know why those causes produced those results. They knew that certain manures were good for certain soils, that certain soils were best adapted to the cultivation of certain produce, that some pastures fattened better than others, but why those different results rose from those different causes, not only the farmer could not tell you, but no man had turned his attention to investigate it. Chemists have of late years turned their attention to Agriculture, and that science which had formerly been considered to be confined in its practical application to medicine, has of late years been turned to the practical advantage of Agriculture, and the agriculturist is in fact a manufacturer. He is a manufacturer of grain, and grass, and cattle. He knows by experience that certain manures are favourable to the growth of certain crops. But the chemist has stepped in of late years, and by careful analysis has told the farmer first of all what are the chemical elements of which his crops are composed; has instructed him what are the substances of which the straw, and the grain, and the grass, and various other vegetable productions, are composed. Well then, the chemist analyses your soil. He tells you what the soil is composed of. By knowing what the soil is composed of, on the one hand, and what the crop you want to grow is, on the other, you can tell whether your soil contains all the elements necessary for the crop, or whether any, and if any, what are the ingredients to be added. Well, this reduces Agriculture, which before was a matter of experiment and trial, to a science very nearly amounting to certainty; because every man can tell, within a certain calculation, whether his soil is adapted to the particular culture to which he wishes to apply it, and if it is not, he knows what manures are necessary in order to render it fit for his purpose. The chemist also teaches the farmer that those chemical substances which are found in his farm-yard, if carefully stored, if carefully collected, and not allowed to run to waste, as has been too much the practice all over the country, are among the most valuable applications which he can add to his soil; and that, in fact, the farm-yard of every farmer contains more valuable manure than he can obtain by a large expenditure of money in purchasing elementary substances from abroad; everybody knew by their experience that marshes containing stagnant water were unfavourable to vegetation. The chemist explains all these various workings of Nature; and when you know what Nature does, and how she does it, you are better able to enlist her natural processes into your service than when you wandered in the dark, without any other guide than that of trial and observation. These are great advantages, which science has of late years brought to assist the practical farmer, as these are descriptions of knowledge which the occupation and pursuits of the farmer prevent him from acquiring."—*Woolmer's Exeter Gazette.*

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Miscellaneous.

shire, viz., *Husbandry of Turnips.—The Time of sowing balanced; Different Varieties on different Soils, and at different Elevations and Latitudes.*—1st. As a general rule Turnips may with advantage be sown at an earlier period in the north than would be suitable for the same species, with other circumstances equal, in the south. Thus, although in the East Riding it is common to commence sowing Swedes the second week in May, and to finish White Turnips by the 21st June, in Suffolk it is usual to commence Swedes near the end of May, and white Turnips a month later. 2nd. The effect, however, of difference in latitude is partially counteracted by a greater or less degree of elevation, as well as by a difference of soil, where other things are equal. 3rd. As a general rule, the greater the elevation of the ground the colder is the climate; therefore, if this is not counteracted by a difference of soil or situation, the high ground of the south will have a climate somewhat similar to land in a more northern latitude, at a less degree of elevation, and should be sown accordingly. 4th. Some soils are naturally of a colder nature than others, and a difference in this respect will counteract what is known to be the common effect of any given elevation or latitude. 5th. Any peculiarity of the soil or situation which tends to promote rapid growth and quick maturity will render the land less suitable to be sown early. Thus we see that, although there is said to be a general difference of about three weeks in the proper time for sowing, between the north and the south of England, the occupiers of the hills in Gloucestershire find it desirable to sow about as early as those of the wolds of Yorkshire; also those of some of the rich and low grounds of the East Riding sow about three weeks later than their neighbours on the wolds not 10 miles from them, and consequently nearly three weeks later than those on the hills of Gloucestershire. Similar deviations from those general rules may be met with in most districts where the soil, aspect, or elevation, vary as above alluded to. The proper season for sowing all the common varieties of Turnips does not usually extend over much more than six weeks in any given district. Swedes are generally sown first. Hybrids, being partly of the same nature, are usually sown next, and white Turnips the last, especially if they are intended for late consumption. When for early use, they, as well as the other species, may with advantage be sown at an earlier period. The more solid the texture of the Turnip, as compared with others of its own particular species, the more suitable it will be for late consumption, and consequently for late sowing. To exemplify this, it is only necessary to say, that the White Globe, which, from its quick growth and large size, is highly valued for early consumption, is, by the same peculiarities, unfitted for standing over winter. In districts where about one-fourth of the arable land should each year be sown with Turnips, there is necessarily more work for the horses than could be done within the period best calculated for producing the heaviest crop. Therefore, the occupiers, through fear that they might be driven into a late season for part of their land, and then, perhaps, be almost compelled to sow in unfavourable weather, with scarcely the chance of obtaining a productive crop, will seize on the earliest period, when the weather is favourable, at which a given species of Turnip has been sown in that situation with success. The chances of a heavier crop are so far in favour of what is considered early sowing, as to justify in this case a little risk of being too early, in order to secure the positive benefit of a commencement under favourable circumstances. In districts where the occupiers are most dependent on their Turnip-crop, from want of good Grass-land, it is of great importance to spread the advantage of having Turnips over as long a period as possible: thus, some will sow part of their white Turnips before Swedes. This very early sowing of white Turnips might be ruinous to the crop, were it intended to stand over the winter, but for early consumption may have every recommendation. I say *may*, because everything must depend on the weather of the season in question. Thus, until we have an assurance that successive years will be counterparts of each other, no man can accurately foretel what period of sowing will have the best effect in any given situation. That climate which by its warmth enables the occupiers of land to sow Stubble Turnips with success has the drawback of rendering Turnips more liable to mildew from too early sowing. When Turnips are sown *too* early, there will also be danger of their growing too much into top during the autumn; and if they are sown *too* late, the crop will be light; even a few days will make a great difference in this respect.—*Extracted from Mr. Barugh Almack's Essay, in the Journal of the English Agricultural Society.*

Notices to Correspondents.

Barley.—*J. B. C.*—The quantity of seed Barley is necessarily greater than that of Wheat, because of the later period at which it is sown. The young plants have not time to *tiller*.

Bone-dust.—*Subscriber.*—Bone-dust, and especially (because it is immediately available), super-phosphate of lime, *i. e.*, bone-dust acted on by sulphuric acid, is a cheaper source of phosphoric acid for plants than guano; and we do not think that the use of the latter will ever drive the former out of the market. In ordinary circumstances, *i. e.*, if your land is not altogether worn out, we should prefer using bone-dust or superphosphate of lime to guano as a manure for Turnips.

Burning Earth.—*Subscriber.*—Please to state your question more in detail. We do not understand to what you allude.

Guano and Bone-dust.—*A Farmer.*—2 cwt. of the former, and 1 quarter of the latter, will be a sufficient dressing for an acre, for Turnips. 20 or 30 bushels of old coal and woodashes will make a good compost with the same quantity of guano, for an acre of land.

Gypsum.—*K. R.*—Sow six bushels of the powder per acre, broadcast by itself, in wet weather. It will probably act beneficially on your aftermath, if the weather be suitable. Sulphuric acid, 1 gallon to about every 40 of urine, is the best fixer of the ammonia in liquid manure.

Linseed.—*J. C.*—The seed crushed and given by itself is too rich. We shall publish a communication on this subject shortly. A manure is valuable in so far as it supplies what the plant wants, and the soil does not contain. A consideration of this will convince you that it is impossible to say whether soaper's ashes or farm-yard manure will answer your purpose best. The latter is most likely to be best, as it contains a greater number of the substances plants require as food. Can any of our correspondents give us their experience of soaper's ashes as a manure?

Mare and Foal.—*No. 5.4.7.*—Can any one inform our correspondent how he may best rear a foal on cow's-milk, or induce its dam to take to her offspring?

Peat.—*G. Williams.*—The beneficial effects which have attended the application of clay and lime on peaty soils point them out as the best correctives of such soils. It is not probable that salt would have much influence in a district so near the sea.

Poisonous Plants.—*X.*—States that he has had in Westmoreland two sheep very suddenly poisoned in a field where such an occurrence was never known before. On examining the field minutely, no poisonous plant can be found except Arum maculatum, of which there is a patch under a wall, looking green and tempting, while the field is completely burnt up and destitute of herbage. It was near this that the sheep were lying dead. He adds, that a gardener to a neighbouring gentleman stated, on the subject being named to him, that they had lost both cows and sheep at different times, as they believed, from the same cause. We do not wonder at it, for this Arum is an acrid poisonous plant, and will have its venom much concentrated in such a season as this. It is absurd to talk of the red spider being the cause; the opinion is not the better for being very popular.

Potatoes.—*A Potato Fancier.*—We must refer you to the numerous communications of correspondents on this subject.

Poultry.—*J. B. C.*—We cannot speak from experience about the Muscovy duck. All our knowledge of this fowl is derived from a work to which we have referred in another column, "*Farming for Ladies*;" which, however, does not answer your question.

Pulverising Chalk.—*W. W.*—Lay it down as road material, where your carts are passing and repassing; this will break some sufficiently small.

Saltpetre.—*A Subscriber.*—You are, in all probability, wrong in attributing the failure of your Potato crop to the nitre in your saline manure. The saltpetre was the most valuable ingredient in the manure you applied. The weather, &c. are sufficient to account for the failure of your crop. Your fate in this respect is not this year a singular one.

Small Farms.—*An Enquirer*, observing a communication from "Senex" respecting 4½ acres of land, is anxious to know—1st, the annual amount of labour employed by him upon it (that is to say, whether it is full employment for one or more hands); and 2d, the amount of and the value of the produce, with the number and description of stock it will maintain.

Stirring Seeds.—*J. B. C.*—The small quantity of inorganic manure thus administered is *supposed* to be influential on the future plant, by giving it a vigorous start in life, and by hastening it through that period when it is peculiarly liable to injury from insects, &c.

Substitute for Guano.—*A Constant Reader* asks Mr. Dimsdale what quantity of lime and sulphate of magnesia should be added to urine in order that the efficiency of his artificial guano may be greatest. We have no hesitation in saying that the addition of caustic lime at all to the liquid is wrong in principle, and calculated to volatilise some of its most valuable constituents.

Weeds.—*Spade and Anchor.*—Your weed, Genista tinctoria, must be dug out; that is the only way to destroy it. We should be glad to publish any instances in which your experience has proved the accuracy of our advice.

Wheat.—*J. C. M.*—The production which is affecting your Wheat is not the true mildew, nor indeed at all nearly allied to it, but is of the same genus as the Hop-mould, which is sometimes so destructive. It is a peculiar form of Erisiphe communis, and is by no means confined to Wheat, but far more common on broad-leaved Grasses. It is, however, not unusually observed on the different kinds of Corn in close damp corners, but in these cases rarely produces fructification. It usually makes its appearance later in the year, and is generally confined to the leaves and sheaths, and consequently is not so injurious as those species which attack the stem. We shall be obliged by your examining the progress of the disease, and forwarding specimens in the course of a fortnight or three weeks, especially if it extends to the stem or ears. We shall also be obliged by your informing us whether it affects the produce of the crop or not. Your specimens are not quite mature, as the fructifying bodies are not yet developed. The structure of the young plant under the microscope is quite different from that of mature individuals, and the two states have consequently been referred to two different genera. After we have received additional information, we shall probably take an opportunity of again adverting to the subject.—*M. J. B.*——*Subscriber.*—With regard to rust, mildew, &c., we hope to publish on the subject soon.

Will, Construction of.—*J. B. W.*—We cannot undertake to answer this question satisfactorily without seeing the Will, or a sufficient extract. If the subject-matter of the devise were pasture land, and the restriction were against ploughing it, such a restriction would extend to spade husbandry; but the question as put does not sufficiently give the facts of the case. You should consult your solicitor.—*W.*

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, June 10.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	6	to	3s	10		
Best Short Horns	3	4		3	8		
Second quality Beasts	3	10		3	2		
Calves	5	6		4	8		
Pigs	3	4		4	0		
Best Downs & Half-breds	3s	6	to	3s	10		
Best Long-wools	3	6		3	8		
Ewes and second quality	3	0		3	4		
Lambs	4	0		5	0		

Beasts, 3082; Sheep and Lambs, 20,650; Calves, 178; Pigs, 320.

We have to-day a large supply of Beef, and a very great many remain unsold. The prices above quoted—namely, 3s 10d for Scots, and 3s 8d for Short-horns—are extreme quotations, a great many of excellent quality having made fully 3d per 8 lbs less; still, several of the choicest have reached those prices. The supply of Sheep is larger than has been known for a very long period, owing to the scarcity of keep; they are also, from the same cause, of middling quality; there is, consequently, a fair demand for the very best, but everything suffers a reduction in price. Veal-trade is excessively bad, and very few Calves make over 4s. per 8 lbs. Pork-trade is heavy.

Friday, June 14.

Our supply of fresh Beasts is not very large, but with what were turned out on Monday, it is more than adequate to meet the demand. Trade is very heavy, at about the same rates as Monday, 3s 8d being the more general price for Scots, and 3s 6d for Short-horns. There is a little brightness in the Mutton-trade, but prices are no better. Lambs are selling rather more freely, and the best are making about 5s 4d per 8 lbs. We have a large supply of Veal, but there is rather more demand for the best qualities, which make about 4s 8d. Pork remains about the same.

Beasts, 610; Sheep and Lambs, 11,080; Calves, 186; Pigs, 307.

4l, West Smithfield.

POTATOES.—Southwark Waterside, June 10.

Our season is fast drawing to a close, unless some good-conditioned lots could be procured, which might protract it beyond its usual time. The long-continued drought has considerably retarded all the early crops in the suburbs of London, consequently old Potatoes are still wanted. There have been arrivals from the various shipping districts during the past week, and the best samples were in great request, and a further advance was effected on all descriptions, and at the close the following prices were well supported. Dutch Whites are selling at 40s to 45s.

York Reds	90s	to	95s	Essex and Sussex Blues	—s	to —s
Perth	85		90	Wisbeach Kidneys	—	—
Early Devons	—		—	Blues	—	—
Late Devons	85		95	Whites	—	—
Cornwall	—		—	Jersey and Guernsey Blues	70	80
Essex Whites	—		—	Prince Regents	—	—
Kent and Essex Kidneys	90		90	York Shaws	—	—

MARK-LANE, MONDAY, June 10.

The Market this morning was moderately supplied with English Wheat by land carriage samples, nevertheless the trade opened dull, and the best qualities could not be disposed of, excepting at a decline of fully 1s. per qr.; the secondary descriptions met a slow sale, at rates barely equal to those of this day se'nnight, and some quantity of both remains unsold. There was a fair retail inquiry for Free Foreign, on the terms of last week. In Bonded we did not hear of anything doing.—Barley and Beans are unaltered in value.—Peas of all sorts are 1s. dearer.—Oats sell freely, and fully maintain the quotations of last week.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	42	46	Red .	40	44
—— Norfolk, Lincolnshire, and Yorkshire .	40	42	White	—	—
Barley, Malting and distilling 28s to 32s Chevalier	31	33	Grind.	24	26
Oats, Lincolnshire and Yorkshire . . Potatoe	20	22	Feed	18	20
—— Northumberland and Scotch . . . Feed	20	22	Potato	21	23
—— Irish . . . . . Feed	18	22	Potato	19	24
Malt, pale, ship	52	60			
—— Mottled and Brown	50	56			
Rye	29	34			
Beans, Mazagan, old and new 32 to 35 Tick	30	36	Harrow	32	36
—— Pigeon, Heligoland . 34 to 39	Winds.	—	—	Longpod	—	—
Peas, White . . . 34 to 37 Maple	32	34	Grey	30	32

FRIDAY, June 14.

The arrivals of English Wheat since Monday have been larger than usual, and the trade is exceedingly heavy at that day's prices. Fresh Free Foreign meets a fair demand, and fully maintains its late value.—Barley, Beans, and Peas are severally held for an advance, and the quantity offering is limited; the f. o. b. inquiry for these articles continues.—The sale of Oats is less brisk than it has been, owing to their being held for more money.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May 3 per Quarter	38s 8d	31s 8d	20s 1d	34s 11d	31s 8d	31s 8d
— 10 . . .	38 1	31 5	20 5	37 4	32 5	32 3
— 17 . . .	38 10	31 1	21 0	31 2	33 3	31 5
— 24 . . .	38 10	30 7	21 2	31 7	33 11	31 7
— 31 . . .	38 6	30 9	21 7	34 0	34 10	33 4
June 7 . . .	38 6	31 4	21 11	33 11	35 11	34 1
6 weeks' Aggreg. Aver.	38 6	31 1	21 1	33 2	33 3	32 4
Duties on Foreign Grain	17 0	7 0	6 0	10 6	9 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . .	8380	320	3420	6110 Sks
Irish . . .	—	—	21460	—
Foreign . .	300	6140	1280	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 6007 Sks. — Brls.		4155	857	5097	122	—	1150	911
Irish . . 200 ,, — ,,		—	—	—	22848	—	—	—
Foreign . ,, — ,,		6440	—	—	3092	—	4133	—

SEEDS, June 10.

Canary . . per qr	48s to 52s	Linseed Cakes, Foreign, p. ton		8l to 7l 10s	
Carraway . . per cwt	30	34	Mustard, White . p. bush.	5s	6
Clover, Red, English .	60	74	— Superfine ,, .	6	8
— — Foreign .	64	74	— Brown ,, .	14	16
K — White, English .	120	130	Rapeseed, English, per last	26l	28l
— — Foreign .	86	126	Rape Cakes . per ton	—	—
Coriander . . .	12	13	Nalsein . . .	—	—
Hempseed . per last	34	36	Tares, Eng. winter p. bush.	3	5
Linseed . per qr	—	—	— Foreign . .	3	5
— Baltic . .	—	—	Trefoil . . per cwt	—	—
— Cakes, Eng. per 1000	10l	10l 10s	Turnip (too variable for quotation).		

KINGSTON, LAND. LAV.

HOPS, FRIDAY, June 14.

The Hop Market continues about the same as last week, and with the exception of Midd. Kent, the vermin and Honey-dew keep increasing on the Bines. The Lowlands are fast going into blight.

FATTEBURN & SAYER, Hop-Factors.

COVENT GARDEN, June 15.—Grapes continue on the increase; they are good in quality, and have not altered much in price. Spanish ones are almost over for a season; a few may, however, still be met with in the market, but they are not of good quality. Little alteration has taken place in the prices of Pines since our last report; they are rather more plentiful. Melons are good and sufficient for the demand; some foreign ones are in the market. Of Peaches and Nectarines there are a few good specimens. Cherries have been imported in considerable quantities, and are in consequence rather lower in price. There are fine samples of Strawberries in the market; they are now beginning to get more abundant. A few dessert Apples and Pears may be met with, but they are scarcely worth quoting. Green Gooseberries and Currants are in abundance. In consequence of the long dry weather, Vegetables in general are not so good in quality. Among them, however, we noticed some excellent heads of Cauliflower, and Asparagus is good and sufficient for the demand. Carrots and Turnips are small, Rhubarb has not altered since our last report; French Beans are a little dearer; Peas are abundant, as are also Lettuces; almost all kinds of Salading are cheap and plentiful. Among Cut Flowers were Heaths, Gardenias, Lily of the Valley, Carnations, Pinks, Sweet Peas, Pelargoniums, Fuchsias, Verbenas, Moss and other Roses.

FRUITS

Pine Apple, per lb., 6s to 10s
Grapes, Spanish, per lb., 1s to 1s 6d
Hothouse Grapes, per lb., 4s to 8s
Melons, each, 2s to 10s
Peaches, per dozen, 10s to 30s
Cherries, per lb., 2s to 3s
Currants, per half-sieve, 2s to 3s 6d
Strawberries, per gallon, 1s to 3s
Gooseberries, per ht.-sieve, 1s 6d to 3s
Walnuts, per bush., shelled, 16s to 20s
Oranges, per dozen, 1s to 2s 6d
— per 100, 5s to 10s
Lemons, per dozen, 1s to 2s
— per 100, 6s to 14s
Almonds, per peck, 6s to 7s
Sweet Almonds, per lb., 2s 6d to 3s
Nuts, Spanish, per bushel, 18s
— Brazil, 16s
— Barcelona, 20s to 24s
— Cob, 14s

VEGETABLES.

Rhubarb, per bundle, 3d to 1s 6d
Cabbages, per dozen, 6d to 1s 6d
— Red, per dozen, 2s to 3s
Cauliflowers, per doz., 2s to 3s
Sorrel, per ht.-sieve, 6d to 9d
Asparagus, per 100, 1s to 4s 6d
Artichokes, per doz., 2s to 3s
French Beans, per 100, 1s 6d to 2s
Autumn Potatoes, per lb., 3d
Greens, per dozen, 1s 6d to 2s 6d
Potatoes, old, per ton, 60s to 120s
— per cwt., 2s to 3s
— per bushel, 2s 6d to 3s 6d
— Kidney, p. bush., 2s 6d to 3s
— New, per cwt., 14s to 20s
Frame Potatoes, per lb., 4d to 6d
New Turnips, per bunch, 3d to 7d
Peas, per bushel sieve, 2s to 4s 6d
Red Beet, per doz., 6d to 1s 6d
New Carrots, 4d to 1s
Radishes, Tur., p. 12 bchs., 6d to 1s 6d
Basil, per bunch, 6d to 9d
Horse Radish, per bundle, 2s to 3s
Savory, per bunch, 3d to 6d
Cucumbers, each, 4d to 1s
Spinach, per sieve, 6d to 1s 6d
Leeks, per doz. bun., 2d to 4s
Garlic, per lb., 6d to 1s
Onions, per bunch, 2d to 10d
— large, per bushel, 1s to 3s
— Spanish, per doz., 1s 6d to 2s
Shallots, per lb., 6d to 10d
— Green, per bunch, 2d to 4d
Lettuces, per score, 6d to 1s
Celery, per bunch, 6d to 2s 6d
Mushrooms, per pottle, 1s to 4s
Small Salads, per punnet, 2d to 3d
Watercress, p. 12 bch. bun. 3d to 6d
Parsley, per ht.-sieve, 6d to 1s
Tarragon, Green, per bunch, 2d to 4d
Green Mint, per bunch, 2d to 4d
Marjoram, per bunch, 4d to 6d
Chervil, per punnet, 2d to 3d

HAY.—Per Load of 36 Trusses.

CUMBERLAND MARKET, June 13.

Superior Meadow Hay	80s to 100s	Superior Clover	100s to 120s		
Inferior . .	64	80	Inferior ,,	105	115	Straw 34s to 38s
New Hay . .	55	70	New Clover	90	100	

JOSHUA BARNS, Hay Salesman.

WHITECHAPEL, June 14.

Hay . .	80s to 84s	Clover .	100s to 120s	Straw .	30s to 32s
— fine . .	90	95	— fine	120	125	

WOOL.—BRITISH, FRIDAY, June 14.

We cannot report any alteration in our Wool Market. The amount of business done in English Wools is not large—as is usual at this season of the year. The sales of Colonial are just finished, which have gone off well, at rather advanced rates.

	per lb.		per lb.
Long-wooled Wethers	11½d to 1s 0½	Southdown Hoggets	1s 0½ to 1s 2½
Do. Hoggins	1s 1 1 3	Kent Fleeces	1 1 1 4
Southdown Fleeces	11½ 1 0		

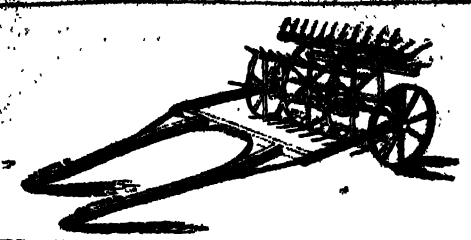
JAMES PARKER, Wool Broker.

ENGLISH TIMBER AND BARK.—JUNE 10, 1844.

Round Timber, per load.		Plank, per foot cube.	Inch board, p. ft. sup.
Oak . . 3l 10s to 5l 5s		3s 9d to 4s 0d.	4½d to 6d
Ash . . 5 5 7 15		2 6 4 6	2 6
Elm . . 3 0 6 0		1 5 2 5	2 2
Beech . 2 10 3 0		1 3 2 0	2 2½
Lime . . 3 10 4 0		2 0 2 6	2½ 4

Oak Bark (per load), 18l. to 19l.

J. S.



HAYMAKING SEASON. — Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 119, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE of LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7s. per cwt. Phosphate of Potash, 16s. per cwt.
,, Soda 12s. ,,
,, Magnesia 9s. ,,
,, Ammonia 1s. per lb.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, June 14, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 40, Upper Thames-street.

GUANO.—For Sale, in bags of 1 cwt. each; just landed, with a succession of cargoes to arrive.

There being considerable variety in the qualities of Guano imported from different places, and indeed from the same island, each parcel will be chemically analysed with the utmost precision, to show its relative productive power. A copy of such analysis will be given to buyers, and also instructions as to the most approved mode of using the Guano, furnished by the experience of eminent Agriculturists in England and Scotland.

Large parcels will be delivered direct from the ship, or waterside premises. Smaller quantities may be had at the warehouses, 24 and 25, Billiter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to JAMES CLARK, 24, Billiter-street.

ARRIVAL of the "GOLDEN SPRING," from Ichaboe, with a Cargo of first-rate GUANO.—The Barque "Golden Spring," Capt. POOLE, of 500 tons burthen, has just arrived in Plymouth Sound, with a full Cargo of first-class GUANO, wholly laden at the Island of Ichaboe.—Prices and particulars on application to WILLIAM E. RENDLE, for Plymouth Manure Company.

Plymouth Manure Company's Office, Union-road, June 5.

TURNIP SOWING. — BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9l. per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town.—Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

IMPORTANT to AGRICULTURISTS.—ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

Gentlemen instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

No. 5A, Hawley road, Kentish Town.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, June 12, 1844:—

Bones . . p. ton	£4 10s.	0d	Nitrate of Potash ,,	£1	4s.	6d
,, crushed,	5l. 10s.	to 6	0	0	Oil of Vitriol, or Sulph.			
,, calcined . .	7	0	0		acid . . p.lb.	0	0	1
Carbonate of ammonia . . p.cwt.	2	15	0		Rape Cakes . p.ton	4	15	0
Guano, Peruvian, p.tn.	11	0	0		Salts, Epsom ,,	9	0	0
,, Ichaboe ,,	9	0	0		,, Glauber ,,	7	0	0
Gypsum . . ,,	2	0	0		Sulphate of Ammonia, per cwt., 16s. to	0	17	0
Nitrate of Soda, p.cwt.	0	14	9					

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

FOR TURNIPS.

THE Urate of the London Manure Company, 4 guineas per ton. The London Manure Company have great pleasure in acquainting their friends that they have this day reduced the Urate from 5l. to 4 guineas per ton, at the same time pledging themselves that the quality shall be fully maintained. The Urate will be found most valuable for Turnips, by promoting a rapid growth; it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. It may be sown broadcast, or, which is preferable, by the drill, at the rate of one ton to 3 acres; and it is desirable it should not be placed more than 2 inches below the surface. Gardeners and Florists will find it very useful for Dahlias, and other roots. Full particulars and testimonials will be forwarded on application. Genuine Peruvian Guano; Phosphate and Sulphate Ammonia; Gypsum, and every other artificial manure.—EDWARD PUGSLEY, Secretary, 40, New-bridge-street.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

WHITNEY'S CHEMICAL, TRANSPARENT, WATERPROOF COMPOSITION, for rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to Rain or Moisture, admitting light equal to Glass, the *burning* rays of the *sun alone* being obstructed. Houses or pits covered with Calico, &c., prepared with this Composition, embrace important advantages over Glass. The light being equally diffused in every part of the house, plants placed on the floor have as much light as those close to the covering, consequently they are not drawn up as under Glass, while they continue much longer in *bloom*, and preserve their *delicate tints unfaded* till the *blossom falls*.

Whitney's Substitute for Glass.—I have had screens of calico rendered transparent with Mr. Whitney's invaluable varnish, and used them last winter, with a success far exceeding my most sanguine expectations, though my anticipations had been considerably excited. Indeed I consider Mr. Whitney's discovery as an invaluable boon to the horticulturist, one that will bear competition with any invention connected with the art and mystery of Horticulture in modern times. My screens were about 9 feet long each, and were inclined to the wall separated about 12 inches below, and as my object was to ascertain the value of the screens, in reference to *radiation*, they were *left open at each end*. Suffice it to say, the Fuchsia, Pomegranate, Passion-flower, Japan Honeysuckle, and others still more delicate and susceptible, were effectually preserved, and that without the slightest check to their growth, or any injury whatever. I am of opinion that in this *new aspect*, it possesses a protecting influence *infinitely superior to glass*, because the effects of radiation, a most powerful source of cold, are *not intercepted by glass*, which so materially counteracts the artificial temperature within; I cannot, therefore, but conclude, that for the protection, not merely of the early blossom, but the maturation of the fruits as in the case of the Peach, Nectarine, Apricot, and Grape, these transparent screens, thus prepared, are invaluable, and their triumphant success certain. Add to this, for Cucumber and Melon frames, their superiority over glass is undoubted for preventing flagging of the foliage (sometimes being scorched) by day, and the chilling effects of radiation by night. Screens prepared with Whitney's Transparent Varnish should be also used as shades in the intensity of a summer's sun, and for protection against radiation in winter, for the stove, greenhouse and conservatory. Even in the *economy of fuel* the value of such screens is demonstrable, as less will be required to maintain an equable warmth, its escape by radiation being thus effectually checked.—J. M., *16th April*, 1844.

Prepared by GEORGE WHITNEY, Chemist, Shrewsbury; and sold in Bottles, 2s. 6d. and 4s. 6d., with ample directions for use; and, as a protection to the public, the signature of the Inventor is on each bottle. Sold by the principal Seedsmen in London and throughout the kingdom. Merchants, Seedsmen, and Florists supplied by Mr. Bailey, North-street, Wolverhampton.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best foreign Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 26, Cornhill; Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1s. 6d. each, and in bottles, six times the size, at 7s. 6d. The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs in.

IMPORTANT TO FLORISTS, HORTICULTURISTS, AND OTHERS.

TANNER'S VITREOUS FLUID and CLOTH, being a SUBSTITUTE for the GLAZED FRAMES of HOTBEDS and CONSERVATORIES, &c.

The Proprietor, in introducing the above Preparations, feels confident a very important desideratum is presented to the Public, combining utility and economy.

A Conservatory or Greenhouse may be built at a very moderate cost, with all the advantages of Glazed Frames. A Forcing-bed covered with this cloth is not only less expensive, but yields many other advantages—not requiring the attention of the ordinary kind, admitting a more genial light, preserving a uniform dewy moisture on the Plant, maintaining, without any other covering, a moderate temperature under the strongest rays of the mid-day sun, and the atmosphere requires only to be changed from time to time according to circumstances. It affords a certain Protection for Fruit-trees, either from Frost, Blight, or excessive Heat, affording abundance of Light and Heat, for the expansion of the blossom, causing the Fruit to set and swell more freely, and much earlier.

The attention of the Nobility and Gentry is respectfully solicited to the above, which being Waterproof, and varying in texture, will prove equally suitable for Marquees, Blinds, covering Market Carts, Vans, &c.

Merchants and the Trading Classes will also find the above adapted for the Windows of Offices and Workshops, admitting a more agreeable light than glass.

Hand-Frames of various sizes, covered with the Vitreous Cloth, may also be obtained of the Proprietor, and Agents.

Manufactured and sold by N. W. TANNER, Chemist, Exeter.

Directions for Use of Fluid with each Bottle.

Any persons residing in large towns or cities, desirous of becoming Agents, are requested to make early application.

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DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Chicory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10l. per ton, or 12s per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street; and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertiliser are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REEVES, Yoxford; Norfolk, Messrs. BULLARD and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

CLEAR WHITE GLASS MILK-PANS.

APSLEY PELLATT, FALCON GLASS WORKS, Holland-street, Blackfriars-road, having made further experiments, is able to reduce the price of the Milk-Pans—as described in the *Gardeners' Chronicle*, of clear white flint glass, which is far superior to the foreign green glass—to 5s. 6d. each, or 3l. per dozen.

A SOCIETY [illegible] the purchase [illegible] to Mr. Ernest [illegible]

WARREN'S BLACK [illegible]—Hundreds [illegible] Gentry, and Agriculturists [illegible] of the inventor. [illegible] The article may [illegible] to its value [illegible] Cowper, Esqre.; J. and G. [illegible] (Commercial-road, Lambeth) and of any Ironmonger in the country. Price in pots, with [illegible] and prints, 2l. 4s

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PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 30 inches wide, at 1d per foot, super. A discount to the trade
Thos. J Cheeseon, 6, Ingram-court, Fenchurch-st., London.

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RAMS FOR RAISING WATER WITHOUT LABOUR, WHERE A FALL CAN BE OBTAINED,



WATER RAM.

FOUNTAINS of every description. Specimens of the Fountain to be seen at the above address.

Also a Ram fixed on the premises. F. BOE, 79, Strand, London.

Every kind of Garden and other Pumps, Well Engines, &c

BURRIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship, in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus, and B & H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices, to 101, Fleet-street.

TO BE LET, with Immediate Possession, a Small, Genteel House, with Half an Acre of Garden Ground, well stocked with Fruit trees. Likewise Two Hot-houses, 70 feet long by 15 wide, with good crops of Grapes now colouring, and Various Plants. The House and Ground Rent 12l. per Annum. The reason for disposing of the above is on account of leaving the country. It will suit any Gardener that wishes to commence business for himself, with a small capital. —For particulars apply to Mr. J. Mansle, Enfield Highway, Middlesex.

EXPERIENCE & SPORTING WANTED to RENT, in Yorkshire.—The Manor must be conveniently capable of accommodating a Gentleman's establishment of the highest respectability, and with a right of shooting attached, if with a small Farm would prove a recommendation. Any Gentleman seeking a permanent and desirable tenant may with confidence address particulars to Messrs. Hepper, Land Agents, 10, New Bond street, opposite the Clarendon.

WANTED, at MICHAELMAS NEXT, for 7, 14, 21, or a longer number of years, a FARM COTTAGE and 200 or 400 acres of GOOD LAND (more but not less will be taken) in any of the following counties:—Devon, Wilts, Somersetshire, Cornwall, Kent, Surrey, Middlesex. No conditions agreed to but to farm in the best style, pay for the incoming crops, and references to assure the rental being paid half-yearly —Address O. O, Office of this Paper.

8vo, sewed, price 2s 6d; by post 3s,

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THE ROYAL BOTANIC SOCIETY, under the Patronage of HER MAJESTY THE QUEEN, HER MAJESTY THE QUEEN DOWAGER, Her Royal Highness the Duchess of Kent, Her Royal Highness the Duchess of Gloucester, Her Royal Highness the Duchess of Cambridge, His Royal Highness Prince Albert, of Saxe Coburg and Gotha, K.G., and His Royal Highness the Duke of Cambridge, K.G., is incorporated by Royal Charter, for the promotion of Botany in all its branches, and for the formation of extensive Botanical and Ornamental Gardens within the immediate vicinity of the Metropolis. The Society's last Exhibition of Plants and Flowers during this Season will take place in the Gardens of the Society, Regent's-park, on Tuesday, July 2. An Exhibition of Microscopes, to illustrate the Structure of Plants, is also introduced. Tickets can be had only by orders from Fellows. Price, before the Day of Exhibition, 5*s*. each; and on the Day of Exhibition, 7*s*. 6*d*. each. Offices for the Sale of Tickets, at the Botanic Gardens, Regent's-park, and next week at 26, Regent-street. Fellows and Members are admitted without tickets, upon signing their names in the Gatekeeper's Book. Should the weather prove wet, a new gate, connected with the Tents, will be opened to admit the company to view the Plants without being exposed to the rain.

J. D. C. Sowerby, Secretary.

*** The Fellows and Members are informed that on Tuesday, the 25th inst., a Military Band will attend in the Gardens, upon which occasion Visitors can only gain admission through the introduction of Fellows.

FLOWER SHOW.—The WEST LONDON GRAND FLORICULTURAL EXHIBITION, under the Superintendence of Mr. J. T. Neville, of Ebenezer House, Peckham, will be held in the Grounds of the Almshouses of the Butchers' Charitable Institution, at Walham Green, Fulham, on Tuesday the 25th, and Wednesday the 26th of June, in Aid of the Building Fund, for Prizes of 2 Silver Cups, and 20 Silver Medals. Lists of the Prizes and Rules may be obtained by application to Mr. Neville.

WOOLWICH FLORAL SOCIETY.—Under the distinguished patronage of the Right Hon. Lord Bloomfield, G.C.B., & K.C.H. The First Exhibition of this Society for the year, will take place at the TOWN HALL, WOOLWICH, on Wednesday, June 26, 1844, when Prizes in Plate, to the amount of 12 Guineas, will be presented to the successful competitors after the Dinner, which will be held at the Bull Tavern, at Six o'clock. First Class.—Nurserymen and Growers for sale. For the best, 2d best, and 3d best Stands of 12 Dissimilar Blooms of Pinks. Entrance to Non-members, 5*s*. Second and Third Class, for Pinks and Pansies, will be confined to Members only. Open to all classes.—For the best and second best Seedling Pinks; for the best and second best Seedling Pansies. Entrance to Non-members, 1*s*. each bloom. The Censors will be instructed not to award Prizes to Seedlings, unless they possess superior properties. Persons intending to exhibit, are required to send notice of such intention to Mr. Blest, the Secretary, Bull Tavern, Woolwich, on or before Monday, 24th inst. The Flowers to be ready for the Censors at One o'clock precisely. The Public will be admitted at Three o'clock by Tickets, to be obtained gratuitously of Mr. Newhall, Powis-street; Mr. Chatwin, Plumstead; Mr. Norman, Bull Fields; and of the Secretary at the Tavern, where also may be obtained Tickets for the Dinner, at 2*s*. each. The Rules of the Society, which will be strictly adhered to, may be seen on application to the Secretary.

THE SECOND EXHIBITION for the SEASON of the BEBINGTON HORTICULTURAL SOCIETY will take place on Friday, the 19th July, in the Pleasure-Grounds of the Royal Rock Ferry Hotel, Cheshire, when numerous Prizes will be awarded to the various specimens of Flowers, Fruits, and Vegetables in season. Boats ply from Liverpool to the Rock Ferry every quarter of an hour on the day of Exhibition.

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28, Cornhill, June 20, 1844.

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June 20, 1844.

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6 — Aquilegia	1 6		10 — ditto	2 6
20 — Hollyhock	4 0			

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*** A comprehensive Catalogue of Dutch Bulbs will be published at the usual time.

CHOICE FLOWERS AND PLANTS IN POTS.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains occasionally dissolved in the water used with Plants produce a vigorous growth and splendid flowers. If what is called a "*Liquid Guano*" is desired, a superior article is obtained at half the usual cost, by dissolving Half a Bottle of this powder in a *quart of water*, and using a table spoonful to a gallon in watering flower-beds. See *Gardeners' Chronicle* for last week, page 390. *Sold in bottles*, 1*s*. 9*d*. *each*, by Chemists and Seedsmen. Agents, Davy, Mackmurdo and Co., 160, Upper Thames-street London.

MAGICAL EFFECT ON FLOWERS.—"*Gardeners' Chronicle*, April 27th.—"I cannot speak POTTER'S LIQUID GUANO in adequate terms of praise. I tried it on Hyacinths, and other Flowers. The effect was magical. My flowers were the finest I ever beheld, and preserved their beauty nearly double their usual time."—*W. Kidd, Hammersmith.*

Sold by Savory & Moore, 136, New Bond-street; 28, Cornhill; and by most Chemists and Seedsmen.

CLEAR WHITE GLASS MILK-PANS.

APSLEY PELLATT, Falcon Glass Works, Falcon-square, Falcon-street, Blackfriars-road, is still making Pans—as described in the *Gardeners' Chronicle*—of the best flint glass, at 5*s*. 6*d*. each, or 3*l*. per dozen; which will make the Milk-Pans of green glass cost 42*s*. per dozen.

SLATE WORKS, ISLEWORTH.

THE following Articles, made of Slate, for Horticultural purposes, may be had at the Works, upon application to the garden-

Tank Covers
Cisterns
Shelves
Garden Edging

Edward Buck will be happy to treat personally or by post.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITION at the GARDEN, June 18th, 1844.

INSTRUCTIONS TO THE JUDGES AS TO THEIR CONSIDERATION OF THE NOVELTY OF THE OBJECTS EXHIBITED.

In forming your opinion of the subjects submitted to you for examination, you are requested to take into consideration whether they have been exhibited previously or not. The object of this regulation is to give specimens produced at the Society's Garden Meetings, for the first time, an advantage over others previously exhibited, although of equal merit; and to obstruct the system of exhibiting very fine plants repeatedly, to the disadvantage of others. The effect of this Regulation should be—1. That if two collections should be nearly the same in point of merit otherwise, that in which no previously exhibited specimen shall be found, will be regarded as the better of the two. 2. That in all cases of doubt the person who had not exhibited previously shall have the benefit of the doubt. 3. That when each of two competitors shall have introduced previously exhibited plants into his collection, that collection which contains the fewest of them shall be deemed the superior if they are otherwise nearly alike. It is not, however, wished that the previous exhibition of plants should depreciate their value so much as to place a superior collection below one very decidedly inferior. The application of this regulation is left to your judicious consideration.

AWARD OF THE JUDGES.

LARGE GOLD MEDAL.

1 To Mr Mylam, Gardener to Sigismund Rucker, Esq., jun., F.H.S., for a collection of Exotic Orchidaceæ.

GOLD KNIGHTIAN MEDAL.

1 To Mr. Robertson, Gardener to Mrs. Lawrence, F.H.S., for a collection of 30 Stove and Greenhouse Plants
2 To the same, for a collection of Exotic Orchidaceæ
3 To Mr. Redding, Gardener to Mrs. Marryatt, F.H.S., for 6 species of Exotic Orchidaceæ
4 To Mr. M. Henderson, Gardener to Sir Geo. Beaumont, Bart., for a miscellaneous collection of Fruit.

GOLD BANKSIAN MEDAL.

1 To Mr. Cock, F.H.S., of Chiswick, for 12 varieties of Pelargonium, in pots of 24 to the cast
2 To Mr. Gaines, of Battersea, for the same
3. To Mr. Dobson, for 12 varieties of Roses in pots
4 To Mr. Lane, for 25 varieties of Roses, in pots
5 To Messrs. Rollisson, of Tooting, for 6 species of Exotic Orchidaceæ
6 To Mr. Robertson, for 20 varieties of Cape Heaths
7 To Mr. Jackson, of Kingston, F.H.S., for the same
8 To Mr. Robertson, for Tall Cacti in flower
9 To Mr. I. Spencer, Gardener to the Marquess of Lansdowne, F.H.S., for a miscellaneous collection of Fruit.

SILVER GILT MEDAL.

1 To Mr. John Green, Gardener to Sir Edmund Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse plants
2 To Mr. Robertson, for a collection of Stove and Greenhouse Climbers
3 To Mr. Dobson, Gardener to Mr. Beck, of Isleworth, for 12 varieties of Pelargonium, in pots of 24 to the cast
4 To Mr. Catleugh, of Hans-place, Chelsea, for the same
5 To Mr. Gaines, for 12 varieties of Pelargonium, in pots of 12 to the cast
6 To Mr. Parker, Gardener to J. H. Oughton, Esq., for the same
7 To Messrs. Paul and Son, of Cheshunt, for a collection of 25 varieties of Roses in pots
8 To Mr. P. N. Don, Gardener to G. F. Cox, Esq., of Stockwell, for 6 species of Exotic Orchidaceæ
9 To Messrs Veitch, of Exeter, for Oncidium Lanceanum
10 To Messrs Rollisson, of Tooting, for 20 varieties of Cape Heaths
11 To Mr. F[illegible]coner, Gardener to Archdale Palmer, Esq., of Cheam for Tall Cacti in flower
12 To Mr. In[illegible]ram, Royal Gardens, Windsor, for Veronica speciosa
13 To Messrs Loddiges, of Hackney, for Epacris miniata
14 To Mr. M. Henderson, for Grapes
15 To Mr. Thompson, Gardener to Sir J. L. Goldsmid, F.H.S., for the same
16 To Mr. Dodds, Gardener to Col. Baker, of Salisbury, F.H.S., for Pine Apples.

LARGE SILVER MEDAL.

1 To Mr. Coysh, Gardener to R. Hudson, Esq., of Clapham Common, for 12 varieties of Pelargonium, in pots of 24 to the cast
2 To Mr. W. Cock, for 12 varieties of Pelargonium, in pots of 12 to the cast
3 To Mr. Catleugh, for the same
4 To Alexander Rowland, Esq., F.H.S., for a collection of 12 varieties of Roses in pots
5 To Messrs Cobbett, of Chobham, near Bagshot, for 25 varieties of Roses in pots
6 To Mr. A. Milne, Gardener to C. S. Chauncey, Esq., F.H.S., for a collection of Roses in 50 varieties
7 To Mr. Rivers, F.H.S., for the same
8 To Mr. Green, for 6 varieties of Cape Heaths
9 To Mr. Dawson, of Brixton hill, for the same
10 To Mr. Green, for Tall Cacti in flower
11 To Mr. G. Stanley, Gardener to H. Berens, Esq., F.H.S., for 6 varieties of Calceolaria, in pots of 12 to the cast
12 To Mr. Gaines, for 12 varieties of Fuchsia
13 To Mr. Falconer, for Brassia caudata
14 To Mr. S. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for Cattleya Mossiæ
15 To Mr. Glendinning, F.H.S., for Clerodendron infortunatum
16 To Mr. Dodds, Gardener to Sir George Warrender, Bart., F.H.S., for a miscellaneous collection of Fruit
17 To Mr. Frost, Gardener to the Lady Grenville, F.H.S., for Grapes
To Mr. E. Mitchell, of Kemp Town, near Brighton, for Grapes
To Mr. M. Henderson, for Pine Apples
To Mr. Wharton, Gardener to Miss Whitehead, of Weston, Bath, for the same.

SILVER KNIGHTIAN MEDAL.

[illegible]r. Bromley, Gardener to Miss Anderdon, of the Upper [illegible]ll, Hammersmith, for a collection of 12 varieties of [illegible]rgonium, in pots of 12 to the cast
[illegible]r. Rivers, of Sawbridgeworth, F.H.S., for a collection [illegible]n 12 varieties
[illegible] Milne, for the same
[illegible]ons, Gardener to A. George, Esq., of Enfield, [illegible]tion of Roses in 50 varieties
[illegible]d and Son, for the same
[illegible] of Hammersmith, for the same *(a certificate [illegible]en in addition, on account of good arrange-*
[illegible]rdener to F. R. Symons, Esq., of Norbi[illegible]t a collection of Roses, in 25 varieties
[illegible]rieties of Calceolarias, in pots of 12
[illegible] Woolwich, for a collection of 24
[illegible]nham, for 12 varieties of Fuchsia
[illegible] depressa
[illegible]sia Gulli
[illegible]e, of Exeter, for Cyrtoceras

14 To Messrs. Tyso and Son, Wallingford, Berks, for a large collection of Ranunculuses
15 To Mr Brazier, Gardener to W. H. Story, Esq., F.H.S., for a collection of Seedling Heaths
16 To Messrs. Lucombe and Pince, for Ixora acuminata
17 To Mr Glendinning, F.H.S., for Achimenes picta
18 To Mr. Smith, the Royal Botanic Gardens, Kew, for Pterodactylus speciosus
19 To Mr Robertson, for the best-named collection (*one error in 10 plants*)
20 To Mr. Parsons, Gardener to A. George, Esq., of Enfield, for Grapes
21 To Mr. Davis, Gardener to Abel Smith, Esq., F.H.S., for Pine Apples
22 To Mr M. Henderson, for Nectarines
23 To Mr Fleming, Gardener to His Grace the Duke of Sutherland, F.H.S., for Peaches
24 To Mr Suggs, Gardener to the Marquess of Abercorn, The Priory, Stanmore, for Peaches
25 To Mr Terry, Gardener to Lady Puller, for three Melons (Anderson's Green-flesh).

THE SILVER BANKSIAN MEDAL.

1 To Mr. Bowen, Gardener to Sir E. Paget, Chelsea Hospital, for 6 varieties of Pelargonium, in pots of 8 to the cast
2 To Mr. Lane, of Great Berkhampstead, F.H.S., for a collection of Roses, in 12 varieties
3 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., Bayford House, Herts, for a collection of Roses, in 50 varieties
4 To Mr. Lane, for the same
5 To Messrs. Cobbett, of Chobham, near Bagshot, for the same
6 To Mr. Dobson, for a collection of Roses, in 25 varieties
7 To Mr. Bennett, of Bath, for the same
8 To Mr. Francis, of Hertford, for the same
9 To Mr. Redding, for Tall Cacti in flower
10 To Mr. T. Ward, of Woolwich, for a collection of 24 varieties of Ferns
11 To Mr. Falconer, for Leschenaultia formosa
12 To Mr. Ayres, Gardener to J. Cook, Esq., F.H.S., for Pentas carnea
13 To Mr. Dobson, for Achimenes grandiflora
14 To Mr. Green, for a Grafted Azalea indica
15 To Mr. Catleugh, for a Pelargonium (The Wonder)
16 To Mr. Robertson, for Gloxinia maxima alba
17 To Mr. T. Jackson, for Dracophyllum secundum
18 To Mr. Green, for Aphelexis humilis
19 To Messrs. Rollisson, for the second-best named collection (*no error in 20 plants*)
20 To Mr. Dodds, Gardener to Sir George Warrender, Bart., for Grapes
21 To Mr. John Wilmot, F.H.S., of Isleworth, for the same
22 To Mr. Ivelder, Gardener to W. Linwood, Esq., F.H.S., for Pine Apples
23 To Mr. R. Fish, Gardener to Col. Sowerby, F.H.S., for Peaches
24 To Mr. Heming, Gardener to His Grace the Duke of Sutherland, F.H.S., for Peaches and Nectarines
25 To Mr. Edyard, of Bathenston, near Bath, for Strawberries
26 To Mr. W. Carmichael, Gardener to Mrs. Hawkins, of Bignor Park, Petworth, Sussex, for a Benares Melon.

THE CERTIFICATE OF MERIT.

1 To Messrs. Cobbett, for a collection of Roses, in 12 varieties
2 To Alex. Rowland, Esq., F.H.S., for a collection of Roses, in 50 varieties *(this would have have had a higher prize if the flowers had not been overblown)*
3 To Mr. S Hooker, of Brenchley, for the same
4 To Mr. Lang, of Twickenham, for the same
5 To Mr. Stanley, Gardener to H. Berens, Esq., F.H.S., for a collection of Roses, in 25 varieties
6 To Messrs. Mountjoy and Son, of Ealing, for Lilium testaceum
7 To Mr. Robertson, for Erica ventricosa alba
8 To the same, for Gesnera lateritia
9 To Mr Green, for Chorozema ovatum
10 To the same, for Coleonema rubrum
11 To Mr. T. Jackson, F.H.S., for a collection of Gloxinias
12 To the same, for Viscaria oculata
13 To Mr. Beck, of Isleworth, for a seedling Pelargonium (Desdemona)
14 To Mr. Boyle, of Guernsey, for a seedling Pelargonium (Titus)
15 To Mr. Whomes, Gardener to E. Foster, Esq., of Clewer, near Windsor, for a seedling Pelargonium (Exactum)
16 To the same, for a seedling Pelargonium (Sir John Broughton)
17 To Mr. Mylam, for the third best named collection (*four errors in 27 plants, and remarkably well written*)
18 To Mr Milpas, Gardener to Mrs. Ormsby Gore, for a Providence Pine Apple
19 To Messrs Lee, of Hammersmith, for the skill with which their Roses were arranged.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. Bailey having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick

D. and E. Bailey also construct in metal all descriptions of Horticultural buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. Bailey were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D and E. Bailey have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, June 14, 1844.

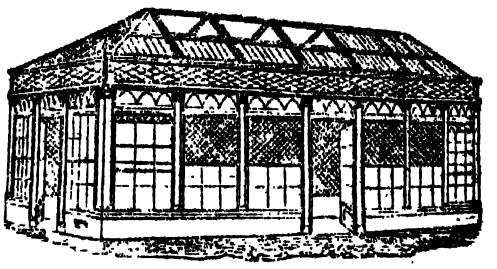
TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 40, Upper Thames-street.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. Mr. Rendle, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square

IMPORTANT to AGRICULTURISTS.—ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

Gentlemen Instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

No. 54, Hawley road, Kentish Town.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus; and B. & H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices to 130, Fleet-street.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Bunney to submit to public competition, by Auction, on the premises, Kingsland Nursery, on Tuesday, July 9, 1844, and following day, at 11 o'clock (in consequence of the Lease having expired), the whole of the rare Exotics, and other plants in pots; consisting of fine specimens, Araucarias, Buonapartea, Juncea, Cliven Nobilis, Cactus, Gloxinias, Achimenes, Magnolias of sorts, New Fuchsias, Gardenias; about 1500 Double and Single Camellias; several thousand China Arbor Vitæ, Sweet Bays, Arbutus, Cypress, &c., in pots, also eight Greenhouses, Pits, &c., in good condition; a considerable quantity of Bricks, York Paving, and other fixtures. May be viewed prior to the sale, and catalogues may be had of the principal Seedsmen, on the premises, and of the Auctioneers, Leytonstone.

The whole of the valuable Nursery Stock will be submitted to public competition, by Auction, about the third week in October.

BY ORDER OF HER MAJESTY'S COMMISSIONERS OF WOODS AND FORESTS.

MAESTRICHT GARDEN, WINDSOR HOME PARK, BERKS.

To Builders, Nurserymen, Market Gardeners, and Others.

TO BE SOLD BY AUCTION, by Mr. TENBOTT, upon the Premises, near Datchet lane, on Wednesday, July 3rd, 1844, at 12 o'clock, in Lots to be taken down at the Purchaser's expense, comprising a large quantity of MATERIALS to sheds, fruit-houses, and stables, several rods of brickwork in walls and pits, two superior greenhouses with stages complete, 30 feet and 45 feet long; two others, 15 feet and 43 feet long; skeleton frame for a tulip-bed, 50 feet long; twenty-eight 3 light boxes, glazed, curbs and lights for melon pits, copper pipes, &c. &c.—To be viewed two days prior to the Sale. Catalogues to be had on the Premises; Crown Inn, Slough; White Hart, Maidenhead; Chequers, Uxbridge; Clarence Hotel, Staines; and at the Auctioneer's Office, Windsor.

NURSERY.

TO BE LET, a Nursery, containing about 2 acres in a most desirable situation, in the centre of the West Riding of Yorkshire, in a good state of cultivation, with a Pinery, Greenhouse, Vinery well stocked, and in excellent state of bearing, and newly-erected Hot-water Propagating House, 90 feet long, 10 feet wide, with sheds, &c. Valuation moderate. Also 2 acres of Grass Land adjoining the Nursery.—For particulars apply to Mr. R. BARRATT, Solicitor, Wakefield.

Wakefield, June 20, 1844.

WANTED, at Michaelmas next, for 7, 14, 21, or a longer number of years, a FARM-COTTAGE, and 300 or 400 acres of GOOD LAND (more but not less will be taken), in any of the following counties:—Devon, Wilts, Somersetshire, Cornwall, Kent, Surrey, Middlesex. No conditions agreed to but to farm in the best style, pay for the incoming crops, and reference to assure the rental being paid half-yearly.—Address O. O., Office of this Paper.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.—The Third Meeting will take place on Saturday, the 13th of July; on which occasion His Grace the Duke of Devonshire, the President of the Society, has kindly directed the doors of his Gardens and Pleasure-Grounds to be opened for the reception of all persons who shall have been admitted into the Garden of the Society by Tickets.—21, Regent-street.

The Gardeners' Chronicle.

SATURDAY, JUNE 22, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, July 2 { Royal Botanic Gardens. 2 p.m. / Horticultural . 3 p.m.
COUNTRY SHOW.—WEDNESDAY, June 26 . Woolwich Floral.

THIS time the sun of summer shone on the MEETING OF THE HORTICULTURAL SOCIETY in their garden at Chiswick, and the 15th of June proved as propitious as the gayest crowd could have desired. The exhibitors had the honour of submitting their productions to the inspection of His Majesty the King of Saxony, who with their Royal Highnesses Prince Albert, the Duchess of Gloucester, and the Duke of Cambridge, spent about an hour and a half in the tents. His Majesty and the Prince were graciously pleased to express their gratification at seeing so many beautiful objects collected together. After the departure of the Royal visitors thirteen thousand five hundred and seventeen persons entered the gardens.

The full report of the Exhibition, which will be found in another column, renders it unnecessary for us to dwell upon it here. As usual, it combined all that the wealth and skill of this great country could produce.

The next and last meeting for the season will take place on the 13th of July, on which occasion His Grace the Duke of Devonshire has again most kindly expressed his intention of opening his beautiful grounds to the visitors to the Society's garden. The scene at Chiswick House, on the similar occasion last year, was one of the most lovely it was ever our good fortune to behold.

THE many letters which have reached us on the subject of VILLAGE HORTICULTURAL SOCIETIES, since we offered some remarks on the plan of management observed at Pytchley (see p. 243, 1844) have convinced us that we in no degree over-estimated their importance. It is undeniable that they exercise the best effect upon the rural population, and contribute more than any other thing, unless it is a good allotment system, to improve substantially the condition of the labouring poor.

Considering the actual state of the Agricultural population, it is hopeless to expect a favourable change from any sudden and great measure of government. That improvement which is so sadly needed must be effected by the well-directed acts of sensible men in all parts of the kingdom, each doing his share of the good work in his own immediate neighbourhood. As a correspondent, thoroughly acquainted with the working of village Associations, has well observed, "So long as people hunted for riches by attempts at the Philosopher's Stone, England was poor. But when wealth was sought by small accumulations of minute profits, then began the increase of England's mighty Capital Stock. In like manner the comfort and elevation of our population must be aimed at through the aggregation of minute things (like the successive spadesful of earth in a railway embankment), if we would do anything of real importance in raising that population. The English character is a noble one, if we draw out its better parts, and give it honest independence, and repress and discourage its bad parts. You may *trust* to an Englishman, rich or poor, if you find the avenue to his esteem and respect and confidence, and *if he is satisfied there is no humbug about the matter!*"

This last is a most important proviso, and explains, we are sure, in almost all cases, the failure of attempts to maintain advantageously village Horticultural Societies. Humbug is not indeed a refined expression, but it is one of very extensive application, and particularly suits the proceedings of ill-conducted rural Shows. A very few illustrations will put this in its true light.

Fairness in judging is the first element of success. People are contented with awards, although unfavorable to them, if they are certain that the judges are perfectly conscientious in their decisions. But if men are not satisfied upon this point, good bye to all chance of holding them together. The poor are too much exposed to trickery elsewhere, to court it by belonging to Associations in which the judgments are unfair. And yet, such conversations as the following have been heard:—"Oh it will never do to give the first prize to Mr. ——, for Lady —— expects it." Or, "Why A., you had the first prize for *this* last time—it's my turn this time." Judges tell these things sometimes when a little quarrel has let secrets out. What is this but humbug? The poor will naturally conclude that if there is such unfairness in one part of the arrangements, there will be the same in others.

Prizes are offered for various Horticultural productions. Competitors appear; their productions are excellent, according to their means; but owing to a want of classification the most unequal and unfair comparisons are drawn. Joe Bramble has some excellent Lettuces for a cottager, but the season has been cold and dry. Mr. Cheeseman, the grocer, also has Lettuces; but then he has a handglass to put over them. Both show, and poor Joe, who has no handglass, is beaten. What is that but humbug; to pretend to give prizes fairly, when, from the want of classification among the exhibitors, the result is certain beforehand? Perhaps this does not often happen, but it does sometimes. The thing, however, is common enough in another shape.

In small provincial Societies, the tradesmen who love flowers, have often not a chance. Their productions are exceedingly good, but they may go to the Show time after time in vain. And why? Because the head-gardener of the Squire, with hothouses, greenhouses, and frames at command, regularly sweeps *every* prize away. In such cases the judges will not be to blame, for of course the flowers of the great man of the village, and of the shopkeeper, will not bear comparison. But the effect of such rules, or want of rules, is most disastrous. The tradesman with a taste for flowers, with Carnations, Dahlias, Cacti, Pansies, &c. of sterling excellence, if compared with ordinary gardens of thousands of country gentlemen, is chagrined at the result, withdraws from the Society, and is soured against his wealthy neighbour.

It may be very true that when rural Societies are broken up, these causes are not assigned. It is not every one who chooses to confess that his discontent arises from awards the injustice or hardship of which he cannot prove. Honest pride forbids it. But every one conversant with this subject knows very well that such things are usually at the bottom of the matter.

We would, therefore, advise the managers of rural Societies to be strictly on their guard against errors of this sort; and, whatever their regulations otherwise may be, to take care that the following are part of them:—

1. No exhibitor to be a judge. The judge to be obtained, if practicable—and it is almost always practicable—from a distance. That will insure the award against the charge of partiality.

2. No person to be regarded as a cottager who gets his living otherwise than by daily labour.

3. Productions obtained wholly in the open ground, or under glass without fire or dung-heat, or in pits or houses artificially heated, to be exhibited and judged independently of each other.

4. Persons having no regular gardener not to exhibit in the same class as those who have one or more regular gardeners.

We cannot but think that some such plan as this, which, indeed, has been more or less adopted in the most successful village Associations, would greatly tend to hold people together, and render discontent impossible.

REMARKS ON POTATOES.

THE frequent failure of the Potato-crop of late, has very justly alarmed cultivators of this valuable root, anything affecting which, may be justly called a national affair. However, in puzzling extremities we are apt to search for far-fetched causes, when, perhaps, they are few, simple, and close to our elbow.

A correspondent (p. 344 of the current year), has made some very useful remarks on the subject, in several of which I heartily concur, but must be allowed to disagree with him as to planting Potatoes in the autumn. Everybody knows that self-set Potatoes spring up very strong, as compared with seed introduced, especially bad seed. Yet those only sprout which are placed just out of the reach of the amount of frost which may have occurred during the past winter. However, to plant at the depth necessary to insure safety through the average of winters, would only be adapted for very light uplands; for wet and sour soils would become completely "puttied" before the plant could be in full action. The chief causes of failure are:—

1st. Badly prepared ground for the seed.
2nd. Using raw and clotted manures.
3rd. Planting seed which has been sprouted.
4th. Pitting seed in too large quantities in an imperfectly ripened state.

With regard to the 1st, I would remark that, although highly pulverised garden ground seldom produces good Potatoes, yet how seldom does the Potato miss coming in such soils, compared with ill-wrought farming lands!

Great breadths are set in fields on what is termed a single furrow, and which has been grazed over until the beginning of April—at least in this neighbourhood. It is then, after being ploughed, or I should say skimmed, left to dry for three weeks, with the turf laying excessively porous; and the weather being generally dry at that period, it frequently becomes baked into bricks, in the course of which the decomposition of the sod is completely arrested; and, to crown all, the beds, or "butts," as they are called here, are soiled over the moment the plant appears, with clods as harsh, and as unfit for nourishing the tender plant, as the soil they are planted in.

2nd. *Using raw and clotted manures.*—Turning and blending manures seems to have got out of practice in some parts; the greater part of the manure applied to Potatoes in some districts with which I am acquainted, is taken in a raw state from the farm-yard—much of it recently made, and laying in hard, raw, and undigested masses. This is peculiarly the case with cow manure. Now, if this was removed from the farm-yard to the head-lands of the fields intended for Potatoes, some months previous to using, and, if possible, slightly fermented there, then before the second and last turning the heap were covered slightly with some fine bone-dust or guano, how much more powerful as well as equable in moisture would the compost become! The only thing that hinders some such practice, is the necessity for more labour; but surely well-directed labour will amply repay in the end.

3rd. *Planting seed which has been sprouted or disbudded.*—It is well known that each succeeding series of buds consequent on disbudding, is weaker than its predecessor, and that, if done three or four times, the leaf-buds become finally destroyed. Who, then, can wonder at the great loss to the crop, through the destruction of even the first sprout? However, it is not the loss of the sprout alone, but with it is gone a quantity of food, intended by Nature to nourish the buds in the act of germination, or until they can cater for themselves. Besides, it is pretty well understood that the upper end of the Potato brings the heaviest produce. Now this end, of course, in the majority of cases, buds first, and the consequence is, that instead of two or three strong original stems, we have, in the case of disbudding, a host of shoots of secondary power, from the lower parts of the Potato; the result of which is, that instead of a given quantity of good produce fit for market, there will, inevitably, be an inferior quantity, much of which will be small in size, or what growers term "chats."

Lastly. *Pitting seed in too large quantities in an imperfectly ripened state.*—I am not of opinion that the size of the pits has increased so much of late years as to account, as some have imagined, for the failures which have taken place. But of this I am assured, that late planting has become prevalent, the consequence of which has been badly-ripened seed. Now, I imagine that such late and unripe seed undergoes a much stronger fermentation in the pits. Besides, late planting has led to the necessity of late taking up, and it is no uncommon thing in this quarter for the crop to be somewhat frost-bitten when pitted, as the operation is frequently deferred until the second week in November. Frost-bitten Potatoes will decay prematurely, and their decay, in conjunction with the high fermentation above alluded to, becomes a fruitful source of failure to future crops. The only wonder is that such should grow at all; but the vital powers of the Potato are amazing.

To the above evils may be added another serious affair, viz., planting in periods of drought. After all the former abuses, the unfortunate set has to be perhaps imbedded in hot dust, as acres have been this season. Now, why not follow the plough or the spade? Roots or seeds will always come best on newly dug or plou,hed land, providing it is in right tilth.

All Potatoes intended for seed for the ensuing year should be selected when the stock is taken up, and stored away separately; and if they must be pitted for convenience sake, by all means let them be hardened by exposure to the air (not sun) for several days previous. What is called "greening" them is, I think, carrying the process too far, especially in the case of early kinds, as it excites the bud into premature growth, especially if rainy weather ensues. I have frequently known them to bud on the ground in the greening process. Very early kinds should, if pitted, be taken out by the early part of January, and placed thinly on shelves or floors, covering with straw or otherwise during severe frost. The best place for budding early ash-leaved kidneys, as far as my experience has gone, is the fruit-room shelves. In this case the fruit-room, it must be understood, is about three feet below the ground-level, and perhaps slightly damp.

Much has been said about planting Potatoes whole. Whole planting has these advantages:—1st, a greater certainty in the crop coming up; 2nd, a superior produce, if they have sufficient distance and the soil is pretty good, together with high cultivation and broad-shouldered drills. Its chief disadvantages are overgrown Potatoes, sometimes too large to be saleable, and inferior in quality; the latter arises from the circumstance of their producing more and stronger haulm than cut sets, consequently the elaboration of sap is less complete. I speak now of planting whole Potatoes; but a much better plan is to plant the moderate-sized ones (as recommended by "J. Mel.," p. 344). One of the best crops of the ash-leaved kidneys I ever knew was from very small whole seed, which had been slightly greened, but not budded previous to planting. The most general fault of Potatoes planted whole is the not allowing sufficient room between the drills. On land in a high state of cultivation the drills should be about three feet six inches apart, and the row of Potatoes, when finally earthed, should present the appearance of an asparagus bed, having broad shoulders of at least eight inches, the surface of which should have an inclination towards the Potatoes, thereby conducting the rain to the plant, which, in the ridiculous pointed drill system is immediately conveyed from the plant. Single rows of cultivation I once grew twelve bushels of seeds equal of ground, which rood in Cheshire is eight or above

With regard to putting the manure

sets, there exists much contention. I recommend having it well rotted, and mixed thoroughly with the soil. I may add, in conclusion, that one great advantage in planting whole Potatoes is the facility which the wide drills afford for the operations of cleansing thoroughly, and also for picking off the blossom,—an operation that should never by any means be omitted.—*Robert Errington.*

FAMILIAR BOTANY.

MORPHOLOGY.—No. XV.

Who can recount what transformations there
Are ceaseless made? What hidden forces strive?
And how fresh changing leaves with leaves combine,
Form the dark chambers of the nascent germ,
And guard with pointed leaves the unborn embryo's home.

WHEN people listen with incredulous ears to the assurance that a Peach is formed out of a leaf, they do not consider what sort of body the Peach was when young. It would not appear so extraordinary that an Apple should be composed of leaves, if the nature of the Apple were ascertained before it began to grow into that sort of fruit. There is no more resemblance between the young Peach or the young Apple and the full-grown fruit, than there is between the latter and the leaves. It is not surprising that small things should be overlooked by those who won't use magnifying glasses. He who would see more than his neighbours must arm himself with spectacles.

The young fruit of a plant is called its CARPEL. That is what we must look to, if we would judge of the true nature of the fruit. To take another course is like attempting to determine the quality of timber after it is covered with paint and varnish. In examining the carpel a better subject cannot be taken than the common Cherry.

The carpel of the Cherry consists of a shining oval bright-green case, called the *ovary*, within which is a *young seed* or *ovule*; at its end is a thread called the *style*, the termination of which is a moist expansion termed the *stigma*. On one side of this stigma is a notch, and from that notch, down to the bottom of the ovary a deep furrow passes. But although this is the usual state of the Cherry-carpel it is not always so. Sometimes, especially in double Cherries, the furrow is an opening on one side of the carpel, from top to bottom; and then the sides of the carpel are veined, while the edges of the opening are toothed, and the whole texture of the thing is that of a leaf. In fact it is a small leaf, folded up, with its end extended into a style, and its point enlarged into a stigma; the only difference is that it sometimes carries an ovule on one of its edges; but it sometimes does not. The carpel of a Cherry, then, is a rolled up leaf. Sometimes the Cherry will produce two such leaves, one opposite the other, and sometimes it will in like manner produce two carpels: in both instances the parts of those organs bear precisely the same relation to each other.

The carpels of the Whitethorn are two or three, or even five, placed in a ring, at the bottom of the calyx, and having a little spongy pyramid rising up between them. Each of these carpels is like that of the Whitethorn except that it is hairy; and a very moderate search will produce instances where, as in the Cherry, the carpels are represented by little leaves; in the double Whitethorn this is very common. It is just the same in a Rose, except that the number of carpels is very considerable. Each of them is like that of the Whitethorn, and each is very constantly opened on the furrowed side, and spread into a small leaf. The furrow is, in fact, the line where the edges of the folded leaf come in contact.

The Ranunculus, the Anemone, and the Potentilla, present endless evidence of the same sort. In a damp season it is more abundant than in a dry one. There are now before us specimens of a Potentilla nepalensis in which the carpels are, some of them, in their most ordinary condition, some a little opened on the furrowed side, some broad and nearly flat, while many are enlarged and lobed, and veined, and just like common leaves. No doubt, then, can be entertained that the carpel is a small leaf folded up.

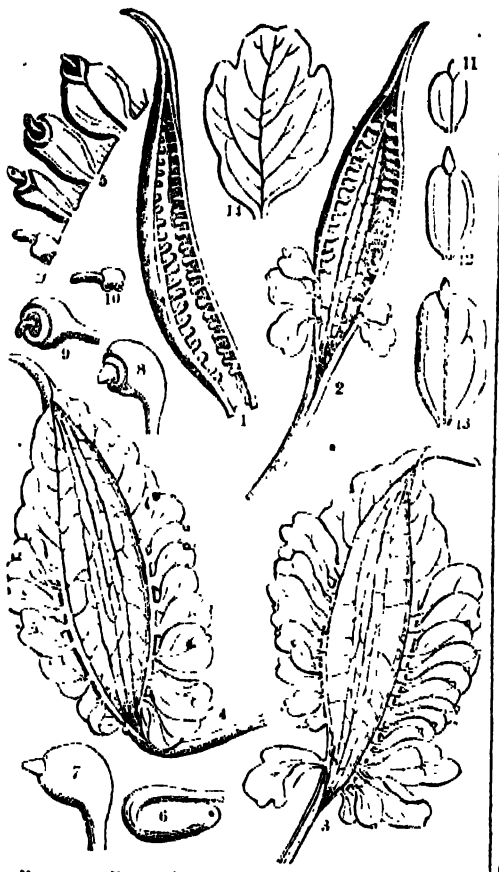
But I have more illustrations of this at hand. In a letter by Mr. Ayres, lately published, mention is made of a very singular deviation from ordinary structure in an Epacris nivalis. The subjoined cut represents this case. The Epacris has, in its usual state, 5 carpels, which are soldered together where they touch. But in Mr. Ayres's specimens some of them are merely unsoldered, some are thinned and ened into little s, while others entirely like that you nguish cer- ey



lengthened from between them, in a manner that will be explained hereafter. Here these carpels and leaves are proved to be the same thing in different states.

The last piece of evidence for which I can find room is the following, for which I am indebted to a friend, in Ely.

Fig. 1 represents the carpel of a common Columbine, artificially opened along the furrow, but otherwise in the



ordinary condition. But my correspondent found a plant of this species with its carpels in all sorts of changes, even into that of lobed leaves. In fig. 2 we have a carpel with five lobes on its sides; in figs. 3 and 4 it is spread quite flat and lobed along almost the whole of the edge, from end to end. At the same time, the ovules, which at fig. 1 stand in rows upon each edge of the opened furrow, have wholly disappeared. To this curious case I shall again refer for another purpose.

I now conceive that the carpels of the Cherry, the Hawthorn, the Rose, the Epacris, and the Columbine, have been sufficiently shown to be leaves, and therefore all carpels must be so considered; for what is physiologically true of a given organ in one plant, is true of the same organ in all other plants, as has been already stated.—*R. E.*

THE RANUNCULUS.

So much has been written on the culture of the Ranunculus, that the young florist has ample means of knowing how to manage this lovely flower with the fairest hopes of success; but I apprehend that a few remarks on the habits of this class of plants may not be unacceptable to your readers. From the experience of 40 years, I am prepared to say that the Ranunculus delights in a moist soil and a rainy season. Last year was the most congenial to this class of plants I ever recollect of. Indeed so prosperous was it, that many of the old varieties, such as Naxara, Variat, La Tendresse, Brelange des Beautés, and several others, sent up fine pericarps, commonly called eyes, from which, by impregnation, good seed has been saved. The frequent showers of 1843 induced most of the best seedlings which have for some years maintained a high character as good show-flowers to yield large seed-vessels, so that many of the flowers were unfit for exhibition; but for this trick of youth, they have amply compensated by producing a greater abundance of prime seed. The showing of the eye may be thought by many a great drawback on the value of a flower; yet it should be remembered that no flower shows such a perfect crown as one whose petals are supported by the seed-vessel; though it is well known that they will not do for exhibition after the pericarp is developed. But it is also certain that those that are semidouble will come perfectly double in a few years; and many that produce large seed-vessels in a congenial season, will, in a dry spring, be entirely destitute of them, but generally inferior both in size and colour.

There is also in the Ranunculus what is by florists called a sportive character—that is, they run from their original colour; though this defect is not so glaring as in the Tulip and Carnation, yet it causes great disappointment to the ardent florist. Some that have yellow grounds delicately spotted will come plain yellow, and some red and white striped will come plain red; sometimes the colours will mix, and the flowers will become dingy. I have a beautiful modest flower which some years ago obtained a first seedling prize; I called it "Innocent;" but the year before last it came so foul, that I wrote against it "Guilty." Last year, however, it resumed all the beauty and purity of its youth, which induced me to write against it "Acquitted." Cathcart, when it first bloomed, was a white ground, beautifully mottled with crimson; now it frequently comes with only a crimson spot; but in good seasons it will display all the beauties of its youth. Sometimes the flowers will be as green as the grass of the plants from which they grow. Some of the finest seedlings are weak, and therefore die in a few years; though for a short time they had great renown; such has been the case with Abbé St. Andrew, Quixos, Viol le vrai Noir, Grand Berger, and Rose Incomparable, and some others of later date. But there are others of first-rate character which are remarkably strong, and increase abundantly, such as Attractor, Felix, Saladin, Edgar, Eureka, Victor, and many others. If the last season was very propitious for the Ranunculus, the present 1844 has been altogether as adverse, especially for the early-planted roots. The frosts by night, and the drought by day, have done much injury, and many have died. These are circumstances which try the patience and baffle the skill of the ardent florist; but let him persevere through all the diversity of seasons, and his efforts will be sure to be crowned with success. I have during the last twenty years raised many thousands of seedlings, out of which I have selected about two hundred; amongst them is one yellow-edged seedling called Edgar, which is so perfect in every respect, that the London florists pronounced it "a model flower," and many others of them have at exhibitions borne away the palm from their far-famed predecessors. I generally grow from 20 to 30 large beds, planted at various seasons; but the best time to secure a good bloom is to plant in the last week in February or the first in March.—*Joseph Tyso, Wallingford.*

Home Correspondence.

Rose Budding.—I strongly recommend all amateurs who are desirous of avoiding disappointment in budding Roses, to leave a small piece of wood as a protection to the bud when cut from the branch. By adopting this plan, I have succeeded in propagating all descriptions of Roses, even in the driest weather, both late and early in the season. I always use white worsted, instead of bast, for tying up, which I find answers much better; it keeps the parts more closely together, and they unite in a shorter time. A very small portion of wood is sufficient to preserve the root of the buds. My stock, on which I operate, is the Bengalensis, free and rapid in its growth. The crimson Boursault also makes a good parent, and is easily struck.—*Falcon.*

Sowing Seed.—I have had no difficulty in bringing up my seeds, during this unusually dry weather, by pursuing the following system:—Dig and pulverise the earth well, soak it with water (not immediately from a spring,—it should be exposed for some time to the air), fine the top, sow the seed in shallow trenches, which is far preferable to broad-cast, and then sift over the bed a coating of rich compost; in a few days the appearance of green leaves will reward your trouble. In this way I coax Paraley above the ground in three weeks.—*Falcon.*

Statice pseudo-armeria.—Having been a considerable time familiar with the Armeria latifolia, a notice of which as a new plant is quoted, in your Number of June 1st, from "Paxton's Magazine," under the name of Statice pseudo-armeria, and having received some account of its history from Dr. Bell Salter, of Ryde, I take the liberty of offering some remarks respecting it. Some seeds of a supposed new Statice were given by Ashurst Majendie, Esq., of Hedingham Castle, Essex, and Caen, in Normandy, to several persons in Ryde in the winter of 1842; and John Vaux, Esq., (my former esteemed employer) succeeded in flowering it last year, but most of the plants produced did not flower until this year. As soon as it flowered it was at once recognised as the Armeria latifolia, of which a sufficient description and a characteristic cut are given in "Loudon's Encyclopedia of Plants," and its introduction is dated as far back as 1740. It is here mentioned as a native of "Algarbia." Mr. Majendie received his seeds from a French officer serving at Bona, in Africa, of which place and district it is a native. I have not "Paxton's Magazine" to refer to, but I see by your extract that it was received in 1841 by Messrs. Rollisson, from the Jardin des Plantes, but unaccompanied with any memoranda of its history; this deficiency, I believe, I can fortunately supply. Mr. Majendie presented seeds to the Jardin des Plantes a very considerable time previously to his doing so here; he plants from that quarter are, therefore, no doubt of the same origin as those growing in this island—namely, from Bona; and Mr. Majendie has lately mentioned in Ryde that in France they have given to his plants the name by which Mr. Paxton mentions that he received them. Some of the Ryde plants were given last year to Sir Wm. Hooker for the Kew Garden; he confirms its being the Armeria latifolia, and considered the present to be a re-introduction, supposing it had been lost to this country. Of this, however, I have reason to entertain very strong doubts, there being now in the garden under my care (namely, that of J. Percival, Esq., of Woodlands, near Ryde), a plant which has been there a considerable period. I have every reason to believe that it was obtained in London at far too early a period to be of Mr. Majendie's source, and therefore have no doubt of its being from the old stock of the original introduction. In conclusion, I can bear ample testimony to the beauty and desirableness of the plant, and am happy to be able to confirm Mr. Paxton's suggestion as to its admitting early forcing, and also to be able to add, both on the authority of Mr. Majendie and from my own observation, that it will bear the winter in this country with-

out any protection. A plant, now thriving well in the open garden, has remained there without protection two winters, and from the inquiries I have made I should think it had been three, or even four.—*E. Barnall, Woodlands, near Ryde.*

Chinese Seeds.—It may amuse some of your readers to hear of the following example of Chinese bad faith. An old botanical pupil of mine, with every facility for procuring what he might want in China (being in the suite of Sir H. Pottinger), lately sent me over 79 little jars of Chinese seeds, duly labelled in unintelligible hieroglyphics, but accompanied with a list professing to give the botanical names of many, and a slight description of the rest. These seeds were positively declared to be genuine, and the collector most trustworthy. Upon examination they were found to contain only 14 sorts in all, not less than 11 different names being given to the very same seed in one case—the names belonging to as many different families. I have more than once received seeds from China in these little jars, but scarcely any of them ever germinated, and I believe it is a custom with the Chinese to scald the seeds they sell to barbarians!—*J. S. Henslow.* [We fear the plant-sellers of the Celestial empire are not Sinenses but Sinonides, for they certainly must claim their descent from the prince of cheats.]

The Vine.—Writers on the cultivation of the Vine under glass, insist much on the necessity of keeping a dry atmosphere while the Grapes are ripening. Now, at Cabul and Candahar, where the Grapes ripen out of doors, and are said to be the finest in the world, the dew is, I should imagine, much heavier than with us, so that at night both leaves and fruit must be covered with moisture. Should we not, therefore, imitate Nature more closely, and keep the leaves of our Vines in a healthier state? obtaining thereby fruit of a finer flavour, if we were to keep a moist atmosphere at night till our Grapes are quite ripe.—*Guichenet.*

Bees.—My object in forwarding my remarks on bees to the *Gardeners' Chronicle*, was with the view of drawing the attention of more experienced apiarians to peculiarities I fancied I had observed in the habits of these industrious insects, which might have escaped their notice; and I certainly expected, from the respectability of the publication to which they were addressed, that in the event of obtaining a place in its columns, the Editor would have avoided inserting remarks in subsequent Numbers tending to ridicule my communications. In a newspaper desirous of promoting a spirit of inquiry, the greatest care should be taken not to check, but rather to encourage, disinterested correspondents, who, if they are wrong in their impressions, have no object in view but to call forth the conscientious opinions of others, and not such evidently intended ridiculous assertions as your correspondents "Mel," and his amiable consort "Melissa," have given in their allusions to "bees and their nightcaps." Perhaps your correspondent with the wonderful Wrotham telescope will favour your readers with a solution of the reason a butterfly or a housefly, and many other sharp-sighted insects, can be touched by the hand on some occasions, when at other periods the slightest movement or approximation would cause them to fly away. I have witnessed, and many medical men can confirm the truth of my statement, that there are members of the human race who habitually sleep with their eyes open, and, I may add, without nightcaps; and the hand or a lighted candle has been moved backwards and forwards, close to the face, without the eyelids or the pupil contracting in the least, or the sleeper being aware of the presence of other parties. It is, therefore, surely not too great a stretch of the imagination to suppose that the eyes of bees, in their dark abodes, may be sufficiently obscured to enable them to enjoy, what it is probable all animated creation requires, the luxury of repose. It is surprising that your correspondent did not allude to the continual hum in the interior of a hive in summer, as likely to disturb the sleep of the bees, even although aided by the nightcaps he says he has discovered; but it is more than probable he has been a great traveller by sea and land, and has ascertained from personal observation that the wearied sailor can sleep amidst the lashing of the waves and howling of the winds on the tempestuous ocean; or he may have visited the interior of one of the cotton mills along with Lord Ashley, and observed the overworked factory child, without the aid of a Wrotham nightcap, as sound asleep and oblivious to all external objects, amidst the continual noise of the steam-engine and loud hum of the spinning-jennies, as in the dark room and humble bed allotted for repose when the labours of the day are ended. Your correspondent's attempted sneer because I have designated some of the bees guards, in consequence of the duties they appear to perform, I shall only answer by quoting the following from Bonner, whose work, published in 1793, gives an interesting and short account of the natural history and habits of these insects; and, if he uses the terms "scouts" and "squadron" in illustrating his observations, I cannot perceive any impropriateness in applying the term I have used to explain the idea I wished to convey of the regularity and even systematic arrangement so beautifully exhibited in all the actions of a hive of bees:—"When the weather is very favourable, the bees often, before swarming, send out scouts in search of a proper habitation; and when they discover a hive whose bees are dead, or any convenient place about the roof of a gentleman's house, or a church, castle, or trunk of a tree, more especially if bees have wrought combs in it the summer before, but have died out of it in winter, they will send out a squadron or bees, three or four days before they swarm, to clean out the place, and render it fit for the reception of the young colony the first favourable opportunity."—*John Grant, Woolwich.* [We can assure our correspondent that neither *Mel* nor *Melissa* had a thought of hurting his feelings. We did not dream that offence would be taken at a little harmless banter. "Oderunt hilarem tristes tristemque jocosi," says Horace or somebody else; we fear the saying is too true; and yet we cannot be serious always.]

Bees.—In the year 1842, a stock of bees settled in a box formed according to Mr. Cotton's plan, and filled a side-box; I had 25lbs. of beautiful honey from them. Last year I had a large swarm from this stock, which I imagined weakened them too much, as the season was so unfavourable they only collected honey for themselves. I had purchased a swarm in the parish, but it could only have been a cast, it was so small; consequently only 3 or 4 small combs were made and filled. Knowing there was every probability of one, if not both, of these stocks perishing in the winter, I resolved to unite, and then by way of experiment bury them. I had some thick syrup made, and turned up the hives, sprinkling a very little upon the bees in each, and placing the old hive upon the other, in hopes the smallest lot would creep up; but no such thing occurred. The next morning they had descended to the east, and there they pertinaciously remained, despite of my turning them about, first up, and then down. It seemed certain death to bury them with so small a portion of food; therefore I was compelled to put in both hives together, and make them up in the form of a Potato pir, having a roof of two thatched hurdles put over to keep the rain off. On the 25th of March, my prisoners were disinterred, and I must confess I was very much delighted to hear a brisk hum. About half a teacupful of dead bees were taken out, and very little honey had been consumed; the bees seemed settled in the upper box, and as the sun shone brightly they were quite overjoyed at their liberty. Alas! the unnatural swarm I had from them the spring before, finding these were so much better off than themselves, (though they had not eaten all their stock of provision) began robbing and murdering with savage ferocity. I shut up the attacked for a day or two, and fed the marauders. All went on quietly for a month, when they made another attack; the gardener covered them with a mat, and though many were killed, still they went on thrivingly for a few weeks; then a third attack was made, and before they obtained help more were killed than before. To give my persecuted stock a chance of life, it was moved into a walled garden, some little distance off, where I flattered myself it would remain undiscovered; but no such good luck was for it. On Monday last, the wretches came in double force very early in the morning, and I do not think a handful survives of this unfortunate family. What can I do? The robbers thrive on their ill-gotten gains; I have finished and sealed the combs in the centre box, and filled three parts of a side-box, and now I have put on another, thinking there must be "idle hands" which have perpetrated so much mischief. What can their learned advocates say of such bad dispositions in their favourites? And are there any means, short of fire and smoke, by which to reduce my rebels to order? What have I done wrong or clumsily? And what should I have done, in order to the better success of my experiments?—*An Old Correspondent.*

The Sting of a Bee.—Turning to p. 509, vol. ii., of the *Chronicle*, my eye caught "Sting of a Bee." The remedy there given is a very inefficient one; laudanum will not cure, but liquor potassæ will, perfectly and immediately; it instantly removes the pain, and prevents swelling or inflammation: the poison of the bee being an acid, this very powerful alkali neutralises it. It should be applied cautiously, of course; a sharp pen, or very fine camel's-hair pencil, or even the point of a needle does well: but it must be applied instantly upon the sting being extracted. As I am constantly amongst bees, I generally carry a little bottle containing a few drops in my pocket. It is very rarely that I get a sting, but when I do, my remedy is at hand. I regard it not half so much as the sting of a Nettle.—*A Constant Reader.*

Humphreys's Compound.—Observing in an advertisement in your columns, that what is called a liquid guano may be made by means of Humphreys's Compound, dissolved in water, and having been informed that this compound is little else than nitrate of soda and common salt, I could not at all understand how anything resembling guano could be made from it. Under this impression, I got a chemical friend to examine this compound upon the chemical ingredients of guano, and he informs me that he cannot discover a trace of phosphate of lime in it, which every one knows is the principal fertilising substance of guano! I do think that parties advertising manures ought to be more particular in their assertions, and not take it for granted that all who read their announcements are blockheads.—*F. R., St. George's-place, Brixton.* [We cannot be answerable for the statements of advertisers].

Euphorbia Jacquiniflora.—The following is the result of an experiment with this plant:—I bought a large specimen, but to my disappointment it was covered with brown scale. Determined, however, to clean it, I cut every branch back to the old wood, and smeared it over with clay, according to Mr. Beaton's plan, made to the consistence of thick paint. I shook all the soil away from the roots in order to get at the bottom of the stem. I repotted the plant in a small pot and placed it in a warm moist atmosphere. It is now growing very nicely, and is breaking all over. Being afraid to propagate from the young wood for fear of the insects, I took from the roots about four or five pieces, which I divided into two or three, and to my astonishment they not only broke but sent out from three to eight shoots each. I cut the roots off three weeks ago, and the shoots are now an inch long. As it is difficult to get this plant to break low down, propagating by roots appears to be a good way to get low bushy plants.—*A. Threlkeld, Headingly House, Leeds.*

Pheasants' Eggs.—I had given me a "clutch" of the common pheasant's eggs, numbering fifteen, with the caution that they had already been "setting upon." Twelve hours elapsed from the time of their being taken from the nest and reset, the eggs at the time being quite cold and apparently useless. At the expiration of twelve days, to my surprise every egg produced a bird, which is now very strong and healthy. Some years since I had brought me twelve eggs of the sheldrake (Anas tadorna), and in this instance they had been laid upon bricks in the open yard for 15 or 16 hours before they were reset, and at the expiration of 24 hours every egg was hatched, and I succeeded in rearing all. These instances show the great changes of temperature the incipient germ of life is capable of sustaining.—*Y.*

Standard Roses.—I have experienced some difficulty in the cultivation of these. I have a great dislike to seeing Standard Roses closely pruned, and I think that pruning makes the French Moss and other small growers unhealthy, whilst the more robust are induced to make wood instead of bloom. I have not pruned my plants so much as most other persons, but I found that when it became necessary to reduce the size of the heads many of the plants died. The wood being very hard, and the buds small, they had great difficulty in putting out in spring, and the "heath dook" generally eat out the buds, or they were attacked with grubs. An idea struck me that if they were cut directly after blooming, they would put out soon after, and have time to form heads before winter. I tried several last year, which are now fine and healthy, and have all the appearance of being planted about two years. I would not advise it as a regular mode of pruning, but under the circumstances I have mentioned I imagine it will be found useful once in three or four years.—*J. R. Pearson, Chilwell Nurseries.*

American Blight.—I had three Apple-trees covered with this blight, which I had scrubbed with a hard brush and strong soap-suds several times without effect; but after the trees were quite dry from the last scrubbing, I had them anointed with linseed-oil, applying it with a painter's brush; this has entirely removed every vestige of the disease.—*J. G.*

The Pine Apple.—Having observed that you invite persons disinterested in the matter, to make statements concerning the quality of the Thornfield Pines, I, although I have never seen any of the fruit in question, beg to be allowed to state that I approve of Mr. Hamilton's practice with regard to moisture, and that I follow a similar course with the most beneficial results. My method is to grow the plants as fast as possible from the beginning, never allowing them to experience a check if I can possibly avoid it. They are subjected during the whole of their growth to a very moist atmosphere, as I never fail to sprinkle them over-head until the fruit is in bloom. When they are in this state, the walls of the pits are wetted every evening before shutting up; and as soon as the bloom has dropped, watering over-head is again resumed, and continued until the fruit begins to change colour. When this occurs, watering is discontinued altogether, with the exception of occasionally wetting the walls and pipes. When the atmosphere of the pits is too dry, I prefer a good bottom-heat, which enables me to give abundance of air in fine weather. This adds greatly to the strength of the plant, and is most essential to the flavour of the fruit. Under this treatment the fruit of our Queens generally weigh from four to five pounds each. The plants are grown in pots seldom larger than twelves. The fruit of these have pips flat and large, more like those of the Providence than of the Queen; they are of the brightest colour, and of the highest flavour, abounding in juice of the richest quality. When grown in a dry atmosphere I have seen the same kind, and also other varieties, having more the appearance of the head of a Teasel than that of a Pine-Apple. These facts prove that moisture is not injurious to the flavour of the Pine-Apple.—*C. J.*

Singular Propensity of a Cat.—A friend of mine has a favourite female cat who is fond of raw potato parings. Every time the gude wife begins to prepare the potatoes for cooking, puss leaves her warm corner, and begins purring and mewing, and patting with her paw, till a paring is given her, which she immediately devours with much relish. As soon as she has finished, she renews her supplications, is served again, until the potatoes are all pared for the bipeds of the family. What is more remarkable, the parings do not appear to disagree with grimalkin, who is fat and sleepy. Her descendants do not inherit this strange propensity.—*A. T.*

The Froth Fly.—Upon referring to p. 508, vol. ii., of the *Chronicle*, I find "Ruticola" to be in error when saying, "On removing the froth the small green larvæ will be found concealed, and are able to skip away when disturbed." Now in this state they certainly cannot, and but very imperfectly walk. He also says, "But when and where the female lays her eggs is still undiscovered, but most probably in the young twigs or buds which are formed to produce leaves the following spring." If so, I would ask how comes the froth, with the larvæ of the insect in it, upon my Bouvardias which were raised from small pieces of roots, and even upon seedling plants in my greenhouse? and again, upon the young shoots of hardy Fuchsias in my borders, which have died down in autumn, and had their roots covered

with cinder-ashes, or something of the kind, to defend them from frost? If the froth is found in March and April upon plants thus raised from roots, and upon seedling plants (which myself and some of my neighbours have frequently experienced), how can "the eggs be deposited on the young twigs or buds?" I am quite at a loss to conjecture how they are generated; but possibly this notice may meet the eye of some one who can solve the mystery.—*A Constant Reader.*

Potter's Liquid Guano.—I write these few lines to describe the wonderful efficacy of the liquid guano. Peas, Onions, and Asparagus have been singularly improved by it, especially during the dry season. People come to admire the appearance of the garden.—*S. W.*

Miscellaneous.—*An Arbroath Gardener* states that he sowed the Early Kent Pea on the 29th November, and gathered a dish on the 24th May; he informs us that he sowed the Early May on the same border on the 7th November, which was not ready for gathering until the 8th of June. He sowed Early Kent, Prince Albert, and Sutton's Champion on the 17th February. The Early Kent, he remarks, will be ready at least 10 days before the others. He writes that there is no difference between Prince Albert and Sutton's Champion, with regard to earliness.

Societies.

HORTICULTURAL SOCIETY.

THE SECOND EXHIBITION of the season, in the gardens of the Horticultural Society at Chiswick, took place on Saturday last. The day was very auspicious—a gentle south-west breeze prevailing throughout it; and a number of very rare and beautiful plants were brought together. The Gardens, as a matter of course, in this droughty season, were much parched up; but though the borders lacked the usual gaiety of a June garden-scene, there was no dearth of gaiety of a more animated nature. Long as we have been in the habit of attending these *fêtes*, and celebrated as they are for the vast number of visitors which attend them, we were not prepared for the scene of Saturday last. No sooner were the gates thrown open than the garden was crowded, and from 2 o'clock until 6 there could never have been less than ten thousand persons present at one time; the grounds were literally crammed, more than 13,500 visitors having passed the gates. This, we think, is a sufficient proof of the increasing popularity and taste among the wealthy of the land for gardening pursuits; and to the professional gardener it must be a source of high gratification to see his peculiar occupation so much honoured. The Exhibition, taken as a whole, was less brilliant than usual; but, nevertheless, many plants were shown in finer condition than they had ever before been seen, and the display of fruit was superlatively excellent. The collections of Orchidaceous plants were very rich, as were also the Pelargoniums and Roses in pots; the large collections of stove and greenhouse plants from Ealing Park contained many admirable specimens; and of single specimens and new and rare plants exhibited for the first time there were some very remarkable things. The new Melons from Bokhara and Cabul were shown in fine condition, and it is not too much to say they fully realised all that has been said of them, and there is a peculiar crispness and freshness, accompanied by delicious sweetness, which surpasses every other kind of Melon we have ever tasted. The Bokhara Melon which we tasted, though not quite ripe, we could only compare to iced sugar; and when fully matured, it will, from its size and flavour, be esteemed as the very best kind in cultivation. The great facilities offered by the tank and other new systems of heating horticultural structures, promises to bring this fruit into universal cultivation, and in a few years the small amateur and even cottager will calculate as certainly upon his Melons as he does at the present time upon his Cucumbers. But we must proceed to a more detailed account of the Exhibition.

Among the curious tribes of ORCHIDACEOUS PLANTS, Mr. Mylam, gr. to S. Rucker, Esq., of Wandsworth, produced a large collection in remarkable health and beauty. Among them we noticed the lovely Saccolabium præmorsum, with two fine spikes of its delicately beautiful flowers; a grand plant of S. guttatum producing eight spikes of bloom; a fine specimen of Acrides odoratum; another plant with nine spikes of bloom, A. odoratum var., and a remarkably handsome kind called A. affine. A singular and very beautiful species of Angulos, with large pale cream-coloured flowers, slightly tinged with greenish orange, was sent from the same place, as were also a fine plant of Cattleya Mossiæ, with seven of its charming flowers, and C. Mossiæ variety, with eight fine blooms. The rare and curious Angræcum caudatum was also produced by Mr. Mylam, as were likewise the neat and elegant Dendrobium densiflorum, with ten spikes of its peculiarly-tinted pale orange flowers. There was, moreover, the finest bloomed specimen of the admirable Phalænopsis amabilis we have yet seen. It had a fine spike of eleven flowers; and, gently moving in the breeze, it looked the most lovely of all the lovely things around it! A good plant of Cycnoches chlorochilon, with curious pale green flowers, was also produced by Mr. Mylam, as were likewise the well-known C. Loddigesii. Of the plants of this remarkable tribe, which rank more particularly as curiosities, there was a very healthy specimen of Maxillaria stapelioides, the pot of which was densely covered with strange brown flowers, spotted with green, which resembled so many blooms of the singular Stapelia. Two other very curious plants were Cirrhæa viridipurpurea, with greenish-purple flowers, and C. fusco-lutea with pale-yellow and brown flowers. These flowers depended over the sides of the pots, and so closely did they resemble insects, that a lady remarked, "An entomologist viewing them for the first time, would be afraid to venture near the plant, lest he should frighten the insects away before he had taken a proper view of them." Mr. Mylam also produced fine plants of Phajus albus, with fine white flowers; Oncidium papilio; the curious butterfly plant, O. pulvinatum, in good bloom; Epidendrum cinnabarinum and alatum with finely coloured flowers; E. macrochilum roseum, curious and pretty; E. aloefolium, growing on a block of wood; and a fine specimen of Brassia brachiata. The appearance of this collection of plants was very rich, the specimens being in the finest health, and the flowers as perfect as they possibly could be.—From the gardens at Ealing Park, Mr. Robertson, Mrs. Lawrence's gardener, contributed a large collection, among which was particularly conspicuous a large plant growing in a rustic basket, of Stanhopea tigrina, with six of its large and singular dark-brown flowers, which were produced beneath the bottom of the basket.—Of Cattleyas, Mr. Robertson produced C. Mossiæ with two fine flowers; C. Mossiæ variety, with pale pinkish flesh-coloured flowers; another variety of C. Mossiæ of the same colour, but with a large blotch of purplish crimson on the lip, and a very lovely specimen of C. violacea with two flowers.—Small plants of Barkeria spectabilis, and a pale variety of the same, were sent by Mr. Robertson, and a large specimen of Bletia Shepherdii, which was past the meridian of its bloom. There was, moreover, a very fine specimen of Oncidium Lanceanum, with remarkably large blooms; a good plant of O. Papilio with six flowers; O. Russellianum and Bowesianum in good bloom, and an immense plant of O. flexuosum, the flower-branches of which being trained to the front, formed a dense mass of bloom four feet high and three feet in diameter. Mr. Robertson also sent a very healthy specimen of Brassia brachiata, with pretty cream-coloured flowers spotted with brown; the before-mentioned Maxillaria stapelioides in fine bloom, with Epidendrum variegatum; the pretty E. cinnabarinum; the curious Galeandra Baueri, with a fine specimen of Cycnoches ventricosum, and an unnamed species of Cyrtochilum.—A third collection was produced by Mr. Redding, gr. to Mrs. Marryat, at Wimbledon, among which was a good specimen of Stanhopea grandiflora, with four fine cream-coloured flowers, Cattleya Mossiæ with nine flowers, Epidendrum variegatum, Odontoglossum maculatum, and Vanda Roxburghii, in fine health. Mr. Redding also communicated neat specimens of Oncidium ampliatum majus, O. pulvinatum, Bauerianum, and luridum.—From the Nursery of Messrs. Rollisson, of Tooting, were good specimens of Stanhopea oculata and saccata in fine bloom, a small plant of Barkeria spectabilis, Epidendrum cinnabarinum, with Oncidium volubile, luridum guttatum, pulvinatum, flexuosum, and luridum.—Mr. P. N. Don, gr. to G. F. Cox, Esq., of Stockwell, sent Stanhopea tigrina, with two flowers; Cattleya Mossiæ, in good condition and remarkably well coloured; a neat plant of Acropera Loddigesii, with Oncidium pulvinatum and flexuosum.—Of single specimens, Messrs. Veitch and Son, of Exeter, sent a noble plant of Oncidium Lanceanum, with twelve flower-spikes.—Mr. Falconer, gr. to A. Palmer, Esq., of Cheam, sent Brassia caudata in very fine condition; and Mr. Carson, gr. to W. F. G. Farmer, Esq., of Enfield, a good plant of Cattleya Mossiæ.

The large collection of STOVE and GREENHOUSE PLANTS contributed by Mr. Robertson, gr. to Mrs. Lawrence, was unusually fine, and certainly could not be surpassed by any collection in the country. When so many plants are required to constitute a collection, it is not unusual to see some bad plants, but here they were all good, all evincing first-rate management. To give some idea of the beauty of this group at the back, on the centre of the stage stood an immense plant of Acacia alata ten feet high, and at least twelve feet in diameter, the head forming a complete ball, so thick that a bird could scarcely fly through it, and densely covered with its pale lemon-coloured flowers. Flanking this were two immense plants of Polygala oppositifolia, covered with bloom, and in the front of it a most noble plant of Pimelea decussata six feet high and six feet through, regularly branched from the pot upwards, and a complete sheet of inflorescence. This plant, with the exception of the flowers being a little pale, which was doubtless attributable to the shade necessary to retard its blooming in this sunny season, was in every respect perfect. Another very remarkable plant was Phœnocoma prolifera, a plant two feet high and about the same in diameter, the branches drooping over the sides and partly hiding the pot, and every branch tipped with its curious everlasting flowers; scarcely less excellent was a plant of Leschenaultia formosa one foot high and nearly three feet in diameter; and a plant of the same size, and a mass of flowers, was Stylidium fasciculatum. Mr. Robertson, moreover, contributed a noble specimen of Aphelexis sesamoides, in fine bloom, and an admirable specimen of Acacia pulchella; this plant was about 6 feet high, and the same in diameter, forming a regular globe, and in fine bloom. Of Manettia cordifolia there was a splendid specimen, trained over an hemispherical trellis; it was profusely covered with flowers, and in every respect a first-rate plant. Leschenaultia biloba, the pale variety; Boronia denticulata, Begonia nitida and parvifolia, Chorozema varium nanum, Siphocampylus betulifolius, Hindsia longiflora, Lobelia longiflora, Gloxinia violacea and maxima alba, and Achimenes longiflora, rosea, and grandiflora, were shown in fine condition; and finally, there was a prodigious plant of Erythrina crista galli, covered with bloom, and two exceedingly fine specimens of Clerodendrum affine; the largest plant was 5 feet high, and the head of bloom consisted of eleven spikes of flowers; the second plant was not quite so large, but both evinced excellent management.—The collection from Mr. Green, gr. to Sir E. Antrobus, Bart., at Cheam, contained neat specimens of Eutaxia pungens, in fine bloom; Leschenaultia formosa, dwarf and good; Hibbertia Cunninghamii, densely covered with pale-yellow flowers; Rondeletia speciosa, and Sollya linearis, profusely covered with bloom. Mr. Green had, moreover, a large plant of Epacris heteronema, with Ixora coccinea, much injured by its previous journey to Chiswick; Lachnæa purpurea, in good bloom; Tropæolum edule, with orange flowers; Stephanotus floribundus, and a large specimen of Cosmelia rubra.

Of CLIMBERS, Mr. Robertson sent a collection, consisting of a most admirable specimen of Stephanotus floribundus, completely covered with its deliciously fragrant flowers; very large specimens of Manettia cordifolia and bicolor, the former covered with bloom; a remarkably healthy specimen of Poivrea coccinea, and a good plant of Hardenbergia monophylla. From the same garden was a fine plant of the beautiful Clitoria Ternatea, but unfortunately the blooms, which are of the finest blue imaginable, are too scantily produced for the plant ever to become generally cultivated.

Among NEW PLANTS some very admirable things were produced.—From Her Majesty's garden at Windsor, Mr. Ingram sent one of the finest of New Zealand plants, called Veronica speciosa. It was a very fine healthy specimen, and had 11 spikes of rich purple flowers.—From the Royal Botanic Gardens at Kew, Mr. Smith, the curator, communicated Pterodiscus speciosus, a plant with rosy purple flowers bearing a close resemblance to a Mimulus; and from their nurseries at Exeter, Messrs. Lucombe, Pince, and Co. sent Ixora acuminata, a plant producing a large head of white flowers, and promising to become a useful though not a very conspicuous plant for public exhibitions.—Messrs. Loddiges, of Hackney, sent a very lovely species of Epacris called E. miniata. It has rich vermilion-coloured flowers tipped with white, and they are produced in very great abundance.—Clerodendrum infortunatum, a plant very superior to any of the old kinds, was sent by Mr. Glendinning, nurseryman, of Chiswick. It is a plant of free growth and robust habit, with flowers both larger and brighter than C. affine; and from the same gentleman was a plant of Achimenes picta and three hybrid varieties of Gloxinia. The Achimenes has flowers resembling A. pedunculata, but they are finer formed and more intense in colour; and the plant is of dwarf compact habit, with the leaves bearing a sort of silvery variegation.—Of the Gloxinias, one which is in cultivation under the name of G. Cartonii, has pale crimson flowers margined with white, and as it branches freely, promises to become a first-rate plant; a second plant bore a close resemblance to this, but was not so good; and the third was of a pale violet colour, with a deep purple blotch in the throat, which gave it a very neat appearance.—Mr. Slowe, gr. to W. R. Baker, Esq., of Bayfordbury, Herts, sent a small plant of Pavetta caffra.—Mr. Green, Gompholobium splendens, a plant with rich yellow flowers.—Mr. Bruce, gr. to Boyd Miller, Esq., sent a new species of Kennedya from New Holland, with greenish-white flowers; and Mr. Jackson, of Kingston, a finely bloomed plant of the new annual, called Viscaria oculata; and, finally, from Mr. Ayres, gr. to James Cook, Esq., Brooklands, Blackheath Park, was a plant of Pentas carnea, with ten heads of its delicately tinted pale peach-blossom coloured flowers. Messrs. Veitch and Son, of Exeter, sent cut specimens of Hindsia longiflora and violacea.

Of single specimens of OLD PLANTS, Mr. Green produced an Azalea, upon which the three following kinds, viz., A. Indica variegata, lateritia, and Gladstanesii, had been grafted, and with the flowers intermixed, had a very novel and pleasing appearance. Mr. Green had also fine specimens of Gompholobium polymorphum, in fine bloom; Aphelexis humilis, a fine specimen, but the flowers badly coloured; Coleonema rubrum, a very excellent plant; and a small, but promising plant of Chorozema ovatum.—From Mr. Dawson, nurseryman, of Brixton-hill, was a very large plant of Erica Massoni, in most excellent health and fine bloom.—Mr. Robertson communicated E. ventricosa, densely covered with bloom; and E. depressa, evincing equally good management. Mr. Robertson, moreover, contributed a lovely plant of Gesnera lateritia; a superlatively excellent plant of Gloxinia maxima alba, covered with hundreds of flowers; and a very large plant of Erythrina crista-galli.—From Mr. Falconer was a very lovely specimen of Leschenaultia formosa, and a very large but badly bloomed plant of Achimenes longiflora.—Mr. Dobson, gr. to Mr. Beck, of the Slate Works, Isleworth, had a very fine specimen, in a slate pot, of Achimenes grandiflora, and a small but finely-bloomed plant of Rondeletia speciosa.—Mr. Jackson, of Kingston, sent Dracophyllum secundum, with very curious flowers; and Messrs. Lucombe, Pince, and Co. the rare pale-yellow and white asclepias-flowered plant, called Cyrtoceras reflexum.—From Mr. Jones, gr. to Sir Moore Disney, at East Acton, was a neat plant of Leschenaultia formosa, covered with bloom, and a large specimen of Fuchsia grandiflora maxima.—Mr. Pamplin, nurseryman, of Walthamstow, produced a finely bloomed, but unnaturally trained plant of Boronia serrulata; and Messrs. Mountjoy and Son, of Ealing, sent Lilium testaceum, with pale, creamy, buff flowers.

Of the beautiful tribe of ERICA there was a very fine

display. Mr. Robertson produced very neat specimens of E. perspicua nana in fine bloom; tricolor elegans very neat and pretty; tricolor in fine health; inflata alba very fine; Cavendishii, a superb specimen in excellent condition; gemmifera, one foot six inches high and two feet in diameter, and in fine health; pregnans, remarkably healthy; and metuliflora bicolor, in fine condition. Mr. R. had, moreover, a very lovely plant of E. ventricosa rosea globosa, growing in one of Mr. Beck's slate pots, and in remarkable health and bloom; he had also fine plants of E. ventricosa alba, E. v. tenuiflora, E. v. stellata, and E. v. superba, each a mass of flowers; a good plant of E. radiata, not quite sufficiently in bloom; and fine plants of E. breviflora, Westphalingia, splendens finely bloomed, but an indifferent plant; and a promising specimen of E. Humeana.—Mr. Brazier, gr. to W. H. Storey, Esq., of Isleworth, produced fourteen seedling varieties of E. vestita, ventricosa, and grandiflora kinds, originated by Mr. Storey, and some of them very beautiful. They consisted of E. vestita albida, a lovely plant; E. v. alba superba, very pretty; E. v. rosea alba, delicate rose-colour, elegant; E. grandiflora lucida, very neat; E. g. purpurascens; E. ventricosa carnea; E. ventricosa coccinea superba; E. Longiflora floribunda, a splendid kind; with E. variabalis, Albertiana, and Albertiana superba. It is rather melancholy to reflect, that while we are writing, the noble collection of Ericas, and other plants of Mr. Storey, which the public have so frequently looked upon with delight, at Horticultural Exhibitions, are being disposed of by public auction.—In the group of six Heaths Mr. Green had fine plants of E. elegans and tricolor elegans, in fine bloom; E. perspicua nana and ventricosa superba, loaded with bloom; and tolerable plants of E. splendens and Cavendishii.—Mr. Dawson, of Brixton-hill, sent E. pulverulenta, nicely in bloom, and forming a cone of verdure three or four feet high by six inches in diameter at the base; very handsome plants of ventricosa globosa and tricolor elegans; and neat specimens of Bergiana, Massoni, and the admirable little Coventryana.—From the nursery of Mr. Jackson, of Kingston, was a collection of very large specimens: it contained an immense plant of E. ventricosa Bothwelliana, a plant four feet high and three feet in diameter, covered with bloom; E. tricolor speciosa, with neat pale-red flowers; E. tricolor, a seedling variety, very superb; a fine plant of the singular E. halicacaba, with pale-green flowers; E. moschata, covered with small greenish yellow blooms; and a fine plant of E. depressa. Mr. Jackson had, moreover, fine plants of what he called E. Patersoniana, var. Cavendishii; E. vestita coccinea, large, but past its best; a fine Jasminiflora alba; the singular E. Plukenetii, with dull-red flowers; a fine large E. elegans odorata, not quite in bloom; an excellent plant, three feet high and two feet in diameter, of E. translucens, with pretty pink flowers; and tolerable specimens of E. inflata and carnosa.—In the collection from Messrs. Rollisson, of Tooting, were several of those curious Heaths, which are rarely met with at public exhibitions: they were E. sanguinolenta, with small, dark, blood-coloured flowers; E. thymiflora, resembling a large plant of the old Mother of Thyme; E. imbricata, very singular; and E. villosa, with a silvery-greenish appearance. In this collection were also a very fine variety called E. Massoni major, a plant of much more vigorous habit, and with flowers of a finer colour than E. Massoni. There were, moreover, good plants of E. ventricosa superba, in fine bloom; E. v. carnea, E. v. præguans, E. v. stellifera, and E. v. tenuiflora. Messrs. Rollisson had, finally, good plants of E. jasminiflora nana and vittata, and well-bloomed specimens of E. Coventryana, grandiflora, Cavendishii, and mundula.

The collections of Cacti, though of course brilliant, did not contain any very novel kinds. Mr. Robertson had fine plants of Cereus speciosissimus, Epiphyllum Ackermanni and Jenkinsonii, and good plants of E. splendens, speciosus, and Jenkinsonii major.—Mr. Falconer had a fine plant of Cereus Mallisonii in fine bloom, speciosissimus, with Epiphyllum Jenkinsonii and Ackermanni in rich order, and several other varieties.—From Mr. Green were plants of Epiphyllum speciosum, elegans, Jenkinsonii multiflorum, splendens, and aurantiacum, with orange-scarlet flowers; neat plants of rubrum grandiflorum, speciosum purpureum, formosum, and Ackermanni violaceum. He had also Cereus speciosissimus, with C. Mallisonii, and a variety of the latter called C. strictus, with very pale-red flowers.

The Garden of the Society contributed some fine specimens of Pinuses in pots, among which we noticed P. filifolia, tenuifolia, Apulcensis, patula, Russelliana, Montuzumæ, macrophylla, Devoniana, religiosa, and Hartwegii. There were also Juniperus tetragona and flaccida, a curious climbing plant, with green campanulate flowers striped with brown, called Codonopsis lurida; and a large fruiting specimen of Musa Cavendishii.

Of Wardian Cases there was only one example, which consisted of succulent plants in small pots. They had a neat and interesting appearance, and to our knowledge they have been growing in the same case for several years. They were from Mrs. Leigh, F.H.S., of Turnham Green.

Roses in Pots were shown, in fine condition, by Mr. Dobson; Messrs. Lane and Sons, of Berkhampstead; Paul and Sons, of Cheshunt; Alexander Rowland, Esq.; and Mr. Cobbett, nurseryman, of Chobham. The two latter collections were in no way remarkable; Mr. Cobbett's, which were principally Moss Roses, having flagged early in the morning, and Mr. Rowland's being less skilfully grown. Mr. Dobson's collection, though evidencing good management, were principally dwarf standards, which for pot culture we consider in doubtful taste. They look too artificial, and, let them be ever so well done, will never approach our standard of what pot Roses ought to be, or accomplish what the Society has in view, viz., show the real character of the plant. The only way in which standards can be at all admissible will be when the branches are trained pendantly, so as to hide the naked stem, and indeed in this way some of the stronger-growing kinds of French Hybrid China, Noisette, Hybrid Perpetual, and Damask, when trained over balloon or other fancy-formed trellises, will make very beautiful objects. To satisfy our taste, we must also see dwarf Roses grown without each flower being supported by a stick; for, however much such arrangement may be necessary for the proper conveyance of the plants from place to place, a Rose that will not do without them is unfit for pot culture. These remarks apply to Rose-growing generally, and not to Mr. Beck's in particular. The kinds produced by Mr. Beck were Aspasia, La France, Mrs. Bosanquet, Pompone Laquene, Hortense Leroy, Brennus, Belle Marie, Coutard, and Madam Nerard. — Messrs. Lane's collection consisted principally of dwarf kinds, and had been most excellently managed. They consisted of Moire, Blanchefleur, Duke of Devonshire, Great Western, Duc de Cases, Armosa, Scholastique, Madame Plantier, Boule de Nanteuil, Pomone, Therese, Isabella, Comtesse de Lacepede, Augustine Lelieur, Augustine Hersent, Pierre St. Cyr, Auteros, and Triomphe de Luxembourg.—The greater part of Messrs. Paul's were dwarf standards, but were in very fine bloom; the best were named Daubenton, Duke of Cambridge, Madame Desprez, Ipsilante, Agnessan, Taglioni, La Pactole, Comte Lacepede, Buonaparte, Sophie de Marcilly, Beauty of Billiard, and Roi de Rome.

Of Cut Roses a great quantity were exhibited from various parts of the country. The kinds sent by Mr. Rivers, nurseryman, of Sawbridgeworth, were *Hybrid perpetual*: Mrs. Elliot, Prudence Rose, Madame Laffay, Duc d'Aumale, Duchess of Sutherland, Aubernon, and Louis Buonaparte. *Hybrid China*: Fulgens, Coutard, Velours Episcopal, Kleber, Beauté vive, Chenedole, Eucharis, Vingt neuf Juillet, Blanii No. 2, Triomphe d'Angers, Pangot, Coupe d'Amour, Brennus, Pompone Bicolor, Beauty of Billiard, and Triomphe de Laquene. *French*: Royal Marbled, Adelaide, Renoncule ponctuée, Boule de Nanteuil, Kean, and Madame Cottin. *Damask*: Madame Hardy and Deesse de Flore. *Hybrid Bourbon*: Coupe d'Hebe, Charles Duval, Belle de St. Cyr, Great Western, Colonel Combes, Sylvain, and Brillante. *Alba*: La Séduisante and Princesse de Lamballe. *Provence*: Sylvain and Crested. *Hybrid Provence*: Blanchefleur and Duchesse d'Angoulême; with *Tea* Elise Sauvage, Persian Yellow, Harrisonii, Eclat des Roses, and Oracle de Siecle Mr. Rivers had also the following kinds of Moss Roses—Prolific, Crimson, French Crimson, Pompone, Celina, White Bush, Blush, Princess Royal, Single Crimson, Unique de Provence, Pompone fin, and Luxembourg.—In Messrs. Paul's collection of cut Roses were very fine specimens of the following kinds:—Marie de Medicis, Madame Gernin, La Séduisante, Blanchefleur, General Allard, Madame Hardy, Comte de Paris, Lady Stuart, Adele Prevost, Carré de Boussiloup, Duchesse d'Angoulême, Densiflora, Comtesse de Lacepede, Rouge Eblouissante, Niphets, Stadtholder, Triomphe de Laquene, Brennus, Aimable Queen, and Duchess d'Abrantes.—Mr. Hooker, Nurseryman, of Brenchley, Kent, had the annexed kinds: Prince Albert, Wm. Jesse, Celinetre, Hymenea, Malton, Blanchefleur, Princess Augusta, Coupe, Duke of Sussex, Reine des Isles Bourbon, Devoniensis, Persian Yellow, Octavie, La Calarisseme, Camellia blanc, and odorata. Mr. Hooker also exhibited six seedling varieties, one a light yellow Scotch; another like Village Maid, with the Emperor of Russia, Burgundy, a seedling Moss, and Gallica.—From Messrs. Lee, Nurserymen, of Hammersmith, were several boxes of admirably-arranged flowers, the advantage consisting in arranging each colour in a separate line across the box, instead of in large bunches, and so intermixing the colours that each may enhance by contrast the beauty of its neighbour. The best kinds were Madame Dubarry, Blanchefleur, Glory of France, Sophie de Marcilly, Fimbriata, Lady Sefton, Duke of Devonshire, Fanny Parisot and Leon 10th.—Mr. C. Cobbett, Nurseryman, of Chobham, produced fine blooms of the following:—Fulgens, Victor Hugo, Coutard, Armosa, Duc d'Angoulême, Brennus, La Grandeur, Robin Hood, Painted Damask, Waterloo, William Jesse, Brennus Superb, Comtesse de Lacepede.—Mr. Francis, Nurseryman, of Hertford, and Mr. Bennett, Nurseryman, of Bath, also sent collections of very fine cut Roses.—Among private growers, Mr. Milne, gr. to C. S. Chancey, Esq., had very fine specimens of the following varieties:—Parry, Rivers's Superb Tuscany, Adonis, Yellow Noisette, Glory of France, Sulphurea Superba, Noisette Lamarque, and Eugene Barbot.—Mr. Dobson contributed Beauty of Billiard, Triomphe de Montmorency, Brennus, Queen of the Bourbons, Princesse Lamballe, Glory of France, Coupe de Amour, General Lamarque, and Madame Dauberg.—Mr. Slow had good specimens of Nina, Safrana, Elise Sauvage, Belle Allemande, Silene Reine de Bontem, Mrs. Bosanquet, Queen, and Triomphe du Luxembourg.—Mr. Parsons, gr. to A. George, Esq., sent, among others, Gobault, Melaine, Taglioni, Madame Hardy, Julie Etanges, Las Casas, Brennus, Remarquable, Charles-Louis, Sir W. Scott, Therese Isabelle, Madame Plantier, Noisette Lamarque, Bongere, Kean, and Niphet.—From Mr. Laing, of Twickenham, were Jaune Desprez, Adele Prevost, Lamarque, Deesse de Flora, Ida, Hamon, Aurora, Las Casas, and Triomphe de Lamarque.—Cut Roses were also shown by A. Rowland, Esq.; Mr. Butler, gr. to — Symons, Esq., Norbiton, Surrey; and Mr. Stanley, gr. to H. Berens, Esq., Sidcup, Kent. We regret, however, to state that, in consequence of Mr. S. attending to the packing of his other plants before he went to the Roses, the whole of them were purloined; we doubt not, by persons who, from their appearance, ought to have known better.

As has been before observed, the Exhibition of Fruit was of a very superior description. Mr. Henderson, gr. to Sir George Beaumont, Bart., exhibited, in a collection, some very splendid Black Hamburgh Grapes, very fine Cabul Melons, two Queen Pines, beautifully swelled, and also excellent Peaches and Nectarines. This collection was very excellent, and we should say, taking it altogether, no man ever produced a finer one.—In Mr. Spencer's (gr. to the Marquess of Lansdowne) collection were very fine Providence Pines, tolerable Grapes, good Green-flesh Melons, and four dishes of very fine Peaches and Nectarines.—Mr. Dodds, gr. to Sir George Warrender, Bart., sent some very good Melons, tolerable Pines, Black Hamburgh and Muscat Grapes, and very good Peaches, Nectarines, and Red and White Currants.—Of Pines, four very superior Queens, weighing from 4 lbs. to 5 lbs. each, were shown by Mr. Dodds, gr. to Col. Baker; three fine Queens, but not quite so well swelled as Mr. Dodds's, by Mr. Henderson; two Queens by Mr. Wharton, gr. to Miss Whitehead, Weston, Bath; two Providence, an Enville, and a Queen, by Mr. E. Davies, gr. to A. Smith, Esq; four fine Providence by Mr. Fielder, gr. to W. Linwood, Esq.; and a long but badly swelled Enville from Mr. Gladmore, gr. to J. Berens, Esq., Revington, Kent.—The Bokhara Melon sent by Mr. Henderson was about 12 inches long and 6 inches in diameter, tapering slightly from the middle to each end, and of a dull brownish-green colour.—The Cabul Melon is a yellow slightly-netted kind, not unlike the Kelsing, and three exceedingly well grown ones were sent by Mr. Carson, gr. to F. G. Farmer, Esq.—Another new kind, called the Benares Melon, of large size, was sent by Mr. Carmichael, gr. to Mrs. Hawkins; good specimens of Anderson's Green-flesh Melon, by Mr. Terry, gr. to Lady Pullen; four fine Egyptian Green-flesh, by Mr. Falconer; and some Green-flesh and Putterridge Green-flesh by Mr. R. Fish, gr. to Colonel Sowerby; some indifferent Melons were sent by Mr. E. Davies, and Cuthill's Early Melon by Mr. Wharton.—Some very excellent Royal George Peaches were sent by Mr. Foggo, gr. to the Marquess of Abercorn, at Stanmore Priory; Elruge Nectarines, very fine, by Mr. Henderson; and well-grown Noblesse and Royal George Peaches, and fine well-coloured Nectarines by Mr. Fleming, gr. to the Duke of Sutherland.—Fine Royal George Peaches and red Roman Nectarines were sent by Mr. Mitchell, gr. to Lord Vernon; and very fine but badly coloured Royal George Peaches and Nectarines by Mr. R. Fish.

Of Grapes there were scarcely any bad ones; but the Black Hamburghs shown by Mr. Henderson, and the Black Hamburgh and white Frontignan by Mr. Thompson, gr. to Sir J. L. Goldsmid, Bart., left nothing to be wished for; they were large bunches, large berries, well-coloured, and perfectly ripened.—Mr. Frost, gr. to Lady Grenville, also produced fine bunches of Black Prince, White Muscat of Alexandria, and Black Hamburgh; but the last were rather deficient of colour, and the Muscats were not quite ripe.—Mr. Parsons, gr. to A. George, Esq., had some well-coloured and ripened Black Hamburgh and Muscadines, and Mr. Dodds, gr. to Sir G. Warrender, had also some fine Black Hamburgs.—Mr. Fielder, gr. to W. Linwood, Esq., sent some good Black Hamburghs, but those belonging to Mr. Atlee, gr. to H. Beaufoy, Esq., Mr. J. Fish, gr. to H. H. Oddie, and Mr. Gadd, of Betchworth, though fine, were not, as compared with others, quite sufficiently coloured.—Mr. Mitchell, of Brighton, sent fine Black Hamburghs, but those from Mr. Wilmot, of Isleworth, were not well-coloured, and not near ripe.—Fine Keen's Seedling and British Queen Strawberries were sent by Mr. Ledgard, of Bathenston, and good Keen's Seedling by Mr. R. Fish and Mr. Elliot, gr. to J. Boothby, Esq.—A plate of Apples was produced by Mr. J. Fish, and a Cucumber, by no means remarkable for June, by Mr. Mills, of Gunnersbury.

The Pelargoniums contributed more than their usual share to the gaiety of the Exhibition, and the crowded state during the day of the seedling and exhibition tents, bore evidence of the increasing popularity of this delightful flower. There were three competitors for the Gold Medal in the Amateurs' Class of 12 new and first-rate varieties, in pots of 24 to the case; the first Prize was awarded to Mr. Cock, of Chiswick, for the following 12 plants, produced with his accustomed skill:—Paragon, Sir R. Peel, Eclipse, Emma, Hebe, Queen of the Fairies, Black Dwarf, Erectum, Sarah, Garth's Queen Philippa, Unit, and Maid of Honour.—Mr. Dobson, gr. to Mr. E. Beck, received the Silver Gilt Medal, being the second Prize for the following finely cultivated flowers, grown in slate pots, corresponding in size to 24s.:—Majestic, Matilda, Queen of Fairies, Bella, Leonora, Martha, Sarjeant, Flora, Angiola, Conflagration, Sir R. Peel, Susanna.—The third Prize, being the large Silver Medal, was awarded to Mr. Coysh, gr. to R. Hudson, Esq., Clapham; this collection consisted of the following varieties:—Beauty, Nymph, Prince Albert, Comte de Paris, Venus, Sylph, Erectum, Lord Mayor, Phillis, Priory Queen, Matilda, Madeleine.—In the Nurserymens' Class the only exhibitors were Mr. Gaines and Mr.

Catleugh; the Gold Banksian was awarded to the collection of the former, which contained the following sorts:—Queen of Beauties, Oberon, Coronation Superb, Beauty Supreme, Witch, Orange Perfection, Pirate, Clio, Rising Sun, Princeps, Hermione, and Princess Royal. 2d Prize, Silver Gilt Medal, was awarded to Mr. Catleugh, his collection comprising Conflagration, Luna, Sultana, Flash, Paragon, Emma, Taglioni, Madeleine, Maid of Honour, Sarah, Laura.—There were three competitors in the Amateur's Class of twelve varieties, in pots of 12 to the cast. The Silver Gilt Medal in this class was awarded to Mr. J. Parker, gr. to J. H. Oughton, Esq. This collection comprised 12 very finely cultivated varieties, uniform in size, and in perfect health—Victory, Ovid, Rienzi, Jubilee, Rosalind, Annette, Evadne, Priory Queen, Arabella, Erebus, Lord Mayor, and Comte de Paris.—The large Silver Medal was awarded to Mr. Cock for the following well-selected sorts:—Hector, Sultana, Queen of Faries, Wizard, Symmetry, Hebe, Constellation, Paragon, Rising Sun, Rachel, Nestor, and Lord of the Isles.—3d, Silver Knightian to Mr. W. Bromley, gr. to — Anderdon, Hammersmith, for Annette, Sylph, Grand Duke, Priory Queen, Exquisite, Una, Victory, Erectum, Piba, Leila Jones, Clarissa, and Coronation.—In the Nurserymen's Class, the contest again lay between Mr. Gaines and Mr. Catleugh, the former taking the 1st Prize, Silver Gilt Medal, for Juba, Albina, Lifeguardsman, Lady Cotton Shepherd, Pride of Surrey, Mabel, Arabella, Gem of the West, Priory Queen, Lady Sale, Madeleine, Alba Perfecta. Mr. Catleugh's flowers were Dido, Luna, Nestor, Selina, Hannah, Priory Queen, Madeleine, Lord Mayor, Comte de Paris, Hebe, Amulet, and Witch.—The Silver Banksian was awarded to Mr. Bourne, gr. to Sir E. Paget, for 6 varieties in pots of 8 to the cast—Lifeguardsman, Matilda, Erectum, Victory, Nymph, Madonna.

The CALCEOLARIAS exhibited this year have not been equal to those of former seasons, either in the goodness of the sorts or in their cultivation. The Amateurs', which were decidedly the best, were from Mr. Stanley, gr. to H. Berens, Esq.; to these the Large Silver was awarded; the sorts were Jewess, Magnifica, Gipsy, Auro maculata, Duke of Cornwall, and Vivid.—The Nurseryman's collection was from Mr. Gaines, and contained Candidate, Lady Elcho, Magnet, Mabel, Sunbeam, and Tigrina.

Two collections of FUCHSIAS were exhibited for competition; both were under fine cultivation. Mr. Gaines obtained the large Silver Medal for his collection, which contained the best-selected sorts which have yet appeared—Decora, Robusta, Conspicua arborea, Alata, Curtisii, Majestica, Gem, Venus Victrix, Iveryana, Victory, Excelsa, and Pulcherrima. The other collection was from Mr. R. Laing, of Twickenham, and received the Silver Knightian Medal; the following sorts comprised this collection—Stanwelliana, Arborea, Insignis, Fulgens, Multiflora, Majestica, Robusta, Lanei, Paragon, Moneypennii, Elegans superba, and Venus Victrix.

A superb collection of RANUNCULUSES was exhibited by Messrs. Tyso and Son, of Wallingford; these flowers attracted much attention, from their extreme delicacy and beauty; and, considering the unpropitious season we have had, it must have required great skill and unceasing attention to have produced such fine blooms; the collection contained Temeraire, Candale, Tippoo Saib, Kilgour's Queen Victoria, Princess Royal, Dr. Neill, Coronation, Marquess of Hertford, Ximenes, Queen Victoria, Bon Financier, &c., with the following fine seedlings raised by Messrs. Tyso and Son—Felix, Edgar Gippius, Grand Romana, Albinus, Herbert, Virginia, Attractor, Dictator, Raphael, Amasis, Jubal, Delectus, Champion, Falcidia, Eureka, Alexis, Comptroller, Tubal, Basilica, Grandis, Adolphus, Phyllis, Silverton, Innocent, Ada Cathcart, Arcadia, Solon.

The PINKS were good for the season; the collection to which the Silver Knightian Medal was awarded, was from Messrs. Norman, of Woolwich, and contained the following sorts:—Cousin's Queen of the Isles, Creed's Henry Creed, Willmer's Queen Victoria, Young John, Eclipse, Hodges' Gem, Lady Flora Hastings, Melona, Flora, Willmer's Prince of Wales, Cousins's Little Wonder, Creed's President, Majestic, Unsworth's Omega, Duke of Northumberland, Garrat's Alpha, Bunkell's Lord Brougham, Norman's William, Triumphant, Queen of Roses, W. Cobbett, Gay Lad, Creed's Miss Creed.

Seedling Calceolarias were exhibited, but none sufficiently distinct to be selected for prizes. A tray of seedling Pelargoniums from Mr. Hoyle, of Guernsey, contained some curious varieties. Cut bloom were also shown by Mr. Pamplin, of Walthamstow, and from Messrs. Lucombe and Pince. Many seedlings of great merit were exhibited: those selected by the judges were as follow:—*Sir J. Broughton*, a well-formed, compact, but rather small flower; colours high and fine; blotch on the upper petals dark and fine, gradating to the edge, which is of a bright crimson-rose; it has a small white centre, with rich purple crimson under petals. *Exactum*, good cupped flower resembling the former, but larger, and a few degrees lighter in colour; these two flowers were exhibited by Mr. Whomes, gr. to E. Foster, Esq., Clewer Manor. *Titus*, from Mr. Hoyle, of Guernsey, a well-formed flower, rosy under petals with light centre; dark rich velvety upper petals, with a distinct margin of bright rosy-carmine. *Desdemona*, Mr. Dobson, gr. to Mr. E. Beck, a fine full-sized flower of good form; under petals tinged with delicate pink; upper petals, large, stout, and of a velvety texture, of a rich maroon colour, which runs to the base of the petal, and also leaves a distinct margin of delicate rose-colour round the petals.

The following is the order in which the Exhibitors were placed by the judges:—

PELARGONIUMS, new varieties, in 24s.—*Amateurs*: 1, Cock; 2, Dobson; 3, Coysh. *Nurserymen*: 1, Gaines; 2, Catleugh.

PELARGONIUMS, in 12s.—*Amateurs*: 1, Parker; 2, Cock; 3, Bromley. *Nurserymen*: 1, Gaines; 2, Catleugh.

PELARGONIUMS in 8s.—*Amateurs*: 1, Bowen.

CALCEOLARIAS, in 12s.—*Amateurs*: 1, Stanley. *Nurserymen*: 1, Gaines.

PINKS, in 24 distinct varieties.—*Nurserymen*: 1, Norman; 2, Ward.

FUCHSIAS—*Nurserymen*: 1, Gaines; 2, Laing.

STOVE AND GREENHOUSE PLANTS, large collection.—1, Robertson.

STOVE AND GREENHOUSE PLANTS, in collections of 15.—1, Green.

STOVE AND GREENHOUSE CLIMBERS.—1, Robertson.

CAPE HEATHS, 20 varieties.—*Amateurs*: 1, Robertson. *Nurserymen*: 1, Jackson; 2, Rollisson.

CAPE HEATHS, 6 varieties.—*Amateurs*: 1, Green. *Nurserymen*: 1, Dawson.

TALL CACTI.—*Amateurs*: 1, Robertson; 2, Falconer; 3, Green; 4, Redding.

ROSES IN POTS.—*Amateurs*: 1, Dobson; 2, Rowlands. *Nurserymen*: 1, Lane; 2, Paul; 3, Cobbett.

MOSS ROSES in bunches of 12 varieties.—*Amateurs*: 1, Milne. *Nurserymen*: 1, Rivers; 2, Lane; 3, Cobbett.

OTHER ROSES in bunches of 50 varieties.—*Amateurs*: 1, Milne; 2, Parsons; 3, Slowe; 4, Rowland. *Nurserymen*: 1, Rivers; 2, Paul; 3, Cobbett & Lane; 4, Hooker & Laing.

OTHER ROSES in bunches of 25 varieties.—*Amateurs*: 1, Buttery; 2, Dobson & Bennett; 3, Stanly. *Nurserymen*: 1, Francis.

EXOTIC ORCHIDACEÆ, large collections.—1, Mylam; 2, Robertson.

ORCHIDACEÆ, in collections of 6.—1, Redding; 2, Rollisson; 3, Don.

EXOTIC ORCHIDACEÆ, single specimens.—1, Veitch; 2, Falconer & Carson.

SEEDLING FLORISTS' FLOWERS.—Whomes, Hoyle, and Beck.

MISCELLANEOUS SUBJECTS.—1, Robertson, Lucombe & Co., Storey, Tyso & Sons; 2, Falconer, Dobson, Green, Catleugh, Roberts, Jackson; 3, Mountjoy, Roberts, Green, Jackson.

FRUIT, large collections.—*Amateurs*: 1, Henderson; 2, Spencer; 3, Dodds. *Nurserymen*: 1, Mitchell; 2, Wilmot.

PINE APPLES.—1, Dodds; 2, Henderson & Wharton; 3, Davis; 4, Fielder & Malpas.

PEACHES OR NECTARINES, 6 specimens.—1, Henderson, Fleming, and Monk; 2, Fish & Fleming.

MISCELLANEOUS FRUIT.—1, Terry; 2, Carmichael; 3, Lidyard.

NEW ORNAMENTAL PLANTS.—1, Ingram & Loddiges; 2, Glendinning; 3, Lucombe, Glendinning, and Smith; 4, Ayres; 5, Jackson.

BEST-NAMED COLLECTIONS.—1, Robertson; 2, Rollisson; 3, Mylam.

ARRANGEMENT OF ROSES.—Lee.

The following is the value of the Prizes gained by each exhibitor:—

	£	s.	d.
Ayres, S.B., 1*l.*	1	0	0
Beck, C., 10*s.*	0	10	0
Bennett, S.B., 1*l.*	1	0	0
Bowen, S.B., 1*l.*	1	0	0
Brazier, S.K., 1*l.* 5*s.*	1	5	0
Bromley, S.K., 1*l.* 5*s.*	1	5	0
Buttery, S.K., 1*l.* 5*s.*	1	5	0
Carmichael, S.B., 1*l.*	1	0	0
Carson, L.S., 1*l.* 15*s.*	1	15	0
Catleugh, S.G., 4*l.*; L.S., 1*l.* 15*s.*; S.B., 1*l.*	6	15	0
Cobbett, L.S., 1*l.* 15*s.*; S.B., 1*l.*, C. 10*s.*	3	5	0
Cock, G.B., 7*l.*; L.S. 1*l.* 15*s.*	8	15	0
Coysh, L.S., 1*l.* 15*s.*	1	15	0
Davies, S.K., 1*l.* 5*s.*	1	5	0
Dawson, L.S., 1*l.* 15*s.*	1	15	0
Dobson, G.B., 7*l.*; S.G., 4*l.*; 2 S.B., 2*l.*	13	0	0
Dodds, L.S., 1*l.* 15*s.*; S.B., 1*l.*	2	15	0
Dodds, S.G., 4*l.*	4	0	0
Don, S.G., 4*l.*	4	0	0
Falconer, S.G., 4*l.*; L.S., 1*l.* 15*s.*, S.B., 1*l.*	6	15	0
Fielder, S.B., 1*l.*	1	0	0
Fish, S.B., 1*l.*	1	0	0
Fleming, S.K., 1*l.* 5*s.*; S.B., 1*l.*	2	5	0
Foggo, S.K., 1*l.* 5*s.*	1	5	0
Frances, S.B., 1*l.*	1	0	0
Frost, L.S., 1*l.* 15*s.*	1	15	0
Gaines, G.B., 7*l.*; S.G., 4*l.*; L.S., 1*l.* 15*s.*; S.K., 1*l.* 5*s.*	14	0	0
Glendinning, L.S., 1*l.* 15*s.*; S.K., 1*l.* 5*s.*	3	0	0
Green, S.G., 4*l.*; 2 L.S., 3*l.* 10*s.*; 2 S.B., 2*l.*; 2 C., 1*l.*	10	10	0
Henderson, G.K., 10*l.*; S.G., 4*l.*, L.S., 1*l.* 15*s.*; S.K., 1*l.* 5*s.*	17	0	0
Hooker, C., 10*s.*	0	10	0
Hoyle, C., 10*s.*	0	10	0
Ingram, S.G., 4*l.*	4	0	0
Jackson, G.B., 7*l.*; S.B., 1*l.*; 2 C., 1*l.*	9	0	0
Laing, S.K., 1*l.* 5*s.*; C., 10*s.*	£1	15	0
Lane, G.B., 7*l.*; 2 S.B., 2*l.*	9	0	0
Lee, S.K., 1*l.* 5*s.*, C., 10*s.*	1	15	0
Loddiges, S G., 4*l.*	1	0	0
Lucombe and Pince, 2 S.K., 2*l.* 10*s.*	2	10	0
Lidyard, S.B., 1*l.*	1	0	0
Malpas, C., 10*s.*	0	10	0
Milne, L.S., 1*l.* 15*s.*; S.K., 1*l.* 5*s.*	3	0	0
Mitchell, L.S., 1*l.* 15*s.*	1	15	0
Mountjoy & Son, C., 10*s.*	0	10	0
Mylam, L.G., 20*l.*, C., 10*s.*	20	10	0
Norman, S.K., 1*l.* 5*s.*	1	5	0
Parker, S G., 4*l.*	4	0	0
Parsons, 2 S.K., 2*l.* 10*s.*	2	10	0
Paul and Son, S G., 4*l.*; S.K., 1*l.* 5*s.*	5	5	0
Redding, G.K., 10*l.*; S.B., 1*l.*	11	0	0
Rivers, L.S., 1*l.* 15*s.*; S.K., 1*l.* 5*s.*	3	0	0
Robertson, 2 G.K., 20*l.*, 2 G.B., 14*l.*; S.G., 4*l.*; 3 S.K., 3*l.* 15*s.*; S.B., 1*l.*; 2 C., 1*l.*	43	15	0
Rollisson, G.B., 7*l.*; L.G., 4*l.*; S.B., 1*l.*	12	0	0
Rowland, L.S., 1*l.* 15*s.*; C., 10*s.*	2	5	0
Slowe, S.B., 1*l.*	1	0	0
Smith, S.K., 1*l.* 5*s.*	1	5	0
Spencer, G B., 7*l.*	7	0	0
Stanley, L.S., 1*l.* 15*s.*; C., 10*s.*	2	5	0
Terry, S.K., 1*l.* 5*s.*	1	5	0
Thompson, S.G., 4*l.*	4	0	0
Tyso and Son, S.K., 1*l.* 5*s.*	1	5	0
Veitch, S.G., 4*l.*	4	0	0
Ward, S.B., 1*l.*	1	0	0
Wharton, L.S., 1*l.* 15*s.*	1	15	0
Whomes, 2 C., 1*l.*	1	0	0
Wilmot, S.B., 1*l.*	1	0	0
	£288	15	0

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

June 18.—The second meeting for the season took place in the Surrey Zoological Gardens. The Exhibition was in no degree remarkable. On looking over some of the collections we could scarcely discover a well-grown specimen. Others, however, contained objects that were well deserving of notice. In the collection by Mr. Bruce, of Tooting, were some exceedingly well-managed plants, including a beautiful large specimen of Aphelexis humilis covered with blossoms; a well cultivated Erica tricolor, a small but good Leschenaultia biloba, producing pretty azure flowers in abundance, and a fine specimen of Cactus Jenkinsonii covered with bloom; together with a large Ixora coccinea, and a beautiful small Cactus Ackermanni having very large flowers.—A group by Mr. Atlee, gr. to H. Beaufoy, Esq., although inferior to these, comprised some good plants; among which was Pimelea decussata, a large Boronia denticulata, Cereus speciosissimus, in fine bloom, and a well-managed Boronia denticulata; for these a Gold Medal was awarded. The 2d Prize was given to Mr. Hamp, for Gloxinia candida, a tall plant of Erythrina crista-galli; an Amaryllis, and a good Aphelexis humilis.—Among Nurserymen, the best Collection of Miscellaneous Plants was shown by Mr. Fairbairn, who produced a beautiful Leschenaultia formosa, a scarlet Pelargonium, and small but nicely cultivated specimens of Heaths.—A large Silver Medal was awarded to Mr. Dawson, of Brixton-hill, for 12 varieties of Heaths, including the lovely E. propendens, a small but well-grown E. depressa, a large E. Massoni in fine health, and E. Coventryana, with small pink blossoms.—Of single specimens, Mr. Bruce obtained the first Prize for a beautiful plant of Aphelexis humilis, in profuse bloom. He was also awarded a large Silver Medal for the best 6 Specimen Plants, among which was Pentas carnea in good condition.—The 2d was awarded to G. F. Cox, Esq., of Stockwell, for a specimen of the beautiful Cattleya Mossiæ. Mr. Cox also obtained the 1st Prize for a collection of Orchidaceæ, in which was Vanda Roxburghi, the white variety of Gongora maculata, and a good Stanhopea oculata, having a fine spike of flowers.—The 2d was awarded to Mr. Schroder for Stanhopea insignis, Vanda cristata, and some others.—Mr. Wood contributed a collection of named Alpines. The display of Cut Flowers was particularly fine; the Roses were admirable. Among Amateurs, Mr. Seldon got the 1st Prize for Roses; the 2d was awarded to Mr. Edwards.—In Cut Flowers, Mr. Schroder was first.—Among Gentlemen's Gardeners, Mr. Bruce obtained the 1st Prize, and Mr. Parsons was 2d.—In the Nurserymen's Class, Messrs. Paul and Son got a large Silver Medal for Roses. The award for the best Cut Flowers was given to Mr. Chapman. Mr. Denyer's Prize to Amateurs for 12 trusses of Roses was awarded to Mr. Hunt and Mr. Parsons.

PELARGONIUMS:—*Amateurs:* The Gold Medal was awarded to Mr. Edmonds, for the following 6 varieties—Orange Boven, Comte de Paris, Priory Queen, Joan of Arc, Erectum, and Hebe. These specimens were admirably grown, the plants were in perfect health, and covered with bloom. In this class there was no competition.—Mr. Edmonds also received the Middle Silver Medal for the best 6 varieties of Calceolarias; the sorts were Lady of the Lake, Lady Constable, Competition, Glow-worm, Gazelle, and a seedling.—*Gentlemen's Gardeners:* Collections of 8 varieties: Large Silver Medal, Mr. Bourne, gr. to Sir E. Paget; this collection consisted of Sylph, Nymph, Matilda, Comte de Paris, Victory, Chelsea Pensioner, Diana and Erectum. Mid. Silv. Medal, Mr. Welch, gr. to—we could not learn whom—for Reward, Nymph, Victory, Joan of Arc, Lifeguardsman, Jubilee, Storey's Seedling, and Bridegroom.—*Nurserymen and Florists:* 12 varieties: 1st Prize, Gold Medal. This prize was awarded to Mr. Gaines, for 12 magnificent specimens, in perfect health, and covered with a profusion of bloom; the sorts were, Arabella, Priory Queen, Albina, Gem of the West, Lady Isabella Douglas, Mabel, Comte de Paris, Lady Cotton Shepherd, Erectum, Juba, Lifeguardsman, and Album perfectum. 2d Prize: the Large Silver Medal was obtained by Mr. Catleugh, for Nestor, Amulet, Madeline, Hannah, Lord Mayor, Duchess of Sutherland, Witch, Priory Queen, Comte de Paris, Hebe, and Maid of Honour. For PINKS, the 1st Prize (Small Silver Medal), was voted to Mr. Smith.—*Nurserymen:* The 1st Prize (Mid. Silv. Medal), was awarded to Mr. Norman, Bull's Field, Woolwich; and the collection from Mr. Henbrey, was recommended for a prize.

A splendid stand of RANUNCULUSES was exhibited by Messrs. Tyso and Son, to which the Middle Silver Medal was awarded; the sorts exhibited were the following—Marquess of Hertford, Kilgour's Princess Royal, Grandis, Romana, Temeraire, Tippoo Saib, Sabina, Queen Victoria, and the following seedlings, raised by Messrs. Tyso and Son—Imbert, Felix, Edgar, Dr. Horner, Virginia, Ximenes, Silverton, Comptroller, Delectus, Adolphus, Albinus, Boz, Basilica, Attractor, and a fine seedling not named.—1st Prize, Large Silver, Mr. Dawler, 12 varieties, in bunches.

A collection of FUCHSIAS from Mr. Robinson was recommended for a prize; and also another good collection from Mr. Pawsey, of Tulse Hill. Extra Prizes, offered by Mr. R. J. Chapman for the best and second best stand of 24 HEARTSEASE: 1st, Middle Silver Medal, Mr. Hunt; 2d, Small do., Mr. Edmonds.

PANSIES, in 24 varieties.—1st Prize, Mr. Edmonds; 2d Prize (Middle Silver), Mr. Hunt; 3d Prize (Small Silver), Mr. Bridges. Pansies, in 36 varieties, 1st Prize (Middle Silver Medal), to Mr. King, of Iver; 2d Prize (Small Silver), to Mr. Agate, of Croydon. Collections were also exhibited by Mr. Buxton, Wandsworth; Mr. Cook, Longwick; and Mr. Henbrey, of Croydon.

CALCEOLARIAS:—*Gentlemen's Gardeners:* Mr. Welch (Middle Silver Medal): this collection, which was well-grown, had no names attached. A collection of Mimuli, was exhibited by Mr. Wyness; many of the sorts having richly-coloured centres, were very handsome.—*Nurserymen:* Calceolarias in collections of 12 pots: 1st Prize, Mr. Gaines, whose collection consisted of Candidate, Mabel, Black Prince, Cyrus, Tigrina, Sultan, Aurea, Sunbeam, Attila, Lady Sale, Formosa, Queen.

SEEDLINGS:—A Prize was awarded to Mr. Henbery, of Croydon, for a pink named *Beauty*, a handsome variety, very beautifully and perfectly laced. A Prize was also awarded to Mr. Cook, of Longwick, for a Pansy named *Ariadne*, a handsome flower; and another variety named Prince Albert, was also recommended.

FRUITS AND VEGETABLES.—For the best collection of Fruits, Middle Silver Medal, Mr. Kay; 2, Mr. Atlee. For a basket of Black Hamburgh Grapes, Middle Silver Medal, Mr. Flicker. For the best collection of Vegetables, Middle Silver Medal, Mr. Martin; 2, Mr. J. Gaines. Mr. Cuthill produced good specimens of his Black spine Cucumber.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

May 17.—The Spring Meeting was held at the Experimental Garden, Inverleith; the day was unfortunately one of the most inclement of the season. For the four finest Shrubby Plants, the Silver Medal was voted to Mr. J. Young, gr. to T. Oliver, Esq., for Chorozema varium, Kennedya glabrata, Elichrysum elegans, and Boronia serrulata; 2, Mr. P. Crocket, gr. to Colonel Ferguson, for Pimelea decussata, Chorozema Henchmanni, Euphorbia splendens, and Franciscea Hopeana. For the finest Rhododendron, the Medal was awarded to Mr. P. Thomson, gr. to W. E. H. Vere, Esq., for R. splendidum var., richly clothed with flowers. For the two newest Fuchsias of merit, the medal was voted to Mr. J. Macdonald, gr. to Sir J. G. Craig, Bart., for F. Brookmannii and Eppsii; 2, Mr. Young, for F. Venus victrix and magnifica. For four Cape Heaths, the Medal was assigned to Mr. D. Foulis, gr. to J. Tytler, Esq., for Erica ventricosa alba, aristata, Beaumontia, and suaveolens; 2, Mr. G. Stirling, gr. to Lord Viscount Melville, for E. elegans, ovata, perspicua, and Willmoreana. The display of tender Herbaceous Exotics in pots was not great, the piercing east wind and violent hail showers having prevented gardeners from sending stove plants. An award was made to Mr. Young, for Amaryllis formosissima, Cineraria Youngii, Cineraria named Enchantress, and Tropæolum tricolorum. For Chinese Azaleas, the Medal was assigned to Mr. J. Reid, gr. to Professor Syme, for A. lateritia and variegata; 2, Mr. Crocket, for A. indica alba and Addisonii. For the best Tropæolum tricolorum, the Medal was awarded to Mr. W. Findlay, gr. to F. B. Douglas, Esq., for a specimen trained in the pillar form to the height of eight feet; 2, Mr. Reid, for one in the conical shape; and 3, Mr. R. Foulis, gr. to Admiral Sir P. C. H. Durham, for one trained in the halberd form. There was but a small display of stage Auriculas, the principal bloom being over. For one good collection, however, a premium was assigned to Mr. Thomson; the kinds being—of the white-edged, Sir William Wallace and Hugh's Pillar of Beauty; green-edged, Lord Nelson and Prince Blucher; gray-edged, Gain's Privateer and Chalcot's Brilliant. For two Cacti in flower, the Medal was awarded to Mr. John Macnaughten, gr. to J. Wauchope, Esq., for Cereus speciosissimus and Epiphyllum Jenkinsoni; 2, Mr. J. Gow, gr. to Count Flahault, for Epiphyllum speciosum and Jenkinsoni. An extra award was made to Mr. J. Thomson, gr to Dr. Neill, for Trichophlia tortilis and Dendrobium densiflorum. To Mr. J. Blair, gr. to the Earl of Rosslyn, an extra Medal was voted for an uncommonly rich series of flowers of Rhododendron, consisting of 30 distinct kinds, all of them beautiful, and several of them fine seedling hybrids of the damask sort, raised at Dysart Garden. Another extra Medal was voted to I. Anderson, Esq., for a choice collection of 30 new Seedling Calceolarias raised by himself, several of them of handsome shape and curiously marked, particularly those named Queen Victoria, Mrs. Syme, Sir Geo. Murray, Hon. Mrs. Peter Ramsay, Marquis of Bute, and Hon. Mrs. Norton. Messrs. Dickson and Co., Leith Walk, had likewise a Medal awarded to them, for an excellent collection of Calceolarias, including some fine Seedlings lately raised by them, particularly those marked Dickson's Sir Walter Scott and Competitor, Shankie's Ne plus Ultra and Leith Walk Beauty, Richardson's Eclipse, and Scott's Gem. They sent for exhibition, also, several beautiful exotics, especially Ixora coccinea, Epacris grandiflora, and Tetranema mexicanum, with a selection of fine Cape Heaths in flower. Another extra medal was voted to Messrs. J. Dickson and Sons, Inverleith, for a fine collection of exotic plants, including a fine Seedling Fuchsia, called Edina, a noble specimen of Erica florida campanulata, and a remarkable Leschenaultia biloba, measuring about 5ft. in circumference around the branches, and covered with its azure flowers. An honorary award was made to Messrs. Cartstairs, Kelly, and Co., florists at Warriston, who exhibited a remarkably tall plant of Cereus speciosissimus in flower, with a beautiful Seedling Cineraria, marked C. Warristoniana. A large basket filled with flowering Alpine plants in pots attracted much attention, several of the plants being rare, such as Ajuga pyramidalis, Viola amœna, Galium grœcum, &c. For this an extra award was made to Mr. Stirling, Melville Castle. A large box filled with succulent plants in pots, consisting of many genera and species, likewise excited a good deal of interest. It was from Corstorphine-hill garden; another extra premium for it was voted to Mr. J. Thomson, gr. to W. Keith, Esq. The display of Pansies, both named flowers and seedlings, was exceedingly rich. For a stand of 40 named Pansies, 20 being fine seedlings raised at Golden Acre, an award was made to Messrs. P. Lawson and Sons, as a mark of approbation. Mr. Alexander Forrester, gr. to Captain Falconar, of Carlowrie, sent cut specimens of a number of curious border flowers, a collection of Tulips, and a seedling Dodecatheon of merit, earlier and much larger than the ordinary sort, raised at Carlowrie, from a seed of the white variety; and for this last a premium was voted. A number of other articles were marked as sent for exhibition only. A specimen of Oncidium Papilio, from the hot-house of Mrs. Robert Haig, View Park, attracted the attention of every one, from its striking resemblance to a large butterfly or moth perched on the top of a wand, the flower-stem being long and without leaves. A specimen of Echium giganteum, 6 feet high, and exhibiting numerous gorgeous flower-spikes, and a new and fine stove plant, called Justicia carnea major, were from the Royal Botanic Garden, and much admired. Professor Dunbar sent, from Rose Park, a collection of the genera Erica and Epacris, and a fine plant in full bloom, of Camellia Gussonii; Sir J. W. Drummond, from Hawthornden, a general collection of green-house plants; Miss Broughton, from Rossend Castle, a splendid specimen of Epiphyllum Ackermanni; Thomas Oliver, Esq., from Newington Lodge, excellent collections of Tulips, Pansies, Anemones, and Pelargoniums; Messrs. Purdie and Meriless, Stanwell Lodge, beautiful Cape Heaths and Calceolarias; General Robertson, Canaan Bank, two admirably grown specimens of Calceolaria Standishii; James Adam, Esq., some very large double white Stocks. In the Hall were placed some very choice plants from the Society's own garden; particularly Statice macrophylla in flower, and a double-flowering variety of Ribes sanguineum, which bids fair to become a desirable acquisition to the shrubbery, the flowers coming later and continuing much longer in perfection.

The only culinary article exhibited this day consisted of remarkably large stalks of the Victoria Rhubarb, raised by Mr. David Carstairs, Leith Walk. To interest the agriculturist, there was a variety of Indian wheat in full ear, sent by Mr. Macnaughton from Edmonstone garden; the seed having been sown in a large pot in the greenhouse on 26th January, seedlings potted off on 26th February, planted out in the open border in March, and in flower early in May.

June 6.—This was the Florists' Flower Competition. Calceolarias, Pelargoniums, and Pansies, were particularly fine. On this occasion were offered two prizes of two guineas each, to be competed for by practical gardeners only—the one from Messrs. Dickson and Co., Leith Walk, for Calceolarias, and the other from Messrs. J. Dickson and Sons, Inverleith, for Pelargoniums. For the former, viz., the six finest varieties of Calceolaria, four competitors appeared; the prize was adjudged to Mr. J. Young, gr. to Mrs. H. N. Ferguson, of Archerfield, the kinds being named Duchess of Buccleuch, Prince of Wales, Hebe, Lady Constable, Yellow Craig, and Auldbattle; the last two were seedlings raised at Archerfield. In consequence of the near approach, in point of excellence, of another collection, sent by Mr. J. Young, gr. to T. Oliver, Esq., Newington Lodge, the committee thought it proper that an extra premium should be given for it, the flowers being Lady Constable, Standishii, Duchess of Buccleuch, Henrietta, Prince of Denmark, and Miss Mary Douglas, the last two being seedlings of 1843, raised at Newington Lodge.—For Pelargoniums there were likewise four competitors, all producing beautiful specimens. The principal prize was again found due to Mr. Young, Archerfield, the flowers being Grand Monarque, Fair Maid of Devon, Caroline, Florence, Flash, and Black Dwarf. Two of the other collections were so good that the committee deemed it proper to make extra awards for them—first, to Mr. A. Cossar, gr. to Lady Hay, for Constellation, Armyntor, Comte de Paris, Sapphire, Cleopatra, and Diana; and next, to Mr. P. Thomson, gr. to W. E. H. Vere, Esq, for Erectum, Flash, Queen of the Fairies, Fair Maid of Devon, Rising Sun, and Nymph.—For the prize offered for Pansies six competitors came forward; but two very fine collections were set aside and excluded, on account of the regulations not having been properly complied with. The Silver Medal was awarded to A. Symington, Esq., for seedlings wholly of his own raising, and named as follows:—Mrs. Boyle, Miss Millar, Miss Thomson, Miss Patterson, Miss Hutchison, Jane, Miss Duncan, Miss Harriet Thomson, Miss Landale, Miss Skinner, Margaret, Anne, Miss Baukes, Agnes, Mrs. James M'Nab, Mrs. Mackenzie, Miss Taylor, Lord Morpeth, Miss Fraser, Marquess of Lansdowne, Miss Fleming, Miss Logan, Christina, and Miss Neill. The committee made two extra awards—one to Mr. J. Downie, gr. to General Robertson, and the other to Mr. J. Bulloch, gr. to Mrs. Crooks.—For Stocks, three red and three white, there were six competitors, forming together an admirable display of this fine flower. The Medal was voted to Mr. H. Gibb, gr. to Mrs. Stark; and a second premium to Mr. J. Lyall, gr. to Sir J. Hope, Bart.—For Rockets, the prize was assigned to Mr. Young, for French white, double purple, and double white.—For six hardy herbaceous perennial plants there were three competitors, and two premiums were given—the first to Mr. G. Stirling, gr. to Lord Viscount Melville, for Salvia lanata, Dracocephalum palmatum, Thermopsis fabaces, Anemone sulphurea, Lilium auranticacum var. bulbiferum, and Lilium monadelphum; and the next to Mr. J. Addison, gr. to the Earl of Wemyss, for Lupinus grandiflorus, Dodecatheon Meadia elegans, and albiflorum, Czackia lilnastrum, Aquilegia glandulosa, and Gladiolus byzantinus.—For tropical Orchidaceæ a Medal was voted to Mr. R. Haig; the plants were Stanhopea oculata, Oncidium flexuosum, and Oncidium papilio.—Extra awards were made to Mr. D. Christie, gr. to Col. Campbell, for producing small potted plants of Chrysanthemum sinense in full flower at this season of the year, the usual time of blooming being Nov.; and to Mr. Stirling, for exhibiting a large tray filled with exotic Alpines, and another with British Alpines, all the plants being in flower, and several of them of great beauty and extreme rarity in cultivation. Few vegetables were produced on this occasion.—A premium was voted to Mr. Addison, for fine samples of the Onion of Nocera, a new sort brought from the Continent last year by Mr. Lawson. It resembles the silver-skinned, is well flavoured, and excellently adapted for pickling; and it was mentioned by Mr. Addison, that while many Straburgh and Portugal Onions, sown at the same time, in August, 1843, had new run to seed, not one of the Nocera Onion had done so. Another premium was given to Mr. A. Lauder, market gardener, for large heads of a new white Broccoli, remarkable for its lateness, and desirable for this quality, being thus calculated to supply the table till Cauliflower is common. Many plants and cut flowers were sent for exhibition only, both the pavilion on the lawn and the elegant new hall being completely filled. The most extensive contributors were the nurserymen and florists of Edinburgh, particularly Messrs. Dickson & Co., who, in addition to a fine show of Pelargoniums, Calceolarias, and Cape Heaths, produced a flowering specimen of Tropæolum edule, a kind of Indian Cress, lately introduced from Chili, having finely divided glaucous foliage and rather large orange blossoms; Messrs. J. Dickson and Sons made a similar fine display of Pelargoniums, Calceolarias, and Heaths, along with a specimen of Gloxinia (or Gesnera) tubiflora, four feet high; Messrs. Lawson, in addition to a choice collection of Pansies, sent a plant of Clerodendrum Kæmpferi, coming into flower; Messrs. Carstairs and Kelly, besides select Pelargoniums and Heaths, exhibited some admirably grown specimens of Saxifraga pyramidalis; and Messrs. T. and W. Handasyde, sent a choice collection of Pansies, and nine different species of herbaceous Irises in flower.—Exotic plants in pots were exhibited from the collections of Mr. Keith, Mr. Henderson, and Dr. Neill; and rare cut flowers from the garden of Captain Falconar.—Beautiful Tulips were shown by Mr. Hutchison and Mr. Gilmour.—A fine display of Calceolarias by Mr. Anderson, Maryfield, being hybrid variations raised by himself, excited general admiration; and a rich collection of the same kind from Mr. Kinghorn, was also much admired, though unfortunately injured by carriage.—In the large tent a fine effect was produced by three noble Palm-trees waving their graceful fronds over the humbler plants and flowers. These were from the Royal Botanic Garden, and consisted of Phœnix dactylifera, or the Date Palm, and two specimens of Latania borbonica, from the Mauritius.—On this occasion twenty new members were added to the roll, among whom were G. W. Johnson, Esq., and M. Louis Van Houtte, of Ghent.

COUNTRY SHOWS.

Cambridge Horticultural Society, May 15.—This May Show was a very satisfactory one. The company was more numerous than at the May Show last year. The following prizes were awarded.—*Strawberries.* Mr. Cumming for Keen's Seedling, 5s. *Tulips*: 1, Mr. Ready for Duke of Bedford, Rubens, Triomphe Royal, Heroine, and San Josef, 1l.; 2, Mr. Haylock for Triomphe Royal, Rose, Neptune, Polyphemus, Carlo Dolci, Washington, and Holmes' King, 10s.; 3, Mr. Catling for Washington, Duchess of Wellington, and Gloria mundi, 7s.; 4, Mr. F. B. Smith for Polyphemus, Triomphe Royal, and Rachel Rush, 5s. *Anemones*: Mr. Gimson for Princess Charlotte, Bismath Scarlet, Royal Queen, Queen Adelaide, Reine de France, and Grandissima, 3s. *Pelargoniums*: 1, Mr. Widnall for Widnall's Magnificent, Priory Queen, Effulgens, Joan d'Arc, Lord Mayor, and Flash, 1l.; 2, Messrs. Hudson for Hudson's Coronation, Splendidissima, Alicia, Joan d'Arc, Lowndes' Perfection, and Hudson's Sir Robert Peel, 10s. *Calceolarias*: Mr. Widnall for Widnall's Apollo, Golden Fleece, Caiuph, Homer, Plutus, and Vivid, 10s. *Pansies*, (cut,: Mr. Widnall for Thompson's Regulator, ditto Azurea, ditto Fair Maid, ditto Malibran, ditto La Vallée, ditto Warrior, May's Imogene, Custer's White Defiance, Widnall's Excelsa, ditto Lepide, ditto Una, ditto Victor, and 12 seedlings, 10s. *Plant in a Pot*: Mr. Widnall for Erythrina crista-galli, 5s. *Ditto* (Amateurs): 1, Mr. F. B. Smith for Azalea indica alba, 5s.; 2, Mrs. R. Foster for Nerium splendens, 3s.; 3, Mr. Widnall for Cactus speciosissimus, C. speciosus, C. Scottii, Hoya carnosa, Deutzia scabra, Nuremburgia intermedia, Clematis azurea grandiflora, Leschenaultia biloba, Gloxinia maxima alba, Philibertia grandiflora, Manulea pedunculata, Cineraria imperial blue, Euphorbia splendens, Scutellaria splendens, Salvia patens, Calla æthiopica, Fuchsia fulgens superba, St. Clare, Formosa elegans, Pelargonium Gipsey, Siddonia, Garth's Victory, Calceolaria Royal Standard, and two seedlings, 1l.; 4, Mr. Ashton for Fuchsia multiflora, Eppsii, Achimenoflora, Venus Victrix, Arborea, Curtisii, Barclayana, Vallota purpurea, Pelargonium effulgens, and Miranda, 10s.; 5, Messrs. Hudson for Fuchsia Curtisii, Fuchsia corymbiflora, Solitya heterophylla, Calla æthiopica, Petunia alba. *Pelargoniums*: Masterpiece, Lanascrianum, Dumnis's Perfection, and Alexandrina, 5s.; 6, Mrs. R. Foster for Hoya carnosa, Hydrangea hortensis, and Fuchsia fulgens, 5s. EXTRA PRIZES.—*Tulips*: Mr. Twitchett for Twitchett's Don John, 7s.; a fine feathered Bizarre from seed of Polyphemus impregnated with Abercromby, and broke the first time of blooming. *Grapes*. Mr. Cumming for Black Hamburgh, 5s.—*Cambridge Chronicle.*

Cambridge Florists' Society, May 16.—This was the first Show for this season. Tulips, Pelargoniums, and Stocks constituted the principal feature of the exhibition. Notwithstanding the long-continued drought, the Tulips on the prize stands were better than might have been expected. The following prizes were awarded:—TULIPS.—*Flamed Bizarres*: Mr. Twitchett, Polyphemus, Osiris; Mr. Dickerson, Polyphemus; Mr. Haylock, Polyphemus; Mr. Ready, San Josef. *Flamed Byblomens*: Mr. Ready, Acapulca, Roi de Siam, Rubens, and Rachel; Mr. Twitchett, Acapulca, Mr Catlin, Roi de Siam. *Flamed Rose*: Mr. Ready, Triomphe Royal, Rose Astonishing; Mr. Haylock, Triomphe Royal, Aglaia, Mr. Ready, Madame Catalani, Rose Camuze. *Feathered Bizarres*: Mr. Ready, Platonia; Mr. Haylock, Platonia, Mr. Twitchett, Royal Sovereign; Mr. Dickerson, Captain White; Mr Twitchett, Platonia; Mr. Coulden, Vulcan. *Feathered Byblomens*: Mr. Ready, Lawrence's Friend; Mr. Catling, Violet Rouge Cœur; Mr. Twitchett, Lawrence's Friend; Mr. F. B. Smith, Impératrice de Marocq; Mr. Twitchett, Lucas; Mr Ready, Washington. *Feathered Rose*: Mr. Twitchett, Reine des Roses; Mr. Ready, Heroine; Mr. Twitchett, Reine des Roses; Mr. Haylock, Heroine; Mr. Dickerson, Cœur Blanch; Mr F. B. Smith, Rosa Blanca. PELARGONIUMS.—*Crimson and Scarlet*: Messrs. Hudson, Joan d'Arc, Splendidissimum. *White*. Messrs. Hudson, Alexandrina, Duchess of Gloucester. *Dark*: Messrs. Hudson, Seedling, Dennis's Perfection. *Rose and Pink*. Messrs. Hudson, Alicia, Victoria. *Plant in a pot*, Mr. F. B. Smith, *Azalea indica alba*; Mr. Green, *Aalmia latifolia.*—*Cambridge Chronicle.*

County of Durham Floral and Horticultural Society, May 21.—This was the first Show for this season. As a spring exhibition it was superior to any that has taken place since the establishment of the Society, both as regards the number and quality of the plants shown and the attendance of visitors. The following prizes were awarded:—*Pelargoniums*: Annette, Bridesmaid, Comte de Paris, Coronation, Jewess, Joan of Arc, Lord Mayor, Madeline Rienzer, Sylph, Vulcan, Victory, Mr. G. Lowrey, gr. to Mr. Fawcett; Specimen: Victory (10½ feet in circumference), Mr. F. Nichol, gr. to H. J. Spearman, Esq

Calceolarias: 1, Lady Constable, Standard, Landmark, Miss Astrobus, Knosthorpe Hero, Magna Charta, Nymph, Gazella, Eclipse, Standish's Louis XIV., Mr. J. Wilson, gr. to H. J. Marshall, Esq.; 2, Knosthorpe Hero, Standish's Queen, Lady Constable, Elysium, Sir D. Wilkie, Mrs. Meynell, Ingram, Lady Prudhoe, Nun, Duke of Devonshire, Standish's No. 24, Mr. H. Mayor's No. 37, Messrs. Hancock and Son, Durham; Best 9: Lady Constable, Mrs. Meynell, Standard, Lowrey's Sophia, Knosthorpe Hero, Tam O'Shanter, Incomparable, Isabella, Dusty Miller, H. J. Marshall, Esq.; Best 6: Douglas, Lady Constable, Standard, and 3 seedlings, Mr. Lowrey; Best 1: Lady Constable, Mr. Nichol. *Fuchsias*: Tricolor, Venus Victrix, Moonshine, Mr. Lowrey. *Greenhouse Plants*: Pimelea hispida, Dillwynia glaberrima, Erica vestita rosea, E. vestita coccinea, E. ovata, E. ectiliflora, E. ventricosa, E. mundula, Dillwynia elevata, Fabiana imbricata, Eutaxia pungens, Siphocampylos bicolor, Chorozema Dicksonii, Eutaxia (new sp.), Clematis azurea grandiflora, Clematis Sieboldii, Erica hybrida, Dillwynia speciosa, Boronia serrulata, Erica grapihalodes, Messrs. Hancock and Son; 12 Greenhouse Plants: Pimelea decussata, P. spectabilis, Chorozema Dicksonii, C. Henchmannii, C. microphylla, Dillwynia speciosa, Eutaxia myrtifolia, Erica vestita coccinea, Erica quadriflora, Erica ventricosa superba, Anagallis Philippi, Hardenbergia monophylla, Mr. Lowrey. *Cinerarias*: Queen of May, Pride of Peckham, Eclipse, Splendida, Triumph, Regina Victoria, Messrs. Hancock; Best 3: Enchantress, Challenger, Imperial Blue, Mr. Lowrey. An extra prize was awarded to Messrs. Hancock and Son for a Calceolaria named Isabella, Burchellia capensis, Hancock's Northern Beauty (Pelargonium), Cineraria Enchantress, Fuchsia speciosa, Anagallis Breweri, Calceolaria Midas, Cineraria Victoria, Pelargonium Vanguard, Calceolaria Prince of Wales, Arbutus new sp., Dillwynia, new sp., &c.

Devon and Cornwall Botanical and Horticultural Society, May, 20.—This was the Spring Exhibition. Many of the stands were filled with choice productions. Mr. F. Wood sent fine *Calceolarias*; among them were Andromache, Corymbifora, Golden Fleece, Gaines's Bride, Incomparable, King, Lady of the Lake, Lady Constable, Lady Sale, Magician, Miss Antrobus, Purpurea grandiflora, Princess Royal, Royal Standard, Standish's. His Seedlings were as follow:—Tyrolean, Albion's Pride, Lady Bulkely Phillips, Lady Dickson, Clansman, Amina, Hon. Mrs. Murray, Ines de Castro, Kate Kearney, Countess Mt. Edgcumbe. Mr. Wood's *Petunias* were beautifully in flower; several of them were seedlings of his own. The collection of *Verbenas* comprised Barkeril, delicata, Edmondii, Emperor, Favourite, Formosa, grandis, Ingramii, Lilac, Perfection, Prince of Wales, Princess Royal, and Victory. Among Mr. Wood's *Fuchsias* were Brockmannii, Enchantress, Grand Monarch, Exoniensis, Transparens, Venus victrix, Grovellii, Lanei, and Tuddiana. The group of Cinerarias comprised Agnes, Beauty, Bonny Lass, carulea, Cleopatra, Clara, Comet, Coronet, Emily Moreland, Eclipse, Empress Josephine, Enchantress, Favourite, King of Russia, and Ovid. The *Pelargoniums* were in excellent condition, and among them we observed Acme of Perfection, Arabella, Bridegroom, Bridesmaid, Constellation, Conservative, Eros, Emily Moreland, Enchantress, Florence, Gem of the West, Great Western, Hawk's Eye, Ivanhoe, Joan of Arc, King of the Fairies, Lady of the Lake, Lady Peel, Sir David Milne, Macbeth, Nymph, Princess Maude, Royal Pet, Proserpine, Coronation. Mrs. Wells, of Exeter, sent a collection containing a beautiful Cattleya Mossiæ, with six flowers; very fine plants of Erica ventricosa, and Azalea variegata. *Orchidaceæ*.—Brassia maculata, Oncidium Carthagineuse, the larger variety of O. ampliatum, O. papilio, O. divaricatum, Broughtonia sanguinea, Epidendrum fragrans, Lycaste Deppei, Vanda Roxburghii. *Stove Plants*—Quisqualis indica, Ardisia crenulata, Stanhopea grandiflora. *Greenhouse Plants*.—Gompholobium splendens, Leschenaultia formosa, Boronia viminea, Aphelexis humilis, A. sesamoides, Polygala speciosa major, Dillwynia speciosa, Pimelea hispida. *Ericas*—tricolor, very fine; ventricosa superba, vestita alba, mirabilis odorata, perspicua nana, jasminiflora, and intermedia. The contributions from Mr. W. E. Rendle were good. His Pelargoniums were excellent, including the following varieties:—Lyne's Duke of Cornwall, Sunrise, Cynthia, Hamlet, Lord Ebrington, and Modesty; Gaines's Rising Sun, Blackford's Thunderer and Jersey Maid, Foster's Conflagration, Constellation, and Favourite; Miller's Fascination, and Guide; Beck's Hebe, Sweet's Hermione, Cordelia, and Semiramis; Sir Robert Peel, Fair Maid of Devon, Beauty of Exe Vale, Princess Royal, Cornish Gem, Fanny, Queen of the Fairies, Grand Monarch, Van Amburgh, Enchantress, Camilla, Prince of Waterloo, Lady Villiers, Wilson's Aurora, Creole, Attila, &c. &c. He also sent a well-grown collection of Gloxinias, containing roseo alba, a very distinct variety; Pressleyi tubiflora, a white variety; rubra, maxima, picta, and candida; together with Gesnera Cooperi and zebrina, Euphorbia Bronnii and splendens, Centradenia rosea, Begonia floribunda, Francisca Hopeana, Gardenia florida, Philibertia grandiflora, Achimenes longiflora and grandiflora, and Vinca rosea. His collection of Ericas comprised Beaumontii, Blandfordiana, carnea, coccinea, curviflora, ceriantholdes, campanulata, cylindrica, fastigiata lutea, fulgida, gemmifera, gelida, Humeana, Hartnelli, hybrida, intermedia, mollis, mundula, ovata, propendens, rubra calyx, sulphurea, ventricosa superba, and Walkeri; together with a fine specimen of Paulownia imperialis.—*Plymouth Herald*.

Norfolk and Norwich Hort. Society, May 1.—This was the first Exhibition of fruits, flowers, and vegetables for this season. A fine specimen of Clematis Sieboldii, and a good Hardenbergia monophylla was sent from the garden of C. Middleton, Esq. A collection of plants contributed by J. Stacey, Esq., comprised Tropæolum tricolorum, Azalea indica alba in good condition, Euphorbia splendens, and Streptocarpus Rexii. A beautiful Rhododendron arboreum was exhibited by Mrs. Chitty. From Mrs. Backhouse was an Azalea indica alba, literally covered with flowers, and a fine specimen of Cytisus racemosus. A number of plants exhibited by Mr. J. Bell, not for competition, contained good specimens of Erica Hartnelli and ventricosa, E. tenuiflora, E. suaveolens, Fuchsia Britannia, Cineraria Eclipse, Medora, Cærulea, King of Prussia, splendens, and Calceolaria Sir Robert Sale, Magician, Zebrina and Barnes's King; Aphelexis humilis, Leschenaultia formosa, very fine specimen of Siphocampylus bicolor, Hoves Ceisi, Azalea phœnicea and Smithii; Rhododendron Smithii and Verbena speciosa. Prizes:—*Double White Camellia*, J. Rippingale, gr. to G. Morse, Esq.; *Azalea indica alba*, J. Allen, gr. to Mrs. Backhouse; *Rhododendron arboreum*, J. Boughton, gr. to Mrs. Chitty; *Clematis Sieboldii*, C. Middleton, Esq.; *Araucaria juniperoides*, J. Rippingale; *Aucuba armata*, J. Rippingale; *Gunnia simplex*, H. Browne, Esq.; *Cactus truncatus*, R. Emms. *Muscat Grapes*, dried fruit, the Rev. C. Lucas. *Keen's Seedling Strawberries*, C. K. Thompson, Esq.; *Perring's Scarlet do.*, Mr. J. Cockburn, gr. to J. T. Mott, Esq.; *Bath Scarlet do.*, C. Middleton, Esq. *Cattilac Pears*, S. Short; *Uvedale St. Germain do.*, S. Short. *Dessert Apples*: Ribstons Pippin, Royal Russet, and Golden Pearmain, W. Scarlett, gr. to Mrs. Kett; *Sauce Apples*: Bedfordshire Foundling, S. Short; 2d do., Norfolk Beefin, W. Scarlett. *Cucumbers*: Suffolk Hero, R. Emms; 2d do. Windsor Prize Fighter, C. Alborough, gr. to G. S. Kett, Esq.; 2d do. Suffolk Hero, R. Emms. *Cobb Nuts*, Mrs. Gowing, Trowse. *Myatt's Victoria Rhubarb*, Rev. O. Mathias; 2d do., E. Kemp, gr. to J. B. Muskett, Esq. *Potatoes* Ash-leaf Kidney, J. Rippingale; 2d do. Prince Noble, W. Exelby. *Black-seeded Cuss and Cabbage Lettuces*, R. Emms gr. to the Hon. and Rev. R. Wilson. *White Buttersea Asparagus*, Mr. J. Warner, gr. to W. Robinson, Esq. *Seakale*, S. Short. *Broccoli* (Dale's), S. Short; 2d do. (Summer's late white), E. Kemp. *Imperial Cabbages*, E. Kemp. The Cottagers had about 10*l.* awarded as prizes, receiving from 1*s.* 6*d.* to 10*s.* each. Mr. Guymer received 7*s.* 6*d.* for a bunch of beautiful Black Spine Cucumbers. The show was visited by upwards of 3000 persons.—*Norfolk Chronicle and Norwich Gazette*.

Stamford Hill Horticultural Society.—This was the first Show for this year. It was held on the 9th of May, in the grounds of J. Wilson, Esq. The display of plants, flowers, &c. was excellent; and, combined with the fineness of the weather, it afforded much gratification to the visitors. Many prizes were awarded; but as the Society is entirely composed of amateurs among the gentry of the neighbourhood, to the exclusion of all dealers or professional gardeners, I do not enter into any details. I may state, however, that it is the practice of this Society to offer prizes to Nurserymen (who compete with each other only) at each of their Shows.—*An Orig. Sub., Hackney*.

Surrey Horticultural and Floral Society.—This Society held their Tulip Show on Monday, May 20. The following is a list of the prizes awarded:—*Rose Tulips*: 1 and 2, Mr. Evans, Triomphe Royal; 3, Mr. Wakeling, Triompho Royal; 4, Mr. Dickson, Ponceau très Blanc; 5, Mr. Evans, Fleur des Dames. *Bublomens*: 1, Mr. Wakeling, Siam; 2, Mr. Evans, Ely's Queen Victoria; 3, Mr. Wakeling, Rubens; 4, Mr. Evans, Holmes' King; 5, Mr. Dickson, Sir Edward Knatchbull. *Bizarres*: 1 and 2, Mr. Jackson, General Jackson and Gloria Mundi; 3 Mr. Wakeling, Sir Walter Scott; 4, Mr. Evans, Polyphemus; 5, Mr. Wakeling, Bolivar. *Pansies*, Yellow-ground: 1, Mr. Field, Thompson's Eclipse; 2 and 3, Mr. Downton, Satirist and Thompson's Regulator; 4, Mr. Buxton, Eclipse Superb; 5, Mr Downton, Satirist. White-ground: 1, 2, and 3, Mr. Downton, Cotherstone, Lord Howe, and Blue Skin; 4, Mr. Pawsey, Miss Stainforth; 5, Mr. Plant, a seedling named Chieftain. *Light Selfs*: 1 and 2, Mr. Otley, Zelica; 3, Mr. Buxton, Imogene; 4, Mr. Heath, Imogene; 5, Mr. Field, Good's King of Yellows. *Dark Selfs*: 1, Mr. Downton, Black Bess; 2, Mr. Field, Pearson's Black Prince; 3, Mr Edmonds, Black Bess. 3 *Seedling Self Pansies*: Mr. Downton, for Lucy Banks, Black-eyed Susan, and Emma. Mr. Otley's prizes for 24 dissimilar Blooms of *Pansies*: 1, Mr. Edmonds, Old Robin Gray, Satirist, Regulator, Jehu, Jewess, Rory O'More, Beauty, Princess Alice, Black Bess, Wallace, Blue-eyed Maid, Prince Albert, Curion, Firebrand, Exquisite, Yellow Perfection, Mulberry Superb, Ernest, Cyclops, Nymph, Herbert, Conservative, Miss Stainforth, and Sarah; 2, Mr. Field, Imogene, Regulator, Antagonist, Indian Chief, Exquisite, Mulberry superb, Grand Duke, Eclipse, Jehu, Black Bess, Rory O'More, Unique, Buxton's Knight, Maid of Lodi, Baroness, Warrior, Surprise, Delicata, Maid of Kent, King of Yellows, Eclipse superb, Trafalgar, Maria, and Attila; 3, Mr Gittens, Satirist, Jehu, Unique, Attila, Rory O'More, Childe Harold, Black Bess, Eclipse, Delicata, Jewess, Mulberry superb, Imogene, Yellow Perfection, Regulator, Curion, Beauty, Exquisite, Miss Stainforth, Czar, Purple Perfection, Surprise, Sulphurea elegans, Julia, and Mazeppa. 3 Best *Greenhouse Plants*: Mr. Dawson, for Boronia serrulata, Kennedya, and Polygala cordata. *Pelargoniums*: 1, Mr. Roberts, Dido; 2 and 3, Mr Jennings, Wood's Ivanhoe, and Gaines' King; 4 and 5, Mr. Roberts, a seedling not named, and Joan of Arc.

Torbay Horticultural Society, May 17.—This was the first Exhibition for the season. It was held in the grounds of Apsley House, Torbay. A handsome pavilion, 60 feet long by 35 wide, and 30 high, was erected for the purpose, and was well filled with plants from the neighbouring gardens, together with contributions from the Exeter, Plymouth, and Torbay nurseries. The Society numbered last year 100 members, with a total receipt of 144*l.* 11*s.* 2*d.*; the number of members is now 121, with a promise of increase in the funds. Prizes were awarded to all classes of Flowers, Fruits, and Vegetables, which, considering the excessive drought, were fine. The Prize *for the best Bouquet of Tender Plants grown in the open air* was awarded to Mrs. Johnes, of Park Hill. Among the specimens exhibited in this collection, and its competitors, were scarlet Pelargoniums, five varieties of Fuchsias, Mesembryanthemums, Petunias, &c., all in profuse bloom. As the thermometer only fell to 31° during the preceding winter, nearly every kind of greenhouse plant might have been grown in the open air. The Prize Medal for the *best Fuchsia*, was won by the Rev. G. M. Coleridge, with a fine showy plant of Richardsii, Exoniensis (not fully in flower), Gem, Pendula major, and others. The Pelargoniums, Heaths, Stove Plants, and other classes, comprised all the leading varieties. A Seedling Prize was awarded to the Rev. F. Belfield, for *Amaryllis transcendens marginata*, having all the good properties of *A. transcendens* with a distinct margin of pure white. The Seedling Medal, open to all England, for the best Pelargonium of 1844, was not awarded; a very beautiful specimen was exhibited, but was not superior to the old varieties of the same class.

Vale of Evesham Horticultural Society, May 22.—This Exhibition was the best that we have had. A fine display of Cacti attracted much attention. The stands were crowded with Tulips, which were in better condition than might have been expected, from the cold nights and scorching days we have lately had. Amongst the vegetables we noticed some fine Rhubarb, from the Rev. W. Digby, six stalks weighing 17 lbs. The following prizes were awarded:—Tulips.—*Feathered Bizarre*: 1, Platoff, W. Barnes, Esq.; 2, Donzelli, F. Davies, Esq.; 3, Demetrius, Mr. R. Whitford. *Flamed*: 1, Polyphemus, Mr. R. Whitford. 2, Titian, F. Davies, Esq.; 3, Scipio, Mr. R. Whitford. *Feathered Byblomen*: 1, Ambassadeur de Hollande, Mr. Clarke; 3, Premier Noble, Mr. R. Whitford. *Flamed*: 1, Lawrence's Friend, F. Davies, Esq.; 2, Couronne Violette, Mr. Clarke; 3, Washington, W. Barnes, Esq. *Feathered Rose*: 1 & 2, Walworth, Mr. R. Whitford; 3, Cerise la belle forme, F. Davies, Esq. *Flamed*: 1, Catalani, do.; 2, Rose Triumph Royal, do.; 3, Michael de Lisle, Mr. R. Whitford. *Yellow Self*: Mine d'Or, W. Barnes, Esq. *White*: Mountain of Snow: Mr. Whitford. *Stove or Greenhouse Plants*.—1, Cactus speciosissimus, Mrs. O. Chuck; 2, Erica ventricosa, E. Rudge, Esq.; 3, Epacris grandiflora, Mr. Pinnell. *Pelargoniums*.—1, Jehu, R. Ashwin, Esq.; 2, Foster's Alicia, A. Hartland, Esq.; 3, Splendidum, R. Ashwin, Esq.—*Berrow's Worcester Journal*.

York Horticultural Society, 22d May.—This was the second meeting this year. The following is a list of premiums awarded:—*Pelargoniums*: Messrs. Backhouse, for Alexandrina, Bridesmaid, Erectum, Lady Cottin Shepherd, Crampton, Masterpiece, Sylph, Coronation, Madeline, Wonder, Queen of the Fairies, Victory, &c. *Stove Plants*: 1, Messrs. Backhouse, for Angelonia grandiflora; 2, Mr. Appleby, for Gesnera splendens; 4, J. Roper, Esq., for Gloxinia hybrida; 5, Rev. D. Currer, for Erythrina Crista-galli. *Cacti*: 1, Rev. D. R. Currer, for Cactus Ackermanni; 2, the Lord Mayor, for Cactus Malcisonii; 3, Rev. W. Taylor, for Cactus Ackermanni; 4, Rev D. R. Currer, for Cactus Jenkinsonii. *Orchidaceæ*: Messrs. Backhouse, for Oncidium amplatum, O. Papilio, Cyrtochilum maculatum, and Gongora atropurpurea. *Climbers*: Mr. Edward, for Tropæolum tricolorum; 4, Mr. Appleby, for Zichya glabrata; 5, Jas. Richardson, Esq., for Sollya heterophylla. *Bulbous Plant*: 1, the Lord Mayor, for Amaryllis vittata; 2, Rev. D. R. Currer, for Pelargonium ardescens. *Greenhouse Plants*: 1, Mr. Appleby, for Pimelea spectabilis, and a well-grown Chorozema macrophyllum; 4, Messrs. Backhouse, for Boronia speciosa. *Spotted or Mottled Calceolarias*: 2, Lord Downe, for Lady Constable; 3, the Lord Mayor, for ditto; 4, Mr. Appleby, for Prince Albert; 5, Mr. Edward, for Fair Helen. *Blotched or Clouded*: 1, Lord Downe, for Catharine; 2, Messrs. Backhouse, for Green's Royal Blue; 4, Mr. Edward, for Splendida. *Self*: 1, Mr. Harrison, for Green's Standard; 2, Mr. Appleby, for Green's Desdemona; 4, Mr. Harrison, for Tam o' Shanter. *Fuchsias*: 1, Mr. Appleby, for Exoniensis; 2, Messrs. Backhouse, for Transparens, Venus Victrix, and Mooypennii; 3, Mr. Appleby, for Tricolor. *Ericas*: 1, G. Swan, Esq., for E. hybrida, particularly fine; 3, the Lord Mayor, for E. hybrida coccinea; 4, Messrs. Backhouse, for E. mundula and vestita alba. *Rose in Pot*: 1, Col. Thompson, for Prince Albert. *Azaleas*: 1, Mr. Appleby, for Woodali; 2, the Lord Mayor, for Variegata; 3, Mr. Appleby, for Indica alba. *Epacris or Correas*: Mr. Appleby, for E. pulchella; Messrs. Backhouse for E. Craigii. *Hardy Herbaceous Plant*: 1, Mr. Appleby, for Euthales macrophylla; 2, Messrs. Backhouse, for Campanula grandis; 3, Mr. Harrison, for the same. *Rhododendron*: J. Roper, Esq., for Maximowiczianum. *Exotic Fuchsias*.—*Cinerarias*: Mr. Appleby, for Pride of Peckham, Van Amburgh, and Enchantress. *Hardy Shrub*: Messrs. Backhouse for Fabiana imbricata.

Reviews.

Transactions of the Horticultural Society. Vol. 5. Part I. New Series. 4to.

The Number of the "Society's Transactions" contains the commencement of Mr. Hartweg's Journal, extracted by us at p. 134, a plate of the beautiful Habrothamnus fasciculatus, and several papers of considerable interest. A long and very important report, by Mr. E. Solly, upon his experiments in the Society's Garden, occupies above 60 pages. For the general facts elicited by them, we must refer to the ample and elaborate tables in the report itself. We can only extract a few passages.

Speaking of experiments with Potatoes, Mr. Solly calls attention to the remarkable fact, that the presence of nitric acid in the crop bore no apparent relation to the manures employed. In one case, although nitrate of soda was employed, no nitric acid could be found; and yet this compound made its appearance when the sulphates of soda and magnesia were alone employed. Upon this the following remark is made:—

"The fact that some of these plants contained salts of nitric acid, whilst others did not, is very remarkable, and of especial interest in connexion with the action of the nitrates as manure. Professor Liebig says, in his 'Chemistry in its Applications to Agriculture,' &c. (3d edit. p. 233,) 'The presence of a nitrate in plants permits only one conclusion—that the nitrogen of nitric acid is not employed in their organism for the formation of compounds containing that element, because, if it were, at a certain period of the life of the plant, it would disappear on account of this conversion.' The existence of nitrates in a plant cannot, as it appears to me, be considered as any evidence that the nitrate does not supply nitrogen to the plant. It might in the same way be argued, that ammonia does not supply nitrogen to plants, because it is very constantly found in them. With regard to the disappearance of the nitric acid at a certain period of the life of the plant, it is desirable to have experimental evidence; I have found in several cases that the proportion of nitric acid in plants was great when they were young, and gradually diminished as they grew older. I have already adverted to the curious fact that when plants were manured with nitrates they grew very vigorously, but were not found on examination to contain any nitric acid."

Some attempts have been made to ascertain whether Chemistry can explain the difference in the quality of the same sort of timber grown in different soils. This examination is one requiring many experiments, and necessarily occupying a very long time. The following experiments, however, have been made by Mr. Solly:—

"A large collection of samples of wood from different localities, grown in various situations, and under various conditions, has been made; amongst these was a series of specimens of Oak-wood, for which I am indebted to Sir William Symonds, and which in addition to their being from different parts of the world, were all of known quality, each sample being marked with a note of its quality deduced from actual experience. It is to be regretted that the majority of them were bad or inferior, even those from localities whence the very best wood is usually imported, hence, of course, they cannot be regarded as average samples but rather as exceptions. The proportion of earthy matter which they contained, together with their locality, and relative goodness, is contained in the following table:—

Oak Wood from	Quality.	Organic matter.	Water.	Inorganic matter.	Inorganic in 10,000 parts dry
America (white)	bad	9188	778	30	43
Do. (live Oak)	good	9266	691	73	78
Do. do. "Gibraltar"	good	8815	1111	274	308
Crimea	tolerable	8909	1056	68	78
Canada	bad	8646	1128	23	27
Circassia	indifferent	9125	841	34	37
Dantzig	tolerable for plank	8949	1037	24	27
England (mean of 10)	various	8880	1097	18	19
East Prussia	indifferent	9145	832	23	25
France	bad	8892	1092	16	19
Farnia (Tuscany)	bad	9234	722	44	48
Hainault	bad	8738	1238	14	16
Istria	bad	9214	823	63	73
Poland	indifferent	9289	994	17	18
Podolia	bad	8980	1019	21	23
Russia	bad	9013	977	10	11
Sty ia	indifferent and light	9085	937	19	20
Sardinia	good	9269	1003	28	30
Tuscany	good	8869	947	184	200
Ischia	good for plank	9095	882	18	20

"The larger proportion of earthy matters in the Oak, of southern countries is remarkable as contrasted with the smaller quantity found in English Oak, and the Oak of northern countries generally. Still from this table no general conclusion can be drawn as to the relation between the inorganic substances and the quality of the wood."

Among the agents concerning whose utility in cultivation hopes may be reasonably entertained, are the salts of muriatic acid. The latter is proved to be of itself a very powerful and valuable promoter of growth, when employed in very small quantity, and the effect of muriate of soda or common salt is well known. Hence Mr. Solly's attention was turned to the consideration of the muriates, and among others of muriate of lime.

"In nearly all the experiments which have been made at the Gardens," he observes, "marked effects have been produced by manures containing muriatic acid; hence it was reasonable to conclude beforehand that the muriate of lime would prove a good manure. Other considerations gave it a still higher interest; from previous experiments it had been ascertained that a very small quantity of muriate of lime in a soil, exerted, in consequence of its hygrometric properties, powerful influence on the retentive power of the soil for moisture. It was, however, apprehended that the presence of any quantity of the salt, even though small, might prove injurious to vegetation. The experiments above described show that this is not the case; the quantity employed was considerable, and so far from doing any harm, it on the contrary produced a very excellent effect. The experiments on the hygrometric powers of soils just referred to, were part of an extensive series, undertaken with a view of ascertaining what influence saline manures exert on the retention of moisture. Weighed quantities of natural and artificial soils of various natures were moistened, some with pure water, and others with water holding in solution minute quantities of different saline substances; the soils were carefully weighed from day to day, and the daily loss of water, subtracted from the original quantity of moisture which the soils contained, showed the relative retentive power of the soil under examination. The following short table shows the result of one of those experiments in which 25 portions of fine siliceous sand weighing 2000 grains each, were each moistened with 500 grains of pure water, and weighed every day. To the first five portions nothing but the water was added, the next five received in addition one grain of muriate of lime, the next five two grains of that salt, the next five, five grains, and the remainder ten grains of the muriate. The mean of each five weighings alone is given; the numbers show the weight of water retained by each portion during the experiment:—

	Water only.	1 Grain Muriate of Lime.	2 Grains Muriate of Lime.	5 Grains Muriate of Lime.	10 Grains Muriate of Lime.
1st Day	500	500	500	500	500
2d do.	444	449	453	457	463
3d do.	392	403	408	412	416
4th do.	332	344	352	356	361
5th do.	266	293	305	312	317
6th do.	230	261	273	280	286
7th do.	188	223	236	243	249
8th do.	132	176	189	197	205
9th do.	80	129	145	154	163
10th do.	50	98	110	121	134
11th do.	26	68	85	98	114
12th do.	13	40	57	71	90
13th do.	6	20	40	56	77
14th do.	2	14	25	39	60
15th do.	2	9	18	31	52
16th do.	2	5	12	24	44

Hence it appears that while soil in its ordinary condition had lost in 16 days nearly all its water, that in which 10 grains, *or* a 200th part of muriate of lime had been mixed, retained nearly a tenth of the water; a most important consideration in a practical point of view, considering the cheapness of the material and the disastrous effects of drought.

Another paper consists of notes by Dr. Lindley, upon the Rate of Growth by Plants, at Different Periods of the Day. In this paper the object was to ascertain the degree in which vegetation is affected by light and darkness in the rate of growth. We must suppose that the development of a plant under the influence of a bright sun, or in a damp and clouded atmosphere, in a cool night, or in a chilly morning before sunrise, will be materially dissimilar. But it is in very few cases that physiologists have turned their attention to such variations, and because the operations of the forcing gardener are much connected with the inquiry, a series of observations upon the subject was made four times daily, in the garden of the Society, by Mr. James Donald, during the months of March and April, 1843. The plants selected for experiment were a Sweet Willow, a Fig, the Onyx Passionflower, and a Vine. The plants were fastened as they grew, to a lath, on which the amount of lengthening was marked off four times a day, viz., at 6 a.m.; noon; 6 p.m.; and 11 p.m.; and the detail of the observations is given in a tabular form. We can only find room for some of the results. After stating that in some respects the observations confirm the prevailing opinion that plants grow fastest in warm, cloudy weather, and slowest in clear, bright weather, the author remarks as follows:—"But if the experiments were to a certain degree to confirm the general opinion that plants grow fastest in warm cloudy weather, it is also clear that they indicate the presence of other agencies than light and heat, and a regular supply of moisture. The numerous exceptions that are found even in those plants which in rapid growth conform the best to the supposed rule show this sufficiently well, and when we attempt to reduce to it the slowest growths we fail entirely; the facts inclining sometimes one way and sometimes the other. One of the most singular facts brought out by these observations is the total want of correspondence between the effects produced upon plants by the same external circumstances. The subjects of experiment were placed within a few feet of each other, in a house kept very uniformly, and equally exposed to light, and to every other agent by which it is conceivable that plants should be affected. Yet, strange to say, it appears certain that the same causes do not produce the same results, when operating upon plants of different species. For example, the greatest growth made by the Sweet Willow was on the 7th of March, when the noon-day observation gave .56; at that hour the growth of the Fig had been only .08, and of the Passionflower .24, which was about the average; and of the Vine only .42, which was slightly above it. The greatest growth of the Passionflower was on the 14th of April, when the 6 p.m. observation gave .82, which was .42 above the average; on the same day the Willow had grown .36, or .20 above the average; the Fig .09, or about the average; and the Vine, .11 or .24 *below the average!* Upon the whole, then, it seems that we must regard the growth of plants as a far more complicated problem than is generally supposed. The evidence that has been produced appears to show that there is a regular oscillation of growth during the 24 hours, that the principal development takes place in the afternoon (between noon and 6 in the evening), and follows the smallest, which occurs in the forenoon (between 6 in the morning and noon); and that this oscillation is not connected with light and temperature, because the growth in the forenoon is less than in the morning (11 p.m. to 6 a.m.), when the temperature is at its lowest; it may also be inferred that thin-skinned plants grow fastest in the absence of bright light, and possibly that thick-skinned plants obey an opposite law. But it does not appear satisfactorily that the varying rates of elongation are, under the circumstances of the experiments now detailed, dependent, to any considerable extent, upon fluctuations of temperature, light, or moisture. On the contrary, it seems almost certain that some other powerful agent is in operation, the nature of which we have at present no means of ascertaining.

Miscellaneous.

Guano.—The top and sides of the Morro de Arica, on the Coast of Peru, appeared, as we had already seen them from the open sea, of a white colour; but we had been mistaken in supposing that such was the colour of the rock. This white coating is the celebrated fowls' dung, the guano of the Peruvians, which has excited so much attention in recent times.* Along almost the whole coast of South Peru this excrementitious matter covers the small islands and cliffs near to the coast; and on some spots lies in such enormous beds as could only be produced by the accumulation of thousands of years. It is derived from the immense multitudes of the larger sea-fowls which inhabit this coast, and which belong chiefly to the genera of Pelicans, Cormorants, and Gulls. Their number is legion, for, in the true sense of the word, they eclipse the sun when, early in the morning they take flight from their resting places, in flocks that are miles in length. One must have seen them in order to form an adequate idea of their numbers; and then it becomes conceivable how in particular places such vast masses of this manure are yearly dug up. Mr. Rivero estimates that the islands Ilay and Jesus alone yielded annually 500 fanegas of this fresh birds'-dung. The guano is an article of commerce of great importance, particularly as, in the southern maritime provinces of Peru, where a great want of water prevails, the soil is very sandy, and requires to be manured previously to being tilled. The extraordinary fertility which birds'-dung, with sufficient irrigation, imparts to the soil, is equally well known to our countrymen in Europe: in Peru the produce of the fields is doubled by it. According to the age, and perhaps also according to the different kinds of fowl that yield it, the guano is found of different colours and quality; so that it has been divided into three distinct varieties, namely, the red (Guano rojo), the brown (G. perduzco), and the white (G. blanco); which also bring different prices. The red and brown kinds sell at 1½ dollars the fanega (2½ quintals), while the fresh white fetches 2 dollars, and in time of war still higher prices. ..... The birds which yield the Peruvian guano are known by the general name of Huanacs.—*Meyen's Reise um die Welt*, vol. i. p. 434-5.

* It is worthy of note that the guano was known to Herrera. In Dec. V., lib. iv., cap. 9, he says, "En algunas islas de la costa del Perú se ven unos cerros blancos, qui parecen de nieve, y son montanos de estiercol de Pajaros marinos, que van allí a estercolar, y allí van los Rancos a cargar de ello, para estercolar la tierra, de que sienten gran provechoete."

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

This is about the best time to get any necessary repairs, or painting, &c. done in the stoves, as the greater portion of the plants may be safely removed into other houses; indeed all plant-houses ought to have a slight coat of paint annually. Any moveable sashes may be done from the outside, by turning them on purpose. The lights of pits and frames at work may be painted any time in dry weather, by turning them in the same way. Many of the soft-wooded stove plants flower best while they are young; and about the end of June is a good time to propagate these for flowering next year.

Conservatory.—Common Pelargoniums are now being struck from cuttings in the open ground round London in multitudes; the old plants might also be shaken out of their pots, and planted in the open ground, to be taken up early in the autumn, so as to get well established in the pots before winter; they would make excellent plants for forcing next spring; the midsummer cuttings will make strong plants by next October; and if they are well encouraged early in the spring, they will make beautiful flowering plants this time next year. All the best varieties of the Chinese Primrose should now be divided and planted out in a shady situation in very rotten leaf-mould, to be taken up next September for winter flowering. Seedlings of them should also be planted out now in spare pits, well shaded, there to remain till they all flower, when the inferior sorts may be thrown away.

Greenhouse.—All the best specimen plants are still to be kept in-doors, but the paths are flooded over every evening to keep the plants in a moist atmosphere; and where a portion of the hardier stove plants are introduced among them, the doors and ventilators had better be shut up late in the evenings.

Pits.—Prepare to make a large plantation of your choice dwarf and young plants in these useful structures, turned out of the pots for two or three months in suitable composts. One who has not seen the good effects of this plan can hardly conceive the improvement it makes in the plants, particularly in Heaths, Epacrises, and other delicate plants, which are difficult to manage in dry hot seasons under the ordinary pot culture.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

The directions of last week, I am sorry to say, are still applicable in this part of the country; for though I can hear of heavy rains in various parts, it is by no means a general thing at present. This dull weather is, however, all in our favour, and my plants, which have been well watered, have grown more within the last ten days than they had previously in treble the time. I have heard of great success having attended the application of concentrated manures to bedded-out plants this season; but as the same cause which has kept them growing through this dry weather will start them to growth instead of flower, perhaps those who may now have strong plants will find a great scarcity of bloom in the autumn. I therefore do not feel warranted to recommend the use of such stimulants, except on very poor soils, until by experiment I have satisfied myself of the advantages of their application.

Chrysanthemums which have been planted out and are now becoming tall, may have their branches regularly pegged out so as to get the tips turned up preparatory to their being layered towards the end of next month.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Continue to prick out seedlings, in pans or boxes, shading them from the sun. *Polyanthuses*, if we continue to have showers, may be parted to advantage now, renewing the bed with decayed cow-manure, and leaf-soil. some growers shorten the leaves; it is most advisable not to do so. *Tulips.*—The general collection may now be taken up, provided the foliage has assumed a yellow hue; shake the soil clean from the roots, but do not yet remove the fibres or outer skin from the bulbs; place them in their respective compartments in the boxes, or wrap them in very thin paper, called "Cap-paper," writing the name on each. *Ranunculuses.*—The late drought has been seriously against these beautiful flowers. Any roots, the foliage of which has begun to decay, must immediately be taken up; as rainy weather will cause them to "start" again, to the almost certain destruction of the root. In sunny weather, dust the capsules of your favourite flowers, which you may be anxious to seed with farina of the best formed semidoubles you can obtain. *Carnations.*—Follow the directions given [illegible] last week, pinching off the laterals, disbudding [illegible], tying, keeping free from Aphis (if possible), &c. &c. [illegible] put in pipings, as recommended for the pink, marking each lot of cuttings, so that when the layers bloom from which they were taken, if they should chance to be "run," or full of colour, the pipings from such foul flowers may be destroyed. *Dahlias.*—Carefully stake, tie, &c. &c.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—If the bottom heat where the plants are swelling their fruit fall below 85°, the readiest way of renewing it will be to lay a few inches of fresh tan on the surface; should the pots be already plunged to the rim, the new tan may be laid over the surface of the soil, without detriment, if not with positively good effects to the plant, as it helps to keep the soil in a uniform state of moisture, which is a great desideratum in the culture of this plant, as well as of all others. Where the young stock is grown in pits heated on the tank system, and tan is consequently used merely as a material for plunging, I recommend the practice of covering the rims of the pots to the depth of two inches, as also recommended in Mr. Hamilton's "Treatise." I have practised this method, and find it beneficial to the plants, and also a saving of labour, as watering is almost dispensed with, excepting what the plants receive by being well syringed every evening.

Vineries.—Let the houses where the fruit has been cut have plenty of air, and keep the Vines free from insects. Those Vines now ripening their crop will require the temperature to be kept well up during the day, with abundant ventilation at the top of the house. No fire need be made at night, but the atmosphere must be kept dry. Attend to the watering of the Vines planted inside the border. In removing the litter from the roots, take care to leave some of the shortest as a mulching, and if the border appears at all dry, give a copious watering.

Peach-houses.—Continue the treatment recommended for the last few weeks.

Fig-house.—The plants in pots will now have their second crop advancing to maturity, if they have been treated as recommended in the Calendar for April 20th. Let them have regular supplies of water as they may require it, and avoid wetting the fruit.

Melons.—We find it difficult to keep Melon plants in pits heated by hot water free from red spider this season; nothing but constant watching for its appearance, and applying immediately the usual remedies, will keep this pest in check. We wash the walls and pipes once a fortnight with whitewash, in a pailful of which half-a-pound of sulphur has been stirred. Persian Melons require a very dry and warm atmosphere to grow in, with abundance of moisture at the lower part of the soil. This we supply to them by means of earthen pipes placed perpendicularly in the soil at intervals of five or six feet. Into these water is poured once a week, and to keep the atmosphere dry, the apertures of these pipes are covered with tiles in damp weather.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Last night we had at last a beautiful rain. Every one who has had the same privilege will be busy planting, sowing, thinning, &c. As soon as convenient let the surface of the ground be well stirred with the rake or hoe, to prevent the moisture evaporating. The late very dry weather will have forced several things upon the consideration of many; such as the importance of so choosing the site of a garden as to have a plentiful supply of water; the construction of tanks in gardens short of a supply, to receive the water from drainage, hothouses, frames, &c. It is an ascertained fact, that in general as much rain falls on a dwelling-house as will supply the inmates during the season. Why should such a fact not be made available in gardens? In most pit and frame grounds much valuable matter is lost every heavy rain, which would be of great service for summer crops. The past season will likewise have demonstrated the utter inefficiency of surface-watering, the importance of keeping the surface of the soil loose and often moved, and the great advantage of digging or trenching deep for all the main crops. On ground thus treated I have never seen Peas, Potatoes, &c. look better, though they have had no assistance from the watering-pot. *Routine.*—Attend to fruit-trees, peg down the shoots of Cucumbers and Vegetable Marrow under hand-lights, brush and roll the walks and make every place clean and tidy.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Attend to previous directions, but take care that the persons employed really understand the principles of their work.

Coppice.—The same attention is required in this department; prune, train, and regulate the young shoots from the stools; do not allow them to get injured by being too much crowded.

Young Plantations.—Prune and train the young plants, as by this practice several seasons' growth will be gained. Instead of thinning out when the trees are young, much more good may be effected by shortening the side branches next the permanent trees, and occasionally those of the trees also, in order to keep them in proper form.

Hedge-rows.—The plants in these will require attention occasionally.

Nursery Work.—Watering and shading the transplanted seedlings and other things are still requisite. We have had no rain where I reside yet, except passing showers, which are barely sufficient to lay the dust.—*W. B.*

State of the Weather near London, for the week ending June 20, 1844, as observed at the Horticultural Garden, Chiswick.

June	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri.	14	29.630	29.598	75	52	63.5	W.	
Sat.	15	29.668	29.602	79	55	67.2	W.	
Sun.	16	29.197	29.149	73	56	64.5	N.W.	.04
Mon.	17	29.153	29.098	77	53	65.5	S.	.54
Tues.	18	29.757	29.734	74	54	64.5	E.	.03
Wed.	19	30.014	29.850	69	46	57.0	N.W.	.08
Thurs.	20	30.041	29.979	74	53	63.6	N.W.	.07
Average		29.734	29.651	75.0	52.1	63.5		.19

June 14: Clear; fine throughout.
— 15: Very fine; clear at night.
— 16: Slightly clouded; very fine; clear.
— 17: Hot and dry; cloudy; thunder-storm.
— 18: Rain; fine; thunder in afternoon, with showers.
— 19: Showers; heavy clouds; remarkably dreadful hail-storm.
— 20: Drizzly overcast; slight showers; cleared and fine.

Mean temperature of the week 2·10th from below the Average.

Notes of the Weather at Chiswick during the last 10 years, for the ensuing Week ending June 29, 1844.

June	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 23	73.2	49.6	61.4	4	0.44 in.	1	1	2	1	2	4	1	1
Mon. 24	72.1	49.6	60.9	4	0.42	2	2	1	2	1	5	1	1
Tues. 25	71.4	50.4	60.9	3	0.40	1	1	1	1	2	2	2	2
Wed. 26	72.1	50.4	61.2	4	1.00	1	1	1	1	1	3	2	3
Thur. 27	69.2	51.1	60.1	5	0.90	1	1	2	2	1	2	0	1
Fri. 28	72.2	51.6	61.9	4	0.70	2	1	2	1	1	2	1	4
Sat. 29	72.0	49.7	60.8	4	0.60	2	1	2	1	—	1	5	4

The highest temperature during the above period occurred on the 28th, 1836—Range 31°; and the lowest on the 29th, 1st—Thermometer 46°.

Notices to Correspondents.

We have again to announce that MR. PAXTON'S COTTAGERS' CALENDAR is out of print. We have given instructions for a new edition to be prepared immediately, and shall feel obliged if those gentlemen who propose distributing copies amongst their tenantry will at once order them, that we may judge how many to reprint.

ARTEMISIA *Abrotanum.*—This is a perennial, and may be propagated by seeds or roots. How much odd person may consume we cannot tell. Its leaves are to be gathered when full grown, and before they change colour. If the plant is not allowed to flower they will be finer. They should be dried in the shade like Chamomile flowers, and when quite dry be inclosed in tin canisters. They are aromatic and tonic. Both Hawthorn leaves and Sloe leaves are astringent. There is no harm in them when dried, nor any good that we know of.

BOOKS.—*W. C.*—The last edition of "Sweet's Hortus Britannicus" was published, we believe, in 1839.——*A Subscriber.*—"Hastings on the Pine," "Roberts on the Vine," "Sweet's Hothouse and Greenhouse Companion."

CAMELLIAS.—*T. G. H.*—These may be inarched in June; but care should be taken not to keep the plants close and warm, if you wish them to flower the first spring, as they are apt to make a second growth. If worked in June or July, and kept slightly shaded, they will be fit to be separated from the parent plant before the rest of your plants are housed.‡——*A Subscriber.*—As soon as the present year's shoots are ripe, take cuttings off, with a heel, and put them into pots prepared in the usual way for cuttings. They should be placed in a cool frame, or under hand-glasses, and kept shaded until they have commenced forming roots, when they may be removed into a brisk bottom-heat. Shoots of the middle size make the best cuttings.‡

CAPE BULBS.—*A Reader.*—Your large bulb from the Cape is, we presume, Brunsvigia Josephinæ. It should be planted in well drained pots in light loam with the bulbs half way above the soil. They should be watered sparingly until roots are formed; but when they begin to grow, water may be more freely supplied. In autumn they may be placed in a light situation in a cool greenhouse, where they may remain until spring. During this period they should receive only a moderate supply of water. About the beginning of May they should be placed in a stove where they may be kept warm through the summer, and in August or beginning of September the flower-buds will appear and rise rapidly. The Elephant's Foot is Testudinaria elephantipes.‡

CLIMBING PLANTS.—*A. M.*—The following is a good selection: Clematis azurea, Sieboldi, and montana; Glycine sinensis, Solanum crispum, Chimonanthus grandiflorus, Jasminum revolutum, Ceanothus azureus, Magnolia conspicua and grandiflora, Berberis fascicularis, Passiflora racemosa, Bignonia radicans major, Caprifolium sempervirens, Eccremocarpus scaber, Cobæa stipularis.‡

CONSERVATORIES.—*A Subscriber.*—Your plan looks well; but you are losing too much room. Select corner the stages at the back wall; otherwise you will have only 4 feet, out of 15, for plants. Your borders, moreover, ought to be at least 3 feet wide, if bushes are to grow in them. Freestone is better for stages than wood.

COTTAGE GARDENS.—*R. H.*—We are much obliged for your note. Perhaps we have been remiss. We will endeavour to do better. Such hints and such aid are always most welcome.

ELDER FLOWERS.—*J. M. L.*—If these are dried very slowly, in the shade, and without heating, they will retain a part of their fragrance: but a great deal of it will disappear. They ought to be put into the still soon after gathered.

GARDEN WALLS.—*A Novice.*—A garden wall will face the sun at 1 P.M., if you build it at right angles to the corresponding point of the compass from your meridian, or N. by E. ½ E. If you are in doubt about the correction for the variation of the compass, you may consult your watch, putting yourself in a line with the sun, and a stake fixed in the ground, at the hour required, having first corrected your watch to the time of the sun's coming to the meridian, on the 20th of August; and surely this will be sufficiently accurate for all Horticultural purposes.‡

GRASSES.—*R. G.*—The most valuable of the Graminaceæ growing under trees is Dactylis glomerata. For *Aira Cæspitosa*, p. 393, read Aira C., but it is perfectly worthless—scarcely a creature will touch it; but we have the authority of Messrs. Lawson, transmitted, we apprehend, from some German experimenters, that Aira lutea, which has the same habitats as *A. Cæspitosa*, is a good Grass, with Anthoxanthum odoratum, Melica uniflora, (a very elegant Grass), Melica Sylvestris, Festuca Sylvestris, Bromus Sylvestris, Arundo Epigeios, and Bromus giganteus, also grow in woods under trees. The versatile character of Lotus corniculatus, which usually frequents only the sunniest downs, is one which has not been generally observed.—*W. P. Taunton.*

GREENHOUSE VINERIES.—*Omeo.*—The points to attend to in forcing plants in vineries are the following:—1. To train the Vines to the rafters, or trellis, so that they shall not overshadow the interior before the end of May. 2. To empty the house of all greenhouse plants after that period, and to take every possible pains to get the wood ripe. You cannot have Grapes without well-ripened wood. If Vines are very late in growing, they will require fire-heat in autumn, in order to ripen their wood, in many seasons. Vines and greenhouse plants do not agree very well; but under such a system they may be kept from quarrelling much.

HOLLY HEDGES.—*G. B. S.*—If your hedge were ours we should cut it down in the beginning of March to within two feet of the ground. It would spring up again, and would soon form an impervious barrier. Or if you like, cut the plants down to two feet and four feet alternately. If, after having done this, you shorten the shoots back a little every year, and never allow the bottom to be choked with weeds, a beautiful thick hedge will soon be regained.

HEATING.—*Aliquis.*—It will not do to use *open* gutters for bottom-heat. Whether you employ tanks or gutters they must be covered by something; and a porous material, like soft burnt flue tiles, is found the best. Wood will soon rot when buried in the ground; it is better to use bricks or slate. You must not rely upon your bottom-heat for winter purposes; at that time you want dry air heat for a greenhouse, and must have iron pipes to supply it. If E D is 13 feet, let A E be 6½ feet, C D 10 feet, and F B any height you please.

HEIGHT OF TREES.—*A Subscriber.*—An easy method of finding the height of trees is as follows:—Being provided with a level which is furnished with a vertical arch, take a station as far distant from the tree as its apparent height from the ground, and as nearly as possible on a level with its root. Having placed the instrument level, and upon looking through the sights, make a mark on the tree in a line with the cross wire in the sight of the level. Then raising the moveable part of the level to the angle of 45° fix it there. Looking through the sights, observe if they are in a line with the top of the tree, and if they are not, move the instrument backwards or forwards until the top is seen through them, still, however, keeping the instrument on the same horizontal plane with the first station. The distance from the instrument to the tree is its height from the mark first observed upwards; to this add the height from the ground to the mark, and the sum is the entire height of the tree.‡

INSECTS.—*C. F.*—Your little Spiders are the young of Aranea diadema, which live entirely upon flies and other insects, and when first hatched are gregarious. *R.*——*Este.*—The galls on your Elm-leaves are filled with an Aphis, but unless we had more matured and winged specimens, we cannot name the species. *R.*——*W. R.*—If your Thrips be the tropical species, no heat will destroy it, and if the evaporation be great, fumigation will not be successful. We cannot recommend any thing more effectual than fumigating with sulphur for twenty minutes, but the external air must be excluded. *R.*——*P. W.*—Your Weevils are the Curculio Pini, which only attacks coniferous trees: it has been numerous in various localities this season. The best mode of extirpation in young plantations is to hand-pick at night. *R.*——*B. Chilo.*—No. 1 is the Imago of Ephemera vulgata: the previous state is termed the Pseud-imago. 2. Chrysopa perla. 3 is an Ichneumon called Cryptus. You will find the histories and figures of your insects in "Curtis's Brit. Ent.," folios 709, 520, & 668.——*Abdolonymus.*—The history and a figure of your insect are given in the above work, fol. & pl. 37, and it is called Raphidia ophiopsis. It is in no way injurious to Roses, being carnivorous in the larva and imago states: if you will search at night, you will undoubtedly detect the real offenders, which we shall be glad to see. *R.*——*Vesicus.*—Your insect is the male Puss-moth, Cerura vinula. *R.*——*A.*—If you will take an ounce of shag tobacco, and pour a pint of boiling water upon it, and then dip into it the twig of a Rose-bush covered with Aphides, whilst it is tolerably hot, you will find the lice all dead in a few hours; and you may increase the quantity of water until you have ascertained to what an extent the decoction may be diluted to be efficient; but unless you can syringe the underside of the leaves it will have little if any effect on the insects lodged there, and this renders fumigation far superior where it can be applied. *R.*

LARCHES.—*A Reader.*—It is commonly reported that red sandstone produces heart-rot; but we have seen good healthy trees on a bottom of white freestone, which was in some places so thinly covered with soil as to appear above the surface of the ground. The Larch will thrive so as to be a profitable tree in almost all elevated rocky places, or where water does not stagnate; but it evidently dislikes permanently wet land. Rot often occurs in Larches growing in undrained clays, in wet sandy subsoils, in moors and such-like places, which afford a probable explanation of the cause of the evil. Worn out garden ground, or soil rich in humus, is especially unsuitable for it.‡

MANURES.—*A.*—From what we have seen and heard of Potter's guano, we should say that it can produce no such effects as those of drawing up and weakening shoots, and shortening the duration of flowers. We suspect your enemy to be darkness.——*C. L.*—If land is poor, it is as well to give liquid manure to bulbous Iridaceæ and Amaryllidaceæ; but few plants want it less. When administered it should be in very small doses, and when the plants are in full growth; the first application may be when they have fairly pushed; and the last when they are fully in flower. Three or four applications would be enough.——*J. B.*—It is impossible to answer such general questions. All plants like manure, except Heaths and Coniferæ; but the quantity and frequency of the application depends upon their health, of which no one can judge except an eye-witness. As we have frequently stated, the proper way of applying liquid manure is frequently and weak. The operator must judge for himself, from the appearance of the plants under treatment, when to stop. No directions can well be given for such things; experience is the true guide.

MORPHOLOGY.—*Devoniensis.*—There is no end to the proofs of the truth of this branch of science, if people will but use their eyes and understandings. Yours, however, is an unusually beautiful piece of evidence, and we shall get "R. E." to introduce it into his papers, for which purpose a drawing will be made of it. *By-and-bye we shall show why the doctrines of Morphology are important to Gardeners.* They really form the very foundation of some branches of the art of Horticulture.

NAMES OF PLANTS.—*Dugald.*—It is impossible to name foreign seeds.——*J. K. T.*—Your Lobella is not nearly so handsome as its parent.——*J. B.*—Your plant is one of the curious shrubby Nolanas. We did not know that they were in this country. Send us a better specimen, with two or three flowers, and it shall be published in the "Botanical Register."——*W. K.*—Callistemon lineare.——*A Subscriber.*—Irises cannot be named with certainty from such badly-preserved fragments.——*J. K.*—It is impossible to name plants without flowers in an *examinable* condition.

OAK BARK.—*Anon.*—Next week.

STRAWBERRIES.—*A Subscriber.*—With regard to the opinion that a fresh plantation of strawberries should be made every year, to be destroyed after having once borne fruit, and that the finest crops can only be obtained by this method, there are some doubts. Mr. Keene, the fortunate raiser of the seedling which bears his name, and an extensive cultivator, had a tolerable crop the first year, an excellent one the second, and after the third year he destroyed the plantation. Those called Pine Strawberries, such as the old Pine, Keens' Seedling, Elton, &c., will bear well in the same situation for many years, if properly managed. That Scarlets are best when the plantations are frequently renewed is generally admitted; and there are some large varieties, which appear to have more or less of the Chili in their constitution, as Myatt's Seedlings, which require that runners be early established for bearing in the following season, as the old plants are apt to die off. As fruit can be obtained earlier in the season from plants that have not previously borne, it is advisable to renew some portion every year; but the propriety of annually destroying the whole depends very much on circumstances; and, therefore, the method cannot be recommended, except in particular cases. Where it is adopted, it is of the utmost importance to root the runners as early as possible, either from plants established in the open ground, or from such as have been forced. Where practicable, it is one of the best plans to lay the runners in small pots. This plan has been known to insure complete success as regards a crop in the following season, when plantations made from plants not so rooted in pots have borne but partially.‡

VINES.—*A Subscriber.*—It will be in favour of the future welfare of your Vines if you reduce the number of bunches to 10 on each, seeing they have not been long planted.‡

MISCELLANEOUS.—*Abdolonymus.*—Numerous articles on watering out-door plants are given in the *Chronicle* for 1843, to which we would refer you, and more especially to p. 499 of the volume for that year, where we have expressed our own opinion on the subject.‡——*A Subscriber.*—Gentianella is troublesome to raise from seed. If well managed the seedlings may flower in the second year, but can hardly be expected to do so before the third. Portulaca Thellusonii is a tender annual.——*Gentlewoman.*—In the first place, your Strelitzia has suffered from removal, and has not yet recovered. Secondly, it is probable that a little bottom-heat is wanted by it; though that is not generally necessary. The genus does very well in loam, and will bear a good deal of dryness. We should expect that your specimen, if it remains in health, will flower again next year.——*A Lady.*—We have sent your letter to Mr. Roberts, and shall probably get an answer next week. We do not think you will find any of your seeds worth growing except Clitoria, Erythrina, and Noronhea chartacea.——*Anon.*—Much obliged. Your letter is given to the Superintendent of Police, who has all the arrangements, and will no doubt take means to abate the evil you complain of.——*F. H. R.*—The Number you require to complete your set has been some time out of print.——*An old Subscriber.*—Fruiterers may show at Chiswick against Market Gardeners, but not against private growers.——*A Gallovidian.*—No plants, except lichens, will grow on the steep face of a granite rock, where soil cannot lodge. Unless some means are found of enabling earth to collect, it is impracticable to clothe the rock with vegetation.——*S. Andrews.*—Cerasus crenatus can only be obtained by Fellows of the Horticultural Society, until it shall have been propagated by the trade. We have not received any previous note. It was raised at Carclew, near Penrhyn.

SEEDLING FLORISTS' FLOWERS.

CALCEOLARIAS.—*J. E. Y.*—Your seedlings are not equal in size, colour, or marking, to the Calceolarias of the present time.*

CARNATIONS AND PICOTEES.—*B. C.*—The Editor will attend to the wishes of his correspondent as soon as the flowers are sent.*

GLADIOLI.—*A. P.*—Your specimen was so shrivelled that we can give you no opinion upon it. We doubt, however, whether it is of any value. Unless seedling Gladioli are very decidedly handsomer than the old ones they are not worth preserving.

PANSIES.—*L. H.*—Your Seedling is of no value; it is deficient in the qualities that constitute a good flower.*

PELARGONIUMS.—*W. D., jun.*—Your flowers were so badly packed that it was impossible to tell to which of the flowers the petals belonged; they were all shaken from their stalks, and mixed together; something soft should have been placed over them. Judging from the petals, they appear to be common sorts, deficient in fine form, substance, and colour.*——*Capt. E.*—Your seedling resembles very strongly a variety called Garth's Witch, with more colour in the top petals; its great fault is its thinness and want of substance.*——*Anon.*—No. 1, dark self, is a very good flower, well formed, but possessing no superiority above many already known. 2 is the most novel; the form is good, and the petals large and flat; it, however, wants size. 3 is rather thin, and too irregular in its marking.*——*E. L.*—Both your seedlings are common, and not equal to sorts of the same character that have been long in cultivation.*——*R. C.*—Your seedlings are very deficient in substance; they are also common in colour and character, and not equal to the cultivated varieties of the present day.*——*A Devonian.*—Such specimens as you have sent come under the denomination of good showy varieties; they are deficient in the higher qualities that constitute the first-rate flowers of the present day. No. 1 is decidedly the best—its white centre, and the substance and fine colour in the lower petals, will make it a favourite. 6 is fine in colour, but we fear the petals curl back. The petals of 6 are all broad, but the upper ones are too puckered and uneven. 4 is too much like many that are already known.*——*M. A. T.*—Your seedling very much resembles a variety named Garth's Witch; the petals are rather long, and any other colour in the top petals would have been an improvement; nevertheless, it is a showy variety.*——*G. L.*—There is one great drawback to your flower—it turns at the edges; it is very like Coronation, but brighter in colour.*——*I. R. P.*—Salamander is beautiful in colour, but wants form very much; the same fault occurs in Marianne, but there is good colour in the upper petals; Mrs. Figg is the best flower in form and substance, and it retains its form well.*——*R. and S.*—A. is a clear showy flower, but too fringed at the edges, and does not differ sufficiently from known varieties. B. is an improvement upon a known flower, named Lady Carlisle; it is a fine clear colour, and appears to keep its form well; the spot is distinct, but too small, as one of the top petals nearly obliterates the spot in the other.*——*I. K. L.*—As the same character runs through all your seedlings, it is useless to criticise them individually; they all want size, form, and substance, and the plotch in the upper petals is generally composed too much of feather. You cannot have saved your seed from the best flowers.*——*Ajax.*—No. 11 is decidedly your best seedling; the flower is clear, bright, and well-formed; in the other three there is a deficiency of form and substance, and they are very common in colour; 9 stands next in good qualities.*——*A Young Beginner.*—The upper petals of your seedling are an improvement upon Garth's Witch; the bottom petals are rather long and thin, and the flower, altogether, not so stout as the one mentioned.*——*H. T.*—Your flowers had unfortunately fallen to pieces, but the under petals are evidently too narrow for a well-formed flower; it is showy and novel, but the form is deficient.*

PETUNIAS.—*S. G.*—Some of your seedlings are very beautiful, and will prove very acceptable to the lovers of this class of flowers, as novel additions to their collections. 54, lavender, with veiny surface, and having a lighter spot in each division of the corolla. 55, similar to 54, but a deeper lavender. 53, lilac, with deep purple crimson veins; a bold and striking flower; centre very dark. 52, Peach-colour, with dark veins and intensely dark centre. 36, ground-colour a degree darker, and veins rather lighter than 52, with the darker colour more spread over the surface. 37 resembles 52, with the ground-colour lighter and the veins more distinct. 38, blue-purple veins upon a lilac ground. 51, purple veins upon almost a white ground. 39, 34, 55, and 56 are not sufficiently distinct.*

ROSES.—*Rosa.*—Your seedling, *Briar* (single) is most beautiful in colour, a rich orange-scarlet, decidedly worth propagating.*

*** As usual, many communications have been received too late.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

GREAT NATIONAL CATTLE SHOW.

THE SOCIETY'S THIRD GREAT AGRICULTURAL MEETING AND CATTLE SHOW, for the Exhibition of Breeding and Fat Stock, Horses, Sheep, Swine, Flax, Wool, Butter, Farming and Agricultural Implements, &c. &c., will be held at the COBOURG GARDENS, Harcourt-street, Dublin, on Wednesday and Thursday, the 14th and 15th days of August next, for the Province of Leinster.

Premiums to the Amount of One Thousand Pounds and upwards will be given on this occasion, for the encouragement of the different Breeds of Stock, including:—Short-horns, Devons, Ayrshires, Herefords, Long-horns, Polled Angus or Galloways, West Highland and Kerry Breeds; also, for fat and Extra Stock not included in the above classes; also, for Horses best adapted to Agricultural Purposes, Sheep, Swine, &c., open for General Competition.

Premiums to a considerable amount will be also given for the best specimens of Butter, Flax, Yarn, and Wool; and a considerable sum of money, besides the Medals of the Society, will be allowed for the introduction and encouragement of Agricultural Machinery and Farming Implements of every description, for which the most ample accommodation will be provided. A large sum of money will be also appropriated for the exhibition of Seeds, Grasses, and Agricultural preparations of every kind, for which a large covered Shed will be erected, capable of affording the fullest accommodation.

The whole area of the COBOURG GARDENS, containing upwards of Eight Acres in extent, will be entirely appropriated on this occasion, and fitted up with separate Stalls, in the most commodious manner, for the exhibition of the Stock, Horses, Sheep, &c., and the different other objects of the Show.

Full Particulars connected with the Show can be had on application to Edward Bullen, Esq., the Secretary of the Society, 37, Upper Sackville-street, Dublin; by whom Premium Sheets and Blank forms of Notices of Entry can now be forwarded, on application, to any parts of the kingdom. Every animal must have a separate Notice of Entry, and all the Notices must be lodged with the Secretary in Dublin, properly filled up, on or before Thursday, the 1st of August, previous to the Show, or else be excluded from competition. Persons desirous of exhibiting large collections of Agricultural Implements are requested to send in full particulars to the Secretary, numerically arranged, on or before the 1st of August, in order that they may be published in full in the Catalogue.

The Agricultural Challenge Cup, value One Hundred Sovereigns, given by Peter Purcell, Esq., Honorary Secretary to the Society, for the Best Animal in the Neat Cattle Classes, possessing most merit of its kind, in the estimation of the Judges, and now held by George A. Grey, Esq., with his Short Horned Bull "Recruit," will be also challengeable on this occasion.

The different entertainments connected with the meeting will be conducted on the most extensive scale; and will be open to exhibitors and strangers visiting Dublin at the time of the Show, and every accommodation will be provided for the Exhibition of Stock and Implements in the Show Yard.

Signed by Order, EDWARD BULLEN, Secretary.
Society's Rooms, 37, Upper Sackville street, Dublin.

AGRICULTURAL SCHOOL.

MESSRS. NESBITS' ACADEMY, 38, Kennington-Lane, Lambeth, near London.

"From Chemistry alone further progress in Agriculture is to be expected."—LIEBIG.

In this School, in addition to the general routine studies, every facility is afforded for the acquisition of a sound knowledge of Chemistry. The Pupils are practically taught in the Laboratories the methods of analysing the various earths, soils, manures, &c.; and likewise the means of detecting the substances abstracted from the land by different crops. Land Surveying is also taught practically, as well as theoretically.

A copy of a Lecture on Agricultural Chemistry, delivered by Mr. J. C. NESBIT to the Maidstone Farmers' Club, and the Terms of the School, which vary from 40 gs. to 70 gs. per annum, may be had on application, either personally or by letter.

Mr. NESBIT'S Works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, Education, &c., may be had of all Booksellers.

REFERENCES.—Dr. D. B. Reid, F.R.S.E., &c., Author of "Elements of Practical Chemistry," &c., St. James's Park, Westminster; G. F. Richardson, Esq., F.G.S., Author of "Geology for Beginners," &c., British Museum, London; W. and J. Gibbs, Esqrs., Civil Engineers, Devonshire-street, Portland-place, London; Rev. T. Cuffe, Carlisle Episcopal Chapel, Lambeth; R. Greenhill, Esq., Ashford, Kent; and C. G. Whitaker, Esq., Barming, near Maidstone, Kent.

The School will be re-opened on Monday, July 15th, 1844.

The Agricultural Gazette.

SATURDAY, JUNE 22, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 26	Agricultural Society of England.
THURSDAY, June 27	Agricultural Imp. Soc. of Ireland.
WEDNESDAY, July 3	Agricultural Society of England.
THURSDAY, July 4	Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

June 24	Chepstow. Wenlock. Fairford. W. Firle.	June 28	Stoke Ferry. Hadleigh. Wrentham. Debenham.
June 25	Bromsgrove. Framlingham. Rayleigh.	June 29	Cardiff. Gloucester.
June 27	Richmondshire. Grove Ferry.	July 1	W. Market.

SOME time ago we received from one of our readers the following communication, signed "C. L.," commenting upon our remarks on MOWING YOUNG WHEAT:—"On reading your Leading Article of the 18th May, on the subject of mowing young Wheat, it appeared to me that if such a method was really beneficial, all my previous notions, which I had obtained through the columns of your Paper, of the great importance of leaves to vegetation, were erroneous, and that leaves were rather prejudicial than otherwise, for in this instance you recommend them to be cut away, to benefit the stem. Such an impression, I think, is natural; but upon reflection, it strikes me that the plan of mowing young Wheat is only a remedy for an error committed in sowing Wheat too thick, and that if a sufficient space between the plants had been left, it would be better to allow the leaves to remain. If leaves are to be considered as so many chemical laboratories always at work in the day-time, preparing food for plants, it does appear an injurious practice to destroy them."

Now, it must be observed that our remarks on this subject were only applicable when the plants, owing to luxuriant soil, wet weather, or other circumstances, had become overgrown, and thus liable to be laid by rain and wind. It must have been a very extraordinary case indeed, that would have benefited by the operation this year, the weather having been so singularly opposed to over-growth of any kind.

We quite agree with "C. L." that drilling Wheat in rows sufficiently far apart, would in a great measure obviate the necessity for this operation; light would then obtain free access to all parts of the plants, unhindered by their luxuriant foliage, and all its beneficial effects would then be experienced without any artificial assistance. For this reason, too, one would think that wide drilling would be particularly suited to wet seasons and districts—that the width of the interval between the plants, from which the maximum benefit is derivable, would be proportioned in some manner to the wetness of the climate.

We mention this particularly now, because we have in process an experiment on a considerable scale, the result of which will enable us to determine, with reference to soils of a certain description, the width of intervals at which, under given circumstances, the farmer ought to drill his Wheat. In accordance with the suggestion of the Editor of the *Gardeners' Chronicle* (in the vol. for 1843), we have divided a 10-acre field into five different plots, in which the seed was drilled in rows, 6, 9, 12, 15, and 18 inches apart respectively. Notwithstanding the dry weather which we have experienced, which if ever thick sowing was advisable would cause it to be so this year, the thinnest sown Wheat, that which is drilled at intervals of 18 inches, is of a singularly luxuriant and vigorous growth compared with that sown at intervals of 6 inches alongside of it. The plants and ears on the thick-sown plot are individually very puny compared with those on the neighbouring thin-sown land; though how far their greater number on a given space will affect the experiment in reference to the produce per acre—this being of course the ultimate test by which the practice must be tried—remains to be seen. We shall report further on this experiment in the autumn, and, along with our own, we shall be happy then to report the experience of any of our readers, on the important subject to which it refers.

IN the year 1834, the Doncaster Agricultural Society published a Report of their Committee on the TURNIP-FLY, and on the means of preventing its ravages. This Report embodied the opinions and experience of 102 correspondents, and though it suggested but few satisfactory means of diminishing the ravages of the fly, yet it was influential in drawing the attention of Entomologists to an insect which had till then almost entirely escaped notice. Accordingly, we find from the paper by Mr. Curtis on this subject, in the 2d vol. of the English Agricultural Society's Journal, that the economy of this little beetle was shortly after that made known by the careful investigations of Mr. H. Le Keux.

We extract the following particulars from Mr. Curtis's communication to the Agricultural Society:—"The eggs of the common striped Turnip-fly are laid on the under side of the rough leaf of the Turnip, from April to September; they hatch in two days. The maggots live between the two skins or cuticles of the rough leaf, and arrive at maturity in sixteen days. The chrysalis is buried just beneath the surface of the earth, where it remains about a fortnight. The beetles live through the winter in a torpid state, and revive in the spring, when they destroy the two first leaves, called the cotyledons, or seed-leaves, of the young Turnip. There are five or six broods in a season. These insects are most to be feared in fine seasons. Heavy rains, cold springs, and long droughts, destroy them. Their scent is very perfect: the beetles fly against the wind, and are attracted from a distance. The rapid growth of the plant is the best security against them: to secure which, sow plenty of seed, all of the same age. Burning the surface of the land is beneficial by destroying the chrysalides. Sheep-folding must destroy the insects in every state. Deep ploughing is an excellent practice when the chrysalides are in the soil. Drilling is a far superior practice to sowing the seed broadcast. Long, raw manure harbours the beetles. The benefit derived from the application of lime and soot is very doubtful. Mangold Wurzel is not favourable to the beetles; and Swedes are probably less attractive than white Turnips. Mixing white Turnips with Swedes is not desirable, as the beetles may be attracted by the strong scent of the former. Early sowing is attended with disadvantages. Destroy Charlock—it affords support to the beetles before the Turnips come up." Hoeing and rolling, constant horse-hoeing, watering the crops, especially with weak brine, fumigation by burning stubble, &c., tend to destroy, harass, and keep off the beetles; and immense quantities may be caught and destroyed by the use of Paul's net, painted boards, &c., drawn over the young Turnip plants.

It is not, however, to these latter remedies that the farmer must look for security from the Turnip-fly; he must adopt preventive, not remedial measures, to insure the safety of his crops from its ravages. Watering plants which are attacked by it may destroy numbers of these insects, but it is an operation which no extensive farmer can undertake. This is evident from the consideration that one day's showers—say equal to an inch of rain—scatters over each acre a hundred tons of water: a quantity which a man, horse, and water-cart could not spread in a week.

The most probable means of destroying these insects are, frequent and deep cultivation during the growth of the plants, and at all other times; and the most probable means of evading their attacks lie in the adoption of such a mode of cultivation as shall cause a rapid germination of the Turnip-seed, and vigorous growth of the young plants through that stage of their existence in which they are most liable to injury from this cause.

AGRICULTURAL IMPROVEMENTS.

WITH reference to my improvements at Tiptree Hall (the expenditure of 6000*l.* on a farm of 130 acres, that only cost 3250*l.* as explained in my two former letters), I am so constantly told, in tones varying from doubt and pity to ridicule and censure, that "It can never pay"—"You will never see your money again"—"You are a bold man"—"It is impossible it can answer—the cost is too great," and so on, that I must endeavour to fill up the outline of my plan with details, and try to convince those whose comprehension of my success is impeded by prejudice. Most of my operations are approved of separately, but there is a dread of the sum total, as if what were individually right could be collectively wrong. I shall show, then,

1st. How the farm is to pay me, as landlord, an additional rent of 240*l.* per annum, with an increased benefit to the tenant, as compared with his former holding.

2d. The intended course of cropping, stocking, and management of the farm.

3d. I will remark on the weak points in the present state of land and system of farming.

4th. I shall submit a few general observations on the non-application of capital to land; and on the importance of agricultural improvements in an economical, social, and other points of view.

In making the following estimates, I have adhered strictly to matters of fact, which I am prepared to discuss and substantiate. I have expressly undervalued the benefits, because I know how suspiciously and sceptically my statement will be scrutinised by those whose minds are pre-occupied by doubts and prejudices, rather than by calculation.

STATEMENT OF ANNUAL GAIN OR SAVING.	£	s.	d.
200 trees removed—estimated to damage by their roots and by their shade, 1*s.* each	10	0	0
980 linear rods (5½ yards each) of removed banks and Fences (Ditches filled up), averaging two yards wide—estimated to damage by their roots, their shade, their encouragement of weeds and vermin, 6*d.* per rod	21	5	0
1-6th saved in horse labour and wear. (This, in the Agricultural Society's Journal, vol. iv. p. 336, is estimated at 1-4th)	21	0	0
1-8th ditto in manual labour	20	0	0
Seven acres gained in fences, &c., which produced nothing, but cost the tenant, rent, &c., 35*s.* per acre	12	12	0
Profit in cultivation of the above seven acres, at 15*s.* per acre	5	5	0
105 quarters of Wheat, thrashed by machine, gain in quantity 1-26th, or 2*s.* per quarter	10	10	0
150 ditto spring Corn, at 1*s.*	7	10	0
Saving in thatching, removing stacks and straw, waste by birds, &c.	5	0	0
Liquid manure tank—we only reckon upon 20,000 gallons, at 50*s.* per thousand (each 1100 gallons being equal to 4 cwt. guano)	50	0	0
Improved quality of solid manure	10	0	0
Increased value of stock, by warmth, dryness, and diminished consumption of food	15	0	0
General increase on 90 acres of Corn and Clover crops, arising from *perfect* drainage, at 1*l.* per acre	90	0	0
Saving in quantity of seed sown	20	0	0
Twenty acres that used to be long fallowed, at an expense of 5*l.* per acre, now calculated to pay their expenses, if not a profit, by Bean or Root crops	100	0	0
A first-rate house to live in, with every comfort and convenience—the lower rooms eleven feet high, the bed rooms ten feet high, and convenient rooms for the bailiff. (The tenant could not reside in the old dilapidated hovel, which was damp, unhealthy, and caused several deaths by fever)	80	0	0
	£428	2	0

To sum up, whereas the former gross annual return of the farm was under 5*l.* per acre, we shall try to increase it to 10*l.* per acre.

To this might be added several contingent advantages, of considerable value, but not so easily reduced to figures.

1st. The being able to fat at least 100 to 150 sheep more than before, of a better quality, and earlier lambs. The tenant could breed, but never thoroughly fatten a lamb or sheep on the farm in its former cold, wet, and exposed state, with its homestead open to the cutting north-east winds, without gutters or drainage.

2d. The facility of cooking and steaming food, and the economy of several acres that were required for horse food, by growing Lucerne, Tares, &c.

3d. The very important benefit of early sowing and

harvesting. We reckon we shall gain at least a fortnight in both, as proved last year, with superiority of sample, and avoidance of wet weather in September.

4th. A perfect independance (by our efficient drainage) of a very wet season, which has often ruined the crops on this farm; witness 1842, when the Oats yielded but three quarters two bushels per acre, and an inferior sample.

Lastly, The agreeable feeling of having a complete farm, with good roads, comfortable homestead, and good crops, instead of the former dilapidated, beggarly, and poverty-struck land and premises.

The saving of horse and manual labour is considerably underrated, when you consider the ready communication with each part of the farm, the abolition of all short lands, the facility of ploughing or carting at almost any time with less power, the land being firm and mellow, instead of puttyand-pate-like;—no idle days in wet or cold weather, there being employment under cover for men and horses, grinding, chaff-cutting, or thrashing; the facility, at harvest, of drawing the loaded carts into the bays of our large barn, and at once depositing the sheaves;—the ease with which they are transferred from both barn and stacks to the thrashing machine, the straw being delivered by the machine into a gallery over the very sheds, yards, and stables, where it is required; no time lost or accidents in leading horses or cattle to water, there being tanks in every yard, and a yard to every stable—all the tanks filled simultaneously from a single pump. There is another advantage of which no valuation is taken, I mean the farmer or bailiff's time; whilst writing up his accounts or arranging his plans, by stepping from one room to the other, he can at once see every man, boy, horse, or sheep, on *any* part of the farm excepting four acres. Any accident, neglect, maltreatment, or pilfering, is perceptible at a glance.

The course of cropping will be regulated by markets and circumstances. It may be stated generally, that on the heavy land Wheat will alternate with Beans and a little Clover and Tares; and on the light land Barley succeeded by Rye for feed, and then roots, so as to have one corn crop, one green crop, and one root crop in two years. Should Flax or Indian Corn be found profitable, we may grow them. It is intended to adopt Mr. Hewitt Davis's excellent practice (which is Jethro Tull's revived) of a small quantity of seed with wide intervals. For carrying out this, no instrument appears so well suited as Newberry's dibbling machine, which will deposit three pecks per acre of Wheat (and other corn in proportion) at intervals of six inches in the row, and the rows twelve inches from each other (Beans, Peas, and Roots we mean to place twenty-seven inches between the rows). By affording a sufficient space for frequent hoeing and cleaning, this will do away with long fallows, secure heavier crops (on drained land) and avoid that competition for support which produces, in luxuriant showery seasons like the last, ruinously laid crops, and lean miserable kernels, which diminish the value of the sample by ten pounds in every hundred. We have found Crosskill's clod-crusher roller of extraordinary benefit in pulverising our stiff land (disordered by drainage and carting), and shall use Hill's pulverising plough with Mason's knives: in fact, take every opportunity, by means of subsoiling, scarifying, &c., to obtain a fine and deep tilth free from weeds; nor shall we debar ourselves from purchasing guano or artificial manures, should such a course appear occasionally desirable. Our great object will be to grow the very utmost that the land can produce by forcing; bearing in mind, that in doing so, we virtually decrease the expense of rent, labour, seed, tithes, rates, and other charges, thereby increasing our profit, and improving the land for the future. We are now using one bushel of bone-dust, dissolved in forty pounds of pure sulphuric acid, to all our root-crops, in addition to other manure.

The stock will consist of twelve head of cattle fed in stalls or boxes (on the principle so ably stated and practised by Mr. John Warnes, jun.), with steamed or cooked linseed, clover, chaff, pulse, potatoes, &c. These cattle will be considered our manufacturers of manure, as the Lincolnshire farmers call them, and if they occasionally pay for their feed or profit, so much the better. As we shall grow annually thirty to forty acres of roots, we hope to be able hereafter to produce food enough for 200 to 300 sheep, to be folded on the land or fed in the yard, according to weather and circumstances, having an especial regard to the well-established fact (as proved by Professors Liebig, Playfair, and others) that with warmth and dryness, a little food fattens quicker than a great deal with cold and wet. All our straw will be cut into chaff for litter. There appear many advantages in this, such as the diminished space it occupies, the readiness with which it absorbs liquid manure, its more rapid fermentation, its avoidance of frequent turning, its portability, both as chaff and manure, and above all, the facility of commixing it intimately with the soil in preparation for root crops. In the tank we shall probably introduce a layer of earth or gypsum between each layer of manure, particularly in the summer season, so as to secure the ammonia. The liquid manure will be applied by a water-cast to the growing crops (the ammonia being first fixed by sulphuric acid) and as the green crops are mowed for consumption in the yard, the liquid manure will follow the scythe. We have also used much common salt, especially on the light land.—*J. J. Mechi*, 4, *Leadenhall-street, London*

(*To be continued.*)

ON BLACK HORSEPONDS.—No. VII.

In concluding these papers, I have yet to mention one agent which acts as a vigorous poison when received into the constitution through the lungs during respiration, and which is elaborated in and eliminated by black horseponds; namely, sulphuretted hydrogen. It has long been known that this gas, when inspired, produces very injurious effects on health and life, even though largely diluted with atmospheric air. The experiments of Messrs. Thénard and Dupuytren have shown that birds are destroyed in an atmosphere containing only $\frac{1}{800}$th part of this gas, and that air containing $\frac{1}{150}$th part will kill a horse in a short time. Sulphuretted hydrogen has long been suspected to play an active part in the production of malaria; producing in warm climates yellow fever, and in the more temperate regions fevers of a bilious and typhoid character, as well as ague. Until recently, scientific men have failed to demonstrate its existence in places known to be malarious; Professor Daniel, however, in 1841, succeeded in detecting quantities of this gas in some specimens of water submitted to his notice by the British Admiralty for analysis. These specimens were from the African rivers, Bonny, Sierra Leone, Mooney, Congo, and the adjacent seas. Dr. Marcet found the same gas in the waters of the Yellow seas; and Mr. Gardner, of London, also found it in water from the Booney and Lagos. All these localities are reputed for their insalubrity, and we have recently had melancholy proof of the same in the late Niger expedition. The same causes which produce the yellow fever in the African rivers are in activity in our own country, producing malarious disease, modified by climate, such as the agues and bilious fevers of the Fens of Lincolnshire, the Isles of Ely, of Sheppey, and many other localities.

The active agents in the formation of sulphuretted hydrogen in these localities are, vegetable matter in a state of decomposition, sulphates, water, and heat. When vegetable matter, in a state of decay, is placed in contact with sulphates in solution, these latter undergo decomposition, oxygen is abstracted, and sulphurets are produced; the latter in their turn yield sulphuretted hydrogen with the first nascent hydrogen they encounter. The final compound of these bases is probably a carbonate. That sulphuretted hydrogen is thus produced is a matter of demonstration. Professor Daniel put decayed leaves together, with water containing sulphate of soda, in a jar, and subjected them to the action of summer heat; in three months sulphuretted hydrogen was abundantly given off, and the salts decomposed. If no sulphate be present either in the vegetable matter or water, the gas will not be given off.

Now in black horseponds we have all the circumstances necessary for the generation of this deleterious gas; we have vegetable matter in a state of decomposition, and also the sulphates in solution, such as sulphates of lime, soda, potash, and magnesia: these latter are contained in the saline matter of the urine, and when these ingredients are warmed by the sun, during the summer and autumn months, we have sulphuretted hydrogen generated in abundance; this gas constantly being evolved from the surface of such waters, renders the air above and around highly pestilential. That sulphuretted hydrogen does exist in and is evolved from the surface of black horseponds, we have only to use as a test a piece of pure silver. If a piece of pure silver be partly coated with grease or varnish, and be suspended for a few days above, or in the horsepond, or in any locality where the gas is disengaged, it will be found to have acquired a colour varying from the palest yellow to orange or brown on the part uncovered, while the varnished portion will retain its original brightness, showing by the contrast of colour any change in the exposed portion. This change of colour arises from the suphur combining with the silver, and forming a sulphuret of that metal. The same change occurs when a silver spoon has been used in eating an egg—the egg containing a portion of sulphur. The smell of rotten eggs is, in fact, sulphuretted hydrogen, given off by the decomposing animal matter of the eggs. The rapid tarnishing of silver or plated goods in towns arises also from the same cause, this gas being evolved from the sewers and drains in abundance.

Although the amount of this gas evolved from the black horsepond may not be sufficient to endanger the life of the animal, diluted, as it must be, by atmospheric air, yet, when so deadly a poison is mixed with the air we breathe, it must produce an injurious action on the animal economy, impairing the functions of every organ in the body, and interfering with that regular process of health, which it is the interest of every farmer to maintain in his feeding and fatting stock. To the existence of such causes, also, may perhaps be attributed those epidemic diseases which so often attack, and not unfrequently carry off much valuable stock, to say nothing of the fevers which may arise in his own or his neighbour's family from the same source.

The farmer may devote his time and attention to breeding and rearing the best cattle—providing the most nutritious food—feeding on the best principles—erecting the best-constructed sheds with regard to aspect and warmth, with all the *et ceteras* conducive to profit; yet, if he neglect to keep up vigorous health in his stock by supplying pure water, instead of water polluted with the excrements of his cattle, all his exertions will be in vain—his cattle will be longer in feeding, consuming much food, and will never arrive at that state of perfection which it is his object to attain.—*Alfred Gyde, Painswick.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Management of Manures.—After the farmer has rendered his fields free from superfluous moisture, the next great object of his care is to enrich them with manures. Experience has taught every practical Agriculturist that, notwithstanding all his attention to completed drainage, minute pulverisation, thorough eradication of weeds, and strict adherence to alternate cropping—indispensable towards perfect husbandry as these unquestionably are—his land will certainly and speedily become deteriorated in condition, and his crops vastly diminished both in quantity and in quality, unless the productive powers of the soil be kept up by regular applications of enriching manures. Close and severe cropping being the leading feature of the agriculture on the strong fertile soils of East Lothian, frequent and liberal manuring obviously becomes indispensable. The collection and judicious application of manure are, therefore, matters of no trivial importance; for it is obvious that on the quantity he is able to accumulate, and the judgment displayed in its management, much of the productive capabilities of his land, and consequently of the extent of his own success, will ultimately depend.

The East Lothian practice of former times in the management of dung, appears to have been extremely defective. The great error consisted in giving too large a quantity at once, and at very long intervals. At one period the quantity of manure bestowed was very great—sometimes triple, and always double the bulk now applied—thereby surfeiting one field and starving others, or, to use the words of an old agricultural writer of this county, "The soil rioted in the midst of plenty for two or three years, and fasted or starved for several succeeding seasons. Hence the generality of fields were either too rich or too poor; either saturated with manure, or completely barren for the want of it." The practice of the old farmers was, in other respects, equally injudicious. Within the last 20 years, however, very considerable improvement has taken place in everything relating to the management of manure; indeed, it may be truly said that a great deal more anxiety and judgment are displayed in the collection and general management of manures by even the worst farmers of the present day, than what were shown by the very best some 30 years ago. But, notwithstanding the increased attention now everywhere paid to this valuable substance, it must be acknowledged that very ample room still exists for further improvement in the East Lothian mode of managing it. There are undoubtedly many substances, both of a solid and a liquid nature, either entirely lost, or allowed to remain in a state worse than useless, which might very easily be converted to the most useful purposes. Large sums of money are annually expended in this county in purchasing guano, nitrate of soda, and other foreign "fertilisers," whilst considerable quantities of equally valuable substances of home production are either altogether neglected or but partially employed. In point of soil, cultivation, and produce, East Lothian, it is freely conceded, ranks first in Scotland; and in some of these respects, particularly in its mode of tillage, it will at least bear a comparison with the most improved districts of England; but the greatest admirers of the system of farming here pursued acknowledge that, so far as relates to the general economy of manures, the practice of the East Lothian farmers is not deserving of similar commendation. It is to be hoped, however, from the general anxiety which now happily prevails amongst the farmers, to hear and, so far as practicable and profitable, to adopt the suggestions of men of science on this important subject, that in the management and application of manures, too, the spirited farmers of East Lothian will not long remain behind their neighbours. In my further remarks upon this subject, I shall restrict myself chiefly to details of the mode of managing farm-yard dung and other manures, now pursued by the best farmers in the county. The reader may then judge for himself, as to the merits or demerits of our practice in this department of rural economy.

Farm-yard Dung.—Until a comparatively recent period, muck, lime, and seaweed, were the chief, if not the only species of manures, used in this county. During the last twenty years, bone-dust and rape-dust have been extensively employed in Turnip culture; but these, though once highly prized, are in their turn likely to be superseded, at least for some time, by the various other fertilisers now so much in vogue. But, notwithstanding the comparative cheapness and efficacy of many of these new auxiliaries, it is still on the old "muck midden," or dung-hill, that the farmer's chief reliance is placed.

The practice universally adopted throughout the Lothians, of feeding cattle of all kinds and ages, except milch cows, in open fold-yards termed closes, with accompanying shelter-sheds, greatly facilitates the rotting of straw, and the accumulation of dung, fresh litter being constantly required to keep the yards dry and clean, and straw given unsparingly as fodder, the excrements of the cattle uniting with the straw, and all compressed together into one mass of animal and vegetable substances. Of course, the yards occupied by cattle fed on Turnips and Oil-cake, contain the best dung. In the majority of the newly-erected farm-steadings, the stable opens on one side upon some one of these yards, the dung and soiled litter from which are regularly scattered over the yards, when cleaning out the stable every morning.

When the dung has considerably accumulated in the yards, or has become pretty well rotten, it is carted out at convenient opportunities, to the fields to which it is afterwards to be applied, and there stored up in large heaps, here called middens. The carting of dung from the yards to the fields intended for green crops, proceeds during the winter, as suitable opportunities occur, or when the state of the weather prevents the other operations of the farm from being carried on. Hard, frosty weather is, for obvious reasons, always preferred; but the work is proceeded with at all times during the winter

and spring, when the ploughing is suspended by heavy falls of rain or snow. A convenient spot near to the entrance gate of the field is selected for the site of the dunghill, a few cart-loads of the roughest of the dung are first carried out, and the whole of the intended site filled with it, in order to prevent the cart-wheels from sinking into the soft land. The heaps, for the convenience of after turning, are seldom more than five or six feet high, and so wide as to allow the horses and carts to turn, when unloading, on the top. The fields being, generally speaking, rather large, and often of irregular surface, two heaps are commonly made of the dung to be applied, so situated as to economise, as much as possible, the after cartage. When taken out in winter, the horses and carts are allowed to go up and unload upon the heap, one end being left low for that purpose, and afterwards made up uniform with the rest; but the dung taken out to the fields during the spring, or shortly before being required for application to the land, is never carted or trodden upon. In this case the carts are backed up to the heap, and the dung thrown loosely together with a grape or fork. The heap not being consolidated by unloading upon it, the process of fermentation commences immediately after its formation. Double-horse turn-up, or as we call them coup-carts, are invariably used in conveying dung from the yards to the fields. All the yards, sheds, and houses are cleaned out generally about the middle or end of March, for the dung to be that year applied to Beans, Potatoes, and Turnips; what is collected from that period till June being reserved for the land (if any) to be summer-fallowed. The dung carted out in winter is, in most cases, completely turned over about three or four weeks before being applied to the land, in order to mix all the different parts minutely together, and to bring the entire mass into the requisite degree of decomposition; the heaps intended for Beans, Potatoes, Swedish Turnips, &c., being turned over in the order in which they are wanted for application. This operation is usually done by contract. In some parts of the county women are preferred to men for turning dung, the former being supposed to take smaller grapefuls, and mix the parts more intimately together, than the latter. The workmen invariably begin at that end of the dunghill on the lowest ground, and after marking off a strake or division, about one and a half or two yards wide, according to the depth, they turn it over into a mud heap, laying that which was originally uppermost underneath. The use of the dung-spade in cutting the dung perpendicularly greatly facilitates its lifting with the grapes. When arrived at the bottom of each division a portion of the earth is thrown over the top of the newly-turned dung. Another division of the heap is then marked off and turned in a similar manner, and so on until the whole is completed. Should the dung be very dry and but slowly decomposing, it is customary to saturate it perfectly with water, in the absence of rain, while turning it over, which considerably accelerates the fermentative process. Latterly a few farmers, while turning their manure heaps, have sprinkled them over with a little gypsum, in order to fix the ammonia evolved during the process of fermentation. Others are beginning to use diluted sulphuric acid for the same purpose.

After the whole has been turned, the sides and top are covered with earth for the purpose of protecting the dung from the effects of the sun and wind, and to absorb the volatile gases disengaged in the process of fermentation. Dung carted out during the spring and intended for Potatoes, is seldom turned over in the field, it being considered that this crop does not require the manure to be brought to the same degree of decomposition as for Turnips or other crops having small seeds. The dung intended for application to the fallows is usually turned over in the yard in which it has been collected a short time before being required for use. If very dry, as is generally the case at that period of the year, water is copiously added. Wet weather is always preferred, especially in summer, for performing this operation.—*T. Sullivan.*

ON MINERAL AND INORGANIC MANURES. No. XIX.

By Professor Charles Sprengel.

(*Continued from page* 394.)

4. *Clay and Loam.*—Clay, as we know, is a very fine grained earth, which consists of a chemical compound of alumina and silica, with a great quantity of *free* silica and alumina, more or less oxide of iron and manganese, silicate of lime, potash, soda, magnesia, and iron. Most sorts of clays contain, moreover, a small quantity of gypsum, common salt, phosphate of alumina, phosphate of iron, or phosphate of lime. Notwithstanding, therefore, that the chief component parts of clay are silica, alumina, and oxide of iron, which have little value as manures, as most soils contain them in sufficient quantity, still it also contains a small proportion of those substances, which are essential for the nourishment of plants, and often wanting in several sorts of soil.

Loam differs from clay only in the coarseness of its grains, consisting mostly of quarts, but at times also of felspar, mica, silicates of potash, lime, &c. which are mixed more or less with the fine argillaceous parts. These must not be left unnoticed, if a correct idea of the action of both clay and loam is to be formed. Both improve the soil, not only mechanically, but also chemically, as they contain substances which really nourish plants.

Clay and loam have long been used in their natural state as well as roasted, in the manuring and improving of fields; and although some believe that the manuring with burnt clay is a discovery of recent date, it can be proved that it has been used in some countries for the last 150 years. In its natural state, clay is merely used for improving sandy, marshy, peaty and chalky soils; because, although matters essential to vegetable nourishment are thus added, the main object is to improve their texture. In a roasted state, however, clay is used on all sorts of soils, as it will not only improve most of them mechanically, but all in a chemical point of view. We shall speak first of the manuring with clay or loam in their natural state.

Both will decompose, but very slightly, the coal of humus or the vegetable matter in the soil, as they do not contain any powerful bases (as soda, lime, potash) either free or combined with carbonic acid. If, on the other hand, the bases which are contained in the clay or loam combined into silicates by silica, are to become useful to the plants, the soil must contain a substance which will decompose the latter. Such is humic acid, which combines with the lime, magnesia, soda, and potash of the silicates into salts, which being soluble in water, will pass into the plants. Humic acid is the more important as it has to dissolve such phosphates as may be contained in the clay, and to convey them to the plants; because, although the carbonic acid, which comes with the rain water into the soil, or which is formed by the humus, acts similarly to humic acid, yet its action is very slight.

The circumstance, that clay and loam always contain only small quantities of gypsum, common salt, and silicates of lime, magnesia, potash, and soda, as well as phosphates, compel the use of them in large quantities, if they are intended to improve the soil chemically, and to nourish plants. In sandy and marshy soils this is the more necessary, as they are also required to improve them physically.

I have analysed several sorts of loam which are employed with great effect for the improvement of sandy soils, and subjoin two such cases, as I shall thus be better able to explain their action; and they may serve as a guidance to those who may wish to manure their soils with loam.

a. 100,000 parts of a loam employed for the improvement of a sandy soil, rich in humus, contain:—

95,104	parts	silica and quartz sand
2,520	,,	alumina, partly combined with silica
1,460	,,	oxide of iron ditto
0,048	,,	oxide of manganese
0,336	,,	lime combined with silica
0,125	,,	magnesia ditto
0,072	,,	potash ditto
0,180	,,	soda ditto
0,072	,,	phosphate of lime
0,048	,,	gypsum
0,035	,,	common salt
100,000	parts.	

Of this loam not less than 200,000 lbs. are to be put on one acre, to produce a good effect; the soil will then receive 5000 lbs. alumina, partly as clay, and partly in a free state, which will not only increase the powers of the soil for retaining water, but will in some degree decompose the humus; it will also receive 670 lbs. lime, which will become gradually available for plants, as the humic acid of the soil separates it from the silica; 250 lbs. magnesia, which will also reach the plants by means of the humic acid, and suffice for many crops; 150 lbs. potash, and 360 lbs. soda, which, like the lime and magnesia, will be separated from the silica; 150 lbs. phosphate of lime, which is soluble in carbonic and humic acid; and 96 lbs. gypsum, and 70 lbs. common salt, which the rain water will convey to the plants. The quantity of phosphates of lime contained in loam may be somewhat greater, but as one crop does not require of this substance, as has been stated above, more than 5 lbs. or 6 lbs.; the quantity of it present will suffice for 30 crops; the same will be the case with gypsum and common salt. But it is not to be forgotten that part of the mineral substances conveyed to the plants reverts again to the soil as manure; while some portions may be altogether lost, as they are dissolved and carried away by the atmospheric water. If instead of 200,000 lbs., 300,000 lbs. of loam are conveyed on one acre of land, one-third more of all these mineral substances will reach the soil, and the effect will be then the greater; but it is the province of agricultural calculation to see whether the increased expense will be commensurate with the result to be obtained. If the texture of dry sandy soil be improved by loam, as it certainly will if the above quantity be used, it is also to be considered that the dung will afterwards be of more avail to the crops, as it will be less apt to volatilise, and to be extracted by the rain.

100,000 parts of a loam which was used for the improving of a sandy soil, which contained 2½ per cent. of humic acid, and was not entirely deficient in lime, magnesia, potash, soda, gypsum, &c., was composed of

95,365	parts	silica and quartz sand
1,600	,,	alumina mostly combined with silica
2,140	,,	oxide of iron
0,200	,,	oxide of manganese
0,135	,,	lime combined with silica
0,040	,,	magnesia ditto
0 087	,,	potash ditto
0,090	,,	soda ditto
0,260	,,	phosphate of lime
0,065	,,	gypsum
0,018	,,	common salt
100,000	parts.	

By the application of 300,000 lbs. of this loam per acre, we therefore convey to the soil 4800 lbs. alumina, 405 lbs. lime, 120 lbs. magnesia, 26 lbs. potash, 270 lbs. soda, 780 lbs. phosphate of lime, 195 lbs. gypsum, 54 lbs. common salt, &c., all which substances will supply many crops with the necessary nourishment.

Clay always contains not only more alumina (at times 20 per ct.), but generally more gypsum, common salt, potash, soda, lime, and magnesia, on which account such large quantities of it as of loam, are not required. This, however, can only be decided with accuracy, by subjecting it to chemical analysis, as this is the only means to ascertain the amount of the manuring substances, which are thereby conveyed to the soil. It is not necessary to state in detail that clay and loam will never improve the soil as *clayey* marl does, and that they are only to be used when the latter is not at hand.

ON BONES AS MANURE.

The chief ingredients of which the bones of animals consist are gelatine (glue), and the phosphates of lime and magnesia. They contain about 34 parts of gelatine, and 57 parts of the phosphates of lime and magnesia; and, besides this, a small per centage of carbonate of lime (chalk), and fluoride of calcium (Derbyshire spar). The only ingredients of any importance to agriculturists, are those which form the chief bulk of bones, viz., gelatine and the phosphates. Bones are employed in two forms, either unboiled or boiled. Let us consider what takes place when bones are boiled in water. The gelatine dissolves, and the earthy matter of the bones remains, retaining the form of unboiled bones. The question now is, What part does the gelatine play in the nutrition of plants? It has been proved that gelatine, as such, cannot be taken up by the roots of plants, and it is only by its conversion into carbonate of ammonia that it is able to benefit a crop. Gelatine contains all the ingredients necessary for this conversion, which, however, takes place but slowly. Carbonate of ammonia is taken up readily by the plant, and is expended in the formation of substances containing nitrogen. The chief objection to this salt is its volatility; it therefore becomes a question of practical importance to the farmer, whether it be not more profitable to make use of boiled bones, if they can be got cheaper, and to supply a safer and cheaper substitute for the gelatine, viz., a substance capable of yielding nitrogen to plants without much loss. It can be proved that a great loss takes place in unboiled bones in the soil during autumn and winter, by the volatile nature of carbonate of ammonia. Of the importance and use of boiled bones, those only will doubt who know nothing of the uses of phosphates in the economy of vegetable life, and who believe the effect of bones to be solely owing to their animal matter. The importance of phosphate of lime will be manifest, when we are informed by chemists that the ashes of the seeds of Wheat contain 44½, those of Barley 32, and of Peas 17½ per cent. of it. How could the bones of children and animals be formed, were they not contained in their food, which has been abstracted from the soil? We know that bones, by boiling, are only deprived of their gelatine; and they consist, after boiling, almost wholly of phosphate of lime. The price of boiled bones is less than half that of unboiled; and since most people will allow that the gelatine may be substituted, why not make use of a substance fitted for immediate use by the plant? Such substances are sulphate of ammonia, muriate of ammonia, nitrate of soda, and guano. Eight pounds of sulphate of ammonia to every cwt. of boiled bones would amply compensate for all the nitrogen which the same quantity of unboiled bones could yield, provided all its nitrogen were imbibed by the plant,—a case which never occurs. It may be urged, and truly, that unboiled bones are of longer duration than boiled bones. This is partially true, owing to the protective influence of the gelatine; but they have the disadvantage that, unless finely ground, they do not exercise much influence upon the plants in the first year, whilst boiled bones benefit the crops immediately. When the land is very deficient in phosphates, it will be very materially cheaper to the farmer to apply boiled bones, because with every cwt. of these he supplies one-third more phosphates at half the expense. The objection against the shorter duration of boiled bones is easily obviated by the application of a quantity rather more than sufficient for the supply of a rotation of crops, with phosphates, and in the manner recommended by Professor Liebig, viz., by dissolving them in acid. For this purpose, 1 cwt. of boiled bones will more than suffice for the supply of a statute acre of land, with the necessary quantity of phosphates required by the ordinary rotation of five crops. It is better to add more than a sufficiency, as by these means the land is gradually improved without unnecessary outlay of money. In order to effect the solution, proceed as follows:—1 cwt. of the ground boiled bones are to be placed in a wooden tub, and 3 cwt. of water to be poured upon them; 70 lbs. weight of sulphuric acid (oil of vitriol of commerce) are now to be poured into the tub, and the mixture to be well and frequently stirred. Effervescence takes place, owing to the decomposition of the carbonate of lime, contained in small quantity in the bones, and the expulsion of carbonic acid, for which reason the tub must only be two-thirds filled. In this process the following decomposition takes place:—The sulphuric acid, combining with the lime and magnesia of the bones, forms sulphate of lime and sulphate of magnesia (gypsum and Epsom salts), and renders the phosphoric acid soluble, which, together with the sulphate of magnesia, is dissolved in the water. Allow the liquid, &c., to stand over night, and mix it upon the following day with dry charcoal, sawdust, and soil, until all the liquor is absorbed, and the whole forms a stiff mass. Take it out

of the tub, spread it out, and dry it in the sun, or in a warm place, and apply it by the drill. If it is to be used on pasture land, the last time will be the end of March.

Let me here remind the farmer that in buying unboiled bones, he should recollect that the younger the animals have been from which the bones have been taken, the greater will be the quantity of gelatine contained therein, and *vice versâ*. Old farmers have observed that the bones of horses (which are only killed when old and unfit for use) are preferable, and of longer duration than those of any other animal. This is evidently owing to the large amount of phosphates which they contain, varying from 70 to 85 per cent., thus confirming the view I take on the subject of boiled bones. The agriculturist will find it of more advantage to use the gelatine of unboiled bones for nourishing his pigs, than for applying to his land; it will well remunerate him to buy fresh bones for the purpose of boiling them together with other messes for nourishing his pigs.

If the farmer does not wish to dissolve his bones after the efficient manner proposed by Liebig, it is better to use bone-dust. He must not, however, imagine that bones are a substitute for guano or farm-yard manure. If the land is only wanting in phosphates, with nothing either better or cheaper can they be supplied than by means of bones. They are often found to produce no effect, and in every such case which has come under my notice I have found that the land either contained a sufficiency of phosphates, or demanded a supply of alkalies. Bones are almost as much misapplied as lime. All that can be answered for certain to the inquiry, When should bones be applied? is, that pasture lands, on which cattle have been continually fed and brought up, without any substitute for the substances the earth has furnished, with the exception of the manure of these cattle, must ultimately fail, unless the bodies of these cattle be restored. By means of analysis a certain answer may be given.

We now come to the adulteration of bones. Unboiled bones can only be adulterated when finely ground: there are then often found mixed up with them carbonate of lime (chalk, oystershells), lime, sulphate of lime (gypsum), and sulphate of barytes. The most common adulteration is the first, the detection of which lies in every one's power. Take a weighed sample of bone-dust and place it in a small Florence flask, the weight of which is known and noted down; as much muriatic acid (spirits of salt), diluted with its own weight of water, as there is bone-dust is to be poured into the flask upon the bones; violent effervescence takes place if adulterated with chalk, whereas only slight effervescence if unadulterated. Bone-dust contains naturally about 3 per cent. of carbonate of lime. After all effervescence has ceased for some time, watch the flask open; the loss in weight will show the amount of carbonic acid, from which the quantity of chalk contained in the bone-dust may be estimated, remembering that every 45 parts of carbonic acid corresponds to 100 of chalk. An adulteration with lime may be proved, firstly, by an alkaline taste; and, secondly, by adding a small portion of the bone-dust with water, filtering and adding a clear solution of carbonate of soda or oxalate of potash to the filtered liquid. In both cases, a white precipitate indicates the certain presence of lime. If an adulteration with sulphate of lime, or sulphate of barytes be suspected, (this is found out by the increased weight,) the quantity may be thus detected:—Take a dried and weighed sample of bone-dust, put it into a Berlin porcelain evaporating basin, and pour a quantity of slightly diluted muriatic acid, sufficient to dissolve it. Heat it and filter through filtering paper, and wash the residuum, if any appreciable quantity there be, with clean water. Dry the filtrum, separate the powder, and weigh it; the weight indicates the amount of adulteration. Should you wish to know whether it be gypsum or sulphate of barytes, pour a little water on the powder, and filter it; add a small portion of a solution of chloride of barium to the filtered liquid; a white precipitate would prove the adulteration to be gypsum, no precipitate (sulphate of barytes is insoluble) would indicate sulphate of barytes. If the experimenter in testing for chalk should find none, he may add a small quantity of fresh acid, and heat the flask over a spirit-lamp until nothing more dissolves; an appreciable residuum would indicate an adulteration.

The only adulteration of which whole boiled bones is capable is water. This may amount to 30 per cent. Any one who has seen a dry bone will not be taken in. I only mention this adulteration, because I have met with farmers who told me that they preferred the boiled bones, just as they are taken from the boilers.—*Albert J., Barnays, London.*

THE ROT IN SHEEP.

The first symptoms attending this disease are by no means strongly marked; there is no loss of condition, but rather apparently the contrary; indeed, sheep intended for the butcher have been purposely cotted or rotted in order to increase their fattening properties for a few weeks, a practice which was adopted by the celebrated Bakeley. A want of liveliness, and paleness of the membranes, generally may be considered as the first symptoms of the disease, to which may be added a yellowness of the caruncle at the corner of the eye. Dr. Harrison observes, "When in warm sultry and rainy weather, sheep that are grazing on low and moist lands feed rapidly, and some of them die suddenly, there is fear that they have contracted the rot." This suspicion will be further increased if a few weeks afterwards the sheep begin to shrink, and become flaccid about the loins. By pressure about the hips at this time a crackling is perceptible now or soon after words, the countenance looks pale, and upon parting the fleece the skin is found to have changed its vermilion hue for a pale red, and the wool is easily separated from the pelt; and as the disorder advances the skin becomes dappled with yellow or black spots. To these symptoms succeed increased dulness, loss of condition, greater paleness of the mucous membranes, the eyelids becoming almost white, and afterwards yellow. This yellowness extends to other parts of the body, and a watery fluid appears under the skin, which becomes loose and flabby, the wool coming off readily. The symptoms of dropsy often extend over the body, and sometimes the sheep becomes chockered, as it is termed—a large swelling forms under the jaw—which, from the appearance of the fluid it contains, is in some places called the watery poke. The duration of the disease is uncertain; the animal occasionally dies shortly after becoming affected, but more frequently it extends to from three to six months, the sheep gradually losing flesh and pining away, particularly if, as is frequently the case, an obstinate purging supervenes.

With regard to our remedial measures, little satisfactory matter can be offered. There are few drugs which the laboratory can supply but what have been tried and found wanting; and though salt has appeared to have had more effect on it than anything else, it must be confessed that hitherto medicine has offered no remedy for this formidable and destructive disease. Prevention must be our chief aim, and it is satisfactory to know that much can be done by means of extensive and general draining; and it is hoped that before long, by the aid of the legislature and the conjoint energy and capital of both owners and occupiers of land, the system will be adopted almost universally, by which alone this disease is likely to be controlled or eradicated; and at the same time increased labour employed on the land, and more abundant crops obtained from the bounty of Nature.

It appears that, whether as a preventive or as a cure, salt has a more powerful influence over this disease than any other remedy. Its presence preserves even wet pastures from the disposition to give the rot, for it is well known that salt marshes are free from danger. In what manner salt thus operates it is difficult to explain. The blood in this disease is in a state of unnatural dilution—it is deficient in its fibrous and colouring principles: now, whether salt, which is a combination of chlorine and soda, acts by restoring some portion of those salts of which the blood is deficient, or whether it is prejudicial to the vitality of the flukes and the eggs, or whether it acts by the antiseptic power which belongs to chlorine, we cannot tell, though its influence over the disease is generally acknowledged.

Our own advice as to remedial treatment may be summed up in a small compass. The sheep should be removed from the unsound pasture as soon as possible, either to a salt marsh or the driest pasture that can be found; as much salt may be given as the animals will take with their food; to this the sulphate of iron may be joined. Half a drachm daily for each sheep, with the same quantity of ginger, may be given in nourishing gruel. An aperient should be given once or twice during the treatment, and may consist of one or two ounces of sulphate of magnesia, or a large table-spoonful of common salt dissolved in warm gruel or water. Food should be given in as nutritious a form as possible; and a pint of Beans daily will be an excellent diet with good Hay on sound pasture.

Though Turnips cannot be considered as a cause of rot, yet from the superabundance of water they contain, they are highly prejudicial to sheep that are affected with the disease, particularly if taken whilst a hoar-frost is on them. Calomel has been strongly advised, but the recommendation, as far as I am aware, has not been backed by any successful cases. If tried by way of experiment, about five grains daily, with four of opium, suspended in thick gruel, may be repeated once a day for the space of a week at a time.—*Extracted, by permission, from Mr. Spooner's forthcoming work on the Sheep.*

Home Correspondence.

The Tussac Grass.—We are indebted to the kindness of Sir William Hooker for the opportunity of publishing the following extracts from a letter addressed to him by the Governor of the Falkland Islands:—"*Feb.* 1, 1844.—If you take this valuable production of Nature in hand, and make it known in England, there will be no doubt of its being both valued as it ought to be, and extensively grown in the parts of the country best adapted for it. I can now further add, that the experiment of sowing seed in common garden mould in a spot not under the immediate influence of the spray of the sea answers perfectly, as also transplanting the young plants from the natural habitat to other and totally different sites and soils; both these I have proved to my utmost satisfaction, and I have also tried it in garden ground richly manured. In fact, I am inclined to think that the Grass will answer anywhere, and in any soil. To be on the safe side, not to mislead people, I have only mentioned in my despatches the sites natural to it, and have said it may be cut twice in the year, but I think it may be gone over four times. It grows rapidly, and improves much by cutting, but is decidedly injured by grazing, at all events, for the first three or four years. It is my intention to plant out a large field at Port William, the site of the new town, planting it in rows; and as I think there is every probability of Oats and Barley answering well, I shall be able to keep my horses in the stable, foddering them with bundles of Tussac instead of hay; and keep my cows and sheep about the premises by throwing them down bundles of Tussac at night. It must be recollected that this Tussac grows, and can be cut, winter and summer alike. You will probably agree with me that it ought to be immediately tried at the Orkneys and Shetlands. It would be a wise thing in the gentlemen of these Islands to subscribe, and send an agent here to collect seed and study the habits of the Grass; he should arrive at the latter end of October, and start again after three months' residence, bringing with him a small portable house (in preference to a tent) from Manning, the builder, of Stepney and Holborn. The house should be the *fac simile* of one he has lately sent me, by order of Government, for the Survey Department. It is 10 feet square, fitting in pannels, with a hipped roof and two glass doors (so as always to have one to open to leeward). The expense is about 20*l.* or 25*l.*, and would sell when he went away for 30*l.*, or more. It puts up and takes to pieces in a few hours. He should also bring about 200 bricks, a small barrel of lime, and a ton or two of coals, with biscuit, tea, and sugar. You see I am practical in my ideas, and descend to details. Experience makes every person practical. The expense of sending such an agent would be far more than repaid by the abundance of seed he could collect, and the care he would take of it on the passage home. I have sent some seed to you inclosed in a box, with much more to Lord Stanley. A settler here sends, by the same opportunity, a quantity on speculation for sale. I hope every summer to be able to collect some from "Hooker's Islet," at the sea-board, at the east end of Jackson's harbour; your son knows the place. Mind the birds when the seed-vessels are ripening on the Grass. I was robbed of all mine from the patch in the garden in one morning. On the Tussac Islands, when the seed is ripe, our Falkland sparrows are in myriads, filling the air with their chirpings of delight. I must stop about the Tussac, or you will think I ride my hobby to death. Who, however, can help being enthusiastic when, filled with gratitude to a bountiful Providence, he contemplates this valuable production, and yearns with earnestness for it to be appreciated as it ought to be, clothing hereafter the wild sea-beaten regions of the North with its rich vegetation? My heart is always full when I think upon it. Your son will be pleased to hear that a patch of Barley, the seed being brought from so warm a latitude as the Rio Negro (lat. 39 deg.), is now in ear, as is also a patch of Oats; the latter being exceedingly vigorous and strong, not even in the very slightest degree affected by the wind. It will be a patriotic act to send us some Scotch Oats, Rye, Barley and Wheat, Clover-seed and Rye-Grass. The Elder-trees are high and strong, as are the Gooseberries and Sweet Briar, Broom, &c. Roses from St. Helena are doing extremely well. Many of the "Antarctic" trees in the grave-yard are doing well, chiefly the Beeches."—*R. C. Moody.*

Adulteration of Manures.—I am grieved to say that I have had full confirmation of the truth of your leading Article in last week's Paper. I purchased 5 quarters of what is called bone-dust of a neighbour, intending to have all I wanted of him this season; I put 4 bushels in a tub, and mixed it with acid; I soon discovered that it was not all bones, but a mixture of lime-plaster with other rubbish. I found a bushel weighed exactly 70 lbs., when a bushel from Messrs. Porter, of Bristol, weighs 46 lbs.; I therefore conclude that not more than 40 or 50 per cent. is bone. As soon as I discovered this infamous cheat, I sent a parcel to Mr. Phillips, of Craig's Court, to be analysed, and until that is done it will not be proper to give names; and therefore, while you may make what use you please of this, do not mention where it comes from. When the truth is ascertained, I feel it will be my duty, however much against my inclination, to make the fraud public. I know of no less than ten persons who have had this stuff to mix with acid, and of course the trial must fail, and the blame will be laid upon me. [*From a known correspondent.*]

Rats.—As a Mr. Meyer is making a secret of a poison for rats, I publish a cheap and efficacious one, recommended by the late Sir Humphrey Davy, as being tasteless, odourless, and impalpable (carbonate of barytes, 2 oz., mixed with 1 lb. of grease.) It produces great thirst, and death immediately after drinking, thus preventing the animals going back to their holes. To prevent accidents to dogs, cats, and poultry, it should be spread on the inside of an iron or tin vessel hung with wire, bottom upwards, over a beam, just high enough for a rat to pass under easily. I have proved the efficacy of this poison during many years, and have added many strong-smelling substances, without increasing my success.—*S.*

Potatoes.—Reading so many opinions in your invaluable Journal on the cultivation of Potatoes, I was induced to try a method recommended a few weeks back, which was to set large whole Potatoes a yard apart; and in order, as I thought, to be sure of having a crop, each alternate row I planted large cut sets; the rows were 30 inches wide, and that it should not be said that the manure rotted the sets, I planted them without any. The result is, that I have fine strong plants from the whole sets, and more than one-third of the cut ones have rotted. A few of the last rows planted were smaller sets, and they have failed altogether; and I am obliged to plant them over again, and you may depend upon it I shall plant whole ones in their place. The soil is light and sandy. I have raked the soil nearly flat, and top-dressed with guano whilst we had the fine showers last week. I am now using the hoe to kill the weeds, which will cause the guano to drop amongst the roots, and shall then plough them up; the result of the experiment, if worth

your insertion, shall be forwarded in due course. The experiment is tried on an acre of ground.—*F. N.*

Ox-eyed Daisy.—In many parts of Surrey the meadows are quite overrun with this weed, and it communicates a most rank taste to the butter made from the milk of cows fed in the pastures where it abounds. There is too much of it to attempt to extirpate it successfully by hand-weeding, as many fields are quite white with the flowers, which expand about the same time at which the Grass crops become ripe. It is never, therefore, allowed to ripen its seed, and I cannot account for its having become so exceedingly prevalent in many districts where I have observed it. I have tried pasturing, draining, and manuring the meadows where it is abundant, but without materially weakening it. Perhaps some of your correspondents, who are unfortunate enough to be acquainted with this pest of meadow land, may have discovered some remedy for it, and there may be some manure, the application of which would tend to destroy it. Possibly lime might have a beneficial effect, but if any of your readers could suggest a method of destroying it, of which they have themselves proved the efficacy, it would confer a great benefit to make it generally known, through the columns of the *Agricultural Gazette*.—*A Constant Subscriber.* [This weed appears to be unusually rank this year. Probably the only way of destroying it, except breaking up the pastures, is by keeping the Grass closely eaten down by cattle and sheep for a series of years. This would certainly weaken it, if it did not ultimately destroy it.]

Manures.—The desire to promote the science of Agriculture, is one of the "Lions" of the day. The steam is up, and some of us are fairly off on the search after new discoveries in this *terra incognita*. But others of us remain behind, and while our friends are gone on their voyage, let us do the best we may in their absence, and show them, on their return, that with the same soil, and with manures better arranged, and with materials found at home, we can compete with them, in our common object—production. We shall avoid the uncertain speculations in guano, nitrates, sulphates, &c., for these learned things, or rather names, mislead and perplex uneducated farmers; and the statements written respecting them tend to induce the belief that substantial or farm-yard manure is unnecessary. And then, as most of us have no knowledge of chemistry, we may spend our money for adulterated and useless matters, sold under specious names, to which they have really no claim. Even common salt, sold under the name of Agricultural Salt, is often anything but chloride of sodium, and the soot which is swept from our chimneys becomes, somehow or other, a mixture of soot and calcined sawdust before it is sold to the farmer. Good productive farming does not depend upon these things, so much as upon draining, deep and frequent ploughing, clearing the land from all other plants but those you desire to grow, early seeding, and last, but not least, preserving every decayed vegetable matter that can be found, either on or off the farm, and mixing it judiciously with the excrement of a well-selected stock of animals adapted to the character of the soil, preserving the mixtures in properly constructed yards and tanks. But, although I advise the farmer not to be led away by uncertain and delusive schemes, yet he should keep his eye open to the discoveries of wiser, because better educated men. You have repeatedly referred to the waste of some of our best manures, which could be arrested by timely care, and I shall close my note with a practical illustration of the saving of something to a profitable purpose, which is commonly overlooked and lost. The compost described below, I have seen extraordinary effects from in Turnip cultivation, but no doubt it can be applied to other plants with equal advantage. I shall describe a quantity applicable to one acre, either sowed broadcast or drilled in with the seed:—Put 8 bushels of crushed bones into a dry shed, and add from time to time, as they come to hand from the farm-house, or as they can be procured elsewhere, 24 bushels of ashes (wood are the best), and empty upon the mass, from day to day, the contents of the chamber utensils; to be stirred and mixed occasionally. At least 6 or 8 acres may be thus manured at a farm consisting of as many persons. Some of your chemical correspondents will, perhaps, explain the chemical changes which occur under these circumstances, and tell us what new compounds are formed.—*H. D., Witham.*

Tares.—I consider Tares to be as valuable a crop as the farmer can have, for, if grown properly, they are ready at a season of the year when an artificial green crop is most wanted. The land I have to grow them on is good Wheat soil, but still will not bring them at the time when most needed. Having sown some immediately after harvest in 1843, I found they did not make much progress, and therefore bethought myself of applying some kind of manure as a top-dressing, and on the 25th March, 1844, I sowed soot and salt broadcast in the proportions mentioned by C. Johnson, Esq., in his valuable publication on Fertilizers, viz., 30 bushels of soot and 8 of salt per acre, thinking that if beneficial for Wheat, it would most likely be equally so for Tares; but to my great disappointment, owing no doubt in a great measure to the unfavourable dry weather which followed in this part of the country, half the crop was destroyed, and it is now in a very poor plight indeed. Some self-sown Wheat, which happened to be left in the soil from the preceding crop, is growing very luxuriantly. The plan I intend adopting next season will be very different, and as follows:—Get the land ready as soon as possible after harvest, and drill the Tares in with some manure, which will help to force the crop; keep hoeing and rolling with a liquid-manure cart in dry weather, if necessary, and by this means, the weather proving favourable, I hope to insure a good crop. Although mine was an unsuccessful experiment, it might answer on different land; but I would caution your readers to be careful as to the use of salt, and only try a small portion of ground at once; as many know, and I have found out by experience, what a deleterious substance it is when applied in too large quantities to the soil.—*Titus Oats, Nottingham.*

Yew.—On extensive pasture lands, near the summit of Birling-hill, two miles north of Town-Malling, Kent, are a great many old and several young Yew-trees. The cattle, sheep, and horses kept there have never suffered any ill effects from eating the green branches. About 18 years ago, a large tree was cut down in the winter season; the trunk and large branches were removed, and a few of the smaller ones used to fill up a gap in one of the hedges. A few days afterwards several bullocks and horses died, and on opening their stomachs a small quantity of the sere bark and leaves was found in each. The cattle seldom or never browse them when other green food can be found; indeed, during the spring and summer the farmers are careless about removing the trees or branches that may be blown down by the wind, as they never see that the sheep or stock will then touch them.—*W. P. Keane, Leybourne Grange.* [Another correspondent, "H. T.," states that the apparent want of agreement amongst the witnesses on this subject is owing to one party describing consequences which have followed when cattle have eaten Yew on a full stomach, while the instances recorded by the other party have occurred when Yew has been taken on an empty stomach.]

Rabbits.—Under the initial "C." I some time back made inquiry about the destruction of rabbits. For numerous replies from public and private correspondents I beg to return my best thanks. I have used many of the plans recommended. No information has been so conclusive as that from an "Old Poacher;" he recommends to get three or four dozen either polecats, martens, or young kittens just fit to take from the old cats, and turn them out in different quarters. Nothing will be more likely to destroy all the rabbits, game, or the rest of the gamekeepers.—*C.*

Rooks.—I must say one word in favour of this misunderstood bird and valuable farmers' friend. It is true they do sometimes attack the Corn, when it first appears above ground, but I believe they do not eat it before it begins to vegetate; and they amply repay the farmer for the damage they do to the sprouting crops, by the destruction of the larvæ of insects, which, were it not for the rooks, would do ten times as much injury. Many years ago I was drilling a field with Beans; the rooks were very numerous and busy, chiefly on the freshly-drilled ground. My ploughman was much annoyed to see them so actively employed, and insisted that they were devouring the Beans. Happening to have my gun upon my arm, I shot one to convince him of his mistake; on opening it, the crop was found full of the larvæ of the cockchafer, but not one Bean was to be seen in it! I would recommend your correspondent "Facile" to read the article on the Rook in Yarrell's "British Birds;" he would not then consider them useless to the farmer, because they do not destroy the Turnip-fly.—*Lusor.*

Nitrate of Soda.—Some time since I dressed three or four acres of old and new Grass with nitrate of soda, at the rate of 1 cwt. to the acre, as recommended by Mr. Grey, of Dilston. Notwithstanding the dry, harsh, and ungenial weather, the present appearance of the Grass, especially the new Grass, is very luxuriant, so much as to attract the attention of passers-by; and the experiment promises well. A neighbour of mine, an old farmer, however tells me that he tried the same experiment, and had a very good crop; but at the expense of his aftermath and subsequent crop. He therefore denounced nitrate of soda as impoverishing to the soil. Now, I am neither farmer nor chemist enough to argue the point with him, or to decide the matter for myself. It seems to me, however, that the argument is fallacious, for every good crop exhausts the soil, and the better the crop, the more complete the process of exhaustion. A farmer might as well lament having a good crop of Wheat or Turnips on the ground, because they were impoverishing his land. It seems to me that the proper way of meeting the difficulty is not to abstain from using that which will give a good crop, but to restore to the land the constituent elements of which the good crop complained of may have deprived it; and suppose this is a correct idea, my desire is to learn what is the best and most desirable mode of proceeding with land that is to be ploughed next spring for Oats, and which is now, thanks to nitrate of soda, bearing an exhausting crop of new Grass.—*S. L. B.* [The ploughing in of the Clover-root is generally sufficient surety for the succeeding Oat-crop.]

Steeping Seeds.—When I last wrote to you from Dorsetshire I promised to send you the analysis of Campbell's solution, or steep for Wheat. I distrusted my own skill in assaying, and submitted to Mr. Morson, in Southampton-row, a sample of the mixture. He writes—"This salt consists almost entirely of muriate and sulphate of ammonia, with a small quantity of iron and silica; but as all impure salts of this class are contaminated with iron, it may be regarded as a mixture of them in an impure state, in the following proportions:—

Muriate of ammonia	22 parts.
Sulphate of ,, ...	75 ,,
Iron, silica, and loss	3 ,,
	100 parts.

These salts being imperfectly mixed, it is probable some variation would be found in different samples." My own experiments prove that a solution of the muriate of soda and of potash, sulphate of ammonia, and superphosphate of lime, in equal parts—1 lb. of the mixture dissolved in 1¼ gallons of water, acts more quickly, i. e., produces a more rapid and darker vegetation than Mr. Campbell's.—*A. Huxtable.*

Swedish Turnips.—Knowing the value of Turnips at this season of the year, and particularly in the present year, when the Grass is still very short, I beg to say that I have Swede Turnips at this present moment (on which my cattle are feeding) perfectly sound, and I have nearly sufficient to last me until next month. They have been kept by placing rubble partitions a foot's breadth apart, and sloping outwards at a right angle, not lined with straw, which prevents a free circulation of air to permeate the heap, and carry off the damp vapours; the Turnips are then piled up as high as they will stand, and brought to a ridge, and thatched after the heat has in great measure evaporated, yielding only some loose straw on the top to keep out the heaviest rains. My heap was 40 yards long without a single unsound root. Mangold Wurzel kept in the same way. I find great benefit at this time of the year, when they are dry, from allowing the cut Turnips to stand for an hour or two in water, before being given to the cattle, as they imbibe a large portion of moisture.—*Tiro, T.* [We can state from experience that this is a very excellent plan of housing roots, having this year laid about 1200 tons of roots, Turnips, Mangold Wurzel, and Carrots, under this sort of cover, which preserved them well. We shall refer particularly to this subject at the proper season.]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover square, on Wednesday last, the 19th of June; present—the Right Hon. Earl Spencer, President, in the chair; Duke of Richmond, Earl of Ilchester, Lord Beauchamp, Earl of Burlington, Earl of Lovelace, Lord Bridport, Hon. Colonel D. Pennant, M.P.; Hon. Captain Spencer, Hon. G. H. Cavendish, M.P.; T. Alcock, Esq., M.P.; R. Archbold, Esq., M.P.; T. Baines, Esq.; D. Barclay, Esq., M.P.; T. R. Barker, Esq.; R. Barker, Esq.; J. Benett, Esq., M.P.; H. Blanshard, Esq.; Sir A. de C. Broke, Bart.; F. Burke, Esq.; Dr. Calvert; Col. Challoner; H. Colman, Esq.; J. Dean, Esq.; J. E. Denison, Esq., M.P.; B. Forrester, Esq.; A. E. Fuller, Esq., M.P.; B. Gibbs, Esq.; J. B. Glegg, Esq.; W. F. Hobbs, Esq.; Sir H. Hoskyns, Bart.; Sir J. Johnstone, Bart., M.P.; Col. Le Couteur; Sir C. Lemon, Bart., M.P.; Col. M'Donnell; J. L. Naper, Esq.; Sir J. Ogilvie, Bart.; A. Ogilvie, Esq.; J. Parken, Esq., C.E.; E. Parkins, Esq.; E. W. Pendarves, Esq., M.P.; Sir R. Price, Bart.; H. Price, Esq.; J. Roddam, Esq.; E. A. Sanford, Esq.; Prof. Sewell; J. V. Shelley, Esq.; R. A. Slaney, Esq.; R. Spooner, Esq.; E. Thomas, Esq.; T. Tweed, Esq.; and J. L. White, Esq.

The following new members were elected:—

Knight, J., Southampton
Gatrell, W., Lymington, Hants
Thoume, J., Guernsey
Edwards, R., Roby Hall, Liverpool
Parsons, G., Bursledon, Southampton
Martin, J., Evershot, Dorchester, Dors.
Raphael, L., Bushill Park, Edmonton
Buchan, H., Southampton
Hall, E. C. L., Emlyn Cottage, Newcastle-Emlyn, S. W.
Phillips, J., Lordship-lane, Tottenham
Betts, W., Leicester

The names of 23 candidates for election at the next meeting were then read.

The attention of the Council was called by Viscount Howick, through Mr. Shelly, to the best mode of collecting and publishing the numerous details connected with draining, and the cheap production of the most efficient tiles for that purpose; by Mr. Parkes, to the improvements effecting in the Denenden Pipe-tile Machine of Mr. Law Hodges, at the manufactory of Messrs. Cottam and Hallen; and, by Messrs. Barrett, Exall, and Andrews, of Reading, to their invention of a new and cheap machine for the production of pipe-tiles.—Dr. Playfair, Consulting Chemist to the Society, announced to the members the extensive arrangements he had made at Manchester, for analyses of soils at rates of one-half the amount of those he had formerly transmitted to the secretary for their reference.—Mr. Pellatt presented a new glass milk-pan, with an inner circular groove for the reception of the milk last left in the pan, agreeably with the suggestion of Sir John Lubbock; and announced his engagement in perfecting glass syphons for dairy use.—Mr. Frere, C.E., Bitton Rectory, near Bristol, presented a small supply of Neapolitan skinless Barley he had received by the last Mediterranean mail from a friend in Malta.—The Imperial Agricultural Society of Vienna, and the Royal Society of Agriculture at Caen, each presented to the Library of the Society a set of their respective volumes of Transactions.—The Royal Agricultural Improvement Society of Ireland transmitted copies of the prize sheets for their ensuing Show in Dublin; and Mr. Mechi, of Leadenhall-street, copies of the last report on his agricultural improvements in Essex.—Mr. Slaney presented Mr. Ford's new junction-tiles, made agreeably with a suggestion of Mr. Pusey. For all which communications and presents, the Council ordered their best thanks.

The Council then adjourned to Wednesday next, the 26th of June.

FARMERS' CLUBS.

Braintree and Bocking.—At a late meeting of this Society, Mr. F. Ebbbs being in the chair, Mr. Smith, of Deanston, delivered a lecture on draining. After some general remarks arising from the occasion, he stated, that in the "Gentleman's Magazine," 150 years ago, there was a paper on the subject of draining in Essex, which described the work as parallel drains filled up with elm twigs, and which when opened fifty years afterwards were found to be sound. These drains were three feet deep and sixteen feet from each other. I think (said Mr. S.), draining was first introduced in Essex. I do not claim the invention, but I consider the merit to which I am entitled consists in directing the work to be done in a safer and more judicious manner. I first attended to the subject in Stirlingshire, where draining in the low lands had been introduced from Ireland. The character of this soil was alluvial, and of a very unproductive quality, and the drains were filled with turf and stones. I soon had opportunities of extending the practice to the upper lands, and of persuading my neighbours to adopt better plans of carrying out the work. I was subsequently examined by a committee of the House of Commons on thorough draining and subsoil ploughing, and perhaps I cannot better illustrate my views of these two important operations than by explaining a diagram which is intended to represent the soil of the field above the drains. The upper division is the soil affected by the common plough; the second division is the soil moved by the subsoil plough; and the lower, the soil undisturbed by either operation. Now in the old system of draining, to catch the surface water, the drains were cut across the hill; to point out the imperfections of this plan is one of the objects of my lecture. In an undrained state the cracks in the soil receive as much water as they will contain, but in heavy rains they are soon filled, and the superabundant water runs over the surface and retards early sowing in the spring, which is essential to productive farming, and it also unfits the soil for the safe reception of the seed. The purpose of thorough draining is, therefore, to get rid of the water rapidly, and to accomplish this, the distances of the drains, as well as their depth, must vary, according to the nature of the soil. Experience has pointed out that in impervious soils 18 feet is a good working distance, and it will be found that in extreme stiff clay, drains do not seem sufficiently to dry the land when first put down; the improvement in these cases is gradual, and may take several years, but the result is certain. Drains in these soils should be two feet and a half deep. In working strong soils it has been the common practice to work the ridges into a round form, in order that the water may escape from the surface, and run off in the furrows; by draining it is intended that the water should pass through the land, and this, I have no doubt, can be accomplished with certainty. If subsoiled and thoroughly drained, the clay cracks in the immediate neighbourhood of the drains —for clay contracts a sixth part of its bulk—which leaves openings for the water to pass down; you may trace these cracks in the intermediate spaces between and down to the drains; in dry weather for a long continuance these cracks are so extensive that the land becomes like a sponge. The admission of air carries on the process by its chemical action, and divides the soil into minute particles. In thorough-drained and subsoil-ploughed land, therefore, of whatever texture, the water readily finds its way through the furrow-slice into the subsoil, and from thence into the drains, and no longer passes over the surface. This may be called theory, but it is fact drawn from observation. I have examined the soil most carefully by a magnifying glass, to test the truth of this statement. But I must observe, that clay land when first drained is not like land of a more open texture, and caution is necessary in opening the subsoil. At Castle Howard some land of this description was subsoil-ploughed at the same time that it was drained, and the result was injurious; but when the subsoil plough was used from two to four years after draining, it was successful. In recent drains the water carries with it into the drains sediment, but in a short time it percolates through the soil into the drains in a pure state, leaving behind all matter held previously in solution. It has been thought by some that in strong adhesive clays the drains should not be more than from 18 to 20 inches deep. I say they should be deeper, or the water will be too near the surface. It is requisite to good farming that land should be worked early, and therefore the exit of water should be speedy. The feet of the horses do great damage to land that is charged with water near the surface; and therefore the deeper the water lies the less injury will accrue from this source. Air acts speedily upon the surface; as the water recedes into the soil, the air takes its place, and thus land deep drained is easily worked. The absorption of water by the atmosphere is much more rapid at one time than another, which one may witness by the rapid or tardy disappearance of vapour from the chimney of a steam-engine. Many suppose that on filling up a drain, the soil should not be put in close or firm, as it would prevent the water getting through it; this is contradicted by the practice of plug-draining. I say it is better to put in the stiff clay upon the pipe or tile than looser soil. The cracking of this stiff clay, if put directly upon the drains, facilitates the passing of the water into it; looser stuff will melt down, pass into the drains, and choke them. The clay should be put in a wet state over the drains. I have found two inches of sediment in the bottom of drains. The drains may be placed at greater distances if the land be subsoiled than otherwise. In the very adhesive clays, the stiffest I have ever known, the distance may be from 15 to 21 feet. There may be stronger clays in this county than I have seen elsewhere. Time is necessary to establish the full benefit of draining stiff soils: you must wait for two or three years for the full effect. I have known in Stirlingshire a progressive effect for 20 years in the conversion of strong lands into Turnip soil. In regard to the expense of draining, you have all a practical knowledge. In the strong clays of Scotland, the plough has been employed to 18 inches deep; even 30 inches have been opened by the plough with twelve horses and six men, which enables 36 yards to be taken out for 2d. upon a large scale; no spade is here used. Materials used for preserving the openings of the drains vary in different places. Stones are the best if small, but they require greater care, and often fail from mud getting in. Clay should be put over the stones, then straw put in on the wet clay as a close cover, and then filled up with common soil. Tiles, with or without soles, or pipes, are now extensively used; they should not be small, and great care should be exercised that they are sufficiently burnt. Circular tiles, with a sole somewhat concave, are preferred by some. I think them the safest. The water with such a bottom will clear itself better. Over the tile or pipe put stones, if you can get them, so as to prevent mud getting in. In the clay embankments of railroads the water gets into the cracks, and breaks down the embankment by dividing the clay. If the drain be kept open it is not of much importance whether tiles or pipes are used; if well burnt they are indestructible, and in all cases cover the drain with strong clay. Leveling is of great importance—in many cases absolutely necessary to safety. A very small fall will do; even one to four inches per mile is safe, (?) but have more if you can get it. After land is thoroughly drained it should be worked flat, without furrows. The margin of the furrow is always defective in produce. Experience teaches us this—that it should be flat, as you are sure to have equal benefit or injury from rain; and as water takes nourishment from the atmosphere which descends with the rain, it is thus distributed in equal proportions. And land is more easily worked flat, especially with a turn-wrest plough, and no injury occurs by the use of this instrument from the treading of the horses on the ploughed soil, which in all cases should be avoided. No stiff lands should be worked wet. With the turn-wrest plough you also get a quarter of an acre more ploughed per day.—After a long discussion Mr. Pattison moved a vote of thanks to Mr. Smith, which was seconded by the Rev. C. Blair Warren, and carried with great cheering. —*Chelmsford Chronicle.*

Darlington.—This Club held their monthly meeting on Monday last. The subject under discussion was the Best Method of Fallowing the Strong Clay Lands of the District, and whether it is desirable to break the Pan or Old Sole of such Lands in Fallowing. Mr. Walton, the Vice-Chairman, on introducing the subject, read to the meeting a very interesting paper, written and presented to the Club by Mr. George Davidson, now of Darlington, when a very spirited discussion followed. At the close of the discussion, it was unanimously resolved:—That it is better not to break the pan or sole to any great extent, either by subsoiling or otherwise, unless the land be first effectually thorough-drained, in order to carry off the water; but at the same time, deep ploughing, on the majority of strong clays, is considered highly advantageous, and is strongly recommended; bearing in mind always, that the first ploughing should be given in the autumn, or the beginning of winter, so that such parts of the pan or subsoil as may be turned up by that ploughing may be exposed to the frost; the land also to be thoroughly water-furrowed and gripped, and afterwards well cleaned and cultivated during the succeeding summer's fallowing. A vote of thanks was then awarded to Mr. Davidson for the valuable information which he has, from time to time, presented to the Club: and the subject fixed for discussion at the next monthly meeting, was fixed to be the Comparative Advantages of Stall and Pasture Feeding during Summer, for Draught Horses and other Cattle, with the best and most profitable Green Fodder for Stall Feeding.

Ardrossan.—After the Annual Cattle Show of this Society, a number of the members of the Society dined together at Irvine, Capt. Montgomerie, of Giffen in the chair. In the course of the evening the chairman stated it would be in the recollection of the members present, that, when making some remarks on the quality of rennet, at the meeting of the Society in November last, he had observed in the Transactions of the Highland Society, attached to the first Number of the new series of the "Journal of Agriculture," among some experiments on milk by Professor Traill, that he found sulphuric acid produced a much larger proportion of curd than rennet; and that, though late in the season, he (the chairman) would try the experiment on a larger scale, communicate the results, and submit the produce to be tested by the Society, which he now did, placing upon the table two small cheeses—the one made with sulphuric acid, the other with rennet. These cheeses, he stated, were made under his own inspection, of equal quantities of milk, and on the morning of two following days the curd was produced by the acid about seven minutes sooner than by the rennet, and that of the former much more solid than the latter. The proportion of acid used was that pointed out by Professor Traill, viz., 40 drops to a teaspoonful of rennet; but the result he had not found the same: on the 28th of December there was a difference in the weight of 11 oz. in favour of the cheese made by the rennet, and the same difference existed when weighed previous to sitting down to dinner. The rennet he could answer for being of excellent quality: of the acid he was not a judge. He then cut up both cheeses, when that made by the acid was found to have a very unpleasant taste, in the opinion of some of the gentlemen, to an extent that must preclude the use of it; though a few were of a different opinion.

North Walsham.—At the Annual Meeting of this Society lately held, Mr. Gower, the Secretary, read the Report for 1844, from which we make the following extracts:—"The highly important discussion on the nature of soils was exceedingly interesting, being most ably introduced by Mr. Mann. The following is a brief analysis of the subject. The fertility of soils depends upon a due admixture of its various ingredients, a coarse gravel, a fine sand, and a powdery mass, consisting of various earths, and mouldering material, in the state of finest division; the relative proportions of these ingredients may be duly ascertained. Let 400 grains of dry soil be exposed to the heat of a spirit lamp in an earthen vessel, until a chip of wood is rendered black by charring, and its loss in weight will indicate the amount of moisture that had been united in an insensible state. Bruise the soil gently in a mortar and pass it through a sieve that will retain a Mustard seed; what remains in the sieve when weighed gives the proportion of coarse gravel and undecomposed vegetable fibre. Boil the powder for five minutes in a porcelain vessel with pure water, pour it into a narrow glass vessel, and in two minutes the sand will settle at the bottom, and the rest may be poured off diffused in the water. The sand dried in a porcelain vessel over the spirit lamp may be weighed to ascertain its proportion. Ascertain the weight of a paper filter. Place in it a glass funnel, and pour the solution in fine powder in; when the fluid has passed through, dry the filter, and having deducted its weight, the result is the proportion of the powdery mass; this is the most important ingredient, and contains the principal materials of nourishment for the plants. Rich clays consist merely of this fine powdery ingredient, with water, and an excess of aluminous earth. Fertile heavy soils should consist of at least one-fourth of this nourishing material, two-fourths of fine sand, one-fourth of coarse gravel and moisture. The amount of lime present may be ascertained by dissolving 50 grains of the fine powder in half a drachm of muriatic acid, and a drachm and a half of water, adding another ounce of water after three hours, then pass it through a filter and dry it, having deducted the weight of the filter; the loss of weight is the amount of carbonate of lime which was present, but now remains dissolved in the diluted acid, and the principle on the filter is aluminous earth. The proportion of animal and vegetable matter may be ascertained by exposing any known weight in a crucible to a red heat, the loss in weight will be the amount of organic matter which has been dissipated" . . . . "On the cultivation and manufacture of Flax, it was stated that from an acre of land, which produced four coombs of seed, 53 st. 8 lbs. of fibre had been scutched, and 7*s.* 6*d.* a stone had been offered for it. It was considered that had this Flax been pulled earlier, it would have been worth more per stone than it then was, would have produced more weight per acre, exhausted the land much less, and would have been off the land in time to sow Turnips for sheep-feeding." . . . . "In detailing the method which had produced the greatest weight of Swedes per acre recorded by the Club, the most striking peculiarity in the management of the crop was hand-weeding, or thinning the plants previous to their being hoed: when thus separated the plants take stronger hold of the ground; the best plants are easier selected by the hoers when cut across the drills. This crop having been grown on ridges at 27 in. distance, led to remarks on ridging and drilling on flat work; the latter system was supported only by few. It is evident, since this question was first discussed at the Club, there are many converts to the ridge system." —*Abridged from the Norfolk Chronicle.*

Maidstone.—At the late monthly meeting of this Society, the subject of discussion was the Cultivation of the Hop. The question, whether it was advisable to summer dig or nidget deeply, first came under consideration, and it was believed that deep and frequent cultivation was in all cases preferable. An interesting conversation followed on the nature and causes of mould, in which an almost ridiculous uncertainty as to the relations of cause and effect was observable. Almost every planter present adduced some instance where the mould had followed particular circumstances, but in almost every one of such instances, some other planter recollected where nearly similar circumstances had produced quite opposite effects. The members, after discussing the subject for a considerable time, unanimously coincided with the opinion which was quoted of a very old planter, namely that "he had lived a great many years and made a great many inquiries into the nature of the mould in Hops, and had only been able to arrive at certainty on one point, namely that he knew nothing about it." In the course of the evening several valuable hints were thrown out as to Hop Cultivation, amongst which were:—That stripping is not considered desirable, that bine should never be pulled from weak hills, but that such hills should always have a little extra manure given to them in the summer. That where a dead hill occurs it may be effectually supplied by training a bine in a trench underground to its poles from each of the neighbouring hills, which plan will give Hops on that hill the same year, and the runners being severed in the winter, the hill is filled up for the next. The following resolution was unanimously adopted:—"That deep culture and consequent pulverization of the soil is essential to the rapid growth of the hop, and although instances have been stated in which the neglect

of these has succeeded, yet they must be taken as the exceptions rather than the rule. That *mould* having been witnessed under all systems of management and after all sorts of manure, and the same systems having, in the same seasons, escaped, upon the same soils, no determination as to the causes can be come to, excepting upon some very strong instances given of its resulting after the use of rags. That many of the artificial manures recently introduced appear to have a stimulating effect upon the hop, but that the Club require further experiments to be made ere they can recommend their general adoption." It was then determined that the subject of discussion for the next monthly meeting should be—The best Mode of Employing, and Improving the condition of the Agricultural Labourer (of course apart from all political considerations,) and the best Mode of Breeding the Domestic Animals.—*Kentish Courier.*

We are much gratified to hear that these excellent societies are progressing in the county of Monmouth. On June 1st, a Farmers' Club was established at Usk, with upwards of thirty members—W. A. Williams, Esq., Chairman; T. Reece, Esq, Vice-Chairman; H. Phillips, Esq., Treasurer, and J. Knapp, Esq., Hon. Sec. At Abergavenny, on June 2nd, a large meeting of landowners and farmers met, Hanbury Williams, Esq., in the Chair, supported by W. H. Little, Esq., W. Williams, Esq., &c. The excellent Chairman, after briefly stating the importance to agriculture of farmers' clubs, proposed that a club should be established at Abergavenny; this being carried by acclamation, upwards of 60 members enrolled their names, and elected Hanbury Williams, Esq., Chairman; W. H. Little, Esq. Vice-Chairman; W. Williams, Esq., Treasurer, and W. H. Walbridge, Esq. Hon. Sec.

Miscellaneous.

Diseases of Wheat.—On the Bunt, Smut-balls, or Pepper-brand.—The fungus which occasions this well-known and much dreaded disease has hitherto been met with only in the grains of Wheat. Its presence is readily recognised by the peculiarly disgusting odour of the infected ear. It may be detected in the young seed, even in the very earliest states of the flower-bud; and when fully ripe it most frequently occupies the whole interior of the grain, but without bursting the skin, so that the Wheat seed retains very nearly the same size and shape that it would have assumed had it been perfectly sound. When examined under the microscope, the Bunt-fungus is seen to consist of vast numbers of extremely minute globules, of a dark-colour, and which are at first attached to a mass of matted thread-like matter, analogous to what is termed the spawn in Mushrooms, and other Agarics—and which in those plants spreads underground, and frequently occasions the remarkable appearances called fairy-rings. It is not easy to see this spawn of the bunt-fungus, but the little dark globules called spores, may readily be detected. They may be considered analogous to the seed-vessels of flowering plants, and each of them contains a mass of almost inconceivably minute sporules, by means of which the plant is propagated. The reproductive powers of fungi are quite beyond our comprehension. Fries, one of our greatest authorities, has calculated that a particular fungus may contain 10,000,000 sporidia.* Mr. Bauer has accurately measured the spores of the present species, and finds their diameter is not more than $\frac{1}{1000}$ of an inch. A single grain of Wheat (estimated at less than the $\frac{1}{1000}$ of a cubic inch) would therefore contain more than 4,000,000 such spores; but it is hardly possible to conjecture how many sporules each spore contains, since they are scarcely distinguishable under very high powers of the microscope, and then appear only as a faint cloud or vapour, whilst they are escaping from the ruptured spores. A reference to Mr. Bauer's plate and account of this fungus, in the "Penny Magazine" for 1833, p.126, will furnish the inquirer with very accurate details of its structure and peculiarities. When this disease prevails, it greatly deteriorates the value of the sample; imparting its disgusting odour to the flour, it makes it less fit for bread; but I understand that ready purchasers are to be found among the venders of gingerbread, who have discovered that the treacle, and whatever else they mix up with it, effectually disguises the odour of the fungus; if this in itself is really innoxious, there can be no objection to such a mode of employing the tainted flour; but some are of opinion that it is to a certain extent deleterious. Although the bunt-fungus confines its attacks to the young seed, it seems to be a condition essential to its propagation, that it should be introduced into the plant during the early stages of its growth, and that its sporules are most readily absorbed by the root during the germination of the seed from which the plant has sprung. It has been clearly proved that Wheat-plants may be easily infested and the disease thus propagated, by simply rubbing the seeds before they are sown, with the black powder, or spores, of the fungus. It is also as clearly ascertained, that if seeds thus tainted be thoroughly cleansed, the plants raised from them will not be infected. This fact is now so well established, that the practice of washing or steeping seed Wheat in certain solutions, almost universally prevails. Upon simply immersing the grain in water, the infected seeds float, and on the water being poured off nothing but the sound ones remain in the vessel. This simple process, however, is never perfectly effective, because, in threshing the Wheat, many of the infected grains (smut-balls) are crushed, and the spores are dispersed in the form of a fine powder, which adheres with considerable obstinacy to the surface of the sound grains, by means of an oily or greasy matter found in the fungi. In order to detach them thoroughly, it has been considered useful to add some alkaline ley to the water in which they are washed; because oil and alkali unite and form a soapy substance, and then the spores will no longer adhere to the surface of the grains of Wheat. Lime, possessing alkaline qualities, has been long employed for the purpose. Common potash, and substances containing ammonia, as the liquid portion of stable manure, have also been used. But, as some persons employ brine, sulphate of copper, arsenic, and a variety of other materials which do not possess alkaline properties, it is supposed that all these solutions act rather by destroying the vegetative properties of the fungi than as a means of removing them from the surface of the grains. It may therefore be worth while to institute a set of experiments to determine which supposition is really correct. Perhaps some portion of the effect may be owing to the increased specific gravity of the liquid; or perhaps some portion of the solution may be imbibed by the steeped Corn, sufficient to prevent the sporules of the fungus from germinating within the substance of the plant; just as corrosive sublimate, essential oils, and Russia-leather prevent the formation of mouldiness. I may also add that the temperature at which the solutions are applied may be of some importance. *On the Smut or Dust-brand.*—This disease is produced by another fungus, which is often confounded with the last. The smut-fungus, indeed, resembles the bunt-fungus in colour and shape, but its spores are not half so large, and it possesses none of that disgusting odour which characterises the latter. Although this fungus is generally supposed to attack the grain much in the same way as the bunt-fungus, only that it more thoroughly destroys it, this is not the case. M. Ad. Brongniart has shown, in the "Annales des Sciences," vol. xx. p. 121, that the smut-fungus destroys the ear, by first occasioning the innermost parts of the flower to become abortive, whilst the little stalks (*pedicels*) on which these are seated swell, and become very fleshy. The fungus then consumes the whole of this fleshy mass, and at length appears between the chaff-scales in the form of a black soot-like powder. It is stated, however, by others, that it does not confine its attack to the ear; and though I have not myself witnessed its effects on other parts, it is described as infecting both chaff, straw, and leaves. The spores, when ripe, burst through the epidermis, and disperse in the form of a black powder, resembling charcoal. Mr. Bauer has given figures, and an account of this fungus also, in the "Penny Magazine" for 1833, p. 180. He there gives the dimensions of the fungus, by which it appears that the diameter of a spore is not more than the $\frac{1}{1000}$ of an inch. This disease is not so much dreaded as bunt, for two reasons: the spores have generally been dispersed before the Corn is cut; and even when present in the flour, they have no disagreeable odour. It is sometimes, however, very injurious, by diminishing the produce. It is comparatively rare in Wheat, but very common in Barley, and even more so in Oats; Rye does not appear to be subject to it. It has been observed in several Grasses, and I have this year noticed it in the common Oat-like Grass. (*Arrhenatherum avenaceum*). Like the bunt-fungus, so also may the smut-fungus be kept in check by carefully steeping the infected grain; but this process does not here appear to be so thoroughly effective as in the former case. Probably the earlier ripening of the spores causes the sporules to disperse in the fields, and so keeps up a greater out-door supply of them. If of two evils we might choose the least, it would certainly be more desirable that the Corn should be attacked by smut than bunt. I know not how an idea has originated, which I find prevalent among farmers, that a little smut in the Barley crop is a good sign; I can only suppose they mean to say the less the better. It seems to be most likely that both bunted and smutted Corn cannot be very noxious, as fowls which have been fed with them receive no injury. At the same time it is asserted that the straw of Corn infested with the smut-fungus is distasteful to cattle; but I am not aware that any experiments have hitherto been made with a view of ascertaining whether it is actually injurious to their health. *On the Precautions to be taken against Bunt and Smut.*—Whatever some persons may hope when they suggest the possibility of our effectually exterminating the bunt-fungus, provided a system of carefully steeping all seed Wheat were universally to prevail, the most sanguine calculations could never count upon the extermination of the smut-fungus with any prospect of success. Since the smut-fungus does not confine its attacks to Corn, but is also found in the Grasses which grow in pastures and by the road-side, a plentiful supply of sporules will always be kept up to warrant our believing that we shall never expunge this species from the British Flora. Still we may feel assured that precautionary measures may materially lessen an evil which cannot be wholly avoided. Since the sporules of the two fungi which produce bunt and smut enter the plants they attack by absorption at the roots, and since they are buried with those seeds to whose surface they have attached themselves, it is evident that too great care cannot be bestowed in procuring clean seed, or in purifying such as may accidentally be infected. From a variety of considerations, it has always appeared to me strange that practical agriculturists are accustomed to pay so little attention to the raising of pure seed-crops. There may be reasons, which I do not properly appreciate, that would render it inexpedient to cultivate a seed-crop apart from the rest of a produce raised on a farm; but I should have thought that it was always worth while for every farmer to set aside some portion of ground to be more carefully tended than the rest, for the purpose of securing good and perfectly clean seed. Among other reasons for such a practice, he would then be able to weed his crop from every plant infected with bunt or smut, before the fungi ripened. The benefit of steeping Wheat in some mixture or other, being thoroughly established, but it being still uncertain to what cause the success of this practice should be attributed, a few experiments might be undertaken, with a view to determine this point. These would tend to point out which of the numerous mixtures now in use were most likely to be really beneficial, and which of them might advantageously be discarded with. I shall therefore venture to suggest, in the following sketch, the kind of experiments that may be either at once, or that they may readily be added to, or improved upon, by those who are willing to interest themselves in this matter. A parcel of thoroughly bunted or smutted seed should be divided into a number of small packets, each of the same weight; or if very small, each containing the same number of grains. When any of these packets are steeped or washed, the floated grains, and the fungi which rise to the surface, may be kept apart for separate experiments, being carefully labelled "F. 1," "F. 2," &c., to show that they were obtained from the packets of seeds, "No. 1," "No. 2," &c. by this process.

No. 1. Seeds unwashed, to serve as a comparative experiment.
— 2. Washed in cold water only—(2*) in scalding water.
— 3. Washed in water with lime, the proportions specified.
— 4. Washed in water and brine.
(a) Mixed in the proportion of 2 water to 1 saturated brine.
(b) " " " 1 " 1 "
(c) " " " 1 " 2 "
(d) Saturated brine.
— 5. Washed in sulphate of copper.
— 6. Sprinkled, but not washed, with lime.

Another set of experiments may be prepared with clean Corn, to be infected with the floated fungi obtained in washing the above.

No. 7. Rubbed with—
(a) F. 2, to serve as a comparative experiment.
(b) F. 3.
(c) F. 4.
(d) F. 5.

Another set may be prepared with clean Corn, which should first be steeped in different solutions, and then rubbed with the fungi obtained by simply washing in water (No. 2).

No. 8. Steeped in lime, and rubbed with F. 8.
— 9. " brine and do.
— 10. " sulphate of copper and do.

These last may be repeated by washing the seeds clean after they have been steeped, to remove any of the mixture that may adhere to the surface.

No. 11. Prepared as No. 8.
— 12. " " 9.
— 13. " " 10., &c.

—*Professor Henslow's Report, 2nd vol. of the English Agricultural Society's Journal.*

Fodder for Horses.—According to a five years' average of foddering horses, from the year 1825 to 1829, the following quantities are required to a head:—

	Oats.		Hay.	Mixture of 5 Hay & 2 Straw, cut into Chaff.		Worth of whole in Hay.
	Wt.	Worth in Hay.	Wt.	Wt.	Worth in Hay.	
Work-horse for a heavy train	10 lbs.	20 lbs.	12 lbs.	4 lbs.	3½ lbs.	35½ lbs.
Ditto for a light train	7·5	15	10	4	3½	28½
Stallion	6·5	13	10	4	3½	26½
Chaise-horses	6·5	13	10	4	3½	26½
3—4 years old	4·5	9	10	4	3½	22½
2—3 years old	3·75	7·5	8	3	2½	18
1— 2 years old	2·5	5	7	3	2½	14½
½—1 year old	2	4	5	2·5	2	11

The lb. here is that of Bavaria, 8-9ths of the English lb.

—*Burger's Economy of the Farm.*

Effects of Manures on Turnips.—I prepared for Turnips a piece of five acres, of poor stiff clay, which would otherwise have in the usual round lain fallow, with 5 different manures of nearly equal value, and put on, on the same day and under exactly the same circumstances. The results are placed in the following tabular form:—

Acres.	Manure.	Produce.
1st	Ninety cart-loads of dung	360 bush.
2nd	Eight cwt. guano, at 12s. 6d.	640 "
3rd	One ton of rape, cost 8l 8s.	480 "
4th	One ton of urate prepared by the London Company, which cost 5l. in London, being more than double the quantity they recommend per acre.	320 "
5th	Forty bushels ground bones, cost 5l. at Maidstone	480 "

Mr. Barnes, at the Maidstone Farmers' Club.—*Maidstone Gazette.*

The Turnip-Fly.—I ascertained, by accident, that the fly prefers other food to the Swede, and that the reason why it is more difficult to obtain a plant of Swedes than common Turnips is from being sown before other species, at a season of the year when commonly less rain falls than at a later period, and being slower in growth, and less able to withstand the attack of the fly. Over-feeding, whether from genial weather, excess of manure, or thick seeding, will commonly insure a plant: but sowing other seeds, as a decoy, is the most convenient, certain, and economical mode. The Turnip-fly abounds in woods, fences, and pastures. This, and some other facts relating to their nature and habits, I learned from the Rev. Mr. Kirby; and, acting on this information, I drilled thick rows of common Turnips as a decoy to catch them off, as practised by Mr. Paul, of

* The terms *spora*, *sporulæ*, *sporidia*, &c., have either been applied synonymously or vaguely by different authors. The more modern practice appears to be, to use *sporules* for the ultimate granules analogous to seeds; *sporidia* for the cases or vessels containing them; and *spora* for an additional covering, which sometimes includes several *sporidia*.

Staunton, some 35 years since. Catching the flies I found to be an endless job; besides, my land being bounded by woods on two sides, the flies so abounded that they destroyed the plants after being hoed out; but on leaving the thickly drilled decoy to feed the flies, I found they did not leave to feed on the newly-sown Turnips; and, in two instances, it appeared evident that the decoys I had sown, and left, saved the crop from injury, if not from destruction by the larvæ of the saw-fly—the black caterpillar. The decoys swarmed with both flies and caterpillars during the summer.—*Charles Poppy, in the Mark Lane Express.*

Experiments on the Cultivation of Turnips.—Perhaps it may not be yet too late to present our readers with the following report of some experiments instituted last year, by Mr. Peacock, at Popple, near Haddington, for the purpose of testing the comparative influence of certain manures and their combinations on the growth of Turnips, and which he has kindly allowed us to publish. The quantity of land allotted to each experiment varied from a rood to half an acre; but the following table has been calculated for the imperial acre. The tops and roots are not included in the results here given. The variety sown was the White Globe; it was sown in all the cases on the 10th of July, on a strong, tenacious clay soil, thorough-drained.

Manure per Acre.					Expense per acre.	Results per Imperial acre.
Farm-yard dung, at 3s. per ton.	Guano, at 11s. 6d. per cwt.	Bone-dust at 10s. 6d. per cwt.	Rape-dust at 5s. 6d. per bushel.	Gypsum at 3s. per cwt.	£ s.	tons. cwt.
—	2	—	—	—	2 0	13 5
—	1	6	—	—	1 18	12 16
—	—	—	2	—	1 6	15 15
—	—	—	—	4	0 13	12 14
—	1	3	2½	—	1 16	12 2
10	—	—	—	—	2 10	9 12

The above statement is by no means submitted to the public as examples of extraordinary, or even average produce, the entire crop—from being too late sown, and other causes—having been a very deficient one; but merely for the purpose of illustrating the comparative efficacy of the manures and combinations employed, so far as may be inferred from the results of these experiments. The first five lots were ready for thinning a week at least before the other Turnips sown in the same field, on the same day, and manured with the usual allowance of well-fermented farm-yard dung. The tops presented from the first a very dark-green colour, visible from a considerable distance, maintaining throughout superior luxuriance, and, when cut from the bulb, were at least double in quantity compared with those on the other Turnips. It may be worth mentioning, that the bulbs produced by the "fertilisers" weighed very considerably heavier in proportion to their size than those grown with the dung. It may also be useful to observe that the land experimented upon has, during Mr. Peacock's 14 years' occupying of it, always failed in growing Clover—a circumstance which may, in some measure, account for the comparatively large produce of lot No. 4, manured with gypsum (sulphate of lime), and has induced the present spirited and intelligent tenant to give it a further application of gypsum as a top-dressing to the Barley now growing, with the view of promoting the growth of that most invaluable plant, Clover.—*Berwick and Kelso Warder.*

Jamaica.—At the monthly meeting of the Agricultural Society, you were appointed corresponding Member of the Society. You will be pleased to learn that the Queen has been graciously pleased to signify her consent to become its patroness, and to command that it be in future called "The Royal Agricultural Society of Jamaica." Lord Stanley, too, has become a life member; and the happy manner in which all this was communicated to the meeting by Lord Elgin, with his intention of following so good an example, induced our worthy Bishop to come forward, and declare his desire also to become a life member; and at the same time he exhorted the clergy, many of whom were present, to support by all means in their power a Society calculated to work so much good. This brought Admiral Sir Charles Adam on [illegible], who announced his intention to become a [illegible] and he was subsequently elected a Vice-[illegible] Society. I am sure you will agree with me that this Society, so honoured by the distinguished mark of her Majesty's Royal favour, is calculated to be of immense advantage, not only to Jamaica, but the West India Colonies generally; and I therefore hope you will lose no opportunity of bringing it before the public, and of urging, as much as lies in your power, proprietors and others, connected with Jamaica property, to support it by their subscriptions. The proprietors in England of Jamaica estates are doing very wrong in throwing them up, as they are doing to an alarming extent: it would be much wiser in them to rent them out, even at a peppercorn rent, to practical men in the island, in order to keep up the cultivation to some amount until the crisis has passed; for, as you know, an estate once abandoned can only be brought back into cultivation at a very heavy charge. We who are resident in the island, with our good governor at the head, have determined to use every effort to restore prosperity by the introduction of new and improved systems of Agriculture, and there cannot be a doubt of our success when it shall please the Almighty to visit us with rains.—*Simmonds' Colonial Magazine.*

The Benenden New Tile Machine.—In a recent Number we mentioned a new tile-making machine, for which the agricultural world are indebted to T. Law Hodges, Esq., at Benenden, assisted by Mr. K. Hatcher, a self-taught potter and tile-maker, of considerable scientific qualifications and practical knowledge. We have since had the gratification of inspecting this machine at work; and as it possesses many points of improvement over any other which we are acquainted with, a slight notice of it will not perhaps be unacceptable to our agricultural and scientific readers. The more recent tile-making machines are all constructed on the principle of forcing the clay, in a properly tempered state, through a die fixed in an iron box, so that it may come out, if the expression may be allowed, in a continuous stream of pipe, which is then cut off to the proper length for forming separate tiles. The clay must, of course, be completely mixed and amalgamated in a pug-mill; and when, as in Mr. Etheridge's, the die was fixed to the bottom of the pug-mill, the operation appeared reduced to the greatest degree of simplicity of which it is susceptible. The machine constructed by Mr. Reid is also exceedingly simple: but this, like Mr. Etheridge's, is stationary, which is found in practice to be comparatively disadvantageous. The tiles having to be dried by exposure to the air for some days before they are burnt, must be taken by the hand from the stationary machine, placed on barrows, wheeled to the shed, and again taken from the barrows and placed in piles. As the sheds under which these piles of raw tiles are placed are upwards of 100 ft. long, in order to transfer the raw tile at one motion from the machine to the rows of piled tiles, the machine must of course move along the rows from one end to the other. This is done by the Benenden machine, which we will now describe. This implement has the appearance of a form about 18 inches wide and 10 ft. long, standing between two upright battens near to one end. On the form, and between these two uprights, is a square iron box, in one side of which are placed the dies from which the stream of pipe rolls out on to the form. Fitted into the top of this iron box is an iron cylinder, having a close iron grating or sieve to intercept small stones or grit at the bottom of it. This cylinder, being charged with tempered clay, is placed on the iron box. A piston, worked by a toothed rack and pinion and common winch, presses the plastic clay down from the top through the dies, three continuous lengths of pipe, 1¼ inch bore, emerging thus at one time. This pipe is too soft to admit of being pushed along the form, so it is assisted by an endless web, on which it falls from the dies, and the pace of which is regulated by the supplying power of the machine. As the rolls of pipe progress along the form, portions of the end of it are continually cut off, of the proper length to form one-foot tiles. The instrument by which this is done consists of a small round staff, which is inserted into the orifice of the pipe, and on which the tile is carried away after being cut off by a piece of fine wire, ingeniously attached to the staff. The shed in which the machine works is about 108 feet long, and of sufficient width to admit of the machine being wheeled along in the centre, and of a boy to work on each side of it, in removing the tiles from the machine, and placing them in a row along under each side of the shed. The *modus operandi* is this: A stout lad brings a cylinder charged with prepared clay, and having received a cylinder, and emptied and cleaned all the grit from its grating, proceeds to fill that in the same way. A man turns the winch with his right hand, assisting the pipe as it issues from the die with his left. If a piece of grit, or a "nub" of rather harder clay affects the shape of the emerging pipe, the piece is severed and carried away into a basket by the endless web, and a new issue of perfect pipe proceeds from the die. During the issue, the two removing boys are kept in full activity. It is estimated that a man and three boys will thus make 5000 tiles per day, and that the price at which they can be sold will not exceed 15*s.* per thousand for those of 2 inches bore, and 14*s.* for those of 1¼ inch bore. The greatest advantage of the plan probably consists in the readiness by which the machine and the pug-mill may be transferred from place to place. Both together may hereafter be purchased for about 24*l.*, and any considerable farmer or landlord will doubtless find it cheaper to make his own drain-tiles than to buy them, as the cost of carriage has hitherto been a serious item. This improvement must prove of incalculable advantage to the Weald, the clay of which, after lying long in clods in the sun, rings like stone or earthenware when struck with a hard substance, and is exceedingly stiff and retentive of moisture. —*Maidstone Gazette.*

The Alpaca of Peru.—We observed in a late Number of a periodical, that there was some expectation of introducing the Alpaca into this country on a large scale, for the purpose of wool-gathering; but an objection was raised, because, besides other adverse circumstances, the climate of Great Britain and Ireland was unsuitable. We beg to disabuse the public mind on this subject, as there can be no doubt as to the climate being suitable, the difficulty not being in the climate, but in the meantime to get these animals into this country in a healthy state. They continue very healthy, we are informed, until they reach the Cape of Good Hope, but after being a very little longer at sea (either from being so long at sea, or some defect of physical strength) they droop and die—at least to the extent of two-thirds. Some method might be adopted whereby they could be put on shore for a time at the Cape, and re-embarked into a succeeding vessel. But be this managed as it may, we have seen a male and female of the Alpaca species at Craigbarnet, Lennoxtown, Stirlingshire, which have been there for the last eight months, and they have stood the severe winter without injury, and we are assured are more hardy than our native sheep: they require less food, and could exist where sheep would die. There seems hardly to be any kind of food they will not eat; they eat Turnips, Hay, Oats, and Beans; they are more partial to meadow than Rye-grass Hay. These animals are now in the highest order, and in the most perfect health; they are jet black, and follow their keeper like a dog, and are very elegant and interesting. The weight of the fleeces of last year was 17½ lbs. Their worthy owner, to use his own words, "anticipates, when the navigation between us and South America is diminished as to the length of time, which steam will most assuredly accomplish, thousands of Alpaca will be brought over—our hills will be covered with them, and they will become a source of great wealth to the proprietors and farmers of the Highland districts, for these animals will thrive upon that kind of coarse bent, which neither horse, nor cow, nor sheep, will look at or touch."—*Edinburgh Witness.*

Experiments with Nitrogenous Manures.—At a meeting of the Chemical Society, a paper was lately read, containing a report of some experiments with saline manures containing nitrogen, conducted on the Manor Farm, Havering-atte-Bower, Essex, in the occupation of C. Hall, Esq., communicated by W. M. F. Chatterley, Esq. The experiments were suggested by the prevailing opinion, that the fertilising power of some animal manures, and of the salts, nitre, (nitrate of potash,) nitrate of soda, and sulphate of ammonia, depend upon the proportion of nitrogen they contain. * * * A field of Wheat was chosen, which, in the latter end of April, 1842, presented a thin plant; the salts were top-dressed over the land by hand, on the 12th of May, and the crop mowed on the 10th of August. The soil was rather poor, consisting of a heavy clay upon a subsoil of the London clay. 1. No manure; corn per acre 1413 lbs. 2. With 28 lbs. of sulphate of ammonia; corn, 1612 lbs. 3. With 140 lbs. of the same salt; corn, 1999 lbs. 4. With 112 lbs. of nitrate of soda; corn, 1905 lbs. 5. With 112 lbs. of nitre; corn, 1890 lbs. The increase in the Straw was also considerable in all cases, except with the small proportion of sulphate of ammonia. The total increase in the four manured crops was per cent., in the order in which they were enumerated,—14.1, 41.5, 34, and 33.5. The cost of the manure for the three last did not greatly differ, being 21*s.* 9*d.*, 24*s.* 6*d.*, 27*s.* 6*d.*; and the profit on the outlay was, with the small dose of sulphate of ammonia, 294 per cent.; with the large dose, 212 per cent.; with the nitrate of soda, 138 per cent.; and with the nitrate of potash 92 per cent. The principal conclusions drawn by the author are, that the increase of nitrogen in the crop is greater than is accounted for by the nitrogen of the manures, showing that these manures have a stimulating effect, or enable the plants to draw additional nitrogenised food from the soil and atmosphere; the considerable superiority of sulphate of ammonia over the other salts, and the greater proportional efficiency of a small, than of a large dose of that salt.—*Smith's Productive Farming.*

The best Comparison of the Old and New Scottish Systems that we know of, is that of Mr. Oliver, of Lochend, near Edinburgh, who has the reputation of being one of the best practical farmers in the realm. The acre he speaks of is the Scotch acre, about 1⅕ acre English. A Scotch boll of Wheat is nearly 4 bushels, and of Barley nearly 6 bushels. "The mode of cropping at the former period (1723) was—first, Peas; second, Wheat; third, Barley; fourth, Oats; the produce being about three seeds, but to prevent all cavil, say four seeds. This, taking the seed for each acre at one boll, over a farm of 100 acres, is 400 bolls. The quantity of straw for each boll of such a crop could not exceed 15 stones; which, on 400 bolls, gives 6000 stones, or 42 tons, 15½ cwts. of straw to be consumed by the stock, and returned to the land in the shape of manure. But, upon a farm of 100 acres, cultivated as at present, viz., a fourth Turnips, a fourth Wheat or Barley, a fourth Clover or Rye-Grass, pastured or made into hay, and consumed on the spot, and a fourth Oats or Wheat, the account would stand thus:—50 acres of Wheat, Barley, and Oats, at eight bolls an acre, which is not above the average of the crops of the best district of East Lothian, and such only was cultivated when Lord Belhaven wrote; this, allowing, as before, 15 stones of straw for each boll, gives 120 stones per acre, which, over 50 acres, makes in all 6000 stones of straw, being equal to the quantity produced by the whole 100 acres under the old system. Now, suppose that the 25 acres of Clover and Rye-grass are made into hay, which, however, is not the best mode, nor that usually followed, and that each acre yields 200 stones, the total quantity will be 5000 stones, or 35 tons, 14 1-10th cwts.; and add to this 500 tons Turnip, being the produce of 25 acres at 20 tons per acre, which is by no means above a fair average crop. Upon these data, the weight of the materials produced annually as food for cattle and manure, under the old and new systems, will be as follows:—

Old System,	Straw	6,000 st.	or	42 tons.
New System,	Straw	6,000	,,	42 ,,
	Hay	5,000	,,	35 ,,
	Turnips	70,000	,,	500 ,,

Thus making the weight of materials for food and manure under the new system, in round numbers, 577 tons; while, under the old system, the quantity is only 42 tons, leaving a balance in favour of the new of 535 tons per annum, being more than twelve times the whole quantity produced under the old! Nothing more is necessary to show the superiority of the new system, in so far as keeping up the fertility of the soil is concerned, and upon this depends the progress of Agriculture. As

to the question of comparative profit, it would be easy to show, from unquestionable data, that the new system is as superior to the old in this respect as it is in the supply of manure; but this must be abundantly obvious to every one who contrasts the almost imperceptible advances made in Agriculture, and in the accumulation of agricultural capital, for many centuries, with the extraordinary progress during the last 50 or 60 years, or since the new system began to be introduced."—*Kentish Courier.*

Notices to Correspondents.

AMMONIA.—*T. R.*—The usual mode of obtaining ammonia from animal matter is by destructive distillation. *E.*

BRAN.—*H. Lawson.*—Can any one inform our correspondent where an analysis of Bran is to be found?

COATES'S HERD-BOOK.—*W. Sadler.*—Can any one inform our Correspondent the terms of admission of Cattle into "Coates's Herd-book?"

DRAINAGE.—*Subscriber.*—It is well to place soles the whole of the way under the draining-tiles.

DRILLING CORN.—*Querist.*—The advantages of this practice lie in the capability which it confers on you of cleaning the land during the growth of the crop. The plants would necessarily grow better were the seed sown at equidistant intervals in every direction; but the necessity for hoeing and cleaning the land requires that the intervals be widened in one direction; and therefore, that the quantity of seed sown may be sufficient, it also requires that the intervals be diminished in the other direction: hence the *rationale* of drilling. You must keep your land clean; but for this, hoeing is an injury in this hot weather.

DANIELL'S MANURE.—*J. Wharton.*—Please to give us your address.

GUANO.—*T. Wade.*—The quantity you applied should have secured you a crop the second year, and, had it not been such weather, probably would have done so.

LAWNS.—*R. A.*—There is a machine for mowing lawns which goes under the name of Budding's Mowing-machine.

MANURES.—*B. L.*—If no ammonia is given off on boiling any substance in a caustic alkaline solution, it is plain that no salts of ammonia are present in it. There is usually a quantity of ammonia in wool, chiefly derived from the perspiration of the animals; this ammonia would be lost by boiling the wool with alkali. Ammonia is generated when animal matters decay, or are decomposed in any manner; by boiling wool with alkali, it would be more or less decomposed, a portion of ammonia would be formed, and lost in consequence of its volatility under those circumstances. *E.*——*Wm. B.*—The sum of 18*s.*, charged by Mr. Karkeek as expenses connected with the use of town manure, includes not only the spreading of it on the land, but the mixing, turning, &c., which it received previous to spreading.

NOTICE TO QUIT.—*Ox nobis.*—The case of our correspondent is a hard one; but (assuming that the notice to quit is correct in point of form, and as to the parties by whom it is given) there can be no doubt but that he must give up the land at the expiration of the six months. He is of course aware that a notice to quit, to put an end to a tenancy from year to year, must expire at the same time as the current year of the tenancy; *e.g.*, if the tenancy commenced at Michaelmas, the notice must be given to quit at Michaelmas, and not at any other period of the year. *W.*

PULVERISING CHALK.—*R. T.*—Will the notice in last week's paper answer your purpose?

RATS.—*Several* inquiries have been addressed to us about Mr. Meyer's mode of destroying rats, his terms, &c. Perhaps this notice may result in eliciting the required information.

SMALL FARM.—*A Lady* had better sow half an acre to Mangold Wurzel, half an acre to Carrots, half an acre to Wheat with Clover, half an acre to Wheat without Clover, the stubble of which may be broken up and sown to Vetches, which may be mown for the cows in spring, the land being planted to Potatoes; and a quarter of an acre to Cabbage, Potatoes, &c. Litter and food will thus be provided for two cows.

THISTLES.—*G. L.*—Persevere in pulling them, cutting them off, &c.; and ultimate success in extirpating them is inevitable.

MISCELLANEOUS.—*W. P. T.*—We have sent your letter to Professor Henslow. Have patience, and you will not be disappointed.

***As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, June 17.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 8 to 4s 0	Best Downs & Half-breds	3s 8 to 4s 0
Best Short Horns	3 4	3 8	Best Long-wools	3 6	3 10
Second quality Beasts	3 10	3 2	Wives and second quality	3 0	3 4
Calves	3 8	4 2	Lambs	4 4	5 0
Pigs	3 4	4 0			

Beasts, 2722; Sheep and Lambs, 24,150; Calves, 204; Pigs, 501.

Our supply of Beef to-day is somewhat smaller than last week; still, there is a large quantity, and it is difficult to get a full sale. The demand, however, has improved, and our top quotations are more freely given; the best Scots readily make 3*s* 10*d*, and Short horns 3*s* 8*d* per 8 lbs. Middling qualities are a heavy trade, and there is no variance in the price of that description. Sheep are also in less quantity, and the demand rather increased; still it is difficult to obtain an advance in price, and our highest quotations are not generally supported, many of the best Downs, &c., being sold at 3*s* 10*d*, and the best Longwools at 3*s* 8*d*; Half-meated Sheep are heavy on hand, the buyers of that description being, for the most part, kept out of the market by the continued dry weather. Lamb is a steady trade, rather more in demand. Veal-trade is remarkably heavy—many very good Calves make no more than 4*s*. Pork-trade is heavy.

FRIDAY, June 21.

Fresh Beasts are not very plentiful to-day, and trade is rather brisker. Our top quotations of Monday are well supported, and in some few instances there is a little advance; the late refreshing showers since Monday, and a shorter supply to the dead market, have improved our trade for both Beef and Mutton. Although there is a fair supply of Sheep, there is more demand, and the best Downs, &c. of moderate size, readily make 4*s*, and Longwools, not too large, 3*s* 10*d* per 8 lbs.—the weather being warm; big fat Sheep are very unselling, and make no more than from 3*s* 6*d* to 3*s* 8*d* per 8 lbs. Lamb is about the same as on Monday. Veal is a shade better, some of the best Calves making about 4*s* 4*d* per 8 lbs. The warm weather makes Pork-trade heavy—very neat Porkers barely make 4*s* per 8 lbs.

Beasts, 317; Sheep and Lambs, 11,370; Calves, 448; Pigs, 283.

41, West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, June 17.

THE weather continues very dry, and during the past week sultry hot, the wind being generally south-west, without any appearance of rain. This market has been supplied since our last from the northern districts, also from Devonshire and the Channel Islands; but in consequence of the drought, a further advance was obtained on the Late Devon Reds, and also on some of the best samples of the York Reds; but the dry-rot being apparent in several samples of the Perth Reds, our last quotations have not been fully maintained. Foreign Whites are still selling from 80*s* to 90*s*.

York Reds	80s to 110s	Kents and Essex Blues	—s to —s
Perth	80	Wisbeach Kidneys	— —
Early Devons	— —	— Blues	— —
Late Devons	95 105	— Whites	— —
Cornwall	— —	Jersey and Guernsey Blues	75 80
Sussex Whites	— —	Prince Regents	— —
Kent and Essex Kidneys	— —	York Shaws	— —

WOOL.—BRITISH, FRIDAY, June 21.

Our market continues steady; an average amount of business, for the season of the year, is being done. The Suppliers complain much that the high prices the Farmers at present demand for the new Wools prevents their buying any large quantity.

	per lb.		per lb.
Long-wooled Wethers	11½d to 0s	Southdown Hoggists	1s 0½ to 1s 8½
Do. Hoggitts	2s 1 1 8	Kent Fleeces	1 1½ 1 8
Southdown Fleeces	11½ 1 0		

JAMES PEARSE, Wool Broker.

HOPS, FRIDAY, June 21.

The accounts from the Hop plantations have continued to come worse during the week, speaking of a general increase of vermin throughout Sussex, Weald of Kent, and Worcester; Mild. Kent as yet is only partially touched with fly, but mould has already shown itself in several places; the market, in consequence, has advanced 5*s* to 6*s* on last week's prices.

PATTESHALL & SONS, Hop-Factors.

MARK-LANE, MONDAY, June 17.

THERE was a short supply of English Wheat at this morning's market, and the trade ruled exceedingly heavy; sales were effected with much difficulty, on about the same terms as last Monday. Foreign met a moderate demand at our quotations. Low heavy descriptions of Bonded met a slight inquiry at 34*s*. to 35*s*. per qr., for export to France.—Barley must be noted 1*s*. higher, and Foreign f. o. b. continues to find buyers at rather improving rates.—Beans sell freely, at last week's Prices.—Peas, both White and Grey, are 1*s*. dearer.—The Oat-trade is good, and fine qualities command an advance of 6*d*. to 1*s*. per qr.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . . White	46	55	Red .	46	54
—— Norfolk, Lincolnshire, and Yorkshire .	30	36	White	—	—
Barley, Malting and distilling 27*s* to 31*s* Chevalier	32	34	Grind.	25	28
Oats, Lincolnshire and Yorkshire . . Polands	20	23	Feed	19	22
—— Northumberland and Scotch . . Feed	20	23	Potato	21	25
—— Irish . . . . . Feed	18	22	Potato	19	24
Malt, pale, ship	58	62			
—— Hertford and Essex	60	63			
Rye	29	31			
Beans, Mazagan, old and new 30 to 35	Tick	30	36	Harrow	32	36
—— Pigeon, Heligoland . 34 to 39	Winds.	—	—	Longpod	—	—
Peas, White . . . . 35 to 38	Maple	34	35	Grey	31	33

FRIDAY, June 21.

The arrivals of Wheat, both English and Foreign, since Monday, have been good; although the quantity offering on sale is moderate, the trade has ruled dull, and sales were limited at that day's quotations. The weather, having been showery throughout the country, appears to have affected the demand for Spring Corn, in which there is little doing to day; but we observe no alteration in the value of Barley, Beans, or Peas.—The Oat-trade is heavy, and Monday's advance barely maintained.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans	Peas.
May 10 per Quarter.	35*s* 1*d*	31*s* 5*d*	20*s* 5*d*	31*s* 4*d*	32*s* 5*d*	34*s* 2*d*
— 17 . . .	35 10	31 1	21 0	31 2	33 3	31 8
— 24 . . .	35 10	30 7	21 2	31 7	33 11	31 7
— 31 . . .	35 6	30 9	21 7	34 0	34 10	33 4
June 7 . . .	35 6	31 4	21 11	33 11	35 11	34 1
— 14 . . .	35 9	31 10	22 6	33 4	36 11	34 1
6 weeks' Aggreg. Aver.	35 7	31 2	21 5	32 5	34 7	33 10
Duties on Foreign Grain	17 0	7 0	6 0	10 6	8 6	10 6

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . . .	5010	650	7110	5430 Sks
Irish . . .	—	100	10920	—
Foreign . . .	12930	6910	3740	—

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye	Bns.	Peas
English .	7430 Sks. — Brls.	1051	623	7059	3053	110	1093	220
Irish .	— " — "	—	—	15	21783	—	—	—
Foreign .	" — "	1892	5075	—	4480	—	—	304

SEEDS, June 17.

Canary . . per qr	45*s* to 63*s*	Linseed Cakes, Foreign, p. ton	6*l* to 7*l* 10*s*
Carraway . . per cwt	50 54	Mustard, White . p. bush.	5*s* 7
Clover, Red, English .	60 74	— Superfine " .	6 10
— — Foreign .	64 76	— Brown " .	— —
— White, English .	100 130	Rapeseed, English, per last	24*l* 28*l*
— — Foreign .	84 128	Rape Cake . per ton	— —
Coriander . . .	12 16	Sainfoin . . .	— —
Hempseed . per last	30 35	Tares, Essex, winter p. bush.	6 8
Linseed . . per qr	— —	— Foreign . .	— —
— Baltic . .	— —	Trefoil . per cwt	— —
— Cakes, Eng. per 1000	10*l* 10*l* 10*s*	Turnip (two variable for quotation).	

KINGSFORD AND LAY.

COVENT GARDEN, JUNE 22.—The market has been well supplied with Fruit during the week. Pine Apples are both good and plentiful. Among them were some excellent specimens of Providence and Queens. Grapes are also good in quality, and have been abundantly supplied. Peaches and Nectarines are considerably reduced in price since our last Report, as are also Melons, the best specimens of which are offered at about 7*s*. each. Cherries, both from Standards and from the wall are abundant. Strawberries are very good and plentiful, and they are becoming cheaper. The market is now well supplied with Gooseberries, many of which are now getting ripe; Currants are less abundant. Vegetables are, generally speaking, still interior, owing to the long dry weather. Spinach is scarcer and dearer, in consequence. Carrots and Turnips are also affected by the drought; Cauliflowers, however, are large and fine, and Asparagus is good and sufficient to meet the demand. Rhubarb has not altered in price since our last Report. French Beans are a little reduced in price. Peas are supplied in large quantities at last week's prices. Lettuces and almost all kinds of Salading are abundant. Cut Flowers chiefly consist of Heaths, Pelargoniums, Gardenias, Pinks, Lily of the Valley, Sweet Peas, Fuchsias, Verbenas, Cacti, Moss, Provins and other Roses.

FRUITS.

Pine Apple, per lb., 4*s* to 10*s*	Oranges, per dozen, 1*s* to 2*s* 6*d*
Grapes, Spanish, per lb., 1*s* to 1*s* 6*d*	— per 100, 5*s* to 10*s*
Hothouse Grapes, per lb., 3*s* to 7*s*	Lemons, per dozen, 1*s* to 2*s*
Melons, each, 3*s* to 7*s*	— per 100, 4*s* to 14*s*
Peaches, per dozen, 12*s* to 30*s*	Almonds, per peck, 6*s* to 7*s*
Cherries, per lb., 1*s* to 3*s*	Sweet Almonds, per lb., 2*s* 6*d* to 3*s*
Currants, per half-sieve, 2*s* to 3*s* 6*d*	Nuts, Spanish, per bushel, 18*s*
Strawberries, per gallon, 6*d* to 1*s* 6*d*	— Brazil, 16*s*
Gooseberries, per half-sieve, 1*s* 6*s*. to 3*s*	— Barcelona, 30*s* to 34*s*
Walnuts, per bush., shelled, 16*s* to 20*s*	— Cob, 14*s*

VEGETABLES.

Rhubarb, per bundle, 3*d* to 1*s* 6*d*	Horse Radish, per bundle, 2*s* to 3*s*
Cabbages, per dozen, 6*d* to 1*s* 6*d*	Savory, per bunch, 3*d* to 6*d*
— Red, per dozen, 2*s* to 3*s*	Cucumbers, each, 4*d* to 1*s*
Cauliflowers, per doz., 1*s* to 4*s*	Spinach, per sieve, 1*s* 6*d* to 3*s*
Sorrel, per half-sieve, 6*d* to 9*d*	Leeks, per doz. bun., 3*s* to 6*s*
Asparagus, per 100, 1*s* to 4*s* 6*d*	Garlic, per lb., 6*d* to 8*d*
Artichokes, per doz., 2*s* to 3*s*	Onions, per bunch, 3*d* to 10*d*
French Beans, per 100, 1*s* to 2*s*	— large, per bushel, 1*s* to 3*s*
Autumn Potatoes, per lb., 3*d*	— Spanish, per doz., 1*s* 6*d* to 3*s*
Greens, per dozen, 1*s* 6*d* to 2*s* 6*d*	Shallots, per lb., 6*d* to 10*d*
Potatoes, old, per ton, 80*s* to 120*s*	— Green, per bunch, 3*d* to 4*d*
— per cwt., 3*s* to 6*s*	Lettuce, per score, 6*d* to 1*s* 6*d*
— per bushel, 3*s* 6*d* to 3*s* 6*d*	Celery, per bunch, 6*d* to 2*s* 6*d*
— Kidney, p. bush., 2*s* 6*d* to 3*s*	Mushrooms, per pottle, 2*s* to 3*s*
— New, per cwt., 14*s* to 30*s*	Small Salads, per punnet, 2*d* to 3*d*
Frame Potatoes, per lb., 3*d* to 6*d*	Watercress, p. 12 sm. bun. 3*d* to 6*d*
New Turnips, per bunch, 3*d* to 4*d*	Parsley, per hf.-sieve, 1*s* to 1*s* 6*d*
Peas, per bushel sieve, 3*s* to 4*s* 6*d*	Tarragon, Green, per bunch, 3*d* to 4*d*
Red Beet, per doz., 1*s* to 2*s*	Green Mint, per bunch, 2*d* to 4*d*
New Carrots, 4*d* to 1*s*	Marjoram, per bunch, 4*d* to 6*d*
Kidshaw, Turnip, p. 12 bchs., 1*s* to 1*s* 6*d*	Chervil, per punnet, 2*d* to 3*d*
Basil, per bunch, 4*d* to 6*d*	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 20.

Prime Upland Hay 95*s* to 100*s*	Clover 100*s* to 126*s*	Straw . 30*s* to 34*s*
Inferior . . 80 90		

Short supply, with a heavy trade.

JOHN COOPER, Salesman.

CUMBERLAND MARKET, June 20.

Superior Old Hay 100*s* to 110*s*	Superior Clover 120*s* to 130*s*	
Inferior . 90 95	Inferior " 110 118	Straw 32*s* to 40*s*
New Hay . 85 90	New Clover 90 100	

JOSHUA BAKER, Hay Salesman.

WHITECHAPEL, June 21.

Hay . . 90*s* to 95*s*	Clover . 120*s* to 126*s*	Straw . 32*s* to 38*s*
Fine . . 90 95	— fine 130 135	

WHOLESALE PRICES OF MANURES.

Alum . .	per ton	12*l.* 0*s* 0*d*	Muriate of Lime .	ton	8*s* 0*d*
Ammonia, Carbonate	cwt.	0*l* 0 0	— Potash .	ton	14*l* 0 0
— Sulphate	cwt.	1*l* 0	Nitrate of Soda	cwt.	1*l* 5*s* to 1*l* 0 0
— . .	cwt.	1*l* 0 0	— Potash (Saltpetre)	cwt.	2*l* 5*s* to 2*l* 0 0
— Muriate .	cwt.	1*l* 0 0	Phosph. of Lime (Calc. Bones)	cwt.	7 0
— Sal Ammoniac	cwt.	4*l* 0	— . .	ton	14 0
— Phosphate	lb.	1 0	— Super,	cwt.	7 0
Bones . .	ton	8*l* 0 0	Salt (Common) .	ton	32 0
Boneduet .	qr.	16*s* to 17*s* 0	Soda (Dry Carbonate)	cwt.	2*l* 0
Guano, Peruvian	ton	14*l* 0 0	— (Crystallised)	cwt.	1*l* 0
— Ichaboe	ton	7*l* to 10*l* 0 0	Sulph. of Magnesia (pure)	cwt.	1*l* 0 0
— African	ton	5*l* to 7*l* 0 0	— Potash .	cwt.	1*l* 5 0
— Potter's .	ton	10*l* 0 0	— Soda .	cwt.	0 0
Gypsum . .	ton	3*l* 0	Sulphuric Acid (sp. g. 1.84)	lb.	0 1½
			— — (sp. g. 1.7)	lb.	0 1

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

FOR TURNIPS.

THE Heads of the London Manure Company, in addressing the Public, inform the London Manure Company have great pleasure in acquainting their friends that they have this day reduced the Price from 8*l.* to 4 guineas per ton, at the same time pledging themselves that the quality shall be fully maintained. The Guano will be found most valuable for Turnips, by promoting a rapid growth, it secures a full plant, at the same time producing a great weight per acre, and extending its beneficial effects to the succeeding crops. It may be sown broadcast, or, where it is preferred by the drill, at the rate of one ton to 3 acres; and as to the time, it should not be sown more than 2 inches below the surface. Gardeners and Florists will find it very useful for Dahlias, and other roots. Full particulars and testimonials will be delivered on application. Also the Peruvian Guano; Bicephate and Sulphate of Ammonia; Gypsum, and every other artificial manure.—Lewis and Peacock, Secretary, 40, New-bridge-street.

WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the Inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S Manufactory, Ongar, Essex; and G. DEANE, Ironmongers, London-bridge; and of any Ironmonger in the country. *Price*, in box, with deal and joints, 2*l.* 5*s.*



HAYMAKING SEASON.—Agriculturists, and others who may require the assistance of WEBLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 128, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

TURNIPS, &c.

DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful constituents of the best Peruvian Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious in soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Celery, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10*l.* per ton, or 12*s.* per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street, and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertilisers are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford; Norfolk, Messrs. BULLARD and WARNE, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Conservatories and Greenhouses, being calculated, from its extreme hardness, to resist the water incident to ordinary Plastering. For Floors it has a threefold advantage over stone-paving. 1st, in its lightness; one inch in thickness of KEENE'S CEMENT suffering where 3 inch flagging would be employed. Next, in its appearance resembling, and in time, the hardness of stone with a uniform colour, and even surface free from joints; and lastly, in economy, being one-third the price of Portland paving.

The most conclusive evidence can be given of the utility of KEENE'S CEMENT for these purposes by the Patentees and Manufacturers.—JOHN BAZLEY WHITE and Sons, Millbank-street, Westminster.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 23 inches wide, at 1*d.* per foot, super. A discount to the trade. THOS. J. CRUDDOCK, 8, Ingram-court, Fenchurch-st., London.

DR. HALLETT'S LIQUID FERTILISER.—The beauty of Flowers, with their power of perfecting their Seeds, and the flavour and size of Fruits and Vegetables, must ever depend upon the food supplied to the plants producing them, and these a very extensive series of trials on various soils has shown, may be secured by the use of Dr. HALLETT'S CONCENTRATED LIQUID FERTILISER, which contains all the essential ingredients of the best Peruvian Guano, with others equally so, but not to be found by Sea Fowl, in the Atlantic Ocean. Sold at Mr. G. HALLETT'S Factory, Broad Wall, Blackfriars; Messrs. WINSTANLEY'S, Chemists, 7, Poultry; Messrs. WARNER'S, 28, Cornhill; Messrs. RIDLEY and M'MULLEN'S, 6, Leadenhall-street; and every respectable Chemist's and Seedsman's, with directions, in stone quarts, at 1*s.* 6*d.* each, and in bottles, six times the size, at 7*s.* 6*d.* The quart requires 32 gallons of water to reduce it for use, for watering soils and growing bulbs

TURNIP SOWING.—BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day, it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9*l.* per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon office in town.—Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

TO GARDENERS AND AGRICULTURISTS.

SUPER-PHOSPHATE OF LIME is capable of producing a more rapid vegetation in Plants than any substance known. It may be had at Mr. LAWES' Factory, Deptford Creek, price 7*s.* per cwt.:—

Super-phosphate of Potash, 15*s.* per cwt.
" Soda 12*s.* "
" Magnesia 9*s.* "
" Ammonia 1*s.* per lb.

GUANO.—For Sale, in bags of 1 cwt. each; just landed, with a succession of cargoes to arrive.

There being considerable variety in the qualities of Guano imported from different places, and indeed from the same island, each parcel will be chemically analysed with the utmost precision, to show its relative productive power. A copy of such analysis will be given to buyers, and also instructions as to the most approved mode of using the Guano, furnished by the experience of eminent Agriculturists in England and Scotland.

Large parcels will be delivered direct from the ship, or waterside premises. Smaller quantities may be had at the warehouses, 24 and 25, Bilter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to JAMES CLARE, 24, Bilter-street.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is bought in the market.

Price-current, London, June 22, 1844:—

Bones . . p. ton	£4 10*s.* 0*d*	Nitrate of Potash .	£1 4*s.* 6*d*
" crushed,	5*l.* 10*s.* to 6 0 0	Oil of Vitriol, or Sulph. acid . . p. lb.	0 0 1
" calcined .	7 0 0	Rape Cakes . p. ton	4 15 0
Carbonate of ammonia . . p. cwt.	2 16 0	Salts, Epsom "	9 0 0
Guano, Peruvian, p. ton	11 0 0	" Glauber "	7 0 0
" Ichaboe "	9 0 0	Sulphate of Ammonia, per cwt.,	10*s.* to 0 17 0
Gypsum . . "	2 0 0		
Nitrate of Soda, p. cwt.	0 14 0		

Wm. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

GLASS SUPERSEDED FOR HORTICULTURAL PURPOSES BY

WHITNEY'S CHEMICAL, TRANSPARENT, WATERPROOF COMPOSITION, for rendering Muslin, Calico, or Linen, for the Frames of Greenhouses, Pine, Melon, or Cucumber Stoves, &c., impervious to Rain or Moisture, admitting light equal to Glass, the *burning* rays of the *sun alone* being obstructed. Houses or pits covered with Calico, &c., prepared with this Composition, embrace important advantages over Glass. The light being equally diffused in every part of the house, plants placed on the floor have as much light as those close to the covering, consequently they are not drawn up as under Glass, while they continue much longer in *bloom*, and preserve their *delicate tints unfaded* till the *blossom falls*.

Whitney's Substitute for Glass.—I have had screens of calico rendered transparent with Mr. Whitney's invaluable varnish, and used them last winter, with a success far exceeding my most sanguine expectations, though my anticipations had been considerably excited. Indeed I consider Mr. Whitney's discovery as an invaluable boon to the horticulturist, one that will bear competition with any invention connected with the art and mystery of Horticulture in modern times. My screens were about 9 feet long each, and were inclined to the wall separated about 12 inches below, and as my object was to ascertain the value of the screens, in reference to *radiation*, they were *left open at each end*. Suffice it to say, the Fuchsia, Pomegranate, Passion-flower, Japan Honeysuckle, and others still more delicate and susceptible, were effectually preserved, and that without the slightest check to their growth, or any injury whatever. I am of opinion that in this *new aspect*, it possesses a protecting influence *infinitely superior to glass*, because the effects of radiation, a most powerful source of cold, are *not interrupted by glass*, which so materially counteracts the artificial temperature within; I cannot, therefore, but conclude, that for the protection, not merely of the early blossom, but the maturation of the fruits as in the case of the Peach, Nectarine, Apricot, and Grape, these transparent screens, thus prepared, are invaluable, and their triumphant success certain. Add to this, for Cucumber and Melon frames, their superiority over glass is undoubted for preventing flagging of the foliage (sometimes being scorched) by day, and the chilling effects of radiation by night. Screens prepared with Whitney's Transparent Varnish should be also used as shades in the intensity of a summer's sun, and for protection against radiation in winter, for the stove, greenhouse and conservatory. Even in the *economy of fuel* the value of such screens is demonstrable, as less will be required to maintain an equable warmth, its escape by radiation being thus effectually checked.—J. M., 16*th April*, 1844.

Prepared by GEORGE WHITNEY, Chemist, Shrewsbury; and sold in Bottles, 2*s.* 6*d.* and 4*s.* 6*d.*, with ample directions for use; and, as a protection to the public, the signature of the inventor is on each bottle. Sold by the principal Seedsmen in London and throughout the kingdom. Merchants, Seedsmen, and Florists supplied by Mr. Bailey, North-street, Wolverhampton.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6, 1844.*—The cabin of the Great Western has been regularly supplied with Lea & Perrins's Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of the kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup; giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 8, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

HORTICULTURAL SOCIETY OF LONDON.—LIST OF PRIZES,

OFFERED AT THE EXHIBITIONS IN THE GARDENS, IN 1844.

MEDALS AND REWARDS.

The Society distributes the following Medals and Rewards; viz.:

	value—£	*s.*	*d.*
C. The Certificate	0	10	0
SB. Silver Banksian Medal	1	0	0
SK. Silver Knightian Do.	1	5	0
LS. Large Silver Do.	1	15	0
SG. Large Silver Gilt Do.	4	0	0
GB. Gold Banksian Do.	7	0	0
GK. Gold Knightian Do.	10	0	0
LG. Large Gold Do.	20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate. In case an Exhibitor shall receive a First Prize in any one Letter, he shall not be entitled to receive any other Medal in the same Letter, except in *CC*, *DD*, and *EE*.

CLASS I.—FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A. Pelargoniums, in collections of 12 new and first-rate varieties, cultivated with superior skill, in pots of 24 to a cast. GB—SG—LS—SK.

B. Pelargoniums, in collections of 12 varieties, in pots of 12 to a cast. SG—LS—SK.

N.B. Persons exhibiting in *B* cannot also exhibit in *C*.

C. Pelargoniums, in collections of 6 varieties, in pots of 9 to a cast. LS—SB.

D. Rhododendrons, in pots; not fewer than 6 plants, in 6 varieties. LS—SK—SB.

E. Roses, in pots; Amateurs to show in collections of 12, Nurserymen in collections of 25, distinct varieties. GB—SG—LS.

N.B. It is the wish of the Society in a future season, to require Roses to be shown exclusively in pots; and not to allow cut specimens to be exhibited at all.

F. Moss Roses in loose bunches, so as to exhibit, as far as possible, the habit of the variety; in 12 varieties. SK—SB—C.

G. Other Roses, exhibited as in the last letter, and in 50 varieties. LS—SK—B—C.

N.B. No one who exhibits in this letter can also compete for the following.

H. Other Roses, exhibited as in the letter *F*, and in 25 varieties. SK—SB—C.

N.B. Higher medals than those here offered for Roses cannot be given by the Judges. And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to be placed on the tables.

I. Cape Heaths, in collections of 20 distinct varieties. GB—SG—LS.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion.

K. Cape Heaths, in collections of 6 distinct varieties. SG—LS—SK.

N.B. No person who shows in *I* will be allowed to exhibit also in *K*.

L. Calceolarias, in sixes; in pots of 12 to the cast. LS—SK—SB.

M. Carnations, in pans of 24 distinct varieties. LS—SK—SB.

N. Picotees, in pans of 24 distinct varieties. LS—SK—SB.

O. Pinks, in pans of 24 distinct varieties. SK—SB.

CLASS II.—FLOWERS; for which all persons are admitted to equal competition.

P. Stove or Greenhouse Plants, in collections of 30 plants. GK—GB—SG—LS.

N.B. Heaths, Calceolarias, Fuchsias, Greenhouse Azaleas, Rhododendrons, Orchidaceæ, Cacti, and Pelargoniums, to be excluded from *P*, *Q*, and *R*.

Q. Stove or Greenhouse plants, in collections of 15 plants. GB—SG—LS.

N.B. Persons exhibiting in *P* not to compete in *Q* also.

R. Stove or Greenhouse plants, in collections of 6 distinct species. SG—LS—SK.

N.B. Persons exhibiting in *P* or *Q* will not be allowed to compete in *R* also.

S. Greenhouse Azaleas, in 12 distinct varieties. GB—SG—LS.

T. Greenhouse Azaleas, in 6 distinct varieties. SG—LS.

N.B. No one can show in both classes of Azaleas.

U. Stove or Greenhouse climbers, in collections of 6 species. SG—SK.

V. Exotic Orchidaceæ, in collections of not fewer than 20 species. LG—GK—GB

N.B. Exhibitors cannot show in more than one of the classes, *V*, *W*, and *X*.

W. Exotic Orchidaceæ, in collections of not fewer than 6 species. —GK—GB—SG.

X. Exotic Orchidaceæ in single specimens. SG LS—SK.

Y. Plants in glass cases, grown on Mr. Ward's plan. SG—LS—SK.

N.B. It is highly desirable that these cases be made with a movable door, so as to prevent the condensation of the water on the inner face of the glass during the time of exhibition.

Z. Distinct varieties of Tall Cacti in flower. GB—SG—LS.

N.B. The GB and SG Medals are not to be given if fewer than six varieties are exhibited.

AA. Fuchsias in collections of 12 distinct varieties. LS—SK.

BB. Cinerarias, in pots, in collections of 12 distinct varieties. SK—SB.

CC. Single specimens of new or extremely rare ornamental plants. SG—LS—SK—SB—C.

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Gardens in a previous season.*

DD Miscellaneous subjects. SK—SB—C.

N.B. Cockscombs, Heartsease, Hydrangeas, and cut flowers, are altogether excluded from exhibition. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

EE. Seedling Florists' flowers. SK—SB—C.

N.B. Every seedling must be shown singly, and must be marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. Pelargoniums are to be shown in pots, and not in a cut state. No person will be allowed to exhibit more than five seedlings at each meeting. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

In addition to any medals assigned to the classes *J*, *P*, *Q*, and *R*, the SK and SB medals are offered for the two collections in those classes which are not best named by the Exhibitor.

N.B. The Society's officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy of the spelling, and the neatness of the writing.

CLASS III.—FRUIT, for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the market, and private growers, exhibit independently of each other.

N.B. All Fruit must be FULLY ripe and WELL COLOURED; if the contrary it will be disqualified.

FF. Miscellaneous collections of Fruit, consisting of at least three different kinds, Peaches and Nectarines being considered as only one kind. GK—GB—LS.

N.B. Cucumbers, Tomatoes, Gourds, and similar Kitchen Garden produce, are excluded from this letter.

GG. Grapes. SG—LS—SK—SB.

HH. Pine-apples. SG—LS—SK—SB.

II. Peaches or Nectarines, in dishes of six specimens. SK—SB.

KK. Other kinds of Fruit. SK—SB—C.

Judges.—The Judges have the power of *increasing* or *diminishing* the number and value of the silver medals offered by the Society for particular objects, and also of *conferring* Silver Medals or Certificates in cases not contemplated in these regulations, if they think it necessary to do so.

The Judges are also required to bear in mind that the Society's Medals are offered less for new and curious objects, than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the collector as to reward the skilful Gardener; they are also not to make any award in cases where the objects exhibited do not appear worthy of a Medal; otherwise a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

Copies of the above list may be obtained at 21, Regent-street, upon application to the Secretary.

HAND-BOOKS FOR THE PEOPLE.

THE HAND-BOOK OF GARDENING; expressly intended for Persons possessing and fond of cultivating a Garden of moderate size. Price 2*s.* cloth, a New and Enlarged Edition.

THE HAND-BOOK OF BOTANY;
Or Linnæan Lessons on Common Plants, for Field and Garden Practice. Price 2*s.*

THE HAND-BOOK OF AGRICULTURE;
Chiefly for the use of those interested in the Allotment System. Price 1*s.* 3*d.*

THE HAND-BOOK OF COOKERY;
Intended for the use of the Middle Classes. Price 2*s.* cloth.

THE HAND-BOOK OF THE TOILETTE;
Having in view the union of Bodily Health with Beauty of Person. Price 2*s.* cloth.

THE HAND-BOOK OF THE LAUNDRY,
Expressly intended for those who "wash at home." Price 1*s.* 6*d.*

THE HAND-BOOK OF MEDICINE;
Forming a Useful Manual in time of Need, when Professional Aid cannot readily be procured. Price 2*s.* cloth.

THE HAND-BOOK OF NATURAL PHILOSOPHY.
Price 1*s.* 6*d.*

In one small volume, price 18*s.*,

PAXTON'S POCKET BOTANICAL DICTIONARY.

In what may be called an age of Cyclopædias, when the compression of a great variety of information into one volume, in order to bring it within the means of persons of all ranks, is so universally sought, it is evidently desirable that the Gardener, and those connected with his profession, should be as well accommodated as other classes in this particular. No such work existing, however, prior to the issue of the present publication, its value will be at once apparent; since it combines the more essential features of a Botanical Catalogue, a Horticultural Guide, and a Technical Glossary.

Besides being of this comprehensive description, it is especially adapted for the Amateur and Floriculturist; who may, by carrying it in his pocket, examine all the plants that are at any time submitted to his inspection, and immediately derive every intelligence respecting the peculiarities or affinities of particular species which could reasonably be wished for. This is an advantage that can only be sufficiently estimated by those who have felt the want of such an assistant; and to all such individuals, as well as to every agent or friend of Horticulture, the Pocket Botanical Dictionary is decidedly indispensable.

One Volume, price 7*s.* 6*d.*

THE LIFE AND TIMES OF RIENZI.

Not less interesting than Sir E. Lytton Bulwer's eloquent romance, and scarcely less romantic, is this historical record of the Conspiracy of Gabrini."—*Monthly Repository.*

"To all who have read Sir E. Lytton Bulwer's 'Rienzi,' its perusal is, in a measure, a duty."—*Spectator.*

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 26.—1844. SATURDAY, JUNE 29. [Price 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—At the Horticultural Exhibition, held at Bromley, on the 11th inst, the following Extra Prize was awarded to Mr Hally, for a Dish of his Seedling Strawberries, "Princess Alice Maud It should have been for a "Dish of Fisher's Seedling Strawberries *Princess Alice Maud*."—E R Cutler, Secretary

FLORICULTURAL SEEDS

J. CARTER, Seedsman and Florist, No. 238, High Holborn, London, begs leave to recommend the following Seeds for present and autumn sowing The Annuals he has selected will flower in the autumn if sown this month He would recommend a second sowing early in September, for those sown in the autumn will flower earlier, and much finer, than the spring sown, particularly in dry seasons like the present 1.—Hardy Annuals in Assortments

8 fine Calliopsis	2s 6d.	8 fine Schizanthus	2s 6d
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3 — Tropæolum	2 0	— Gladiolus	1 6
Chinese Primrose, m.	1 0	— Verbena	1 0

And most other Flower Seeds contained in his General Catalogue for 1844.

*** A comprehensive Catalogue of Dutch Bulbs will be published at the usual time

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LISIANTHUS GLAUCIFOLIUS

Do. NIGRICANS.

ACHIMENES PICTA.—R. G obtained the Knightian Medal on the 18th inst. for this very fine new species

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MAGICAL EFFECT ON FLOWERS.—*Gardeners' Chronicle*, April 27th.—"I cannot speak of POTTER'S LIQUID GUANO in adequate terms of praise. I trial it on Hyacinths, and other Flowers. The effect was magical My flowers were the finest I ever beheld, and they preserved their beauty nearly double their usual time."—*W. Kidd, Hammersmith.*

"I write to describe the wonderful efficacy of POTTER'S LIQUID GUANO; Peas, Onions, and Asparagus have been singularly improved by it. People came to admire the appearance of the garden."—See *Chronicle*, p. 405.

*** Beware of an ineffectious imitation. See *Chronicle*, p. 405—"Humphreys's Compound"

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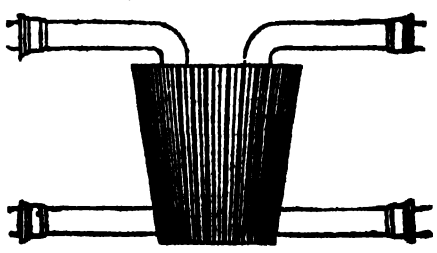
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10	2 2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12	3 15	30	12 6	7 6	2 6	90 to 125 feet.	40 to 65
14	3 10	35	17 5	8 6	4 6	150 to 200 feet.	65 to 100
18	5 5	45	25 0	8 6	5 6	300 to 400 feet.	Warm a grapery 25ft. long, and a pit 50ft
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Manufactured and sold by N. W. TANNER, Chemist, Exeter.

Directions for Use of Fluid with each Bottle.

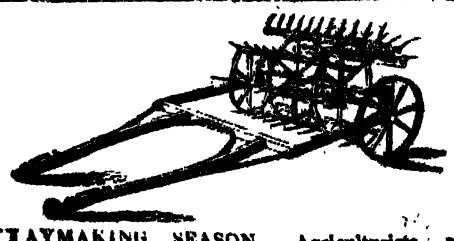
Any persons residing in large towns or cities, desirous of becoming Agents, are requested to make early application.

YORKSHIRE LAND-DRAINING ASSOCIATION.—At a MEETING of the PROVISIONAL COMMITTEE held at YORK, this day, for the purpose of Allotting the Shares applied for in the Association, and on other business—

It was resolved, that the number of Shares now allotted being amply sufficient to justify the Committee in proceeding forthwith to carry out the objects of the Association, the necessary Deed of Settlement be prepared for execution. And that such of the Public as may yet be desirous of becoming Shareholders, and shall signify the same to the Solicitors, (Messrs. BEAUCHAMP, RICHARDSON, and GYTON, York), or to the Secretary, (Mr. CHARNOCK, Wakefield), on or before the 31st of July next, shall be admitted (if the number of unallotted Shares be sufficient) on the same terms as the present Subscribers.

York, June 19, 1844. JAMES HAMERTON, Chairman.

WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. DRANE, Ironmongers, London-bridge; and of any Ironmonger in the country. Price, in box, with lock and joints, 2l. 5s.



HAYMAKING SEASON.—Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

CLEAR WHITE GLASS MILK-PANS.

PELLATT, PELLATT, & GLENDINNING'S FALCON GLASS WORKS, Holland-street, Blackfriars-road, is still making the Milk-Pans—as described in the Gardeners' Chronicle, of clear white flint glass, at 5s. 6d. each, or 9l. per dozen. Early in July A. P. will make the Milk-Pans of green glass of excellent quality, at 42s. per dozen.

TO COLONISTS, AGRICULTURISTS, &c.—Mrs. MARY WEDLAKE, Widow of the late Mr. THOMAS WEDLAKE, of the Original Ironfoundry and Agricultural Implement Manufactory, established forty years, at Hornchurch, near Romford, Essex, and of 118, Fenchurch-street, London, begs to inform the Friends of her late Husband that she continues to Manufacture all kinds of Agricultural Implements, for the invention of which he was so often honoured with the medals of the Royal Society of Agriculture, and which obtained for him so high a distinction among the Farmers of England and British Colonists. Being assisted by men of talent in the manufacture of these articles, she is in hopes of deserving the high repute this Establishment has so long enjoyed, and now solicits respectfully a continuance of the patronage of the numerous friends of her late husband. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, 118, Fenchurch-street, viz.—

Patent Hay-making Machines	Subsoil Ploughs
Winnowing Machines	Horse-power and Hand-Threshing Machines
Dressing Machines	Patent Horse Rakes
Patent Chaff-cutting Machines	Scarifiers
Oil Cake Crushers	Drills of all kinds
Double-action Turnip-cutters	Park Fencings, Hurdles
Flour Mills	Furnace Bars
Bean Mills	Cast-Iron Horse Racks
Railway Wheels, Vacuum Pumps	Kitchen Ranges
Patent Essex Ploughs, 30 different sorts	Stoves, Fenders

*** Castings to any pattern.

☞ For a more detailed List see Johnson and Shaw's Farmer's Almanack for 1844.

Please to be particular in the Address, MARY WEDLAKE, 118, Fenchurch-street, London; or Original Ironfoundry, Hornchurch, Essex.

AGRICULTURAL SCHOOL.

MESSRS. NESBITS' ACADEMY, 38, Kennington-lane, Lambeth, near London.

"From Chemistry alone further progress in Agriculture is to be expected."—LIEBIG.

In this School, in addition to the general routine studies, every facility is afforded for the acquisition of a sound knowledge of Chemistry. The Pupils are practically taught in the Laboratories the methods of analysing the various earths, soils, manures, &c.; and likewise the means of detecting the substances abstracted from the land by different crops. Land Surveying is also taught practically, as well as theoretically.

A copy of a Lecture on Agricultural Chemistry, delivered by Mr. J. C. NESBIT to the Maidstone Farmers' Club, and the Terms of the School, which vary from 40 gs. to 70 gs. per annum, may be had on application, either personally or by letter.

Mr. NESBIT'S Works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, Education, &c., may be had of all Booksellers.

REFERENCES.—Dr. D. B. Reid, F.R.S.E., &c., Author of "Elements of Practical Chemistry," &c., St. James's Park, Westminster; G. F. Richardson, Esq., F.G.S., Author of "Geology for Beginners," &c., British Museum, London; W. and J. Gibbs, Esqrs., Civil Engineers, Devonshire-street, Portland-place, London; Rev. T. Cuffe, Carlisle Episcopal Chapel, Lambeth; R. Greenhill, Esq., Ashford, Kent; and C. G. Whitaker, Esq., Barming, near Maidstone, Kent.

The School will be re opened on Monday, July 15th, 1844.

GLASS CHANDELIERS FOR DRAWING-ROOMS.—APSLEY PELLATT (late Pellatt and Green), Falcon Glass Works, Holland-street, Blackfriars, has recently constructed a NEW CHANDELIER (Registered), which surpasses in brilliant and refractive effects all former efforts, to which he invites inspection. Renaissance and other Glass Chandeliers as usual at low prices, which, when lighted, have a far more resplendent effect than buhl. TABLE CUT AND ENGRAVED GLASS at the Printed List of Prices, subject to an extra discount for Cash. The manufactory and steam-cutting works may be seen any Tuesday, Wednesday, or Thursday. Merchants' orders and outfits for Glass and China on the very lowest terms. No connexion with any house in the City.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6*, 1844.—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is LEA and PERRINS'S Worcestershire Sauce, adapted to fish, flesh, fowl, and soup; giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 6, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual vendors of Sauces.

PRESERVES and CONFECTIONERY.—The superiority of BETTS'S PATENT BRANDY for PRESERVES and CONFECTIONERY is testified by the fact that it is preferred to any other spirit by the most extensive WHOLESALE CONFECTIONERS in the METROPOLIS for fortifying Home-made Wines it is invaluable; as an Ordinary Beverage it is congenial to the most delicate constitutions; and, as a Medical Stimulant, it is peculiarly adapted to persons of bilious or dyspeptic habits. Quantities of not less than Two Gallons, supplied at the Distillery, 7, Smithfield Bars, in Stone Jars, at 16s. per Gallon, exclusive of the price of the Jars; and in Glass Bottles, at 20s. per Gallon, Bottles and Case included.

CONSUMERS of BRANDY are respectfully informed, that J. T. BETTS, JUN., and Co., will not be responsible for any BOTTLED BRANDY that is not protected against fraudulent substitution, by the PATENT METALLIC CAPSULES, made of pure and solid metal (*not tin-foil*), embossed with the words "Betts's Patent Brandy, 7, Smithfield Bars," *to which attention is especially directed.*

A LUXURY FOR WARM WEATHER.

BERDOE'S SUPERIOR LIGHT SUMMER FROCKS, WATERPROOF. A variety of the above, in NEW and greatly improved materials (in lieu of the unsightly rubbish made by slopsellers), now ready, guaranteed to exclude any rain whatever; and confidently recommended to those who regard a respectable appearance or wish to avoid disappointment and vexation.

FIRST-RATE CLOTHING of every description, upon the lowest terms possible, consistent with TRUE economy, and ultimate satisfaction.—W. BERDOE, Tailor, Waterproofer, &c., 99, Cornhill (north side).

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. BOSSEY to submit to public competition, by Auction, on the premises, Kingsland Nursery, on Tuesday, July 9, 1844, and following day, at 11 o'clock (in consequence of the Lease having expired), the whole of the rare Exotics, and other plants in pots; consisting of fine specimens, Araucarias, Buenagurtes, Juncea, Olives Nobilis, Cactus, Gleznines, Achimenes, Magnolias of sorts, New Fuchsias, Gardenias; about 1500 Double and Single Camellias; several thousand China Arbor Vitæ, Sweet Bays, Arbutus, Cypress, &c., in pots; also eight Greenhouses, Pits, &c., in good condition; a considerable quantity of Bricks, York Paving, and other fixtures. May be viewed prior to the sale, and catalogues may be had of the principal Seedsmen, on the premises, and of the Auctioneers, Leytonstone.

The whole of the valuable Nursery Stock will be submitted to public competition, by Auction, about the third week in October.

CAPITAL INVESTMENT.—IMPROVABLE ESTATE in AYRSHIRE, with SALMON-FISHINGS, GROUSE-SHOOTING, &c.—FOR SALE IN ONE OR MORE LOTS.

THE ESTATE OF BALLANTRAE, extending to about 7164 acres imperial, with the Village and Harbour and the valuable Salmon-Fishings of the River Stinchar and the adjacent Sea-coast.

The Lands immediately around the village, about 1687 acres, form a compact and beautiful Estate, lying on both sides of the River Stinchar, and nearly two miles along the Frith of Clyde; and they afford many fine situations for a residence. The land in this division is arable, of superior quality, and capable of great increase of value, by draining, planting, and better cultivation. The remainder of the Estate, about two miles distant, consists of excellent Stock Farms, capable also of great improvement, by surface-draining and liming, and affords some of the best Grouse-shooting in the south of Scotland. The River Stinchar, and other streams on the Estate, abound with Salmon and Trout.

The present rental is only 1891*l.* 2*s.*; but the principal Farms are let at very low rents, and a considerable rise may be counted on. The public burdens payable by the proprietor are of trifling amount. The great post-road to Portpatrick passes through the village, and if the proposed improvements on the harbour are completed, Ballantrae will be the Shipping Port of the whole vale of Stinchar; and, with its valuable Fisheries, must become a place of some trade and importance. Ballantrae is about 15 hours' sail from Liverpool, 6½ hours' sail from Glasgow, and 12 miles from Girvan, to which latter place it is now in contemplation to continue the Ayrshire Railway.

If not immediately sold in one Lot, the Estate will be exposed as follows:—

1st. The MOOR LOT, extending to about 5577 acres, of which the present land rental is £375 0 0
And the shooting for the present season is let at . 50 0 0
Total rent . £425 0 0

2d, The FARM of LAGGAN and LAGGANHOLM, as at present possessed by Hugh Lockhart, James M'Meikan, John Murray, Mrs. M'Kinna, &c., with 13 acres of thriving young Plantations, extending to about 450 acres, at present let at £416 4 3

There is a neat, small, modern Mansion on this lot, like a good Farm-house, and the principal part of the Land is out of lease at Martinmas next.

3d. The REMAINDER of the LANDS of LAGGAN and GARLEFFAN, including the Mill and Mill Lands, extending to about 232 acres, at present let at £175 2 9

4th. The LANDS on North side of the River Stinchar, with the Salmon-Fishing, Harbour, and Village, extending to about 905 acres, at present let at 874*l.* 14*s.* 9*d.*, will be exposed along with Lots 2d and 3d, but will not be separately sold till these two Lots are disposed of.

James M'Gregor, Ballantrae, will show the Lands; and for further particulars application may be made to George Guthrie, Esq., factor, Culhorn, near Stranraer; or to Æneas Macbean, Writer to the Signet, Edinburgh.—Edinburgh, 24th May, 1844.

TO BE SOLD by AUCTION, some time next Autumn (unless previously disposed of, but of which due notice will be given), the whole of a NURSERY STOCK, consisting of choice Fruit and Forest Trees, Shrubs, &c. &c.

The unexpired Lease of the Nursery Ground will be Let. The House, Shop, and Premises (where a large and increasing Seed business has been carried on for the last 30 years) will be either Sold or Let for a Term; if Sold, part of the purchase-money might remain on Mortgage. Any person desirous of treating for the same may apply to ALEX. SMITH, Nursery and Seedsman, Cirencester.

NURSERY.

TO BE LET, a Nursery, containing about 2 acres in a most desirable situation, in the centre of the West Riding of Yorkshire, in a good state of cultivation, with a Pinery, Greenhouse, Vinery well stocked, and in excellent state of bearing, and newly-erected Hot-water Propagating House, 90 feet long, 10 feet wide, with sheds, &c. Valuation moderate. Also 2 acres of Grass Land adjoining the Nursery.—For particulars apply to Mr. R. BARRATT, Solicitor, Wakefield.

Wakefield, June 28, 1844.

DARTFORD NURSERY.

FOR SALE, One Mile from the Town of Dartford, and 14 from London, a NURSERY BUSINESS, 14 Years established; a commodious house for business, with about 46 feet frontage, and 200 feet deep of Freehold Land; Greenhouse, 21 feet long; some Frames; all well stocked. Also the STOCK of TWO ACRES, held by Lease at 3*l.* per year; Lease about 9 years more to run. No doubt the Lease can be renewed.

Land now become worth 3*l.* per foot for building in this neighbourhood. A never-failing well of water, &c. &c. All offered for 800*l.*

N.B.—The Advertisement will be only once inserted in any paper, so that although the Advertisement may not appear, the Land, &c. may still be for sale.

METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose—1*s.* An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and successful manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE'S Sole Establishment, 130a, Oxford-street, one door from Hollis-street.

Caution—Beware of the words "From Metcalfe's," adopted by some houses.

BOOKS.

EDENTER begs to inform the Nobility, Gentry, and his friends in general, that his superb Collection of Roses are now in full bloom; the standard and dwarf Roses are planted on each side of a walk 660 feet, and consist of 300 varieties. Orders taken for the plants when in bloom, and delivered in November next. Admittance Gratis, daily (Sundays excepted). Loughborough Nursery, Brixton, within 3 miles of London. June 20th, 1844.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.—The Third Meeting will take place on Saturday, the 13th of July; on which occasion His Grace the Duke of Devonshire, the President of the Society, has kindly directed the doors of his Gardens and Pleasure-Grounds to be opened for the reception of all persons who shall have been admitted into the Garden of the Society by Tickets.—21, Regent-street.

The Gardeners' Chronicle.

SATURDAY, JUNE 29, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Tuesday,	July 2	Royal Botanic Gardens.	2 P.M.
		Horticultural . . .	3 P.M.
Friday,	July 5	Botanical	3 P.M.

We observe that a letter has been addressed to the Editor of the *Hereford Times*, by Mr. W. Godsall, strongly recommending all persons interested in the Potato Crop, especially cottagers, to pull off the flowers diligently as soon as they appear. We beg to second that recommendation. All experience shows that flowers of the Potato are produced at the expense of that organisable matter which gives its value to the tuber, and which is diminished in quantity in proportion to the number of flowers that have been fed. For flowers must exist and feed on something, and that something is what would, if not removed by the flowers, descend beneath the ground and collect itself in the tubers.

The mere production of flowers is a loss; but the mischief is infinitely increased if the flowers are succeeded, as they almost always are, by the berries. The actual amount of loss produced by each truss of flowers is not ascertained; but it is probable that if the flowers abstract one ounce of organisable matter, the berries consume at least twice as much. Now, as Potatoes are not grown for the sake of either the flowers or the berries, every particle of matter which is consumed by the plant in producing them is a dead loss to the grower.

The man who makes his Potato-ground feed flowers prevents its feeding his children. Every ounce of matter consumed by the flowers is so much taken from the consumption of the family.

We cannot just now lay our hands on any precise evidence of how much is lost in this way. Mr. Godsall assumes it to amount to many hundred weights, or even a ton an acre; but he is in all probability under the mark. A bunch of Potatoe-berries weighs, we will say, half-a-pound. Suppose that each Potato-plant bears half-a-dozen bunches; that makes 3lbs. of worthless produce. An acre of Potato-ground carries about 20,000 plants on an average; this gives 60,000lbs. of waste. But of this 54,824lbs. will be water, according to Mr. Edward Solly's experiments, and only 5322lbs. organic matter. The latter, however, or 2 tons 7 cwt. 58lbs. would, according to this calculation, be the amount of loss sustained per acre, by allowing the Potatoes to flower and fruit.

Admitting, however, that this is an excessive statement; supposing it to be wrong by even one-half—and it can hardly be so much as that—still there is the most ample evidence to show the immense importance of preventing the Potato expending its energy in the wasteful production of parts which are of no sort of use for food.

In the *Gardeners' Chronicle* of Oct. 21st, 1843, p. 735, descriptions and figures were given of Aspidiotus conchiformis, the Apple-tree Mussel, or Dry scale, which attacks various fruit-trees. It is there stated that "these scales do not lie in one direction, as others generally do, with their heads downward, for some of the Apple-tree scales are placed vertically, others obliquely, many have a transverse direction, and sometimes they are crowded together in immense multitudes in every possible position, even lying one over the other. The scales are hard, dark, and shining; they are exceedingly like minute mussel-shells, but rather more elongated; they are slightly curved, transversely wrinkled, rounded at the tail, and attenuated at the head, which is semi-cylindrical, less opaque, and of a rusty colour. These adhere firmly to the bark, having the margins beneath broad and woolly, and when dislodged, the space they had covered appears white. Within the shell is found a fleshy green female, occupying part of the cavity towards the tapering extremity, the hinder space being entirely filled with white oval eggs, amounting sometimes to 80 or more; they are rather larger than in most species, I think, and produce little white flat cocci, with two antennæ and six legs; they actively and run about for several days," but having fixed themselves, they grow, and by degrees become very different creatures to what they were immediately after their birth."

As it is, according to all appearance, this same insect which, by the statement laid by several gentlemen connected with the Orange trade before the Entomological Society of London,* is now threatening the entire destruction of the Orange trees in the Azores, it may not be uninteresting to add some further observations which the facts already known supply, together with the best means of eradicating this pest.

It has been generally believed that the various scale insects are confined to particular species of plants and trees, and such is often the case; in this respect, therefore, the Mussel-scale differs essentially from others, for in England it attacks a variety of fruit-trees, amongst which are the Apples, Pears, Plums, Apricots, and Peaches, and in the Azores, the Mulberry and Orange-trees.

Although occasionally very numerous in this country, we are not aware of its having caused the destruction at any period which is reported to have followed its introduction into the Azores, where it has spread so rapidly under the mild temperature of those islands, that in three years it has destroyed all the Orange-trees in Fayal! If this scourge be not checked, many evils will be the result, and the inhabitants may well be alarmed at the calamity which threatens to deprive them of the profits arising from their Orange orchards; the public also may lose one of the best sources from whence they derive a regular supply of a luxury at once wholesome, grateful, and reasonable; for many years must elapse before the Orange-trees of the Azores, some of them 300 years old, and producing annually from 5000 to 6000 Oranges each, can be replaced; and even our revenue would suffer from the suspension of the trade.

We here have a striking proof of the importance of Entomology as a science, for the ravages of this insect can only be arrested by a knowledge of its economy; and we doubt not if some experienced Entomologist had been on the spot, the mischief might have been nipped in the bud. Whether it be too late to be averted can only be ascertained by the application of remedies under the guidance and inspection of scientific men, well-versed in the economy of insects.

If scraping the trunks and branches be resorted to—and we confess this seems to us the best mode of attacking the Mussel-scale—powdered unslaked lime, if it can be procured, should first be scattered thickly round the base of the tree, in order that those which fall down may be destroyed; or a fresh-tarred or painted circular board, divided across the middle with a central hole large enough to receive the stem, would do as well. The scales having been scraped off carefully with a wooden knife, the trunk and branches, as soon as they have been thus freed from the scales, should be washed over with some liquid, as a paint, to destroy the embryo young and eggs, many of which will otherwise remain uninjured.

To ascertain the most effectual wash, mixtures should be made of lime-water, of clay and urine, of cowdung and urine, of train oil, &c.; and if these be employed hot, the result will be attended with more complete success. The degree of heat which may be applied for the destruction of the insects, without injuring the trees, and the best of the mixtures, can only be ascertained by careful and judicious experiments. In the operation of applying these, a stiff painter's brush should be used, which will penetrate into the chinks and damaged places in the bark, so as to leave no space uncovered; for it is not only by destroying the old scales that benefit will be derived, by rendering the surface of the tree deleterious to the young scales, those which may escape the purification will be starved to death. Having some further observations to make upon the scales which affect the leaves and the fruit, we shall resume the subject hereafter. In the mean while, if any one could supply us with the maggots or pupæ, *in situ*, which live in and under the skins of decaying Oranges, we would make them the subject of a separate notice.—*R.*

FRENCH CULTIVATION of the PELARGONIUM.

The following are the details of the *Propagation*, *Culture*, and *General Treatment* of the Pelargonium in France, as they have been furnished by M. Bataille, the Curator of the Botanical Garden at Avranches, in Normandy, who, while he fully admits that his theoretical remarks are compiled from French works of high authority, advances nothing in the practical portions that he has not ascertained from long and assiduous attention. I shall critically pursue his own order of arrangement in treating the subject.—*Martin Doyle.*

There are two divisions of the Pelargonium. No. 1 has tuberous roots, which may be divided into those without stems and those with them; No. 2—the roots are fibrous, and the species nearly all shrubby: this division has more cultivated varieties than the other.

The mode of vegetation in No. 1 differs from that of the other in this respect, that, being tuberous-rooted, the species are without any signs of growth during a certain season, and then the quantity of water given should be only enough to prevent the root from dwindling away; but as soon as it begins to give signs of life, the watering should be gradually increased, until the plant has entirely brought out its young leaves; then, if in summer, it should be plentifully watered, but not so much as a plant with fleshy roots; for the great quantity of mucilaginous matter which accumulates in all roots, whether bulbous or tuberous, keeps them alive for a considerable time without any water. The means of multiplying this race are not so numerous as those employed for propagating the other: the seeds and tubercles are generally used. The tubercles are distinct, yet they are joined by a thread which runs through each, so that by cutting it, one tubercle comes out alone without detaching the rest; this may be set like a slip or cutting, provided it be sunk so deep that the upper part is even with the ground. If the tubercle is fresh, by placing it under a bell-glass it will grow without being watered. The seeds should be sown as soon as ripe, in the early part of the summer, so as to give the young plant time to acquire strength before winter; but if they have not ripened in an early season, it is best to postpone the sowing until the following spring.

General Remarks on the Shrubby Pelargoniums.—To cultivate the shrubby species with success, the proper time for flowering should be kept in mind, so as to advance the plant by proper treatment with reference to that period. Flowers may be had in the middle of April, but the end of that month, or beginning of May, is the proper time for flowering, before which season the full beauty of the blossoms is not developed; because those which open before have formed their buds too early in the winter, and consequently are not in proper condition to undergo a critical examination. It is not before the month of May that the flower appears in its full splendour and perfection. The cuttings should be taken from shoots which are neither too woody nor too soft, and from branches of old stocks which had been topped after the flowering season. As soon as the cuttings are potted, which should be in August or September, they should be watered through a fine rose watering-pot, so as to settle the earth about the roots. A small stick should then be fixed to each cutting. As soon as the plants are habituated to the air, they should be placed in a greenhouse, or on a stand in some suitable room, care being taken that the sun's rays do not fall too directly on them; but air and light should be admitted freely when the weather permits. About a fortnight after they have been placed in the greenhouse, they should be cut down to the height of 3 or 4 inches, and even if they should be lower, topping is necessary, for it hastens the growth and branching; three or four buds are a sufficient number to encourage. To those who have no greenhouse, any exposed house will answer until the end of November, when the pots may be placed in some apartment which has a sufficiency of light and a southern aspect, and with windows which can be opened when the thermometer is not below 40°. In severe frost artificial warmth will be necessary, and draughts of external air should be excluded.

Watering.—Even if a plant has languished from want of moisture, heavy watering at one time is injurious, because the roots are not then in a fit condition to perform their functions all at once, but by wetting the earth gradually a healthy action will be induced. Watering in the middle of the day, and particularly in sunshine, is so injurious, that plants have been known to die suddenly after this operation, which should be performed in the morning during the winter months, and in the evening from the month of March until about the fifteenth or twentieth of October. When watering has been excessive, the foliage becomes yellowish, the faded leaves adhere to the stem, and the earth does not dry as quickly as usual. In such a case the plant should be taken out of the pot and have the roots examined, when these will be found decayed more or less; the mode of renovating the plant is to repot it, and keep it in the shade and sheltered from heavy rain. In April and May, syringe the plants gently which have not opened their flowers; and if the water is not sufficiently evaporated during the night, open the doors and windows early in the morning, to give a free circulation of air to dry the plants before the sun is too powerful.

Treatment of the Plants after their Flowering.—They should be cut down closely, in order to concentrate the sap in the lower part of the plant, and to keep it as low as possible, because in such condition it produces most seed, and is more attractive than a tall ill-furnished plant; besides, this operation tends to prolong its existence. July and August are the proper months for using the knife for the above purpose, but two or three eyes should be left upon the branches of the same year's growth, for the buds are seldom vigorous on old wood. The plants, when thus cut down, should be placed in rows in a very airy place, and exposed to the sun to promote the new budding: some cultivators put them in a greenhouse, or under a frame, until the new shoots are well advanced, and then pot them; but others say that the spring is the only proper season for doing that, for they consider that the second changing prevents the plants from taking sufficient root in the pots, and causes them to grow too high during the winter.

(*To be continued.*)

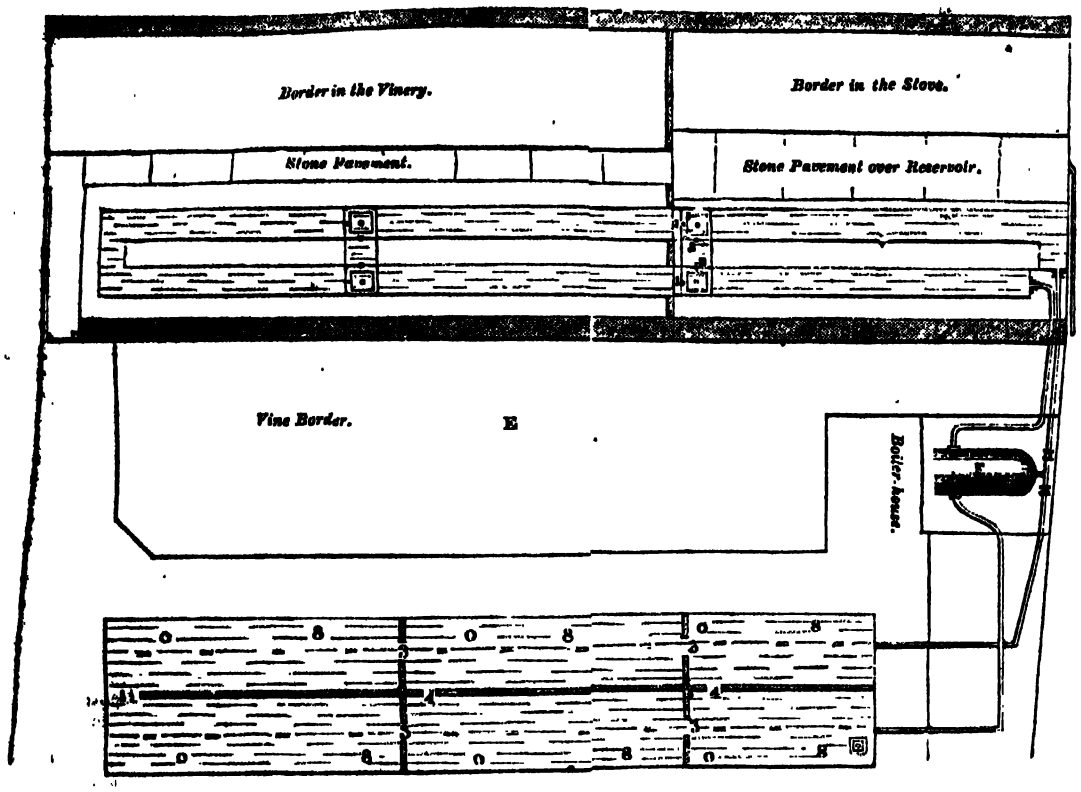
* vide Chron., June 15th, 1844, p. 390.

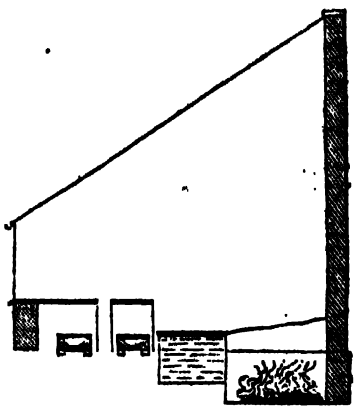
THE TANK SYSTEM OF HEATING.

As many are, no doubt, contemplating the adoption of the tank system of heating, and as various materials and modes of construction have been suggested, I will give a description of some pits, a hothouse, and vinery which I have erected, and which, so far as I am enabled to judge from six months' experience, viz. from the beginning of November to the beginning of May, answer perfectly.

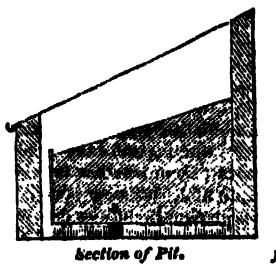
Not having been quite satisfied with any material for tanks which I had seen or heard of, I resolved on trying the experiment of forming the gutters or tanks for the hothouse and vinery of pottery of some sort. My notion was, that the heat would be given out quickly—abundantly—containing more moisture than that from iron pipes—and that a greater surface would be obtained at much less cost. The ordinary tiles involved numerous joints, which, of course, increased the risk of leakage.

I got a potter in this neighbourhood to make some moulds, and ascertain the greatest lengths in which he could form the gutters, so that they could be dried and burned without any material deviation from their original form. He found that he could not conveniently make them in lengths exceeding 15 or 16 inches. The order was not given till September, when it was too late to dry the clay, when formed, in the sun: the pieces were therefore kiln-dried, and were not nearly so true and perfect as they might have been if made early in the summer, and regularly dried in the open air. However, under all the disadvantages in the construction and putting together, attending a first experiment, the success has been complete, with the aid of a thin coating of Roman cement, which I am satisfied would have been unnecessary if I could have induced the labouring man who put the troughs together to have worked the ordinary cement I had provided to a proper degree of fineness.





Section of Hothouse.



Section of Pit.



Sluice for Pit.

The accompanying ground-plan and section of the house and pits will show the mode of construction. It will be seen that there is a partition across the house, dividing off about one-third nearest to the boiler as a hothouse, which can easily be kept at a much higher temperature, when required, than the remainder of the range, which is intended for a vinery. The circulation may be confined to that exclusively, or suffered to extend throughout the range for a longer or shorter period, as may be desired. Under the paved walk in the hothouse, a reservoir is formed in brick and cemented, into which all the rain which falls on the roof of the house is collected. A moveable pump is inserted in one end, through a hole cut in the stone, for raising the water for use in the house. The gutters are 15 inches wide, and 5 inches deep, and formed in 15-inch lengths—simple open troughs, as shown in the section, excepting at the angles, where there are three pieces, one for each angle, formed in a different mould, there being no joint at the angles, and the two end pieces, which are formed with projecting collars to receive the pipes from the boiler. The gutters are covered with tiles 1¼ inch in thickness.

It was, at first, intended to form the house in three divisions, and the gutters were laid accordingly. It will be seen that the flow and return-gutters are connected at two points, in order that the circulation may be confined between either and the boiler. At these points the gutters are covered by a wooden frame, instead of a tile, in which is fixed a moveable cover, which exposes the pipes, by means of which the circulation is diverted across the house, or extended at pleasure, along the entire range. If it is desired to confine the circulation to the stove, the plugs at (1) are inserted and those at (2) withdrawn.

On reference to the section of the house it will be seen that the back wall is carried down considerably under the level of the ground, to admit of a bed of earth on the inside about 4 feet deep; then comes the reservoir, about 3 feet deep, 3 wide, and 16 in length, covered by pavement. The earth on which the gutters are placed has not been moved; but in order to make it level and firm it was covered with a thin coat of concrete. At every 15 inches, where the joints occur, they are laid on two bricks, in order that the under as well as the upper surface should radiate heat; every foot run of gutter presents a surface of 40 inches radiating heat. The potter can deliver these gutters and covers, at some distance from the pottery, at 1*s.* 6*d.* per foot run; whereas, an iron pipe, with a 4-inch bore, which affords but 12 inches of radiating surface, I believe is usually sold at 1*s.* per foot at the factory.

There are two slate tables the whole length of the house, with room for the gardener to walk between them, to hold the plants, which it is expected will do very well even in the vinery, as there are front sashes, and the Vines will be confined to the rafters in the roof. One table rests on one side on the front wall, and on iron legs on the other; the other table is supported entirely by iron legs lying close against the gutters. By this arrangement the gutters are secured against being broken or disturbed by any chance accident.

The boiler is of copper, having a pipe at the top through which the hot water rises, with a cross pipe having two cocks in it, with a brass union on each side at the bottom, to receive the return pipes; so that the circulation may be carried on throughout the house and the pits at the same time, or confined to either at pleasure by means of the two cocks in the upper pipe.

This is a double cylindrical boiler, and I cannot recommend them. I would advise any one to have a single cylinder, and, if made of copper, to see that it is made of ample thickness, and to pay an additional price if need be. I would have those who contemplate what they may deem economy in this respect, suppose they have a house full of valuable plants, and all the pits at work in January, with 10 degrees of frost, when, on a sudden, the boiler leaks and puts the fire out. This happened to me within two months after my boiler was put up—fortunately when the weather was mild, and before the house and pits were stocked. The maker alleged that this could not have occurred by fair work. It so chanced that the boiler had not been put to the performance of more than one third of the work it was sent to me to perform, and it turned out, on examination, that the copper was so thin as not to stand the action of fire for many weeks: this is not a single instance.

The construction of the pits is as follows:—The floor is formed of bricks, laid flat on a bed of concrete, and set in cement. The tanks are then formed by carrying tiles made of pottery, 1¼ inch thick, and 5 inches deep, round the outer edge, and on the top of the brick floor, a double row being carried along the centre, to support the covering tiles, which form a floor and return tanks about 2 feet 6 inches wide. These are covered with tiles, the same as the gutters in the house, upon which the earth rests. It will be seen, on reference to the section of the pits, that the front tank is finished so as to leave a space of about 3 inches between it and the front wall. Slate slabs, 2 feet 6 inches deep, rest on the tank to keep up the earth; and at every 5 or 6 feet, where the joints in the slabs occur, there is a single brick carried up between the joints and the front wall, to support the slabs against the pressure of the earth. The object of this, and also of round pipes of pottery, which rest on the surface of the tanks at (*o*), and pass up through the earth, is to furnish dry heat, and to promote a free circulation on the surface, which is found advantageous for propagating. At the points marked (8) are similar pipes, which pass through the tiles covering the tank, which are formed with an opening for the purpose into the tanks; these are fitted at the top with wooden plugs, for the purpose of steaming the pits when requisite.

If it is required that the circulation should be confined to the 1st or 2nd pit nearest the boiler, the sluices (3) are closed, and those at (4) are opened. These sluices are formed by a metallic frame being substituted for the tile at those points, in which a small metallic door works on a spindle. This is attached to a rod, passing up through the earth, having a handle at the top just above the earth. I see nothing to prevent these gutters and tanks lasting sound for ever, and they undoubtedly heat a very considerable area at a very small first cost. The boiler for such a purpose is the only source of anxiety: the only safe course is to have a spare one always at hand, to replace at once that in work in case of an accident. This may easily be contrived so that one boiler may be removed without the loss of more water than chances to be in it at the moment. The pipes may be readily stopped, either by cocks or plugs, so that the hot water in the gutters and tanks may be kept in them, while the defective boiler is replaced by another, and thus no sensible check would occur. I may add that in the winter, when the thermometer stood at 23°, there was a bottom heat of 90°, and of 80° on the surface of the pit then in action, and of 73° in the stove.—*C. L., Cirencester.*

Home Correspondence.

The Chiswick Exhibition and the Judges.—The number and splendour of the company who crowded the Gardens of the Horticultural Society on the 15th, was truly a source of gratification to a reflective mind. The very notion that such a company could be drawn together by anything the peaceful pursuits of Horticulture could possibly produce, could not even have gained credence a few years back, when red coats, the sound of the drum, the prance of the war-horse, and the glitter of military equipment, absorbed the public attention. However gratifying all this may be, and certainly is, there were some symptoms in the Exhibition itself last Saturday, calculated to awaken painful reflections, although there were many splendid things there. It is worthy of consideration by wiser heads than mine, what causes or circumstances contributed to deprive the Society and the public of so many exhibitors of large collections. Whatever my own guesses and conjectures may be, there is only one circumstance to which I beg to call attention. It relates to the judges; and I am reminded of it by happening to meet two or three friends, in returning from a Horticultural Show only yesterday. I was told that among the exhibitors of collections of Heaths at the

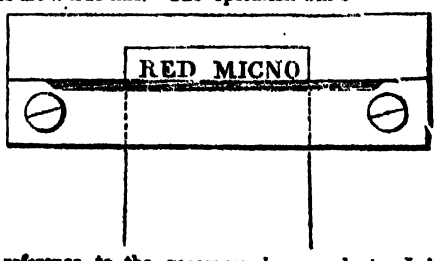
Gardens last Saturday, the judges awarded the *second* medal offered by the Society, to what they considered the *first* or best collection. Now, I am quite aware of the difficulties conscientious men have to encounter in acting as judges, notwithstanding their instructions, and the latitude of discretion allowed them. Having many times acted in that capacity both at Chiswick and elsewhere, I have not escaped the fate of most, in having my judgment (such as it is) criticised and impugned; but in the above case I have no hesitation in saying the judges (whoever they were, and I am sure I do not know), were decidedly wrong. If the Society offers a series of medals for a series of collections, say of Heaths or Pelargoniums, I cannot conceive it to be within the discretion of any judges to give the *secondary* medal to the *best collection present*, however far that may fall short of their ideal notion of perfection. In such a case I think it the bounden duty of the judges to award the *highest medal* the Society offers to the best collection there present before them; their discretion by no means extending to alter and set aside the proffered rewards of the Society. In so doing, they exceed their duty, mortify and disappoint the exhibitor, and do an injury to the Society, which every well-wisher to its interests must deplore and condemn. In course of practice in these matters, I have seen subjects exhibited the worth of which were so far below what the Society offers for things of the same name and kind, that we felt it a duty to pass them over altogether, but such could not happen with collections of Heaths; and I deeply regret the Society should suffer injury, or its Exhibitions be deteriorated, by any such instances of overstrained discretion (indiscretion?) I leave this for your cogitation, being an ardent well-wisher to the Society.—*One of the Judges* (*not of Heaths*). [As our correspondent is one of the judges, he must be aware of three things—1. That "the judges have the power of *increasing* or *diminishing* the number and value of the silver medals offered by the Society for particular objects, and also of *conferring* silver medals or certificates in cases not contemplated in the regulations, if they think it necessary to do so." And also "of not making any award in cases where the objects exhibited do not appear worthy of a medal; otherwise a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it." 2. That whenever the judges propose to withhold a medal, the Society's officer, who registers the award, invariably begs them to consider again whether they are quite justified in doing so, he, at the same time, pointing out that such a regulation should not be put in force except on very sufficient grounds, and that they should always act on the side of liberality. 3. That the Society never disturbs an award after it has been made.——We state this much on behalf of the Society. For ourselves, we are clearly of opinion that withholding medals, except on very sufficient grounds, is unfair to the exhibitors, injurious to the exhibitions, and entirely contrary to the intentions of the Society. The absence of large collections is owing to the new regulation, which prevents Azaleas, Cacti, Heaths, and such things being included in them. This rule was made under the impression that it would improve the appearance of the large collections; but it is clear that exhibitors cannot, in general, comply with it, and we have no doubt that it will be altered another year.]

Morphology.—Those who oppose the doctrine of Morphology, are constantly referring to instances of monstrous development in the animal kingdom, as proofs that the so-called vegetable monstrosities are to be regarded merely as being accidental and adventitious, and not, as the Morphologists think, proofs of the real nature of the vegetable development, and exhibiting clearly the manner in which the Creator has willed that each should bring forth "its seed after its kind." Among the statements which have been used to decry the doctrine, and those who hold it, none have been so positively insisted upon as being conclusively repulsive to it, as these instances of animal malformation. It seems to have been forgotten that, between the manner of the development of the animal, and that of the vegetable kingdom, there does not exist any analogy: consequently, the deductions drawn from the premises afforded by such instances, have no weight in the argument. We may take as an illustration of the foregoing, that period when the infant creature, and the infant vegetable, become visible and tangible: prior to this period, the consideration may be left on neutral ground, for it does not affect the question. An infant animal is, at the first moment after its birth, if not perfect, at least fully formed; and its subsequent increase in size is not caused by any accession of new parts, but (with a trifling exception) is only a constant scene of distension, or of filling out the various parts of that structure which, at the moment of its birth, was there palpable in every part—a perfect animal being in miniature. It is very different with a new-born vegetable when it bursts from its tenement and is presented to our view; it has not every part of its structure formed: it has, indeed, a root, or the nucleus of one; it has leaves, but these are imperfect, transient, and subservient only to those which follow; and the future existence of this vegetable being is not merely a scene of filling out parts of its structure which are then present and palpable, but of a constant accession of new parts, and of a constant addition of new matter. Such being the case, no instance or arguments connected with animal organisation can be taken as having any relation or bearing on the doctrine of Morphology, which belongs exclusively to the vegetable kingdom. Now, as a plant, when it first springs into existence, has no other visible organs than the root and leaves aforesaid, and as its further growth and increase is mainly made by a more addition of organs similar to the latter, each succeeding one becoming more and more developed, and more and more perfect, it must follow that the same power which supplied the materials from which these organs were fashioned, by the inherent force (we may believe) of the mysterious vitality with which the germ was imbued, must also supply the materials from which a series of organs, still more perfect, are eventually moulded, and which have allotted to them the peculiar task of perpetuating their race. Beside this truth, another must be maintained and reiterated—namely, that circumstances are ordained to exercise an influence over the development of plants; and that, when a sufficient age and maturity is attained, the nature of that development does change according to the nature of the circumstances which affect it.—*T. Moore.*

Morphology.—Morphology has certainly good arguments in its favour; but some of its propositions are so startling, that mature consideration is requisite before yielding an assent to them. That stem, branch, bract, flower, and fruit, are but metamorphosed leaves is the leading doctrine of Morphologists; but, I would ask, why of leaves? May not leaves with equal propriety be said to be modifications of the stem or the flower? No doubt the leaf is a most important organ, and performs most useful functions in the vegetable economy; but does not the flower present a more advanced stage of organisation, and is not the fruit the most perfect of all? Would it not be a much better mode of stating the doctrine, to say that stem, branches, leaves, flower, and fruit, are essentially the same in structure and composition, but varied and modified in their outward form and appearance? Few would, I think, object to this phraseology. Any one acquainted with the subject of Vegetable Chemistry would agree to it without much hesitation; and I contend that the above proposition would embody the whole of the much-vaunted doctrines of Morphology. But when we hear flowers called "imperfect leaves," or fruit "stunted branches," is it not natural to regard such terms as unscrupulous and unphilosophical? No doubt florists can sometimes, by varying their mode of treatment, cause plants to grow to flowers or branches—to wood or fruit—according to wish; but then, this is by using artificial means. In a natural state, the various organs of a plant will be found occupying their allotted and constant situations; and if, as in the case of the Pæony, instanced by "R. E.," there is a progressive change from the lowermost leaf to the very pistil, are not these but the nice and beautiful gradations which Nature, always having sudden transformations, employs in all her works?—*Dendrophilus.* [The reason why leaves are taken as the types of all the other organs is, that they are first formed, appear in a perfect state before any other part, evidently change into the other organs, which themselves are reconverted into ordinary leaves in the presence of any disturbing cause of sufficient power. The artificial means employed by florists are only an imitation of the ordinary means put in action by Nature, when transformations are produced.]

Budding.—I have generally used adhesive plaister cut into strips about a quarter of an inch wide, to secure the bud in its place, and I consider it far better than either bast or worsted, as it not only keeps out the air perfectly, but is less likely to cut into the stock. It is equally eligible for grafting; I have grafts inserted this spring, and secured by the plaister, having the union of the bark with that of the stock so accurate as not to be seen but by a careful inspection.—*Lusor.*

Labelling.—In reference to labelling Roses, (see "Rose Garden," p. 372,) I beg to recommend the following plan for securing neatness in the stamping. I have a piece of iron plate 8 inches long, 2 wide, and ¼ thick; upon this is another the same length, 1 inch wide, and ⅛ thick, fixed by a screw at each end, so as to cover half the width of the other plate. I introduce the lead I wish to stamp between the two plates, and fix it firmly by tightening the screws. I then apply the letter-punches to the edge of the thin plate, and punch upon the thick one, which gives me a true line. The operation will be understood



by reference to the accompanying woodcut. I have found it an improvement to bevel off the edge of the thin plate—as shown in the cut—to about $\frac{1}{10}$ of an inch. I consider Wetterstedt's marine metal better than lead—being thinner, and, of course, lighter.—*W.*

Gooseberry Caterpillars.—I have for the last three seasons (this year excepted) adopted the method of picking off the eggs of these before they are hatched, or immediately afterwards. This plan is both simple and effectual, and is not expensive when the person who does it becomes accustomed to the work. The garden under my care contains between three and four acres; all round the borders and two squares are planted with Gooseberry bushes. The first year I gave a boy a halfpenny per dozen for leaves containing eggs, or caterpillars just hatched, before any of them had left the leaf. The whole sum given to the boy during the season amounted to about 7*s.* 6*d.* Last year I gave the boys employed in the garden 6*s.* for keeping it free from caterpillars, and this they did successfully. This year I have not seen a dozen all over the garden up to the present time. If gardeners will follow this plan they will have no reason to regret the experiment. The garden here had hitherto been much infested with caterpillars, which, in some years, stripped the trees of nearly every leaf.—*A. K.*

Whitney's Composition.—Last winter I procured a quantity of calico and book-muslin, which was prepared strictly in accordance with Mr. Whitney's printed directions. On applying the fluid, however, it did not cover near the extent of surface it was said to do, although all the minutiæ were fully attended to. When the flower-buds on my peach-trees began to expand, the most promising trees were shaded with this material, others being covered with netting only. As the season advanced, the foliage of those protected by Mr. Whitney's material showed signs of blister, and the evil continued to increase until the shading was removed; while those protected by the netting were wholly uninjured. The quantity of fruit in each case is about equal. Those that were under the waterproof material are perhaps a little in advance, but the difference is not great. Book-muslin admits more light than calico, but is very unsuitable in exposed situations. Its texture does not stand the pressure of wind, although very carefully secured to the frames. An amateur in this neighbourhood has this season prepared calico for growing cucumbers, according to a prescription by "Devoniensis." This is equally waterproof, quite as transparent as that of Whitney, and not half so expensive, which is of some consequence. A few of his fruit measure 20 inches in length, and the plants are healthy and vigorous.—*Alex. Cramb, Heywood House.*—Another correspondent, whose name we have, writes thus:—"I, with others, find that Mr. Whitney's Composition does not go so far as he says it will; 60 feet take a quart, and much care."—*W.*

Pansies.—This being the proper time to plant out Pansies, cuttings of which were put in under hand-glasses in April, and are now fit for bedding out, I beg to give the following particulars as to their successful cultivation. Prepare a bed to the depth of two feet with loam, cow-dung, and road-sand; place the plants 18 inches apart every way; coat the bed all over with cow-dung one inch in thickness, to prevent it appearing unsightly; cover it over with fine sifted road-sand, which will cause it to have a neat appearance, and the sharp gritty particles will also protect the plants from snails, slugs, &c., as they have a great aversion to crawl over rough uneven surfaces; the above composition will cause the plants to grow moderately and bloom finely, and the coating of cow-dung will prevent the necessity of watering during the hottest weather.—*J. R., Woolwich.*

Strawberries.—My practice in the cultivation of these is neither novel nor peculiarly valuable, but it has certainly been abundantly successful, and might possibly, as far as it goes, assist in settling the question of the annual renewal of this valuable and highly esteemed fruit. My plan, then, is as follows:—I peg down the runners as early as possible, taking care to cut off all the superfluous ones as they appear. By the first week in July, at the latest, I plant them out at 18 inches between the rows, and only one foot from plant to plant. I prepare my bed by deep trenching, and manure it abundantly with good frame dung, mixed with the rakings of the borders, mowings of the lawns, refuse vegetables—in short, with litter of all sorts, and then well saturate the heap with gas-water. The result of this practice this year was, and continues still to be, as follows:—My bed was under a south-east wall, and divided equally between Keen's Seedlings and the British Queen; the length is 100 feet, the breadth is 9 feet. I began to gather most excellent fruit on the 23d of May, and on that day picked a quart of Keen's Seedlings, and from that time to this, I have gathered more than 2½ bushels, the Seedlings being nearly exhausted, but the Queens promising a more lengthened duration. I have to add, that they have, notwithstanding the dryness of the season, been watered but three times, but then they were deluged, and that every week I regularly took off all runners. The fruit of both sorts was the finest I ever saw, and that not by culled samples, but universally over the beds. These were planted runners last year, and put in the first week in July.—*J. Vaux, Northfield, Ryde.*

Asparagus.—I tried salting Asparagus-beds two years ago, and each year the beds were worse and worse, and now that I am digging them up, the earth turns up in large lumps as adhesive as glue; the roots are in pools of water, and of course nearly rotten. This is not the fault of the soil or subsoil, the former having the advantage of 28 years' indefatigable care, and the latter a rather tenacious brick earth.—*J. Vaux, Northfield, Ryde.* [Our correspondent may rely upon it his mode of applying the salt, or some other cause, has done the mischief. All evidence goes to prove the great value of salt to Asparagus.]——"Eate" begs to say that, following the advice in the *Gardeners' Chronicle*, he applied salt to his Asparagus beds, each 14 square yards, nine in number, 2 lbs. to the yard; 1843 was a cold and wet spring; his produce was greater and finer than ever. This year he followed the same plan, the spring dry and frequently hot; the produce greater and better than last year. Thanks, and many, to the sound sense of the *Gardeners' Chronicle.*

Bees.—Your correspondent, Mr. Grant, complains of what he styles remarks tending to ridicule his communications. I acknowledge that, on reading in the *Gardeners' Chronicle*, some of the communications on the subject of bees, my feelings have been aroused; and I agree with the observation made by a recent writer on "Substances in Manures," who observes, "that

parties ought to be more particular, and not take it for granted that all who read their remarks are block-heads." Mr. Grant has favoured us with an extract from Bonner, (a good practical bee-keeper,) explanatory of the way he used the terms sleep or repose, officer bees or scouts, bees on guard, &c. I am now satisfied, and hope that other bee-keepers will be so to. I just take leave to remind Mr. Grant, that Bonner states "that bees were eager of work during the day, and sing for joy through the night; that they labour with great assiduity and constancy." And you, Mr. Editor, will please to recollect that Horace says, that "ridicule was more efficacious in deciding disputes of importance, than all the severity of argument." And Shaftesbury went further: he states that "ridicule is the test of truth."—*Mel.* [There is no doubt that if disputes can stand the test of ridicule, they have a great argument in their favour; but ridicule is, for all that, a weapon that should be used discreetly. Weak-minded people will abandon the best cause, merely because they cannot bear to be laughed at.]

Sleep of Bees.—My attention was lately called to the sleep of Bees by Mr. Grant's remarks at p. 334. I agree with him that bees are at times not so industrious as we think they might be, but I cannot go so far as to blame them for being sleepy and indolent in good weather, only working six hours in a day. I am aware that some apiarians are of a different opinion—they imagine that bees after toil take a nap, but I think that few believe they loiter away six hours at a time in good weather. But as Mr. G. made his observations at the apiary, I shall state what he says respecting the idle bee:—"I have come to this conclusion from repeated observation, that in proportion to the number of bees leaving the centre hive or side box, at the early hour of five o'clock in the morning, nearly an equal number came in the side box to repose at eleven o'clock, a.m., and those that left at later hours in the morning ceased from their field labours at intervals of about six hours during the day. Those that had returned from labour could easily be distinguished from the others that had been out, as the former occupied particular positions until those that were asleep wakened, and vacated their places to go on duty, and then the others might be seen taking up their positions, and in a short time afterwards were fast asleep." I consider that the bees entered the side box not to sleep, but to commence comb-building; why they did not begin sooner in the day was owing to the low temperature of the hive. As the day advanced the heat of the hive increased, and the bees returning with their loads, which were soon deposited, they again returned to the fields without taking a six hours' nap, or perhaps joining in the cluster to appearance lulled, though busy within. Has any one ever observed bees which had just been in the fields, powdered with pollen, hanging in a cluster? No, they may be seen issuing from the hive almost as "mealy" as when they entered. There is a time, however, when pollen or farina bees are in a bustling cluster; I mean when a swarm is mustering for their exit from the stock; but they are only stragglers which happen to mingle with the swarm, especially if it is the first one. This favours my belief that bees are hardly aware of the exact time the queen will quit, and that they often seem more anxious to be gone than the watchful queen. Though true, I question whether Mr. Grant's remarks on ventilation will please some of our apiarians now-a-days. I can hardly lean to his views of the clustering of bees outside the hive "not being any loss whatever to bee-keepers." There is a time, however, and perhaps the only one, when this may be applied; it is when bees are about to swarm; though room is given, idleness often prevails inside. But in general, clustering outside the hive must be a loss, for when room is given they often begin fresh combs, and of course store up honey without being driven to it by bees who "never work themselves." It may be worthy of remark, that moralists may have extolled the industry of bees too much, and some apiarians too little. But let it be borne in mind that they were originally "emotics," and it is only under the influence of a warm climate that their real habits can be rightly understood. —*J. Wighton.*

Bee-flowers.—I find that bees are very fond of the following shrubs and flowers:—For winter feeding—Erica carnea, Crocuses of sorts, winter Aconite, Berberis repens and Aquifolium, Ribes sanguineum. For spring feeding—Papaver Cambricum (the yellow Poppy) is the best, Berberis vulgaris and Empetrifolia, Helianthemums. For summer feeding—The annual Poppies are the best, Sea-kale flowers are very good, as are those of Fraxinellas, Phyteuma orbiculare, Asters, and hardy Heaths. —*F. Y. O.*——In a late Number, at p. 334, "Apis" gives a list of flowers, of which, he says, bees are very fond. There are few plants that bees visit oftener than Sea-kale, Phacelia tanacetifolia, and common pot-herbs. The Phacelia is a particular favourite with them, and should be grown in great quantities where bees are kept. It is ornamental, and thrives well in any waste ground. Sea-kale should also be grown for the same purpose.—*J. O. C.*

Peas.—On the 14th Feb. last I made sowings, side by side, of rows of the Prince Albert Pea, Early Warwick, and Shilling's Early Grotto. From the first of these I had a gathering on the 5th inst. as forward as some of the Warwick which were sown under a wall in December last; the others are not yet (June 11) ready. The Prince Albert has proved, however, with me a very shy bearer, and I should say was a tender Pea.—*Claudio cantensis.*

Prince Albert Strawberry.—This is certainly a very large and prolific Strawberry. I have a dozen of them planted 2 feet apart every way; each plant measures 7 feet in circumference. On one of them I counted the extraordinary number of 356 fruit, and altogether the average is 250; therefore, the plants have on them at this present time the amazing number of 3000 fruit, all formed, and in different stages of growth—some very large and ripe. The plants are still in full flower; they are growing in well-manured sandy loam.—*Cantium.*

The Pear-tree.—The Pear-tree, although possessing, as it does, a most vigorous constitution, and accommodating itself to almost any kind of soil, is, nevertheless, frequently unproductive, whether it is grown as a standard, and allowed to assume its natural habit, or under artificial training, but more especially in the latter case, in which the extreme points of the branches only produce fruit. Young Pear-trees, under any state of cultivation, seldom bear abundantly, and in many instances the planter has to wait, perhaps a dozen years, before his labours are rewarded by even a moderate crop of fruit. Luxuriance of growth is supposed to be the cause of this deficiency; and this has led me to consider how the superabundant sap might be directed to the forming of fruit, instead of producing useless branches. All gardeners are aware that at the base of the shoots forming what is termed breast-wood, there are leaf-buds which seem to want the requisite quantity of sap to produce blossom-buds; and it occurred to me that the breast-wood robbed these buds, and that it was therefore necessary to direct the sap to them, and thereby increase the number of fruit-buds, which is the great end to be obtained. My plan for effecting this, is as follows:—Supposing, in the first instance, that the tree has been pruned and fastened to the wall in March, which is about the usual time for the operation, in summer-pruning, I go over the trees, stopping merely the breast-wood at six, nine, or twelve inches, according to the strength of the shoots, but taking care not to cut closer than six inches. Any shoots they may make after that time, I again stop within a few inches of the first cutting. This is done merely to give the tree a neat appearance: in autumn, when the trees are to be fastened to the wall, I proceed with that operation without cutting off anything except dead wood from the tree, deferring the pruning to the following April, or first week in May, when the tree shall have formed leaves. I then go over it, cutting the breast-wood close into the spurs, so as not to leave any buds to conduct the sap or form breast-wood. The system of the tree having been thus changed, it produces little useless wood; but, should it occasionally do so, the same system of pruning should be persevered in, and it will be followed by good results. I have practised this plan for some years, both with young and old Pear-trees, and have been uniformly successful, particularly in the case of old trees of perhaps forty years' growth, that had spread upwards of eight yards on each side of the trunk, and which, previous to this mode of pruning, produced but few fruit, and those only over a surface of about four feet from the extreme points of the branches, whilst they now bear good fruit uniformly all over the tree. Younger trees have sometimes produced fruit, even on the perpendicular stem from which the branches spring. It must, however, be observed, that my remarks are confined to Pear-trees that are vigorous and healthy. Diseased trees require to be made healthy before they can be treated in the foregoing manner. The varieties that have come under my management are the Chaumontel, Beurré Rance, Easter Beurré, Marie-Louise, Napoleon, Gansel's Bergamotte, Autumn Bergamot, Glout Morceau, Beurré Bosc, White Doyenné, Spanish Bon Chrétien, Wilding of Caissoy, and some others, all of which have been treated nearly alike, as far as the habit of the trees would permit, which must be left, in all cases, to the judgment and skill of the gardener.—*Observer.*

Boilers.—In reply to a correspondent who complains about the expense of boilers for temporary forcing, I beg to mention that, if he lives in the neighbourhood of a potter, and would get him to make an earthen boiler, the earth prior to making being well kneaded with a saturated solution of sulphate of alum, it would stand any amount of heat, and would not cost more than 3*s.* or 4*s.*—*Jacob Green.*——I often hear complaints made of the expensiveness of boilers for heating pits and small greenhouses. Would not Papin's Digesters make very good boilers, by inserting a pipe where the valve is? They may be procured at a very moderate price.—*Empty.*

Potter's Liquid Guano.—About two months ago I communicated some practical and important results from the use of Potter's Liquid Guano, which during the spring I applied to a large variety of flowers, plants, and bulbs, in pots, and in glasses (see p. 261). My remarks were quoted by Mr. Potter in his Advertisements, and thereby they have obtained a wide publicity. In reference thereto, I have been asked to state further, "What was the effect produced by the guano on the plants after the very beautiful flowers they had borne had done blooming?" Some are of opinion that the roots were of necessity enervated, and unfit for further bearing. At all events, they imagine that the productive powers of the roots were very considerably impaired. This, as far as my own observation extends (and I have severely tested the matter by oft-repeated experiments), is totally at variance with fact. The roots and leaves improve wonderfully, both in substance and health; so much so that the fertilising nature of the guano is apparent to every observer. It is not the quantity used that effects this, but the regular and moderate application of it in weak solution. My Strawberry plants in particular confirm what I have now stated; and next season I expect to be fully rewarded for the pains I have taken with them, by a rich harvest of fruit. As for my Roses and flowers generally, their colours, fragrance, and beauty, speak far more eloquently for the liquid guano than any set terms of praise.—*William Kidd, New Road, Hammersmith.*

Humphreys's Compound.—Having observed an attack on this article in the *Chronicle* of last week, I would claim the privilege of a reply, in justice to myself and to the public. In his first sentence, "F. R." speaks of "having been informed that this Compound is little else than nitrate of soda and common salt." My answer to this insinuation is, that not a single particle of either the nitrate of soda or of common salt is used in the Compound. Resting on the above false statement, he proceeds to say, that he "could not understand how anything resembling guano could be made from it;" and by way of an authority states that he "got a chemical friend to examine it; and he informs me (he writes) that he cannot discover a trace of phosphate of lime in it." Now it so happens that the phosphate of lime is insoluble in water, so that to expect to find it in an article advertised as a soluble compound to make what is called a "liquid guano" is an absurdity. That the phosphate of lime in guano is most useful for Corn, everybody admits; but the phosphoric acid in this article is introduced under a form of far more general application. The fertilising influence of guano is known to depend, to a great extent, on the proportion of ammonia it contains; and if the reader will mix a little powdered quicklime with a teaspoonful of the Compound, as a chemical test, the pungent ammoniacal odour evolved will at once convince him of its parallel character and condensed power as a manure rich in nitrogen.—*J. D. Humphreys, John-st, Pentonville.*

Societies.

LINNEAN SOCIETY.

Tuesday, June 18.—The Bishop of Norwich in the Chair.—Professor Edward Forbes exhibited specimens of Cynomorium coccineum, procured by Colonel Bailey from the island of Gozo.—A specimen of Orobanche caryophyllacea, found growing on the roots of Galium mollugo, near Folkestone, was exhibited by Mr. Richard Taylor, to whom it had been sent by Messrs. C. C. Babington, W. Francis, and A. Henfrey, now on a botanical tour in Kent.—Drawings of an unnamed parasite belonging to the genus Anopleura, and found upon the Ornithorhynchus, were exhibited by Mr. Jas. Dixon, surgeon.—Fruits of the Juglans nigra and Quercus macrocarpa were exhibited, presented to the museum by G. Charlwood, Esq.—A paper was read by Mr. Edward Solly on the solid vegetable oils. These oils were characterised by possessing stearine, the solid principle of all oils, in such quantity as to render them solid at the ordinary temperatures of the atmosphere. They were of the consistence of animal fats, and in many instances were used as substitutes for the fat of animals in the making of candles, and as substitutes for butter, as articles of diet. There was some difficulty in distinguishing these oils from wax; but the latter was produced in much less quantities. The various plants yielding solid oils were pointed out, with the modes of obtaining the oils, and the uses to which they were subservient in the various parts of the world. Few or no British plants yield solid oils. The plants yielding butter, tallow, and solid oils which were mentioned are as follow:—Theobroma Cacao, Chocolate nut-tree, yielding Cacao butter; Vateria Indica, producing a solid semicrystalline fat, used for various purposes in India, where the tree is called Tallow-tree; Pentadesma butyracea, the Butter or Tallow-tree of Sierra Leone. Several species of plants belonging to the natural order Lauraceæ, as Laurus nobilis, Tetranthera sebifera or Litsea sebifera, Laurus cinnamomum, &c., yield solid oils, in addition to their volatile fluid oils. The Myristica moschata, the common Nutmeg, with the M. sebifera, both yield a solid oil, sometimes called Nutmeg Butter; Bassia butyracea, the Mahva or Madhuca-tree, gives out a kind of butter which is used in India. The Butter-tree of Mungo Park, found in Africa, is the Bassia Parkii of some writers, though others have doubted if the Butter-tree of Park is a Bassia at all. The butter is also called Shea butter, and specimens were exhibited procured by Dr. Stanger during the late Niger expedition. Several Palms yield solid oils, the principal of these are the Cocos nucifera Cocoa nut-tree, and the Elæis guineensis; the former yields the Cocoa-nut oil and butter; the latter, the Palm-oil of commerce. All the fruits, however, of Palmaceæ are capable of yielding more or less solid oil, and many other species than those named yield the Palm-oil of commerce.—A paper was read from Mr. Curtis, on the economy of the order Strepsiptera. During the spring the author had found upon the female of a species of Anarsena, a number of larvæ excessively minute, so much so that there was at least a thousand on the body of the larger insect. These were accurately described, and the author believed that they were no other than the larvæ of a species of Stylops, but he was prevented watching their development by their destruction, arising from their being kept in a box with camphor.—A third paper was read from Dr. Hemming, on the anatomy of the muscles which move the peacock's tail. This paper was accompanied by beautiful drawings.—Dr. Balfour, Professor of Botany in the University of Glasgow, was elected a fellow.—Messrs. Ross, Powell, and Varley exhibited their microscopes, with examples of vegetable circulation in Nitella, Valisneria, Tradescantia, Hydrocharis, &c.—Mr. Ogilby exhibited a specimen of Prangos pabularia, which had grown and flowered in Ireland.

MICROSCOPICAL SOCIETY.

Wednesday, June 19.—Dr. Goodfellow in the chair. Mr. Edwin Quekett read a paper on vegetable substances vomited from the stomach of a human being. Previous to giving an account of the case in which the author had observed this phenomenon, he gave an account of the various instances in which vegetable growths had appeared to be a source of disease in the human body as well as in the lower animals. Fungi had been found growing on gold-fish, sticklebacks, &c. &c. Mr. Goodsir had related a case in which a species of Alga was thrown from the stomach with the vomited fluid. In the present case the person had been ill with diseased liver for a great length of time, and was incessantly vomiting a fluid which contained a great number of cells, having the external form and character of the Torula Cerevisiæ. When the fluid was set aside fermentation went on, with the escape of carbonic acid, in the same manner as in the ordinary process of fermentation. Nothing that had been prescribed had afforded any relief to the patient. The paper was illustrated with drawings of the Algæ vomited in this case, as well as of the various forms of fungi and Algæ that had hitherto been detected as producing diseases upon animals. The chairman pointed out the value of this contribution in a pathological point of view, and as illustrative of the value of the microscope.—Dr. Lankester referred to the development of fungi on the bodies of flies, as also the supposed vegetable origin of tubercles in the lungs. He was not prepared to admit that these cells were either plants or animals; they were evidently the product of organisation.—Dr. Wright, of Cheltenham, thought that such cases as this ought to lead us to be careful in adopting the dogma "Omne vivum ex ovo." This observation led to a discussion on the nature of spontaneous generation, in which Mr. Varley, Dr. Wright, and Mr. R. H. Solly, took part.

Reviews.

Knight's Weekly Volume. No. 1.

We cannot allow the week to pass without mentioning the appearance of this proposed Periodical, notwithstanding that its objects are those of General Literature. Mr. Knight proposes to issue one volume weekly, at the price of a shilling, in the hope of presenting persons of small means with the opportunity of perusing the best and most healthy part of our national authors. The attempt is a noble one, and deserves to be supported by every one who has at heart the welfare of his country; for by this means, more surely than by any other, will the pernicious rubbish that now circulates so largely, because of its cheapness, be removed.

The volume before us, the "Life of Caxton," is a most interesting history of printing. It is six inches long, four inches wide, has 240 pages, contains a great quantity of woodcuts, and *is sold for one shilling*. Who is there who would not try to save a shilling a week for such a periodical as this?

A Description of the Newly Invented Bar and Frame Hive, or Miniature Apiary. By W. A. Munn, Esq. 8vo. Van Voorst. Pp. 52.

The opinions of Bee-keepers respecting the merits of hives are so conflicting, that we cannot pretend to settle them. The arguments of Counsel in the great case of Wood *v.* Straw have been occupying the Courts for years, and seem as far as ever from being terminated. We, therefore, recommend the earnest bee-keeper to leave Counsel to themselves, and to betake himself to the superior Court of Experience.

As a guide to his road thither, he will find this sensible pamphlet useful; for the author evidently understands his subject, and seems little biassed by prejudice. We doubt, however, whether his plan of moving bees from place to place in search of food can ever be carried into practice in a country like this. The hive, which it is Mr. Munn's object to describe, has already been mentioned, with a woodcut, at p. 317 of our volume for 1843, to which place we refer our readers. It is only necessary to add that there appear to be considerable advantages in the use of the Bar and Frame Hive, and that it seems well worth a trial. How to manage it, will be fully learnt from Mr. Munn's pamphlet.

Miscellaneous.

Note upon a way of Grafting, so as to accelerate Bearing, by M. Lecoq, Gardener to the Royal Society of Horticulture.—People are surprised that fruit-trees are not so frequently raised from seeds as they ought to be. There is no doubt that the scarcity of attempts of this kind is to be attributed to the great lapse of time that is required to judge of the result. Indeed, for an amateur or for a gardener to wait from 10 to 15 years is enough to discourage them. Nevertheless, I think I have found a way of shortening this long space of time, and I wish to communicate the means that I have employed for the purpose. I received, in the spring of 1833, a branch of a Pear-tree, without a name, the fruit of which I was assured was excellent, being much like the Saint Germain. I was a nurseryman then, and I would not send out a tree without being quite sure of its fruit; so I then made three scions (in the manner of cleft-grafting) with this branch of the Pear-tree. I chose for the stock three principal branches upon a Quenouille which had been planted about eight years; I shortened these branches to 11 inches from the trunk; I fixed to each branch a graft provided with two eyes, which pushed very well, and each made two shoots 23 to 26 inches long. The next year I pruned my Quenouille as usual, except the branches proceeding from my grafts, which I preserved at full length; I bent them by drawing towards the ground, and brought them as close as possible to the trunk of the tree, where I fixed them: they remained in this state all the year. Each bud, instead of growing into a branch, formed a fruit-spur. The third year I detached my branches, straightened them a little, which permitted the sap to circulate more freely; and that same year I gathered from my three grafts 36 Pears, which I found to be the Pastorale. At the same time that I tried the above experiment, I inserted four other cleft grafts upon some young Quinces; I cut them to one bud the following August: they produced me 32 buds, which I worked with a dormant eye: 29 succeeded, which I sold the year that I was able to judge of the fruit. Cleft-grafting, then, can be employed with success to prove a tree raised from seeds. Only there is the disadvantage of sacrificing a good tree to gain, perhaps, a bad fruit; but those who have old Quenouilles can employ this kind of grafting without making a great sacrifice. Plantations of Apple, or Pear, or Quince-stocks may be prepared in Quenouilles for this purpose. The same branch may be grafted several times. Thus, a branch which has been grafted for the first time, 11 inches from the trunk, can be grafted six times, by cutting 1½ inch off each time that a new graft is placed on. It is to be observed, however, that the stock on which these experiments are made is not intended for a perfect tree, but merely a stock from which one must draw what advantage he can. About five years ago I saw in the Royal kitchen-garden, at Versailles, this kind of grafting practised on a large scale, but with well-known sorts; I never saw such a plentiful crop, but I think that the trees cannot last above two or three years. —*Revue Horticole.*

The third flowering of the Paulownia imperialis.—The father of all the Paulownias, which have now been distributed in such great numbers through the gardens of Europe, has just flowered, for the third time, in the Garden of Plants at Paris; 150 terminal bunches, bearing each 20 to 30 flowers, make the tree appear like a single bouquet of a light blue colour, having the most charming effect. The peduncles are from 15 to 16 inches long.—*Revue Horticole.*

Newspaper Marvels.—In a north country paper there appeared lately the following paragraph:—"Great Marvel.—Scotch Leek.—There was lately pulled in a garden belonging to Mr. Cook, civil engineer, Wooler, a Scotch Leek 9 inches in diameter, breadth of leaf 7½ inches, and weight 2½ lbs.; in the same place there are several others as large." Had this been true it would have been indeed a prodigious Leek. But as we do not find advantage in taking such wonders upon trust, we wrote upon the subject to Mr. Cook, who has very kindly explained the matter by informing us that we should read *circumference* for *diameter*; which makes a rather considerable difference. A Leek that weighs 2½ lbs. is a fine Leek, for all that.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—STOVE, CONSERVATORIES, &c.

If you imagine that any of your established stove plants will require another shift this summer, let it be done soon; but avoid shifting large specimens so late, if you can; rather encourage them with a little liquid manure occasionally. Your young plants may be potted as they require it for the next two months. Do not neglect to make cuttings of Justicias, Clerodendrons, and such useful plants, early in July, for flowering next year, these will form beautiful plants before the end of October. Pentas carnea belongs to this class; it is a very useful plant in winter, and may be had in flower all the year round; it is as cheap as Verbenas. Air, moisture, and cleanliness, as usual, are requisite.

Conservatory.—There is no scarcity of flowers here now. The usual routine of training the climbers and keeping the other plants in order, together with neatness, is all that is immediately wanted; but keep a good eye to your winter stock. Camellias that have formed their flower-buds may now be potted; those of them that are to flower early should be kept in doors all summer, but the spring-flowering ones may be turned out soon. Attend to Violets; this has been a hard season for them as well as for Chrysanthemums. The China Rose, called Cramoisie superieure, is the best of them all for winter forcing, and takes the place of the old sanguinea in the bouquets at Christmas. Anna Boleyn Pinks for forcing ought now to be in a forward state; and if they show symptoms of flowering, pinch off the stems as they appear. In short, this is just the proper time to attend diligently to such plants as will flower from October to May.

Greenhouse.—As all but the very best specimens are now removed from this house, you will have room to introduce annuals, placing three or four of them in large pots; with a little care they will come in useful for the Conservatory. Syringe this house every evening now, and keep the paths constantly moist, otherwise you cannot expect a healthy growth.

Pits.—For growing a stock of young plants in summer, no structures are so good or economical as good pits. Place the pots on a bed of sifted coal-ashes, and if you can procure clean Moss, free from slugs, &c.; it is an excellent plan to place a thin layer of it between the pots; after it is well damped, you have a source of constant moisture, which, passing up among the foliage, is very beneficial to all plants in summer, and they require less shading when they are thus managed.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

We have had upwards of thirty hours of as fine a rain as ever has fallen from the clouds, and the plants which last week were dying, now promise to be regenerated. Calendarial directions are almost unnecessary this week, but a few hints may not be out of place. First, get all bad pieces of turf on the lawn or verges replaced by new, taking care to lay it on *mud*, and when the sun shines brightly, shade it with an old mat until established. Secondly, where the Grass is much parched up, give it a slight dressing of Potter's guano, in the proportion of one bushel of guano to four of light sifted soil. Dress also with the same any of the plants in the beds which may not be growing so well as could be desired. Thirdly, look well to the rolling of the walks, and, above all things, clear all rubbish from by-corners. Nothing in my opinion looks so bad as corners left dirty, merely because they are not often seen; and there is nothing for which I would sooner call a gardener a "sloven."

Reserve Garden.—Biennials and Perennials have grown indifferently in general this season, therefore make another sowing immediately, especially of Wallflowers, which are indispensable for spring decoration. Sow also Campanulas, Pinks, Pansies, Aquilegias, Antirrhinums, Hollyhocks, &c. Brompton Stocks I never sow before the first week in August, at which time they will be treated of in detail.—*W. F. A.*

III.—FLORISTS' FLOWERS

Pinks.—The exhibitions of this deservedly favourite flower are rapidly taking place through the country. Complaints are made of their not lacing so well as usual; but this defect is principally with those which have been removed in the spring. We are glad to find that the standard of perfection is assimilating throughout the country, and that something like uniformity of opinion begins to prevail. Those who are anxious to obtain good seed do not leave the impregnation to chance, but assist Nature in the operation. Continue to put in pipings or cuttings; shade and water them occasionally. *Carnations.*—The late showers have had a beneficial effect on these as well as on the other departments of the florist's care; and they are now coming on most favourably. The observation made above, as to planting in the spring, will also apply to the Carnation and Picotee; the detrimental effects of which may be seen in the plants throwing up weak stems almost destitute of "grass" or layers, to the great disappointment and loss of the grower. Continue to disbud, &c., as recommended last week. Put in pipings, &c. If the buds are sufficiently forward tie some waxed thread round to prevent their bursting, twisting the ends together, which will be found a sufficient fastening. *Pansies.*—Shoots may be removed and planted out—the weaker the better. Gather seed as it ripens, collecting only from the very best flowers. *Dahlias.*—Cover the ground about the roots with very rotten manure, carefully attach them to the stakes as they grow, as a rough wind may destroy all hopes of a bloom, if attention is not paid in this particular.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—The air is now so genial, that it may be admitted freely to those plants that have been potted from three weeks to a month, keeping at the same time the paths moist by frequent sprinkling. This treatment, with syringing the plants when they are shut up in the afternoon, will encourage a strong growth. Shading slightly during clear sunshine must be still attended to, as the plants suffer materially from the sun when not shaded. Now is a good time for turning out of pots a few plants of those which promise to show soon. They will soon root into the bed, and if supplied occasionally with a little liquid manure, will produce finely swelled fruit during the early part of winter.

Vineries.—Few people think it necessary to shade Vines during hot weather; but it is not at all an uncommon thing to see the foliage severely scorched, to the permanent injury of the plant itself, as well as of the crop upon it at the time. It would be labour well bestowed to shade the more delicate foliaged kinds, particularly where the roof of the house is of a great depth. Be careful to have the Vines quite dry before the sun comes upon them in the morning, as nothing is more injurious to the tissue of the leaves than the action of the sun upon them when moist. This is one reason why I recommend keeping a rather dry atmosphere during the night. The atmosphere of any tolerably well-glazed house will, when shut up, become sufficiently moist for the health of Vines ripening their fruit.

Peach-houses.—Attend well to the cleanliness and health of all the trees, whether in pots or growing in the borders of the houses. Watering well when necessary, and syringing frequently where there is no fruit ripening, are the principal things to attend to now, that too much air can hardly be given, and the wood has nearly done growing.

Cherries.—Plant out in some light friable soil, any small Cherry-trees that have been forced in pots. They will make fine young roots by the time for taking them in again; and if taken carefully up and put into pots somewhat larger than those they are now in, they will be in fine order for forcing. Keep the Cherry-house as cool as possible, give plenty of water, and syringe daily.

Melons.—The plan recommended in last week's Calendar, of supplying water to the roots of the Melons (by means of earthen pipes let into the bed with the lower ends placed upon slates in order to spread the water), we tried for the first time this season, and find it to answer admirably. It is not too late to try it yet with late planted Melons, which have not covered much of the bed. Indeed, we have tried it with a pit just planted, as we are convinced of its utility. Much attention is now required to keep the foliage of Melons clean and healthy. Give a little air early in the morning, increasing it as the day advances.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

When, owing to the extreme heat, vegetation was again drooping, we have been favoured with another splendid rain. The ground is now in good order for the reception of autumn and winter crops, and no delay should occur in getting a quantity of the forwardest, Savoys, Brussels sprouts, Brocoli, &c., planted out. Those who have got their first Peas cleared off the ground will be so far fortunate; but there are not many places where there is ground enough to enable the gardener to have only one crop on the ground at once. In sowing Peas in rows 5 feet apart, with a row of Early Potatoes between each two rows of Peas, a row of winter-stuff may be planted on each side of the row of Potatoes. From such continuous cropping, you cannot expect to gather many monster heads of Brocoli, &c.; but you will have abundance of a size more suitable for a family. The plants will be a little drawn at first, but they soon become strong and stubby, when the Peas, &c., are removed. Now is a good time to get in the first main crop of Celery. A few trenches will have been previously planted. To save ground, we plant it all in beds, about four feet in width, with ridges of the same width between, sowing a row of Peas along the centre of the ridge, and using the trench for Lettuce, &c., before it is wanted for Celery. The beds intended for late Celery are narrower, they were manured as soon as possible in the spring, and planted with *Early* Potatoes, which succeeded those in frames, &c. The trenches were formed with a high and low side, resembling a turf-pit, strong stakes were laid across from side to side, upon which common hurdles, wattled with Spruce Fir branches, were drawn up and down, according to the weather. When all danger from frost was over, the hurdles were removed, and became most useful in protecting newly-sown seeds from sun, birds, and flies; and the ridges were turned up, levelled, and sown with Peas, Scarlet Runners, &c. These statements may be useful to the amateur, who is fond of Peas and Celery, and has but little ground at his command. *Routine.*—Sow a good breadth of Cauliflowers on a south border, and you may have Cauliflower late in winter if the season is favourable; also Turnips, Radishes, Endive, Chicory, Spinach, &c.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Now, when woods are cleared of all the produce cut during the bark season, little is required to be done except paying attention to keeping fences in good repair, and attending to former directions respecting summer pruning and training young trees.

Coppices.—If these are not yet cleared of all stuff cut during preceding months, the sooner it is done the better, as much injury may be done to young shoots springing from stools recently cut; do not neglect summer management, if you wish a profitable return.

Young Plantations.—If these were properly managed they would make greater progress in growth, and consequently in value, than they generally do. Follow Dr. Thackeray's method—employ a well-instructed person at all seasons, particularly during spring and summer, to regulate and train the summer growth. By the system of going over them once or twice a year only, many things escape attention that want immediate correction, and fresh cases constantly occur. This I know from

importance, and I therefore should endeavour to impress the propriety of Dr. Thackeray's question on all proprietors of woods.

Nursery Work.—Attend to former directions with regard to watering, shading, weeding, hoeing, and summer-training. Thin out some of the strongest side shoots where they are too numerous, and shorten others, always training to one upright leader.—*W. B.*

VII.—COTTAGERS' CALENDAR.

Those Cottagers who have Vines trained on the cottage, or in other parts of the garden, should examine and carefully regulate their branches, taking care to retain no more young wood, and fruit-bearing shoots, than the Vines are capable of supporting and bringing to maturity. The fruit-bearing branches, if not already done, should now have their tops pinched off, two eyes above the bunch, and the others may also be stopped in the same manner, when they have reached about 20 inches in length. After this stopping, at most of the eyes, they will in all probability throw out laterals, which should be nipped off immediately above the first joint, taking great care, however, not to injure it for fear of prematurely starting the bud at the base. No more shoots should be allowed to remain than are necessary to cover the space that may be for training them. It is always better to keep Vines thin and open, than to crowd the branches together, for loading the plant with a superabundance of wood, only serves to weaken it, and rob the fruit of much of its nourishment. Many of the flowers around the cottage will now be in full bloom, and will therefore require some attention. Notwithstanding the long dry weather, Roses this season are blooming abundantly, and in great perfection; they are also remarkably free from the attacks of insects. Should greenfly, however, be troublesome, they may be got rid of by syringing the plants with ammoniacal liquor, diluted with ten times its bulk of water. From this time to the middle of July, is the best season of the year to increase Roses from layers. The shoots are less brittle now, and on that account are easier to handle than when they are ripe. Take up bulbs, such as Tulips, and Hyacinths, if not already done, when their leaves are decayed, and preserve them dry until autumn; their places may be filled by transplanting a few Annuals from patches that are too thick. Now that we have at last got rain, and the ground in good order, some Brussels sprouts, Savoys, Broccoli, and other things for autumn and winter use, should be got in wherever there is room, and clear away anything in the seed-beds or elsewhere, that is not likely to be wanted. Do not allow the soil to become hard or baked on the surface, but keep it loose and well stirred up; taking care to keep down weeds as soon as they appear, for on the order and neatness in which a cottage garden is kept, much of its beauty and effect depends.—*J. Mc. H*

State of the Weather near London for the week ending June 27, 1844, as observed at the Horticultural Garden, Chiswick.

June	Moon's Age.	Barometer.		Thermometer.		Mean.	Wind.	Rain.
		Max	Min.	Max	Min.			
Frid. 21	5	29.980	29.761	85	52	67.5	S.W.	
Sat. 22	6	29.797	29.760	82	48	67.0	S.W.	
Sun. 23	7	29.789	29.742	81	62	71.0	N.	
Mon. 24	8	29.631	29.542	85	67	73.0	S.W.	*
Tues. 25	9	29.670	29.613	84	67	66.0	S.W.	.62
Wed. 26	10	29.724	29.718	67	51	59.0	N.	.13
Thurs. 27	11	29.890	29.685	68	50	59.0	N.	
Average		29.793	29.704	78.1	54.0	66.2		.74

June 21 Light clouds, and deep blue sky; slightly overcast at night.
— 22 Slightly overcast; very fine; sultry; clear at night.
— 23 Exceedingly clear and fine; very hot and sultry; clear.
— 24 Cloudy and calm; hot and sultry, clear.
— 25 Constant rain throughout; the quantity greater than had fallen during ten weeks previous.
— 26 Cloudy and fine, densely overcast; rain at night.
— 27 Overcast; cloudy and very fine.
Mean temperature of the week 8 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending July 6, 1844.

June	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.						
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 30	73.0	50.7	61.8	6	0.90 in.	—	2	2	1	6	2	6	2
July													
Mon. 1	71.8	52.7	62.3	8	0.86	1	1	4	—	3	3	5	1
Tues. 2	74.0	52.2	63.1	5	0.78	—	1	2	—	4	5	5	1
Wed. 3	75.2	52.2	63.7	7	0.78	—	2	2	—	1	6	6	1
Thur. 4	77.1	53.7	65.4	4	0.84	—	1	3	—	2	5	8	—
Fri. 5	77.4	53.2	65.3	8	0.40	—	2	—	4	1	5	5	1
Sat. 6	76.0	51.6	63.8	7	0.45	—	—	1	1	3	7	6	2

The highest temperature during the above period occurred on the 5th, 1838—therm. 94°; and the lowest on the 6th, 1840—therm. 40°.

Notices to Correspondents.

Asparagus.—*A Constant S.*—Salt should be applied 2 or 3 times during the time when the summer shoots are growing fast. Now is an excellent season.

Cheats.—*Stultus.*—If, as you say, some nurseryman has cheated you by selling rubbishy Cinerarias and Pelargoniums under fine names, you should not deal with him again. We have no means of protecting you.

Coniferæ.—*Visto.*—All the sorts you mention are hardy except Pinus longifolia. Plant them out when a foot high, in any exposed situation, and light land.

Cucumbers.—*A Reader.*—Your Cucumbers in all probability die off on account of being kept too damp, and for want of sufficient bottom-heat. Keeping them warm and vigorous, and free from sudden checks, is the best preventive. Turn and renew the linings occasionally; do not allow the beds to get crowded with useless Vines, and success is almost certain.‡

Greenhouse.—*An Observer* has our thanks; we are endeavouring to obtain a *plan* of the houses in Stirlingshire, when we will publish his letter along with it.

Earwigs.—*Anti-forficula.*—If you apply oil and turpentine to the stems of your Dahlias it will injure them; and even if it did not hurt the plants, it would not keep off earwigs. You had better trap them by placing inverted pots, having a little dry Moss in them, over the top of the Dahlia stakes. By examining the pots frequently, and killing the insects collected, you may soon get rid of these troublesome vermin.‡

Figs.—*C. R.*—The figure to which you allude is like all such figures, a diagram, and not a representation of any actual plant. If you look again you will see that it represents the plan of cultivation at Hewell, not at Chiswick, where the trees are all too vigorous. We cannot imagine why you are not satisfied with Mr. Markham's excellent directions, which are thoroughly practical. Cease to gather Rhubarb stalks as soon as Gooseberries are ready for use; the longer you gather them the more the plants will be weakened against another year.

Fuchsia.—*A Constant Reader.*—Try the following sorts:—Fulgens elegans, Exoniensis, Curtisii, Venus Victrix, Gem, Robusta Colossus, Conspicua arborea, Decora, Britannia, Coronacii and Gigantea.*

Insects.—*R. C. B.*'s Roses are infested by Aniempilin horticola, a beetle which is very abundant this year, and occasionally does great injury to those flowers. We will make it the subject of a future paper. *R.*——*J. H. C.*'s Elm-leaves are disfigured by a species of Aphis, probably the Eriosoma Ulmi-gallarum. If he would favour us with a leaf or two not crushed by the carriage, we should be enabled to make a drawing, and study the economy of the insect. *R.*——*A Norman.*—Your woolly galls of the Oak are produced by the Cynips Quercus ramuli. *R.*——*B. Childe.*—Your Spider is Aranea scenica. If Butterflies be held between the finger and thumb when the wings are closed, and gently squeezed, it will deprive them of life without injury, and large Moths may be killed by the application of heat. A cylinder fitting into the top of a small saucepan, having both ends covered with gauze, is a simple mode of admitting a volume of steam to act upon the inclosed insect, and the moment it hits down the cylinder must be removed, and the animal taken out to fly. Harris's "Aurelian" is an interesting work, but it only treats of Lepidoptera, and the nomenclature is defective.‡——*M. Saul.*—We have every reason to believe that your Corn-maggots will produce the Chlorops pumilionis, and we hope that you and other cultivators will endeavour to rear them, and send us specimens in their different stages. *R.*——*B. Childe.*—No. 1 is Macroglossa Stellatarum; 2 is Crabo dimidiatus; and 3 is Chrysis ignita, all of which you will find figured or noticed in Curt. Brit. Ent., plates 6, 688, and 747. There is little doubt that the flies were buried by the wasp for its larvæ to feed upon, and we regret that you did not inclose the flies. *R.*——*J. R.*—Your Caterpillars were crushed to pieces, but as we know the depredators, we can tell you that they will change to the "green-veined white Butterfly," Pontia Napi, whose history, &c. you will find in the Royal Agr. Journ., v. iii., p. 312, and pl. F, figs. 17 to 20. *R.*——*Mrs. Waller's* green Saw-fly is the Tenthredo scalaris; the other is the Ctenophora strata, and being loose in the box it was broken to pieces. *R.*——*Dover.*—Not being able to discover any insects in the box, we conclude your Grapes are eaten off by the Woodlice or by Weevils, which you will ascertain by visiting the greenhouse at night. We wish to be informed if such prove to be the case, and beg that you will send us specimens of the aggressors whatever they may be. *R.*——*N. B.*—We regret being unable to recommend anything more destructive to animal life than the fumes of sulphur. It is said that washing the leaves with soap and water, applying it with the hands, is a certain remedy, and perfectly harmless to vegetation. *R.*——*I. I.*—The aquatic animal is the larva of a Dragon-fly; that infesting your Ribes is a female Coccus. It is the Thrips, we suppose, which is attacking your Melons; we wish it was possible to discover a remedy against that troublesome little plague, but it is said that the fumes of sulphur even are unavailing. *R.*——*A Lady's* Caterpillar with two tails will change to the Puss Moth, named Cerura Vinula. *R.*

Morphology.—*T. Elliot.*—Your Roses with the sepals producing branches from their axils are a useful kind of illustration. We should like to ask those who cannot comprehend the principles of Morphology, how they explain such instances without reference to those principles.

Names of Plants.—*Viscus.*—Calonyction speciosum.——*J. C. L.*—Maxillaria Warreana and M. crocea.——*S. Warnford.*—Lotus major, Orobus tuberosus.

Oak Bark.—*A Subscriber.*—After it is peeled make a platform or frame, by driving into the ground forked stakes, about three feet in length, two opposite each other about 18 inches or 2 feet apart in breadth; then lay slender poles lengthways to rest on the forks, and lay the bark on them crossways, reserving the large pieces from the stems or poles for covering it; the large pieces for covering should be spread open while the sap is moist, to lay flat upon the other, lengthways with the frame, keeping the inside downwards to throw off the wet and dew; for when the inside of the bark gets spotted, mildewed, or discoloured, the quality is injured and its value lessened. Bark requires as much care in harvesting as a crop of grain; hence, too much attention cannot be paid to keep the inside from wet and dews from the very commencement; it is soonest injured while the sap is moist. After it has laid on the raised frame sometime, it should be turned, to expedite the drying, first taking the covers carefully off to be replaced as at first. The thinner the bark is laid on the frame the sooner it dries; from 10 to 16 inches in thickness is enough. The time required for drying depends upon the weather and exposure. Bark should always be placed to dry in an exposed place, so as to receive the full benefit of sun and wind. In such a season as this, it requires from two to three weeks; but much depends on whether it is from large trees or coppice poles. When sufficiently dry, it should be delivered to the purchaser, or made into stacks, or put under an open covered building; if in stacks, they should be thatched immediately, and as securely as stacks of grain.—*W. B.*

Oleanders.—*A Reader.*—The Oleander is easily propagated by cuttings of the young or half-ripened wood at any time when such can be procured. They may be treated in the ordinary way, and placed either in a Melon-frame or in a pit where they will be kept warm and close. The cuttings require to be kept very moist. The Oleander may also be increased by putting a single cutting into a small phial filled with water in a warm, close situation. It will no doubt succeed well in the way you mention if properly treated now. ¶

Pelargoniums.—*Jonathan.*—You will find ample details about their management in our volume for 1841. The French method is in type, and only waiting for space. All Pelargoniums are better for being placed in the open air, for the summer, exposed to the sun, but not so as to be sunburnt.——*A Lady.*—A mixture of two parts turfy loam and one of well-decomposed cow manure, not less than three years old, with a small portion of silver sand, will be found a suitable compost for Pelargoniums.‡——*J. M.*—We are not acquainted with the Pelargonium you have sent as *Comus*, it certainly is not the Queen of the Fairies, for which variety you say it was sold; it appears to be too small for a Show-flower.*

Plants.—*T. Jones.*—The following is a list of choice plants for greenhouse cultivation:—Boronia pinnata, serrulata, and anemonefolia; Polygala oppositifolia and cordifolia, Gardoquia Hookeri, Roella ciliata, Hovea celsi and pungens, Chorozema varium, Dicksoni and Henchmanni, Mirbella floribunda, Aphelexis humilis, Pimelea spectabilis, decussata and hispida, Bossiæa linophylla, Eutaxia myrtifolia, Dillwynia floribunda, Luculia gratissima, Leschenaultia formosa and biloba, Coleonema tenuifolia, Genista canariensis, Sprengelia incarnata, and Crowea saligna, together with the different kinds of Acacia, Correa, Camellia, and Azalea, &c. Climbers may consist of Kennedya Marryattæ, Hardenbergia monophylla and macrophylla, Sollya linearis, Gompholobium polymorphum, Zichya glabrata, Tropæolum brachyceras, tricolor and azureum, Mandevilla suaveolens, Dolichos lignosus, and Clematis azurea grandiflora.‡

Roses.—*J. J. Dillaston.*—Roses do not show well as single flowers. They must be in bunches; but they ought to be tied loosely so as to show the habit of the sort. For kinds we must refer you to the reports of the Chiswick Shows.

Roses in Pots.—*Blair.*—We prefer them on their own bottom. If budded, the stocks certainly should not be more than a foot high. If you look to the lists of Roses exhibited by the winners at the Chiswick Shows you will see what force best.

Strawberries.—*G. I.*—Your fruit was smashed in the Post-office.

The Tulip-tree.—*Peter Schlemihl.*—This is sold in all the nurseries, where it is raised from seeds. It is quite hardy, and grows fast. All good soils that are not too heavy and wet, suit it. The wood is light and tough, but is of no great use. The tree is very ornamental.

Vines.—*A Lady* states that in February last she made a new Vine-border, according to directions given in "Roberts's Treatise on the Vine." Her Vines had not borne for two years previously, and the roots, on digging out the border, were found to have penetrated below the good soil far into the marl. They were carefully got up and planted very near the surface; the bottom was well covered with stones, and over that was laid a mixture of lime and gravel. The border was then filled, to the depth of two feet, with rich soil, consisting of well-rotted turf, leaf-mould, stable manure, bones, and a good deal of carrion. About the end of March the Vines broke well, and several of them by the end of April had made shoots six inches long. The house was kept to an even temperature of about 45°, or 48° at night. Very little fire-heat was employed; the Vines were slightly shaded with canvas from the mid-day sun. They, however, began gradually to fall, the buds of the shoots becoming withered and dying away, until now, we are informed, there are only two plants alive, and those make no wood. Upon submitting this matter to Mr. Roberts, he gives the following explanation:—It appears that the Vines are old, and that they had penetrated the subsoil, which no doubt produced the failure. After making the new border, which has even been very powerful, I should have preferred planting young Vines in it, as, by proper treatment, they would have produced a crop the whole length of the rafter in the second year after planting. The failure may be attributed to several causes. Was there sufficient caution used in carefully lifting the roots out of the subsoil? Have they not been cut and left destitute of fibres? Although this was the case they might break, and the young shoots, being fed by the sap previously stored up in the old stem and root, would grow to the length of six inches, but as the shoots continued to lengthen, the old roots not being prepared with new fibres, would droop first at the top and gradually wither away, for want of support. The old Vines ought to have been cut down close to the sill, and a gentle heat added to the border, in order to have encouraged them to make new roots before the top broke. Again, has not the carrion been placed too near the surface of the border? This might have suited Vines in perfect health to revel in, but the mutilated roots of old plants would not be in a state to form new fibres in such powerful material, and wherever they came in contact with it they would undoubtedly rot off. If any heating material was applied to the border, too powerful a heat has been kept up, and the roots have been burnt. This, probably, may have been the cause of disappointment. I would recommend that the border be cleared of the old Vines entirely, notwithstanding the advanced season of the year, and replanted with healthy year-old Vines that were cut down this spring, and are still in a free growing state. Take off the eyes and leaves a foot or 15 inches from the bottom of the cane, and lay it in the border, as I recommend in my treatise. When the Vine is at rest, mulch the roots, or add a gentle heat to them, and by judicious treatment with regard to temperature, humidity, &c., there is yet time for good canes to be made and perfectly ripened before winter.——*Hort. Suf.*—Some persons object to syringe Vines as a preventive against red spider, in the morning as well as the evening; but we know no good reason against it; and some of the best Vine-growers do it *morning*, *noon*, and night. Gardeners say that Vines are scorched in consequence; but experiments are greatly wanted upon this subject. Watering will never destroy red spider so readily as lime and sulphur painted over the flues, and driven into the air by the heat.——*A Constant Subscriber.*—We presume that your Vines are for the present ruined by overbearing. Young Vines cannot carry with impunity such a crop as you speak of. All you now can do is to pull off what bunches they have produced, and treat them to all the air, light, and food you can give them. Certainly discontinue fires. If towards autumn the wood does not ripen, you may then light fires again. But we cannot suppose that it will be necessary. You will have to shorten them very much in the autumn. Read "Roberts on the Vine."

Miscellaneous.—*A Novice.*—We would refer you to Mr. Wood's Papers on Fuchsias, lately given in our columns, where you will find the information you want. Potter's Guano, if concentrated, poured upon the leaves of plants, will injure them; but if weak, it is harmless.‡——*Empty's* Stocks have probably suffered from a cold wind, or some such cause. What has happened is, that one side of the seed-vessels has been injured, while the other has continued growing, the result of which is, of course, a curvature. The seeds will not be the worse for the accident.——*F. X. O.*—The variegation in your Mountain Ash is surely very ugly.——*T. Jones.*—You must have patience; your young Melon plants, although in good health, are unable to set their flowers until they have made considerable progress in growth. As soon as they are old enough, if attention is paid to fertilise the females, you will no doubt be more successful. You have kept your Ipomœa much too dry; the red spider is prevented by keeping a damp atmosphere, or killed by the application of fumes of sulphur.‡——*A Subscriber.*—Orange trees like the very strongest manure. A compost consisting of one-third rough charcoal and blood, and two-third good turfy-loam, is a suitable soil for them. For information regarding the construction of a fruit-room, see Leaders, pages 611 and 643, vol. 1841.‡——*Cautus.*—We are unable to answer your question. Of course, if you infringe any patent you must take the consequences.——*J. S. J.*—1*s.* 2*d.*——*Denton.*—Having a two-light frame, you may have young Potatoes at Christmas by planting in the beginning of September. The new rose-coloured winter Radish should be sown in August. We presume the early Pea to which you allude as being grown near Gravesend and Rochester, is the early Charlton.‡

SEEDLING FLORISTS' FLOWERS.

Anagallis.—*A. B.*—Your specimen of an Anagallis was too dried up: it was impossible to form an opinion of its qualities.*

Calceolarias.—*C. N.*—Your seedlings are very fair specimens. 3 is decidedly the best in form and colour; 2 is very common; and 1 wants decision of colour.*

Fuchsias.—*A. B.*—If your seedling is a free bloomer, it must be a handsome plant; the colour is not novel, being similar to most seedlings from splendens; but the length of the flower, 4½ inches, with the slender tubes, if flowering in bunches, must give the plant a curious appearance.*——*J. Y.*—The colour, form, and substance of your seedling makes a handsome variety.*

Geranium.—*W. J. T.*—Your seedling is very brilliant, but not superior to some of the varieties in cultivation; its value depends upon its being of dwarf habit, combined with freedom of flowering.*

Mimulus.—*Devoniensis.*—Your seedling variety is not uncommon.*

Pelargoniums.—*J. M. W.*—The seedling you have sent wants form and substance; and with these drawbacks we certainly cannot recommend it as a parent. There are many rich and highly-coloured flowers that would answer the purpose much better.*——*C. W.*—William the Conqueror is large and showy, but very deficient in form, and wanting in substance.* *S. E. M.*—The form of your seedling is very good; the upper petals are too uneven and puckered at the edges, but the flower possesses substance and form; the colour is not uncommon.*——*A. B.*—Judging of your seedlings from the loose petals, they are of no value; they are all so deficient in substance.*——*W. M.*—Pompey is a stout flower, of good form, with broad pink under-petals; the upper petals have a deep blotch, which is surrounded with crimson, leaving a margin of delicate pink. Champion has rosy crimson under-petals, terminating in the centre with a tinge of blue; the top petals have a large rich spot, which gradually softens to the edge. Unique has top-petals covered with deep maroon, leaving a narrow margin of rosy purple, white centre, with delicate pink under-petals, upon which are seen rosy purple veins—three flowers of good substance, size, and variety.*

Petunias.—*A. Z.*—From your seedlings being badly packed, the blooms were much bruised; the colour of 39 is very fine, being a splendid dark purple; and next to this we prefer the darkest of the light blues. The other varieties do not appear to be sufficiently distinct; we should like to see blooms of these again.*

Erratum.—In last week's Paper, p. 404, in article "Statice Pseudo-armeria," the signature should be *E. Barnsdale*, and not *E. Barnsall*, as is there printed.

*** As usual, many communications have been received too late

IMPORTANT to AGRICULTURISTS.—ANALYSIS of Soils, Manures, and all Agricultural Products, (as conducted by Mr. MECHI and Mr. MITCHELL, Analytical Chemist, late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

Gentlemen Instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

No. 8A, Rawley-road, Kentish Town.

The Agricultural Gazette.

SATURDAY, JUNE 29, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July 3	Agricultural Society of England.
THURSDAY, July 4	Agricultural Imp. Soc. of Ireland.
WEDNESDAY, July 10	Agricultural Society of England.
THURSDAY, July 11	Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.—July 1, W. Market.

IT is obvious that, were there no other consideration than that of the GROWTH OF THE TURNIP-CROP, to affect the determination of the farmer as to the mode of its cultivation, the best arrangement of the plants on the ground would be one of equi-distance between them, so that whatever distance might be fixed upon, whether 10, 12, or 14 inches, the ground being supposed divided into squares of that dimension, the plants should be placed one in the centre of each. They would thus all be situated on equal terms, in relation to the sources of their nourishment, and there would in all probability be a uniformly productive yield.

The object of a root-crop, however, as may be gathered from the name of the class under which it comes—the object of a *fallow* crop—is not merely the growth of a great quantity of food of good quality for stock; the cleansing of the land, and its preparation for the succeeding grain crop, are to be effected during its growth; and it is therefore necessary to modify the otherwise advisable equi-distant arrangement of the plants, so as to enable the farmer the better to cultivate the land during their growth. Instead of scattering the seed at equal intervals all over the field, as a good broad-cast sower, he is thus required to sow it in rows, at such intervals as may enable him to use the horse-hoe or plough. This width varies from 20 to 30 inches. The best distance, it is evident, must be the least at which the land can be properly cultivated—the least, compatible with the efficient use of the implements we have named.

The same reason which renders the drill husbandry of Turnips superior to the broadcast system, renders the ridge-drill mode of cultivation superior to that on the flat surface. The first act of cultivation which the land receives after the Turnip-seed is sown should be a horse-hoeing between the rows while the young plants are assuming their rough leaves. The rows are after that more easily broken by the hoe when the plants are being singled out, and thus that operation is cheapened. But it is evident that this could not be done without great danger of burying the young plants when the flat-drill system is adopted: whereas, when the seed is sown on the tops of the ridges, the stirring of the soil causes it to roll away from the plants, so that ultimately the land loses its ridged appearance, and the plants are in no danger of being buried.

As soon as the young Turnip-plants have assumed their rough leaves, they should be singled out to a distance of 12 or 14 inches; it is manifestly of greater importance to increase the size than to increase the number of the roots. The crop per acre will be increased in weight four times as much by doubling the diameter of the roots as it would by doubling their number; and it is therefore of importance to allow as much room for each plant to grow in as its full size requires. The operation of hand-hoeing, when singling the plants out, does not require to be performed gently; indeed, a little roughness in handling the young plant is found to be beneficial. The earth should be pushed and pulled *from* it; and though it be left with an inch in length of its root exposed, it will not be injured thereby.

It is impossible to overrate the importance of the operation of horse-hoeing the land during the growth of the Turnip-crop. Not only is the vigorous growth of the roots thereby insured, but the land is cleaned and enriched for the grain crop of the following year. We say enriched, because by this operation the fibrous roots of the plants are enabled and encouraged to permeate the whole soil, so as to leave it filled full of vegetable matter when the crop is removed. We have seen fields so well cultivated in this way, that a handful of earth could not be taken up in it which was not full of these silken-looking fibres; and so vigorous was the growth of the crop in that field, that on digging a pit in one, these fibres (recognised by their appearance and taste) were found to have penetrated to a depth of five feet!

We conclude by quoting from an excellent paper by Mr. S. Almack on this subject, in the fourth volume of the "English Agricultural Society's Journal," the following effects of the drill system of husbandry in the East Riding of Yorkshire, "as increasing the produce of the land in that district, and employing its industrious population. Within the last forty years the wolds of Yorkshire were considered quite unfit for the growth of Wheat, but now they grow fully as good crops of Wheat per acre as the average of the kingdom. As a sample of the change in this respect, a friend of mine sold the late occupier of a farm Wheat for the use of his family, because the farm did not then grow sufficient for the use of his family. Both the parties I allude to lived to see that farm grow Wheat, 100 acres together, which was supposed by the best judge to have 5 quarters per acre. I do not say the farm grows, on an average, 5 quarters of Wheat per acre, but the crops of Wheat on it will generally be found decidedly above the average of England; and all this resulted from *high* cultivation *long* continued."

ON FEEDING CATTLE IN HOUSES OR IN OPEN SHEDS.

NOTWITHSTANDING the rapid advances towards perfection which have been made in the practice of Agriculture within the present century, the continued application of scientific research, and of minute observation to the routine of practice, frequently shows that even in departments in which the propriety of established usage was considered to be beyond question, much still remains to be learned. Experiments, when properly conducted, are the life and soul of husbandry, as enabling the practical farmer to test the comparative merits of different systems of management, and also to ascertain the value of the suggestions of men of science. But in order to be of any use, it is obvious that all the circumstances attending their execution should be accurately taken into consideration, in drawing from them any practical conclusions; without this they are not merely valueless but mischievous in their tendency, and calculated to mislead, by the establishment of practice founded on incorrect data. Any accurate observer cannot fail to perceive that more than one half of the experiments in practical Agriculture, from time to time recorded, are greatly deficient in the detail of the various circumstances by which the results of all such trials are effected; and that, strictly speaking, they should go for nothing as regards the purpose for which they were instituted. Until, therefore, a greater degree of attention is paid to this subject, that value cannot be attached to this department of agricultural improvement to which it would otherwise be entitled.

These considerations have presented themselves on contrasting the almost universal practice at the present day among the farmers of the northern part of the island, as regards the management of their cattle, with the researches and deductions of the celebrated German philosopher, Liebig, in the rich and important field of Organic Chemistry. The practice of feeding cattle in open sheds, in preference to close houses, is now almost universal in certain districts of Scotland, and is daily gaining ground, although reasonable and well-founded doubts may be entertained of its propriety. It was not, however, hastily adopted by the Scotch farmers, without consideration; this would, indeed, be inconsistent with their character and habits. Numerous experiments were performed with the view of correctly ascertaining the relative merits of the two plans, the greater part, if not the whole, of which were favourable to the open sheds; and this satisfactorily accounts for the increasing favour with which that system of management is received.

Should it appear, however, that the results which have led to the general adoption of this practice have been founded on incorrect conclusions, and that the contrary practice is, in reality, that which accurate observation would tend to establish, it is evidently of much importance that all doubts on such a momentous subject should be removed. The practice of the Scottish farmers is usually considered as the most perfect in the world, and a plan of management regarding the propriety of which so little, if any, difference of opinion exists among them, it may be believed will be rapidly introduced into other less favoured districts; but it would appear that further and more accurate trials are wanting before any course of management so directly at variance with what may be regarded as the established phenomena of the animal economy can be recommended for universal adoption.

However erroneous many of the conclusions may have been at which the physiologists of other days arrived in their investigations of the phenomena of animal life, their successful elucidation does not now seem matter of doubt. Regarding the sources of animal heat and nutrition no question can be entertained, and the various circumstances by which they are affected seem also to be perfectly ascertained. The production of fat can only take place when the various matters which enter the system are not expended in its maintenance. Whether in the evolution of heat, or of the usual animal secretions, exercise is well known to be conducive to an increased consumption of food; so that it is obviously unfavourable to the accumulation of fat, however necessary it may be in the case of growing animals, in which the proper and rapid development of the system is the primary consideration. Heat also is only maintained by the expenditure of some of the most important of the animal solids; so that any circumstances in which this is rapidly abstracted must further be regarded as inimical to the objects of the feeder. But both these conditions—rest, and an equable, or rather warm temperature—would seem to be obtained more efficiently when animals are confined to their stalls than when placed in open yards, where, to a certain extent, very considerable exercise may be taken, and where the necessary exposure to the piercing winds and cool atmosphere of the winter season cause a considerable abstraction of heat from the animal body, the reproduction of which is unfavourable to the accumulation of flesh and fat.

This will, perhaps, be more apparent from a consideration of the constituents of the food of graminivorous animals, and the part fulfilled by each in the animal economy. It is well known that all parts of the body have been originally produced, and are constantly maintained in healthy action, by the blood, which, by a wonderful arrangement, permeates every part of the system, and from which various secretions are constantly taking place through the instrumentality of the skin, kidneys, and other agents. Every one is also familiar with the necessity of the presence of the atmospheric air for the support of animal life, the oxygen of which enters into combination with the carbon of the blood, and is given off in the form of carbonic acid gas, the remaining constituent of the atmosphere, nitrogen, being again exhaled without change. The constant and copious inhalation of oxygen, which is constantly going on during every period of existence, must therefore be attended by an equivalent waste of carbon in the proportion in which these two elementary substances combine to form carbonic acid gas. A portion of the oxygen thus inhaled also combines with hydrogen in the system, and is given out in the vapour of water. The oxygen taken in being, therefore, given off in combination with carbon and hydrogen, and these being supplied by the food, it is obvious that the quantity of food required will in a great degree depend on the extent to which the former is inhaled. Exertion produces increased respiration, or causes an additional quantity of oxygen to be inhaled, which must be followed by an increased abstraction of carbon and hydrogen. Though necessary for the support of animal life, it is thus seen that the inhalation of oxygen is attended by very considerable waste of other ingredients, and the circumstances in which the minimum quantity of this substance is taken into the system are those most favourable to the accumulation of fat. But the extent or volume taken in at each inspiration being constant, depending on the capacity of the chest, it is evident that a greater quantity will be inhaled in cold weather than in warm, in winter than in summer; and hence, in the former cases, an increased quantity of food will be consumed to make up for the waste thus occasioned. This circumstance readily accounts for the human race, in polar regions, using the strongest animal food, revolting even to the inhabitants of temperate climates; and why, in the latter case, vegetables and fruits form the chief food of mankind.

The combination of oxygen and carbon is further attended by the evolution of heat. This is familiar to every one in the process of combustion; and although not so readily apparent in the case of their combination in the animal system, yet Professor Liebig has shown that precisely the same amount of heat is disengaged in the latter case as in the former; and this is the true source of animal heat. The temperature of the body, therefore, it appears, depends on the quantity of oxygen taken into the system. But the need of food has also been seen to be regulated by the same cause; and hence the deduction, that keeping up a high temperature, either by clothing or a warm atmosphere, is to a certain extent an equivalent for food. The heat of animals respiring rapidly will be found to be greater than of those respiring more slowly—that of an infant being greater than of an adult—of birds being greater than of quadrupeds,—while that of fishes, whose respiration is so inconsiderable, is little greater than that of the surrounding waters.

The blood of animals, through the instrumentality of which the various processes of nutrition are effected, is known to be composed of fibrine and albumen; the former being identical in its composition with muscular fibre, and constituting the solid portion of the blood, and the latter being similar to the white of eggs in its properties. These two substances comprehend in their composition the various elementary matters constituting the different organs of the animal body. Fibrine and albumen are obtained by the coagulation of the blood, when they separate from each other—phenomena with which every one is familiar. But what is still more remarkable, these substances, though so apparently dissimilar, are identical in composition, containing the same elementary matters in precisely equal proportions—their particles being merely arranged in a different order. The former is even capable of being resolved into the latter; and both, in the process of nutrition, are converted into muscular fibre.

The elementary matters of which blood is composed are, further, precisely the same as those constituting the organisation of vegetables—namely, oxygen, hydrogen, carbon, and nitrogen, with sulphur, phosphorus, and metallic and earthy salts. Were this not the case, animals could not be supported on vegetable food, it being clearly ascertained that the animal economy is totally incapable of producing an elementary substance from matters which do not contain it. The fat of animals is widely different from the other parts of the body, not only in external appearance, but also in composition; it can hardly, indeed, be said to be organised, being an amorphous mass, and, further, being the only part of the system destitute of nitrogen. Nitrogen is, however, an essential constituent of all the nutritious parts of vegetables, or those capable of supporting animal life; it is, in fact, to the presence of this substance that the various kinds of grain and pulse owe the nutritive properties for which they are so highly valued. The nitrogenised compound

of plants—their fibrine, albumen, and caseine—may be obtained without difficulty by the amateur desirous of investigating their properties for himself. Vegetable fibrine may be obtained in a state of tolerable purity from Wheat-flour, by mechanical means, with water, it being insoluble. The albumen is obtained from the juices of various plants—cruciferous plants especially; and is found in great abundance also in Nuts and Almonds, in which a peculiar kind of oil takes the place of starch, so abundant in the seeds of graminaceous plants. Caseine is found in leguminous seeds, and, like albumen, is soluble in water; but the solution is not affected by heat. These three substances, though differing in their mechanical properties, are found to be identical in composition, not only with each other, but also with the chief constituents of blood—animal fibrine, and albumen. The salts of iron, present to a greater or less extent in vegetables, supply the blood with its colouring matter; and their earthy salts contain the ingredients necessary for the formation of bone.

The nitrogenised compounds of vegetables, therefore, are those only which supply the animal system with the materials required for reproduction or the supply of waste; and from the foregoing observations it will be seen how admirably they are adapted for that purpose. But it has been seen that a large expenditure of carbon and hydrogen is also taking place during every moment of existence, by respiration; and for the supply of these, uncombined with nitrogen, these compounds do not make provision. It is from vegetable substances, in which nitrogen is not present, that the supply to meet such expenditure must be obtained; and such substances, accordingly, form a large proportion of the food of graminaceous animals. In the earliest stages of existence these are supplied by the mother's milk, the caseine of which supplies the constituents of blood; and the butter, and remaining ingredient, known as sugar of milk, supply the carbon destined to be consumed in the respiratory process. As the young animal advances in growth, the nitrogenised compounds of plants furnish the former, and those abounding in starch, gum, or sugar, furnish the latter. The similarity of composition of these substances is well known; starch is, indeed, capable of being converted into sugar by very simple means, as in the process of malting, or by the addition of acids.—*J. Sproule.*

AGRICULTURAL IMPROVEMENTS.

(Continued from page 414.)

The weak points of the present system.—I believe I am quite correct in stating, that in our heavy land districts only 50 acres out of every 100 are available to produce food for man or profit to the farmer. Full 20 acres are consumed by the farm horses, 25 acres in long fallows growing nothing, but involving an outlay of nearly 5*l.* for each acre, and from five to ten acres occupied by banks, ditches, and farm buildings, leaving the tenant the produce of from 45 to 50 acres to pay all charges on 100 acres. I think it is high time such a system should be altered; that by perfect drainage, economy of manure, and superior cultivation, 12 acres should keep the horses, and all the rest (save the homestead and an external iron or wooden boundary fence) be available for corn or roots. That this is perfectly practicable is proved in Lincolnshire, parts of Scotland, and other highly cultivated districts. It is an easy and profitable way of adding 40 per cent. to our territory without the cost, cruelty, and trouble of conquest, military protection, or migration, with the still more pleasing reflection of not having to rend asunder those kindly ties of home, affection, and friendship, the want of which is bitterness in the cup of many an honest emigrant. With regard to fences, there appears a sort of veneration for them entirely unaccountable. I object to them *in toto*, except such as are of wood or iron. The banks on which they stand are privileged receptacles for every description of noxious weed, insect, bird, and vermin. Unhoed, unploughed, they furnish an annual crop of seed-weeds, carried by winds and by birds on the land, that defies all the farmer's attempts to clean it; that renders long fallowing necessary, and involves a perpetual expense in hoeing, and loss by superseding so much of the regular crops. In fact, in a variety of ways they involve a loss far beyond the annual interest, for the repair of wood or iron fences, or charge for their gradual deterioration. I object even to well-regulated thorn fences, on the score of exhaustion by their roots, the expense of clipping, and the impossibility of disturbing the ground on which they stand. But my dislike amounts to positive indignation at seeing the generality of fences occupying one-tenth of the land that should grow our food, and employ our labour and our capital, spoiling another tenth by their supply of weeds and vermin; their interruption of air and light—to say nothing of the facilities they afford for fraud and neglect of duty, and the difficulties they interpose to a ready supervision by the farmer or his bailiff. If shelter is needed at particular seasons, it can readily be afforded by other means. In cold and elevated districts, well-regulated plantation-belts are essential, but cannot be required in our midland and southern counties, where there should be well-arranged homesteads, through which no north or east wind should be permitted to breathe—much less blow.

Another gross oversight is in the placement of buildings. How often is profit unwittingly sacrificed to minor considerations! To gain the view of a road, or because the premises would show better, we starve our cattle with a north or east aspect, shutting out the sunny warmth. Gutters to the buildings or drainage to the yard itself are seldom thought of, it being a *sine qud non* that a farm-yard should be both cold and wet.

There are many other matters that strike me as requiring amendment. Time is money (at least it is paid for in money), therefore light spring carts and improved implements, with active but strong horses, will necessarily make quick smart men; but this cannot be till we drain our lands, knock down our fences, and substitute dry firm land for knee-deep muddy lanes. If, as a matter of calculation, there are 40 points in Agriculture (and there are more) a saving of one-half per cent. in each will clearly make a difference of 20 per cent.

I have been found fault with for removing the trees, "spoiling the landscape and beauties of the country," as if farming were not a business, and carried on for profit rather than appearance: one might almost as properly suggest to the manufacturer costly and spacious ornaments to take the place of his spindles and machinery. Besides, perfect drainage of house, buildings, or land, is impossible where you have trees and fences; their roots will travel many yards in search of moisture, will seise on and occupy a drain (as a Vine-root would on a bone), and effectually choke it. I know an instance where the root of a Pear-tree followed the retreating water of a well 40 feet.

I have been censured for erecting so spacious a barn, and for building it with bricks on the plea of its endangering the sample in a damp season. This objection is untenable, the roof having gutters, and the ground on which it stands being perfectly drained inside and out, a matter of great importance, as water rises by capillary attraction. We have also about four dozen of iron air-bricks as ventilators, and take care not to fill it entirely, but leave a space for ventilation between the corn and the roof. Last season, with its contents of twenty-five acres, the sample was excellent, and having just hastily filled it before that heavy rain which wetted most of the stacks through, and deteriorated the samples five shillings a quarter, it saved us at least 20*l.*

Threshing machines are valued principally for their facility of conversion, and the quantity they perform. To me their more perfect extraction of the grain, and prevention of fraud or neglect, are far more important considerations. A single grain of wheat in fifty is two pounds in every hundred, or five shillings per acre, and an examination of straw whenever we have the opportunity, gives us fearful evidence of what is lost by imperfect threshing and shaking.

I frequently see with pain the farmer engaged in laborious pursuits (the work of his labourers), when his time should be much more profitably employed in keeping correct and daily accounts of all his monetary and other transactions, so that, by a reference to each particular department, he could at once detect generally, or in detail, the weak points that require amending.

I am not one of those who think a farmer more likely to succeed for dressing or acting like one of his common labourers—it is the mind and calculation makes the man.

The Non-application of Capital to Land Improvements.—It seems singular that in this age of superabundant capital and superfluous unemployed labour, there should never have been a concentration of wealth for the purpose of improvement in Agriculture. We have had companies with unlimited capital for the wildest and most unprofitable schemes, as well as the most trivial. We lend without compunction our hundreds of millions to employ the labour and strengthen the hands of foreign nations, who are now our competitors in Agriculture, commerce, and manufactures, and who may be to-morrow our greatest enemies in warfare. It seems like a national disgrace, that whilst we have had companies for almost everything, from a railway to a steam-washing and milk company, we have had no "Improvement of our Native Land Company." And yet there is nothing so grateful as the soil—so safe—so permanent—so large in pecuniary amount—so honourable and pleasant in pursuit.

There may appear difficulties in the way—but in what undertakings are there not? Under a well-arranged Act of Parliament, thousands of landlords whose mortgaged estates are now almost an incumbrance to them, would readily avail themselves of an opportunity that would render their sterile lands valuable properties, increase the capital employed on them, improve the condition and diminish the competition of our farmers, reduce pauperism and discontent by furnishing employment to the willing labourer without emigration, and keep in our own country and for our own benefit that large sum annually paid for foreign corn. If there had been such a company, I, for one, would have invested my spare capital in it; but there not being one, I have carried out individually, at no small personal trouble and thought, those improvements which I hope to see some day effected, as a matter of course, by a well-regulated charter of associated capitalists, who will derive not only a good pecuniary benefit, but the more enviable gratification of having conferred a valuable boon on their fellow countrymen.—*J. J. Mechi*, 4, *Leadenhall street, London.*

P.S. I am preparing drawings and ground plans of my buildings and machinery, which, with copies of my letters, I shall be happy to give to any gentleman interested in agriculture. The plans and designs are my own. The general application of the expenditure is as follows:—

Draining, fencing, levelling, ditching, and roads	£2300	0	0
Barn, stabling, tanks, sheds, yards, &c.	2000	0	0
House and offices	1000	0	0
Machinery, implements, steam apparatus, &c.	500	0	0
Manure, marl, &c.	200	0	0
	£6000	0	0

The item for house has been objected to, but I have yet to learn that a farmer is not entitled to be as well housed as a tradesman or manufacturer, and I am convinced brick and slate buildings are ultimately much cheaper than board and thatch. I would caution gentlemen who may visit my farm this year, against raising their expectations too high, for although the land is all cropped and doing well, considering the dry season, I would have them remember that last year it was considered the poorest farm in Essex; that since January 1843, we have cut 80 miles of drains, and spread their contents (nasty yellow stiff loam) on the surface; that we have removed 5000 yards of banks and fences, filled up the ditches, cut new ditches (on the heavy land there should be one every seven or eight acres), made new roads, cut down and converted between 200 and 300 trees, carted across the land 60,000 bushels of stones, 300,000 drain-pipes, 400,000 bricks, 200 loads of timber, slates, iron, stone, sand, lime, and building materials; that we have removed all the old buildings, and erected new ones on a different site; that everything has been out of order and out of time, and that all this was done in sixteen months, without long fallowing a single field.

ON MINERAL AND INORGANIC MANURES.

No. XX.

By Professor Charles Sprengel.

(*Continued from page* 415.)

The main requisite is to mix the clay and loam intimately with the soil, the reasons of which have been stated under the head of marl. However little difficulty there may be to mix loam with the furrow-slice, it is different with clay, on which account the former is always preferable, especially if marshy soils are to be manured. The surest way to succeed with clay is to use only small quantities at once; if, therefore, 300,000 lbs. are intended for one acre, it is best to take only 100,000 lbs. every five or six years. It must always remain spread on the surface of the field during winter, as the absorbed and then frozen water will best convert it into a powder. If, however, humic earth is to be had, nothing better can be done than to mix it with the clay or loam before they are used in alternate layers in large heaps, to let them remain so for some time, and to work it up once or twice, by which the clay will be loosened and so more easily mixed with the soil. By these means a soil sufficient in humus will be supplied with that amount of humic acid which is required for decomposing the silicates of the clay. In some places clay or loam is also put into heaps in alternate layers with manure; but in order that both these substances may become thereby mixed, the heaps must be left standing at least a year, and worked up during this period several times. In other places they construct of the loam, intended to improve the fields, a wall three feet high around the dung sink; on the top of this wall is a gutter, in which at times the superfluous liquid is poured. In this way the liquid manure is consumed, and after the lapse of a year an earth is obtained, which being saturated with many powerful ingredients, will act very powerfully; still, it is to be remembered, that as the loam is deficient in humus, much ammonia will always be volatilised.

Fields which have been manured with loam or clay, and have borne one crop, are generally left afterwards for pasture, as time will effect the mixing much better than the most careful work. Loam contains mostly more soda, potash, gypsum, common salt, &c., in the lower strata than in the higher ones, and it is better to use the former; on this subject, however, nothing but a chemical analysis can yield certain data. Clay, on the other hand, does not contain in its lower strata any more of the easily soluble mineral substances, as the water cannot filter through them.

Manuring with Loam and Clay in a Roasted State.—A long experience has proved, especially in Ireland and Scotland, that the manuring properties of loam and clay are considerably increased, if exposed previously to the action of fire. The advantage which this operation will produce with a good material and in appropriate localities, is striking; and it has even gone so far, that some have asserted, that manuring with burnt clay renders manuring with dung superfluous. Although this assertion is not borne out by fact, still it cannot be doubted that by roasted clay or loam one substance is conveyed to the soil, which is a most important ingredient of dung, viz. nitrogen. Because, if a loam or clay is roasted, which contain already protoxide of iron or manganese, or in which these substances are formed during burning from the oxide of iron or manganese, ammonia will be formed the moment that water and the nitrogen of the atmospheric air have access, as the protoxides of iron and manganese decompose the water and combine with its oxygen into an oxide, by which the hydrogen will be set free, which will then unite with the nitrogen of the air into ammonia, the latter being either condensed in the pores of the clay, or received by the moisture which is at hand. That this process really takes place, I have found by many experiments, on which account I recommend that sort of clay or loam for roasting which are rich in iron or manganese. A calculation made by me shows, that if the clay or loam used for the manuring of one acre, contains 1000 lbs. protoxide of iron or manganese, there is a possibility that 100 lbs. of ammonia will be formed, which (as we know already) will produce a great effect. It might be believed, that the above two protoxides, which will be conveyed by the roasted clay into the soil, will rather injure than benefit vegetation, but this is not the case, as both will lose by heat the property of being easily dissolved in either carbonic or humic acid. Roasting has, more-

ger, another essential use, viz. that of loosening the silicates contained in the loam or clay, by which they become more easily soluble in carbonic or humic acid, and converted into vegetable nourishment. The more silicates, therefore, the clay or loam used contains, the greater will be the utility of roasting. From what has been said it will be seen that a soil, to be benefited by the application of roasted clay, must not be deficient in humic acid, which has partly to transfer the bases of the silicates into the plants, and partly to neutralise and chemically bind the ammonia which will be formed in the clay. If, therefore, the manuring with roasted clay has not turned out well in all places, it was caused either by the clay not possessing enough iron, manganese, or silicates, or by the soil being deficient in free humic acid. The effect of roasted clay will be, moreover, the greater, the more gypsum, common salt, and phosphoric salts it contains, as those substances (independently of its other component parts) are most powerful nutriments of plants.

Loam or clay which are to be exposed to the action of fire must be always of that compactness that the lumps will not crumble to pieces during burning, else fire could not properly act throughout them. The roasting is either performed in a sort of a funnel-shaped oven, built for the purpose on the grates on which the clay is placed, and fire made underneath, or it may be put in high heaps, with wood, peat, and such like, which are then lighted. If ovens are used for roasting, the lumps of clay which are biggest and have most consistency are placed first on the grate, and the smaller ones on the top; the whole, however, must always be built up very loosely, so that the heat and smoke of the fuel, be this wood, thorns, peat, &c., can pass to the uppermost layer. The different contrivances for burning clay are to be found in my work on Cultivation, to which the reader may refer.

SKETCHES OF EAST LOTHIAN HUSBANDRY.

(Farm-yard Dung, *Continued from page* 415.)

Some of the most intelligent farmers in the county dung considerable portions of their fields, intended for Beans and Turnips, on the stubble, immediately before giving it the winter furrow; and this practice appears to be fast gaining ground. The soiling of working horses in the stables, on green Clover and Rye-grass, during the summer months, is common in most parts of the county, and a similar mode of fattening cattle for the butcher is also becoming pretty general. The Grass for the latter is cut and given to them in the fold-yards, with a small allowance either of oil-cake or Bean-meal. The advantages of this method of summer feeding are numerous and apparent; but, perhaps, the chief benefit of soiling arises from the large quantity of excellent dung thereby produced. All the dung thus made during the summer months is, in most instances, applied either as a top-dressing to Vetch-land designed for Wheat, or spread upon the stubble and ploughed in with the winter furrow in order to clear the yards for their winter occupants.

The great advantages of winter dunging are, that it economises time when the season of more active labour comes on, and that the dung is thereby better incorporated with the land than it could be when applied with drill crops. Steep hilly fields, intended for green crops in the following year, are almost invariably dunged on the stubble (whenever dung is given); the cartage being then much more easily effected and with less injury to the land than at any subsequent period. In the case of Bean-land, the whole allowance of manure is commonly given before the first ploughing, but when the field is designed for Turnips, only half the intended quantity is at that time applied; when the seeds are being sown, the remainder of the dung is given in the ordinary way; or, what is now very common, instead of dung, a small quantity of bone-dust, rape-dust, or guano, is added at seed-time. A fair average allowance, per imperial acre, seems to be from 10 to 12 loads of dung ploughed in with the stubble-furrow, and 3½ cwt. to 4 cwt. of rape-dust, or about 6 bushels of bone-dust, given when sowing the Turnip-seeds. When the dung laid on the stubble is not sufficiently fermented, a little boy attends to each plough for the purpose of clearing the irons when entangled with the rough dung, so as to get all of it completely covered in. This is a point of much consequence with most of the farmers here.

Farm-yard dung is applied to the land while undergoing the process of summer-fallow, or as a manure with Beans, Potatoes, Turnips, or other green crops; when used with drilled crops, the carts are driven along the intervals, and the dung pulled out into small heaps 6 or 7 yards asunder, by a man specially appointed for that purpose, and provided with a dung-drag. In East Lothian, where economy appears to be the perpetual watchword of every farmer, it is customary to have a few boys for leading the horses from the dung-heap to the drills; a man drags out the dung, according to the quantity to be applied, and the boys return with the empty carts. Much attention is now everywhere bestowed upon the equal distribution of the dung in the drills. The spreading is always done by women; three drills are taken together, a woman to each, and the steward or some careful person goes behind them in order to correct any defects in the spreading. When the drills are very long, and the work going actively forward, it is usual to have two parties of spreaders, commencing at opposite ends of the drills, and meeting about midway. Most of the farmers are very solicitous to have the dung covered in as soon after spreading as possible, in order to prevent its evaporation; and in warm, sunny weather none is left uncovered, either spread, or in heaps between yokings, or during the time allotted for rest.

The quantity of farmyard dung applied with the different crops varies, of course, according to the quality of the land, and the whole stock of manure at the farmer's command. In former times 20 to 24 double loads were by no means an uncommon allowance; but this valuable substance is now much better economised. The practice of the best farmers is to give a liberal but limited quantity frequently, not saturating the land at one time with manure, and neglecting it for many years afterwards, but to maintain a uniform or increasing fertility in the soil. For common Turnips, 12 to 14 loads, of about 18 cwt. each, is the quantity generally given per acre. Potatoes and Swedish Turnips commonly receive a few loads additional, say 15 to 17 cart-loads per acre.

Lime.—An abundant supply of limestone is amongst the natural advantages possessed by East Lothian for successful agriculture. What is termed the mountain limestone abounds in many parts of the county, particularly in the parishes of Dunbar, Preston-Kirk, North Berwick, and Salton, where kilns for burning it are kept going during certain periods of the year. The quantity of lime formerly used in this shire was very considerable, it having been found of the greatest efficacy on the strong clayey land; it is employed now only to a very limited extent compared with what was formerly used. More than one-half of the kilns are at present idle, very few of the farmers applying lime in any considerable quantities to the land. This, doubtless, arises from the circumstance that land once thoroughly limed (as every farm here has been) derives comparatively little advantage, and may possibly be injured from further application of this valuable substance, for a considerable period after the first dose.

Lime is usually conveyed from the kiln to the fields during the months of July and August; or between the completion of Turnip sowing and the commencement of the harvest operations. It is applied to land at all stages of the rotation; but it is during the season in which it is in fallow that lime can be used with the greatest advantage. Sometimes it is applied to the Turnip-crop, in which case it is either spread upon the land and harrowed in before forming the drills, or applied at a subsequent period, when the operations of the horse-hoe and drill-grubber necessary for the crop sufficiently incorporates it with the soil.

The usual mode of managing lime is as follows:—When conveyed from the kilns to the field to which it is to be applied, it is laid down in small heaps at regular intervals, and immediately covered with earth; a gradual slacking speedily commences, and the stones soon crumble down into fine powder; after which it is spread upon the land and ploughed in with a shallow furrow. On heavy soils 90 to 100 bushels of newly-calcined lime are reckoned a moderate dose per acre; on lighter soils a less; and in very stiff clays a greater quantity is generally applied.

Composts.—Lime is now principally used in mixtures with earthy or vegetable substances. The Quickens or Couch-grass collected off the land while in fallow or preparing for fallow crops, are in most cases heaped up in some convenient corner of the field, where they are allowed to remain for a few years, until their strong vegetative powers are nearly destroyed, and then compounded with a good proportion of hot lime. Composts thus formed are found to be a valuable top-dressing either for Grass or arable land. Lime is mixed up with waste, earth-scourings of ditches, scrapings of road-sides, &c. In addition to the compost-heaps thus formed in the fields, others are also formed in convenient spots near the farm-steading, to which the cleanings of the poultry-house, scrapings of roads, coal-ashes, and offal of every description are regularly taken.

Sea-weed.—The farmers along the coast from North-Berwick eastward, avail themselves of the large quantities of sea-weed or sea-ware, (Algæ marinæ) driven ashore during the winter and spring months. It is considered a very useful species of manure for the light dry soils adjacent to the coast, but is not found advantageous on clays. Sea-ware is immediate, but transient in its effects; seldom lasting for a longer period than a single crop. It is applied to the land as fresh as possible, being always spread upon the field when brought from the sea, and is used at all times in which it can be obtained. It has invariably been found highly efficacious as a top-dressing to Grass lands, and also as a manure for Potatoes, but the crop, though bulky, is generally inferior in quality; sea-ware is seldom mixed with other substances.

Bone-dust.—Large quantities of this valuable substance have long been employed with the best effects in this county, for the manuring of Turnips on light dry soils, to which it seems best adapted. The quantity of bone-dust annually used has considerably decreased within the last few years, in consequence of the introduction of guano, and other fertilisers. The bones are allowed to undergo a slight degree of fermentation before being applied. For this purpose they are made up into a heap in some convenient spot about the steading or the stack-yard, and covered with straw. The addition of a small quantity of water during dry weather accelerates their fermentation. The only crop to which bone-dust is here applied, is Turnips; when used unmixed with any other substance, the quantity usually given is two quarters per acre. But bone-dust is now very frequently combined with other manures, such as farm-yard dung, rape-dust, &c.; mixing it with finely-sifted coal-ashes, and allowing the mass to ferment, appears to be a most judicious and economical plan. The bones are scattered along the hollows of the drills by the hand, the women employed at the work carrying a small quantity in their canvass aprons, and a boy attends to supply them with bones when required. The drills are not formed as deep for bone-dust, as when farm-yard dung is applied. An apparatus attached to the Turnip-sowing machine is used in some places for depositing the bones while sowing the seed, but this double machine is not much employed. Some farmers are now beginning to sprinkle the bone-dust before using it, with dilute sulphuric acid; and a few are this year trying the solution of bones in sulphuric acid, which has produced such astonishing results in other districts. The price of bone-dust is here, 2*s.* 4*d.* to 2*s.* 6*d.* per bushel of about 47lbs.

Rape-dust.—This is another species of manure very much used in this county. It is applied with advantage to almost every crop, but is considered to be best adapted to Turnips. When used with this crop it is commonly mixed with bone-dust, as has been already mentioned, or with farm-yard dung, guano, gypsum, &c. When used alone, 8 to 10 cwt. is the quantity usually applied to the acre. Rape-dust is frequently employed as a top-dressing to Wheat lands, in which case it is scattered upon the surface while sowing the seed, and covered in by the harrows. It is considered to be better suited to strong, stiff soils, than to those of a light, dry, and friable quality. Its price is 5*l.* 10*s.* per ton: a bushel weighs about 52 lbs.

Guano, although but recently introduced into East Lothian husbandry, is now very extensively used as a manure for Turnips and Potatoes, and also, though to a less extent, as a top-dressing to Grass lands and corn-crops. It appears from the results of the various trials which have been here made with it, that genuine guano is a most powerful fertiliser. In applying guano to the Turnip-crop, it is always strewed along the hollow of the drills immediately before sowing the seed; the drills are then reversed in the same manner as when dung is used, and the seed sown by the Turnip-sowing machine. A similar mode of application is generally pursued in the case of Potatoes, and the sets planted in contact with the guano. I am aware that many intelligent men recommend the interposition of an inch or so of soil between the guano and the sets, and that some writers on this manure even maintain that it should never be applied in immediate contact with any seeds. It may be useful, however, to state, that so far as I am aware no such precaution is observed by the generality of East Lothian farmers. Indeed, I personally witnessed several acres of Potatoes as well as Turnips manured by guano last year, and the sets were planted on the manure precisely as in the case of dung. In one instance of a Potato-crop manured in this way by guano, the quantity of Potatoes obtained from the lot to which guano was applied, was very nearly double the produce of a similarly-sized lot manured by the usual quantity of well-fermented farm-yard dung. The quantity applied was 3½ cwt. to the acre, the soil a strong clay, thorough-drained. This experiment, to be afterwards noticed, came under my own observation; I can, therefore, vouch for its authenticity.

Guano is this year applied to a very considerable extent in the manuring of Potatoes and Turnips, and so far as can be yet judged from the former crop, with success. Before using this manure it is finely sifted, and all the lumps well broken and re-sifted. When used alone, the usual quantity applied is 2 cwt. to 3 cwt. per acre for Turnips, and from 3 to 4 cwt. for Potatoes. Price 11*l.* per ton.

Gypsum.—This substance has been, but is not now, much used as a manure in this county. The crops to which gypsum is applied are Turnips and Potatoes. It is also used as a top-dressing to Clover and Corn crops. When used for Turnips or Potatoes it is generally combined with other manures, such as guano, rape-dust, &c., and when applied to Corn-crops it is either scattered upon the surface and harrowed in with the seed in the same manner as rape-dust, or sown at a subsequent period. Moist weather is, of course, preferred for applying gypsum. The quantity usually given when used alone is 2½ to 3 cwt. per acre. Some farmers in this quarter are now beginning to strew a little gypsum on the farmyard dung while being turned over, before using, and a few also sprinkle the stable-floor with it every morning after being cleaned. Potato sets are now generally powdered over with gypsum before planting. Price 3*l.* per ton; weight per bushel, 91 lbs.

Nitrate of Soda.—Until the introduction of guano, nitrate of soda engaged much attention, and was supposed to possess very strong fertilising properties. Although not so much employed now as formerly, it is still applied to some extent principally as a top-dressing to Corn-crops presenting a weakly stunted appearance. It is also occasionally applied to Grass lands. The quantity commonly used is 1 to 1½ cwt. per acre. Its high price, 20*l.* per ton, is an obstacle to its extended use. Besides the different species of manures now enumerated, there are several others, such as soot, nitrate of potash, muriate of soda, sulphate of soda, and sulphate of magnesia, occasionally used. They are not, however, employed in any considerable quantities, and the results of the applications which have been hitherto made with them, have been generally contradictory and indecisive.—*T. Sullivan.*

POTATO STARCH.

Of all the starch-bearing plants, the Potato is that which affords the greatest quantity of produce from a given surface of land. The different varieties of Potato differ, however, very much; and the following table will indicate exactly the circumstances of the most important kinds. The plants were grown all on the same

quality of land, and the analyses are by Peyen, the eminent French Agricultural chemist.

Varieties.	1 cwt. of tubers produced.	1 statute acre produced.	100 parts contained		
			Water	Starch.	Gluten & Fibre.
Rohan	56 cwt.	14½ tons.	75 2	16.6	8.2
Large Yellow	37 ,,	9¼ ,,	68.7	23.3	8 0
Scotch	28 ,,	8 ,,	69 9	22 0	8 2
Slow Island	56 ,,	14 ,,	79.4	12.7	8.3
Lapstones	32 ,,	8 ,,	71.2	20 6	8 2
Albertus	48 ,,	10 ,,	77 8	14 0	8.2
Duvillers	40 ,,	10 ,,	78 9	11 6	8 1

These results show that the quantity of starch is not largest necessarily in those varieties which yield the greatest weight of tubers. Thus an acre of large yellow Potatoes, which gives but 9¼ tons of tubers, produces 2 tons 8 cwt. of starch, whilst the acre of Slow Island Potatoes, which produce 14 tons of tubers, gives only 1 ton 15 cwt. of starch. In cultivating the plant for the purpose of extracting this material, it is therefore of the greatest importance to attend to the existence of these varieties.

The preparation of starch from the Potato is an operation of a very simple kind, and well adapted for the industry of the smaller towns, where Potatoes would be usually cheap. It requires only the most ordinary skill, and involves little machinery, the greatest nicety in it being perfect cleanliness, and care that the washings be well finished, and with pure water. The operations of the manufacture are—1st. Washing the tubers; 2d Rasping them to a pulp, 3d. Pressing the pulp; 4th. Washing the rough starch; 5th. Draining and drying the produce. 6th. Bolting and storing.

Of these operations it is only necessary to notice one or two in detail.

The breaking up of the tubers into a pulp is accomplished by means of cutting cylinders, to which the Potatoes are supplied from a hopper, nearly as grain is to a mill. The more rapidly the cutters move, the finer is the pulp produced, and the more perfect the subsequent extraction of the starch, and hence they generally make 600 to 900 turns in the minute, and as these cylinders are usually about 20 inches in diameter, their periphery moves with a velocity of from 1000 to 1500 yards in a minute. A single cylinder of the above dimensions and of 16 inches long, making 800 revolutions in a minute, will reduce to pulp about 50 bushels of Potatoes per hour. This for the 12 working hours is about 10 tons.

The object of pressing or sifting the pulp is to separate the fecula from all foreign substances, especially from the cellular tissue, which, being coarser, rests on the sieve through which the fine starch passes. A great variety of mechanical arrangements have been constructed for this purpose, which fulfil their object, but there remains always with the residual pulp two or three per cent. of the fecula which it is impossible to obtain.

The starch, diffused in the current of water by which it has been washed out from the pulp, is run into vats, where it gradually settles. When the water has become quite clear, it is poured off, and fresh water put on: finally, the starch is taken out and dried on floors. As it consolidates into very firm masses, it requires finally to be broken down by a kind of bolting machine, before being put up for sale.

It is necessary to add some valuation of the money circumstances of this manufacture. An acre of Potatoes, very well manured, and on good land, may be considered to produce nine tons of Potatoes, which may be taken as worth 15*l.* From such Potatoes, it may be expected that, with proper care, 15 per cent. of pure starch may be extracted, and hence, from the 9 tons, 27 cwt. The market price of the Potato starch is variable: it has been 30*s.* per cwt., but it only on rare occasions falls below 20*s.* Taking it at 20*s.* the value of the produce of the acre becomes 27*l.*, leaving for cost of manufacture and profit 12*l.* and of this certainly a large proportion should be profit. I do not think I value the Potatoes too low, as, of course, the manufacturer, if not himself the grower, would purchase for store at proper seasons, and avail himself of the lowest terms.

But this calculation of advantage supposes the starch to be the only valuable matter extracted from the Potato, which is far from being the case. The residual pulp, which, when perfectly dry, amounts to about five per cent. of the entire weight of the tubers, has been found a most nourishing food; in fact, it contains most of the nutritious part of the root, the mere starch which was removed being comparatively much less important in nutrition. This pulp, if moist, putrefies rapidly, it is rich in nitrogen, and in fact analogous to animal substances in composition, and consequently, if not required for food, would form, by being made with lime and clay into a compost, a manure of great value, and especially suitable for restoring to the Potato ground the substances which the crop in growing had removed. The waters, with which the pulp is first washed, dissolve a quantity of the soluble constituents of the Potato. They rapidly putrefy, and exhale an odour so rotten as to have rendered the starch factories near Paris a nuisance to the neighbourhood, until it was suggested to employ this water as a manure, which has been perfectly successful, and at once removed an important draw-back to this branch of industry, and materially increased the fertility of the surrounding farms.

If these residues be properly economised, it is evident that the cost of growing the Potatoes may be materially diminished. The atmosphere, in itself, furnishes in fact carbonic acid and water from which the starch is manufactured, and if the matters taken from the soil in each crop, be returned to it in the residues of the manufacture, the cost of manure, so heavy for this particular plant, may be almost entirely obviated.

In this country, where the extensive use and culture of the Potato have become almost a national characteristic; where labour not requiring considerable skill is to be had so cheap; where Potatoes are at their minimum price; it is not merely to be regretted but absolutely disgraceful to ourselves, that we import from Scotland and from France, a large quantity of the Potato starch to be consumed in Ireland.

The starch is not the only material extracted from Potatoes, and extensively available in the arts. The Potato itself reduced to flour, is at present extensively employed upon the Continent in the preparation of a very wholesome quality of bread, and the starch itself is consumed in making confectionary, jellies, sago, tapioca, in thickening paper, and in a variety of uses, by which such quantities of it are employed as to render its manufacture a really important and extensive department of industry. The most remarkable of all the applications of Potato starch is, however, one to which the excise laws of this country would probably present invincible impediments. It is the preparation of sugar and of spirits. Under the influence of certain chemical agents, simple, yet peculiar in their action, and to which it would not be my province here to refer in detail, starch is converted into sugar, and this sugar, by fermentation, yields spirits. On the Continent the manufacture of sugar from corn is almost abandoned. Potato spirit is almost universally used; and in flavour it so resembles brandy that it is well known that a large quantity of the French brandy brought into London, is Potato spirit from Hamburgh coloured with burned sugar.—[From Professor Kane's lately published work, *The Industrial Resources of Ireland.*]

Home Correspondence.

Spilsby Union Workhouse.—Account of Pigs, &c. &c., purchased and sold by the guardians of the above Union, from 5th Dec., 1842, to the 14th Dec., 1843.

Date.	Bought	Amount	Date.	Sold.	Amount
		£ s. d.			£ s. d.
5 Dec., 1842	To 6 Pigs	10 13 0	2 Jan., 1843	By 4 Pigs	6 10 0
2 Jan., 1843	,, 4 Pigs	4 0 0	24 March	,, 2 Pigs	10 0 0
24 March	,, Butcher for Killing	0 4 0	1 April	,, 2 Pigs	2 10 0
1 April	,, Bull for Barley Meal	1 0 0	27 June	,, 1 Pig	5 18 0
1 July	,, 4 Pigs	3 12 0	8th Oct.	,, 1 Pig	5 18 0
,,	,, Butcher for Killing	0 3 0	25 Nov.	,, 1 Pig	4 15 0
29 Sept.	,, Bull for Barley Meal	0 19 6	14 Dec.	,, 1 Pig	5 18 0
8th Oct.	,, Butcher for Killing	0 3 0	,,	,, 2 Pigs	10 5 7
,,	,, Bull for Barley	0 19 6	,,	Stock in hand, 4 P.Cs, Meal, &c.	4 18 0
6 Nov.	,, 4 Pigs	3 12 0			27 18 1
,,	,, Butcher for Killing	0 3 0			
25 Nov.	,, Bull for Barley Meal	0 19 6			
14 Dec.	,, 3 Sacks Barley	2 2 0			
,,	,, Butcher for Killing	0 3 0			
,,	,, Do. do.	0 3 0			
	Balance	25 16 1			
		£ 53 18 1			£ 53 18 1

For the information of the Board of Guardians, I beg to state that the description of Potatoes on which the Pigs were fed the preceding three years of this account, were sold for the sum of 2*l.* 7*s.* 8*d.* annually, and that the swill brought in the sum of 1*l.* per annum: *M. M'Intosh, Master.*—*Wm. B. Wingate, Guardian, Hareby.*

Steeping Seeds.— As a reader of the *Gardeners' Chronicle*, I have perused Mr. Campbell's account of his "Corn-producing Liquids." If Mr. Campbell will refer to "Ellis's Practical Farmer, or Hertfordshire Husbandman," 4th edition, published 1742, at page 25, he will find the following, which I copy verbatim:—"A prepared Liquor to steep Barley, &c. for sowing.—Take a quantity of the grain you are to sow, a bushel, more or less, and boil it in a copper (to a bushel put five pails-full of water) till the grain bursts, and the water thereby becomes impregnated with the essential salt of such grain; strain your liquor, and give the corn to the poultry; thus there may be no waste. While the liquor is hot, put three pounds of nitre, that it may dissolve, and add four or five pails-full of water which drains from the dunghill, or urine of any sort. And in this prepared liquor steep the grain about 24 hours. Let the liquor be four inches above the corn in the fat (vat?), because the corn will swell and imbibe it. Then take the grain and let it dry in the shade, or sift lime over it, which will dry it sooner, and sow one-third less than usual, and you will assuredly find the benefit by twenty fold; I have actually tried it with Barley, and had commonly thirty ears from one root. The liquor that is left will serve again with fresh addition, or is admirable to water a garden. About three pounds of nitre, as above, is sufficient for as much as will sow an acre or more; and what is left is still the stronger by being the groundwork of the next addition of nitre. You must pour your prepared liquor warm upon the corn, and stop all as close as you can, for this causes the salts to be put in motion. Imbibe the corn one evening and take it out to dry the next, and by morning it will be fit to sow; at the same time you may prepare more corn for the next day, and so on till the season is over. The excellency of this receipt is obvious in several cases. 1. It saves seed. 2. It in some measure supplies the defect of full dressing the land, by the seed being full of riches when sown. 3. It produces greater quantity than ordinary. Lastly, by thus steeping, the grain will make its way out of the ground if drought should succeed; whereas that sown dry, and especially that which lies nearest the surface, will continue sometimes till Midsummer, in a dry summer, before it grows, and thereby often occasions the loss of great part of the crop, for when one part is ripe the other is green at harvest, which was the very case almost all over the nation this last summer, 1731; when I was so fortunate as to sow, for the first time, the Barley after this receipt, which brought my crop up more even than my neighbours, to the admiration of the beholders, and had more on an acre than ever I had; I believe I may say as much again."—*A Welsh Farmer.*

Potatoes.—I have grown Potatoes with many different kinds of manure, both fresh and decayed; I have planted them in deep drills and shallow; I have tried earthing them up, and I have tried them without earthing up; I have used freshly-cut Grass in planting them, and I once had an excellent crop, by merely putting chopped or bruised Cabbage-leaves in the drills with the sets; this last plan I believe to be very beneficial to the crops, more especially in a dry season. But the system I now pursue is one which I have employed many years, and always with a good result. The main point to be attended to for insuring a good crop, must of necessity be the having good and properly-saved seed. My method is this:—At the usual season for raising the Potatoes, I cause them to be ploughed or dug up, and the quantity I reserve for seed is strewed thinly on the surface of the ground, in any shady place; secure, of course, from the invasion of cattle, &c. Here I suffer them to remain exposed to the varied influences of the atmosphere, until they become quite green, and the texture of the Potato perfectly firm, which will commonly be in about three weeks; during this time they require turning occasionally. I pay no regard as to whether the tubers be ripe or unripe when they are taken up, as I consider that the above treatment is an efficient method of ripening or harvesting the seed. When they are perfectly fit to store, I put them in a cool, dry place, covering them with plenty of clean straw; and here they remain till the time for planting arrives. I always, if possible, preserve the first-started shoots, as they grow stronger, and will always produce better crops of large tubers, with fewer small or refuse Potatoes: if the first shoots are destroyed, the succeeding ones are weaker; and consequently can only produce Potatoes in proportion to their strength. As regards planting, I have tried them whole, as well as cut; the former plan I practise in part, but I believe the best plan is, to cut a small piece about the size of a shilling off each seed Potatoe just before planting. (!) I believe this renders them much more prolific; the reason for which I imagine to be, that the old set, by being cut gradually decays, as the plants grow and the young tubers advance in size; whereas the whole sets are much longer in decaying. "J. M'I." prepares his ground well, but I do not agree with his not using the hoe, as I think the use of that implement to be of benefit to every crop. I always use manure when I can procure it, and pay little regard as to quality, but always prefer it when not too much decayed.—*J. L. Snow, Swanton, Bedale.*

Potatoes.—In my communication to you of the 12th inst., I forgot to mention that, agreeably to your wish in a previous Number, I tried the experiment with part of a ridge of early (Fox) Potatoes. I nipped off three joints from the top of the plants, and selected six yards from out of the middle; the result was, that those which were untouched were larger and heavier by nearly one-third, from the same measurement of ground.—*F. N.*

Diseases of Wheat.—Not having as yet seen in your paper any account satisfactory to myself as to the causes of the bunt in Wheat, I beg to offer a few observations which I have noticed for the last two years on my own Wheat, as well as on that of my neighbours, it being now the time of year that your numerous Correspondents have an opportunity of making like observations, and of communicating their experience. If I mistake not, Wheat is an hermaphrodite plant, and of the genus Triticum, class Triandria, order Monogynia. Consequently each kernel of Wheat has three male and one female parts of fructification necessary to the setting of the seed. A few days after a field of Wheat is out of flower you will soon perceive the bunty ears, the kernels of which appear to stand thinner on the stem than the others. Some plants have all bunts, and some partly sound ears and partly bunts; and some ears have good kernels and bunts on the same stem. On examination of the bunty kernel, I find that the stamens and anthers never break through the chaff, but burst inside the chaff, and thus the flowers never receive the influence of the sun and air necessary to the setting of the seed, or necessary to the process of fructification, and thus the seed becomes abortive. Now, if this be the cause of bunts, I am at a loss to understand what effect the dressing of Wheat before sowing, with brine, mercury, lime, &c., can have to prevent this disease. I once knew a field all dressed alike and all sown one day; the field was clear from bunts, with the exception of a strip about six yards through the middle, and that was nearly altogether bunty; this strip was where an old road had once been. I have sometimes attributed this disease to frost or blight, which might have been the cause here, as

very probably that part of the field being stiff and hard, the Wheat was not in flower at the same time as on the other part of the field, and being at a different stage of growth, a frost or blight might have a very partial effect I hope that some of your Correspondents will make minute observations, and communicate the results for the information of the agricultural public.—*Richard Rilott.*

Diseases in Wheat.—I send you herewith four ears of Wheat taken from a field in the county of Essex, which are seriously affected with disease. You will perceive that more than one-third of the ear (in one case about half) in length from the top is white and dead. The crop from which these specimens were taken was partially affected by the disease, and the owner of it observed other crops in his neighbourhood similarly affected. Is not the whole ear affected by the disease, and may not the white appearance be expected to extend itself over the whole, if it cannot be checked? Probably there are no means of stopping it when once begun, but there may be means of preventing it, and if so, it is very desirable that they should be known. Were the disease at all general in a crop, the effect would be very serious.—*H. F. I.*

[This disease has appeared in many quarters, and it is supposed to be one of the injurious consequences of the long-continued dry weather which we have experienced this year. It is not unfrequently the case that the culms of the ear of Wheat at both its extremities prove abortive, when there is not sufficient nourishment for the plant in the soil, or when, as now, though there may be a sufficiency of nourishment present, a drought destroys the means of conveying it to the roots of the plant]—We add as follows from another Correspondent, respecting this disease:—"The field in which the diseased Wheat occurs is in a high state of cultivation; it was a Clover lea fed off by sheep and pigs all through the summer, which were also supplied from troughs with oil-cake, Beans and Peas. The soil varies; full one-half of the field is affected as the inclosed; this has a subsoil of gravel covered by a good mixed rather light soil; the remainder of the field has a clay or loamy bottom, and on this the Wheat is very luxuriant and entirely free from this unnatural blight." [This appears to be in accordance with the theory which ascribes this disease to the influence of the weather.]

Artificial Guano—In your paper of 25th May, "W M., Dimsdale," writes that a compound of urine, sulphate of magnesia, and hydrated lime, is equal to guano and bones; he states the quantities of urine and sulphate-magnesia in 14 lbs to 100 gallons, but not of the lime, I should be glad of information from him, as to whether that should be added in such quantities as to saturate the liquid, and in what quantity would this compound be equal in fertilising strength to guano, and in about what proportions should it be used as a substitute for guano.—*J Green.*

Rooks—Your Rook correspondent should inquire of the farmers and labourers of the moorlands of Staffordshire, who are obliged to live upon Potatoes the most part of the year, if Rooks are a benefit to them. They pull the sets out of the ground, and carry them away during six weeks in spring, and if the weather be unfavourable to get them up in the autumn, the Rooks will do it for them.—*T. X. O.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A SPECIAL COUNCIL, for the purpose of taking the Prizes for next year into final consideration, agreeably with the Bye-Laws, and appointing the Judges for the Society's ensuing Show of Stock, Implements, &c, at Southampton, in July next, was held at the Society's House, in Hanover-square, on Wednesday last, the 26th of June; present, the Rt. Hon. Earl Spencer, President, in the chair; Duke of Richmond, Marquess of Downshire, Earl of Ilchester, Earl of Lisburne, Viscount Torrington, Hon. Col. Douglas Pennant, M.P., Hon. R. H. Clive, M.P., Hon. G. H. Cavendish, M.P., Thos. Raymond Barker, Esq John R. Barker, Esq; John Benett, Esq., M.P., T W. Bramston, Esq., M.P, W. R. Browne, Esq, F. Burke, Esq.; Col. Challoner; H. C. Compton, Esq., M P.; J. Cotes, Esq.; J. H. H. Foley, Esq.; B. Gibbs, Esq, S. Grantham, Esq, W. Fisher Hobbs, Esq, E. Holland, Esq.; Sir John Johnstone, Bart., M.P.; S Jonas, Esq, J. Kinder, Esq.; Sir Francis Lawley, Bart., Wm. Miles, Esq, M.P.; Sir Charles Morgan, Bart.; E. W. W. Pendarves, Esq., R. S. Chandos Pole, Esq; Prof. Sewell; Wm. Shaw, Esq., R. A Slaney, Esq, J. Spencer Stanhope, Esq., W. R. C. Stansfeld, Esq, M P; W. Bruce Stopford, Esq., and Vincent Stuckey, Esq

The Council finally arranged the Prize Sheet for the Shrewsbury Meeting in 1845, introducing new Prizes for a Bull Calf under each of the divisions of Short-Horned, Hereford, and Devon Cattle; additional Prizes for Horses; a new class of Prizes for Sheep best adapted to a mountain district; a Prize for Oats, in addition to those for Seed-Wheat and Barley; and Prizes for Cheese made within the range of the counties of Anglesey, Carnarvon, Merioneth, Montgomery, Denbigh, Flint, Chester, Salop, and Stafford, constituting the district in which the Meeting at Shrewsbury in 1845 will be held. Those Members of Council who intended to be exhibitors at the Southampton Meeting then left the room, when the remaining Members proceeded to the appointment of Judges for the various departments of the Show on that occasion.

FALL OF RAIN.—The President, at the conclusion of the business of the Council, communicated to the Meeting, the following interesting statement of results connected with the fall of rain during the present and the last 14 years:—

"Rain which fell on my Farm at Chapel Brampton, Northamptonshire, during the Spring and Summer months of the under-mentioned years—

MARCH, APRIL, AND MAY.	Inches.	JUNE, JULY, AND AUGUST.	Inches.
1830	5.90	1830	7 70
1831	3 71	1831	7 34
1832	4 82	1832	7 91
1833	3.87	1833	6 73
1834	1 74	1834	9 34
1835	6 39	1835	3 36
1836	5 97	1836	4 23
1837	3 13	1837	6 91
1838	4 32	1838	6 52
1839	3 82	1839	9 06
1840	2 80	1840	4 98
1841	3 67	1841	11 10
1842	4 49	1842	6 48
1843	6 11	1843	5 74
1844	1 86	1844	?
Average of 14 years	4 13	Average of 14 years	6 94
Average of the spring months when less than 3 inches fell	2 70	Average of corresponding summer months	8 44
Average of the spring months when more than 5 inches fell	5 91	Average of corresponding summer months	5 30

The smallest quantity of rain which fell since 1830 inclusive, previous to 1844, in April and May, was 1 inch 15 This year, there has only fallen during those two months, 0 inch 28 (Signed) SPENCER."

FARMERS' CLUBS.

Axminster.—The Rev. W. D. Conybeare lately delivered a lecture here on Manures. It is to be observed, that throughout all nature there is a great and continuous circulation of matter—nothing perishes—nothing is destroyed. Besides the great materials of which the globe is composed, vegetables are found to grow and reproduce their species like organised beings; they afford sustenance to the animal creation; and, indeed, no animal could be provided with nutriment from what had not passed, in some shape or other, through the beautiful laboratory of the vegetable world. Oxygen, hydrogen, and carbon—each subservient to the higher uses of animals—entered into new combinations in nature—numberless in their variety, but all serving the purposes of man or beast. Vegetables were found to be composed of these elementary constituents, as had been proved by analysis The gluten of vegetable bodies was found to be similar to the gelatin of the blood of animals, for the solid particles of the blood had been shown to possess properties precisely like gluten The combinations of carbon, oxygen, hydrogen, and nitrogen in the vegetable world were almost infinite, presenting every variety of product—oil, wine, resin, gum, wax, starch, &c., of every complexion, taste, and hue. It was also in the vegetable kingdom that Nature produced chemically four-fifths of the medicines named in the Pharmacopœia; and the lecturer had no doubt that cattle were directed by an instinct implanted by their Creator to the use of various herbs which their constitution might require. Plants separate noxious matter from the air by decomposing it; they obtain carbon from the air, and give out oxygen in return; the carbon exists in the atmosphere in the shape of carbonic acid gas, which, it is calculated, forms one thousandth part of the entire volume of air. Animals, on the other hand, throw off carbon from their lungs, and plants take it in by their leaves, and thus the composition, or the relative proportions of the elements forming that medium in which they both exist, is maintained constantly unchanged. Thus has an equilibrium been preserved since the beginning of creation, the elemental constituents of the atmosphere have been running a round from air to vegetables, vegetables to animals, and animals to vegetables again, yet they exist in the same proportion as ever. We are computed to breathe a pound of carbon per day into the air, and this is taken up by vegetables, which give us back oxygen instead. Eight thousand years would, it is supposed, be occupied in turning the oxygen of the atmosphere into carbonic acid, and were all the oxygen thus changed we could not breathe, but plants come in to our help, and by taking up the carbonic acid generated by man and by animals, restore the atmosphere to a healthful state The fact that plants obtain carbon from the air may be proved by allowing a plant to grow in a vessel under water, connected with another vessel containing carbonic acid gas, the carbonic acid gas will be absorbed and the water take its place. But, to look above gallipots and experiments to the great forests of Nature—it may be asked how are they supplied? They can obtain carbon only from the air; very true, but they take long periods of time in which to grow, whereas crops of corn must be raised in one season; and we, therefore, have to surround them with an atmosphere which will supply carbon quicker. This is done by manure. Nitrogen forms another element of vegetable growth, and is procured from the air also, in the shape of ammonia, a volatile and pungent compound of hydrogen and nitrogen plants also obtain ammonia from rain, which holds one thousandth part of it. Ammonia is given off in the decomposition of animal matter. The ashes of vegetables consist of lime, silica, alkali, and chlorine, obtained from inorganic nature in an altered condition. Many of these inorganic constituents vary according to the soil in which the plants grow; but without a certain number of them they never arrive at maturity. It is calculated that from an acre of land, in a course of four years' cropping, there is taken away 1200 lbs. of these substances; they must needs be restored, and this is done by manure, or allowing ground to remain fallow, whereby new particles are brought out, or into contact with each other. Fresh surfaces are exposed, and new salts are formed by fallowing. The learned gentleman then recapitulated some observations in reference to the consumption of food by animals. A part was taken up by the blood—carbon was thrown off by breathing and perspiration; the earthy particles go to the formation of bones, and the remainder is given back in liquid or solid excrement. The fertilising power of animal manures, whether fluid or solid, is dependent, like that of the soil itself, upon the happy admixture of a great number of those substances which are required by plants in cultivation, and upon the large proportion of nitrogen which they contain. The grand principle of manuring consisted in applying or restoring to the soil what had been abstracted from it; this was done every day by the farmer in folding his sheep; and when he heard from his friend Dr. Buckland, a few days since, the doctor speaking of everything being given back to the soil, said—"Why do you not advise my Axminster friends to do as the Chinese do—take care of their beards when they shave?" The reverend lecturer then proceeded to recommend liquid manure, as being extremely rich in ammonia and the salts of potash; he said the ammonia might be fixed by means of gypsum found at Branscombe; the gypsum should be placed in tanks with the drainage of stables and cattle stalls, and it would form sulphate of ammonia, which is far less volatile than the carbonate or smelling-salts. This sulphate of ammonia was readily obtained from urine strewed with the plaster of Paris or gypsum. This forms the urate sold as manure. Every town and farm might thus supply itself with the manure, which, besides containing the most nitrogen, contains also the most phosphates—both fertilisers to a great extent. On the Continent the powerful agency of urine as a manure was well known, and in many places it was preserved. Some philosophers were wont to regret the large waste of valuable manure by means of sewers and drains; but such was not actually the case—nothing was really wasted—the bank of Nature was as full as ever, and contained the same stock of ammonia and earthy salts, although they might be diffused. Still it was a very different thing to the farmer whether the gold were in the Bank of England or in his own pocket—there might be plenty in the former while he remained poor; so fertilising matters might be floating about, but his object was to have them ready at his own door. The salts contained in the deposits of birds were very efficacious; hence the great value of guano, respecting the results of which the statements were highly satisfactory, Turnips, Wheat, and indeed every crop, had been raised in increased quantity by its use. It should not, however, be used with lime, as he had been informed by Messrs. Toms, of Chard, because there was an antagonism between the two substances—the carbonic acid in the lime flew off and united with the ammonia of the guano, and carbonate of ammonia resulted, which was apt to fly off like smelling-salts. The salts of potash were necessary constituents of the soil, and their application had been attended with good results in some cases. Nitrate of soda, saltpetre, and common salt were each valuable as manures, provided the soil were deficient of these substances; and the uncertainty of result in their application might be attributed to the varieties of soil. Guano and other excrements brought each thing which the soil required, whereas the salts only supplied a particular deficiency. Lime acted mechanically upon the soil, rendering it friable and pervious to rain, and was therefore valuable, now, clay was found in most soils, but not pure—it was mixed with silica—an important constituent of Wheat, lime liberated the silica, or earth of flint, and enabled it to be taken up by the Wheat-plant.—*Sherborne Journal.*

Reviews.

The Dictionary of the Farm. By the Rev. W. L. Rham, Vicar of Winkfield, Berkshire. London: Charles Knight and Co., Ludgate-street.

THIS work is the production of one who, by familiar acquaintance with the science on which the farmer's practice depends, as well as by extensive practical knowledge of his subject, was eminently qualified as an agricultural writer. Its Preface commences thus:—"The lamented death of Mr Rham, within less than a month after he had completed the materials of this volume for the press, cannot be passed over without a brief notice of his estimable and valuable life" Then follows an interesting biographical sketch; and to convince our readers of our justice in recommending this work to their attention, at the same time assuring them that the articles it contains are such as might be expected from the qualifications of their author, we quote further as follows—

"His early connection with the Continent, which was kept up in after life afforded scope for observation of the husbandry of different countries; and his thorough knowledge of several living languages gave him access to the works of scientific writers on foreign Agriculture. In the next place, his chemical studies at Edinburgh, while preparing for the medical profession, were of eminent service to him; and scarcely less so was the proficiency in mathematics which he attained at Cambridge. It may safely be asserted that no other writer on Agriculture ever enjoyed in so great a degree such a combination of advantages; and to his knowledge of the chemical and mechanical departments of Agriculture there was united a thorough acquaintance with its routine details. We would simply refer to the article 'Plough,' as an example of this combination of science with practical knowledge. On his farm at Winkfield he engaged in his

favourite pursuit, with a practical perception of its details, and a scientific knowledge of its processes, which has probably never before been possessed by one person. Thus, above all other writers of the present day on the subject of Agriculture, Mr. Rham was eminently fitted, by his excellent judgment and sound sense, to be useful to the country in the existing state of its husbandry and rural economy, when, probably, we are on the eve of great improvements in every department of these most important branches of industry. He was an active member of the council and upon the committees of the Royal Society of Agriculture, from its formation in 1838: his loss at this moment is therefore great. The present volume contains his views on all the principal subjects of interest to the agriculturist."

In addition to the article on the "Plough" here specified, we may refer to those on "Arable Land," "Soils," and many others, as likely to prove *useful* to agricultural readers. There is also much instructive matter regarding the present condition of British Agriculture to be found in a series of articles descriptive of farming as practised in the several counties.

Miscellaneous.

Disease of Wheat.—On the Rust, Red-rag, Red-robin, Red-gum.—I believe that under the names here quoted, agriculturists comprehended the attacks of what botanists consider to be two distinct species of fungi; and which the experienced eye of the microscopic observer was alone likely to separate. They form yellow and brown oval spots and blotches upon the stem, leaf, and chaff, and when the spores have burst through the epidermis they are readily dispersed. Like those of the bunt-fungus and smut-fungus, they consist of very minute grains, but their colour is different, varying from orange-yellow to brown, and their shape is not so perfectly spherical, especially those of U. linearis, which are usually oblong. Both these fungi are very common on Corn and Grasses. I have within the last two months (of July and August), seen more of the Red-rag (*U. rubigo*) as it is here called, than of any other of these Corn-pests. It abounded in the form of an orange powder which exuded from the inner surfaces of the chaff-scales, but was scarcely if ever to be seen in the skin of the seed; it might also be traced in patches beneath the epidermis of the straw, but I did not observe that it had burst through the epidermis anywhere, excepting on the inside of the chaff. It seemed to prevail more among the rough-chaffed Wheats than others; and in this parish, more especially in some fields of the variety called white Tunstall. At one time it appeared likely that these fields would be seriously injured by it, but some warm sunny weather coming on, the Red-rag lost ground, and I observed that the sori, or spots from whence the spores exuded, turned deep-brown. This disease is not so injurious as the true mildew; but although I shall speak of the latter as if it were produced by a distinct species of fungus, and in compliance with the present opinions of most systematic botanists, still I am very much inclined to think that both diseases are occasioned by the same fungus, under different forms or states of fructification. *On the Mildew.*—If agriculturists appear to have confounded under the name of rust, the attacks of fungi which botanists consider to belong to two distinct species, so also have they frequently applied the name of rust as well as mildew to the disease we are about to notice. I am inclined to consider these two diseases to be mere modifications in the attack of the same species of fungus, but further observations are required to settle this question. For the present, then, we must consider the mildew-fungus not merely as a distinct species, but also as belonging to a different genus from the two rust-fungi. The form of its spores is indeed very different from those we have already noticed. Mr. Bauer long ago published figures in which all the forms of the mildew-fungus are accurately delineated. This plate accompanies a short account of mildew by the late Sir Joseph Banks, which was published as a separate pamphlet, but afterwards reprinted in the second volume of the "Annals of Botany;" again, in "Curtis's Account of Grasses;" and again, but without Mr. Bauer's figures, in the sixth volume of "The Pamphleteer." The ripe spores of this fungus are little intensely dark-brown club-shaped bodies, having the thicker end divided into two chambers, each filled with sporules. They taper gradually at the base into a fine stalk. The sori (or patches of spores) are composed of multitudes of these bodies, which sometimes burst through the epidermis of the stem and leaves, in such profusion that the whole plant appears as if it had been scorched. I have observed this fungus intermixed with the rust-fungi in a way which strengthens my opinion that they are identical; but I do not wish to discuss this point any further, as my observations on mildew have hitherto been very slight. The only example which this year came under my notice, occurred in two fields at Audleyend, in one of which Lord Braybrooke informs me, "that Wheat was never grown before, the ground having been sheep-walk and absolutely worthless, until it was ploughed up some years ago, and since been farmed on the four-course system. The ground being much exposed, and with a northern aspect, the ploughmen call it Freeze-land. The seed was supposed to be pure Talavera." The seed in the other field was Hickland's Prolific. As these fields were mildewed in a season remarkably free from this blight, these circumstances are worth recording—and in addition I may observe, that the soil was poor chalk-land, and the field of Talavera surrounded on all sides by high hedges and plantations. The mildew in the other field was confined to one corner. *On the precautions to be taken against Rust and Mildew.*—I have very little that is satisfactory to report on this head. I do not think it has been clearly determined by experiment, whether the sporules of the rust and mildew fungi are absorbed by the roots of Corn, like those of the bunt and smut fungi; or whether, (which seems to be the more prevalent idea) they enter through those minute pores on the stem and leaves which botanists term *stomata*. The fungi at first make their appearance in little cavities seated immediately beneath these pores, which certainly looks very much as if the sporules entered there. The stomata are naturally exhaling organs, continually discharging, under the influence of light, a large proportion of the water imbibed by the root. But in moist weather this function is impeded, if, in some cases, it be not actually reversed; when it would be easy for the sporules to enter these invisible stomata, with the moisture imbibed by them. The fact, however, stands in need of proof; and hitherto the evidence is more in favour of similar fungi being imbibed by the roots of the plants which they attack. Mr. Knight, indeed, who is high authority, particularly insists upon mildew being induced by foggy weather happening at a time when the ground is particularly dry: circumstances which we may readily understand as likely to convert the stomata (or even the whole superficial tissue of plants) into imbibing organs. If the autumnal fogs really pre-dispose Wheat to the attacks of the mildew-fungus, we must agree with those who recommend the growth of early varieties in places subject to these fogs. It seems to be pretty generally admitted that spring Wheats are less liable to mildew than winter Wheats; and that heavy soils are less subject to it than light ones. But, at present, the information on these points is very vague and unsatisfactory. We may safely conclude, that a generally healthy state of the plant, without any over-luxuriance of vegetation, is most likely to secure a crop against the attacks of the rust and mildew-fungi; but, that whatever tends to render the plant sickly, whether it be excess of heat or cold, drought or wet, sudden changes of temperature, poverty of soil, over-manuring, shade, &c. &c., must be considered as a pre-disposing cause to these diseases. Supposing it were clearly ascertained that a Corn crop had imbibed the sporules of the mildew-fungus early in the season, might it not be advisable to feed it down by sheep? I ask the question in perfect ignorance of the propriety or practicability of such a course. The rust and mildew-fungi attack many Grasses, and I have this year found the latter in great perfection in the common Reed. It is evident, therefore, that we can never expect to exterminate these fungi; but that their sporules will always be found in our fields, ready to attack the Corn crops whenever these are brought into a state adapted to receive their influence. Whether remedial or palliative measures may not be discovered is an inquiry well worthy the attention of agriculturists.—*Professor Henslow's Report, 2nd vol. of the English Agricultural Society's Journal.*

Notices to Correspondents.

AGRICULTURAL GAZETTE.—*T. Green.*—We do not know any one anxious to take the paper as you propose. With regard to the contents of your drain, you had better mix them with fresh burnt charcoal dust, which will destroy the smell and dry the material, so as to cause its application to the land an easy and not disagreeable operation.

BURNT CLAY.—*A Subscriber* will find information on this subject in this and the next Numbers of Sprengel's Inorganic Manures. Spread 30 cart-loads an acre on your land, and mix it with the soil by ploughings, &c.

CLOVER DODDER.—*W.*—Your specimen is the Flax Dodder.

HIGHWAYS.—*A Constant Reader.*—Gates erected in highways time out of mind are not a nuisance, and cannot be removed. But if a new gate be so placed, it is an obstruction, and a nuisance which any one may abate. We are not aware that such cases are within the summary jurisdiction of magistrates, unless under such circumstances as may bring them within the 72d section of the General Highway Act, "for wilfully obstructing the free passage of any highway." *W.*

HUMBER WARP.—*B.R.W.*—You had better get the mud out now, and mix such a quantity of lime with it as, considering the quantity you intend to apply, will amount to 80 or 100 bushels per acre. The influence of the lime on the salt will be beneficial. If it be applied as fine as possible in autumn, the winter weather will enable you to spread it perfectly in spring.

LAND SOCIETY.—*H.F.*—Is there no more effective way of investing your funds in the employment of agricultural labourers, (that is your object, is it not?) than by the *purchase* of land to be cultivated by the spade? Will you favour us with the history of your Society? With your *apparently* limited funds, you cannot, surely, have done much.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, June 24.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	2	to 4s	0	Best Downs & Half-breds	3s	10 to 4s 0
Best Short Horns	3	4	3	8	Best Long-wools	3	6	3	10
Second quality Beasts	2	10	3	2	Ewes and second quality	3	2	3	6
Calves	3	0	4	2	Lambs	4	0	5	0
Pigs	3	4	4	0					

Beasts, 2285; Sheep and Lambs, 31,610; Calves, 317; Pigs, 307.

We have a smaller supply of Beasts to-day, especially of the best qualities, consequently there is an advance of full 2d per 8 lbs on Scots, Herefords, &c. There is not such a rise in the price of the larger Beasts; we cannot quote Short horns at more than 3s 8d, although in some few instances a little more than that is obtained. The number of Sheep and Lambs is also less than last week, but there are quite sufficient for the demand; the trade is, however, rather brisker, and our top quotations are readily realised for the best qualities. Veal and Pork are about the same as on Monday last, but not quite so good as on Friday.

FRIDAY, June 28.

Our supply of Beasts to-day is good; there are also plenty of buyers, at a little advance on Monday's prices. We have very few good Scots on offer; many of second quality Scots and best Short-horns are making very nearly 4s per 8 lbs. In Sheep and Lambs we have a larger number than has been known on the Friday for some years; notwithstanding, our Monday's prices are pretty well supported, owing to a deficient supply at the dead market during the week. Calves sell slowly, the numbers being large; the best make very little over 4s per 8 lbs. Pork is a heavy trade, owing to the warm weather.

Beasts, 763; Sheep and Lambs, 18,630; Calves, [illegible]; Pigs, 261.

JAS. WEST, Smithfield.

WOOL.—BRITISH, FRIDAY, June 28.

Our advices from the manufacturing districts report favourably of the state of the Wool-trade. There is a good and steady demand for the article, and stocks have somewhat decreased, but prices continue stationary. The Staplers still complain that the prices demanded by the growers are much higher than, in the present state of the market, they can afford; consequently their operations with the Farmers have as yet been few.

	per lb.				per lb.
Long-woolled Wethers	1s	0d to 1s 0½	Southdown Hoggets	1s	0½ to 1s 0½
Do. Hoggits	1s	1 1 0	Kent Fleeces	1	1 1 0
Southdown Fleeces	1	1 0			

JAMES PEARSE, Wool Broker.

MARK-LANE, MONDAY, June 24.

WE had a short supply of English Wheat this morning from the near counties; the Essex and Suffolk was disposed of on about the same terms as this day week, but some quantity of Kent was left unsold, although offered at rather lower rates. In Free Foreign there was a fair retail sale at late prices.—We observe no alteration in the value of English Barley, but Foreign f. o. b. continues to find buyers at fully former prices.—Beans are the turn lower.—Peas fully support our quotations.—The arrival of Oats being large, they meet a slow sale, and the advance of last Monday is not maintained.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	42	56	Red	42	54
—— Norfolk, Lincolnshire, and Yorkshire	40	56	White	—	—
Barley, Malting and distilling 27s to 31s Chevalier	32	34	Grind.	25	29
Oats, Lincolnshire and Yorkshire	20	23	Feed	19	22
—— Northumberland and Scotch	20	25	Potato	21	25
—— Irish	17	22	Potato	19	24
Malt, pale, ship	52	62			
—— Hertford and Essex	60	62			
Rye	32	36			
Beans, Mazagan, old and new	30	to 33	Tick	30	36	Harrow	32	36
—— Pigeon, Heligoland	34	to 39	Winds.	—	—	Longpod	—	—
Peas, White	35	to 38	Maple	32	35	Grey	31	3

FRIDAY, June 28.

The arrivals of English Wheat since Monday have been moderate, and the little offering is with difficulty disposed of on that day's terms. The demand for Foreign is languid, and quite in retail; but holders are firm, and not inclined to force sales. There is but a trifling business doing in Spring Corn of any description, and late prices are barely maintained.—Oats must be noted 6d. to 1s. per qr. lower.

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May	17 per Quarter.	55s 10d	31s 1d	21s 6d	31s 2d	32s 6d	31s 6d
—	24	55 10	30 7	21 3	31 7	32 11	31 7
—	31	55 6	30 5	21 7	30 0	34 10	33 6
June	7	55 6	31 4	21 11	28 11	33 11	34 1
—	14	55 9	31 10	22 0	32 4	33 11	34 1
—	21	55 8	32 8	22 8	34 2	37 10	33 8
6 weeks' Aggreg. Aver.		55 8	31 4	21 10	32 10	33 3	33 4
Duties on Foreign Grain		17 0	7 0	6 0	10 6	7 6	9 8

SEEDS, June 24.

Canary - per qr	56s to 62s	Linseed Cakes, Foreign, p. ton	6l to 7l 10s
Carraway - per cwt	50	54	Mustard, White - p. bush.	5s	7
Clover, Red, English -	69	74	—— Superfine „ -	6	10
—— Foreign	64	74	—— Brown „ -	—	—
—— White, English -	100	120	Rapeseed, English, per last	28l	29l
—— Foreign -	94	122	Rape Cakes - per ton	—	—
Coriander - - -	12	13	Rapeseed, Foreign -	—	—
Hempseed - per last	35	40	Tares, Eng. winter p. bush.	6	8
Linseed - per qr	—	—	—— Foreign -	—	—
—— Baltic - -	—	—	Trefoil - per cwt	—	—
—— Cakes, Eng. per 1000	10l	10l 10s	Turnip (too variable for quotation).		

KINGSFORD AND LAY.

HOPS, FRIDAY, June 28.

THERE is no alteration in our market since this day week; the accounts from Sussex, Weald of Kent, and Worcester are daily worse, and the late rain has increased the vermin very much in these districts, and an appearance of fresh fly since the rain. FAREBROTHER & SMITH, Hop-Factors.

COVENT GARDEN, JUNE 29.—The market has been well supplied with both Fruit and Vegetables during the week; but trade for some things has been dull. Pine Apples are more plentiful and are remarkably fine; they consist chiefly of Queens, Providence, and Jamaicas. The supply of Peaches and Nectarines has been unusually abundant; but the demand for them is not great. Strawberries and Cherries are daily becoming more plentiful in the market, and Raspberries are now added in pretty considerable quantities. Hothouse Grapes of excellent quality are sufficient for the demand, and are slightly reduced in price. The supply of Dutch and English Melons is well kept up; good specimens of the latter are offered at about 6s. each. Oranges and Lemons are much the same as last week. Considerable quantities of perfectly ripe Gooseberries and Currants are in the market. Vegetables, in consequence of the late more favourable weather, begin to improve. Cauliflowers are good and plentiful. Asparagus is becoming scarce, as is also Rhubarb. French Beans are slightly altered in price. Peas have been much dearer during the week, and have been in consequence less on demand; they are, however, again fallen in price, and a brisk trade for them is expected. Lettuces and all kinds of Salading are plentiful. A few specimens of Vegetable Marrow have been brought to the market during the week. Cut Flowers chiefly consist of Combretum purpureum, Cactus speciosissimus, Sweet Peas, Lily of the Valley, Alstroemeria pelegrina, Heaths, Pelargoniums, Gardenias, Pinks, Fuchsias, Verbenas, Moss, Provins, and other Roses.

FRUITS.

Pine Apple, per lb., 4s to 8s	Oranges, per dozen, 1s to 2s 6d
Grapes, Spanish, per lb., 1s to 1s 6d	— per 100, 8s to 10s
Hothouse Grapes, per lb., 2s to 6s	Lemons, per dozen, 1s to 2s
Melons, each, 2s to 6s	— per 100, 6s to 14s
Peaches, per dozen, 6s to 12s	Almonds, per peck, 6s to 7s
Cherries, per lb., 1s to 3s	Sweet Almonds, per lb., 4d to 3s
Currants, per half-sieve, 2s to 3s	Nuts, Spanish, per bushel, 12s
Strawberries, per gallon, 6d to 1s 6d	— Brazil, 16s
Gooseberries, per hf.-sieve, 1s 6d to 3s	— Barcelona, 20s to 24s
Walnuts, per bush., shelled, 16s to 20s	— Cob, 14s

VEGETABLES.

Rhubarb, per bundle, 3d to 1s 6d	Horse Radish, per bundle, 3s to 5s
Cabbages, per dozen, 6d to 1s 6d	Savory, per bunch, 2d to 6d
— Red, per dozen, 2s to 3s	Cucumbers, each, 4d to 1s
Cauliflowers, per doz., 1s to 4s	Spinach, per sieve, 1s 6d to 3s
Sprrel, per hf.-sieve, 6d to 9d	Leeks, per doz. bun., 3s to 6s
Asparagus, per 100, 1s to 4s 6d	Garlic, per lb., 6d to 8d
Artichokes, per doz., 2s to 3s	Onions, per bunch, 2d to 10d
French Beans, per 100, 1s to 2s	— large, per bushel, 1s to 2s
Autumn Potatoes, per lb., 2d	— Spanish, per doz., 1s 6d to 3s
Greens, per dozen, 1s 6d to 3s 6d	Shallots, per lb., 4d to 10d
Potatoes, old, per ton, 50s to 90s	— Green, per bunch, 2d to 4d
— per cwt., 2s 6d to 4s 6d	Lettuce, per score, 6d to 2s
— per bushel, 1s 6d to 2s	Celery, per bunch, 6d to 2s
— Kidney, p. bush., 2s 6d	Mushrooms, per pottle, 2s to 3s
— New, per cwt., 2s to 10s	Small Salads, per punnet, 2d to 3d
Frame Potatoes, per lb., 2d to 6d	Watercress, p. 12 sm. bun. 2d to 6d
New Turnips, per bunch, 2d to 6d	Parsley, per hf.-sieve, 1s to 2s 6d
Peas, per bushel sieve, 2s 6d to 5s 6d	Tarragon, Green, per bunch, 2d to 4d
Red Beet, per doz., 1s to 2s	Green Mint, per bunch, 2d to 4d
New Carrots, 4d to 1s	Marjoram, per bunch, 2d to 3d
Radishes, Tur., p. 12 bchs., 1s to 1s 6d	Chervil, per punnet, 2d to 3d
Basil, per bunch, 4d to 6d	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 27.

Prime Upland Hay	94s to 104s	New Hay	70s to 77s	Straw -	32s to 34s
Interior - -	90	88	Clover	120	140

JOHN COOPER, Salesman.

CUMBERLAND MARKET, June 27.

Superior Old Hay	100s to 110s	Superior Clover	140s to 150s		
Inferior -	88	95	Inferior „	120	130	Straw 34s to 36s
New Hay -	70	84	New Clover	88	100

JOSHUA BANNE, Hay Salesman.

WHITECHAPEL, June 28.

Hay - -	94s to 99s	Clover -	122s to 132s	Straw -	32s to 36s
— fine -	96 100	— fine	130 140	New Hay	88 90

POTATOES.—SOUTHWARK WATERSIDE, June 24.

THE weather in the early part of the week was more genial, and some slight showers fell in the immediate vicinity of London, but there was some fine rain fell at some distance from the Metropolis, which will prove beneficial to the crops generally, and to the green crops in particular, but at the close the heat was excessive; these, together, have had a tendency to depress our Market, and the best samples went off slowly, with some deduction on our last quotations, and the inferior have been a complete drug, especially the Perth Reds, in consequence of the damage occasioned by the dry rot. There are several parts of cargoes left for the coming week, much against the inclination of the holders. There were a few arrivals from Devonshire and Holland, and the supply appears more than sufficient, as the demand becomes very limited. This market will shortly close for the season.

York Reds	- - -	80s to 100s	Essex and Sussex Blues	—	to —
Perth - - -	- - -	80	75	Wisbeach Kidneys	- - —	—
Early Devons	- - -	—	—	—	Blues	- - —	—
Late Devons	- - -	—	100	—	Whites	- - —	—
Cornwall - -	- - -	—	—	Jersey and Guernsey Blues		90	90
Dutch Whites	- - -	80	80	Prince Regents	- - -	—	—
Kent and Essex Kidneys		—	—	York Shaws	- - -	—	—

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Water, river
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For a Specimen Plant of Pelargonium.—Extra Prize to Mr Gaines, for Floridum.

For Collections of 6 Calceolarias.—AMATEURS.—1st Prize to Mr. W. Barnes. NURSERYMEN.—1st Prize to Mr. Gaines.

For Seedling Pelargoniums—2d Prize to Mr. Beck, Slate works, Isleworth, for Aurora, 3d, to Mr. Silverlock, Chichester, for Emperor Nicholas. Certificate of Merit to Mr Staines, for La Polka; Certificate of Merit to Messrs. Henderson, Pine apple Place, Edgeware Road, for Lady Peel.

For a Seedling Pelargonium, containing a deep shade of Scarlet—1st Prize to Mr. Beck, for Igniferum.

For a Seedling Scarlet Pelargonium—Certificate to Mr. Diplock, gr. to M Emmanuel, Esq, Hammersmith, for Antagonist.

For a Seedling Fuchsia—1st Prize to Mr. Hally, for Highland Chief.

For Collections of Cut Blooms of Moss Roses—AMATEURS.—1st Prize to Mr Betteridge, Milton Hill, Abingdon, 2d, to Mr. Milne, gr. to C S. Chauncey, Esq, Little Morden, Ware. NURSERYMEN—1st Prize to Messrs. Lane and Son, Great Berkhampstead; 2d, to Mr T. Rivers, jun, Sawbridgeworth; 3d, to Mr. Hooker, Brenchley

For Collections of Cut Blooms of Summer Roses.—AMATEURS (60).—1st Prize to Mr. Milne, 2d, to Mr. A Parsons, gr. to A. E. George, Esq., Ponder's End, Enfield, 3d, to Mr. Henry Collison, Bath. Extra Prize, to Mr. Betteridge, Extra do, to Mr. Slowe. NURSERYMEN (100).—1st Prize to Messrs Lane and Son; 2d, to Mr. T. Rivers, jun., 3d Prizes (equal) to Messrs. Paul and Son, Cheshunt; and to Mr. Hooker

For Collections of 24 Cut Verbenas—1st Prize to Mr Smith, Hornsey Road Extra Prize to Mr. W P Ayres

For Collections of 24 Carnations—1st Prize to Messrs. Norman, Bull fields, Woolwich; 2d, to Mr. Willmer, King's road, Chelsea.

For Collections of 24 Picotees—1st Prize to Mr John Dickson, Brixton, 2d, to Mr. Edmonds, Wandsworth-road. Extra Prize to Messrs. Norman.

For Collections of 24 Pinks—1st Prize to Messrs. Brown and Atwell, Uxbridge, 2d, to Mr Hardstone, St Mary Cray.

For Collections of 36 Pansies 1st Prize to Mr Parsons, Enfield, 2d, to Messrs Goode, Ponder's-end, Enfield.

For Collections of Roses, in Pots, (20 plants).—1st Prize to Messrs Lane and Son, (10 plants)—1st Prize to Mr. Dobson.

For a Seedling Heath.—1st Prize to Mr. Burley, Limpsfield, for Erica tricolor pallida.

For Collections of Cape Heaths.—(15 plants)—AMATEURS.—1st Prize to Mr. May; 2d, to Mr. W. Barnes. NURSERYMEN—1st Prize to Mr. Jackson, Kingston-on-Thames; 2d, to Mr. Pawley, 3d, to Messrs Fairbairn, Clapham. (6 plants)—AMATEURS—1st Prize to Mr. Hunt; 2d, to Mr. Taylor, Streatham. NURSERYMEN.—1st Prize to Mr. Dawson, Brixton-hill; 2d, to Mr. Fraser.

For a Collection of 24 Alpine Plants—2d Prize to Mr. Wood, Norwood

For a Dance in Cut Flowers, representing the grouping of colours.—1st Prize to Mr. W. P. Ayres.

For a Collection of 6 Statices.—1st Prize to Mr. Taylor.

For Collections of 6 Orchidaceous Plants.—1st Prize to Mr. Hunt; 2d, to F G. Cox, Esq., Stockwell; 3d, to Mr. Barnes.

For a Specimen Orchidaceous Plant.—2d Prize to Mr. Jackson, for Aranda Wrayea.

For Collections of British Ferns, in Pots.—1st Prize to Mr. A. Smith, gr. to Joseph Anderson, Esq., The Holme, Regent's Park; 2d, to Mr. Taylor.

The following *Extra Prizes*, for miscellaneous subjects, were awarded:—

For a Collection of Dried Specimens of 20 Varieties of Cultivated Grain, to Mr. T. Moore, Camden Town. *For Minerals Splendens*, to Mr. Bunney. *For a Collection of 10 Kinds of Fruit*, to Mr. T Burrell, Brentford. *For a Collection of 24 Seedling Pelargoniums (cut blooms)*, to Messrs. Lucombe & Co. *For a Seedling Petunia No. 1*, to Mr. Worrell, Springfield. *For a Seedling Pink*, Favorite, to Messrs. Brown and Atwell, Uxbridge.

There were several fine microscopes exhibited by Messrs. Powell and Leland, Mr Rose, and Mr. Varley; but the first party only having duly entered their instruments, the 1st Prize was necessarily awarded to them. There were at unsuccessful competitors, who, for the trouble taken by them, the Society feels indebted, and takes this opportunity of returning them its thanks.

J D C GOMERSEY, Secretary.

NEW PLANTS.

R. GLENDINNING very respectfully begs to offer the following New and Valuable Ornamental Exotic Plants—

CLERODENDRUM INFORTUNATUM.—This new and magnificent species, surpassing all others of the genus yet introduced, was awarded the Large Silver Medal at the Horticultural Society's Exhibition on the 18th inst.

PENTAS CARNEA.
LISIANTHUS GLAUCIFOLIUS.
Do. NIGRICANS.
ACHIMENES PICTA.—R. G. obtained the Knightian Medal on the 18th ult. for this very fine new species.
GLOXINIA.—Four new varieties, two of which have been awarded the Banksian Medal. A Figure of the Group will shortly appear in the "Botanical Register."

Chiswick Nursery, near London, July 3, 1844.

MAGICAL EFFECT ON FLOWERS.—*Gardeners' Chronicle*, April 27th.—"I cannot speak of POTTER'S LIQUID GUANO in adequate terms of praise. I tried it on Hyacinths, and other Flowers. The effect was magical. My flowers were the finest I ever beheld, and they preserved their beauty nearly double their usual time."—*W. Kidd, Hammersmith.*

"I write to describe the wonderful efficacy of POTTER'S LIQUID GUANO; Peas, Onions, and Asparagus have been singularly improved by it. People came to admire the appearance of the garden"—See *Chronicle*, p. 466.

*** Beware of an ineffectious imitation. See *Chronicle*, p. 468—"Humphreys's Compound."

Sold by most Chemists and Seedsmen.
Factory, 28, Upper Fore-street, Lambeth.

CURTIS'S BUDDING KNIFE.—"This is the neatest Budding-knife we have seen. The ivory handle is shaped like the blade of a curved pruning-knife, sharp, and turned up at the point, and is evidently extremely well contrived for the purpose it is intended."—Gardener of Professor LINDLEY, in the *Gardeners' Chronicle*, July 6, 1844.

GEORGE PLEW, Surgical Instrument Maker and Cutler, No. 265, Strand, London, and at No. 2, Dolphin-street, Bristol, begs to call the attention of the public to the above new and desirable article, manufactured solely by him. Sent free to any part of the kingdom, on receipt of 36 penny postage stamps, or a post-office order for 3s. 6d.

LYNDON'S PATENT SPADE.—Sold by GREEN and CONSTABLE, Ironmongers, 36, King William-st., London-bridge Horticultural Tool Chests, Bright Ladies' Spades, Money's Patent Water Pots, Lord Vernon's Patent Hose, with a general assortment of Garden Implements.

HORTICULTURAL BUILDING & HEATING by HOT WATER



J. WEEKS and Co., ARCHITECTS, &c, Gloucester-place, King's-road, Chelsea, Hothouse Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot water Apparatus, Models, Plans, Estimates, &c, at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

SLATT WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured [illegible] for Horticultural purposes, may be seen in use [illegible] on Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Rothesay for Pits
Cisterns	Roofs for Balcon[illegible] Veranda
Shelves	
Garden Edging	Drainage Tube, Flo[illegible] Pans, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, June 28, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 40, Upper Thames-street.

TURNIP SOWING. — BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day, it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9*l.* per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town. —Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, June 12, 1844:—

Bones . .	p. ton	£4	10s. 0d.	Nitrate of Potash .	„ £1	4s. 6d
„ crushed,	£4 10s. to	6	0 0	Oil of Vitriol, or Sulph.		
„ calcined .		7	0 0	acid . .	p. lb.	0 0 1
Carbonate of ammonia .	p. cwt.	2	10 0	Rape Cakes .	p. ton	4 15 0
Guano, Peruvian, p. tn.		11	0 0	Salts, Epsom	„	0 0 0
„ Ichaboe	„	9	0 0	„ Glauber	„	7 0 0
Gypsum . .	„	2	0 0	Sulphate of Ammonia, per cwt., 16s. to		0 17 0
Nitrate of Soda,	p. cwt.	0	14 0			

Wm. NOAKSCOTT, 18, Rood-lane, Fenchurch-street.

TURNIPS, &c.

DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Chicory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 14*l.* per ton, or 12*s.* per cwt.

Sold by MARK FOTHERGILL, 40, Upper Thames-street; and Mr. [illegible], at the Factory, Broadwall, Blackfriars, London. The Fertilisers manufactured under the immediate inspection of J. HALLETT, M.D., &c.

Agents—London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. REVANS, Yoxford; Norfolk, Messrs. BURLEIGH [illegible], Norwich; Jersey, Mr. C. Kruger. Respectable [illegible] wanted.

CHOICE FLOWERS AND PLANTS IN POTS.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains occasionally dissolved in the water used with Plants produce a vigorous growth and splendid flowers. If what is called a "*Liquid Guano*" is desired, a superior article is obtained at half the usual cost, by dissolving *Half* a Bottle of this powder in a *quart of water*, and using a table-spoonful to a gallon in watering flower-beds. *Sold in bottles, 1s. 9d. each*, by Chemists and Seedsmen. Agents; DAVY, MACKMURDO and Co., 108, Upper Thames-street, London.

*** "In these days of *deception*, it is due to those persons who send out a really good article, that those who benefit by it should make it known."—See Evidence of J. R. PEARSON, Chilwell Nurseries, *Chronicle*, p. 290, "*Humphreys's Compound.*"

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 68, Dorset-street, Fleet-street, London

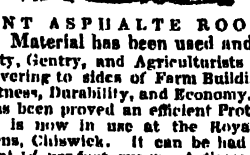
IMPORTANT to AGRICULTURISTS.—ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

Gentlemen Instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

No. 5A, Hawley-road, Kentish Town.

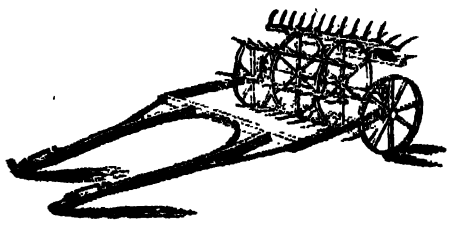
WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. DEANE, Ironmongers, London-bridge; and of any Ironmonger in the country. Price, in box, with lock and joints, 2*l.* 5*s.*

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1*d.* per foot, super. A discount to the trade. THOS. J. CHODDON, 8, Ingram-court, Fenchurch-st., London.



HAYMAKING SEASON. — Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Conservatories and Greenhouses, being calculated, from its extreme hardness, to resist the wear incident to ordinary Plastering. For Floors it has a threefold advantage over Stone-paving. 1st, in its lightness; one inch in thickness of KEENE'S CEMENT sufficing where 2 to 3-inch flagging would be employed. Next, in its appearance, combining, as it does, the hardness of stone with a uniform colour and even surface free from joints; and lastly, in economy, being one-third the price of Portland paving.

The most conclusive evidence can be given of the utility of KEENE'S CEMENT for these purposes by the Patentees and Manufacturers.—JOHN BAZLEY WHITE and SONS, Millbank-street, Westminster.

AGRICULTURAL SCHOOL.

MESSRS. NESBIT'S ACADEMY, 38, Kennington-lane, Lambeth, near London.

"From Chemistry alone further progress in Agriculture is to be expected."—LIEBIG.

In this School, in addition to the general routine studies, every facility is afforded for the acquisition of a sound knowledge of Chemistry. The Pupils are practically taught in the Laboratories the methods of analysing the various earths, soils, manures, &c.; and likewise the means of detecting the substances abstracted from the land by different crops. Land Surveying is also taught practically, as well as theoretically.

A copy of a Lecture on Agricultural Chemistry, delivered by Mr. J. C. NESBIT to the Maidstone Farmers' Club, and the Terms of the School, which vary from 40 gs. to 70 gs. per annum, may be had on application, either personally or by letter.

Mr. NESBIT'S Works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, Education, &c., may be had of all Booksellers.

REFERENCES.—Dr. D. B. Reid, F.R.S.E., &c., Author of "Elements of Practical Chemistry," &c., St. James's Park, Westminster; C. F. Richardson, Esq., F.G.S., Author of "Geology for Beginners," &c., British Museum, London; W. and J. Gibbs, Esqrs., Civil Engineers, Devonshire-street, Portland-place, London; Rev. T. Cuff, Carlisle Episcopal Chapel, Lambeth; R. Greenhill, Esq., Ashford, Kent; and C. G. Whitaker, Esq., Barming, near Maidstone, Kent.

The School will be re-opened on Monday, July 15th, 1844.

THE AGRICULTURAL MEETING, AND GENERAL SHOW OF LIVE STOCK, under the Patronage of The Highland and Agricultural Society of Scotland, takes place at Glasgow on the 7th, 8th, and 9th of August next. The arrangements will be—

Wednesday, Aug. 7.—The Exhibition of Agricultural Implements, Dairy Produce, Roots, Seeds, and Plants.

Thursday, Aug. 8.—The General Show of Cattle, Horses, Sheep, Swine, and the whole of the articles enumerated above, exhibited on Wednesday.

Friday, Aug. 9th.—The Exhibition of the Prize Stock, Implements, and other articles.

The Premiums to be awarded amount to 1600*l.* The Classes will be—

CATTLE.—1. Short-horned; 2. Ayrshire; 3. West Highland; 4. Galloway, Angus, and Aberdeen, Polled; 5. Fife; 6. Any Breed. HORSES.—1. Cart Stallions; 2. Do. Mares; 3. Brood Mares; 4. Colts; 5. Fillies; 6. Geldings, &c. SHEEP.—1. Black-faced; 2. Cheviot; 3. Leicester; 4. Southdown; 5. Crosses.

ALPACAS; SWINE; POULTRY.

DAIRY PRODUCE.—1. Curing Butter; 2. Making Cheese.

SEED WHEAT.—To be competed for on 2d October.

EXTRA STOCK, ROOTS, SEEDS, IMPLEMENTS, and MACHINES.

The competition is open to Stock and Implements from every part of the United Kingdom. The Certificates for Stock, Implements, &c., must be lodged with the Secretary of the Society, or transmitted so as to reach him, at his office, Albyn-place, Edinburgh, or with the Local Secretaries at Glasgow, at the latest on Tuesday, the 16th July. Copies of the Bill of Premiums and Regulations, and Certificates to be completed, may be had on application at The Society's Hall, Albyn-place, Edinburgh; of Mungo Campbell, Jun., Esq., Glasgow; and of Mark Sprot, Esq., of Garnkirk, the Local Secretaries. The Secretary of any Local Association will, on application, obtain Copies of the Bill of Premiums for the use of the Members of the Association. CHAS. GORDON, Secretary.

Society's Hall, Edinburgh, June 18th, 1844.

The GREAT DINNER, on the day of the General Show (Thursday, 8th August) at half-past five. As Tickets must be reserved for many attending the Meeting from a distance, Gentlemen residing in Glasgow and the neighbourhood are requested to secure their Tickets by early application. Members of the Society will be entitled to a preference, up to Saturday the 27th of July.

The COMMITTEE DINNER, open to Members of the Society, will take place on Wednesday the 7th August, the first day of the Meeting.

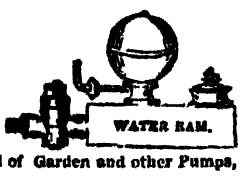
CLEAR WHITE GLASS MILK-PANS.

APSLEY PELLATT, FALCON GLASS WORKS, Holland-street, Blackfriars-road, is still making the Milk-Pans—as described in the *Gardeners' Chronicle*, of clear white flint glass, at 5*s.* 6*d.* each, or 3*l.* per dozen. Early in July A. P. will make the Milk-Pans of green glass of excellent quality, at 42*s.* per dozen.

70, STRAND, LONDON.

RAMS FOR RAISING WATER WITHOUT LABOUR, WHERE A FALL CAN BE OBTAINED. Fountain Basins in Iron, &c.

F. ROE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in Iron, which will stand the Frost and last for ages. Specimens of Rams, Jets, &c. to be seen on the Premises, 70, Strand, London. Every kind of Garden and other Pumps, Well Engines, Baths, &c.



Sales by Auction.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Bunney to submit to public competition, by Auction, on the premises, Kingsland Nursery, on Tuesday, July 9, 1844, and following day, at 11 o'clock (in consequence of the Lease having expired), the whole of the rare Exotics, and other plants in pots; consisting of fine specimens, Araucarias, Buonapartea, Juncea, Olivea Nobilis, Cactus, Gloxinias, Achimenæas, Magnolias of sorts, New Fuchsias, Gardenias; about 1500 Double and Single Camellias; several thousand China Arbor Vitæ, Sweet Bays, Arbutus, Cypress, &c., in pots; also eight Greenhouses, Pits, &c., in good condition; a considerable quantity of Bricks, York Paving, and other fixtures. May be viewed prior to the sale, and catalogues may be had of the principal Seedsmen, on the premises, and of the Auctioneers, Leytonstone.

The whole of the valuable Nursery Stock will be submitted to public competition, by Auction, about the third week in October.

TO BE SOLD by AUCTION, some time next Autumn (unless previously disposed of, but of which due notice will be given), the whole of a NURSERY STOCK, consisting of choice Fruit and Forest Trees, Shrubs, &c. &c.

The unexpired Lease of the Nursery Ground will be Let. The House, Shop, and Premises (where a large and increasing Seed business has been carried on for the last 30 years) will be either Sold or Let for a Term; if Sold, part of the purchase-money might remain on Mortgage. Any person desirous of treating for the same may apply to ABEL SMITH, Nursery and Seedsman, Cirencester.

TO CAPITALISTS.

TO BE SOLD, to pay a clear Five per Cent., THE TOLLS arising from the Navigation of Vessels laden with Corn, Coals, Timber, Stone, &c. &c., passing along the River Waveney, from Beccles to Bungay, Suffolk, with a Capital Residence, Malting Office, Business Premises, &c., at Bungay.

The above Property is let on Lease at 1300*l.* per annum, six years of which Lease were unexpired at Lady-day last.

For Price and further Particulars apply to Mr. BUTCHER, Auctioneer, Norwich.

VALUABLE CHURCH PREFERMENT.

TO BE SOLD, the NEXT PRESENTATION to the RECTORY of RICKINGHALL INFERIOR, in SUFFOLK. The Incumbent is in the 68th year of his age, and the Net Income arising from the Commuted Tithes, Glebes, and Surplice Fees, average about 385*l.* per annum. Also, the NEXT PRESENTATION to the RECTORY of RICKINGHALL SUPERIOR, possessing a Net Income of 457*l.* per annum.

For further particulars apply to Mr. BUTCHER, Auctioneer, Norwich.

SUSSEX NURSERY, Loughborough-road, Brixton-road.

TO GENTLEMEN, FLORISTS, and the PUBLIC. —CHOICE PLANTS for Bedding, selling off at One Fourth their value, and must be cleared in six weeks, the whole of the Stock of CHOICE PLANTS, in Pots, upwards of 10,000, as follows:—Frogmore, Scarlet, and other Geraniums; splendid assortment of Fuchsias, Verbenas, Petunias, Monthly Roses, Ageratum, Heliotropes, Celsias, Anagallis, &c.—The whole of the above may be had in large or small quantities to suit the Purchaser, from 2*s.* 6*d.* to 3*s.* 6*d.* per dozen.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The Third Meeting will take place on SATURDAY, the 13th of July, on which occasion His Grace the Duke of Devonshire, the President of the Society, has kindly directed the doors of his Gardens and Pleasure-grounds to be opened for the reception of all persons who shall have been admitted into the Society's Garden by Tickets.

Subjects for Exhibition must be at this Office on Friday the 12th, or at the Garden before half past 8 o'clock A.M. on the day of Exhibition.

N.B. No Tickets will be issued in Regent-street on the day of Exhibition.—21, Regent-street.

The Gardeners' Chronicle.

SATURDAY, JULY 6, 1844.

MEETING FOR THE FOLLOWING WEEK.
SATURDAY, July 13 . Horticultural Gardens . 1 P.M.

AMONG the many contrivances by which man has succeeded in converting the wild productions of untamed nature into bodies better adapted to his artificial wants, nothing has produced more past advantage, or promises more future profit, than HYBRIDISING. We shall not refer in this place to what has been done in the animal kingdom, but confine the attention of the reader to its effects upon vegetation.

The practice is regarded as one of very recent date; and so it is, as an artificial process, applied by rule to definite purposes. But he must be a bold man who dares assign to it historical limits; on the contrary, it may be supposed to date from the Creation —or rather, it is in a manner certain that it does. The presence of winds or insects must necessarily from the beginning have produced effects upon plants, which resulted in hybrid productions.

Hybridising is effected by applying to the stigma of one plant the pollen of some other; the end of which is the generation of a form participating more or less in the attributes of both its parents. Nature, in her wildest state, opposes no insurmountable difficulties in the way of this operation. Insects, bepowdered with the pollen of one plant, plunge into the recesses of another, and thus effectually destroy the purity of races. The natural brush on the body of a bee will convey the subtile powder as well as the trim camel's hair pencil of the artificial operator.

It is contended, indeed, that this cannot be; because if it were so, all species must, in the lapse of ages, be confounded in one inextricable chaos. But, in the first place, this supposition is of little force, till it is shown that that which is easily done artificially cannot possibly take place naturally; and secondly, it must be proved that the wild races of plants actually do remain in all their original purity. No Botanist would, we suspect, venture upon such an argument as that. The genera Salix, Rubus, Rosa, and Carex, would make the stoutest advocate of original purity pause before he threw himself into the lists. Nobody, in fact, can possibly doubt that wild hybrids exist, are common, and, perhaps, much more frequent than we think for. We will not stop to quote notorious and proved instances of this, because we regard the fact as being beyond all dispute.

Let us not, however, infer from this that no natural obstacles are opposed to the indiscriminate mixture of races in plants; on the contrary, there are barriers which cannot be overleaped. By some mysterious agency there is a complete bar to all intermixture of plants not closely related to each other. An Elm may certainly mix with an Elm, and perhaps with a Nettle-tree; but not with an Oak. A Peach may, peradventure, cross a Plum; but not an Apple. These obstacles are, doubtless, connected with the molecular constitution of plants, the precise nature of which we have no means of examining. Another obstacle consists in the obvious fact that the pollen of a flower has a better opportunity of falling upon the stigma that belongs to it, than pollen brought from any distance; and we know that if pollen has once taken effect, no after-application of other pollen can change the result. In fact, the natural hybridising of wild plants will generally take place when, owing to some accidental cause, the proper stamens of the flower prove defective.

But there is a still more effectual obstacle to the confusion of races by natural hybridising. Although we conceive that the *production* of hybrid plants naturally is of more common occurrence than may be supposed, it must be remembered that the *preservation* of them is quite an artificial process. A hybrid tree springs up; it has no means of multiplying itself, except by seed. That seed has no stable constitution, but has a tendency to return towards the condition of one of its parents; in this way the hybrid disappears, while the parents remain; or it may, and often is, barren; and then it remains as a solitary, childless individual. Again, a hybrid herb appears; it is exposed to the same obstacles as the tree, in the way of perpetuation. It is barren; its seeds of themselves tend towards the original stock, which is recovered in a generation or two; or they are at once fertilised by the pollen of one of the hybrid parents, when the tendency to a return to its original stock is increased tenfold in strength. It is not, therefore, likely that natural hybrids will often be long perpetuated, although they may be frequently produced.

We mention these things by way of vindicating the hybridisers, who have been accused of attempting to subvert the whole order of Nature by monstrous practices. It is clear that they only imitate the practices of Nature. It is equally clear, too, that the occasional formation of natural hybrids is intended as a manifestation to man of one of the sources of power with which he is so largely provided. His reason is to be called upon to turn to profitable account that which, in savage nature, leads to no result.

Be this as it may, the practice of hybridising is, as the politicians say, a *great fact*, opposition to which would be fruitless if it were desirable. People have found out how much is to be gained by it, and they cannot be checked in its application by the sighs of Botanists over the dreaded advent of a chaos of species. All that Botanists afflicted with the *hemionophobia* can do, is to abandon gardens, and seek for solace in uncultivated lands.

Hitherto the operation of hybridising has been mainly confined to gardens. But see what advantages have come of it there. What were our Roses in 1789, when the first China Rose reached England? and what are they now? The China Rose hybridises so freely with almost every other, that there is hardly an ancient species to which it has not lent some part of its rich foliage, gay colours, and abundant blooming. Can anything be more striking than the effect of hybridising upon Pelargoniums, Heaths, Gloxinias, Verbenas, and Gladioli? By this process we have given to the hardy Pears of the north all the richness and delicacy of those of the south; to watery Grapes the perfume of the Muscat; to the pale-faced but hardy Rhododendrons of Caucasus and America the rich and glowing colours of their tender brethren of India; to the gaudy Azalea of Pontus the crimson of the small-flowered fragrant species of the United States.

Such striking consequences of the very first operations in hybridising have excited a universal desire to vary and extend them. Everybody now, who cares for his garden, asks himself in the first place what he can do to get new seedlings; and to hybridising he looks exclusively for assistance. If a fine new species of an ancient family appears, its good points as a "brood plant" (forgive the innovation) are among the first things discussed; and its value is much determined by its fitness for hybridising. Nor is it to be wondered at. Hybridising is a game of chance played between man and plants. It is in some respects a matter of hazard; and we all know how much more excitement is produced by uncertain than by certain results. What increases the charm of the game is, that although the end of it may be doubtful, yet a good player can judge of the issue with tolerable confidence, and that skill and judgment have in this case all their customary value.

What the principles are to which the hybridiser should look, and where the fields lie in which his operations can be best conducted, we shall endeavour to show next week.

WE have so often urged upon our readers the importance of turning their serious attention to the establishment of GARDEN ALLOTMENTS, that we are induced, notwithstanding the extreme pressure of other matter, to give a prominent situation to the following Report, lately (June 24) made to the Garden Allotment Society of Tottenham by their Committee:—

"Your committee congratulate you *on the amount of good* which your subscriptions have enabled them to confer upon a considerable number of industrious labourers, artisans, and mechanics, in the allotment of garden ground to them, sufficient to occupy the spare time of themselves and families. Out of 76 gardens, 70 were let; the remainder could have been let to small tradesmen, but your committee *reserve them for the class for whose benefit they were originally designed.* Your committee therefore confidently appeal to the good feeling of their fellow-parishioners, and proudly ask, *In what parish, having a population approaching to* 9000, *is there less suffering and less crime than in this?* which, as your committee confidently believe, arises *in a great measure from the assistance thus afforded.* Your committee do not pretend to offer you an exhibition of floral productions, but they cannot doubt that you will derive pleasure from viewing the handiworks of the labourer, displayed in the production of various roots, and almost every variety of vegetable, useful for culinary purposes.

"Prizes of the value of 30*s.*, 20*s.*, 15*s.*, 10*s.*, and 5*s.*, and two extra prizes, given by the Rev. the Vicar, of 10*s.* each, in seeds, tools, clothing, or articles of household furniture, were awarded by the Judges as follow:—

"To the tenant whose garden shall be the neatest, most free from weeds, best cropped, and in the general best state and condition, viz.—

"1st prize, 30*s.*, to Richard Richardson, labourer; 2d do., 20*s.*, to Edward Burton, journeyman tinman; 3d do., 15*s.*, to Simon Brown, labourer; 4th do., 10*s.*, to Charles Warren, labourer; 5th do., 10*s.*, to Theophilus Rowe, shoemaker; 6th do., 10*s.*, to William Watts, labourer; 7th do., 5*s.*, to Thomas Vinton, labourer.

"The inspection of the gardens by the subscribers appeared to give great satisfaction; and resolutions were passed, authorising the committee *to extend the system* into the High Cross Ward as soon as an eligible piece of land of four or five acres can be obtained for the purpose; also to treat for the management of the allotment gardens in Marsh-lane, 56 in number, which, with those in White-hart-lane (76) and the proposed addition at the High Cross or Hall, will together amount to *about* 200 *gardens.*"

Here we have evidence of the working of the system; of its mitigating suffering, preventing crime, and conferring happiness upon that important class with whose welfare that of their superiors is inseparably bound up. What a pity it is that those who have wealth and leisure at command should not assemble in every parish to follow the good example thus set by the inhabitants of Tottenham!

FRENCH CULTIVATION of the PELARGONIUM.

(*Continued from page* 427.)

Winter Treatment.—In October the plants should be taken into the greenhouse, where they ought to have free ventilation during the winter, and as much light as possible; and it is desirable that they should be kept by themselves, or at least with plants that require the same treatment. The months of November, December, and January are critical for plants which during these months are, as it were, in a state of torpor—a state in which their vegetation ought not to be forced by any artificial means. Heat is to be avoided, and watering, except in extraordinary cases: they ought to be watered only when the earth can be easily reduced to dust with the fingers, and the leaves of the plants are on the point of withering. The water used ought to be of the same temperature as the greenhouse. The withered leaves, diseased stems, and weeds ought to be carefully removed.

Spring.—In February, the plants will commence to vegetate, and during the first fortnight of this month (though any part of it is seasonable for the operation) the Pelargoniums should be repotted with fresh earth, and the plants that require removal put into larger pots. To do this properly, the earth must be shaken entirely, or nearly so, from the roots. On examining these, the fibres will be found either entirely or partly dead, and must be separated from the large roots with the finger, which is preferable to a knife: that ought to be used only to trim the latter, if dead or decayed. The new soil used for potting should have been under a shed a few days previously, or it will be too damp. All the plants will require stakes rather higher than themselves, to which they should be tied with very flexible strings, but so that the branches be not attached too closely together. This done, they may be put back into their winter habitation. The fresh soil will not require immediate watering, especially if the weather is cloudy; but in case of bright sunshine, it will be right to shade the greenhouse for a day or two, and to water the leaves, in order to repair the loss they will experience from perspiration. The roots having lost their spongioles, the plants will not begin to grow until new roots have been acquired; therefore, to facilitate the growth of these, a watering-pot with very small holes must be employed. About the middle of April the plants will have formed new fibres, when they may be taken out of the greenhouse, and put in a sheltered part of the garden, where they may remain until the beginning of May, but so arranged that they may be covered in case of a late frost. The plants having thus passed about a month exposed to the free air, will be robust and free from insects, which are destructive to them on account of an unctuous secretion with which they cover the leaves, and which prevents perspiration and absorption: besides, it is to the presence of those insects that the attacks of ants are attributable; by destroying the former, therefore, the latter will be kept away. In the month of May, or towards the end of April, the plants should be placed where they are to flower. The precaution of covering the greenhouse with canvass from 10 o'clock in the morning until about 4 in the afternoon, will be necessary to preserve the flowers in bloom; or if the plants are placed under a shed well lighted and exposed to the east, they will receive the light of the rising sun, and have shade during the remainder of the day.

Soil for Pelargoniums. — Two barrowfuls of fresh soil, such as the decomposed sods of a good pasture-field; one barrowful of cow-dung, one of horse-dung, (both being reduced by decomposition as much as possible), and the same quantity of garden-mould. This compost should be left for a year, but turned several times with a spade and fork. When perfectly reduced and blended, it may be used, and if it be too heavy, a barrowful of common sand or river gravel may be added, or a bed of rich kitchen-garden mould will make a good soil for Geraniums, if well stirred during two or three months, and thus exposed to the influences of the atmosphere. It should be passed through a riddle before being used. Plants, with thick fibrous roots, like those of the Pelargonium tricolor, will grow better in good heath or peat-earth.

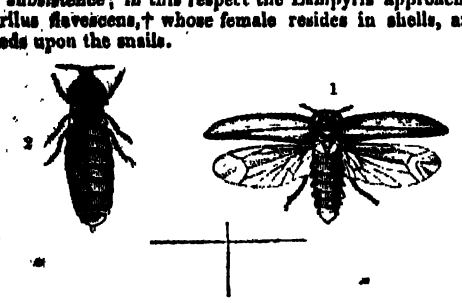
ENTOMOLOGY.

LAMPYRIS NOCTILUCA (*the Glow-worm*). Towards the end of last year an opportunity offered of illustrating the history and habits of the Italian Fire-fly, when I promised to communicate the economy of our native

species, which if not so splendid is wonderfully beautiful, and not less interesting from the early reminiscences it often awakens in the mind. Who has not, in his youth, beheld with astonishment and delight the refined and beautiful light of the Glow-worm? Who has not contemplated with admiration these little animals sparkling on a bank, or scattered like living gems amongst the brushwood? And not unfrequently have I seen them bedecking some rustic boy's hat, as he returned late from the harvest-field, "whistling as he went, for want of thought!" Such are the agreeable pictures and delightful associations which are hourly presented by Nature to those who are so fortunate as to take pleasure in exploring her pleasant and peaceful ways.

The Baron De Geer ascertained that the pupæ possess the phosphorescent qualities of the larva and imago, but in a less degree; the larvæ have been observed shining as early as March and as late as the middle of November;* but the females are most brilliant in July and August. The light is evidently increased by excitement, and the animal has the remarkable power of reviving or extinguishing its lamp at pleasure. The Glow-worms lie in the most profound repose during the day, and only become active on the approach of night, when the males fly in search of the females, guided by their brilliancy. I have observed that the males sometimes emit a glimmer, and they have been attracted in considerable numbers by the light of a candle. It appears that Mr. Dale took 40 in this way in one night; yet few persons have seen the males. They may, however, be captured by placing a female Glow-worm in the hand at night, in localities inhabited by them, when the male will often come to her.

The female lays a great number of eggs, which are attached by their glutinous surface to the Grass or herbage where they live; they are very large, compared with the bulk of the insect, being, according to De Geer, as large as Turnip-seeds; they are round, and of a citron-yellow colour. The larvæ, when full-grown, form a cocoon, I believe, which is only a soft and flexible skin, and very *fragile*; in this state they remain 14 days, during which period they are deprived of locomotion. The perfect insects walk very slowly, and when touched withdraw their heads and remain motionless for a long time. De Geer says that they live upon fresh earth, and Professor Henslow has ascertained that the larvæ feed upon snails, having kept two which lived upon them for three weeks in September, during which time they shone very brightly. On examining the mouths of the Glow-worm and its larva, it is at once evident that their economy must be very different; it is clear that the former is not carnivorous, whilst the formidable mandibles of the latter are admirably suited for such a mode of subsistence; in this respect the Lampyris approaches Drilus flavescens,† whose female resides in shells, and feeds upon the snails.



The Glow-worm, which only inhabits the north of Europe, received from Linnæus the name of Lampyris noctiluca: the *male* is winged, of an ochreous-brown or smoky colour, thickly punctured and clothed with very short pubescence; the head is concealed beneath the shield-like thorax, which is semi-circular, the margin projecting and slightly reflexed; the organs of manducation are small; the antennæ are short and 11-jointed; the eyes are large, black, and approximating beneath; the elytra are elliptical and completely cover the abdomen; the wings are very ample and folded beneath the elytra in repose; they are pale fuscous, with various brown nervures: the sides of the abdomen are serrated, with *two* phosphorescent spots on the penultimate segment, beneath: the six legs are moderately long; the tibiæ simple; the tarsi five-jointed, the three basal joints short, fourth bilobed, fifth slender, clavate, and furnished with two small claws, (fig. 1, magnified); the cross-lines exhibit the natural expansion of the male flying. The *female* is long and apterous, a little broadest at the middle, of a reddish-brown colour; the head small and mostly concealed, but it is visible when the animal is in action; the eyes are smaller than in the male; the antennæ are similar; the thorax is larger and resembles the other sex, but the margin is more opaque; the second thoracic segment is short and narrow, and, with the third, has a somewhat transparent orange spot at each posterior angle: four terminal segments, cream-colour or ochreous beneath, and phosphorescent; the six legs are shorter and stouter than those of the male, (fig. 2, the natural size). The *larva* is similar to the female, but is often much smaller when young; it is, however, when full grown, an inch long; the mouth is furnished with a pair of longish, exceedingly acute jaws, which are curved and cross each other, together with palpi, &c.: all the 12 abdominal segments have an ochreous or orange spot on each posterior angle; the six legs are short, and terminated by single claws. The minute horns, apparently formed legs, and spotted sides of the body, independently of the mouth, readily distinguish the larva from the females. The pupa resembles the larva, but is curved, and the antennæ and legs are inclosed in membranous sheaths, so that the animal is unable to walk.—*Burlinda.*

* Curtis's Brit. Ent. fol. 699.

† Curtis's Brit. Ent., pl 699, for the dissections, &c.

THE ROSE-GARDEN.—No. XIII.

(*Continued from page 399*)

March Pruning.—In places where the plants are much exposed, this cutting in may be delayed occasionally even to the 15th of April, which will remove the inconvenience and injury that the delicate sort may suffer from pushing too early, and subsequent cold after pruning. During the month of March, early or late, according to the season, the operation of depriving the shoots of the wild stocks of their useless wood takes place; and from this date the return for all previous labours is commenced.

One eye being left beyond—that is, nearer the summit of each branch than the bud placed upon it—the remainder of the wild branch is to be removed; and if there be any of the stem of the tree above the highest wild shoot, that also may be cut off close to the base of the shoot, slanting, as at first directed, and the live wood now exposed is to be defended with the mixture before given—unless, indeed, immediate appearance is of no importance, or the application of the mixture be considered too troublesome, on which latter case the incision should be made when the flow of sap is at its full, or delayed till the following spring.

Sap-bud.—Upon the single bud left at the end of the wild branch the strength of the expected shoot greatly depends. The inserted bud, though almost sure to grow, is not incorporated with the tree itself; for, if a branch of a tree in its natural state be broken off, part of the tree will come off with it; not so a bud placed in the branch—it will come off as if it had been merely stuck on. The sap, therefore, does not quite so readily flow to it, and must be drawn up by a leading bud, not actually as a matter of necessity (though it almost amounts to it), but as a means of increasing success. The desideratum is to put the sap in motion, and establish its action by means of the leading bud; and when the inserted buds are fit to perform their part, to transfer the supply of the leader to them. The sap, in the present instance, may be considered as a vessel on the water, which requires some force to propel it, but when once set in motion, unless a severe check be experienced, its own weight will keep it so. It is true that the inserted bud will start without the assistance of the leader, but this is not always to be depended upon, and the final result far less so. The destruction of the leader of a tree disorganises for the time the whole vegetable economy. If the leaders of some trees be stopped, they will form half a dozen or more equal growing branches, each performing its quota of the part of the original leader; and if the leader of a creeper be destroyed, the accumulating sap sets to work the buds half way down the plant, and the produce being multiplied, the size of it is diminished. It may here be remarked that the capability of the tree, if in health, is much more than sufficient to support what is desired of it this season; if, therefore, under an impression that the tree will be weakened by wasting itself in wild produce, the sap bud be not left, the plant will obstinately persist in showing buds at the sides of the stem, and after making a feeble shoot from the inserted bud, and this with a considerable delay, it will finish its first season with a head, not more than equal to one from a bud with a pushing eye of the same year.

In these cases the tree vegetates weakly for a season or two, and generally dies. The destruction of the sap-bud was once an error very prevalent in English nurseries, and accounted in a great measure for the inferiority and unhealthiness of their standards, but it is now generally rectified.

A tree planted with a dormant bud upon it, and little root, will frequently, if deprived of its sap-buds, hang back until the sap be powerfully collected, and break out a knot below the inserted bud, which will then commence and continue to progress with the wild one, which, although the lowest of the two, should not, under these circumstances, be knocked off (provided the other continues to increase), until it arrive at the same state of forwardness as directed for the sap-buds, when the inserted bud being ready to take up the nourishment, the wild shoot may be removed.

In all cases where the tree refuses to break above, the formation of suckers may be apprehended, particularly from clump roots, which renders it very desirable that the root should be properly trimmed at first planting. The wild bud should be left to push till it has got two or three pair of leaves, and then stopped by nipping off the point with the finger and thumb; the placed bud will then shoot vigorously, and when it is four or five inches long, the sap-bud is to be cut off nearer its base; it is not desirable to remove it entirely (though it must not be allowed to throw out long side-shoots), but barely left alive, in order to maintain the bark at the end of the branch, and the succeeding March, or even at Midsummer, if vigorous, the extraneous wood may be removed to the base of the inserted bud, the sap from which will then (if the place be lightly protected with mixture) cover the wound completely. In cases of weak growth, however, the base of the sap-bud may be left with advantage until the succeeding spring, or even summer.

It sometimes occurs that the bud of last year's insertion is by no means prepared to start; it looks like a bud at the base of any other plant, hard and immovable; perhaps two sap-buds have been left, and these, when cut in, again form shoots, which are also stopped without success, or perhaps on each side of the worked shoots, and from the same eye, buds make their appearance while the insertion is unchanged. In such cases the shoots should be shortened to one sap-bud, in order to throw the vigour of the plant into the immediate vicinity of the bud; and the shoots from the stem of the tree above mentioned, should in general be allowed to progress, and that part of the plant assisted in its general health until the inserted bud begin to vegetate, and the moment it is able to take up the circulation the extraneous shoots may be reduced as before described.

A certain quantity of leaves being necessary to keep every plant in health, it is very desirable that the leaves of the sap-buds should not be taken off until the inserted bud increases into full vigour; they afford nourishment to the plant, and take none from it, sustaining the vigour of the plant at its extremes.

It is desirable that some shoot should be free to work at the summit of the plant, which cannot always be the case when only one bud is inserted, which, flowering at its summit, sometimes restrains or stagnates a vigorous plant to a considerable degree. Hence the desideratum of three or four shoots instead of one, the jets from which will find sufficient work for the plant, to allow its flowering without injury. This any one who has remarked the capability of supplying nourishment which the wild stem possesses, and is aware of its impatience of stagnation, and speedy withdrawal of its sap, on such occasions, will at once acknowledge. It must be remembered, however, that this benefit will only be derived to such Roses as cannot be made to produce more than a certain quantity of wood, as Smith's Yellow Noisette, &c., whose thickened juices seem sometimes scarcely able to open the flowers, but there are many others in which the volume of sap seems assisted by confinement to a single channel.

No plant is so much benefited by a constant attendance upon its wants, as the standard Rose, the first year after it has been worked; the demands for which labour, if freely supplied, would far outweigh the value of any plant that could be raised.

Home Correspondence.

Asparagus.—On the 26th of July, 1843, I procured 6 cwt. of dirty salt, at 1*s.* per cwt., and applied it to three beds of Asparagus which were three years old. One of the beds had seeds sown in drills at the time it was planted; both the seed and the two-year old roots, which I had from Hamburgh, are of the Giant sort; each bed is 12 yards long and 1½ yard wide; 2 cwt. of salt was sown over each; it destroyed everything that was growing on the bed, except the Asparagus; the salt remained on the surface until rain washed it in. I then forked the bed well over, and the plants commenced growing and continued luxuriant until November, when the weather was cold and frosty. Strong heads, however, were occasionally produced until Christmas, when I cut down the stems to within 12 inches of the ground, and threw out the soil from the alleys on the beds to the depth of about 6 inches; and in this state they remained until March. I then raked off all the rough clods and stones into the alleys, taking with them the decayed stems, and forked over the beds. The plants began to shoot, and continued growing luxuriantly until about a month back, when they all turned yellow, and presented the appearance of autumn. This destroyed all my hopes; but, on examining the roots with my fork, I found out the cause. The plants about which the soil was stirred up in the morning had changed their colour in the evening. On perceiving this, I forked two rows, the whole length of the bed; next morning these had also changed colour. I then set to work in good earnest, and forked all my beds over. The soil turned up in great clods, down to the very crowns of the roots, pulling up with it several young shoots. I was obliged to split the clods before they could be got from amongst the stems; these clods I pulverised in the alleys, and then returned the soil to the beds. Before spreading it on the beds, however, I put four quarts of Poittevin's disinfected manure between the four rows of plants, and then covered over the bed with the soil; next morning the stalks were covered all over with a fine dew, and were of a beautiful green. I have no doubt but the cause of the evil is the exclusion of air from the roots, and bad drainage. The average height of my Asparagus is now more than 6 feet, and young shoots are continually being produced, as if it was spring. Poittevin's manure is the best fertiliser in dry weather of any of the patent manures: this I have proved in many instances during this dry summer. I have used it for four years, but never before applied it to Asparagus. Next summer I propose using half the quantity of salt, mixed with 18 "strikes" of sea-sand, fresh from the beach. A good dressing of salt once in two years is often enough; it destroys all weeds and damps the land. The three beds are salted as before, and being well forked up in March, the seedlings are rising luxuriantly since the rain. I am convinced that salt will neither destroy plants nor seeds of Asparagus or Seakale.—*Wm. Coulam, Louth, Line.*

Judges.—Your observation, in Leading Article of the 22d inst., that "Fairness in judging is the first element of success. People are contented with awards, although unfavourable to them, if they are certain the judges are perfectly conscious in their decisions. But if men are not satisfied on this point good-bye to all chance of holding them together"—is one that ought to be deeply impressed on the minds of all managers and judges, more particularly of small and provincial societies, where all semblance of unfairness and deviations from a society's rules—whether these deviations be caused by prudence, malice, or ignorance—are sure to be felt and resented as a grievance. Several cases corroborating this have from time to time, during the last twelve months, come under

my own observation, and I shall relate them shortly in such a way as to allow you to affix your judgment to each instance. 1. A prize being offered "for the newest and best Annual," would it be fair to award the prize to Mesembryanthemum tricolor, a plant that has been in the country for 50 years?—[If it were both the newest and best, yes; not otherwise.] 2. A prize being offered "for the six newest and finest-flowered stage Pelargoniums in pots, with names," would it be fair to award the prize to spindled, pale-foliaged plants, having numerous trusses of individually inferior flowers of Caroline, Florence, Flash, Fair Maid of Devon, Black Dwarf, and Grand Monarch, to the exclusion of compact, dark-green-foliaged plants, having comparatively but few trusses of individually splendid flowers of Constellation, Cleopatra, Diana, Armynta, Sapphire, and Comte de Paris?—[No.] 3. A prize being offered "for the finest grown specimen of any recently-introduced perennial herbaceous plant in flower, with name," would it be fair to award the prize to a potful of Achimenes grandiflora, to the exclusion of a single plant of Achimenes grandiflora, better grown than the other, so far as single plant for single plant went, being considerably the tallest of the two, clothed with large dark-green leaves from the pot upwards, and having, although necessarily fewer yet better-coloured flowers?—[This could only be ascertained by inspection. According to the case here put, it would not be a fair award.] 4. A prize being offered "for the finest grown specimen of any rare, tender, shrubby plant or flower," would it be fair to award the prize to a plant about two feet in height, and about same diameter, of the comparatively not rare, not tender, Pimelea decussata var. rosea, to the exclusion of a plant upwards of one foot high and two feet in diameter, of the comparatively rare and tender Turnera elegans? [No.]——As these instances are not altogether imaginary, and as a deep and extensive suspicion seems to be rapidly engendering against Horticultural Societies in general, that may ultimately, and soon advance to a serious reaction against them, it becomes necessary—you will allow surely—to comment on and check all misunderstandings and instances of unfairness. —*C. M. C. H. S.*——[We can only add, that the motto of the Judge should be *fiat justitia, ruat cælum*, which, being interpreted signifies, Do what is right and fair, without caring who is pleased or offended.]

Pine Apples.—Having a very large Pine stove capable of holding nearly 100 fruiting plants, heated with hot water, both for bottom and top, I resolved, about six months ago, to adopt different plans of fruiting them. For this purpose I had the bed divided into three compartments. In the first division the pots are suspended from holes formed on a wooden stage by their rims, into a hot-air chamber, by which it receives its heat from hot-water pipes, with dishes to hold water passing underneath, about 4 feet deep. In the second division brick pillars were raised a few inches above the pipes, and a bottom of flag and large pieces of broken brick was formed, upon which about three loads of tanners' bark were placed for plunging the pots. The third division was also covered in the same manner, but instead of tan bark, a thick coat of manure was laid over the brick-bats. The pit was then filled with fresh peat and river sand, well mixed together: 36 succession plants were planted out in this compartment, and each division containing about the same number; the sorts are nearly all Black Jamaicas. Attention has been paid to airing, watering, and keeping a steady surface-heat, and, as far as could be judged, to keeping a regular bottom-heat; the plants are very strong and healthy, and many have sent up suckers, but hitherto, with one exception, no fruit has appeared. It is impossible the plants could have a better appearance, but I am much disappointed in not having fruit,—especially as in Mackintosh's "Practical Gardener" it is stated that "Pines starting into fruit in August, may be considered tantamount to being lost." Can any of your correspondents suggest a method likely to be successful in bringing them into fruit before August?—*A. B. C.*

Bees.—In the *Gardeners' Chronicle*, p. 197, 1841, "An Old Correspondent" will find that I have recorded a similar instance of interment with his own, attended by a like successful result. To obviate such a fatal event as succeeded, I know of no sure remedy but the removal of one of the families beyond the usual range of the bees' flight, till the flowers afford them an ample supply of honey.—If a "Constant Reader" will refer to page 284 of the 1st edition of the "Honey Bee," or 328 of the 2d edition, he will find that I there recommend the use of volatile alkali, for the same purpose and for the same reason that he makes use of the fixed alkali; and the former has this advantage over the latter—it is more penetrating, and no caution is required in the use of it. I have always found it speedily effectual.—*Edw. Bevan, Esqair Evan, Newtown, Montgomeryshire.*

Bees.—Having read several articles on the conservative system of keeping bees, so as to prevent their swarming, which some apiarians imagine is the best plan, I tried the following experiment with two old stocks:—On the 6th of May they showed every symptom of swarming, and in order to prevent them from doing so, I placed a large hive under each. The hives are 14 inches deep, and the same in diameter; each is made with a wooden top and a hole in the centre 1¼ inch square; the bees soon filled them with comb, and on the 8th of June one of them, although well shaded, swarmed; the swarm weighed 5 lbs. The other has not swarmed yet. On the 16th of June I took off the top hive from the one that had swarmed, and from it I obtained 20 lbs. of very clear and good honey; there was a small quantity of brood near the bottom of the hive in two of the combs. Now, I am desirous of information on the following points:—If I take the hive off the top of the other hive (which is exceedingly strong) will not the decrease in room cause it to swarm? Again, if I leave it on much longer, and then take it away, will not the bees be prevented from procuring sufficient food for their support in winter, as there is no place here to which they may be transported in autumn for a supply? Will not an old stock work up as well as down? Any experienced apiarian who will kindly answer these inquiries, will greatly oblige—*A Cottager, West Dean, Sussex.*

Sting of Bees.—Apply the blue-bag used by the washerwomen. Five minutes ago (and which induced me thus to address you) I was stung by one of my bees, who made three distinct attacks before he could succeed. I applied the bag, and the pain ceased instantaneously. I have tried the same remedy before, both on myself and children, and always with the same result.—*F. G. C. Aston Hall, Hawarden.*

Humphreys's Compound.—The letter of "F. R." attracted my attention, as well as that of Mr. Humphreys, and I felt anxious to know if the remarks made by that writer may be trusted, as also whether the explanation offered by Mr. H. is admissible. That the Compound contains no phosphate of lime is admitted, but who ever heard of guano without it? As well might we speak of syrup without sugar, or brine without salt! But it is stated that, although phosphate of lime is absent, phosphoric acid is present, and that in a state more generally available. Of course, if this be the case, it is capable of proof, and a simple experiment will suffice for this purpose. I took a portion of Humphreys's Compound, and found it readily soluble in water. The solution was diluted, made alkaline with pure ammonia, and a drop or two of solution of chloride of calcium added to it. There was not the least precipitate or opalescence produced, even after some length of time, which would have been the case if phosphoric acid had been present. To prove this position, a glass rod was dipped into a very dilute solution of phosphoric acid, and applied to the mixture. The well-known appearance of precipitated phosphate of lime was almost instantaneously observed. This experiment must, I think, be admitted as conclusive; and if so, we have before us the anomalous statement that a "liquid guano" can be produced from a "compound" not only not containing phosphate of lime, but utterly devoid of phosphoric acid in any shape! When Mr. H. proposes by public advertisement to substitute his preparation, excellent as it is for some purposes, for my "liquid guano" (for this is evidently pointed at), he should first rub up his chemistry a little, or at least give others the credit for not taking an unsubstantiated assertion as indisputable fact. In conclusion, I should propose that, instead of regaling the public with our discussions, and occupying, very unprofitably to you, your valuable pages, that Mr. H. be so good as to withdraw the objectionable part of his advertisement, and let each of us prosecute our career without interfering one with the other; for, surely, there is plenty of room for both, without jostling or falling out by the way.—*W. H. Potter, 28, Upper Fore-street, Lambeth.*

Horehound.—Many thanks are due to your correspondent (p. 375), for having directed attention to the valuable properties of the Horehound in cases of influenza, &c., as restoring the tone to the stomach, and allaying irritation. I question, however, if the generality of your readers would venture upon a second glass of the mixture there prescribed, owing to the peculiarly bitter character of the plant. The mixture I have seen used for the same purpose, though probably less efficacious than that of "M.D." was certainly more palatable. It consists merely of a strong decoction of Horehound (prepared in the same manner as Camomile-tea), sweetened with honey to the taste. Any tolerable hand at taking medicine will find no difficulty in drinking a wine-glass or two of this mixture the first thing in the morning, or at any time when oppression on the stomach is felt. Yarrow-tea is in some parts of Yorkshire a favourite beverage among the old women, the effects of which are possibly similar.—*M. A.*

Labelling.—Allow me to say that, although I referred to the "Rose-garden," I think the labels and my little implement applicable in other ways. I use such labels to my fruit-trees, plants in pots and borders, to my wine bins, &c. Those, however, who, like me, detest to see that crooked which ought to be straight, may find themselves disappointed with a few round-based letters—the c, *a*, *j*, o, q, and u. The makers of the punches—why, I cannot tell—are apt to leave them thicker in the edge than the other letters, which causes them to stand higher than the true line. A file will sometimes correct the punches; if too hard for it, as generally they are, any cutler or whitesmith will do it on his grind-stone. The q, however, is nearly impracticable; his tail will not let him "keep the line." The only way, I believe, is to use the o instead, and, with a knife, the corner of a small chisel, or a graver, give him his appendage afterwards.—*W.*

Societies.

HORTICULTURAL SOCIETY OF LONDON.

July 3.—W. H. Pepys, Esq., in the chair. His Majesty the King of Saxony was elected an honorary member of the Society; and the following gentlemen were elected fellows—Sir T. Tancred; J. B. Phillips, Esq.; Dr. W. Speir, and Mr. F. C. Ball. The Exhibition included several objects of great interest. Sir W. J. Hooker sent from the Royal Botanic Garden, Kew, the charming Thunbergia chrysops, remarkable for its eye of gold in a field of the richest purple; a beautiful specimen of Dracophyllum gracile, with its clusters of snow-white flowers; a noble new species of Justicia, resembling J. carnea, but with leaves as soft as velvet; a new species of Oncidium allied to O. Baueri, but quite distinct, from central America; and several other interesting things.—Mr. Best, gr. to Alexander Park, Esq., Merton Grove, Surrey, obtained the Silver Knightian Medal for a *new shrubby* Nolana, with large sky-blue flowers; this plant may be expected to become a very valuable addition to our collections, if, as is probable, it will grow out of doors like a Pelargonium during the summer.—Mrs. Mason, of Copt Hewick, produced blossoms of that Passiflora membranacea, largely distributed by the Society from Mr. Hartweg's seed, with beautiful foliage, which no one had succeeded in throwing into flower; it proves to have pale lemon-coloured blossoms lying within a pair of pale purple bracts, looking exceedingly like some gay bivalve shell.—Seedling Calceolarias came from W. C. Alston of Birmingham, and Mr. Jones, gr. to Sir Moore Disney; and seedling Pelargoniums from Mr. Fish, of Colney House.—Mr. Glendinning, of Turnham Green Nursery, produced a beautiful little specimen of the splendid Clerodendron infortunatum, which is thus shown to blossom freely while small.—Roses, Brachycomes, and other plants were received from Mr. Jones, who also gained a Certificate of Merit for a nice dish of Black Tartarian Cherries.—Of Fruit there were some remarkable specimens.—Mr. Hugh Frazer, gr. to E. D. Davenport, Esq., produced four Providence Pines, weighing respectively 6 lbs. 2 oz., 8 lbs. 12 oz., 7 lbs. 2 oz., and 6 lbs. 15 oz., and obtained a Silver Banksian Medal for the first, which was handsome as well as heavy. Next him came Mr. S. Rylance, gr. to J. B. Glegg, Esq., to whom a Certificate was given for a very pretty Providence Pine, weighing 4 lbs. 8 oz.—Among Melons was a Hoosainee from Mr. Hendry, gr. to the Rev. Wm. Antrobus, weighing 12 lbs. 3 oz., for which, although degenerate, a Banksian Medal was given, because of its good cultivation.—Mr. S. Rylance also produced another of the same kind, and, like that, of a runaway sort, weighing 5 lbs. 1 oz.—Finally, Strawberries were shown by Mr. Bulger, gr. to R. Wrench, Esq., and by Mr. Fish, who also produced a seedling, but it proved coarse, and deficient in flavour.—Of the Plants from the Society's Garden the most interesting was a beautiful plant of Elæocarpus cyaneus, loaded with snow-white cups, cut at the border into feathers. Few people flower this species; the specimen produced had been exposed to a long season of heat, comparative dryness, and bright light, in the iron conservatory; Lindleya mespiloides, one of the sweetest of fragrant evergreens, but tender, was there in beauty. Finally, the result of a trial of charcoal *versus* bone-dust, as applied to Fuchsias, was produced in the form of two plants of Fuchsia Chevalieri: they were struck from cuttings in one pot, and were potted off on the 15th Feb. A thumb-pot full of bone-dust was mixed with the soil in which one was potted; the other received the same quantity of charcoal; each was potted in a 48. For a few weeks the only perceivable difference was, that the one in bone-dust had leaves of a much darker colour than the other. Both were repotted on April 26th, into 16s, a 60 pot of bone-dust being then given to the one, and of charcoal to the other, in the same way as before; both plants had grown so much alike, that it was hardly possible to say which was best; and thus it appeared, that good as bone-dust is, it is equalled by charcoal in the treatment of Fuchsias for specimen plants.

ROYAL BOTANIC SOCIETY OF LONDON.

July 2.—The third and last Exhibition for the season was held in their gardens, Inner Circle, Regent's Park. The morning was exceedingly wet and unpromising, but towards noon the sky began to clear, and the afternoon, although cloudy, continued favourable. At this Exhibition, although less showy than either of the two former meetings, there was a considerable number of plants that strikingly exemplified both skill and good management.

Of the two LARGE COLLECTIONS present of stove and greenhouse plants, that of Mr. Barnes, gr. to G. W. Norman, Esq., contained the greatest number of well-grown specimens, comprising a variety of Clerodendron squamatum; Aphelexis humilis, loaded with flowers, which, on account of the dulness of the day did not open; Stephanotus floribundus, finely in bloom, trained on a wire trellis; Swainsona galegifolia, with beautiful purple blossoms; an Ixora coccinea, and a dwarf-spreading specimen of Phœnocoma prolifera. In this group was also a beautiful Rondeletia speciosa; Lilium longiflorum, small, but a mass of white bloom; and Leschenaultia formosa, dwarf and bushy, together with several well-grown Heaths. The other was from Mr. Hunt, gr. to Miss Traill, and, except in a few instances, was little inferior to the preceding. It contained, among others, a well-managed Leschenaultia formosa, covering the pot; Clerodendron squamatum, having five fine spikes of brilliant scarlet flowers; Sinningia velutina, with delicately-spotted, cream-coloured blossoms; a small, but beautiful Rondeletia speciosa; a large pot of Achimenes longiflora, in fine condition; together with an excellent Boronia serrulata, and a magnificent specimen of Crowea saligna, 5 feet high, in luxuriant health.

Collections of 20 STOVE and GREENHOUSE PLANTS were contributed by Mr. Bruce, Mr. Baker, and Mr. Green; and in the nurserymen's class by Mr. Fraser and Mr. Pawley.—Mr. Bruce sent a large Coleonema pulchrum, the gracefully drooping branches of which were loaded with small pink blossoms; an exceedingly well cultivated Aphelexis humilis, exhibiting a mass of bloom; a large

Euphorbia splendens, Pentas lanceolata tricolor, and a good Cactus speciosissimus.—The group by Mr. Baker, gr. to — Lindsay, Esq., although somewhat inferior to these, comprised good plants, and among them Dracophyllum gracile, covered with clusters of snow-white blossoms, was conspicuous; as was also Sollya linearis, producing deep blue flowers, trained on a wire trellis; Achimenes longiflora and rosea, together with the sweet-smelling Erica odorata.—From Mr. Green, among others, was a handsome Stephanotus floribundus, in excellent health, trained on a circular trellis; Nematanthus longipes, with dark-red, drooping blossoms; a good Sollya heterophylla, and a small Gloxinia rubra.—In Mr. Frazer's group, which contained healthy, well-managed plants, three Cressulas were particularly noticeable for their fine heads of bloom, viz. nitida, grandiflora minuta, and cocciuea. Mr. Frazer also sent a pretty Angelonia Gardneriana; a small but good Gardoquia Hookeri; Crowea saligna, particularly fine; along with a large bush of Vinca rosea alba, and a small Roella ciliata.—Mr. Pawley contributed a variety of Cattleya Mossiæ, called superba, with very large showy blossoms; Æschynanthus ramosissimus, trained on a wire trellis; Stephanotus floribundus, in luxuriant growth, and other plants equally eviucing good treatment.—Groups of ten stove and greenhouse plants were from Mr. May, Mr. Taylor, and Mr. Slowe. Mr. May's collection comprised a magnificent Ixora coccinea; a large Pimelea hispida, Polygala cordifolia, covered with purple blossoms; Crowea saligna, in good health; and a pretty Pimelea decussata.—Mr. Taylor sent Myoporum parvifiorum, producing white star-like flowers; Lantana aculeata, Gesnera splendens, and Diplacus aurantiacus, covered with orange blossoms.—From Mr. Slowe were Clerodendron paniculatum, Crowea saligna, Statice arborea, a good Mahernia pinnata, and a small Vinca rosea. Of Stove and Greenhouse Climbers, Mr. Frazer contributed Hoya carnosa, Sollya linearis, heterophylla, and angustifolia, Stephanotus floribundus, and a handsome Manettia cordata.

Collections of Orchidaceæ were exhibited by Mr. Hunt, Mr. Cox, and Mr. Barnes. Among them there was nothing particularly novel or striking. Mr. Hunt sent good plants of Cattleya crispa and Mossiæ. Mr. Cox had a variety of Stanhopea insignis, in good condition; together with Oncidium pulvinatum, and Miltonia spectabilis; and from Mr. Barnes was a good Calanthe veratrifolia and an Aerides odoratum in fair condition.—Mr. Jackson, of Kingston, showed as a single specimen Brassia Wrayæ.—Messrs. Henderson, of Pine Apple Place, sent (not for competition) among others, Cattleya Forbesii and Rodriguesia recurva, the latter with two drooping racemes of pale-yellow blossoms.—Of Heaths there was a good display. Collections of 15 were contributed by Mr. May and Mr. Barnes, and in the Nurserymen's Class by Mr. Jackson, Mr. Pawley, and Mr. Fairbairn. The group by Mr. May was the best, and contained a very fine large specimen of radiata, four feet across, in robust health, and covered with handsome red and white flowers; the neat small flowering comosa alba, the free-blooming Savileana, a handsome small plant of depressa, and a fine viridiflora, covered with its singular drooping green blossoms.—Among the plants supplied by Mr. Barnes, were obbata, with handsome large white flowers; a variety of tricolor, called splendens, retorta major, which is an excellent Heath, and a small elegans in good health, together with perspicua nana, which was in fine bloom even thus late in the season; and a good gemmifera finely in flower.—Mr. Jackson sent an immense bush of a variety of ampullacea, named Eassoniana; jubata, very large and covered with bloom; Jasminiflora in fine health, and a variety of ventricosa, called Bothwelliana, 4 feet high and about 3 feet indiameter, completely loaded with delicate pink blossoms. From Mr. Jackson was also depressa in good health, several varieties of tricolor, and a handsome specimen of Westphalingia, quite a mass of red bloom.—Mr. Pawley sent a large ventricosa stellate, a lovely splendens, a well-grown Cavendishii, and a small depressa in fine health.—From Mr. Fairbairn, among others, was cubica loaded with drooping little bells, a distinct variety of ampullacea called rubra, and small plants of Irbiana and princeps.—Mr. Green exhibited in collections of 15, but was disqualified on account of producing only 14 plants.—In 6 Heaths, the best plants were shown by Mr. Hunt and Mr. Dawson, of Brixton-hill; both these groups contained admirable specimens; among those of the former, we noticed Massoni, dwarf and bushy, and in fine health; Cavendishii, in excellent condition; gemmifera, large and in profuse bloom; and Westphalingia, very fine;—among those of the latter was a beautiful specimen of ampullacea major; Irbyana, covered with pink flowers, and the free-flowering mutabilis.—Mr. Taylor and Mr. Frazer also showed creditable plants in this class; Mr. Tayler likewise contributed G Statices, in which was a good plant of puberula.—From Mr. Burley, Limpsfield, was a seedling Heath named tricolor pallida.—Of single specimens, those most worthy of remark were a most beautiful large Erica Jasminiflora alba from Mr. May; a magnificent Statice macrophylla in robust health from Messrs. Lucombe and Pince; and a large Erica Hibberti in luxuriant growth, but scarce of bloom, from J. Wells, Esq., of Bromley; specimens of Luxemburgia ciliosa, Cyrtoceras reflexum, Ixora acuminata, and a small Cuphea strigillosa, were likewise shown by Messrs. Lucombe, Pince, and Co.—Mr. Green sent Gompholobium splendens, bearing large yellow blossoms; and a specimen of Fuchsia altissima was contributed by Mr. Noble, gr. to R. Mangles, Esq.—From F. G. Cox, Esq., was a large Erythrina laurifolia.—Mr. Jackson produced Statice sinuata, in good condition, and a plant of Scutellaria racemosa, with curious dull-coloured flowers.—Two Gloxinias, named Cartouli, having beautiful star-coloured blossoms, tinged with white, was shown by Mr. Green.—A collection of Achimenes was sent by Mr. Dobson, gr. to Mr. Beck. They were in lovely condition, being clean, healthy, and presenting an unbroken mass of bloom; than these it is scarcely possible to find a finer instance of good management.—A collection of Roses, in plate cups, from Mr. Dobson, were not less remarkable. Among them was a most beautiful specimen of General Allard, producing a multitude of large pink blossoms; others were Centard, Madame Desprez, Triomphe du Luxemburg, Acidalie, Aimé Vibert, Robin Hood, &c.—A large group from Messrs. Lane and Son, equally good, comprised many fine varieties.—A great quantity of Cut Roses was exhibited, in unusually fine condition, by Messrs. Lane, Betteridge, Milne, and other growers. Among miscellaneous objects, we noticed two groups of Dwarf Cacti, some British Ferns, a few Alpine plants, dried specimens of Cereal Grasses, and a small quantity of Fruit.

The Pelargoniums, though not so good as at the last meeting, were very fine and brilliant in colour. A specimen of Matilda, in Mr. Dobson's collection, deserves particular notice; this was perfect, and a complete mass of bloom. The 1st Prize, for 12 varieties in 24-sized pots, was awarded to Mr. Dobson: this collection consisted of Dido, Leonora, Meteor, Bella, Lucy, Angiola, Erectum, Lucy Matilda, Lord Chancellor, Cleopatra, and Flora. There was no competition in this class.—For 8 varieties in 24-sized pots, in the amateurs' class, the 1st Prize was awarded to Mr. Staines, of Middlesex-place, for the Fair Maid of Devon, Duke of Wellington, Anna, Princess Royal, Clio, Beauty, Matilda, and Priory King.—2nd, to Mr. Coysh, gr. to R. Hudson, Esq., Clapham, for Queen of Beauties, Beauty, Witch, Erectum, Acme, Priory King, Mabel, and Lord Mayor. Mr. Gaines and Mr. Catleugh were the only exhibitors in the Nurserymen's Class: the former obtained the first Prize for the following 12 varieties in 12-sized pots—Lady Isabella Douglas, Grand Duke, Antiope, Sirius, Una, Amaranth, Madeleine, Cyrus, Mabel, Amethyst, The Cid, and Album perfectum.—Mr. Catleugh's collection consisted of—Witch, Erectum, Priory Queen, Acme, Selina, Hebe, Jubilee, Coronation, Marsala, Grand Monarch, Gipsy, and Queen of the Fairies.—For 12 varieties in 24 sized-pots, Mr. Gaines again took the 1st Prize—for Mogul, Gaines' Elegans Novum, Madeleine, Albini, Queen of the Fairies, Hermione, Achilles, Lady Sale, Harriet, Priory King, Queen of Bourbons.—Mr. Catleugh exhibited—Myra, Nestor, Rosetta superb, Sultana, Dido, Sir R. Peel, Garth's Constellation, Madeleine, Pulchellum, Symmetry, Juliet, Gipsy.—A large specimen Pelargonium, named Floridum, exhibited by Mr. Gaines, was recommended for a Prize.—A Prize of the 2nd Class was awarded to Mr. Ayres, gr. to J. Cook, Esq., for Scarlet Geraniums, consisting of Gen. Tom Thumb, (seedling) and Smith's Emperor. Calceolarias.—*Amateurs.*—A 1st Prize was awarded to Mr. Barnes for Maculata, Lady of the Lake, Pride of Kent, Cotherstone, Competition, Colossus, Elysium, and Mabel. *Nurserymen.*—Mr. Gaines obtained a 1st Prize for Aurea, May grandiflora, Lady Sale, Attila, Cyrus, Tigrina, Sunbeam, and Prince of Wales.—The Fuchsias generally were in fine condition; Mr. Gaines, to whom was awarded the 1st Prize, exhibited 12 well-selected and finely-grown plants—Paragon, nobilissima, majestica, Britannia, excelsa, alata, formosa elegans, Lanei, Cormackii, Eclipse, Defiance, and robusta. 2d Prize to J. Simpson, Esq., Thames Bank, Pimlico, for Dr. Gardener, Cormackii, Stanwelliana, Eppsii, Rogersoniana, racemiflora, Bnestii, formosa elegans, and Eppsii. A good collection from Mr. Halley, of Blackheath, and another from Mr. Laing, of Twickenham, were recommended by the Judges for Prizes. Carnations and Picotees, in stands of 24 varieties: the 1st Prize for Carnations was awarded to Mr. Norman, of Woolwich; the 2d, to Mr. Willmer, King's Road, Chelsea, for Picotees. Mr. Dickson, of Acre Lane, Brixton, obtained the 1st Prize for Gidden's Lydia, Annesley's Plenipo, Coxe's Victoria Regina, Willmer's Queen, Barraud's Borderer, Kirtland's Duke of Wellington, Martin's Queen Adelaide, Wilson's Pluperfect, Sharp's Agitation, Edmond's Ada, Willmer's Princess Royal, Ely's John Bull, Martin's Queen of Violets, John's Prince Albert, Ely's Marchioness of Waterford, Barraud's Coriolanus, Kirtland's Queen Victoria, Willmer's Mary Ann, Sharp's Gem, Brinkler's Lady Chesterfield, Trip to Cambridge, Sharp's Cleopatra, Gidden's Teaser, and Vespasian.—To Mr. Edmonds was awarded the 2d Prize, for Willmer's Bifrons, Peter the Great, Annesley's Sanspareil, Burrough's Mrs. Bevan, Kirtland's Wellington, Cockburn's Champion, Sharp's Cleopatra, John's Prince Albert, Miss Annesley, Nottingham Hero, Crask's Princess Victoria, Lady Chesterfield, Garratt's Lady Dacre, Sir R. Peal, Edmond's Ada, Sharp's Agitator, Willmer's Elizabeth, Willmer's Queen Victoria, Brinkler's New Purple, Kirtland's Princess Victoria, Wood's Agrippina, Gidden's Teaser, Sharp's Fairy Queen. An Extra Prize for Picotees was also awarded to Mr. Norman. — Pinks in 24 varieties: 1st Prize to Messrs. Brown and Atwell, Uxbridge; 2d, to Mr. Henderson, St. Mary Cray.—Pansies in collections of 36 varieties: 1st Prize, Mr. Parsons, Pendere End; 2d, Mr. Woods, do.; 1st Prize to Mr. Smith, Horneastle, for a collection of cut bloom of Verbenas. Extra Prize to Mr. Ayres, gr. to J. Cook, Esq., Brockham, for Geraniums.—Pansies.—Seedlings.—A 1st Prize to Mr. Beck, for a seedling variety, named Servant; 2d, to Mr. Silverlock, Chelsea, for Emperor Nicholas; Certificate to Mr. Stainer, for Le Petite. A 1st Prize for a Pelargonium containing the nearest approach to scarlet, to Mr. Beck, Isleworth, for Lychnidiflorum. A certificate to Mr. Diplock, gr. to M. Emanuel, Esq., for a scarlet Geranium, named Antagonist; do. to Mr. Henderson, for a Pelargonium, named Lady Ann; 1st Prize to Mr. Halley, of Blackheath, for a Seedling Fuchsia, the Highland Chief. An Extra Prize was awarded to Messrs. Lucombe and Pince, of Exeter, for cut bloom of a Seedling Pelargonium.

COUNTRY SHOWS.

[We shall endeavour to dispose of all notices of this kind on Saturday, July 20.]

Reviews.

The Botany of the Antarctic Voyage of H.M.'s Discovery Ships Erebus and Terror, in the years 1839–1843. By Joseph D. Hooker, M.D. 4to., L. Reeve. Monthly Parts.

Although the English are the great discoverers in the annals of South-sea geography, and botanists have been attached to the more important of those perilous southern voyages, yet the English public has little for which to thank the scientific gentlemen. On the contrary, when their cost is compared with the result, it would have been better to have saved the money. In Cook's first voyage, large Botanical collections were made by Dr. Solander; but his materials are chiefly known from occasional allusions to them by writers who have access to the Banksian collection. To the general public they have produced little advantage. With Flinders's voyage, a Botanist and a Botanical draughtsman were associated, at the public charge; and both these officers discharged their duty of collecting materials most zealously. But if we inquire for the public Botanical advantage which has been derived from that expedition, either to ourselves or the New South Wales colonists, we find it to consist of little more than—1st, a Latin fragment, dated 1810, the publication of which was so managed, that after a time it was withdrawn from circulation in this country, and is principally accessible through German reprints; 2d, some learned general remarks, geographical and systematical, and a few plates with Latin descriptions, appended to Flinders's account of his voyage; and 3d, 15 folio plates of plants, also a fragment. These were expressions of intentions, and no more. That full account of the Botanical discoveries made during Flinders's expedition, which the public had a right to expect, has never appeared. The dried plants, or what remains of them, are to be found in the cases of the British Museum; and the beautiful plates made by Mr. Ferdinand Bauer with such care and admirable skill, after slumbering for years at the Admiralty, are now (we understand) also at the Museum. No publication of them has taken place in this country beyond the few cases already mentioned; what their merits are we chiefly know in consequence of their having been partially made public in Vienna!

Things, however, are changed; and gentlemen employed in the public service now feel that they have other duties to perform besides those of drawing pay and drying plants for their own private satisfaction. When Dr. Joseph Hooker was appointed to the charge of the Botany of Sir James Ross's most interesting voyage, we were persuaded that in him at least there would be no want of a determination to convert the results of the expedition to their legitimate purpose—the public information; and that, too, without a moment's unnecessary delay. Nor have we been disappointed. Sir James Ross only returned to England last September, and we have now before us the first of a series of quarto Numbers of a publication which is to contain 500 plates, illustrating the vegetation of the country examined. Eight months have sufficed to land and arrange the collections, to obtain a Government grant of 1000*l.*, to overcome all difficulties connected with publication (and they have been both many and great), to get plates enough ready for a commencement, and to produce 26 quarto pages of letterpress. Dr. Hooker has thus set an excellent example of what energy can accomplish, and has put it out of the power of others hereafter to defer the completion of their task upon the plea of difficulties that cannot be overcome. All such difficulties may be overcome where the will exists.

Nor does this important publication bear marks of haste; on the contrary, the letterpress, drawings, and plates are all that could be desired. We have a brief account of the voyage itself, explaining clearly the ship's course, and giving a useful sketch of the general nature of "Lord Auckland's group and Campbell's Island," the vegetation of which is first treated of; and when we add that the work is wonderfully cheap, we are sure to enlist all lovers of natural history among its cordial supporters.

The plates of the first Number consist of Ranunculus pinguis and acaulis, two species—especially the latter—interesting from their exhibiting in their petals a clear tendency towards forming the spurs of an Aquilegia; three species of Cardamine from Campbell's Island, Geranium microphyllum, a curious little Epilobium called linnæoides, a singular little Stevensia, and an umbelliferous plant, of considerable beauty, from Lord Auckland's group. This plant, the Anisotome latifolia, is described as a noble species, often growing 6 ft. high, and bearing several umbels of rose-coloured or purplish flowers, each compound umbel being as large as the human head. The whole plant is aromatic.

Lord Auckland's group is in about the latitude of Edinburgh, and it is interesting to compare the vegetation of that country with that of the antipodes. The

[illegible] an old familiar face, speaking of home and its associations; we see Ranunculuses, Cardamines, common Chickweed, Sandwort, and Geum-like plants, mixed with Epilobiums, Callitriche, and Montia fontana; but to remind us that we are, nevertheless, in a strange land, Acæna mix with the herbage, and a Myrtaceous tree (Metrosideros lucida), from 20 to 40 feet high, unfolds its crimson flowers.

We await with impatience the continuance of this most interesting book.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

Gastrolobium Hendersonii, Messrs. Henderson's Gompholobium. (*Evergreen Shrub*). Leguminosæ. Decandria Monogynia.—This plant belongs to a genus extremely elegant and ornamental. G. polymorphum is probably the most universally known of any of its members, and is remarkable for the tasteful gracility of its stems, and the bold and conspicuous arrangement of its beautiful blossoms, and it is also a plant of quick growth and easy culture. G. Hendersonii possesses a character which differs widely from this, though it is no less distinguished for beauty. Instead of shoots remarkable for great length and gracility, it is, on the contrary, a small dwarf bush, of a slow growth, and very stiff rigid habit, approaching more nearly to G. spinifolia. The leaflets are small and narrow, always ternate, whilst those of G. polymorphum are sometimes three and sometimes five. The flowers are scarcely so large, but are produced in equal abundance, and near the extremity of the shoots. Seeds were sent over by Captain Mangles from the Swan River in 1840, from which plants were raised in the following spring. This plant flowered in the nursery of Messrs. Henderson, of Pine-apple-place. Considerable skill and attention is necessary to preserve this species, and indeed many of the slow-growing New Holland plants, in a healthy growing condition. It is one of those delicate-rooted plants which are an extremely susceptible of injury from the careless application of water. Nothing is more likely to prove fatal than either to allow the soil to become too dry, or to maintain it in a wet and sodden state. At each application sufficient water must be given to moisten all the soil contained in the pot. Slight waterings, though often repeated, are not so beneficial as one copious application; as the surface of the soil alone becomes moist, and the great bulk which surrounds the roots of the plant, and on which it is chiefly dependent for nourishment, remains almost as dry as before. A peaty soil of a fibrous nature, with a trifling admixture of loam and sand, should be chosen, and in potting, sufficient drainage must be employed to provide a ready escape for superabundant moisture. And as this is a plant which never rambles or grows large and luxuriant, it must not be planted in too large a pot. Immediately after potting it should be placed in a close frame, and kept shaded from bright sunshine, till the roots have taken hold of the fresh compost. The great difficulty experienced in inducing cuttings to strike root still prevents the plant from becoming common or even generally known. Cuttings must be chosen from the young wood just as it begins to acquire firmness, and they should be planted in sand, the pot plunged in a slight bottom-heat, and covered with a bell-glass. The specific designation is given in compliment to Messrs. Henderson, of Pine-apple place.—*Paxton's Magazine of Botany.*

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—Among the various experiments carried on here, that of steeping seeds has occupied some attention. Seeds of the principal kinds of grain and legumes, viz., Wheat, Barley, Rye, Oats, Beans, and Peas, have been steeped in solutions of nitrate of soda, muriate of lime, sulphate of magnesia, muriate of ammonia, phosphate of ammonia, salt, and water. These are sown in parallel beds, in rows drilled across the beds, and an unsteeped row of each of the above-named grain is sown beside them, in order to ascertain comparatively the effect of the steeps. Judging from present appearances the Wheat, Barley, Rye, and Oats, seem to be little affected by the steeps, but, if anything, some have rather an injurious than a beneficial effect, especially on the Wheat. In the case of Peas, however, all were killed except those steeped in sulphate of magnesia, the unsteeped, and those steeped in water only; the latter are the best. Of Beans, the row that was steeped in water is decidedly the best. In the large stove are seeds of Lupinus Hartwegii, in pots, that were steeped in a solution of phosphate of ammonia. There were 12 pots, in each of which 5 seeds were sown on the 22d of April; those that germinated appeared above the soil about the 25th of the same month. The first sowing was 6 hours in the steep, the second was 12, and so on in progression to the 12th, which was 168 hours, or a week in the steep. Of the 5 seeds sown, the greatest number raised in each pot was 2, and all of them had a sickly appearance; four of the pots produced nothing, including the seeds that were in the steep 168 hours. Other 12 pots were sown with seeds steeped in the same kind of solution, but considerably weaker, all other circumstances being the same as above; and the result in this instance is nearly similar—with this exception, that the 5 seeds which were 6 hours in the steep were healthy. Five seeds, receiving exactly the same treatment with regard to temperature, &c., but not steeped in the solution, are very healthy. The ground manured with artificial manures for Potatoes last season, is this year sown with Barley, without any manure, in order to prove the effect of the substances on a second crop; owing to the long continuation of dry weather, however, there is at present very little difference in any of the beds. The same may be said of the portions sown with Wheat, and manured exactly as last season; where the muriate, sulphate, and phosphate of ammonia were applied, the plants exhibit a darker green foliage than the others. With regard to heating, the cast-iron tanks put up by Bunbidge and Healy, in the wooden vinery, have as yet proved satisfactory. During dry weather the circular openings in the covers are left open for the emission of vapour—so essentially necessary to the Vines, in this dry season particularly. The Vines have a healthy broad dark-green foliage. The saddle-flues, converted into hot-water pipes, reaching nearly right by account, and covered with tiles, answer admirably for the summer for almost all plants—the only doubt being the quantity of too much vapour, for most things, in winter. The Melon-pits lately erected appear to answer well, especially where the iron tanks are covered with portable tiles, made to fit above and lap down the sides. The tiles give out enough of moisture to the soil, and effectually prevent the roots from being injured by contact with the iron. That the plants like their situation is amply proved by their fine, large, dark-green foliage. They were raised from seeds sent by Colonel Stoddart from Bokhara; and by others from Cabul. They appear to be strong-growing and prolific kinds; they are planted in Norwood loam. In some instances, the surface of this is paved with small stones, which tend to preserve the roots in a more uniform state with regard to heat and moisture during this dry season. In the large stove is a plant of Aristolochia gigas, or Pilate's nightcap, trained along the roof. This is an excellent stove-climber, having been in bloom three or four months, and producing seven or eight of its singularly large concave blossoms at a time. Besides their size and curious form they are not without beauty, from the pretty dark-purple veins that intersect the lip, which has a cream-coloured ground. Around the orifice of the tube the colour is a beautiful, rich, velvety purple, which adds much to the beauty of the flower. In general appearance it somewhat resembles Aristolochia fœtens, but is much larger, and has more the appearance of a cap. When grown in a pot this plant is exceedingly liable to be attacked by red spider, which renders the plant unhealthy, and gives the foliage a bad appearance; but it succeeds well planted out in the border of a large stove, for which, from its extreme luxuriance of growth, it is particularly suitable. It was received from Guatemala a few years ago, but is not yet generally known. In the same house was a Gesnera, very much like G. rutila, that had been sent from Popayan by Mr. Hartweg. In the house that was formerly a Pine stove, but that has lately been greatly altered and improved, the plants have a very healthy appearance. A large plant of Doryanthes excelsa is throwing up a strong flower-stem, at present about 6 feet high, in the large conservatory; and here, among other plants, was also in bloom a fine bush of Mimulus glutinosus.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—STOVE, CONSERVATORIES, &c.

For the next six weeks or two months, according to the weather, stove plants ought to have more air and light than at any other period. After this time, therefore, shade as little as possible with the exception of Orchidaceæ and young or newly-propagated plants. Seeds of those splendid Clerodendrons, which make such fine display at summer Exhibitions, should be sown as early this month as possible; they will flower about this time next year, or earlier; and seedling plants of them are much easier to manage than those from cuttings.

Conservatory.—Climbers in this house—if they are what they should be—will now require the greatest attention; training, thinning, and arranging them properly, occupies a great deal of time, and is one of those jobs that should never be done in a hurry. Formerly it was customary in many places to tie up these close to the pillars and rafters, &c., in a stiff, formal way, but now it is thought they can hardly have too much freedom, providing they do not injure other plants with their shade. Orange-trees, and many large specimen plants, require less water about this time; but diminish the quantity very gradually.

Greenhouse.—If the plants here now are all of the true greenhouse kinds, give them as much air as the house will admit; but if, as is generally the case at this time, they are a mixed collection of half stove plants and annuals, &c., you must keep them close at night, with a very damp atmosphere, and you may let the house get well heated by the sun before you give air in the morning. Training and staking plants, surfacing pots, and all that sort of routine business, you need not be reminded of.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

There is little to attend to in this department at the present time, except cleaning, and keeping everything and every place as neat and tidy as possible. The Grass here, which was dressed with Potter's Guano when the rain fell, though as brown as a gravel-walk, is now as green as could possibly be desired, while other lawns in the neighbourhood are still comparatively quite brown: so much for Potter's Guano. Attend to the removal of flowers as fast as they decay, as nothing looks so untidy in a well-kept garden as dead flowers.

Reserve Garden.—Under this head last week I made a mistake: the last sentence ought to have read as follows:—Brompton Stocks must be sown immediately, but Brompton Ten-week Stocks I never sow before the first week in August. The reader will please to attend to this.

Nursery.—This is delightful weather for budding; and where the buds are properly matured, as they are in most places, it must be attended to immediately. Established plants of Roses, that make very strong branches which hide the flowers, should have them shortened in below the level of the flowers.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Tulips.—These ought now to be all safely stored; those which are seeding on the bed, must occasionally be examined; when the stalk assumes a yellow tint, the roots may be taken up, and the stems, with capsules attached, may be placed in an airy room, till they become perfectly dry. Bulbs which have perfected a head of seed, usually "come out of character" the following season. More Tulip seed will be saved this season than usual; and florists are congratulating themselves on the great increase their bulbs have made, and the prime condition they take up in. *Pinks.*—Plant out the first crop of pipings, if proper attention can be given them; such as shading, watering, &c. If more convenient, wait till the first shower comes. *Carnations.*—I noticed in the *Chronicle* some time ago, a recommendation to mix fresh cow-manure with water, for plants; it may suit some well, I doubt not; but I nearly lost a large stock of Carnations two years ago, by watering them with such a mixture. It was just previous to layering, and it appears that the eggs of a species of fly were deposited in the dung; and consequently carried to the surface of the soil in the pots, with the water; the process of layering went on, and in about a week, myriads of small brown grubs with black shining heads were hatched. The work of destruction commenced, scores of pots, full of layers, were destroyed; the layers of those remaining were unpotted, the soil removed, and every precaution taken; but the plague vanished suddenly as it appeared, in consequence of the young grubs assuming their pupa state. They did not attack those which had not been layered. Continue to tie up buds, stop all laterals, and attend to shading, &c., as the warm weather brings them on rapidly. I have lately given my stock a dose or two of Ichor's Liquid Guano with evident benefit to the plants. *Pansies.*—Take advantage of the first showery weather, to put out your young plants.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Examine frequently all plants in pots not plunged over the rim, to see if they require water. Be attentive to giving air, and shade in hot weather. Should any of the fruit show indications of ripening before the soil is in a proper state of dryness, raise the pots out of the tan, to allow them to become dry, and avoid syringing them. Much caution should be exercised not to continue watering too long, as the flavour of the fruit suffers much by the soil being kept too moist when ripening. Put of plant all strong suckers as soon as taken from the plants. Suckers grow with greatest vigour when planted in fairy or half-decayed leaf-mould over tan; and if those now ready can be so treated, they will, by the end of September, have made great progress, and be fit for potting in 6 or 7 inch pots, in which they will be well-established by the middle of November. Whether planted out or potted they should have a bottom-heat of from 80° to 85°, and be shaded in bright sunshine, till they are well rooted.

Vineries.—Those who have been fortunate in keeping the foliage of their early forced Vines clean and healthy up to this period, will stand the best chance of success next year. Continue to wash the foliage occasionally, and give plenty of air. If the roots are outside, no more watering will be necessary in situations where rain has fallen freely, particularly where mulching is practised, as recommended in former Calendars. Those who, like ourselves, are in a situation somewhat resembling that of Tantalus, and can see and hear of rain falling in abundance all around them, while their own ground is parched up like an African desert, must water away yet. The mulching should be of sufficient thickness to prevent the soil from cracking, but not altogether to prevent the action of the sun and atmosphere on the border, as that is of great benefit to the roots. In the "Answers to Correspondents" last week, it is said that "some of the best gardeners syringe their Vines morning, noon, and night." As this practice is at variance with my own experience, I am now making some further experiments on the subject, which may help to set the matter at rest, and the results of which I will make known.

Peach houses.—Attend to the watering, syringing, and ventilating of the late houses. Houses from which the crop has been gathered should be kept perfectly clean from insects, and the paths and borders in neat order. If the lights are required for other crops they may be removed after the trees have been properly hardened to the air, by leaving the back and front ventilators open night and day for a week or 10 days. However, prefer keeping the lights on till the leaves begin to fade, giving the air full scope, and supplying the inside roots with water when necessary.

Fig-house.—Trees planted within the last two or three years will probably be growing too vigorously to bear much fruit. Give them no more water than will secure the fruit they have on from dropping; stop the lateral shoots at every third eye, and keep them thin, in order to let the leaves have sufficient air and light.

Strawberries.—A number of small pots should now be got in readiness in which to lay the runners intended to make plants for forcing next season. Taking care to have plenty of plants is one great step towards having plenty of fruit next spring. Prepare also some loamy soil, moderately enriched with leaf-mould, for potting them in.

Melons.—Pay attention to stopping the laterals and setting the fruit on the successional plants. Keep them very thin, never allowing one leaf to overlap another. Keep up the heat in dung-beds by fresh linings when necessary.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Pear and Apple Trees, &c.—Those who thought proper to attend to the stopping of the shoots of Pear trees, &c. against walls, will be gratified with perceiving the buds swelling beautifully at the points of the small spurs, and at the base of the shoots shortened. Allow the young shoot, started from the foremost bud of the stopped shoot, to grow a little longer, or if getting long, merely pinch out its point, as any sudden check to the flow of the sap, after such genial rains, would be apt to cause those promising buds to break into shoots, which you would rather wish to see adorned with blossom and fruit next season. Whatever opinions we may entertain on disputed points in vegetable morphology, there can be no question that the production of blossom or of leaf buds, will depend mainly on the circumstances in which a plant is situated, and the treatment it receives. It is a general complaint that fine looking old Pear trees against walls produce sparingly, and that chiefly on the points of the branches. This is partly owing to the fact, that the other parts of the tree are so smothered with breastwood during the best part of the summer, that the buds finally left cannot be matured by the juice-elaborating influence of light, and partly is it attributable to the prejudice that exists among the employers of gardeners against nailing their fruit tree branches unstopped, the consequence of which is that the roots are nailed to go so deep that they absorb juices of an rank a character, that our longest and best summers are insufficient to ripen the buds on their willow-like shoots. The true remedy for this is to raise the roots nearer the surface (the cutting of the roots a yard or two from the bole of the tree, and filling the trench with rich compost, is working to make work), timely fore-shortening, and slight or no stopping. On some occasions I have witnessed beneficial results produced by taking off the young wood from every alternate branch on old trees, choosing nice shoots, about a foot apart, on the other branches, commencing at the top of the tree, tying these shoots in a pendent position to the denuded branches; taking out these branches in the succeeding year, and then in a year more, other circumstances being favourable, the tree was regularly covered with young fruitful wood.

Vegetable Marrow and Cucumbers under hand lights should have a little long litter spread over the soil, before the shoots are pegged out to their full extent, which will keep the fruit clean, save watering, and bring up the mushrooms quicker where spawn was inserted. Cucumbers in frames will require to have the linings renewed, if we have much dull weather, and seed should be sown, or cuttings struck, and fresh beds made, so as to secure nice crisp fruit, when those on ridges may have become stunted from a cold autumn. In making beds, though much heat will not now be wanted, it will be found a saving of labour, and ultimately of material, to make them large enough at first, as previously recommended.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—As the overgrowth of Briers and other stuff is very injurious to young trees, frequent attention should be paid to keeping their summer growths from being injured.

Coppice.—Presuming that all the produce of this year's cutting is cleared away, and that fences are put in good repair, great care should now be taken to regulate and keep in proper order the young shoots from stools, &c. Train these for profitable purposes, and prevent them from injuring each other by being too crowded.

Young Plantations.—If landowners would consider the great advantages, as well as profits, that would arise from judicious summer pruning and training of young trees, from the time they are first planted until they shall have reached fifteen or twenty years' growth, the plantations and hedge-row trees in this country would have a much more creditable appearance. The neglect of this practice is apparent from the general state of plantations and hedge-row trees at the present day.

Nursery Work.—In consequence of the long dry weather, the ground, between rows of plants, will require frequent stirring

water newly transplanted trees, seedlings, and seedbeds of delicate things. There has been little rain here yet.—*W. B.*

THE CHEAPSIDE CALENDAR.

Where the walls of the cottage are covered with creepers it is necessary to have them trimmed up occasionally during the growing season, in order to keep them neat and within proper limits. Fruit trees, such as Apples, Pears, Plums, and Cherries, the kinds generally grown by cottagers against walls, should now be gone over, and have their leading shoots fastened in, to prevent them from being broken. As these kinds of trees produce their fruit chiefly on spurs formed along the principal branches, it is necessary to shorten the fore right shoots to within a few inches of this branch or spur from which they spring. Summer pruning, however, in every case ought to be performed with care and discretion, and it is better to err on the side side than to prune too closely, as the shorter the spur there is the greater chance of the buds breaking into shoots in the present season, instead of becoming fruit buds in the following season. Some say prune not at all; but this is not the best advice, for the fruit to be good must itself have light and air, and the fruit spurs become weak when too much shaded by a thicket of shoots. Attend to Potatoes, and see that they are properly earthed up. The cottager should now be on the outlook for plants of the following Broccolies, to be planted about the end of the month, viz., Purple Sprouting, Knight's Protecting, Portsmouth, and Danish; the first is an exceedingly useful Broccoli, as in favourable winters it is in use from the time the autumn sorts are done until the spring varieties come in; the other two kinds are good for spring use; the last may be planted about 15 inches apart, or even perhaps as close as 12—it is small but very hardy, and producing a large quantity of heads for the ground it occupies; it is well suited for the cottager. A small quantity of Cauliflower might now be planted for use in August; where that will not succeed, Grange's Early Cauliflower Broccoli is an excellent substitute, a little of which planted occasionally towards the middle of July will be found useful. Sow a patch of Lettuce seed every fortnight, so that a succession may always be had in the best order. It ought to be sown where it is to stand, and should never be transplanted during hot weather. A small bed of Onions sown now will be useful in autumn.—*J. McH.*

State of the Weather near London for the week ending July 4, 1844, as observed at the Horticultural Garden, Chiswick.

June	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Frid.. 28	13	29.618	29.549	74	47	60.5	W.	
Sat. 29	18	30 005	29.926	68	54	60.5	S.W.	
Sun. 30	○	29.998	29.850	70	50	64.5	N.E.	
July								
Mon. 1	1	29.856	29.820	70	54	66.5	S.	.04
Tues. 2	2	29.841	29.822	62	56	61.0	N.	.28
Wed. 3	3	29.870	29.800	72	57	64.5	S.E.	.14
Thurs. 4	4	29.838	29.598	68	55	61 5	S.W.	.01
Average		29 869	29.797	74.6	56.3	63 5		.71

June 28 Very fine; dusky haze; clear, with a few white clouds.
— 29 Exceedingly fine throughout.
— 30 Dry haze; overcast and fine; slightly clouded at night.
July 1 Slight dry haze; cloudy; thunder with rain in the evening.
— 2 Constant and rather heavy rain; cloudy; uniformly overcast.
— 3 Thickly overcast; cloudy and mild throughout.
— 4 Slight rain; cloudy and mild.

Mean temperature of the week 1 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending July 13, 1844.

July	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 7	72.0	54.1	63.5	10	0.83 in.	—	2	1	2	2	2	5	—
Mon. 8	72.6	51.3	62.5	9	0 46	—	2	1	—	2	1	6	5
Tues. 9	73.6	50.6	62.1	4	0.57	2	1	—	1	2	3	7	3
Wed. 10	74.1	51.0	62 6	4	0.36	—	—	1	1	2	7	5	5
Thur. 11	74.0	52.2	63.7	5	0.16	2	—	2	4	4	2	3	3
Fri. 12	73.4	53.0	63.7	6	1.10	—	1	1	—	3	6	4	3
Sat. 13	72.2	50.2	62.0	7	0.78	—	1	1	—	—	12	3	1

The highest temperature during the above period occurred on the 11th, 1836—therm. 89°; and the lowest on the 13th, 1840—therm. 41°.

Notices to Correspondents.

The Reprint of Mr. PAXTON'S COTTAGERS' CALENDAR will be ready on WEDNESDAY, price 3*d.* each Copy. An Index has been added to this present Edition. Parties wishing to have copies for distribution among their tenantry can have them at the rate of 2*s* for 3*s*.

ARAUCARIA EXCELSA.—*J. G. B.*—This strikes freely from cuttings put into sand about the middle of August. They should be covered with a bell-glass, and placed in a close pit or frame, where there is no bottom-heat. They must remain in this situation (free from frost and damp) until the following spring, when they should have a little bottom-heat to start them. Plants of this, struck from cuttings, however, always retain the fan-like habit of the branches, and they never make a good leader.¶

BOOKS.—*W. Payne.*—For a gardener the Botany of Lindley's "Theory of Horticulture" is what is most essential. Suppose the chapters to be called Lectures, and you have what you want. If you wish to analyse soils, and to go into similar details, consult Johnston's "Agricultural Chemistry." You should apply to the Philosophical Instrument makers, such as Newman, in Regent-street, for catalogues of apparatus.—*E. T. R. F.*—There is a full account of the Botanical productions of Melville Islands, North America, in the Appendix to Parry's "Voyage to the North Pole."

CHISWICK SHOWS.—*T. U.*—All persons can exhibit, and there are no other regulations than those which have been advertised in our columns from time to time

CUCUMBERS.—*R. C. B.*—Your Cucumbers have more water given them than they can consume, the effect of which is that gum forms in their interior and eventually finds its way through their surface. Perhaps you shade them too much; or they may not have air enough—for we cannot suppose that they are not warm enough in this sort of weather.

GRAFTING.—*Old Subscriber.*—It is doubtless true that when the head of a tree is cut off, and a few scions are inserted upon it, it is hard to suppose that all the juices of the tree, which, in its original condition, would have gone to feed its head, can go to the sustenance of the little twigs which are produced by the scions when they grow; yet it is substantially so. All the branches and buds being removed, nothing else can take place. What happens is, that the organising force of the trunk is directed to those scions, and consumed by them, as far as is in the nature of things practicable; wherefore, in fact, such scions make enormous shoots. But, inasmuch as they can only consume a certain small quantity of the organisable matter, the remainder continues locked up in the interior of the tree, till, in future years, it is wanted. If, upon grafted trees you leave the natural branches, they are apt to attract all the juices to themselves, and so starve the scions, which consequently perish.

HEATING.—*J. P.*—If an iron tank has its sides exposed it will heat the air of a stove and also convey bottom-heat. It is only when tanks are buried in soil that pipes become necessary for air-heating.

HYDRANGEAS.—*A Subscriber.*—If you want to get large bushes of Hydrangeas in the open air, plant them in good fresh soil, form a basin of clay all round them six inches deep, and in dry weather fill it with water every evening after they have got fairly into leaf. Towards autumn withhold watering altogether. Get their wood ripe. For winter, stuff straw between their branches, wrap them well in it, and nail them up.

INSECTS.—*J. W. G.*—Your beetle is the Curculio Abietis.—*E. H.*—We believe the eggs are those of the earth-worm. The black beetles of London are cockroaches, the former being a very important species, as they do not belong to the same order of insects as beetles do, but it is extremely difficult to conquer winged insects. We intend to make the Cockroaches the subject of a memoir, as sooner or later we have an opportunity. The Fuke-root is unknown to us. *R.*—*E. A.*—We must beg of you in future to send your specimens protected in quills, for they were all destroyed. We can give you no advice beyond urging you to repeat the remedies which appeared most beneficial. All that is known regarding the pests you suffer from has been published in the 1st vol. of this Journal, p. 196, and a more elaborate paper will shortly appear in the Journal of the Royal Agricultural Society. *R.*—*Apis's* Insects with luminous tails are male Glow-worms. *R.*—*A. B.'s* Barley is infested with the maggots of a fly called Chlorops; the specific name shall be communicated as soon as the specimens hatch. Mr. Curtis will feel obliged if *A. B.* will favour him with some more specimens directed to 11, Robert-st., Hampstead-road, with any remarks he has to make regarding the time when they were first noticed; and anything that may occur to him during the future growth of the Barley, Mr. C. begs may be forwarded also, as he will be arranging his materials during the autumn relative to the Corn crops, for the Journal of the Royal Agricultural Society.—*A Subscriber.*—For a cure for wireworm, see p. 233, 1843, and p. 777, 1842.

MELONS.—*Susanna.*—Take your Melons before they are ripe, peel them, and cut them into quarters; then throw them into a thin syrup, and boil them gently over a slow fire for two hours; afterwards put them into wide jars. Look at them in a week or ten days, and if they are likely to ferment give them a second boil as before.

MORPHOLOGY.—*J. M., Cheshire.*—Double Heaths are very uncommon. In your case the additional corolla is formed by the change of part of the stamens into petals.

NAMES OF PLANTS.—*Sedum.*—Linaria bipartita, not indigenous.—*O. C.*—Clitoria Ternatea.—*Anon* appears to be a young Epilobium hirsutum.—*X. X. X.*—We do not see how your Gesnera differs from G. faucialis. Flowers ought never to be sent in cotton wool, which dries them up. They should be covered with damp brown paper before they are put into the box for post.—*A Young Botanist.*—No. 1, Arrhenatherum avenaceum, attacked by Uredo segetum (smut); 2, A. avenaceum; 3, Festuca elatior; 4, Avena strigosa; 5, A. flavescens; 6, Hordeum murinum.‡—*A Constant Reader.*—Gesnera Suttoni.—*W. R.*—It is impracticable to name seedling plants that have not flowered; or if practicable, it requires more time than we can spare. 3 is some Xanthoxylon. The Corylus is a Viburnum.

PELARGONIUMS.—*Verax.*—Your leaves are certainly very healthy and the plants must be in good condition; but we do not find anything particularly remarkable in them.

POTATOES.—*Villager.*—When Potatoes blossom and the flowers fall off, no fruit succeeding, it is *pro tanto* injurious to the crop to let such flowers follow their own inclinations; they should be nipped in the bud.

QUICK HEDGES.—*Tyro.*—There is a difference of opinion whether Quick should be cut down as soon as planted, or allowed to remain one year before the operation is performed. Like all such questions, circumstances render the one plan better at one time—the other at another. In such a dry season as this, it would have been better to have cut it down upon first planting. A moderate quantity of soft charcoal is evidently advantageous to all plants, if mixed with the soil.

ROSES.—*E. F. L.*—The following are 10 good China Roses:—Cramoisie superieure, Fabvier, Henry the Fifth, Napoleon, Theresa Stravius, Paris, Clara Sylvain, Mrs. Bosanquet, Eugene Beauharnais, and Archduke Charles. Liquid guano may be applied with advantage to Peach-trees.‡

ROYAL BOTANICAL SOCIETY.—*Felix.*—We have no right to publish statements relating to the private affairs of the Society. If you want information apply to the secretary.—*Scrutator.*—Your letter, as it relates to matters of fact, must be verified by your *confidentially* giving your name. We will then publish it, with a little curtailment. We agree with you that exhibitors ought not to be judges.

SNAILS.—*F. H. R.*—A correspondent (p. 737, 1843) states that he has found decaying blooms of Sunflower to be the best trap for snails.‡

STRAWBERRIES.—*G. P.'s* British Queen Strawberry plants, of last autumn's planting out, from the runners then made, have borne a very good crop of fruit, both in size and quantity, but the points of the fruit do not ripen but continue hard, although the bulk of the Strawberry and that part more especially exposed to the sun, is soft and of a good flavour, the points are almost like a core, and of unripe acid taste. The situation is warm, and they have the sun for a considerable portion of the day. We presume the mischief to arise from slow growth, on account of insufficient watering.

SUNKEN PITS.—*Amateur, Reform Club*, suggests that those who are occupied in the formation of horticultural buildings, while they direct their attention to the discovery of all sorts of contrivances for heating and constructing them, have generally overlooked one of considerable importance, namely, the advantage of sinking them below the surface of the soil; and he remarks that, assuming the possibility of *perfect drainage* from the bottom of the building, there would be in sunken pits the advantage of an equable temperature. This is true, and it is partly for this reason, and partly for the sake of economy, that the plan of building sunken pits has been adopted here and there. Certainly, where ground lies high and slopes so as to throw water rapidly off it, the advantages anticipated would be gained; that is to say, such pits could be kept at a more equable temperature than others merely surrounded by thin walls. But there are disadvantages of considerable moment. Sunken pits are inconvenient to get at; there is no pulling their sashes off and on with ease, and ventilation is troublesome. Then again, in spite of all that can be done, they will always be damp; and although this is advantageous for some purposes, it is destructive to greenhouse plants in long winters. Upon the whole, the inconveniences are at least as considerable as the advantages; and we doubt whether sunken pits can often be recommended in gardens.

VINES.—*Hort Suff.*—If, as you say, we state that we see "no good reason against syringing Vines, even morning, noon, and night," without exposing them to any danger, and a correspondent in another part of the Paper says, "Be careful to have the Vines quite dry before the sun comes upon them in the morning, as nothing is so injurious to the leaves as the action of the sun on them when moist," this only shows that it is, as we have told you, a debated question. We hold to our own opinion; and we see that Mr. Roberts, than whom no man has produced finer Grapes, does habitually exactly what we recommend as a help against the Red Spider. *Very bright* light appears to injure newly-moistened Vines; but why?—that is an unexplained fact, if it be a fact.

MISCELLANEOUS.—*X.*—Nothing is more common than the tobacco plant. It is an annual raised from seed, on a hot-bed, and planted out in the open border when the frosts are over.—*R. W.*—The quickest growing hedge to protect a flower garden, much exposed to south-west winds, and on the top of a hill, is Furze; which, if well managed, is substantial and durable.—*A. J. B.*—Your Gunpowder seed is probably of bad quality. Change your stock. The fern-leaved Beech is a sport from the common Beech; and, like all sports, is apt to return to its original form, either wholly or in part.—*A Subscriber.*—The irregularity of which you complain must be passed by the folding, as the Paper is accurately paged except the "town part, which is left blank for the convenience of persons who wish to cadit it in binding. We have nothing to do with the folding, we merely supply the loose sheets.—*Wigtownshire.*—The Volume will not be completed till the 30th Dec.—*T. T. H.*—We have heard nothing more with respect to your Nemesia.—*Rusty* will find an answer to his question in last week's Paper, p. 428.‡—*J. K.*—English mercury is a dangerous poison, producing tetanus, vomiting and diarrhœa. It is called Mercurialis, because they say that the God Mercury discovered its use.—*An Old Subscriber.*—We do not see how we can possibly give you the *detailed* advice that you require. General advice will be of little service in your case. Better apply to Mr. Glendinning, of Turnham Green, who would find time to attend to the details.—*Almus.*—The Rose of Jericho is the Anastatica hierochuntina, of which you will find a full account in a Leading Article in a former No.—*A Subscriber.*—There is nothing deleterious or poisonous in the ripe fruit of Cactus speciosissimus.†—*A Subscriber.*—You may clip your Box-edgings now; they may be also done with advantage in spring.‡—*Flora.*—For Camellias, mix your guano with cow's urine.‡—*A Subscriber.*—If your seed is good it will grow.‡ but the kinds are apt to be long in coming up. The Alstrœmeria requires bottom-heat; the others would also do better with it, but will succeed without it.‡—*Clericus.*—If your Strawberry plants are young and runners troublesome, they should be removed before they have taken root, which will give the stool plants full possession of the soil. The removal of your Fuchsias from a warm to a colder situation would cause the tops of the shoot to become curled and distorted, or the neglect of sufficiently supplying them with water would produce the same effect. In the former case a little care will soon recover them; in the latter the remedy is apparent.‡—*Clericus.*—We have still a few copies of the *Gardeners' Chronicle*, vol. for 1843; price 20*s*., cloth.

SEEDLING FLORISTS' FLOWERS.

ANTIRRHINUM.—*W. M.*—We are glad to find this beautiful tribe taken up; it is, no doubt, susceptible of great improvement; we, however, see but two varieties that are new amongst your seedlings, 6 and 5.*

CALCEOLARIAS.—*R. & S.*—Your seedling is a flower of fine form, and the spotting very pretty; but the ground colour not being uniform, is a detriment to the value of the flower.*—*R. S.*—Your seedlings are rich in colour, and would have been welcomed a few years since, but they are small compared to the flowers of the present time; they are, however, of good substance.*—*S. S.*—Spotted specimens are become common; some of your varieties are fine and peculiar; the best are, Nos. 47, 45, 98, 87, 46, 100; 7—47 is particularly fine.*

FUCHSIAS.—*B. B.*—The seedling is a large and very stout flower; the sepals expand, and show the corolla, which is very large and stout, with a slight dash of purple added to the crimson; it is a handsome variety.*—*A Novice.*—Your seedling is a large richly-coloured and very stout flower, crimson tube and sepals, having a stout corolla, with a slight tinge of purple; a good and handsome flower.*

PANSIES.—*J. J. J.*—Neither of your Pansies will suit the present taste; they are deficient in size and substance.*—*J. C.*—No. 1 is very inferior to the dark selfs in cultivation; No. 2 is extremely pretty, from the margin being similar on all the petals; it, however, wants substance and size.*

PETUNIA.—*B. B.*—Your Petunias are large, but they are very inferior to the variegated varieties produced at the present time.*—*W. M.*—*Unique superb* is a remarkably rich and fine coloured variety. *Fuscatum*, also, is a fine flower. *Beauty superb* is good also in colour, but this and the other two varieties have the outline too much cut in upon at the divisions of the corolla.*

PELARGONIUMS.—*J. J. J.*—Nos. 1, 4, 5, 6 are flowers bad in form, having petals too long and narrow. 2 and 3 are better in form, but they are common in colour, and too small.*—*J. D. W.*—*Mary Deane* is a very pretty variety; the colours are clear, spot intense, and the pure white centre gives the flower a very lively appearance.*—*R. S.*—Both your seedlings are pretty little specimens; No. 1 is the best; its colours are of a higher quality, and the white threat gives it a superiority over No. 2; they want size.*—*A. R.*—Your seedling is a flower of good form; deep velvety maroon upper petals, with rosy fringed edge, rosy under petals, with a blotch in each; these petals are rather fringed at the edge also, which is the defect in the flower.*—*I. D. P.*—It is impossible to form a correct opinion of a flower sent flat in a letter; the colours are clean, but it appears to want substance very much.*—*J. S. J.*—*Gem.* The colour, form, and substance of this flower are good; it wants a little more width in the lower petals; the upper petals are rich and fine; the colour terminates abruptly at the base, and leaves a narrow margin of rose-colour round the upper part. No. 4 is fine and desirable in colour, of good substance, with an intense spot; the flowers were shaken to pieces, but the lower petals are evidently too long for a finely-formed flower.*—*Dromore.*—We are not acquainted with the name of your flower; its pretensions are very moderate. It is impossible to account for a single flower on a truss coming imperfect.*—*A Berkshire Subscriber.*—The best flower in your collection is No. 8, being of good form and substance; 2 and 7 are common, and too much alike; 3, 5, 4, and 1 are also very moderate; 6 is a mere curiosity.*—*Z. Y. X.*—No. 1 is a seedling of good form, and strong contrast between the colour of the upper and lower petals; its principal defect is the want of substance; 2, common in colour, but fair in form; this flower, we imagine, curls back too much. 3, petals rather too long, and the substance is not carried through to the edge, but this part of the flower is left thin and uneven. 4, a pretty flower, good in form, but thin on the edges of the top petals. 5, top petals too high, and blotched. 6, petals too narrow, and thin. 7, a very pretty variety; margin well defined on the top petals; it appears to be too thin also. There is good promise in these seedlings, but if you compare them with the leading varieties of the present day, you will perceive that there is generally a deficiency of substance, which should be carried out to the margin of the petals.*—*A Novice.*—A bright and very pretty seedling; the lower petals are beautiful in colour and form; the flower, altogether, is small; the white centre gives it a lively appearance.*—*J. S. J.*—Your seedlings are remarkably fine and showy greenhouse varieties, clear and rich in colour, but rather deficient in that compactness of form and clean set of the petals which constitute the first-rate varieties of the present day. No. 1 is a fine clear rose-coloured variety, with white centre; upper petals a little too small for the size of the flower. 2 is also a flower clear and fine in colour, but when fully expanded the flowers do not retain their form; the under petals are too narrow. 3 has the same fault, and is common in colour. 16, good colours, with an inclination in the petals to curl back. 18, not good, either in colour or form; when expanded, the lower petals separate from the upper. 12, very large, and superior in colour, with broad under petals; but when fully open, the petals curl back, and deprive the flower of that compactness of form which it should retain to the last. Have these specimens not been a little overgrown?*

SPANISH PINK.—*A Constant Reader's* seedling Spanish Pink will make a desirable border variety, or for the purpose of bedding out: it is described as a free blooming, each plant having 12 or 14 stems, and each stem having 12 to 24 blooms; the colour is a rich bright carmine.*

TRUNCHEOLARIA.—*J. Piper.*—If your seedlings, called Minta superba and aurantiaca, superior retain their increased size, they are certainly a great improvement.

VERBENAS.—*W. W.*—*Rainbow* is a good variety, bright rosy purple, with a white eye, distinct in colour.*—*I. R. I.*—Your seedling is a fine dark variety, of a rich, velvety, crimson maroon colour; the flowers are large and expand well; it is one of the best dark-coloured varieties we have seen.*

YORKSHIRE LAND-DRAINING ASSOCIATION.—At a MEETING of the PROVISIONAL COMMITTEE held at YORK, this day, for the purpose of Allotting the Shares applied for in the Association, and on other business—

It was resolved, that the number of Shares now allotted being amply sufficient to justify the Committee in proceeding forthwith to carry out the objects of the Association, the necessary Deed of Settlement be prepared for execution And that such of the Public as may yet be desirous of becoming Shareholders, and shall signify the same to the Solicitors, (Messrs. BLANCHARD, RICHARDSON, and GUTCH, York), or to the Secretary, (Mr. CHARNOCK, Wakefield), on or before the 31st of July next, shall be admitted (if the number of unallotted Shares be sufficient) on the same terms as the present Subscribers.

York, June 12, 1844 JAMES HAMERTON, Chairman

The Agricultural Gazette.

SATURDAY, JULY 6, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS

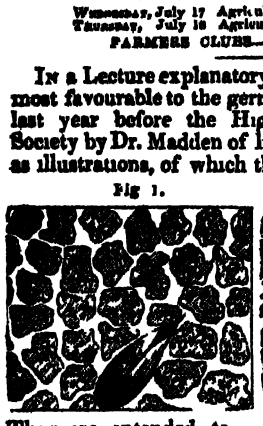
Wednesday, July 10 Agricultural Society of England
Thursday, July 11 Agricultural Imp Soc of Ireland

Wednesday, July 17 Agricultural Society of England
Thursday, July 18 Agricultural Imp Soc of Ireland

FARMERS CLUBS.—July 9 Abergavenny

IN a Lecture explanatory of the CONDITION OF SOIL most favourable to the germination of seed, delivered last year before the Highland and Agricultural Society by Dr. Madden of Penicuik, figures were used as illustrations, of which those below are wood-cuts

Fig 1. Fig 2



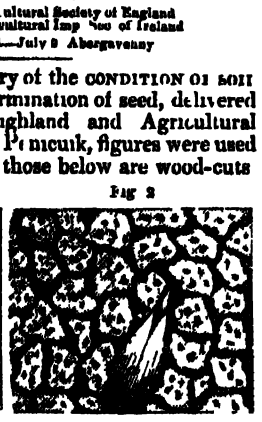
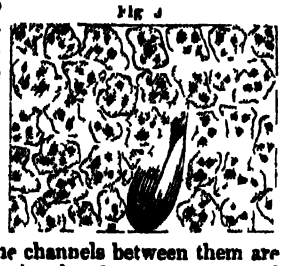


Fig 3



They are intended to represent highly-magnified sections of specimens of soil in three different conditions Under the microscope soil is seen to be made up of numerous distinct porous particles. Fig 1 represents it in a perfectly dry state, both the particles and the channels between them are dry Fig 2, on the other hand, represents a soil perfectly wet, the particles themselves are full of water, and so are the channels between them. Now, as both air and moisture are needed to enable the germination of seed, neither of the above conditions are favourable to that process, in the one of the cases air is wanting, and in the other there is no water The state of soil in which both are present obtains when, as is represented in Fig 3, the particles themselves are moist, while the passages between them are filled with air

Now, this condition of soil, which is favourable to the germination of seed is just that under which the vigour of the plant growing on it would also be greatest The material placed there by the farmer as vegetable food —farm yard manure—requires to undergo a putrefactive process, before much of it can be available for the nourishment of the crop, and this process cannot take place in the absence of air In a soil full of stagnant water no air can enter, and this is one of the many reasons why such land is so unproductive, and why there is such a difference between lands otherwise similar, the one being drained naturally or artificially, and the other undrained

There are, of course, many other circumstances, dependent upon the effects of stagnant water, by which the immense improvement consequent upon the drainage of land may be accounted for—some of them were stated in a Lecture lately delivered at the Royal Institution, which was reported in this Paper,—but its tendency to promote a circulation of fresh air through the soil is certainly one of its greatest advantages. And while drainage is a security against land ever acquiring the condition represented in Fig 2, it is also, though not so obviously, a security against the soil ever becoming thoroughly dry Many a well-drained field has afforded a practical proof of this during the present season—the crops on them have not been so much injured by the dry weather as those on undrained land, of an otherwise similar quality, in their neighbourhood; and this fact is explained by the consideration that a finely-pulverised soil is very retentive of moisture. The dryness produced by drainage not only enables the farmer to bring his soil to a finer tilth on the surface, but by the use of the subsoil plough, which, indeed, ought to be considered as a draining-tool, it enables him to preserve this tilth to a depth which was before impracticable. The plants have thus stores of moisture laid up for them at a depth where the sun has no influence, on which they can draw in a dry season, while those on an undrained soil are parched for want of rain Drainage, in fact, tends to preserve land constantly in the condition represented in Fig 3; while, where it is needed, the state of the land fluctuates according to the weather between those represented in Figs. 1 and 2. Thus, comparatively speaking, drained land is dry in winter and moist in summer On this subject, in the last Number of the *Ayrshire Agriculturist*, there is an excellent letter from an anonymous correspondent, from which we shall make a few extracts He says—"It is a very mistaken notion to suppose that the only object of draining is to dry the land, and that land can be made *too dry* by draining It is imagined that water is an *evil* to be got rid of It is only an evil when we do not make a proper use of it, and the more effectually the land is drained, the more moisture will be obtained when most required, during drought This fact has been beautifully exemplified during the late protracted drought The undrained, impervious soils have everywhere been baked like brick earth, showing when in Grain crops, a yellow, sickly, stunted blade, and when in Grass, nothing but bleached windle straws Whereas, on well drained land, the crops have shown a dark green, luxuriant blade, and the pastures covered with a close sole of white clover while the fallows turned up full of moisture" Again he says with reference "to the majority of the land in Ayrshire, and over the greater part of Scotland, which is so stiff and impervious as not to admit the rain that falls from the heavens more than a few inches into the upper soil, where it sours the vegetation, being aided by the poaching of the cattle when in pasture, which form little pools and do incalculable injury, in winter this land is never dry, but is always in a complete puddle to the depth that the plough enters In heavy rains, all the heat of the soil is washed away by the open furrows into the nearest rivers In time of drought the water upon the surface is soon evaporated by the sun and wind, the land cracks into wide fissures, and the whole herbage is withered down to the roots On the other hand, when this land is drained to a proper depth (two and a half to three feet), pulverised effectually, and a good dressing of hot lime incorporated with it, the water that falls penetrates through the subsoil into the drains a proper supply of moisture, is thereby constantly kept up throughout the pores of the soil, while the surplus is discharged by the drains, so that in winter it is never too wet, and in summer it is never too dry In this state the land does not crack, as the moisture prevents it from contracting In the undrained land there is a constant evaporation from the surface, chilling and destroying vegetation, whereas on the drained, there is a current of warm air passing *downwards*."

In drained land the system of cracks is all below ground, and there they are a benefit instead of an injury, for in clay land the efficiency of drains is greatly increased by them It is upon this that Mr Smith of Deanston, rests his explanation of the fact that drains in very stiff clays often, apparently do not commence to act efficiently till after the lapse of years He tells us that during this period the cracks commencing at each of the drains is under their influence the subsoil in their immediate neighbourhood gets dried, have been extending, until the whole subsoil is dried by them and then the surface feels the influence of the network system of drainage below it

Mr Stirling, of Glenbervie, another distinguished Stirlingshire agriculturist, again, thinks that the delay apparent in the action of drains in stiff clays, is owing to the rain water very slowly carrying down lime and manure to the subsoil, and thereby rendering it richer and more friable. He states that he has proof that a large portion of the soluble parts of the manure applied on the surface, is often carried away by the water of drains This gentleman proposes a plan for expediting the action of drains at the ordinary interval in clay land, which is a very simple one, and in many situations may be easily and cheaply carried out. He states that where the surface of the soil is furrowed an inch or two deep in spring "it will crack to a depth and width in proportion to the contractability of the soil, when freed of its superfluous moisture by the summer drought, and that the crack will follow the line so marked This might be done with a common plough without a mould, and a narrow sock, the feather being set high The lines being drawn across the drains, if the cracks when formed were filled with *dry* sand, it would form a permanent filter towards the drain, at a small expense."

SKETCHES OF EAST LOTHIAN HUSBANDRY

IMPLEMENTS.—As imperfect work is a necessary consequence of defective implements, it will be found, when agricultural operations are skilfully executed, much attention is invariably bestowed upon the construction of the implements and machines employed, and in adapting them to the particular soils and circumstances in which they may be used. There is, perhaps, no county in the kingdom better provided with implements and machines for executing and economising rural labour than East Lothian, and to this circumstance, in a great measure, may be ascribed the acknowledged excellence of its tillage farming.

The principal implements used in this county may with propriety be classed under the following heads — 1, tillage implements, 2, sowing machines 3, hoeing implements; 4, barn machines, and 5, wheel carriages or carts. In a brief sketch like the present, it is quite impossible to present anything like a minutely detailed description of all the implements included under these heads; and my observations will, therefore, be chiefly restricted to a few of the most important in general use on every considerable farm here

1 TILLAGE IMPLEMENTS.—*Ploughs.*—Until a very recent period, ploughs having wood for the beam and handles, cast iron for the side-plates, sole-plate, and mould-board, and malleable iron for the coulter, share and bridle, were the only ones in general use throughout the shire, but although not yet entirely displaced by the improved iron swing-plough, they are now rarely to be seen except on some of the upland farms. Men who had long ploughed with these wooden ploughs invariably agree in telling me that they preferred them to the iron ones now employed and that they made fully as good work with the old as with the new plough What is called the Currie plough, although not manufactured in the county, is preferred by some farmers to any of those, for ploughing lea, and all light soils The increased draught requisite for drawing this plough is its principal fault Carrick's plough, which is amongst the steadiest going ones, is furnished with an iron rod, connecting the bridle and that part of the beam into which the coulter is inserted This is what is termed a chain bridle, and its object is to diminish the draught The only material improvements effected in the construction of the East Lothian ploughs, during the last few years, consist in lengthening the handles, and in some slight alterations in the shape of the mould board Small light ploughs, drawn by one horse, are much used in paring the sides of Bean and Potato drills, preparatory to horse-hoeing, and in ribbing land to be sown with Wheat; when ribbing, or moulding up drills, a spare mould board is attached, which converts it into a double mould plough Price of iron plough, fully mounted, 3*l.* 10*s* to 4*l.*

Harrows.—The only description of harrows employed here is the common angular one, made either of wood or iron The iron harrow is preferred on heavy soils, and is coming into general use. Small wooden harrows, with short teeth, are used in covering in Grass seeds, every farm having at least one pair A truck or framework of wood, on three low wheels is employed on almost every farm, for the purpose of conveying harrows to a distance or along roads Price of iron harrows, with draught trees 3*l* to 3*l* 10*s*

Rollers.—The rollers chiefly employed are made either of cast-iron or wood Stone rollers of small diameter, are, however, still used in some farms The usual length of the cast-iron roller is 6 feet, divided into two segments; and its diameter 22 inches. It is always drawn by two horses, one before the other The price varies, according to the size, from 8*l* to 11*l*, with frames.

Grubbers.—The grubber is here considered to be second only to the plough in point of importance and utility to the tillage farmer Finlayson's harrow has been found of the greatest advantage in Turnip culture on stiff soils, being well adapted for loosening the soil to a considerable depth, and for dragging up root weeds from beneath the surface, and as doing so effectually has in many cases superseded the necessity of many ploughings But notwithstanding the celebrity and efficiency of Finlayson's harrow, it is now, on account of its many apparent defects, almost entirely superseded by other grubbers, constructed upon similar principles, but possessing the advantages of which it is deficient The principal imperfections in Finlayson's harrow are, 1. Its weight and dimensions. 2. The absence of any means whereby the coulters may be lifted wholly out of the ground, and, 3 The inconveniently large intervals between the openings in the spring by which the depth is regulated These are rectified by the instruments manufactured by Kirkwood of Tranent and Scouler of Haddington, both of which are allowed to be amongst the most perfect and efficient grubbers anywhere made. Kirkwood's implement differs essentially in its construction, and in the shape of the coulters, from Finlayson's. It is drawn by two, three or four horses, according to the nature of the soil and the depth to which it may be required to work it rests on three wheels, and has seven coulters, so adjusted as to move at equal distances from one another, and will work to any required depth of soil. The handles when moved act as levers, of which the fulcrum is the axle of the hindmost wheels An elevation or depression of the handles elevates or depresses the whole frame-work, and consequently causes the coulters to move at any required depth in the ground, or disengages them altogether, which prevents danger to the coulters when turning at the land-ends, or when encountering rocks or other obstacles in the ground. The coulters cover a space of 4 feet 4 inches in width; they are 14½ inches long 2 inches broad, and about ¾ of an inch thick. The diameter of the hindmost wheels is 22 inches, and the weight of the whole grubber is about 4 cwt. Scouler's grubber is constructed upon the same general principles as Finlayson's, but it is much smaller and lighter, and has, like Kirkwood's, the advantage of a very simple apparatus, by means of which the depth is regulated, and the coulters readily disengaged from the soil when necessary. Scouler's two-horse grubber, the only

one generally used here covers a space of about two feet nine inches, has five coulters, each 23 inches long. The diameter of the hindmost wheels is 22 inches. The principal improvements lately effected here in the construction of the grubbers, consists in strengthening the whole machine, adding stays to the coulters and increasing the height of the wheels. Price of grubbers, 6*l.* to 6*l.* 10*s.*

2. SOWING MACHINES.—Under this head are included machines for sowing the seeds of Turnips, Beans, and Peas, Carrots and Corn in drills; also a machine for sowing Corn and Grass seeds broadcast: most of these are now well known. The machine for sowing Corn in drills or rows is now but seldom used, except on light mossy or sandy soils, where a sufficient cover for the seed cannot be had by the operation of the harrows, or in some foul land; the distance between the rows allowing the ground to be worked, and the weeds destroyed, by the hand-hoe—or horse-shoe of a peculiar construction—now rarely employed. The rows are invariably made across the ridges; the machine sows from six to ten rows at a time, according to its size, and is drawn by one horse. The Oat is the only Corn crop generally sown in rows. A machine very extensively employed in this county is that for sowing Corn and Grass seeds broadcast. Its great recommendations are, the regularity with which it distributes the seed, the saving thereby effected, and in remedying the inconvenience and loss of seed arising from sowing with the hand during high winds. The machine consists of an oblong box, 18 to 19 feet in length, supported upon a frame-work on three wheels. A revolving horizontal spindle, with pinions in the inside of the box, scatters the seed; when working, the box extends over half the space of each adjoining ridge, the horse walking in the furrow. Clover and Grass seeds are now rarely sown by the hand, this machine being peculiarly adapted for sowing such small seeds, and obviating the difficulty always experienced in distributing with regularity the small allowance usually given per acre, especially during winds, when, from the lightness of the seeds, they are liable to be blown away.—*T. Sullivan.*

ON LIQUID MANURE.

IN former Papers on Black Horse-ponds, we have shown the large amount of highly fertilising ingredients annually lost to those farmers who allow the urine of their cattle to run to waste. Let us suppose some have determined to collect and preserve it in tanks or otherwise, and to avail themselves of its advantages. The object of the present paper is to point out how this can be best and most economically accomplished, as far as the volatile ingredient ammonia is concerned, passing in review the different modes which have been recommended, and their respective merits and cost.

We have seen that the urine of man and our domestic animals contains a substance called urea, which, when pure, may be preserved for a considerable length of time without change, but which, under favourable circumstances, undergoes a true fermentation, and is converted into carbonate of ammonia. The mode by which this change is brought about is thus described by M. Dumas, in his "Chemical and Physiological Balance of Organic Nature:"—"In the urine, Nature has placed, side by side with the urea, traces of an albuminous or mucous substance, so slight that they almost escape detection by analysis. Nevertheless, this infinitely minute quantity of matter undergoes a change when it comes into contact with the air, becomes one of those ferments which are found distributed over the whole of organic nature, and determines the conversion of the urea into ordinary ammonia." The carbonate of ammonia thus generated, is very soluble in water, and it is also very volatile, constantly tending to assume the gaseous form and to escape into the atmosphere. Water absorbs ammonia, readily taking it up at ordinary temperatures: hence the ammonia lately discovered by Liebig in rain-water and dew. Volcanoes, and even crevices in volcanic soils, give off into the atmosphere ammoniacal gas in abundance; so do all animal, and some vegetable substances, during putrefaction. Thus given off, it is absorbed and dissolved by the descending shower, and again brought down to the earth—again escaping, again to be returned, until it is seized upon by the roots of plants and appropriated in their texture. Much of the value of all manure depends on the proportion of this volatile ingredient that it contains, and it ought to be the object of the farmer to secure for his crops as much of it as he can. In Holland and Flanders the use of liquid manure is well understood, and duly appreciated. "It is chiefly by its peculiar and extraordinary fertilising powers, that the industry of the Fleming is described as having brought so much of the originally sandy and sterile tracts of his country into a state of garden cultivation. The Heath and Broom, which grow on the poorest soils, are encouraged, till their roots bind the loose and white sands together. These being cut, small patches of diminutive Clover are induced, or a few patches of Potatoes are planted, when a cow is kept. The urine is collected carefully in a small tank, or perhaps a cask sunk in the earth; and this is the nucleus from which, in a few years, a little farm will spread around."

"*Solid dung* is comparatively inert. It contains much less ammonia, and ferments with much less activity; and, until moistened, and partially decomposed, acts with much less vigour on the plant. It is by the rapid effect on vegetation produced by the ammonia in liquid manure, that the bulk of roots, and of vegetable matter, are so increased, even in those poor sands, that they are ultimately converted into a soil, not only rich in itself, but by its improved condition capable of absorbing and retaining the moisture necessary to the plant, and with the moisture, the fresh supplies of ammonia which it brings with it. Now, the great blunder of many practical farmers in this country is, as I have endeavoured to show in my former papers on Black Horse-ponds, that they pay little or no attention to the preservation of the urine of their cattle. It is true they make great heaps of solid dung by the road-side, or in their fields, and think they have laid in a large stock of fertility, while they are so totally careless of the liquid and much more valuable portions of the animal excrement, that most of it is lost. There is no doubt but that there is considerable difficulty in preventing this loss, especially of that part which passes off by evaporation. Let us now consider the best methods which practice or science have suggested, of checking this evaporation, *i. e.*, technically, of fixing the ammonia.

The Flemish farmers are in the habit of mixing water with the urine before fermentation; this addition of water retains much of the ammonia in solution. Thus, on referring to the analysis of Sprengel, we find that when cows' urine was allowed to ferment alone for one month, 100,000 lbs. of it was found to contain 205 lbs. of ammonia; but when an equal quantity of water was added previously to fermentation, he found the liquid to contain 1622 lbs. of ammonia: this quantity, although large when compared with that retained by the undiluted urine, is not all the ammonia the urea had yielded by its decomposition, nearly 300 lbs. having escaped into the atmosphere in a gaseous form. Another disadvantage arising from the use of water to retain the ammonia, is the loss of another portion of the ammonia by volatilisation from the surface of the soil, after the application of the liquid manure, more particularly if it be applied in dry and warm weather. The expense of its application also must be greater where the ammonia is retained by water, than where it is fixed by an acid, since at least double the quantity must be conveyed on the land to produce the same effects.

Sulphate of Iron (green vitriol or copperas) is frequently used in Flanders and Holland for the purpose of converting the carbonate of ammonia of the urine into a sulphate. When sulphate of iron is added to fermented urine, the sulphuric acid, which, in the sulphate, is in combination with oxide of iron, quits the iron and combines with the ammonia of the urine, forming sulphate of ammonia, a soluble but not a volatile salt; while the iron and the carbonic acid, the latter of which was in combination with the ammonia, combine together, forming a carbonate of iron, which is insoluble and falls to the bottom of the vessel. In using sulphate of iron the formation of sulphate of ammonia is complete, provided sufficient sulphate of iron has been added to the urine. the sulphate of ammonia being a fixed salt, remains in solution, and may be thus kept for any length of time without loss. This mode of fixing the ammonia is subject to the disadvantage of leaving a sediment of carbonate of iron in the tank; which, in time, would collect to a considerable amount. If more sulphate of iron be added to the urine than sufficient to fix the ammonia, by converting it into a sulphate, it might act injuriously on vegetation in soils devoid of lime.—*Alfred Gyde, Painswick.*

(*To be continued.*)

ON MINERAL AND INORGANIC MANURES.

No. XXI.

BY PROFESSOR CHARLES SPRENGEL.

(*Continued from p.* 435.)

Clay and loam may be roasted immediately on their being dug out of the ground; still, the operation will succeed better if they have become somewhat dry. It may be as well to observe, that roasting should be done in the dryest and hottest season.

At times, clay or loam fit for roasting may be found in the subsoil of the field, in which case much carriage will be saved, and the ovens should be erected close at hand. It is calculated that two men can roast daily from 500 to 600 cubic feet, for which, however, two ovens will be required, of which one will be in operation whilst the other is cooling. By roasting in ovens, some fuel is saved; but the produce of roasting in heaps yields better manure, as it will be mixed with the ashes of a greater amount of fuel. It is the soil on which the loam or clay is to be used, which has to decide the duration and the degree of heating. A stiff clayey soil has not only to be manured, but also loosened by the burnt loam or clay, on which account they are to be burnt for that purpose till they have become hard, as they will then keep the soil loose like sand; still, the burning is not to be continued too long, else the whole protoxide of iron would be re-converted into ar oxide, which would cause no ammonia at all to be afterwards formed. It will not be too much for a clayey soil to use 100,000 lbs. of the burnt material on one Magdeburg acre of land; and if these contain, as is not rarely the case, 2000 lbs. protoxide of iron, 200 lbs. of ammonia can be successfully formed. Generally, however, not so much is used, as burnt clay is not a cheap manure. Clayey soils are sometimes also manured with the dust of burnt bricks; in this case, however, no ammonia can be formed, as this contains no protoxide of iron or manganese. Sandy soils, on the other hand, require a slightly roasted clay, because, as it is necessary to improve it physically as well as chemically, a strongly burnt clay would be of little avail, as it does not possess much power of retaining moisture, and cannot become well mixed with the soil. A slightly burnt clay is a better manure than one much burnt, as it contains always more protoxide of iron and manganese, besides silicates which, by having been vitrified by the heat, are easier decomposed by humic acid. It is also to be considered, that a slight roasting of clay will require much less fuel than the burning. The quantity required will be always greater than that of a clayey soil, provided that the texture of the former, as well as its composition, requires to be improved. If it is, however, merely considered as a manure, the quantity to be used will depend on its chemical ingredients. Loamy soils require the least quantity of roasted clay, as they do not need to be physically improved, but merely to receive some manuring substances. For this sort of soil, therefore, 20,000 lbs., and often even less, will be sufficient; nay, some affirm that they have produced an effect by merely applying to this sort of soil twelve times the bulk of the seed-corn; the clay used, however, in this case might be marl.

It is difficult to say how long burnt clay will act as a manure, as this depends on the quantity used, on the chemical properties of the clay, as well as those of the soil. The formation of ammonia decreases in measure as the protoxide of iron and manganese are converted into oxides, and the effect of the silicates will cease, when their bases have passed, by means of the humic acid, into the plants. Even the effects of strongly burnt clay, as a means of loosening the soil, cease finally, as it gradually assumes an earthy consistency, or becomes dissolved. Sandy soils, on the other hand, will become permanently improved by slightly roasted clay. In the first year of application, it chiefly advances the growth of the cereals, which is easily to be explained, by their receiving nitrogen through the roots, as they absorb the ammonia which is formed with the oxide of iron and manganese.

If only small quantities of roasted clay or loam are used, they are strewed over the field, and harrowed in with the seed; larger quantities are to be ploughed under, which, however, must be done very shallow, as the nitrogen of the air (indispensable for the formation of ammonia,) must always have free access. Before it is ploughed in, it is best to break it still more to pieces with both harrow and roller, because if the humic acid is to decompose the silicates, it is necessary to come into close contact with them. At times fields are manured simultaneously with roasted clay and lime, but this practice appears to me advantageous only when the soil contains much free humic acid, as otherwise the lime will expel the ammonia. The humate of ammonia which is formed, can only subsist along with lime, when the latter finds sufficient humic acid to combine with.

BRITISH OAK.

IN a book entitled the "Library of Useful and Entertaining Knowledge," in the volume which treats of timber-trees, it is said, "The Oak is the father of ships,"—the knotty Oak of England—the unwedgeable and gnarled Oak, as Shakspeare called it; in these two words describing its leading properties." Now it is evident to me that this term will only apply to Q. sessiliflora, which is more full of knots, from its habit and manner of growth, than Q. pedunculata, and which is the only kind that cannot be riven with wedges. In the same book, it is, however, added that "A writer in the 'Quarterly Review' (Sir Walter Scott) ascribes the dry rot in the Navy to the substitution of a *foreign species of Oak* in our own plantations, instead of the true native Oak." The author then goes on to acquaint his readers with what he calls "a fact long known to botanists, but of which our planters and purveyors of timber for the Navy appear to have had no suspicion," that there are two distinct species of Oaks in England—the Quercus robur, and Quercus sessiliflora, the former of which affords a close-grained, firm, solid timber, rarely subject to rot. The other more loose and sappy, very liable to rot, and not half so durable. Here the term Q. robur is applied, after the example of the late Sir James Edward Smith, to Q. pedunculata, to which the name best belongs, if the strength (robor) of the timber is considered; for according to the experience of practical men, Q. sessiliflora is the most close-grained, firm, and solid timber by far of the two. Probably Q. pedunculata, or what is here termed Q. robur, may be the best for particular parts of ships, where weight or stress is required, as from its manner of growth it is more free from knots than the "unwedgeable gnarled Oak," which without doubt is Q. sessiliflora. Thus the one may be more proper for supporting a great weight and resisting a strain; and the other, Q. sessiliflora, for not splintering by a cannon-shot, for uprights, thick planks, boards, &c. where no particular stress is laid. I say probably, for according to Mr. Atkinson, as quoted by Jack, the sessiliflora requires a greater weight to break it than the other. As to its being in solidity, firmness, and durability superior to Q. pedunculata, if cut at a proper age, I think there cannot be the least doubt, from what has been stated on former occasions; therefore they are both valuable for particular purposes.

In the same volume it is further stated that "Q. sessiliflora is supposed to have been introduced some two or three ages ago, from the Continent, where the Oaks are chiefly of the latter species, especially in the German forests, the timber of which is known to be very worthless: but what is of more importance to us to state, in fact, the imposture abounds and is propagated vigorously in the New Forest and other parts of Hampshire, in Norfolk and the northern counties, also about London, and there is too much reason to believe that the numerous complaints that were heard about our ships being infected with what was called improperly enough the dry rot were owing to the introduction of this species of Oak into the naval dock-yards, where, we understand, the distinction was not even suspected." How any writer or book-maker could pen such a passage as this is, to me, inconceivable.

Q. sessiliflora, introduced "some five or three-score ago!" Why, the most ancient Oak timber in the country, the beams of old castles, the doors of old churches, the roof of Westminster Hall, the submarine forest at Hastings, and the Oak logs taken from the mosses in Scotland, are all of that species. I have myself seen very large Oaks of the sessiliflora in the Forest of Dean and in natural Oak woods on the banks of the Derwent.

As a further specimen of the quality of the information conveyed to the public in this book of the Society for the Diffusion of Useful Knowledge, the following may be taken:—"Of the various European Oaks, the Q. pedunculata is most esteemed on the Continent; it is a magnificent tree, considerably taller than our native Oak. In the forests of Fontainebleau and Compeigne there are at this time many trees of this species, the trunks of which measure from 30 to 36 feet in circumference at the base, and rise to the height of 40 feet without a single branch. Beautiful as this species is, it produces timber very inferior to our Quercus robur—(this may arise from climate, local situation, and growing close together). It is probable that this species, which is indifferently designated by the French Botanists as Q. robur and Q. sessiliflora, is a species entirely different from our real English Oak, for the wood of the Q. pedunculata is described by these writers as harder and more compact than that of the Q. robur or sessiliflora."

The confusion and contradiction observable in the foregoing remarks is most extraordinary. The Q. pedunculata of the French is the same as the Q. pedunculata of the English; and their Q. sessiliflora is also the same species as ours: so that Q. pedunculata is in one place cried up by this writer as the true "heart of Oak" under the name of Q. robur; and then, under its other name of Q. pedunculata, it is supposed to be something else, and of bad quality. As to the concluding part of the sentence, it is wholly unintelligible. Such are the errors of writers who, having no practical or systematical knowledge of the subject on which they write, are nevertheless allowed to lead people wrong most seriously, not only in matters of opinion, but in practice.—*W. Billington.* [The above is the substance of a communication, which, in its original state, was much too long for our columns.]

ON FEEDING CATTLE IN HOUSES OR IN OPEN SHEDS.

(*Continued from page 434.*)

The functions fulfilled by the various ingredients of the food of the domestic animals, will have been seen from the foregoing imperfect sketch:—The importance of supplying matters rich in nitrogen is apparent, for without it no increase of muscular fibre can take place. Highly carbonised ingredients will, however, be seen to be no less essential, otherwise respiration will take place at the expense of the transformation of existing tissues, and in a proportionate degree with loss of condition in the animal.

The quantity of food required by carnivorous, when compared with that used by graminivorous animals, is small. The food of the former class is highly nutritive when compared with that of the latter, in addition to which, the skin of carnivorous animals is destitute of perspiratory pores, so that, in them, no consumption of food is necessary to supply waste from perspiration. Graminivorous animals, especially the ruminantia, continue eating throughout the day with little intermission, as they possess, in a greater degree, the power of converting into organised tissues the excess of food which they consume beyond what is required for supplying the waste which is constantly going forward. They therefore become plump and acquire flesh, while the carnivorous animal continues spare, its flesh being tough and sinewy. The accumulation of flesh in the latter, indeed, would be fatal to their existence, as rendering them incapable of pursuing their prey.

The conditions under which flesh and fat can be accumulated will now be understood. The extent to which this property is developed in many of the breeds of cattle in this country is truly astonishing. In the case of the stall-fed animal, deprived of all means of exercise, and preserved in an atmosphere not subject to vicissitudes of temperature, the waste of the system is inconsiderable, as compared with what it would be in the event of exercise being taken; and the consumption of nitrogenised food is accordingly greater than is required to supply the waste going forward, so that the excess here must be devoted to the production of an increase of muscular fibre or flesh. But the preservation of a high temperature and the want of exercise have also been seen to be equivalent to a diminished supply of oxygen, so that, in the circumstances under consideration, a portion of the carbon which would otherwise be consumed in respiration, will be appropriated to the production of fat, of which, it has been already stated, nitrogen is not a constituent. The proportion, too, in which either flesh or fat will be produced, can in some degree be regulated by the food, that abounding in starch, sugar, or gum, being calculated chiefly for the production of fat alone.

The foregoing sketch presents merely a brief and meagre outline of the phenomena of the process of nutrition in graminivorous animals, to which, for obvious reasons, it has been chiefly confined. Although the successful elucidation of most of these phenomena is not altogether of recent date, yet it is believed that in this department the credit due to Liebig is perhaps equal to what can be claimed for any of his predecessors. The recent work of that learned professor on the subject affords a striking earnest of what may be expected from chemical science in the interesting and important department of which it treats.

Besides, then, the connexion existing between the accumulation of flesh and fat in the domestic animals, and certain conditions as regards temperature and exercise, it is believed that the foregoing considerations are of much value in determining the relative advantages of the different methods by which the required conditions are sought to be obtained. Stall-feeding cattle is not a practice of recent introduction, nor can it be said that science has had much to do with its adoption. It has been for a length of time losing ground in certain districts, while in others it is almost entirely abandoned, and feeding in open yards, with shelter sheds, substituted, although it would appear that the propriety of the change may be gravely questioned—nay, that the practice abandoned is that which is still to be preferred. Perseverance in an erroneous practice is no new thing among an agricultural population; their disinclination to change is proverbial; but in this age of agricultural improvement it seems not a little difficult to account for the substitution of erroneous practice in the room of that which would appear to be in exact accordance with the investigations of science. But it is believed that although the practice was right, the manner of carrying it into execution may frequently have been so defective that it was rather a matter of surprise that any progress should have been made towards effecting the object in view, than that it should not have come up to the expectations of the feeder.

That the arrangements for the maintenance of the domestic animals should be such as to conduce to their comfort as much as possible is not less enjoined by the dictates of humanity than by self-interest, as, when suffering from any cause, that proficiency either in growth or fatness cannot be made, which it is so much the interest of the feeder to secure. When the animals are confined, either for the whole or the greater part of their time, the evils of even trifling inconveniences are much increased. It is no unusual thing to see stall-fed animals coming to the butcher having their knees covered by a mass of cartilage, sometimes of enormous size, caused by resting on a hard pavement. The pain endured by the unfortunate animal, in the first instance, before Nature interposed this covering for his protection, must have been great indeed. Another arrangement, frequently adopted with a view of preventing choking while feeding on Turnips, is to shorten the neck-chain by which the animal is tied, so that he cannot raise his head more than a few inches from the ground. As animals being stall-fed are seldom standing, only when taking their food, it might be supposed that tying them down in this manner could not be productive of much inconvenience; but so injurious does it often prove, that the animals may frequently be seen with the chains sunk in the backs of their necks, from their constant pressure. Deficient ventilation and want of cleanliness are also frequently characteristic of such apartments, than which nothing can be more inimical to the progress of the animals. In those districts, therefore, where the practice of stall-feeding is losing ground in the estimation of the farmers, it would be well if they made strict inquiry to ascertain that their arrangements were such as a rational and enlightened view of the animal economy would dictate.

After having seen the importance of warmth, as facilitating the object of the feeder, it may appear an anomaly to insist on ventilation; but it must be recollected that deficient ventilation is not always followed by an increase of temperature, and that the latter can be maintained with the greatest facility when the arrangements for ventilation are the most perfect. Deficient ventilation cannot be long in operation without seriously affecting the health of the animals; and it is mistaken policy to suppose that when this is the case the object of the feeder can be promoted.

The breeder and feeder of live-stock should not lose sight of the important fact that the circumstances affecting the growth and fattening of the domestic animals are widely different. The grand object is, of course, to produce the greatest effect by the smallest possible expenditure of means, whether the object be rapid growth, by which early maturity is secured, or the speedy accumulation of fat. A total want of exercise for any considerable length of time, especially in the case of growing animals, is believed to be inimical to the preservation of perfect health; but this is different from the short period of confinement to which they are subjected while being fattened off for the butcher. A certain degree of confinement may, it is conceived, be advantageously extended to cattle of every description, but total confinement in the case of young cattle and milch cows cannot be indiscriminately recommended. The practice of house-feeding milch cows has hitherto obtained but little favour, simply from the circumstance of exercise being altogether withheld; but, were an hour or two daily allotted to this purpose, very different results would be obtained.—*J. Sproule.*

Home Correspondence.

Fixation of Ammonia.—I am about to commence the formation of a manure-heap on a very extensive scale, according to the plan and directions given in your Number of the 15th ult., and shall feel greatly obliged if you, or any of your correspondents, will answer me the following queries:—Is diluted sulphuric acid still considered the best article for fixing the ammonia? What quantity of water should be used for each pound of the acid? and how many pounds of acid are sufficient for two 2-horse cart-loads, exclusive of the earth, road-side sweepings, &c. laid upon each layer of fold-manure in forming the heap? Should the diluted acid be used upon each layer, each day's work, at night? or the whole in proportion, upon the whole heap, when completed? and what are the most proper utensils to put the liquor into when using it, and the best way of doing so?—*Carl.*

[In answer to this we extract the following from a communication by Mr. Gyde, of Painswick:—"If we assume, with Boussingault, that farm-yard dung, in its ordinary or moist state, contains 0.40 in 100 of nitrogen, we shall be within a fraction of the amount contained in a mixture of 1 of litter and 3 of excrement. Hence, we shall have in 10,000 lbs. of dung 40 lbs. of nitrogen, equivalent to 48½ of ammonia, requiring 138 lbs. of liquid sulphuric acid, specific gravity 1 85, to convert it into sulphate of ammonia (that is, supposing all the nitrogen to exist in the condition of ammonia in the dung); and if, for the sake of round numbers, we calculate the 10,000 lbs. of dung at 4½ tons, we shall require a fraction over 30 lbs. of sulphuric acid per ton, to convert the ammonia into a sulphate; each ton would then be equivalent to 40 lbs. of crystallised sulphate of ammonia. The sulphuric acid should be diluted with four or five times its weight of water before it is applied to the dung, or it will undergo partial decomposition on coming in contact with the vegetable matter in the manure. Sulphate of lime (gypsum) will not do as a substitute for acid in this case, since I find that it will not fix ammonia unless it is first dissolved, and as it requires 500 times its weight of cold water for its solution, its use in that state would be quite out of the question; nevertheless, if sprinkled freely over the fold-yard, it would fix a portion, and would be a good addition to the manure. It would require 50 lbs. of gypsum to supply 30 lbs. of sulphuric acid, or to fix the ammonia in 1 ton of farm-yard dung, provided the decomposition was complete." The acid should be added every two or three days, whenever there is any considerable accumulation of fresh manure; and it must be remembered that 30 lbs. of sulphuric acid is the quantity required to fix the ammonia in manure consisting of ¼ of litter and ¾ of excrement.]

Rooks and their Owners.—It appears to me that their counsel has completely failed in making out a case in their favour (*vide* page 321). He commences by saying, "We hail with pleasure the arrival of the rooks;" and he goes on to extol their value, till at last he admits the following faults; and I think it no trifle in seed-time to the farmer to have his seed stolen by his rooks, which pull up the young blade of the Corn, on its first appearance, to get the grain. "The pilfering lasts about three weeks; we hire a boy at threepence and sixpence to scour them off. In winter they will attack the Corn-stacks." I will mention another fact to show that they will take Corn if they can possibly come at it. A short time ago a farmer took a quantity of Corn, and steeped it in arsenic, and placed it in different parts of the field, to see whether the rooks would take it or not; they soon cleared it off, and they were found dead many miles from the place where they had got it, and the man was, therefore, troubled no more with them. Rooks are not game, and the farmer has a right to destroy them, and I think it is high time that they should be destroyed; as in page 60 it appears that the expense which they occasion amounts to 4000*l.*, in a limited district, Garstang.—*Facile.* [The farmer certainly suffers considerable injury from rooks, which would destroy a good deal of his seed, and many of his Potatoe sets in spring, were he not at some expense to prevent them. The only question for consideration is—Would he not suffer to a greater degree, were these birds destroyed, by the depredations of insects, which would then undoubtedly prevail in much larger numbers?]

Thorn Planting.—The Duke of Hamilton has been making considerable improvements upon his estates in the neighbourhood of Garstang, for some years past; and, amongst other things, I have noticed the removing of the unsightly fences, and the planting them upon an entirely different system. The present year he has planted to a considerable extent. Instead of planting the Thorns upright, he lays them; those planted upright this season appear almost dead, and have made no new wood, owing, I suppose, to the dryness of the weather; while those laid have made wonderfully fine young shoots. *Facile, Garstang.*

Daniels' Manure.—Where it has been properly applied, Daniels' manure, in some instances, has been of considerable benefit; but the season has been very much against it. I am sorry to say that, in the experiments by the farmers hereabout, the manure was not half buried, and, of course, all nutriment which was exposed was soon volatilised by the sun and air. Mr. Daniels' own Wheat was excellent; but great pains was taken to bury the substance, likewise to sow the seed. He is now giving it the sixth trial on the same land. I have seen Potatoes turn out a good crop with the manure, from a very poor shallow soil, where it would not being sufficient to pay for cultivation before. It has been tried here with Potatoes, in a loamy soil—two quarters of acres on some arable land, one with stable manure, and the other with Daniels', and there was no difference in crop or flavour, but more haulm to the artificial. Indeed, when properly applied, I think it will be of great benefit to shallow uplands. It was carefully tried near this on pasture, in three different ways, with no benefit whatever. It is of no good to gardens on a loamy soil.—*T. Wharton, Weston, Bath.*

Farm-yard Manure.—Among the various experiments with manures which I am constantly reading about in your Paper, the grand result seems to be the showing how much farm-yard manure is surpassed by guano, nitrate of soda, bone-dust, &c. &c. Now what I wish to ask is, Whether, in all these experiments, poor farm

yard dung has a fair trial or no? that is, whether the dung is from a heap such as Mr. Gyde would find in his black horsepond yard, out of which all the gravy of the meat, if I may so say, has run away, or from a heap upon which all the juice has been pumped back and which has had all its ammonia fixed and been made up with all the advantages which a modern muck heap ought to receive? Because, unless it is a dung heap of such a character, I contend that it does not stand a fair comparison with the other manures Mr Gyde in his admirable papers tells us, that the urine, &c, of cattle contains all the ingredients which render guano and other manures so valuable, therefore, unless the farm yard manure is composed of all the drainage and sweepings from the stables and yard properly made up, to try it against the host of fertilisers which have all their strength concentrated and made the most of, it cannot properly be a true test of its powers Experimenters should state what sort of farm yard manure theirs is, as in 90 cases out of 100 I believe it would be found to be good of its sort, but not half so good and strong as it ought to be and is entitled to be — *R W.* [Our correspondent's complaint is a very just one the farm yard manure which is used as a standard of comparison in experiments on the value of guano, &c, is rarely what it ought to be, it is generally much the worse for having its insoluble ingredients washed out of it And there is another fault in these comparative experiments a farmer applies manure to his land perhaps once in four years, the crops of all these four years ought to be measured and weighed before the value of the manures as fertilisers can be ascertained]

Vetches —I think the practice of the father of the late Mr. Webb Hall worthy of attention even in these more enlightened days As soon as the Wheat crop was cleared, he prepared for Vetches and laid on all the manure intended for the subsequent Turnip crop, the Vetches, of course, were most luxuriant, and he was thus enabled to feed them off in good time for sowing Swedes, the land being in excellent condition, and having, moreover, the benefit derived from the increased quantity of manure from the sheep, in consequence of the superiority of the crop of Vetches —*Luso*

Smut in Wheat —About 40 or 50 years ago a Mr Roger Treffry, of Beer Alston, professed to be in possession of a secret for preventing the smut in Wheat Accordingly, about seed time he made a tour of several of the midland counties, offering to sow seed from the most infected sample, but prepared by him, also he would take the cleanest seed, which he also prepared these were both sown, and next year at harvest he called on those farmers who permitted him to try the experiment; when, if the smutted seed was found to produce [illegible] their respective merits and cost

We have seen that the urine of man and our domestic animals contains a substance [illegible] receive three guineas for the secret this he did, as I understood, without an exception, and realised a very handsome sum. His secret for disinfection consisted simply in thorough washing in pure water, and on the other hand, he infected the good seed by thoroughly rubbing it with the contents of smut balls. After all, his method was not generally adopted, nor do I believe it certain of success without extreme care. I once prepared the seed for a field by well washing in two waters, and skimming off the light corn which floated, and yet the crop was more than half smutty I am of opinion that heat is necessary to destroy the vegetative power of the sporules, and therefore adopted the following plan which was perfectly successful, for I was never after troubled with smut. I placed the seed intended for the next day's sowing in a heap, upon the top of this was a vessel of boiling saturated solution of common salt, into which was thrown a sufficient quantity of fresh burnt lime, the slaking of which raised the temperature far above that of boiling water, and it foamed most furiously over the vessel, and ran down amongst the Wheat, the whole was then carefully turned over several times, till thoroughly mixed the heap dressed up neatly, and left till morning, when it was quite dry enough to drill — *Luso*.

Wide Drilling.—In your Leading Article, p 413, you invite the communication of the experience of your readers on this subject. I am therefore induced to mention an experiment I tried, "long long ago" I planted two acres of a very rich garden loam with Wheat, one acre was dibbled in 3-feet rows, and 9 inches from hole to hole, with 2 corns in each; the other at 18 inches, and 9 inches from hole to hole. The plants grew very luxuriantly, but never covered the ground, the ears were very long and loose, and the sample thin and hungry * I have no memorandum of the product, but I considered the attempt to give Wheat so much room a complete failure. Adjoining these two acres I drilled two other acres at 16-inch intervals, which produced 70 bushels of very good Wheat.—*Luso*.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND

A Monthly Council was held at the Society's House, in Hanover square on Wednesday last, the 3rd of July present—His Grace the Duke of Richmond, K.G., in the chair; Marquess of Downshire, Earl Beauchamp, Viscount Torrington, Lord Cameys, Lord Hatherton, Col. Austen, Thomas Raymond Barker, Esq; John R. Barker, Esq., Geo. R. Barker, Esq; J Bennett, Esq., M.P; S. Bennett, Esq, T W Bramston, Esq., M.P., W. R Browne, Esq; F Burke, Esq., Col Challoner; F. C. Cherry, Esq.; R. Colman, Esq, E. D. Davenport, Esq.; J. H H. Foley, Esq, Capt. Forbes, R.N; B. Gibbs, Esq, W. Fisher Hobbs, Esq; Sir John Johnstone, Bt, M P, Rev. R. C. Kyone, J. Kinder, Esq; Sir F Lawley, Bt, Sir C. Lemon, Bt., M.P; Col. Macdonall, J W L Naper, Esq., Sir R. Price, Bt; W. Shaw, Esq W. R. C. Stansfield, Esq., M P., and V. Stuckey, Esq

Viscount Alford, of Carlton Terrace, London, and Ralph Creyke, Esq, of Rawcliffe Hall, near Selby, Yorkshire, were elected Governors, and the following gentlemen Members of the Society:—

Pilgrim Charles H Kingsfield, Southampton
Pilgrim Charles Kingsfield, Southampton
Bevdon Rev Frederick North Stoneham Rectory, Southampton
Bearmark Richard, Mount St Alban's, Caerleon, Monmouthshire
Streeter William Sanderstead Croydon Surrey
Carson William Seaforth near Liverpool
Prosser George Llvaston Farm Harewood Ross, Herefordshire
Crouch John Cirencester Gloucestershire
Mitford Charles Pittshill Petworth Sussex
Butler Hon Sir Edward Chilworth Southampton
Altherly George junr Southampton
Shuttleworth Geo Edmund Tottenham Green Middlesex
Waddington John Thomas (High Sheriff Hants) Twyford Lodge Winchester
Bird William St Leonard's Farm Beaulieu Southampton
Charteris Hon Francis Armisfield Haddington N B
Parsons Chr Anglesey Place Southampton
Dottee Harry President of the Agricultural Society, Guernsey
Bate J Richard Botleigh Grange Southampton
Brough John Shaw Farm Overton Marlborough
Bourne Right Hon W Sturges Ujper Brook street London
Gibson Robert Bagshot Surrey
Oliver George Kingston Arundel Sussex
Yorkstart Captain Robert (Coldstream Guards), 11 Halkin st West Belgrave square
Trudgen Henry Hodge Trevilley Tenzance Cornwall
Malmesbury Earl of Heron Court Christchurch Hants
Waddington John H Langrish Petersfield Hants
Miles John Wexcomb Great Bedwin Wilts
Craven Henry Wickham Hall Bromley Kent
Linham Humphrey Poringdrig Hants
Lee William Shipley Ringwood Hants
Raymond Henry Archer Harrow Weald House Harrow Middlesex
Mitchell John 5 Hawley Road Kentish Town
Binstead Henry Wood Farm Wareham Hants
Knight John Harvey High street Southampton
Thompson Thomas St Mary street Southampton
Grey Thomas Robinson North Stockton on Tees Durham
Stone William St Leonards Franfield Cuckfield Sussex
Huddleston Thomas Stedcomb House Colleton Devon

The names of 18 candidates for election at the next meeting were then read

FINANCES —Mr Raymond Barker, Chairman of the Finance Committee, laid before the Council the Monthly Report of the Committee on the state of the Funds of the Society, from which it appeared, that at the end of last month the amount of invested capital was 7700*l*, and the current cash balance in the hands of the bankers' at the same date 345*l* 7*s* Mr Barker explained to the Council that this balance included 800*l*, on account of the Southampton subscription, of which the Committee had recommended a further sum of 500*l* to the sulphate of ammonia being a fixed salt remains in solution and may be thus kept for any length of time be paid to meet the expenses already incurred in making the requisite preparations for the ensuing country meeting at that place, leaving 200*l* of the subscription of 1000*l* originally remitted from Southampton still remaining in the bankers hands, and available for further claims on that account

Colonel Challoner, Captain Forbes, and Mr Bennett M P, and Mr S Bennett, favoured the Council with the results of their trials to effect the extirpation of rats from their respective premises, Colonel Challoner taking that opportunity of correcting a misapprehension of his statement at a former meeting as to the extent of his experience of Mr Meyer's preparations. At that time, his application of those preparations had been limited to a broad Holly-hedge in his flower garden, where they were found to be perfectly successful —Mr Manning, contractor of the Society's works at Southampton, addressed a letter to the President in reference to the site of the Pavilion, Messrs. Drummond, of Stirling, and Messrs Morton, of Edinburgh, replied to the inquiries of the Council on the subject of Bixby's draught machine. The Rev C J James, of Braintree Rectory, called the attention of the Council to the condition of agricultural labourers, and the intentions of the Committee appointed to report to the Council on that subject, and the Highland and Agricultural Society of Scotland announced the reservation of tickets for members of the Royal Agricultural Societies of England and Ireland who might be induced to attend the ensuing meeting at Glasgow The Marquis of Downshire invited the attendance of members at the ensuing meeting of the Royal Agricultural Improvement Society of Ireland at Dublin, where the authorities were prepared to receive them with every attention Mr Brandreth Gibbs presented copies of the Prize Sheet of the December Show of the Smithfield Club

The Council then adjourned to Wednesday next, the 10th of July

HIGHLAND AND AGRICULTURAL SOCIETY.

At a late meeting of Committee, for making the necessary arrangements for the ensuing great Agricultural Meeting at Glasgow, the following Report was read — The local Committee, upon their appointment in January, 1843, commenced operations by taking steps to unite the adjoining counties of Lanark, Renfrew, Dumbarton, Ayr, Argyll, Bute, and Stirling, in constituting the Show, and are happy to state that all these counties agreed to combine for the purpose, with the exception of Stirlingshire, which declined to have any connexion with the Show The local Committee have given their best endeavours to frame a list of premiums to be awarded for stock, which should be properly adapted to the different breeds deserving encouragement in the districts comporing the Show, and they hope that the list which has been published, which was drawn up with the aid and under the superintendence of the Edinburgh Committee, will afford satisfaction. The premiums advertised amount to 1575*l*, being the largest sum ever offered for competition at any of the Society's Shows; and it is expected that the number and liberality of the premiums will attract an unprecedented display of stock from all parts of the country. The requisite funds are not yet fully realised, but with a little exertion there is no doubt of the sum subscribed being perfectly sufficient to meet all liabilities. The 7th, 8th, and 9th days of August have been fixed upon as the most eligible time for holding the Show, avoiding alike the Goodwood races, at which the Duke of Richmond and the Earl of Eglinton must be present, and the commencement of the shooting season. Part of the public Green of Glasgow has been kindly granted by the magistrates as the site for holding the Show, which is peculiarly adapted for the purpose, and will afford abundant accommodation. It has been resolved, instead of building a temporary erection, to have the public dinner within the City Hall of Glasgow, which can, at comparatively small expense, be fitted up to accommodate 1800 people with comfort. A plan of the Green, and the portion allotted for the Show, at the Flesher's Haugh, was exhibited. It seemed to satisfy all present, and it was left to a committee that were appointed to make every proper arrangement for securing the grounds, and for the necessary accommodation of the committees, the judges, and all concerned in the proceedings. The following are the plans for the three days of the Show —Wednesday, 7th Aug —The exhibition of agricultural implements, dairy produce, roots, seeds, and plants, to conclude with the Committee's dinner, and a grand ball in the evening Thursday, 8th Aug, will be the great day—set apart as it is for the general show of cattle, horses, sheep, swine, and the whole of the articles exhibited on Wednesday The business will be wound up by a grand public dinner in the City Hall, with the Duke of Richmond, president of the Society, in the chair Friday, 9th Aug —This day will be employed in the exhibition of the prize stock, implements, &c It was also arranged that Mr Smith, of Deanston, and Professor Johnston, should, either at the public breakfast, or at some other time during the proceedings, deliver lectures on draining and agricultural chemistry It was stated that the City Hall would accommodate 1800 at dinner, and it was agreed that tickets should be on sale, *to members only*, until the 27th July —thereafter the public to be served as they applied; a certain portion, until a particular date, being laid aside for the gentlemen belonging to Societies in England and Ireland.

FARMERS' CLUBS

Chelmsford Wool Fair —Mr. Towers, who presided [illegible] as Shakspeare [illegible] this occasion, made the following [illegible] at the public dinner on [illegible] remarks on the state of the wool trade He stated that the buyers had said there had been a material rise in wool over last year, though not in proportion to what was stated, but still a material rise, and they would see that it was impossible it should not be so when he detailed the fact that in 1843, advancing from several former years, the export of wool to Belgium and France was 8,000,000 lbs —6,802,000 lbs to the former, and 1 077,000 lbs. to the latter—as was shown by the return on the wool-trade made on the motion of Mr Miles. Now, in fact, this had been going on at the same time with a decrease in the import of wool If they looked back to the same document, they would find that from 1836 to 1840, the average import of foreign wool was 51,406,049 lbs, but from 1841 to 1843 the average import was only 50,410,902 lbs Therefore, there had been in the last three years a diminution of about 4,000,000 lbs. in the import of wool, which had taken place at a period when, from the extension of mechanical skill in the production of machinery, the competing power of the manufacturers had been largely increased; and, strange to tell, the sales of perfect and completed manufactured goods during that time, had only maintained the average of little more than five or six millions How was this to be accounted for? By this extraordinary fact, that there had been of late not only an export of 8,000,000 lbs. of their wool against an import of 50 millions some odd thousands, but an export of British woollen and worsted yarn to the amount of 7,906 392 lbs, being an increase on the former year of 1,423,262 lbs There had, therefore, been a double export of the raw material, first of our wool, and then of woollen and worsted yarn, which was the first manufacture from the wool; and this had fallen so heavily upon the reduced imports, that the manufacturers of the country were found to be in want of wool to meet the magnitude of their operations. He should be unwilling to check the desire of the sellers to sell, yet as the proceedings of this meeting were going forth to the country, and giving a tone to other fairs, it would have been wrong in him not to have stated relatively the situation of the buyers and sellers. There were points in the current year most favourable to the sellers, the buyers were consulting their interests in buying their wools on the most favourable terms they would offer them; and he did not believe that by holding back and speculating on the price, the growers would be consulting their own interest, for he did not think the farmer had a right to be a speculator But let the buyers be aware of this, that he had placed it beyond contradiction that it was their interest to make purchases provided they received offers favourable to their views. Let him call attention to the fact, that in Belgium and France the manufacturers admitted that British wool was of the greatest importance to them, as they required it to form the warp for their finer wools, in making the cloths and

the previous quality of goods in which they all have Yorkshire trade.—*From the Chelmsford Chronicle.*

West Norfolk.—At the late meeting of this Agricultural Association Mr. Hamond made the following remarks:—If you go into the society of intellectual farmers you will hear them talk of their business, of how they can produce the best crops by the most economical means; how one crop answers, how another answers, what are the best kinds of manure, and how to apply chemistry to farming. All these things tend to open men's minds, and to make them better farmers and better men. And if any of us knows a little bit of chemistry, let us not bottle it up nor take out a patent for it. There has been a great deal written by Professor Henslow on the subject of gypsum. I tried a little, but did not get on at all with it. Instead of using the sulphate of lime, I mixed sulphuric acid with water, and watered the manure-heaps with it. I do not profess to have made an accurate experiment; but after using twenty loads of this manure, I can say there was a great improvement in the tops and bottoms of Mangold Wurzel. I have turned over every load of manure with diluted sulphuric acid. If you like to try it, one gallon of sulphuric acid, which costs 1*s.* 9*d.*, to 36 gallons of water, will be the quantity for 20 loads of manure. The experiment is not very expensive, and I really would strongly recommend you to try it.

Reviews.

Supplement to Loudon's Encyclopedia of Agriculture. By J. C. Loudon, F.L.G.Z., and H.S., &c. Longman, Brown, Green, and Longmans. 1844.

Those who possess the "Encyclopedia of Agriculture," published by the late Mr. Loudon in 1825, will need this volume to complete that work. It brings down improvements in the art of field culture from 1831 to 1843 inclusive.

These improvements are enumerated in an instructive Preface, from which we extract the following paragraphs:

"The functions of the leaves of plants are beginning to be more generally understood; and hence, also, the importance of allowing sufficient space for their exposure to the sun and air, by wider sowing or planting, by judicious thinning, and by pruning.

"Hence, also, when plants are to be destroyed, this may be effectually done by cutting off their incipient leaves as fast as they appear. In this way Ferns and other perennial weeds in pastures may be more easily destroyed than by any other mode; and the same may be said of weeds growing up from the bottoms of ponds.

"As a proof that the use of leaves was not understood by practical men, and even by the officers of the Highland and Agricultural Society of Scotland, so lately as 1836, we may refer to the Transactions of that body; in which we find the Society giving a premium for an essay on the destruction of Ferns in pastures, to a candidate who recommends as the best mode the irrigation of these pastures. The irrigation of pastures on which Ferns abound may be considered impracticable in ninety-nine cases out of a hundred.

"Growth and maturation in plants are two separate processes, and when either is the main object of culture, the other should be prevented or checked; thus when seeds or fruits are maturing, the elongation of shoots and the production of leaves should be checked, by pinching them off as fast as they appear. Hence the use of topping Beans, Tobacco, Woad, and even Potatoes; not to mention Vines, Gooseberries, Raspberries, Peaches, and other garden fruit shrubs and trees.

"By preventing the formation of seeds or fruits, more strength is thrown into the plant generally; and if it is a plant which produces bulbs, tubers, or underground stems, as substitutes for seeds, these will be increased in size. Hence the use of picking off the blossoms of Potatoes.

"Plants imbibe nourishment from the soil, chiefly from the points of the fibres at the extremities of their roots. Hence, the practice of banking up hedges, Beans, Potatoes, and other plants in drills, and of watering, stirring the soil, and laying manure close to the stems of trees and plants, is erroneous in principle and often injurious in effect, by cutting off the fibrils, or, in the case of Potatoes, the underground shoots on which the Potatoes are formed. In some cases, however, cutting off the extremities of the roots is useful by increasing the number of fibrils, and consequently of the spongioles or mouths by which nourishment is imbibed.

"Hence the Berwickshire practice of tabling hedges, so much recommended and so generally followed by Scotch bailiffs, foresters, and hedgers, is for the most part a waste of labour; unless, indeed, the object be to stunt the growth of the hedge, and prevent its roots from robbing the soil of the adjoining fields. The practice of earthing up Turnips was once in vogue, but it is now ascertained to be a certain mode of instantly checking the swelling of the Turnip, by the pressure of the soil which is thrown up to it by the plough.

"The progress of the ripening of seeds and fruits in general goes on in a geometrical ratio, and hence the great nicety required to determine the moment when seeds or fruits should be gathered, which period varies according to the purpose to which the seeds or fruits are to be applied. The last change which takes place in the ripening of Wheat is an increase of bran or husk, and a relative diminution of farinaceous matter or flour; and hence the immense difference in the produce in flour, between that of the grain of a field of Wheat cut down at the proper time, and a field of Wheat allowed to be over ripe. Too much importance can hardly be attached to this subject.

"Draining water is found to supply oxygen, potash, carbonic acid gas, and ammonia, all which serving as manures for plants, it follows that irrigation, even in cold climates, is beneficial to Grass lands, altogether independently of supplying water as an element of growth, which in cold climates is seldom wanted in that capacity.

"More importance is now being attached to the ascertaining of the mineral constituents of plants, such as alkalies and alkaline earths, phosphorus, sulphuric acid, silica, &c., than was the case before the appearance of 'Liebig's Organic Chemistry.'

"The permanent fertility of a soil is found to depend more on the inorganic substances which it contains, (for example, on the proportion of alkalies and alkaline earths which it holds in combination with the silicic, phosphoric, sulphuric, and other acids,) than on its organic constituents, such as humus or decaying vegetable matter; for all organic matter in soil, whether that soil be naturally good or bad, is sooner or later exhausted by the growth of plants; and if the supply is not kept up, the soil reverts to its original state, except in so far as it may have been improved mechanically by draining, levelling, shelter, &c.

"Alkalies are the most important inorganic constituents of soils, and when a soil has been exhausted of them by cropping, no manure that does not contain alkalies will restore their fertility for agricultural plants.

"The poorest soils are almost invariably those which contain least alkalies and alkaline earths.

"Animal manures contain a much greater proportion of the inorganic constituents of plants, than vegetable manures; and the most powerful of animal manures are those of carnivorous or omnivorous animals; for example, of the human species.

"Saline manures not only supply food, but, acting as stimulants, enable plants to derive more food from the soil and the atmosphere than they otherwise would do.

"The ammonia of liquid or other manures may be fixed by gypsum or sulphuric acid; or, in default of these, it may be prevented from evaporating by mixing with soil or diluting with water. In general the most convenient and economic mode for the British agriculturist is to mix it with farm-yard manure, or, what is better in our opinion, plenty of surface soil.

"The chief practical advantages which have as yet resulted from the recent discoveries in chemistry, as applied to agriculture, are the employment of saline manures, and the recognition of their importance, the mixing of azotised (nitrogenised) with unazotised (unnitrogenised) food in feeding and fattening cattle, and the procuring greater warmth for the domestic animals of the farm.

"The most useful practices which have obtained extended diffusion within the last ten years are, the frequent drain system, long practised in Essex and Suffolk, but recently brought conspicuously into notice by Mr. Smith of Deanston; the use of draining-tiles instead of stones; the use of the subsoil plough, and of the cultivator as a substitute for the plough in various cases; the greater eagerness to procure improved implements, machines, and buildings generally; the mixture of soils; the greater value set on urine and liquid manure generally; the use of single-horse carts; the selection of improved varieties both of animals and plants, and the employment of land agents, conversant with agriculture, instead of lawyers or others who have little or no agricultural knowledge.

"The details which have led to the above summary will be found in Liebig's 'Organic Chemistry,' and 'Animal Chemistry;' Johnston's 'Agricultural Chemistry;' Trimmer's 'Practical Chemistry for Farmers and Landowners;' Solly's 'Rural Chemistry;' Dr. Playfair's Lectures on Rearing and Feeding Cattle, published in the 'Journal of the Royal Agricultural Society,' vol. iv.; Donaldson's 'Manures, Agricultural Grasses, and General Management of Landed Property, &c.' The greater part of this Supplement consists of extracts from these works; and from the 'Quarterly Journal of Agriculture,' the 'British Farmer's Magazine,' the *Gardeners' Chronicle*, and the 'Gardeners' Magazine.'"

The information given in this volume is arranged and classified with all that skill and order for which its author was distinguished. In Part 1st Agriculture is considered as to its origin, progress, and present state. In Part 2d it is considered, subjectively, as a science and an art; thus we have, under successive heads, an immense mass of matter on the animal kingdom, the mineral kingdom, and the atmosphere, with reference to Agriculture; on the mechanical agents employed in Agriculture; and on the operations of Agriculture. In Part 3d Agriculture as practised in Britain is described, more especially with reference to the arrangement and improvement of estates. And Part 4th gives information on the statistics of British Agriculture. Though certainly a supplementary work, it is nevertheless to a great extent complete, inasmuch as the practice, and our knowledge of the science of Agriculture have improved to an unprecedented extent within the period the improvements of which it professes to detail. We therefore recommend this work even to those who may not be in possession of the original edition. It contains a great mass of useful information on agricultural subjects, admirably arranged, and fully illustrated by wood-cuts, where these are necessary.

Farming for Ladies; or, a Guide to the Poultry-yard, the Dairy, and the Piggery. By the Author of "British Husbandry." London: John Murray, Albemarle-st.

This is an elegant octavo volume, containing in full detail information on the management of all kinds of Poultry, with chapters on the Pigeon, the Rabbit, the Goat—on the Dairy and the Piggery. It is illustrated by woodcuts whenever these are required; and it is ornamented by a drawing of the Queen's poultry-yard at Windsor. The Preface says that it is not intended for the mere cottager, nor for persons of large fortunes, but for those ladies in the middle ranks of life who study healthful domestic economy, either for the pleasure or the profit which it affords; and it certainly is just the kind of book which any one not possessed of practical experience on the subject would wish for, to receive instruction from. The chapters on the Dairy contain a variety of information, by attention to which, professional as well as amateur farmers might benefit.

Miscellaneous.

Adulteration of Manures.—A paragraph somewhat as follows would seasonably issue from your Journal:—"It is projected by several leading agriculturists to establish, during the Southampton Meeting, a Protection Society against the frauds practised upon the farmer by the importers and manufacturers of manures, Linseed-cake, &c. &c. It is well known that the whole of the 'scutch' (the refuse from the carriers' yards) from Scotland, is imported into Hull to be mixed with the crushed bones, and sold to the simple farmers as genuine bone-dust. Also that foreign Linseed-cake of very inferior value is re-crushed with the dregs of the Linseed-oil, and sold by the Hull manufacturers as English cake. It is lamentable to observe merchants moving in a respectable station of society demean themselves by such gross swindling. It is intended by the Society to employ chemists to analyse samples of manure and cake, and to make examples of dishonest traders, by instituting actions-at-law at the cost of the Society. It is earnestly hoped the farmers generally will associate themselves with the Society, that an immediate stop may be made to the robbery imposed upon them."—*Agricola, in the Farmers' Journal.*

Scientific Lecturers.—To the Council of the Royal Agricultural Society of England: The Memorial of the Cardiff Farmers' Club, respectfully sheweth,—That your Memorialists feel deeply impressed with the great advantages which must result to the Agriculture of this kingdom from the extended operations of the Royal Agricultural Society. That they further believe that in the formation of farmers' clubs your Council will possess an additional and most important means of diffusing practical and useful knowledge amongst the cultivators of the soil. That your memorialists beg leave most respectfully to state that they are fully of opinion that the great objects contemplated by the Royal Agricultural Society would be greatly and most beneficially promoted by the employment of real practical and scientific lecturers, who would from time to time visit the various farmers' clubs now formed, as well as to assist in the formation of others, and to convey through the means of lectures or otherwise to these clubs the various improvements in the cultivation of the land; in the breeding and feeding of stock, and in the most approved varieties of grain, roots, &c., which have been successfully adopted in other parts of the kingdom. That the recent establishment of so many farmers' clubs in different parts of England and Wales offer facilities for diffusing such information throughout the rural districts which have never before occurred; your memorialists therefore earnestly hope that the Royal Agricultural Society of England will adopt such measures as may seem to them best adapted to the attainment of so desirable an object. Signed on behalf of the club, E. David, Chairman.—*Report of the Cardiff Farmers' Club.*

The Tick, Fly, &c.—Sheep are much exposed to the attack, and suffer much from the effects, of various insects and vermin. One of the most common and well-known is the tick, which though commonly about the size of a pea, is sometimes much larger. It attaches itself to the skin by means of sharp claws at the extremity of the legs, and pierces the skin with sharp instruments attached to the head. The tick propagates rapidly, and is often found in great numbers on a single sheep, selecting the neck and shoulders in preference to other parts. It may be destroyed by the application of turpentine, linseed oil, or mercurial ointment, or dipping in a solution of arsenic. Lice are sometimes a source of much annoyance, but may be destroyed by mercurial ointment, solution of arsenic, or tobacco-water. The fly is a still more formidable enemy, causing more irritation, and leaving behind more severe effects. It abounds mostly in woody localities, and in the month of May deposits its eggs on the sheep, selecting a sore, if there is any to be found, which is often the case, particularly about the head. The maggots being hatched burrow under the skin, causing severe irritation, and producing frequently extensive and troublesome wounds. The sheep exhibit much uneasiness soon after being struck, often stamping, biting themselves, and running about the field with much violence. The wounds, if neglected, soon spread, and I have known the most severe and complicated fistulous wounds produced thereby,—extending between the shoulders and becoming incurable. The most simple preventive to the attack of the fly is the application of coarse whale oil to the parts most likely to be attacked. The fly has such dislike to even the strong smell of the oil, that it acts as a safe protection, and is much more simple than the application of a plaster, as sometimes practised. A striking instance of the effect of the oil is mentioned by Mr. Hogg in his "Shepherd's Guide." As a local application, immediately after the sheep have been struck by the fly, white lead is one of the best, and it will also act as a preventive.

It is rendered still more efficient when mixed, as in the following recipe, and on being scattered over the parts will speedily destroy the maggots:—

White lead	. . . . .	4 ounces.
White arsenic	. . . . .	1 „
Sulphur	. . . . .	6 „
Cinnabar of antimony	. . .	2 „

Each to be finely powdered, and the whole then well mixed. It may be rendered weaker, and perhaps more suitable when employed as a preventive, by diminishing considerably the proportion of arsenic. The following is the application used at Holkham successfully in the flocks of the Earl of Leicester:—

White arsenic	. .	1¼ ounce to 1 gallon of water.
Soap	. . .	2 „ „
Tobacco	. . .	2 „ „

The arsenic is boiled in a bag, and kept stirred at the time of boiling. The tobacco is also boiled in the same manner, and put into the water when cold. The soap is cut in thin slices, and the whole of the mixture boiled for half an hour. One pint and a half to be applied to each sheep. Earl Spencer observes—"It is better to dip the lambs immediately after the ewes are shorn than after weaning. The shearing the ewes destroys or removes the ticks which were upon them, and the dipping destroys those which were upon the lambs; whereas, if it is postponed till the lambs are weaned, the wool on the ewes will have then grown long enough to shelter ticks, which have come upon them from the lambs after the time of shearing." If the sore, from inattention or neglect, has spread, the application of the following astringent powder will be desirable:—

Prepared chalk	. . . .	6 ounces.
Alum	. . . . .	1 „
Armenian bole	. . . .	1 „
White lead	. . . .	1 „
Chloride of lime	. . .	1 drachm.

Each to be finely powdered, and the whole then well mixed together.—*From Mr. Spooner's Work "On the Sheep."*

Cultivation of Root-crops on Heavy Land.—I must first observe that much of my land has been laid out in wide ridges of eight yards, gathered twice from the flat, and drained where needful with tiles and stones up every furrow; the remaining part of the farm is in lands of six feet or two yards wide, and has been drained many years since with shallow stone drains in a direction across the run of the furrows at intervals of eight or nine yards, and with tile heads. This method of draining does not answer upon our close and adhesive clay soils, as it does not carry off the surface water readily. It is my intention to set out these lands afresh, and to put them (as I have done the others) into ridges of eight yards in width, and to intersect the old drains, where necessary, by running others up the *new* furrows, at intervals of sixteen or thirty-two yards. By this means I hope to give the old drains a quicker vent, and to enable them to discharge the water *more* readily than they do at present. Other drains may at a future period be laid in those furrows which are at first missed, whenever it may appear necessary. We will now suppose the ground drained, and rendered as sound and dry as such land can be made. We will also suppose the land to be in fair condition and tolerably free from couch and root weeds (for should the field have been run out, as we say, and full of couch, a naked fallow on this kind of soil must of course be resorted to). My mode of proceeding will be thus:—I shall in the first place have the ground very carefully looked over, and with three-grained forks dig up every blade of couch and every dock that can be seen; having previously finished, as I said on a former occasion, sowing my winter Vetches and drilled my Wheat. The land intended for a root crop is then to be ploughed, in a direction diagonally to the run of the furrows, into single bouts of twenty-seven or twenty-eight inches; or into two-bout ridges where Cabbages are intended to be grown. The appearance of the field will then be like garden ground laid up in trenches. I should plough as deep a furrow as practicable, exposing a large surface for the winter frosts to mellow and sweeten. After the land has become sufficiently pulverised and the trenches are in a dry state, with a double mould-board plough I purpose thoroughly to open out and considerably deepen them, directly following with a stout plough, having the turn-furrow taken off, and with a strong team of horses harnessed at length, subsoil or stir the hitherto unmoved soil in the bottom of every furrow trench, as deeply as may be practicable—six or eight inches at the least. This being not trampled on while in a moist and tender state, will lie light and hollow for the air and frost to sweeten and pulverise. Nothing will have to be done now to the land till the dry weather sets in in the early spring, be it in February or the beginning of March; at which time I intend to set the dung carts to work, and having spread the manure carefully in the bottom of the trenches, with a pair of horses driven abreast cover it up, by splitting or reversing the bout ridges. These are again to remain untouched till well dried and pulverised, when an opportunity will be afforded of subsoiling or stirring the intervals. Thus, then, nearly the whole of the ground will have been loosened to the depth of twelve inches at the least, and a sufficient tilth gained, and that too at no very ruinous expense. I prefer to cultivate my Turnips and other roots (such as Cabbage and Beet) on the ridge system after the Scotch manner, because it will give me an opportunity of working the ground deeply and frequently, during the growth of the crop; and because it will allow me, at the time of singling out the Turnips, to draw the earth well away from the plants, whereby they appear to swell, and form better bulbs.—*Mr. N., in the Report of the Gloucester Farmers' Club.*

Serious Loss of Sheep.—Some time ago, the extraordinary number of 49 sheep had been lost by Mr. Fountain, of Leake, under the following circumstances:—The flock had been for some weeks kept on Swede Turnips, and on being removed, was driven for a few miles, and placed on a piece of meadow land. The next morning, many of the sheep were perceived to be afflicted with symptoms of lethargy, and appeared to be otherwise out of condition; and within forty-eight hours of their being placed on the meadow land it was found necessary to slaughter from fifteen to twenty; since then they have continued dying, and on Friday night the number lost amounted, as above stated, to forty-nine. The animals, it seems, were afflicted with inflammation of the kidneys, supposed to have been produced by the distance they were driven, and the sudden change of keep.—*Boston Herald.*

Notices to Correspondents.

BOOKS.—*S.*—Low's "Elements of Practical Agriculture."

BOKHARA CLOVER.—*F. E.*—This plant—such specimens of it as we have seen—is only edible by cattle when it is young; when old it is shrubby. Its name is derived from that of the country from which it is said to have been brought.

CLOVER SEEDS.—*Carl.*—We are in the habit of sowing 10 lbs. of Red Clover, 5 lbs. of White Dutch, and 5 lbs. of Trefoil per acre. Our Clovers are all fed off by sheep, and therefore we sow no Rye-Grass, for much of it would be left on the ground uneaten, and the pasture would be left in a tangled condition. A smaller quantity per acre, preserving the proportion of the different kinds, would probably be sufficient seed per acre. We should prefer your No. 1 mixture to the other, *i. e.*, 14 lbs. Red Clover, 3 lbs. White Clover, 2 lbs. Trefoil, 2 lbs. Rib-Grass, half peck of Rye-Grass per acre to 12 lbs. of White Clover, 2 lbs. of Trefoil, and half a peck of Rye-Grass. What may be best for the southern part of the kingdom might not, however, suit the North Riding of Yorkshire.

DAIRY STOCK.—*X. Z.*—A cow will generally consume about 2 cwt. of hay a week, or about 130 lbs. if, as you propose, you give her ¾ cwt. of roots per diem besides. You can supply with roots from October till May or June; and if your land will yield an average crop of 30 cwt. of hay per acre, half of it mown will supply you with more hay than you will be able to consume in this way with the stock which the other half will keep during the summer months, so that you will have to supply them with Clover, Vetches, &c., from other land during the summer too. The data now supplied will enable you to calculate for yourself.

FALLOW LAND.—*R. W.*—You had better ridge-drill the land up at intervals of 26 inches, and sow a late Turnip as soon as you have rain; or if your land is thoroughly dry and pulverised, you may sow it now—4 or 5 lbs. of seed per acre—and wait for rain. The failure of the Potato set is a very common complaint this year.

LIME.—*Cato.*—If stone-lime be burnt and left in the heap exposed to wet and winds, &c. (it not being wanted for use before next spring), its power of action on the land will be injured, but not destroyed.

LIQUID MANURE.—*Constant Reader.*—It is not right to put caustic lime amongst urine; it will volatilise the ammonia. Mr. Dimsdale has been applied to.

LUCERNE.—*J. Heaton.*—Your Chinese Lucerne is darker in the flower, and is also a more luxuriant specimen than any we have seen this year, but it does not otherwise appear to differ from the common variety. The dry weather we have had has made it fortunate that you did not wait till after the first mowing for your seed-crop.

MANURE, &c.—*Cottage Gardener.*—Your fault must have been one of omission, not of commission, *i. e.*, if the failure of your Onions is chargeable on you, and not on the weather; the manure you applied cannot have killed them.

SUPER-PHOSPHATE OF LIME.—*Subscriber.*—It differs from the phosphate in containing twice the quantity of phosphorus, and in being soluble in water. Apply 2 cwt. per acre, mixed with turf-ashes early in spring upon your Grass-land.

TITHE AND RENT.—*G.*—Theoretically, tithe is one-tenth of the produce. Rent may be one-half, one fourth, one-sixth of the produce, or any other fraction, dependent upon the expenses and returns of cultivation, and the demand, whether natural or artificial, which may exist for land. You will thus see there is no necessary proportion existing between rent and tithe.

WEED.—*R. H. C.*—Your weed can be extirpated only by perseverance in cutting the plant off whenever it appears. We know of no easy plan of destroying it.

***As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, July 1.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	10	to 4s	2	Best Downs & Half-breds	3s	10	to 4s	0
Best Short Horns	3	6		3	10	Best Long-wools	3	8		3	10
Second quality Beasts	3	2		3	6	Ewes and second quality	3	4		3	8
Calves	3	4		4	0	Lambs	4	0		4	6
Pigs	3	4		4	0						

Beasts, 2819; Sheep and Lambs, 23,470; Calves, 197; Pigs, 369.

We have a very fair supply of Beasts to-day, both as regards numbers and quality; buyers are also numerous, and the dead trade of late having been pretty good for Beef, there was a brisk demand for the best qualities at an advance of nearly 2d per 8 lbs on last Monday's prices; although 4s 2d was obtained for several of the best Scots, and 3s 10d for several of the best Short-horns, yet many very good of both descriptions were sold at 2d per 8 lbs less. In Sheep and Lambs there is an increase of numbers, on the whole, the supply of the best qualities of Sheep, however, is but moderate; they fully maintain, and in some instances rather exceed, our late quotations, some of the most selling Downs, &c. making 4s 2d, and Longwools 4s per 8 lbs, still, the trade ruled very heavy, and these prices could not be currently obtained. There were a great many Lambs, and the trade for them very heavy at rather lower rates. Calves are heavy trade, at rather lower prices. Pork remains about the same, but a dull trade.

FRIDAY, July 5.

We have quite enough Beasts to meet the demand, though rather fewer than last Friday; prices are rather lower; the best Scots, &c., make no more than 4s, and the best Short-horns 3s 8d. The supply of Mutton is good, and prices remain the same as on Monday. We have a large quantity of Lambs, the trade for which is very bad, owing to immense quantities being sent down during the week; some of the very best make 4s 6d per 8 lbs, but many good ones are sold at from 4s to 4s 4d. Calf-trade is a little brisker, but no higher prices are obtained. Pork about the same.

Beasts, 748; Sheep and Lambs, 19,180; Calves, 360; Pigs, 300.

41, West Smithfield.

WOOL.—BRITISH, FRIDAY, July 5.

We are able to report to-day as favourably of our English Wool Market as we did last week. At the several Wool Fairs which have recently been held, the greater part offered has been sold, but not at an advance upon our late quotations. We see nothing in the prospects of the trade which leads us to look for any material and permanent advance in price.

	per lb.			per lb.	
Leeg-wooled Mothers	11d	to 1s 0d	Southdown Hoggists	1s 0d	to 1s 2d
Do. Hoggists	1s 1	1 2	Kent Fleeces	1 1	1 2
Southdown Fleeces	11½	1 1½			

JAMES PEARCE, Wool Broker.

POTATOES.—SOUTHWARK WATERSIDE, July 1.

The weather has been all that could be desired since our last; there was a fine rain fell in London and its suburbs on Tuesday last, which, without inundation, continued for eighteen hours, and being followed by some cloudy days, must prove very beneficial to the crops. There was but little done in this Market during the past week. Perth Reds have finished badly, several damaged lots have been sold for the cattle at 30s.

Yorks Reds	—	—	60s	to 80s	Kents and Essex Blues	—	to —
Perth	—	—	45	60	Wisbeach Kidneys	—	—
Early Devons	—	—	—	—	Blues	—	—
Late Devons	—	—	85	90	— Whites	—	—
Cornwall	—	—	—	—	Jersey and Guernsey Blues	80	85
Dutch Whites	—	—	45	65	Prince Regents	—	—
Rocs and Rose Kidneys	—	—	—	—	York Regents	—	—

CORN EXCHANGE, MONDAY, July 1.

Our supply of English Wheat by land carriage coastwise this morning was moderate, nevertheless the trade ruled exceedingly heavy, and a large proportion remained unsold, although offered at a decline of upon 1s. to 2s. per qr. The arrivals of Foreign are rather large; millers evinced great reluctance to purchase, and where sales have been effected, late prices were barely maintained. The Flour lately arrived from Canada appears to be of good quality, and is saleable in retail at 32s. to 34s. per barrel.—Barley was held at our quotations, which buyers were unwilling to comply with, and business was very limited.—Beans must be written from 1s. to 2s., and Grey Peas 1s. cheaper, but the value of White is supported.—Having a large show of Oats, sales were slow at a decline of 1s. to 2s. per qr.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	40	46	Red	40	44
—— Norfolk, Lincolnshire, and Yorkshire	36	42	White	—	—
Barley, Malting and distilling, 27s to 32s Chevalier	32	34	Grinding	26	28
Oats, Lincolnshire and Yorkshire	20	25	Feed	19	22
—— Northumberland and Scotch	20	23	Potato	21	25
—— Irish	—	—	Feed	18	20
Malt, pale, ship	52	56	Potato	19	22
—— Maltard and Essex	50	52			
Rye	32	33			
Beans, Mazagan, old and new	29	to 34	Tick	30	34
—— Pigeon, Heligoland	34	to 36	Winds.	—	—
Peas, White	35	to 36	Maple	30	34

Harrow	32	35								
Longpod	—	—								
Grey	29	30								

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.				Wht.	Bark.	Malt.	Oats.	Rye.	Bns.	Peas
English	6372	Sks.	—	Bris.	7187	700	7000	3300	—	1663	300
Irish	—	„	—	„	—	197	—	17910	—	—	—
Foreign	—	„	75	„	13497	4019	—	14081	—	5035	1257

FRIDAY, July 5.

The English Wheat left over from Monday has been pretty well cleared off at that day's prices; the demand for Free Foreign is exceedingly limited, but the trade, nevertheless very firm, a considerable quantity of rain having fallen during the week, with an appearance of more.—In Barley there is scarcely any business doing.—Beans and Peas are difficult to quit, and rather cheaper.—The Oat-trade continues very heavy, and must be written fully 6d. lower than our late quotations.

ARRIVALS THIS WEEK.

	Wheat.	Barley	Oats	Flour
English	4160	280	4600	4210 Sks.
Irish	—	—	2330	—
Foreign	11190	6980	10080	—

IMPERIAL AVERAGES.

			Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May	24	per Quarter.	55s 10d	30s 7d	21s 2d	31s 7d	32s 11d	33s 7d
—	31	„	55 6	30 9	21 7	34 0	34 10	33 4
June	7	„	55 6	31 6	21 11	33 11	35 11	33 1
—	14	„	55 9	31 10	22 6	33 4	35 11	34 1
—	21	„	55 6	32 2	22 8	34 2	37 10	35 2
—	28	„	55 9	34 0	22 9	36 0	38 0	36 1
6 weeks' Aggregr. Aver.			55 8	31 10	22 1	33 6	36 2	34 1
Duties on Foreign Grain			17 0	7 0	6 0	9 6	6 6	9 6

SEEDS, July 1.

Canary	per qr	55s	to 60s	Linseed Cakes, Foreign, p. ton	6l	to 7l 10s
Carraway	per cwt	50	54	Mustard, White	p. bush.	8s	7
Clover, Red, English	60	74	—	Superfine	„	6	10
— Foreign	64	76	—	Brown	„	—	—
— White, English	100	120	Rapeseed, English, per last		24l	28l
— — Foreign	94	126	Rape Cakes	p. per ton	—	—
Coriander	12	18	Saintoin		—	—
Hempseed	per last	35	40	Tares, Eng. winter	p. bush.	6	8
Linseed	per qr	—	—	— Foreign		—	—
— Baltic	—	—	—	Trefoil	per cwt	—	—
— Cake, Eng. per 1000	10l	10l 10s	Turnip (two variable for quotation).				

KINGSFORD AND LAY.

HOPS, FRIDAY, July 5.

The accounts from Sussex, Weald of Kent, and Worcester, continue to come unfavourable, and the market remains the same as last week.

FAREBROTHER & SONS, Hop-Factors.

COVENT GARDEN, JULY 6.—The supply of Fruit and Vegetables have, in most instances, been very good during the past week, but trade for some things has been dull. Pine Apples have not varied much since our last report. Grapes are also selling at nearly the same prices; among them we observed fine specimens of Black Hamburghs, which are very plentiful. Melons are good, and although not abundant, are sufficient for the demand. Peaches and Nectarines are quite as plentiful as they were last week, and are offered at the same prices. Cherries are likewise good and plentiful. Strawberries are abundantly supplied, and are low in price; among them are good samples of Myatt's British Queen and Keen's Seedling, as well as of other varieties. Ripe Gooseberries are plentiful, as are also Currants: the latter are very good in quality. Of Vegetables, except in one or two instances, there is an abundance. Peas, in particular, are very plentiful; but the demand for them is not good, and, consequently, they are low in price. The best French Beans are offered at about 10s. per half-sieve. A considerable quantity of new Potatoes, of good quality, imported from Holland, has been in the market this week. Asparagus is becoming scarce; a small quantity may, however, still be procured; the best is selling at 4s. 6d. per 100. Rhubarb is not plentiful, being nearly over for a season. There has been little alteration in the prices of Cauliflowers, Cabbages, Carrots, and Turnips since last week. Vegetable Marrow is offered at from 1s. to 2s. per dozen. Leeks are very small. Lettuces and other Salading are abundant. Among Cut Flowers we noticed Erica ampullacea and cerinthoides, Heliotropium peruvianum, Lilium longiflorum, Sweet Peas, Pinks, Lily of the Valley, Verbenas, Pelargoniums, Gardenias, Fuchsias, Cacti, Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb., 4s to 8s	Oranges, per dozen, 1s to 2s 6d
Hothouse Grapes, per lb., 3s to 6s	— per 100, 6s to 15s
Melons, each, 2s to 6s	Lemons, per dozen, 1s to 2s
Peaches, per dozen, 6s to 12s	— per 100, 6s to 14s
Cherries, per lb., 1s to 3s 6d	Almonds, per peck, 6s to 7s
Currants, per half-sieve, 2s to 5s	Sweet Almonds, per lb., 2s 6d to 3s
Strawberries, per gallon, 6d to 2s	Nuts, Spanish, per bushel, 18s
Gooseberries, per hf.-sieve, 1s to 2s	— Brazil, 15s
Walnuts, pickling, per bush., 6s	— Barcelona, 20s to 24s
	— Cob, 14s

VEGETABLES.

Cabbages, per dozen, 6d to 1s 6d	Cucumbers, each, 4d to 1s 6d
Cauliflowers, per doz., 1s to 4s	Vegetable Marrow, per doz., 1s to 2s
Sorrel, per hf.-sieve, 6d to 9d	Spinach, per sieve, 1s 6d to 2s
Asparagus, per 100, 1s to 2s 6d	Leeks, per doz. bun., 2s to 4s
Artichokes, per doz., 2s to 4s	Garlic, per lb., 6d to 9d
French Beans, per hf.-sieve, 4s to 10s	Onions, per bunch, 2d to 10d
Greens, per dozen, 1s 6d to 2s 6d	— large, per bushel, 1s to 2s
Potatoes, old, per ton, 80s to 90s	— Spanish, per doz., 1s 6d to 2s
— per cwt., 2s 6d to 4s	Shallots, per lb., 6d to 10d
— per bushel, 1s 6d to 2s	— Green, per bunch, 3d to 4d
— Kidney, p. bush., 2s 6d	Lettuce, per score, 6d to 2s
— New, per cwt., 6s to 10s	Celery, per bunch, 6d to 1s 6d
— per half-sieve, 1s 6d to 6s	Mushrooms, per pottle, 2s to 3s 6d
New Turnips, per bunch, 3d to 6d	Small Salads, per punnet, 3d to 6d
Peas, per bushel sieve, 1s 6d to 3s 6d	Watercress, p. 12 sm. bun. 2d to 3d
Red Beet, per doz., 1s to 2s	Parsley, per hf.-sieve, 1s to 1s 6d
New Carrots, 4d to 1s	Tarragon, Green, per bunch, 3d to 6d
Radishes, Turnip, 12 bchs., 1s to 1s 6d	Green Mint, per bunch, 3d to 6d
Small, per bunch, 4d to 6d	Marjoram, per bunch, 6d to 9d
Horse Radish, per bundle, 2s to 3s	Chervil, per punnet, 3d to 6d
Savory, per bunch, 3d to 6d	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 5.

Prime Meadow Hay	90s	to 95s	Clover	100s	to 120s	
Inferior „	80	85	Straw	28s	to 34s	

JOHN COOPER, Salesman.

CUMBERLAND MARKET, July 4.

Superior Old Hay	100s	to 108s	Superior Clover	120s	to 140s	
Inferior „	80	88	Inferior „	115	120	Straw 30s to 34s
New Hay	70	86	New Clover	80	100	

JOSEPH BAKER, Hay Salesman.

WHITECHAPEL, July 5.

Old Hay	90s	to 95s	Old Clover	110s	120s	Straw 30s to 32s
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Supply large, with a dull trade at the above prices.

HORTICULTURAL SOCIETY OF LONDON.—LIST OF PRIZES

offered at Nine Exhibitions in the Garden, in 1854, viz.:

MEDALS AND REWARDS.

The Society distributes the following Medals and Rewards; viz.:

	Value—£	s.	d.
C. The Certificate		6	12	6
SB. Silver Banksian Medal		1	0	0
SK. Silver Knightian Do.		1	5	0
LS. Large Silver Do.		3	15	0
SG. Large Silver-Gilt Do.		4	0	0
GB. Gold Banksian Do.		7	0	0
GK. Gold Knightian Do.		10	0	0
LG. Large Gold Do.		20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate. In case an Exhibitor shall receive a First Prize in any one Letter, he shall not be entitled to receive any other Medal in the same Letter, except in *CC*, *DD*, and *EE*.

CLASS I.—FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A. Pelargoniums, in collections of 12 new and first-rate varieties, cultivated with superior skill, in pots of 24 to a cast. GB—SG—LS—SK.

B. Pelargoniums, in collections of 12 varieties, in pots of 12 to a cast. SG—LS—SK.

N.B. Persons exhibiting in *B* cannot also exhibit in *C*.

C. Pelargoniums, in collections of 6 varieties, in pots of 8 to a cast. LS—SB.

D. Rhododendrons, in pots; not fewer than 6 plants, in 6 varieties. LS—SK—SB.

E. Roses, in pots; Amateurs to show in collections of 12, Nurserymen in collections of 24, distinct varieties. GB—SG—LS.

N.B. It is the wish of the Society in a future season, to require Roses to be shown exclusively in pots; and not to allow cut specimens to be exhibited at all.

F. Moss Roses in loose bunches, so as to exhibit, as far as possible, the habit of the variety; in 12 varieties. SK—SB—C.

G. Other Roses, exhibited as in the last letter, and in 50 varieties. LS—SK—B—C.

N.B. No one who exhibits in this letter can also compete for the following.

H. Other Roses, exhibited as in the letter *F*, and in 25 varieties. SK—SB—C.

N.B. Higher medals than those here offered for Roses cannot be given by the Judges. And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to be placed on the tables.

I. Cape Heaths, in collections of 20 distinct varieties. GB—SG—LS.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion.

K. Cape Heaths, in collections of 6 distinct varieties. SG—LS—SK.

N.B. No person who shows in *I* will be allowed to exhibit also in *K*.

L. Calceolarias, in sixes; in pots of 12 to the cast. LS—SK—SB.

M. Carnations, in pans of 24 distinct varieties. LS—SK—SB.

N. Picotees, in pans of 24 distinct varieties. LS—SK—SB.

O. Pinks, in pans of 24 distinct varieties. SK—SB.

CLASS II.—FLOWERS; for which all persons are admitted to equal competition.

P. Stove or Greenhouse Plants, in collections of 30 plants. GK—GB—SG—LS.

N.B. Heaths, Calceolarias, Fuchsias, Greenhouse Azaleas, Rhododendrons, Orchidaceæ, Cacti, and Pelargoniums, to be excluded from *P*, *Q*, and *R*.

Q. Stove or Greenhouse plants, in collections of 15 plants. GB—SG—LS.

N.B. Persons exhibiting in *P* not to compete in *Q* also.

R. Stove or Greenhouse plants, in collections of 6 distinct species. SG—LS—SK.

N.B. Persons exhibiting in *P* or *Q* will not be allowed to compete in *R* also.

S. Greenhouse Azaleas, in 12 distinct varieties. GB—SG—LS.

T. Greenhouse Azaleas, in 6 distinct varieties. SG—LS.

N.B. No one can show in both classes of Azaleas.

U. Stove or Greenhouse climbers, in collections of 6 species. SG—SK.

V. Exotic Orchidaceæ, in collections of not fewer than 20 species. LG—GK—GB

N.B. Exhibitors cannot show in more than one of the classes, *V*, *W*, and *X*.

W. Exotic Orchidaceæ, in collections of not fewer than 6 species. —GK—GB—SG.

X. Exotic Orchidaceæ in single specimens. SG—LS—SK.

Y. Plants in glass cases, grown on Mr. Ward's plan. SG—LS—SK.

N.B. It is highly desirable that these cases be made with a movable door, so as to prevent the condensation of the water on the inner face of the glass during the time of exhibition.

Z. Distinct varieties of Tall Cacti in flower. GB—SG—LS.

N.B. The GB and SG Medals are not to be given if fewer than six varieties are exhibited.

AA. Fuchsias in collections of 12 distinct varieties. LS—SK.

BB. Cinerarias, in pots, in collections of 12 distinct varieties SK—SB.

CC. Single specimens of new or extremely rare ornamental plants. SG—LS—SK—SB—C.

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Gardens in a previous season.*

DD. Miscellaneous subjects. SK—SB—C.

N.B. Cockscombs, Hemerocalles, Hydrangeas, and cut flowers, are altogether excluded from exhibition. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

EE. Seedling Florists' flowers. SK—SB—C.

N.B. Every seedling must be shown singly, and must be marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. Pelargoniums are to be shown in pots, and not in a cut state. No person will be allowed to exhibit more than five seedlings at each meeting. Exhibitors under this head will not be thereby *entitled* to a pass ticket.

In Addition to any medals assigned to the classes *J*, *P*, *Q*, and *W*, the SK and SB medals are offered for the two collections in those classes which shall be best named by the Exhibitor.

N.B. The Society's officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy of the spelling, and the neatness of the writing.

CLASS III.—FRUIT, for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the market, and private growers, exhibit independently of each other.

N.B. All Fruit must be FULLY RIPE and WELL-COLOURED; if the contrary it will be disqualified.

FF. Miscellaneous collections of Fruit, consisting of at least three different kinds. Peaches and Nectarines being considered as only one kind. GK—GB—LS.

N.B. Cucumbers, Tomatoes, Gourds, and similar Kitchen Garden produce, are excluded from this letter.

GG. Grapes. SG—LS—SK—SB.

HH. Nine apples. SG—LS—SK—SB.

II. Peaches or Nectarines, in dishes of six specimens SK—SB.

KK. Other kinds of Fruit. SK—SB—C.

Judges.—The Judges have the power of *increasing or diminishing* the number and value of the silver medals offered by the Society for particular objects, and also of *conferring* Silver Medals or Certificates in cases not contemplated in these regulations, if they think it necessary to do so.

The Judges are also required to bear in mind that the Society's Medals are offered less for new and curious objects, than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the collector as to reward the skilful Gardener; they are also not to make any award in cases where the objects exhibited do not appear worthy of a medal; or where a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

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THE GARDENERS' CHRONICLE
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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 28.—1844. SATURDAY, JULY 13. [Price 6d.

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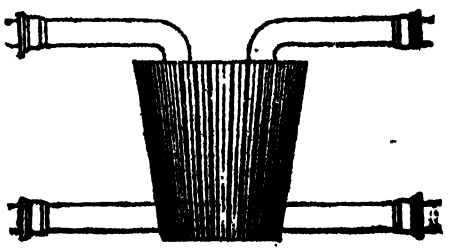
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Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford, Norfolk, Messrs. BULLARD and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1*d* per foot, super. A discount to the trade. THOS. J. CRODDON, 8, Ingram-court, Fenchurch-st., London.

IMPORTANT to AGRICULTURISTS.—ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

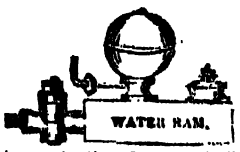
Gentlemen Instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

No. 5a, Hawley-road, Kentish Town.

70, STRAND, LONDON.

RAMS FOR RAISING WATER WITHOUT LABOUR, where a fall can be obtained. FOUNTAIN BASINS IN IRON, &c.

F. ROE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in iron, which will stand the Frost and last for ages. A Ram and Fountain Jets fixed on the premises for inspection. Every kind of Garden and other Pumps, Well Engines, Baths, &c. Houses, &c. Heated by Hot Water.



TANNER'S VITREOUS FLUID and CLOTH, a Substitute for Glass for Horticultural Purposes.—The Vitreous Cloth proves its superiority over Glass, by producing the light most suitable to vegetation, superseding the necessity of any shading, preserving a healthy moisture on the plant, retaining its bloom to a more lengthened period, less expensive, and not requiring so much attention. The above (retaining heat) is preferable to glass for Hothouses, &c., the temperature of which is maintained with less fuel. It is equally applicable as a covering for Fruit trees, preserving them from frost, blight, and excessive heat. The Vitreous Cloth, made by machinery, is much superior to any prepared in a different manner. By the use of the Vitreous fluid, the Cloth (after lengthened service) may be renewed.

The Fluid sold in bottles 2*s.* 6*d.* and 4*s.* 6*d.* The Cloth 2*s.* 6*d.* and 3*s.* per yard. Manufactured by N. W. TANNER, Chemist, Exeter. Agents for Exeter and Vicinity, Messrs. LUCOMBE, PINCE, & Co., Exeter Nursery.

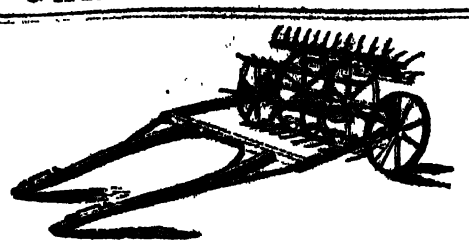
To Mr. N. W. Tanner—Sir, we have used your prepared Cloth, and have pleasure in informing you that whilst the light admitted through it is very suitable to vegetation, there has been no necessity to have recourse to any extra shading during the very clear, bright weather which we have so long experienced; this we consider an important point. Yours, &c.

(Signed) LUCOMBE, PINCE & Co., Exeter Nursery.

June 21, 1844.

*** Respectable Agents required.

WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. BRAIN, Ironmongers, London-bridge; and of any Ironmonger in the country. Price, in box, with lock and joints, 2*l.* 5*s.*



HAYMAKING SEASON. — Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

YORKSHIRE AGRICULTURAL SOCIETY.

The EARL OF ZETLAND, PRESIDENT.

THE SEVENTH GREAT ANNUAL MEETING and EXHIBITION of the above SOCIETY will be held at RICHMOND, on WEDNESDAY, August 7th, 1844, when about SIX HUNDRED POUNDS will be offered in Prizes for Stock, Implements, Essays, Drain Tiles, Cheese, &c.

No articles can be admitted for Exhibition or Trial unless a Certificate of Entry be filled up according to the prescribed form, and sent by Letter, (not delivered), to the Secretary, MATTHEW M. MILBURN, of Thorpfield, Thirsk, on or before WEDNESDAY, July 24th. Lists of Prizes and Forms of Certificate may be had, free, on application by Letter, to the Secretary.

For the convenience of persons to whom it may be inconvenient to write to the Secretary, Mr. JOHN WATSON, of 1, Clarence-street, York, and H. J. TURNER, Esq., of Richmond, will also receive entries and transmit them to the Secretary, but all entries made to them must be at least One Day before the 24th July.

Members of the Society exhibit all articles Free. Non-Members pay 10*s.* for every article or lot of articles, before they obtain their Ticket of Admission to the Show Fields. Persons become Members of the Society by the payment annually, in advance, of a Subscription of 1*l.*, on application to the Secretary, who will be glad to give any information respecting the Society or its meeting.

By Order of the Council, MATTHEW M. MILBURN,
Thorpfield, Thirsk, July 1st, 1844. Secretary.

AGRICULTURAL COLLEGE, &c.

AT a GENERAL MEETING of the Subscribers and Friends of the proposed AGRICULTURAL COLLEGE, held at CIRENCESTER, the 1st of JULY, 1844, EARL BATHURST in the Chair, the following Resolutions were unanimously carried:—

First—Moved by T. H. S. SOTHERON, Esq., M.P., and seconded by EDWARD HOLLAND, Esq.—That it appearing by the Report of the Committee appointed at the last General Meeting that the establishment of an Institution for giving a scientific and practical education to young persons intended for Agricultural pursuits, will receive adequate support: *Resolved*, that the present Subscribers, and those who may hereafter become subscribers, until the whole capital shall be subscribed for, constitute a company to be incorporated by Royal Charter, limiting individual responsibility, for the establishment of such an Institution.

Second—Moved by JAMES CROWDY, Esq., and seconded by Dr. DAUBENY,—That the affairs of the Company shall be carried on by a President, Vice President, and Committee of Management, which is hereby authorised to apply for a Charter, and to arrange with Earl Bathurst the lease of the Farm; to call in Subscriptions, and to be invested with full powers to act in other respects; to consist of 18 Shareholders, five to form a quorum, and one third of the number to go out annually, by rotation, but to be re-eligible; and that the following form the Committee:—

Earl Bathurst,	Charles Lawrence, Esq.
T. H. S. Sotheron, Esq., M.P.	Rev. Thomas Maurice
Edmund Holland, Esq.	Mr. Daniel Tinder
Sir M. H. Hicks Beach, Bart.	Mr. Edward Bowly
Raymond Cripps, Esq.	Mr. Edmund Rack
Rev. J. M. Prower	Mr. James Kearsey
Mr. Henry Howell	Mr. Thomas Stone
Mr. Peter Matthews	Mr. Thomas C. Broan
Mr. T. Arkell	Mr. Thomas Iles.
Dr. Daubeny	

Third—Moved by the Rev. J. M. PROWER, and seconded by Mr. KEARSEY,—That Earl Bathurst, Earl Ducie, T. H. S. S. E. Sotheron, Esq., and Edmund Holland, Esq., be the Trustees of the Institution.

Fourth—Moved by Mr. A. R. FEWSTER, and seconded by Rev. T. MAURICE,—That the Council of the Royal Agricultural Society of England having given their sanction to the holding of a Meeting during the Session at Southampton, for the purpose of making the objects of this Institution more generally known amongst Agriculturists: Resolved, that a Meeting be held on the evening of Tuesday, the 23d instant, at Southampton, and that the Committee appoint a Deputation to call and attend such Meeting.

Fifth—Moved by Mr. EDWARD BOWLY, and seconded by Mr. CHARLES LAWRENCE,—That Earl Bathurst be President, the Earl of Ducie, Vice-President, and Mr. Robert J. Brown, Honorary Secretary, to be ex officio members of the Committee.

Sixth.—It was Resolved unanimously—That the thanks of this Meeting be given to Earl Bathurst, for taking the chair.

REPORT OF THE COMMITTEE.

The Committee report that in pursuance of the resolution in that behalf passed at the General Meeting, they have by public Advertisement and otherwise, invited Tenders of a suitable Site for the proposed College. They are happy to inform the Meeting that they have received the offer of a Farm on Lease from Earl Bathurst, which, from its general character and situation, is, in their opinion, so well adapted for the purposes of the Institution, that they have no hesitation in recommending that an application be immediately made to his Lordship for the terms on which he would be willing to let the Farm. The Committee have every reason to believe the terms would be entirely satisfactory to the Subscribers. They have great satisfaction in reporting further a very handsome offer on the part of Earl Bathurst, to advance at very moderate interest, to be added to the rent, one half, not exceeding 2000*l.*, of the expense of the necessary buildings.

This Farm now consists of about 400 acres of arable, and 30 acres of pasture land, and is situated about one mile from Cirencester, and accessible by two good turnpike-roads.

The Committee are further enabled to report that the application for a Charter has been so favourably received by Government as to leave no doubt that one will be granted, provided the Society consent that any surplus of income, after paying dividends at the rate of 4 per cent. on the subscribed capital, shall be applied to increase the efficiency of the Institution.

The Committee continues to receive such increasing support and encouragement, that with the aid of the fund for building offered by Earl Bathurst, they are of opinion that all necessary steps for the establishment of the College may at once be safely taken. (Signed) RAYMOND CRIPPS, Chairman.

Cirencester, 1st July, 1844.

YORKSHIRE LAND-DRAINING ASSOCIATION.—At a MEETING of the PROVISIONAL COMMITTEE held at YORK, this day, for the purpose of Allotting the Shares applied for in the Association, and on other business—

It was resolved that the number of Shares now allotted being amply sufficient to justify the Committee in proceeding forthwith to carry out the objects of the Association, the necessary Deed of Settlement be prepared for execution. And that such of the Public as may yet be desirous of becoming Shareholders, and shall signify the same to the Solicitors (Messrs. BLANCHARD, RICHARDSON, and GUTCH, York), or to the Secretary, (Mr. CHARNOCK, Wakefield), on or before the 31st of July next, shall be admitted (if the number of unallotted Shares be sufficient), on the same terms as the present Subscribers.

York, June 12, 1844. JAMES HAMERTON, Chairman.

AGRICULTURAL SCHOOL.

MESSRS. NESBIT'S ACADEMY, 38, Kennington-lane, Lambeth, near London.

"From Chemistry alone further progress in Agriculture is to be expected."—LIEBIG.

In this School, in addition to the general routine studies, every facility is afforded for the acquisition of a sound knowledge of Chemistry. The Pupils are practically taught in the Laboratories the methods of analysing the various earths, soils, manures, &c.; and likewise the means of detecting the substances abstracted from the land by different crops. Land Surveying is also taught practically, as well as theoretically.

A copy of a Lecture on Agricultural Chemistry, delivered by Mr. J. C. NESBIT to the Maidstone Farmers' Club, and the Terms of the School, which vary from 40 gs. to 70 gs. per annum, may be had on application, either personally or by letter.

Mr. NESBIT'S Works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, Education, &c., may be had of all Booksellers.

REFERENCES.—Dr. D. B. Reid, F.R.S.E., &c., Author of "Elements of Practical Chemistry," &c., St. James's Park, Westminster; G. F. Richardson, Esq., F.G.S., Author of "Geology for Beginners," &c., British Museum, London; W. and J. Gibbs, Esqrs., Civil Engineers, Devonshire-street, Portland place, London; Rev. T. Cuffe, Carlisle Episcopal Chapel, Lambeth; R. Grecnhill, Esq., Ashford, Kent; and C. G. Whitaker, Esq., Barming, near Maidstone, Kent.

The School will be re-opened on Monday, July 15th, 1844.

ROYAL AGRICULTURAL MEETING AT SOUTHAMPTON.

THOMAS MATCHAM, of the ROYAL HOTEL, Southampton, being the sole appointed Agent for the London and South-Western Railway Company, begs to inform those parties who intend sending Cattle or Implements for the approaching Agricultural Show, that he will be in readiness at the Railway Terminus and the Portswood Station to convey Implements and Cattle to the Show-yard at very moderate charges, particulars of which may be obtained upon application at the Terminus of the London and South-Western Railway, Nine Elms and Southampton. T. MATCHAM requests—to prevent disappointment—that due notice may be given him, with full particulars of what each party may require. Omnibuses, Flys, and Post horses will be in readiness at the Terminus to meet the Trains for the conveying of Passengers to the Show.

DRAWING-ROOM CLOCKS.—A. B. SAVORY and SONS, No. 9, Cornhill, London, opposite the Bank of England, invite attention to a splendid variety of Rosewood, China, Bronze, and Ormolu CLOCKS; they go for eight days and strike the hours and half-hours. Price 4 guineas, 7 guineas and 10 guineas each, and upwards. The performance is warranted.

A Pamphlet, with detailed lists of Prices, and illustrated with sketches, may be had on application gratis, or sent to all parts of Great Britain and Ireland, postage free, in answer to a post letter.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June* 6, 1844.—The cabin of the Great Western has been regularly supplied with LEA & PERRINS's Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers for its cephal flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup: giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 6, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

PAXTON-PLACE, NEAR ST. NEOTS.

TO BE SOLD BY AUCTION, by WM. MEDLAND, on MONDAY 22d, WEDNESDAY 24th, and FRIDAY, 26th days of JULY, 1844, by order of the Executors of the late H. P. STANLEY, Esq., 2530 GREENHOUSE, ORCHIDACEOUS, and other Hothouse PLANTS; Three Superior GREEN and HOTHOUSES, 52 MELON and CUCUMBER LIGHTS, and 265 Dozen of CHOICE WINES.

ARRANGEMENT.—On Monday 22d: 1926 Greenhouse, 328 Orchidaceous, and 574 Hothouse Plants and Cape Bulbs, at Ten o'clock. On Wednesday 24th, 1000 Greenhouse Plants and Bulbs, and the Hot and Greenhouses, and Melon and Cucumber Lights, at Ten o'clock. On Friday 26th, the Wines, comprising 192 doz. Port, 80 doz. Sherry, 80 doz. East India Madeira, 11 doz. Claret, 14½ doz. Hock, 20 doz. Champagne, and other Wines, at One o'clock.

Catalogues may be had at the George, Huntingdon and Bedford; Eagle, Cambridge; Unicorn, St. Ives; Swan, Biggleswade; Three Cups, Aldersgate-street, London; and of WM. MEDLAND, Surveyor and Appraiser, St. Neots.

TO CAPITALISTS.

TO BE SOLD, to pay a clear Five per Cent., THE TOLLS arising from the Navigation of Vessels laden with Corn, Coals, Timber, Stone, &c. &c., passing along the River Waveney, from Beccles to Bungay, Suffolk, with a Capital Residence, Malting Office, Business Premises, &c., at Bungay.

The above Property is let on Lease at 1300*l.* per annum, six years of which Lease were unexpired at Lady-day last.

For Price and further Particulars apply to Mr. BUTCHER, Auctioneer, Norwich.

VALUABLE CHURCH PREFERMENT.

TO BE SOLD, the NEXT PRESENTATION to the RECTORY of RICKINGHALL INFERIOR, in SUFFOLK. The Incumbent is in the 68th year of his age, and the Net Income arising from the Commuted Tithes, Glebes, and Surplice Fees, average about 468*l.* per annum. Also, the NEXT PRESENTATION to the RECTORY of RICKINGHALL SUPERIOR, possessing a Net Income of 438*l.* per annum.

For further particulars apply to Mr. BUTCHER, Auctioneer Norwich.

CARNATIONS AND PICOTEES.—Grand Exhibition now in full bloom, at Messrs. N. & B. NORMAN'S, Bull Fields, Woolwich. July 6, 1844.

GRAND FLORAL FETE & HORTICULTURAL EXHIBITION, will take place in the Rosherville Gardens, Gravesend, on WEDNESDAY, July 17th, 1844, when Prizes to the extent of 50*l.* for the best productions will be distributed. Two full Military Bands will be in attendance, and the Evening's amusements will conclude with a brilliant display of Fireworks. The Gardens will be opened to the Public at 12 o'clock. Admission, 1*s.* each.

The Gardeners' Chronicle.

SATURDAY, JULY 13, 1844.

MEETING FOR THE TWO FOLLOWING WEEKS.

TUESDAY, July 23 South London Floricultural . 1 P.M.

A CORRESPONDENT has sent us the following statement concerning the JUDGES at the last ROYAL BOTANICAL SOCIETY'S Show in the Regent's Park. He complains of two things. The first is, that two or three Nurserymen were appointed to judge the Amateurs' Roses, and three Amateurs to judge the Nurserymen's in return, nearly all of whom were themselves exhibitors; so that, in fact, each party judged the other's Roses The second allegation is, that although one Nurseryman was disqualified, in consequence of having too many stems in several of his varieties, yet another Nurseryman, exhibiting two Roses without names, and two others of the same kind with the same name, received a prize; an extra prize, on the other hand, was, he says, awarded to an Amateur who had fallen into the same error which disqualified the Nurseryman. This method of judging he complains of as unfair; and very justly, IF TRUE.

But upon making inquiry, we find that, as to the first allegation, no Nurseryman whatever was among the judges of Roses, nor were there two sets of judges for those flowers; so that the first statement is altogether a mistake, and requires no further comment. The second charge is answered by the judges thus:—There was but one Nurseryman's stand that did not, as far as the judges could discover, comply with the regulations, and that one was otherwise inferior, in their opinion, to those which received prizes. Not one of the Amateurs complied with the regulations, and therefore the judges had to decide whether they would refuse prizes to the whole of them, or, as they were all alike in error, determine their merits without reference to the regulations. They decided upon the latter course—and they did right.

Our correspondent adds that "Fair play is a jewel;" and we entirely agree with him. He too will, we trust, agree with us in thinking that, as other persons are, no doubt, under the same misapprehensions as himself, this mode of noticing his communication is more in the spirit of that good old English maxim, than the insertion of it, without comment, would have been.

THOUGH HYBRIDISING has already led to important results, they are probably nothing compared to what may be expected to come of it. We anticipate through its assistance a change in the whole face of cultivated plants, and we shall be much surprised if even a few years do not bring us acquainted with races of trees, esculents, corn, and forage plants, of at least as much importance in their way as those which have already appeared among fruits and flowers; all that is wanted is to call attention to the subject, and to point out what the principles are which the experimenter has to bear in mind.

The effect is produced by applying the pollen of one flower to the stigma of another. The pollen indicates the male parent, the stigma the female. In performing the operation it is necessary to use these precautions:—The female flower must be deprived of her stamens before they burst and disperse their pollen; and as soon as the stigma is glutinous enough to hold it fast, the pollen must be applied with care. Should this care not be taken the stigma is very likely to be inoculated with the pollen of her own or some other flower, and then the pollen which it is intended to use will not take; for it must be always borne in mind that a stigma once inoculated cannot be inoculated again. From want of these precautions, people are continually fancying they have obtained hybrids when they have only gained natural seedlings. At least half the specimens of so-called hybrids sent to us for examination, are not hybridised at all. When the Dean of Manchester, who is the greatest of all authorities in this matter, wishes to obtain a cross, he always endeavours to force the female parent before others of its kind blow, so as to be insured against accidental inoculation from pollen floating in the air. Want of attention to these minutiæ has led to some singular errors on the part of a very ingenious correspondent, who fancied he had obtained seedlings between Crinum, Ismene, Buphane, Calostemma, &c., while he had only raised the usual seedlings.

It is hard to say within what limits the operation may be successfully practised. The general rule is that plants only, which are very nearly related, are able to inoculate each other. But there may be exceptions to this. At least we know that very near connexions have, or seem to have, a great aversion for one another. For example, a Raspberry and a Strawberry are first-cousins, yet they appear to have no mind for an alliance. A Gooseberry, Currant, and Black Currant are still nearer to each other, and their repugnance seems invincible; at least nobody has yet found means to hybridise them with each other, though many have attempted it. On the other hand, Heaths, different as they are from each other, intermingle freely; Cereus speciosissimus is readily inoculated by the night-flowering Cereus; and even the creeping Cereus has been crossed with the former; the Rhododendron will fertilise the Azalea; and, strangest of all, the Red Cedar has on several occasions been found to inoculate the American Arbor Vitæ, the issue from which is that curious whipcord-branched plant called in the gardens Thuja filiformis. This singular shrub was so produced for the first time in Messrs Loddiges' nursery at Hackney, and has since been obtained in the same manner at Paris. These facts open a very wide field for inquiry, and are especially valuable as affording evidence that the limits of hybridising are far from being narrow.

In the midst of many experiments conducted without exactness, from which no safe conclusion can be drawn, there are some which, in the hands of such men as the Dean of Manchester, seem to justify the important inference, that as a general rule the properties of the male parent will be most conspicuous in the hybrid. For example, Mr. Herbert crossed the long-yellow-cupped common Daffodil, with the small red-edge-cupped Poet's Daffodil; and the seeds of the common Daffodil furnished a bulb with most of the attributes of the Poet's Narcissus. The same gentleman also obtained out of a capsule of Rhododendron ponticum, inoculated by Azalea pontica, seedlings which had entirely the habit of the latter or male parent.

In like manner the arborescent crimson-flowered Rhododendron atlaclerense was raised from the seed of the dwarf pallid R. catawbiense hybridised by the arborescent crimson R. arboreum; and when the common scarlet Azalea, with its crimson flowers and narrow leaves, was inoculated at Highclere by Azalea pontica, Mr. Gower found that its seeds produced plants much more like the male than the female parent. Exceptions, or apparent exceptions to this, do no doubt exist, and hybrids could be found who are either half-way between their father and mother, or more like the mother than the father; but as far as any means of judging at present exist these would seem to be the exception and not the rule; and therefore the greater influence of the male may be taken as a tolerably safe guide in all experiments upon this interesting art.

IN resuming the important subject of the SCALE INSECTS infesting the Orange plantations in the Azores, and elsewhere, it may be observed that there are two others, of the same family, which affect those trees. The most formidable one is named Coccus Hesperidum, which we have frequently observed on the under side of the leaves of the Lemon and Citron, as well as of the Orange; and in greenhouses it is said these scales will attach themselves to Myrtles also, when they are kept rather warm. This animal is covered with an elliptical shield, which is inseparable from it, and of a deep brown colour, with a pale margin. It is a difficult pest to exterminate; and although many modes have been suggested, the best will not succeed, unless applied with care and perseverance. Lime and Tobacco-water may be thrown with the syringe upon the under sides of the leaves, the worst of which must be cut off, collected into baskets, and immediately burnt. This should be done at the coldest period of the year, when the young are inactive; for we have seen them running about as late as November in a greenhouse. We would also recommend a decoction to be made of shag Tobacco and water, say 1 lb. to a gallon, in which the leading shoots, when affected, should be immersed; and by repeating the experiment, it may be ascertained at what degree of strength and heat this liquor may be used, so as not to injure vegetation, and yet destroy the animals.

There is found also upon the Oranges, especially attached towards the crown and around the stalk, a smaller oval scale; it is of a brownish colour, and something like an oyster-shell when magnified, being slightly convex, with the anterior edge pale and membranous. It adheres very closely; and those which we removed left a whit spot beneath. Under one of these scales we found a fleshy Orange-coloured female, with eight or ten shining eggs, of an oval form, and a Lemon-colour. The mother was firmly fixed by her rostrum, which is more slender than the finest hair; and it was inserted into the skin of the fruit with such force, that it was with difficulty we could remove her. Beneath another scale were two or three smaller ones, which had been formed by the young under their parent; for, on removing these minute scales, which were bright brown on the disc, little females were disclosed, similar in colour to the eggs. It is not a little remarkable that these are a totally distinct species from that which inhabits the leaves; indeed, they belong to different genera. The leaf-scale, having the shield attached to the animal, is arranged under the Linnean group called Coccus; whilst that on the fruit, as we have just shown, is not attached to the scale, which forms a distinct shield; and this structure characterises the genus Aspidiotus.

It is fortunate that little need be apprehended from this scale; for no remedy but the destruction of the fruit could avail in its extirpation. But should it ever make its appearance in any numbers, it will be advisable to gather the affected fruit at once and burn it.

Those who are desirous of becoming better acquainted with the habits of these insects will find the economy, &c. of several species discussed in last year's *Gardeners' Chronicle*; but we may here state, that the males of the three species of Coccidæ infesting the Orange-trees are, we believe, unknown to naturalists. They are no doubt exceedingly minute, with two little white wings and two tails, similar to those of Coccus Aceris, figured in Curtis's Brit. Ent., pl. 717. It would be of essential service to destroy these gentlemen, in order to prevent the fertility of the females; and, since our first notice of the subject, it has occurred to us, that if the application of any of the adhesive paintings of clay, marl, &c. did not destroy the old females, which might escape the operation of scraping, from being stationed in the forks or upon young branches, still they would, if done in a workmanlike manner, prevent the young, possibly, from hatching, or at least from seeking fresh spots for subsistence; and if this end only were accomplished, the Mussel-scale must disappear the following season. We also think that the delicate males would be sealed up in their cocoons, from which they issue backwards.

Having thrown out these hints regarding the different species of scales which affect the Orange-trees, it only remains for us to observe, that as one of the most important uses of the *Gardeners' Chronicle* is to direct the attention of its readers, who have leisure and opportunities, to the most effective modes of destroying noxious insects, we trust that such as have Apple and Pear-trees affected by the Aspidiotus conchiformis will try experiments, and communicate them through this channel, by which means they may assist materially in saving the Orange-groves of the Azores.—*R.*

FRENCH CULTIVATION of the PELARGONIUM

(*Continued from page* 443.)

Propagation.—This is usually effected in two ways—by seed, and by cuttings; the last mode is practised to preserve the choice varieties, and the other to obtain new ones; for it is not to be supposed that the seed will produce plants similar to those from which it is taken: that scarcely ever happens. Cuttings are generally taken when the plants have ceased flowering, when they must be cut down to the second or third leaf above the shoot of that year. Strip off two or three leaves from the lower part, and the stipules, or little leaves, which are at the bottom of the stem; the cutting should be cut across immediately under a joint, then planted in a small pot with the soil well pressed around it, but not so as to hurt the bark. The watering-pot, if the earth be damp, will not be required, otherwise, a slight watering will be necessary; after which they must be left to dry in the open air, then placed under a frame upon a hotbed, and shaded whenever the sun shines on them. In a month or six weeks, they will have taken root, and must then be exposed to the air, by opening the top of the frame; at night they should be left entirely uncovered; and when sufficiently accustomed to the open air, they should be put into beds in an open situation, in order to make them hardy and strong. When the fibres have lined the sides of the pots like network, they require to be put into larger pots, in which they may remain until the general time for repotting. There are two other modes of taking cuttings, which succeed at least as well. A border being well dug, pulverised, and raked, lines are to be drawn at the distance of five or six inches from each other; the cuttings prepared as described are then planted in rows, and the name of each variety is painted on small wooden or lead labels. The planting finished, drive into the ground at each end a small wooden fork, and lay a stick across them, to support a mat to shade the cuttings from the sun. After ten days or a fortnight the matting should be put on later in the morning, and taken off earlier in the evening, and it should never be spread in rainy weather. In pots five or six inches in diameter, plant four or five cuttings around, an inch from the sides; water them very gently, and then range the pots under the shade of a

hedge or wall, taking care that no drops from it fall upon them; by those methods very few cuttings are lost, because though they may be exposed to much rain, the evaporation is greater in the open air than in a house, where, though the confined heat and moisture would cause them to take root quickly, those agents of vegetation would also occasion their decay. Though cuttings may be taken at all seasons, with the requisite precautions, the months of June, July, and August, are the most favorable.

Increase by Grafting.—If you wish to have two or three different varieties on the same stem, choose a plant with the same number of branches that you wish to have of colours. Cut off the tops of these branches the evening before they are grafted, as low as possible; and when the excess of sap has evaporated through the incisions, select an equal number of strong grafts (from stocks of equal vigour, so that there be an evenness and uniformity in the parts of the plant), from 9 ins. to 10 ins. in length; insert them in the incisions, bind them with soft ligatures, cover them with fresh Moss, and place them under a bell-glass shaded from the sun until the grafts have taken well.

Saving the Seed.—The seed must be gathered gradually as it arrives at maturity; for since all the flowers do not blossom at the same time, the seeds will not ripen simultaneously. You may know when to collect them by the brown colour of the upper part of the pod; the pod then becomes detached from the calyx, and if not carefully watched, may be carried away by the wind. The seeds should be put into paper bags and kept in a very dry place, until a sufficient quantity has been collected. Those which are collected at hazard may sometimes produce good varieties, but those from choice plants are far preferable. Seed may be raised so as to produce plants participating of the nature of two different stocks. Suppose two Pelargoniums in flower, of different colours, and that it is desired to have these two colours united in the same flower: to effect this combination, it is only necessary to cut out the stamens of that which you intend to become the parent, then take a small camel's-hair brush, and remove with it as much as you can of the pollen to the stigma of the mother plant, using great caution lest that organ be injured. The stamens may also be cut as fast as they ripen, and the anther applied to the pistils of the flowers that are to be fertilised. You must operate upon flowers equally advanced, or repeat two or three times this operation, in case the pistil is not fertilised the first time. In order to render the operation (which ought to be always repeated) more complete, the fertilised plant ought to be kept apart from every other, and covered with gauze, to protect it from bees and other insects, which would extract the nectar; but seed may be obtained which will give excellent varieties, without taking all this trouble, provided it be taken from flowers of first-rate merit.

ON GATHERING FRUITS.

THIS is a most important point to be attended to; for, upon the manner in which fruits are gathered depends the success of their keeping, in whatever manner they may be preserved. No fruits should be gathered when dew is upon them, or in dull, cloudy weather. On this important point every gardener agrees. I cannot too severely condemn the mode of gathering the more common fruits, as Apples and Pears, at one sweep; although a common practice, even with the best of gardeners, it is a bad one. All fruits should be gathered as they arrive at maturity, and that in the most careful manner. It, however, often happens, even in the most congenial climates and situations, that a portion of the fruit, of the same tree, and even on the same branch, will arrive at maturity sometimes before the others; the ripe portion should be gathered immediately, and carried carefully to the fruit-room, which should be cool and dry. Here they may be laid upon the shelves, or tables, as the case may be, and covered over with canvas, to prevent evaporation, and to keep the dust from settling upon them, whilst the remainder is gathered, when the whole should then be immediately packed for preservation.

There have been many plans recommended for gathering the more delicate fruits, of which I entirely disapprove. What I would recommend is to gather them by the hand in as careful a manner as possible, and lay them gently in baskets, previously padded and lined with some soft material, such as wadding, and carried without delay to the fruit-room; the shelves should be previously covered with canvas, or some such material. In good gardens, I would recommend that the fruits which are in any way difficult of being detached from the tree, should be cut of the twigs with a pair of sharp scissors, into a padded basket held beneath for their reception. This may be considered to be a tedious way of gathering fruits; I grant it is. But if we consider, we will see that the fruit thus carefully gathered will repay the trouble, by keeping longer fresh and sound. I can boldly assert, that there is more fruit injured by improper gathering and storing, than by any other means.

In proof of this, if gardeners would take an Apple or Pear which has been gathered in the usual way, and lay it aside for a day or so, then carefully peel it, they will find it bruised, though not observable before. How does this happen? I answer, that it occurred during the operation of gathering, carelessly laying them in cane baskets, and in carrying them to the fruit-room; they are also hurt in moving them from one shelf to another. It is a general practice in large gardens, to intrust the gathering of fruits to persons who are regardless how they gather them; and this is a source of much mischief, as the fruit is often much injured by them.

It was a common practice, and is in some places now, to allow the fruit when ripe to fall of its own accord; and many plans have been adopted to prevent the fruit from injury by falling on the ground. Fruits allowed to remain on the trees till sufficiently ripe to fall of their own accord are much too ripe for preserving for any length of time. Some fruits, such as Peaches, Plums, &c. will not keep over a day or two; and the flavour of the fruit thus allowed to fall will be much deteriorated. There are certain criteria by which we may know with great nicety when fruit is in a proper state for gathering. Most fruits, such as Peaches, Pears, and Plums, part freely from the tree when ripe. Plums should be handled in the most careful manner, otherwise the bloom will be rubbed off them. When this is the case, a little fine flour should be carefully dusted over them, but with the greatest delicacy. Apricots should be gathered when the side next the sun feels soft, which may be ascertained by a gentle pressure with the finger. This fruit adheres firmly to the trees, and would, if not gathered, remain until it was over-ripe, and had become mealy. Peaches, Nectarines, Apples, and Pears fall of their own accord when fully ripe; but they should never be allowed to do so, for reasons before stated. The best plan is to gather all fruits, with the exception of stone-fruit, some time previous to their arriving at maturity, to place them in a warm room to accelerate their ripening, if they are required for immediate use. A good criterion with Apples and Pears is to cut up a fruit of average ripeness, and if the seeds have acquired a brown or black colour, they are in a fit state for gathering; but if they remain white, the fruit is not ripe, and should remain some time longer on the trees, even supposing a slight frost should intervene. Some sorts of Pears and Apples which have had a slight touch of frost are not injured by it; on the contrary, they will be found to have acquired a finer flavour. If severe frost should set in before the late sorts of Apples and Pears on the walls (which in some cold and unfavourable climates will be the case) have arrived at proper maturity for gathering, they should be covered by suspending canvas or bunting in front of them. Having procured the proper materials, and cut or sewed them into convenient lengths, they should then be fastened on the top of the walls by means of hooks and eyes of sufficient strength, and to pegs driven into the ground, at 2 or 3 feet from the wall; this covering should always be taken off during the middle of the day, and replaced in the evening; by this means they can be allowed to remain on the trees much longer, free from frost. If Apples have been pitted in the manner previously recommended, and if very severe frost should occur, the pit should on no account be opened if there is the least suspicion that the frost has reached them; if it is opened air will enter, and the consequence will be the entire loss of the fruit. When the frost has disappeared the pit may be opened with safety.

Cherries.—This fruit should be gathered when quite ripe. I, however, would recommend a portion of them to be gathered before being quite ripe, and if required for immediate use, they should be suspended over a hot-house flue in a basket, in order to accelerate their ripening. The remainder may be kept in air-tight tin cases, of a broad and flat form, packed in a little fine dry charcoal, Beech-flowers, or bran, until they are required for use.

Strawberries and Raspberries.—For these fruits, as far as I am aware, there has been no means adopted for their preservation for any length of time. I would recommend that the fruit which has begun to change colour (which some will do before others) should be gathered, and placed in a hot-house to accelerate the ripening; this will afford a succession. Fruits gathered in this manner and surrounded with silk-paper, and then packed in tin cases, thoroughly air-tight, with a little charcoal sprinkled amongst them, will be found to keep for some time; the later sorts of these fruits should only be preserved. The flavour of these and other fruits of this nature, which have been preserved in this manner, will not be so fine as those that are allowed to remain on the plants and ripened by the sun. However, fruits preserved in this way will be found useful for dessert, when those in the open air are finished.

Walnuts, Chesnuts, Filberts, &c., should not be gathered until they are quite ripe, and fall of their own accord from the trees. It will often happen, however, in late seasons, that the winter will be far advanced, especially before Chesnuts drop, therefore they should be gathered by means of ladders; but on no account should the trees be beaten with sticks, which is a very common practice, but cannot be too severely condemned. After they are gathered they should be divested of their outer shells, and gently dried after which they may be packed in boxes or casks, in fine dry sand or charcoal, in alternate layers, and placed in a dry cellar; the casks or boxes should be elevated on bricks, to prevent rats and mice from destroying them, which will be the case if they once gain admittance.

Packing for Carriage.—This is also an important point to be attended to, especially when over-ripe fruits have to be sent to any distance. In this, as in preserving and gathering, different methods have been adopted, and a great many of them without success. Baskets, for packing fruits, should on no account be used if it can be avoided. I would recommend two boxes, to be of different sizes, with false bottoms, and secured with a lock and two keys,—the one to be kept by the person who packs the fruit, and the other by the person who unpacks it. Boxes made of inch-deal have been recommended by some; these will answer the purpose equally well, if they have been made thoroughly air and water-tight. In packing fruits of all descriptions, the heaviest should always be laid in the bottom, and the more delicate on the top, each fruit being previously surrounded with clean linen or fine paper, and packed amongst bran, Beech or Hazel-flowers; fine-powdered charcoal will answer equally well, if it has been thoroughly dried previous to being used. Whatever material has been made use of for packing, when the fruit is taken out it should be properly cleaned, and laid in some cool cellar until required for use, first taking all bruised ones out and throwing them away; for, if they are left, they will impart a musty flavour to the others. For packing Grapes, I would recommend bran thoroughly dried, first putting in a layer of bran, then Grapes, shaking a little amongst the berries, which will fill up any spaces between them, and likewise prevent them from bruising each other; when unpacked, the bran will fall out from amongst them, and if any remain, it should be removed with a small painter's brush; the berries should then be treated as before directed, when they will be ready for the table.

The smaller fruits, such as Gooseberries, Currants, &c., should be packed in flat tin cases, and on no account should a large quantity be put into the case; if this is done, they will not be fit for use at their journey's end. All these small fruits should be packed in bran, which can be easily removed when they are unpacked; this will prevent them from bruising one another. When unpacked, they should then be laid in some cool apartment until they are required for use.—*John McIntosh.*

ROSE GARDEN.—No. XIV.

(*Continued from page 444.*)

Pushing Eye.—Sometimes a jet from an eye will start before the winter, and grow an inch or more; and this (if not killed by severe weather—a matter to be dreaded with a small and delicate shoot), will show a tendency to burst into leaf with the first intimation of spring. This is not desirable, as it would form one straight leader; and yet, from the little rings around it appearing so undefined, and no buds being clearly perceptible, the only chance of life appears in the summit. This, however, is not the case; and in order to delay it, and cause the sap to form buds on either side, the little shoot may be shortened to three or four rings, and left about an inch long; buds will then form on each side of its base, as well as from the rings, and instead of a single stronger leader, the tree will form a little head at once. This mode ought to be adopted also (when wood only is required) with the buds of the previous seasons' insertion, by nipping off the point of the shoot when three or four eyes have been formed; in this case the plant has not advanced enough to suffer the evil of a check, but rather a restraint, which being only just sufficient to increase the impatience of the plant to start into action, does not diminish the quantity of wood to be formed, but by multiplying the shoots, keeps it nearer home and forms a better head, yielding more buds to work from, and sooner than if left to run up, and for this reason less inclined to flower; this mode of treatment presupposes the plant to be both healthy and in good ground.

Guards against Wind.—The inserted buds, when vegetating, have, as has been before observed, no immediate junction with the stock; to prevent, therefore, their being knocked out by the wind, it is necessary to tie a small, but not flexible twig, as thick as the finger, to the stem of the tree, leaving a foot sticking out above; and when the jets are a few inches long, to tie them with a piece of bast to this guard to defend them from injury.

It sometimes happens, on looking at the buds which have taken and sprung several inches, that a want of vigour may be observed in some particular shoot, which droops as if about to die off. On examining this, it will be found that just at that place where the ripening had commenced, a slug has been at work, and eaten half-way through the shoot; whether it is that this operation is performed by the animal for the purpose of destroying the end, and eating it when dead, or merely to devour that small portion to which it has applied itself, does not appear, though, from the habits of the animal, the former is not improbable. However this be, slugs seldom sever the shoot the first time they attack it, but always return and finish what they have once begun. If the shoot were left to itself, the slug, or the next gust of wind, would destroy it. To avoid this, a small stick may be laid alongside the shoot, and both bound round and round gently with bast (covering the shoot close) to the top, the leaves only being left out, thus rendering it impervious to the attack of the animal, for at least two or three inches. A dead cabbage or other leaf may be placed at the bottom of the tree, and, in all probability, the enemy will be found under it in the morning; while by the precaution taken, the shoot will be protected from further injury, unless a fresh attack be commenced beyond the ligature.

Home Correspondence.

The Chiswick Exhibition and the Judges.—A communication in the last Number of the *Chronicle*, signed "One of the Judges (not of Heaths)," demands more notice than has been bestowed upon it. Although your correspondent, in his evident ignorance of the rules for the guidance of the judges, which year after year have been published by the Society, and also in the *animus* which pervades his communication, appears more in the character of a disappointed exhibitor, than of "One of the Judges," I will suppose him to be what he terms himself; and, granting this, I would ask, Whether the instance he so pointedly alludes to, and so strongly condemns, is the only one that ever came under his notice

during his extensive judicial experience? If not, from what motive has this particular case been selected from all others as the groundwork of his animadversions? It surely cannot be possible that a judge who professes so much liberality, would thus wantonly accuse his fellows of "exceeding their duty, overstrained discretion," &c., at the instigation of any disappointed exhibitor. For the sake of his consistency, I hope that this very just judge was not one of the fruit censors, because they acted on precisely the same principle that governed me and my colleagues; they withheld the principal prize from the Grapes exhibited by market-gardeners, because in their opinion the Grapes did not deserve the principal prize; they likewise gave a Silver Banksian Medal only to the second best Grapes in the same class, thus lowering the best production one degree, and the second best production three degrees in the scale of prizes. Of course your very censorious correspondent could not have been aware of this, or he would not have blamed us exclusively for merely doing the same. The matter has been brought so prominently forward, that I feel bound, in justice to myself and colleagues, to state the grounds upon which our decision was formed. There were two collections of six Heaths exhibited, one belonging to a nurseryman and the other to a private gentleman; consequently, as they stood in different classes, and did not compete one against the other, each would have been entitled to a Silver Gilt Medal had the plants been good enough to deserve it. The judges, however, considered that they were not, because, although there were some very good plants in both collections, they were not all good; and it was our opinion, and still is mine, that there ought to be six good Heaths shown to deserve a reward of 4*l*. In the nurseryman's collection all the plants were in good health, but two, if not three of them were much too young and small to justify their admission into a collection of six. The best grown plant, because the most difficult to grow well, in the other collection, was splendens; the other five (if I remember correctly, but certainly four) were critically compared with plants of the same kinds which formed part of a collection of twenty in the same tent, and in every instance to the disadvantage of those belonging to the smaller collection; we considered, in fact, that three separate collections of six plants might have been selected from the aforesaid collections of twenty, good enough to beat the two small collections now in question. Our decision, therefore, was not governed by "ideal notions of perfection," but by critical examination and careful comparison; and however loudly interested or inconsiderate persons may clamour against it, I feel confident that no conscientious man, who is in the habit of seeing good Heaths, would have decided differently. The office of censor at horticultural Exhibitions is by no means an enviable one, for, however anxious a man may be to do right, there are always some who, from interest, ignorance, or pique, are ready to repudiate his judgment, or impugn his equity. In the present case there must have been a stronger motive than ordinary to induce a person, who acknowledges that he has himself been persecuted by similar complaints, to come forward voluntarily and make a charge which I have shown to be wholly unfounded. Before leaving this subject, I wish to add my testimony to one part of the statement you made in reply to "One of the Judges." I have myself been a judge at the Society's Exhibitions for several years, and in no one instance have I ever known an officer of the Society attempt to lower the prizes which the judges had awarded; the whole responsibility of the awards consequently rests upon that body, and I, as one of them, am ready at all times to take my share of it; you are therefore at liberty to append my name to this communication if you think proper.—*One of the Judges of Heaths.*

What is a Flamed Tulip?—I am induced to ask this question in consequence of what occurred at the York Tulip Meeting. In the York Tulip schedule flamed varieties were mentioned, and sums of money attached to them as prizes, and being a judge upon that occasion, I very naturally refused to judge as flamed flowers those which the committee had selected as such, in consequence of their not having had a beam up the centre. An umpire was called in to decide the dispute, and the decision was given against me for this reason, viz.—because the flowers had the mother or breeder colour in them. In answer to what is a flamed Tulip? I will quote the opinion of Mr. Groom, given in the "Florist's Journal" for July, 1840. In page 57, line 15th from the top, after describing a feathered Tulip, he proceeds thus:—"Next to this comes the flamed flower, which should have, besides the feather, a rich beam up the rib of each of the petals, branching off on either side, and the points meeting the feather; at the same time preserving a sufficiency of the ground-colour between the flaming, to display it to the greatest advantage." In this description of a flamed Tulip I perfectly agree: for what constitutes a flamed Tulip except the beam?—and the cause of the beam is this:—The Tulip in breaking from the breeder leaves a portion of the mother or breeder colour which runs up the centre of the petal, and then strikes off with the real colour to the feathering; but why this is so is a mystery which we cannot unravel. It is so, however, and we can only surmise. To say it is an imperfect break would not do, as the majority of the finest Tulips are what are termed flamed ones; and if on that account they are disqualified, there will only remain a few of what are termed first-rate varieties. What is Salvator Rosa?—a flamed variety. Would you disqualify one of the finest Tulips in cultivation on account of the beam; or the mother colour, whichever you may be pleased to term it? What are Pandora, Thalia, Reine de Sheba *alias* Mentor, Ponceau très blanc *alias* Madame Catalina, Aglaia, Bijou des Amateurs, Bacchus, Cerise à belle Forme, Donzelli, Marcellus, Iago, Holmes's King, Polyphemus, Camarine, &c.? Further—What says the Editor of the "Florist's and Amateur's Annual?" In his properties of the Tulip he divides them into six parts, and in his 6th section of the properties, he comes to the marking, and he thus writes:—"The marking of the petals regular and uniform, whether it be a broad or narrow feather round the edges of the petals which are exposed, or a flame up the centre, and branching off, and though very rarely uniform in this respect, the nearer approach the better. So much in regard to the properties for showing." But the writer must have forgot this published opinion, when so lately as the 29th of June he says—"No flower can be good for show if it has the breeder colour in it;" and on the 6th July he says—"A Tulip should not have any of the breeder colour in it." I can only account for this on the following grounds, namely:—The question has not been fairly stated to him. If it was a feathered variety, and had breeder colour in it, I agree with him that it ought to disqualify a pan, providing the other pan or pans have not the same glaring fault. There has never been but one instance, I believe, of the beam and feathering being of the same colour; but I must admit that the nearer the approach to the colour of the feathering so much the better. A Tulip in the north, if the beam is very pale, is not considered of so much value as one very dark. Aglaia, although a pretty variety, is very defective in the beam. In some instances it is uncommonly pale, and at other times the colour is tolerable. The same may be said of many others. If the taste of the York florists is correct, then it will be a mere mockery to offer prizes for flamed Tulips, if those only which are what are termed, and correctly so, neither feathered nor flamed, are to be classed as such. I have a work before me upwards of 100 years old, written by the celebrated Dutch florist Nicholas Van Kampen, and the properties he lays down are in accordance with what has been previously expressed. The authorities quoted, however, are sufficient to satisfy any Tulip-grower, they being, as they are, the opinions of the best florists in the country; and I trust that the properties already alluded to will for the future form the standard of a flamed Tulip, being persuaded that they are strictly in accordance with the opinions of all England, excepting within a circuit of about 30 or 40 miles round York. I must, in justice to Leeds, Wakefield, Halifax, and their neighbourhood, say that their opinion is in accordance with the general one, and all flamed flowers are judged according to Mr. Groom's standard.—*John Slater, Cheetham Hill, near Manchester.*

Raspberries.—In the "Theory of Horticulture," the practice of training trees upon a horizontal plane is condemned, and reasons for objecting to the plan are given. It is there stated that "such a mode of training exposes a tree as much as possible to the effect of radiation." A proof of this has occurred with me this season. A part of my Raspberry plants is tied to upright stakes, another portion is arched. We had a severe frost here on the morning of the 20th of May, which did considerable injury, and Raspberries came in for a share of the suffering. Those plants, however, that are trained in an upright manner, appear to have suffered less than those that are arched. They are growing in the same soil and situation; on some of the arched plants scarcely any fruit have set, and I can give no other reason for the failure than that they have had a greater surface exposed to the frost than the others.—*Peter Mackenzie.*

Plantations.—Much has been said and written on this subject; and whilst the advocates of the several methods recommended for the improvements of our plantations have occasionally differed, so far as to afford room for controversy, it may nevertheless be said, that such difference was not so much in principle, as in degree; consequently the discussions which from time to time have arisen, do not so much refer to the merits or demerits of any particular system, as to the extent to which an acknowledged system ought to be carried. Of the advantages resulting from the operations of pruning and thinning, no one in the smallest degree acquainted with the management of young plantations entertains a doubt; but as to the time and manner in which their operations ought to be performed, and the extent to which they ought to be prosecuted, there are still many waverers; and if those who, through the medium of the Press, have favoured us with their views and notions on these important points, differed in degree, so also have their followers; and it may be said that the hand of the wood-forester of the present day, so far as regards pruning and thinning, is heavy or light, just in proportion to the extent of his faith in the efficacy of the same. The writer has been led into these remarks from what occurred to him on a late visit to the woods at Nerquis, in Flintshire, belonging to Dr. Thackeray, of Chester, (a gentleman favourably known as a planter of forest-trees.) The plantations here alluded to extend to about 450 acres. They were planted by Dr. Thackeray, in 1814, and have been pruned every year, and throughout the whole year round from that period to the present time, (some of the trees several times in one year,) the effect of which has been, that whilst there is perhaps not another plantation in the kingdom of similar extent, where the proper system of early pruning and thinning has been prosecuted with the same degree of nicety, there is not to be met with, in any other part of the country, a plantation more uniformly thriving, or that bids fairer to become in time a source of wealth to the proprietor, an ornament to the country, and a luxury to all who possess any taste for magnificent forest-trees. In these plantations there is no exemption from the pruning process,—every tree in the wood having been reared under the influence of the knife and chisel. The Oak, the Ash, and Elm, together with the Larch, the Scotch Fir, the Spruce, and other varieties of the Pine tribe, are made to share the same fate; and in every case the success has been complete. There are many who maintain that pruning of a kind so rigorous as that here instanced, is calculated to weaken and produce sickness in the stem; and there are others who, while they approve of, and extensively practise pruning of all descriptions of hard-wood, object to the process being extended to Larch and Fir, on the ground that if it would not be detrimental, it would at least be an unnecessary expense. Without meeting these objections by a train of arguments, which might be satisfactorily done, suffice it to say, that the evidences of results prove the contrary; and were those who still adhere to the objections noticed, only to visit the plantations forming the subject of these remarks, there would be no resisting the evidence which they furnish; there they would not merely have an opportunity of witnessing the beneficial effects resulting from a complete system of training, but they would also have an opportunity of witnessing the injurious effects resulting from an opposite course of management: for in the plantations, not only in that, but in the adjoining counties—particularly in Delamere Forest, belonging to the Crown, planted at the same time, and possessing greater natural advantages—the system of "Let nature work," appears to have met with but small interruption. In the one case we have clean vigorous stems, standing at proper distances, and uniformly handsome; whereas in the other we have only a thicket of dwarfish bushes grown wild from neglect, and having more the appearance of puny shrubs than forest trees; and, but for abundant evidence to the contrary, the failure in this would, no doubt, as in similar cases, be attributed to an unfavourable climate, sterility of soil, or some such cause; in short, to everything but the real cause—neglect of culture. In highly favoured situations trees will push up almost in defiance of neglect: it is not so, however, in regard to all situations; and those who would successfully grow timber on poor mountain-land, must have recourse to the arts devised by human skill, otherwise it would be in vain to hope for favourable results. As a further proof of the good effects of early and regular pruning, there are some trees growing at Craiglelo, near Ruthin, in Denbighshire, planted also by Dr. Thackeray, about 38 years ago, for W. Jones, Esq; several of these contain upwards of 35 cubic feet of timber, and they were regularly pruned for 14 years after they were planted. The situation of the plantations noticed above is not by any means favourable; that at Nerquis stands at least 800 feet above the level of the sea, has a northern exposure, and is as poor mountain-land as is almost anywhere to be met with. It was purchased by Dr. Thackeray expressly for the purpose of planting, for a mere trifle; yet, although planted only in 1814, many of the Larches contain from 8 to 9 cubic feet of timber, and there are Oak saplings that measure from 25 to 30 feet in length, and that girt from 30 to 32 inches at two feet from the ground; from these, and other similar instances, we may conclude that very great improvements might be effected in planting, by adopting a system of treatment of the kind practised, in the cases to which I have directed attention. In most parts of North Britain the art of pruning, accompanied with proper thinning, is well understood and generally practised; but there are other parts of the kingdom, equally adapted for planting, of which so much cannot be said; indeed, in the principality generally the woods are neglected, and there is reason to fear that the great indifference on this subject so prevalent in that part of the country is neither more nor less than the offspring of ignorance.—*A Scotchman, Wales.*

Thrips.—These are more easily destroyed in Cucumber and Melon-frames than in a greenhouse or a conservatory. Let a common Cucumber-frame, say a two-light box, be provided with 12 or 16 common garden flower-pot pans large enough to hold a quart or three pints of water; fill them and place them between the plants, or wherever it is convenient; procure as many pieces of fresh unslacked lime as you have pans, and pour on each piece a few drops of spirit of hartshorn; then place the lime in the pans of water, taking care to keep the part on which the hartshorn was dropped a little above the surface of the water; afterwards, shut down the lights close, and let them remain so for two hours. If the sun shines so much the better, provided you have not too strong a bottom-heat. By this means a gas is generated which is destructive to animal life, and at the same time beneficial to plants. In the case of Cucumber-frames, the pans of water may remain until the water evaporates, and the Cucumbers will even be all the better if the pans are again filled up.—*W. P., Shirley Nursery.*

Potatoes.—Pulling off the blossom has, to my knowledge, been practised most beneficially for more than 20 years. It stands to reason that, if the plants exhaust themselves in forming seed-pods, the produce of the roots must be diminished. Let any sceptic select four rows of Potato-plants, planted at the same time and of the same sort, and from rows 1 and 3 pluck off every blossom as it appears, and upon the plants in rows 2 and 4 permit every blossom to come to maturity, and when the roots are ripe let him weigh the produce of the rows 1 and 3 against the produce of the rows 2 and 4, and communicate the result honestly to the *Chronicle*; and I shall be surprised if he persists in permitting his Potatoes to expand their bloom.—*A West Countryman.*

Ash-leaved Kidney Potato.—The origin of this Potato is imperfectly known; it was raised from seed of the Mouse Kidney near 40 years since, at Retford, in Nottinghamshire, by John Holberry, a shoemaker of that town. I seeded it in 1826, and raised several varieties of Kidney from it, but none of them was so good as the original.—*F. X. O.*

Whitney's Composition.—Mr. Whitney, I see, upholds his statement that a quart will coat twice 7.5 square feet. I can only say I applied his liquid with my own hand, and so carefully, that the process of scraping "next day with a card" was superfluous—there was nothing to scrape. I used it too, as hot as, without a varnisher's stoved-room, could be done. I had the greatest difficulty in eking out a second coating for 60 feet and a few inches of the glazed calico. It is still quite possible that, working in a large way, with large brushes, a large quantity of the liquid retaining naturally its heat a longer time, and with an apartment regulated for the especial purpose, Mr. Whitney may effect what he says. So respectable a man, as I believe him to be, cannot have intended to deceive the public; but I am strongly of opinion, nevertheless, that his statement will disappoint them as to the above point.—*W.*——Another correspondent writes thus:—I have tried Whitney's Composition for a covering for a turf-pit. The material used was calico at 4*d.* per yard. I find it answer the purpose admirably; but it comes greatly deficient in covering the extent of cloth specified in the printed directions. The pit I had made for the purpose of protecting half-hardy plants; after they were turned into the beds, I introduced Heaths and various other plants, all of which thrive under it; while those exposed to the action of the scorching rays of this uncongenial season are of a sickly hue. I do not consider bookmuslin a suitable article for the purpose; I think the stronger the calico is, the better. One of my workmen unluckily put his foot through one of the lights; in that case the glasier could be of no service to us: we had recourse to needle and thread.—*James Melville, Gardener, Murton Rectory.* [We have an endless tissue of complaints of the same kind, and our own experience confirms our correspondents' statements. It is, therefore, not worth dwelling further on the subject.]

Peas.—With regard to the Early Kent Pea, in addition to what an "Arbroath Gardener" says, I would state that I sowed it and the Early Warwick on the 6th of February, on the same border, and under exactly the same circumstances. I could have gathered the Kents on the last day in May, but there being a Horticultural Exhibition in this neighbourhood on the 5th of June, they were reserved for that occasion, when although there were seven exhibitors of Peas, my Early Kents won the first prize; they were about 11 or 12 days before the Warwicks.—*J. M., Cheshire.*

Foreign Correspondence.

Société Royale D'Horticulture de Paris. — This Society has again shown its incapacity of getting up anything like a fine floral Exhibition, although it can and has during the past week drawn together 2000 or 3000 plants (such as are daily seen in the markets) which may delight or amuse the idlers of Paris; but to suppose that any possible benefit can accrue to Horticulture as these Shows are now conducted, is a complete mockery; preposterous regulations will most assuredly render abortive the patronage, influence, and money lavished upon this Society. What would be thought in England of a management which required conformity to rules like these?—"1st. All plants to be in the room before 12 o'clock on Monday, and placed in lots upon the ground ready for the inspection of the judges. 2nd. The judges will examine the lots and award prizes on Tuesday, between 10 and 4 o'clock, after which exhibitors must remove their plants from the ground and arrange them upon stages. 3d. The public will be admitted from 10 to 6 on Wednesday, Thursday, Friday, Saturday, and Sunday, during which time each exhibitor must pay attention to his own plants." Would it have a single exhibitor? I think not, let the prizes be ever so tempting; yet such is the system adopted here. Is it, then, marvellous that France, with all its advantages of locality and climate, should be fifty years behind England, Belgium, or Germany, either in new plants or successful culture. Great exertions had been made to render this *fête* attractive, for, independent of the prizes offered by the Society, were four Gold Medals, one from the Duchesse d'Orleans for the best collection of plants; another from the Princesse Adelaide for a new rose; a third from some lady patronesses for the finest plants in flower; and a fourth for the finest forced fruits; beside two large Silver Medals from the city of Paris and the Luxembourg for fruit and vegetables; but even here the same mismanagement was apparent, for these prizes were only publicly made known a few days before the Show. They certainly do these things better in England. The weather was splendid during the whole week, but too hot for the Roses, which cut but a very sorry figure even by Wednesday, when the public was admitted. The company was not so numerous as usual; perhaps the superior attractions of the Champs Elysées might have caused this; nevertheless, several thousand persons visited the Orangerie of the Luxembourg, which was free to all the world. As to fine specimen plants, scarcely one was to be found. Messrs. Cels, as usual, sent a large collection of Cacti and miscellaneous plants, among which was a good Cattleya Mossiæ, Oncidium papilio, Mamillaria dolichocentra, serieata, and Melocactus cephalomorphus; but the very small number of plants in flower was a great detraction from its beauty. The Gold Medal of the Duchesse d'Orleans was awarded to it. M. Morel showed Brassia macrostachya, Lælia cinnabarina, Gongora maculata, and Oncidium pulvinatum. M. L'Homme gained the Society's first prize for hothouse plants, among which were Latania sinensis, Columnea Lindenii, Anthurium Hookeri, Hotæa japonica, Cendollea cuneiformis, Sabal Adansoni, Adiantum tenerum, Cheilanthes lendigera, together with a pretty collection of indigenous Orchises. The Roses in pots were very poor after those I have just seen exhibited by Messrs. Lane and Beck in England. The varieties were good, but the plants badly grown: in the same collection might be seen standards 5 feet high, and others 12 inches, which showed a miserable want of taste. The collection of M. Margottin gained the first prize—some flowers of Comte de Paris, Triomphe de Luxembourg, Smithii Gigantesque, Bougere, Maugais, Suchet, Reine des Iles Bourbon, Aubernon, and La Reine, were very large. M. René was second, and also showed good flowers of Gombault, Lady Warrender, Eliza Sauvage, Lamarque, Devoniensis, Comte de Paris, Paul Joseph, and Madlle. Hardy; but the weather was evidently too hot to see them to advantage. Seedling Roses (cut) were numerous, and the Gold Medal from the Princesse Adelaide was gained by M. Hardy for a large flower very much like the old yellow China, which was named Madame Adelaide; he had also another pretty seedling, named Princesse de Joinville, in the shape and way of Aimé Vibert, with a sulphur tint. In his general collection were some fine blooms of Belle Portugaise, a bright-red hybrid, Dupuy, black, Bougere, and Vandael. M. Laffay gained the Society's seedling Rose prize; he had several hybrid perpetuals,—the Comtesse du Chatel is good but not equal to La Reine, which he sent out last autumn. M. Verdier had a collection of Cût Roses, to which was awarded the Society's Medal; it numbered nearly 500 varieties of Provins, Hybrids, Perpetuelles, Tea, Bourbons, &c. The Geraniums were numerous—certainly not less than one thousand plants were exhibited; but as quantity seemed to be thought more of by the judges than quality, I need only say that the greater part were such as are sold in the markets at 10 sous each. MM. Chauvière and Souchet had, however, prizes for them. Fuchsias were not numerous. M. Lemon was awarded a prize for some pretty Iris Germanica, and M. Dufay for grafted Dahlias, which form nice dwarf bushy plants in pots, and flower early. M. Bachoux gained the first prize for a general collection of hot and greenhouse plants, among which were the curious Ceropegia stapeliæformis and Mesembryanthemum obconellum, and a good Mammillaria nivea. M. Rythogel was awarded the prize for new plants, hardly one of which was in bloom. Billbergia zebrina was in this and other collections. M. Modeste was as usual without a rival in Chinese Peonies, and showed fine blooms of Triumphans, Reine Hortense, Victoire Modeste, Comte de Paris, and Perfection. M. Malingre was awarded the seedling prize for a collection of Alstrœmerias, which, however, seemed very like some cultivated by Mr. Gaines ten years since. The grand attraction was the fruit exhibited by M. Bergmann, gardener to Baron Rothschild, to whom was awarded the Lady Patronesses' Gold Medal, for six Providence and Moscow Queen's Pines, which were magnificent; in fact, such as either Mr. Spencer or Mr. Barnes might have been proud of showing. M. Grison had also a Gold Medal for a basket of Fruit—Peaches, Apricots, Grapes, Figs, Plums, Cherries, and Currants; and also the Silver Medal for some fine Cauliflowers Artichokes, and other vegetables. M. Puquet showed 120 Apples—Calville Blanche, Canada Pippin, Reinette franche, and St. Germain Pears, preserved after a new method, which looked as plump and fresh as they usually do at Christmas; for these a Silver Medal was also given. M. Duluc gained the Luxembourg Silver Medal for Melons, Cauliflowers, and Cabbages, which, however, were not equal to those of M. Grison.

Societies.

BOTANICAL SOCIETY OF LONDON.

June 7.—J. Reynolds, Esq., Treasurer, in the chair. Specimens of Œnanthe peucedanifolia and Œnanthe pimpinelloides were exhibited, accompanied by notices of their distinctive characters and habitats, by E. Lees, Esq. Much uncertainty and confusion having prevailed among British authors and distributors in regard to the distinctions between these species, the views of Mr. L., founded on good opportunities for observation, are deserving of particular attention. The following condensed abstract will explain the conclusions formed by this botanist. 1st. Œ. peucedanifolia always grows in wet places, and is found both by salt and fresh water, while Œ. pimpinelloides is found in dry ground only. 2d. The characters derived from the form of the radical leaves, and the presence or absence of an involucrum, will not prove sufficient to prevent confusion, but the rounded tubercles upon the roots of Œ. pimpinelloides will readily distinguish that species from Œ. peucedanifolia, in which the tubercles are elongate and sessile. 3d. There is some difference in the fruit of the two species, though the materials in the possession of Mr. L. are not sufficient to state this with precision and certainty. Mr. L. thus attaches the first importance to the form of the root, as a distinctive character; and this circumstance should instruct collectors to be mindful of the value of the root. Specimens collected by Mr. L. afforded the principal reason for retaining Œ. pimpinelloides as a British species, in the London Catalogue, in preference to the adoption of Mr. Babington's change to Œ. Lachenalii; and one of the same specimens communicated to Mr. Ball induced that excellent botanist to admit Œ. pimpinelloides, as well as Œ. Lachenalii, among the indigenous species. Three species, not two only, should therefore now be looked for, and the confusion and uncertainty may thus be removed. Most of the specimens hitherto sent to the Society have proved quite useless, through the absence of roots and fruit; but it is earnestly requested by the Council that contributors will collect specimens with roots and fruit, from as many localities as possible. Some highly-interesting examples of the Irish Saxifrages, belonging to Haworth's genus Robertsonia were exhibited from Mr. Andrews, who had obligingly sent living plants as well as dried specimens. Two of the specimens were sent in record of the fact, lately doubted or denied by the accurate Mr. C. C. Babington, that the Pyrenean forms of S. umbrosa, and S. Geum (with crenate leaves), are certainly native in Ireland; the specimen of S. Geum, indeed, being considered "even more obtusely crenate than Mr. Babington's figure (No. 8), from the Pyrenean plant." These specimens were collected "this year, from the mountains to the south of Brandon mountain, county of Kerry." S. hirsuta is considered by Mr. Andrews to be a hybrid form between S. Geum and S. umbrosa, "as many of the varieties present characters leaning either more or less to the one species or the other." S. elegans is deemed by Mr. A. to be simply a variety of S. umbrosa; and after a careful examination of the forms of S. hypnoides, he is now "satisfied that S. affinis, incurvifolia, hirta and palmata, are all mere varieties, or indeed, barely deserving the name of varieties." Read, "A Synoptical View of the British Fruticose Rubi, arranged in Groups, with explanatory Remarks," (Part 3,) by Edwin Lees, Esq., F.L.S. The paper was accompanied by drawings and specimens.

ENTOMOLOGICAL SOCIETY.

July 1.—George Newport, Esq., in the Chair. Mr. Marshall stated that he had taken home the specimens of Coccus upon the Lime, produced at the last meeting by Mr. Thrupps, and found that they had produced hymenopterous insects. — Mr. Westwood stated that some of the Ichneumonidæ deposited their ova in the Cocci, and this was undoubtedly the case in the present instance. A want of attention to the habits of the Ichneumonidæ had led to the supposition that the male of the Coccus was a winged insect.—A collection of small Crustacea from New Zealand and Swan River, was presented by the Rev. F. Hope.—The committee appointed at the last meeting to inquire into the subject of the Coccus attacking the Orange groves of the Azores, had sent in their report to the Orange Company. They had not been able to propose any remedy which offered a prospect of immediately exterminating the pest. —Specimens of the Saropoda fuscata, which had been attacked by the Cælioxys conica, were exhibited by the President.—Captain Parry exhibited a box of insects from New Zealand, which contained, amongst other things, a remarkable species of wingless Grasshoppers, a species of Boletophagus, and a specimen of Sirex gigas. —Mr. Yonell exhibited specimens of the leaves of a Lime-tree, covered with little conical projections, produced by the deposition of the ova of a species of Aphis.—The Rev. F. Hope exhibited specimens of Goliathus Savagesii and G. Polyphemus.—Mr. Westwood exhibited also a drawing of the G. maximus, in the possession of Mr. Turner, of Manchester, which he believed was only a variety of G. Druriі.—Several drawings of insects were exhibited from Robert Templeton, Esq., of Ceylon, and a letter was read, in which that gentleman announced that he was rapidly proceeding with his work on the Zoology of Ceylon. He referred to the bites of Scorpions, and the Scolopendra generally, and expressed his conviction that they were not poisonous. This gave rise to some discussion, in which the President stated that these insects possessed a special glandular apparatus for secreting poison; and Mr. Hope and other Members related instances of inflammatory action following their bites.—The Rev. F. Hope read a paper on some species of Buprestidæ, from Australia. The paper contained a description of 37 species, but he possessed still many undescribed. He also exhibited drawings of fossil insects identical with living species, found in the tertiary deposits of Aix, in France. He had also received others from Senegallia, in Italy.—Mr. Westwood stated that in May he had seen a swarm of female wasps feeding on some leaves affected with honey-dew. They might have been easily destroyed, and with them their coming progeny. A discussion took place as to the advantage of killing wasps, as it was well known that they destroyed many species of flies which were equally destructive with themselves.—Mr. Westwood read a paper on some new hemipterous insects. One of these he called the Plataria Madagascariensis, as he had first seen a specimen from Madagascar in the Museum of the Jardin des Plantes at Paris; but he had since received a specimen from South Australia.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

The midsummer meeting of this Society was held in their garden at Inverleith, near Edinburgh, on the 28th ult. The grounds were in the highest state of beauty, and the company numerous. For the four finest specimens of Cape Heaths, the silver medal was voted to Mr. J. Reid, gr. to Professor Syme; the kinds being Erica Savilleana major, ventricosa pragnans, tricolor speciosa, and Woodhall ventricosa; 2, Mr. G. Binnie, gr. to Professor Dunbar, for E. splendens, ventricosa, pragnans, ventricosa stellata, and ventricosa tricolor; 3, Mr. G. Stirling, gr. to Lord Melville, for E. ventri-

cosa nana, tricolor, Savilpana major, and purpurea.—For the three finest and recently introduced varieties of Fuchsia, there were eight competitors. The silver medal was assigned to Mr. J. Downie, gr. to General Robertson, who produced F. Rogersiana, Eppaii, and magnifica, (besides several very large varieties sent for exhibition only); 2, Mr. R. Oswald, gr. at the Orphan Hospital, for varieties named Prince of Waterloo, Magnificent, and Fairy Queen; 3, Mr. J. Young, gr. to T. Oliver, Esq. for F. excelsa, racemiflora, and pulchella.—The show of Roses was on this occasion magnificent. For a general collection, consisting of sixty named sorts, the silver medal was voted to Messrs. Handasyde, nurserymen, Fisher-row. For the best twelve hybrid varieties of the China Rose, the silver medal was awarded to Mr. P. Thomson, gr. to J. J. H. Vere, Esq., for R. odorata, Devoniensis, tea-scented, Blairii, Camelliæflora, white China, Princess Augusta, Sir Walter Scott, Yellow China, Swan-neck, Crimson China, and Doctor Billiard; 2, Mr. A. Forrester, gr. to Capt. Falconar, for R. Blairii, Belzance, Beranger, Blanche, Mrs. Boyle, Indica major, Fabvier, Girliug, Paroquet, Devoniensis, Maria Stuart, and Magna rosea.—Comparatively few tender shrubby Exotics were sent for competition; but for one collection, consisting of Epacris grandiflora, Elichrysum proliferum, Erythrina laurifolia, and Leschenaultia biloba, a premium was awarded to Mr. Young. For an admirably grown specimen of Pimelea decussata rosea, another premium was voted to Mr. P. Crocket, gr. to Col. Ferguson.—Many beautiful tender shrubby exotics, for exhibition only, were sent by Mrs. Haig, Professor Dunbar, J. Henderson, Esq., and Mr. J. Macnaughton.—Some very beautiful tropical Orchidaceæ were produced in full flower; a premium was awarded to Mr. Stirling, for Oncidium Harrisonii and Maxillaria Harrisonii.—Beautiful specimens of Stanhopea grandiflora, Oncidium cupreum, and Acropera Loddigesii, from View Park, were sent, not for competition.—The competition in stage Pelargoniums was limited, and the prize was gained by Mr. Young, with varieties called Duchess of Sutherland, Enchantress, Mabel, Beauty, Caroline, and Rising Sun. But the specimens sent for exhibition only were never excelled either in number or splendour, the principal exhibitors being Messrs. Dickson and Co., Leith Walk; Dickson and Sons, Inverleith; and Carstairs, Kelly, and Co., Warriston.—For remarkably well-grown herbaceous perennial plants, two premiums were voted: the first, being the silver medal, to Mr. Young, gr. to Mrs. H. N. Ferguson, for a splendid specimen of Achimenes grandiflora; and the next, to Mr. Forrester, Cailourie, for Orchis foliosa.—For producing the four most curious or uncommon native British plants, in pots, a premium was awarded to Mr. Stirling, the plants being Aceras anthropophora, Eriophorum alpinum, Asplenium viride, and Sedum dasyphyllum. To the same another premium was adjudged, for two trays, one filled with exotic, and another with indigenous alpine and rock plants, several of them of great rarity and beauty.—An extra award was made to Mr. Gow, gr. to Count Flahault, Tullialan Castle, for a collection of Cut Flowers of more than 30 varieties of seedling Rhododendrons raised by himself. Among the remarkable plants exhibited was a magnificent specimen of Erica spuria from the Royal Botanic Garden, upwards of 8 feet high and 15 feet in circumference, the whole plant being completely clothed with rich blossoms; together with several other fine heaths of large growth.—Clerodendron Kæmpferi, in full flower, was sent by Messrs. Lawson and Sons. Echites atropurpurea, was from the Society's own collection. Nemophila discoidalis, was from the garden of the Orphan Hospital. Delphinium Menziesii, a Columbia river species, was sent by Mr. Guthrie, Dundee. A basket of the highly scented flowers of Mandevilla suaveolens was from Archerfield Garden, where the plant is grown in great perfection. Trays of very lovely Pansies were exhibited by Mr. Symington, Mr. Finlayson, Mr. Rutherfurd, and Mr. Murray. A luxuriant specimen of Heracleum giganteum, eight feet high, was sent by Dr. Neill, marked as having been grown on a very poor sandy bank, entirely without manure. Mr. Sang, of Kirkaldy, sent a dish of the ripe fruit of Rubus spectabilis, which was found not very palatable, and proved that this species is more adapted for ornament than utility.—Mr. Adamson, Balcarras, sent a Melon and a brace of Cucumbers.

BOTANICAL SOCIETY OF EDINBURGH.

June 13.—This Society met at the Royal Botanic Gardens—Professor Graham, President, in the chair. After a delightful walk through the garden and planthouses, accompanied by the learned president, who pointed out many of the beautiful specimens which they contain, the meeting re-assembled in the classroom, when the following papers were read. 1. On four Genera of Desmidieæ, by Mr. J. Ralfs, Penzance. The genera are Cosmarium, Pediastrum, Xanthidium, and Scenedesmus, and the descriptions of them, which were accompanied by illustrative drawings, will shortly appear in the "Annals and Magazine of Natural History." 2. Continuation of Mr. James M'Nab's Journal of a Tour through part of the United States and the Canadas. In the previous part of this journal, Mr. M'Nab gave a brief outline of the principal botanical and horticultural features observed in the neighbourhood of New York. The part now read, embraced chiefly the appearance of the country around Albany, with an account of the more interesting plants seen during the journey thither. Among these, the most remarkable were several species of Lycopodium, with which the peaty soils on the road-sides around Albany were covered, consisting of complanatum, clavatum, and dendroides, the latter resembling at a distance young spruce Firs—being similarly shaped and of a lively green colour. In damp situations in the close forests, Adiantum pedatum and other ferns covered large tracts, while Pyrola elliptica and rotundifolia, with Chimaphila maculata and umbellata were in full flower along the drier parts. Satyrium herbiola, and Neottia tortilis were also observed—the latter growing chiefly in pairs. The principal plants noticed in the meadows or open grounds were Lilium Philadelphicum and Canadense, Mimulus ringens, Verbena hastata, and urticifolia with Asclepias obtusifolia and variegata. Proceeding towards Troy, on the banks of the Hudson, great quantities of Kalmia angustifolia, Cornus florida, Lupinus perennis, Andromedas, Vacciniums, &c., occurred. In an extensive forest, chiefly composed of small trees, and much entangled with Smilax or green Brier, through which the party proceeded with great difficulty, Cypripedium spectabile covered large patches, with Arum triphyllum, the latter in full flower. Mr. M'Nab concluded the present part of his journal with an account of some large trees of the hemlock spruce, Abies canadensis, being the first of this tree which the party had observed in natural situations;—the largest specimens were about 10 feet in circumference, and 80 feet in height.—The Honourable G. C. Cunningham, Mauritius, and F. S. Cordier, M.D., Paris, were elected foreign members; and A. Greenwood, Esq., Chelmsford, Essex, was elected a non-resident Fellow of the Society.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

Clitoria Fulgens. Bright flowered Clitoria (*Twining Evergreen.*). Leguminosæ. Diadelphia Decandria.—This is an elegant addition to the number of those plants usually called creepers. It was obtained by Messrs. Veitch and Sons, of Exeter, who exhibited a specimen at the Horticultural *fête* at the Chiswick Gardens in May, as a species of Centrosema, one of the division of the genus Clitoria. It was discovered by their collector, Mr. Lobb, growing on rocks,—over which the graceful slender branches spread in all the wild luxuriance of nature,—on the Organ Mountains of Brazil, in the autumn of 1840; and seeds were received from him, at the Exeter Nursery, in the spring of 1841. These were sown immediately, and produced plants which flowered for the first time, though rather scantily, last autumn. The abundance, however, in which the blossom buds have been developed during the present spring, justify us in considering it most likely to prove a very free-blooming plant. The long, slender, and slightly hairy stems, are well adorned with handsome foliage, having a smooth and bright-green upper surface, and the lower side of a paler hue, closely covered with numerous very short soft hairs. The slightly depressed position of the leaves has a pretty appearance, especially when the stems are trained spirally round a basket, as they then fall over each other in a neat and loosely tiled manner. From the axils of the leaves, the flowers are produced in a clustered head, supported on a stiff and wiry peduncle five or six inches long, elevating them sufficiently above the foliage to display, without interruption, the bright and glowing scarlet blossoms. It has, hitherto, been cultivated in a house intermediate betwixt the stove and greenhouse, but it will probably be found to succeed pretty well in the ordinary temperature of the greenhouse. It thrives well in a mixture of peat, loam, and sand, and when removed from a small pot to a large one, its natural situation among rocks would point out the propriety of intermingling with this compost a few pieces of porous, broken pot, or charcoal, to keep the soil open, and facilitate drainage. And, although it will need a reasonable abundance of water during the season of growth, it will be proper to limit the supply in winter, as moisture is then liable to injure it, especially with a low temperature. Seeds have not yet been produced in this country, but it strikes root with tolerable freedom, from cuttings.—*Paxton's Magazine of Botany.*

Garden Memoranda.

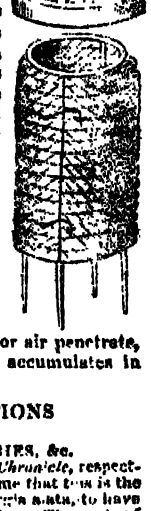
Bank Farm, near Kingston, the residence of Sir John Broughton, Bart.—We visited this charming place to see the collection of Pelargoniums, which are now at the best, and were highly gratified to find some of our old favourites keeping their places, in spite of the new varieties which have annually appeared. When we looked at them we could not but wonder why, when such beautiful flowers as Matilda, Nymph, Queen of the Fairers, Erectum, &c., can be purchased at less than 5s. each, such inferior sorts should be cultivated as are too often to be met with, even in collections where a better taste might reasonably be expected. We were never more struck with the superiority of nature over art, than in the present instance. Plants of vigorous and robust habit, grown in moderate-sized pots, had sent up fine heads of bloom, which they supported in graceful negligence, without any help, the mingled colours contrasting finely with the clear, dark-green foliage. Not a fly or the mark of one was to be seen; upon close inspection, however, a good deal of run colour might be observed — which is the fault of the extremely hot weather—but the plants being judiciously placed upon the stage this did not materially detract from the general effect. We must leave to a future day the contents of our note-book, and will conclude by remarking that the taste and liberality of the proprietor, being well seconded by the gardener, (Mr. Redding) were manifest in everything we observed. All the plants cultivated at Bank Farm are specimens of their kind; and whether they are beneath glass, or in the beds and borders, the general effect, on the closest examination, alike proved the wisdom of doing that well which is done.

Miscellaneous.

New Horticultural Expedition.—A new voyage in search of plants is on the point of being undertaken by Mr. Lowe, jun., of the Clapton Nursery, who proceeds to the Straits of Malacca, with the intention of visiting Borneo and Java, and if possible, the coast of Siam, Celebes, and New Guinea. The spirit of enterprise which leads to so arduous an undertaking cannot fail to bring an ample reward; and we have no doubt that the name of Mr. Lowe, the younger, will soon rank among the foremost of those bold spirits to whose dangers and sacrifices the unparalleled magnificence of our gardens is chiefly owing.

New English Dye.—Dr. Robert Thomson has lately published an account of the dyeing qualities of the common yellow pale Lichen (Parmelia parietina) which he finds to contain a peculiar colouring matter, called Parietin, of a bright yellow. This is heightened by a drop of nitric, muriatic, or sulphuric acid, while minute quantities of ammonia, or other alkalies, change it to a rich red inclining to purple.

A Shelter for Young Plants.—This shelter is more especially destined to be placed near houses in places where other such contrivances would produce a disagreeable effect. It is composed of two moveable semi-cylinders, constructed in the way of straw hives. To these semi-cylinders are fixed solid feet of wood, for the purpose of being driven into the ground. If it is only necessary to shelter one plant from east or north-east winds, one semi-cylinder is sufficient; but if it is a plant which you are forced to protect, is delicate, and requires a more complete protection, you inclose it between the 2 semi-cylinders fixed one to the other by means of hooks represented in the drawing. A lid of the same construction, furnished at its edge with a circle in wood-work, is fitted, when necessary, upon the cylinder, and thus perhaps offers a more effectual shelter against the severity of cold winds and excessive heat than any other. These sorts of shades are light to move, very solid, and very warm; for, letting but little of the exterior air penetrate, they preserve very well the heat which accumulates in the interior.—*Revue Horticole.*



CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

The answer given to Mr. Fryer, in the last *Chronicle*, respecting his new beautiful Tumbergias, reminds me that now is the right time to grow the varieties of Thunbergia alata, to have fine specimens of them by next April and May. The roots of T. coccinea is the best stock for them, but those of T. grandiflora will also do. Another lot grafted in September will succeed these, and a third grafting in April will keep up the succession for eight or nine months, and the trouble is not half so much as that of rearing seedlings. As the nights begin to lengthen, and the stove plants have made their growths, the house need not be kept so moist as formerly; but diminish the quantity by degrees, and do not syringe late in the afternoon.

Conservatory.—The Tacsonias sent home by Mr. Hartweg, and some of his Passion-flowers also, promise to make good Conservatory climbers. I know two sorts of new hybrid Passion flower—one of which I have flowered—which will likewise do for this house; both are in some of the nurseries, but are not yet named. Passiflora fragrans is almost a failure; although its flowers are sweet and the sweetest, they are too sparingly produced to make a fine display. All Pelargoniums, including the common Scarlets, that are to be forced before next March, should not be stopped or cut in after this time, and all the early struck cuttings of them should now, or soon, be planted out into the reserve garden for a month or two: but as soon as they begin to get too strong or succulent pot them. Another rule to be observed with forcing Pelargoniums is that the pots should be full of roots, or what we call pot-bound, before they are brought into heat; as soon as they throw up for flowering, however, they may be shifted into larger pots, or well supplied with liquid manure. Any person can apply heat and moisture to flowers in winter; but a good deal of judgment and forethought is required to *prepare* the plants: now is the time. *D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Outdoor Department.

Flower gardens are at last becoming a little cheerful, and the plants are rapidly making up for the time lost in the spring. Look over the beds of Scarlet Pelargoniums, and stop the leading branches wherever a flower-bud is perceptible. This will tend to keep the plants dwarf, and the flower-buds will be much increased in size by the concentration of sap. Beds of Petunias and tall-growing Verbenas are frequently much disfigured by being broken about in stormy weather. To prevent this, provide some strong pieces of birch branches and place them in the bed, so as after they are covered, they will support the branches, and prevent their being blown about. Attend assiduously to the removal of all decaying flowers, especially on profuse flowering Verbenas, as Barclayana, Queen, &c., which will do much to prolong their season of bloom; and roll, mow, and sweep the Grass and walks at least once a week.

Rose-tree Garden.—Prepare a temporary pit here, either by building turf walls, or excavating the earth a few inches deep, and forming an embankment round the sides for the propagation of Scarlet and other Pelargoniums; indeed, for all free-striking plants. This pit may be covered with Whitened or oiled canvas, and, if there a three or four inches of light sandy soil for the cuttings to strike root into it, will answer admirably.

Heaths, Pentstemons, and most plants which make branches about the surface of the soil, may be readily increased by placing some light sandy soil about the young shoots, into which they will strike root, and may then be removed into nursery beds.

Pits and Frames.—These structures are now partly stocked with Nierembergias, &c., which are coming forward for another season. Prepare a slight hotbed for a frame, and begin to increase such plants as you require a large stock of next season. Mangles's and other variegated Pelargoniums are generally tardy strikers if left till late in the season; therefore begin in time.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—Still attend to the cleanliness of these plants, keeping them free from decayed leaves, weeds, and "the green fly." *Polyanthuses.*—Continue to part in favourable weather; also plant out seedlings. *Tulips.*—Of these little can be said just now. The bed, however, must not be neglected; stir it over, and ridge it up, so that the soil may be sweetened by the action of sun and air. The bulbs in the boxes ought to be thoroughly dry before the loose skins or roots are removed. *Ranunculuses.*—Great attention must be directed towards the roots as they arrive at maturity, which is indicated by the leaves becoming yellow, they should be carefully taken up, as it usually happens that some are ready to remove before others; and all old the roots which have become dormant remain in the ground too long, they are apt to "start," or commence throwing out fresh fibres, which is attended with ruinous consequences. *Carnations.*—The blooming season has now fairly begun, and these favourite flowers will continue to attract admiration during the present and succeeding month. In the south the Exhibitions have already commenced, and will be held, according to the locality, in different parts of England and Scotland, perhaps till the middle of September. As seedlings

bloom, pull up all single or semi-double flowers, as well as all "selfs," unless the variety has some striking characteristic, when it may be worth while to propagate it as a border flower. Commence laying the shoots, taking those varieties first which are in the greatest state of forwardness. Still tie up blds as they advance; and do not let the plants in pots lack moisture —*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Some of the Montserrats and Black Jamaicas for a winter supply should now be showing. Give these every encouragement by supplying them with liquid manure, and keeping a brisk bottom-heat, with air as the weather permits. Sprinkle the plants frequently, and keep a moist atmosphere during the time that air is admitted. If they are tardy in showing, give but little water till the fruit begins to appear. Be attentive to watering and syringing the young stock, and to the state of the linings of pits heated by dung. Much addition to them will probably not be required at this season, but it is well to be always prepared, should dull or cold weather occur.

Vineries.—In the late vineries, the Grapes which are intended to be kept till Christmas, or after (the best sorts for which are the St. Peter's, Muscat, and Tokay), should be well thinned, to prevent them from moulding in damp weather; and the shoulders of the bunches should be well tied out, to expose the berries as much as possible to the sun, that they may be firm in the skin. Repeat the washing the walls, and flues or pipes, with a mixture of quicklime and sulphur, if the red spider is troublesome.

Peach houses.—Look over the ripening fruit daily, and gather it before it loses its flavour, which it will sometimes do before it drops into the nets placed to receive it.

Fig-house.—Syringe daily where the fruit is not ripening; supply water liberally to the roots, and admit air freely.

Melons.—Maintain a brisk bottom-heat by renewing the linings occasionally. In the pits heated by tanks, if constructed on a good principle, there is the advantage of being always prepared to meet any sudden rise or fall in the external temperature.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Peach-trees.—Proceed with thinning shoots where they are too thick, taking off the laterals, and exposing all the wood you mean to retain for next season, to the benefit of sun and air. *Plums and Cherries.*—On old trees lay in a succession of young wood in all parts of the tree, which being kept close to the wall, will in a few years furnish finer fruit, and produce more plentifully, than can be obtained from old unsightly spurs. *Currants and Gooseberries.*—Shorten the side shoots if not already done. On plants previously shortened, the points of the leading shoots may now be taken off with advantage. *Strawberries.*—Keep the late sorts, such as the "Elton," well mulched with Grass or Straw, to keep the fruit clean. Beds that I covered early with Grass now want covering again. Look after the runners of Keen's Seedling and other early sorts. Where time and labour are not scarce commodities, it is a good plan to lay each runner in a pot, and to cut it from the parent plant when the pot is full of roots; or rich compost may be strewed between the rows to encourage the rooting of the runners. The method I generally adopt is to choose a situation with a good aspect; dig it finely; supply it with a good dressing of old Mushroom dung, or other manure; cut off the runners as soon as they have made two or three leaves, and are beginning to protrude roots; prick them out on the prepared ground three or four inches apart; shade until they begin to grow, and lift with balls either for forcing or making fresh plantations as wanted. The advantage of this system is, that you can clear away all the runners, and the superabundant plants, almost as soon as a plantation has finished bearing; thus affording free exposure to those buds which you expect to produce fruit next season. *Runline* as before.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—The directions previously given regarding summer management, are still applicable for the present time.

Coppice.—The same directions as stated above, are likewise applicable here; but the advantages in regard to profit are greater.

Young Plantations.—It is a great evil to young plantations to allow the hedges round them to grow to a great height before they are cut, by which the side branches of the outside trees are killed, or much injured, and the beauty of the trees spoiled. When this is the case after the hedges are cut, the bare stems are all at once exposed to the winds; therefore, if you do not wish to see through a belt or plantation, and when handsome and useful trees are desired, the hedges should be cut at an early period—at all events frequently cut the inside spray off the hedge next the trees; this will prevent much injury to the lower branches, until the trees are of sufficient height to admit of the hedge being properly cut. On the sides most exposed to boisterous winds, the hedge might be kept higher, and longer in that state, than on the sheltered sides, provided the precaution is taken to trim the insides of them.

Nursery-work.—Attend to previous directions, except that watering and shading are not now wanted, as rain more or less has fallen in most parts of the country, in sufficient quantity for a time to suspend those operations.—*W. B.*

VII.—COTTAGERS' CALENDAR.

Pelargoniums which are now going out of flower may be removed to a situation in the open air, where they will be freely exposed to the sun. In the course of two or three weeks the wood will thus get thoroughly ripened, which will be known by its assuming a brown hue, and the plants may then be cut down and placed in a less exposed situation until they again start into growth. In what state are the summer things sown in the clumps or borders? Spring-sown annuals in many places have come up badly, and in some instances have never appeared at all. The warm and seasonable showers, however, which have fallen lately, have caused the seeds which have hitherto lain dormant to germinate and come up plentifully; but where this is not the case, small patches of such hardy things as Collinsias, Poppies, Convolvulus minor, &c. sown now, will, I have no doubt, flower soon and well, and, intermixing with the herbaceous plants, will render the borders gay in autumn. A correspondent writes—"I have just sown some French Beans, and also some Early Frame Peas, as I imagine this sort will do better than any of the late varieties, for it will come into use sooner, and will consequently be less liable to be attacked by mildew." If the cottager has a piece of spare ground, he had better sow a small quantity of this or some other kind for autumn use. Those who have Broccoli ready for planting had better get them put in soon, as the ground is in good order for their reception. Make room for them by removing crops of Peas or Beans that have ceased to be useful. If sufficient space, however, cannot be got in this way, plant between the rows of Peas, but previous to planting let the ground be well forked up. Plant Celery, and get in a main sowing of Turnips; likewise plant out in drills upon rich ground as many Leeks as may be wanted. Let the drills be about 12 inches apart, and the plants 6 inches in the drill. Brussels Sprouts, Savoys, and German Greens ought also to be planted out about this time. Cucumbers planted out of doors under hand-glasses will now be growing vigorously, and will require strict attention.—*J. McH.*

State of the Weather near London for the week ending July 11, 1844, as observed at the Horticultural Garden, Chiswick.

July	Mean's Aver.	Barometer. Max	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain
Wed. 5	15	29.596	29.574	70	50	60.0	N.E.	.30
Thu. 6	20	29.574	29.490	65	54	59.5	N.	.22
Fri. 7	6	29.595	29.529	61	53	57.5	E.	.18
Sat. 8	23	29.681	29.556	72	55	67.5	W.	
Sun. 9	22	29.604	29.530	70	48	61.5	N.	
Mon. 10	24	29.607	29.590	70	60	69 0	S.W.	
Tues. 11	26	29.580	29.504	78	57	67 0	W.	
Average		29.597	29.539	74.9	54.3	63 9		.70

July 5 *Very fine; cloudy; sometimes rain at night.*
" 6 *Overcast and fine; rain.*
" 7 *Hazy and mild; evening wet and very calm.*
" 8 *Hazy; very fine throughout.*
" 9 Light clouds and very fine; clear at night.
" 10 Light clouds, with heavy dew; very fine; cloudy.
" 11 *Very fine throughout.*
Mean temperature of the week 6.3 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending July 20, 1844.

July	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 14	74.6	51.1	62.8	7	0.60 in.	1	1	1	—	3	3	5	1
Mon. 15	76 2	50.9	63.6	10	1.42	—	2	1	—	3	2	3	1
Tues. 16	76 0	50.8	63.3	4	0.12	1	1	2	—	3	2	6	—
Wed. 17	77.0	55 0	66 3	4	0.46	—	1	1	2	4	3	5	1
Thur. 18	78.6	53.0	65.8	9	1.62	—	—	—	—	5	2	2	2
Fri. 19	71.6	51 7	61.7	10	0.60	—	—	—	1	6	3	3	—
Sat. 20	70 9	51.7	61.0	12	0.47	1	—	—	—	1	3	6	—

The highest temperature during the above period occurred on the 17th, 1834—therm. 91°, and the lowest on the 18th, 1839—therm. 41°.

Notices to Correspondents.

ANTS.—*A Subscriber.*—We know of no effectual remedy for these troublesome little pests. Some recommend arsenic and sugar; others, a solution of corrosive sublimate and treacle; while a third party says lime-water or powdered quicklime expels, but does not kill them. Boiling water has also been tried, and this certainly will destroy them where it can be applied; but that is not often. Perhaps the remedy of most general application is flowers of sulphur. This, says a correspondent, effectually expels them, but does not appear to kill them. After its application, however, he says that they invariably leave the spot, and are not again to be found in the neighbourhood of their late locality. He adds that it affects equally the black and the red Ants.‡

BEES.—*A Lady.*—There is no necessity for having the discoloured combs cut from the centre box; the operation would inflict a serious injury on the brood; and it is not from that part of the hive that pure honeycombs are to be expected. You need not be afraid that old combs will produce weak or small bees. I have a prosperous hive eight years old. However, when the bees happen to die, the bad combs had better be cut out. As the slide was left out, most likely the dead bees found in the drawer died during the winter or spring, which is a common occurrence. But, supposing that was not the case, and that the hive had not swarmed, the old bees would die in the beginning of summer. This applies to the straw hive also, even although it was a first swarm this season; for it would contain old bees from the stock. In some cases intruders cause the slaughter. *J. Wighton.*

BUDDING.—*A Constant Reader.*—Plums are budded in the autumn when the bark runs, and exactly like other plants.

EMIGRATION.—*A Reader.*—The West India Islands are in want of *good* gardeners; but it is doubtful whether good wages can be had. A mere routine gardener would, however, be useless there. If a man would succeed he must thoroughly understand the *principles* of his business. A man who had been a gardener in the West Indies for two or three years would be of more value when he returned than when he went, *provided he contracted no bad habits.*

GRAFTING.—*What do Ants live on?*—It is absurd to suppose that these creatures have hurt your grafts. The work is well done, and the loss of so many of your scions has arisen from the excessively dry weather. Nobody is to blame.

GRAPES.—*J. W.*—Your very old Vine is probably getting worn out, and its roots may be too dry. It is therefore more likely to suffer from a hot sun than are the more vigorous kinds growing beside it; and such has evidently taken effect on the young bunch of fruit received.‡

INSECTS.—*Oakly* says, "Having sown some Swede seed in a flower-pot with some guano, and finding that it grew very slowly, I examined the pot, and found many seeds on the surface in the state which you will see in No. 1, and on opening one, the small fly in No. 2 came out." No. 1 is not Swede seed, but Millet seed; No. 2 is the Thrips, which has no relation to either. Is our correspondent quizzing us?—*B. Chilo.*—We are obliged for the satisfactory packet containing the wasp, flies, &c. *R.* All the questions that have reached us have been answered; but we cannot undertake in all cases to reply on the instant.

NAMES OF PLANTS.—*J. M.*—We do not recognise the leaves you have sent. Your Ferns are 1, Aspidium Filix mas (?), in a young state; 2, Polypodium Dryopteris; 3, Aspidium lobatum; 4, Polypodium Phegopteris.§—*Peter Mackenzie.*—Your Rubus seems a remarkable variety of the common Raspberry.—*Ann.*—Genista tinctoria, var. hirsuta. ¶.—*Inscius.*—Canary Grass.—*J. K. S.*—1, Carex paludosa; 2, Carex remota; no number, Mitella nuda.§—*H. E. B.*—Grewia orientalis.—*P.*—Epidendrum odoratissimum. We have nothing from you unanswered.—*Censorius.*—4. Orobus niger; 1, Cistus salvifolius. Nobody can tell the names of the other fragments. You should remember that plants cannot often be named unless good specimens are supplied.—*F. C. B.*—We really must once more decline naming foreign seeds. You cannot be aware of the enormous difficulty of doing so. Two days would not be enough for the task you propose.—*S. W. W.*—Datura Stramonium.

PELARGONIUMS.—*V. S.*—We can hardly explain your case. We should not refer it to the action of bees or insects, it is most likely to be connected with dryness of the air. We presume you have not described all the circumstances of your case, although no doubt you have intended to do so.

POTATOES.—*S. W.*—The sooner the Potato-blossoms are removed, the better. It is bad physiology to say that if the berries are prevented forming their poisonous matter, that matter will be transferred to the tubers. The materials out of which the fruit forms its poison will be transferred to the tuber, but in another chemical form—namely, that of starch. The Fig-tree bears sugary fruit; if you pull off the Figs, you will not, on that account, get sugar in the branches. The Cherry is red and pulpy; if you remove Cherries, you will not make the branches red and pulpy—and so on.

RHODODENDRONS.—*An Amateur.*—The following are very good free bloomers, and are tolerably hardy:—Russellianum, scarlet; Altaclerense, scarlet; Arbe reum roseum, bright rose; Victoria, deep red; Venustum, pink; Angustum, pale flesh, spotted; Pulcherrimum, scarlet; Grandiflorum (Cunningham's), pale flesh; Macranthum, rose; and Knightii, scarlet. Rhododendrons may be grafted with success in August or September. After the scions are put on, the plants should have a little bottom-heat to set the sap in motion.‡

SOIL.—*W. H. B.*—Provided your soil is stiff enough not to burn, light enough to admit air into its crevices, and thoroughly drained, it does not much matter what its composition is. Equal parts of peat or leaf-mould, loam, and sand, make a good mixture. If a little calcareous matter, such as the plaster and mortar rubbish of old buildings, be added, it will be an improvement.

STRAWBERRIES.—*I. G. H.*—In preparing ground for these, trench it well two spits deep, and manure on the second spit. The beds may be mulched in autumn. Spread the manure on the surface. The autumn rains will wash the substance of it down to the roots, and it will form a clean surface for the plants.‡

TULIP TREES.—*X Y Z.*—These are propagated by seeds imported from North America. If your tree is in health, why manure it? If you will not let well alone, employ good rotten farm-yard dung, dug into the ground as far from the bole as the ends of the branches.

VARIEGATED BEECHES.—*J. H. Haycroft.*—This is very distinct from the old Variegated Beech, and desirable if constant¶, for the gratification of those who admire variegated plants, which we do not in general.

WHITNEY'S COMPOSITION.—*J. G. H.*—Good calico is the best for this material. An Arnott stove will keep the frost out of a small house; but you must take care not to work it without a pan of water on the top.

MISCELLANEOUS.—*Icenus.*—Certainly, Berberis fascicularis is no twiner; nor can we find any statement that it is so in the page to which you refer.—*F. X. O.*—Your Erica tetralix aurea is uncommonly ugly. Do you mean to say that the roots of your Teasel plants have contained three pints of water each.—One shilling each will be given for No. 7, 1842, and No. 2, 1843.—*A. M.*—When your seedling Strawberry reached us it was quite rotten, and consequently in an unfit state for forming any opinion in regard to its merits.‡—*B. Chilo.*—We shall give our opinion on the merits of your Picotees if you send them.*—*Querist.*—Gentianella may be increased by dividing the plants early in autumn. The cutting of Asparagus should never be continued beyond midsummer; apply salt to the beds when the summer shoots are growing (see p. 444 of last week's Paper). Where seed is not wanted, the seed-vessels should always be taken off Rhododendrons as soon as the blossoms drop, for reasons previously given. Daphne Cneorum is propagated by layers. Annuals do not flower better for being sown in autumn, but they flower earlier next spring. Crops are benefited by having the soil stirred up between the rows in dry weather.‡—*Conifera.*—Abies Smithiana and Pinus Cephalonica are both perfectly hardy‡—*Delta.*—Trap the blackbirds with rat-traps, baited with Cherries. The mode of preserving Gooseberries, Currants, &c., mentioned at p. 821, 1842, is as follows:—Take wide-mouthed glass, or, if possible, stone bottles; fill them by shaking, or even, if you like, by pressing them or mashing them with a round stick like a ruler. Then cork them tight with the best corks (for good corking is more than half the battle), using good deep chives, as they are called; wire down the cork strongly, and insert a small slip of wood between the wire and cork. Place the bottles upright in a boiler, filled with cold water, up to their necks; heat the water until it boils; keep it boiling ten minutes, and then withdraw the fire, or move the boiler off it. When the water is cool take out the bottles, and they will keep for years. They may be rosined; but with good corks it is needless, and is afterwards troublesome.—*A. E.*—We must beg to refer you to the numerous statements made on the culture of the Double Yellow Rose in previous volumes, particularly in a Leading Article at p. 811, in the vol. for 1841.‡—*Anne.*—Your specimen of a Carex piercing the root of Gymnadenia conopsea is curious. We have such a case with Couchgrass and Potato.

SEEDLING FLOWERS.

CALCEOLARIAS.—*Thos A.*—Your seedlings are small, and inferior in the marking to the seedlings of the present day. Gipsey is the most uncommon.*

FUCHSIAS.—*J. B., Durham.*—Your seedling is a finely-formed flower; tube and sepals of the most delicate pink, approaching to white; corolla rose, with a slight tinge of purple: a clear and brilliant flower, the best of its colour we have yet seen.*—*H. M.*—None of your seedlings are improvements upon varieties already in cultivation, and they are all deficient in the colour of the corolla.*

GLADIOLI.—*E. H. Krelage, Haarlem.*—Your seedlings appear to be crosses between G. cardinalis and G. blandus, the former variety predominating most in the offspring. They are very beautiful, like all such crosses. The colours range from very pale red to a deep rich vermilion. Many, however, bear too strong a resemblance to each other, the difference of colour being very trifling; and in two or three instances the form of the flower is not good, the petals being very narrow. Eclatante frappante is an example of want of form. Seedling No. 41 is a rich, splendid, and distinct colour; and Lord John Russell, Prince Albert, and Queen Victoria are very good varieties of a pale colour. We should say that seedling No. 41 is the cream of the batch. All are wonderfully well grown. A selection of the most distinct varieties would be acceptable to any garden.

PANSIES.—*T. C.*—No. 1 is a flower of good form and substance, but the faint and uncertain colour in the top petals is objectionable. 2, white pure, eye clear and well defined, flower flat, edges are a little too uneven. 3 is an inferior flower, and wants the blotch on the side petals to complete the eye. 4—the shield, or centre, of this flower wants defining, and the lip is too small, in proportion to the other petals. 5 is your best flower—round, flat, and of good substance; the side petals meet closely above the eye, the proportion of the petals is very fine, and it is more novel than the others.*

PELARGONIUMS.—*I. D. J., Brussels.*—Your seedlings are generally deficient in one property, regarded in the present day as essential in constituting a fine flower—viz., form. In substance they are very good, and in colour some of the varieties are fine, such as 480, 481, and 460; the colours of these are high and fine; 415 is also clear and good. 285 is an improvement in the form; the under petals are short and broad, but the colour is poor and uneven. Your flowers generally are small, and wanting in form, compared to the varieties raised of late years in this country.*—*P. F.*—There is nothing remarkable in your seedlings; they are common in colour, with the top petals rather pointed, and the bottom ones too narrow. 12 and 10 are the two best; the latter is a repetition of Matilda, with a fine spot running to the base of the petal.*—*R. W.*—Rembrandt is a bright and very pretty seedling; from its colour and firmness of petal well adapted for bouquets; it is deficient in form, compared to recent varieties.*—*W. R., near Devizes.*—Both your seedlings are pretty flowers; No. 7 is the better form; 10 has fine top petals, but the bottom ones are rather too long; both are good in colour.*—*J. W.*—Your seedlings from P. tricolor are pretty in colour, but the flowers want size to render them desirable.*

PETUNIAS.—*W. R., near Devizes.*—Of your seedlings, No. 2 is the best; the colour is rich and fine, and the flower well formed. No. 1, though showy, is not uncommon in colour; and the divisions in the corolla are too deeply indented. Compare the form of this with No. 2. 3 and 5 are not rare, though rich in colour; and 4 is common. P. punctata is a variegated variety.*

PICOTEES.—*P. W.*—Your two seedlings can only be regarded as border varieties.*

PINKS.—*R. B. B. B.*—The serrated edge is the great fault in your Pink; in other properties it is very good; the pod is well formed, white pure, colour rather novel, and the lacing perfect.*

POTENTILLAS.—*J. M.*—If the supposed origin of your flower from P. leucochroa is true, then it would seem to be a cross between it and P. atrosanguinea. Is it any improvement on the latter?

ROSES.—*W. W. & S.*—Your seedling Gallica, named *Margaret Mary*, is a handsome variety—fine in form, being compact and very double, with the outside petals finely cupped; in colour it is of a purple rose, of a peculiar and beautiful tinge; it is fragrant, and at its best when fully expanded; this is owing to the bud not being handsome in form, and one or two of the petals having a bruised appearance, which may probably arise from the season, or accident. The foliage is of a deep, rich green, short, and very handsome.*

***As usual, many communications have been received too late.

SEED-WHEAT.—Any one desirous of purchasing Seed for next year is invited to inspect the two varieties of Wheat, SHIRREFF'S HOPETOUN and MORTON'S RED-STRAW WHITE, 126 acres of which are now growing on WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE.

The present is the only season of the year when the value of any variety of Wheat as Seed can be ascertained by inspection; for, if the examination of a mere sample of the grain, which can be seen at any time, be nearly uninstructive as to its quality in the eye of the baker (see *Ag. Gazette*, No. 8), it is entirely so as to the productiveness or habit of growth of the variety to which it belongs. These points, which are of the highest importance in the eye of the Farmer, can be ascertained only by an examination of the growing plant when in full ear.

JOHN MORTON, Whitfield, Thornbury.

The Agricultural Gazette.

SATURDAY, JULY 13, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday,	July 17	Agricultural Society of England.
Thursday,	July 18	Agricultural Imp. Soc. of Ireland.
Tuesday,	July 23	Meeting, Implement, and Cattle Shows of the Agricultural Society of England, at Southampton.
Wednesday,	July 24	
Thursday,	July 25	
Friday,	July 26	
Thursday,	July 25	Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

July 23	Richmondshire.	July 27	Cardiff.
	Grove Ferry.		Gloucester.
July 26	Debenham.		
	Stoke Ferry.		
	Haleeworth.		

Doubtless most of our readers have heard of the Agricultural Museum at Stirling, established and conducted by Messrs. Drummond and Sons. That institution has not only been of immense benefit to the agriculture of the district in which it is placed, but it has, through its numerous visitors, greatly furthered the progress of good farming generally. Now, all the advantages which this establishment has conferred on Stirlingshire, may equally be secured for any district in the kingdom by any one who will adopt the simple measures necessary for the purpose. And should any one feel desirous of making such a patriotic attempt, having made inquiry as to the steps taken by the Messrs. Drummond in the early history of their Museum, we publish the result for his information.

But first let us direct attention to the following statement by S. D. Stirling, Esq., of Glenbervie, which he, as a Stirlingshire landlord, gives of the advantage of this Institution.

"In reference to the following statistics of the Stirling Agricultural Museum, I shall notice a few of the advantages which a wide district has derived from this establishment; and which are equally within the reach of any district where the landlords choose to give a helping hand to those whose interest in the land is as great, though not as permanent, as their own. A detail of these will be the easiest mode of pointing out what are the requisites for the successful establishment of such an institution. The Messrs. Drummond possess a practical knowledge of all matters connected with agriculture and horticulture—this is one requisite; and they are ever ready, either themselves, or by the aid of their numerous friends, to test the value of any alleged improvement either in seeds, roots, or agricultural implements. Thus quackery cannot go long undetected, and the farmer, by seeing a great variety of the articles he may require, and having access to the opinion of those who, being unbiassed, have properly tested their respective merits, is able to judge what will best suit his wants or his means. Another advantage of this institution lies in the emulation which is excited amongst the tradesmen who supply the different implements to the Messrs. Drummond; for if the articles furnished by one are in any respect inferior to those of his neighbours, either in material, form, or workmanship, the want of demand soon puts all to rights. Messrs. Drummond also spare neither trouble nor expense in procuring such implements as are most approved from every district, however distant: they have thus obtained for their Museum such a name that orders are sent from distances to which the cost of transit alone would appear to be an insurmountable obstacle. To this Museum all are admitted, and the uses and merits of each article exhibited are explained; nor does this attention always go unrewarded, for much useful information is often obtained from casual visitors, which is again circulated; and an extensive connection is thus formed, through which all questions respecting agricultural matters are readily answered.

"There is also a large collection of Grains and Grasses in the straw, from which many a useful lesson is to be learned; and being labelled in a manner to be understood by the agricultural classes generally, to those who may have been charmed and misled by fine names, it becomes evident that Anthoxanthum odoratum and Cynosurus cristatus are neither more nor less than sweet-scented Vernal and Dog's-tail Grass, generally too prevalent in soil which they affect, and too unproductive to deserve to be placed where they can be kept out. It is also explained which Grasses are best suited for particular soils and particular purposes; which varieties of Grain are best adapted for situations where the crop may be expected to lodge, and, where this is inevitable, which will suffer least from being laid. Specimens of root-crops are also annually sent to this Museum by the agriculturists, and their different merits are freely commented on; and whereas, at first, size was principally aimed at by exhibitors, good shape to turn the rain, and specific gravity, as indicating solidity, are now considered of more importance.

"It would be tedious to enumerate all, or nearly all that is to be found in this Museum, which has been collected by the unwearied attention of the Messrs. Drummond; suffice it to say, that it is calculated to exert as useful an influence as any establishment of the kind in Europe, and that to it the district and Scotland is much indebted for its advanced state of agricultural improvement."

The following is the answer of the Messrs. Drummond to an inquiry into the statistics of their institution:—

"It was chiefly from witnessing the advantages resulting from collections of vegetable productions at Horticultural Shows, and from observing the interest excited by fine specimens of Agricultural produce, which were occasionally sent to their premises for exhibition, that W. Drummond and Sons conceived the idea of affording, as far as possible, an opportunity for such exhibitions on an enlarged and regular plan.

"The following is a copy of their first circular:—

"'*To Agriculturists.*—It is proposed to exhibit at the premises of W. Drummond and Sons, Stirling, on the 11th of November next, and the three succeeding weeks, specimens of all the varieties of Turnip, Carrot, Potato, and other roots and seeds connected with the agriculture of this district. Such specimens will be received from any quarter, betwixt this and the above date; and as it is of importance to have these productions properly labelled, it is very desirable that they should be accompanied with a note stating the name of the variety, by whom grown, the weight or measure of each, the produce per acre, description of soil, and the kind and quantity of manure applied, &c. Those interested are respectfully invited to an inspection. — *Stirling, September* 27, 1831.'

"The proposal was promptly and well responded to, for at this first essay there were above 80 lots of roots, and 160 specimens of grain, also a few implements shown. The contributors were above 200, the visitors several thousands, of all ranks.

"A Report of the Exhibition was published in December, 1831, wherein it is remarked, that in matters of substantive fact there are no means of acquiring knowledge so convincing and abiding as those afforded by the eyes and the hands, and that men cannot form just ideas of the relative value of any subject without comparison, and the more extensive in number and condensed in position the subjects of that comparison are, the more evident and correct will their relative characters appear. In agriculture, such opportunities of comparison had hitherto seldom occurred, but it was hoped that this Exhibition would form the germ of a system destined to grow and flourish. Early in the succeeding year (1832) circulars containing a fuller prospectus and details were issued. The specimens shown were multiplied and varied, with a more specific and correct labelling. The interest excited and number of visitors increased. This second Exhibition continued from 16th November till 16th March following. A report, with communications, was thereafter published. In the Preface it is observed that, "To speak of the merits of this mode of circulating agricultural knowledge is rendered unnecessary by its already felt advantages, and by the cordial approval of competent judges. The machinery of such Exhibitions being of the most simple kind, may easily be adopted by any agricultural association." The third year (1833) the Exhibition was commenced earlier, on account of the Highland and Agricultural Society of Scotland holding its annual meeting in Stirling that year. The collections of specimens and implements, &c. far surpassed the preceding ones, and were inspected with approval by the thousands of agriculturists who attended the great meeting, and the Directors of the Society soon afterwards signified their approbation by the award of their Gold Medal to 'Messrs. Drummond, in approbation of their having originated an Exhibition of seeds, plants, and other specimens useful in the operations of practical agriculture.'

"A third Report was published, and the Exhibition rendered permanent under the designation of an Agricultural Museum or Repository. With this Report were given also several excellent communications, particularly Remarks on thorough Drainage and deep Ploughing, by Mr. Smith, of Deanston; by which and by his valuable counsel and assistance in the whole undertaking, that gentleman has eminently contributed to its success. It happened most opportunely also, that spirited and well-conducted improvements were in progress at Polmaise, Glenbervie, Keir, Blair-Drummond, and other estates in the neighbourhood, the proprietors of which have ever given their most cordial and efficient support.

"The Agricultural Museum, in connexion with the Warehouse, has continued to prosper the connexion being of mutual advantage; for the Warehouse contains full-sized implements, &c., daily coming in, and exhibits the successive improvements of various makers; it prevents the stagnation which must more or less take place in the interest excited by collections of mere specimens and models; the demand, too, which here takes place for particular seeds or implements affords a fair and therefore a useful test of their value.

"In 1840, for the better conducting of the establishment, a large building was designed and erected, consisting of four halls or floors, each 160 feet in length, and 20 to 25 feet in breadth; the two uppermost being chiefly allotted to the Museum, the two undermost to the Warehouse; and in December, 1843, an Agricultural Museum and Warehouse, in connexion with their Stirling one, was opened by Messrs. Drummond and Sons, in Dublin, which has met with the greatest encouragement.

"The number of visitors has nearly doubled within these few years, and may now average 1000 per month, including many strangers, and often foreigners, who visit Stirling in their route, and gentlemen connected with agriculture, who frequently come from a distance on purpose to inspect the collection and the farming improvements of the district. The frequent and careful inspection, and the purchase and trial of new and improved seeds and implements, which might not otherwise have come under observation by those active as improvers, afford ample proof of the value of the Agricultural Museum in helping them forward. And very seldom indeed have any, although not naturally improvers, been found so apathetic, on viewing the whole collection, as not to feel and express an increasing interest in its objects.

"In regard to the matter of finance, or the support of the Museum as distinct from the Warehouse: after the first three years, the outlay having become considerable, a small fund, the proceeds of admission tickets and subscriptions of agricultural friends, contributed partly to the expenses; but, business transactions increasing its maintenance, this had for a number of years been thrown wholly on the profits of the Warehouse, which are derived not from higher prices, however, on the goods—as they, equally with those of other salesmen, are exposed to competition—but by extent of business conducted with economy and attention."

The concluding paragraphs of this statement are worthy of attention. It appears that this Museum has not only been a source of profit to the neighbourhood in which it is placed, but also, through its visitors, who naturally become customers, to the spirited proprietors of it. This is a very important point, and one which justifies the anticipation that much of our future progress in agricultural improvement may be owing to the operation of Museums of this description, hereafter to be established by seedsmen, agricultural implement makers, and others, over the extent of the country.

No *additions*, whether through the aid of scientific men or otherwise, to our present knowledge as farmers, valuable though it might be, can exceed in national importance the benefits which would follow the universal diffusion of what is already known, though it be by few; and this can only be obtained through the influence of example farms and *Agricultural Museums*.

After a season of unexampled drought the country is at length blessed with refreshing rains. The effects of the weather we have experienced are reported as follows:—Wheat has not suffered much injury except on light and shallow soils. A gentleman who has lately travelled through the counties of Essex, Herts, Bedford, Northampton, and Lincoln, and through Buckinghamshire, Oxfordshire, Berks, and Gloucestershire, informs us that if it be harvested well, he anticipates a full average crop. In Scotland again, where the weather does not appear to have been so dry, still less injury, if any, has been done.

With regard to all spring Corn, however, a very different report is given. Beans and Peas will be a very poor crop; Oats and Barley will not only be comparatively unproductive per acre, but the breadth of land sown, especially of the latter, is much less than usual—farmers having in many cases delayed sowing till too late, in the hope of wet weather.

The Hay crop is one of the lightest ever known; and less than the ordinary extent of Grass has been mown—much that was intended for Hay having been required for the cattle, owing to the failure of the pastures.

The Potato crop is in many districts a failure; many cases are reported in which the seed has been sown twice, but has never sprouted. Turnips, though sown late, or rather through brairding late—for the seed may have lain dry in the ground for weeks—may yet yield a plentiful crop if the weather be favourable. Mangold Wurzel, in all cases which we have heard of, is a failure: the dry weather set in just at its seed-time.

The most favourable account that can be given of the present condition of the farmer's prospects, is that if the weather be suitable, the Wheat crop will probably be early and plentiful, and that we may yet have good crops of Turnips, and of aftermath Grass.

The accounts of the appearance of the crops in Scotland are generally more favourable than those from most districts in England.

EFFECTS OF CHARCOAL AND SALT ON THE SWEDISH TURNIP.

HEREWITH I send you three plants of Turnips, (Skirving's), sowed on the same plot of ground, at the same hour of the same day. In the case of the largest specimen, the seed was well mixed with about twelve times its bulk of charcoal-dust. In that of the next size, the seed was mixed with five times its weight of common salt, and nine bulks of charcoal; and in the case of the plant just come up, the seed was put in quite alone. In all three cases the seed was put in drills in soil which last year bore Mangold Wurzel in seed, and the year before Wheat, and no manure has been applied since. My object in using the charcoal and salt was from the consideration that both substances are powerful absorbents and retainers of moisture, as well as direct food for plants.

Nos. 1 and 2, in spite of the parched state of the ground, (the 3rd June) came up strong in five days, and continued growing; No. 1, however, soon and rapidly taking the lead. At the end of a fortnight all three rows were once watered, which however failed to bring up the seed sown without anything. When our first rain came heavily, ten days ago, No. 1 grew almost visibly, and three or four days after, No. 3 just began to show. I may also state that I sowed Belgian Carrots with charcoal only, the first week in May, and though the soil then was quite dusty, and so continued until ten days ago, the plant came up well in three weeks, which is at least ten days sooner than Carrot seed usually comes up, even under favourable circumstances as to rain. I sowed one more row of the Turnip, with a double quantity of salt, which seems to have destroyed the seed, as none has yet appeared. If you think these experiments worth noticing in your excellent Journal, you are quite welcome to do so, and I shall feel happy if so simple a substance should prove of use in forcing a plant of Turnips, or other roots.—ESSEX, *Cassiobury, Watford.*

[We are exceedingly obliged to the Earl of Essex for this interesting communication. Of the specimens sent, No. 1 appears to be a plant which has had about six weeks' vigorous growth; No. 3 has not yet acquired its rough leaf; and No. 2 is of a medium size. This extraordinary difference in plants sown at the same time, on the same plot of ground, appears to be wholly owing to the simple means adopted, as described above, which, from his Lordship's experience, certainly appear to be well worthy of extensive trial.]

SKETCHES OF EAST LOTHIAN HUSBANDRY.

3. HOEING IMPLEMENTS.—These include the several instruments employed in tilling and pulverising the intervals of plants cultivated in rows. It has been already stated that some of the cereal Grasses, particularly Oats, were, under peculiar circumstances, sown in rows. The implement most commonly employed in tilling the intervals is the hand-hoe; but where the system is practised to any considerable extent, a machine drawn by one horse, consisting of a series of flat triangular shares, nearly as wide as the intervals in which they are to move, and attached to a frame supported upon wheels, is sometimes employed. This implement in its present imperfect condition is not found easily manageable or very efficient, and is therefore but very seldom used.

A hoeing implement of general use is the small paring-plough already referred to. Its purpose, as its name implies, is to pare away a slice of earth from the sides of Bean, Potato, or Turnip drills, before horse-hoeing or grubbing the intervals. The other implements of this class are several kinds of drill-grubbers, horse-hoes, scufflers, &c., designed to follow the paring-plough, and further to reduce the soil pared from the drills, and to drag to the surface weeds of every description. Drill-harrows with attached hoes of various shapes, were until lately much used for these purposes, but are now nearly altogether dispensed with, at least on the heavy clay farms; the drill-grubber, an implement with cutters only, being found to perform more effectually the double purpose of dragging weeds to the surface, and of pulverising and tilling the intervals between the rows of plants. The drill-grubber, it may also be remarked, frequently supersedes the use of the paring-plough. The operations of the drill-grubber are chiefly confined to Bean and Potato culture; a lighter implement with teeth similar to those of the common harrow, rather appropriately termed a scraper, being generally used for Turnips.

4. BARN MACHINES.—East Lothian has the undisputed honour of being the county in which the *Threshing-machine*—decidedly the most valuable rural implement ever invented—was first originated and employed. Threshing by the flail is now almost, but not altogether, unknown here. I am aware, however, of only one solitary instance of a farm in the Lowland district in which this rude instrument is still used, but it is very common in the Lammermoor district, as the quantity of Corn grown there upon any farm does not warrant the expense of erecting a threshing-machine. The usual size of the machines employed on farms of from 300 to 500 acres is that requiring the power of six horses to propel it. Machines driven by four horses are used on arable farms under 300 acres, where any one is used.

Threshing-machines, on the larger class of farms, are now generally driven by steam-power. Water, as being even still more economical, is preferred and used where a sufficient supply of it can be had; but where this is not the case, steam-power is employed. Wind-driven machines were, until lately, very numerous; but this, as well as the most expensive and objectionable of all—horse-power—has gradually given way to the steam engine, which has been found to be much more uniform and expeditious in executing its work than either. In 1805, when Somerville wrote the Survey of the County for the Board of Agriculture, there was but one threshing-machine in it driven by steam, but farm-engines are now so numerous, that Sir Thomas B. Hepburn, member for the county, has been somewhat appropriately styled the representative of tall chimneys. The engines most commonly used are what are termed high-pressure, or non-condensing; condensing-engines are also employed on some farms, but they are not so simple or so cheap as the former. Six-horse-power engines are the most numerous, although, on very large farms, eight-horse-power engines are not uncommon.

The chief advantages of steam power arises from its great economy, particularly in a locality where coals are abundant and cheap. A cart-load of about 15 cwt. of small dross coal, purchased at the colliery for a shilling, will, in ordinary cases, supply with fuel a six-horse-power engine for 10 hours, during which time from 35 to 45 quarters of grain may be threshed. The quantity threshed in a given time will, of course, depend upon its quality and the length of the straw; but under favourable circumstances, and with an average quality of grain, from 4 to 5 quarters of Oats or Barley, and from 3½ to 4½ quarters of Wheat, may be threshed in an hour. Little need be said here about the threshing-machine itself, as it is now well known to every person engaged in agricultural pursuits. Alterations and improvements have, no doubt, been made in some localities on certain parts of the machine, but all its essential parts, and the principle of its construction, are the same everywhere.

When the threshing-machine is made to be driven by water, it is usual also to have a horse-course and apparatus attached, for the purpose of applying horse-power when a sufficient supply of water cannot be obtained. By varying the positions of the pinions on the common shaft, which communicates with the horse and water-wheels, either power can be used separately, or both may be combined when the water is unable to propel the machine alone.

The number of persons requisite for working a threshing-machine of the usual size—a six-horse-power—is generally seven—four women and three men. Two women loosen or unbind the sheaves and lay them upon the feeding-board, to the man who supplies them to the machine, and other two women are required in the ender or corn-barn, to remove the grain as it falls from the fanners attached to the threshing-machine. Two men are necessary for carrying away the straw ejected from the machine, to be piled up for use either in the straw-barn into which it falls from the machine, or in the stackyard. Wheaten straw, to be used as litter, is generally conveyed at once to the yards in which it may be required.

A threshing-machine and all its necessary appendages, together with a six-horse-power high-pressure engine, may now be erected for about 150*l.*

Winnowing-Machine or Fanners—The winnowing-machines are nearly the same as those in general use in other parts of the country, and therefore do not require any lengthened description in this place. One pair of fanners is invariably attached to, and driven by a leather belt or chain from the threshing machine. Besides this one, which separates the chaff from the grain before coming to the ground, another is used for dressing or preparing the grain for market, generally worked by the hand, but frequently also by means of a belt from the machine. Instead of the wire sieves so commonly used in the interior of winnowing-machines, a strong canvas cloth revolving upon two wooden rollers is by some farmers preferred and employed. From six to seven quarters of Oats is the usual quantity which can be once winnowed in an hour, by a machine in good order, and actively worked. Best fanners, with sieves and riddles, may be had for 8*l.* to 8*l.* 10*s.*

The only other machines belonging to or worked in the barn, are a *Hummeller* for the purpose of separating the awns from the grains of Barley, and a machine for bruising Oats, Peas, or Beans, for horses or other animals, both of which are driven by the same power that propels the threshing-machine. The threshing, hummelling, and winnowing of Barley always proceed simultaneously, but the bruiser is seldom worked with the other machines, as the motion necessary for threshing is considered to be too rapid for the purpose of bruising properly. Besides the machines already mentioned, a churn and a straw-cutter are also not unfrequently worked in connection with the threshing-machine.

5. WHEEL-CARRIAGES OR CARTS.—Every farm is provided with several kinds of carts, each adapted to some particular species of work; some are in daily employment while others are used only on special occasions.

Single-horse Carts.—Formerly, on account of bad roads and other causes, none but two-horse carts were used in this county, for the different purposes of farming, but single-horse carts are now generally preferred and more frequently employed, especially in long journeys, conveying Corn to market and coals from the colliery, &c. The superiority of the single over the double cart, consists in being much lighter, more steady and compact, and consequently less shaking and burthensome on the shaft-horse. The majority of single-horse carts are made with the body permanently fixed to the shafts; this construction being supposed to render the cart more steady and compact than the turn-up or coup-cart. In the economy of the farm, every ploughman has the charge and management of a pair of horses, and when carting, he drives them both himself. When using single carts, one follows the other, the horse of the last cart being fastened by a short rope from his bridle to a ring in the hind-door of the foremost cart. These carts are usually 4½ feet in length inside the boards; 3 feet 2 inches in breadth at bottom, and 14 inches deep. Price, with wheels and axle, 9*l.* 10*s.* to 10*l.*

The Double-horse Cart differs little from the single cart except in being larger and stronger. It has sometimes a fixed but most generally a turn-up body. Double-horse carts are now employed only in carting out dung from the yards to the fields, earth or other heavy materials. Although single-horse carts are, beyond a question, the most economical and profitable for general purposes, experience has fully decided that the double-horse cart cannot be altogether dispensed with; and is invariably used for conveying dung to the fields during winter, when farm roads are not generally in the best condition. A two-horse cart is commonly 5 feet long within the sides, 3½ feet in breadth, and 17 inches high. With side-boards it will contain, if well filled, about two cubic yards of dung. Price, with wheels and axle, 10*l.* 10*s.* to 11*l.*

The Corn-cart consists of a sparred frame-work, with the bottom and part of the sides boarded, and is used solely for the purpose of carting Corn in the sheaf, hay, or similar materials. When being employed, this cart is mounted upon the wheels and axle of any of the close carts, and may be drawn by one or two horses according to circumstances. No species of cart is better adapted to the purpose for which it is intended than this. None admits of a larger load with the least possible trouble to the driver or horse. The only alterations or improvements lately effected in the construction of the Corn-cart consist in making the body wider and dispensing with the usual side-rails. Corn-carts of this description are now much used in the hill-district; they have no side-rails; one cross-rail supported upon two upright iron stays prevents the Corn from falling forward on the horse, and two semicircular bars of iron-halves of wheel-rims answer the purpose, serve to keep the wheels from disturbing the load, and support a strong board nearly bisecting the cart, on which the driver stands while forking the sheaves to the stacker. The object of this form is to render the cart less liable to be overturned in uneven situations. In some of the Corn-carts now made, the rails are so fitted to the body, that they may be taken off and replaced at pleasure, and the body used for carting wood, &c. The usual dimensions of the Corn-cart are—length of rails, 10½ feet; height of spars, 20 inches; breadth 5½ feet.

Cart-wheels are generally 4½ feet in diameter; cast-metal naves were in much vogue some time ago throughout the county, but have now fallen into disuse. Great attention is paid to the fitting of the axle.

In this hasty sketch of the principal implements and machines in general use here, I have omitted even to name a very considerable number of others of minor importance, but the most of them shall be noticed when I come to speak of the different operations in which they are employed.—*T. Sullivan.*

SCIENTIFIC EDUCATION.

THE following account of the half-yearly examination of the scholars of Messrs. Nesbit, of Kennington House Academy, abridged from the *Maidstone Gazette*, is inserted here with the view of placing before our readers Dr. Reid's excellent remarks on the value of a scientific education even to those who may only receive from it an *indirect* benefit. Of how much greater value must it be to those who, like the farmer, daily superintend operations dependent for their success on the favourable development of scientific principles!

At the hour appointed for the examination, Dr. D. B. Reid, F.R.S.E., took the chair, and the schoolroom was completely filled with a respectable audience. After a short address from Mr. J. C. Nesbit, various literary selections were recited by some of the pupils. A very satisfactory examination in geometry, by J. Imray, Esq., M.A., was then conducted, and after an extended examination in geology, by Mr. Richardson, of the British Museum, one of the young gentlemen, assisted by the members of the Chemistry Class, delivered a short lecture on chemistry, and was highly complimented by the chairman and applauded by the audience.

Dr. Reid, in the course of his remarks, after the conclusion of the recitations and examinations, said no one felt more desirous for the promulgation of a knowledge of modern science than himself. Where he had received his education, there were upwards of 200 boys in his classes, and upwards of 800 altogether in the school, and he had had the good fortune to meet

with some 50 of these in after life, and whenever their conversation recurred to the scenes of their early days, their exclamation had constantly been, "Oh that we had had the same opportunities of acquiring modern languages—the same facilities for acquiring scientific knowledge—which exist in these days! How much we should have been enabled to do which we have been obliged to leave undone! How much more might we have appreciated, and perhaps contributed to, those splendid realities in physical science which are now shedding their beneficial influence over every country of the globe!" When he and his old associates looked back upon their own difficulties, it was doubly gratifying to them to witness the advantages which were placed within the reach of their young friends, whose exertions had afforded the audience so much pleasure in the course of the evening. From what he had seen he could not doubt that they had felt much delight in acquiring the knowledge they had displayed. He could fully appreciate the delight of all persons who loved the promotion of education, at the successful results they had seen of the attempt to combine the knowledge of foreign languages and modern science with the usual branches of education. It was to an improved knowledge in these branches of education that they must look for an extension of that intercourse, and a strengthening of those bonds of mutual sympathy, which were calculated, the more they were extended, to connect man with man, in the pursuit of objects of the most elevated kind. He could not pass over, without particular notice, the chemical lecture which they had heard from one of the pupils. He could not recommend too earnestly to the young persons present the necessity of acquainting themselves with chemical science. That young persons might do so, had been most successfully demonstrated on that evening. The cultivation of the love of science in young persons was of the highest importance, even if it had no definite purpose in connexion with their pursuits in after life, which it sometimes influenced materially. The difference between youths who had been thus educated and those who had not, was apparent to the most superficial observer. Their mode of thinking, and even the tone of their conversation, were influenced by this mode of training to a very great extent, and he was satisfied that the great exertions of their teachers would be appreciated more and more as their pupils advanced in life, and found the immense advantages of their education on the principles adopted in this school, which would entwine themselves with all their habits and associations, as well as with the varied duties to which their future occupations might lead them. Physical science was universal in its operations, and necessarily embodied everything that was associated with the useful arts, as well as with the comforts and elegancies of life, and in one department, viz., agriculture, the young pupils preparing for this profession would only be astonished as they proceeded, at the long and lingering slowness with which the farmers had hitherto taken up and applied that knowledge, particularly of chemistry, which gave significant proof that it would soon do as much for agriculture as it had already achieved for arts and manufactures. Those who had not been thus educated were frequently consuming their time unprofitably both to themselves and others. But when acquainted with science, young persons were constantly engaged in the discovery of new facts, or in some inquiry which had for its object the pursuit, development, and demonstration of truth.—*M. S.*

ON LIQUID MANURE.—No. II.

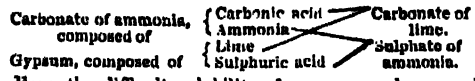
In pursuing the subject of the best and most economical ingredient for fixing the ammonia generated during the putrefaction of urine, we next come to sulphate of lime, known as gypsum, plaster stone, alabaster, or plaster of Paris; it exists abundantly in many parts of England, and is composed of—

Lime	28.5
Sulphuric acid	40.0
Water	18.0
	86.5

If gypsum be subjected to a red heat, it parts with its water, is easily reduced to powder, and is known as ordinary plaster of Paris: in this state it has a great affinity for water, readily combining with it, and in a short time setting into a hard mass. Sulphate of lime is sparingly soluble in water, at ordinary temperatures; 500 parts of water only dissolving one part of sulphate of lime. It exists in some soils, and is dissolved by rain water as it sinks through the earth. Hence it is found in the waters of many springs and rivers, and it is frequently the cause of hardness in water.

Gypsum strongly recommends itself to the English farmer, from the low price at which it may be obtained, as a means of converting the volatile carbonate of ammonia contained in putrid urine into a sulphate of ammonia, which is not volatile. But to insure its producing this effect, it is necessary that it should, in the first place, be reduced to an impalpable powder, since it is only when in solution that gypsum can be decomposed by a solution of ammonia, and as it is so sparingly soluble, every precaution is necessary to insure success; and since, the finer the powder it is reduced to, the more readily soluble does it become, it is necessary that this point be closely attended to. If it were only crushed or coarsely ground, it would be in vain to expect it to become soluble, or to fix the ammonia. It is also necessary, in the second place, that the powdered gypsum be frequently raked up from the bottom of the vessel or tank in which it is used, since it is only by frequently bringing it into contact with fresh portions of liquid that the solution is effected.

When gypsum is once dissolved, it readily undergoes decomposition with the ammonia contained in the urine. This occurs in the following manner:—The sulphuric acid, which is in combustion with the lime in gypsum, quits the lime and combines with the ammonia, forming sulphate of ammonia; while the lime, the other constituent of the gypsum, combines with the carbonic acid which was in combination with the ammonia before the formation of sulphate of ammonia, and forms a carbonate of lime or chalk; this subsides to the bottom of the tank, and will require to be removed occasionally; the following diagram will show the change which occurs in the constituents:—



From the difficult solubility of gypsum, only a small portion of it can be taken up in solution at any one time, which portion soon undergoes decomposition, and may be replaced by another portion, and so on until all in its turn has become soluble, and undergone decomposition, this change being greatly facilitated by frequent agitation; in fact, without it, the gypsum would remain at the bottom of the tank as an inert mass, while the ammonia would continue to escape from its surface and be lost. From a series of experiments I have lately conducted to ascertain the relative power of different substances to form fixed salts of ammonia, I found that it required several days before the ammonia in putrid urine was effectually converted into a sulphate by the use of gypsum reduced to powder, even when the contents of the vessel was stirred twice a day. The same result was attained in less than half the time when a sulphate of lime was used, which was expressly prepared for the purpose by precipitation; this was owing to a more minute state of division of the particles of the sulphate, and, consequently, more ready solubility.

When burnt gypsum was used it became partly consolidated, and consequently of little effect, until again reduced to powder, when it acted effectually. When imperfectly powdered gypsum was used, only those portions underwent decomposition which were reduced to a fine powder, the outer portion of the coarse granular powder becoming coated with a crust of carbonate of lime, which totally prevented any further action of the ammonia on the gypsum inclosed within. Hence it is evident that unless gypsum be reduced to a very fine powder, it cannot undergo perfect decomposition, and also, that this action is greatly facilitated by frequently stirring the mixture.

As a proof that the decomposition of the gypsum has taken place, the following test may be applied:—Remove a portion of the precipitated powder, place it in a glass vessel, and pour over it vinegar or diluted muriatic acid as long as effervescence occurs; should a portion of powder remain undissolved, it will, in all probability, be undecomposed gypsum, but should the whole dissolve with effervescence, the decomposition of the gypsum has been complete. It would always be advisable to have a portion of undecomposed gypsum in the tank, ready to act on the ammonia as soon as generated, and to have the contents well stirred, at least twice a week.

In using sulphate of lime or gypsum in liquid manure, to convert the ammonia into a sulphate, for every 148 lbs. of (unburnt) gypsum, one cwt. of sulphate of ammonia will be formed; the same quantity will be obtained by the decomposition of 118 lbs. of burnt gypsum, or common plaster of Paris.*—*Alfred Clyde, Painswick.*

(To be continued).

* The urate of the London Manure Company is said to be gypsum heated to redness, and thrown into putrid urine, then removed, dried, and crushed.

Home Correspondence.

Fixation of Ammonia.—There is a slight mistake in the Notices to Correspondents of your Paper, June 15th, upon the subject of my experiments with sulphuric acid as a fixer of the ammonia in decomposing urine. According to my experiment, 16 gallons of putrid urine require for neutralisation 60¼ ounces by weight of sulphuric acid of sp. gr. 1.850. The quantity, however, will vary according to the strength of the acid, or the state of decomposition of the urine. I should prefer using diluted acid, in the proportion of 1 pound of acid to 6 or 8 of water, adding the solution until all effervescence ceases. The composition found to be of so much value by your correspondent "H. D.," of Witham, is strictly in accordance with chemical theory, or rather fact. "H. D." supplies to his plants all the elements of their composition. The crop being Turnips, the loss of the ammonia of the urine is not felt. If he were to fix his urine with dilute sulphuric acid, and then use it in the same way and apply it to Wheat or Beans, he will have excellent crops. In the way in which he has used the urine, it is probable no fresh combinations were entered into, or were necessary. Bones, charcoal, and urine contain everything, except silica, which the plant requires; and of this Turnips want little or none. Chemical Science will, in the end, attain its proper position in Agriculture. Practice may be, and is frequently wrong. Science may be applied incorrectly, but its truths are incontrovertible, and must be right.—*C. R. Bree, Stowmarket.*

Peat as a Top Dressing for Gravelly Soil.—In 1842 I planted a ten-acre field of this soil with Potatoes, and after the Potatoes were gathered in November, I gave a part of it a covering of about three inches deep of raw Moss, and over that again a slight sprinkling of land. Last year it was sown with Barley, and laid down with Clover and Rye-grass; the Barley was lodging in the part that got the covering of Moss, while the Barley in the other part of the field would hardly bend to the sickle at shearing time. This year the Hay is lodging where the Moss was put on, while in the other part of the field there is but a poor thin covering.—*A. C.*

Ox-eye Daisy.—Having observed a paragraph from "A Subscriber," requesting to be informed of a method of getting rid of the Ox-eye Daisy, I beg to state that in a field in my possession that had recently been laid down for permanent pasture, the Ox-eye Daisy sprung up in a part of it so thickly as to exclude other vegetation. The weed was mowed down when in flower, and the field was close fed by sheep for the ensuing year, when the Ox-eye Daisy entirely disappeared.—*A. C. L.*

Phenomenon.—In a field of Rye-grass and Red Clover now nearly fit for the scythe, we have observed more than once, at mid-day, a thin vapour arise on the windward side, and gradually spread over the whole surface, measuring 22 acres; and at the distance of half a mile, it appeared like the smoke of a large brick-kiln, and to parties near, quite a thin vapour. Now, the wind was light, and the day perfectly serene and beautiful. It travels along with the current of air, but there certainly was no appearance of disturbance in the air; and, what appears strange, it is confined to one field. The soil is a rich loam, and in a very dry state, having had no rain and but little dew for many weeks.—*W. D.*

[May this not be owing to the disturbance of the herbage by a gust of wind, which would raise, here and there, in the form of a vapour, the pollen of the ripe and dry Grass?]

Turnip-seed.—One man is born with a silver spoon in his mouth, another with a wooden ladle. Some of your happy correspondents, by soaking their Turnip-seed in Linseed-oil, and drying it in flowers of sulphur, have for years escaped the fly. I diligently soaked my Swede-seed this year in Linseed-oil for 48 hours, rubbing it repeatedly to impregnate every seed. I endeavoured to dry it with powdered sulphur, rubbing it diligently with more and more sulphur for five days together, until it was dry. I drilled it thick enough to please Mr. Morton, so that it comes up like Mustard and Cress; but the Turnip-flies seem as if they were a body of yeomanry called out this month, and they dress by the Turnip-rows exactly, and there is not a seed-leaf (such exact discipline do they keep) which is not perforated by them like a sieve, baffling the numerous instances in which they have eaten up the entire cotyledon. Wishing all other farmers better success in the experiment, I am, &c.—*W. P., Taunton.*

Mare and Foal.—Not seeing any answer in your Paper to your correspondent's question respecting a "mare and foal," I send the following:—Tie the mare up in a stable when the foal is to be admitted to her, and let a man stand behind her armed with a broomstick (a suitable broomstick—a switch or whip will not do), and when the mare offers to bite or kick the foal, let it be applied to the fleshy parts of the hind quarters. There is great virtue in a broomstick, but it all depends upon its being well applied, and with right good will. I have made a very savage mare take her foal in this way. Let your correspondent observe, I much prefer gentle measures, and only recommend the broomstick in extreme cases, where all such have failed. I have no doubt, though I never had occasion to try it, that a foal might be brought up on cow's milk from a bottle, as used by shepherds for lambs, till it was old enough to drink it from a pail, taking care not to give the milk too cold.—*D., an Old Dragoon.*

Bran.—In answer to H. Lawson's request, I beg to refer him to page 108 of Sir H. Davy's "Agricultural Chemistry," where the constituents of 100 parts of ashes of bran are said to be—

Soluble salts . . .	41.16
Earthy phosphates . .	46.5
Silica	.5
Metallic oxides . .	.25
Loss	8.59
	100.00

H. S., Bedhampton. [Another correspondent, "C. J." refers us to Dr. Ure's "Dictionary of Arts and Manufactures," under the word Bran. Saussure found bran to contain a large proportion of inorganic matter, almost identical with that of Wheat; viz., very rich in potash and the phosphates.]

Farmyard Manure.—It is now known to most farmers that, when cattle are full-grown, nearly all the mineral ingredients of the soil are returned with the droppings—the soluble salts in the urine and the insoluble with the solid excrements. Because we find certain mineral substances contained in all plants in definite proportions, we may conclude that these are absolutely necessary for their vigorous growth. It is, therefore, easy to understand how farmyard manure supplies the crops with food, as it contains it in the proportions required by them. Of what importance must it not be carefully to preserve this manure! In its natural state, however, it contains ingredients which, if left to themselves, are dissipated in the air, thus occasioning loss to the farmer. How are these ingredients to be preserved, and what are they? They are nitrogenous substances, that is to say, they contain that element—Nitrogen—which enters so largely into the composition of the plant, and serves to form the most nutritious portion of it. They are contained in two forms—as urea, and carbonate of ammonia. The urea, as soon, cannot serve as food to the plant, and is only of use when converted into a salt of ammonia. Now it so happens that such a change takes place when urine is left to itself; and a compound is formed—carbonate of ammonia—which can serve directly as nutriment. The only objection to it is its volatility; and we must endeavour to put it into an un

objectionable shape, so that it may easily be taken up and decomposed by the plant, without being volatile. This may be done in two ways—either by decomposing the carbonate of ammonia by means of a stronger acid, such as oil of vitriol (sulphuric acid), or spirits of salt (muriatic acid), and dispelling the carbonic acid, or by a double decomposition, whereby we fix both the ammonia and the carbonic acid. The latter is effected by sulphate of lime (gypsum), or muriate of lime, which decompose the carbonate of ammonia and form sulphate or muriate of ammonia and carbonate of lime (chalk). This decomposition only takes place when the agent (gypsum or muriate of lime) is dissolved in water; for which reason muriate of lime is preferable to gypsum, because it is soluble in its own weight of water, whilst the latter requires 350 parts of water to dissolve it. I presume, now, that all those farmers who read the *Agricultural Gazette* are acquainted with the value of the urine of cattle. Supposing the farmer has his tank, the best method of effectually preserving the ammonia of the urine, and of removing the smell from the stables and cowsheds, is to strew the floor, behind the cattle, with a sprinkling of gypsum every day. When this plan is first adopted, it is best to water the gypsum with a watering-pot, after having strewn it on the floor; as I have said that the action of it on the carbonate of ammonia does not take place till it is dissolved. If the farmer wishes to remove the smell from his stables, he will be obliged to wash the walls with a solution of gypsum, or better, with a solution of muriate of lime, and afterwards with pure water, for the walls in an ill-ventilated stable are covered with a solution of ammonia in water. In preparing the farmyard heap, it should be a rule with the farmer to heap it on as small a space and as compact as possible. The ground on which it is to lie should either be bricked or should consist of a very stiff clay, and should be about half a foot below the surrounding ground, and should be situated at the lowest part of the farmyard. By means of pipes the floor is connected with the tank, so that all the urine and water may run off. A layer of gypsum is now to be spread on the flooring, and the heap is to be commenced by covering the whole bottom, with the exception of about half a foot on every side. On every foot-height of manure a layer of gypsum is to be spread, sufficiently thick to appear white. When the heap is completed, or before, the contents of the tank are to be poured on by degrees, in quantity sufficient to wet the heap well, but so that not much will run back into the tank. By these means the following advantages will be obtained:—1st. The cartage of it in water-carts will be rendered unnecessary, and some labour saved. 2d. The gypsum of the farmyard heap will be dissolved; and, 3d, by the addition and evaporation of the water of the urine, the decay of the farmyard manure will be facilitated. To the question, How should farmyard manure be applied? I answer: If the soils are light, the farm-yard manure cannot be too much decayed, provided proper precautions be taken to preserve all its useful ingredients by the means already stated. The farmer will, in this case, do well only to place as much on his land as will suffice for the nutriment of one crop, because a large portion of it will be washed beyond the reach of the roots of the plants by the falling rains. If the soils are heavy, it will be better to plough your farm-yard manure under, in as recent a state as possible, again providing it has been properly preserved; the fermentation of the Straw may tend to lighten the soil in such a case. If the manure is to serve immediately as food to the plant, it must be decayed; if, on the contrary, it is to act slowly, it should be fresh; as to the time when it should be placed on land, farmers are much at variance. For pastures it should be spread after the first mowing of the Grass—if possible on a rainy day—and should be as much decayed as possible. It will then act as quickly as guano. For arable land it will much depend upon the state of the soil and upon the nature of the crops. I may, however, be allowed to add, that it is a downright absurdity to lead out unprepared farm-yard manure on a hot day, and to leave it for any length of time in heaps on the soil. This I have seen scores of times; the loss which takes place is nigh incalculable. We have hitherto spoken of pure farm-yard manure; we must now make some remarks on the farm-yard manure of most agriculturists. It is a common practice to collect the weeds of the soil and to spread them on the dungheap. Farmers seem not to be aware that whilst they destroy one individual plant they may sow again at least a hundred, if the weeds are in seed. Now this is frequently the case, although many say that seeds are killed on the dunghill. This idea is fallacious; some seeds may be killed, but most are not. Many wonder at the numberless weeds that constantly reappear on fields that have been carefully weeded, and yet they seek not the cause so near home, forgetting that they sow the seeds themselves. I have known farmers who allowed that seeds were not killed on the dunghill, and resorted to the worse system of adding lime to the dunghill. It is true that the seeds were killed, but at the expense of the ammonia and the organic matter. Far better mix the weeds with caustic lime, to burn them, which amounts to the same. Another practice is to place the Potato stalks on the dunghill, without any precaution as to whether they are again conveyed to the field they grew upon or not. This is not immaterial when the farmer recollects that these stalks contain a most necessary ingredient of the stalks of grain. It is owing to the frequent removal of these stalks that land is so very impoverished, inasmuch as the haulm of grain are scarcely able to support themselves. If these stalks are placed on the dungbill, it is necessary to use that part of the heap on which they have been put, as manure for the land from which they have been taken. I have only one remark more to make, which appears to be of great importance. I have known gentlemen who have bought up the manure collected by poor people, and who have manured meadows with it. The consequence has been, in two cases which have come under my more immediate notice, that the Grass has almost been totally extirpated by numerous weeds. They were not able to give any reason for this change, but only told me whence they had bought their manure. It was chiefly the manure of horses, which had been fed on the highroads, or on weeds collected from different parts. The weeds must have been in seed, and have passed unchanged through the stomach of the horse, germinated, and sprung up in the soil. There can scarcely be a farmer who has not, on some occasions, found a few solitary grains of corn growing in the dung of horses. Having seen this myself, I endeavoured to find out whether small seeds were killed by passing through the body of a horse. For this purpose I fed an old horse with weeds in seed, collected its dung, and mixed it with soil in which I believe there were no seeds of any kind. The box which I filled with this mixture was, after eight days, filled with weeds, which, after the lapse of a few weeks, I was able to recognise as the same species as those on which the animal had been fed. Here, then, I found a key to the mystery. This must be the case constantly in a weak horse and in an old horse. It is not without good grounds that sheep are said to improve pasture lands, as the process of digestion in them seems to be more powerful and complete than in horses, at least old ones. May it not be the case with most old animals? I conclude with this, and merely add that I should be glad to hear of any communication to this effect.—*Albert J. Bernays.*

Drainage.—Would you have the kindness to inform me whether charred branches of trees can be advantageously employed, as well as drain-pipes, in draining heavy land? My hedge-rows would furnish me with an abundance of loppings fit for charring, and I should be glad to so employ them. As charcoal is almost impenetrable, I should think this might answer, at least for a good many years.—*Thomas Holmes.* [Your suggestion is, we think, new; loppings of trees and hedges have long been employed as material for filling drains, which, so filled, act efficiently, though not permanently. If they were charred superficially (not thoroughly, lest, being brittle, they should break into small fragments when being placed in the drain), they would be equally suitable for this purpose, and they would have, in addition, the important character of permanence conferred upon them.]

Rooks.—That the food of this bird is various in its nature I know from undeniable facts; early in this spring I had two rooks brought to me that had been killed on a field of spring Wheat, and the craws contained Wheat only, with the usual accompaniment of gravel; but it is the Potato crop that suffers most in this country. That the rook is also of great use to the farmer must, I think, also be true, as he is constantly seen on fresh ploughed land, and often on Grass fields, where only insects can be met with. The balance of good or injury that the bird does can only be estimated by conjecture, without a close examination into the birds' usual habits. But I am inclined to think, notwithstanding the injury done to the Potato crop—notwithstanding these birds being gramivorous must consume very much Corn—yet, that if their food was not more abundantly composed of insects, that from their immense numbers, the crops both of Corn and Potatoes would be totally destroyed, instead of partially injured.—Δ. [This is, we think, the fair conclusion to be derived from this discussion, which, in the absence of any fresh facts on the subject, we must now bring to a close.]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND

At a weekly Council held at the Society's house in Hanover-square on Wednesday last, the 10th of July, present, His Grace the Duke of Richmond, K.G., in the chair, Lord Bridport, Hon. George Agar, Hon. Geo. H. Cavendish, M.P., R. Archbold, Esq., M.P., C. H. Baldock, Esq., D. Barclay, Esq., M.P., T. R. Barker, Esq., J. R. Barker, Esq., J. Benett, Esq., M.P., H. Blackett, Esq., W. R. Browne, Esq., F. Burke, Esq., Dr. Calvert, Rev. Thos. Cator, Col. Challoner, F. C. Cherry, Esq., L. Cooke, Esq., G. Cottam, Esq., J. Dean, Esq. J. E. Denison, Esq., M.P., R. Etwall, Esq., M.P., H. Gibbs, Esq., J. B. Glegg, Esq., Col. Henderson (Mayor of Southampton), E. Holland, Esq., Sir John V. B. Johnstone, Bart., M.P., T. Jones, Esq., J. Kinder, Esq., J. Marmont, Esq., Col. MacDouall, E. Parkins, Esq., E. W. W. Pendarves, Esq., M.P., E. S. C. Pole, Esq., H. Price, Esq., J. Roddam, Esq., J. Scales, Esq., Prof. Sewell, J. V. Shelley, Esq., R. A. Slaney, Esq., T. H. B. Sotheron, Esq., M.P., W. B. Stopford, Esq., and T. Tweed, Esq., the following new Members were elected:—

Quicke, Rev. Andrew, Winchester.
Withers, Rev. Edward, Phillimore Place, Kensington.
Bull, Alban, Hanwell, Banbury, Oxon.
Vivian, Lord, Glynn, Lostwithiel, Cornwall.
Bourne, Henry Titus, Alford, Lincolnshire.
Templemore, Lord, Dunroby Park, Co. Wexford, Ireland.
Sewell, Robt. Burleigh, Newport, Isle of Wight.
Dickinson, Edmund Henry, Kingweston, Somersetshire.
Henderson, Richard Langley Ford, Wooler, Northumberland.
Reed, Thos., Warkeworth Barns, Alnwick, Northumberland.
Pink, Richard, Hambledon, Horndean, Hants.
Pink, Charles, Hambledon, Horndean, Hants.
Winnington, Sir Thomas, Bart., Stanford Court, Worcester.
Chapman, Thos. Sands, Aston Clinton, Tring, Herts.
Pain, George, Salisbury.
James, Charles, Stratford, Salisbury.
Aitchison, Capt R., Bartley Manor House, Eling, Southampton.
Bird, J. A. Park Cottage, Brixton, Surrey.

The names of twenty-three candidates for election at the next meeting were then read.

PIPE-TILE MACHINE. — Mr. Cottam, of Winsley Street, Oxford Street, favoured the Council with a report on the latest improvements effected in the Benenden Machine of Mr. Hatcher for the production of cylindric draining tiles. This machine in its present state consists of a framework supported on wheels: one-third of its length being appropriated to the platform of the machine for the manufacture of the tiles, and the remainder to the apparatus of the endless web for supporting the pipes as they are formed, and conveying them to the hands of the boys stationed to receive them. On a level with this endless web, and between two upright posts, is placed a square iron box, which forms the bottom of the machine. It is open at the top and at that side in its front which adjoins the endless web. This box is always full of clay, the iron grating which acts the part of a sieve or screener of the clay being placed on the top of the box, and the required dies, or plates of iron, with apertures for the shape of tile required, secured in front. On this box thus arranged, is placed a cylinder filled with clay from the pug-mill, and the piston being inserted, and forced down steadily by means of a winch working a couple of toothed wheels, the clay is driven under great pressure through the iron grating into the square box, and thence out of the box, through the apertures which constitute the pattern-dies of the tiles, which, as they issue continuously from the machine, are conveyed along the endless web set in simultaneous motion with the piston by a connection with the same winch and a couple of rollers. As one cylinder becomes emptied another is ready to replace it. A boy is stationed at each side of the endless web, and measures off the tiles, piling them alongside the machine, which as the work proceeds is moved from time to time forward, out of the way, by means of the wheels on which it is supported. Mr. Cottam explained to the Council the various improvements effected in the action of the piston, the insertion of the die-plates, the material best adapted for the endless web, and the mode adopted for keeping it in proper tension, the apparatus for measuring and cutting off the tiles, the advantages possessed by the cylindric shape of the tiles for arranging them, both for the purpose of drying and burning equably, the rate of charge for labour, fuel, &c., the number of tiles produced per day, &c. &c. He submitted to the inspection of the Council a model of the machine, and one of the cutters for measuring off the tiles. This apparatus Mr. Cottam described as one of the most ingenious and efficient contrivances he had ever met with for accomplishing its purpose by the most simple means. Previously to its use, the tiles were cut off by a wire without measurement; the consequence of which was, that they were not only of unequal length, but injured by the pressure of the hands on their sides on being conveyed away from the machine. It consists of a wooden roller, secured firmly by a screw at one end to a plate of iron; to this iron plate an iron bar is secured, which runs parallel three or four inches above the roller, and serves the purpose of a handle for the boy, as well as a support for the cutting-wire, which moves in a frame and socket up and down in front of the roller. The boy takes the apparatus by the handle, and inserts the roller inside the pipe-tiling up to its hilt at the iron plate; he then draws the cutting-wire, when the pipe-tile is perfectly severed, and remains loose on the roller, from which he at once allows it to glide off into its proper place, without injury or loss of time. Mr. Cottam stated that the cost of the machine complete would be 25*l.*; and for the inspection of such members of the Society as felt an interest in the subject, he had made arrangements at his manufactory in Winsley-street (opposite the Pantheon, in Oxford-street), to have the machine at work daily from 12 to 3 o'clock. Assuming one man, one youth, and two boys to be employed at the machine (including pug work), with one man at the kiln, and the price of coals to be 25*s.* per ton, the following results would be obtained by calculation from the data laid by Mr. Cottam before the Council on this occasion:—

Diameter of Tiles.	Number that can be made in a day of 10 hours.	Cost per Thousand.
1 inch.	11,000	4*s.* 6*d.*
1¼ inch.	8,000	5*s.* 6*d.*
1½ inch.	5,800	6*s.* 0*d.*
2 inches.	4,000	7*s.* 3*d.*
2½ inches.	3,200	8*s.* 6*d.*

Mr. Denison, M.P., remarked that when it was taken into consideration how many points there were in the new system of tile-making which this machine would affect in reference to the cost of production, it could not be doubted that in the progress of the experience to be gained it would be found, that in the less amount of clay required, the consequent reduction in fuel for burning, and the local advantage of coals to be obtained in so many parts of the kingdom at a less rate than that of 25*s*, as assumed in the present inquiry, there would be every reason to believe that tiles might be made by means of this machine at a still lower cost even than that which was at present deducible from the facts laid before the Council.

Mr. Denison then proceeded to give the Council an interesting narrative of the history of the ingenious inventor of the present tile-machine; and as he had liberally given up (at the patriotic suggestion of his patron, Mr. Law Hodges) all patent right in reference to its manufacture—a privilege probably equivalent to a premium of no

less than 3000*l.*—he trusted that all members of the Society who intended to purchase the machine would obtain it at head-quarters, of the inventor's accredited agents, Messrs. Cottam and Hallen, both in reference to his own peculiar claims on the consideration of the promoters of agricultural improvement, and to the desirableness that no parties should experience disappointment by the purchase and employment of an inferior machine: he thought such a choice in their selection would not only be fair to the inventor, but a slight return to him in remuneration for the benefits he will have conferred on those persons who are so unfortunate as to have land which requires draining.

The Duke of Richmond then proposed the best thanks of the Council to be given to Mr. Cottam for his kindness in explaining to the members the construction of this machine; which were carried unanimously.

Southampton Meeting.—The Mayor of Southampton has communicated to the Society the rates at which it has been determined to limit the prices for lodgings at Southampton during the ensuing meeting: on which occasion no beds would be charged more than half-a-guinea per night under any circumstances, while others would range at prices considerably lower according to situation and condition. Every facility would be given to promote the comfort of the numerous visitors expected on that occasion.

(To be continued.)

HIGHLAND AND AGRICULTURAL SOCIETY.

The half-yearly meeting was held on Tuesday last; the Earl of Leven in the chair. After electing 110 new members, the secretary gave in the Report on the premiums offered by the Directors for this year from the funds left to their disposal by the general meeting in January. Among the new premiums, 100*l.* is offered for experiments with special manures, separately, or mixed in certain proportions, and on the effect of such manures on the succeeding crops of the rotation; for reports of experiments on various descriptions of food—as Carrot, Beet, Potatoes, Beans, Oats, Barley, and Oil-cake, afforded to grazing and fattening stock and to dairy cows—50*l.* for an analytical examination of the grain of Oat, as affected or modified by soil, manure, climate, or variety of seed, intended as a commencement of a series of premiums for analyses of the cultivated grains of the country; 50*l.* for an illustration, by chemical analysis, of sound and healthy plants of different varieties of the Potato, of the cause of the disease which has of late years affected that valuable root.—Sir John Hope reported on the Veterinary College, which he said had been most successful, and, as a proof, in last April, 41 students had qualified and passed their examinations. Besides those in Scotland many students had come from different parts of England and Ireland. The Professor had lately told him that since the commencement of the College upwards of 700 students had attended his lectures.—Sir John Graham Dalyell reported from the committee on machinery, that at their last meeting they had awarded three medals—two silver medals for improvements in the internal economy of farm-yards, and a gold medal to Lord James Hay, for the great trouble and expense incurred by him in devising the manufacture of his concrete drain tiles, and laying the plan before the Society.—Mr. Miller, Forrest, moved that the Society should use its influence to have the markets for grain throughout the country reported in a uniform manner; almost every market at present reported their sales by different measures, which rendered it a matter of extreme difficulty to strike an average among them.—Thanks were voted to the Earl of Leven and Melville; after which the meeting adjourned.—*Edinburgh Paper.*

AGRICULTURAL CHEMISTRY ASSOCIATION.

The usual half-yearly general meeting of the subscribers to the Agricultural Chemistry Association was held on Monday in the Museum of the Highland and Agricultural Society: Lord Dunfermline in the chair. The Secretary, Mr. Coventry, read the half-yearly Report, extracts from which we shall publish next week.

CIRENCESTER AGRICULTURAL COLLEGE.

On Monday last a meeting of those interested in this institution was held at Cirencester, Earl Bathurst in the chair, to report the progress of the committee in the establishment of the College. The Report will be found in another column, and will be read with lively satisfaction by the friends of the undertaking. The Society has now resolved itself into a tangible shape, and will immediately commence operations. Port Farm, within one mile of Cirencester, the property of the Right Hon. Earl Bathurst, and in the present occupation of Mr. Stevens, has been fixed upon as the site for the example farm. Mr. Sotheron, in proposing the first resolution, observed, that about six months ago he first heard of this college, and he then thought it of so speculative a nature that it would never have been carried into effect. He had, however, been now entirely brought to the opinion that it was likely to be practically useful to all classes of agriculturists. The main point in this undertaking was to obtain a good system of management by gentlemen who would not go through their duties in a hurried manner, but would allow no detail to be carried out without their sanction, by rules and meetings. He had ventured to make these remarks, as he had lately taken some part in the formation of an institution, which resembled the present in many respects—the Marlborough Proprietary College. He had there seen what errors they might have fallen into during the last years, had they not had a gentleman to conduct it who was well conversant with his duties, and by whose exertions they had been enabled to keep their expenditure within the limits of their income. This had convinced him of the necessity of a good system, which could only be achieved by placing men of business at the head of their affairs.—Mr. A. Fewster, in moving the fourth resolution, said that it would hardly have been deemed possible that any person could have been found to oppose so desirable an object as this, though experience proved the contrary. One objection he had heard was that it would train up young persons to be sort of dandy farmers, whom landlords would not be very much inclined to have as tenants, and indeed if they did, they would get no rent out of them. Another thought the establishment of this college a dangerous matter, as tradesmen's sons and other young persons would be so well instructed as to drive "us old codgers out of the market." These two objections he thought entirely destroyed each other. It was preposterous to believe that a person should be unable to cultivate the soil because his mind was cultivated. He was acquainted with the projectors of this college, and knew their object to be to establish, not a theoretical institution, but one based on a sound practical foundation. He gave agriculturists credit, as a class, for being fully as industrious as any class of the community, though at the same time he must own there was a great lack of intelligence amongst them. And why should not agriculturists receive as good education as any other class of the community? It would be productive of advantage to the higher classes, because the landlord would reap the benefit of a skilful application of a larger amount of capital on his land. The farmer, however, will be a greater gainer still by the college—it would be the means of imparting a purer and more healthy tone of moral feeling amongst his children. It was gratifying to notice what a change had taken place in this respect since he had first attended market, a period of 30 years. Formerly the conversation at the market ordinaries was calculated to produce anything but a good effect in the minds of those who partook in it. At present, however, the conversation turns on the improvement of stock, and the better cultivation of their farms, to advance which latter object was the intent of this Society. Farmers would thereby be brought into more immediate contact than they generally are, and would be enabled to combine science with practice. The moral advantages, too, would not be confined to this class alone, but would also extend to the industrious labouring classes. The improvements in the cultivation of the farms produced by this College, with the means resulting therefrom, would be such that there would be a very large increase in the number of labourers employed in the cultivation of the soil at the present time; and what effect would this produce on the manufacturers and the home market!

FARMERS' CLUBS.

Debenham.—The subject of discussion on June 28th, 1844, was the Drainage of Arable Pasture Lands. The member who introduced it said he would merely state to the Club the manner in which he drained his farm, which has a flat surface, and a subsoil which he might call a clay, only he could not dig a rod without either meeting with a vein of sand or gravel. He preferred drawing the drains obliquely instead of in the direction of the furrows. He found eight or nine yards from drain to drain sufficiently close; he opened the drains with the plough as deep as possible, then followed with the broad and draining spades, to the depth of 22 inches; he thought ling the best material to put in the drain, but on account of its distance he is obliged to use straw, haulm, bushes, &c. Where straw is used he would put it into the drain loose, not twisted; he would, of course prefer tiles, but they ought to be found by the landlord. For pasture land he had tried the mole or draining-plough, but on his description of land he found it perfectly useless. He had also ploughed out a deep furrow with the common plough, and then used the narrow or draining-spade only; this he did not approve of; he thought it best to pursue the same plan for pasture as he did for arable land, excepting that he made his drains at distances of 11 yards, which laid his pastures sufficiently dry.—Another member said he considered draining in this district of the greatest importance; it was almost useless to manure the land unless it was first thoroughly and efficiently drained. He occupies a farm with a very stiff subsoil, and therefore opens his drains only six yards apart; he also prefers his drains in an oblique direction, instead of following the track of the ridges; thinks the drain cannot well be made too deep; it ought not to be of less depth than 32 or 34 inches. He has purchased Furze for filling in the drains; finds four score faggots sufficient for one acre, costing on the heath 2*s.* per score. He has also used the plashings of borders, ditches, &c., for filling in the drains; considers there are several objects gained by so doing;—First, employ is found for an extra labourer, straw or haulm, which would otherwise be used, is saved for manure, and the borders, banks, &c., are freed from Brambles, rubbish, &c. He is of opinion that great attention should be paid to the filling in of the earth turned out of the drain; the clay drawn by the narrow or draining-spade should be carefully placed upon the shoulders and well stamped down before the other mould is put into the drain; he lays a pipe about 12 inches long, and compressed at one end, in the eye of each drain, to keep out rats, rabbits, &c. His pastures having also a strong subsoil, he has drained the greater part at distances of five yards, and one piece which immediately abuts upon his homestead, every four yards, with the mole or draining-plough, at a depth of 24 inches.—A third member, whose farm was different from the two preceding members', his land being much more hilly, the subsoil on the hills being very stiff, while towards the bottom it was much lighter, thinks five yards apart quite sufficient on strong lands; thinks Hag better than Furze; next to draining-tiles would use picked stones, could sufficient be obtained; drains ought to be 32 inches deep; draws his drains obliquely across the slope of the lands. For pasture land, if drained by hand, thinks nine yards from drain to drain sufficiently near.—It was ultimately resolved, that in draining arable land the spade is decidedly preferable to the mole-plough; that the nature of the subsoil must determine the distance between the drains; that while on stiff or strong clay lands five to six yards may be a sufficient distance, on loose-bottomed *gaulty* soils there may be a distance of seven or eight yards from drain to drain; that 30 or 32 inches is the proper depth for a drain. Tile-draining is most desirable on tender or springy soils, but it being a permanent improvement the tiles should be furnished by the landlord. That the mole or draining-plough is the best for pasture land.—*W. G., Hon. Sec.*

Reviews.

The History, Structure, Economy, and Diseases of the Sheep. By W. C. Spooner, V. S., &c. Cradock and Co., 48, Paternoster Row. 8vo. Pp. 456.

[Our readers will recognise this title, as that of a volume from which we have already been permitted to make several instructive extracts. See pp. 329, 416, *Ag. Gazette.*]

"This work is divided into three Parts. The first, which embraces the history or description of the breeds of sheep, is arranged somewhat according to the plan adopted by Professor Low in his large work on the Breeds of Cattle and Sheep; and the author has availed himself of this work in the account of the various races of sheep found in the northern part of the Island; whilst he has relied principally on his own knowledge for the description of the more southern breeds. The most important portion of the anatomical division of the work has been the result of careful dissection; and for the section on Feeding, Fatting, and Breeding, the author alone is responsible. In the third Part, on the Diseases of Sheep, free use has been made of the various papers contributed to the 'Veterinarian,' &c."

The above, extracted from its Preface, is accurately descriptive of this work. The name of Mr. Spooner, who is a distinguished member of his profession, is a sufficient guarantee for the accuracy and usefulness of its contents. Let us extract from the chapters on Feeding and Fatting, which he informs us are more particularly his own, the following, as a specimen of the style in which this section of the work has been executed:—

"The various points in the form of a sheep, connected with the aptitude to fatten, have received the utmost attention from practical and sagacious breeders, although some of these points are still matters of dispute. The superiority of particular improved breeds is now generally acknowledged, and may indeed be considered to be established on certain principles, though in arriving at these principles it must be confessed that we are little indebted to science, but to the long and attentive observation and correct reasoning of sagacious and practical men. It is, indeed, only very lately that anything like a correct explanation could be offered for the various phenomena that attend the fattening of animals, or why one description of food should be more suitable for the purpose than another. It had, indeed, been laid down as a fact, that a large capacious chest and lungs were necessary for the production of fat, and that its secretion depended in a great degree on the quantity of air that could be respired; whilst the researches of modern chemists have shown that nothing could be further from the truth. And now that the fallacy has been exposed by chemistry it can also be readily shown by anatomy, for we find that whilst the horse and the camel have eighteen ribs, the ox and the sheep have only thirteen. The absence of these five pair of ribs must of course materially diminish the cavity of the chest, and its greater breadth (necessary for another purpose) does not by any means compensate for its diminished length. Animals of speed have rarely a propensity to fatten, but in greyhounds, hares, foxes, deer, &c. we find the chest is long and deep, though not wide, whilst in pigs, sheep, and oxen we notice an opposite conformation. The fact is, in proportion to the activity of the animal is its respiration and its demand for oxygen, and in proportion to the consumption of oxygen is the wear and tear of the system and the consumption of the elements of the food. If the exertions are therefore excessive, that portion of the food that would have increased the weight of the body is called for to support respiration.

"In animals having a propensity to fatten, we find the chest of a circular form; the ribs spring from the spine more horizontally than in others, almost at right angles: this is observed in the ox, compared with the horse, and still more so in the sheep. The effect of this conformation is certainly in one respect to increase the width of the chest, but another important effect is to increase very considerably the size of the abdomen; for in order to obtain the greatest possible nutriment from the food, it is essential that the organs of digestion should be capacious, which cannot be the case unless the cavity in which they are situated is large."

This is a book which Farmers' Clubs ought to add to their libraries, and as a work of reference, it ought to be in the possession of all sheep-farmers. The first Part contains a great deal of very interesting reading, and, as as well as the second and third Parts, which are likely to form the more *useful* portion of the volume, it is illustrated by good engravings.

Lectures on Agricultural Chemistry and Geology. By James F. W. Johnston, M.A., F.R.SS. L. & E. Reader in Chemistry and Mineralogy in the University of Durham, &c. William Blackwood and Sons, Edinburgh.

To enable one to write usefully on the subject of these Lectures, it is evident that the most intimate knowledge of chemical or geological science is not all that is necessary; an acquaintance with the practical details of farming is required by any one who would apply the doctrines of chemistry to the improvement of agriculture; and Professor Johnston, in his capacity of Chemist to the Agricultural Chemistry Association of Scotland, has enjoyed opportunities of becoming acquainted with correct agricultural management, better than perhaps ever before fell to the lot of any scientific man. The consequence is, that while his writings will doubtless for a long time to come be an authoritative standard to which all questions about the bearings of chemistry on agriculture will be referred, both they and his Lectures have a practical and most useful tendency.

In Scotland the efforts of Professor Johnston during the past year, in diffusing a knowledge of the relations of chemical science to the practice of the farmer, have been extraordinarily successful. Some of the immediate results of his agency on behalf of the Agricultural Chemistry Association will be found in the Report in another column, of the late half-yearly meeting of that Society; but perhaps as much benefit will ultimately arise from the spirit which he has aroused in agricultural districts, by which the connexion of science and farming being duly appreciated, a desire for scientific information has been excited. The existence of this desire is proved by the establishment of no fewer than seven or eight agricultural periodicals in Scotland within the last year.

We mention all these as the effects of Professor Johnston's teaching in Scotland, to show the value to agriculture generally, of a systematic work on Agricultural Chemistry and Geology, by one so thoroughly qualified to write on these subjects. But we must also select for this purpose some extracts from these Lectures.

The following remarks are on the action of lime as manure:—

"The changes, therefore, which lime and organic matter, supposed to be free from nitrogen, respectively undergo, and their mutual action in the soil, may be summed up as follows:—

"1. The organic matter, under the influence of air and moisture, spontaneously decomposes, and besides carbonic acid which escapes, forms also other acid substances which linger in the soil.

"2. With these acids the quick-lime combines, and either by its union with them or with carbonic acid from the air, soon (comparatively) loses its caustic state.

"3. The production of acid substances by the oxidation of the organic matter goes on more rapidly under the disposing influence of the lime, whether caustic or carbonated. These acids combine with the lime, liberating from it, when in the state of carbonate, a slow but constant current of carbonic acid, upon which plants at least partly live.

"4. The organic acid matter which thus unites with the lime continues itself to be acted upon by the air and water, aided by heat and light—itself passes through a succession of stages of decomposition, at each of which it gives off water or carbonic acid, retaining still its hold of the lime, till at last, being wholly decomposed, it leaves the lime again in the state of carbonate ready to begin anew the same round of change.

"During this series of progressive decompositions, certain more soluble compounds of lime are formed, by which plants are in part at least supplied with this earth, and which with the aid of the rains carry off both lime and organic matter from the soil. And again, the more rapid the production of the acid substances which result from the union of the organic matter with oxygen, the more abundant in general also the production of those gaseous and volatile compounds which they form by uniting with hydrogen, so that, in promoting the formation of the one class of bodies, lime also favours the evolution of the other in greater abundance, and thus in a double measure contributes to the exhaustion of the soil.

"The disposing action of lime to this twin form of decomposition few varieties of organic matter can resist, and hence arises the well-known efficacy of lime in resolving and rendering useful the apparently inert vegetable substances that not unfrequently exist in the soil.

"*Of the Comparative Utility of Burned and Unburned Lime.*—Is there no advantage, then, you may ask, in using caustic or burned rather than carbonate or unburned lime? If the ultimate effects of both upon the land be the same, why be at the expense of burning? Among other benefits may be enumerated the following:—

"1. By burning and slaking, the lime is reduced to the state of an impalpable powder, finer than could be obtained by any available method of crushing. It can in consequence be diffused more uniformly through the soil, and hence a smaller quantity will produce an equal effect. This minute state of division also promotes in a wonderful degree the chemical action of the lime. In all cases chemical action takes place between exceedingly minute particles of matter, and among solid substances the more rapidly, the finer the powder to which they can be reduced. Thus a mass of iron or lead slowly rusts or tarnishes in the air; but if the mass of either metal be reduced to the state of an impalpable powder—which can be done by certain chemical means—it will take fire when simply exposed to the air at the ordinary temperature, and will burn till it is entirely converted into oxide. By mere mechanical division the apparent action of the oxygen of the air upon metals is augmented and hastened in this extraordinary degree, and a similar result follows when lime in an impalpable state is brought into contact with the vegetable matter upon which it is intended to act.

"2. The effect of burned lime is more powerful and more immediate than that of unburned lime in the form of chalk, marl, or shell sand. Hence it sooner neutralises the acids which exist in the soil, and sooner causes that decomposition of vegetable matter of every kind to commence, upon which its efficacy, in a great degree, depends. Hence, when it can easily be procured, it is better fitted for sour Grass or arable lands, for such as contain an excess of vegetable matter, and especially for such as abound in that dead or inert form of organic matter which requires a stronger stimulus—the presence of more powerful chemical affinities, that is—to bring it into active decomposition. In such cases, the lime has already done much good before it has been brought into the mild state, and remaining afterwards in this state in the soil, it still serves, in a great measure, the same slower after-purposes, as the original addition of carbonate would have done.

"3. Besides, if any portion of it, after the lapse of two or three years, still linger in the caustic state it will continue to provoke more rapid changes among the organic substances in the soil, than mild lime alone could have done.

"4. Further, quick-lime is soluble in water, and hence every shower that falls and sinks into the soil carries with it a portion of lime, so long as any of it remains in the caustic state. It thus reaches acid matters that lie beneath the surface, and alters and ameliorates even the subsoil itself.

"5. It is not a small additional recommendation of quick-lime, that by burning it loses about 44 per cent. of its weight, thus enabling nearly twice the quantity to be conveyed from place to place at the same cost of transport. This not only causes a direct saving of money—as when the burned chalk of Antrim is carried by sea to the Ayrshire coasts—but an additional saving of labour also upon the farm, where the number of hands and horses is often barely sufficient for the necessary work."

The remark in the last paragraph of this extract from Prof. Johnston's Lectures, demonstrates that attention to the practical bearings of his subject, of which we have been speaking, no less than the other portions of it evidence his scientific ability. We shall return more than once to the consideration of selections from this work, which must for many years be a text-book on the subjects of which it treats.

Miscellaneous.

Statistics of Tile-draining in Ayrshire.—Tile draining as a system was commenced in this county about twenty years ago. At that period a great many farmers were very averse to it; so much so, that otherwise intelligent men would not consent to give it a fair trial. One great objection regarded the durability of the tile, and the improbability of the water getting down to the drain; all hesitation on these scores, if properly manufactured and judiciously laid, have been completely set aside: and to show how thoroughly the agricultural interest have become persuaded of the immense advantage of the system, it need only be stated that, there are beyond fifty Tile-works in Ayrshire alone! These will produce on an average thirty millions of tiles yearly—a quantity capable of draining not less than 12,396 imperial acres, allowing a distance of eighteen feet between the drains, and the tiles one foot long. The number of acres in Ayrshire is 793,600, and suppose one fourth to be incapable of amelioration, there will still remain 595,200 of improvable land. At the present rate of tile-making, taking it for granted that the whole will be used, and deducting 150 millions as the manufacture of previous years, it would require nearly 43 years to complete the drainage of the county. The price of thirty millions of tiles, at 25*s.* per 1000, would be 37,500*l.* The quantity of coal consumed will be about 15,000 tons, and the number of men and boys employed in making them not less than 1200. Thirty millions of tiles, one foot in length, will lay 1,621,621 falls of drains, 18½ feet to the fall, or nearly 6000 miles. Supposing the average cost of cutting, laying, and filling the drains to be 4*d.* per fall, the total would amount to 27,027*l.*, and calculating a labourer's wages at 10*s.* per week, for sixteen weeks in the year, the usual period of draining in this county, it follows that employment is given to 3378 men—a matter of no small moment, especially at a season when other out-door work is not to be had. Granting that 150,000,000 of tiles have been laid prior to this date, 61,980 imperial acres will necessarily have been drained. Take the produce before the land is subjected to this process at six bolls, and now at ten, per acre—a medium average—the increase over former years will be 247,920 bolls, or 123,960 quarters. Carrying the calculation a little farther, suppose that equal enterprise is displayed during the next ten years—and there is every probability that it will far exceed it, should no political shock affect the encouragement of home agriculture—the stimulus given to the productive capabilities of the soil will be still more strikingly apparent. Ten years' draining at 12,396 acres yearly, will give a total of 123,960, or an increase at the previous average of 247,920 quarters of grain, thus showing an augmentation in the means of existence of 66 per cent., while it is well known that the gross increase of the population in any previous period of ten years has not much exceeded 15 per cent. The above calculation of produce, &c., is of course limited to the county of Ayr; and, great as the benefits are which it exhibits, how much greater would they be in a national point of view were the naturally rich lands of England and Ireland subjected to a similar process!—*R. Boyle, Esq., in Ayrshire Agriculturist.*

Laughable Mistake.—A carrier, in the neighbourhood of Bolton, recently had to convey a barrel of Roman cement to a gentleman, and a barrel of guano to a farmer, each of which he delivered to the wrong party. A plasterer commenced preparing the guano, which was given to him as Roman cement; and, after much difficulty, owing to the bad smell, he succeeded in plastering a few yards of the gentleman's house; but, the stench becoming past his endurance, he called out to the gentleman, and said, "I am very sorry, but I must beg of you to get some other person to finish this job, for I never met with such Roman cement before. I am quite sick, and the smell will poison me if I go on; besides, did you ever see Roman cement so yellow?" The gentleman said there must be some mistake, for it evidently was not cement, and accompanied the plasterer to the carrier's, where they found the farmer complaining about the barrel of stuff he had got. It was like sand; but when mixed with water it turned into stone, and would flag his field instead of making the Grass grow almost as quick as winking, as he was told this new manure would do. His man had mixed water with some of it, and spread it out; and, on returning a short time afterwards, he found the stuff as hard as a flag, and came to him in breathless haste, saying, "Mestur, I nevvur seed sitch stuff I aw my loife as yon, for I mixt sum on't wi weytur, un its turned into a flag."—"O!" exclaimed the plasterer, "that must be the Roman cement, and I have been mixing up your guano instead of it."—*Bolton Free Press.*

Notices to Correspondents.

ADHESIVE LAND.—*Villager.*—You may safely use the sand, of which you sent a specimen, in the manner you propose. With respect to your light land, pond mud and clay, previously mixed with lime, are likely to be beneficial applications.

ALPACA.—*E. R.*—Thanks for your correction; the passage was quoted from another paper. The ordinary route from Peru is, of course, round Cape Horn.

BRAN.—*F.S.*—Thank you. You will see in our Home Correspondence that your information has been anticipated.

COMMON MELILOT.—*A. B.*—Your specimen is Trefolium melilotus officinalis. It is useful as food for horses, sheep, &c., but is inferior in this respect to another species of the same plant, the Sicilian Melilot, or long-rooted Clover. See Hort. Gram. Woburnensis.

DAIRY VESSELS.—*M. Q.*—We have made inquiries on the subject of your question, and shall soon be able to give you the result.

FAILURE IN CLOVER.—*W. C.*—This may be remedied if the weather and soil be suitable, by sowing Italian Rye-grass over the bare spots immediately after harvest. It would be too late, we think, for Clover.

GRASS.—*Landlord.*—Your specimen is Anthoxanthum odoratum, or sweet scented vernal Grass, of which Mr. Sinclair gives the following character in his Hort. Gram. Woburnensis:—"This Grass constitutes a part of the herbage of pasture on almost every kind of soil, though it only attains to perfection in those that are deep and moist. The chief property that gives merit to this Grass is its early growth. It is a true permanent pasture Grass. It does not appear to be particularly liked by cattle." The latter math is more valuable for grazing than the first crop. It is said to give new-mown hay its odour.

HIGHWAYS—GATES.—*A Constant Reader.*—Such gates as those mentioned by our correspondent are usually tailgates, which are so hung as to shut of themselves; and we think that persons wilfully leaving them open would be answerable for damage thereby occasioned. They appear to be, in fact, the fences of the parties by or for whom they were erected, subject to the easement enjoyed by the public of passing through them and the public must so use the right as not to injure other parties.—*W.*

HOPS.—*A. R. C.*—Sow the seed in March in a south border; keep them for a year in the seed-bed, and then prick them out a foot apart. They require protection for the first winter, as they are tender when young. The seed should be obtained from a female which has been purposely intertwined with a male, so that the flowers may come in contact. We have sent your note to *Ruricola.*

SAWDUST.—*Serra.*—See Mr. Parke's communication on the manufacture of peat charcoal, in a previous Number of this Paper. His suggestions there may be useful to you.

SULPHURIC ACID.—*Carl.*—You will find that the rest of your letter was inserted and answered amongst the Home Correspondence of last week. Use acid diluted with five weights of water; sprinkle it over each layer of manure in the heap, at the rate of 30 lbs. of acid to 5 cwt. of *excrement*, with whatever quantity of litter you may consider that to be mixed in your manure.

VALUE OF ROOTS.—*Querist.*—For the ordinary purposes of feeding sheep and oxen, we consider 20 tons of Swedes, 10 tons of Carrots, and 24 tons of Mangold Wurzel, each at the period when it is best as food, to be equal in value. For particular purposes, however, they differ in value. Thus Mangold Wurzel given to cows does not taint their milk—Swedes do; Carrots, again, are peculiarly valuable as food for horses. Ferns may be destroyed by perseverance in cutting them off as soon as they appear. Their existence in Grass indicates light, sandy, soft land.

***As usual, many communications have been received too late.

Markets.

HOPS, FRIDAY, July 12.

THE accounts from the blighted districts continues to come daily worse, and many Planters say they are past recovery in many places. Midd. Kent continues free from vermin, but mould is on the increase. The market is more active, and speculators buying freely.

FAIRBROTHER & SMITH, Hop-Factors.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 12.

Prime Meadow Hay	90s to 95s	Clover	100s to 130s	Straw	28s to 34s
Inferior ,,	80 85				

JOHN COOPER, Salesman.

CUMBERLAND MARKET, July 11.

Superior Old Hay	100s to 105s	Superior Clover	120s to 128s		
Inferior ,,	88 94	Inferior ,,	100 110	Straw	30s to 36s
New Hay ,,	75 80	New Clover ,,	90 100		

JOSHUA BARNS, Hay Salesman.

WHITECHAPEL, July 12.

Old Hay ,,	90s to 96s	Old Clover	110s 130s	Straw	30s to 34s
New Hay ,,	75 80	New Clover	90 100		

Trade very dull at the above prices.

SMITHFIELD, MONDAY, July 8.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 10	to 4s 0	Best Downs & Half-breds	3s 10	to 4s 0
Best Short Horns	3 6	3 8	Best Long-wools	3 6	3 10
Second quality Beasts	3 0	3 4	Ewes and second quality	3 4	3 8
Calves	3 6	4 2	Lambs	4 0	4 8
Pigs	3 4	4 0			

Beasts, 2040; Sheep and Lambs, 21,920; Calves, 796; Pigs, 272.

We have to-day a larger supply of Beasts, but a very great many are of inferior quality; in consequence, the best are readily bought, and do not suffer much abatement in price from last Monday, although the numbers have some effect upon it; some of the most selling Scots, &c., have made 4s 0d, and Short horns 3s 10d, but the greater part of good quality realise very little, if any, over 4s for the former description, and 3s 8d the latter; the middling qualities are a very heavy sale, and several remain unsold. Our numbers of Sheep and Lambs continue large, but we notice good Sheep are not very plentiful; the best qualities are little dearer; there is also rather more demand for the middling qualities since the late rains; 4s 8d for Downs, &c., 4s for Longwools, although realised in some instances, cannot be quoted as general prices. The best Lamb is making a little more money, but a large proportion of the supply of this article is also very inferior, and very difficult to dispose of. Veal-trade is rather brisker. In Pork, no alteration.

FRIDAY, July 12.

The Beast-trade to-day is very dull, at a little less money; the top prices for best Scots, &c., being 4s, and Short-horns, 3s 8d. The Mutton trade is rather heavy, about the same prices as on Monday; Downs, &c. 4s, and Longwools 3s 10d, Ewes, &c. 3s 4d to 3s 8d. There is a slight improvement in the Lamb-trade; some of the most selling qualities have made 4s, but the general price of good Lamb is from 4s 4d to 4s 8d. Veal-trade is a little better, prices running from 3s 8d to 4s 4d. Pork, 3s 4d to 4s. Although there is a shorter market generally, there is fully sufficient to meet the demand.

Beasts, 6,60; Sheep and Lambs, 10,010; Calves, 451; Pigs, 320.

4l, West Smithfield.

WOOL.—BRITISH, FRIDAY, July 12.

	per lb.				per lb.	
Long-wooled Wethers	11½d	to 1s 0½	Southdown Hoggitts	1s 0½	to 1s 2½
Do. Hoggitts	1s 1	1 3	Kent Fleeces	1 1	1 2
Southdown Fleeces	11½	1 1½			

JAMES PEARS, Wool Broker.

COVENT GARDEN, July 13.—The market has been well supplied with Fruit during the week, but Vegetables have been scarce, and generally inferior in quality. Trade remains nearly the same. Pine-apples are equally good and plentiful as they were last week, as are also Peaches and Nectarines, both of which are excellent in quality. Among the former we remarked some particularly fine specimens of Royal George, which are offered at nearly the same prices as last week. Grapes are sufficient for the demand. Some fine Melons are likewise in the market, at about the same prices as last week. Cherries are very abundant, and are a little reduced in price since our last report. Of Strawberries there are plenty, excellent in quality; the chief varieties are Keen's Seedling and Myatt's British Queen. There are also abundance of ripe Gooseberries and Currants, which have not altered in price since our last report. Vegetables are, for the most part, offered at nearly the same prices as last week, except Cauliflowers, which are a little dearer. Cabbages remain about the same, as do likewise Peas, Turnips, Carrots, &c., but French Beans are a little dearer. Potatoes are good and plentiful. Asparagus is nearly over for a season; a few bundles, however, are still in the market. Vegetable Marrow is nearly the same as last week; and no alteration has taken place in the price of Leeks. Lettuces and other salading are plentiful. Cut Flowers chiefly consist of Erica ampullacea, Erythrina crista galli, Ceanothus azureus, Carnations and Picotees, Verbenas, Heliotropes, Pelargoniums, Gardenias, Fuchsias, Lilies, Moss, Provence, and China Roses.

FRUITS.

Pine Apple, per lb., 4s to 8s	Walnuts, pleeling, per bush., 2s 6d to 3s
Hothouse Grapes, per lb., 3s to 6s	Oranges, per dozen, 1s to 2s 6d
Melons, each, 2s to 6s	— per 100, 6s to 16s
Peaches, per dozen, 6s to 18s	Lemons, per dozen, 1s to 2s
Cherries, 6 all, per lb., 1s to 3s	— per 100, 6s to 14s
— Standards, per doz., 1s to 3s	Almonds, per peck, 6s to 7s
Currants, per half-sieve, 2s to 3s	Sweet Almonds, per lb., 2s 6d to 3s
Strawberries, per gallon, 6d to 2s	Nuts, Barcelona, 20s to 24s
Gooseberries, per half-sieve, 1s to 2s	— Cob, 14s

VEGETABLES.

Cabbages, per dozen, 6d to 1s 6d	Vegetable Marrow, per doz., 1s to 2s
Cauliflowers, per doz., 2s to 3s	Spinach, per sieve, 1s 6d to 3s
Sorrel, per bl.-sieve, 6d to 9d	Leeks, per doz. bun., 2s to 4s
Artichokes, per doz., 2s to 4s	Garlic, per lb., 6d to 8d
French Beans, per bl.-sieve, 2s to 3s	Onions, per bunch, 2d to 10d
Potatoes, old, per ton, 80s to 90s	— large, per bushel, 1s to 2s
— per cwt., 2s 6d to 4s	Shallots, per lb., 4d to 6d
— per bushel, 1s 6d to 3s	— Green, per bunch, 2d to 4d
— Kidney, p. bush., 2s 6d	Lettuce, per score, 6d to 2s
— New, per cwt., 4s to 8s	Celery, per bunch, 6d to 1s 2d
— per half sieve, 1s 6d to 3s	Mushrooms, per pottle, 2s to 3s 6d
New Turnips, per bunch, 3d to 6d	Small Salads, per punnet, 2d to 3d
Peas, per bushel sieve, 1s 6d to 3s 6d	Watercress, p. 12 sm. bun. 3d to 6d
Red Beet, per doz., 1s to 2s	Parsley, per bl.-sieve, 1s to 1s 6d
New Carrots, 4d to 1s	Tarragon, Green, per bunch, 3d to 4d
Basil, per bunch, 4d to 6d	Green Mint, per bunch, 2d to 3d
Horse Radish, per bundle, 2s to 3s	Marjoram, per bunch, 4d to 6d
Savory, per bunch, 2d to 3d	Chervil, per punnet, 2d to 3d
Cucumbers, each, 4d to 1s 6d	

MARK-LANE, MONDAY, July 8.

We had a fair supply of English Wheat at Market this morning, which met a slow sale at a decline of fully 1s. per qr. from this day se'nnight; the transactions in Free Foreign were very limited, and the few retail sales effected brought last week's prices.—The Barley is exceedingly heavy, and must be noted 1s. lower.—Beans and Peas have each declined 1s. per qr.—There is a large show of Oats on the Market, and to effect sales, a reduction of 1s per qr. must be submitted to.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	White	49	51	Red	46	54
—— Norfolk, Lincolnshire, and Yorkshire		50	55	White	—	—
Barley, Malting and distilling 27s to 30s	Chevalier	32	33	Grind.	25	32
Oats, Lincolnshire and Yorkshire	Polands	20	21	Feed	19	22
—— Northumberland and Scotch	Feed	20	23	Potato	21	25
—— Irish	Feed	18	20	Potato	19	24
Malt, pale, ship		58	62			
—— Hertford and Essex		60	68			
Rye		29	32			
Beans, Mazagan, old and new	32 to 33	Tick	30	34	Harrow	31	34
—— Pigeon, Heligoland	33 to 37	Winds	—	—	Longpod	—	—
Peas, White	34 to 37	Maple	30	33	Grey	29	34

ARRIVALS IN THE RIVER LAST WEEK.

Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 4550 Sks. — Brls.	5633	410	3789	1672	—	933	455
Irish . 600 „ — „	—	—	20	15442	—	—	—
Foreign — „ — „	11782	5513	—	10915	—	1270	952

FRIDAY, July 12.

The arrivals of Wheat, both English and Foreign, since Monday, have been moderate, and the trade continues dull at that day's quotations.—There is scarcely any business in Barley, Beans, or Peas, and their value is nominally the same.—Having a large supply of Oats, the Dealers are disposed to refrain from buying for the present, and sales can only be effected to a limited extent, at a further reduction.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	4430	240	2990	3540 Sk
Irish	—	—	22010	—
Foreign	6160	6260	6970	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May 31 per Quarter.	55s 6d	32s 9d	21s 7d	34s 0d	35 11	34 1
June 7	55 6	31 4	21 11	33 11	35 11	34 1
— 14	55 8	31 10	22 6	34 4	36 11	34 1
— 21	55 8	32 6	22 8	34 2	37 10	35 2
— 28	55 9	32 6	22 9	33 9	38 0	36 1
July 5	56 8	33 11	23 0	33 2	38 2	36 6
6 weeks' Aggreg. Aver.	55 8	32 6	22 5	34 1	36 11	34 11
Duties on Foreign Grain	17 0	6 0	5 0	5 0	6 0	5 0

SEEDS, July 8.

Canary	per qr	58s to 58s	Linseed Cakes, Foreign, p. ton	6l to 7l	10s
Caraway	per cwt	44	46	Mustard, White p. bush.	5s	7
Clover, Red, English	69	74	— Superfine „	6	10
— Foreign	64	74	— Brown „	—	—
— White, English	100	120	Rapeseed, English, per last	26l	28l
— Foreign	94	120	Rape Cakes per ton	—	—
Coriander	12	13	Saintoin	—	—
Hempseed per last	35	40	Tares, Reg. winter p. bush.	6	8
Linseed per qr	—	—	— Foreign	—	—
— Baltic	—	—	Teasel per cwt	—	—
— Cakes, Eng. per 1000	9l	10l 10s	Turnip (no variable for quotation).		

Liverpool Corn Trade.

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APSLEY PELLATT, FALCON GLASS WORKS, Holland-street, Blackfriars-road, is still making the Milk-Pans—as described in the *Gardeners' Chronicle*, of clear white flint glass, at 5s. 6d. each, or 3l. per dozen. Early in July A. P. will make the Milk-Pans of green glass of excellent quality, at 42s. per dozen.

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THE BEST MEDICINE IN THE WORLD, are now established as the only *certain* cure of disease in the human frame. Sufficient has already been advertised in the public prints to convince any reasonable person that the efficacy of this Medicine is unbounded, and that every disease will soon vanish from the effects of this popular remedy. Already the Proprietors have received and published 26 different sheets of Testimonials; and, besides, have received some thousands of letters confirming all the statements published, and proving the immense benefit derived by all classes by taking PARR'S LIFE PILLS. Testimonials are received daily, and it would be impossible in a newspaper to publish one-half received; and the following are selected as people well known in their respective neighbourhoods, and whose testimony is unquestionable. Further sheets of Testimonials may be had, gratis, of all Agents.

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BAPTISM, 1767.—THOMAS, son of JAMES and MARTHA BARLOW, of Hale, Cheshire, was Baptised the 27th day of November, in the year of our Lord 1767.

From the Parish Register—F. ROWDON.
Signed—JOHN BALDWIN, Vicar.

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"It seems probable that your Paper will prove more serviceable to the Botanical traveller than the thick grey Paper often sent with specimens from Germany, and much esteemed by English Botanists; but having the serious defect of extreme liability to tear, which does not appear in your Paper. It certainly ought to supersede the demy Grey recommended in the Instructions issued by the Botanical Society of Edinburgh."—*H. C. Watson, Esq., F.L.S., Vice-President of the Botanical Society of London.*
Professor Lindley, University College, London, & C. C. B. Babington, Esq., F.L.S., St. John's College, Cambridge, have also kindly allowed the use of their names as strongly recommending it.
May be had of the Manufacturers, Halstead, Essex; and of their agents, Mr. E. Newman, 9, Devonshire-street, Bishopsgate-street, London; and Mr. D. S. McIntosh, 12, Catharine-street, Edinburgh.
For Sizes & Prices, see *Gardeners' Chronicle*, June 8th & 15th.

LYNDON'S PATENT SPADE.—Sold by Green and Constable, Ironmongers, 36, King William-st., London-bridge. Horticultural Tool Chests, Bright Ladies' Spades, Mowing Machines, Water Pots, Lord Veseey's Patent Hoes, with a general assortment of Garden Implements.

CURTIS'S BUDDING KNIFE.—"This is the neatest Budding-knife we have seen. The ivory handle is shaped like the blade of a curved penknife, sharp, and turned up at the point, and is evidently extremely well contrived for the purpose it is intended."—Opinion of Professor LINDLEY, in the *Gardeners' Chronicle*, July 20, 1843.

GEORGE PLUM, Surgical Instrument Maker and Cutler, No. 262, Strand, London, and at No. 3, Dolphin street, Bristol, begs to call the attention of the public to the above new and desirable article, manufactured solely by him. Sent free to any part of the kingdom, on receipt of 38 postage stamps, or a post-office order for 3s. 2d.

MAGICAL EFFECT ON FLOWERS.—*Gardeners' Chronicle*, April 27th.—"I cannot speak of POTTER'S LIQUID GUANO in adequate terms of praise. I tried it on Hyacinths, and other Flowers. The effect was magical. My flowers were the finest I ever beheld, and they preserved their beauty nearly double their usual time."—*W. Kidd, Hammersmith.*

"I write to describe the wonderful efficacy of POTTER'S LIQUID GUANO: Peas, Onions, and Asparagus have been singularly improved by it. People came to admire the appearance of the garden."—See *Chronicle*, p. 406.

*** Beware of an ineffectual imitation. See *Chronicle*, p. 406—"Humphreys's Compound."

Sold by most Chemists and Seedsmen.

Factory, 28, Upper Fore-street, Lambeth.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	
Garden Edging	Orange Tubs, Flower Boxes, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

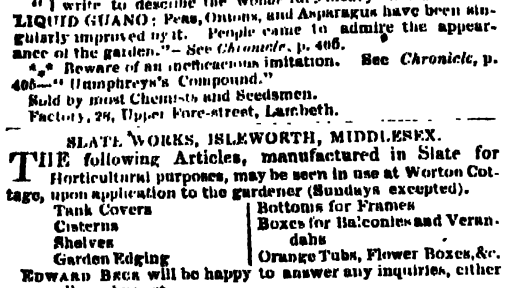
D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

KNDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. Mr. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

TURNIP SEASON.

[illegible] awaits (Foreign and Potter's), RAPE-DUST, [illegible]DUST, CLARKE'S COMPOST, and all other [illegible]r the TURNIP CROP, to be had on the best [illegible] FOTHERGILL, 68, Upper Thames-street.

HORTICULTURAL SOCIETY of LONDON.—EXHIBITION AT THE GARDEN, July 13th, 1844.

INSTRUCTIONS TO THE JUDGES AS TO THEIR CONSIDERATION OF THE NOVELTY OF THE OBJECTS EXHIBITED.

In forming your opinion of the subjects submitted to you for examination, you are requested to take into consideration whether they have been exhibited previously or not. The object of this regulation is to give specimens produced at the Society's Garden Meetings, for the first time, an advantage over others previously exhibited, although of equal merit; and to obstruct the system of exhibiting very fine plants repeatedly, to the disadvantage of others. The EFFECT of this regulation should be,—1. That if two collections should be nearly the same in point of merit otherwise, that in which no previously exhibited specimen shall be found, will be regarded as the better of the two. 2. That in all cases of doubt, the person who had not exhibited previously shall have the benefit of the doubt. 3. That when each of two competitors shall have introduced previously exhibited plants into his collection, that collection which contains the fewest of them shall be deemed the superior if they are otherwise nearly alike. It is not, however, wished that the previous exhibition of plants should depreciate their value so much as to place a superior collection below one very decidedly inferior. The APPLICATION of this regulation is left to your judicious consideration.

AWARD OF THE JUDGES.

LARGE GOLD MEDAL.

1 To Mr. Mylam, Gardener to Sigismund Rucker, Esq., jun., F.H.S., for a collection of Exotic Orchidaceæ

GOLD KNIGHTIAN MEDAL.

1 To Mr. Robertson, Gardener to Mrs. Lawrence, F.H.S., for a collection of 30 Stove and Greenhouse Plants
2 To Messrs. Rollisson, of Tooting, for a collection of Exotic Orchidaceæ
3 To Mr. Don, Gardener to F. G. Cox, Esq., of Stockwell, for six species of Exotic Orchidaceæ
4 To Mr. Spencer, Gardener to the Marquess of Lansdowne, F.H.S., for a miscellaneous collection of Fruit.

GOLD BANKSIAN MEDAL.

1 To Mr. Frazer, of Leyton, Essex, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Staines, of Middlesex-place, New-road, for 12 varieties of Pelargonium, in pots of 24 to the cast
3 To Mr. Catleugh, of Hans-place, Sloane-street, for the same
4 To Mr. Dobson, Gardener to Mr. Beck, of Isleworth, for 12 varieties of Roses in pots
5 To Messrs. Lane and Son, of Great Berkhampstead, for 25 varieties of Roses in pots
6 To Mr. Robertson, for a collection of Exotic Orchidaceæ
7 To Mr. Redding, Gardener to Mrs. Marryatt, F.H.S., for six species of Exotic Orchidaceæ
8 To Mr. Robertson, for 20 varieties of Cape Heaths
9 To Mr. T. Jackson, F.H.S., for the same
10 To Mr. Henderson, Gardener to Sir George Beaumont, Bart., for a miscellaneous collection of Fruit

SILVER GILT MEDAL.

1 To Mr. W. Cock, F.H.S., of Chiswick, for 12 varieties of Pelargonium, in pots of 24 to the cast
2 To Mr. Gaines, of Battersea, for the same
3 To Mr. Catleugh, for 12 varieties of Pelargonium, in pots of 12 to the cast
4 To Mr. Epps, of Maidstone, for a collection of 15 Stove and Greenhouse Plants
5 To Mr. Bruce, Gardener to Boyd Miller, Esq., for a collection of six Stove and Greenhouse Plants
6 To Mr. Frazer, for a collection of six Stove and Greenhouse Climbers
7 To Mr. Green, Gardener to Sir Edmund Antrobus, Bart., F.H.S., for a collection of 20 varieties of Cape Heaths
8 To Messrs. Fairbairn, of Clapham, for the same
9 To Mr. Bruce, for a collection of six species of Cape Heaths
10 To Mr. J. W. Dawson, of Brixton Hill, for the same
11 To Messrs. Veitch and Son, of Exeter, for Cattleya Loddigesii
12 To Mr. Robertson, for Saurauja spectabilis
13 To Mr. Potts, of Shrewsbury, for Plant-cases on Mr. Ward's plan
14 To Mr. Dytche, Gardener to Sir F. Goodricke, of Studley Castle, Warwick, for Grapes
15 To Mr. Hamp, Gardener to James Thorne, Esq., of Mawbey House, South Lambeth, for the same
16 To Mr. J. Davis, of East Barnet, for the same
17 To Mr. Hamp, for Pine Apples
18 To Mr. M'Ewen, Gardener to Colonel Wyndham, of Petworth, for the same
19 To Mr. Parsons, Gardener to A. George, Esq., of Ponder's End, near Enfield, for the same
20 To Mr. Brewin, Gardener to R Gunter, Esq., F.H.S., for the same

LARGE SILVER MEDAL.

1 To Mr. Green, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Stowe, Gardener to W. R. Baker, Esq., F.H.S., for a collection of six Stove and Greenhouse Plants
3 To Mr. Gaines, for 12 varieties of Pelargoniums, in pots of 12 to the cast
4 To Alexander Rowland, Esq., F.H.S., for a collection of Roses, in 50 varieties
5 To Messrs. Paul and Son, of Cheshunt, for the same
6 To Mr. Epps, for a collection of 20 species of Cape Heaths
7 To Mr. J. Doran, Gardener to T. Hawes, Esq., F.H.S., for a collection of six species of Cape Heaths
8 To Mr. Frazer, for the same
9 To Mr. C. Embleton, Gardener to Thomas Barnard, Esq., of Park-terrace, North Brixton, for a collection of 24 varieties of Carnations
10 To Messrs. Norman, of Woolwich, for the same
11 To Mr. Embleton, for a collection of 24 varieties of Picotees
12 To Mr. Dickson, of Acre-lane, Brixton, for the same
13 To Mr. Gaines, for a collection of 12 varieties of Fuchsia
14 To Mr. Laing, of Twickenham, for the same
15 To Mr. Dods, Gardener to Sir George Warrender, Bart., F.H.S., for a miscellaneous collection of Fruit
16 To Mr. Robinson, Gardener to A Sinclair, Esq., of Hill-side House, Liverpool, for Grapes
17 To Mr. Ingram, Gardener to Her Majesty, at Windsor, for Royal Albert Grapes
18 To Mr. Wilmot, of Isleworth, F.H.S., for Grapes
19 To Mr. T. Belton, Gardener to Charles Winn, Esq., F.H.S., for Pine Apples
20 To Mr. Wilmot, for the same

SILVER KNIGHTIAN MEDAL.

1 To Mr. George Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of six Stove and Greenhouse Plants
2 To Messrs. Lane and Son, for a collection of Moss Roses, in 12 varieties
3 To Mr. N. Wilson, Gardener to Earl Howe, F.H.S., for a collection of Roses, in 50 varieties
4 To Messrs Lane and Son, for the same
5 To Mr. Buttery, Gardener to F. R. Symons, Esq., of Norbiton Park, Kingston, for a collection of Roses, in 25 varieties
6 To Mr. E. P. Francis, of Hertford, for the same
7 To Mr. Glendinning, of Turnham Green, F.H.S., for a collection of six species of Cape Heaths
8 To Mr. Willmer, of Sunbury, for a collection of 24 varieties of Carnations
9 To G. Edmonds, Esq., of Wandsworth-road, for a collection of 24 varieties of Picotees
10 To Messrs. Norman, for the same
11 To Messrs. W. P. Ayres, Gardener to J. Cook, Esq., F.H.S., for 12 varieties of Fuchsia
12 To Mr. Kendall, of Stoke Newington, for the same
13 To Mr. Eyles, Gardener to Sir George de Hochepied Larpent, Bart., F.H.S. for Calanthe plantaginea
14 To Messrs. Mountjoy and Son, of Ealing, for a collection of Lilium eximium
15 To the same for a collection of Gloxinias
16 To Mr. Dobson, for a collection of Achimenes
17 To Mr Robertson, for Nepenthes distillatoria
18 To Mr. Fyles, for Chloeneus racemosa
19 To Mr. Robertson, for the best named collection, (*no error in 30 plants, and beautifully written.*)
20 To Mr. Parker, Gardener to J. H. Oughton, Esq., of Roehampton, for a miscellaneous collection of Fruit
21 To Mr. Atlee, Gardener to H. Beaufoy, Esq., of South Lambeth, for Grapes
22 To Mr. Dods, for the same
23 To Mr. Davis, Gardener to Abel Smith, Esq., M.P., F.H.S., for the same
24 To Mr. Smith, Gardener to Sir Gore Ouseley, Bart., F.H.S., for the same
25 To Mr. Mitchell, of Kemp Town, near Brighton, for the same
26 To Mr. Sellers, Gardener to L. V. Watkins, Esq., F.H.S., for Pine Apples
27 To Mr. Davis, of East Barnet, for Nectarines
28 To Mr. Snow, Gardener to the Earl de Grey, F.H.S, for a collection of Peaches and Nectarines
29 To Mr. M'Ewen, for Figs
30 To Mr. Ingram, for Green Gage Plums

SILVER BANKSIAN MEDAL.

1. To Messrs. Cobbett, for a collection of Moss Roses, in 12 varieties
2 To the same, for a collection of Roses, in 50 varieties
3 To Mr. Slowe, for a collection of Roses, in 25 varieties
4 To Mr. Cripps, of Tunbridge Wells, for the same
5 To Mr. Ward, of Woolwich, for a collection of 24 varieties of Carnations
6 To the same, for a collection of 24 varieties of Picotees
7 To Mr. Willmer, for the same
8 To Messrs. Lane and Son, for 12 varieties of Fuchsia
9 To Messrs. Henderson and Co., Pine-apple-place, Edgeware-road, for the same
10 To Mr. Robertson, for Achimenes grandiflora
11 To Mr. Bailey, Gardener to the Lord Archbishop of York, F.H.S., for Crassula grandiflora miniata
12 To the same, for Crassula nitida
13 To Mr. G. Hyde, Gardener to B. Cotten, Esq., of Park House, Wanstead, for Lisianthus Russellianus
14 To Mr. Frazer, for Crowea saligna.
15 To Mr. Robertson, for Medinilla erythrophylla
16 To the same, for Erica radiata
17 To Mr. May, of Woodford, Essex, for Tristania nerifolia
18 To Mr. Bailey, for a miscellaneous collection of Fruit
19 To Mr. Umpleby, Gardener to H. Benyon, Esq., of Roundhay, Leeds, for Grapes
20 To Mr. J. Godfrey, Gardener to the Earl of Limerick, for the same
21 To Mr. Parsons, for the same
22 To Mr. Chapman, for the same
23 To Mr. Henderson, for Pine Apples
24 To Mr. Spencer, for Peaches and Nectarines
25 To Mr. C. Ewing, Gardener to O. F. Meyrick, Esq., F. H. S. for Peaches
26 To Mr. Ferguson, Gardener to his Grace the Duke of Buckingham, for Nectarines
27 To Mr. Fleming, Gardener to His Grace the Duke of Sutherland, F.H.S., for Peaches
28 To Mr. Stanley, for a collection of Madras Citrons
29 To Mr. Pedrick, Gardener to H. Pownall, Esq., for Black Tartarian Cherries
30 To Mr. Redding, for Cherries
31 To Mr D. Caldwell, Gardener to E. Bligh, Esq., for a specimen Orange
32 To Mr. Baxter, Gardener to J. W. Cressey, Esq., of Poplar Cottage, Shepherd's Bush, for Cherries
33 To Mr. Meyers, of Brentford, for the same
34 To Messrs. Rollisson, for the second best-named collection, (*one error in 30 plants.*)

THE CERTIFICATE OF MERIT.

1 To Mr. Catleugh, for a collection of 24 varieties of Carnations
2 To Mr. J. T. Willmer, of the King's-road, Chelsea, for the same
3 To Mr Kendall, of Stoke Newington, for a seedling Fuchsia, (Erecta elegans.)
4 To Mr. Gaines, for a seedling Pelargonium, (Duchess of Lancaster)
5 To Mr. Willmer, of Sunbury, for a seedling Carnation, (Mayo)
6 To Mr. Norman, for a seedling Picotee, (Beauty)
7 To Mr. W. Cock, F.H.S., for a collection of Balsams
8 To Mr. Cuthill, F.H.S., for Lisianthus Russellianus
9 To Mr. Dawson, of Brixton, for Erica ampullacea major
10 To Mr. Hopgood, of Bayswater, for Sollya linearis
11 To Mr. Robertson, for Achimenes longiflora
12 To Messrs. Henderson, for Erica tetragona
13 To Mr. Robertson, for Erica eximia
14 To the same, for Erica tricolor elegans
15 To Mr. Gad, Gardener to T. Lenox, Esq., F.H.S., for Brugmansia floribunda
16 To Mr. T. Jackson, F.H.S., for the third best-named collection, (*one error in 20 plants*)
17 To Messrs. Fairbairn, for the fourth best-named collection, (*one error in 20 plants*)
18 To Mr Mylam, for the fifth best-named collection, (*two errors in 33 plants*)
19 To the Hon and Rev. Robert Wilson, F.H.S., for Raspberries
20 To Messrs. Youell and Co., of Great Yarmouth, for Fastolff Raspberries

*** In consequence of CC. 2, CC. 9, CC. 4, CC. 10, having been exhibited as *new or rare* plants, instead of miscellaneous plants so far as the three first are concerned, and as a single specimen of Orchidaceæ in the case of CC. 10, the Judges have been obliged to pass them by, instead of assigning them the Medals which they would otherwise have received. They must also add that Brugmansia floribunda *scarcely* comes within the meaning of new or rare plants.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, July 20, 1844.

GUANO.—For Sale, in bags of 1 cwt. each; just landed, with a succession of cargoes to arrive.

There being considerable variety in the qualities of Guano imported from different places, and indeed from the same island, each parcel will be chemically analysed with the utmost precision, to show its relative productive power. A copy of such analysis will be given to buyers, and also instructions as to the most approved mode of using the Guano, furnished by the experience of eminent Agriculturists in England and Scotland.

Large parcels will be delivered direct from the Ship, or waterside premises. Smaller quantities may be had at the warehouses, 24 and 25, Billiter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to JAMES CLARK, 24, Billiter-street.

THE COUNCIL
OF THE
Horticultural Society of London

Having ascertained that a very large number of the Exhibition Tickets of the present season have not been used, chiefly on account of the unfavourable weather of the 13th—the last day fixed for the Exhibitions; and

HIS GRACE THE DUKE OF DEVONSHIRE,

the President of the Society, having most kindly offered again to throw open the grounds of Chiswick House,

NOTICE IS HEREBY GIVEN,

That there will be on WEDNESDAY, the 31st of July, a MUSICAL PROMENADE in the Society's Garden, at which the unused Tickets of the present season will be received. Other Tickets for the occasion will be issued till the 30th inst. at this Office, price 3*s.* 6*d.* each, or at the Garden on the 31st inst., at 5*s.* each; under the regulations already in force for governing admission to the Exhibitions at the Garden. The usual refreshments will be supplied by Messrs. Gunter.—21, Regent-street.

The Gardeners' Chronicle.

SATURDAY, JULY 20, 1844.

MEETING FOR THE TWO FOLLOWING WEEKS.
TUESDAY, July 23 South London Floricultural . 1 P.M.

At last, after 36 fine or nearly fine days spread over 12 years, the HORTICULTURAL SOCIETY have experienced a wet meeting, which was the more unfortunate, because his Grace the Duke of Devonshire, the noble President of the Society, had opened his beautiful park and gardens to the enjoyment of the visitors, and an unusual abundance of the most accomplished military musicians had been provided, to enliven the scene among the promenaders.* Nevertheless, 4278 persons thronged into the tents and grounds, as regardless of the pitiless rain as they were in May of the bitter wind.

The Exhibition was by far the best we ever saw in the Garden in July, and we incline to think it in some respects the finest of the present season. Of the Orchidaceæ, the single specimens, such excellent tests of cultivation, and, indeed, of the majority of the plants, it is impossible to speak in terms of too much praise. The fruit, however, was the great thing. Conceive 96 Pine apples, 300 or 400 lbs. of Grapes, and endless dishes of all sorts of other kinds, capitally grown, packed in close order upon a very large circular table, tier above tier, and some notion may be formed of this extraordinary spectacle. We find that as many as 44 Medals were distributed among the competitors.

Although it is impossible on occasions of this kind for everybody to win Medals, yet we do think it due to the exhibitors to say, that we remember the time when the worst of those who showed last Saturday would have stood a fair chance for first-class Medals; so much has gardening advanced of late.

The system of offering rewards for correct labelling has of course produced its effect. It has not only caused the plants to be in almost all cases correctly and legibly named—a great convenience to the spectator—but it has turned the attention of the exhibitors to the importance of spelling the names of their plants with exactness In the great collection exhibited last Saturday by Mr. Robertson, gr. to Mrs. Lawrence, there was not a single error which the critic could detect, and the writing of the labels was a beautiful specimen of penmanship Some people may think this a point of no importance, and that it matters not at all whether a man writes and spells well or not, so that he is intelligible. Such persons will also think that it is all the same whether they grow their plants well or ill, so that they do it well enough to keep their places.

It is hopeless to expect that great meetings of this sort should always pass off without errors on the part of the various persons engaged in doing in six hours what ought to consume twenty-four—and in these we include exhibitors, judges, and the officials of the Garden. But if there is one source of error less excusable than another, it is that of mis-entries by the exhibitors. The Society gives the fullest explanation of the classes in which plants are shown; printed papers, explaining in ample detail all that it is necessary to know, are distributed by thousands, to say nothing of advertisements; and yet persons will bring their plants to the Exhibition without having once examined the regulations, and place them in classes to which they in no manner belong; the consequence of which is their being disqualified. It may be said that this signifies to nobody except the exhibitors, who are sufficiently punished for their negligence by the loss of their medals; but we cannot look at the matter exactly in that way. We never see without regret fine specimens, which must have cost the grower much care and solicitude, and which he has perhaps been nursing for weeks, in the laudable hope that they might at last gain for him some honourable distinction, passed by, merely because they are put into wrong classes. It is distressing that the error of a moment should thus nullify the labour of weeks. Yet this constantly occurs, and the Society can neither prevent nor remedy it. For example:—Last Saturday there were the following specimens, all of them well grown, and creditable to anybody, which experienced this disaster. One of the best plants we ever saw of Gloriosa superba, from Mr. Gad, gardener to Thomas Lenox, Esq., a capital Erica tricolor from Messrs. Henderson, Pine Apple Place, and a very nice Statice sinuata, from Mr. Thomas Jackson of Kingston, were all passed over because they were shown, as single specimens of new or very rare ornamental plants, which was absurd. And in like manner, a fine Stanhopea oculata, the original variety, and one of the best, a plant introduced to our gardens above fifteen years ago, was also exhibited as a new plant, although there is a class expressly for single specimens of Orchidaceous plants. We do trust that in another year exhibitors will avoid these most unnecessary mistakes.

Now that the last of these great Horticultural meetings is over, we would beg all those who are interested in the success either of them or of gardening, now, when all the circumstances relating to them are fresh in their memory, to state by letter, addressed *To the Vice-Secretary*, 21, *Regent-street*, whatever they can suggest by way of improving the regulations. We can assure them that the Committee, to whom those letters will be submitted, will give them the fullest attention, and will adopt the recommendations wherever they feel that they would be justified in doing so It is probable that the Committee will meet during this month, in order to settle the arrangements for next year.

We stop the press to announce that the noble PRESIDENT of the HORTICULTURAL SOCIETY has, in the kindest manner, offered again to throw open the grounds of Chiswick House to the visitors to the Garden of the Horticultural Society, and that the Council have therefore just decided upon providing a large attendance of Military Bands at a Musical Promenade in the Garden on the 31st inst., to which all the holders of the unused Exhibition tickets of Saturday last will be admitted. For further information we must refer to the advertisement in another place, and to our columns of Saturday next.

Some weeks since a correspondent from Brixton asserted that the fertilising substance extensively sold in the shops under the name of "HUMPHREYS'S SOLUBLE COMPOUND," and stated to form a *liquid Guano* of superior quality when dissolved in water, was "little else than nitrate of soda and common salt," and that a chemist had been unable to find in it a trace of phosphate of lime (p. 405). The following week Mr. Humphreys replied that his Compound contained neither nitrate of soda nor common salt; and *that the phosphoric acid in his article is introduced under a form of far more general application than phosphate of lime* (p. 430). This seems to have excited the attention of Mr. Potter, who (p. 445) after a chemical examination of the material, pronounced the "Compound" to be utterly devoid of phosphoric acid in any shape.

Here we should have been contented to let the matter rest; for Mr. Potter was not likely to peril his reputation as a chemist by an assertion which could be so easily disproved, if untrue. However, Mr. Humphreys persevered in his original declaration, as will be seen by the following not very courteous letter:

"Lest the public should be misled by the insinuations contained in Mr Potter's Letter of last week, I beg leave to show the simple facts of the case. In my communication at page 430, it was stated that the compound *contains phosphoric acid in a form of* MORE EXTENSIVE USEFULNESS *than that of the phosphate of lime*—and that, as the latter salt is insoluble in water, it was absurd to expect to find it in the Compound." On this Mr. Potter remarks:—"Who ever heard of guano without it?" Now, if Mr. P. will refer to the masterly analysis of guano, by Vellacher, given in the "Pharmaceutical Journal," p. 501, he will find that "guano contains no *soluble* salts of lime;" so that the point is, as it were, twice proved. an actual solution of guano itself does not contain lime! Mr. Potter next relates some inefficient chemical experiments, on which he assumes, notwithstanding my previous contrary assertion, that the Compound is "utterly devoid of phosphoric acid in any shape." I shall not notice the personality which follows, further than to hint to Mr. Potter, that the Compound was not put together with the view that it could be analysed by such chemists as himself, and that *the phosphoric acid is used* UNDER A CHEMICAL ARRANGEMENT, *which renders it insoluble* under the action of the test he names, or even of that very superior one in general use, the nitrate of silver. I am sorry Mr. Potter does not fancy my advertisement, which is evidently distasteful to him, exactly in proportion as it will be useful to the public. But one word more:—Mr. Potter speaks of my public statement, that the Compound contains phosphoric acid, as "an unsubstantiated assertion;" I would, therefore, refer him, or any other person, for a corroboration, to Messrs. Davy Macmurdo, and Co., who have manufactured the preparation of phosphoric acid in question, for the Compound.—J. D. HUMPHREYS."

Here, then, is a violent clash of assertions; and it is impossible for the public, which is much interested in the question, to determine what is the truth. Whether Mr. Humphreys's Compound contains phosphoric acid, according to the assertion of its vendor, or does not, as Mr. Potter has affirmed, is a very material fact for the buyer, and one which, since this Journal has been made the scene of contention, we feel bound to answer. We have therefore caused the "Soluble Compound" to be analysed by one of the most skilful chemists of the present day, and the following is his Report:—

"I have examined two samples of 'Humphreys's Soluble Compound.' I find it to be nitrate of ammonia. It contains rather less than 1 per cent. of other matters; namely, iron, from which it derives its colour, lime, alkaline salts, chlorine, sulphuric acid, and phosphoric acid. The quantity of each of the substances is very minute; I have not estimated it The oxide of iron amounts to 0.32 per cent. *I regard them of no value as part of the manure.*"

We shall make little comment on this fact. Analysis proves that Humphreys's "Soluble Compound" contains so little phosphoric acid that it is doubtful whether it exists in it at all. Of 100 lbs. of the Compound 99 lbs. are nitrate of ammonia, and the remaining pound consists of about five ounces of oxide of iron, and *eleven ounces of lime, alkaline salts, chlorine, and sulphuric and phosphoric acids!* So that what Mr. Humphreys calls "a form of phosphoric acid of far more general application and more extensive usefulness than phosphate of lime," is in fact its almost total absence. By this kind of reasoning its total absence would have made it more useful still. Nobody will now dispute his statement, that it is used under a chemical arrangement which renders it invisible under ordinary tests. Those must be delicate tests which can discover a drop in a hogshead.*

ENTOMOLOGY.

THE WOOLLY OAK-GALL, produced by *Cynips Quercus-ramuli*.—As the galls formed by insects are very remarkable and interesting objects, and the habits of the various species creating them but little known in this country, even by men of science, I shall avail myself of every opportunity to render their histories more familiar to our readers. Having already investigated the economy of several species,† I must refer to my former papers for a general account of the family.

The woolly Oak-galls do not appear to be so common as many other sorts, at least I have never seen them growing; it was, therefore, with much pleasure that I received examples last May, from Mr. Coller, of Normanton Turville; the tree at that period, I learned, was literally covered with these Oak-apples, but none of the common varieties could be found upon it. On opening one of the galls at that time, I found at the base, and amongst the stamina of the male flowers, little brown, woody, oval cells, each containing a minute, white, shining maggot. Towards the end of June I received a fresh supply of these galls; they were not so white as the former, and Mr. Coller informed me that many of them had turned brown and fallen off. In May they looked like balls of white raw cotton, but on closer inspection they exactly resembled short wool, and still more so in June, when they were yellowish, with a pale brownish tinge in parts.

It is certainly wonderful that the puncture of these little flies should produce such a *revolution* in the regular course of nature, as to change flowering buds into large masses of fine threads; and equally marvellous is it, considering the similar conformation of all the Gall-flies that attack the Oak, of which 14 have been described, that the galls of the different species should assume such a variety of appearances; many are round and placed singly, others in groups; some are irregular in outline, spongy, woolly, or mossy; others there are, hard and solid; then, again, the spot selected by each species is unvarying—the upper or under side of the leaves, the footstalks, the catkins, and even the roots, buds, and bark, having each its appropriate Gall-fly.

On examining the woolly galls, I ascertained that they were formed upon the male catkins, which was well ex-

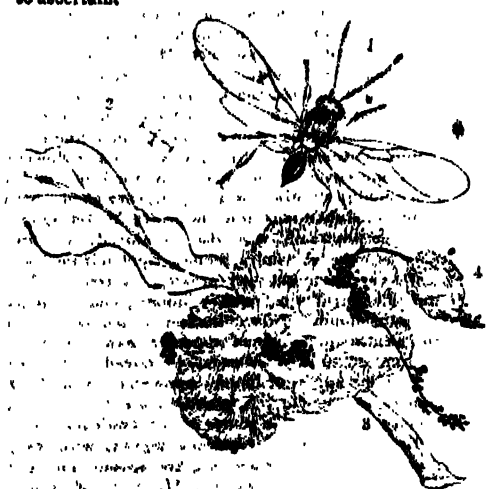
* The following arrangements were ordered to be observed by the military bands on this occasion:—"The bands of the Royal Horse Guards, Coldstreams, Fusiliers, and Royal Artillery, will take their stations in the Society's Garden by one o'clock, and will commence playing as usual. At 25 minutes to 2, P.M; the Coldstreams, the Royal Horse Guards, and the Fusiliers will march to the station of the Royal Artillery, playing the *British Grenadiers' March* in F flat. The four bands will then form themselves into one; and at a quarter to 2 P.M., will play the *Overture to Zampa*, which will be conducted by Mr. Tutton, Bandmaster of the Royal Horse Guards. At the conclusion of this piece, the Fusiliers, Coldstreams, and Royal Horse Guards will resume their stations, and the band of the Royal Artillery will file off in two divisions into the grounds of His Grace the Duke of Devonshire, the whole playing the *British Grenadiers' March* as before. During the afternoon, all the bands will play separately, as usual. At half-past 5 P.M., the band of the Royal Artillery will march back from Chiswick House in two divisions, again playing the *British Grenadiers' March*. One division will be joined on their march by the Blues and Fusiliers, the other division by the Coldstreams, and the whole will resume their first position, again forming themselves into one band. The four bands, thus united, will then play the *March in Oberon* and the *Jubilee Overture*, both of which will be conducted by Mr. Godfrey, Bandmaster of the Coldstreams. At the conclusion of these pieces, the bands will quit the Garden."

[In consequence of the badness of the weather, these arrangements could not be carried into execution. However, at half-past five, the bands collected, and played most admirably the Overture to Zampa, the March in Oberon, and God Save the Queen. The effect thus produced among the trees by wind instruments, played on by 150 of the best performers in Europe, was perfectly enchanting; and we trust the experiment of bringing together large numbers of military instruments will be tried again another year, when we may hope for more favourable weather.]

* Since this was written, we have received a note from Mr. H., in which he states that the phosphate he uses "has its water of crystallisation driven off by heat, so as to reduce it one half in weight; and in this condensed form, 47 grains are added to every pound weight of the Compound." That is to say, he employs 0.67 per cent. of some phosphate, about one-half of which may be regarded as phosphoric acid. We have no doubt of the accuracy of this statement; it agrees very nearly with the analysis above given. But what then? Such homœopathic doses are of no earthly use in gardening; and any mixture containing them may be considered, for practical purposes, to be wholly destitute of phosphoric acid.

† Vide the *Gard. Chron.*, vol. i., p. 732; vol. ii., p. 852; vol. iii., p. 52; and vol. iv., p. 212.

amplified in the one figured, but they were so closely placed, that as they grew they crowded each other until they appeared like one mass, often as large as the fruit of a Horsechesnut. On the 24th June, and for 10 days or more after, the flies kept hatching in multitudes, and of course, on opening the galls, I found the little pupæ curled up in their cells, where I had detected the larvæ in May. It is an exceedingly curious question, Where do the Gall-flies deposit their eggs at this season? I released at least 500 this morning (28th June) from the box containing the galls, all of which appeared to be males, although some were twice as large as others; on the following day many females hatched, but as there are no catkins upon the Oaks now for them to deposit their eggs in, what can be the nidus selected by the summer brood, which, there is every reason to believe, will die long before winter arrives, for many of the males lived only a few days in the box? It is certainly probable that some of the pupæ may lie dormant in the fallen galls until the ensuing spring, when they may issue forth in due time to puncture the male flower-buds of the Oaks, and thus proceed in their usual course; or it may be that a very few of the females hibernate, for if we reason from analogy, it seems incredible that such immense numbers should be doomed to die without depositing eggs, which are undoubtedly impregnated; yet it is evident if some extensive check were not given to these little animals, no Oak could escape, for they are still hatching in swarms from the few galls I received, and it is very important to observe that up to this time I have not detected a single parasitic fly amongst them; it is true that these may appear at a more convenient season, when the larvæ are in existence, and this I hope to ascertain.



The little fly of the woolly Oak-gall was named by Linnæus Cynips Quercus-ramuli; the *male* (fig. 1, the natural size being shown by the crossed lines, fig. 2), is shining, ochreous or fulvous; the antennæ are long, slender, and 15-jointed, the third joint being the longest; the head is subferruginous, brown at the base, with three large ocelli on the crown; eyes black; thorax with three brown patches before the middle; the scutellum is surrounded with chesnut brown; petiole short; abdomen much smaller than the thorax, intensely black and polished, the apex pointed, with an incurved aculeus capable of elongation; wings pubescent, superior, very long, with a costal cell, a triangular basal one, two submarginal cells, with an imperfect, minute, triangular areolet at their union, from which issues a nervure extending to the posterior margin; the pulvilli and claws are black. The *female* is stouter; the antennæ have only 14 joints; the abdomen is as large as the thorax, ovate-conic, but not acuminated, with an oviduct beneath; it is shining, fulvous, the basal segment only black. Fig. 3 exhibits one of the woolly galls with the anthers of the catkins more or less enveloped, one having a smaller gall produced near the extremity, fig. 4. Curtis's Brit. Ent. may be consulted for the descriptions and dissections of Cynips, pl. and fol. 688; and his Guide Gen., 564, for a list of the species.—*Ruricola.*

FRENCH CULTURE OF THE PELARGONIUM.

(Concluded from page 460.)

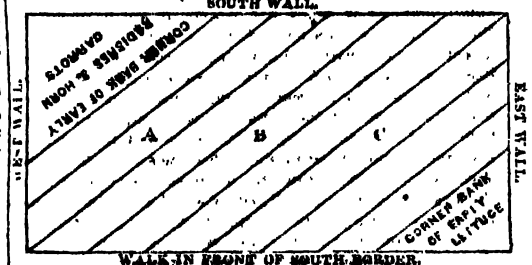
Raising from Seed.—The seeds should be sown in the year in which they are matured, or in the spring following. If the seeds have been taken early in July or August, you may sow them immediately; their produce will acquire strength enough to stand the winter, and most of them will bear flowers the following season. The mode of sowing is as follows. Fill pots or boxes within one inch of the top, with good earth well sifted and rather light, smooth it well on the surface, draw lines with your finger, put the seeds into each line, cover them lightly with the same earth, water them, and then place the pots or boxes on the steps in the greenhouse or under a frame. Take care to keep the earth constantly moist, and shade them from too much sun, which would harden the earth, and impede the vegetation. In fifteen or twenty days many of the seeds will be above ground. When the new plants have three or four leaves, put them separately into small pots, keeping as much earth as possible about the roots; water them and put them in a greenhouse or under a frame, shade them from too much sun for a few days, and in less than a week they will have taken root. If you wish to have stronger plants, to flower almost all the spring, put them in an old hot-bed without fresh dung; plant them in such a form that they may be covered with a glass; when they are perfectly rooted remove them sufficiently early to allow them to establish themselves in their new situations before the winter.

Insects hurtful to the Pelargonium.—If the aphis, or green fly, attack the plants in the greenhouse, they are easily destroyed by a strong fumigation of tobacco; this should be done in the morning, when the plants are very dry. In this way plants may be preserved, without fearing that the smoke will injure the plants or flowers. There is another kind of insect which is very destructive to the Pelargonium, produced by a small but tetty, which deposits on the plant its eggs, which the heat of the greenhouse hatches in the autumn and during the winter; these destroyers show themselves by the parenchyma of the leaves being eaten; there is no way of getting rid of them, except by looking for them attentively, and picking them off the plants; and they are very difficult to be seen, because they are usually of the colour of the plant which nourishes them. When the plants begin to show their first flowers, or a short time before, if you think that the fibres spread over the sides of the pot, they must be watered once or twice during the period of flowering, with liquid manure, or water which has percolated through good garden-mould; if the former be used (and it is decidedly preferable), that from the dung of cows is best. This precaution will considerably strengthen the plants during the whole time of their flowering. But such stimulants should not be applied after the buds appear, because they occasion too luxuriant growth of leaves, to the injury of the flowers; experience showing that plants, whose leaves have been too much developed, have fewer flowers, and those of a smaller size, than if the plant was less luxuriant. This observation applies not only to the Pelargonium, but to the Dahlia, and a number of other plants, which run too much to wood, and bear few flowers, when they are planted in a very rich soil. A second flowering of the Pelargonium may be obtained by putting only a part of the collection into the greenhouse; those that are left outside will begin to flower when those that are inside have ceased; these will perhaps be even finer, for it is known that the flowers which bloom in the open air, and under the direct influence of the light, have a more brilliant colour, supposing, of course, that the weather is warm and mild; otherwise, they must be taken in, and put with the rest, because warmth is necessary, in order to obtain large and well-blown flowers. By attention to the foregoing directions, no collection of plants will afford more pleasure than Pelargoniums.

Criterions.—A plant of high merit for propagation should be strong and healthy, not much inclined to run to wood, nor to grow tall; the peduncles slight, but sufficiently firm to support the truss, which ought to consist of from three to five flowers; each flower, clear in colour, should have five petals—two superior, two lateral, and one inferior; or, as it is generally expressed, two superior and three inferior petals. The principal colours are red, orange, rose, and carnation, with their gradations and shades; but lilac is not often admitted. Each of the superior petals must be entirely covered with a large crimson or black spot, well velveted in the centre, surmounted by carmine or lake, more or less deep; but the clearer the spot on the petal, and the more it resembles a fine piece of velvet, the greater its merit. M. Bataille has obtained some varieties in which a spot of the most beautiful velvet entirely covers the upper petals (with the exception of the edge), which spot is embroidered with a white zone that produces the most beautiful contrast. There are some kinds in which the five petals are spotted; it is particularly so in the dark colours, of which there has not yet been found a perfect flower; but as the colour of the lower petals is always lighter than that of the upper ones, so their spots are always less dark. All the petals should be of good substance, very smooth and well united, without any folds or tendency to curl much outwards when the flower is in bloom; and then it should assume as nearly as possible a circular form, which cannot be the case if the petals are narrow and lanceolated, with, of course, a considerable space between them.

Home Correspondence.

Peas.—In these improving times, when every man is expected to render his assistance in giving his mite of information, I beg to state the result of Early Peas as they have proved with me this season, hoping that it may be the means of eliciting from others the result of their experience, so that no one may be tempted in any way to be biassed by what I have myself proved to my satisfaction. Some years ago, but since I have been in practice, it was thought early to have Peas fit for table by George the Third's birthday (the 4th of June); since those days, in different parts of the country, I have gathered Peas from ten to twenty-one days earlier. After a long, dreary winter, every family seems to wish for young Peas as soon as they possibly can get them—no one finds fault on account of their being brought too early to table. In last November, having a south border of late Cauliflowers cleared off, and put into a place of protection for winter purposes, the border was trenched and formed into banks, which were left rough and open to sweeten for Early Peas; having great faith in the Early Warwick Pea for some years, a portion of the banks was sown on the 14th of December; the Peas were above ground on the 28th; in bloom, April 6th; stopped, that is, had their tops pinched off, on the 12th; and were gathered from on May 18th. The height was 4 feet 6 inches, the crop was heavy, and the pods well filled. They were mulched soon after the dry weather set in, which was the means of their continuing to produce good Peas for about thirty days. The banks were 5 feet apart. Cormack's Prince Albert was sown on banks on the same border on the 4th of January, 1844; they were up on the 14th; in bloom on the 1st April; and were gathered entirely on May 14th. I could have gathered a small dish on the 10th of May from them. This is a very prolific and fine-flavoured Pea. On the same day, and on the same border, another portion of the Warwick was sown. These, although having exactly the same treatment as the two above sowings, with regard to banks, hoeing, earthing, sheltering, sticking and watering, stopping or topping, &c., in favour being shown either to one or the other, were in bloom on the 13th of April, and gathered on the 28th of May. Although thus fairly treated, my old favourite Pea was fourteen days behind the Albert. About thirteen years ago I compared the Warwick on a long south border with several others; of these, Early Peas, the Warwick proving itself then superior to the others, retained my favour ever since. Next year, should the Albert prove the same as it has done this year, I can only call the Warwick a Pea for a second crop. Last year I sowed the two above Peas on the same day, under the same preparation and management; the winter, however, was so mild, that they got too "gay," and were very much cut and crippled in the spring, but enough was left to fully prove the superior earliness of the Albert over the Warwick that time. With regard to Shilling's Grotto Pea I have not yet fairly proved its earliness. I sowed it this year to succeed others on an open quarter on the 4th of March. It was above ground on the 12th; in bloom on the 4th of May; and gathered on the 12th of June. Its height was 5 feet. It was not so prolific as the two above Peas. The pods with me were wide and rather short; but it is a fine-flavoured Pea, and of a beautiful colour when cooked.



I find great advantage by sowing Early Peas in the above method; first, they enjoy a greater portion of sun during the short days of winter and in spring; second, the earth lies dry, sweet, and wholesome; third, the banks break the wind from each other, so that the Peas lie well sheltered, although the banks are so sloped that the rows of Peas have the full enjoyment of all the sun; the banks are 5 feet apart, A, B, and C representing them; height of back sloped, 2 feet; sloping to the front, about 3 feet 6 inches; and the Peas are sown or transplanted 1 foot from the bottom. The above method is not only good for the Peas, but the border is so sweetened and pulverised by its being continually hoed, that the crop is sure to do well that succeeds the Peas.—*James Barnes, Bicton.*

Peach-trees.—With regard to "Omikron's" Peach-trees, Mr. Roberts (p. 389) imagines that I lay too much stress on the attacks of insects, and deep and stagnant borders; and he supposes that the cause of disease proceeds rather from ill-ripened wood. Now, this I never doubted: nearly all the evils to which the Peach is liable are traceable to this alone, and for this very reason I both practise and recommend the use of shallow borders, which I consider the very basis of all acclimatising; and this, with the chopped turf, is all that can be desired in that respect; with the latter there is a much greater freedom of root, and earlier action through the months of April and May, at the time I conceive it is much needed; for who would expect good fruit and healthy young wood from torpid roots, imbedded from one foot to three in putrid and stagnant soil? I therefore trust that I shall not be farther misunderstood, for let it be remembered that of the ten fundamental points, which I assumed in my answer to "Omikron" as sound maxims in the cultivation of the Peach, eight at least have a direct reference to the ripening of the wood. Indeed I may say that with me this is everything, and on this alone I rely. Mr. Roberts need be under no alarm about Peach-trees becoming too luxuriant in chopped turf,—such is assuredly not the case, as my trees abundantly prove; they are an exact medium as to strength, and gum is unknown to them; therefore there can be no harm in chopped turf. Perhaps I ought, however, to have written more guardedly. If turf was cut as thin as for turfing lawns, for this purpose, I should not be surprised to find the trees in a showery season too luxuriant; but the turf I use is, perhaps, from 4 to 6 inches thick, and being put in the hole in rough lumps, the water readily escapes. Turf used in this way retains its mechanical properties for many years, and if dug up at the end of ten or fifteen years, will be found of a much more mellow character than what is termed compost; which signifies good soils mischievously handled. I beg to assure Mr. Roberts, that the summer stopping, on which I presume the equalisation of the sap depends, is by no means productive of the evil consequences that he apprehends. When a shoot bursts into laterals, who can expect healthy blossom-buds above that point? It is tolerably evident, then, that this superabundant grossness is maintained at the expense of the lower portions of the

trees. As to flued walls, I admit their utility; but if we Northmen can produce fruit and trees equal to the genial climate of the Southern parts of the island, without the aid of flues, it at least argues in favour of the principles we adopt. I am sorry to see, at p. 389, the propriety of chopped turf disputed by Mr. Lawrence. He appeals to facts—so do I. However, I should expect just such results as actually took place, the border being three feet deep. It is, however, wrong to assume that because three feet of turf is too much, one foot must be the same. I beg to repeat that I plant on the mounds of brick or stone, and consequently have not above ten inches of soil in that part, increasing slightly in depth outwards, and that no trees can look better or have a finer crop of fruit? they have endured all the hot and dry weather without a single drop of water, and the walk over their roots is as hard as a turnpike road. This has taught me a lesson as to the habits of the Peach that I shall not easily forget. Ten assurance years ago, that what is called disease in the Peach is neither more nor less than ill-ripened wood, in the great majority of cases, led me to conclude that any soil which would insure an early action of root, combined with an early check or timely cessation of growth, would be most conducive to this end, and this I find most perfectly accomplished by my present plans. Trees situated as mine are, can never be glutted with moisture; they possess a steady and uniform existence, through the slowly progressive decay of the lumps of turf; manure being unknown, except as top-dressing in cases of exhaustion.—*Robert Errington.*

Vines.—Last season I renewed the Vines in one of my vineries, and in doing this I adopted a plan which I have not seen practised elsewhere. A hole was made in the parapet-wall under each sash, and a rod of the previous season's growth was passed out at one hole and in at another. The border was prepared as follows:—About a foot of the surface of the old border was removed, a small quantity of ashes was thrown in for drainage, and the bottom was then flagged with stones to the width of 2 feet from the wall; at the outside of this a barrier of flags was put up, and the space between this and the wall was divided into as many compartments as there were plants (or layers) in the house; these compartments were then filled in to the depth of 18 inches with prepared soil, the layers being covered about 8 inches; the border was then mulched over, and this finished the operation for the first two years. The 2 feet of soil I consider sufficient for the first two years; on the third, (*i. e.*, next season,) I shall remove the barrier, and with a fork take off part of the soil, to enable me to prune, examine, and arrange the roots, as may appear necessary; having done this, I shall place the barrier about a foot and a half further out, and fill the space up with fresh soil, in the same way as at first; this operation I intend to repeat annually. The advantages are—1st. I will not lose the use of the old Vines until the young ones are quite ready to take their place; 2d. I divide the labour of making the border, which is usually done in one year, over a number of years; 3d. I have a perfect command of the roots of my Vines, and can manage them with as much regularity as I can do the branches; 4th. Should it become necessary from any cause to remove an old Vine, or introduce a new one, it can be done without in the slightest degree interfering with its neighbour; and 5th. They have a fresh supply of soil to produce every crop, and should I wish to feed with liquid manure, I know exactly where to apply it effectually. This system might also be applied with advantage to wall-trees. It might be improved upon, in the case of forming a new house for early forcing, by leaving the compartments larger, and making a trench for fermenting materials, with pigeon-holed brick-work between the compartments, which would enable a temperature to be kept at the roots in some degree corresponding to that in the inside of the house. The connection between the layers and the old Vines was cut off a considerable time before the growing season was over, and the former were so well rooted that they never hung a leaf. They are now growing beautifully, and making as good wood as I could wish.—*W. W.*

Pine-apples.—For the information of "A. B. C." (p. 445), whose Pines have not fruited, I would suggest that if he was to turn his strongest plants in pots out into new tan, it would possibly start them into fruit, and also, in all probability, increase their size. The complaint about Pines not fruiting at the usual season is not new; but a complete remedy for this is at hand, not, however, in the unnatural practice of hungering the plants, neither is it in that of starving or disrooting them, but in encouraging rapid growth, thereby promoting complete development of the plant, and maturation of the fruit. At p. 53 of my "Treatise on the Pine-apple," is stated the result of my own practice. It consists in keeping the plant growing rapidly until the fruit is ripened off, which is usually in about eight or ten months after the Pines are planted out. I would also inform "A. B. C." that, if his plants should fruit this autumn, he may again fruit them in the following autumn. These facts I have a second time this season fully tested, at Thornfield—namely, that the Pine is capable of producing one fruit annually for any length of time. I shall soon be able to ascertain the result of an experiment made with two New Providence Pines—one I turned out into good compost, and the other I planted in the tan; the fruit of the latter is evidently swelling better, according to the size of the plant, than that of the former; and it has not half the size of crown.—*Joseph Hamilton, Thornfield.*

Tall Orchis.—An Orchis maculata measured 7¾ inches long in the flower-spike, with the four topmost buds yet unexpanded; and 2 feet 8½ inches high from the ground. Is not that an unusual size?—*A. H.* [Very.]

Bees.—I would suggest to the "Cottager," of West Dean, Sussex, that in future, when he has occasion to double his stock hives, he should place the empty hive over the other, instead of beneath it. Bees have a disposition to carry their stores upward, and if the "Cottager" had supered his stock, he would probably have found, when he harvested his honey, that the hive would have contained no brood. Under similar circumstances I had three supers last year, which, one with another, contained nearly 12lb. lbs. of honey-comb, uncontaminated by a single brood cell. If the "Cottager" decides upon removing his other super, as the family is populous, I recommend him to replace it by an empty hive, as swarming at this season should be discouraged. In answer to the question, Whether the bees will collect sufficient food for their winter sustenance in case of a protracted removal? I would observe that, if they have not already stored enough, or nearly so, in the nadir hive, which may be ascertained by weighing it, the probability is that the winter's supply of the bees will be deficient, and that they will require feeding. The inquiry, Whether an old stock will not work up as well as down? I have virtually answered already. The bees will work better up than down. I do not know what sized hives the pasturage of West Dean may require, but those described by the "Cottager" are very much too large for any district that ever came under my cognizance.—*Edward Bevan, Egair Evan, Newtown, Montgomeryshire.*

Bees.—In answer to "A Cottager," I have to say that if the bees have destroyed the drones,* he will not have any swarm, although the space is decreased. If the bees are deprived of part of their honey by the removal of a hive in connexion with the main stock, room ought at the same time to be given in some other place, if it is thought desirable to prevent swarming. The best way of managing bees is to have side hives, and when one side hive is taken, to place an empty hive on the other side. The side hives being only wanted for summer, may be made of old packing cases; the smaller they are the sooner they are filled. There should be a window with a shutter in the side hives, to know when they are fit to be taken. I have not had a single swarm since I have understood the conservative plan.—*C. A. A. Lloyd.*

Ants.—Who says there is no effectual remedy for these troublesome little pests? Arsenic and sugar!—Why, they delight in it. Take a saucer, smear the inside slightly with honey, place it inverted near their haunts; in an hour examine the saucer, and see if the honey be all gone; if not, let the saucer remain until it is. When it is all gone repeat it, and let them eat it off. Do this a third time; but now, when many are under the saucer feeding (and I have found hundreds), having with you a basin of boiling water, gently raise the saucer without turning it up, and hold it within an inch or two of the hot water; the Ants feeling the steam will drop, and of course die. Put the saucer, renewing the honey, in the same place, and in a quarter of an hour steam again, and so on, until you destroy all, which will be done in a very short time. According to the numbers two or three saucers may be used if wished; but I have found one always sufficient. By this means you kill all the workers, and by killing them, I need not say you destroy the colony.—*W. H. G.*

* This is usually done in July.

Societies.

HORTICULTURAL SOCIETY.

The last Exhibition of the season in the gardens at Chiswick took place on Saturday last. The day was very inauspicious, the rain beginning to fall just as the company began to enter the garden, and the "pitiless pelting of the storm" continuing with little intermission for hours after the company had left the grounds. This was very unfortunate, as the Exhibition was one of the very best we ever witnessed in July; and in addition to the usual attractions, the beautiful grounds of the noble President of the Society, His Grace the Duke of Devonshire, were thrown open to the public, though but few had courage to avail themselves of the privilege. The leading features of the Exhibition were the noble collections of Orchidaceæ from the gardens of S. Rucker, Esq., Messrs. Rollisson of Tooting, Mrs. Lawrence, Mrs. Marryat, and Mr. Cox of Stockwell; the Roses in Pots, from Mr. Beck and Messrs. Lane; the fine Collections of Plants, from Mrs. Lawrence, Mr. Frazer, Mr. Epps of Maidstone, and others; and the magnificent Collection of Fruit from all parts of the country. The Heaths, Pelargoniums, and Fuchsias, contributed much to enliven the scene, and the Florists' Flowers were not destitute of admirers.

The large Collection of Orchidaceous Plants sent by Mr. Mylam, gr. to S. Rucker, Esq., was very rich, both in novelty and beauty, and contained many noble specimens, evincing the very best management, and in the highest health. Among them were fine plants in perfect bloom of Stanhopea tigrina and cinnamomea, producing their singular flowers beneath the bottom of a wire-basket; the curious plant producing a yellow Maxillaria-like flower spotted with brown, called Scuticaria Steelii; the rare Angulos Clowesii, producing a pale-yellow, or rather lemon-coloured flower; and a noble plant of Miltonia spectabilis, with 15 of its lovely blooms. He had, moreover, a very fine plant of Oncidium Lanceanum in beautiful bloom, with O. luridum guttatum, leucochilum, and pictum. Another very pretty plant was Zygopetalum crinitum cœruleum, which contained more blue in the flowers than is usual in this class of flowers; a curious plant, not quite in bloom, of Sarcanthus rostratus; and very pretty specimens of Cycnoches maculatum, Brassia Lawrenceana, and Lanceana very fine, with Angræcum bilobum, Cycnoches ventricosum, Lycaste Skinneri and macrophylla, Cycnoches chlorochilon, with pale-green flowers; Odontoglossum pulchellum very pretty, the curious Catasetum citrinum and luridum, Huntleya violacea, Maxillaria Warreana and vitellina, Epidendrum fragrans, Galeandra Bauerii, the singular Maxillaria stapelioides, and a species with very pink flowers, called M. tetragona.—Of the curious genus Cirrhæa, there were three species, called picta, lutea, and Warreana, with very curious flowers hanging over the side of the pots, and which would have been better shown had they had a sheet of white paper placed beneath them; and, finally, there was a pretty specimen of the beautiful Stanhopea saccata.—The Collection from the nursery of Messrs. Rollisson, of Tooting, was scarcely less interesting than the preceding, and taken as a whole was very superior to the one produced by the same growers in June. Among them we noticed a fine variety of Calanthe, with rich violet flowers, called C. masuca; a new species or rather variety of Cymbidium, with large dark-brown flowers resembling C. aloifolium; Catasetum deltoideum, with very pretty dark-brown flowers; Stanhopea tigrina, and Wardii very fine; and a plant of Oncidium Lanceanum in fine bloom. Another very beautiful plant was Aerides quinquevulnerum, and there were also neat plants of Miltonia spectabilis, and the lovely Cattleya crispa. The same gentlemen also communicated Acropera Loddigesii, the singular Cycnoches Loddigesii, Epidendrum alatum, Lycaste tetragona, very curious; Isochilus linearis, Aspasia lunata, Rodriguezia recurva, Brassia Lanceana, and Oncidium luridum, all in fine health and bloom.—From the garden of Mrs. Lawrence, Mr. Robertson produced a magnificent plant, not quite sufficiently in bloom, of Peristeria alata, the Panama Dove plant; fine plants of Stanhopea eburnea, oculata, quadricornis; with Xylobium squalens, very curious; and a fine plant of the singular Mormodes citrinum, with yellow flowers. There was, moreover, a fine plant, in good bloom, of Acropera Loddigesii, Maxillaria Deppii, very good; with the curious M. stapelioides, and the pretty M. tetragona. Mormodes aromaticum was also produced, in fine condition; as were Galeandra Baueri, Epidendrum vitellinum, Brassia bracteata, very pretty; Catasetum Russellianum, Phajus albidus, in fine bloom; and Epidendrum odoratissimum. This collection of plants was in excellent health, and showed superior management.—Mr. Redding, gr. to Mrs. Marryat, produced Stanhopea oculata, with six spikes of bloom, somewhat injured by the coldness of the day; S. grandiflora and tigrina, in good bloom; and tolerable plants of Epidendrum variegatum, Brassia Lanceana, Gongora nigrita, with very dark flowers; with Oncidium papilio, altissimum, and pulvinatum.—From the garden of Mr. Cox, of Stockwell, Mr. Don produced Rodriguezia secunda and recurva, Catasetum Russellianum, Calanthe masuca, Cattleya Harrisonii, in fine bloom; the lovely Stanhopea venusta, with Cycnoches chlorochilon, Phajus albus, Miltonia spectabilis, Oncidium flexuosum, and Cymbidium lancifolium.

Of single specimens of Orchidaceæ there was a splendid plant of Cattleya Loddigesii, with nine spikes of bloom, from Messrs. Veitch and Sons, of Exeter; a Stanhopea oculata variety, with twenty flowers, from Messrs. Henderson, of Pine-apple Place; Vanda Roxburghi, a small plant, from Mr. Plant, gr. to H. Schroder, Esq., of Brixton; and a new species of Calanthe, with pale-violet flowers, called C. plantaginea, from Mr. Eyles, gr. to Sir George Larpent, at Putney Heath.

Only one large collection of Stove and Greenhouse Plants was produced, and that came from the garden of Mrs. Lawrence, at Ealing Park. It contained some beautiful plants, which were the more to be admired because they were full-formed specimens, plants that were fit to be seen on all sides, and had not been trained on the now too fashionable method of making one-sided plants, by training the branches to one side only, and leaving the back naked and ugly. Now, however much necessity there was for this method of training in years gone by, when plant cultivation was not quite so well understood as it is at the present time, it is quite certain there is no necessity for such deformity now, and we therefore hope another year to see such plants excluded from competition. The perfection of cultivation is to produce plants perfect on all sides; and although such plants may require more room and more care for their proper management, we think it cannot be denied that they would be very preferable to one-sided plants. While, however, we would insist upon plants being grown into perfect specimens, we must enter our protest against their being brought into proper form by the use of a forest of sticks. All plants ought to be grown so as to require, or at any rate exhibit, as few sticks for their support as possible. Pelargoniums may be grown without sticks, so may Heaths and most other hard-wooded plants. Fuchsias do not require them, and the more they are used the more is the elegant drooping habit of that beautiful flower destroyed. We mention these things here, because many otherwise handsome plants were completely spoiled by an unnecessary and unsightly use of sticks; and this was not confined to Fuchsias only, but to many of the stove and greenhouse plants, and even to some of the Heaths. To proceed with the collections, Mrs. Lawrence's contained a fine specimen of Æschynanthus maculatus, upwards of two feet in diameter, trained hemispherically, and liberally

covered with bloom; Bæleria pulchella, a very pretty plant; Lasiandra petiolata, a plant three feet in diameter, and producing very pretty blue flowers; Phænocoma prolifera, a very fine specimen; Cuphea Melvillai, two large plants producing large scarlet flowers tipped with green; Pentas carnea, a dwarf and well-bloomed plant; Manettia cordifolia, very fine specimens described in our last report, but rather past their best; Statice macrophylla, with a fine spike of bloom; S. sinuata, a neat plant; and a very pretty specimen of Mirbelia floribunda.

In addition to the above, Mr. Robertson produced a remarkably fine plant of Vinca rosea ocellata in perfect bloom; Siphocampylus betulifolius, a good specimen; Achimenes grandiflora, a well-grown and noble specimen in most profuse bloom; two plants of Angelonia Gardneriana, producing prettily-spotted purple flowers, in long spikes, and a great abundance of them; a remarkably fine specimen, before noticed, of Leschenaultia formosa; Asclepias curassavica, a good specimen; a nice plant of Osbeckia chinensis, with rose-coloured flowers; Clerodendrum calamitosum, a pretty specimen; with a beautiful plant of Cassia corymbosa, and a number of other good plants. All that this collection required to render it perfect, especially on a dull day, was a greater number of various coloured flowers, as scarlet, orange, and yellow; but under the present regulations, it is almost impossible to introduce them.—The collection of plants from Mr. Frazer, of the Lea-bridge-road, was particularly remarkable for fine cultivation, and clean and excellent growth Better taste had also been displayed in the selection of the colours, and also in their arrangement on the stage. The most remarkable plant was a very fine specimen of Kalosanthes coccinea, loaded with its bright-scarlet flowers; a very large and admirably-managed plant of Vinca rosea alba, in excellent bloom; Roella ciliata, an admirable plant, 18ins. in diameter, and nearly the same in height, and covered with its beautiful pale blueish-purple flowers; Euthales macrophylla, a lovely plant, four feet high, and the same in diameter, densely covered with beautiful yellow flowers; Angelonia Gardneriana, a very handsome plant; with Crowea saligna, in fine bloom, and good plants of Vinca rosea, and Gardoquia Hookeri, a plant which, generally, is not blooming in good condition this season. Mr. Fraser had also plants in excellent condition of Boronia viminea and Leschenaultia formosa.—Mr. Epps, of the Bower Nursery, Maidstone, contributed a group of 15 plants, among which were some new things, and well-grown specimens of Coleonema rubrum; a fine plant, well bloomed, of Sollya heterophylla; Clerodendrum squamatum, a very dwarf plant, with two spikes of bloom; an admirably-bloomed specimen of Achimenes multiflora; and a tolerable plant of Achimenes grandiflora, apparently from a single crown this season.—Mr. Epps sent a very pretty specimen of Brugmansia floribunda, with orange flowers: a neat plant of Gloxinia Cattoni; and good plants in profuse bloom of Begonia parviflora, Torenia scabra, and Vinca rosea and rosea alba. For a new beginner, this collection was very creditable, especially considering it had been conveyed upwards of 40 miles to the place of exhibition.—Mr. Green, gr. to Sir E. Antrobus, Bart., and Mr. Redding, gr. to Mrs. Marryat, produced collections in the 15th Class, but neither were particularly remarkable. Mr. Green's contained two handsome plants, and these were Coleonema rubrum and Stephanotis floribundus.—Groups of six plants were shown by Mr. Bruce, gr. to Boyd Miller, Esq., of Mitcham, Mr. Stowe, gr. to W. R. Baker, Esq., Bayfordbury Park, Herts, Mr. Stanley, gr. to H. Berens, Esq., Sidcup, Kent, and Mr. Cox of Stockwell. Mr. Bruce's plants were, a very admirable specimen of Pentas carnea, said to have been grown in the open air; Achimenes longiflora, the flowers most beautifully coloured; Aphelexis humilis, a lovely plant; Clerodendrum squamatum, well-grown; and good plants of the old Phymatanthus or Pelargonium tricolor, and Pimelea decussata. The best plants in Mr. Stowe's collection were Bossiæa linophylla, not quite sufficiently in bloom; Crowea saligna, a promising plant; Swainsona galegifolia; Vinca alba; and Campanula Barrelieri.—Mr. Stanley had fine plants of Leschenaultia formosa, Gloxinia Menziesii, and Nuphæa oblonga; but Begonia parviflora, Achimenes rosea, and Vinca ocellata, in the same collection, were spoilt by the injudicious use of sticks.—Mr. Cox's collection was not remarkable.

Of CLIMBING PLANTS, only one collection was produced, and that came from Mr. Frazer. It contained a very handsome specimen of Allamanda cathartica; excellent plants, Sollya angustifolia and linearis, with Manettia cordifolia, Hoya carnosa, and Stephanotus floribundus.

From the Nursery of Mr. Jackson, of Kingston, were a collection of Statices, consisting of S. sinuata, a very pretty species; Pseudo-armeria, a variety with pink flowers, said to be hardy; with S. Gmelini undulata, Dendroni, arborea and incana.—Messrs. [illegible], of Ealing, sent 12 very fine plants of Lilium [illegible], in beautiful bloom, and 6 remarkable well-[illegible] specimens of Gloxinia rubra and maxima alba, [illegible] profusely covered with bloom.—Mr. Dobson, gr. to [illegible] Beck, of Isleworth sent 7 very fine plants of [illegible], but with rather pale flowers; and Mr. Cut[illegible]an, of Camberwell, 10 beautifully grown [illegible] Lanthus Russellianus, a plant for the success [illegible] of which he has been so long celebrated. [illegible] almost all the PLANTS the most remarkable was a [illegible] open air; plant the [illegible]son, called Saurauja spectabilis. [illegible]oking leaves, and flowers in large bunches resembling Spiræa aruncifolia, but shorter in the bunch, and deliciously sweet-scented. Another curious new plant Chiococca racemosa, was produced by Mr. Eyles, gr. to Sir George Larpent. It had small yellow flowers, which were abundantly produced.—Mr. Gad, gr. to Thomas Lenox, Esq., of Plaistow, Essex, communicated a plant of Brugmansia floribunda, in good bloom; Messrs. Mountjoy, a plant of Gloxinia cerina, with pale pink flowers, and said to be a half-bred Sinningia; Mr. Stanley, a species of Thysanotus, the flowers of which open early in the day, but close towards noon; and Mr. Jackson, a plant of Gesneria, with particularly bright scarlet flowers, which were profusely produced.—From the Nursery of Mr. Frazer was a plant of Gompholobium splendens, with yellow flowers; and Mr. Ayres, gr. to James Cook, Esq., sent a plant of a hybrid Achimenes, said to have been raised between A. rosea and coccinea, and called A. Beatoni. It was too near A. coccinea.—Mr. Miller, of the Providence Nursery, Ramsgate, sent a large plant of Petunia punctata, which fully realised all that has been said of it. The flowers open of a bluish purple colour, but as they advance in age becomes marked or blotched with white, and this change continues until the flowers at last are almost wholly white. The plants, however, which we have seen in the open borders, do not at present show any of the spotted character, but continue a dirty purple until they decay; so that, though the plant may do as a curiosity for pot culture, it will never be of any use for bedding out; indeed, to make the most of it, the spotted ones are but faded flowers. A number of other plants were shown in this class, but, unfortunately for the exhibitors, they were entered wrong, and consequently no award of prizes was made to them.

Of SINGLE SPECIMENS, some remarkable plants were exhibited, especially a large specimen of Gloriosa superba, upwards of six feet high, and in splendid bloom. This was by far the best pot specimen of this plant we ever saw, but through a mis-entry no prize was awarded to it.—A very curious plant with pink flowers protruding from all parts of the old wood of the plant, even from the surface of the pot to the extreme point, was sent by Mr. Robertson, and called Medinilla erythrophylla; he had another beautiful and singular plant, called Lemonia spectabilis.—From the Nursery of Mr. Frazer was a magnificent specimen of Crowea saligna, in excellent health; and Mr. Hyde, gr. to B. Cotton, Esq., sent a noble specimen of Lasianthus Russellianus, covered with upwards of three hundred flower-buds.—Mr. Bailey, gr. to His Grace the Archbishop of York, sent two exceedingly well-grown plants of Kalosanthes nitida, and grandiflora minuta; they were three feet high and three feet in diameter, but the bloom was not in proportion to the size of the plants. They were, however, admirable specimens of cultivation, and deserving of all praise.—Statice sinuata, a lovely specimen, was communicated by Mr. Jackson; Achimenes longiflora, remarkably good, by Mr. Bruce; and A. longiflora and grandiflora, superlatively excellent, by Mr. Robertson.—Sedum tortuosum came from Mr. Doran, gr. to Thos. Hawes, Esq.; and Leschenaultia formosa, from Mr. Poole, of Leyton, Essex.—A fine plant of Sollya linearis, was sent by Mr. Hopgood, of Bayswater; Tristania neriifolia, with yellow flowers, by Mr. May, of Woodford; Erica ampullacea, a splendid plant, by Mr. Dawson, of Brixton Hill; E. tricolor superba, by Messrs. Henderson; and E. tricolor elegans radiata, an excellent plant, and eximia, a fine specimen, by Mr. Robertson, who also sent a grand plant, 10 feet high, of Nepenthes distillatoria, the singular Pitcher plant, which was covered with pitchers, and was very much admired. The curious Erica tetragona, and a tolerable plant of E. eximia, were sent by Mr. Hudson.

A number of Collections of HEATHS were shown by various persons, and among them were some admirable specimens.—Mr. Robertson produced fine plants of Parmenteriana rosea; gemmifera, in fine bloom; depressa, an excellent specimen, in perfect health and bloom; viridiflora, with green flowers, a good plant; cerinthoides major, an excellent plant; jasminiflora alba, a good plant, in perfect bloom; Cavendishii and ampullacea, both good; a nice plant of obbata, and another of ampullacea vittata. Mr. Robertson had, moreover, good plants of a variety called Lannonii, with ventricosa rosea, globosa, and superba; and also eximia radiata, tricolor elegans, and inflata alba.—Mr. Jackson's collection consisted of E. ampullacea and a. rubra; cerinthoides, a fine plant; Westphalingia, in fine health and bloom; jasminiflora alba, Jacksoni, a fine plant; Massoni, in good bloom; tricolor superba, fine; and a seedling variety, equally good; ventricosa Bothwelliana and purpurea, both very large; with inflata, princeps, eximia, and gemmifera, in good health. Mr. Jackson also sent a large plant of E. jubata, 4 feet high, and 4 feet through, very fine; a seedling from Shannonii, a good variety; and also ampullacea vittata, in good bloom. Most of these plants were large, and some of the collection a little past their best.—Messrs. Fairbairn, Nurserymen, of Clapham, sent a collection of very prettily grown small specimens: the best of them were jasminiflora alba, ampullacea, a vittata, eximia, cubica major, inflata, Irbyana, Shannoniana, princeps, procumbens, tricolor (Lee's), tricolor elegans, impulsa, sanguinolenta, and the pretty little Savilliana. These plants were in excellent health, and promise to make admirable specimens.—From Mr. Epps, of Maidstone, the plants consisted of tricolor; tricolor (Lee's), a good plant, Savilliana, ventricosa superba, carnea, globosa and rosea, gemmifera, eximia, jubata, jasminiflora alba, inflata, metuliflora bicolor, Templeana, ampullacea, and ampullacea rubra. These, like the preceding, were principally plants in their second year's growth, and had been potted, for the most part, on the "one-shift system."—Another collection of 20 plants was sent by Mr. Green; it contained good plants of elegans and eximia, Cavendishii, ampullacea, Shannonii, ventricosa superba, viridiflora, metuliflora bicolor, tricolor elegans (a fine plant); inflata, Massonii, well bloomed; ampullacea vittata, with Coventryana, parmenteriana rosea, depressa, and jasminoides.—In the groups of 6 plants, Mr. Bruce sent a good specimen of tricolor elegans; princeps, very pretty; Irbyana, viridiflora, ampullacea, and a good plant of eximia.—A Collection, consisting of small plants of E. rubens, viridiflora, ampullacea, Irbyana, eximia, and Jasminoides, was sent by Mr. Doran.—In the Nurserymen's Class, Mr. Frazer produced E. rubens, eximia, Parmenteriana rosea, Irbyana, Westphalingia, and ampullacea superba; Mr. Dawson, of Brixton, a splendid E. Irbyana, Massonii fine, with Savilliana jasminiflora, ampullacea major, and a variety miscalled infundibuliformis. Among others, Mr. Glendinning, of the Chiswick Nursery, had ampullacea vittata, tricolor carnosa, ventricosa brevifiora, pulcherrima, inflata, and ampullacea.

ROSES IN POTS were shown by Mr. Dobson, gr. to Mr. Beck; and Messrs. Lane and Sons, of Berkhampstead. They were not so good as at former meetings, while the kinds were nearly the same; and indeed the pot culture of this popular flower has been confined too much to those kinds which it was known would grow in pots, while those kinds about the management of which there is some doubt have been to a great extent neglected. Another season we hope to see prizes for large collections, and also for (any six plants) of each class of Hybrid China, Gallica, H. Bourbon, Bourbon, Moss, China, Tea, &c. In this manner all the popular tribes will be properly represented, and the cultivation will not, as is the case now to a great extent, be confined to certain popular varieties. The best of the kinds sent by Mr. Dobson were Elise Sauvage, Barbon, General Allard, Queen of the Bourbons, Highclere seedling, resembling Devoniensis, Celimene, and Augustine Mayet. The plants were healthy and clean, but the flowers rather destitute of colour. Messrs. Lane's Collection consisted of Psyche, Charles Duval, Elise Sauvage, Fabvier, Mirabile, Comte d'Osmond, Triomphe de Luxembourg, Napoleon, Duc d'Aumale, Emilie Courtier, Princess de Mecklenberg, Cramoisie superieure, Diana Vernon, Proserpine, Taglioni, and Gouda. Some of Messrs. Lane's plants were not so clean as they might have been, but generally they evinced good management.

Of CUT ROSES, those from Messrs. Paul, of Cheshunt, were the finest, and were exhibited in large groups of a dozen or more flowers, and being placed single had a very fine effect. They consisted of Charles Duval, Jaune Desprez, Bouquet à Flore, Crested Provence, Wm. Jesse, Lamarque, General Allard, Grain d'Or, Madame Deschoulteres, Celimene, Amiable Queen, Icheymaker, Nannette, Acidalie, Emilie Courtier, Félicité perpétuel, Edward Jesse, Eugene Beauharnais, Josephine Malton, Aubernoir, African Black, Duchess of Sutherland, Mrs. Bosanquet, Charles Sir, Niphets, a splendid kind, Madame Nerard, Louis-Buonaparte, Miss Elliot, Devoniensis, Perpetual Rivers, Paul Joseph Augustine Lelieur, Jaune, Comte de Paris, Madame Laffay, Bourbon Queen, Proserpine, Fleur d'Amour, Lady Stewart, Marie de Neria, Pompone bicolor, Enchantress, and Ne plus Ultra.—Messrs. Lane's varieties consisted of the following:—They were fine flowers, and arranged in rows across the box, after the manner of Messrs. Lee at the June *fête*; Devoniensis, General Christiana, Grandissima, Duchess Montebello, Prince de Provence, Blush Provence, D'Angrusseau, Duc de Treyise, Charles Duval, White Globe Hip, Belle de Rosny, Cynthe, Chatelaine, Paul Joseph, Queen, Lafite, La Seduisante, Berryer, Gen. Foy, Boula de Nanteuil, Triomphe de la guerre, Ohl, Eugene Barbot, Bizarre Marbre, Queen of Denmark, Madam Hardy, Lady A. Peel, Duchess of Sutherland, William Jesse, Prince of Wales, Aubernon, Robin Hood, Madame Laffay, and Miss Elliott.—The kinds sent by Messrs. H. and C. Cobbett, Nurserymen, of Chobham, near Bagshot, were William Jesse, Madame Laffay, Nuralba, Royal Provence, Unique Provence, Victor Hugo, Bouquet de Flore, Lady Warrender, Armosa, Acidalie, Madame Desprez, Félicité perpétuel, Village Maid, Madame Marana, General Allard, and Elise Sauvage. The arrangement of this Collection was rather confused, and many of the kinds were overblown flowers.—From Mr. Francis, Nurseryman, of Hertford, were a collection of twenty-five good Roses, consisting of Jaune Desprez, Augustine Lelieur, Rose du Roi, Belle Marie, Lamarque, Madame Laffay, Queen of Denmark, Triomphe de Plantier, Latifolia, Louis-Buonaparte, Madam Newman, William Jesse, General Lamarque, Devoniensis, General Soyez, Leopold, Chatelaine, Beauty of Billiard, Elise Sauvage, Princess Helene, Lady Fordwich, Queen of Bourbons, and Comte de Paris.—Mr. Cripps produced a small collection, and the best flowers were Euphrosine, Nelly, New Village Maid, Triomphe des Dames, Prudence Reeser, Armide, Jaune Desprez, Madame Laffay, Bourbon Queen, Leopold, William Jesse, Lyonnaise, L'Anglaise, La Pactole, Daphne, and La Columbraine.—Moss Roses were produced by Messrs. Lane and Cobbet, but the latter were certainly inferior. Messrs. Lane's consisted of Crimson, Mottled, Crested, Perpetual White, Prolific, Luxembourg, Malvina, White Bath, Common, Eclatante, and Aspasie; and the best of Messrs. Cobbett's were Unique, Prolific, Luxembourg, Blush, and Mousseuse Partout. But few collections of Roses were produced by Ama-

teurs, and some of them were so incorrectly named that we did not take a note of them. The best were from Mr. Slowe, of Bayfordbury Park; and Mr. Buttery, gr. to F. Raymond Symonds, Esq., Norbiton Park, Surrey. Mr. Slowe's consisted of Cerise, Bourbon Queen, Beauharnais, Madame Laffay, Cramoisie superieure, Hymene, Paria, Goubult, Carmine Superb, Elise Sauvage, Gigantesque, Marjolin, Mrs. Rosanquet, and Caroline. Mr. Buttery's comprised Crimson Perpetual, Aimé Vibert, Emilie Courtier, Beauty of Billiard, Queen of Bourbons, Augustine Marjet, Mrs. Rosanquet, Jaune Despraz, Cramoisie superieure, Triomphe de Plantier, Unique, Fabvier, Phœnix, Armoss, Crimson, Madame Desprez, and Euphrosine. —Mr. Wilson, gr. to Lord Howe, at Gopsall, and Alexander Rowland, Esq., also contributed Roses; but their flowers were over-blown, and neither collection contained any very remarkable kinds, which have not been before noticed.—Mr. Cock, of Chiswick, sent some fine Balsams in small pots; and two magnificently-grand Wardian cases were sent for exhibition by Mr. Potts, of Shrewsbury; they were glazed with the finest sheet-glass, and the framework, which was Gothic, was all gilded. We cannot imagine a finer piece of furniture for a drawing-room than one of these cases, nor a finer habitation for plants while in the drawing-room.

We have had so much to say in favour of the excellence of the FRUIT on former occasions, that at the present time we are at a loss for words to express our admiration of it. We might be very concise, and in a few words say it was all excellent, and that would be the truth; but as there was some variety as to the degrees of excellence, we must in justice to the exhibitors enter into a detailed account. In former years it has been necessary to remind fruit cultivators of the importance of their maintaining the character of English gardeners in the fruit department, but this season they have come voluntarily forward and proved how excellent their management is. We were happy to remark among the exhibitors the gardeners of their Majesties the Queen and Queen Dowager.—In the Collections, Mr. Spencer, gr. to the Marquis of Lansdowne, exhibited a number of magnificent Providence and Queen Pines, fine Cannon Hall, Muscat, Black Hamburgh, and Frontignan Grapes, excellent Cabul Melons, with beautifully-coloured and ripened Elruge Nectarines, and Bellegarde and Noblesse Peaches. To this collection the first Prize was awarded, and certainly it was highly deserving of it, for the fruit was perfect.—Mr. Henderson, gr. to Sir George Beaumont, had fine Queen Pines, but not so well swelled as usual; excellent Black Hamburgh Grapes, Melons, with Elruge Nectarines, and Strawberries, and Cherries.—Mr. Dods, gr. to Sir George Warrender, also sent fine Pines, Melons, Black Hamburgh and Muscat Grapes, very good, with Peaches, Nectarines, Cherries, and Currants. —From the garden of J. H. Oughton, Esq., Elm Grove, Roehampton, Mr. Parker produced very good Black Hamburgh, Black St. Peter's, and Muscat Grapes, with magnificent Nectarines and Peaches, and some fine Melons.—Black Hamburgh and Muscat Grapes, and some excellent Melons, were sent by Mr. Bailey, gr. to the Archbishop of York; good Melons, Strawberries, Cherries, Currants, and Golden Harvey Apples in excellent preservation, by Mr. Davis, gr. to J. Disney, Esq.; and a tolerable collection of fruit came from Mr. Peddrick, gr. to H. Pownall, Esq.—The Pines were all good, but the most perfect specimen in the exhibition was a Queen grown by Mr. Hamp, gr. to Jas. Thorn, Esq. This, we were informed by Mr. Hamp, had been grown on the tank system of heating, and certainly the fruit was as fine as could be desired.—Mr. M'Ewen, gr. to Colonel Wyndham, at Petworth, sent very excellent Providence and Queen Pines.—Mr. Parsons, gr. to A. George, Esq., the same; and very superior Providence Pines also came from Mr. Belton, gr. to C. Winn, Esq., of Nostell Priory.—Mr. Sellers, gr. to L. V. Watkins, Esq., had some fine Enviles; Mr. Henderson, and Mr. Dods, gr. to Col. Baker, some fine Queens; and Mr. Gunter and Mr. Wilmot, of Isleworth, sent some very fine fruit.—Mr. Brown, gr. to C. W. Packe, Esq., contributed some good Providence Pines; Mr. Dryden some good Enville and Providence; but the Enville, Providence, and Otaheite Pines from the garden of Lady Rolle, at Bicton, did not maintain the character of that establishment.—Of Grapes, the finest were from Mr. Dytche, gr. to Sir F. Goodricke, and Mr. Hamp; but very admirable fruit, a little injured by packing, was also sent by Mr. Robinson, gr. to A. Sinclair, Esq., of Liverpool; Mr. Ingram, of the Royal Gardens, Windsor, whose sort was called the Royal Albert, and was grown in a pot; Mr. Atlee, gr. to H. Beaufoy, Esq.; Mr. Dods; Mr. E. Davies, gr. to G. Smith, Esq.; Mr. Umpleby, gr. to H. Benyon, Esq., Leeds; Mr. Godfrey, gr. to the Earl of Limerick, and Mr. Parsons. Other Grapes were sent by Mr. Dods; Mr. Wilson, gr. to Lord Howe; Mr. Taylor, gr. to J. Coster, Esq.; Mr. Henderson; Mr. M'Lean, gr. to the Marquess of Downshire; Mr. Smith, gr. to Sir G. Ansley; and Mr. Gibson, gr. to Her Majesty the Queen Dowager.—Of Market Gardeners, very excellent fruit was sent by Mr. Davis, of Barnet; Mr. Wilmot, Mr. Mitchell, of Brighton; Mr. Chapman, of Lambeth; and Mr. Gunter.—In Peaches, some admirable fruit were sent by Mr. Snow, gr. to Earl de Grey; and very excellent Peaches and Nectarines by Mr. Spencer; Mr. Ewing, gr. to O. F. Meyrick, Esq.; Mr. Ferguson, gr. to the Duke of Buckingham; Mr. Fleming, gr. to the Duke of Sutherland; and Mr. Davis, of Oak-hill, Barnet. Some very good Peaches and Nectarines were also sent by Mr. Collins, gr. to E. H. Chapman, Esq.; and Mr. Foggo, gr. the Marquis of Abercorn.—The Melons especially were exceedingly fine; but as no Prize was awarded, we suppose the internal examination did not satisfy the Judges. —Mr. Fleming sent two very fine Cabul Melons, weighing 10 lbs. each; Mr. Mitchell, gr. to Lord Vernon, sent a very splendid specimen of the Hoosanee; and Mr. Spencer, two remarkably fine fruit of the Beechwood. Mr. M'Ewen and Mr. Graham had likewise some good Beechwood; and other good-looking Melons were sent by Mr. Marton, Thames Bank, Pimlico; Mr. Bance, gr. to Dr. Tarleton, Mr. Gibson, and Mr. Fish, gr. to H. Oddie, Esq.—A bunch of the fruit of Musa Cavendishii was from the Garden of the Society; and of miscellaneous fruit, some fine Greengage Plums were sent from Her Majesty's Gardens, Windsor.—Figs, remarkably fine, but unknown, from Mr. M'Ewen; Cherries, by Mr Meyers, of Brentford, Mr. Redding, and Mr. Baxter; and Circassian Cherries, by Mr. Peddrick.—Fastolff Raspberries were sent by Messrs. Youell; and others, nearly as good, by the Hon. and Rev. R. Wilson.—Mr. Stanley, gr. to H. Berens, Esq., sent fine Citrons; and Mr. Caldwell, a remarkably well-grown Orange.—Some fine Myatt's Pine Strawberries were sent by Mr. Redding; Turner's Pine, by Mr. Turner, of Brentford; Apples, well preserved, by Mr. J. Fish; Cherries, by Mr. Jones, gr. to Sir Moore Disney, and Mr. Elliott, gr. to T. B. Boothby, Esq.; Elton and Turner's Pine Strawberries, by Mr. Jones; Citron des Carmes Pears, by Mr. M'Ewen; and some handsome Cucumbers, by Mr. Mills, not sent for competition, grown in his improved pit, heated by Burbidge and Healy's boilers and tank, "in the short period of 20 days from the time of planting."—Gooseberries were sent by Mr. Meyers, of Brentford; and some seedling varieties, by Mr. J. Fish.

We must not omit some beautiful HONEYCOMB, obtained at Dover, in Nutt's boxes, and exhibited by Mr. Geo. Neighbour, of Holborn.

Though not so numerous as at the two former Exhibitions, and the season having been a very long one, the display of PELARGONIUMS reflected great credit upon the growers, for having produced them in such fine condition as to health, and quantity of bloom. In the Amateurs' class of 12 new and first-rate varieties, in pots of 24 to the cast, *the Gold Banksian* in this class was taken by Mr. Stains, whose collection contained the following sorts:—Sunbeam, Roulette, Superbum, Queen of the East, Rising Sun, Alice Gray, Fair Maid of Devon, Duke of Cornwall, Nestor, Wonder of the West, Matilda, and Wonder.—*The Silver Gilt* was awarded to Mr. Cock for Madame Taglioni, Pulchellum, Unit, Juliet, Sylph, Conflagration, Sir R. Peel, Black Dwarf, Symmetry, Laura, Hector, and Jessie.

In the NURSERYMEN'S CLASS the *Gold Banksian* was awarded to Mr. Catleugh, his collection consisting of Rosetta superb, Tpili, Unit, Nestor, Pandora, Queen of the Fairies, Witch, Dara, Symmetry, Victoria, Beauty, and Grand Monarch.—*The Silver Gilt*, Mr. Gaines, Battersea, for Witch, Miss Louisa Stanley, Excelsum, Fair Maid of Devon, Glory of Jersey, Egbert, Rising Sun, Elegans Novum, Madeleine, Albina, White Surrey, and King of Saxony. The two collections of 12 varieties in 12-sized pots, were from Mr. Catleugh and Mr. Gaines; the former taking *the Silver Gilt Medal* for Nestor, Selina, Sapphire, Queen of Fairies, Dido, Lord Mayor, Madeleine, Matilda, Tasso, Armenia, Constellation, and Cyrus superb.—Mr. Gaines received the *Large Silver* for Madeleine, Egbert, Lady Isabella Douglas, Rising Sun, Cid, Antiope, Mabel, Triumphant, Album perfectum, Erectum, Floridum, and Cyrus.

The exhibition of FUCHSIAS was greater than we had seen brought together at any former period, and many fine and magnificent specimens were exhibited; but good as they were, we could not but feel that there was too great a similarity in the colour, and these elegant flowers will never make an effective display, unless the sorts are judiciously chosen, and a watchful regard paid to contrast of colour. Each collection should contain the greatest range of variety the flowers possesses.—The *Large Silver Medal* was awarded to Mr. Gaines, and to Mr. Laing, of Twickenham; the former collection was composed of Decora, Nobilissima, Britannia, Alata, Eclipse, Robusta, Paragon, Eppsii, Champion, Pulcherrima, and Defiance; and the latter of Venus Victria, Eppsii, Dalstoni, Victory, Stanwelliana, Defiance, Bridegroom, Kentish Hero, Insignis, Conspicua arborea, Chandlerii, and Magnifica.—*The Silver Knightian*, to Mr. Ayres, gr. to W. Cook, Esq., Brooklands, Blackheath, for Attractor, Balloonii, Stanwelliana, Epps's Marie, King John, Eppsii, Speciosa, Globosa major, Elegans, Exoniensis, Excelsa, and Duke of Wellington.—*The Same Medal* was also awarded to Mr. Kendall, of Stoke Newington, for Formosa elegans, Venus Victrix, Brockmannii, Eppsii, Stanwelliana, Compacta, Britannia, Defiance, Eclipse, Alata, Victory, and Robusta.—*The Silver Banksian Medal*, to Messrs. Lane and Son, for Laneii, Pulcherrima, Robusta, Defiance, Exoniensis, Magnifica, Fulgens, Paragon, Alata, Britannia, Brockmannii, and Eppsii; and the *same Medal* for the collection from Messrs. Henderson, Pine-apple-place, which contained the following flowers:—Le Chinois, Pulcherrima, Tricolor, Formosa elegans, Rosea elegans, Chauverii, Majestica, Closiot, Eppsii, Defiance, Lady Walsingham, and Venus Victrix.

The Collections of PICOTEES and CARNATIONS appeared to afford general gratification; there was an excellent display of these beautiful flowers, which are unquestionably rising in public estimation. In the Amateurs' Class the *Large Silver* was awarded to Mr. C. Embleton, gr. to T. Barnard, Esq., whose stand contained the following varieties:—Willmer's Prince Royal, John's Prince Albert, Sharp's Gem, Barnard's Mrs. Barnard, and Lady Douro, Dickson's Bride, and Trip to Cambridge, Wildman's Isabella, Burrough's Lady Douro, Robinson's Nottingham Hero, Sharp's Wellington, La Delicate, and Reade's Favourite, Burrough's Mrs. Bevan, Waine's Victoria, Brinkler's Lady Chesterfield, Gidden's Miss Desborough, Teaser, and Vespasian, Hogg's Queen of England, Burrough's Lady Peel, and Mrs. Benyon, Ely's Marquess of Waterford, and Annersley's Sanspariel.—Geo. Edmonds, Esq., Wandsworth, received the *Silver Knightian Medal* for Willmer's Prince Royal, Barraud's Bride, Barderer, and Eclipse, Burrough's Mrs. Bevan, Annersley's Sanspariel and Mrs. Willoughby, Jessop's Sir W. Middleton, Cox's Victoria Regina, Wildman's Isabella, Wain's Victoria, Dickson's Trip to Cambridge, Kirtland's Wellington and Princess Augusta, Wood's Lady St. John, John's Prince Albert, Gidden's Sir R. Peel, Princess Royal, Teaser, and Don Juan, Lady Flower, Garrat's Lady Dacre, Brinkler's Conductor, and Crask's Queen Victoria.—In the Nurserymen's Class, the *Large Silver Medal* was awarded to Mr. J. Dickson, of Acre-lane, whose stand contained as follows:—Barraud's Portia and Cornelius, Sharp's Gem, Criterion, La Delicate, and Agitator, Dickson's No. 10, No. 2, Lady Jane Grey, Charles Stanford, No. 8, and No. 6, Burrough's Mrs. Bevan, Gidden's Vespasian, Hero of Nottingham, Wildman's Isabella, Gidden's Lydia and Teaser, Kirtland's Princess Augusta of Cambridge, Beauty of Reading, Queen Victoria, and Duke of Wellington, Wain's Queen Victoria, and Willmer's Prince Royal.—The 2d Prize, *Silver Knightian Medal*, was awarded to Messrs. Norman of Woolwich, for Ely's Field Marshall, Halliday's Henrietta, Crask's Victoria, Wain's Queen Victoria, Dickson's Trip to Cambridge, Sharp's Gem, Barraud's Bride and Eclipse, Norwich Rival, Barnard's Mrs. Barnard, Wildman's Isabella, Burrough's Lady Flower and Lady Douro, Bennet's Seedling, Garrat's Champion, Woolwich Beauty, Gidden's Vespasian, Lady Dacre, Purpurea elegans, Halliday's Fair Phillis, Sharp's Invincible, Robinson's Duke of Wellington, Lovegrove's No. 5, and Purple Perfection. *Silver Banksian.*—Mr. H. Ward, Woolwich, for Martin's Prince Albert, Gidden's Lady Dacre, Burrough's Lady Flower, and Mrs. Bevan, Green's Queen, Crask's Victoria, Annette, Trude's Queen Victoria, John's Prince Albert, Wilson's Miss Fanny Irby, Brinkler's Lady Chesterfield, Barnard's Mrs Barnard, Martin's Queen of Violets, Willmer's Prince Royal, Sharp's Invincible, and Countess De Grey, Gidden's Vespasian, Burrow's Jim Crow, Seedling, Purple Perfection, Dickson's Trip to Cambridge, Wain's Queen Victoria, Wood's Lord Hitchbrooke; and *the same Medal* to Mr. Willmer of Sunbury, whose collection consisted of Gidden's Sir R. Peel, Miss Desborough and Vespasian, Hufton's Queen of Sheba, Burrough's Miss Jane, and Aurora, Willmer's Queen, Barraud's Portia, Cornelius and Borderer, Dickson's Trip to Cambridge, Brinkler's Fairy Queen, Willmer's Peter the Great, Miss Browning, an Prince Royal, No. 10. Sharp's Cleopatra, Kirtland's Princess Augusta, Trude's Queen Victoria, Ely's Mrs. Horner, Field Marshall and Marquess of Waterford, Hogg's Lady Acland, and Newell's Harlequin. CARNATIONS.—*The Large Silver*, in the Amateurs' Class, was awarded to Mr. Embleton, gr. to J. Barnard, Esq., for Jaques's Iris, Puxley's Prince Albert, Seedling, Snook's Defiance, Cartwright's Rainbow, Dalton's Lancashire Lass, Holmes's Count Paulina, Brook's Flora's Garland, Grey's Mary, Willmer's Amato, Hero of Middlesex, and Conquering Hero, Seedling, Mansley's Beauty of Woodhouse, Wilson's George IV., Squire's Defiance, Soorn's Bloomsbury, Hogg's Colonel of the Blues, Wood's William IV., Maud's Rauston, Ely's Leviathan, Hale's Prince Albert, Barnard's Duke of Roxburgh, and Seedling. In the Nurserymen's Class the *Large Silver* was given to the Messrs. Norman, of Woolwich, for Squire's Defiance, Ely's Lady Ely, Regulus, and John Wright, Shenning's Duke of Cumberland, Willmer's Solander, Defiance, and Conquering Hero, Wilson's Harriet, Martin's Splendid, Hale's Prince Albert, Franklin's Queen of Hearts, Calcot's Juba, Milwood's Premier, and Robert Burns. Bucknell's Ulysses, Count Paulina, Lady Gardener, Cartwright's Rainbow, Beauty of Woodhouse, Strong's Duke of York, Brook's Flora's Garland, Ely's Duke of Bedford, Hugo Meynell.—To Mr. Willmer, of Sunbury, the *Silver Knightian*, for Ely's Jolly Dragoon, Lady Ely, Addenbrook's Lydia, Willmer's Telemachus, Endymion, Solander, Prince of Wales, Duke of York, Conquering Hero, and Hero of Middlesex, Fletcher's Duchess of Devonshire, Cartwright's Rainbow, Jones's Ringleader, Appleby's Prince of Wales, Strong's Duke of York, Mansley's Beauty of Woodhouse, Twitchett's Don John, Pond's Lady of the Lake, Brooks's Flora's Garland, Christian's Excellent, Holmes's Count Paulina, Hogg's Colonel of the Blues, Ashworth's Miss Walker.—*The Silver Banksian*, to Mr. H. Ward, Woolwich, for Hale's Prince Albert, Ward's Sir Geo. Hosie, Calcot's Brutus, Holmes's Count Paulina, Giddens' Sir R. Peel, Puxley's Prince Albert and Queen, Addenbrook's Lydia, Milwood's Premier, Jacques's Iris, Mansley's Euclid, Martin's Splendid, Wilson's Harriet, Strong's Esther, Smith's Mrs. Betts, Hogg's Epaminondas, Dalton's Lancashire Lass, Brooks's Flora's Garland, Lascelles's Queen of Sheba, Rainforth's Gameboy, Irons's Ringleader, Nix's Lady Chetwynde, Bearless, Sir G. Osbgrne, Willmer's Miss Browning.—*Certificate*, to Mr. Willmer, Jun., King's Road, for Parker's Queen of England, Snooks's Defiance, Stone's Venus, Hale's Prince Albert, Willmer's Duchess of Kent, Endymion, Marquess of Anglesey, No. 106, and Solander, Wood's William IV., Creswell's Premier, Holmes's Count Paulina, Bates's Wellington,

Gresley's Mary Ann, Fletcher's Duchess of Devonshire, Tally-ho, Elliot's Duke of Sutherland, Hodges's Phœbus, Wilson's Harriet, Parker's Sophia, Marquess of Granby, Nutford Hero, Hoyle's Lovely Nancy, and Ely's Colonel Wainman.—*The same* to Mr. W. Catleugh, for Cartwright's Rainbow, Headley's Defiance, Puxley's Adelaide, Puxley's Gem, seedlings 194, 288, 172, 196, 189, 251, Puxley's Lady Peel, Prince of Wales, Princess Royal, and Prince Albert, Will's Beauty, Lodge's True Briton, Hogg's Lady Rowley, Low's Marquess of Westminster, Jacques's Iris, Hale's Prince Albert, Twitchett's Don John, Catleugh's Lady Broughton, Wakefield's Paul Fry, Strong's Duke of Bedford.

SHREWSBURY.—*Certificates* were awarded to the following Seedlings:—To Mr. Gaines for a seedling Pelargonium named *Duchess of Lancaster*, a clear, bright flower, orange-pink under petals, with a dash of scarlet in the top petals; it opens well and flowers freely—Mr. Kendall for a seedling Fuchsia named *Erecta elegans*, a well-formed variety, bright carmine tube and sepals, and purple corolla—Mr. Willmer, of Sunbury, for a purple Flake named *Mayo*, a flower of good properties; and Mr. Norman, of Woolwich, for a purple Picotee named *Beauty*, a light-edged purple, well-formed, with the colour uniform and unbroken.

COUNTRY SHOWS.

Ayrshire Horticultural Society, June 26.—This was the first Exhibition. The display of flowers was excellent, the Pelargoniums, Calceolarias, and Fuchsias were beautiful, and constituted the greater part of the Exhibition. The Heaths, a class of flowers becoming every year more popular, from Mrs. Hamilton and J. Miller, Esq., were very fine. Among Greenhouse Plants, we observed a specimen of Pimelea decussata, from the garden of Mrs. M'Taggart; it measured 4 feet in height and about 9 feet in circumference, and was covered from top to bottom with flowers. Among Herbaceous Plants was a fine Pentstemon cobæa, from the gardens of M. Hamilton, Esq. *Greenhouse Plants*: Mr. Hunter, for Pimelea decussata, Gesnera reflexa, Erythrina Crista galli, Erica vestita alba, and E. breviflora. *Pelargoniums*: Mr. Hunter, for Witch, Decorum, and a Seedling. *Best 7*: Mr. Hunter, for a Seedling called Medora, Rienzi, Prince Consort, Lord Mayor, Evandine, and Victory. *Herbaceous Plants*: Mr. Galbraith, for Pentstemon cobæa, and a Lilac Hollyhock. *Best 10*: Mr. Hunter, for Cypripedium spectabile, Cypripedium pubescens, Scutellaria media elegans, D. elatior, Delphinium grandiflorum, Calceolaria hyssopifolia, Lupinus polyphyllus, &c. *Fuchsias*: Mr. Galbraith, for Ayrshire Lass, Waverley, Lord Montgomery, Eclipse, Diana Vernon, Criterion, Dentist, Beauty, Field Marshal Macdonald, Complete, Ivanhoe, Queen Victoria, Miss Chalmers, and Angelina. *Cinerarias*: Mr. Galbraith, for Granville, Incomparable, and Royal Blue. *Pæonias*: Mr. Hamilton, for Prince Victor, Mountpensier, and Perfecta magnifica. *Heaths*: Mr. Hunter, for five varieties of Ventricosa. Among extra varieties were a collection of Azaleas and American plants, from Mr. Smith, Mount Oswald Grove. A beautiful display of Gothic, Arabian, and a good Silvine arbores, from Rosslie. Four stalks of Myatt's Victoria Rhubarb, weighing 3lbs. each, from Mr. Mowbray and Messrs. Edgar and Sons. Acacia pulchella, Achimenes longiflora, Botryanthera, Boronia pinnata, and a few fine Calceolarias, from Mr. M'Hamilton. Medals were awarded to Mr. Galbraith for Pimelea spectabilis, and P. decussata; to Mr. Hamilton for Pentstemon tricolorum; to Mr. Hunter for Fuchsia fulgens; to Mr. Galbraith for Fuchsia fulgens multiflora; to Mr. Hunter for Gesnera glabrata splendida, and to Mr. Pollock for Ayrshire Lass Pelargonium.—*Ayrshire Agriculturist.*

Bolington Horticultural Society, June 5.—This was the first meeting for the season. The specimens most worthy of notice were a beautiful Cactus speciosissimus, from S. Needham, Esq., the Rev. Mr. Molyneux's splendid Rhododendron splendens, Sir W. Stanley's Gnidiums, Leschenaults, and Azalea indica. There were a great number of choice Pelargoniums, amongst which, Joan d'Arc and Beauty of Kilve, from H. Littledale, Esq., were much admired. Miscellaneously were good, consisting of Black and White-Grapes, Melons, and Guavas. The following Prizes were awarded:—*Greenhouse Plants*: Dendrobium fimbriatum, Sir W. M. Stanley, Bart. *Stove Plant*: Euphorbia splendens, Rev. J. Molyneux. *Greenhouse Plant*: Azalea indica, Sir W. Stanley. *Pelargoniums*: Joan d'Arc, H. Littledale, Esq. *Fuchsias*: Globosa elatior, S. J. Wainwright, Esq. *Collection of Greenhouse Plants*: 1, Salvia patens, Chatice arborea, Lychnis fulgens, Lytta magnifica, and E. tricolor elegans, Sir W. Stanley; 2, Gladiolus maximus, Achimenes longiflora, Maranta fasciata, Begonia serratifolia, &c., Rev. J. Molyneux. *Pelargoniums*: 1, Desmarestii, Bridesmaid, Vulcan, Lady Douro, Orange Boven, Queen Dowager, H. Littledale, Esq.; 2, Sylph, Louis Quatorze, Cortes, Alexandrina, Corinna, Joan d'Arc, H. Winch, Esq. *Four Dahlias*: 1, Juba, Coronation, Erectum, and Mabel, Sir W. Stanley; 2, Decorum, Beauty of Ware, Barratt's Belgian Queen, Grand Duke, H. Littledale, Esq. *Fuchsias*: 1, trimbles, Pictorius, Mourpensii, Curtisii, Enchantress, and fulgens, Sir W. Stanley; 2, Venus Victrix, Britannia, Enchantress, Chandleeii, and magnifica, J. T. Raynes, Esq. *Verbenas*: 1, Queen, Perfection, Henderssonii, rosea odorata, variegata, and speciosa, S. Wright, Esq.; 2, Ignea, Rubens, Pulchra, Hispida, and Incisa, J. Cubin, Esq. Best *Greenhouse Plant*: Aphelexis humilis, Sir W. Stanley. Best *Stove Plant*: Gesnera Cooperii, W. Sharp, Esq.—*Liverpool Mail.*

Blackburn Tulip Show, June 19.—At a Meeting of the Tulip-growers of Blackburn and its neighbourhood, the following flowers obtained Prizes:—1st *Pan of Six Blooms*, containing Trafalgar, Phœnix, La belle Marinus, Lewold, La belle Annette, and Unique, Mr. T. Chippindale: 2, Trafalgar, Incomparable Bizarre, Violet Winner, Violet à feuil Noir, Duc de Bronte, and Unique, Mr. N. Briggs. *Three Blooms*: 1, Duke of Lancaster, Bien Fait, and Wellworth, Mr. R. Hodgson; 2, Duke of Wellington, Violet Winner, and Hercules, Mr. T. Chippindale. *Breeders, two to each Class*: 1, Arlette, Mr. J. Houlker; 2, Lady Crewe, Mr. W. Hargreaves.—1, Eunota Sophia, Mr. T. Chippindale; 2, Saint Sebastian, Mr. R. Kemp.—1, Duke of Hamilton, Mr. J. Houlker; 2, Charbonier, Mr. J. Houlker. *Selfs*: 1, Min d'Or, Mr. N. Briggs; 2, White Flag, Mr. N. Briggs. *Doubles*: 1, Double Rose, Mr. N. Briggs. *Premier Blooms*: Washington, Mr. R. Kemp. *First Class*: Trafalgar, Mr. N. Briggs; Parton's Liberty, Mr. J. Houlker; Duke of Wellington, Mr. C. Turner; Duke of Lancaster, Mr. T. Chippindale; Surpass Catafalque, Mr. R. Hodgson; Catafalque Superfleurs, Mr. H. Seed; Sir Sydney Smith, Mr. R. Kemp. *Second Class*: Violet Winner, Mr. T. Chippindale; Washington, Mr. W. Hargreaves, Mango, Mr. R. Riding; Maitre partout, Mr. J. Houlker, Demeroc, Mr. R. Kemp; Lautra, Mr. N. Briggs; Ne plus Ultra, Mr. T. Chippindale. *Third Class*: Wellworth, Mr. R. Hodgson; Doolittle, Mr. W. Wilkinson; Lady Crewe, Mr. J. Houlker; Prince Albert, Mr R. Riding; Rose Carnesse, Mr. T. Chippindale; Rose Celina, Mr. R. Riding; Heroine, Mr. R. Hodgson. *Fourth Class*: Abercromby, Mr. J. Houlker; Incomparable Bizarre, Mr W. Hargreaves. Phœnix and Lustre de Beauté, Mr. R. Hodgson, Albion, Mr. H. Seed; Turner's Black Prince, Mr. N. Briggs; Beauté Empereur, Mr. R. Hodgson. *Fifth Class*: Unknown, Mr. R. Hodgson; Rouge de Siam, Bien Fait, and Violet Walters, Mr. R. Ainsworth; Maitre partout, Mr. W. Hargreaves; Prince de Largess, Mr. R. Ainsworth; Fuller, Mr. C. Turner. *Sixth Class*: Rose Unique and Rose Vesta, Mr. W. Wilkinson; Lady Crewe, Mr. T. Chippindale; Roi de Cerise, Mr. R. Ainsworth; Princess Royal, Mr. E. Hodgson; La Vandyke, Mr. W. Wilkinson; Lord Hill, Mr. N. Briggs.

Cambridge Florists' Society, July 26.—Roses were present in great variety. Ranunculuses were but so-so as to bloom, from the wet. Pansies were of good size and fine colour. The following Prizes were awarded:—*Fancy Pansies*: Purple Edged and Spotted: Prince of Wales, Mr. Crisp; Maids of Kent, Mr. Ready; Maid Marian, Mr. R. Headly; Butler, La Vandyke, and Esther, Mr. Catling. Dark Purple Varieties, Mr. Crisp; Superbus, Mr. Ready; Varieties, Mr. Crisp; Black Prince, Superbus and Varieties, Mr. Ready. Yellow Ground: Andromache, Mr. Crisp; Andromache, Mr. Ready; Purple, Mr. R. Headly; L'Arbriseau, Mr. Catling; Grace, Montague and Andromache, Mr. Ready. Rose and Pink: Alice, Rose Unique, Alphonso, Duchess of Richmond, Alphonso and Rose Unique, Mr. Catling. White Edged: Maid Marian, Magdalen, and La Singulaire, Mr. R. Headly; Dorcas, Mr. Ready; Mr. Welch, Mr. R. Headly; La Singulaire, Mr. Catling. Light Purple and Grey: Nomius, Mr. Crisp; Porcia, Amatamut, Othello, Baroness Percy, and Nomius, Mr. Ready. Orange: Cedo Nulli, Orange Brabançon, Prince of Orange, and Orangiere, Mr. Crisp; Black: Condorcet, Navara, and Condoreet, Mr. Catling; Black Prince, Navara, and Kempenfeldt, Mr. R. Headly. Buff: Cox's Buff, Fair Quaker, Colenre de Perle, and Cox's Buff, Mr. Crisp; Red and White Striped: Le Temeraire, Fillet Partuite, Le Temeraire, and Œillet Due, Mr. Crisp. Olive: Bouquet Sansparell, Pherobasis, Harvey's Olive. Jaune on Pompadour, Bouquet Sansparell, and Hortensis, Mr. Crisp. White: La Favorite, Mr Crisp; Pausanias, Mr. R. Headly; White Swan, Snowden, Februn, and Pausanias, Mr. Ready. Yellow ground Edged: Headly's King James, Albion, Nestor, Marshal Key, and Pucello, Mr. R. Headly. Crimson: Duke of Wellington, Mr. Catling; Firebrand, Newton, Maulius, and Firebrand, Mr. Crisp, Duke of Wellington, Mr. Catling. Yellow and Sulphur: Adrian, Mr. Crisp; Eliza and Beroth, Mr. Ready; Sulphurea, Mr. R. Headly; Ghiace, Mr. Crisp; Marquisate, Mr. Ready. Scarlet: Jupiter, Alphonso, and Rising Sun, Mr. R. Headly; Jupiter, Mr. Ready, Rising Sun, and Julius Cæsar, Mr. R Headly. Coffee Colour: Prince George, and Theodat, Mr Crisp; Versailles, Mr. Catling; Pherobasis, Mr. Ready; Prince George, Mr. Catling; Theodat, Mr. Ready. Red and Yellow Striped: Scarlet and Gold, Mélange des Beauté, La Soleil, Scarlet and Gold, and Mélange des Beauté, Mr. Crisp. Shaded White: Princess Charlotte, Tillott's Blush, St. Jerome, Tillott's Blush, and St. Jerome, Mr. Crisp. Mottled: Thompson's Queen, Mr Catling; Seedling, Shell, and Seedling, Mr. R. Headly; Julienne, Mr. Crisp. *Pinks.*—Red lace: Buck's Queen, Mr. Ready; do., Mr. R. Headly; Mrs. Childers and Earl of Uxbridge, Mr. J. Headland; Bond's Seedling, Mr. Ready; Mrs. Childers, Mr. J. Headland. Purple Laced: Duke of Northumberland, Mr J. Headland; Norman's Henry and Hodges's Gem, Mr. R. Headly; Lovely Ann, Mr. Ready; Hodges's Gem and Duke of Northumberland, Mr. J. Headland. Rose Pinks: Wood's Superb and Windsor Castle, Mr. Catling; Wood's Superb, Mr. R. Haylock; Harefield Rose and Anna Boleyn, Mr. Catling; Wood's Superb, Mr. R. Haylock. Plain Pink: Conqueror, Mr. J. Headland; Venus, Parry's Union, Well's Superb, Conqueror, and Parry's Union, Mr. Catling. *Roses.*—Crimson: Boule de Nanteuil, Mr. J. Sparrow; Guerin's Gift, Mr. H. Green; George the Fourth, Messrs. Hudson; Edmund Kean and Grande Cramoise, Mr. Twitchett. Yellow: China Ne Plus Ultra and Smith's Yellow Noisette, Mr. H. Green; do., Mr. E. Harris; do., Mr. H. Green; do., Mr. J. Sparrow. Deep Blush: Claude Duval, Mr. Catling; Browne's Superb, Mr. H. Greene; Provence, Mr. Ready, Crested Moss and Provence Moss, Mr. R. Headly. Striped: Village Maid, Mr. Ready. Light Blush: Triomphe de Guerin, Mr. H. Greene; do., Mr. Twitchett; do., Mr. J. Headland; Fanny Parriset and Maiden's Blush, Mr. Twitchett. Dark: Miraiba and General Lamarque, Mr. H. Green; Thornless Violet, Mr. F. B. Smith; Grand Duke of Tuscany, Messrs. Hudson; do., Mr. E. Harris. White: Blanche Fleur, Mr. J. Sparrow, do., Mr. H. Green; Madame Hardy, Mr. Twitchett; Unique, Mr. J. Kits; Madame Hardy, Mr. J. Sparrow; do., Mr. E. Harris. Crimson Scarlet: Brennus, Mr. H. Greene; do., Mr. J. Headland. Mr. H. Green's Prize to *Amateurs—Pan of Roses*: 1, Blanche Fleur, Village Maid, Fanny Parriset, George IV., Triomphe de Guerin, Provence, China Ne Plus Ultra, Fulgens, and Brennus, Mr. J. Sparrow; 2, Yellow Noisette, Blanche Fleur, Provence, Coronation, George IV., Duke of Devonshire, Beauty of Billard, Duchess d'Angoulême, and Brennus, Mr. J. Taylor. *Pan of Six*: 1, Duke of Devonshire, Crested Moss, Madame Hardy, Edmund Kean, Brennus, and Triomphe de Guerin, Mr. Twitchett; 2, Madame Hardy, George IV., Blanche Fleur, Ne Plus Ultra, Provence, and Duke of Devonshire, Mr. E. Harris. *Pan of Three*: Duke of Devonshire, Provence, and Blanche Fleur, Mr. J. Boning. *Collections of Plants*: 1, Erica mutabilis, Ventricosa superba, and jasminiflora, Spiræa japonica, Petunia superba, Pelargonium tricolor, Vinca rosea, and picta, Oncidium pulvinatum, and flexuosum, Gloxinia speciosa, and rubra, Pimelea decussata, Lantana Sellowii, Sedum cæruleum, Swainsona coronillifolia, Mr. A. Biggs; 2, Pentstemon gentianoides, Petunia, Enchantress, Hydrangea hortensis, Fuchsia fulgens, and multiflora, Clematis florida, Erica ventricosa superba, Pelargonium, Victory, and Garth's King, Rhododendron ponticum, Verbena Thompsonii, Pimelea decussata, Lotus Jacobæus, Azalea odorata, Alstræmeria pelegrina, Leschenaultia biloba, and formosa, Mr. H. Green. *Specimen Plant*: 1, Fuchsia globosa, Mr. A. Biggs; 2, Clematis Sieboldi, Messrs. Hudson. EXTRA PRIZES: Alstræmeria pulchella, Mr. Ready.—*Cambridge Chronicle.*

Cambridgeshire Horticultural Society, June 19.—This Exhibition, like the preceding, was well attended. The following prizes were awarded:—*Strawberries*, 1, Keen's Seedling, Mr. G. Fisher; 2, do., Mr. Cumming. *Melon*, Green Persian, Mrs. R. Foster. *Roses*, 2, Mr. Glinso, for Madame Dubarry, Village Maid, fulgens, Blush Hip, Wellington, George the Fourth, Ville de Bruxelles, Duchesse d'Angoulême, Margined Hip, Las Casas, Duc de Cayes, Blush Moss, Luxembourg Moss, African Black, White Moss, Tuscany, Madame Hardy, grandissima, La Volupte, Blanchefleur, Boula de Nanteuil, perpetual, Antinous, and Brown's Superb; 4, Mr. Green, for Globe Hip, Madame Dubarry, Euphrosayne, Camilen estnes, Amelia d'Abancourt, Kean, Noble, Leo the Tenth, Cyrus, Blanchefleur, Royal Marbled, Brennus, Crested Moss, splendidissima, Marbled Superb, Madame Hardy, Brown's Superb, Duke of Devonshire, Beauty of Billard, Coronation, Ne plus Ultra, fulgens, Antonius; 4, Mr. Green, for Provins Moss, Blanchefleur, Queen of Bourbons, Nelly, Crimson Moss, Kean, Prince Albert, Coronation, Madame Desprez, General Lamarque, Luxembourg Moss, Unique, Miss Chauncy, Bernard, Virgin Rose, Grand Triumphant, Duke of Devonshire, fulgens, Crested Moss, Cyrus, Fulgoria, Fanny Parisot, and Wellington; 3 *varieties*, Mr. Twitchett, for Madame Hardy, Brennus, and Village Maid. *Plants in pots*, 2, Mr. Green, for Hydrangea hortensis, Pelargonium Victory, do. Gaines's King, Pentstemon gentianoides coccineum, Alstræmeria pelegrina, Petunia Enchantress, Petunia Seedling, Petunia Sir Robert Peel, Fuchsia Chandleeii, do. carnea, Azalea odorata, Clematis florida, Erica ventricosa superba, ventricosa, Hartnelli bicolor, Rhododendron ponticum, Lotus Jacobæus, Pimelea decussata, Verbena Thompsonia, and 2 Balsams; 2, Messrs. Hudson, for Clematis Sieboldi, Cactus speciosus, South, and Jenkinsonii, Fuchsia Thompsonia, Calceolaria bicolor, Verbena Queen, Pelargonium Mrs. Maclean, Orange Boven, effulgens, and Bollya heterophylla. *Single Specimen*, 3, Mr. Widnall, for Clematis Sieboldii; Messrs. Hudson, for Cactus speciosissimus. *Fuchsias*, 6 *varieties*, 1, Mr. Widnall, for Erecta, elegans, nobilissima, Frontil, formosa elegans, gault flora; 2, Mr. Green, for fulgens, Curtisii, rosea, elegans, bicolor, Youalii, and elegans rubescha. *Azaleas*, 2, Messrs. Hudson, for Curtisii, globosa-major, and Chandleeii. EXTRA PRIZES—*Roses*, Mr. Ready, for Ne plus Ultra, fulgens, Bronzus, Provence, Unique, Moss, Madame de Flahy, Tuscany, Rarnac Goal, George the Fourth, Village Maid, and Unknown. *Pansies*, Mr. Gimson, for Hannah, Hurst, Orlando, and alba.—*Cambridge Advertiser.*

Colchester Horticultural Society, June 14.—This was the first meeting for this year. It was held in the grounds belonging to the Diocesan College, which are beautifully wooded with Deodars and other rare trees. Several prizes were awarded, but we have only been furnished with a list of rewards without the names of the flowers for which they were given.

Royal Cornwall Horticultural Society, July 9.—This was the second Exhibition. The show of flowers was not equal to that of the previous meeting. Among stove plants were Cattleya Skinneri, and Oncidium flexuosum; several specimens of Achimenes and Rondeletia speciosa. Messrs. Veitch, of Exeter, showed—Hindsia violacea, H. longiflora, Clitoria fulgens, Echites atropurpurea, and Passiflora carnea. FRUIT.—The prizes were awarded as follow:—*Melon*: 1, King's Own Green Flesh, G. C. Fox, Esq.; 2, W. Daubuz, Esq., for the same. *Cherries*: 1, Black Heart, J. Vivian, Esq.; 2, White Heart, Mrs. Sampson. *Gooseberries*: Yellow Rockwood, Mrs. Sampson; green or white Do.: Wainwright's Green Cream, Mrs. Sampson; Do.: red, Wellington, Mrs. Sampson. *Currants*: Knight's Red, Sir C. Lemon, Bart., M.P.; *black Do.*: Naples Black, Sir C. Lemon, Bart., M.P. *Red Raspberries*, Caroline, Mrs. Sampson. *Strawberries*: 1, Old Pine, Sir C. Lemon, Bart., M.P.; 2, Do., 2, Carolina, Rev. C. Rogers. *Cherries*: May Duke, Rev. C. Rogers. *Melon*: King's Own, Rev. C. Rogers. FLOWERS.—*Stove Plants*: 1, Achimenes longiflora, A. grandiflora, Ardisia crenulata, Rondeletia speciosa, Vinca rosea, Ixora, bandhuca, J. P. Magor, Esq.; 2, Euphorbia splendens, Achimenes grandiflora, Vinca oculata, Manettia gonlata, Achimenes longiflora, Vinca oculata rosea, J. Vivian, Esq.; 3, Achimenes longiflora, A. grandiflora, Rondeletia speciosa, Clerodendron splendens, Manettia glabra, W. M. Tweedy, Esq. *Greenhouse Plants*: 1, Oncidium papillo, J. P. Magor, Esq.; 2, Cattleya Harrisonii, G. C. Fox, Esq. *Greenhouse Plants*: Lychnis grandiflora, Scitya salicifolia, Petunia rook's nest, Millia a. punctata, Statice puberula, Viscaria oculata, G. N. Simmons, Esq.; specimen, Deya carnosa, J. P. Magor, Esq. *Pelargoniums*: La Grand, Naualigans, Anna, Atillabey, Ignes de Costa, W. Daubuz, Esq. *Heaths*: Eximia, viridiflora, ventricosa pauguana, and ventricosa superba, G. N. Simmons, Esq. *Fuchsias*: 1, Tricolor, Augusta, Exoniensis, Grovehilli, Richardii grandiflora, Multiflora, J. Vivian, Esq.; 2, Bateali, Magnifica, Exoniensis, Tricolor, Victoria, Splendissima, G. C. Fox, Esq.; 3, Augusta, Curtisii, Middletonia, Richardii grandiflora, Mollypennii, Multiflora, F. Pasmingham, Esq. *Verbenas*: 1, Ovid, Tweediana superba, Lascoti, Queen, Ignea, Odoratissima, Rev. C. Rogers; 2, Queen of Orange, Odoratissima, Bride, Duchess of Cornwall, Seedling, G. N. Simmons, Esq. *Roses*: 1, Smith's Yellow, Fulgens, Indica, Duprez, Hybrid Lamarque, Devonshire, Indica odoratissima, Agaa Maria, Garlandia, Yellow China, King, Gellot, Tea-Bennetts, G. C. Fox, Esq.; 2, Jaune Desprez, Hybrid China, Clara Sylvain, Astrolabe, Common Rose, Smith's Yellow, Celina Rose, Acidalie, Unique provins, Rivers's Purpetual, L'Ingenue, Duc de Choiseul, N. C. Stephens, Esq. *Carnations*: Wood's William IV., Wigg's Earl of Leicester, Ely's Lady Ely, Ely's Col. Wainman, Jacques floriana, Manley's Beauty of Westhouse, F. Pasmingham, Esq. *Picotees*: Sharp's Rector, Martin's Queen Victoria, Purple Perfection, Burough's Miss Jane, Sykes's Eliza, Sharp's Cleopatra, F. Pasmingham, Esq. *Fuchsias*: Pasmingham, Augusta, Venus Victrix, St. Clare, Dalstonii, Corruscopeia, G. N. Simmons, Esq. *Picotees*: Sykes's Eliza, Ely's Bright Venus, Sharp's Duke of Wellington, Cox's Classica, Gaskell's Lady Diana, Wilmer's, Mary Anne, Mr. R. Dunn. *Calceolarias*: Unexceptionable, Decora, Brilliant, Splendens, Gem, Bicolor, W. Daubuz, Esq. *Pelargoniums*: Splendens, Grandiflora, Madonna, Rosea alba, Lady Peel, Gem, F. Pasmingham, Esq. VEGETABLES.—*Peas*: 1, British Queen, W. Daubuz, Esq.; 2, Woodford Marrow, G. C. Fox, Esq. *Kidney Beans*: G. C. Fox, Esq. *Cauliflowers*: Walcheren, F. Pasmingham, Esq. *Artichokes*: Globe, Mr. C. Lemon, Bart., M.P. FLORISTS, NURSERYMEN, AND MARKET GARDENERS.—*Roses*: 1, cut flowers, Rivers's Mystery, Rubbel Mere, Vibren, Isle de Bourbon, Madame Laffay, White China, Perpetual China, Yellow China, Tricolor pompone, Common Moss, Noisette China, Black alcrais, Madame Dubarry, Lord Wellington, Common China, Rivers's Nankin, New Blush Moss, Duchess d'Angoulême, Blush Rose Brunswick, Amy Robsart, Cyrtle, Alinee Vibert, and Blushing Maid. Mr. J. Treseder; 2, Royal Portugal, Duchess d'Angoulême, Grand Agatha, St. Vero, Queen Bourbon, Tuscany, Aimee Vibert, Damask, Triomphe de Flore, Charles X., Ne plus Ultra, General Lamarque, De la Flash Moss, White Rose, Wellington, Blush Moss, Unique, Fimbriata, Village Maid, Fulgens, Caroline, Black African, Luxembourg Moss, Hybrid Bourbon, and Lacepede, Mr. J. Paul.—*From the West Briton, Carnegie.*

Doncaster Horticultural Society, June 26.—This was the second Exhibition. The plants and flowers were much inferior to those of the previous meeting. Dr. Schofield exhibited a fine specimen Sedum acre. Among the nurserymen, Mr. W. Barratt, of Wakefield, sent Lilium speciosum; and from Mr. Milan were several varieties of Achimenes. W. Chadwick, Esq., exhibited a beautiful Thunbergia alata. From Mr. Cooke was Erythrina crista-galli, which obtained the first Prize. The following Prizes were awarded:—*Stove Plant*: G. J. Horsfall, Esq., Gloxinia rubra and speciosa. *Greenhouse Plant*: J. H. Cooke, Esq., Erythrina crista-galli; 2, G. J. Horsfall, Esq., Achimenes longiflora; 3, W. Chadwick, Esq., Crassula coccinea. *Cactus*: 1, G. C. Walker, Esq., Cactus Ackermanni; 2, G. J. Horsfall, Esq., Cactus speciosissimus. *Exotic Climber*: 1, W. Chadwick, Esq., Thunbergia alata; 2, G. C. Walker, Esq., Clematis Sieboldii. *Purple Pelargoniums*: Dr. Schofield, Juba, and Conservative. *Crimson*: Dr. Schofield, Splendidum and Grand Duke. *Rose*: 1, Dr. Schofield, Helen of Troy; 2, W. Chadwick, Esq., Priam. *Pink*: Dr. Schofield, Nymph. *Blush*: 1, W. Chadwick, Esq., Victory; 2, Lady Cooke, Rienzi. *Light clouded*: 1, Dr. Schofield, Jehu; 2, Lady Cooke, St. Leger. *Dark clouded*: 1, H. Cooke, Esq., Firebrand; 2, Dr. Schofield, Jewess. *Scarlet*: Lady Cooke, Superb. *Striped*: Dr. Schofield, speculum metal. *White*: Lady Cooke, Alexandrina. *Zonal*: H. Cooke, Esq., Ventricosa superba. *Fuchsia*: 1, Mrs. White, Exoniensis; 2, Dr. Schofield, Nevonia. *Cinerarias*: Dr. Schofield, Wizard of the North. *Herbaceous Plant*: Dr. Schofield, Phlox omnifolia. *Pansies*: G. Jessett, Esq., Margery Dawson, Beauty of Ritching, Yellow Defiance, Governess, Anna, Black Prince, Sulphurea elegans, Lord Francis Egerton, Sunbeam, Cox's Defiance, and Napoleon. *Six varieties*: G. Jessett, Esq., Regulator, Prince Albert, Lord F. Egerton, Maid of Milan, Fiddy, and Yellow Defiance. NURSERYMEN'S PRIZES.—*Greenhouse Plant*: Mr. Milan, Achimenes grandiflora. *Exotic Climber*: Mr. Milan, Morinda alba.—*Doncaster Gazette.*

Hampstead Florist Society, June 13.—This was the first Exhibition; it took place in the grounds of J. Jackson, Esq. The company was numerous. The following Prizes were awarded:—*Collections*: 1, Mr. Cockburn, gr. to the Earl of Mansfield, for Pimelea decussata, Phillibortia grandiflora, Tropæolum tricolorum, Epacris grandiflora, Anagallis grandiflora rubra, Swainsona albiflora, Cytisus spicatus, Leschenaultia formosa and biloba; 2, Mr. Calver, gr. to J. C. Melville, Esq., for Cactus grandiflorus, Polygala cordifolia, Fuchsia Monypennii and incumiflora; a Petunia, named Beauty; a Brugmansia, Lasea grandiflora; a Calceolaria, named Gem; Mimulus roseus,

and others. 6 *Plants*: 1, Mr. Goulding, gr. to T. Turner, Esq., for Pimelea decussata, Tropæolum tetraphyllum, Epacris grandiflora, Cactus Jenkinsonii and Ackermannii, and a Calceolaria, called Emperor; 2, Mr. Wren, gr. to T. Neville, Esq., for Cactus Jenkinsonii, speciosissimus, and Ackermannii, Pimelea decussata, Erica ventricosa, and Polygala oppositifolia; 3, Mr. Garrod, gr. to R. B. Formby, Esq., for Cactus speciosissimus, Ackermanni, Erica ventricosa superba, tricolor, Cavendishii, maxima, and coccinea; 4, Mr. Tucker, gr. to R. Crofton, Esq., for Pimelea hispida and rosea, Mimulus roseus, Fuchsia Atkinsonii and corymbiflora, and a variegated Polygala. *Specimen Plant*: 1, Mr. Goulding, for Pimelea decussata; 2, Mr. Cockburn, for Cactus speciosus; 3, Mr. Wren, for Cactus speciosissimus; 4, Mr. Tucker, for Fuchsia grandiflora; 5, Mr. Garrod, for Polygala grandiflora. *Fuchsias*: 1, Mr. Goulding, for Joan of Arc; Beauty of Hampstead, Sylph, Beauty of Ware, Rienzi, Jewess, Louis Quatorze, Victory, and a seedling; 2, Mr. Cockburn, for Standard Bearer, Exhibition, Pearl, Fairmaid, Emmeline, Comte de Paris, Victory, Elizabeth, and Novelty; 3, Mr. Garrod, for Climax, Victory, Lady Denbigh, Enchantress, Priory Queen, Joan of Arc, Sir Robert Peel, Comte de Paris, and Rienzi. 6 *Varieties*: 1, Mr. Cruickshank, gr. to J. Jackson, Esq., for Gauntlet, Pearl, Floreus, Una, Britannia, and Madona; 2, Mr. Wrep, for Enchantress, Victory, Sylph, Grand Duke, Alicia, Superba; 3, Mr. Culver, Beauty of Hampstead, Lady Denbigh, Lady Murray, Mr. Stewart, Victory and Priory Queen; 4, Mr. Tucker, Lady Denbigh, Garth's Perfection, Belladonna, Erectus, Jewess, and a seedling. *Calceolarias*: 1, Mr. Garrod, for Royal Standard, Lady of the Lake, Green's Victoria, Salmon King, Thomson's Corymbiflora, and Sir Robert Peel; 2, Mr. Cockburn, for Lady Constable, Royal Standard, Salmon King, Standishii, and two others.

Inverness Horticultural Society, June 20.—The numerous advantages of devoting attention, in the first place, to the higher branches of Horticulture, observed by this Society, are now beginning to develop themselves, with much satisfaction to the acting committee, and great benefit to our northern districts. Many thought that the founders offering prizes at the commencement for the very finest greenhouse productions, which are the subjects of competition at the English Shows was but a foolish imitation of southern practices, and exclaimed that we should be content with mere common garden flowers and vegetables, and should chiefly devote ourselves to the improvement of small steadings and cottage gardens. Amateurs were early encouraged to compete, but it is only now that they are beginning to do so; and for the last three successive years the premiums offered to amateurs have been utterly disregarded, no one being found prepared; either in their premises or gardens, to stand the test of examination. Perfection is only attained by stating at a high standard, and therefore our northern horticulturists very quite right in attempting the best things, and holding out rewards for the finest and newest productions, excepting such only as require stove heat. The consequence has been a very marked and progressive improvement in the character of the show at all of our recent Exhibitions in Inverness, and the gradual elevation of the whole horticulture of the north to a respectable position. Gardening, even on the smallest scale and in the remotest parts of the Highlands, is not now what it was in the days of our fathers: the rearing only of a few snow-drops, Pansies, Monkshood, and Bachelors' buttons, and of "Kale, Skirlet, and pot herbs." This Exhibition was an excellent one, and was graced by the attendance of a numerous and respectable class of visitors. A decided improvement was visible in the mode of culture among all the growers, and several new things were exhibited. The following premiums were awarded: *Pelargoniums.*—1, Mr. W. Dallas, gr., Balmore House, for Life Guardsman, Sylph, Nymph, Bridegroom, Adelaide, and Aquatic; 2, Mr. J. Stephen, gr. to Lady Seymour, for Bright Alicia superba, Comte de Paris, Gabriel's King, Louis Quatorze, and Jewess. Extra prize, Mr. Dallas, for Fuchsia Alicia, Garth's Perfection, Alexandrina Victoria, Rienzi, Sylph, Joan of Arc, Queen of Beauty, Orange Boven, Jewess, Masterpiece, Inquisene, and Duke of Devonshire. *Calceolarias.*—1, Mr. R. Fraser, gr. to E. Baillie, Esq., for seedlings shewn; 2, Mr. R. Rindley, gr. to W. F. Tytler, Esq., for Lady Ruthven, Speciosa, Superba, Magnifica, and two seedlings. *Fuchsias.*—1, Mr. R. Fraser, for F. Candidate, Coloneel, Admiral, and Conductor; 2, Mr. W. Westwood, gr. to J. Stewart, Esq., for Mpnypennii, Standishii, Venus Victrix, and Rosea alba. *Best grown Fuchsia*: 1, Mr J. Ross, gr. to Lady Ross, for F. Insignis; 2, Mr. Westwood, for Greyii. *Cineraria.*—1, Mr. Westwood, for King, Rival King, Royal Blue, and Imperial Blue. *Mimulus.*—1, Mr. J. Bain, gr. to Lord Lovat; 2, Mr. Dallas, for seedlings. *Balsams.*—1, Mr. Bain; 2, Mr. Ross. *Petunias.*—1, Mr. W. Dallas; 2, Mr. Bain; *Verbenas.*—1, Mr. Ross, for the Queen, Burleyana, Unique, Princess Royal, Prince of Wales, and Laconi; 2, Mr. J. Stephen, for Princess Royal, Prince of Wales, Tweedside elegans, Rosea elegans, Victory, and Rosea. *Exotic Plants.*—1, Mr. Ross, for Gesnera bulbosa, Gloxinia candida, G. Priestleyii, Euphorbia splendens, Pimelea sylvestris, and Philibertia grandiflora; 2, Mr. J. Stephen, for Polygala oppositifolia, Pimelea decussata, Elichrysum proliferum, Sollya heterophylla, Rulingtonia hederacea, and Swainsona galegifolia. *Specimen of any Exotic.*—1, Mr. Ross, for Russelia juncea—a splendid specimen, trained on an umbrella-shaped trellis, five feet high, from the top of which it drooped downwards for four feet; 2, Mr. Stephen, for Eperis grandiflora. *Rare Exotic Plant.*—Mr. Ross, for Physolobium subumbellatum—a hardy greenhouse plant from Swan River. *Heaths.*—Mr. Stephen, for Erica ventricosa, v. pregnans, v. stellata and odorata. *Rockets.*—Mr. Westwood. *Herbaceous Plants.*—1, Mr. Ross, for a new species Digitalis, spiræa Japonica, Delphinium Barlowii, D. grandiflorum, Cynoglossum stylosa, Dianthus caryophylloides, Hyacinthus orientalis, Tenula Whitleii; 2, Mr. Westwood, for Allium moly, Lychnis fos-cucculi, Dictamnus ruber, Lathyrus grandiflorus, Achillea tomentosa, Aster tomentosus, Delphinium grandiflorum, and Campanula speciosa. *Irises.*—1, Mr. Westwood; 2, Mr. Ross. *Phlox.*—1, Mr. Stephen; 2, Mr. J. Lawrence. *Pinsies.*—1, Mr. Lawrence; 2, Mr. Westwood. *Double Anemones.*—1, Mr. J. Treasurer, gr., Forres; 2, Mr. Stephen. *Cut Roses.*—1, Mr. Treasurer, for Fabvier, Napoleon, Archduke Charles, and Deschiens; 2, Mr. Macdonald, gr., Newton. *Basket of Exotics.*—1, Mr. Ross, for a fine basket, containing Gloxinias, Pimeleas, Achimenes, Boronias, Cockscombs, Balsams, and Hydrangeas; 2, Mr. Stephen, for a similar basket. *Bouquet of Flowers.*—Mr. Lawrence. *Best kept Apples.*—1, Mr. J. Ross, for Ribston Pippins, and Nonpareil Russets, preserved in sand; 2, Mr. Cameron, gr. to Gen. Cameron. *Cucumbers.*—1, Mr. J. Ross, for two of Weeden's Cucumbers, 24½ inches long, by 14 in diameter; 2, Mr. Grant. *Unforced Cherries.*—1, Mr. Bain; 2, Mr. G. Ross, gr., Bught. *Unforced Strawberries.*—1, Mr. A. Fraser, gr. to J. Thomson, Esq., for Myatt's Pine and Ballieferrie seedling—both kinds were large and well flavoured; 2, Mr. G. Ross. *Peas.*—1, Mr. J. Ross, for Early Charlton; 2, Mr. Bain. *Cauliflower.*—1, Mr. Mackintosh, gr. to J. Mackenzie, Esq.; 2, Mr. W. Mackenzie, gr. to Sir J. R. Mackenzie. *Turnips.*—1, Mr. J. Stephen; 2, Mr. Dallas. *Potatoes.*—1, Mr. R. Fraser; 2, Mr. W. Mackenzie. *Cabbages.*—1, Mr. Ross, for large York; 2, Mr. Fraser. *Lettuce.*—1, Mr. Ross, for Drumhead; 2, Mr. Mackintosh. *Autumn sown Onions.*—1, Mr. Bain; 2, Mr. Ross, for Magnum bonum. The following plants, sent for exhibition, deserve notice, namely, a collection of Seedling Pelargoniums, four species of Gloxinia, specimens of Cucumbers and Myatt's Giant Rhubarb, from Altyre; a fine collection from Holme, containing two very large Hydrangeas in flower, one blue and the other light pink; a seedling Pelargonium; a large healthy plant, in full flower, of Boronia crenulata, &c., Heaths and Calceolarias from Dochfour a large assortment of seedlings from Noble Castle, especially six Calceolarias, one flowered, with Cineria maritima, Schizanthus retusus, &c.; a collection of Rustic and Seedlings from Balgownie Lodge; and some stalks (weighing 24 lbs.) of Myatt's Victoria Giant Rhubarb, from Sprottiswood Cottage Gardens.—*Inverness Courier.* [As consequence of this being the most southerly and remote Horticultural Society in the British Isles, and therefore an unusual interest being attached to its proceedings, we have thought it to depart from the general rule, and insert it at full length, even although the names of all the winning flowers are not given.]

Isle of Wight Horticultural Society, July 3.—This was the first exhibition for the season. The weather being fine, the company was numerous. The collections were not plentiful; but in point of good cultivation, they have not been surpassed at any previous Show. The display of Fruit and Cut Flowers was excellent. The prizes were awarded as follows:—*Stove and Greenhouse Plants*: 1, Mr. E. Barnicle, gr. to J. Percival, Esq., for Rose, Goodlies, Ternera elegans, Rondeletia speciosa, Achimenes grandiflora, Columnea Schiedeana, and Gloxinia rubra; 2, Mr. E. Meehan, gr. to Col. Harcourt, for Lilium Japonicum, Vinca rosea, Vinca rosea alba, Polygala oppositifolia, Achimenes longiflora, and Erica Bartnellii. *Fuchsias*: 1, E. Barnicle, for Champion, Robusta, Nobilissima, Victory, Britannia, Venus Victrix, Laneii, Insignis, Magnifica, St. Clare, Fulgens multiflora, Multiflora, and Grandiflora; 2, E. Meehan, for Enchantress, Tricolor, Venus Victrix, St. Clare, Superb, Admirable Monypennii, Splendida, Princeps, Formosa elegans, Chandlerii, Grandiflora maxima, and Racemiflora. *Roses*: 1, Mr. Barnicle, for Brennus, Charles Duval, Madame Hardy, Venus de Medicis, Columella, Mrs. Elliott, Franklin, Algae Dusart, Attila, Enchantress, Duc d'Aumale, Madame Margat, Gazelle, Cambronne, Emerance, La Volupté, Buffon, Cicero, Cyntie, Kean, La Ville de Londres, Rachael, Great Western, Jaune Desprez; 2, Mr. Meehan, for Bougere, William Tell, Victor Hugo, Aimée Vibert, Contard, Lamarque, Kean, Elegans rosea, Camuzet carnea, Aurora, Duchesse d'Angoulême, Prince Albert, Caroline, General Allard, Odeur d'Amande, Brennus, Plurericus, Moss prolifere, Du Roi, Madame Laffay, Celine, Jaune Desprez, Odorata, and Grandissima. *Balsams*: 1, Mr. Bone; 2, E. Barnicle. *Cockscombs*: 1, Mr. Bone; 2, Mr. Salter. *Seedling Pansy*. Mr. Barnicle. *German Stocks*: Mr. Thompson, gr. to Capt. Johnson. FRUIT.—*Black Grapes*: 1, S. Harcourt, Esq., for Hamburgh; 2, Mr. Jobling, for the same. *Green flesh Melon*: Mr. Thompson, Beechwood. *Strawberries*. 1, I. Vaux, Esq., British Queen; 2, Mr. Jobling, Elton Pine. EXTRA PRIZES were awarded to Mr. Meehan, for Achimenes grandiflora, and to Mr. Jobling, for White Sweetwater Grapes.

Liverpool Horticultural Exhibition, June 29.—The second Show was held in the Botanic Garden. The day was extremely fine, and the Exhibition was good and well attended. The Prizes were awarded as follows:—*Heaths*. 1. tricolor, Humeana, ventricosa superba, v. coccinea minor, v. stellata, and tricolor minor, Mr. G. Cunningham; 2, tricolor, Savileana rubens, vestita rosea, persspicua, and ventricosa, T. Davis and Co. *Fuchsias*: 1, Exoniensis, Magnifica, Frostii, Chandlerii, Youelli, Venus Victrix, Gem, Messrs. Whalley; 2, Magnifica, Venus Victrix, Pulchella, Robertsii, St. Clare, Victoria, Chandlerii, R. W. Preston, Esq. *Calceolarias* Standishii, Willmoreana, Desirable, and 6 Seedlings, Messrs. T. Davis and Co. *Pelargoniums*: 1, Madelina, Nymph, Witch, Rising Sun, Anna, Superb, Vesta, Florence, Coronation, Messrs. T. Davis and Co.; 2 Superb, Duke of Cornwall, Hamlet, Rising Sun, Madelina, Anna, Beauty, Gaines's Prince Albert, and Cerito, Mr. G. Cunningham; 3, Duke of Cornwall, Rising Sun, Flash, Cornish Gem, Comet, Prince of Waterloo, Sylph, Garth's Fanny, Messrs. Whalley. *Best Six*: 1, Madelina, Nymph, Witch, Rebe, Superb, and Jubilee, Messrs. T. Davis and Co.; 2, Alexandrina, Prince of Wales Vivid, Sylph, Lowndes Perfection, Joan of Arc, Messrs. Whalley; 3, Mabel, Queen of Fairies, Sylph, Enchantress, Madelina, Pride of Surrey, Queen Victoria, Messrs. T. Davies and Co. *Stove or Greenhouse Plants*. 1, Lilium longiflora, Cactus Ackermanni, C. Jenkinsonii, Gladiolus roseus, Pimelea decussata, I. Hadwin, Esq.; 2, Plumbago capensis, Achimenes longiflora, Fuchsia Curtisa, Statice arborea, Boronia serrulata, Rosa. Aimee Vibert, H. Winch, Esq.; 3, Vinca rosea alba, Pimelea decussata, &c., O. F. Meyrick, Esq. *Best* 4. 1, Euphorbia splendens, Fuchsia Riccartonii, Statice macrophylla, Mr. Skirving; 2, Rondeletia speciosa, Calceolaria Lady Constable, Achimenes grandiflora, C. Horsfall, Esq. *Single Specimen*: 1, Russelia juncea, O. F. Meyrick, Esq; 2, Combretum purpureum, Mr. Cunningham. *Exotic Orchidaceæ*: 1, Brassia Wrayæ, Oncidium amplatum, Oncidium luridum guttatum, &c., C. Horsfall, Esq.; 2, Oncidium sanguineum, O. Cavendishii, Maxillaria Harrisonii, Stanhopea oculata, Cattleya violacea, O. F. Meyrick, Esq., 3, Oncidium Lanceanum, O. Papilio, J. Moss, Esq.; 4, Oncidium luridum, O. luridum var., Aerides odoratum, C. Horsfall, Esq. *Single Specimen*: Oncidium luridum var., C. Horsfall, Esq *Basket of Plants*, containing Oncidium luridum, Gongora maculata, Petunia Beauty, Achimenes longiflora, &c., C. Horsfall, Esq. *Single Specimen* Phlox van Houtii, Mr. Cunningham. EXTRA PRIZES.—*Pelargoniums*: 1, Alexandrina, Louis Quatorze, Garth's Perfection, Joan of Arc, Priory Queen, R. M. Beckwith, Esq.; 2, Prince of Wales, Nymph, Enchantress, Beauty, Elizabeth, R. W. Preston, Esq. *Fuchsias*: Chandlerii, Triumphans, Riccartonii. Racemiflora, Formosa elegans, Fulgens, Magnifica, Venus Victrix longiflora, Mr. Skirving.—*Liverpool Mail.*

Middleton Pelargonium Show, June 22.—Mr. J. Tottlow obtained the Premium Prize with Conservative. *Dark Varieties*: 1, Conservative, Mr. J. Smithies; 2, Lady Douro, Mr. H. Ogden; 3, Comte De Paris, Mr. S. Page; 4, Corona, Mr. D. Saxton, 5, Clarissa, Mr. H. Ogden, 6, Star of Bethlehem, Mr. J. Lancashire; 7, Sultan, Mr. H. Ogden; 8, Commodore, Mr. S. Page; 9, Arabella, Mr. J. Smithies. *Pink and Blush Kinds*, 1, Grace Darling, Mr. J. Hilton; 2, Masterpiece, and Grace Darling, Mr. J. Tottlow; 3, Lowndes' Perfection, Mr. H. Ogden; 4, Foster's Rose, Mr. J. Lancashire; 5, Sylph and Nymph, Mr. J. Tottlow; 6, Lady Cottam, Shepherd and Jubilee, Mr. D. Saxton. *White Sorts*: 1, British Queen, Mr. H. Ogden; 2, British Queen, Mr. D. Saxton; 3, Annetta, Mr. S. Page; 4, Enchantress and Alexandrina, Mr. J. Lancashire; 5, Lancashire Witch, Mr. J. Smithies.

Middleton Tulip Show.—The Premier Prize for the best Feathered Tulip was won by Mr. J. Holland, with Charles X.; the Premier Prize for the best Flamed ditto was awarded to Mr. J Morton, for Violet Waiters. *Feathered Bizarre*: Catalaque, Mr. T. Hilton; Liberty, Mr. J. Schofield; Trafalgar, Mr T. Hilton; Crown Prince, Mr. J. Jaques; Duc de Savoy and Gold Duers, Col. Lee; Sam Joe, Mr. J. Taylor; Surpass Catalaque, Mr. W. Bentley. *Feathered Byblumen*: Barn Fair, Mr. J. Taylor, Baguet and Grotia, Mr. J. Holland; Guastalla, Mr. J. Schofield; Washington, Mr. J. Morton; La Belle Nature, Mr. L. Ashmole; Toote, Mr. J. Morton. *Feathered Roses*: Do little, Mr. J. Schofield; Heroine, Mr. J. Etches; Lady Crewe, Mr. L. Ashmole; Hero of the Nile, Mr. J. Morton; Duke Brunte, Mr. J. Schofield; Cerise Cuery, Mr. J. Heap; Comte de Vergnies, Mr. J. Morton; Unknown, Mr. J. Heap. *Flamed Bizarre*: Albion, Mr. L. Ashmole; Lustre, Mr. J. Morton; Liberty Mr. J. Smithies; High Careless, Mr. J. Jaques; Surpass Licantique, Mr. L. Ashmole; Duke of Leeds, Mr. W. Bentley; Black Prince, Mr. J. Taylor; Old Licantique, Mr. J. Heap. *Flamed Byblumens*. Violet Walters, Mr. J. Morton; David, Mr. L. Ashmole, Sable Mez, Mr. J. Jacques; Diana Bruin, Mr. J. Taylor; Wurtemburg, Mr. L. Ashmole; Rio de Siam, Mr. T. Hilton; Violet Brown and Grotia, Mr. L. Ashmole. *Flamed Roses*. Unique, Mr. J. Morton; Lady Crewe, Col. Lee; Vesta, Mr. W. Bentley; Lord Hill, Mr J. Schofield; Triomphe Royale, Mr. W. Bentley; Duchess of Newcastle, Mr. J. Schofield; Comte de Virginus, Mr. J. Marsden; Lady Wilmer, Mr. J. Taylor; Dutch Catafalque, Mr. J. Taylor; Unknown, Mr. W. Bentley; Polyphemus, Mr. L. Ashmole; Catharina, Mr. J. Taylor; Baguet, Mr. J. Holland; Seedling, Mr. J. Schofield; Lady Crewe, Col. Lee; Newcastle, Mr. J. Heap; Averard, Mr. W. Bentley. *Selfs*: White Flag, Mr. J. Schofield; Miss Or, Mr. J. Jaques.

Middleton Pink Show.—1st Pan, Mr. J. Scholes, for Duke of St. Albans, Cockington, and Paris Union. 2d Pan, Mr. P. Hodgkinson, for Duke of St. Albans, Sir William, and Overall. 3d Pan, Mr. J. Scholes, for Duke of St. Albans, Criterion, and Paris Union. Medium Pan, Mr. W. Taylor, for Duke of St. Albans, Little Wonder, and Lady Middleton. CLASS 1.—*Purple*, Duke of St. Albans, Mr. J. Clegg; Greenside, Mr. P. Hodgkinson; Admiral Napier, Mr. W. Taylor, Sunarrow, Mr. J. Scholes; Robin Hood, Mr. J. Lowther; Jessie, Mr. J. Etches; Gilliver, Mr. J. Buckley; Rango, Mr. J. Scholes. CLASS 2.—*Red*, Criterion, Mr. J. Hodgkinson, Cockington, Sir William, and Miss, Mr. G. Scholes; Elizabeth, Comet, and Broadnought, Mr. J. Brighton; Paragon, Mr. J. S. Buckley. CLASS 3.—*Black and White*, Overall, Mr. J. Scholes; Beauty of Blackburn, Mr. W. Taylor; Sidewell, Mr. J. Etches; Lady Middlewich, Mr. P. Hodgkinson; Jane Shepherd, Mr. J. Buckley; Paris Union, Paintbox, and David, Mr. J. Scholes.

Morningside Practical Gardeners' Society, June 19.—This was the second Meeting for the season. The following Prizes were awarded:—*Pelargoniums*: Mr. J. Downie, gr. to Gen. Robertson, for Gem of the West, Sylph, Grand Monarque, Conservative, Queen of the Fairies, Glory of Jersey. *Pansies*: Mr. J. Downie, for Daniel Defoe, Finlayson's Black-Eyed Susan, Neil Gow, Robbie, Ossian, Flora M'Donald, Gipsy, Donald, Lawsonii, and Miss Russell. *Tulips*: Mr. J. Young, for Sol de Sion, Claudine, Gaddy's Magnificent, Whittingham's Seedling, Grand Monarque, and Triomphe Royale. *Ranunculuses*: Mr. R. Anderson, gr., Burghmuirhead, for Prince Albert, Princess Royal, Lord Strathallan, Robb's Matilda, Queen Adelaide, and Lady Ann Murray. *Hardy Shrubs*: Mr. J. Fargie, gr. to Mrs. Gregory, for Rubesia hispida, Cornelicum chinense, a pink Laburnum, and a white-flowered Spiræa. *Herbaceous Plants*: Mr. W. Denholm, for Aquilegia grandiflora, Phlox omnifora, Pentstemon argutus, Cheiranthus barbata, Delphinium Barlowii, and Potentilla fragaria. *Chinas. Roses*: Mr. J. Fargie, for Duchess of Kent, Archduke, and Yellow China. *Hose Gourds*: Mr. T. Ovens.—Mrs. J. Gould, gr. Caiaman Cottage, exhibited a fine seedling Cineraria, for which an Extra Prize was awarded. Mr. J. Young sent five flowered stems of a new Purple Ranket, for which an Extra Prize was awarded. And Mr. M. Little, gr., Salisbury Green, exhibited two beautiful plants of Giant Cape Stock, growing to pots, which had also an Extra Prize awarded them. The Prize by Mrs. Finlayson of Kinnesting, for the *Best Three Females*, was gained by Mrs. J. Robertson, with Fair Maid, Shakspeare, and Lady Grosvenor.

Norwich Horticultural Society.—This was the Rose Show, which is always very attractive, and was more than usually so this season. Mr. Bircham has some splendid varieties. They consisted of the following: *Hybrid Perpetual*.—La Reine, Lady Elphinstone, Marquis d'Alton, Arieus, Augustine Mouchet, Anbernon, Clementine Soringe, Comte de Paris, Duchess of Sutherland, Earl Talbot, Lady Alice Peel, Lane, Madame Laffay, Marquis of Boccella, Melanie Corem, Mrs. Elliot, Prince Albert, Prince de Galles, William Jesse. *Bourbon*.—Acteon, Anne Boleine, Comte Crimson Globe, Paul Joseph, Proserpine, Souvenir de Malmaison, Thaiffait, Splendens. *Moss*.—Angelique, Comte Grimaud, Pompone, Unique de Provence, White Bath. *Provence*.—Duchesse, Sylvain, Vaugandoon, Unique. *Hybrid Perpetual*.—Agrand, Berel, Blanchefleur, Emerance, Illustre Brunet, La Volupté, Miss Rivers, Cleopatra, Duchess of Kent, Souplisse, Chenedole. *Gallic*.—Agine Dusart, Antonius d'Ormois, Augusta, Camille Lemoine, Boule de Nanteuil, Brinda, Cambronne, Cyrille, d'Aguesseau, Dr. Dekham, Duchess of Beaudemont, Grandissima, Guerin's Gift, Julie, Kean, Latour d'Auvergne, Madame Hardie, Madame Stolz, Napoleon, Juliet, Phœnicus, Triomphe de Asnieres, Shakspeare, La Splendeur, Lee, Leon des Tenth, Samuel Appleton, Sidwell Chine. —Blairii No. 2, Beauté Rose, Bellone, Chenedole, Charles Louis, Comtesse de Lacepede, General Allard, Gilliny, Louis Prien, Marjolin, Madame Plantier, Sylvanie, Triomphe de Laqueue, Decandolle, Emperor Chelsea, Hippocrate, Julia. *Hybrid Bourbon*.—Charles Duval, Comte d'Hericourt, Western, Henri Barbet, Hortense Leroy, Jane Cazes, Jack Rouge, President Mole, Sylvain. Besides these, Mr. Bircham supplied a collection of Moss Roses, &c. The Fruits were not so fine as several of the numerous ones on former occasions. The Melons were excellent, and there were some fine Keen's Seedling Strawberries, from Mr. Kett. The Vegetables, considering the drought, were good. The following is the order in which the prizes were awarded: *Roses*.—1. Rev. T. J. Blofeld for Fulgens, Crested Provins, Antonelle, Reine de Provins, Brennus, Village Maid, Madame Desprez, Blanchefleur, Lee's Crimson Perpetual, Queen of the Bourbons, Wellington Provins, Beauty of Billiard, Madame Hardy, Velours Episcopal, La Ville de Bruxelles, Coronation, Unique, Belle Marie, Aurora, La Volupté, Oracle de Nôtre, Leon des Tenth, Warratah, Crivalis, Triomphe de Guerin, Chenedole, Bath Moss, Rien ne me Surpasse, Fanny Parisot, General Allard, Sapharine, Illustre Beauté, Madame Dubourg, Smith's Rolling Noisette, Grilny; 2. Rev. C. Fellowes, for Charles Duval, Duke of Cambridge, La Ville de Londres, Boule de Nanteuil, La Volupté, Blairii No. 2, Triomphe de Laqueue, Las Casas, Duboury, Rose Major, Blanchefleur, La Ville de Gand, Josephine Lelieur, Belle Marie, Chenedole, Coupe d'Hebe, Belle d'Irvies, Victor Hugo, Princess Helene, Warratah, Grilony, Charles-Louis, Fulgens, Triomphe de Brabant, Belle Parabere, Le Grandeur, Vandael, George IV. Sir Robert Peel, Colonel Fabvier, Mrs. Rivers, Kleber, Striped Unique, General Bernard, Félicité, Hybrid d'Ecouse. *Collection of* 24.—Rev. C. Fellowes, for Blairii No. 2, La Ville de Londres, Las Casas, Kleber, Striped Unique, Triomphe de Laqueue, Cynthie, Leonel Dumonstier, Duke of Cambridge, Coupe d'Hebe, Boula de Nanteuil, Guerin de Denac, Hybrid d'Ecouse, Blush Moss, Legouvé, General Bernard, Ancelin, Rosa Magna, Le Grandeur, Theresita, Fontaine, Itiego, Aspasie, Victor Hugo. *Collection of* 48. —Rev. J. Burroughes, for Petit Pierre, Countess Lacepede, Madame Laffay, Madame Desprez, Louis-Philippe, George IV. Coccinea superba, Madame Plantier, Rose Devigne, Grifiamme, Ecosse, Marshal Soult, Moss Kean, Madame Hardy, Triomphe d'Angers, Las Casas, Bouquet de Flore, Village Maid, Duke of Devonshire, Aurora, Boula de Nanteuil, Grand Perpetual, Rivgo, Sapharine, Ville de Londres, Brennus, Félicité, Blush Moss, Beauty of Billiard, Lee's Perpetual, Perox, Belle Marie, Velours Episcopal, Cleopatra, Becquet, Triomphe de Guérin, Louis-Buonaparte, William Jesse, Emerance, Pashot Provine, La Volupté, Globe White Hip, Striped Unique, Crimson Moss, Ancelline, Iberia, Augustine Lelieur. *Collection of* 18.—Mrs. Blofeld, for Hoveton, Catele, Duchesse d'Orleans, Rien ne me Surpasse, Velours Episcopal, Madame Hardy, Reine de Provins, Brennus, Comte de Paris, Brennan, Superb, Belle Marie, Petit Pierre, Beauty of Billiard, Crested Provins, Blush Hip, Bath Moss, Letitia, King, Triomphe d'Angers. *Collection of* 12.—Rev. J. Burroughes, for Boula de Nanteuil, Sapharine, Las Casas, Comte de Paris, Paul Perrot, Charles-Louis, La Reine, Madame Laffay, Striped Unique, Charles Duval, Miraire Meuble. FRUIT.—*Pine*: Mr. Walton, gr. to R. Sanderson, Esq., M.P. *Grapes*: Black Prince, Mr. Rippingale; Constantia, Mr. J. Potter; Black Hamburgh, pot culture, Mr. Walton. *Melons*: Duncan's Improved, Mr. Excelly, gr. to H. Birkbeck, Esq., Scarlet China, and Casawba, Mr. Rippingale. *Strawberries*: Keen's Seedling, Mr. Aldborough, gr. to G. S. Kett, Esq.; Bath Scarlet, Mr. Spence, gr. to Sir W. B. Proctor, Bart.; Bishop's seedling, Rev. J. Burroughes, Elton Pine, Mr. Scarlett, *Cherries*: Black Tartarian, Mr. Short; May Duke, Hon. and Rev. R. Wilson. *Apricot*: Early Masculine, Mr. Wighton. *Red Cur-*

rants: W. Gale, gr. to H. N. Burroughes, Esq.; Mr. Wood's Currants: Mr. J. Potter. *Apples*: Ribstone Pippin, Mr. Beaurfit, gr. to Mrs. Rutt. *Vegetables*.—*Cucumbers*: (Black Spine) Extra Prize, Mr. Rippingale. *Lettuces*: Cos, Mr. Hamblen; Rev. R. Wilson; and Cos, Mr. Short, gr. to H. Mc Burroughes, Esq., M.P. *Peas*: Auvergne, John Kitson, Esq., Imperial, Mr. Spencer. *Beans*: Long-pod, Mr. Shore. *Potatoes*: King Pippin, Mr. Short. *Cabbages*: Imperial, Extra Value, Mr. Short. *Onions*: Early Tears, Mr. Colman. *Rhubarb*: Myatt's Victoria, Mr. Short.—*Vermil. h Mercury.*

Nottingham Floral and Horticultural Society, June 19.—This was the second Exhibition. Two plants, generally speaking, were in excellent condition. The Pelargoniums added much to the splendour of the show. The Fuchsias were numerous; and attracted much attention, well-grown specimens of that beautiful plant collectively the greater part of the Mixed Nurserymen's Collections. The Roses were magnificent. Upwards of 1100 persons attended the Exhibition. *Ranunculuses*: 1, Mr. Taylor, for Ann (Seedling); La Tempete, La Singulaire, Orion, Virginale, and Socrates; 2, to 5 Model of Socrates, La Daniel, Bridesmaid, Mr. Welsh, Gillatt, Rosey, Groom's Eliza, and Virginale. *Roses*.—Mr. S. R. P. Shilton, for Duc de Choiseul Poiteau, Reine de Provins, Wellington, Spectabilis, Malvina, Madame Duplay, Gazelle, Fontenelle, Duc d'Enghien, L'Ingenue, Duke of Devonshire, Rivet, Beauty of Billard, Coup d'Hebe, Lafouve, Duc de Luxembourg, Miami Nemerion, Felicite, La Remarquable, Painted Lady, La Ville de Bruxelles, Crimson Perpetual, and Bernard. *Nurserymen's 24 Blooms*: 1, Mr. Pearson, for Charles Duval, Rivet, Aequale, Madame Harty, William Jesse, Rose du Roi, Lilac Queen, Blanchefleur, Pourpelle, Countess de Lacepede, Created Moss, Luxembourg Moss, Bath White, Reine des Belges, La Casse, Malmaherey, Antiopus, La Grandeur, Velours Epicopal, La Majestueuse, Carlist, Rigo, Beauty of Waltham, and Vandael; 2, Mr. Prettingham, for Madame Harty, Duke of Devonshire, Caroline, Elizabeth Prior, Charles Duval, Las Casas, Brennus, Crested Moss, Blanchefleur, Antiopus, Victory, Miss Isaacs, Richelieu, Coup d'Amour, Belle de Zibles, Queen's Gift, Aspasie, D'Aogers, La Cerise, Jo Bieke, Commissaire Amy Reboart, and two unknown. *Amateur's 12 Blooms*: 1, Mr. W. Gosse, for Rivet, Armeau, Rose du Roi, Perpetual, Belle Parabere, Bernard, Reine de Rose, Duke gown, Omia Superb, Duke of Devonshire, Fulgens, and Crimson Moss; 2, Mr. Taylor, for Fulgens, Nepius Ultra, Triumphe d'Angers, Brown's Superb, Lilac Queen, Velours Episcopal, Capel, George the Fourth, Tuscany, Old Miss, Charmante Jaune, and Old Cottage; 3, Colonel Wildman, for Auberon, Madame Laffay, Anthonia, Rosse Inebe, Delmon, Camper Corse-fusca major, Eugene Hardy, celestia, and White Ranunculus. *Geraniums*: Reine de Perenes, Mrs S. R. P. Shilton. *Moss*: Gastemoyen, Mrs S. R. P. Shilton. *Fuchsias*: Aspasie, Mr. Pearson; 2, Madame Dubourg, Mr. S. R. P. Shilton. *Tree Fuchsias*: Mr. Pearson; 2, Mr. S. R. P. Shilton. *Pelargoniums*.—*Amateurs*: 1, Mr. F. Nevill, for Ann, Felipse, Maegrath, Magdala, Geneva, Julia, Miltern, Agnes, Black Prince, Hinda, Agnes, Rival Yellow, Emily, and seven seedlings; 2, Mr. S. R. P. Shilton, for Maid of Lodi, Climber, Mungo Park, Curlon, Regulator, Prince Albert, Black Prince, Eclipse, Telleraft, Coronation, St. Paul, Jewess, Hinda, wedding Warrior, Burgundy, Juliana, Regent, and Nestor. *Nurserymen*: Mr. Pearson, for Comet, Milton, Zelica, Black Prince, Elizabeth, Hindon, Agnes, Eulbotica elegans, Macgrath, Paul Jones, Debuck, Sobieski, Atlantes, and Grand Duke. *Pelargoniums*.—*Amateurs*: 1, G. Walker, Esq., for Pictum, Nymph, Joan of Arc, Duke of Cornwall, Crimpee Royal, and Kreutzma; 2, W. Carlage, Esq., for Victor, Joan of Arc, Nabel, Fairy Queen, Duke of Cornwall, and Conservative. *Nurserymen*: Mr. Pearson, for Enchantress, Priory Queen, Comte de Paris, Beauty, Rarnet, and Marianne. *Best one*: 1, G. Walker, Esq., Conservative; 2, Mr. Pearson, Sylph. *Show Pinks*.—G. Walker, Esq., for Illimous rosea, Achimenes grandiflora, and Vinca rosea alba. *Best one*: G. Walker, Esq., Rondeletia speciosa. *Orchideæ*.—G. Walker, Esq., for Aerides affine, Epidendrum aromaticum, and Oncidium flexuosum. *Best one*: G. Walker, Esq., for Miltonia spectabilis. *Greenhouse Plants*: 1, G. Walker, Esq., for Russia juncea, Humea elegans, Pultenæa grandiflora, Sollya linearis, Boronia serrulata, and Erythrina crista galli; 2, A. Lowe, Esq., for Tropæolum pentaphyllum, Boya carnea, Leptospermum Baudeverdi, Russelia juncea, Euphorbia splendens, and Erythrina crista galli. *Best one*: 1, A. Lowe, Esq., Cactus speciosissimus; 2, G. Walker, Esq., Scutellaria splendens. *Calceolaria*: A. Lowe, Esq., for Stamford, Lady Constable, Leopard, Perfection, and Defiance. *Best one*: A. Lowe, Esq., for Prince of Wales. *Brica*: G. Walker, Esq., for Ventricosa superba, Ventricosa speciosa minor, and Rubra calyx. *Best one*: A. Lowe, Esq., Jacqualiflora. *Fuchsias*: 1, A. Lowe, Esq., for Formosa elegans, Blairwelliana, Cyanea arborea, Tricolor, Lanei, and Defiance; 2, G. Walker, Esq., for Venus Victrix, Tricolor, Vera, Formosa elegans, Mons pictus, and Exemplaris. *Herbaceous Plants*: 1, Mr. Pearson, for Aster alpinus, Aconitum stramdiflorum, Dictamnus rubei, and Iris cærulea. *Miscellaneous Collections*.—A. Lowe, Esq., for Fuchsias, Majestica, Fulgens multiflora, Paragon, Mauypennii, Beswateri, Floribunda magna, Champion, Invincible, Britannia, Cameo, Tricolor, Globosa, Lee's Dark, Fulgens style-a quamina, Eclipse, Victory, Rotunata, Defiance, Venus Victrix, Candidati, Pulcherrima, Delicata, Fulgens insignis, Nobilissima, Exquisita, Alata, Rosea alba, Mirabilis, and Rappii; Cameron Gouperii, Calceolarias: Lady of the Lake and Vivid; Leptospermum scoparium; Citrus vulgaris; Swainsona galegifolia; Lantana crocea and sculosta; Gladiolus cruentus; Pinckea decumana; Mesembryanthemum Barclayanum and alba; Campanula garganica; Salvia patens; Russelia juncea, Cineraria; King of Prussia and Carnaine, Petunias: Alice, Enchantress, Cupid, and Magicum. *Verbenas*: Meeke and Red Rover; and Petargoniums: Sylph, Lady Downe, and Lowe's Fiske M'Ivor. Extra Prizes.—*Mesembryanthemum*: Mr. S. R. P. Shilton. *Balsams*: G. Walker, Esq. *Petunias*, A. Lowe, Esq., for Lowe's Alice, Punctata, Cupid, Dædalea, Magician, Enchantress, and Comet. Fuchsia, *Pine*, (Jamaica,) J. Milnes, Esq. White Gobpea, (Mauve,) J. Milnes, Esq. *Strawberries*, (Keen's Seedling,) A. Lowe, Esq. Vegetables.—*Peas*, (Fillbasket) A. Lowe, Esq. *Broad Beans*: 1, (Mazagan,) Lois, Wellington, 3, (Early Long Pod,) G. Walker, Esq. *Rhubarb*, (Victoria,) Mr. S. R. P. Shilton. *Cucumbers*, (Tripoli,) F. Wright, Esq. *Potatoes*, (Early Globe,) Mr. S. R. P. Shilton. *Brace of Broccoli*, (Mallard's Late,) G. Walker, Esq. *Brace of Cabbage*, (Nonpareil,) A. Lowe, Esq. *Brace of Lettuce*, (Both Cos,) F. Wright, Esq. *Brace of Cucumbers*: 1, (Manchester,) G. Walker, Esq.; 2, (Walnut,) Mr. Lincher. *Turnips*: 1, (Stone,) F. Wright, Esq.; 2, (Early Dutch,) A. Lowe, Esq. *Carrots*, (Altringham,) F. Wright, Esq.; and *Shallots*, Rev. S. Lowson.

Pontefract Floral and Horticultural Society of Ireland.—This was the first Show. Roses excellent. The following is a list of the prizes awarded:—*Roses*, 1, 11, M. Dombrain, Esq.; 2, Mr. Bennett; 3, Mr. Rose; 4, Mr. Hall; 5, Mr. Dombrain; 6, Mr. Bennett; 7, Mr. Hall; 8, Mr. Dombrain; 9, Mr. Bennett; 10, Mr. Hall; 11, Mr. Dombrain; 12, Mr. Bennett. *Fuchsias*: 1, Mr. Hall; 2, Mr. Bennett; 3, Mr. Hall; 4, Mr. Bennett; 5, Mr. Hall; 6, Mr. Bennett; 7, Mr. Hall; 8, Mr. Bennett; 9, Mr. Hall; 10, Mr. Bennett; 11, Mr. Hall; 12, Mr. Bennett. *Geraniums*: 1, Mr. Hall; 2, Mr. Bennett; 3, Mr. Hall; 4, Mr. Bennett; 5, Mr. Hall; 6, Mr. Bennett; 7, Mr. Hall; 8, Mr. Bennett; 9, Mr. Hall; 10, Mr. Bennett; 11, Mr. Hall; 12, Mr. Bennett. *Pelargoniums*: 1, Mr. Hall; 2, Mr. Bennett; 3, Mr. Hall; 4, Mr. Bennett; 5, Mr. Hall; 6, Mr. Bennett; 7, Mr. Hall; 8, Mr. Bennett; 9, Mr. Hall; 10, Mr. Bennett; 11, Mr. Hall; 12, Mr. Bennett. *Verbenas*: 1, Mr. Hall; 2, Mr. Bennett; 3, Mr. Hall; 4, Mr. Bennett; 5, Mr. Hall; 6, Mr. Bennett; 7, Mr. Hall; 8, Mr. Bennett; 9, Mr. Hall; 10, Mr. Bennett; 11, Mr. Hall; 12, Mr. Bennett. *Petunias*: 1, Mr. Hall; 2, Mr. Bennett; 3, Mr. Hall; 4, Mr. Bennett; 5, Mr. Hall; 6, Mr. Bennett; 7, Mr. Hall; 8, Mr. Bennett; 9, Mr. Hall; 10, Mr. Bennett; 11, Mr. Hall; 12, Mr. Bennett. *Calceolar

tale respecting whom was founded on some circumstances connected with a shipwreck on the 'Ile d'Ambre,' near Mapou, which were embellished by the author of the tale. On the borders of a shady part of the road near Pamplemousses, the beautiful orange and white varieties of Thunbergia alata were growing, much in the manner that Ground-Ivy grows in England; and by the side of a brook, there was a species of Papyrus or Paper Reed; and a remarkable Palm from Madagascar, from the fibres of which beautiful cloth, resembling muslin, is manufactured. The country between Port Louis and Pamplemousses is grassy, nearly flat, and but little cultivated, up to the foot of the mountain ranges of the Peuse, Moka, and Peter Bot. Beyond the village, the country is more undulating. Much of it is covered with fragments of vesicular basalt, among which the Sugar-cane is cultivated. In many of the fields, the stones are collected into ridges, about four feet apart, and in others, into squares; the canes are planted in the interstices between these rude walls. Some of the stones are small and others as large as a man's head, but the soil among them is adapted for the growth of the Cane, which thrives even in the fissures of the rocks, where the stones preserve it from drought. In some places there are also fields of Manioc, and plantations of Bananas, &c. In others the wood has not been cleared, and among it are many trees of Ebony, *Diospyros Ebenum*; also Custard-Apples, Guavas, &c. that have become wild."

Again, in speaking of the Botanic Garden of Port Louis, the author says—

"We accompanied our friends George and Jane Clark in a ride to Pamplemousses, and spent a little time in the Botanic Garden. This institution is not so well kept up under the English Government as it was under the French; but it contains an extensive collection of trees, shrubs, and herbaceous plants from various parts of the world. The assemblage of stately Palms is very fine, and there is an interesting group of trees and shrubs producing spices, such as Cassia, Cinnamon, Cloves, and Nutmegs. The fruit of the last is something like a Green Chissel Pear; when ripe, it splits open and exposes the Nutmeg enveloped in a coating of bright-red Mace. A specimen of the tree affording the poison used in the Ordeal, in Madagascar, by which great numbers of human beings are annually destroyed, is also preserved in this garden."

We have the following graphic account of the "Ravenala," and some other plants.

"The Travellers' tree, *Urania speciosa*, forms a striking feature in the prospect. Clumps of these trees, composed of several stems, rising from the same root, are scattered over the country, in all directions. The trunks, or more properly root-stocks, which are about three feet in circumference, sometimes attain to thirty feet in height; but whether of this elevation, or scarcely emerging above ground, they support grand crests of leaves, of about four feet long, and one foot wide, but often torn into comb-like shreds. The head is of a fan-like form, and the flowers, which are not striking for their beauty, are white, and produced from large, horizontal, green sheaths. The foot-stalks of the leaves, which are somewhat shorter than the leaves themselves, yield a copious supply of fresh water, very grateful to the traveller, on having their margins cut away near to the base, or forced from contact with those immediately above them, especially those about the middle of the series. The root-stock is of a soft cellular substance, and the fruit, which resembles a small Banana, is dry, and not edible. This remarkable vegetable production is said to grow in the most arid countries, and thus to be provided for the refreshment of man in a dry and thirsty land. Probably the water may originate in the condensation of dew, and be collected and retained by the peculiar structure of the leaf; it has a slight taste of the tree, but is not disagreeable. The Badamier, *Terminalia Badamia*, a handsome tree, with large, obovate leaves, and fruit, the size of an Almond in its husk, abounds in this direction. The spongy shell is so tough as to render access difficult to its small kernel, which is like a young Hazel-nut in flavour. A species of Cinnamon, *Laurus cupularis*, forms a handsome bush in the borders of the woods. I also noticed a species of Mimusops, forming a small tree, with a fruit the size of a nonpareil Apple.

"The Mango, *Mangifera indica*, which was introduced into this island, had become naturalised here, along with several other fruit trees, such as the Apple-fruited Guava, *Psidium pomiferum*, and the Jamrose, *Jambosa vulgaris*. The Pine-apple, *Bromelia Ananas*, forms impassable thickets: its fruit is sold for a few pence at the bazaars. *Gloriosa superba*, or an allied species of this beautiful plant, of the Lily tribe, was growing in an elevated wood, by the side of a streamlet, on the borders of which *Andromeda salicifolia* formed a considerable tree. Numerous species of *Pandanus*, or Screw-pine, Ferns, climbers of the Convolvulus tribe, some of which were very beautiful, and many other interesting plants, were also growing here. Twice, in the course of my walk, my hat came in contact with the naked combs of a large ochre-coloured wasp, which suspends its nests in the bushes. As soon as the buzz of the enraged insects apprised me of the injury I had committed, I hastened through among the bushes, without looking behind, and the return of the twigs drove the wasps back; but on the second occasion, a briery branch caught me by the sleeve, and detained me till one of my antagonists had avenged itself by stinging my finger. The sting is about equal to that of an English wasp; the burning pain subsided in a few minutes, on sucking out the poison, and sucking the part affected. The poison was distinctly alkaline. The Creoles eat the larvæ, or grubs, which they roast in the combs; in taking the nests, they drive off the wasps by means of a burning rag fastened to the end of a stick. The combs are sold in the bazaar at Port Louis. On the muddy margins of a salt-water bay, there are two arborescent species of *Erythrina*, or Coral-tree, the pea-like flowers of which are crimson-red; *Hibiscus tiliaceus*, *Thespesia populnea*, trees with leaves like the Lime-tree, and yellow flowers, with crimson eyes, resembling those of the Hollyhock; *Rhizophora mucronata* and *Bruguiera gymnorhiza*, Mangroves of Laurel-like figure, with large seeds, emitting thick roots while hanging to the tree. To the south of Mahébourg, in a similar association, is the silvery-leaved *Edwardsia dasudata*, with yellow, pea-like flowers, possibly the same as that on Moreton Island, New South Wales, where, also, several other plants similar to those growing here are met with. In a brook that discharges itself into the Rivière des Créoles, a large, smooth, black Neritina was adhering to the rocks."

An account of the mountain vegetation of the Isle of France must, for the present, conclude our extracts.

"We walked to the top of the Pouce, and enjoyed the various beauties and curiosities of creation, presented in the primeval forest of the upper part of the mountain; in which, however, many exotic trees and shrubs have now become naturalised; among these are the Lemon, Guava, Jambos, Date, &c. The Bigarade or Seville Orange, *Citrus vulgaris*, is considered native here. The top of this mountain is 2639 feet above the level of the sea. The ascent is along the rocky and woody side of the glen, at the lower end of which Port Louis is situated. A footpath winding along the rocks, passes nearly over the summit, to the vale of Moka, and saves more than six miles of the distance, the high road winding round the end of the mountain. This footpath is chiefly travelled by Blacks, formerly slaves, now apprentices, who carry great loads on their heads, to the bazaar of Port Louis. The heartless cruelty of systematic oppression, the offspring of slavery, does not allow them to wear shoes to defend their feet, though they generally require sticks to steady their steps among the rocks. The vegetation of the upper part of the mountain resembles that of the mountain tract about Cure Pipe. Similar tree Ferns and species of Pandanus are here, and epiphytes, of the Orchis, Fern, and Pepper tribes, grow on the trunks of the larger trees. In the shady parts of the forest, there are several species of Club-moss, *Lycopodium*, some of which are of the section of the genus to which *L. helveticum* belongs. The apex of the mountain is almost too narrow to stand upon, and the sides and front are nearly perpendicular. At this point we found the pretty little blue *Lobelia serpens*, and a plant of the Heath tribe, *Salaxis arborescens*, the last of which cheered us, by bringing to recollection its British allies, not having seen anything so like an English Heath for nearly seven years. *Rhipsalis mauritiana*, and *Sarcostemma mauritiana*, leafless, fistiform plants, with green stems, the thickness of a quill, were growing upon the rocks midway down the mountain: the former is allied to the Cactuses of America, and the latter has congeners in Africa and New South Wales. Here are also great numbers of large snails, with oblong shells, mottled with brown and white. These snails are eaten by the Blacks, and the shells are sent to England, to decorate the mantle-shelves of the curious."

The lovers of Natural History will find a large field of interesting facts in the remainder of this volume, from which we purpose to borrow from time to time.

Miscellaneous.

New Facts respecting Trees killed by the Effect of Paint and Oil.—In the Number of last March, page 572, we mentioned the loss of a great many fruit trees from the effect of paint. A gardener of Châlon-sur-Saône declared, at a meeting of the Horticultural Society of this town, that, having nailed up some Peach and Apricot-trees upon a trellis freshly painted with verdegris, towards the end of June, in a short time they all died, except one Apricot-tree, which only lost the branches which were attached to that part of the trellis that had been painted. Another gardener reported also that, having rested some bars of wood painted with verdegris upon some Pear-trees, he observed that deep cancer suddenly formed wherever the paint had left any marks. A gardener from the department of Haute-Marne, M. Delisle, wrote to us, saying he had seen trees die from oil which had been spread upon the branches to destroy the caterpillars. The use of soft soap, of which oil is the base, says this gardener, has caused the branches of trees which have been rubbed with it to die.—*Revue Horticole.*

CALENDAR OF OPERATIONS
For the ensuing Week.

I.—HOTHOUSE CONSERVATORIES, &c.

Before advancing farther, let us assert in if those stove-plants which we have lost, or found difficult to manage in former winters, are now in a state likely to give less trouble during next winter; examine their pots, and if the soil or drainage is not in a proper condition, shake the mould away from the roots, and re-pot them in light soil. Sandy-loam is better for wintering delicate stove-plants in than composts containing either peat or leaf-mould; peat is very liable to get saddened in a close stove in winter, but in frames and greenhouses nothing suits better. In the beginning of the growing season all kinds of stimulants were in requisition to insure a rapid growth, but, from this time, all safe means of retarding vegetation should be resorted to, in order that the season's growth may be ripened to match as our means can afford. These general rules require more use than mere details.

Cleistocactus.—Now, when many will begin to cut down their [illegible] and are [illegible] against [illegible]

[illegible] formerly we used to cut our plants to mere stumps, and now some cut them by far too long, for the sake of making large specimens next year; and with care this may be effected: but the safest way for beginners is to cut the lower-side shoots of this season's growth to 3 or 4 eyes, and if the plants are tall, to cut in the centre about to 1 or 2 eyes. Three years old plants make the finest specimens for ordinary use, providing the roots are healthy. Very old plants of Pelargoniums, that are to be preserved, had better be planted in the open ground, and they will furnish good cuttings in September, which may be kept in stove-pots through the winter, and they will come in excellent succession next summer.

Greenhouse.—Many of the greenhouse plants might be improved by being turned out into the open ground now for six weeks or two months; others might be plunged, with their pots, an inch or two below the surface, when many of their roots turn up to the surface, and thus occupy the whole of the ball instead of being crowded at the bottom of the pot, as is usually the case.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.
Out-door Department.

The work in the flower-garden at the present time is in a great measure routine. Attend to the regulating of all plants and beds, and keep everything as clean and neat as possible. Ply the broom, scythe, hoe, rake, and roller diligently, and at all times. Remove dead flowers and keep a sharp eye to insects and mildew, which is making its appearance on the Roses since the rain.

Reserve Garden.—Some of the biennials will now be fit to thin out a little, and the young plants may, if required, be pricked out in nursery beds for transplanting. Hoe the ground among the plants frequently, not only to destroy weeds, but also to promote the growth of the plants.—*W. P. A.*

[The reader will please to correct the following error in the last Calendar:—Reserve Garden, last line—for "earthings" read "cuttings."]

III.—FLORISTS' FLOWERS.

Carnations.—The green fly, which congregates on the buds, and the minute black insect which, beneath the calyx, eats away the coloured parts, both in Carnations and Picotees, are more numerous and mischievous than usual. The attacks of the former are more easily prevented (being an open foe), whilst the insidious depredations of the other can with difficulty be repressed. We have found dusting the calyx with Scotch snuff, previous to its opening, the best preventive (amongst many) which we have tried. Continue to tie the buds as they advance; waxed thread, wound round the top part about thrice, twisting the ends together with the finger and thumb, will be found the most safe, easy, and expeditious method. An old florist in the north used to get some Windsor Beans, and, cut them transversely, in sections of about the eighth of an inch; when the inside was removed, the skin formed a small hoop or ring; he would fit these lightly on the buds, according to their size: the exposure to the air caused them to shrink, thus fitting the calyx closely, and certainly this was a very neat as well as effectual means of attaining the end proposed. We have yet a novel and simple plan in operation, to prevent the bursting of the calyx, the successful adaptation of which to our own stock will induce us to communicate it shortly for the benefit of our readers. Continue to put down layers; pegs of fern or wood are made use of; we give the preference, however, to those made of lead. Shade the expanding flowers from sun and rain; and amid the multifarious manipulations required just now of the Carnation grower, the best means of raising good seed must not be forgotten, and manual impregnation by all means should be resorted to. *Picotees.*—Continue to plant out rooted pipings. Look well to pods of seed, extract the decayed petals, and slit the calyx down to prevent the extension of wet, which will inevitably cause decay and the loss of the seed. *Dahlias.*—Must be regularly tied up to their stakes, as they are now making vigorous growth; occasional waterings with liquid manure will be of service. *Tulips.*—As we presume they are all safely stored, an occasional glance, to see that all is going on right, is all that is now requisite.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—From now to the end of October is the season most favourable to the growth of Pines: and it is necessary to make the most of it, by paying due attention to the wants of the plants in their various stages. The more strength and compactness we can get into the plants, the greater will be the probability of fine fruit; and to obtain the greatest degree of strength, it is requisite that the plants have plenty of room, with as much air as the weather will permit; and that they be kept in a brisk bottom heat of from 85° to 90°. Too much water at the roots should be carefully avoided, as there is always a greater number of fibres made when the soil is moderately dry, particularly if it be put in the pot in a rough or lumpy state. Plants with plenty of healthy fibre, and broad, strong, but short leaves, cannot fail to produce fine fruit, other circumstances being favourable. Continue to syringe in the afternoon, and if you have no other means of keeping the atmosphere of your houses and pits moist, the tan and paths may be sprinkled once or twice a day.

Vineries.—Let the Vines now ripening their crop have air early in the morning, and increase it as the day advances, shut up early with a dry atmosphere. If the weather should become damp make slight fires. This, by causing the fumes of the sulphur on the pipes or flues to ascend, will assist in the destruction of the red spider. Keep the houses from which the crops have been gathered in the neatest order. The Vines in these houses will require the light to be open night and day. Young Vines of this year's planting should be encouraged to make all the wood possible. Allow all the laterals to grow on these; as it give early, and with proper after management, permanent strength and vigour to the plants.

Peach-houses.—should wet weather occur, make slight fires to dry the atmosphere of the houses where fruit is now ripening. This with plenty of air will help to give flavour to the fruit. If red spider make its appearance, dress the pipes or flues with sulphur and quick lime, and make slight fires to render the application more effectual.

Figs.—Leave a little air on all night, and give a great deal during the day. Let the plants be well supplied with water, and syringe daily except where fruit is nearly ripe.

Strawberries.—Where the crop is gathered from the British Queen, and other kinds suitable for forcing (which in most places is now the case), the strongest runners may be carefully put into small pots, with what roots they have made, the pots having been previously plunged at a proper distance from the parent plant, to prevent the runners being shaded by its foliage. It will be necessary to lay small stones on the runners that have not made roots, to keep them in contact with the soil in the pots till they have time to establish themselves. Should the weather prove dry, watering will be beneficial.

Melons.—Pay a retract attention to stopping and cutting out decaying leaves. Do not let plants swelling their fruit suffer for want of water, but withhold it by degrees as the fruit approaches maturity.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Budding.—The fine mild showery weather we now have presents a favourable opportunity for budding the stocks of stone fruit-trees, and for inserting buds of esteemed kinds upon the branches of established trees; the sorts of which are not approved of. Propagation by budding, though generally confined to stone fruits, may also be resorted to with advantage with scarce varieties of Apples and Pears. Any statements respecting the mode of operation would be futile, after the plain and lucid directions given in the current year's *Chronicle*. I recollect a striking instance of success that resulted from

budding the Peach on established trees of the Apricot; the shoots from the buds growing freely, and producing plentifully, when the general stock of Peach-trees could not be kept in a healthy state, though great pains were bestowed upon them by a very clever gardener. This fact would seem to indicate that it would be worth while to try Apricot stocks for Peaches to a greater extent than is generally done.

Tomatoes.—Keep shoots fastened to the wall or fence; thin out the shoots and leaves, and pinch out the points before the clusters of blossoms, where early fruit is desirable. Without the assistance of a wall they will not do with good success north of London, unless in favourable situations—though I always regret planting them near, as they use such gross feeders. For their culture, Capsicums, &c., and the forwarding of early crops, dwarf walls with sloping bottle-boards are in every garden. It is very fashionable to speak of a gardener as an itinerant philosopher; who crops perhaps rather closely, as an itinerant philosopher; who crops perhaps rather closely, as an itinerant philosopher; who crops perhaps rather closely, as an itinerant philosopher; who crops perhaps rather closely, his fruit from borders, though nine cases in ten it is the result not of choice, but of necessity, aware as he is that the somewhat inferior condition of his fruit trees will not be such an unpardonable evil as being bothered with a constantly supply of the best vegetables. *Peas.*—A last sowing may now be made of some of the early sorts. A sowing of Dwarfs might be made towards the end of the month, where the situation was very favourable, and means of protection could be resorted to. *Asparagus.*—The present weather offers a good opportunity for sprinkling the beds with salt, and supplying them with any rich manure you can spare. *Potatoes.*—Those who are partial to young tiny Potatoes may now plant some tubers saved from the earliest crops. If previously greened in the sun they will grow more vigorously. The rows may either be covered with litter on the approach of frost, or they may be dug up, and the produce kept in dry sand. *Cabbage.*—Prepare for sowing for the main crop next month. In cold situations, they cannot be sown one week too soon; in warm favourable places, it will be as well to defer for eight days. *Routing.*—Keep planting winter-stuff every favourable opportunity.—*R. F.*

FLOWER CULTIVATION.

Old Woods.—See preceding Calendars for what is required to be done in this department.

Coppice.—Go through these frequently, in order to see what is wanting; what you do not observe at one time you may at another.

Young Plantations.—About this time young oaks will be making their second growth; therefore young plantations should be frequently gone over, for high winds sometimes do considerable injury to luxuriant young shoots, and especially to the leaders. Should the latter happen to get broken, they may, in a great measure, be rectified in the same season, and a new leader obtained, if properly attended to.

Miscellaneous work.—Keeping the borders clean, by frequent weeding and hoeing, and attending to pruning and training young plants, is nearly all that is requisite at this season in private nurseries. But remember, the knife should be used now on the young shoots; only the daggers and shears should be employed to pinch off the ends of too luxuriant side shoots.—*W. B*

WILDGOOSE GARDENS.

In consequence of the late fine weather, everything is now growing rapidly, and the hoe, which should never be idle, ought to be more than usually active in keeping down weeds and stirring up the ground between rows of growing crops. The flower borders should also be attended to. Tie up any plants that have been broken down by the late heavy showers, and let Verbenas, which are now making vigorous growth, be pegged down until the space allotted for each plant is covered, after which they may be allowed to grow at random. Particularly attend to the tying of Dahlias, which are very apt to get broken by sudden storms. Remove all crops that have ceased to be useful, as they only exhaust the soil and encourage snails and slugs; and let the ground be prepared for winter Greens, which should now be planted, as soon as possible. While the weather is favourable, Celery, if not already done, should also now be planted in beds, which is the best plan for the cottager, as when planted in this way it occupies less ground. If it is intended to make new plantations of Strawberries, select now some of the strongest runners for that purpose; by planting out early they become well established before winter, and often produce a good crop of fruit the following season. In cottage gardens a row is frequently planted along the sides of the walks, so as to encroach as little as possible on the space required for vegetables, and in such situations, where the exposure is open they often ripen abundant crops of fine fruit. The soil most suitable for Strawberries is a strong rich loam, but they will succeed well in almost any soil that has been properly manured, and is in good condition.—*J. M. H.*

State of the Weather near London for the week ending July 13, 1844, as observed at the Horticultural Garden, Chiswick.

July	Mean Temperature of the Air.			Mean Temperature of the Soil.			Wind.	Rain.
	Max.	Min.	Mean.	Max.	Min.	Mean.		
Frid. 12	86	60.5	73.25	76	58	67	W.	
Sat. 13	87	62	74.5	76	58	67	S.W.	.65
Sun. 14	84	62	73.25	75	57	66	W.	
Mon. 15	●	60.5	72.25	75	56	65.5	W.	
Tues. 16	●	59	71.5	75	56	65.5	N.W.	
Wed. 17	●	58	71	75	55	65	N.	
Thurs. 18	●	58.5	70.75	73	55	64	W.	
Average		59.928	72.714	75.4	56.1	65.8		.50

July 12. Fine, with light cloudy showers; cloudy.
— 13 Fine in the morning, with light clouds; constant rain throughout the day.
— 14 Very fine; clear and cool at night.
— 15 Very fine, with bright sun; clear and dry air.
— 16 Overcast and foggy; clear and cold at night.
— 17 Fine, with light clouds; flashy clouds with dry haze.
— 18 Light clouds, and very fine throughout; cold at night.

Mean temperature of the week 1.5 deg. below the average.

State of the Weather at Chiswick during the last 40 years, for the ensuing Week ending July 27, 1844.

July	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Fall of Rain.	Prevailing Winds.						
						E.	S.E.	S.	S.W.	W.	N.W.	N.
Sun. 21	71.0	51.1	61.1	17	0.64	—	—	2	6	4	3	4
Mon. 22	71.5	51.6	61.1	19	1.27	—	—	2	4	7	3	1
Tues. 23	71.7	52.4	61.8	7	1.60	—	—	1	3	5	4	6
Wed. 24	72.2	52.6	62.4	4	0.62	—	—	1	2	4	2	7
Thur. 25	74.8	51.8	63.3	4	0.22	—	—	2	1	3	7	1
Fri. 26	73.7	52.3	63.0	6	0.42	—	—	2	2	4	4	2
Sat. 27	75.0	51.5	63.3	6	0.56	—	—	2	3	4	3	2

The highest temperature during the above period observed on the 31st, 1825—thermo. 89°; and the lowest on the 27th, 1816, and 26th, 1829—thermo. 40°.

Notices to Correspondents.

The Reprint of Mr. PAXTON'S COTTAGE AND CABINET is now ready, price 4*d.* each Copy. An Index has been added to this present Edition. Parties wishing to have copies for distribution among their tenantry can have them at the rate of 2*s.* for 6*s.*

Bees.—*Valkalla.*—We really cannot do anything in this matter. All we can say respecting Mr. Bettigrew's proposals is that we have ourselves subscribed to his scheme, because we know him to be a most respectable man, whose honesty is unsurpassed for excellence.

Carnations.—*W.*—There are several causes which will produce the effect you mention. The fretchloe, the diseased state of the layer at the joint of covenants from the parent plant, also late planting, especially after such dry weather as we have lately experienced, or should the buds have been infested with Aphis, which have inadvertently been crushed on the pot instead of being destroyed. In all of these highly injurious, and cause the weaker specimens quickly to die. I would recommend watering with an infusion of half a peck of sheep manure in six gallons of water, or with Potter's liquid manure.

Colours.—*Mark.*—Why is it, that all colours appear to a man are different by candlelight from daylight, whilst in those of nature hardly any difference is perceptible? Is this and is it the utmost trouble to obtain such beautiful greens, yellows from white, purples and pinks also are so regular, and go with trees and flowers. [What any one answer this question?—*We cannot.*]

Composts.—*Never employ manure* certainly never for these. It may do very well for Hollies, Laurels, and such evergreens, but is fatal to Cypresses, Yews, Junipers, and the whole Coniferous race.

Dahlias.—*Nemo.*—We know of no better mode of awarding these than pegging them down. It is not necessary to pinch off the flower buds in order to keep up a later bloom, the Dahlias in general flower well until they are cut off by frost.

Heating.—*G. C.*—Sand is better than sawdust for covering a tank, because the latter will breed fungi. We should have no fear of your having heat enough; the great fear is that the soil will get dry. You must provide ample means of watering the soil as well as steaming the air. If you grow Melons in your pit, cover the tank with neither sand nor sawdust, but with good maiden loam.

Insects.—*A Lady.*—Red Spider is not to be destroyed by water; it can only be kept under by such means. A sulphur fumigation is the only effectual remedy.—*S. S. H.*—The Peach-leaf is infested with Aphides. The tree should be syringed with Tobacco-water, and the shoots which most abound with the Plant-lice may be cut off and burnt. The Froth-flies on the Lavender are the larvæ of a Tettigonia, described and figured in the 2d vol., p. 599, of this Journal. *R.*—*A. R. C.*—We shall be happy to comply with your wishes, if you will furnish us with the necessary materials. *R.*—*B. Child.*—No. 1 is Curculio scrophulariæ; No. 2, Curculio nubila; 3, Altica testacea. *R.*—*W. M. C.*—Not finding any winged specimens in the quill, we cannot be certain regarding your Aphides, but believe them to be the Cinara laricis of Curtis's Guide. Be so good as to send us living specimens of the Caterpillars, for we cannot tell you what it is that destroys the foliage of your Larches. *R.*—*R. N. C.*—The leaves of the Geraniums are affected by damp, and not by insects. The roots of the Pansies are suffering from the attacks of young Snake Millipedes, which are exceedingly difficult to destroy: unslaked lime, or lime-water, will be the best applications, and you will find other remedies and the history of the Juli, in the *Gard Chron.*, vol. i. p. 196. *R.*—*A. B. C.*—Your insect is Pentatoma rufipes, which generally feeds upon caterpillars, &c. *R.*—*B. Child.*—The moth is Zygæna filipendulæ; and the other insect is the larva of a bug, called Pentatoma. *R.*

Manures.—*W. R.*—We really do not see what we can do to satisfy you; we will, however, consider against another week.

Names of Plants.—*Zephyrus.*—Pellæa grisea.—*An Enquirer.*—Plantago major. Destroy it by constantly cutting through the crown of the root with a sharp spade.—*Subscriber.*—Geranium sanguineum.—*T. U. M.*—Oncidium triquetrum.—*H. Doubleday.*—Stachys recta. We never received your former parcel.—*R. Durant.*—Your leaves are attacked by a parasitical fungus. We really can suggest no better remedy than stripping the tree and burning every one of the leaves.—*W. Bentall.*—Apparently Carex pallescens.—*H. H.*—The Poke-root may be the Phytolacca decandra, called the Virginian Poke.

Pelargoniums.—*Simplex.*—These have become diseased no doubt on account of having been kept too dry. Being potted in leaf-mould, chopped turf, and having a good drainage, they require a very great deal of water, especially during such a season as this.—*Fanny.*—The truss, cut from the Sylph, which you have sent, bearing a perfectly white flower, among the others, is not an uncommon occurrence; at the same time, nothing is known, beyond a white flower having been one of the parents of the particular variety that bears it. How a single flower in a truss, or an entire truss, should come white, when the rest of the flowers are pink, is a matter involved in obscurity. Having had one branch with a complete truss of white flowers, we recommend you, by all means, to strike it, as the plant produced from this cutting will in all probability produce white flowers—and a white Sylph, with the size and substance of that favourite variety, will be a very desirable acquisition.*

Planting.—*A Card.*—All that has been published concerning Dr. Thackeray's mode of pruning is to be found in our columns, where it has been often mentioned and commented upon.

Rats.—*L. Y. Z.* is desirous of knowing the meaning of the term "slamm" in a communication by "G. C." on the 25th May last. Moreover, a piece of calico is to be used rather larger than the trap—Is this to be placed under the trap, and the corners tucked in? or are other pieces of calico to be put all around the trap?

Rhododendrons.—*Mrs. Gall.*—These may be grown in a chalky soil, provided pits are formed for them, and filled with leaf-mould. The holes should be tolerably wide, but need not be more than eighteen inches deep. Mould composed of loam and leaves will do. Whatever leaves are used must be thoroughly decomposed, and if they can be mixed with one half peat so much the better.‡

Strawberries.—*G.*—The best varieties for a market gardener, both with regard to quantity and quality, are Keen's Seedling and Myatt's British Queen. The former is an excellent forcer.‡—*J. W. Yellow.*—Your soil being strong, if once unusually dry, no surface watering would have been sufficient to insure the perfection of your Strawberry crop, but under such circumstances, irrigation produces the desired effect. Like yours, plants are apt to die in intervals between imperfect surface-waterings. Your sand is the "sharp silver sand," mixing so that used for propagating. It is valuable, and if you have it in abundance, a mixture of it would improve your stiff Strawberry soil.—*A Subscriber.*—If your beds of Keen's Seedling exhibit signs of decay, your best plan will be to make a fresh plantation. You may obtain good crops from those that do not yet exhibit such symptoms, if you keep them clear of runners, giving them a top dressing of light manure and fresh loam in winter. The Elton Strawberry is a fine sort, rather acid if not perfectly well-ripened. We never before heard to complained of as being tender, and suspect you have not obtained the true kind.‡

Swiss Briar Hedge.—*R. R.*—This may be obtained by sowing the hips of the Rosa rubiginosa in the autumn as soon as ripe; or, which is better, in the month of March, having kept them in the meantime mixed with sand. But it is far more convenient to buy sweet-briar stocks, (young plants) from the nurserymen, and to plant them, about early in the month of November. Let them grow as they like for the first year, and cut them down to the ground the second; they will then spring up and require no more care than the occasional trimming with the pruning-knife or shears, so as to keep the hedge in shape. When it gets naked at the bottom it must be again cut down.

Vines.—*A Subscriber.*—The Vine leaf you sent bears strong marks of the Red Spider, together with a little scorching. As the shoots are ripe, the best thing you can do is to cut them down to the bottom if you be desirous of having fine fruit next season; as soon as their vegetation is at rest for the present season.—Another Subscriber, who has sent a leaf from a Vine that has not been fired, but has blistered, and has brought with it large excrescences, in an intermediate stage from the small white pimples under side of the leaf to the production of blisters, caused by the dried-up state of the intermediate portions of cuticle.

Vines.—*S. S.*—We presume you intend to train within the same kind of net as is usually employed for that purpose; but which is prepared at a somewhat coarser mesh, and is [illegible] strachan; and water to be added. [illegible] plants and has for [illegible] tisement would produce them.—*J. H.*—No. 10 of last year, and 6 for the present, may be had. No. 6 is out of print—send your address with 13 pence stamps. [illegible] Your [illegible] planted upside down, attempting to recover its position, and nearly succeeding. It is a curious fact, already known, that Hyacinths will produce coloured flowers, even although grown in the dark. The phenomenon, which is extremely remarkable, has never been explained; nor can we explain it. Possibly the external matter is formed the year before; but, if so, where; and in what form is it hidden in the bulb?—*C. J.*—Spearmint in paper cases, we believe, would go by the overland mail, without any other care than that of drying them properly. If yours are too bulky, they will go very well by sea, if packed loosely in coarse canvas bags, and kept in a cabin, or some other dry place. Seeds will go very well in boxes of tin, or to send them long, the best, is to kill them. Ripe cuttings taken off in November, with their ends stuck into a Potato, and well covered with an India-rubber or other waterproof envelope, sometimes reach India safely by the overland mail; but they more frequently fail. Such plants are despatched by the Post-office, or if too heavy, by the Indian agents.—*A Lady.*—No plant is more simple to manage than Euphorbia splendens. It only wants a stove heat and a moist atmosphere. It is very different from some kinds of Cape bulbs. See some remarks on the subject, at p. 293 for 1843; where the treatment of Brunsvigia is described.—*N. O. P.*—We never heard of taking Cats [illegible] are unable to answer your question as to [illegible] You had better apply to dyers. In using Whitney's Composition, the linen should be boiled slackly at first, and then, after the first application, stretched tight before it is nailed.—*W. D.*—There is no such thing as male and female Geranium or Fuchsia blossoms. Each flower contains the two sexes.—*A Constant Subscriber.*—The Portulacaria [illegible] under the name of Cissus [illegible] named *Ercetum*, the foliage of which is smooth and of a deep green; the one named *Gilvum* [illegible] the same colour, but more [illegible] and the other named *Subscriber.*—The Sweet Briar does not make a good stock on which to bud the Damask and Perpetual Roses, but the Noisette may be budded with success on the Sweet Briar.—*W. W.*—Your two Vines in pots, infested by red spider, will not be injured by being placed out of doors, and the red spider will be much more easily destroyed in the open air than [illegible] For the method of laying down a Pine-pit, we would refer you to Loading Article, p. 379, vol. 1843.—*J. H. Watson*—We find the [illegible] described by Devonensis repeated at p. 391 of this year;—*Rev. Lewis Evans.*—Your Pines are mildewed by the dry weather; there is no doubt; but we do not see how your Vines can have suffered from over-luxuriant growth.—Depend on it, if you have a large and abundant crop of Grapes, with you have wood, be must be the better gardener of the two. There is no remedy for your Nectarines now; dry weather and drought [illegible] Red Spider has taken off your leaves. All you can now do is to syringe plentifully and treat to manure. On no account shade; if you do, you will have no flavour in your fruit. You will learn how to procure Green Peas by unwilling to [illegible] vol. for 1843, p. 174.

SEEDLING FLOWERS.

Fuchsias.—*Z. Z.*—The best variety among your seedlings is Hebe, being bright and pleasing in colour; but none of these flowers can be regarded as improvements upon those already out.—*J. Y.*—The peculiar character in the form of your flowers; its great length must render it very showy on the plant.—*C.* is very pretty; but the colour is not new. *J* and *E* are not new.—*Rhum.*—Of your seedlings, John Bull is ugly in form, with the corolla so short that it is scarcely seen. The sepals of the *Président* are coarse, and there are many in the same way. Gallia, with light tube and sepals, and a rose-purple corolla is new, as you say, but does not surpass others in the same way.—*W. Tenterden.*—We find no improvements in your present batch of seedlings; neither in size, colour, nor texture, are they equal to the numerous varieties already in cultivation. Something new is required, as there is so much monotony in the sorts cultivated, that would decidedly advantage the [illegible] make exhibitions of this popular flower attractive.

Gloxinias.—*A Reader.*—Your seedlings are good, and very inferior to some.

Pelargoniums.—*H. D.*—Your seedling is [illegible] rich crimson purple, the white coming given it a lively appearance; it is tolerably good both in form and substance.—*J. Y.*—Your flower was being well pasted, the petals [illegible] fallen, and were partially dried by [illegible] to form an opinion of its qualities.

Peruvians.—*C. E.*—Several fine Peruvians have been exhibited this season, of the kind characterized by your seedlings. Some of your varieties are very [illegible] Mrs. Lilac; was damaged, but appears to be good in colour [illegible] s, white, with dark very purple [illegible] a good variety. [illegible] sion. The other varieties [illegible] You can cultivate [illegible] regarding a guarantee. A few of our blooms, and plants in pots, covered with flowers, were exhibited at the Horticultural Society's Garden on Saturday last, that is the description given of the flower in this paper.

Phlox Drummondi.—*T. S.*—There is nothing uncommon in your seedling; the colour is bright and pleasing, but the form of the [illegible] is indifferent.

Pictures.—*R. C.*—Your specimens can only be regarded as border varieties; the petals are too small, and the colour not sufficiently outlined to the edge of the petals. Do not [illegible] the heat.—*Rondi.*—Your seedling [illegible] but the guard petals [illegible] they are small, rather crumpled, and not even on the edge. In other respects, as the flower, as the white is pure, the petals [illegible] and the [illegible] edging of a beautiful colour. Your next [illegible] has very fine guard petals, and the centre ones are quite [illegible] uneven on the edge; good pod, petals [illegible] slightly serrated, and the [illegible] the number of petals. No. 3 [illegible] a good sized flower, with petals of a good form; but several of them are [illegible] pled and broken. [illegible] edge, rather inclining to [illegible]

Verbena.—*A Subscriber, from the Commencement of Your seedling being packed up without anything [illegible] about it, was to say a little about [illegible] it was impossible to tell [illegible] colours, and it would not [illegible] Your seedling is a very good variety, [illegible] of a delicate blush-ring, changing to white, but [illegible] a little colour at the [illegible]

As usual, many communications have been received [illegible]

SEED-WHEAT.—Any one desirous of purchasing Seed for next year is invited to inspect the two varieties of Wheat, RUBERETTE, IMPETUEUX, and MORETON'S NEW STRAW WHITE, 180 acres of which are now growing on WHENNELD FARM, THORNBURY, GLOUCESTERSHIRE.

The present is the only season of the year when the value of any variety of Wheat as Seed can be ascertained by instantaneous test, if the examination of a mere sample of the grain which can be seen at any time, be merely satisfactory as to its quality in the eye of the baker or the miller, it is entirely so as to the predominance or debility of growth of the variety to which it belongs. Those points, which are of the highest importance in the eye of the Farmer, can be ascertained only by an examination of the growing plant, when in full ear.

JOHN MORTON, Whitfield, Thornbury.

The Agricultural Gazette.

SATURDAY, JULY 20, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Tuesday, July 23, Yeomanry and Cattle Show, Maryland Meeting.
Wednesday, July 24, Meeting of the Agricultural Society of England, at Southampton.
Thursday, July 25, } at Southampton.
Friday, July 26, }
Saturday, July 27, Agricultural Prize Soc. of Ireland.
Monday, July 29, Agricultural Society of England.
Tuesday, July 30, Agricultural Prize Soc. of Ireland.
Wednesday, July 31, Bingley Cattle Show.
Aug. 1, Huddersfield.
Aug. 2, Great Yeomanry Meeting, at Framlingham.
Aug. 3, Peterboro'. July 30, Isle of Thanet.
Aug. 5, Great Yeomanry Meeting, at Bayleigh.
Aug. 6, Thame. Aug. 5, Collumpton.
Aug. 7, Cirencester.
Aug. 8, Gloucester.

FIFTY-NINE THOUSAND POUNDS' WORTH OF GUANO (we quote from a statement by Mr. Milne at the late meeting of the Scottish Agricultural Chemistry Association) were last year imported into Liverpool alone. But guano is imported direct from its sources into many other ports of the United Kingdom beside this; indeed, advertisers are daily announcing the actual or expected arrival of cargoes direct from African or Peruvian islands at second and even third-rate seaport towns, so that the sum here named is perhaps not an eighth of what has been spent in the purchase of this manure during the present season; and, from the better knowledge which prevails of its fertilising properties, as well as from the enormous supplies which will by that time have arrived in England, we may suppose, that if this year's value of guano sold be reckoned by tens, that which will be bought by farmers next year will be reckoned by hundreds.

Now we ask, Is not the expenditure of some hundreds of thousands of pounds on a substance so often, because so easily, adulterated as this—an expenditure too by parties generally so incapable of detecting the fraud—is not this a subject of serious agricultural importance? It is absolutely necessary that farmers should combine to insure themselves against a source of such serious loss, to the action of which they are so liable; for we can tell them that if the articles which have lately appeared on this subject in the *Agricultural Gazette* have failed to awaken them to their true interest, they have, by no means been so uninfluential on the parties whose roguery they exposed. These gentlemen see that it is necessary now to have a semblance of authority for the value of their trash, to insure its sale; and, as illustrative of this, Mr. Gyde, of Painswick, whose name is well known to our readers, lately gave us the following account of an attempt made upon him:—

"The object of the party in sending me the sample of guano so shamefully adulterated, was to ascertain if I would become an agent for its sale; if so, I was to receive a handsome commission, &c. My answer was to be left at a Post office, and every precaution was taken to prevent the locality being detected, in case the proposition did not meet with a favourable reception. The so-called guano consisted of a mixture of red marl and old mortar crushed together to the extent of 95 per cent.; the remaining 5 per cent. consisted of vegetable matter (probably partially decomposed sawdust), and genuine guano. This mixture had been moistened with putrid urine, and re-dried. It certainly had the appearance of a fair sample of guano when casually looked at, and would no doubt deceive any person unaccustomed to the genuine article. When moistened with caustic potash, and heated, it only gave traces of ammonia compared with the effect produced on natural guano; and after drying and heating to a red heat, 45 per cent. of inorganic matter was left, which did not contain 1 per cent of phosphates. I think the answer I sent them will prevent their offering it in this neighbourhood. The largest amount of adulteration of guano I have met with has been 15 per cent., excepting the above instance."

This case, in point of impudence, can be compared only with the notorious instance published by Mr. Solly, in which a manure containing only 3 per cent. of what it professed to be, was considered to be good enough for agricultural purposes.

Well, there can be no doubt after this, and the many other instances we have at various times published, that there is a necessity for vigilant carefulness in the purchase of guano. It is most desirable that Farmers' Clubs, and especially all those in inland districts, should adopt the means suggested by Mr. Hyett of Painswick in an early number of this Paper, viz., each of them nominate some scientific man as their agricultural chemist, and secure his services, at a certain rate of charge to the analysis, *before purchase*, of all concentrated manures, natural or artificial. We allude to inland Farmers' Clubs particularly, in reference to the purchase of guano, for farmers near sea-ports can buy at the ship's side; and though, through error, or impurities, it may have been imported, yet impurities to any considerable amount are, in ninety-nine cases out of the hundred, to be attributed to the roguery of secondary manure dealers, after it has been brought on shore. The general and hearty adoption by Farmers' Clubs of means, such as this, would go far to deter dishonest people from attempting this deceit. But the subject must be taken up immediately, if it be intended to exert any influence; for guano is daily arriving in this country, and unless sufficient influence be exerted to the contrary, as soon as it is cheapest it will be bought up from the importers, in order to be adulterated and diluted ready for next spring.

Only one Society, that we know of, has heartily adopted the plan to which we allude, and that—a Society, indeed, formed for the very purpose of securing for the farmer the services of the chemist—is the Agricultural Chemistry Association of Scotland. The Report, in another column, of the half-yearly meeting of this body, is well worthy of perusal. It will be seen what success has attended the efforts which have been put forth in Scotland to bring the farmer and chemist together. The circumstance mentioned at that meeting by Mr. Milne, that all the instances of fraud in the manure-trade, which we have published, have occurred south of the Border, is sufficiently convincing of the influence exerted by the existence of a ready and certain means of detection.

It is not guano alone which these district agricultural chemists would have to analyse—they would find cases of adulteration in many other manures. Mr. Gyde informs us that he lately analysed, for a farmer near Chepstow, in Monmouthshire, a specimen of bone-dust, in which he found 20 per cent. of sand, and 12 per cent. of water, so that, for all agricultural purposes, one third of it was useless. One would think, from the constant occurrence of these instances of fraud by manure-dealers, that, though familiar with it from childhood, farmers were not yet convinced of the expediency of the old rule—

"Taste and try, before you buy."

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

THE word in the above title, which is meant to express the character of the following contributions to the *Gazette*, is intended at the same time to signify that dependence of the farmer's practice on the nature of the soil he cultivates, and therefore on the geological character of his vicinity, which it is my object to illustrate.

South Gloucestershire, perhaps, more than any other district in the kingdom, possesses a very variable geological character; the character of its agriculture is also various, and an attentive survey of it will convince any one, as it did me, that these stand to one another in the relation of cause and effect.

In order that my remarks on its farming may be useful, I must first describe its general appearance and climate.

The district to which the following remarks refer, is that portion of Gloucestershire which extends on the east and south to the boundaries of the county, on the west to the river Severn, and on the north to a line drawn from near the village of Frampton-on-Severn to the town of Stroud. The whole of it is included in No. 35 of the Maps of the Ordnance Survey. Its greatest length, from N.N.E. to S.S.W., is about 26 miles; its greatest width, from N.N.W. to S.S.E., is about 16 miles. Looking at it with regard to the elevation of its surface above the level of the sea, it may be divided into two portions—the one on the elevated table-land of the Cotswold range, and the other constituting the extensive tract in the vale of the Severn between Gloucester and Bristol. The average elevation of the one is from 500 to 600 feet above the average level of the other; and of the 330 square miles which constitute the extent of the whole district, about 80 belong to the hilly portion, the rest to the vale. The two districts are divided by a bold edge or escarpment, stretching between them in a direction N.N.W. and S.S.E. The surface of the table land slopes towards the east, its highest points being always near the edge of this escarpment; and these are, therefore, situations from which a very accurate idea of the general appearance of the whole country may be obtained. In the northern and southern parts of the district the table-land is furrowed out by valleys of considerable extent, which are independent of one another; each is complete in itself, possessing a series of lateral branches, into which, again, a second series of smaller valleys run; their sides thus present a number of recesses and promontories, to which, chiefly, the beauty of their scenery is due. In the same way, the front of which the Cotswold range consists—the bolder rock—is made up of a series of nearly horizontal beds of various kinds—limestone, clay, and sand—the valleys which cut through this series of beds have upon their sides the characters of each, and another source of variety in their scenery is introduced.

As all of them occur close to one another, the whole being within a space of ten miles, the high land generally presents outliers in the form of long arms, which extend as so many headlands into the vale. From the extremities of these arms the most beautiful and extensive views of the vale may be obtained, and instead of proceeding to state at the outset, as to the character of the surface of only the second portion of our district, it may be well to attain one of these heights and obtain thence a view of its general appearance.

Stinchcombe-hill, which stands further out into the midst of the vale than any of the neighbouring hills, being at the extremity of the tongue of the arms just mentioned, will best suit our purpose.

If we climb this hill early on the morning of a summer's day, we shall probably find the whole of the vale covered by a thin stratum of white cloud, which hides from us, as a sea, the whole of the country it rests upon. The high lands on the far side of the Severn appear as a distant coast, ourselves being on the top of one of the boldest headlands which here stretch far into the midst of the strait.

As the heat of the day increases, this cloud gradually disappears, and discloses to us the beauties of the land it had covered. Looking to the north, the east, and the south, we see stretched out before us the vale of Gloucester and Bristol; on looking eastward, behind and on either side of us, we find it bounded by the escarpment of the table-land already described; and as we gradually direct our gaze from north to south over the western horizon, the Malvern hills in the far distance—May Hill—the Forest of Dean—the distant Welsh hills—the open sea in the Bristol Channel—and the Mendip hills beyond Bristol, successively pass under review. These boundaries present every variety of outline and appearance—they form a fit frame for the beautiful picture which they surround. The scenery of the vale itself also varies in its character. Northward its surface is comparatively level; to the south it is irregularly broken up into hill and valley. In the northern part of the vale the city and cathedral of Gloucester may be seen at a distance of 15 miles, and here and there over the whole of it, villages with their church spires make their appearance. We can see very little but pasture land, indeed, with such immense quantity of timber as everywhere covers the vale, arable land could not be cultivated.

Isolated portions, however, in the midst of the thickly wooded country below us—the surrounding the foot of the hill—another near Frampton on Severn—a third between these—and others, are bare, and cultivated by the arable farmer. This hinders any monotony to which the scene would otherwise be liable. The northern part of the vale consists chiefly of clay, but there here spots occur where a deposit of gravel has taken place over the clay; a difference in the subsoil thus producing an entire change in the appearance of the surface.

The southern part of the vale is, as I said, broken up into hill and vale. A ridge, or southern escarpment, about 150 or 200 feet high, commencing at Bristol, and running northwards 15 miles, when it runs out by Tortworth and Wickwar, and again southwards to Sodbury, incloses a basin-shaped tract of country of considerable extent; and, besides this, many detached hills occur here and there, as in the neighbourhood of Thornbury and Berkeley, adding to the irregularity and beauty of the scenery.

The climate of this district does not vary much in point of temperature, being of such limited extent. It is probably, however, always from 2° to 4° colder on the table land than in the vale, and this, where, as in this case, it is united with a much greater degree of exposure, will make a great difference in climate.

At Bristol, the following is the monthly average temperature, in degrees of Fahrenheit's thermometer:—

January.	February.	March.	April.	May.	June.
37.3	40.8	41.3	47.1	55.8	61.9
July.	August.	Sept.	Oct.	Nov.	Dec.
63.	61.5	57.3	51.7	43	40.6

The average number of wet days in the year at Bristol, is 166, which are divided out among the months as follows:—

January.	February.	March.	April.	May.	June.
15	12	15	10	9	13
July.	August.	Sept.	Oct.	Nov.	Dec.
14	13	20	16	20	17

At Cheltenham, the following are the results of meteorological observations, which have been carried on for seven consecutive years, during the first eight months of the year; and for five years, ending 1837, during the remaining four months. The average temperature for each month is as follows:—

January.	February.	March.	April.	May.	June.
37.6	40.4	41.5	46	53.9	59
July.	August.	Sept.	Oct.	Nov.	Dec.
61.1	59.7	55.5	50.4	43.9	41.6

The average quantity of rain which falls in the year at Cheltenham is, according to these observations, 31.81 inches, which is divided amongst the months as follows:—

January.	February.	March.	April.	May.	June.
2.17	3.55	2.1	1.26	1.6	3 21
July.	August.	Sept.	Oct.	Nov.	Dec.
3 58	2.79	3.15	2.96	3.36	2.12

These observations give the average temperature of the year at Bristol, in the south of our district, 50°; and at Cheltenham, beyond the north of it, 49°.

The temperature of Chalford springs, occurring in the valley of that name, three miles east of Stroud, which are the largest springs in the county, does not vary throughout the year, and may be taken as the average annual temperature of the place, it is 49° 8.

The temperature of a considerable spring, near Hillday, was, in the month of August, 50°. This, too, may probably with accuracy be taken as the temperature of

the place. Neither of these, however, occur on the table land, the annual temperature of which is, probably, above 3° degrees less than either.—*M. S.*

ON LIQUID MANURE.—No. III.

(*Concluded from p. 467.*)

In pursuing the above subject, for the purpose of ascertaining the cheapest and most economical method of converting the ammonia generated in urine by putrefaction into a fixed salt, we next come to *Sulphuric Acid.* This acid, from the large quantity which is used in our arts and manufactures, is now produced at a much cheaper rate than formerly. It offers the most certain, if not quite the cheapest mode of fixing the ammonia contained in putrid urine by at once entering into chemical combination with it. When sulphate of iron, sulphate of lime, or any of the soluble salts are used for this purpose, a double decomposition occurs: the two constituents of the substance used are separated, and enter into new combinations with the ammonia; but before this change can take place, the two substances which are intended to react on each other—*i. e.*, before the acid of the one can combine with the alkali (ammonia) of the other, both must be in solution; and when the substance used to fix the ammonia is sparingly soluble as is the case with gypsum, much care and time is necessary effectually to accomplish this object. But when the acid itself is used, no such inconvenience takes place; the acid at once combines with the ammonia, and forms a sulphate of ammonia, while carbonic acid escapes with effervescence. In using sulphuric acid in liquid manure, there are several advantages obtained over that of gypsum, or sulphate of iron, since in the first place no deposit takes place in the tank, which requires it to be occasionally emptied; and if a slight excess of acid be added, no injurious action is exerted by it on the plants, should it in this state be added to the soil; indeed, a slight excess of acid in the tank would be more beneficial than otherwise, since urine contains no inconsiderable portion of phosphate of lime and magnesia; and an excess of acid would convert this into a superphosphate, which is more soluble, and, we have every reason to believe, far more efficacious than phosphate of lime or bone-earth; for by the use of a small quantity of bones dissolved in sulphuric acid, by which a soluble superphosphate of lime is formed, we are enabled to produce as large a crop of Turnips as by the use of many times the weight of bones without the acid.* When sulphuric acid is used in liquid manure, it may be added in small quantities as long as any effervescence occurs, stirring the liquid after each addition, and waiting until the effervescence has subsided before any fresh addition of acid be made; and it is advisable that this should be done at intervals of ten days or a fortnight where convenient. In purchasing sulphuric acid, care should be taken to ascertain that it is of full strength, namely, of 1·85 specific gravity; and, as its strength is in direct proportion to its specific gravity, this is a good criterion by which the purchaser can protect himself against imposition. The following is a mode by which an inexperienced person may ascertain if it be undiluted:—Fill an imperial pint with water, and place it in the scales, having first balanced, or ascertained the weight of the empty cup; the water should weigh 20 ounces; remove the cup, and pour away the water, then fill it with the acid the strength of which it is required to ascertain, and again weigh it; if it weighs about 17 ounces more than the pint of water, the acid is of ordinary commercial strength, but if much less, it has been in all probability diluted.

Common Salt has been strongly recommended to fix the ammonia in urine, since it was thought to possess the double advantage of not only forming a muriate of ammonia, by the acid contained in the salt combining with the ammonia in the urine, but because the carbonate of soda which would also have been found would act as a beneficial manure, supplying plants with an alkali: and, if this theory had been correct, salt would certainly have possessed great claims on the farmer's attention; but unfortunately the decomposition which goes on when concentrated solutions of common salt and carbonate of ammonia are mixed together, takes place on too limited an extent in diluted solutions, as we meet with it in urine, to be of any service to the farmer. When two concentrated solutions of salt and carbonate of ammonia are mixed, a quantity of carbonate of soda and muriate of ammonia are formed; the carbonate of soda being comparatively insoluble in a solution of muriate of ammonia, it is deposited in the vessel, and may be separated by a filter. But if this mixture be largely diluted with water, and the carbonate of soda redissolved, the elements again arrange themselves in their original form, namely, carbonate of ammonia and salt. Strange as this may appear to those unacquainted with chemistry, it is nevertheless the case that when strong solutions of the above salts are mixed, a decomposition takes place, which does not occur, or at least very partially, in less concentrated solutions; and as putrid urine is a weak solution of ammonia, salt undergoes little or no decomposition when mixed with it. Hence the ammonia does not become fixed, neither is carbonate of soda formed. *Muriatic acid*, spirits of salts, or hydrochloric acid, may be substituted for sulphuric acid to fix the ammonia in urine. It is, like sulphuric acid, extensively used in the manufactures of this country, and may now be purchased of the manufacturers at three farthings per pound, when taken in quantities. Like sulphuric acid it combines at once with the ammonia, forming muriate of ammonia; it leaves no deposit in the tank, and may be used in the same way as the sulphuric. In conclusion I have inserted the following table, which shows the ingredients used to fix ammonia, the quantity of each required to form 1 cwt. of sulphate or muriate of ammonia, the cost, and the quantity of ammonia fixed.

Substance used.	Weight in lbs required.	Cost.	Ammonia fixed in lbs.	Salt of ammonia produced. lbs.
		s. d.		
Unburnt Gypsum	146	3 6	30	112 of sulphate
Burnt ditto. . .	118	—	30	112 ,,
Sulphate of Iron .	224	3 8	30	112 ,,
Sulphuric acid .	84	7 0	30	112 ,,
Muriatic acid .	80	5 0	35	612 of muriate of ammonia

N.B.—The cost is calculated from the market price of each article.—*Alfred Gyde, Painswick*

ON ROTATIONS OF CROPS.

SEEING that you invite your readers to communicate the results of their experience or observation, particularly in matters which intimately concern the horticultural and agricultural communities, I beg to offer you a slight sketch of the different rotations of cropping practised on the model farm at Glasnevin, near Dublin, which is under the Commissioners of National Education for Ireland, and superintended by that intelligent agriculturist, Mr. T. Skilling. A great deal is said now a days about the rotation of crops, and very justly so; yet upon the whole how few are there that put a good system of rotation into practice. If this communication be the means of imparting the smallest amount of information on so interesting a subject, the writer has his reward.

This farm consists of about 50½ statute acres, and is composed partly of a deep loam and partly of a light soil; it is worked by 12 young men, with the assistance of two horses, each boy giving six hours work per day—the remaining part of their time is devoted to agricultural study, of such subjects as chemistry, botany, animal and vegetable physiology, &c. The farm-house, gardens, barns, and cattle-sheds, &c., occupy between three and four acres; the remaining 49 are divided into two rotations of four and five crops respectively. The four-crop rotation consists of 19 acres laid down in fields of 4 acres 3 rods each. The five crop rotation consists of 30 acres, divided into fields of six acres each. The reason why it is laid down in two rotations is to show the pupils the practical working of both systems; were it not for that, the whole 49 acres would be laid down under the five-crop rotation. The number of stock usually kept on the produce of the farm is 20 cows, 2 horses, and from 15 to 20 pigs; the cows are fed during the winter six months on Turnips, Mangold Wurzel, Potatoes, Hay, Straw, &c. The produce of the first two—Turnips and Mangold Wurzel—averages from 35 to 40 tons per acre, say 38 tons; each cow is allowed, with Hay and Straw, the growth of one rod of Mangold Wurzel, Turnips, &c. Suppose an acre produce 38 tons, 1 rod will yield 9 tons 10 cwt., which being reduced to pounds, will amount to 21 280; this again divided by 190 days, which is rather more than six months, will leave 112 lbs. for each cow per day, which is a large allowance for ordinary sized cows.

The amount of crops raised on the four-crop rotation is as follows:—In field No. 1 (see table No. 2).—Mangold Wurzel, Turnips, &c., 4 acres 3 roods. No. 2.—Oats, 4 acres 3 roods. No. 3.—Same quantity under artificial Grasses, such as Italian Rye Grass, perennial Rye do., and Clover. No. 4.—Do. of Wheat.

The crops on five-crop rotation are as follows:—No. 1.—Potatoes, Turnips, Mangold Wurzel, &c., 6 acres. No. 2.—Oats, 6 acres. No. 3.—Grass pasture, 6 acres, a portion of which is reserved for Hay. No. 4.—Consists of Italian Rye Grass, perennial do., and Clover, which is cut three times during the summer and autumn months for the support of the stock; a great portion of the last crop is made into Hay, for the support of the cattle during the winter months. No. 5 contains the same quantity of land, which is under Wheat or Barley. The total amount of crops raised on the farm is as follows:—Oats, 10 acres 3 roods, Wheat, do. do.; Potatoes, do. do.: cutting Grass, do. do.; Grass pasture, 6 acres; grand total, 49 acres. The produce of 20½ acres of Corn is sold, the remaining 28½ is consumed on the farm. Each cow is calculated to give 8 quarts of milk on an average daily, which, sold in the market at 2*d.* per quart is, for one cow, 1*s.* 4*d.* per day, per year, 24*l.* 6*s.* 8*d.*; or, for 20 cows for one year, 486*l.* 13*s.* 4*d.* The cows are kept from two to three years, and then beginning to go off milk, are fattened and sold, their places being always supplied by others in full milk.

I ought here to mention that the cows are, strictly speaking, housed summer and winter, except two hours each day during the summer months they are allowed to exercise on a portion of the Grass pasture. By this method the greatest possible quantity of manure is collected, which is the great support of the large and luxuriant crops, of Wheat, Oats, Turnips, Grass, &c., The tables Nos. 1, 4, and 5, are sent merely with the view of showing other rotations which might be advantageously used, particularly Nos. 4 and 5, on a larger scale and different soils. A good deal more could be said on this subject, but perhaps enough for the present.—*B. M., formerly a Pupil in the above Establishment.*

No. I.—*The Three-Crop Shift* is the best adapted for small farms near a market town, because you can keep more cattle on the same quantity of land than on any other rotation, because there are two green crops and one grain crop. It is as follows:—

	1st year.	2d year.	3d year.
1st yr.	Potatoes and Turnips	Wheat or Barley, sown down with Grass seeds	Cutting Grass
2d yr.	Wheat, Barley, &c. with Grass seeds	Cutting Grass	Potatoes, Turnips, &c.
3d yr.	Cutting Grass	Potatoes and Turnips	Wheat and Barley with Grass seeds
4th yr.	Same as first		

No. II.—*The Four-Crop Shift* is best suited to strong, heavy soil that is able to bear cultivation; it is very beneficial to the farmer in localities where it can be followed; it is termed alternate husbandry:—

1st year: Potatoes and Turnips. 2nd year: Wheat and Grasses. 3rd year: Cutting Grass. 4th year: Oats. 5th year: Same as first.

No. III.—*Fifth Rotation, or Five-Crop Shift*, is best suited to light soils; it is chiefly followed on the light soils of Scotland; it is a good rotation for raising food for cattle; it has three green and two grain crops; they are as follows:—

1st year: Potatoes and Turnips. 2nd year: Wheat, Barley, and Grass. 3rd year: Cutting Grass. 4th year: Grass pasture. 5th year: Oats. 6th year: same as first.

No. IV.—*The Six-Crop Grass Shift*; its crops are only fit for light, hill, or peat lands. It is well adapted for rearing young cattle or sheep.

1st year: Potatoes or Turnips. 2nd year: Barley or Oats, with Grass seeds. 3rd year: Cutting Grass. 4th year: Grass (second year). 5th year: Grass (third year). 6th year: Oats. 7th year: same as first.

No. V.—*The Six-Crop Bean Shift.* This rotation answers well on heavy clay soils; it is as follows:—

1st year. Potatoes and Turnips. 2nd year: Wheat and Grass seeds. 3d year: Cutting Grass. 4th year: Oats. 5th year: Beans. 6th year: Wheat. 7th year: same as first.

ON THE APPLICATION OF MANURES.

A PLANT has been defined as a compound organic body, deriving nourishment from the soil in which it grows.

This definition appears to have been generally admitted, and has been almost universally acted upon, by depositing in the ground such matters as are thought to furnish this nourishment to the roots, while a power, stimulated by light and heat, elaborating the atmospheric air and the sap, has been supposed to reside in the leaves. Some few—Tull and his disciples—have disputed the utility of so depositing these matters; they proposed, by hoeing the ground, and such like operations on the surface of the soil, to promote its disintegration, and the admission into it of the atmospheric air, in order to supply the roots with gases; and these seem, in a great measure, to be the views of Liebig. Lord Kames and others, again, have contended, and, by some apparently conclusive experiments, have attempted to prove that water is the sole nutriment of plants; but—which seems to have escaped the observations of all—may it not be supposed that the matters thus deposited in the soil, instead of supplying plants with nourishment through their roots, may really so supply them through their leaves and the greener parts of their stems?

When we look at "one of the giants of the vegetable world," stretching far, wide, and deep his vast roots into the bowels of the earth, we must feel convinced that his first and most obvious purpose is so to fix himself as to enable him to brave the storm; his second, to obtain from the soil the means of growth and of prolonging his existence. What does he seek? He plunges his roots deep in the soil; does he do this only to keep hold of it? Does he not do it also to seek food? And what food? The decaying animal and vegetable matters lie near the surface; the action of the atmospheric air, and the heat of the solar rays, do not penetrate the regions he traverses. It is water which he searches after; and this, say some, is the sole food of plants, elaborated in their leaves—this, they say, is all that it is necessary to supply them with. To the experiments made to prove this hypothesis, in which distilled water has been alone supplied to plants set in ground glass, cotton, sand, &c., it has been objected, with much truth, that "these experiments are always performed in or very near houses, where the air is not so pure as in the open fields, and consequently where they have an opportunity of receiving as much nourishment from the air as may compensate for the want of what they would have derived from the earth, if planted on a rich soil. Here, then, is an admission by those who would impugn the evidence of these experiments, and by the advocates for enriching the soil to feed the roots, that plants may be nourished from the air filled with effluvia from the habitations of man. Can it be denied that they may be equally fed by effluvia in the open fields, from the decaying animal and vegetable matters in the soil? It may be said that ammonia is absorbed by the water in which the roots are placed, but it is more probable it is sucked in by the leaves; the contrary opinion has tended more to check the progress of the wide-row system than all the prejudices of ignorance. "We know," says Liebig, "that the functions of the leaves, and other green parts of plants, is to absorb carbonic acid, and, with the aid of light and moisture, to appropriate its carbon."

* In adding sulphuric acid and water to bone-dust (phosphate of lime), the sulphuric acid combines with part of the lime, forming sulphate of lime, while the phosphoric acid which is left attaches itself to the remaining portion of undecomposed bone, and forms with it a superphosphate of lime, or bone-earth, with excess of phosphoric acid which is soluble in the mixture. Hence, we have a mixture of sulphate of lime and superphosphate of lime. May not the increase of crop from the use of such a mixture be partly attributable to the sulphate of lime? and would not a portion of gypsum, used with bones increase the crop, by placing within the reach of the roots of the Turnip a substance which cannot fail to form part of its nourishing food? since it is known to contain lime (25 tons of Turnips containing about 140 lbs. of lime) as well as alkali, both of which the sulphate of lime would yield to the crop.

Sir H. Davy and others have justly objected to naked fallows, that they facilitate the escape of nutritious effluvia from the soil, when there are no plants to absorb them; and that, if nitrous salts are produced in bad weather from exposure of soils containing vegetable and animal remains, it is probable at the expense of ammonia; and this is not denied by the advocates of summer-tillage. In hoeing between the rows of fallow crops, the objects contemplated appear to be the loosening of the soil. Liebig says—"By loosening the soil which surrounds young plants, we favour the access of air and the formation of carbonic acid"—the destruction of weeds, and "the ploughing up of the plants, with the intent of benefiting them. The benefits aimed at by loosening the soil are the admission of the atmospheric air into the soil, there to operate on animal and vegetable matters in the earth for supplying the roots with food. In the words of Liebig, "The carbonic acid, which protects the undecayed humus from further change, is absorbed and taken away by the fine fibres of the roots, and by the roots themselves; this is replaced by the atmospheric air, by which process the decay is renewed, and a fresh portion of carbonic acid formed." But in the widest rows, and with the horse-hoe and plough, the soil is not stirred to a depth exceeding six inches, while the finer fibres of the roots of most plants, to which this deep hoeing is applied, reach certainly very far beyond this depth; and it is the extremities of these fibres that are the mouths of the roots. I admit that some of the roots shoot laterally some of their branches, probably still to seek moisture; but broad-cast Wheat, and Wheat sown in rows rarely exceeding nine inches asunder, are rolled, harrowed, and hoed with the same object, where merely the surface can be bruised and torn up, while the Wheat seed is sown from four to six inches deep, the roots extending to a much greater depth, and the finer fibres probably a foot or two below the surface, to a depth, indeed, to which we cannot suppose, even under the most favourable circumstances—those of fresh-sown ground—the influence of the atmospheric air can penetrate for the purposes of vegetation, for few seeds will germinate much below six inches. The advantages of destroying weeds cannot be disputed, but the benefit of moulding up plants is very questionable: it was never practised or recommended by Mr. Coke (Lord Leicester), of Norfolk, for White crops: to Turnips it is not considered beneficial; to Mangold Wurzel injurious; and I can myself vouch that, for Potatoes (to which roots it is generally considered most applicable), it is useless, except in a final hoeing, to allow a freer passage of air along the rows.—*T. M. C., Stramore Police, Stranraer, Ireland.*

(To be continued.)

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Farm of Grunnesoon.—East Lothian has been long noted for the comparative excellence of its tillage-farming; in no district, perhaps, is rural labour more skilfully executed. As I have already stated, I am by no means desirous of representing the system of farming pursued in this county as the most judicious in every respect that could be devised; much less am I anxious of holding it up as a perfect model of rural economy, for the imitation and guidance of all readers of the *Gazette*. Whether the East Lothian system of farming is superior or inferior to that pursued in some of the most improved districts in England, I am unable to say. It may be proper to observe that my remarks upon the agriculture of this county apply solely to its average character, and not to what is practised only by a few more advanced or enterprising than their neighbours. There are, undoubtedly, many examples of unskilful and slovenly management to be met with in some localities.

The following, among other circumstances, have obviously contributed, to a considerable extent, in bringing about an improved mode of tillage in this county, viz.: the extensive practice of thorough-draining, the invention and employment of efficient implements and machines for executing and economising rural labour, the nature of the soil itself, and the manner of hiring and general management of farm servants; to these, of course, is to be added the security for the outlay of capital which is afforded by the lease. The advantages arising to the tillage farmers of this county from the complete drainage of their land, and the use of effective implements, are too numerous and apparent to require any elucidation here. Even after being thoroughly drained, the strong stubborn nature of the greater part of the soil renders it, in unfavourable seasons, peculiarly difficult, expensive, and precarious to work to any degree of perfection; and this disagreeable quality of the soil has undoubtedly contributed very much towards the general adoption of improved cultivation, as it compels the anxious and industrious farmer to resort to every expedient, and to try every mode of management which practical judgment—often the result of dear-bought experience—could devise. Nor must the admirable manner of hiring and managing farm servants, long successfully pursued in this county, be overlooked in enumerating some of the leading circumstances which have conduced to its improved cultivation. By far the greater part of the regular farm-labour is performed by married servants, provincially termed hinds. They occupy comfortable houses provided for them by the farmer, and which are always situated near the farm-steading. They are hired by the year, and paid partly in money, and partly in the produce of the farm, as shall be more particularly detailed in a subsequent article. The advantages arising to both master and servant from this system, are many and obvious. The hind, from his permanency of employment, naturally acquires an interest in the prosperity of the farm, has usually an anxiety to perform with care his own assigned duties, and from being closely confined to one sort of work, has evidently a better chance of becoming thoroughly a master of it.

Premising these general remarks, I shall now proceed to describe the manner of performing the principal tillage operations, as they are at present practised on the generality of farms in this county, beginning with the most important and indispensable of them all, viz.:—

Ploughing.—It may be necessary to explain some of the technical expressions connected with this subject, employed in this and other parts of Scotland. Land once formed into ridges, is subsequently ploughed by either of the following methods, viz., 1. The ridges may be split out in such a way that the space formerly occupied by the crown of the old ridge becomes the furrow of the new. This operation is technically called *crown-and-furrow* ploughing. 2. Two ridges may be ploughed together, by which means the form of the old ridges, and the situation of the intermediate furrows, are preserved unaltered. This mode of ploughing is termed *casting*. 3. The ridges may be *gathered*, which is effected by beginning at the *crown* or centre of the ridge, and ploughing all the furrow-slices towards it. By this means an increased elevation or curvature is given to the ridge. 4. The last operation may be reversed by commencing at the furrows without ploughing into them, and concluding at the crown, which then becomes an *open* furrow. This process is called *clearing*, the ridges being, when this method of ploughing is adopted, divided or cloven into halves. Each of these modes of ploughing shall be afterwards more minutely described.

Feering, or *feiring*, is a Scotch term, referring to the opening of the first furrow-slices in ploughing a piece of ground, or the process of marking off or *striking* the furrows which regulate the after ploughing of land into ridges. Where the ploughing of a ridge or other piece of ground terminates, is called an *open furrow*; thus, when the crown-and-furrow mode of ploughing is pursued, every furrow is an open one; but in the case of the ridges being cast only every fourth, one becomes an *open* furrow, the others are termed *close* furrows. The last furrow-slice in ploughing a ridge or other piece of land is generally named the *hinting* furrow. When ridges are ploughed, by turning the horses at the headlands to the right about, as is sometimes done in the case of gathering, they are said to be *hupped in*; and when ploughed by turning from right to left, as in cleaving, the ridges are said to be *rounded out*. The most of these technical expressions will, doubtless, appear rather strange to southern readers, and may probably sound somewhat harshly in their ears, but they are well understood in all parts of this country. Their use, however improper in a Paper like the *Gazette*, is almost unavoidable in describing the different methods of performing the important operation to which they refer. I shall endeavour, however, to employ only those local terms which cannot be dispensed with, without occasioning some prolixity of detail. One of the ploughmen, generally the steadiest and most skilful, on every farm is appointed to the rank of *foreman*, a station next in point of trust to that of the steward or *grieve*. The usual duties of the foreman are to feer or mark off the land into ridges, both for himself and for the other ploughmen, to conduct the process of ploughing and other tillage operations, and to regulate the time for stopping from and recommencing work. He is also generally required to stack and sow corn, for which he commonly receives two bushels of Wheat yearly, in addition to the ordinary wages of a ploughman.—*T. Sullivan.*

AGRICULTURAL IMPROVEMENTS.

HAVING in my three former letters disposed of the details of my farming operations, I will now proceed to consider,

First, The imperative necessity of agricultural improvements in a national point of view, and how those improvements can be most readily effected.

Secondly, The defects in the present system of farm valuations, and evils resulting therefrom to landlord, tenant, and country.

Thirdly, The relation of landlord and tenant to each other in a pecuniary point of view; their identity of interest, and the importance of long leases, with Covenants.

Fourthly, Suggestions for rendering the Royal Agricultural Society a standard and model of agricultural improvement in every essential point.

Lastly, Popular but prevalent errors as regards agriculture, with a few general remarks.

The existence of a superfluous capital, with a superabundant unemployed population, is a dangerous anomaly, threatening, in its continuance, ultimate destruction to our nation. Luxury for the wealthy few, and poverty for the willing, but unemployed many, must produce discontent, anarchy, and ruin. It is an alarming fact, that much of our income is derived from the capital we lend to foreign countries; whilst, in our own, we dole out grudgingly, in rates and in charities, a tithe of what ought to be the just and well-earned wage of the industrious but unemployed labourer.

Ask the majority of your independent friends whence they derive their income? The widow will tell you, "My money is making a road, cutting a canal, or building a town in America." The orphan will say, "Mine is supporting a civil war in Spain or South America, or growing corn in Russia for the London market." The capitalist will report his strong-box full of bonds—Chilian, Colombian, Peruvian, Mexican, French, Spanish, Dutch, Portuguese, Russian, Austrian, Prussian, and Neapolitan (some of which, by-the-by, pay neither interest nor principal); but neither the widow, the orphan, or the capitalist will tell you their money is profitably and delightfully engaged in growing food for themselves and their families—in providing employment and profit for their fellow-countrymen, of every grade, from the labourer to the merchant. No! Agriculture has had as yet no charms for the capitalist or speculator. The one lends his money to strengthen foreign competition in agriculture, commerce, and manufactures; the other sows uselessly and prejudicially more seed than the total annual amount of our Wheat importation—the extra quantity sown actually diminishing the produce to a similar extent; yet all this takes place whilst we are complaining of superabundant capital and population, as if an industrious population could be too great. My opinion is, the more numerous we are the more prosperous we shall be, for we live by one another. The denser the population the greater our power and our trade, provided we keep our capital at home and at work amongst ourselves.

To ship off our labourers and our money is nothing less than suicide. It is giving away, economically and politically, the sinews of our strength; and I call upon every man who has the welfare of his country at heart to put a stop to it. How is this to be done? I answer, Easily; and point to my operations at Tiptree Hall Farm, as a solution of the difficulty. If every capitalist expends, as I have done, 40*l.* sterling money in improving each acre of poor and indifferent land, the sum total required would be many hundred millions. I need hardly point to the magical effect of this expenditure on our trade, commerce, and manufactures. Every individual in this country would feel it. It is too grand and delightful a prospect to hope to realise. There is too large a mass of miscalculation, ignorance, prejudice, pride, and long custom to be removed. Facts and results will scarcely do it; but reason and truth must prevail at last: and I look forward with hope that the patriotic, the intelligent, and the wealthy will exercise their influence, by example and precept, to procure so desirable a result. Agriculture is our sheet-anchor; to that we must look for employment and for profits: it is a vast field for enterprise: it is our vital strength as a nation; and one pride of country alone should stimulate us to be independent of foreigners for the supply of our daily bread—the staff of our lives.

In considering how these improvements can be most readily effected, it is quite clear that individuals generally have seldom the means, the ability, or the inclination to carry out a perfect system of agricultural improvement: it must be done by companies of associated capitalists, the same as our railways and other great undertakings. I will venture to assert from experience, that there is not, in agricultural undertakings, one tithe of the difficulty or uncertainty that attended railway operations. Rival companies will be beneficial to the public by the protection of competition. General rules, however, on fundamental principles, must be obtained by sanction of Act of Parliament; and I apprehend an examination of competent authorities would lead to a table of laws adapted to the security and profit of the shareholders, the benefit of the landowner, and the welfare of the tenant. Mortgagees might transfer their mortgages to the company, with full authority to carry out necessary improvements, on condition of receiving from the company all benefits over and above five per cent. interest for the company's capital. Should the landowner desire a sale, the company would have the opportunity of purchasing outright by public competition; or the landlord might have the power of redeeming his property, on paying the company principal and interest up to a period of sufficient notice. In all cases where there is not an absolute sale, landlords should have the power of redeeming their property or transferring it to another company, under equitable arrangements to both parties. The variations in rents and prices of corn would be no greater, on an average, than the fluctuations in railway or other shares.

As to the fear of companies engrossing land, the same objection cannot apply to them as to charities. Shareholders invest for profit, and rivalry will necessarily prevent oppression. What tenant would not rather trust to fair competition under a company than to individual favour, cupidity, or caprice, to say nothing of the uncertainty of individual life? Landlords would also benefit. Frequently now (I know several cases) a landlord, without agricultural knowledge, is prevailed upon, by a designing or an incompetent tenant, who shows an annual statement of heavy losses, to reduce his rent, till he receives but two per cent. for his money. I proceed to consider—*The propriety of valuing improvements; the defects in the present system of valuation, and its evil results to the landlord, the tenant, and the nation.*

At present a bad farmer is almost sure to get a new lease (for who is anxious to take it after him?) whilst a thorough good one is almost as certain to be turned out, or have his rent raised—the landlord being generally ready to avail himself of those improvements which a wise farmer is compelled to make for a profitable return. These improvements are *bonâ fide* his property, and ought to be legally as much so as the coat on his back; and it is a scandal and disgrace that they are not valued to the incoming tenant.

Let us see, in fact, how it acts on the landlord. I shall prove clearly he is a loser by it ultimately.

The outgoing tenant is obliged in self-defence to starve the land and injure his crops the last four years of his lease, whilst it takes the incoming tenant another four years to repair the damage done by his predecessor; so that between the two there is during eight years less

labour and capital employed, less food grown, less profit made, and an increase in the poor's rate, without any corresponding benefit to the landlord. In nine cases out of ten an improving tenant resists being charged a large interest, in the shape of increased rent, on his own capital. He makes way for a miscalculating bad farmer, who ruins the land, ruins himself, and ultimately the landlord is obliged to put up with a small rent—not, however, till all parties have been put to considerable regret, inconvenience, and expense, arising from exchange of residence, to the nothing of expensive sales, valuations, and leases, whose acquaintance with the peculiarities of a new farm, and the breaking up of many friendly and relative ties, formed during a local residence.—*J. J. Mechi, Leadenhall-street.*

(*To be continued.*)

ON MINERAL AND INORGANIC MANURES.

No. XXII.

By PROFESSOR CHARLES SPRENGEL.

(*Continued from page 480.*)

Sand.—Sand, as everybody knows, is an aggregation of loose small grains. Generally it is believed that the grains consist merely of quartz or silica, but by closer examination it is found that many grains of feldspar, mica, iron ore, silicates of potash, soda and lime, oxide of iron, &c., are amongst the main mass. If, therefore, sand is brought on fields, we must not believe that it merely improves them mechanically; on the contrary, we may assume that it furnishes them with sources of vegetable nutriment. Because, although the mineral substances of which it is composed (such as they are) are not soluble in water, still they are decomposed by the humic acid, and gradually changed into food of plants. For marshy, or very humic soils, even the quartz is a manure, as it supplies them with silica, in which they are mostly deficient. As the value of sand, as a manuring substance, consists in the quantity of those of its mineral component parts which are fit for becoming the food of plants, obviously that is to be chosen which is richest in lime, soda, potash, and magnesia silicates; this, however, can be only ascertained by chemical analysis, which has hitherto been entirely neglected. Sand, moreover, used as manure, ought to be very fine, as it will then present to the humic and carbonic acids, which have to decompose its silicates, a greater surface for contact; a clayey soil, nevertheless, which has to be loosened and improved by sand, requires that of coarse grains. Although sand, generally speaking, is only used for the improvement of clayey or very humic soils, it may be also useful for chalky soils; as this sort of soil is always deficient in that quantity of silica which is required for the food of plants, and especially for that of the cerealia.

On stiff clayey soils, which require an improved texture, a sand is to be used which contains many grains of lime, as these will loosen the soil even better than grains of quartz. On the sea-coast that sort of sand, therefore, which is thrown out by the waves, is used with much success for the improving of clayey fields, as it always contains fragments of shells, rich in carbonate of lime. It is generally first used as litter, and then carried (mixed with excrements) to the clayey fields, which, if the process is often repeated, will not only be improved physically, in the driest manner, but also become very fertile. In the manuring of clayey soils with sand, the toughness of the former will always make a thorough mixture with the sand very difficult, at least by manual labour; it will, therefore, best to leave it to Nature. The coarse-grained sand may be spread over a field to the thickness of a quarter to half an inch, at the time when it is used as pasture, as in this case it will not only be trodden in by the cattle, but will be also conveyed downwards into the small crevices which are to be found in a dried-up clayey soil*—an operation which will be also assisted by the rain-water. The first subsequent ploughing is done very shallow, and the first crop should be Oats. After the lapse of a few years, or when the field is used as a pasture, sand is again spread to the above thickness, which, in fact, is repeated until the clayey soil is changed into a loamy one. The same process is resorted to if sand is used for the improving of moors, peaty and marshy soils, be it used as a pasture, meadow, or as arable land; but here the thickness of the sand strata may be 1 to 1½ inches. It will improve the moor, if it be only by compressing it by its weight, and it will bring the organic matters to speedier decomposition.

I may state here that the proportionally bad growth of crops on soils very rich in humus depends (besides some other reasons) on their roots not finding enough oxygen in the soil; which substance, as it penetrates gradually into the ground, is seized by the carbon of the humus, and then cannot be used as food of the roots; for which, nevertheless, it, is absolutely indispensable. The following experiment will corroborate my assertion:—I selected a light loamy soil, containing 3 per cent. humus, and a considerable amount of protoxide of iron. Part of this field had borne for three years Clover, and other parts alternately Oats and Vetches; both parts were dug up together on the 28th of April to a depth of 6 inches, and without being manured at all. I planted them both at once with Oats. On that part where the Vetches had ripened the year before, the Oats grew up in three days; whilst on that which bore the Red Clover, the Oats did not come out of the ground till after 6 days. One might have supposed that the Clover-Oats should have come up to the Vetch-Oats, on account of the better nourishment at its command; but this was not the case. It stood always sickly, and it ripened in part only as the ripening period came on. This phenomenon may be thus explained:—The soil which, on the previous year, had borne Vetches, was so loose that the atmospheric oxygen had constant free access to it; and as it therefore continually supplied new matter for the oxidation of the humus as for that of the protoxide of iron, the Oats found at once as much as they required for speedy germination, and subsequent luxuriant growth. The soil, on the other hand, which had been under Clover during three years, did not afford during this period any nutriment to the oxygen; and when it was at length dug up, the humus and the protoxide of iron (perhaps also the rotting Clover-stalks), took up so much of oxygen—of which they had been so long deprived—that little remained for the roots of the Oats; and thus occasionally crops are prevented from succeeding on soils very rich in humus, to that extent which other circumstances might warrant us to expect. Humic soils will, it is true, absorb more oxygen than any other soil; but they will not keep it in a free state, as it is immediately used for the formation of carbonic and humic acids. Thence it may be deduced, that a soil which contains much undecomposed humus will be much improved if a part of the humus is destroyed, or if any large quantity of a substance be conveyed thereon, which will tend to diminish the amount of it. The former is done by burning and converting it into ashes; the latter, by covering it with a thick layer of sand, common earth, or loam. It is long since both these plans have been adopted with the best effect; and although it is beneficial in many other respects, it is chiefly so in this that the less quantity of humus will then not deprive the roots of the plants of oxygen. If a very moory meadow, or one which has been previously drained, be supplied with much sand, say to the height of 4 to 5 inches, the sour Grasses and Mosses will be suppressed; and if then Oats with Clover and Grasses are sown, they will find in the old rotting Grass such a source of rich nourishment, that they will grow very luxuriantly, at least for some time. More on this subject is found in my work on Cultivation.

If there are fields very rich in humus, where Rye is grown, sand a quarter or half-an-inch thick may also be strewed to great advantage in winter over the frozen soil; it will then also prevent the freezing of the crops during the spring. It has been stated before that sand may be used in stables as litter, and the dung thus obtained may be used as a manure on moors.

As sand is always used in large quantities, its effects are lasting, unless it sinks in marshy soil so deep as to be altogether beyond the reach of the roots; in this case it will even act no longer physically; so that the spreading of it must be repeated. Clayey and chalky soils, on the other hand, will be constantly improved by large quantities of sand, as the water cannot then carry off any of it.

* It will also be ultimately buried by the worms.

HISTORY AND CULTIVATION OF WHEAT.

In what country Wheat is indigenous is not easily ascertained; all opinions must now rest merely upon conjecture. We read of its cultivation in the earliest records of history.

The migration of seeds and plants has been assisted by the sea, the wind, and graminivorous birds, and quadrupeds, as well as by the hand of man, so that it is impossible in all countries to distinguish the indigenous from the foreign.

Wheat is now found growing in a great variety of climates—from the north of Africa to the south of Sweden—but it is more particularly in the temperate zones that it is cultivated with any success. In Norway, Sweden, and Denmark, its cultivation and consumption is very limited; if we turn our course southward we find it cultivated in abundance, and forming the principal constituent of human food; if, again, we proceed still further south, till we arrive within the tropics, we find that the indigenous plants, as Rice, Millet, Maize, &c., are more extensively cultivated as an article of food and commerce, Wheat being cultivated only occasionally. Its character appears also to accommodate itself to circumstances. Sir Joseph Banks, in one of his many papers addressed to the Horticultural Society, mentions in 1805 having received some seeds from a lady, among which was a packet labelled "Hill Wheat," the grains of which were not larger than the grains of our common Grasses, but when magnified exactly resembled Wheat. These grains he carefully sowed in his garden, and was much surprised on obtaining as the produce a good crop of spring Wheat, the grains being of the ordinary size; he made inquiries as to the history of the seed, which proved fruitless, all that could be learnt was, that they had been received from India.

It cannot be doubted that Wheat followed in the train of the conquerors of foreign lands, as we find it related in the history of Cortez, inhuman as he was, that when subduing Mexico to the Spanish yoke, he wrote thus to the King of Spain:—"I beseech your Majesty to give orders that no vessel sails from Spain without a certain quantity of grain and plants; we shall not proceed here as we have done in the islands, where we have neglected cultivation and destroyed the inhabitants; a sad experience ought to teach us otherwise." We may naturally draw from this, its introduction into our own island by the Romans, who, on their gaining a footing in Britain (54 A.C.) found the British tribes living exactly as the Indians do now, upon animals caught in hunting, and on roots and plants indigenous to the island, tillage being unknown, except along the coasts. Whether the order of Cortez was obeyed or not, we have no authentic account; but the foundation of the Wheat harvests in Mexico is said to be the produce of a few grains, which a negro slave of Cortez accidentally found in 1530 amongst some Rice; these the careful negro preserved and cultivated, while, had they fallen into careless hands, they would have been lost to the country. The introduction of Wheat into Peru was the produce of a few grains carried to Lima by the wife of Diego de Chaves; her name, and the regard she took in distributing the yearly produce of these grains amongst the inhabitants, are gratefully recorded in history. However careful she had been in distributing the blessing to Peru, its general cultivation did not commence till after the introduction of Wheat into Mexico; for in the year 1600, Wheaten bread was considered as articles of luxury, and scarcely known in the important city of Cuzco. And so grateful were the inhabitants of Chile for its introduction into that country, by a Fleming, that the records of the monastery of St. Francis preserve, as a precious relic, the rude earthen vessel in which the grains first reached that country.

In Canada Wheat is cultivated in abundance sufficient for its own population, and for exportation to the mother country, where it is received upon more advantageous terms than Wheat the produce of any part of the Continent of Europe. In the United States Wheat is cultivated, as in the temperate regions of Europe, but from improper cultivation, is of much inferior to the produce of our own island. In the Spanish Provinces of Brazil, Buenos Ayres, and Chili, Wheat is abundantly found; and it is a principal article of cultivation at the Cape of Good Hope, yielding there a return of one hundred, with a small proportion of bran. Wheat also flourishes in Australia, and is now the object of general cultivation.

The process of making bread is much similar to that used by us at the present day. We have in the east at a very early period, one to find out the people who are the discoverers, to whom we are all so much indebted. The Jews knew the art of making bread 1600 years before the Christian era, as we are informed in Holy Writ, but they were forbidden the use of leavened bread during the Passover; and there can be no doubt but they learnt the art of making bread from the Egyptians.

Pliny informs us that the ancient Gauls and Spaniards were the first to find out the secret in the process of bread-making, leavened bread being used before; and is still is, in some parts of the south-east of Ireland, and other countries. At Paris, about the 17th century, the bakers used yeast instead of leaven, but the faculty of medicine in 1668 declared it injurious to the health; and many years elapsed before the bakers could convince the public that bread raised by yeast was better than that fermented by leaven. Previous to the 16th century, there were no bakers' shops in London, which may seem strange; the inhabitants of Stratford were baked for their week's use, and they sold their bread every day except Sundays and great festivals, which was brought in carts, and they were ordered to stand—three in Cheapside, one in Cornhill, and one in Gracechurch-street.

At the commencement of the last century, Wheaten bread became generally used by the laboring class in England; for we find that in 1795, it was used in the poor-houses in the southern counties. During the 16th and 17th centuries, it was only used by the higher class, and that only on particular occasions, amounting to Eden, in the year 1747, so small was the quantity of Wheaten bread used in Northumberland that, it was, only a rich family that used a cask in the course of a year, and that was used at Christmas. The usual treat for a stranger was a thick Oatcake and Butter. The Author of the "Three Tracts on the Corn Trade," published at the beginning of the reign of George the Third, says, "It is certain that wheat-bread is become much more generally the food of the common people since 1689 than it was before that time; but it is still very far from being the food of the people in general." At that time, he calculates the number of people in England and Wales to be 6,000,000, and 3,750,000 of that number used Wheaten bread.

The estimated average consumption of Wheat in the United Kingdom, at the present time, is 12,000,000 qrs., or 96,000,000 lbs. per annum, or nearly 33,000 quarters each day.

At the present time, Wheaten bread is used more or less in all civilised countries. In Ireland, however, and some parts of Scotland, the working-class live entirely upon Oatmeal and Potatoes, with milk, when it can be procured; and in some districts, as those of Norway and Sweden, in years of scarcity, it is no uncommon occurrence to see trees stripped of their bark to make bread, the bread being made of the inner bark next the wood, first steeped in warm water, to remove its astringent flavour. It is then hung across a rope to dry, and when dry, it is ground with the Corn into meal.—*J. M'Intosh.*

Home Correspondence.

Potatoes.—There is a great failure in this neighbourhood of all sorts of Potatoes except the early ones. One thing I have observed for many years, that wherever Potatoes have been accidentally left in the ground, no matter how severe the winter's frost, such Potatoes always have vegetated early and well; and this, I conclude, is from their not having spent themselves by throwing out shoots, as they would do if taken up and caved, being thoroughly ripe. Hence I prefer those tubers as seed which have not been perfectly ripened, because not being thoroughly ripe, there is the less probability of their vegetating before being planted out.—*T. T. Hawkey.*

Late Horse-hoeing and Digging.—In reading your Leading Article on the horse-hoeing of Turnips, a query occurred to me, viz., "At what period of their growth

would the hoeing cease?" It is evident that a late brse-hoeing when the soil is permeated, as you describe, with the roots of the Turnip, so that "a handful of earth could not be taken up which was not full of these silken-looking fibres," must break into Beetle, Slugs, or Insect nests. Now, the question is, Is this breaking of the roots beneficial or injurious? The late Mr. Cobbett (or by his assistant), contended that it was beneficial, and practised in the principles of Tull (and also the Duke of Bedford) in Corn, &c. up to a very late period of their lives. They said that the composts which had been applied to the manure roots in a trifling and scattered way, were of far greater good derived from exposing the soil to the influence of the atmosphere, and from the greater vigour with which gathered by the plant when the broken roots have pushed up new rootlets. This seems an important point in agriculture as well as horticulture, not yet satisfactorily ascertained by actual experiment. In gardening, except in the case of Peas and Potatoes (and the advantages of confining their roots chiefly to ridges is not very obvious), the practice of digging is not to stir the earth except very superficially, so as merely to keep down weeds between the crops of Cabbages, Lettuces, &c. The experiment might be easily made by setting part of a plot remain under the ordinary culture, and hoeing the remainder (or digging up in the latest period of the plant's growth); and a similar experiment might be tried as to horse-hoeing part of a field of drilled Turnips or Wheat; and I should strongly advise agriculturists and horticulturists, who have the opportunity, to institute these experiments, in order to ascertain what the facts really are.—*S.* The question put by our Correspondent is a very important one: the evident advantage which has attended the practice on our own farm, of horse-hoeing, as long as the leaves of the Turnip plant will permit, would incline us to approve of Cobbett's answer to Mr. Tull, that horse-hoeing sends out a dozen branches from the cottage, and thus any temporary check which the plant may receive is soon swallowed up in the increased vigour of its growth.

Fixation of Ammonia.—In your last Number this year, I forwarded to you a statement of some interesting experiments made by me on the fixation of ammonia by sulphuric acid in liquid manure, and that gentleman has since called upon me for further particulars himself. I had hoped long before this to have said something further on the subject of experimental research in agriculture, but one thing or another has so occupied my time that I have been continually prevented from turning my thoughts to a fresh communication. I hope, however, soon to resume the subject. In the mean time I will be grateful to any of your readers who may have undertaken the little experiment I proposed last year to the farmers of Sussex, that the time is drawing nigh when I hope to have such questions answered satisfactorily filled up. By satisfactorily, I do not mean favourably to any particular result, but fairly and accurately. I have spoken with some persons who have undertaken the experiment, but they tell me they can *see* no difference between the plots supplied with the addition of the gypsum, and those destitute of it. But let me remind them all that Mr. Pusey said he could *see* no difference in the experiment he tried, but yet he obtained a most marked difference by the scales. As yet I have only received the schedule filled up—for Turnips; and in this case the results have been decidedly in favour of the application of the gypsum. Without entering into any of the details, I will just mention what the result has been; though I would say, as I have said before, I put no faith in the results of one or two, or scarcely in a dozen such experiments. The results are estimated from the data, from the proportions actually obtained:—

	Bushels.	tons.	cwt.	lbs.
Unmanured land	360	15	7	16
Unmanured dung	540	20	2	96
Do. (only half the quantity of dung)				
No manure applied	320	16	5	26
Superphosphate dung	960	17	1*	8
Do. (gypsum added after it had fermented)	960	18	8	64

—*J. S. Henslow.*

Additional System.—Two out of the three families, consisting of 22 persons, now living in comfort on only 13 acres of land were pointed to the Eastbourne and Hellingly Union Bazaar, in 1840. They keep books for the inspection of the guests who favour them by inspection; and their books contain the signatures of numerous farmers, clergymen, and members of both Houses of Parliament, confirming the truth of the statement, and the excellence of the crops they witnessed; and amongst the most recent are the signatures of the Earl of Devon and Captain Kennedy, Secretary of the Landlord and Tenant Commission, who kindly took the trouble of coming, on the 15th of June, from London, to examine, in detail, this simple plan, by which, if it were general, more might be saved in Poor-rates in England and Wales only, than the entire amount of the Income Tax from the whole of the United Kingdom.—*A. A. C.*

Guano, Natural and Artificial.—I beg leave to offer the following experiments to your notice.—I selected a Grass field, intended for Hay, and divided it into two equal parts; I top-dressed the one with Potter's artificial guano, and the other with African, at the rate of 3 cwt. per acre, both being mixed with fine sand; the result, after mowing and making into Hay, was fully double in favour of the African material. I procured the one direct from Potter's manufactory, and the other out of a ship direct from Ichaboe to this port. Now, when we take into consideration the price of Potter's guano—12*l.* per ton, and the other 7*l.* 10*s.* or 8*l.*—the difference is so enormous, that I at least shall not be induced in a hurry to use any more of the former. As by experiments only, similar to the above, can we hope to put on their guard against deception and imposition, I think everybody ought, in justice to their neighbours, to give publicity to any trials they may make of new manures or methods, noting carefully the comparative results.—*T. Stanley, Whitehaven.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY BOARD was held at the Society's House in Hanover-square, on Wednesday last, the 17th of July; present—The Right Hon. Earl Spencer, President, in the chair; Duke of Richmond; Earl of Essex; Viscount Hill; Hon. R. H. Clive, M.P.; Hon. G. H. Cavendish, M.P.; R. Archbold, Esq., M.P.; J. Baines, Esq.; T. E. Barker, Esq.; J. R. Barker, Esq.; S. Bennett, Esq.; J. I. Briscoe, Esq.; Sir A. de C. Brooke, Bt.; E. Buller, Esq., M.P.; F. Burke, Esq.; Dr. Calvert; Rev. T. Cator; Col. Challoner; F. C. Cherry, Esq.; E. Divett, Esq., M.P.; T. B. Evans, Esq.; W. Y. Freebody, Esq.; Sir J. S. Forbes, Bt.; W. F. Hobbs, Esq.; J. Kinder, Esq.; W. Miles, Esq., M.P.; E. M. Mundy, Esq.; A. Ogilvie, Esq.; E. W. W. Pendarves, Esq., M.P.; E. S. C. Pole, Esq.; Sir R. Price, Bt.; H. Price, Esq.; P. Pusey, Esq., M.P.; Prof. Sewell; W. Shaw, Esq.; R. B. Sheridan, Esq.; E. Thomas, Esq.; J. Towers, Esq.; and T. Tweed, Esq. The following new members were elected:—

Ingram, H. F. Meynell, Hodness, Rugeley, Staffs.
Platt, Henry, Priestly Farm, Hitwick, Ampthill, Beds.
Atkinson, John, Charlton, Salisbury.
Olivier, Col. H. S., Manor House, Polleme House, Devizes.
Farquharson, Henry James, Langton, Blandford, Dorset.
Biddle, Waring, Long Ham, Wimborne, Dorset.
Rayne, Robert, Flatts Farm, Bishop Auckland, Durham.
Harvey, William Francis, Purbrook Heath, Portsmouth.
Bailey, Edward, Martyrs Worthy, Winchester.
Edwards, Henry, Winchester.
Price, Charles, M.D., Brighton.
Edgell, Richard Wyatt, Milton place, Egham, Surrey.
Baker, Major T. R., Wivley Court, Plymouth.
Cartwright, George, Lyme Regis, Dorset.
Adams, Samuel, Ware, Herts.
Brookes, William, Elmstree, Tetbury, Glouc.
Gawner, Francis, Coombe Wood, Kingston, Surrey.
Kingsford, John, Esher, Surrey.
Page, James, Merton, Surrey.
Coe, Robert, Tilney, Lynn, Norfolk.
Burness, James, M. Corghill, London.
Hony, Rev. W. E., Baverstock Rectory, Salisbury.
Morrice, George, Eling, Southampton.
Withers, Richard, Luzborough Farm, Romsey, Hants.
Ashhurst, John Henry, Waterstock, Oxford.

The names of 22 Candidates for election at the next meeting were then read.

DESTRUCTION OF RATS.—Dr. Ure, F.R.S., communicated, through Mr. Pusey, M.P., the following results of his experiments on the best mode of preparing phosphorus as a poison for rats:—

"In the Journal of the Royal Agricultural Society there was published, several months ago, a prescription for preparing a poison for the above purpose, by an English gentleman resident in Germany. That preparation consisted essentially of phosphorus mixed with flour and sugar. It has been tried by a friend of mine in Derbyshire, who has a most extensive farm, and found to answer the purpose well; but there is a great difficulty in preparing it, from the insolubility, and even immiscibility, of phosphorus in water, attended with no little danger of fire. The process I have found to succeed perfectly is as follows:—Melt hogs'-lard in a bottle plunged in water heated to about 150 deg. Fah.; introduce into it half-an-ounce of phosphorus for every pound of lard; then add a pint of proof-spirit, or whisky: cork the bottle firmly after its contents have been heated to 150 deg., taking it at the same time out of the water-bath, and agitate smartly till the phosphorus becomes uniformly diffused, forming a milky-looking liquid. This mixture being cooled, with occasional agitation at first, will afford a white compound of phosphorus and lard, from which the spirit spontaneously separates, and may be poured off to be used again, for none of it enters into the combination; but it merely serves to comminute the phosphorus, and to diffuse it in very fine particles through the lard. This fatty compound, on being warmed very gently, may be poured out into a mixture of Wheat-flour and sugar incorporated therewith, and then flavoured with oil of Rhodium, or not, at pleasure. The flavour may be varied with oil of aniseed, &c. This dough, being made into pellets, is to be laid in rat-holes. By its luminousness in the dark, it attracts their notice, and being agreeable to their palates and noses, it is readily eaten, and proves certainly fatal. They soon are seen issuing from their lurking places to seek for water to quench their burning thirst and bowels; and they commonly die near the water. They continue to eat it as long as it is offered to them, without being deterred by the fate of their fellows, as is known to be the case with arsenical doses. My friend in Derbyshire bought a pot of Mr. Meyer's rat-poison, and found it to be an analogous phosphoric preparation. The present mode of preparing it is the result of my own experiments, made with the view of diffusing phosphorus through a mass of flour and sugar, &c, without the risk of fire."

The paper in the Society's Journal, referred to by Dr. Ure, will be found in the third volume, page 428, and was communicated to the Society by Captain Stanley Carr, of Tüschenbeck, near Lübeck, in the duchy of Lauenburg. It may be an easy guide for those members of the Society who are desirous of following Dr. Ure's prescription, and may not have a thermometer at hand, to know that a temperature of 150° of Fahrenheit is equivalent to a degree of heat midway between that at which (according to Schübler) white-of-egg coagulates and white wax melts.

Mr. Miles, M.P., stated the success with which Captain Carr's remedy for destroying rats had been tried by himself and others in Somersetshire, and the extraordinary manner in which they came to eat it.

[The remainder of our report of the proceedings of the last and previous Weekly Councils, and of the two intermediate Special Councils, are unavoidably postponed.]

AGRICULTURAL CHEMISTRY ASSOCIATION.

The committee of management, in their Report, read at the half-yearly general meeting of the Association in January last, announced to the subscribers that Professor Johnston had shortly before then obtained premises for a laboratory, and had engaged several experienced chemists to assist him in his duties; and they expressed a belief that when the arrangements were completed, and when it became known to members of the Association, and to the public, that they were ready to begin work, full employment would be given them. The committee will now briefly narrate what has been done by themselves and by Professor Johnston to carry into effect the objects of the Association. Following the two great leading principles on which it was founded, namely, the diffusion of existing knowledge as to the application of chemistry to agriculture, and the enlargement of that knowledge, the committee will notice, first, what has been done in the way of lectures and other methods of affording information; and, secondly, what has been done by analytic investigations in the laboratory for the guidance of agriculturists and the advancement of the science. 1. It may be remembered that the committee in January last announced, that by way of an opening to the business of the Association, Professor Johnston had, at the solicitation of a number of leading agriculturists in the neighbourhood of Edinburgh, agreed to give three lectures on subjects of general interest. These lectures were accordingly given, and by the numerous assemblages of both landlords and tenants which they produced, proved the deep interest felt in the objects of this institution, as well as the earliest qualifications of Professor Johnston for the duties of the office he had undertaken. These lectures in Edinburgh were, after a short interval, followed by invitations from various local agricultural societies throughout the country to Professor Johnston to deliver similar lectures at the great towns with which they were connected. The subjects of lecture were the General Theory of Manures—Food of Plants—Uses of Manures—Mode of applying them—Methods of improving the Soil—the Benefit of Draining—the Use of Lime—the Qualities and Use of Guano—and the Feeding of Stock. The committee cannot doubt that one result of these visits by Professor Johnston to different districts was to stimulate and extend the desire among both proprietors and tenants for information on the subject of scientific agriculture. Within the last 12 months no less than seven or eight periodicals have been started in Scotland, and three of them within the last three months, exclusively devoted to the diffusion of information on the subject of Agricultural Chemistry and its practical used. Further, it deserves to be mentioned, that several of the parochial schoolmasters in the west of Scotland, perceiving the wishes of the farmers, that their children should imbibe some knowledge on these subjects, and at all events a taste for them, for which one lesson in the week might suffice, prevailed on Professor Johnston to compose a little treatise of a popular nature for their use; and one of them has recently applied to him to learn whether during the vacation of his school he may be permitted to attend the laboratory in Edinburgh, with the view of making himself more familiar with the science. That this is not to be traced to any fanciful idea of his own, is clear from the fact that the farmers of his neighbourhood have agreed to raise a sum of money among themselves to defray his expenses. If either this year, or in a future year, a sufficient number of such applications were made, the committee are happy to announce that Professor Johnston would be willing to give a gratuitous course of lectures to schoolmasters during three weeks of their autumn vacation. 2. The committee have the satisfaction of stating that the advantage of knowing something of the chemical nature of soils, manures, and other substances connected with farming operations is now becoming universally acknowledged and acted on; in proof of which it is enough to mention that during the last six months no less than 242 analyses, of one kind or another, have been performed by Professor Johnston and his assistants—being on an average more than one-and-a-half for every lawful day. When the delicate nature of many of these analyses is considered—some of them requiring many days for their performance, it will be acknowledged that in this department a very large amount of work has been accomplished. The subjects of these 242 analyses were as follow:—Soils, 90; Guano, 77; Waters, 25; Ashes of Plants, 14; Marls, 9; Miscellaneous, 27. The committee may here refer to some of the cases of analyses made in the laboratory, in order to point out to persons who are not members of the Association the practical benefits derived from such information. They will give some instances under different heads:—1. As to Analysis of Soils. Mr. F., a proprietor in the west of Scotland, having sent some samples of soils from his estate for examination, wrote as follows to Professor Johnston, after receiving the analysis:—"From your analysis of my soils it appears that they are deficient in magnesia and the phosphates, which accounts fully for the very beneficial effects of both these substances when applied to my soils as a manure.

It is a striking instance of the benefit that may be obtained from accurate analysis, showing that time may be saved by minute attention to the indications, and that the total failure of a crop may be prevented." 2. As to the Analysis of Guanos.—These several kinds of artificial guano, well known in the market under different names, and selling at as high a rate as natural guano, were during the last six months sent to the laboratory by members of the Association, that their agricultural value might be determined. In each case it was found that the prices charged were from one-third to one-half above the real value of the compound, and that in truth it would be better to spend the sum proposed to be laid out on these mixtures, in buying natural guano. It is hardly necessary to add that the advice so given was very readily followed. But the farmer must be on his guard against adulterations, even in what is sold as natural guano; for very recently a large quantity of a manure alleged to be genuine guano, was sent down to Dumfries for sale there, by one of the most respectable houses in London, which on examination was found to contain 75 per cent. of chalk, and to have been coloured by spent bark ground to a fine powder. The committee may farther mention under this head that a chemical manufacturer in Leith had a quantity of waste refuse, considered of no value, and which had accumulated on his premises—to the extent of about 100 tons—when it occurred to him to send a sample of it for analysis to Professor Johnston. He found that it contained substances extremely valuable as a manure, and recommended that it should be sold as such, at the rate of 3*l.* per ton. The result of this discovery has been, as may be supposed, eminently beneficial, not only to the manufacturer, but to the farmer, and in so far to the country at large. Further, the committee may refer, in illustration of the benefits derived from analysis, to a letter addressed to their secretary, by a member of the Association, and one who is himself an extensive farmer:—"Sir—In answer to your query, Whether or not, as a practical farmer, I have as yet benefited from the existence of the Agricultural Chemistry Association? I beg to say that my annual outlay for foreign manures, such as rape-dust, guano, bones, &c. upon an average of years is much about 150*l.* Previous to the existence of the Association, I was obliged to make my purchases, with no other means of judging of their probable genuineness or fertilising properties than by what their appearance indicated, but this last season I have invariably made my selection after obtaining a minute analysis of the different samples, and choosing the one most favourably reported on by the chemist, and, upon delivery of the stock had a second analysis performed, in order to satisfy me that it was not inferior to the samples from which I bought. I have no hesitation, therefore, in concluding that, by such means, I have been enabled to spend my money with a degree of certainty and satisfaction, which amply repaid me for the trifling expenses I incurred. In illustration, I may mention that part of a cargo from which I obtained my supply was found inferior to the rest by 10 per cent., but I, of course, was enabled, by the plan adopted, to demand compensation, which was immediately conceded. With regard, likewise, to the feeding of my live stock:—Having obtained from merchants samples of such foreign cake as they had, I submitted them for analysation to Professor Johnston, and from amongst them was enabled to select one which was offered to me as a manure, which I purchased at 85*s.* per ton. Having confidence in what it was composed of, I gave a regular supply to a breeding stock of black-faced ewes, at a very small cost indeed; and I am not exaggerating my probable gain, by that discovery, at from 50*l.* to 60*l.* The ewes, though feeding on stinted hilly pasture, were in a condition, at lambing time, never witnessed in former seasons. I have never as yet got any soil analysed; but I doubt not that much ignorance prevails among farmers as to the application of lime; and by simply obtaining a correct report from the chemist as to whether that ingredient is present to the necessary extent in the soil, one might determine upon a system of management, either most profitable to adopt, or save themselves an outlay which might be very needlessly and ruinously made. I trust many of the difficulties that presently embarrass practical men, will be gradually removed when the officer of your Association obtains a better acquaintance with practical agriculture, and thus better enabled to test, by the aid of science, those conflicting results which so often baffle and perplex the most experienced and enlightened farmers. What I have mentioned will, I hope, be considered a sufficient answer to your query. I am a rent-paying farmer, and must not lose sight of profit and loss. I have no idea of substituting mere theory for practical results, but I envy not the landlord or tenant who will refuse to consult a man of science, in order to see whether or not the art might be advanced, by which they not only live, but for its improvement are responsible to the whole community."

Whilst thus explaining the great practical benefits afforded by chemical analysis, the committee would beg to remind subscribers that in applying to Professor Johnston it is material that the party should inform him of the precise object he has in view, seeing that testing for a particular ingredient can be had for 3*s.*, whilst an analysis ascertains all the ingredients, and costs at least 12*s.* 6*d.* To assist subscribers in this matter, the committee intend to draw up and circulate among them a list of charges, with such explanations as will remove all difficulty. And here the committee would take the opportunity of adverting to the cheapness of the terms on which these benefits may be obtained through the medium of the Association. Most persons not being aware of the labour and cost attending chemical analysis, [illegible] that [illegible] been [illegible] by Professor Johnston during the last six months. These expenses, consisting of travelling expenses, attendance, assistants, chemical apparatus, &c. &c.—amount to 250*l.*, which, with the 242*l.* 10*s.* previously paid during that year, make 492*l.* 10*s.* of the sum received, thus leaving a balance on the hands of Professor Johnston of 193*l.*, and intimating to that effect his income out of the subscriptions received by the committee of management. The laboure has been useful, however, in another way than in merely affording analyses to subscribers. It has been employed also in extending our knowledge of the science of Agricultural Chemistry, of which the committee might give several interesting illustrations. But here they would be out of place, and other means will be adopted for bringing them before the public. It appears, however, from some of these researches that the ash of plants varies much more in composition according to the soil and manure in which they are grown, than has hitherto been supposed; and that more is really within the power of the skilful farmer, in the way of modifying the nature of the vegetable food he raises, than without these researches could have been expected. In Mr. Johnston's Report, lately distributed among the members of the Association, mention was made of the composition of Turnips raised with guano and with farm-yard manure; some experiments recently made with the same Turnips, under the direction of Lord Blantyre, have shown that they not only differ in composition, but have very different feeding properties, thus showing the connection between the manure employed and the value of the food raised.—Sir John Hope moved that the meeting approve of the Report now read, and give their best thanks to the committee of management for their services during the last six months.—Mr. Scott of Craiglockhart seconded the motion. Every one (he said) must be convinced that the institution had done a great deal of good to practical agriculture; and especially in relation to the testing of guano. A subject to which he was desirous of alluding was the disease of Potatoes. It extended this year further than it did the last year, and if it continued to extend in the same proportion in which it had done during the two last years, the consequences to the country would be most disastrous. The diseases, which were three in number, he considered to be of so many several kinds, and he thought it would be extremely desirable for the Association to endeavour to throw some light upon the subject. Many of the most careful and most experienced agriculturists were at this moment suffering from it to a very great extent, notwithstanding the exercise of every precaution which skill and experience could suggest.—Mr. Milne, advocate, as one of the committee of management, thanked the meeting for the approval of the Report, and expressed satisfaction at the manner in which Mr. Scott, a practical farmer, had expressed his approbation of the way in which they had brought the Association to its present state. Before sitting down, there were two points to which he was desirous of calling the attention of the meeting. One was the advantage of obtaining analyses of manures; the other the advantages of agricultural schools. In regard to the first, it was inconceivable what a vast sum of money was expended by the agriculturists of this country for manures. They all knew that farm-yard manure was generally insufficient for the purposes of cultivation, and, therefore, recourse must be had to other manures. One farmer expended 150*l.* a-year on foreign manures; and he (Mr. M.) held in his hand a note of the sums expended on an average in the year for manures, as follows:—Bone-dust, 91,755*l.*; rape cake and rape-seed, 169,331*l.*; guano (being the amount imported, not for the country at large, but to Liverpool alone, in one year), 59,240*l.*; being a total of upwards of 320,000*l.* These were the sums expended in manures; and if they were to believe the accounts in the newspapers, which stated that 300 vessels are to be sent to bring home guano, they would soon have an expenditure by the farmers of several millions for this article alone. Now, it was of the greatest importance to check adulteration in guano, because it was hardly possible to take up one of the new publications devoted to this subject, without seeing the enormous extent to which the industrious farmers of this country were defrauded by its adulteration. He had brought with him a number of the *Gardeners' Chronicle*, edited by Professor Lindley, a periodical which was of essential service to agriculture. In this publication many places were mentioned where manures were sold, containing hardly one of those substances whose specific virtues were required. (Mr. Milne then read several extracts from the publication in question, detailing cases at Hull, in Cheshire, and Dumfriesshire, in which guano and bone-ash were sold as pure, although they were adulterated to an almost incredible extent with other substances, either of a noxious nature, or useless as manure. It was a remarkable fact, he continued, that while England had been inundated with these spurious mixtures, Scotland had been in a great measure free of them; for it appeared that of the seventy-seven analyses of Professor Johnston, not one of them had been spurious. Whether or not these dishonest dealers were afraid of venturing upon our soil, knowing that a check existed, and that there was, therefore, a risk of exposure, he did not know; but such was the fact. He mentioned this to show of what consequence it was to the farmers, who spend such large sums upon manures, to have the means of protecting themselves against these frauds, which had the effect of causing them not only to throw away their money, but also to injure their land and their cattle.—A motion for a vote of thanks to Mr. Coventry was then unanimously agreed to, and the meeting then broke up.—*Agricultural Journal of the Caledonian Mercury Courant.*

FARMERS' CLUBS.

Burton-upon-Trent.—At the usual monthly meeting, Mr. Tunbury read a paper on "The Application of Steam to Agricultural Purposes." He had erected a steam-engine on his farm, and had applied its power to a threshing-machine, a chaff-cutter, and a corn-crushing machine, and had connected with it an apparatus for the steaming of cattle provender. The outlay had been considerable, and would have been better repaid on a larger farm, as the engine and machinery was capable of doing three or four times the work he required it to do. Still, taking into consideration the saving he had effected in threshing his corn, and in a more economical plan of feeding his cattle and horses through the winter, the result had been on the whole very advantageous to him. The whole outlay for his six-horse-power engine, and the rest of the machinery, was about 180*l.* The interest on this sum, together with an allowance for wear and tear, he calculated at 15*l.* 15*s.* He had used his threshing-machine 23½ days. He required, on an average, the labour of one man and four women, besides his own superintendence, and his coals cost about 2*s.* 6*d.* each day. The whole expense in labour had amounted to rather more than 8*l.* Reckoning Wheat at 5*d.* per bushel, Barley at 2*s.* per quarter, and Oats at 1*s.* 8*d.*, the quantity of corn he had threshed would have amounted to rather more than 36*l.* if threshed by hand. The saving effected by the threshing-machine had therefore more than repaid the whole annual expense of the outlay; but in the cutting and steaming cattle food he had, as he thought, saved much more. With regard to the steaming of food there were various opinions. The experiments which had been tried seemed to prove that no advantage attended it in the case of grain or roots; and though it was admitted that the steaming of dry fodder enabled cattle to extract a larger portion of nutriment from a given quantity, yet it was doubted whether the cost of the process did not outweigh the advantage gained. He was of opinion that where the cost could be reduced to so insignificant a sum as by his method, the advantage was great. The effect of steaming was not to alter the nature of the food: it did not convert poor food into rich: its simple effect was to render more of the nutritious part of the food digestible. By bruising grain, every particle was exposed to the action of the juices of the stomach; and cattle could break down the substance of roots and green crops thoroughly with their teeth; but in dry fodder some part of the nutriment escaped the action of the stomach, because the fibre could not be thoroughly broken up by mastication. By cutting fodder into short lengths, and steaming, it was rendered tender, and was made to resemble green food. By steaming, both hay and straw might be made more nutritious, and we might substitute a portion of straw for hay, and still keep cattle doing as well as on dry hay alone. He thought it a great advantage to consume a good part of the straw as provender, provided you could do so, and yet keep cattle in condition. The necessity of mowing pastures to a large extent was thereby avoided; it was unprofitable to exhaust pastures by mowing them, and to repair the waste by manure. The manure would be better employed on the arable land, and the pasture would yield a better profit by having its produce consumed on the ground. During the last winter he had 90 head of neat cattle and horses, and he fed them during the whole time on steamed hay and straw. He had a simple apparatus for steaming attached to the boiler of his engine, by means of which the chaff was steamed with great quickness. The coals for the work of the engine and for the steaming, each time cost 1*s.* He cut and steamed 600 or 700 strikes twice a week, and the labour of two men for two hours was sufficient. The cost was not, therefore, more than 4*s.* a week for steaming the food of 90 head of stock. Up to the 14th of February he kept all his stock on one-third hay mixed with two-thirds straw. After that time, finding his cows get in low condition, he used half straw and half hay, and gave the milking beasts a foddering of hay morning and night. As they calved he added a pound of linseed to their steamed food. With this diet his cows grew fast and got into milk as well as he ever remembered. Contrasting his consumption of hay in this and former years, he calculated that he had saved 40 tons; but he thought that if he had used 10 tons more it would have been better, and he therefore set down 30 tons as his saving. The difference between the consuming price of 30 tons of hay and the 30 tons of straw which supplied its place, reckoning hay at 3*l.* 10*s.*, and straw at 1*l.* 5*s.*, would amount to 67*l.* 10*s.*, while the expense of cutting and steaming amounted to less than 5*l.* A very general opinion was expressed that it was more advantageous to have Barley threshed by the flail: when thrashed by machine the pile was cut off so close that it turned out much less measure. Mr. Payne would, notwithstanding the greater weight of samples threshed by machine, prefer Barley threshed by flail at 2*s.* per quarter more, for the purpose of malting. Except for very extensive farms, it was thought that the great outlay required for steam-power, rendered it more expedient to use either the flail or horse-power machines, unless the landlord would be at the cost of erecting the necessary buildings.

Darlington.—At the late monthly meeting of this Club, the subject for discussion was, The comparative Advantages of Stall and Pasture-feeding for Draught Horses and other Cattle during Summer; with the best and most profitable Green Fodder for Soiling or Stall-feeding. A

discussion ensued, during which the whole subject was brought under review. When the meeting was in opinion that it was in most respects decidedly preferable to soil draught horses with green food during summer, but more particularly in consequence of their being able to feed in a much shorter space of time on green Tares or Clover laid before them, than what they could do if turned out to pasture. They would obtain more rest, would not be teased by flies and other insects, and by those means would keep in better condition; besides, a much less quantity of land would keep a team of draught horses or any other heavy cattle when confined in the stall or yard, than would be required if they were pastured upon the land. A greater quantity as well as a better quality of manure would also be produced by soiling, for in dry weather during summer the cattle droppings in the pastures are dried by the sun and wind, so that a considerable portion of the soluble matter evaporates and is lost, whereas the manure produced by soiling in-doors can be preserved of good quality in much greater quantity, and can be applied to the land with greater advantage at suitable seasons. As to milk cows and feeding beasts the Club were not so unanimous with regard to soiling them during summer, and further experience seemed to be wanting in soiling heavy-horned cattle. Some doubts were also expressed by one or two members as to the suitableness of green Tares or Clover for milch cows, they believing that this kind of food had the effect of causing the butter produced therefrom to be light and oily, and also that green Tares produced thin and poor milk; however, the majority were in favour of soiling all heavy cattle during summer, believing by that means that a much greater number of cattle might be kept on a farm than what could be done by turning them upon the land to depasture. With regard to the best and most profitable kind of green food for soiling, the unanimous opinion was that winter and spring Tares, in conjunction with Clover, with a little Italian Rye-grass sown amongst it, were the best and most profitable for soiling in this part of the kingdom, but that Clover, so far as it could be made available, was preferable to Tares, it being generally believed that draught horses fed upon green Clover, stood their work, and kept their condition better than when fed upon green Tares; whilst, at the same time, Tares are believed to exhaust the land more than Clover. At the conclusion of the discussion, the secretary laid before the meeting 21 handsomely bound volumes of "The Journal of Agriculture," and Prize Essays and Transactions of the Highland Agricultural Society of Scotland, which were presented to the Club by Lord H. Vane, M.P., and John Bowes, Esq., M.P., representatives of South Durham. A unanimous vote of thanks was awarded to them for this very valuable donation of books, and for their kindness in encouraging and supporting the interests of the Darlington Farmers' Club and the science of agriculture generally. The subjects fixed for discussion at the next monthly meeting of the Club are—The best Method of making and securing Hay; and the best Season of the Year for applying Manure to Grass lands.—*Yorkshire Gazette.*

East Cornwall.—At the late meeting of this Society F. Rodd, Esq., of Trebartha, detailed some experiments he had made on manures of different kinds. North-hill Lower-park, the subsoil of which is slate and spar, value about 18*s.* per acre, he had manured with Turnip-tops and roots as a manure for Wheat. It was ploughed at Christmas, 1841. One portion was tilled with Turnips, and another with Potatoes, the whole being equally manured with a compost of lime and earth, with the addition of some farm-yard dung. The produce was about 240 bushels of Potatoes and about 30 tons of Turnips per customary acre. In November, 1842, the Potatoes and Turnips were carted away, first cutting off the tops and roots of the latter, and laying them in the furrows after the plough, during the process of preparing that portion of the field on which the Turnips had grown. The produce of Wheat the following year was, on the Turnip ground, 36 Winchester bushels of grain, and on the Potato, 28 bushels per customary acre. On a small portion of the Turnip ground, no Turnip leaves were laid, and on this part the crop of Wheat was decidedly inferior to the part so manured; while that in the Potato ground was inferior to both. The whole of this field was now in Barley, and there was a fine and promising crop throughout, but presenting no visible difference in favour of the Turnip ground. Outer North-hill-park, adjoining the last field, and similar to it in all respects, was in 1842 in Grass, and treated precisely the same as the former—one part of it being filled with Turnips and the other with Potatoes. In 1843 the leaves of the Turnips were laid as before in the furrows of the Turnip ground preparatory to the Wheat tillage. The Wheat now growing on the Turnip ground maintains the same apparent superiority over that on the Potato ground, as shown in the previous instance. A portion, however, of the Wheat on the Potato ground received, in the spring of the present year, a quantity of undiluted liquid manure, in the proportion of 46 hogsheads to the acre. The Wheat thus treated is far superior in its growth and appearance even to that grown on the Turnip ground and manured with the tops. But the plant on which the liquid manure had produced the greatest effect, was the Cabbage, which in some instances had been forced by it to double and even treble its ordinary size, not to mention the copious after-crop of sprouts from the old stump. An experiment on the effect of folding sheep on Wheat had been tried on a field of his, the subsoil of which was spar and slate, worth 1*l.* per acre. In 1843, it was ploughed down and prepared for Wheat, manured with 20 loads of dung, mixed with double that quantity of earth, and tilled in the following October. In March, 1844, he folded fourscore sheep, and twelve cattle nightly in the proportion of from 600 to 1000 sheep to the acre, changing their ground every night, and turning them into Grass pasture by day. The difference between the Wheat grown on the folded ground, and on the portion not folded, was very manifest. Specimens of Wheat effected by the foregoing modes of management were produced, fully confirming the statements made.

Netherens.—In May 1843 it was resolved by this Club that the best method of keeping Clover-seed for a longer period than a year was as follows:—The seed should be made thoroughly dry, placed in casks about three-fourths full, tightly stopped, and frequently rolled during the time it is kept. In June it was considered that drills from 15 inches to 20 inches apart on a flat surface, and 27 inches on ridges, would be best for drilling Swede Turnips, and that a pint and a half of good seed would be enough per acre. In December, the best sorts of Wheat for early and late sowing was the topic introduced, when it was considered that the best sorts for early sowing in this neighbourhood are Honeyball and Brown's Prolific; and for late, Redstraw or old Lammas.

Stevenage.—At the late meeting of this Club, Mr. W. Griffithes, being called upon, read a paper on The best Method of Harvesting Corn, from which the following are extracts:—"I think the kind of Wheat, whether red or white, and the difference of soil upon which it is grown, has something to do with the state of ripeness in which it should be cut, believing, from the little experience I have had, that Wheat grown upon strong soil—Wheat and Bean-land—is more injured in appearance of sample by being allowed to get ripe, than Wheat grown upon light soil, or what is termed Turnip and Barley-land. I find my Wheat, which is cut first, and consequently generally greener than that succeeding it, the best sample, and most pleasing to the millers, whose taste in this particular I endeavour most especially to gratify. I should say the best time to cut Wheat is when it is arrived at that state of ripeness sufficient to admit of its being cut without causing the Corn to shrivel or contract into wrinkles, by which we may secure plump, well-filled culms, with a bright thin skin upon them. I have not observed that white Wheat, in the sale of it, is so much affected by being suffered to get quite ripe, as red Wheat is; but as the sorts are frequently grown upon different soil, the advantage, if any, may arise from that cause. As to the manner of cutting Wheat, whether with scythe, or broad hook, or sickle, I consider the scythe and broad hook equal in many respects (except in tying up of the sheaf, which is not always done, I had nearly said, could not be done in so workman-like a manner after the former as the latter). The land from which the Wheat has been cut with either broad hook or scythe, certainly gains many advantages over that from which the Wheat has been cut with the sickle, the chief benefits of which system seem to consist in the appearance and handiness of the Corn after it is cut, which is certainly better in many respects. With regard to Barley, to the production of which a large portion of the land in this neighbourhood is appropriated, and the quality of which may be affected by its state of ripenness when cut, I am of opinion that it should be allowed to get nearly ripe; it is injured by being cut before being ripe enough. Barley is also much affected by the after management in the field in wet weather; and as situation has much influence over that, I would rather leave to every person's judgment the selection from the different plans adopted of what suited his circumstances. The waggons used for carrying grain in harvest time have been (the generality of them) built with the view of carrying much heavier loads, and consequently are much heavier and stronger than would be required for the purpose of carrying grain in the straw; but if waggons were built for the purpose, and so constructed that the fore-wheels would turn under the chest, as some at present do, which enables them to be turned nearly as short as a cart, I think they would then be the best adapted for that purpose in this country. In some parts of England, and the whole of Scotland (whence so many agricultural wonders come), carts are used solely for that purpose, I believe; but from what I have seen done with carts, and when used by their advocates too in this neighbourhood, at harvest work, I make no wonder that more converts to the system are not made. As regards the best place for making ricks, whether in the field or rickyard, I cannot conceive it to be good policy to draw grain a long distance home in a very busy time, however pleasurable the sight of a well-filled rickyard may be, as there is generally more loss of time when waggons have a long distance to go and come than when ricks are made in the field, from which they can be removed in winter at much less expense than in harvest. Thus have I gone over the different subjects intrusted to me, and though in a very inefficient manner, still let me beg of you to make up the deficiency by your discussion and elucidation of them, so that the subject may not suffer on my account.

'If a better system's thine,
Impart it frankly, or make use of mine.'"

The paper was received with much satisfaction by the meeting, when an animated discussion arose amongst the members present, and it was finally resolved "That it is advisable to cut Wheat generally a little before it is ripe, and that the best manner for cutting, on an average of years, is with the sickle; that waggons of a light construction are preferable to carts, and that the best place for making ricks when at a distance is in the fields."

Reviews.

Lectures on Agricultural Chemistry and Geology.—By James F. W. Johnston, M.A., F.R.SS., L. and E. Reader in Chemistry and Mineralogy in the University of Durham, &c. William Blackwood and Son, Edinburgh.

It is not one of the slightest merits of this work, that many of the early Lectures published in it, were actually delivered to an Agricultural Society—to farmers, in fact, "most of whom possessed no knowledge whatever of scientific Chemistry or Geology. They commence, therefore, with the discussion of those elementary principles, which are necessary to a proper understanding of each branch of the subject. Everything in such Lectures, which is not—or may not be—easily understood by those to whom they are addressed, is worse than useless."*

And thus, while it is a complete work on Agricultural Chemistry, giving all the explanations and suggestions which can be founded on the science in its present state, it may at the same time be understood by any one altogether ignorant of the science, who will take the trouble to read it through from the beginning.

The first Lectures contain the materials by which, in those which follow, the details of agricultural management are explained, and improvements in it are suggested. Thus, one of the last subjects treated of is the very important one—the conversion of vegetable matter into the substance of animals. This properly occupies the latest attention of a lecturer on Agricultural Chemistry, as it is itself one of the *ultimate* objects to which the whole practice of farming tends. The following summary of the views of Chemists on this subject, is extracted from the last Lecture of the series:—

"1. It appears that all vegetables contain ready formed—that is, form during their growth from the food on which they live—those substances of which the parts of animals are composed.

"2. That from the vegetable food it eats, the animal draws directly and ready-formed the materials of its own body—phosphates to form the bones, gluten, &c., to build up its muscles, and oil to lay on in the form of fat.

"3. That during the process of respiration a full-grown man throws off from his lungs about 8 oz., a cow or horse five times as much, of carbon every 24 hours; and that the main office of the starch, gum, and sugar of vegetable food is to supply this carbon. In carnivorous animals it is supplied by the fat of their food, in starving animals by the fat of their own bodies, and in young animals, which live upon milk, by the milk sugar it contains.

"4. That muscles, bones, skin, and hair undergo a certain necessary daily waste of substance, a portion of each being removed every day and carried out of the body in the excretions. The main function of the gluten, the phosphates, and the saline substances in the food of the full-grown animal is to replace the portions of the body which are thus removed, and to sustain its original condition. Exercise increases this natural waste and accelerates the breathing also, so as to render necessary a larger *sustaining* supply of food, a larger daily quantity to keep the animal in condition.

"5. That the fat of the body is generally derived from the fat of the vegetable food—which fat undergoes during digestion a change or transformation by which it is converted into the peculiar kinds of fat which are specially fitted to the body of the animal that eats it. In carnivorous animals the fat is derived directly from the fat of their food, which is, in like manner, changed in order to adapt it to the constitution of their own bodies. In cases of emergency it is probable that fat may be formed in the animal from the starch or sugar of the food.

"6. In the growing animal, the food has a double function to perform: it must *sustain* and it must *increase* the body. Hence, if the animal be merely increasing in fat, the food, besides what is necessary to make up for the daily waste of various kinds, must also supply an additional proportion of oil or fat. To the growing animal, on the other hand, it must supply also an additional quantity of gluten for the muscles, and of phosphates for the bones. If to each of a number of animals equal quantities of the same kind of food be given, then those which require the smallest quantity of food to sustain them will have the largest proportion to convert into parts of their own substance. Hence, whatever tends to increase the sustaining quantity—and cold, exercise, and uneasiness do so—will tend, in an equal degree, to lessen the value of a given weight of food, in adding to the weight of the animal's body. To the pregnant and to the milk cow the same remarks apply. The food is partly expended in the production of milk, and the smaller and leaner the cow is, less food being required to sustain the body, the more will remain for the production of milk.

"7. Lastly, that the quantity and quality of the dung, while they depend in part upon the kind of food with which the animal is fed, yet even when the same kind of food is given, are materially affected by the *purpose* for which the animal is fed. If it be full-grown and merely kept in condition, the dung contains all that was present in the food, except the carbon that has escaped from the lungs. If it be a growing animal, then a portion of the phosphates and gluten of the food are retained to add to its bones and muscles, and hence the dung is something less in quantity, and considerably inferior in quality to that of the full-grown animal.

"So it is in the case of the milk cow, which consumes comparatively little in sustaining her own body, but exhausts all the food that passes through her digestive

* Preface to Professor Johnston's Lectures.

organ for the production of the milk which is to feed her young. The reverse takes place with the fattening ox. He takes little else from the rich additional food he eats but the fat with which it is intended that he should invest his own body. [illegible] for the most part, lost in his stertorous, and hence the hoarseness and [illegible]

[illegible]

Potato Blossoms.—Early in the month of last season was divided [illegible] one side and one-third on the other, and pulling off the blossoms from the latter third, thereby to [illegible] the whole field, [illegible] theory with the other the blossom-bearing stalk takes [illegible] that it did not do more than this third, but [illegible] and also induced [illegible] the flowering habit of the field. This third was planted in the middle of April, the remainder towards the end of that month. Those from which the blossoms were pulled were much more productive, and also produced [illegible] in quality and appearance to the other portion of the field. Being [illegible] particular in the selection of my seed, I had them sorted as usual, when drawing home in winter, into separate pits, those for seed being put in small pits, two feet wide, and those for sale or consumption in pits five or six feet wide. The seed put in the small pits for seed was selected from the two-thirds spun in the end of April, as I always heard it recommended to use the late rather than the early seed; this sorting, remember then, was from the Potatoes from which no blossoms were pulled last season. This season we commenced planting on the 20th of April, from the seed so selected and pitted in the small pits; but as the seed was short, we opened the large six-feet wide pit, and sowed nearly as much more; the only difference beside the seed was, that what was allowed to blossom last season had fine, well-rotted, well-prepared dung, while the latter got manure recently gathered from the yard, fresh and strawy; the difference now, however, is very great—those from which the blossoms were taken having [illegible] stronger, and far outstripping the other, although from the same pits, and were taken from the very best in the neighbourhood. These are sound tubers, but not one from the unblossomed seed, which were [illegible] when accidentally cut with the spade, and [illegible] the others, [illegible] equal; but this cannot be said of the others. In a few places where the seed of the unblossomed ones happened to be dropped, and the [illegible] of the drill, exposed to the great drought of this season, it grew and took [illegible] sprung up, [illegible] round the set into the ground, but the others, wherever displaced, shrivelled up and decayed. Thus it is [illegible] that good sound seed will not be [illegible] or prevented from growing by almost any neglect; while tainted seed, be it ever so sound in appearance, can scarcely be kept alive even with the greatest care. I have great care in planting and manuring [illegible] and yet the crop grows slowly, [illegible] it is an evidence that the seed was not the soundest, and that but for the care taken they would not have grown at all. To the weakness of the seed all failure may be traced; and therefore to grow and preserve the seed should be the chief [illegible] in Potato culture. So far for the [illegible] result; and in theory I believe botanists would advise that to pull off the bloom will add to the tubers below, [illegible] to the quality and soundness, the above, [illegible] satisfies me. You are aware of [illegible] being kept alive for two, three, or more years, by depriving them of the bloom as it appears: the above sort of [illegible] does not generally bear berries; still if keeping the blossoms off prolongs the existence of the plants, as it did with me last season, they will, of course, during the growing season, be adding to the quantity and quality of the tubers below; for of two objects to be attained by a plant—that of bearing seed above, and ripening tubers below—it will surely do one much more perfectly if its energy be confined to it. Some writers affirm that excessive seed-bearing produces the curl in Potatoes, and instances like effects in the animal kingdom. It is remarked, also, that in dry seasons bulbous and tuberous roots are more apt to bear seed; and perhaps it were well if some persons would take the trouble to look back and see if the failure in Potatoes did not generally follow previous dry summers. This being a dry summer, if the above remarks contain any truth, it were well if people would devote some attention this way, and give employment to many poor children; and indeed if the matter be of the importance that I think it is to the country at large, the committee of the Irish Agricultural Improvement Society ought to be directed this year to try the experiment on a large scale. I am so entirely in favour of it, that I shall not try any *comparative* experiment myself, but will destroy all the blossoms with as much care as I would the weeds. I pick the blossoms off before they expand; the flower-stalk being then brittle, it is much more easily performed.—*E. T., in the Dublin Farmers' Gazette.*

Utility of Experimenting.—Shellfish a valuable Manure.—Last year we stated the case of an intelligent gentleman, who had planted Beans in the same row with Potatoes, and the experiment, we are happy to say, succeeded so well that the produce, when carefully measured, exceeded expectation—36 Winchester bushels of Beans, in addition to 12½ tons of Potatoes per acre, and both articles of superior quality. In agriculture, fortunately, as in [illegible] whatever can be done in a corner to the disadvantage were it desired, of the surrounding community, and accordingly, so many persons, including [illegible] watched the minister's new-fangled [illegible] that [illegible] applied were, however, too late to save the lives of Chapman and his two children, who sank under the effect of poison, which [illegible] absorbents, and the blood impregnated with the virus. One other [illegible] survive [illegible]

[illegible] with proper precaution, the disease may be [illegible] together, [illegible] I am [illegible] [illegible] extent, the [illegible] ago I tried some experiments to prevent smut, which seemed [illegible] and [illegible] but certain [illegible] morning too late. I shall be happy to state them.—

November, 1822. I selected three bushels of Wheat, which I had grown that summer, and which was exceedingly smutty; put to remove it still more, as I had a quantity of smut-ball rubbed into it, until the whole was much blackened. The lot was then divided into nine half bushels, and having dissolved half a pound of blue vitriol in boiling water, the Wheat was pickled as follows:—No. 1.—Immersed in the pickling water for three hours. No. 2.—Washed and skimmed well, its own bloom, then immersed in the pickling water as above. No. 3.—No preparation. No. 4.—Washed and skimmed well until clean. No. 5.—Washed and skimmed as above, then sifted quicklime over it, and mixed a quarter of a pound of salt with it. No. 6.—Pickled in the mode usually adopted, with a mixture of lime, salt, and water. The seed was sown the following day on a Clover ley, in six separate ridges, each 113 yards long by five yards wide, half a bushel to each ridge, being at the rate of near five bushels per acre. Appearance of the braird.—Nos. 1, 2, and 5 came up this morning to be at the rate of only two bushels per acre. No. 6 appeared to be at the rate of about 2½ bushels per acre. No. 4 appeared to be at the rate of about three bushels per acre. No. 3 appeared at the rate of about 4 bushels per acre. Sept. 5th, 1823.—The whole was reaped each lot being carefully kept separate, and the result proved as follows:—No. 1.—Found only two smutty ears in the whole ridge, which notwithstanding the care taken, might have come from an adjoining ridge. No. 2.—Had several smutty ears in it. No. 3.—From 30 to 40 black ears in the ridge. No. 6.—About a 20th part smutty ears. No. 4.—About a 5th part smutty ears. No. 5.—About one-half smutty ears. From which it appeared that pickle, coupled with washing and skimming, proved to be an effectual cure, even to a sample of the description sown. Ever since, I have invariably used vitriol, and have found from 20 years' experience on upwards of 100 acres of Wheat annually that one pound to each of Wheat will prevent the disease, as I have never had smutty Wheat since. I believe the cure was effected in the above, by destroying the vegetative powers of the diseased seed; for it will be observed that the produce was clean in proportion to the thickness of the plant. Hence the produce was black in No. 3, which had no pickling, and half the seed appeared to have been destroyed in No. 2, to produce a perfect sample. The grain must be seriously affected by the disease before such beneficial effects would ensue from washing and skimming; but I am inclined to think that soil and season have considerable influence upon it. Some years ago I was requested to value 40 acres of Wheat in this neighbourhood, growing upon wet, poor land, and upon a very careful examination of it I found one-third consisted of smutty ears, and my calculation of the value was made accordingly. The owner informed me that the same seed had that summer produced on healthy land in the western end of this county a good sample. We do not now wash and skim, but simply use vitriol mixed with water, and a small quantity of quicklime to dry it.—*Report of the Cardiff Farmers' Club.*

Guano.—Since guano as a manure has for some time excited great attention among agriculturists, it may not be uninteresting to some readers to learn the opinion of a foreigner given a hundred years ago. The work from which I extract it is entitled, "A Voyage to South America, undertaken by command of the King of Spain, by Don George Juan, and Don Antonio de Ulloa." This journal bears date 1741. They say nothing about guano exhausting the land; but their remark that it is not used for Wheat and Barley is worth attending to. The translation from which the passage following is extracted was published at London in 1760:—"The lands in the jurisdiction of Chancay, like the other parts of the coasts of Peru, are manured with the dung of certain sea-birds which abound here in a very extraordinary manner. These they call guanoes, and the dung guano, the Indian name for excrement in general. These birds, after spending the whole day in catching their food in the sea, repair at night to rest on the islands near the coast, and their number being so great as entirely to cover the ground, they leave a proportionable quantity of excrement. This is dried by the heat of the sun into a crust, and is daily increasing, so that notwithstanding great quantities are taken away, it is never exhausted. Some will have this guano to be only earth endowed with the quality of raising a ferment in the soil with which it is mixed. This opinion is founded on the prodigious quantities carried off from these islands, and on the experiment made by digging or boring, by which the appearance at a certain depth was the same as at the superficies; whence it is concluded that the earth is naturally endowed with the heating quality of dung or guano. This would seem less improbable did not both its appearance and smell prove it to be the excrement in question. I was in these islands when several barques came to load with it; when the insupportable smell left

used in the fields sowed with [illegible]

[illegible] almost [illegible]

[illegible] entirely [illegible]

[illegible] Indian way [illegible]

[illegible] and [illegible]

[illegible] the [illegible]

[illegible] liquid manures. I shall [illegible]

[illegible] to the [illegible]

[illegible] quaintness which [illegible] generally [illegible]

[illegible] plain [illegible] to plain people.

[illegible] the [illegible] tank, watering-cart, and [illegible] from my system, but attach the [illegible] they [illegible] actually work in [illegible] I have the more hope that my plan will succeed, as [illegible] generally do not call in the [illegible] liquid manures will not do when applied in [illegible] perfectly plain to [illegible] liquid manure, if spread upon an impervious [illegible] soil, as [illegible] is not retained long enough in [illegible] taking place, or for the roots of the [illegible] it up in its fresh state. It [illegible] liquid manure, and runs off nearly in the same state, but upon it to a soil rich in [illegible] and [illegible] upon, and on which [illegible] vegetable [illegible] never fails of its extraordinary [illegible] fertilising principle of the manure is [illegible] The water by the decomposition and [illegible] of the carbon or humus—or call it what you will—in the soil, and [illegible] there till absorbed by the rain, which in the form of dew, or taken up by the plants, and by [illegible] and [illegible], or embodied in the growing plant [illegible] liquid manure is at once [illegible] up and [illegible] in the structure of the plant, the water being [illegible] by the leaves, and the organic matter built up [illegible] The [illegible] of administering liquid manure [illegible] perfectly [illegible] state is probably the best of any, were it not for the continued care and attention, and [illegible] expense necessary in supplying our crops with [illegible] in their stages throughout the [illegible] were we certain of the exact [illegible] of the [illegible] stored up in their stems, but which, probably, in [illegible] the water will naturally take up and carry to [illegible] Now, therefore, cannot apply our liquid manures on the best principle, on account of the expense, we may [illegible] the next best plan, that of decomposing them by the aid of [illegible] vegetable matter; and this can happily be done to great perfection by reducing the vegetable matter to the state of carbon or charcoal. The way we [illegible] is—After having laid in a good stock of [illegible] which we make from Peat, as being trifling in expense, easily pulverised, and withal an excellent manure of itself—we divide a shed, or any other building, into two compartments, one of which we make water tight, by puddling the side walls with clay, to the height, perhaps, of two feet, and separate from the other compartment by a low water-tight wall or boarding. This is the fermenting tank, which is filled half or three parts full of pulverised carbonised Peat, and the liquid manure from the byre, stable, pig-styes, &c., &c., directed into it. This is allowed to remain mixed up with the carbonised Peat for three or four weeks, till the decomposition seems about completed, being occasionally stirred about after the composition has become about the consistency of gruel. The whole is then laded over the low partition into the second floor, which is also three parts filled with carbonised peat; and as this second floor is meant merely as a filter, we have it lower on one side than the other, by which means, in the course of a day or two, the carbonised peat is left comparatively dry. The water having passed off at the lower side in a crystal stream—fit for tea or toddy to the most fastidious—the first or fermenting floor is again filled as before, and the contents of the second floor, if considered saturated enough, is then shovelled up into a corner, and allowed to drip, and further dry, till used, which may be either immediately, or at the end of twenty years, as scarcely anything will affect it, if not exposed to the continued washing of rain water, or exposed to the influence of the roots of growing plants. By being thinly spread on a granary floor it soon becomes perfectly dry, and suited to pass through drill machines of all descriptions. The mixing of the carbonised Peat with the liquid manure on the first or fermenting floor, it will be observed, is for laying hold of the gaseous matters as they escape during the fermentation; perhaps other substances may effect this more effectually, but none so cheaply. I think by this plan it will be obvious to every one that a great many desiderata are at once obtained. In the first place, you get rid of about 900 parts out of every 1000 of the weight and bulk of manure by the expulsion of the water, while at the same time you link all the fertilising properties contained in it to one of the most lasting vehicles you can possibly think of—[illegible] and [illegible] the [illegible] which [illegible] [illegible] [illegible]

season proves it to be in high estimation. We may be allowed to add a few words as to the *modus operandum*. It is to be understood that the manure is to be placed in the drill so as when covered its *surface* may not be less than three inches below that of the soil. The coulter of the sowing machine is to be placed so as to penetrate to the above depth, and deposit the seed on the *top* of the manure. The pressure of the roller which follows causes the earth to subside, generally about an inch and a half, at which depth it then leaves the seed, so that, in reality, the actual depth of deposition is not so great as, at a glance, the readers of Mr. Wells' former communication would be apt to imagine. We talked over the matter with a gentleman whose experience qualifies him to give a correct opinion as to the merits of the system, and with this explanation he thinks it more than probable its practice will be generally and profitably adopted.—*Ed. A. G.*]

Guano.—The Island of Ichaboe.—We have been favoured with the following "Remarks on the Island of Ichaboe, and the adjacent Coast of Africa," which we copy almost literally from the notes of the master of a vessel who has repeatedly visited them, and is well qualified to express an opinion on the subjects on which he treats. The island of Ichaboe, which has caused so much commotion amongst merchants, shipowners, and speculators, and which has given rise to the employment of many vessels from some of the principal ports both of England and Scotland, in this new branch of trade, is situated in 26° 18′ 34″ south latitude, a few miles (about twenty-two) north of Angra Pequina—a well determined position, which vessels bound for Ichaboe generally try to make. The main land, for several hundred miles on both sides of Angra Pequina, presents to the eye of the mariner a barren, inhospitable, and dangerous line of seacoast, lying low, though backed with high land in the interior. The strong glare arising from the arid sand and the density of the atmosphere calls for the utmost vigilance and caution on the part of the master-mariner approaching it during the night; for, if he once gets deceived, and into the current which sets upon the shore, the destruction of his vessel is inevitable. Along this line of coast there is not the slightest symptom of vegetation; indeed, it is much to be questioned whether vegetation would thrive, whatever might be the quality of the soil, as no rain falls in this region. True, there are heavy dews, occasionally falling both day and night; but the cold is so severe, for such a high latitude, during the fogs, and the sun, when it does break forth, is so powerful and scorching, that, in all probability, between these alternating temperatures and opposite extremes of weather, no vegetation could survive. The island itself is a barren, shelving rock, about a mile long from north to south, and half a mile across at its broadest part,—viz., from its south-west to its north-east point. It is bounded all round by reefs, except on its eastern side, where there is anchorage in from five to six fathoms. A portion of the island is in the form of a flat shelf, about 1100 feet long and 500 feet broad in the widest part. Upon this shelf is accumulated that deposit of guano which gives so much celebrity to the island, and which varies in depth from 35 to 36 feet. Taking the average width of the deposit at 400 feet, and assuming the average depth to be 36 feet, the total quantity of guano will be about 158 millions of cubic feet. The climate of Ichaboe, notwithstanding the effluvia of the volatile ammoniacal gases emitted from the guano, is very healthy. As one proof of its salubrity, he mentions the fact, that at a period when no fewer than thirty-five ships were lying off the island, their crews, comprising altogether not fewer than about seven hundred men, most of whom were enduring exceedingly laborious employment in that hot region, there were only five cases of sickness within his knowledge, and these were complaints or affections of the lungs. As has been already remarked, there falls during the night a very heavy dew, attended with a piercing coldness of temperature; and even during the day, if the sun's rays be intercepted, a cold disagreeable sensation was immediately experienced. On the sun again breaking forth, its rays speedily scorched the lips, and indeed the whole face and hands of every person of fair complexion; and the lips of very few escaped this tormenting annoyance. Our informant suffered the most excruciating pain in his lips, and the skin of his face and hands, from which the only relief he could find was by anointing the skin with hog's lard, in imitation of the custom of the inhabitants of the mainland, who profusely lubricate their persons with palm oil. With reference to the guano itself, the notes to which we refer express a decided opinion on the part of the writer, that the substance is not, as has been generally supposed, exclusively composed of the excrement of marine birds, which he believes to form only a comparatively small portion of the mass. He supposes it chiefly to consist of the decomposed bodies of marine birds and animals, together with the eggs of the former and the excrementitious matter of both. Amongst other facts and grounds for his adopting this opinion, he mentions the following:—He personally superintended the working or excavating of a pit of guano, 35 feet by 18 feet, and from all that came daily under his observation, he was inclined to the opinion that this barren rock had been a favourite placed of resort for ages, for penguins and other aquatic birds: that myriads of them had successively deposited their eggs there, and had subsequently died on the island; and that it had also been a favourite haunt of seals and other marine animals. In working the pit the men occasionally came to a stratum of a light brown colour, and of greater levity than the strata above and below it, and embedded in this stratum they invariably found numerous skeletons of penguins, in the last stage of decomposition, and vast quantities of their eggs. Having worked through this, the men would, probably some after a time to another stratum of a much darker brown, and much heavier description; and the substances composing the bulk of this stratum, when rubbed between the fingers, would dissolve like tallow and exude much more oil or fat than the first. Throughout this dark-coloured stratum, the men occasionally found many bones and skeletons of seals nearly decomposed, and but very rarely any remains of penguins. The appearance of the stratum suggested to him the idea of a great number of seals having been washed on shore, or having laid down in this spot to die. He adds that the strata were not by any means regular in their alternations; but as a general rule, he did not find both the light and the dark-coloured strata in close succession. The pitshere referred to was in the centre of the island.—*Manchester Guardian.*

Notices to Correspondents.

BARKING TREES.—*Clericus V.* asks if any of our correspondents can suggest a simple means of preventing cows from gnawing the bark of trees?

CHARCOAL.—*E. Bate*—This word applies only to charred *wood*. Charred coal is *coke*

CLOVER SEED, &c.—*A Beginner.*—Italian Rye grass is the best substitute now. Sow gypsum broadcast in wet weather, early in spring. Soap-ashes and gypsum are both useful additions to your compost heap; the more compound you can make it the better. If you put burnt gypsum into your tank put in but little at a time, and stir it well, and it will not cake. Sulphuric acid is, however, a better material; on this, however, we must refer you to articles on liquid manure and fixation of ammonia in the two last Numbers of this Paper. You must not add lime to any manure containing ammonia, or producing it, during putrefaction. The two substances are incompatible, and lime is the stronger of the two, so that it drives off ammonia wherever it meets with it. Fresh mould and freshly-burnt charcoal powder are both good things to mix with cloacine, whether the object be to check smell or loss of ammonia.

DISEASE IN PIGS.—*Anon., Holly Bank*—Next week.

DRAIN-TILES AND CHEMICAL APPARATUS.—*Agricola.*—The notice by Mr. Cottam of the Benenden tile-machine, in our last week's report of the weekly meeting of the English Agricultural Society will perhaps serve your purpose. With regard to your second question we answer, "the former."

ELECTRO TINNING.—*M. Q.*—We have made fruitless inquiries on this subject. Probably the expense would be an insurmountable objection. Will the ordinary earthenware pans, or the glass ones now coming into use, not answer your purpose?

FAILURE IN CLOVER.—*E. T.*—You must wait till after harvest, and sow Italian Rye grass, and, if the land be in suitable condition, Clover seed on the patches, which, if the weather be favourable, will soon be covered.

FLAX DODDER.—*H. F.* informs us that a field of Flax which he lately visited is being rapidly destroyed by this weed, the appearance of which there cannot be accounted for, as the seed was grown by the occupier last year, and there was no Dodder amongst it. We must suppose that his informant has been mistaken on this point. The only way to get rid of it is to use clean seed on clean ground, and that is necessarily effectual. The Clover Dodder at first is nourished from the ground, but as soon as it has laid hold of its victim, it becomes wholly parasitical. (See p. 697 of *Gard. Chron.*, 1843.)

FLOUR MILL.—*W. C.*—We have no experience. Dean's bears a high character.

GRASS SEEDS.—*Delta* says that "Arthur Young said that he had sown Grass seeds in August and September, and never failed, but on sowing them in spring he had often failed. In all modern works these seeds are recommended to be put in at spring time. Have Arthur Young's opinions lost their former worth? or is modern experience better than his? Yet even now-a-days his principles of farming are inculcated as the true ones; but his name is seldom uttered." It is, we believe, *sufficiently* well established that Clover and Grass seeds are surer of successful growth if sown in spring than if sown in autumn. 4 lbs. of burnt gypsum are equal in chemical effect to about 8 lbs. of the mineral. Only, if you use the former on land, take care to spread it evenly, for if any quantity together get wetted, it will *set*, and be almost useless.

LAND SOCIETY.—*H. F.*—We do not know Mr. F. O'Connor's work. It appears to us that the purchase of land to be cultivated by the spade is a very *expensive* mode of patronising spade culture.

MANGOLD WURZEL.—*Silton*—It is good food for sheep. It improves by keeping, and should not be used till April. We grew 600 tons last year, of which 400 must have been eaten by sheep.

POTATO WASHER.—*W. C.*—The Potato-washer that we use is a cylindrical framework 20 inches in diameter and 40 inches long, whose axle works in Ys, placed about three inches above the level of water, in a box. From this box, on one side of it, two curved arms extend; and when the Potatoes have been thoroughly washed, the chains attached to the extremities of these arms are hooked into eyes on the axle of the cylindrical framework, so that on continuing the rotatory movement it is wound up out of the water with its contents, which are thus easily removed.

SULPHURIC ACID.—*A Wiltshire Clergyman.*—It should be diluted with five or six weights of water, when used on the dunghill, and with two or three weights when to be used in the tank. Jerusalem Artichokes are not poisonous when given to pigs or young cattle along with other food; that is the amount of our experience. Thanks for your hint about referring to back Numbers.

ERRATUM.—Page 466, under the heading "Drainage," for "Charcoal is almost impenetrable," read "Charcoal is almost imperishable."

***As usual, many communications have been received too late.

Markets.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 19.

Prime Meadow Hay	90s to 95s	Clover	100s to 130s	Straw	32s to 36s
Inferior „	75 90				

JOHN CROSSE, Salesman.

CUMBERLAND MARKET, July 18.

Superior Old Hay	95s to 100s	Superior Clover	110s to 120s		
Inferior „	80 90	Inferior „	100 110	Straw	32s to 36s
New Hay	70 85	New Clover	90 100		

JOSHUA BAKER, Hay Salesman.

WHITECHAPEL, July 19.

Old Hay	80s to 95s	Old Clover	110s	120s	Straw 32s to 34s
New Hay	70 80	New Clover	70	100	

WOOL.—BRITISH, FRIDAY, July 19.

Our Wool Market continues active, and prices are firm. The Public Sales of Colonial Wools are now being held, as which the attendance is large.

	per lb.		per lb.
Long-wooled Washers	1/4d to 1s 0d	Southdown Hoggits	1s 0d to 1s 2d
Do. Maggitts	1s 1 1 3	Mixt Fleeces	1 1 1 2
Southdown Fleeces	11d 1 0		

JAMES FRASER, Wool Broker.

COVENT GARDEN, JULY 20.—The market has this week been well supplied with both Fruit and Vegetables, and the latter are of better quality than they were last week. Trade has also been a little quicker. The Apples were good and plentiful. A large quantity have been imported from Hamburgh and Mexan, in the Baltonni Islands. They are of the Ribbed Rye and Providence varieties, and are offered at from 2s. to 3s. 6d each. They arrived in good condition, but are said to be of rather inferior quality. In the Bahama Islands they have a very large staple pine-apple, and arrangements have been made for a particular supply from those Islands; three or four shipments are expected during the present season. Of Pumkins and Marrows there is a good supply, and Grapes, Cherries, and Plums, are sufficient for the demand. Gooseberries, Currants, and Strawberries, are also plentiful; some fine Melons are also in the market. Among Vegetables, Cauliflowers are getting scarce and have considerably advanced in price since our last report. Cabbages are a little cheaper, as are also French Beans. Peas are plentiful at last week's prices. Little attempt has been taken place in the prices of Carrots or Turnips. Potatoes are a little dearer, as is also Celery. Vegetable Marrow is nearly the same as it was last week. Among Cut Flowers we noticed several species of Erica, Erythrina, Cistus galli, Ceanothus azureus, Carnations and Picotees, Verbenas, Pelargoniums, Gardenias, Fuchsias, Moss, Provence and China Roses.

FRUITS.

Pine Apple, per lb., 4s to 8s		Gooseberries, per bf.-sieve, 1s 6d to 2s	
Hothouse Grapes, per lb., 3s to 6s		Walnuts, pickling, per bush., 6s to 8s	
Melons, each, 2s to 4s		Oranges, per dozen, 1s to 2s	
Peaches, per dozen, 6s to 12s		— (per 100, 5s to 12s	
Apples, Dessert, per bush., 2s to 4s		— bitter, per 100, 8s to 14s	
— Kitchen, 1s 6d to 4s		Lemons, per dozen, 1s to 2s	
Pears, Dess., per half-sv., 2s to 3s		— per 100, 5s to 14s	
Cherries, 4 lbs., per lb., 1s to 2s		Almonds, per pack, 6s	
— Standards, per doz., 1s to 3s		— new Almonds, per lb., 1s 6d	
Currants, per half-sieve, 2s to 3s		Nuts, Barcelona, 8s	
Strawberries, per gallon, 6d to 3s		— Cob, 4s	

VEGETABLES.

Cabbages, per dozen, 3d to 1s		Vegetable Marrow, per doz., 2d to 3s	
Cauliflowers, per doz., 2s to 3s		Spinach, per sieve, 2s to 3s	
Sprouts, per bf.-sieve, 6d to 9d		Leeks, per bun., 1d to 4d	
Artichokes, per doz., 1s to 2s		Chervil, per doz., 1s	
French Beans, per hf.-sv., 1s 6d to 2s		Shallot, per lb., 6d to 8d	
Potatoes, old, per ton, 60s to 80s		Onions, per bunch, 3d to 7d	
— per cwt., 2s 6d to 4s		— Large, per bushel, 2s to 3s	
— per bushel, 1s 6d to 2s		Shallots, per lb., 4d to 6d	
— Kidney, p. bush., 2s 6d		— Green, per bunch, 2d to 4d	
— New, per cwt., 3s to 4s		Lettuces, per score, 2d to 3s 6d	
— per half-sieve, 1s 6d to 2s		Celery, per bunch, 1s to 1s 6d	
New Turnips, per bunch, 2d to 10d		Mushrooms, per pottle, 2s to 3s 6d	
Peas, per bushel sieve, 1s 6d to 2s		Small Salads, per punnet, 2d to 3d	
Red Beet, per doz., 1s to 2s		Watercresses, p. 12 sm. bun. 2d to 3d	
New Carrots, 4d to 1s		Parsley, per hf.-sieve, 1s to 1s 6d	
Basil, per bunch, 4d to 6d		Tarragon, Green, per bunch, 2d to 4d	
Horse Radish, per bundle, 2s to 3s		Green Mint, per bunch, 2d to 4d	
Savory, per bunch, 2d to 4d		Marjoram, per bunch, 4d to 6d	
Cucumbers, each, 2d to 1s 6d		Chervil, per punnet, 2d to 3d	

MARK-LANE, MONDAY, July 15.

We had a good supply of English Wheat at Market this morning, which met a slow sale at a decline of 1s. to 2s. per qr., at which reduction a large proportion remained unsold. For Foreign there was a retail inquiry; the finest old at about late prices, but common descriptions and new must be written fully 1s. lower.—Barley was very dull, but we do not alter our quotations.—Beans are again 1s. cheaper, and Peas are the turn lower.—The arrival of Oats being very considerable, little progress could be made with sales, even at 1s. below the rates of last week.

BRITISH, PER IMPERIAL QUARTER.		s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	White	44	52	Red	46	51
—— Norfolk, Lincolnshire, and Yorkshire		40	54	White	—	—
Barley, Malting and distilling	28s to 30s Chevalier	32	33	Grind.	26	28
Oats, Lincolnshire and Yorkshire	Polands	20	23	Feed	19	22
—— Northumberland and Scotch	Feed	20	22	Potato	21	25
—— Irish	Feed	14	22	Potato	19	24
Malt, pale, ship		58	62			
—— Hertford and Essex		60	63			
Rye		30	32			
Beans, Mazagan, old and new		30	33	Harrow	30	32
—— Pigeon, Hedgeland		—	—	Longpod	—	—
Peas, White		30	35	Grey	30	31

ARRIVALS IN THE RIVER LAST WEEK.

Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 8431 Sks. —Bels.	5808	325	7304	420	—	991	295
Irish . . „ „	—	—	80	64200	—	6	—
Foreign . . „ 1230 „	7041	2091	—	6313	—	464	2643

FRIDAY, July 19.

The arrivals of Wheat during the week have been good; the trade, both for English and Foreign, very dull at Monday's quotations, business being extremely limited, and confined to necessitous purchasers.—Barley is a heavy sale.—We observe no alteration in Beans and Peas.—Oats continue difficult of disposal, but there appears less inclination to press sales than there has been.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	5080	80	2860	3190 Sks
Irish	—	—	32200	—
Foreign	5900	3510	3770	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 7 per Quarter.	55s 6d	31s 4d	21s 11d	32s 11d	35s 11d	34s 1d
— 14	55 9	31 10	22 6	33 4	36 11	34 1
— 21	56 3	32 3	22 3	34 3	37 10	35 4 2
— 28	55 9	34 0	22 9	35 0	38 0	36 1
July 5	54 5	34 5	23 11	35 0	38 2	36 6
— 12	54 10	34 10	23 3	34 2	37 6	37 2
6 weeks' Aggreg. Aver. .	55 6	33 2	22 6	34 1	37 5	35 6
Duties on Foreign Grain	17 0	5 0	6 0	5 6	5 6	7 6

SEEDS, July 15.

Canary . . per qr	50s to 54s	Linseed Cakes, Foreign, p. ton	6l to 7l 10s		
Carraway . . per cwt	44 48	Mustard, White . p. bush.	5s 7		
Clover, Red, English .	60 74	— Superfine „ .	6 10		
— Foreign .	64 74	— Brown „ .	— —		
— White, English .	100 120	Rapeseed, English, per last	28l 30l		
— — Foreign .	84 125	Rape Cakes . per ton	— —		
Coriander . . .	12 18	Saintfoin . . .	— —		
Hempseed . . per last	35 40	Tares, Eng. winter p. bush.	3 7		
Linseed . . per qr	— —	— Foreign . .	— —		
— Baltic . . —	— —	Trefoil . . per cwt	— —		
— Cakes, Eng. per 1000	10l 10s	10l	Turnip (too variable for quotation).		

KINGSFORD AND LAY.

HOPS, FRIDAY, July 19.

Since last week the accounts continue to come more unfavourable; the duty, in consequence, is receding, and the market improving.

PATTENDEN & SMITH, Hop-Factors.

SMITHFIELD, MONDAY, July 15.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 8 to 4s 0	Best Downs & Half-breds	3s 10 to 4s 2
Best Short Horns	3 6 3 8	Best Long-wools	3 6 3 10
Second quality Beasts	3 0 3 4	Ewes and second quality	3 2 3 6
Calves	3 8 4 4	Lambs	4 4 5 0
Pigs	3 4 4 0		

Beasts, 2004; Sheep and Lambs, 24,260; Calves, 164; Pigs, 260.

Although we are not over-supplied with good Beasts, the trade is heavy; the best Scots, &c. find, however, plenty of buyers at, and in some few instances a little over, 4s per 8 lbs; there is a tolerably ready sale, too, for best Short-horns at 3s 8d; but we have a large proportion of middling quality which are not readily disposed of. Very few remain unsold. We have a full market of Sheep, and trade rules rather heavy; notwithstanding, very nearly all are sold, there being a great many bought for keeping. Our top quotations were tolerably well supported in the most middling Sheep of each description, but Ewes were very heavy on hand, there being so much choice of good Sheep. The best Lamb is rather a brisker trade, but we have a large supply of very middling quality which are very unselling. Calves is a pretty good demand for the best Calves at fully 4s 4d per 8 lbs.

FRIDAY, July 19.

Our supply of Beasts to-day is moderate; we cannot observe any alteration from Monday's prices; the best Scots, &c., are making about 4s, and the best Short-horns about 3s 8d per 8 lbs. Our supply of Sheep is rather short-in-deed, and the best qualities are readily sold at Monday's quotations. Good Lamb is rather scarce, and fully maintains its price, 5s per 8 lbs; we have much very inferior making no more than about 4s 4d. The demand for good Calves is rather brisker, and there is a small advance in the best qualities, they making 4s 6d per 8 lbs.

Beasts, 807; Sheep and Lambs, 9660; Calves, 220; Pigs, 340.

MANURES.—The Readers of the Gazette, who must have noticed the considerable quantity made there of the Adulterations of Manures, that are also carried on to a fearful extent,

The Advertiser, a Chymist of the City of London, and in daily communication with several scientific gentlemen connected with the cultivation of the Nobility, Agriculturists, and Gentry, on the question of supplying Manures, by which a genuine article is ensured. Each article is Analysed; and the analysis forwarded to the purchaser, who can by this means obtain redress against the article differ from the analysis.

Terms, Cash and one per cent. commission for charging and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought to the market.

Price current, London, June 12, 1844:—

Bones . . p. ton, £4 10s. to £5		Nitrate or Potash . . £21 0s. to £21 10s.	
„ crushed, 5l. 10s. to 6	0 0	Oil of Vitriol, or Sulph. acid . . p. lb. 0	0 1
„ calcined . . 7	0 0	Rape Cakes . p. ton 4	15 0
Carbonate of ammonia . p. cwt. 2	16 0	Salts, Epsom „ 9	0 0
Guano, Peruvian, p. ton 11	0 0	„ Glauber „ 7	0 0
„ Ichaboe „ 9	0 0	Sulphate of Ammonia, per cwt., 16s. to 0	17 0
Gypsum . . „ 2	0 0		
Nitrate of Soda, p. cwt. 0	14 9		

WM. NORTHCOTE, 18, Rood-lane, Fenchurch-street.

TURNIP SOWING. — BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day, it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9l. per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town. —Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

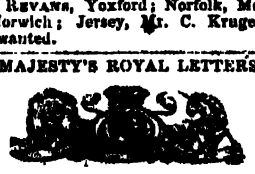
TURNIPS, &c.

DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Chicory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10l. per ton, or 12s. per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street; and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertilisers are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford; Norfolk, Messrs. BULLARD and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade. THOS. J. CROGGON, 8, Ingram-court, Fenchurch-st., London.

IMPORTANT to AGRICULTURISTS.—ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

Gentlemen Instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

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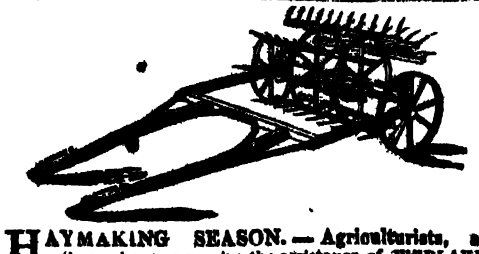
LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London

WRIGHT'S STACK PRESERVER.—Hundreds of Stacks of fine Hay were saved from spontaneous combustion or discoloration in the neighbourhood of the inventor, by the use of the above invaluable instrument. The article may be seen, and bills obtained, containing testimonials to its value from experienced Farmers who have for many years proved its efficacy, at J. WRIGHT'S, Manufacturer, Ongar, Essex; J. and G. DRANE, Ironmongers, London-bridge; and of any Ironmonger in the country. Price, in box, with lock and joints, 2l. 5s.



HAYMAKING SEASON. — Agriculturists, and all others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 118, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

FLOWER AND PLANT MANURE.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains occasionally dissolved in the water in which Plants produce a vigorous growth and splendid flowers. It will be called "*Liquid Guano*" as desired, a superior article for extract by dissolving half a bottle of this powder in a gallon of water and using a table-spoonful to a gallon in watering flower-pots. *Sold in bottles, 1s. 6d. each*, by Chemists and Seedsmen. DAVY, MARTIN, and Co., 180, Upper Thames-street, London.

N.B. In these days of *deception*, it is due to those persons who send out a really good article, that those who benefit by it should make it known."—See Evidence of J. T. Pearson, Chiltern Nurseries, *Chronicle*, p. 292, "*Humphreys's Compound.*"

YORKSHIRE LAND-DRAINING ASSOCIATION.—At a MEETING of the PROVISIONAL COMMITTEE held at YORK, this day, for the purpose of Allotting the Shares applied for in the Association, and on other business—

It was resolved that the number of Shares now allotted being amply sufficient to justify the Committee in proceeding forth with to carry out the objects of the Association, the necessary Deed of Settlement be prepared for execution. And that such of the Public as may yet be desirous of becoming Shareholders, and shall signify the same to the Solicitors (Messrs. BLANCHARD, RICHARDSON, and GURCH, York), or to the Secretary, (Mr. CHARNOCK, Wakefield), on or before the 31st of July next, shall be admitted if the number of unallotted Shares be sufficient), on the same terms as the present Subscribers.

York, June 12, 1844. JAMES HAMERTON, Chairman.

FARMERS' and GRAZIERS' MUTUAL CATTLE INSURANCE ASSOCIATION. Offices, 366, Strand, London.

The especial object of this Association is to give to Farmers, Graziers, and Owners of Cattle the best means of protecting themselves against losses by those diseases and accidents which they can neither foresee nor control, but which have hitherto been most injurious, and often ruinous to thousands.

To prevent fraud, no owner will receive in any case more than two-thirds of the *bonâ fide* value of the animal lost, but he will be entitled to one-third of the value of the skin and carcass.

Insurances may be effected in two ways.

1st. The Owner may have his stock valued by the Inspector of the Association, and pay upon the full amount, and receive two-thirds of the market value of the animal dying (*i. e.*, the value of it the day before the disease manifested itself). For example:—If the full value of the stock, allowing for the improving condition of the animals during the coming year of insurance (for their increasing value during that period must be calculated), amounts, or will amount, to 1000*l.*; then, the premium on 1000*l* being paid, if any one or more die, two-thirds of their market value will be paid, be they worth what they may.

2d. If the owner elects making his own estimate and average, he will receive two-thirds of the said value of the animal dying, provided such value be not more than the average he has specified; and when of smaller value, two thirds of such smaller value only, the Directors having power to grant additional compensation, should they see fit. For instance:—If the stock consists of 100 head, and the average fixed be 10*l.*, then the premium to be paid will be upon 1000*l.*; and if one or more die, of the value of 10*l* (to be certified by the Inspector), the owner will be paid two-thirds of his average (less two-thirds of the skin, &c.); if worth only 8*l.*, then two-thirds of 8*l.*, &c.; but if the animal were worth 20*l.*, he will receive only two-thirds of his average (10*l.*)

PREMIUMS.

Neat Cattle and Cows, against death by all diseases and accidents save *pleuro pneumonia* (usually called the "Epidemic") 30*s.* per 100*l.* value.

Including *pleuro pneumonia*, 20*s.* per cent. additional; being at the rate of 50*s.* per 100*l.* alue. *Pleuro pneumonia* will not be taken alone at this latter rate.

Prospectuses and every information may be obtained at the Office, if by letters, post paid, addressed to WILLIAM SHAW, Esq., 366, Strand, London; or the Agents in the country.

HENRY FLOWER, Secretary.

AGRICULTURAL COLLEGE.—A PUBLIC MEETING will be held at Southampton on Wednesday, the 24th instant, at one o'clock, which will be attended by a Deputation of the Committee of Management and others, who are now engaged in the establishment of a College on a Farm, for giving a scientific and practical education adapted to Agricultural pursuits. At this Meeting, the object of the Institution will be fully explained, also the mode of carrying it into effect. The attendance of all interested in the important object is particularly requested.

PHILIP PUSEY, Esq., M.P. has consented to take the Chair.

By Direction of the Committee. ROBT. J. BROWN,
Cirencester, July 18th, 1844. Hon. Sec.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

GREAT NATIONAL CATTLE SHOW OF IRELAND.

THE SOCIETY'S THIRD GREAT AGRICULTURAL MEETING, and Exhibition of Breeding and Fat Stock, Horses, Sheep, Swine, Flax, Wool, Butter, and Agricultural Implements, &c., open for General Competition, will take place on Wednesday and Thursday, the 14th and 15th days of August next, at the COBOURG GARDENS, Harcourt street, in the City of Dublin.

Wednesday, the 1st of August, will be the last day for serving Notices of entry for Stock, &c., and Premium Sheets, and Blank Forms of Entry can be had, on application to the Secretary, at the Society's Rooms, 37, Upper Sackville-street, by whom they will be forwarded.

All Persons desirous of exhibiting Farming and Agricultural Implements are requested to send in Lists and Descriptions of the different articles to the Secretary, on or before the 1st of August, in order that they might be published in full in the Catalogue.

THE FIRST OR COUNCIL DINNER will take place in the Round Room of the Rotunda, on Wednesday, the First Day of the Show, when the Marquess of Downshire, Chairman of the Council, will preside.

THE GRAND BANQUET will be held on Thursday, the 15th of August, in the Theatre Royal, Hawkins's-street, on which occasion His Grace the Duke of Leinster, President of the Society, supported by the different Noblemen, Vice-Presidents, and Members of the Council, will fill the Chair. The Dress Boxes will be appropriated exclusively to Ladies.

The Premiums to be distributed on this occasion will amount to upwards of ONE THOUSAND POUNDS, and every facility will be given to the Exhibitors of Stock and Implements.

The AGRICULTURAL CHALLENGE CUP, Value ONE HUNDRED SOVEREIGNS, and now held by Geo. A. Grey, Esq., by his Short Horned Bull, Recruit, will be also challenged at the Meeting.

There will be an Auction of Stock in the Show Yard after the Show.

Places at the different entertainments will be specially reserved for strangers attending the Meeting.

The Society's Annual Report for 1843, and first part of its Transactions, are now ready for distribution, and may be obtained by members free, or by non-subscribers at One Shilling a Number, on application to Messrs. Curry and Co., Dublin; Fraser, Edinburgh; and Longman, London, the Society's publishers, who are making the necessary arrangements for its circulation all through the Kingdom. By Order, EDWARD BULLEN, Secretary.

Society's Rooms, 37, Upper Sackville-street, Dublin.

KEENE'S PATENT MARBLE CEMENT.—This CEMENT is particularly adapted for the Walls and Floors of Cellars, Vaults and Underbuildings, being calculated, from its extreme hardness, to resist the wear incidental to ordinary Pavements. For Floors it has a threefold advantage over Stone paving, &c. in its cheapness; one inch in thickness of KEENE'S CEMENT answering where 2 to 3 inch flagging would be employed. Next, in its superior durability, resisting as it does, the dampness of stone with its joints and cross-barring from frost joints; and lastly, in economy being one-third the price of flagging.

The most satisfactory evidence can be given of the utility of KEENE'S CEMENT for the purposes for which the Patentees and Manufacturers recommend it, by applying to Messrs. Blank-street, Westminster.

EXTIRPATION OF BUGS & VERMIN.—OLD, by appointment, to Her Majesty the Queen, H.R.H. the Prince Consort, and the Duchess of Kent, H.R.H. the Duke of Cambridge, the Royal Agricultural Society of England, and the Corporation of the city of London, and by special appointments to the principal Courts of Europe, begs to inform the nobility, gentry, and country agriculturists, shipowners, and the public generally, that he continues to CLEANSE, by contract, from one to three years, every description of PROPERTY of rats, mice, moles, wasps, moths, fleas, bugs, &c., and is authorised by the quality of his preparation respectfully refers to the certificates of the great numbers of Buckingham Palace and Gardens, Windsor Castle, St. James's Palace, Frogmore Lodge, Carlton Club House, Marlboro' House, Newgate Prison, Tavistock Hotel, Brewers, Chester, and Dudley Quays and warehouses in Upper Thames-street, the property of Joseph Barber, Esq., and many others of public and private establishments, which may be seen at the office. The preparations, which are free of poison or deleterious drugs, may be had as above, in pots and bottles at 5s., 10s., 20s., and 100s. each, with full directions, which must be used in proportion to the extent of premises infected to successfully eradicate the vermin, and which can be applied without injury to property. Dwelling-houses cleansed from 1l. to 5l. per annum; mansions and estates from 10l. and upwards; ships, docks, warehouses, granaries, breweries, farms, wharfs, &c., in proportion. Caution.—None are genuine unless bearing the signature and seal Joseph Anton Meyer.

METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleansing them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose. 1s. An improved Clothes' Brush, that cleanses in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and effectual manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the first duty of a genuine Smyrna Sponge. Only at METCALFE'S Establishment, 180a, Oxford-street, one door from Hollis-street.

Caution—Beware of the words "From Metcalfe's," adopted by some houses.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6, 1844.*—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup; giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 6, 1844.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

SURPRISING EFFICACY of "PARR'S LIFE PILLS."

Testimonial just received by the Hibernia from America.—Dr. C. STEANE, 184, Fulton-street, sole agent for Brooklyn, L.I.—An instance of the singular efficacy of PARR'S LIFE PILLS, which merits particular notice, occurred in the person of a lady, residing at Brooklyn, of consumptive make, who had been afflicted for upwards of six years with very great and general debility, headache, flatulence, faintings, and all the effects originating in an impaired constitution. Country air was tried, but to little advantage. She complained of weariness and pain on the least motion; her bowels were sometimes constipated, and at other times lax, and never regular. At this period, she was recommended to try PARR'S LIFE PILLS, when, no less astonishing than true, before she had finished two boxes, an entire and perfect cure was the result. To such, nothing can equal this antidote, as it imparts tone and strength to the stomach, and operates so mildly, that the most delicate of either sex can take them with the greatest safety.—Yours truly,

To T. Roberts & Co., April, 1844. C. STEANE.

These and hundreds of other cases of decided cures, attested on the highest authority, and already published, occupy upwards of 150 pages of letterpress. These Testimonials are published periodically, and may be had on application at any respectable medicine vendor's. The cures in many instances were effected after all other means had failed, and they thus establish the claims of PARR'S LIFE PILLS in being considered the best medicine in the world.

CAUTION TO THE PUBLIC.—Beware of spurious imitations of the above Medicine. None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE LETTERS on a RED GROUND, engraved in the Government Stamp, pasted round each box; also the fac-simile of the signature of the proprietors, "T. ROBERTS & Co., Crane-court, Fleet-street, London," on the directions.

PRESERVES and CONFECTIONERY. — The superiority of BETTS'S PATENT BRANDY for PRESERVES and CONFECTIONERY, is testified by the fact that it is preferred to any other spirit by the most extensive WHOLESALE CONFECTIONERS in the METROPOLIS; for fortifying Home-made Wines it is invaluable; as an Ordinary Beverage it is congenial to the most delicate constitutions; and, as a Medical Stimulant, it is peculiarly adapted to persons of bilious or dyspeptic habits. Quantities of not less than Two Gallons, supplied at the Distillery, 7, Smithfield Bars, in Stone Jars, at 16s. per Gallon, exclusive of the price of the Jar; and in Glass Bottles, at 20s. per Gallon, Bottles and Case included.

CONSUMERS of BRANDY are respectfully informed, that J. T. BETTS, Jun., and Co., will not be responsible for any BOTTLED BRANDY that is not protected against fraudulent substitution, by the PATENT METALLIC CAPSULES, made of pure and solid metal (*not tin-foil*), embossed with the words "Betts's Patent Brandy, 7, Smithfield Bars," *to which attention is especially directed.*

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PERMANENT DRAWING CRAYONS in Cedar, in Twelve Tints.

WOLFF & SON beg to call the attention of Artists & Amateurs that they have by the introduction of great improvements in their CRETA LAVIS, qualified it to be called like some as the ordinary pencil and effects can now be produced equal to water colour drawings, without the use of water and the inconvenience of the various colours blending together while in use. Its softness, beauty, and richness It can be used to delicate tints, while they are capable of giving a very delicate outline For architectural purposes the great advantages resulting from the use of the CRETA LAVIS must be obvious as without the use of water, pointe brushes &c all the various tints can be obtained with a faithfulness that cannot be surpassed. They are [illegible] every other method in general use.

The Drawings [illegible] in a portfolio with safety as unlike other crayons they will not rub off nor suffer injury by coming in contact with the other contents of a portfolio

The CRETA LAVIS will not be affected by heat or change of climate and by its compact form may be carried any distance without the slightest inconvenience To be had of all respectable Stationers and of the Manufacturers at the following prices —

Leather box, containing a set of 12	..	7s	each
—	—	—	18	10s —
—	—	—	24	14s —
—	—	—	36	.. 21s —
In sets as above, without box, at.....				6s per doz
Lake and Cobalt				12s —

*** May be had also in Crayons without cedar, in sets as above, at 6s per dozen, box included

Creta Lavis —We have inspected an invention of Messrs Wolff & Son Creta Lavis are permanent coloured Crayons, of nearly every hue and tint, differing essentially from those in general use, inasmuch as they do not cast off and are clearer than chalk, retaining at the same time much softness and delicacy We think they would be found useful to the sketcher as they are portable not easily injured, and can be used upon white or tinted paper We can recommend them especially to ladies as we have seldom seen more charming specimens of flower drawing than those produced by the Creta Lavis the blue, generally so coarse in chalk, was singularly clear, and many of the landscapes and heads submitted for our inspection proved that Mr Wolff has made a valuable discovery "—*London Art Union*

Instructions for Use—To prodpce the delicate shades the chalk must be cut to a fine point, and worked very lightly on the paper, blending the colours until the required tint be obtained The deep shades merely require a broader point and increased pressure —Bristol Board, Crayon paper &c, in fact, any papers with a fine even surface not glazed, are well adapted for the CRETA LAVIS; but tinted crayon papers are most suitable, as they add to the finish of the drawing

WOLFF & SON beg to recommend their newly-invented SKETCHING PENCILS or Permanent Black Chalks —

B B, Very Black, for foregrounds; H B, Middle tint, N, Neutral tint for distance Price 6s per dozen.

These Pencils are particularly adapted for sketching heads and landscapes, and are capable of producing a beautiful effect with very little labour Having an [illegible] the drawings may be transmitted without fear of injury.

*** WOLFF & SON are desirous of treating an Agency with respectable Country Booksellers and Stationers for the sale of the above —Manufactory, 24, Charles street, Spitalfields, London.

BURBIDGE AND HEALY'S COOKING APPARATUS combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship, in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus; and B & H can safely recommend it from experience, as unquestionably superior to anything of the kind hitherto made A Prospectus can be forwarded, upon application, detailing particulars and prices, to 130, Fleet street

STATE LOAN of His Royal Highness the Grand Duke of Hesse for 4,000,000 fls., to be reimbursed with 2 annuities, in lots of 40,000, 20,000, 10,000, 5,000, 2,000 fls., &c., the smallest being 50 fls —GRAND PUBLIC DISTRIBUTION to take place at Carlsruhe on the 1st of August next, official bulletins containing the result will be forwarded immediately to every shareholder. Price of a single certificate, 10s; 11 for 5l; 23 for 10l; 60 for 25l. sterling; payable in notes money orders, or remittances —Apply for full particulars and certificates, without delay, to Moritz Stiebel, banker Frankfort-on Maine To save postages, all letters addressed to Messrs Stiebel and Co, 8, Lime street, London, will be promptly forwarded and attended to

ROYAL POLYTECHNIC INSTITUTION. — IMPORTANT SCIENTIFIC NOVELTY — Dr POTTS'S PNEUMATIC mode of forming SUBMARINE FOUNDATIONS in DEEP WATER, explained in a Lecture by Dr Ryan, on MONDAYS and SATURDAYS at Four o'clock, with the VARIOUS INTERESTING EXPERIMENTS On the EVENINGS of MONDAY, WEDNESDAY, and FRIDAY, POPULAR LECTURES are delivered by Dr. RYAN, and on TUESDAY and THURSDAY EVENINGS, by Professor BACHHOFFNER The Daily Lectures are constantly varied LONGBOTTOM'S PHYSIOSCOPE & OPAQUE MICROSCOPE ARMSTRONG'S HYDRO-ELECTRIC MACHINE, DIVING BELL and DIVER NEW DISSOLVING VIEWS, &c &c The Music is conducted by T. Wallis, Mus. Doc.—Admission, One Shilling Schools Half price

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Double Dome Pattern.	Size.	£	s	d	*The Melon Pattern*	Size	£	s	d
1 Pld Dish cover,	20in	5	12	6	1 Pld. Dish cover,	20in	5	17	0
1 „ Dish cover,	18in	4	7	6	1 „ Dish cover,	18in	4	14	6
2 „ Dish covers,	14in	5	12	0	2 „ Dish covers,	14in	6	6	0
Per Set		£15	12	0.	Per Set		£16	17	6

The above have silver handles and mountings, and silver shields for engraving the crest or coat of arms A price catalogue, illustrated by drawings and containing every information relative to the purchase of silver or Sheffield plate, may be had on application, or will be sent into the country, free of postage, on answer to a paid letter

REFINED PLEASURE to LOVERS of BOTANY. —The Nobility and Gentry are respectfully informed, that the splendid WARDIAN PLANT CASES which excited so much attention and obtained a Medal at the late Chiswick Fete, are now on view at No 39, Argyle street Regent street

The suggestions of PROFESSOR LINDLEY have been correctly carried out by the manufacturer Mr POTTS so as to elicit the entire approval of that eminent authority The varied charms of Nature are aided by the gorgeous enrichments of Art; and this fairy-child, however exalted her station, may now enjoy at all seasons the reception of Flora, in a cabinet not unworthy places in the most aristocratic mansions.— Agent, Mr NOTTINGHAM.

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MR HOARE'S NEW WORK ON THE VINE —On Thursday next will be published, in one Vol, 12mo, price 6s cloth,

A DESCRIPTIVE ACCOUNT OF A NEW METHOD of PLANTING & MANAGING the ROOTS OF GRAPE VINES, by CLEMENT HOARE, Author of "A Treatise on the Cultivation of the Grape Vine on Open Walls." London: LONGMAN, BROWN, GREEN, and LONGMANS; and FLETCHER and Co, Southampton

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 30.—1844. SATURDAY, JULY 27. [Price 6d.

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THE COUNCIL
OF THE
Horticultural Society of London

HAVING ascertained that a very large number of Exhibition Tickets of the present season have not been used, chiefly on account of the unfavourable weather of the 13th—the last day fixed for the Exhibitions; and

HIS GRACE THE DUKE OF DEVONSHIRE,

the President of the Society, having most kindly offered again to throw open the grounds of Chiswick House,

NOTICE IS HEREBY GIVEN

That there will be on WEDNESDAY, the 31st of July, a MUSICAL PROMENADE in the Society's Garden, at which the unused Tickets of the present season will be received. Other Tickets for the occasion will be issued till the 30th inst., at this Office, price 2s. 6d. each, or at the Garden on the 31st inst., at 5s each, under the regulations already in force for governing admission to the Exhibitions at the Garden. The usual refreshments will be supplied by Messrs. Gunter—21, Regent-street.

ARRANGEMENTS TO BE OBSERVED BY THE MILITARY BANDS

IN THE GARDEN OF THE HORTICULTURAL SOCIETY,

July 31, 1844 (weather permitting).

The Bands of the 1st Life Guards, Royal Horse Guards, Coldstreams, Fusiliers, Royal Artillery, and Sappers and Miners, will take their stations in the Society's Garden by 1 o'clock, when the five first will commence playing as usual, and the Sappers and Miners will proceed at once to their position at the Duke of Devonshire's. At 20 minutes to 2 P.M. the Bands in the Society's Garden will march from their several stations to an orchestra prepared for the purpose, where they will play the *Overture to Lampa*. At the conclusion of this piece the Coldstreams and Royal Horse Guards will file off in two divisions into the Grounds of His Grace the Duke of Devonshire. The 1st Life Guards, Artillery, and Fusiliers will remain in the Society's Garden. At half-past 2 o'clock the 1st Life Guards, Fusiliers, and Royal Artillery will move into the Grounds of Chiswick House, where all the Bands will collect and play the *March in Oberon*. After this the Bands will resume their former stations. Shortly after 3 P.M. the Bands in the Duke of Devonshire's Grounds will march back to the Society's Garden in two divisions, and joining the Artillery, Life Guards, and Fusiliers, the whole will again collect in the orchestra. Thus united, the Bands will play the *March Triomphale of Ries*, the *Overture to Fra Diavolo*, and the *Prince of Wales's March*, by Costa, the whole concluding with *God Save the Queen*, as newly arranged by Costa. At the conclusion of these pieces the Bands will quit the Garden. In the intervals between the concerted pieces the Bands will play separately, as usual. In all cases, when the Bands move from place to place, they will march, playing the *British Grenadiers* in E flat.

*** The concerted pieces will be conducted alternately by the Bandmasters of the five principal Bands.

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WM. SKIRVING, NURSERY AND SEEDSMAN, Walton, near Liverpool, begs to offer the above new and splendid Climber, surpassing in beauty all others of the genus yet introduced. It is a native of Sierra Leone; a perennial of strong and shrubby habit, and a free bloomer. Colour, dazzling purple, with rich yellow eye. Raised at Knowsley Hall, from seed imported by the Right Hon. the Earl of Derby, and presented to W. S. by his lordship. Plants are now ready to be sent out at 10s. 6d. each.

Orders accompanied with a remittance or a respectable reference, will be faithfully and promptly executed.—Walton Nursery, 25th July, 1844.

SHILLING'S QUEEN CABBAGE.—This month and part of August being the time to sow Cabbage Seed for the Autumn and Spring Planting, J. & S. SHILLING having a little Seed left of the above very superior kind, which they highly recommend to those who have not already tried it—beg to offer it to the Public generally, in half oz. packets, postage free, at 2s. 6d. each, on the receipt of postage stamps or a Post-office order.—Northwarsden Nurseries, Oulham, Hants.

GREAT YARMOUTH NURSERY — NORFOLK, 1844.

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Steamers from London Bridge and St. Katharine's Wharf every Tuesday and Saturday evenings at 6 o'clock. Coaches from Spread Eagle, Gracechurch street via Eastern Counties Railway every morning and evening at 8 o'clock.

Great Yarmouth Nursery, July 27, 1844.

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GEORGE SMITH begs to offer the following splendid VERBENAS which comprise the choicest varieties of the season they were shown at the Royal Botanic Gardens of London and much admired for their distinct colours and fine form, they also obtained the first prize. Smith's Ariel, Excelsa, Delicata, Striata Parsons Beauty Supreme Atro sanguinea, Celestina, Princess Alice, Miller's Blue Queen Louisa Youell's Brilliant, Monarch Surprise, Elegance White's Wonder Variabilis, Surprise, Modesty, Imperial Orange Perfection, Howardii Variegatus, Poulii, Ingramii, Lucia, Invincible, Van Genth, Hisloperas Ne plus Ultra, Renown, Bonfield's Brewarth Princess Royal.

Tollington Nursery, Hornsey road Islington, near London.

FUCHSIAS

W. MILLER'S Splendid Collection of the above beautiful tribe of Plants are now in full bloom comprising all the new varieties sent out this season, besides a number of seedlings raised in the Providence Nursery, Ramsgate.—Admission Gratis (Sundays excepted). July 24, 1844.

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Conductor (do.)	5	0	Marginata (Hally)	3	6
Coronet (Smith's)	5	0	Neptune (Smith)	5	0
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12	Extra fine varieties for	9s
25	Do do	18s
50	Do do	9 9

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Lady Hope (do.)	1	0	Punctata (Miller's)	1	6

Nine named varieties at 6s per dozen, when the selection of sorts is left to W. W. & Son.

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Azurea grandiflora (Stewart's)	2	6	Elegans Youell's)	1	6
Array (Smith's)	1	6	Excelsa (Smith's)	2	0
Blue Queen (Miller's)	3	6	Monarch (Youell's)	2	6
Brilliant (Youell's)	1	6	Queen of the Whites (Stewart's)	2	6
Carnea superba (Stewart's)	1	6	Surprise (Youell's)	2	6
Defiance (Girling's)	2	6	Zeuxis (Miller's)	2	6

Also the following fine varieties, at 9s per dozen, the selection being left to the purchaser, or one plant of each for 12s.—Amethystina, Barnsii, Beauty, Bishopii Boule de feu, Bridesmaid, Burleyana Fortune teller, Harlequin, Howardiana, Joan of Arc, Laconii, Minstrel Boy, Renown, Rival King, Speciosa, Tagliani, White Perfection.

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LOUIS VAN HOUTTE, HORTICULTURIST TO THE KING begs leave to inform the Trade and Public in general, that the Parts No. 13, 14, 15, and 16, of his General Catalogue, with the prices of the Plants and Seeds ready for sale at his Establishment at Ghent in Belgium, may be obtained on application to Mr. Geo. Rann, Covent, Minories, London. L. V. H. would willingly take Orchideæ in exchange to any amount, on the part proposing such an exchange giving him a correct statement of the price and strength of the Orchideæ.

Note.—All Letters to Belgium must be post paid.

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Antirrhinia grandiflora, 9s per doz.
Verbenas, 12 best new sorts, 6s per doz
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Potentia punctata, 9s per doz.
Do., three new seedlings, superior varieties, 1s. each.
Scutellaria splendens, 9s per doz.
Phlox Drummondii, 4s per doz
Lantana crocea speciosa, 9s. per doz.
Duchsias, all the leading varieties, 9s. and 12s. per doz.
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White do. do. }
Smith's Yellow Noisette Rose }
Nine new Ruff Roses, "Eliza Sauvage," 18s per doz.
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(The above plants can be sent Post-free)
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Genista retrorsa and elongata, 1s each
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Nine plants of Double White and other new sorts of Camellias, well set for bloom, 21s per doz
Fine Cineraria Calceolaria, and choice Geranium Seed, 1s 6d per packet.—Albion Nursery, Stoke Newington.

NEW SEEDS

J. G. WAITE, SEEDSMAN, &c., 1 and 4, Eyre-street-hill Hatton Garden, London, in expressing the pleasure he derived (during his late journey) from the praises bestowed on the Seeds he had sent out during the past season, begs to return thanks for the very liberal support he has had from the Country Trade, and to inform them that he has just received the undermentioned NEW SEEDS from his Growers, the whole of which he can warrant genuine, being from his own transplanted stocks.—

	s	d
Early Stubble Turnip, per bush	21	0
,, Stone do ,,	21	0
True White Globe do ,,	21	0
,, Green do do ,,	21	0
,, White Round do ,,	18	0
,, Green do do ,,	16	0
,, Red do. do ,,	20	0
,, White Norfolk do ,,	18	0
Dale's Hybrid Turnip ,,	24	0
Purple top Scotch do. ,,	20	0
White's Incomparable Cabbage, per lb	4	0
Hay's Early Dwarf ditto per lb	2	6
Hope Cabbage, per lb	2	0

	s	d
Large York do., Superior ,,	8	0
Early Dwf York do., Nonpareil do., Emperor do., Sugarloaf do., per cwt	28	0
Red Dutch Cabbage p lb.	2	0
Early Cauliflower ,,	6	0
Bath Cos Lettuce ,,	5	0
Brown Dutch do ,,	2	0
New Hardy Green Cos ditto, per lb	5	0
Hardy Green Cabb., do	2	6
Lisbon Onion ,,	1	0
White Spanish do., ,,	2	0
Green Curled Endive ,,	2	0

And all other sorts N B—The above prices are for cash only.

NEW THUNBERGIAS—ALATA SUPERBA AND AURANTIACA SUPERBA

JOSEPH TRYER begs respectfully to call attention to his Advertisements in the two last weeks' Chronicles relating to the above two new and beautiful varieties of Thunbergias, &c., which he will begin sending out on the 1st of August (they may be seen in bloom at the Nursery, or blooms will be forwarded on application containing 6 postage stamps).

*** Agent for Potter's Guano, Humphreys's Compound, and Whitney's Transparent Composition.

Clarendon Nursery, Camberwell, London, July 26, 1844.

MAGICAL EFFECT ON FLOWERS.—*Gardeners' Chronicle*, April 27th.—"I cannot speak of POTTER'S LIQUID GUANO in adequate terms of praise. I tried it on Hyacinths and other flowers. The effect was magical. My flowers were the finest I ever beheld, and they preserved their beauty nearly double their usual time."—*W. Aird, Hammersmith.*

"I write to describe the wonderful efficacy of POTTER'S LIQUID GUANO. Peas, Onions, and Asparagus have been singularly improved by it. People come to admire the appearance of the garden."—See *Chronicle*, p. 406.

*** Beware of an ineffectious imitation. See *Chronicle*, p. 405.—"Humphreys's Compound."

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Factory, 20, Upper Fore-street, Lambeth.

LYNDON'S PATENT SPADE.—Sold by GREEN and CONSTABLE, Ironmongers, 20, King William st., London-bridge. Horticultural Tool Chests. Bright Ladies' Spades, Money's Patent Water Pots, Lord Vernon's Patent Hoes, with a general assortment of Garden Implements.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, &c., BOLTON.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 93, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

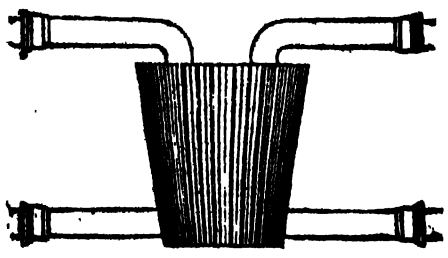
D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 190, FLEET STREET, LONDON.



BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to MR. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit. Length by feet.
in. ft. s.	s.	s. d.	s. d	s. d.		
10 1 5 Ribbed Boiler.	20	7 6	6 6	2 6	30 feet.	12 to 20
10 2 3	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12 2 15	30	12 6	7 6	3 6	80 to 125 feet.	40 to 65
14 3 10	35	17 5	8 6	4 6	150 to 250 feet.	65 to 100
18 5 5	42	25 0	8 6	5 6	300 to 400 feet.	Warm a grapery 25ft. long, and a pit 50ft.
24 8 15	50	35 0	8 6	7 6	600 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

GUANO (GENUINE PERUVIAN & BOLIVIAN)
ON SALE, BY THE ONLY LEGAL IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, July 26, 1844.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 60, Upper Thames-street.

GUANO.—Having been appointed agents for some of the largest importers, we will be happy to treat with Merchants or Consumers, for delivery at any Port or Inland Town in the kingdom, at such seasons of the year as may be desired. Orders from houses for the Continent will also receive prompt attention, and every facility for delivery. As we sell cargoes direct from the place of loading, an unadulterated article, in either large or small quantities, may be relied on—a matter of the greatest importance to country dealers, whose interest is to secure the farmer's confidence. Commissioned agents: G. HEARING, BUNNEY, & Co., 67, Cornhill, London; G. and A. HEARING, South John-street, Liverpool.

GUANO.—For Sale, in bags of 1 cwt. each; just landed, with a succession of cargoes to arrive.

There being considerable variety in the qualities of Guano imported from different places, and indeed from the same island, each parcel will be chemically analysed with the utmost precision, to show its relative productive power. A copy of such analysis will be given to buyers, and also instructions as to the most approved mode of using the Guano, furnished by the experience of eminent Agriculturists in England and Scotland.

Large parcels will be delivered direct from the Ship, or waterside premises. Smaller quantities may be had at the warehouses, 24 and 25, Billiter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to JAMES CLARK, 24, Billiter-street.

TURNIP SOWING.—BRAIN'S ENGLISH GUANO MANURE.—This powerful Manure having been subjected to the most rigorous Analysis by some of the first Agricultural Chemists of the day, it is pronounced by them to be much stronger, and to possess more highly fertilising properties, than the very best samples of foreign brought to this country. Price 9l. per ton; no charge for sacks, and delivered free of charge to any wharf, railway, or waggon-office in town.—Address, FREDERICK BRAIN, Guano Works, Thomas-street, Stamford-street, Blackfriars-road, London.

N.B.—Directions for use sent with all orders.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, June 12, 1844:—

Bones	p. ton	£4 10s. 0d	Nitrate of Potash	„	£1 4s. 6d
„ crushed	5l. 10s. to 6	0 0	Oil of Vitriol, or Sulph. acid	„	p. lb. 0 0 1
„ calcined		7 0 0	Rape Cake		p. ton 4 15 0
Carbonate of ammonia		p. cwt. 2 16 0	Salts, Epsom	„	9 0 0
Guano, Peruvian, p. ton		11 0 0	„ Glauber	„	7 0 0
„ Ichaboe	„	9 0 0	Sulphate of Ammonia, per cwt., 16s. to		0 17 0
Gypsum	„	2 0 0			
Nitrate of Soda, p. cwt.		0 14 0			

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

IMPORTANT to AGRICULTURISTS.—ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Mr. MITCHELL, Analytical Chemist (late of the Royal Polytechnic Institution), with the view of ascertaining whether the soil on which it is proposed to grow any particular crop contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general.

Gentlemen Instructed in Agricultural Chemistry; the Course will comprehend the Elements of Analysis.

No. 5A, Hawley-road, Kentish Town.

TURNIPS, &c.

DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Chicory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10l. per ton, or 12s. per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street; and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertilisers are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

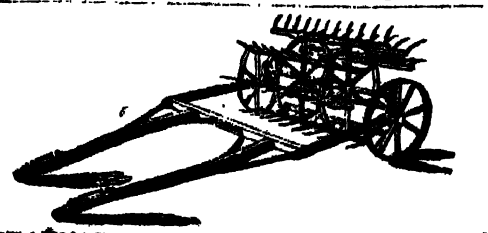
Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford; Norfolk, Messrs. BULLARD and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

TANNER'S VITREOUS FLUID and CLOTH, a Substitute for Glass for Horticultural Purposes.—The Vitreous Cloth proves its superiority over Glass, by producing the light most suitable to vegetation, superseding the necessity of any shading, preserving a healthy moisture on the plant, retaining its bloom to a more lengthened period, less expensive, and not requiring so much attention. The above (retaining heat) is preferable to Glass for Hothouses, &c., the temperature of which is maintained with less fuel. It is equally applicable as a covering for Fruit-trees, preserving them from frost, blight, and excessive heat. The Vitreous Cloth, made by machinery, is much superior to any prepared in a different manner. By the use of the Vitreous fluid, the Cloth (after lengthened service) may be renewed.

The Fluid sold in bottles 2s. 6d. and 4s. 6d. The Cloth 2s. 6d. and 3s. per yard. Manufactured by N. W. TANNER, Chemist, Exeter. Agents for Exeter and vicinity, Messrs. LUCOMBE, PINCE & Co., Exeter Nursery.

To Mr. N. W. Tanner—Sir, we have used your prepared Cloth, and have pleasure in informing you that whilst the light admitted through it is very suitable to vegetation, there has been no necessity to have recourse to any extra shading during the very clear, bright weather which we have so long experienced; this we consider an important point. Yours, &c.
(Signed) LUCOMBE, PINCE, & Co., Exeter Nursery.
June 21, 1844.

*** Respectable Agents required.



HAYMAKING SEASON.—Agriculturists, and others who may require the assistance of WEDLAKE'S PATENT DOUBLE-ACTION HAYMAKING MACHINE, are requested to send their orders early to the London Depôt, No. 116, Fenchurch-street, opposite Mark-lane, where one of the Machines may be inspected.—Catalogues of Agricultural Implements and Machinery may be had on application.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

GREAT NATIONAL CATTLE SHOW OF IRELAND.

THE SOCIETY'S THIRD GREAT AGRICULTURAL MEETING and Exhibition of Breeding and Fat Stock, Horses, Sheep, Swine, Flax, Wool, Butter, and Agricultural Implements, &c., open for General Competition, will take place on Wednesday and Thursday, the 14th and 15th days of August next, at the COBOURG GARDENS, Harcourt street, in the City of Dublin.

Wednesday, the 1st of August, will be the last day for serving Notices of entry for Stock, &c., and Premium Sheets, and Blank Forms of Entry can be had, on application to the Secretary, at the Society's Rooms, 37, Upper Sackville-street, by whom they will be forwarded.

All Persons desirous of exhibiting Farming and Agricultural Implements are requested to send in Lists and Descriptions of the different articles to the Secretary, on or before the 1st of August, in order that they might be published in full in the Catalogue.

THE FIRST OR COUNCIL DINNER will take place in the Round Room of the Rotunda, on Wednesday, the First Day of the Show, when the Marquess of Downshire, Chairman of the Council, will preside.

THE GRAND BANQUET will be held on Thursday, the 15th of August, in the Theatre Royal, Hawkins's-street, on which occasion His Grace the Duke of Leinster, President of the Society, supported by the different Noblemen, Vice-Presidents, and Members of the Council, will fill the Chair. The Dress Boxes will be appropriated exclusively to Ladies.

The Premiums to be distributed on this occasion will amount to upwards of ONE THOUSAND POUNDS, and every facility will be given to the Exhibitors of Stock and Implements.

The AGRICULTURAL CHALLENGE CUP, Value ONE HUNDRED SOVEREIGNS, and now held by Geo. A. Grey, Esq., by his Short Horned Bull, Recruit, will be also challenged at the Meeting.

There will be an Auction of Stock in the Show Yard after the Show.

Places at the different entertainments will be specially reserved for strangers attending the Meeting.

The Society's Annual Report for 1843, and first part of its Transactions, are now ready for distribution, and may be obtained by members free, or by non-subscribers at One Shilling a Number, on application to Messrs. Curry and Co., Dublin; Fraser, Edinburgh; and Longman, London, the Society's publishers, who are making the necessary arrangements for its circulation all through the Kingdom. By Order, EDWARD BULLEN, Secretary.

Society's Rooms, 37, Upper Sackville-street, Dublin.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



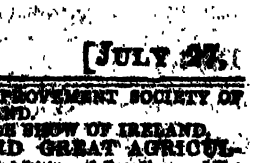
PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade. THOS. J. CROGGON, 8, Ingram-court, Fenchurch-st., London.

70, STRAND, LONDON.

RAMS FOR RAISING WATER WITHOUT LABOUR, where a fall can be obtained. FOUNTAIN BASINS IN IRON, &c.

F. ROE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in iron, which will stand the Frost and last for ages. A Ram and Fountain Jets fixed on the premises for inspection. Every kind of Garden and other Pumps, Well Engines, Baths, &c. Houses, &c. Heated by Hot Water.



LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6*, 1844.—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from table to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup: giving a zest far superior to the long-established favourites, more wholesome and of less cost."—*Naval and Military Gazette, April 6, 1844.*

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

PRESERVES and CONFECTIONERY.—The superiority of BETTS'S PATENT BRANDY for PRESERVES and CONFECTIONERY, is testified by the fact that it is preferred to any other spirit by the most extensive WHOLESALE CONFECTIONERS in the METROPOLIS; for fortifying Home-made Wines it is invaluable; as an Ordinary Beverage it is congenial to the most delicate constitutions; and, as a Medical Stimulant, it is peculiarly adapted to persons of bilious or dyspeptic habits. Quantities of not less than Two Gallons, supplied at the Distillery, 7, Smithfield Bars, in Stone Jars, at 16s. per Gallon, exclusive of the price of the Jar; and in Glass Bottles, at 20s. per Gallon, Bottles and Case included.

CONSUMERS of BRANDY are respectfully informed, that J. T. BETTS, Jun., and Co., will not be responsible for any BOTTLED BRANDY that is not protected against fraudulent substitution, by the PATENT METALLIC CAPSULES, made of pure and solid metal (*not tin-foil*), embossed with the words "Betts's Patent Brandy, 7, Smithfield Bars," *to which attention is especially directed.*

FARMING INVESTMENT IN FRANCE.

TO LET ON LEASE for a long term, in the department of Soane and Loire, a FARM of 1250 ACRES, more than half consisting of Meadow Land, watered by two rivers. Situated about seven miles from a principal Town of 11,000 Inhabitants, and traversed by a main road through its broadest extent. The annual rental of the Arable Land, to be let at the rate of 6l. (6s. 8d.) per acre; the Pasture Land at the rate of 60f. (2l. 8s. 6d.) If preferred by the occupant, the uncut standing Grass might be purchased at the rate of 20f. (16s. 6d.) for 500 kilogrammes (1000 pounds weight), for the first crop, and at the rate of 10f. (8s. 6d.) for the 2d and 3d crops. The Proprietor would erect, at his own expense, the out-buildings required.

For further particulars, application to be made in London to G. B., personally, or by letter, No. 11, Manchester-street, Manchester-square.

WOODLANDS NURSERY, Blackheath, near Uckfield, Sussex.

VERBENA HUDSONII.

WM. WOOD AND SON, having purchased the entire stock of the above magnificent VERBENA, beg leave to solicit attention to Dr. LINDLEY's opinion of it in the *Gardeners' Chronicle*, July 6th, p. 445.

"*W. W. Hudsonii* is a good variety, bright rosy purple, with a white eye, distinct in colour." To which description W. W. & S. may be allowed to add, that the flowers are large and very showy; it has been seen by several competent judges, who have pronounced it to be a variety of first-rate merit. Plants will be ready for sending out on the 20th August next, packed in tin cases and forwarded post-free, at 2s. 6d. each, with the usual allowance to the Trade when six plants or more are taken at once.

A remittance will be expected from unknown correspondents.

The Gardeners' Chronicle.

SATURDAY, JULY 27, 1844.

MEETING FOR THE TWO FOLLOWING WEEKS.

Tuesday, Aug. 6 Horticultural . . . . 3 p.m.

ONE of the most curious things in cultivation is, that disputes should arise respecting the MODE of CONDUCTING OPERATIONS that must have been employed from the beginning of gardening; and that now, when so much real progress has been made in tracing effects to their causes, there should still be need of experiments to determine the nature of the very simplest phenomena.

Some of our readers may have remarked the commencement of a little discussion as to whether the sun will burn leaves recently moistened. Our answer has been, that it is a disputed question, and requires further examination. We have, we confess, made that reply in deference to the opinion of many excellent gardeners, who, when they find their Vine-leaves scorched, ascribe it to the leaves having had water standing on them when the morning sun has reached them. For ourselves, we entertain grave doubts as to the fact, for this simple reason, that when leaves are wetted by a sudden storm in the open air, even in the spring, and at noontide, when the sun is strongest and the leaves most tender, no scorching follows. Nobody ever heard of such a thing as wet leaves being scorched by the sun in the open air. It is only in glass houses that the mischief happens. How can that be?

That Vines are often scorched under glass, we all know too well; that the scorching may have followed the exposure of wet leaves to the sun, is possible enough; but the question is, Have the two facts any real connexion? The scorching might have happened, though the leaves were dry. That looseness of reasoning which obscures so many subjects is nowhere more conspicuous than in gardening, where *post hoc* is as often confounded with *propter hoc* as it is in physic.

If the sun has the alleged power, there must be a reason for it, and accordingly what is called a reason is sometimes assigned. Water is said to collect in globules on the surface of a leaf, and so to concentrate the sun's rays like burning-glasses. But there are some rather serious defects in this explanation. Water does not necessarily collect in globules; and if it did, those globules could not act in a forcing-house with more energy than the dew-drops in the open air, which never burn plants. Moreover, the surface of a leaf is not in the focus of the imaginary fluid burning-glasses; and we need not say that the concentrated rays of the sun are only able to act when they are collected in a focus. Besides, when water falls on leaves, it assumes a plano-convex figure, and then, the convexity being uppermost, no focus can be formed.

Another reason that has been offered for the supposed phenomenon is that of M. De Candolle, who says, "I should think, *if the fact is as represented*, that this burning arises from the water softening the tissue below it, becoming heated by the action of the sun and hindering evaporation." But long before the action of the sun could have heated a drop of water high enough to cause a burning, the water would be dispersed in the form of vapour; and there is no evidence to show that leaves are scorched by the stoppage of evaporation. If it were so, leaves should be burnt the most when they are plunged wholly into water, which is the reverse of the fact. If they *are* hurt between sun and water, it seems more likely to arise from the cold produced by sudden evaporation.

The most rational course will be to verify the statement in the first instance, and then, *if it be a fact*, to seek for its explanation. It may be said, Why doubt that which is so notorious? One of the best and most sensible gardeners in the country, in a letter now before us, says, "I can assure you that my Vines have suffered materially from being acted on by the sun while moist from the syringing of the previous evening, and from the vapour generated in the house while shut close during the night." And he refers the mischief to his houses having been glazed with close-lapped British sheet-glass; giving it as his opinion, that in a house glazed with common glass, and open laps, it would not have occurred. This very statement seems to us conclusive as to the uncertainty of the cause of the burning. It may have arisen from the sun, or from want of ventilation, or from the vapour generated during the night, or, in short, from something else.

It is not difficult to meet these statements by counter assertions, also coming from excellent gardeners. Nobody grows much better Pines than Mr. Hamilton, who, however, "sprinkles their leaves with water two or three degrees warmer than the atmosphere of the house; and this mode of watering ought to be repeated *twice a day* in the summer-houses, *except in very cloudy weather!*" As the season advances, he waters the plants over the leaves whilst the sun is still shining on the glass, before its rays are much diminished. (*Treatise on the Pine-apple*, p. 65). Mr. Barnes also syringes, with water a little warm, occasionally on a fine day at any time. (*Loudon*, p. 700.) And yet, what is more common than to hear of Pine-plants being scorched by the sun shining on their wet leaves? Nor is the practice of wetting leaves at all times confined to certain Pine-growers. Mr. Roberts, whose Grapes have excited so much admiration at the London Shows, expressly declares—"Observe to keep up a very humid atmosphere, as under a clear sun the young foliage has a great drain upon it by evaporation, to a greater degree than when arrived at a more mature state. Syringe lightly, and close your houses early in the afternoon; say in March, two o'clock; April, half-past two; May, three; and so on, as the season and fruit advance to maturity." (*Culture of the Vine*, p. 47.)

We trust then that we have made out a case for inquiry. We would suggest the following mode of conducting it:—Take a Vine in very good health, in a well-glazed light vinery. Place a few of its leaves in exactly the same circumstances as regards the roof. In a bright day, wet some of these leaves, do nothing to the others, and watch the result. We shall then know if the burning is owing to the sun shining on wet leaves, or to some other cause. The first warm sunny day will settle the question; and we trust that many of our Vine-growing friends will tell us what they find to be the fact.

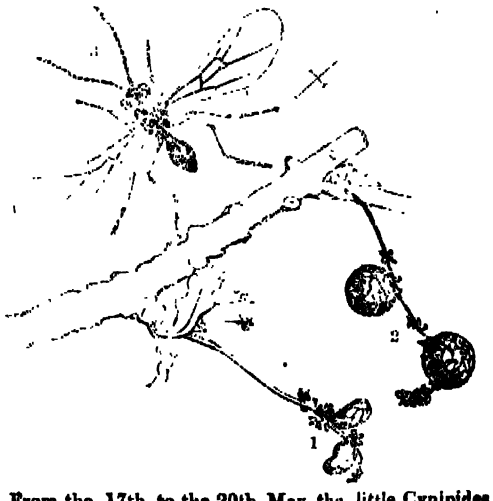
AN advertisement in another column will show the plan which will be adopted next Wednesday in regulating the MILITARY BANDS IN THE HORTICULTURAL SOCIETY'S GARDEN. In this country we know nothing of the surprising effects that may be produced in the open air by large numbers of military musicians. Next Wednesday, the assemblage of nearly 200 of the best in Europe will give some idea of what may be done in this way. No place near London of public resort offers so good an opportunity for trying the experiment as the Garden of the Horticultural Society.

THOSE who look at the progress of Gardening through the returns made in our columns of the proceedings of local and other HORTICULTURAL SOCIETIES, would come to the conclusion that it never was in a more flourishing condition than at present; and we think their judgment could not be gainsaid. Such returns are the best indications that we can have of the state of the public mind. But the more curious observer will remark something unsteady in these associations. Too often symptoms of feverish action are to be perceived, and not very uncommonly fatal cases are recorded. Although, upon the whole, the health of the body Horticultural is improved, yet it is evident that the care of the physician is occasionally wanted. A Society starts up to-day, flourishes to-morrow, languishes, and disappears. Why is this? To take an instance:—Nine years since there was no Horticultural Society in East Kent; when one was formed at Wingham, which still exists, although its funds are not so flourishing as they were. Another was shortly afterwards established at Dover, which flourished for four or five years, then languished, and finally expired. The following year a Society was started at Faversham, which ran about the same course, and is now defunct. Then succeeded one at Eltham, which after two or three years gave up the ghost. The city of Canterbury afterwards entered the field, and still continues to exist, but with three Shows in a year instead of four, as at first. The year before last another Society appeared at Ashford, which still continues, as well as one in the Isle of Thanet. It appears, in fact, that the majority of provincial Horticultural Societies have but a short existence, few, unless established in populous neighbourhoods, lasting more than ten years.

It seems to be well worth ascertaining the cause of these fluctuations. As the spirit for gardening does not abate in the localities where the Societies disappear, it is therefore to be presumed that there is something vicious in the constitution and working of the Societies themselves, which sends them so early to the tomb. A correspondent, who is well acquainted with their management, suggests that the best course to pursue would be to obtain returns from all parts of the country as to the past and present state of such Societies, their numbers, expenses, distribution of prizes, &c., and more especially as to the causes of their decline or dissolution, where they have experienced such mishaps. We agree with him in thinking that some very useful as well as interesting information might be so elicited; and we would, therefore, ask all Secretaries or Managers to communicate with us on the subject. To render the returns useful, and capable of being compared, it will be necessary that they should be made upon printed forms, which we will undertake to supply *gratis* to all who will do us the favour to apply for them, by post. Every man's labour will be thus simplified on the one hand, and rendered uniform on the other. A comparison of the returns will certainly throw much light upon the history of horticultural *eremacausis*, as Professor Liebig would call it; and a good digest of the returns, which we promise to make if the requisite materials are furnished, will, we trust, enable those who may hereafter think of organising local Societies, on the one hand to avoid error, and on the other to adopt regulations which multiplied experience shows to be advantageous.

ENTOMOLOGY.

THE CURRANTS OR GRAPE OAK-GALL, produced by *Cynips Quercus-pedunculi*.—I lately gave the history of the Woolly-galls, and this is another of the excrescences formed upon the flowering stalks of the Oaks, and by far the prettiest with which I am acquainted; much resembling in form, size, and colour, bunches of the Champagne Currant. Oak trees are sometimes covered as thickly with these galls as Currant bushes are with berries: such was the case last May at Wingham, in Kent, and at the same time they were abundant at Enfield, yet I could not find them in Suffolk or Essex this season; but they once occurred in Coombwood, Surrey, in profusion, and about the middle of May, 1841, I gathered the specimen figured, which was particularly interesting, from its showing, I expect, the process of growth in these galls: the flower-buds had been inoculated by the female Cynips, probably the beginning of April or earlier, and some of the stalks were yet green, and the anthers not quite dead; towards the extremity of one were two kidney-shaped galls (fig. 1) also green and wrinkled, in which I discovered minute white maggots; on another were the full-formed galls (fig. 2), globular, smooth, shining, and of a dirty pale-green colour, marbled with purplish red; in these the stalk and anthers were completely withered, and on opening the galls I saw the white pupæ, with black heads, lying in small cavities.



From the 17th to the 20th May the little Cynipides kept issuing from the galls. Linnæus described them under the name of Cynips Quercus-pedunculi, and the males, which first make their appearance, are intensely black and shining; the antennæ are nearly as long as the body, slender, brown, and 15-jointed: the basal joints are of a dull straw-colour; the head is broad, the eyes large, and there are three prominent ocelli on the crown. The thorax is finely striated obliquely, with two longitudinal grooves down the disc, interrupted and forming four pits; scutellum linear, long, rounded and elevated; petiole very short, abdomen not longer than the thorax, and much narrower, compressed; wings greyish, pubescent, and iridescent, superior very ample, the cells of the usual form, the basal nervures deep pitchy, with a small trigonate areolet on the disc; legs long, slender, and dull straw-colour; pulvilli and claws pitchy. The female is similar, but the antennæ are shorter and 14-jointed; the abdomen is shorter and almost as large as the thorax, ovate-conical, compressed, with an oviduct beneath, (fig. 3;) the natural dimensions are exhibited by the crossed lines.

This species is less robust than many of the Cynipidæ are; the wings are large, the legs long, and altogether it seems to be well formed for flight. Mr. Main has made the following observation in the "Gardeners' Magazine" regarding this species, and it equally applies to the Woolly-galls; he says, "There is a remarkable fact accompanying the deposition of the

wise on the drooping stalk of the catkins. These male flowers are destined to wither and drop off as soon as their office of shedding the pollen is terminated; but if, before they have done so, they are seized and appropriated by the fly, they become permanent, and remain so until the maggot within the gall ceases to feed." From my own observations, as already recorded, it appears that many of the galls remain after the larva has become a pupa, and the same happens with the Woolly-galls, which are produced, as was lately shown, upon the male catkins of the Oaks; and the same difficulty presents itself in both instances relative to the deposition of the eggs by the summer broods, as we recently intimated, and which at present has not been satisfactorily accounted for.

These Cynipidæ are not free from the attacks of parasites, for I bred two very brilliant species from the currant-galls: one was apparently the Callimome flavipes of Walker, which is of a beautiful green with yellow legs, the ovipositor of the female being longer than the body; the other was the curious Platymesopus tibialis of Westwood. I am also now able to state that a pretty parasitic Chalcidideous insect has been produced from one of the Woolly-galls; several of both sexes were discovered in the box the 4th July, and they seem to be the Eulophus (Prosorus) similis of Walker.*

It will be remembered that the conglobated masses of twigs on the branches of the Birch, resembling swarms of bees and magpies' nests at a distance, also the mossy excrescences formed on the Briers, are the work of similar insects; which lately led to the suggestion, that if we knew the acids or poison which produce such remarkable objects, and the exact manner in which they are applied, it might be in the power of the philosopher to experimentalise with the same materials, and produce vegetable curiosities as interesting and ornamental as the Weeping Ash, &c. Let it not, however, be imagined that we prefer monstrosities to the simple beauties of nature, but every natural curiosity is worthy of investigation, if it be only in the search of truth; to unveil the mysteries of the creation appears to be one of the interminable subjects destined to exercise the ingenuity of man. —*Rusticola.*

PLAN OF A HOTHOUSE AT POLMAISE, STIRLINGSHIRE.

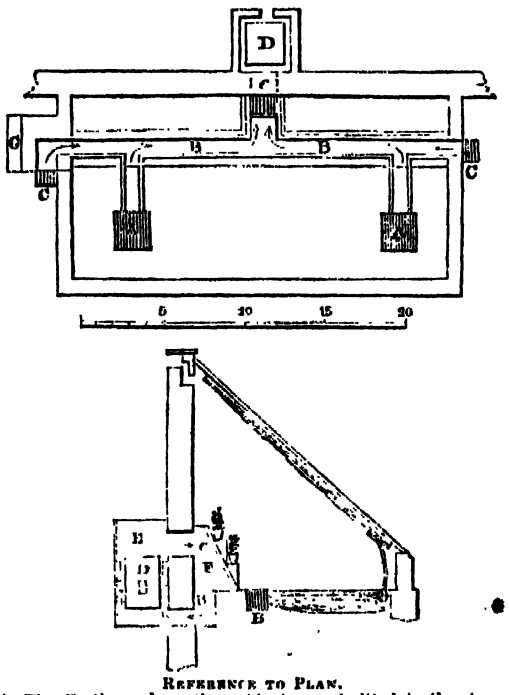
We have been favoured by Mr. Murray with the following plan and description of a hothouse, lately erected by that gentleman at Polmaise, and heated without the intervention of flues or hot-water pipes, but merely by a circulation of air from the hot-air chamber of a stove, behind the wall of the hothouse. Mr. Murray writes that "The hot-air is made to circulate freely through all parts of the house, at any temperature the gardener chooses, and a constant fresh circulation of air is kept up, by merely taking advantage of the well-known principle that hot air is lighter than cold air, and that therefore a circulation can easily be kept up by making the openings or drains one at each corner of the hothouse, and placing a grating on them, and conducting the drains under the surface of the earth of the house, into the stove placed at the outside of the back wall of the house, and introducing the air when heated in the hot-air chamber of the house, by means of an opening as low as possible through the back wall, into the house; but as the air of the house would soon be all returned hot into the house, two drains, one at each end of the house, are made, conveying fresh air also into the stove, and uniting with the two from each corner before entering the stove, and thus keeping up a complete supply of fresh air to the stove to come out heated air, to supply air to the plants in constant succession, and thus forming a healthy climate at any temperature the gardener wishes, with a constant circulation, but without any chance of injuring the Vines at any stage of their growth from the admission of cold air.

"In order to steam the house, a very simple process is adopted, by placing a woollen cloth along the whole length of the house before the hot-air chamber's opening, and watering the woollen cloth, thus producing a mild and gentle steam without any risk of its being too hot, as often happens when a flue is overheated and then watered. A stage for flower-pots is placed in front of the woollen cloth, which is stretched along the back of the stage sloping towards the back wall, the stage being about three feet at the bottom and 9 inches at the top. Indeed, the watering the woollen cloth has been found so beneficial a way of applying steam that some of the neighbouring gardeners have applied it over their flues, and watered it in place of watering the hot flue as formerly. I have also adopted another method of steaming the house, so producing a damp atmosphere, which is preferable. A sewer for conducting water runs along the upper board of the above-mentioned stage, and into the sewer are inserted worsted threads, which hang down a few inches on the woollen cloth—say five or six inches—and convey water gradually and constantly by means of the capillary attraction, thus keeping up any degree of moisture in the house that may be required, which is particularly beneficial during the swelling of the fruit, and can be regulated completely by the number of threads employed, and their thickness; and the water in the sewer is supplied from a small barrel standing at one end of the stage, which can easily be filled when required. Any degree of moisture may thus be given to the air of the house by increasing the quantity of heat, and regulating the supply of water through the

* Figures of the genera are illustrated in Curtis's Brit. Entom. pl. 132 and 562; also the Guide, Genera, 618, 622, and

worsted threads, and being given gradually in place of a rush of steam when hot flues are watered, it more resembles the natural moisture of the air, and is more healthy for the plants, and the moist air may be continued for any number of hours at a time, without any trouble to the gardener, exactly as he wishes it, and to any degree.

"The house has only been built two seasons, but the strength and healthiness of the wood of the Vines and foliage exceeds any in the neighbouring hothouses, or indeed in most others, and the bunches of fruit are quite magnificent. Much less fuel is required through the year—nearly a half—and less attendance. There is no chance of a flue choking, as there are none, or of a pipe bursting, as there are none; of course the original cost is saved, and the repair necessary for both avoided; the fire is made up at night, and requires no attention until morning. The stove used is one of Haydon's patent stoves; and the idea occurred to me of using it for a hothouse, from having heated a large church with a stove by the same maker—merely a circulation of hot air, without flues or pipes. Several professional gardeners have visited the house lately, and all have approved of the great simplicity and cheapness of the plan; and from the success attending it, there is no doubt of its being generally adopted: and the more so, as it is well known that the fruit is always higher flavoured when a free circulation can be adopted of fresh air, at a proper temperature; indeed, the fine bunches of fruit which were obtained last season were particularly high flavoured. The size and strength of the Vines are more like the growth of five years than two, and the foliage is in proportion."—*W. Murray.*



REFERENCE TO PLAN.

A. The Grating, where the cold air is admitted to the stove from within the house.
B. The Drain, conducting the cold air to the stove, over which is the gangway.
C. A Valve for admitting fresh air from without, keeping a healthy atmosphere within.
D. The Stove.
E. The Warm Air Chamber, and *e* the outlet from the chamber.
F. The Woollen Cloth nailed underneath a stage for plants which extends to within 2 feet from each end of the Vinery, dispersing the warm air equally through the Vinery, and steaming it by applying water through the rose of a watering-pan upon the cloth.
G. Steps into the Vinery.

HYBRID FERNS.

A TRANSLATION of some remarks on Hybrid Ferns, by E. Regel, in the "Botanische Zeitung" of August 11, 1843, may be acceptable to some of your readers; to these I have appended copious extracts from a letter on the subject received lately from Mr. J. Henderson, who has paid so much attention to these beautiful plants and formed so valuable a collection of them. As the observations not only of a scientific but of a practical man, they will, I am sure, be thought worthy of comparison with those of Regel, and the more especially as Mr. Henderson had not seen Regel's observations. Regel writes as follows:—

"The production of hybrid Ferns was first announced in modern times by Bernhardi. At present it is only in the genus Gymnogramma that such intermediate Ferns have arisen during cultivation, as may be regarded as hybrids. The arguments which speak for such hybridisation must be but negative so long as nothing certain is known respecting the mode of impregnation; for the views of Hedwig, Stöhelin, Œder, Schmidel, Kölreuter, Gärtner, and Mirbel, on the male organs, have been long regarded as unfounded. In like manner Bernhardi's and Presl's views are but hypothetical. The interesting discovery of Spermatozoa in Ferns lately made by my friend Dr. Nägeli, and which he will shortly publish, place the matter in a new light. Though the mode of impregnation may not have been discovered, still we have here a possibility of this process taking place. The negative ground, then, which speaks for hybridisation in the genus Gymnogramma acquires greater force. So long as a single species only is cultivated, each species of Gymnogramma remains constant under cultivation; but intermediate forms spring up from seeds where several sorts are grown. I have in my Herbarium, from the gardens of Berlin and Bonn, the following intermediate forms, which may be regarded as hybrids:—

"1. Between G. chrysophylla and peruviana, which is nearest to G. peruviana, as regards the mode of division and delicacy of structure; but the meal on the under side is of a somewhat duller yellow than in G. chrysophylla. This species is dispersed in gardens under the name of G. L'Herminieri. Whether it has arisen from culture, or has been introduced, I cannot speak with certainty; it seems, however, to be one of those Ferns which are apparently hybrids. It was distributed from the Leipsic garden through Germany.

"2. I have a plant between G. chrysophylla and G. distans, which was raised at the Botanic Garden at Berlin. In outline it resembles G. distans, but the pinnæ are broader, and the colour of the meal is dull yellow. Probably this is the same plant which was raised from seed at Erfurt, and named by Bernhardi G. chrysophyllo-distans.

"3. A third Fern, intermediate between G. chrysophylla and dealbata, is known in Gardens by the name of G. Martensii.

"4. Two Ferns are known to me between G. chrysophylla and G. calomelana, both of which agree in outline with G. calomelana. In the one the meal is of a greenish yellow; this goes by the name of G. Massoni, and seems to have originated in England. The second originated in the Berlin Garden, and has the meal as intensely yellow as G. chrysophylla. This I call G. chrysophyllo-melana.

"5. I have a Fern perfectly intermediate, both as to division and the colour of the meal, between G. distans and G. calomelana. It is from the Berlin Garden, and I distinguish it by the name of G. distanti-dealbata.

"6. I have two Ferns intermediate between G. dealbata and G. calomelana; one of which is nearer to the former, the other to the latter. The first is from the Berlin and Bonn Gardens, and named by me G. dealbato-calomelana; the latter, from Berlin, I call G. calomelano-dealbata.

"7. Lastly, I have a Fern intermediate between G. calomelana and G. distans, from the Berlin Garden, which I call G. distanti-calomelana. It is worthy of remark that these supposed hybrids are usually far more vigorous and larger than the parent plants.

"In conclusion, I beg leave to remark that if, in the absence of direct proof, these intermediate Ferns be regarded as mere varieties which have arisen from culture, we must for the sake of consistency suppose all the mealy species of Gymnogramma to have arisen from a single stock, which, if the extreme Ferns be considered, is very difficult to agree to."

Mr. Henderson writes to me on the subject as follows:—"I am afraid that I shall not be able to give you much useful information about Hybrid Ferns; it is a very perplexing subject, and all my inquiries in that direction have not enabled me to come to any decided opinion about the matter. Whether these plants are to be regarded as true hybrids, or the changes which they exhibit depend on peculiar circumstances affecting the individuals so changed, are questions which I think have not yet (as far as I know) been satisfactorily made out.

"I believe it is only in the genus Gymnogramma that those Ferns which are called hybrids have been produced from spores, appearing to partake of the characters of two different species. Among the hundreds of seedlings which are every year produced here, I have never in any instance observed a disposition to depart from the characters of the parent plant in any except those of Gymnogramma, and even these are confined to species the fronds of which have a farinaceous covering underneath. They differ chiefly in the colour of the farina, in the shape of the frond, and in having a much more robust habit than the species from which they are derived; they also produce few rather diminutive theca, with small imperfectly formed spores, which I think are mostly if not always abortive. I have sent you specimens of the different sorts that have been raised here; and also a specimen of G. Martensii, which was raised on the Continent, and which, in Link's Filices," is said to be intermediate between G. calomelana and G. chrysophylla. I have also within these few days received G. L'Herminieri, said also to be intermediate between these species, but it is evidently much nearer to the latter than the former species.

"No. 1 is between G. chrysophylla and G. sulphurea, the frond resembling the latter species in outline, but on a larger scale, and the farina approaching to the rich golden colour of the former species. Whether this is really an accidental variety or a species from foreign spores I am unable to say. Two or three seedlings came up here six or seven years ago—one in a pot among foreign seedling Ferns, and another in a pot with an orchidaceous plant: since then about a dozen more have been raised, all so perfectly resembling one another, that I am inclined to think that it is rather a species than a variety. It is by far the most graceful of all the farinaceous Gymnogrammas.—"No. 2 resembles much G. tartarea, but differs in its very large size, its more upright habit, and in the yellow farina.—"No. 3 bears nearly the same relation to G. calomelana which No. 2. does to G. tartarea. It grows to a very large size, nearly twice that of G. calomelana. Neither this nor the preceding have any resemblance to the species with yellow farina.—"No. 4 seems intermediate between G. calomelana and one that is known in gardens under the name of G. ochracea, a species from Buenos Ayres: the farina is paler than in G. ochracea.—I have a number of seedlings, all

closely resembling G. calceolaria, but with farina more or less of a yellow colour. G. calomelæna is, in fact, a very variable species in respect to the colour of its farina. I have hardly a plant the farina of which is free from a tinge of yellow."—*M. J. Berkeley.*

FAMILIAR BOTANY.

Morphology.—No. XVI.

By soft degrees a mighty change ensues.

Erratum.—P. 404, line 49 from the bottom, *for* "Each of these carpels is like that of the Whitethorn," *read* "Each of these carpels is like that of the Cherry."

The fruit of a plant is either merely its ripened carpel, or the ripened carpel together with the parts of the flower that surround it. A Peach is the first, an Apple is the second. This being so, and a carpel, together with the parts of the flower that surround it, having been demonstrated in former articles to be, beyond all possibility of doubt, altered leaves, it follows that the fruit of a plant is also a leaf or leaves. There is no getting away from the conclusion that is thus arrived at.

The changes that the carpel undergoes in the course of its change into a fruit are so numerous, that it would be tedious to discuss them in detail. The alterations that result in the formation of a Peach may be taken as an illustration of the process in other cases.

When the flower of a Peach drops off, the carpel loses its style and stigma, which are no longer wanted, and the ovary alone remains to swell and change. It is to be recollected that that ovary consists of the two sides of a leaf turned inwards, and united at the edges; consequently, one side of it answers to one half of a leaf, and the other side to the opposite half. Now, it is not uncommon to find one half of a leaf green and the other white, or to have the two halves different in some other respect. In the Peach the carpellary leaf is, in like manner, occasionally found to be smooth on one half, and downy on the other; and then, when such a carpel becomes a ripe fruit, one half is a Nectarine, and the other a Peach. This is not of uncommon occurrence, and is clearly intelligible upon morphological reasoning, and upon no other.

Vegetable anatomists also know that the leaf of a Peach-tree, although as thin as a piece of paper, consists in reality of two layers, of which the uppermost is much more compact than the other, in consequence of its component parts being differently arranged. Now, the inside of a Peach is the upper side of the leaf out of which it is fashioned, and therefore may very well be the hardest, as, in fact, we find it to be: for the stone of the Peach is its inside.

When the carpel of a Peach swells, its sides thicken, and soon acquire the texture of brittle leather; by degrees the apparent uniformity of the materials out of which the sides of the Peach are organised cease to present a uniform appearance. The inside (or upper side of the carpellary leaf), becomes paler and firmer; and thus the stone originates. Those who put green Peaches into pickles know this, for such Peaches are unfit for the purpose as soon as a pin refuses to pass easily through them. Gardeners know it still better; for the time when the hardening of the inside of the Peach takes effect is the critical period in the life of the young fruit. At that time the colour of all the parts is the same, or nearly so; it is only by its greater hardness that the future stone is to be known. But by degrees two opposite changes take place in the two layers of the Peach; the outer becomes more and more soft, acquires great succulence, changes colour, and ends in the flesh; the inner becomes more and more hard, acquires considerable dryness, and ends in the stone. In some Peaches the two layers, one flesh and the other stone, freely separate; in others they as firmly adhere—as we all know.

It is thus that a Peach is made out of a leaf in the form of a carpel; and a similar investigation so completely explains the formation of all other fruits, that I shall pursue the matter no further. There is, however, a class of facts connected with certain kinds of fruits, so intimately connected with this subject, and so conclusively establishing the exactness of the views of morphologists, that they may not be passed by in silence.

Every year we remark occasional instances of an Apple or a Pear lengthening out, and acquiring the appearance of a Pear within a Pear. Mr. Peter Mackenzie sent us in 1842 a very curious instance of the sort in a Crassane Pear; and in the same year Mr. Henderson, of Brompton, forwarded a Chasmomtella equally instructive, a figure of which is here introduced.



It had lost entirely its usual form, instead of which it appeared to be constructed with scales arranged one over the other, in the manner of a Pine cone. Nothing can be clearer than that in this case the leaves of the calyx and corolla had increased somewhat in number, the centre round which they were first arranged having lengthened out a little. The effect of the lengthening was to separate the leaves a little, and to raise them somewhat one above another; so that, when the lengthening process took place, their ends projecting one beyond the other would necessarily assume the appearance in the woodcut. If a leaf-bud lengthens a little, this is what happens; and there is no conceivable reason why a flower-bud, which is the same thing in another form, should not also lengthen in the presence of disturbing causes.

What those causes are I shall leave the Editor of the *Gardeners' Chronicle* to explain when he shows, as he one day will endeavour to do, how important a connection there is between Morphology and Gardening.—*R. E.*

NOTES ON AMERICAN PLANTS.

Having, during the spring of 1843, joined a party of gentlemen at St. Louis, state of Missouri, who were bound to the Rocky Mountains on a hunting excursion, and as Botanical pursuits were my sole object, I have thought it might gratify some of the readers of the *Chronicle* to learn a few particulars respecting the localities of the various genera that came under my observation; at the same time I must remark that this is very deficient as a list of the flora in the regions which we traversed. Our movements were too rapid to afford a fair opportunity for exploring many of the most favourable localities, and although I daily travelled at least one-third more than the rest of the party, still I was not able to examine the country as I could have wished.

We left the city of St. Louis on the 2d of May, and proceeded up the Missouri by a steam-boat, a distance of 360 miles. The banks of this noble river were beautifully ornamented by the Cercis Canadensis, which displayed its purple flowers in the greatest profusion. Among the herbaceous plants, I observed several species of Viola, the Podophyllum peltatum, two species of Habenaria, some Oxalis, Corydalis, and Anemone Pennsylvanica; but the spring having been unusually backward, Flora had not then displayed many of her treasures. We reached Westport on the 8th of May. This is the Ultima Thule of civilisation; and, as henceforward we had to travel by land, we had to encamp until the 21st in order to make the necessary arrangements for prosecuting our journey. This delay afforded me a good opportunity of examining the country around. The following embrace such plants as came under my observation, viz., Claytonia virginica, Batschia canescens, B. longiflora, B. Gonelina, Corydalis cucullaria, Baptisia leucophæa, B. leucantha, B. cœrulea, Krigia dandelion, Erythronium albidum, Sisyrinchium mucronatum, with its varieties; Pastinaca fœniculacea, Cypripedium albidum or candidum, C. parviflorum, C. pubescens, Oxalis violacea, Hyporis erecta, Astragalus caryocarpus, Cercis Canadensis, Viola cucullata, V. pedata, V. delphiniifolia, and Verbena Aubletia.

During the first week of our journey, which comprised only a distance of about 100 miles, being from Westport to the Kanzas River, the chief plants were Phalangium esculentum, Ellisia Nyctalea, Psoralea esculenta. The Baptisias leucophæa and leucantha, with Batschia canescens and B. longiflora, were most profusely spread over the rich undulating prairies we traversed, and gave the whole scenery a gay—nay, even a brilliant appearance. The Eryngium aquaticum was the plant that most prevailed, but it was not then in flower. The soil here was very rich, and the country was particularly well wooded along the margin of the various streams which intersected the prairies, comprising the Ash, several species of Elm, Hickory, various Oaks, the American Pappaw, Chesnut, Beech, Birch, and Poplar. From the Kanzas River to the River Platte, which we reached on the 14th of June, the Phlox aristata, Astragalus adsurgens, Pentstemon grandiflorus, and another species, with the Sida coccinea and Gaura coccinea, displayed their rich blossoms in the greatest profusion. The latter plant has a beautiful rosy shade in the morning, scarlet towards noon, and nearly a white in the evening, when it emits a most agreeable odour. This plant and the Gaura coccinea continued to produce their rich blossoms until we reached the Sweet-water of the Platte, a distance of nearly 800 miles. While travelling over this region, I found a beautiful crimson Malva, or Nuttallia. The following embrace the principal plants which came under my notice during this part of our journey:—Lathyrus ornatus, Oxytropis Lamberti, Liatris pycnostachya, L. punctata, Salvia azurea, Psoralea esculenta, P. floribunda, P. canescens, Cassia chamæcrista, Rosa blanda, R. foliolosa, Phalangium esculentum, Monarda oblongata, Corcopsis tripteris, C. palmata, Tradescantia virginica, with varieties from the purest white to the darkest purple; Zizia aurea, Pedicularis canadensis, Anemone Pennsylvanica, Clematis viorna, Fragaria sp. (?), Symphoricarpus vulgaris, Gerardia angustifolia, Seymeria macrophylla, Lilium unifloxum, Lythrum virgatum, Phlox divaricata, P. suavsolens, Senecio aureus, Oxybaphus (Calymenis) Nyctaginea, Talinum parviflorum, Malva pedata, M. involucrata, Cnnothus mollissimus, Psoralea argophylla, Petalostemon violaceum, Desmodium acuminatum, Schrankia uncinata, Darlingtonia brachypoda, Geum virginianum, Potentilla arguta, Polytænia Nuttallii, Œnothera speciosa, and others. We now commenced a tedious and uninteresting journey along the plains of the Platte River, and for several days the flora on the plains was very meagre, if I except two species of Mammillaria and the Opuntia Missourica, O. cylindrica, with a fine variety of Grasses. On the 21st of June we ascended to the upper prairie, when a gay floral scene was presented to our view. The rich yellow of the Coreopsis tenuifolia predominated, but was enchantingly variegated with the white bloom of the Pentstemon albidus, the scarlet of the Sida coccinea, the various shades of the Tradescantia virginica, and the different species of Astragalus, diverging from the purest white to the darkest crimson. From the south to the north fork of the Platte, I observed the most Erysimum argenteus, Lupinus pumilus, L. sp. (?), Erysimum asperum, Erysum pusillum, Cleome integrifolia. Several plants were found in this region which were entirely new to me, particularly a dwarf shrubby Œnothera, the finely-pencilled rose-coloured flowers of which were very much admired. I also observed Lathyrus linearis, Cœnothus Americanus, Amorpha fruticosa, Oxytropis Plattensis, Œnothera rhombipetala, Vernonia fasciculata, Aster cordifolius, A. oblongifolius, A. Novæ Angliæ, Duteria coronopifolia, D. pulverulenta, Erigeron bellidiastrum, E. glabellum, E. strigosum, Coreopsis tinctoria, Lobelia spicata, and L. siphilitica. On the 27th of June we made the North Fork of the Platte; the surface of the ground became more varied; rocks began to make their appearance, with a range of hills composed of soft marl of an earthy formation, and consequently plants were more abundant. As we descended from the upper plains a variety of species were found, among which may be enumerated a species of Oxybaphus (?) or Calymenis (?) Œnothera pinnatifida, O. speciosa, Yucca angustifolia, a most beautiful species of Eriogonum, Œnothera albicaulis, O. trichocalyx, O. biennis, O. Drummondi, O. coronopifolia, O. cæspitosa, O. pinnatifida, with several other unknown species; Potentilla anserina, P. arguta, Thalictrum megacarpum, Argemone Mexicana var. albiflora, Helianthus two species; Nasturtium palustre, and among the hills a beautiful crested Pentstemon. This brings me to Fort Laramie, a trading station of the American Fur Company. From thence to the Sweet-water of the Platte, among other plants may be mentioned a pretty species of Aster, three species of Calochortus, and Gaillardia bicolor. At a small stream called Bitter Creek, several acres were densely covered with a species of Delphinium of the richest azure blue, and most agreeable odour; Pachypodium integrifolium, Vesicaria didymocarpa, Polygala alba, Linum rigidum, Pelargonium Fremontium, Rhus triloba, Purshia tridentata, Glycyrrhiza lepidota, Apios tuberosa, Psoralea campestris, P. tenuifolia, P. lanceolata, Petalostemon candidum, P. villosum, P. violaceum, Astragalus gracilis, Phaca longifolia, and several other species; Kentrophyta montana; Lupinus, four species; Cerasus Virginiana, Campanula rotundifolia, Rubus strigosus, Epilobium coloratum, E. spicatum, Mentzelia nuda, Ribes cereum, R. lacustre, R. irriguum, Sedum rhodiola, Sium inciaum, Cornus stolonifera, Symphoricarpus occidentalis, and Galium boreale. On the 17th of July, while all were occupied in crossing the North Fork of the River Platte, I paid a visit to the highest range of the Black Hills, a distance of eight or ten miles, and was rewarded by finding several species of Euchroma (Castellejas), Claytonia virginica, on the margin of a dense mass of snow; species of Silene, Cerastium, Viola, Pelargonium, Lupinus, Frasera, Erysimum, Œnothera, Batschia, Geum, Pinus, Abies, Juniperus, and the beautiful Lewisia rediviva, with several unknown genera.

On reaching the beautiful winding stream called the Sweet-water of the Platte, we found we were fast approaching the mountains. While passing through this arid region, days would elapse without our finding a single plant that was worthy of notice. The whole ground was literally covered with different species of Artemisia. In many instances the floral goddess seemed to have deserted us. However, in more favoured spots I was enabled to enumerate the following, viz.:—Brickellia grandiflora, Aster multiflorus, A. falcatus, Erigeron canadense, Gutierrezia euthamiæ, Solidago rigida, S. Missouriensis, S. speciosa, S. giganteu, Aplopappus spinulosus, Grindelia squarrosa, Franseria discolor, Helianthus petiolaris, H. Maximiliani, Cosmidium gracile, Bidens connata, Hymenopappus corymbosus, Artemisia Ludoviciana, A. frigida, A. canadensis, A. cana, A. biennis, A. Lewisii, A. rediviva, Stephanomeria runcinata, Gnaphalium uliginosum, G. palustre, Cacalia tuberosa, Mulgedium pulchellum, Lygodesmia juncea, Glaux maritima, several species of Pentstemon, Teucrium canadense, Lycopus sinuatus, Stachys aspera, Scutellaria geniculata, Mentha canadensis, Lippia cuneifolia, Onosmodium molle, Myosotis glomerata, Phlox Hoodii, Polemonium cœruleum var., Calystegia sepium, Gentiana affinis, G. Fremontii, and two other species; Frasera speciosa, Asclepias speciosa, and three other species, Kochia dentata, Eurotia lanata, Fremontia vermicularis (I believe the Batis vermicularis of Hooker), Oxybaphus sp. (?), Polygonum persicaria, P. aviculare, P. viviparum, Rumex sp. (?), Shepherdia argentea, S. canadensis, Sisyrinchium anceps, Iris Missouriensis, Allium reticulatum, Smilacina stellata, Zigadenus glaucus, Eriogonum annuum, E. umbellatum, E. Fremontii, E. cæspitosum, E. ovalifolium, and three other species; Gentiana aretophylla, Elæagnus argentea, Polygonum amphibium, Gilia sp. (?) (splendid), Pulmonaria ciliata, Pedicularis surrecta, Castelleja pallida, C. miniata, and two other species; Mimulus sp. (?), Orthocarpus luteus, Dodecatheon dentatum, Arctostaphylos uva ursi, Senecio triangularis, Helianthus uniflorus, Balsamorrhiza sagittata, Iva axillaris, Phaca ternata, Aster integrifolius, A. adscendens, A. novi Belgii, A. elegans, Potentilla gracilis, P. fruticosa, P. diversifolia, P. sericea, Sibbaldia procumbens, Thermopsis montana, Astragalus hypoglottis, Parnassia fimbriata, Arenaria congesta, Berberis aquifolium, Actæa rubra, &c.

The above names are according to Dr. Torrey, who had the arranging and naming of a collection of specimens collected by Lieut. Fremont, of the U.S. Army, and who had gone over our route, in a great measure, during the summer of 1842.—*Alexander's Gardens, London.*

Home Correspondence.

Summer Pruning.—In the case of the Gooseberry this is frequently neglected, but it is worthy of attention for several reasons. The first is, that by cutting off the summer shoots a greater proportion of sap is directed to the fruit. Where summer pruning is not performed this is lost in the production of useless spray and foliage, which moreover retards the swelling and ripening of the fruit by shading it from the influence of sun and air. Pruning is, on that account, necessary, in order to have large, well-flavoured berries; and it also, by concentrating the sap, in a great measure aids the formation of more fruit-buds for next year, and renders them more vigorous and healthy. The shoots, however, ought not to be cut off too early, as this would perhaps cause the tree to push new shoots again instead of forming fruit-buds; neither would I prune to the base of the shoots, as that would cause the buds at the bottom to push, and perhaps convert some of those formed for fruit into wood buds. My plan is to begin about the end of June or beginning of July (according to the earliness of the season), and cut away all the suckers from the bottom of the bush pretty closely. I then cut off the summer wood along the main branches with pruning-shears, which are speedier than a knife, cutting more or less off the shoots, according to their strength—say about half off a weak shoot, and one-third off a strong one, or perhaps less, it being best to err on the safe side. In some cases merely pinching off the points is sufficient, for by taking too much off you may cause the shoot to push anew. If after this pruning the bushes make more new wood, they may be looked over and the young shoots topped, but take care not to top the leading shoot of a main branch when the bush is young, and has not arrived at its full size. Another reason in favour of summer pruning is, that it makes the bushes have a much neater appearance; it also leaves less shelter for the caterpillar and other vermin. All the young shoots that are thus stopped should be pruned back to one eye in the winter or spring pruning. With regard to the summer pruning of Apple and Pear trees the same remarks are applicable. In pruning these it is common to cut the young shoots close to the spurs, or to rub them off as they appear; but this is a practice of which I do not approve, for by so doing more young wood is always encouraged, and consequently fewer fruit-buds are formed. My method of pruning wall or espalier Apple and Pear trees is this:—I never rub off the wood-buds, but let them grow until the month of June or July, when I go over the tree and shorten the shoots according to their strength and vigour. When young shoots appear after that time, do not rub them off until they are of considerable length, otherwise they would push again, and carrying off the sap, would impair the vigour of the fruit-buds. Thus, by stopping the summer wood in proper time, new fruit-buds are formed, and the others are more matured for the succeeding spring. Some may object to the untidy appearance of the trees on walls having part of the young wood sticking out, and may say that it in a great measure deprives the fruit of the full influence of the sun. But this is not the case, as a moderate shading is not against fruit, and the productiveness of the trees will fully compensate for the untidy appearance. If the above method was fully practised, we would hear of fewer complaints about bad crops on wall and espalier trees.—*A. W., Muiryfold Grange, Banffshire.*

Canker in Fruit Trees.—In April, 1843, I worked some grafts of the Crofton Apple on a young stock; they went through the usual process remarkably well: and when I removed the clay, &c. everything appeared in a healthy state. On examining the stock during the following spring, 1844, I found it so extensively cankered that I was obliged to cut almost through it, in order to eradicate the decayed parts, leaving but a small portion of the back. Fearful of losing my tree from the dryness of the season, and hoping to induce the wounds to heal, I covered the stock up to the grafts (about 16 inches) with rich soil The result of my experiment has been most satisfactory. The injured parts are forming new bark round the edges, and the stock is throwing out beautiful roots from the eye below the grafts.—*Falcon.*

Pear-Pruning, by "Observer."—Before his well written observations are acted upon, one should like to have Dr. Lindley's opinion upon his mode of pruning, as well as that of the leading gardeners, through the medium of the *Chronicle*.—*July 13th*, 1844.

Quick growth of the Pear.—I have in my garden two grafts of the Gansel's Bergamot, and two of the Beurrée D'Aremberg (worked on a Windsor Pear stock in April, 1843), now covering one hundred feet of wall. Is not this rather an extraordinary instance of quick growth?—*Falcon.* [Very.]

Pears.—The introduction of so many good kinds of Pears of late is a very great acquisition. Some of them not only surpass many of the old kinds in flavour, but also in fruitfulness, even in situations where some of the old sorts do not bear well. Witness, for instance, the fine fruit of Napoleon or Marie-Louise, on a north-west wall, where the Crassane and Brown Beurré are cracked and gritty. The Marie-Louise succeeds better on a west or east aspect than on a south one; this is owing to its being retarded in such situations until the weather becomes warmer; it blooms too soon when exposed to the south, and consequently suffers from cold and frosty winds. Many of these lately-introduced varieties keep much longer than the old ones. When this is fully known, we need not be surprised to see Pears take the place of Peaches and Nectarines, which are difficult to keep, especially in late seasons. Though the fruit of both are excellent, yet they are of short duration; while a good collection of Pears will last during winter and spring when fruit is most wanted. It is not unusual to see fine walls covered with old barren Pear-trees, which might be rendered fruitful if they were grafted with new kinds. I observe in a back Number of the *Chronicle* an opinion by Mr. Hayward respecting ripe Pears. He says—"No Pears, if gathered and eaten when fully ripe on the tree, are so good as when gathered as soon as they have attained their full size, and laid by in a dry place until they are ripe." This writer surely cannot mean that Pears ought to be gathered immediately when they attain their "full size." I consider it is better to let them hang on the tree until they give warning by dropping, or until their stalks part freely from the tree; for, in my opinion, many of them, and especially late kinds, are gathered too soon. At present (Nov. 7), I have several kinds of Pears yet on the trees; they seem to be improved in quality. If Pears are gathered too early they become tough and wizzened.—*J. Wighton.*

Gooseberry Seeds.—This is the proper time to sow Gooseberry seed. This season has been very favourable for the finest and most delicate sorts to ripen; and I would recommend those who wish to obtain improved varieties to sow the seed in shallow seed-pans, placing them in a cool frame; the seed can be separated by mixing fine sand with the pulp, and rubbing it out. This operation over, sow immediately, and keep moderately moist the soil in the pans; when the seedlings are up, and have got four leaves, let them be exposed altogether to the weather; but I would advise their being kept in the pans, and again placed in a cold pit, and finally planted out in rows, 2 feet apart. In the spring they will fruit the second year.—*Anon.*

Gooseberry Caterpillar.—Among the many prescriptions for getting rid of this troublesome pest, is one which, for simplicity and efficacy, cannot be made too well known. It is this:—When the bushes are wet, either after a shower or after having been watered with a garden-engine or watering-pot, dust them over with a little dry soot. The caterpillars desert them immediately after the application, and the first shower cleans the bushes of the soot.—*D. F., Woodhouselee.*

Pruning Forest Trees.—In a late *Chronicle* I observe a remark, made by a writer signing himself "Quercus," to the effect that, with reference to the growth of Oaks and the pruning of them, "he never yet saw a magnificent stem that had not a proportionately large head." But I would beg to ask him whether he has not seen many a magnificent head that had not a proportionate stem? I well know that I have, and that I have indeed now some such in my view; yet would I not on any account have that disproportion in them altered, forming as they do an ornamental feature in my grounds; though in respect to others growing in a coppice, where ornament is not such an object, I would gladly exchange the branching honours of their heads for the solid cubic contents of a long stem, from which, when felled, the builder might be able to cut his stout beam and girder, of 25 or 30 feet in length. Every one, doubtless, loves to behold in the rich domain a magnificent Oak, extending far and wide its enormous branches, as if to protect the soil that had nourished its increase, and enabled it to withstand the storms of many centuries. Few objects in the creation present a more imposing spectacle. But for useful purposes, surely it were desirable to grow clean straight timber; and if the zealous planters of the present generation were but to plant Oak more largely (instead of the Beech, and other trees of little use except for fuel), I cannot but think it might again become sufficiently abundant to be extensively used, as formerly, in our buildings, in lieu of the perishable material now generally employed. But such timber can only be obtained by paying more attention to young plantations than is usually bestowed upon them: in the first place, with respect to thinning; and, secondly, by judiciously pruning the young trees. By the neglect of the first operation, the Larch, and other trees that should nurse the Oak in its infancy, will very soon altogether destroy, or sadly weaken it; and, for want of pruning, numbers of the young trees will remain stunted from want of nourishment (except, perhaps, in very congenial soils), or distorted in their growth by the irregular diffusion of the sap among the branches, and the consequent want of a vigorous leading shoot. Having had the experience of near forty years as a rather extensive planter (during which I think I may say I have personally given more attention to the subject, and especially to pruning, than most gentlemen), I will venture boldly to affirm, that increased vigour, stature, and bulk, will ever be the sure result of the judicious pruning of the Oak, whatever any theorists may advance to the contrary.—*W. H.*

Action of Roots.—In illustration of the fact that plants draw all their nourishment from the small roots at their extremities, and are little, if at all, affected by having the larger parts exposed to the weather, I have lately had a convincing proof. In repairing a vinery, I was desirous to have the front wall, which was originally of solid brick-work, built on arches, for the benefit of some of my best Vines. They are planted in the inside of the house, but I have some on the outside likewise, which I wished to retain until their places are supplied with young ones. From these it was necessary that all the soil should be removed; and knowing that it was a stiff adhesive clay, and that there would be few small roots close to the stem, I commenced at it and removed the soil away for a distance of three yards. In that state the roots lay exposed from the end of March to the beginning of May; nevertheless I find that the Vines have broken as strong as usual, and show about the same quantity of Grapes.—*J. M.*

Plant Brokers.—If a new plant could be as readily got as a new book, the trade would be benefited. Why should not there be brokers, who would undertake to execute an order for plants raised in the neighbourhood of London, just as a wholesale bookseller in town executes an order from the country, though it may be for not a single book of which he is the professed publisher? The present system of the trade acts as a check upon their own profit, no less than the grievous charges made by carriers for parcels of small weight.—*Richard Tongue.*

Acclimatising Plants.—I am of opinion that many of our greenhouse plants, particularly those from the Cape, may be cultivated in the open air, even in our uncongenial climate, with greater success than is generally supposed. In proof of this, I planted out last autumn two plants of Cacalia, one ficoides, L. and the other articulata, on a small rock-work, at the end of a vinery. Not being disposed to take them up and reset them, I left them to take their chance. While they were out of doors a sharp night's frost set in, with a cold and high wind. I naturally expected to find the plants destroyed, but upon examination, I found that they were not the least injured. When the next frost appeared, I covered them with a little hay, which was removed as soon as the frost went away, and now the plants are growing freely. Along with the Cacalias was a plant of Aloe succotrina, (De C.), the leaves of which were destroyed, but the roots were spared, and are now sending up two fine suckers. While speaking of this species of Aloe, I may observe, that the leaves of this plant are much sought after here for burns, &c.; the leaf is cut in half, lengthways, the fleshy side is then laid upon the burnt part, and it is said that it greatly abates the pain. So much are these leaves sought after by the inhabitants of Hillsborough, that our plants are greatly mutilated by cutting off the leaves for them. Now, if these fleshy-leaved plants will survive our winters with a slight covering, why not hard-wooded plants, from the same country? At the same time, I put out a plant of Goodia lotifolia. This stood a frost of 5° without the least protection, and in a very exposed situation, but the second frost, which was very severe, and of long duration, killed the plant to the ground; but upon examination, I found the root, and that part of the stem which was under the ground, as fresh as when planted; and I have no doubt but that the roots would have sent up suckers, which this plant is very apt to do, if it had been left in the ground. I ought also to mention that the shoots were of one year's growth, and quite tender, which was greatly against it. I am, however, fully convinced that if the plant had been protected, it would have survived the winter. The Clianthus puniceus stands out here against the end of a vinery, with a very slight protection, and that only on very severe nights, and flowers abundantly in spring. I would recommend this plant to be cultivated as a standard in sheltered situations in flower-gardens and pleasure-grounds. It should be protected with a few Fir branches, or old mats; its beautiful scarlet flowers in the spring months will amply repay the trouble. Azalea indica alba also stands out here in the flower-gardens, and flowers freely, with a few Fir branches laid over the tops of the branches on very severe nights; this plant is generally cultivated in the greenhouse, summer and winter. It will, however, thrive much better if kept, during winter, in a cold frame or pit; when wanted for flowering, it should be placed in the greenhouse. I formerly stated that Fuchsias ought to be abundantly cultivated in the open air: of the importance of this I am every day more and more convinced; and it is my opinion that they ought all to be thus treated, with the exception of those which are intended as specimen plants, for exhibitions, &c.; but for the tender species and varieties, I would recommend a covering of old tan, short dung, or a spadeful of earth, to be laid over their tops after they have been cut down. F. fulgens stood out this winter here, protected in this way. Now, if fulgens, which, in its young state, is amongst the softest-wooded species we have, stands out with a slight protection, why not others of a hardier nature? I trust that these observations will induce some of your correspondents to give the results of their experiments on this subject; for I feel confident that we shall hear of plants which are now choked up in greenhouses, growing freely in the open air with little or no protection during winter; and of those plants which are now burnt up in a stove, growing and flowering freely in the greenhouse.—*John M'Intosh.*

Influence of the Moon on Plants.—A notion was formerly very prevalent among gardeners, and perhaps exists to some extent at present, that the light of the moon has an injurious influence upon plants, particularly in the months of April and May. The name of *Lune Rousse* is given by the French to the April moon, from the influence it is supposed to exert on the leaves of plants, in turning them brown. M. Arago has shown that this notion is erroneous, the effect alluded to being clearly owing to another cause, but one which must necessarily be in active operation on bright moonlight nights. He observed that in the months of April and May the temperature at night is often not more than four or six degrees above the freezing point; and under these circumstances, when the sky is most unclouded and the moon shining brightest, heat will be radiated from the earth sufficient to reduce the temperature at the surface some degrees lower, or below freezing point; hence the tender leaves and roots of plants are nipped by cold, and that appearance given to the former which is intended to be conveyed by the French word *rousse*. I have been induced to offer these observations from

the practical bearing which they appear to have on the subject of morning and evening watering of plants; and I imagine that it is consistent with a just view of the subject to affirm, that in regard to out-of-door plants morning watering alone should be resorted to during the spring months, even to the end of May in our uncertain climate. We cannot prevent the refrigerating process which more or less is going on at the surface of the earth in the cold clear nights of spring; but we may, at least, avoid artificially assisting it by putting the earth just in the most favourable condition for producing cold. It is so placed, when the surface is newly watered, because evaporation, and consequently congelation, is most active when it is in that state. I may illustrate the comparative influence of morning and evening watering, in relation to this subject, by what takes place when several folds of wetted cloth are applied to a vessel to cool the contents. As long as the outer cloth is wet, the evaporation goes on unobstructed and the temperature of the vessel is proportionably reduced; but as soon as the external covering loses its moisture, the process languishes, though the inner folds are still wet. So in morning watering, the surface moisture is evaporated in the genial temperature of daylight, without injury to the plants, and when night comes on, the surface is comparatively dry, and evaporation cannot go on so actively, however clear the atmosphere. In evening watering, on the other hand, we prepare the ground for an energetic evaporation going on during the night; consequently chilling the earth and plants growing in it, at a time when the low temperature of the air is more than sufficiently adverse to the well-being of the latter.—*J. H. H.*

To keep Shrubs from Windwaving.—Among the different methods that have been used to prevent injury to transplanted shrubs, arising from their being shaken by the wind, the simple plan of pegging down their lower branches seems to be the cheapest and best. The forked pegs used for this purpose should be made with one side about half the length of the side from the principal branch, and a head six or seven inches in length should be left for the prevention of splitting, on being driven into the ground. In hard ground the holes, especially for large plants, should be opened with an iron bar, to save labour in driving, and waste of forks. The elasticity of the branches when well secured, preserves the removed plant remarkably steady during the action of heavy gales of wind, and if the ball of earth is of moderate size, and of the usual proportion to the size of the shrub, it is singular how small a twig is sufficient to support it in bad weather. The branches may be cut, and the pegs removed from shrubs near walks, towards the end of the ensuing summer; in other cases they may be left to die, or grow and form layers for masses of shrubs, according as light and air are admitted or excluded. Ropes give and take in dry and wet weather to such a degree as to be useless as stays. And even the fastenings of pole stays are almost sure to become loose enough in dry weather to allow the bark to be chafed. Stays of all kinds ought to be applied whenever practicable to the branches, rather than the main stem; and each stay should have a separate fastening. Comparatively little injury is done even if the bark of branches is compressed too much, or rubbed, and in many cases branches by such means may be weakened to the improvement of the plant. Under circumstances where expense is a secondary object in the removal of valuable trees or shrubs, or it is of consequence to secure common trees, iron-wire stays of $\frac{1}{10}$ to $\frac{3}{10}$ of an inch in diameter, with a stuffed clip round branches secured to pegs, or to posts, if cattle were admitted round the trees, would form a secure fastening capable of lasting a considerable period, and of being used for different trees in succession, in which case its cost would be much less than rope. In reference to the success of transplanting shrubs or trees at different periods of the year, if parties took more notice of all the circumstances attendant on their removal, perhaps several points of greater importance might be observed, for instance:—1. Removal from a greater to a less exposure, for the sake of obtaining a free growth of leaves, which are of greater importance even than roots. 2. Removal from worse to a better ground, either natural or artificial. 3. Removal to land which can be readily penetrated by the young roots of plants; the easiest means of obtaining this essential quality is by mixing loose stones of any kind with the soil; when the tree or shrub gains strength it will usually take care of itself. 4. The removal of trees or shrubs in a healthy but not luxuriant state of growth; cutting round the shrubs some time previous will soon cure the latter defect, and insure subsequent success. It is most valuable in all cases, but occasionally it will be advisable to encourage the growth of fresh roots by good or rich earth added to the trench. Convenience causes these important points in numerous instances to be disregarded, but a due attention to their relative value would enable a planter of moderate experience to predict the comparative success or failure of removals, supposing in each case that the trees or shrubs were equally well planted, in their new position.—*E.*

Transplanting Forest Trees.—I observed in the *Chronicle* of March 30, a statement from a correspondent signing himself "E.," regarding the transplanting of large forest-trees, and expressing a wish for information respecting the preparation of them "before transplanting." As far as my experience goes, I would be inclined to give preference to trees prepared in July. The selection of the tree, however, for its situation, is of more importance to its future success than preparation. For instance, take a plantation that has stood for years pretty thick, cut out the greater part of the trees, leaving at distances of 60 or 70 yards two or three trees together; these trees, on being suddenly exposed, although not moved or touched at the roots, will become as stunted and ill-thriven as if they had been taken from the same situation and transplanted in any other, similar to the one referred to before the wood was thinned. This I know from experiment. "E." has given a statement of the expense of removing his trees, but has omitted to say how far he did remove them; consequently he has left us in the dark. I cannot agree in his tearing up the tree after clearing its roots of soil on the surface, for this among other reasons, that if the tree happened to have (as a good many of them have) a strong tap-root, before this is removed the force of tearing up the tree will necessarily shake away all the earth from the other roots, because of the resistance the tap-root offers to any force in any way applied to turn the tree over.—*Clouden.*

Dwarfed Fig-tree.—I have in my possession what I believe to be a unique curiosity in this country—a Banyan-tree, dwarfed in China, and known to be 200 years old! It was sent to me by a friend in India, and was traced back from one possessor to another in that country for the time above mentioned, having always been regarded as a great curiosity. It arrived, unfortunately, during a severe frost, two years ago, which affected it on its journey from London (having been exposed for one night to the open air), and one of its principal branches was frost-bitten to such a degree, as to make it necessary, in order to save the life of the tree, to have the branch cut down. The other remains perfect. I am aware that there are dwarfed Bannian-trees in other collections in the kingdom, but none, I am given to understand, of so small a size, and of so great an age. I am credibly informed that the Chinese have lost the art of dwarfing forest-trees in this peculiar manner. It has not been removed from the China vessel in which it came from India. Its height is only 2 feet, circumference of one stem 7 inches, of the other 11 inches. It is now in vigorous health, is kept in the hothouse in the winter, and put into the sun during the summer months, removing it at night. It requires very little water. It is a tree of great beauty, and its form is a perfect study for the artist.—*E. C.* [This is not a Banyan, but a curious specimen of Ficus nitida.]

Pine-Apples.—In reply to "A. B. C.," in a late number, I beg to mention that, in different places which I have lately visited, I have observed that the tank-system is not well adapted for the growth of the Pine apple in all its stages; it is better suited for the forcing of Melons, Cucumbers, Asparagus, &c. He states that his house is in three compartments, that the first is composed of wooden stages, and that the pots are suspended by their rims in the same; I imagine this would be the best compartment of the three for fruiting the plants in, more especially about the time he wanted them to fruit. By withdrawing the water from the dishes, having a gentle heat given out by the pipes alone, and at the same time giving little or none to the root, for a few weeks (the plants being strong, and the pots full of roots), would throw them into fruit. I am of opinion that the tank-system disappoints the generality of Pine-growers; many admit that by that system they can produce noble-looking plants, with fine foliage and healthy action, but this is at the expense of the fruit. I do not agree with a statement in Macintosh's "Practical Gardener," which says, "that Pines starting into fruit in August are tantamount to being lost;" as, in large establishments, gardeners are obliged to have a succession for the most part of the year; and of Pines—say a variety of Queens, Black Jamaica, and Montserrats, if strong, healthy plants—showing fruit in August, the Queens would ripen good fruit by the end of October, and the Jamaicas and Montserrats would come in in succession up to Christmas, and even much later; the two last are well known to be the best, both in point of swelling and flavour, for winter fruit. I would recommend "A. B. C." to put his strongest plants in that compartment having the stages, and, if practicable, to withdraw the water from the dishes, and likewise to discontinue watering at the root. The following plan I have often practised with success upon strong plants of shy bearing kinds, such as the Black Jamaica is allowed to be, viz.—with a pair of scissors cut off the tips of the leaves in the hearts of the plants, and continue to do so to others as they spring. This stops their over-luxuriant growth, and the change from excess of moisture to partial dryness, disposes them to fruit, when water might again be added if thought necessary. At all events, I should not discontinue moistening the pipes and pathways after every bright day, and the house should be shut up early in the afternoon.—*James Roberts.*

Pine-Apples.—Those who have the good fortune to reside near good peaty soil, need not be afraid of using it wholly in which to grow Pines. The plants that I fruited in all peat, swelled better during the winter months, and produced finer fruit than those planted in either rich soil or turfy loam. For plants that are to fruit in winter, peat is excellent, on account of its loose texture. Pines planted in a mixture of half charcoal and loam, have fruited very well. All sand gives no one cause of complaint; on the contrary, it should rather be recommended, for the roots become very strong in it, and the rootlets are much more numerous; indeed, I never saw roots so strong and numerous in any other substance. It is not of much importance what kind of material Pines are grown in, provided the roots are in a healthy active state, and free from sudden changes of bottom-heat. The soil in the pot should also be kept from becoming soured by allowing decaying bark to adhere to the outside of the pot. Keep out worms by placing the pot, when plunged, on a flat brick.—*W. Brown, Morpeth.*

Opposite Opinions, Rooks, &c.—The various, and in some instances contradictory statements, of your correspondents, must, in many minds, create a tendency to scepticism; that is to say, where parties do not make practical observations and judge for themselves. One states that salt has produced him magnificent Asparagus—another says that salt has destroyed his plants. One advises carcases as a manure for Vine borders—another says that has nearly destroyed his Vines. One says that for 30 years he has not suffered from Turnip fly, owing to his steeping his seed in oil, and powdering it with sulphur—another says he has tried it, and still the vermin have marched in military array over his field, perforating and consuming his crop. One says persecute the rook and other birds—another, encourage them as your best friends. As great a contrast frequently arises as to the quality of fruits—one stating a particular variety to be excellent—another will not admit it to be second rate. How are we to reconcile such statements, admitting, as we must, in respect of parties with whom we are unacquainted, that each is entitled to equal credit? In many instances, no doubt, the old aphorism may be applied—"Circumstances alter cases," as with regard to salt and carrion manure; a skilful gardener, knowing the time, and watching the result of his experiment, follows up a perceptible improvement, and counteracts the first appearance of a retrograde movement before the disaster becomes irremediable. In similar cases, the rash or inexperienced fail. With regard to the Turnip fly also, there may be some peculiarity of tillage. I have heard of a whole field failing except where a roller had casually been drawn—in some seasons, that the plants are more liable to attack when the ground is rolled. As to fruit, there can be not the least doubt that soil and aspect, or climate, will produce a much greater difference than exists between the first and second class. But with regard to the rook and birds generally, I think there ought to be but one opinion, namely, that their usefulness very greatly exceeds any injury committed by them, either to the farm or garden. An instance is recorded upwards of a century ago, I believe by Bradley, of the inhabitants of a certain village destroying the whole race of birds in their locality, by setting a price upon their heads; the consequence of which was, that their entire produce was attacked by insects and caterpillars innumerable the following year, and they were glad to offer a similar or greater reward to have fresh colonies brought in to their assistance. Dr. Stanley also relates that a whole district in Germany was nearly deprived of its corn harvest by having destroyed their rooks. I have myself seen a field of Swedish Turnips so infested by grubs, that from three to ten were found under nearly every root that was examined, the Turnips having the appearance of warty excrescences and quite hollow within. An immense flock of rooks, accompanied by a flock of starlings, covering more than an acre, alighted upon them, and so busy were they that they would allow a person to go within a few yards of them without flying up. They remained there a whole afternoon, and on examining the Turnips afterwards, I found scarcely one that had not been cleared of the grubs. That piece of ground has been much more productive from that time; and I think at least some share of the improvement is due to the rooks, though certainly not all. As to sparrows and other small birds, particularly wagtails, a careful observer may see them in breeding time following the plough or scarifier, dart their beaks into crevices and pick out the wire-worms incessantly, then carry them to a smooth piece of earth, lay them in a bundle, and then clasp them firmly in their beak and carry them off to their young. Now suppose the rook in searching for grubs pulls up the plant with it, would not the vermin have ruined it in all probability if he had not? And allowing that he pulls up some Potatoes on the moor lands, a little expense of watching obviates that calamity. Also allowing that sparrows will do considerable damage to the Wheat crop from the time the grain is formed until harvested—a period of six weeks or two months—wasting as much as they eat, yet a few old men, for a few shillings per week, may check their depredations over an extensive farm. But by what process, involving fifty times this outlay, could man himself perform the service rendered him by these active labourers, who never want calling to their employment—are never idle when there is any prospect of their working to advantage—who never call upon their protector on a Saturday night. Prejudices often take deep root, and are handed down from ancient to modern times; sparrow clubs are still in existence; and I was informed a few days ago of a person sending 3000 heads to a member of one club, and having to send 3000 more to be exhibited as the genuine trophies of that individual. He also may consider he is doing man a service; but unless I receive further evidence to the contrary, I must continue in the opinion that birds are eminently serviceable to man during at least ten months out of the twelve; that there is no known substitute for their services; and that any injury which they might effect during the rest of the year may be easily and cheaply prevented.—*F. J. Graham, Cranford.* [What a pity it is that people should not have sense enough to attend to these true and excellent suggestions!]

Moss on Gravel Walks.—I sometimes destroy Moss on walks in a very simple manner. It is continually when the surface of the walk is smooth and moist, that Moss abounds; winter is the time best suited for destroying it. By watching a certain degree of frost it will be observed that the surface of the walk, by the expansion of the ice,

will be somewhat loosened, and the Moss thrown out; I then sweep with a stiff broom, or scrape with a draw-hoe, and clean it up afterwards. If the frost is too slight the Moss will be but partially removed, and if too severe, too much of the surface will be loosened; but when a *proper* opportunity occurs, millions of plants may be destroyed in a short time, and the walks look much refreshed afterwards.—*Peter Mackenzie.*

Gravel Walks.—The following is an excellent plan to make (or turn over these in dry weather):—If of a sandy or gravelly nature, strew a little clay or marl upon the walk. When turned over, take away the large stones and place them at the bottom of the soil. Immediately after you level your walk, apply your iron roller steadily, and let a labourer follow the roller, pouring upon it water regularly as it passes over the ground; in 24 hours after, if the weather is dry, it will be as solid as a stone floor. The writer has had ocular demonstration of the fact in 20 instances, in the late dry weather.—*W. R. Hanwood, Liverpool.*

Conservatory Climbers and Fixed Roofs.—In pursuance of the advice given by Mr. Beaton, I had the only sliding sash of my conservatory fixed with screws; and in the hot air thus confined, several of the climbers have certainly flowered far more freely than before. Bignonia Cherere is now splendidly in bloom, as are Ipomœa Learii and Mandevilla suaveolens, which promises to bear a succession of its fine flowers through the autumn. Bignonia jasminoides is also producing its blossoms of almost peerless beauty in large masses; but several other plants do not seem to like the heat. I have several fine specimens of Kennedyas, Zichyas, and Hardenbergias, which, after reaching the top of the pilasters between the windows, are carried along the arches forming the support of the climbers; in this situation the leaves and branches have been quite burnt, and the same effect, though in a less degree, has been produced on Bignonia grandiflora, which, for the sake of its flowers, I still retain in the house, though, doubtless, perfectly hardy in this county. Will any one recommend me a few more climbers that will bear the temperature produced by the fixed roof, either to be planted in the border, or to be inarched on those now growing? Various fine Bignonias and Ipomœas I conceive might be introduced, and there are possibly some things that would unite with Mandevilla. I have lately added Bridgesia spicata, Brachysema villosum, and Beaumontia grandiflora; but the latter seems a slow-growing plant, and, I fear, will be some years old before it blooms. The Brachysema I understand is a fine thing, and will of course not attain the height of its stronger-growing companions.—*A Devonian.*

Longevity of a Pæony.—A plant of the double crimson Pæony is growing at a cottage-door, at Great Chesterford, in Essex, which is known to have occupied that identical spot 100 years. The grandfather and grandmother of the woman who now lives there were both born about 120 years ago, and could not remember the time when it was not there. It is not a very large plant, sending up 16 stalks.* That it lives by the permanency of the original tubers, and not by the formation of new ones, may be inferred from the identity and minuteness of the spot of ground, which it occupies without spreading. Is it ascertained that herbaceous perennials are of shorter life than the Oak or Chesnut?—*A. H.*

Stipa pennata.—It is not generally known that the seed of the Stipa pennata produces a flour very much like that of Rice; and, I have no doubt, on poor sandy soils, would produce a bread Corn, where scarcely anything else would grow.—*Anon.*

Tall Stock.—I have a stock which measures the great length of 2 feet 11¼ inches from the top of the bloom to the last seed-vessel; the stem was cut as close to the seed-vessel as possible.—*Mede.*

Village Horticultural Societies.—Your remarks on the necessity of showing in classes are perfectly true; but, except in the three classes of Gentlemen, Nurserymen, and Cottagers, I do not see any sufficiently broad distinction to make further classification practically useful. The Squire, with his head gardener, hot-houses, &c., will no doubt carry off many of the prizes, but the amateur will very often beat him with his Florist Flowers, Pelargoniums, Fuchsias, and those requiring only greenhouse, or frame; and the Tradesman will generally beat both with his Auriculas, Tulips, Pinks, or Pansies. I have taken the trouble to analyse the number of prizes gained at our last Exhibition, where subscribers all show against each other; and I have subdivided them into four classes:—

1. Gentlemen, with head gardener, hothouses, and every advantage.
2. Amateurs, with one gardener to assist them—mostly a common labourer.
3. Tradesmen, working their own gardens.
4. Market gardeners, who employ men under them.

Eight of the first class contributed 121 articles for exhibition, and obtained 32 prizes, (or about 1 in 4.)
Ten of the second class contributed 69 articles for exhibition, and obtained 14 prizes, (or about 1 in 5.)
Twelve of the third class contributed 98 articles for exhibition, and obtained 13 prizes, (or about 1 in 8.)
Three of the fourth class contributed 22 articles for exhibition, and obtained 7 prizes, (or about 1 in 3.)

You will see by the above that the disproportion is not very great between the Amateur and the Gentleman, and that the Tradesman obtained a greater proportion than either. In the Cottager's Class, 53 Cottagers contributed 137 articles, for which 32 prizes were distributed among 24 of them. This was in a country village, the population of which does not exceed 1200, but the Cottagers of all the neighbouring villages are allowed to compete.—*A Village Secretary.* [We think that in this instance the number of prizes which each exhibitor gained should not be lost sight of.

The Gentlemen obtained 4 prizes each.
Amateurs ,, 1 ⅛ ,,
Tradesmen ,, 1 ⅓ ,,
Market Gardeners 2 ⅔ ,,

This seems to give the Gentlemen a great preponderance.]

Spot on the Pelargonium.—I imagine that this arises from the effects of Green-fly. I, however, do not mean to assert that Green-fly alone produces the spot; but this, in combination with other circumstances, causes it. One of these is the want of paying attention to regularity of watering: when water is injudiciously or sparingly supplied, the result is a sickly and half-dead plant, full of spot and Green-fly. The Pelargonium requires to be regularly supplied with water when in a growing state; if the leaves are allowed to droop time after time, the cause will soon be shown by its effects. Immediately afterwards there appears upon the leaves a sort of sticky substance not unlike sugar, when dissolved and rubbed upon anything, which is injurious to the plant. In order to grow Pelargoniums to perfection, they should have a house wholly for themselves, which should be shaded with canvass, so as to exclude the mid-day sun. Air should be freely admitted, and the plants syringed every other night, when not in flower, with clean water; they should never be too much crowded together, but should be kept a good piece apart, so that air may circulate freely among them. By paying proper attention to these things there is no fear of the spot ever making its appearance. Particular attention should, however, be paid to having a free and open drainage, so that water may not stagnate about the roots. These rules I have seen practised with success in large establishments where hundreds of Pelargoniums were grown.—*Caledonia.*

Bees.—If (p. 405) "An Old Correspondent" had aroused his Bees by rapping on the under hive, instead of leaving them to ascend into the upper one of their own accord during night, most probably they would have done so, and thus prevented the others descending into the lower hive. In uniting Bees from established hives, a little smoke from the fungus Magus (?) is very useful; it makes them quite white, so that they may be handled like Peas. I question if "C.'s" exhumed Bees were "better off than his unnatural swarm" that attacked them; if otherwise, they would have kept them off. The plan adopted to save the "persecuted Bees" might be right; but attacked hives are in general too weak to be of much use, and frequently the pillage is too far gone before it is observed. Removing the Bees beyond the flight of the invaders may be right; but others might get scent and carry off the spoil. If the treasure be an object, the best way is to smoke the Bees from the besieged hive and take it. "C." imagines that some of his Bees were "idle" because they attacked their weak neighbours, but their good store speaks other things; the additional room, if the season admit, enables them to lay up more honey. I may mention that Bees are very fond of the Salvia nemorosa, or Wood Sage. Those who cultivate flowers for Bees ought to grow this plant in abundance.—*J. Wighton.*

Ants.—The best way I know of destroying an ant's nest is by Elder-leaf tea. Boil the leaves in water, and if the tea will injure the roots of any plants, the mixture will be found quite efficacious when cold. I have lately destroyed several nests this way. Elder-tea destroys the Aphis on fruit-trees, and most likely many other insects.—*C. A. A. Lloyd.*

Ants.—In Notices to Correspondents (p. 464) it is said, "We know of no effectual remedy for these troublesome little pests." Please take Cobbett's "English Gardener," and read paragraph 299.—*Paddy.*

Rats.—Observing communications in the *Chronicle* lately, relating to destroying rats, it appears to me the great desiderata in these matters are simplicity and easy application. I therefore make no apology for stating what I have experienced to be most effectual, and combining the two above-named properties:—For the destruction of rats—An ounce of white arsenic mixed up with 3 ounces of lard, spread on slices of bread, which cut in pieces longer than broad (say about 3 inches by 1 for the convenience of putting into the holes). In every rat-hole put a piece of bread and lard, taking care to put it well down the hole, so that dogs or poultry cannot reach it. By this means I have killed thousands of rats, and those not killed desert the premises for at least six months.—*F. G. C., Aston Hall, Hawarden.*

Swans.—A correspondent, "M., Deptford," at p. 390, makes some remarks on what I had said respecting swans.—"Without being pinioned, how are they to be kept, especially in small ponds?" He classes the operation of pinioning with that of "docking, horses, dogs, &c." I hope he does not imagine that I am an advocate for cruelty to animals, when it can be avoided. There are, I suspect, many operations performed on animals for useful and legitimate purposes, that are more cruel than the practice of pinioning swans. "M." observes that swans can be kept without this, because they "have strong local attachment." But he does not say how he contrived to overcome this local attachment in the "pair of swans, which he procured in their second year unmutilated." It would have been expected that upon the principle of local attachment, they would have returned to their former home. Be that as it may, I am persuaded that pinioning is the most effectual expedient for keeping swans at home, especially on small ponds; and their beauty on the water is very little impaired by it. Where swans are kept on large streams, and belong to different proprietors, to allow them to fly must lead to worse confusion than the plan in common practice. "M." speaks of dogs attacking swans that have been pinioned. It must be a powerful dog indeed that would attack a swan in the water. But, on the other hand, if swans could fly, they would be far more likely to fall a prey to the fowler. An instance of this occurred to my own knowledge, a few years ago, near the river Wensum. A swan, which had chanced to escape pinioning, took flight in the winter, and was shot. The person who shot it affirmed that he took it for a wild swan; which was certainly a very natural mistake. I fear the like would be of frequent occurrence, if swans had liberty to use their wings. They have a great dislike to any other fowls being in their waters—even to those of their own species. But it must be borne in mind that they are not gregarious, that is, the tame sort; for the wild swans visit us in flocks from the northern regions in winter. I cannot believe, with "M." that swans kill toads, through jealousy, at the breeding season; such jealousy is to me quite incomprehensible.—*J. Wighton.*

Brugmansia parviflora.—Some of our horticultural friends may, perhaps, be glad to be told, through the medium of the *Gardeners' Chronicle*, that the plant known in our stoves as Brugmansia parviflora, or B. floribunda, is a very different genus from Brugmansia, and one that no botanist seems to be acquainted with, since the days of Ruiz and Pavon. It is strange that it should have escaped the notice of cultivators that it is the Juanulloa parasitica of Ruiz and Pavon's Flora Peruviana, vol. ii. p. 47, tab. 185. It is a "parasite," or more properly an epiphyte, "on the branches of trees, near Pozuzo, and San Antonio de Playa grande in Peru."—*W. J. Hooker, Royal Botanic Gardens, Kew.*

Covering for Frames.—Having seen many statements in the *Chronicle* respecting the advantages derived from waterproof calico for greenhouses, &c., I beg to offer the following remarks, being an eye-witness to the results. Having a Vine situated against a brick wall, and being anxious, if possible, to ripen the fruit, I determined on erecting a shed over it, in every respect similar to a greenhouse, the dimensions of which are 13 feet long, 9 feet high, and 8 feet wide, with a fall of nearly 4 feet, and covering it with calico prepared with oil, wax, and acetate of lead. The sashes are moveable, so that I can at any time regulate the temperature. In many respects I consider this preferable to glass. In the first place the condensation at the top of the house at night is so much, that the Vine always has a sufficient degree of moisture; 2dly, the light is more agreeable, and the heat is retained much longer; and, 3rdly, when the foliage is rather scanty it so shades the fruit, that on the warmest day there is not the least danger of its being injured. This building I had only erected on June 3, just as the Vine commenced blossoming, and having another Vine exposed entirely, I have been able to remark the difference. The Vine inclosed has gained so much on the other, that persons who have seen it consider the thing almost impossible, the Grapes at the present time being nearly as forward as those which have been inclosed under glass all the winter, whilst those uncovered, against the same wall, have only just commenced swelling. One thing I would recommend to those who are disposed to give it a trial, is, to avoid its coming in contact with the leaves, as they are almost certain of being scorched. I mention this, because I have seen complaints made of the foliage being blistered. In using it for protecting fruit trees I would advise that instead of having it placed within 3 inches of the tree at the top, and 12 inches at the bottom, to have it erected at double that distance from the tree.—*J. A. Spargo, Totness, Devon.*

Whitney's Composition.—No sooner does a man like Mr. Whitney invent and bring forward to public notice an article to benefit or assist those who wish to cultivate a taste for Floriculture, than we all find fault with it, and try to make a similar article a little cheaper. Many thanks, however, are due to Mr. W. for starting the plan. So great is the difference in price between a frame glazed and one covered with varnished linen, that had the inventor stated the price of varnish at double what he did, most persons would have been contented. I have tried Whitney's Composition, and also the mixture of oil, resin, and dryers, which I find equally good. I fear that many will be disappointed in its general appearance after the first winter; the excrement from birds, dust, and small pieces from the Larch, &c., have already made my roof look unsightly. I would caution those commencing, to use linen instead of calico, and to strain it remarkably tight. I have been obliged to take the linen off 12 lights, after being twice varnished, and, as I thought, finished, on account of its being too loose; whilst in my propagating pit I might fancy myself on board ship, with the sails flapping above me. My frames are 6 feet long and 3 wide, with two divisions in the length and one across; I should, however, prefer three if I covered more frames.—*G. C.*—Another correspondent writes as follows:—Seeing so many complaints in the *Chronicle* about Whitney's Composition not going so far as is stated by him, I consider it but justice to mention the following facts:—Having had nine lights of a pit to cover, each 4 feet square, I procured two pint bottles of the Composition from Mr. Whitney himself, which gave the nine lights two coats nicely. The cloth was glazed calico, at 5*d.* per yard. About six weeks ago, I had a span-roofed pit erected, having 14 lights; each light was 4 feet 6 inches long, and 4 feet 2 inches wide; the cloth was strong linen, at 8*d.* per yard. For this, I bought two quart bottles (from one of Mr. Whitney's agents), but I found that each of the bottles wanted at least one-fourth of being full; consequently it did not go so far as the first, and

the cloth likewise being thicker, absorbed more of the liquid. A good deal depends upon the quality of the cloth. The two bottles would scarcely do nine lights; I therefore got two more quart bottles (from another agent, which were quite full); one of these finished the remaining five lights, and also three more, much better than the two quarts on the nine. I, however, committed an error in using the first pint bottle. Mr. Whitney directs that it should be applied quite hot; so in making it quite hot, I must have caused it to boil; but instead of becoming thinner, it formed quite a hard substance.—*A. Threlkeld, Headingley-house, Leeds.*

Whitney's Composition.—This will not be found to stand heavy wind and rain, unless the material is thicker than the calico recommended. A frame I had covered with it has been torn in pieces, and I find others make the same complaint. During the previously dry three months nothing could answer better.—*A. R. C.*

Fixing Ammonia.—Have you ever known soot tried for this purpose? My fuel consists altogether of dried peats, and the soot, I find, destroys the offensive vapours of a small urine tank.—*Paddy.* [No doubt soot, which is chiefly charcoal, will perfectly answer the purpose, if you can get it. We have often said so.]

Hard Water.—My pump raises water unfit for many domestic purposes; soap is curdled by it, and vessels in which it is boiled are coated over by a hard substance, of a light-brown colour. Leaden pipes are, in about ten years, reduced to a rotten state. Mixed with oxalic acid, the water assumes a milky appearance, and deposits a white sediment. Can any one say what would prevent the deposit on boilers or kettles, without injuring the water for use?—*Paddy.*

Cucumbers.—A market-gardener has failed in his ridged Cucumbers these three years past. This year they looked strong and healthy from the first, until about three weeks since, when they again showed symptoms of decay. They began to droop here and there; and on pulling up the affected plants, there were no wire-worms, nor anything else visible at the roots to indicate the cause of the stems dying off. Cucumbers have been grown upon the same ridge for several years, but of course, with fresh dung and mould; and the reason for using the same place so often is, that it is protected a little by a brick wall, about 3 feet high, at the north. The soil is good and deep, and although not drained, it is not very heavy or wet. The subsoil is clay or chalk.—*Hodge.* [The disease, as above described, is of frequent occurrence. It probably arises from a want of moisture at the roots.]

Chiswick Exhibition.—An error has crept into the report of the Exhibition of the 13th, which I cannot allow to pass unnoticed. It is stated that "Mr. Rowland also contributed Roses, but they were overblown; and the collection contained no remarkable kinds." This is a very great mistake; and I can positively assert that there was not one Rose overblown in the whole collection, which was at the time very much admired, particularly the Devoniensis, Smith's Yellow Noisette, Prince Albert, Luxembourg, Charles Duval, Adam, &c.; and for which collection the Large Silver Medal was awarded. So far from the Roses being overblown, the whole that were exhibited remained in the same boxes several days before one flower dropped, which can be testified by several Amateurs who happened to visit my garden.—*Alexander Rowland, F.H.S., Rosenthal, Lewisham.*

Ancient Charcoal.—Some time ago when a person was digging peat he came upon a quantity of charcoal; the peat was upwards of eight feet deep, and the charcoal was found about four feet from the surface. One naturally inquires how old it may be, and when the fire was kindled that charred the wood? Could it be by our naked ancestors, or those who came to conquer them? It is said that the Emperor Severus gave orders to cut all the forests in Scotland; or perhaps it was done by the followers of John Duke of Lancaster, when he set 24,000 axes to work to cut down the Caledonian woods. Not far from where the charcoal was found there is an embankment which goes by the name of the Roman Camp; and at the base of the hill upon which it is situated there is part of the line of an old Roman road. It is well known that Roman coins and Roman vessels are found in peat that is much deeper than four feet; but it is difficult to ascertain the age of peat by its thickness, for peat only two feet thick may be as old as that which is twelve feet thick; and we may not be very far wrong if we say that the age of the charcoal may be 1500 or 1600 years. I have sent you a small portion of it for your inspection; you will observe that it wants the jet-black appearance of well-made charcoal; this is perhaps owing to the colouring matter of the peat in which it had been so long soaked. [The charcoal had been prepared from Fir-wood.] Can it be ascertained by the Pine wood that is found in peat if it belongs to the same species that at present goes by the name of Scotch Fir, Pinus sylvestris? From the quantity of rosin that is obtained from the wood that is got in peat some imagine that it belongs to a different species. Some time ago a Pine trunk that was found in peat was cross cut, and exhibited rather an uncommon appearance when smoothed by the plane; there was seen five series of concentric circles, the largest series containing between 80 and 90 circles; they appear to be all perfectly united to each other, except at some places where traces of bark are seen; the diameter of the trunk measures in one way about 14 inches and the other 9 inches. May we suppose it to have been a stunted tree, or the seasons to have been warmer than they are now? The growth of 1826 can be easily pointed out in cut timber, being well known from the small quantity of wood it contains.—*Peter Mackenzie.* [All we can say, after the examination of the charcoal, is that it has been procured from Fir-wood, but whether it was Pinus sylvestris or not is uncertain. We do not perceive any difference.]

Water Colour from the Cactus.—(See p. 247, 1844.)—The Opuntia, whose juice is used for painting in Sicily, has long been known for that purpose at Naples. It is not vulgaris, humilis, Ficus indica, Amyclea, or, in short, what is commonly called the Prickly Pear, but a scarce and more tender species, which I have never seen in any English collection of Cacti. It is Opuntia Tuna, a fine plant, a great bearer of yellow flowers and a fruit of the richest carmine, not purple.—*W. F. S.*

Vegetable Dyes.—The roots of the Epine Vinette, which I take to be the common Berberry, is used in large quantities in France and Germany by the dyers, who extract from it a most brilliant green. The expense of transit, together with the difficulty of obtaining it fresh, prevents its use here; but the price which our dyers could give for it (from 10*s.* to 16*s.* per cwt.), might induce proprietors of large plantations to cultivate it as underwood. Would not the root of the Berberis aquifolium answer equally well?—*J. G., Tulse Hill.* [Common Berberry is the best.]

Ice-houses.—"A. E. W." wrote, in No. 8, *Gardeners' Chronicle*, that a Virginian, with some poles and straw, will construct an ice-house for 10 dollars as good, if not better, than those which cost our men of taste as many scores of pounds. Cobbett, of old, wrote to the same effect, and promised to give the full particulars, so that any countryman should be able to erect it, for the benefit and luxury of himself and his village neighbours; but I believe Cobbett never fulfilled that promise. Is there not among your readers a good-hearted Virginian that will give us this desirable information, in such a clear manner that we could work thereby with a fair prospect of success?—the first consideration being economy in cost. A person having an unused Mushroom-house, on a retentive soil, would, I fancy, find himself much disappointed if he adopted the recommendation of "A. E. W.," without putting in some drains to get rid of the water as it sinks into the broken-up earth; and if "A. E. W." be successful, it more than likely arises from his house being on a gravelly subsoil, which forms a natural and perfect drain.—*H. S.*

Morphology.—The interesting articles on Morphology that appear, from time to time, in the *Chronicle* will induce people to look more attentively at vegetation than they were formerly accustomed to do; even those who had a little "smattering" of botany will look upon their old acquaintance in a new aspect. In a Scotch Fir-tree we commonly find a centre shoot and five or six side ones; but, where a cone is produced, there is a shoot deficient, there being only four or five side ones. I found, what I considered to be a remarkable coincidence, between the pips of the cone and the leaves of the side-shoots; the number of pips was 62, and the number of pairs of leaves on a shoot beside the cone was 64. Is this an instance of leaves being turned into fruit, or seed-vessels? The male blossoms of the same plant are commonly on weak shoots, which have not half the quantity of leaves on them that the more healthy shoots have. I found 30 pairs of leaves on those that I examined, and 20 bundles of male blossom, with 10 or 12 pairs of leaves above them, on the same shoot.—*Peter Mackenzie.*

Vegetable Phenomenon.—I beg to relate a circumstance which occurred to a Pelargonium. One of these plants, on which no flower had then opened, had been with others placed in an airy hall; the expansion of this occurred on the morning of the 6th day, when I was surprised at its altered appearance, every petal having become white and transparent as the clearest gauze, with the exception of a border of the colouring matter the sixteenth of an inch wide; the three lower petals were of a pale pink; the two others of a deeper colour; every blossom in succession did the same, and by constant inspection I found the transparency of each remained about five days; after which, in the same succession, the colour of all was restored with the freshness of newly-opened flowers. The case being so extraordinary it had my particular attention, which enables me to say you may strictly rely on my statement. My son not being at home during this time I dried some for his inspection, and this brought back the colour. This plant, I assure you, was the wonder and admiration of the many who saw it; particular care was taken of this plant, which I desired should remain untouched till the following summer, but no more of these changes have appeared since.—*E. B. Paington.*

Curious Growth of a Scotch Fir.—In the *Chronicle*, p. 574, 1842, there is a notice of a Scotch Fir-tree whose growth was somewhat remarkable; this year it is still more so. The leading shoot, and also the side shoots, started in the spring to all appearance like their neighbours, and continued to grow as on other trees of the same kind until the leader was about 4 inches long; when the side buds on the top, instead of remaining buds until the next spring, grew into branches. A leading shoot was again formed, which grew about 6 inches more, when the side buds a third time grew into branches, which are at present about 2 inches long.—*Peter Mackenzie.*

Myrtles.—Two years since I planted in my shrubbery two broad-leaved Myrtles. They face the east, and my house stands on one of the highest summits of the Chiltern Hills, South Bucks; they have stood the two last winters without any shelter or covering. A severe frost late in the last spring destroyed most of the leaves on one of them, but it has renewed its foliage and is healthy.—*J. Peers.*

Asparagus.—I have half a dozen beds of Asparagus, two years old, from seed; they were sowed in rows one foot apart, and the seeds set one foot apart in the rows: there has not been a single failure. I have given salt in pretty large quantity, and the plants are very strong, each root having five or six shoots. I fancy I should take out every other plant in the rows, leaving each two feet apart; before I do this I should be glad of your opinion, and if you confirm my idea, whether I should do it now or next season, a reply in the *Chronicle* will oblige your subscriber. [We should not disturb the roots. If the beds are well manured, the plants are not too many.] I think I have fairly tried salt, for the beds on which I have used it, now in the second year from sowing, produce from each root five to seven shoots; whilst those sowed with the same seed, at the same time, and side by side, are generally weaker in growth, and put forth two to three shoots only.—*J. G. B.*

Manures.—*Hibernicus* states that last year (spring of 1843) he manured three beds, each containing about 150 plants of Myatt's (Pine Strawberry); 1, with nitrate of soda; 2, with guano; and 3, with bone-dust. He remarked no difference in produce last year; but this year, the one to which the bone-dust was applied is much the best.

Foreign Correspondence.

Canton, Feb. 17, 1844.—The Chinese here are now making great preparations for the celebration of their new year, which takes place to morrow. Flowers of all kinds are in great request amongst the inhabitants, who employ them in the decoration of their dwelling-houses and temples. In going up the river towards the Fatee Gardens, I met boats in great numbers loaded with the branches of Peach and Plum-trees in bloom, Enkianthus quinqueflora, Camellias, Cockscombs, Magnolias, and various other things which flower at this season. The Enkianthus is brought down from the hills with the buds just expanding; and after being placed in water for a day or two, the flowers come out as healthy and fresh as if the branches had not been removed from the parent tree. This plant is a great favourite amongst the Chinese. The common Jonquil too comes in for a most extensive share of patronage; and in the streets of Canton one meets with thousands of bulbs growing in small pans amongst water and a few white stones. In this case the Chinese exhibit their peculiar propensity for dwarf and monstrous growth, by planting the bulbs upside down, and making the plants and flowers assume curious twisted forms, which are most agreeable to the eyes of a Chinaman. Large quantities of all these flowers are exposed for sale in many of the shops and in the corners of the streets in Canton, where they seem to be eagerly bought up by the Chinese, who consider them quite indispensable at this particular season. Not only are the houses and temples decorated, but the boats on the river also come in for a most extensive share. Indeed, these boats are only floating houses; for, as you know, a very great part of the population of Canton lives upon the river. The flower-boats, as they are commonly called, are particularly gay at New-year time with flowers of all hues, and gaudy flags streaming from their mast and stern. The crackers, or fireworks, of which the Chinaman is so fond, are let off in large quantities for several days in all parts of the town, and form part of their religious ceremonies or offerings to their gods. Their shops are closed on New-year's day, and for two or three days afterwards. The greater part of the natives have now on their holiday-clothes, and tramp about amongst their relations and friends to chin-chin them, and wish them a happy new-year, as we do at home. Large parties are made at this season to go up to the gardens at Fatee; and on particular days, you find there hundreds of these flower-boats crowded with well-dressed young Chinese, enjoying themselves as our own population do at Richmond or Hampton Court at home. This is the only season when well-dressed ladies are visible at Canton, as they now go over to Fatee in the flower-boats, and walk about in the gardens.—*R. F.*

Societies.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

THIS, the THIRD MEETING for the season, was held in the Surrey Zoological Gardens. The weather was favourable for the occasion, and the Exhibition was, in many respects, superior to the former meeting.—The MISCELLANEOUS COLLECTIONS OF PLANTS shown by *Amateurs* were deficient; but those produced by Gentlemen's Gardeners and Nurserymen were highly creditable. The best collection in the gardens was from Mr. Bruce, gr. to B. Miller, Esq., and comprised, among others, Achimenes longiflora and grandiflora, finely managed; Hoya carnosa, twining gracefully round a wire trellis; Siphocampylus betulifolius, flowering abundantly, and in excellent health; a good Clerodendron squamatum, and a pretty Euphorbia splendens, together with Pentas carnea, and several well-grown Heaths.—Mr. Atlee and Mr. Hamp also showed as Gentlemen's Gardeners, the former producing, among others, a very large plant of Erica intermedia, a tolerably-good Manettia cordata, but scarce of bloom; Hoya carnosa, and the useful Gardenia radicans, together with Burtonia conferta, Erica ampullacea, and Savileana, loaded with blossoms.—Mr. Hamp received a Large Silver Medal for a group containing the free-flowering Erica mutabilis, Clerodendron squamatum, a pot of Achimenes grandiflora, and a large Ipomœa.—In the *Nurserymen's Class* there were three exhibitors, viz. Mr. Jackson, Mr. Fairbairn, and Mr. Bushell. The group by Mr. Jackson was the best, and was awarded a Gold Medal. It included, among others, good plants of Statice incana, sinuata, and Dinkensoni;

Hibiscus Cameroni, and a considerable number of Heaths, among which was an excellent Hartnelli, in luxuriant growth, its branches hanging over the pot, and feathered with healthy foliage; a magnificent bush of Jacksoni, and a good Westphalingia, quite a mass of bloom.—Mr. Fairbairn obtained a Large Silver Medal for Lilium eximium, having ten fully-expanded blossoms; a purple Petunia, named Beauty; some Fuchsias, and several young, but finely-managed Heaths.—Mr. Schroder and Mr. Cox showed in the Amateurs' Class, the former bringing the best plants, among which was a good Erica Irbyana; Boronia viminea, with small pink blossoms; Mimulus Fraseri, a pretty dark variety; Martynia fragrans, and a yellow Thunbergia, called Fraseri.—From Mr. Cox was Aphimenes longiflora and grandiflora; Eucomis punctata, producing four spikes of green-coloured blossoms; a Gloxinia, and a plant of Lilium punctatum speciosum. Of Heaths there were two Collections present, one from Mr. Fairbairn, of Clapham, the other from Mr. Jackson, of Kingston. Of the two, that by Mr. Fairbairn was the best; it contained good plants of ampullacea vitata, a variety of ampullacea called s. nana; Savileana, in a lovely state; Jasminiflora alba, in fine health; and a dwarf, bushy plant of eximia, loaded with bloom.—From Mr. Jackson was tricolor superba, an excellent variety; cerinthoides, with brilliant scarlet blossoms; the free-flowering Savileana, a pretty Jasminiflora alba, a large princeps carnea, and a good eximia. Some Orchideæ were present, but among them there was nothing novel or particularly fine.—Mr. Don, gr. to G. F. Cox, Esq., received the First Prize, for Cattleya Harrisoni exhibited as a single specimen; and also for a Collection containing Miltonia spectabilis, Cycnoches chlorochilum, Broughtonia sanguinea, and Catasetum Russellianum.—A second group was from J. H. Schroder, Esq., in which were Vanda Roxburghi and Peristeria pendula, in fair condition.—The Second Prize, for the best single specimen, was awarded to Mr. Cuthill, for Lisianthus Russellianus, which had 18 stems, and was two years and four months old.—A well-grown Lisianthus Russellianus, finely in bloom, was also exhibited by Mr. Kay, gr. to B. D. Colvin, Esq., who likewise showed a tall Humea elegans, Maheruia incisa, Myoporum parvifolium, with white star-like blossoms, and some others.—Mr. Bruce was awarded a Large Silver Medal, for the best specimen plants of six distinct genera, among which was a fine Leschenaultia formosa, and a beautiful small Gardoquia' Hookeri.—From Mr. Jennings, of South Lambeth, were Erica mammosa, Lotus Jacobæus, and some Fuchsias.—Among miscellaneous objects was a Collection of Cockscombs from Mr. Suorer; well-managed Balsams from Mr. Atterton; 7 good plants of Lisianthus Russellianus from Mr. Cuthill; a group of Cacti from Mr. Schroder; and a box of cut Indigenous Plants from Mr. Turner.—Of Cut Roses, there was a good display; bunches of 12 varieties were shown by Mr. Edmonds, Mr. Parsons, and Mr. Paul, and good boxes of Cut Flowers were sent by Mr. Garty and Mr. Bruce.

The show of Picotees and Carnations was upon an extensive scale, the number of competitors being very numerous, and the flowers in excellent condition. The tent devoted to this part of the Exhibition was crowded during the day, and the display of these beautiful flowers appeared to afford universal gratification. The Silver Cup, offered by Mr. J. Dickson for 12 white ground Picotees, to be contested for among the amateur members of the Society, was awarded to T. Barnard, Esq., for a remarkably fine stand of flowers, consisting of the following sorts:—Ely's Great Western, Sharp's Duke of Wellington, Ely's Favourite, Brinkler's Lady Emily, Wain's Victoria, Wildman's Isabella, Burrough's Lady Downe, Sharp's Gem, Green's Queen Victoria, Jessop's Sir W. Middleton, Wilson's Pluperfect, and Barnard's Mrs. Barnard.—To *Amateurs*, Members of the Society, the *Gold Medal* was awarded to Mr. Edmonds, for 12 blooms of white ground Picotees. This stand, which was very fine, consisted of Willmer's Princess Royal, Nulli secundus, Jessop's Sir W. Middleton, Orson's Adelaide, Green's Queen, Barraud's Cornelius, Ely's Grace Darling, Headley's Nannette, Gidden's Princess Royal and Tanzer, Cook's Queen Victoria, and Brinkler's Purple Perfection.—*Large Silver Medal*, to the Rev. A. H. Matthews, who showed Dickson's Trip to Cambridge, Cook's Queen Victoria, Lady Alice Peel, Seedling, Enchantress, Ne plus Ultra, and Regina (seedlings also); Brinkler's Purple Perfection, Nulli Secundus, La Elegante, Sir R. Peel, and Lady de Grey.—*Middle Silver Medal* was awarded to — Proctor, jun., Bermondsey; to this collection no names were attached.—*Small Silver Medal*, to Mr. George Leach, for Burrough's Mrs. Bevan, Wilson's Pluperfect, Wain's Queen Victoria, Masson's Charlotte, Wilson's Harry, Willmer's Princess Royal, Barraud's Cornelius, Burrough's Lady Flower, Cook's Queen Victoria, Princess Augusta of Cambridge, Lady Payne, Miss Desborough.—For the best 12 blooms of Carnations, *the Large Silver Medal* was awarded to R. Headley, Esq.—no names attached. 2d, to Mr. Trevors, jun., *the Middle Silver Medal*—no names attached.—For Heartsease in stands of 24 varieties, *Middle Silver Medal*, Mr. J. Hunt; *Small Silver do.*, Mr. W. Hall.—Among *Gentlemen's Gardeners*, for 12 blooms of Carnations, *the Middle Silver Medal* was awarded to Mr. Embleton, gr. to T. Barnard, Esq. This stand contained the following varieties:—Dutton's Lancashire Lass, Hale's Prince Albert, Wilson's Harriet, Queen of Sheba, Greig's Mary, Barnard's Duke of Roxburgh, Martin's President, Red Rambert, Lord Pollington, Ely's Lady Ely, Willmer's Conquering Hero, Prince of Wales, Duke of Northumberland, Hufton's Lord Wellington, Addenbrook's Lydia, Puxley's Prince Albert, Sharp's Duke of York, Wilson's Harriet, Hepworth's True Briton, Brown's Dr. Watts, Brook's Flora's Garland, and Squire Meynell.—2d. *Middle Silver Medal*.—Mr. Norman, of Woolwich, for Wilson's Harriet, Hale's Prince Albert, Holmes's Count Paulina, Wigg's Earl of Leicester, Ely's Hugo Meynell, Mitchell's Patriot, Brook's Flora's Garland, Sharp's Defiance, Mausley's Bonny Bess, Roi du Capucin, Norman's B, and Low's Grand Sultan.—3d. *Small Silver Medal*.—Mr. Bates, of Oxford, for Wilson's Harriet, Hale's Prince Albert, Nix, Lord Chetwynd, Addenbrook's Lydia, Calcott's Brutus, Jones's Brilliant, Ely's Lady Ely, Hepworth's True Briton, Young's Earl Grey, Martin's Splendid, Toon's Prince Albert, Gregory's Alfred.—For the best 12 blooms of white ground Picotees. 1st Prize. *Large Silver Medal* to Mr. Willmer, of Sunbury, whose stand contained Willmer's Princess Royal, Gidden's Vespasian, Wildman's Isabella, Nulli Secundus, Willmer's Queen Adelaide, Sharp's Wellington, Wilson's Fanny Irby, Gidden's Miss Hennell, Jessop's Sir W. Middleton, Gidden's Teaser, Barraud's Bordene, and Hupton's Charlotte.—The *Middle Silver Medal* to Mr. Keynes, of Salisbury, for Gidden's Miss Hennell, Wain's Victoria, Sharp's Hector, Orson's Adelaide, Cook's Victoria, Wildman's Isabella, Hupton's Charlotte, Barraud's Cornelius, Wilson's Pluperfect, Green's Queen, Nulli Secundus, and Sharp's Wellington.—For Heartsease, in stands of 36 varieties, Mr. Brown, of Slough—the *Middle Silver Medal*. This stand contained Hannibal, Viceroy, Hale's Dark, Maid of the Mill, Orlando, Bella, Fair Maid, Warrior, Eclipse, Enchantress, Mulberry Superb, Duke of Beaufort, Cotherstone, Attila, Black Prince, William Tell, Chevalier, Alicia, The Prior, Plenipo, Venus, Duchess of Richmond, and 14 seedlings. Mr. Brown also exhibited a stand of 18 varieties of Dahlias, in very fine condition:—The Beauty of the Plain, Brown's Blue Bonnet, Standard of Perfection, Essex Triumph, Brown's Lady St. Maur, Sir R. Sale, Miranda, Springfield Rival, Dodd's Prince of Wales, Perpetual Grand, Bedford Surprise, Mrs. Shelley, Rembrandt, Brown's Delight, Indispensable, Phœnix, Union, Tournament, and Queen of the Isles.

Seedling.—For the best white ground Picotee, the *Small Silver Medal* was voted to the Rev. A. H. Matthews, for a seedling named Enchantress; and a similar reward to Mr. Norman, of Woolwich, for the best seedling Carnation. Seedling Heartsease recommended for a Prize, from Mr. G. King.

Of Fruit, among *Gentlemen's Gardeners* for the best collection of four sorts, the *Large Silver Medal* was awarded to Mr. Hamp, who also obtained the first prize for Grapes.—The award for the four best sorts in the Nurserymen's class, was given to Mr. Bursill, and Mr. Chapman obtained a *Middle Silver Medal* for good specimens of Black Hamburgh Grapes. Of Vegetables the best were shown by Mr. Gaines, and Mr. Atterton.

Reviews.

The Scientific Phenomena of Domestic Life. By C. F. Gower, Esq. 12mo. Ridgway.

The plan of this trifle is excellent. The Author explains, in familiar language, the true causes of the common phenomena that meet us at every step, and are therefore overlooked. If written by men acquainted with the subject, such books are invaluable, and that Mr. Gower is well acquainted with them, the following extract will abundantly show:—

"The current of air and smoke which ascends the chimney, is again an object to attract our attention—caused by the same expansive power of heat. The air, as it passes through and over the fire, becomes greatly increased in bulk, and consequently lighter; that is, a gallon of air expanded to double its bulk, or two gallons, will weigh only as much as it did before it was so increased, which causes it to ascend through the denser part, leaving its space to be filled by cold air from the door or window. By this means the fire is supplied with the proportion of fresh air necessary for combustion, whilst a considerable quantity of rarified air ascends the chimney, carrying up with it the smoke or dense vapour which arises from burning bodies.

"It may be inquired how it is that, when a fire is lighted in a room, the air does not descend the chimney to supply it, because that appears the easiest access to the outside air; and this, if the chimney were very large and quite open above, so as to admit space enough for an ascending and descending current, might be the case. To obviate this, if the chimney is large, we contract the opening at top, by putting on a chimney-pot, by which means the current of ascending air is rendered so strong through the small aperture as to prevent the external air from entering. We are very frequently disturbed by smoke coming into our rooms, particularly at first lighting a fire, and more especially when other fires in the house have been burning some time previously. When this is the case it will occasion a downward current of air in the chimney, caused by the other fires requiring a supply of air; and the open chimney being the easiest way by which the air can find admittance, this occasions the chimney to smoke when the fire is first lighted; but if the door of the room is closed and a slight portion of the window opened, the room is cut off from communication with the other fires, and the smoke will then ascend the chimney. When the fire is sufficiently established to cause a good draft, the window may be again closed, and the door opened without further annoyance, because the air to feed the other fires in the house will no longer find this chimney the easiest way of introduction, and some other means of entrance will probably soon discover itself. Sudden gusts of wind are apt to cause chimneys to smoke, by removing the equality of the atmospheric pressure on the outside, whilst the interior pressure is not exactly subject to the same influence. During the gust, the perpendicular pressure of the atmosphere above is partly removed by the velocity with which it passes over, in the same manner that the pressure or weight of a cannon-ball is removed from the earth while it is flying along, its velocity having overcome its gravity or weight; but when it loses its velocity, its weight again becomes perceptible, and it falls to the ground; the consequence is, that during the time of the gust, whilst the pressure is removed, there is a rapid draft up the chimney, caused by the want of resistance above; but the moment the wind lulls again, this pressure returns, the upward draft is suddenly checked, which causes a momentary obstacle to the ascending current, and a puff of smoke in the room is the most probable result. Some particular direction of wind will generally influence a chimney in this way more than another, either from some peculiarity in the situation of the chimney above, or from the apartment being more or less immediately influenced by the same cause; for, it is clear, if the variation of pressure above and in the room is simultaneous, no confusion will take place, but if the one happens a few seconds after the other, a contrary effect will be produced."

We heartily commend this little work to all our young friends.

NOTICES of NEW PLANTS WHICH are EITHER USEFUL OR ORNAMENTAL.

Lælia majalis. The May-flower Lælia. (*Stove Epiphyte.*) Orchidaceæ. Gynandria Monandria.—The history of this charming plant is so well given by Mr. Bateman, that we beg to extract it from his magnificent work on the Orchidaceæ of Mexico and Guatemala. "This lovely plant abounds in the most temperate parts of Mexico, where its exquisite beauty has rendered it a prime favourite with the natives, from whom it has received the familiar appellation of 'Flor de Mayo.' It does not, however, appear to have been long known to botanists, Dr. Schiede having been the first to send specimens to Europe, which, through the liberality of Professor Schlechtendahl have been extensively distributed. Living plants were first obtained by Mr. Barker, from Oaxaca, through the instrumentality of Mr. Ross: and more recently, a large supply has been received by the Horticultural Society of London, collected by Mr. Hartweg in San Bartolo, in situations so elevated, that the temperature sometimes falls below the freezing point. This habitat, so unusual for an Orchidaceous plant, will go far to explain the ill success that has hitherto attended its cultivation, for while it is comparatively easy to imitate the close and humid atmosphere in which most of the tribe are found, it is infinitely more difficult to provide a substitute for the pure air and frequent changes of temperature in which these mountain epiphytes would seem to delight. Instead, so signal, in the case of Lælia majalis, has been the failure of even the most experienced cultivators, that although there was scarce a collection that did not contain one or more specimens of the plant, still did it obstinately refuse to flower, except in the solitary instance about to be described, when it yielded to the skilful treatment of Mr. Dillwyn Llewelyn, of Penllergare, who has favoured us with the following note:—'This plant was purchased,' says Mr. Llewelyn, 'about three years since from M. Beschamps, and soon afterwards potted in very rough fibrous peat, being kept nearly dry in a cool plant house, until its new buds began to swell, when it was removed to a hot and damp stove, kept exclusively for Orchidaceæ. Water was regularly given until its buds had acquired their full size, when it was discontinued by degrees, and the plant carried back to a lower temperature. This treatment has been repeated, and under it the entire genus seems to thrive, although, perhaps, from the vigour of some specimens of L. anceps and L. autumnalis, which I have attached to pieces of rough barked wood (with a little peat tied round the root), I should prefer that course of treatment to the more usual one of potting them.' The mode pursued by Mr. Llewelyn is certainly the only one under which success can be expected; but there is yet a point to be gained, for while the specimens at Penllergare, however beautiful, consisted of only a solitary flower, in a wild state, three or four are borne upon a spike." The method of managing the plant in the Gardens of the Horticultural Society is as follows:—It is tied to a block of wood and suspended to a rafter in a moist stove. When removed from one block to another, which is sometimes necessary, it will be found beneficial to place a slice of turfy peat or a small quantity of sphagnum between the wood and the roots of the plant; this retains moisture in summer, so that less syringing is required. The quantity of water necessary for it on the bare block of wood would prove injurious to plants in pots below it. In the growing season the temperature does not exceed 80° by day, nor does it fall below 70° at night. In winter 56° with fire-heat is quite sufficient.—*Botanical Register.*

Miscellaneous.

Myrrh and Frankincense.—Major Harris describes the Myrrh-tree (Balsamodendron Myrrha) as growing abundantly on the Abyssinian coast of the Red Sea to the Straits of Bab el Mandeb, over all the barren hill-sides of the low zone inhabited by the Danakil or Adaiel tribes. It is called Kurbeta, and there exist two varieties; one producing the better description of the gum being a dwarf shrub, with deeply serrated crisp leaves of a dull green; while the other, which yields a substance more like balm than myrrh, attains a height of ten feet, and has bright,

shining, slightly-dentated leaves. The myrrh, called Hofali, flows freely from any wound, in the form of a milky juice, possessing a perceptible acidity, which either evaporates or becomes chemically changed during the formation of the gum. The seasons for collecting it are in January, when the buds appear after the first rain; and in March, when the seeds are ripe. Every peasant by transfers such portions of it as he may find to the hollow boss of his shield, and exchanges it for a handful of Tobacco with the next slave-dealer whom he meets on the caravan-route. The merchants also of the sea-coast, before returning from Abyssinia, send into the forests that gird the western bank of the river Hawash, and bring away considerable quantities of the Hofali, which is sold at a high price. The natives administer it to their horses in cases of fatigue and exhaustion. The shrub which produces the balm of Mecca (Balsamodendron Opobalsamum), is found on the opposite Arabian coast at Cape Aden, where it is called Beshán, either the original of or a derivative from the word Balsam. It is the Balessan of Bruce, who did not meet with the true Myrrh-tree. The balm flows copiously from any incision, and the ethereal oil speedily evaporating, a tasteless gum remains. The Frankincense, Major Harris states, is found chiefly along the Somauli coast, in the neighbourhood of Cape Guardafui. At Bunder Maryah, 20 miles to the S.W. of Ras Feeluk, the mountains are three miles from the shore, and attain a height of 5000 feet. Ascending 1000 feet, a plain presents itself, bounded on every side by precipitous mountains, studded with the Frankincense and Gum-Acacia-trees, although looking bare, from the total absence of underwood. The Frankincense-trees invariably grow from the bare and smooth sides of the white marble rocks, or from isolated blocks of the same scattered over the plain, without any soil whatever. From the base of the trunk, and about treble its diameter, a round thick substance is thrown out, of a nature between bark and wood, adhering most firmly to the stone, and resembling at a distance a mixture of mortar and lime. The stem rises from the centre of this mass, and having first taken a bend outwards of several inches, rises straight to a height of 40 feet. It throws out from the top short branches covered with a very bright green foliage, the leaves being narrow and rounded at the end, five or six inches in length by one broad, and crimped like the frill of a shirt, or rather like the sea-weed called by children on the English coast "the old gentleman's ruffles." The usual girth of the stem is from a foot to eighteen inches. The bark is perfectly smooth and consists of four distinct layers, the outermost of which is very thin; the two next of a singularly fine texture, resembling oiled letter-paper, perfectly transparent, of a beautiful amber colour, and used by the Somaulis to write upon; and the innermost about an inch thick, of a dull reddish hue, tough, and not unlike leather, but yielding a strong aromatic perfume. The wood is white and soft. On making a deep incision into the inner rind, the gum exudes profusely, of the colour and consistence of milk, but hardening into a mass by exposure to the air. The young trees produce the best and most valuable gum, the older merely yielding a clear, glutinous fluid resembling copal varnish, and exhaling a strong resinous odour. During the S.W. monsoon the pastoral tribes in the neighbourhood of Ras Feeluk collect large quantities of frankincense, which they barter with the Indian Banyans, of whom a few reside at the villages along the Abyssinian coast. Boats from Maculla, and from other parts of the Arabian coast also, come across during the fine season, and carry away the gums that have been accumulated, in exchange for a coarse kind of cotton cloth which is worn by the shepherds.—*Annals of Natural History.*

Horticulture of Auckland in New Zealand.—No country in the world seems to be better adapted to Horticulture than New Zealand: the alternations of shower and sunshine that characterise the climate for a great part of the year, cause a most surprising vegetation. All the common fruits and vegetables of Europe flourish in great perfection, and some of the southern climates grow vigorously in the open air. *Fruits.*—There are planted at present in this district, Peaches, Nectarines, Apricots, Almonds, Figs, Lemons, Oranges, Olives, Vines, Plums, Cherries, Mulberries, Pears, Apples, Quinces, Walnuts, Filberts, and the Loquat (Mespilus Japonica). These are all in a healthy state, and many give promise of fruit this season. It is doubtful if the Orange will ripen its fruit, or the Olive, both of which however are in a thriving condition. The Vine plants brought from Sydney in October, 1840, have already produced Grapes, and others procured from different sources, and planted subsequently in gardens, have thriven surprisingly. The cultivation of the Vine on a large scale is a subject that might be enlarged upon, but as it is expensive, and the return tardy, it is not likely to be attended to in the infancy of a colony, but it should not be lost sight of, and it is to be hoped that some enterprising and competent person may yet undertake it, for there can be no doubt that the volcanic lands in this vicinity are well adapted for vineyards, and that good wine might be made from their produce. The Gooseberry, red and black Currant, have been planted, but it is probable that the climate of this district is not adapted to them, as a long continued high temperature would seem to be unsuited to their habits; being natives of northern climates, they do not thrive, but probably means may be found to cultivate these national fruits. The same may be said of the Raspberry, unless planted in a very moist and shady situation. The Strawberry has afforded fine crops in some gardens, but the soil in general appears unsuitable: they generally run too much to leaf. The Cape Gooseberry (physalis edulis) is indigenous, growing wild in every part of the country, but if cultivated in gardens and freshly-turned ground in a greater size, and prove a valuable fruit for domestic purposes. It bears nearly throughout the year. Melons of several varieties have been grown in the open air, though late in coming to maturity, they were of delicious flavour. *Culinary Vegetables.*—The common culinary vegetables of Europe grow in this district in a manner that cannot be surpassed, but much judgment is required in selecting the period for sowing and planting. It may be stated as a general rule, that no seed need be planted in the months of January and February, as the dryness of the season and the attacks of the insects will render the labour futile. The results of the experience of three years are now furnished. Beans may be sown in May and June; when a foot high, it is best to cut them down close to the ground; they will then flower in September, and produce plentifully; if again cut down, they will bear again; they seem to be biennial in this climate. Kidney Beans may be sown from September to November: they bear plentifully, and a species (haricot blanc of the French) produces abundantly, and might be used in their dried state with advantage, as in the south of Europe, in soups and stews: they are very nourishing and palatable. The scarlet runner does not generally succeed well, but a species, the Lima pole Bean, introduced from South America, grows well in a rich soil and in a sheltered situation, and is a very delicious vegetable, being used as the broad bean. Carrots may be sown from April to September, but not later; they grow to a very large size. The Potato Onion, which thrives admirably, ought to be planted in June. A species of Eschalot, which has almost become indigenous, being cultivated largely by the natives, grows throughout the year. *Flowers.*—It would be tedious to enumerate the variety of flowers that flourish in this district. It may suffice to say, that in addition to those cultivated in the open air in Great Britain, many grow here throughout the year, which there require the protection of a greenhouse.—*Extracts from The Southern Cross, and New Zealand Guardian, Nov.* 25, 1843.

Carnation and Picotee Show.—As the day is fast approaching (the 6th of August) when the Carnation and Picotee Show, open to all England, will take place at the Coppice, near this town, in the grounds of Mr. J. F. Wood, nurseryman and florist, for two silver cups, value five guineas each, presented by him for competition, we are enabled by the kindness of the Secretary to the Committee, Mr. G. J. Robinson, to present to our readers a list of the competitors, amongst whom are some of the best growers in the kingdom:—

Carnation Cup.	*Picotee Cup.*
Mr. S. Pollard, Ilkeston	Rev. A. Matthews, Oxford
Mr. E. Hirst, Caunton, near Newark	Mr. E. Hirst, Caunton, near Newark
Mr. T. Hastings, Oxford	Mr. J. Gibbens, Bramcote, Nottinghamshire
Mr. J. Gibbens, Bramcote	Mr. W. Pearson, Nottingham
Mr. W. Hepton, York	Mr. W. Hepton, York
Mr. J. Oldham, Beeston	Mr. J. Oldham, Beeston
Mr. J. Haines, Tipton, Warwickshire	Mr. J. Haines, Tipton
Mr. R. Orson, Grantham	Mr. R. Orston, Grantham
Mr. I. Taylor, Snenton	Mr. J. Hepworth, Halifax, Yorkshire
Mr. I. Hepworth, Halifax	Mr. W. Lodge, Manchester
Mr. W. Lodge, Manchester	Mr. R. Rilot, Donington, Lincolnshire
Mr. R. Rilot, Donington, Lincolnshire	Mr. G. Hudson, Kingstone
Mr. G. Hudson, Kingstone	Mr. J Ward, Nottingham
Mr. J. Smalley, Leicester	Mr. J. Smalley, Leicester
Mr. W. Sharpe, Clophill	Mr. W. Sharpe, Clopdil
Mr. G. Pickering, Nottingham	Mr. S. Buswell, Nottingham.

Observations on the Green Teas of Commerce, by Robert Warington, Esq.—On submitting a sample of Green Tea, supposed to be spurious, and which had been seized by the Excise, to microscopic investigation, the author found that the variation of tints, which had led him to this mode of examination, was dependent on adventitious substances mechanically attached or dusted on the surface of the curled leaves. The principal part of this powder was of a white colour, interspersed with particles of an Orange and of a bright blue. From the abraded dust of this sample, obtained by agitation, some of the latter were separated, and proved on examination to be Prussian-blue; the Orange portion was apparently some vegetable colour; and the white and principal part was found to contain silica, alumina, a little lime and magnesia, and was probably kaolin or powdered agalmatolite, more particularly from the rubbed and prominent parts of the Tea assuming a polished appearance. A great variety of other samples of Teas were submitted to examination, but in all cases they were found to be faced with various substances, to give them the bloom and colour which is so distinct a characteristic of the Green Teas of commerce. The unglazed varieties appear to have had no blueing material applied. Very high qualities of glazed Teas have this facing apparently tinted of an uniform pale blue before application; while others, still of high quality, and embracing the great part of the samples examined, have both the white and blue particles very distinct, the latter varying in its quantity; in the low qualities, as Twankay, being pretty thickly powdered. When this facing was removed, the Tea was found to be of a black colour, but without the corrugated aspect presented by black Teas ordinarily, and which evidently arises from the higher temperature to which they are subjected during the process of curing or drying. The substances separated from these Green Teas were sulphate of lime, a material analogous to kaolin, and Prussian-blue, together with some yellow vegetable colouring body. It is evident that the whole of these Teas come to this country in a dressed or adulterated state, and the onus of this should fall on the right shoulders. The author concluded by quoting various opinions and observations of persons long resident in China, by which his investigations are satisfactorily confirmed.—*Chemical Gazette.*

CALENDAR OF OPERATIONS.

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

About the beginning of August some of the best gardeners treat their established stove plants somewhat like those of the greenhouse for five or six weeks. They either remove the plants to more open houses or throw their stoves open on purpose—removing dwarf, tender, and young, delicate plants into close frames. Whatever conveniences of this nature may be at hand should be made the most of at this time. Nothing can be more injurious to stove plants than keeping them growing late in the season, and thus preventing the ripening of their wood, which renders them more liable to injuries in winter and prevents their flowering freely next season.

Conservatory.—Concerning the varieties of Thunbergia alata, being among the best things for the conservatory at this time, and coming more into fashion every season, I shall again offer suggestions for their management, as some find them difficult to manage. A complete key to the natural or true management of these plants is given in last Number (p. 482), in the notice of Mr. Buckhouse's volume. Mr. B. says they grow in shady places, "much in the manner that Ground Ivy grows in England." From this we may infer that the back borders, or under the large specimens planted out in the conservatory, is the true situation for these plants, where they might scramble among Ferns, roots, or Moss, stones, &c., "after the manner of Ground Ivy." But to improve, or rather to follow out the great improvement which Mr. Fryer has effected, they ought to be planted out in pits early in May, using very rich rough compost, and placing fresh Moss all over the bed; keep the Moss damp and shade the plants in the middle of the day, and allow them run all over the Moss. Beautiful as Mr. Fryer's two new seedlings are, I have no doubt but still greater beauties may easily be obtained from plants thus treated.

Pits and Frames.—The lights should now be drawn off at night, where the plants are of the hardier kinds. Stout cuttings of Plumbago capensis struck now will force next spring for the conservatory, and may afterwards be planted out in beds in the flower-garden, for which they are admirably suited.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department,

We have not had such alternations of wet, cold, and dry seasons for flower-gardening for the last five years, which, if they have taught us nothing else, have convinced me of the impossibility of producing anything like vigorous growth in bedded-out plants by manual labour, let it be ever so well directed. There is certainly a great difference in soils, and plants will grow in one of a free porous nature when they can scarcely exist in one of an opposite mechanical texture; but even under the most favourable circumstances of soil and situation, it is impossible to produce a healthy growth during the prevalence of north or north-east winds, which seem to prevail here during the spring and early summer months, with as much exactness as the trade winds do in more tropical climates. Two of the flower-gardens here were attended during the past dry weather with all the care which the most solicitous could have bestowed upon them. They were regularly watered with warm soft pond water, wetting the soil each time to the depth of at least nine inches; the beds were mulched with short Grass, and the plants shaded in the day time, but with all this they did not grow; under ones became sickly, and those not well established at the time of turning out died, outright. Therefore, What is to be done another season? I direct this question to the flower-gardeners of the United Kingdom, knowing that in the multitude of counsel there is wisdom, and with the hope that many will be induced to communicate their answer to the query. At the same time I should also be glad of a list of such plants as are considered by the growers novelties in the way of bedding-out plants, and more particularly if any are grown which were not mentioned in the Amateur's Garden in the *Chronicle* of last year. I shall next week answer the question, What is to be done? and then proceed weekly with the lists of the best grouping plants.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas and Polyanthuses—Must at this season be kept from excessive rain, and above all things avoid a continuous drip. Nothing ruins an Auricula so soon as wet lodging in the crown or heart. The Aphis must be sedulously attended to and never allowed to get a-head. Tulip-seed continues to ripen: secure the heads as soon as the seed-vessel opens at the top, or the stalk becomes dead; put them in paper bags and hang them up in a dry place. *Carnations.*—The bloom comes on very rapidly, more so than we ever previously recollect. Pollen appears more abundant this year than usual; we have impregnated many blooms this season, always observing to have the bloom operated on, of a good sort and of good colour, and the variety from which the farina is taken as good as we can get it. Continue to layer; a great deal of the success of wintering Carnations well depends on having strong and fairly-rooted layers, that they may be well established in their pots before autumn. Some varieties are blooming better than usual this season. Colcutt's Juba, for instance, a beautiful shaped flower which usually comes short of bizarre, is this season quite up to the mark, whilst the accounts I receive of Colcutt's Brutus confirm me in the opinion I entertained of it some years ago, namely, that it is an extremely course flower as well as uncertain. *Ranunculuses.*—Sad complaints are made from all quarters of the great loss of roots, many collections being nearly destroyed. Seed may now be gathered, as the heads assume a yellow hue.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries—It is a desirable point in the cultivation of the Pine-Apple, that no check should be given to the plants, from the commencement of their growth till the fruit is ripe. Notwithstanding this, there are few gardeners who have not at some period or other been compelled to check some of their plants, by withholding water, to cause them to fruit sooner than they otherwise would do; thus obtaining fruit at the time that it is most required, at a sacrifice of size. This is sometimes the case in large establishments, where a regular supply is wanted all the year round. The leaves should not be allowed to become flaccid, nor the bottom heat to decline. Occasional sprinklings with the syringe should be given, and as soon as you feel certain that the fruit is formed, and beginning to rise from the heart of the plant, give liquid manure in small quantities, and in a clear state, until the plant is quite recovered; when it may be watered and treated in the usual way. Attend to the growth of the suckers, so as to get them well rooted before winter. Shade them in hot sunshine.

Vineries.—Look over the bunches to see if there are any injured or small berries in them, which remove as you go on. The return of dry hot weather is favourable to the increase of red spider; be assiduous in the use of the usual means for checking it. It is easily kept down or eradicated by the syringe where the fruit is all cut. Look to the state of your borders with regard to moisture, where the Vines are swelling their crop. If they are dry, supply plentifully with liquid manure, first loosening the surface with a fork, 1 inch deep, to prevent the water from running off.

Peach houses.—The houses which contain fruit should be kept well ventilated at all times. When the weather is fine, it is not necessary to shut up the houses wholly at night, unless it is wished to hasten the ripening of a crop. Keep all Peach and Nectarine-trees clear of insects, and supply with water regularly as required.

Strawberries.—Continue to lay the runners of the kinds you wish to force in pots, till you have a sufficient quantity done. Let those already laid have plenty of water.

Melons.—(see last week's Calendar.)—*G. F.*

V.—GARDEN, FRUIT, AND KITCHEN-GARDEN.

Apricots.—As soon as the fruit changes colour, keep a sharp look-out for moths and wasps. To keep the first in check, where they are numerous, syringe repeatedly with clear lime-water, wet doing it very late, as otherwise a thin pellicle of chalk would be formed, that would spoil the look of the fruit. Lettuce-leaves, &c., only bruised, rubbed about the wall, after being greased on one side, and smeared every morning. The syringing will also decompose the woodlice, as they do not like wet, and cut-stalks of beans may be inserted in the branches of the trees as traps; but the great remedy is to keep the wall in good order, so as to give them no place for concealment. The following circumstance might furnish a hint:—A month ago they annoyed me by taking undisturbed possession of a Mushroom-bed in a bearing state. I had the covering removed, swept the bed, syringed the walls, killed as many as I could, and run a brush with gas-tar all round the bed. The smell was very offensive for a day or two, but assuredly a woodlouse has been seen since. *Peaches.*—These very hot days are just the delight of the red spider, and whether he establishes his colonies on the underside of the leaves, or on the wall, he will settle secure for a time amid all the battering from your garden-engine. Put plenty of sulphur in the engine, previously made into a paste, so that it mixes equally with the water; or what is better, take Mr. Errington's advice, and daub the open spaces of your wall with it, and then the more intense the heat the stronger the fumes of the sulphur will be. It is as yet the only remedy we possess for expelling or killing the red spider, and I have never known vegetation suffer from its fumes, unless when heated to ignition. *Mushrooms.*—The chief thing to be attended to with beds in a bearing state, is to keep them in a close cool atmosphere, by frequent gentle sprinklings of water on the slight coverings of the beds. Take every opportunity that occurs of collecting and drying horse-droppings, &c., for future beds. *Routine.*—Sow Cabbage for the spring crop, Lettuce and Endive for succession, the last French Beans for the open air, a good breadth of Turnips, Radishes, Onions, &c., for Salads, and Flander's Spinach now, and again in eight days, for early winter use.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Attend to the directions given in recent Calendars. Examine the woods often in order to ascertain what trees may be taken out next season.

Coppice.—As the young shoots from the stools are growing fast, great attention should be paid to thinning and regulating them before high winds, accompanied by heavy rain, occur, which often does much injury to them.

Young Plantations.—Attend to shortening and training the young shoots according to previous directions. By this practice the trees make more progress than those left undone.

Nursery Work.—Attend during the growing season, to thin, shorten, and train the young shoots, if strong handsome plants for speedy removal are wanted.—*W. B.*

VII.—COTTAGERS' GARDENS.

Look over Vines on walls to stop laterals, thin out weak shoots, and keep the rest neatly fastened in. The fruit will now be advancing, and the bunches should be thinned out with a pair of scissors, which is an operation that is very essential to their perfection both in size and flavour. Keep Dahlias tied in; remove weak side-shoots and give them occasionally a watering with manure water; if they are planted in a situation and soil which render mulching necessary, cover the dung over with a thin layer of soil, which will take away its unsightly appearance. Keep Creepers (if any) on the cottage walls neatly trained up, but not so as to give them too stiff or formal an appearance; free them from all dead leaves. It is of great advantage to Cucumbers that are planted in the open air, to cover the ridges with clean Straw or Pea-haulm, before the plants are too far advanced. This keeps the sun from parching the ground in hot dry weather, and prevents the blossoms and young fruit from being covered with soil during heavy rains; it also, in a great measure, preserves the fruit from becoming spotted, when the autumn is wet and cold. Towards the end of the week, prepare a small bed and make a sowing of Early York and Vanack Cabbages, to come into use in spring. Thin out young Turnips as they advance; hoe between the rows of growing crops, and keep down weeds.—*J. M'H.*

State of the Weather near London for the week ending July 25, 1844, as observed at the Horticultural Garden, Chiswick.

July	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain
Mon. 19	5	29.891	29.722	74	44	59 0	N.	.39
Tues. 20	6	30 176	30.067	76	43	59.5	N.W.	
Wed. 21	8	30 278	30.287	82	49	65.5	S.	
Thur. 22	D	30.190	30.044	80	53	71 0	S W.	
Fri. 23	7	30.000	29.910	80	61	75.0	S.	
Sat. 24	8	29.948	29.910	87	58	70.0	S.	
Sun. 25	9	29.992	29.901	92	62	77 0	S.	
Average		30 069	29.969	84.1	52.1	68		.39

July 19 Lightly overcast and fine; thunder showers; very heavy thunder storm, with rain and hail, commenced at 8 P.M.; cloudy at night.
— 20 Clear; very fine throughout.
— 21 Clear; exceedingly fine, with few light clouds; clear.
— 22 Cloudless and hot; clear at night.
— 23 Very fine; slightly overcast; cloudless; hot and dry; clear.
— 24 Sultry; very hot, with a slight dry haze; clear and fine.
— 25 Slightly overcast; excessively hot and sultry; cloudy at night.
Mean temperature of the week 0½ deg above the average.

Mean of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Aug. 3, 1844.

July	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 28	77.0	53 7	65.4	9	0.89 in.	1	1	2	1	0	3	2	
Mon. 29	74.1	53.5	63.8	10	1.21	1	1	4	2	0	2	2	2
Tues. 30	73.7	50.5	62.1	10	0.84	3	2	3	1	2	0	1	
Wed. 31	73.3	49.7	61.5	6	0.66	2	3	1	2	3	0	4	2
Aug.													
Thur. 1	73.0	51.2	62.2	6	0.48	1	2	3	2	2	0	4	—
Fri. 2	73.3	51.6	62.5	8	0.62	1	3	2	—	2	2	2	1
Sat. 3	73.0	52.4	62.7	9	1 03	2	3	1	1	2	0	3	1

The highest temperature during the above period occurred on the 30th July, 1825—therm. 91°; and the lowest on the 1st Aug., 1829—therm. 42°.

Notices to Correspondents.

Soehaba Clover.—*A Constant Reader.*—This is a coarse annual stemmed plant, growing 7 or 8 feet high. Alcohol, when decomposed, may be useful to plants; undecomposed, it must be injurious.

Country Shows.—*John Sillobs*, or *Snobs*, or *S. Shobs*, or *Schobs*, (for we cannot read your signature,) you do not say *what* Show your report belongs to. What Society is "this Society?"

Currants.—*F. X. O.*—The origin of the Black Naples Currant is unknown to us. It has existed in the Garden of the Horticultural Society since 1824, when it was obtained from the Nursery of Messrs. Dickson, of Edinburgh.‡

Diseases.—*J. B.*—Certainly, where the flower-buds of shrubs produce nothing but leaves it is a disease, caused by an excessive supply of food. We should like to know how the ingenious gentlemen who set up against Morphology can explain such things without reference to its principles.

Missing Sorts.—*An old Subscriber.*—Common sense says that the words "That no flower, &c., being burst, artificially supported, or otherwise imperfect, be entitled to take a prize," applies to Carnations, and plants of that sort. If it is maintained that it applies to Moss used in forming a ground for Roses, the decision must be arrived at by some other sense than common sense.

Heating.—*A Subscriber.*—We do not sell heating apparatus. Consult the advertisers. Yours is a very little affair, and hardly fit for an apparatus. Consult the paper by "Dion," at p. 326, vol. 1844, and try to make an apparatus for yourself; if you are a clever man you can easily do it.

Grapes.—*A Reader.*—The following are good kinds, which bloom throughout the summer:—Veronese, Bubilora, vestita coccinea, v rosea, sulphurea, Hartwelli, tricolor, ampullacea eximia, vahliana, Bowkeri, amabilis, viridiflora, irisyana, rotulgens, retorta, purpurea, Mawonii, grandiflora, Altoniana, depressa, Cavendishii, and the several varieties of Ventricosa.—For Camellias, see p. 430 of this year.‡

Humphreys's Botanic Compound.—We have received from Mr. Humphreys another letter, which commences in the following words:—"As it is now obvious that the object of the late attacks on this subject has been to injure the sale, *by the fabrication of fictitious chemical details* as to its nature," &c. This language, which is as false as it is offensive, at once excludes the writer from a future place in this Journal, except in the advertising columns. Our object has been truth, and that we have gained. Our business is to enlighten the public, and that we have done. We have shown that the so-called Compound is nitrate of ammonia, with some trifling impurities, and a mere trace of phosphoric acid; and we have thus enabled gardeners to judge of its real value. Mr. H. was greatly mistaken if he thought that we were to be driven from such a course by either fear or favour.

Hybrids.—*Clericus.*—The greater part of the Fuchsias in cultivation are mules, and barren. If you want pollen you must go to the original species, or you must examine your mules till you find good pollen. The pure parents are the best to use, at least on one side or the other. Without pollen you cannot cross. Let your Dahlias alone; the side-shoots will grow in heat, but will do no good now.

Insects.—*F. H. S.*—Your Caterpillars will change to the Vapourer Moth, Orgyia antiqua, described and figured in the *Gard. Chron* vol. ii. p. 540; they feed on a variety of plants, and occasionally do great mischief in the squares of London. Nothing but hand-picking and destroying the apterous females and the clusters of eggs can afford you any relief. *It.*——*A Subscriber.*—If your query was not answered your letter never came to hand. The maggots infesting your Cauliflowers, &c. will produce a Fly, probably the Anthomyia ceparum, whose history was given in vol. i. p. 395 of this Journal, and you must consult the "Royal Agricultural Journal," vol. iv. p. 128, where the best mode of extirpation is recorded. *R.*——*J. Butterfield.*—Your luminous animals are female Glow-worms. *It.*——*J. M.*—The Slug-worms infesting your Pear-leaves are the larva of a Saw-fly, named by Linnæus Ten hredo cerasi, whose history you will find in the 2nd vol. of the *Gard. Chron.*, p. 692. *It.*——*A. B.* Thanks for your notes and supply of infested Barley. *R.*——*A Constant Reader.*—Your Pear-tree leaves have been eaten by the larvæ of a Moth called Argyromiges Clerckella, which is figured in the 1st vol: of the *Gard. Chron.*, p. 261, where its history is given, and the best means of getting rid of the disease. Whether your Ribstone Pippin be affected by the same Caterpillar we cannot determine without seeing the leaves; the Pelargonium spots arise from a very different cause. *R.*——*A Subscriber, Waterford.*—It is impossible to advise you in the absence of specimens of the insects, and a portion at least of an infested leaf. *R.*——*Aliquis.*—We believe your Shells are the Helix memoralis, but they are so mutilated that it is difficult to determine the species. *R.*——*R. W.*—Your Oak gall will produce the Cynips gemmæ. *R.*——*A Constant Reader in the North.*—Please to send us some of the black scales affecting your Vines, and we will tell you what is best to be done, for as the females are stationary, and the young ones scarcely visible, we think you must be mistaken in supposing they come out of the earth. *R.*——*N. O. P.*—We should be happy to comply with your request, but the Caterpillar was crushed perfectly flat. Lucifer boxes are no protection by post, but if you will send us a Caterpillar or two in a shallow pill-box with a piece of cork stuck in the centre, we shall feel obliged, as this enemy to the Carnations is an interesting and novel fact which we are desirous of investigating. *It.*

Morphology.—*J. S.*—We would strongly advise you to turn your attention to things you understand. We really cannot inflict your ignorance upon our readers.

Manures.—*C. J. P.*—We have had no experience with horn-dust, and therefore cannot give an opinion respecting it.‡

Names of Fruit.—*A Constant Reader.*—Your Pear is the Citron des Carmes.‖

Names of Plants.—*L.*—Tropæolum pentaphyllum.——*A. B. C.*—Certainly not Clerodendron splendens, nor at all like it.

Oaks.—*A North Briton.*—The cause of the disease of your Oaks could only be determined by personal inspection. It is impracticable to say what is the matter without that.

Pelargoniums.—*A.*—Turn them out of doors for a fortnight to ripen the wood, then cut them back, both top and bottom, shake them out of their pots, and repot in fresh soil.

Pot Pourri.—*J. B.*—The following receipt is excellent:—Put into a large China jar the following ingredients, in layers, with salt strewed between the layers: two pecks of Roses, part in buds and part blown, Violets, Orange-flowers, Jasmine, and anything sweet—a handful each; Orris root, sliced, Benjamin, and Storax, 2 oz. of each; ½ oz. of Musk, ½ lb. of Angelica-root, sliced, a quart of the red parts of Clove-Gillyflowers, two handfuls of Lavender-flowers, half a handful of Rosemary-flowers, Bay and Laurel leaves, half a handful each; also of Knotted Marjoram, and Balm of Gilead. Cover them quite close; when the lid is removed the perfume is very fine. When the above has been in the jar some weeks it is advisable to empty it entirely, stir it well with the hand, and return it into the jar again.

Preserving Skins.—*J. M. C.*—You must consult a work on Taxidermy; we cannot give up space to such a subject as bird-stuffing. The booksellers will readily set you up.

Raspberries.—*Messrs. Youell and Co.*—The samples of Fastoliff Raspberries which you have sent are fine, large, good-looking fruit.‡

Royal Botanic Garden, Regent's Park.—*Scrutator.*—This time you are probably right. It may be true that one of the Judges of Roses at the last meeting was also an exhibitor, and assisted in giving the first prize to himself; and if true it did his good taste no great credit, and it was decidedly wrong on the part of the Regent's Park Society to have made him a Judge. But, supposing this to have happened, there can be no doubt that the Managers of the Regent's Park Garden will take care to avoid in future such an oversight as making a Rose Exhibitor a Rose Judge. If it should again happen, it will then be time to attack the Society on the subject; but not till then.

Soils.—*U. J.*—By all means mix Guano with farmyard dung, but mind that it is not allowed to become wet and then drain away. It may become wet, if you like, but the drainage must be all thrown back again. We should dig it in early next spring. We never before heard of a "lug" of ground. How much is that? Move your Apple trees on the 1st of November, or as near that day as you can.

Strawberries.—*S. B. P.*—To Keen's Seedling you may add Myatt's British Queen, Elton, Grove-End Scarlet, and Downton. We would prefer planting in rows, with three plants in each patch.‡

Miscellaneous.—*Enquirer.*—We really do not know what we can add to our own opinions upon planting and pruning, beyond what has been already stated in our columns for the last three years. It is an entangled subject, and you had better consult our previous volumes. If your plants are bushy-headed cut them down, except Beech, and watch with care the new shoots that will be thrown up. Thinning is the great thing; pruning we esteem but lightly, except in particular cases. Prune Laurels in April. Knight's Dwarf Mignonette is the best late Pea. Employ Potter's guano, or superphosphate of lime, the last best. Why not let your Vines lone? There is no earthly reason against it, only sifting with water, and when in full fermentation, and not of vitriol carefully fill afterwards cracks, or move a plaster among it, or if you are practical leave it till it loses its causticity. It is the most valuable of all manures. Steep guano in it, and try it on Camellias.——*A Subscriber.*—After your Calceolarias have done flowering they may be placed out of doors in a shady situation, until the young wood becomes sufficiently ripened for putting in cuttings of them. Allow your Achimenes to dry off, withholding water gradually until the stems become withered, when it may be stopped altogether. From your Pelargonium seed that has not been fertilised with other kinds, you have a chance of raising something different from the parent plant, as Pelargoniums are varieties, but seeds of your Fuchsias, if they are species, are likely to reproduce the same thing. We cannot tell where Meyer's rat poison can be had.‡——*S. E.*—We are not aware that there is any preparation that put on zinc labels to fit them for retaining the ink.——*A Reader.*—For information regarding gold fish, we would refer you to p. 213 of the present year.‡——*A Lady Gardener.*—We cannot recommend Nurserymen.‡——*A. J. B.*—You can have 27 of the Numbers you write for; the others are out of print.——*Rusticus.*—Skeletons of leaves are made by maceration in plain water till all the parts are soft, then washing and picking out the soft parts with needles, and then steeping for a little while in very weak muriatic acid. It is a difficult and tedious process. Gather the leaves when full grown.——*W. C.*—May add to his Conservatory climbers Hardenbergia macrophylla and Mandevilla suaveolens.‡——*Somerset.*—You had better allow your Raspberries to stand, and have patience until another year, when probably you will have suckers. We presume your Salvia is S. mexicana. To flower it, it should be grown in a pot, and should not have too much pot room, as it is apt to get over-luxuriant. It also requires to be freely exposed to bright light during the summer months.‡——*E. E.*—Two good Cabbages to be sown about this time for spring use are the Early York and Vanack. There is no evidence to show that the moon has the effect of causing or preventing them from running to seed. Ground for Onions should be bastard-trenched and ridged late in autumn, and manured at the same time. Nothing, therefore, is required when the seed is sown in spring but levelling down the ridges.‡——*J. A. A.*—The glow-worm is not destructive in flower-gardens. For its history, see page 443 of the present year.‡——*A Reader.*—Will find excellent directions respecting the management of Cape bulbs, given at p. 774, 1843.‡——*Hibernicus.*—For a method of trapping Wasps see p. 260 of this year. Let the weak side-shoots of your Dahlias be thinned out; they are not worth the trouble of putting in for cuttings, as Dahlias are so easily increased in Spring.‡——*Chemical Jack.*—We are sorry, but cannot remedy the evil of which you complain. Speak to the agent who supplies you.——*J. H. H.*—Depend upon it the Vine you speak of was not a Vitis, nor its fruit Grapes of any kind. There is no such thing, as far as we know, as a herbaceous Vitis. There are plenty of Vine-like plants, herbaceous, and bearing berries; but what you may have seen we cannot tell; perhaps some Bryonia.——*Medo.*—We are unable to explain the first cause. There is no doubt that the curling in your pods of stock arises from one side being injured and made incapable of growing as fast as the other. But what may have injured it and made it so we see no means of explaining.——*N. O. P.'s* question is not forgotten.——*Ainus.*—You will find all about Anastatica at p. 363, of 1842. The reference is omitted by some negligence of the person employed to make the Index. The seeds cannot be bought in this country. It has possibly been cultivated, but we never saw it.

SEEDLING FLOWERS.

Antirrhinum.—*Z. Z.*—If 29 is a seedling it must be a repetition of caryophyllideles. 30 is handsome and well formed. 33 is pretty, but not new, and the lower lip does not spread, as it does in 30, which is a very perfectly-formed flower.*

Fuchsias.—*W. J. E.*—We are obliged by the sight of your flowers; they are very good as a collection. 3, 9, and 10 are very fine.*——*E. T. S.*—The sepals of your seedling are too long; and there is nothing new in the colour to recommend it for general cultivation.*——*W. R. and S.*—Your seedlings are large, stout, and showy flowers, but in colour they are similar to the varieties in cultivation; 3.44 is the best.*——*Z. Z.*—A large, stout, and rather coarse flower, not differing in colour from a great many already out.*——*W. S.*—As a variety for bedding out, or planting in the border, your seedling No. 10 is an excellent variety; it appears to be a robust grower, and is the most prolific bloomer we have seen, bearing several flowers at every joint; the flowers are large, rich in colour, and measure, from the base of the footstalk to the end of the pistil, nearly six inches.*——*C. D. M.*—*No.* 1. The sepals to this variety are long and coarse, and there is scarcely any distinction in colour between the corolla and the rest of the flower. 2 is a better flower, elegant in form, but wanting the purple in the corolla: this is the best seedling. No. 3 is small, and though bright and pretty in colour, the proportions of the flower are not good.*——*Y. C.*—Your seedling is a showy variety; rosy carmine tube, with sepals tipped with green; the corolla purple crimson, and very large for the size of the flower.*

Petunias.—*D. J.*—Your seedling is a delicate and pretty variety, and the changes it undergoes after the flower opens, of a purple-crimson to various tints of blue, increases its value.*——*Z. Z.*—Your dark-veined Petunia is a pretty variety, but not very new or striking.*——*W. G.*—It is impossible to form an opinion of your seedling, from the flowers being pressed flat between paper; they were so bruised that the colour was entirely gone; they travel best in damp moss.*——*J. S. S.*—Seedling Petunia, rich purple crimson, spotted, and occasionally striped with white; the spots are distinct, but the flowers are rather small. We should like to see it again, in about a fortnight. It will make a good border variety.*

Pansies.—*W. J—n.*—Your Pansy is of no value, the flower not having a clear ground colour; this part of the flower is blurred and imperfect.*

Pelargoniums.—*R. W. and Co.*—*Formosissima* is your best seedling. The flower is well formed, but the top petals want smoothness; and though common in colour, it is delicate and pretty. *Teniers* was too far gone to form an opinion of; and *Rubens* and *Maid of the Valley* are ill-formed and destitute of novelty.*——*F. C. B.*—Your seedling scarlet is of a very rich and intense colour, and resembles in intensity a variety known as the Brighton Hero. The trusses are very large and compact; the one sent contains between 70 and 80 buds and flowers.*——*J. Y.*—The petals of your flower had fallen; they appear thin and deficient in substance, and the form of the flower we should judge to be too long; the top petals are rich in colour.*——*Eleanor.*—Your white seedling, No. 18, is a good flower, well formed; the spot decided and the white pure: it would have been more welcome with the spot and other colour. The top petals to 19 are too pointed, and the colour and surface too uneven; the lower petals are broad and clean, and the flower is good in substance.*——*W. E. G.*—Your flower is good in colour, but deficient both in substance and form as a show variety.*——*J. M.*—Your seedling is a flower of good form and substance, but it is unfortunately of that lilac colour which is now discarded from every good collection.*

Verbenas.—*Z. Z.*—There is nothing new or particularly attractive in either of your seedlings; they are similar in colour to varieties in cultivation.*

*** As usual, many communications have been received too late.

SEED WHEAT.—Any one desirous of ascertaining the kind best suited for next year is invited to inspect the varieties of Wheat, BRIDGEWATER HOPETOUN and MORTON'S RED-STRAW WHITE, 120 acres of which are now growing on WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE.

The present is the only season of the year when the value of any variety of Wheat as Seed can be ascertained, by inspection; for, if the examination of a mere sample of the grain, which can be seen at any time, be nearly uninstructive as to its quality in the eye of the baker (see *Ag. Gazette*, No. 5), it is entirely so as to the productiveness or habit of growth of the variety to which it belongs. These points, which are of the highest importance in the eye of the Farmer, can be ascertained only by an examination of the growing plant when in full ear.

JOHN MORTON, Whitfield, Thornbury.

The Agricultural Gazette.

SATURDAY, JULY 27, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, July 31 — Agricultural Society of England.
Thursday, Aug. 1 — Agricultural Imp. Soc. of Ireland.
Wednesday, Aug. 7 — Agricultural Society of England.
Thursday, Aug. 8 — Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

July 30 { Framlingham. Isle of Thanet. Rayleigh. | Aug. 2 Collumpton.

We have to direct the attention of our readers to the Report, in other columns, of the MEETING OF THE AGRICULTURAL SOCIETY OF ENGLAND AT SOUTHAMPTON during the past week.

The exhibition of implements, to which, in keeping with our leading principles (see No. 1), we have devoted the greater part of our attention, has greatly surpassed its predecessors, not only in the money, but in the agricultural value of the machines shown. This Exhibition possesses not only a positive interest, depending on the usefulness of competition amongst machine-makers, but it possesses also a relative interest, to be ascertained by a comparison of it with those of previous years, inasmuch as it exhibits the progress of improvement in that important subject—agricultural mechanics. We have endeavoured to exhibit, by a comparative statement, the relation in which the show of implements at Southampton stands to that of the previous year at Derby. This will be seen, along with other remarks on the subject, in another place.

Though the subject of Machines of Carriage will come to be considered more in detail in the course of a series of articles on Agricultural Mechanics, which we hope soon to lay before our readers, yet the present being a seasonable time for a discussion of THE MERITS OF THE CART OR WAGGON FOR HARVEST PURPOSES, we shall just state the points on which such a discussion must turn. Our own opinion is, that for these, as for most if not all farm purposes, the one-horse cart is the most economical machine in use; but the result of a well-conducted comparative trial might prove unfavourable to this view, and yet arable farmers who hold it might still be perfectly justified in refusing to use waggons instead of carts—and this, on the only ground which can commend itself to the practical man—on the ground of true economy. For, to take a case, we happen to know a farm on which, in winter and spring, 2400 cubic yards of manure were last year carted from the steading to the fields; on which, in autumn and winter, about 1400 tons of Swedes, Mangold Wurzel, Carrots, Potatoes, and Turnips, were carted from the fields to the steading; on which, in summer and autumn, about 700 cart-loads of Corn, Hay, and Stubble were carted home. Now, was it the interest of the farmer in this case to change his carts for waggons, though it might be proved that he would have saved by it in harvesting his 700 loads of Corn, when he would so manifestly have suffered by the change, with reference to five times as many loads of the less bulky material—manure and green crops? We do not suppose the experience of every or of many arable farmers is similar to that of the one we allude to, but we just mention the case, to convince those who hold the superiority of the waggon over the cart in harvest-time to be self-evident, that others may agree with them in opinion on this point, and yet reasonably differ from them in practice.

This farmer needs *all* his present number of carts when hauling manure in winter and spring. Is it his interest to purchase, in addition to them, as many waggons as he will require during Corn-harvest, merely to obtain the small differential advantage which we will suppose him to receive from them at that season? This advantage would need to be a great one to justify an affirmative answer. But we believe, where well-constructed carts are in use, the employment of waggons at harvest-time in their stead, in place of being advantageous, would entail a loss upon the farmer.

The implements and furniture of a farm form a large item in the account of capital invested in it, and the purchase of a greater variety than is necessary is obviously most unwise: the aim should be, not to have a machine for every separate purpose, but to get a machine to perform as many purposes as possible.

To no class of implements do remarks on variety being inconsistent with economy apply more than they do to machines of carriage. There are waggons for the carriage of heavy goods, and waggons for the harvesting of Corn or Hay; and there are three-horse, two-horse, and one-horse carts; while the purposes for which all these are used may be effected, we believe, as well by the use of one of them. It is needless to describe all the various little differences in the construction of these machines. They vary in dimension; some have attachments in front and behind, by which the length, and on either side by which the width, of the load may be increased. Some have broad wheels, which are necessary in harvesting Hay or Corn off the wet undrained districts in which they are used; others have narrow wheels, more fitted for the carriage of light loads on good roads.

In the practice of many well-farmed districts, it is shown that one form will answer certainly all the farm purposes, and perhaps almost all other purposes for which this variety is used. Economy requires a form of carriage which, while it will just hold a heaped load of dung, or a flat load of earth, or stones sufficient for the draught of one horse, may, by a simple means of increasing its size, be enabled to hold an equal weight of Straw or Hay.

On this subject we shall hereafter enter more into detail; at present it is sufficient to say, that if, as we know to be the case, a framework supported by only two wheels may be made to carry a full load for one horse—say 24 cwt.—of Corn in sheaf, the only result which could follow a union (in point of size) of two such frameworks supported by four wheels would be that injurious one of increased awkwardness and unmanageableness.

But let us for a short time consider the general question of cart *versus* waggon. There are many advantages possessed by one horse carts over carriages requiring two or three horses to draw them. The second and the third horses, in the latter case, cannot exert themselves to such advantage when in trace harness as if each were between shafts. The strength of the foremost of a long row of horses, and of each of the others, in proportion to their distance from the weight, is expended on the useless labour of keeping those behind him in a straight line. This is particularly observable on going up a hill, when a horse naturally pulls to a side to try to lessen the draught. Unless they are under a skilful driver, some of the horses will be seen pulling one way, and some in another. On going down hill, again, the faults of this plan are equally evident, for the whole weight of the machine comes on the shaft-horse; while, were it divided amongst three or four in separate carts, each would have his share.

In an interesting Paper on this subject in the second volume of the Agricultural Society's Journal, the author states that he has, *after trial*, abandoned the heavy waggons of the district, and substituted in their place, for all farm purposes, the light one-horse cart; he states that the only objection to the one-horse cart system is, that the weight on the back of the animal distresses it. Now, here we think he is wrong; this weight, to which he objects, we believe to be both directly and indirectly advantageous. Directly—for if there be a portion of the load on the back of the horse, there will, of course, be less on the cart for him to draw. When an excavator loads his barrow with earth or stones, he loads it near the handles, that by having more to carry he may have less to wheel. And it is, we believe, *indirectly* beneficial; for when there is a portion of the load on the horse's back, he is better able to draw that which rests on the cart; his feet are firmer on the ground, of which he has thus a better hold, and along which he is of course better able to pull a heavy load; this may easily be seen when he is pulling up hill: the carter then always loads his cart forwards. If a pressure on the back of the horse enables him to draw a heavy load up hill, it will, to a certain extent, also enable him to support a heavy load without slipping on going down hill. There is no doubt, however, but that from a badly arranged load the animal will suffer going down hill, as the pressure is of course increased the more that the centre of gravity of the load is thrown forwards. To remedy this, the author of the paper alluded to recommends three ways. Two of these certainly tend to diminish this weight, though not to take it away. In one of them it is proposed to lower the box of the cart and pass the axle *through* it, so as to have some of the load below as well as above it. In the other, the author simply proposes to lengthen the cart and diminish the height of the load; and he gives a drawing of a very neat Corn-cart on this principle, of his invention. The third method which he suggests is, however, evidently founded on a mistaken idea, (see page 79, vol ii. Society's Journal). He proposes to load the cart at either end "so as to leave the middle space empty, so that, at the greatest descent it has to meet with, no portion of the bulk shall pass the plumb line" from the axle. "consequently no overbalance can take place, no weight can be thrown forwards." But the author forgets that it does not matter whether each of the two loads is on its own side of the plumb line; we must not only look at the fact, that the two equal weights are on either side of the axle or fulcrum, but we must look also to their distances from that fulcrum, and we shall find that if the cart be inclined, as when going down hill, both the front and hind portions of the load will be thrown forwards, the one portion from, and the other nearer to the plumb line from the axle, and thus the weight on the horse's back will be increased as before. If this weight be inconveniently great, the proper and simple remedy is to raise the shafts by taking up the back band of the shaft horse, and loosening the belly-band; or the load may be raised in front, and so thrown backwards, if it be a *till* cart, by means of the rail in front, which most carts of this kind have for that purpose.

We have digressed somewhat from the question which first engaged us, viz. the merits of carts or waggons for *harvest purposes*, and in returning to it we would just say how only this point can be properly determined. If ten or twelve practical men, farming similar extents of similar land, and following the same method of harvesting their grain, excepting that so many used waggons and so many carts, were to keep a journal of their harvest operations, specifying the number of men, women, children, and horses, respectively employed strictly in harvest work, so many *hours* in *each* field—if they were to keep the Corn of each field separate and measure the *bulk* of it a month after harvest when it might be supposed fairly to have settled—and if they were to measure the distance of each field from the stack in which the crop off it was built, a comparison of those journals by any one acquainted with the general character of the crops on each farm, and with the strength and activity of the men and horses at work on it, would determine the question of the relative merits for harvest-work of the carts and waggons employed. The question is a very interesting one, and we should be glad to join with any, in an attempt of this kind, to answer it.

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

It is necessary to state at the outset, that in drawing up the following remarks, the various subsoils or geological strata occurring in our district are described in the reverse order of their deposition, commencing with the uppermost, i. e., the kerse or alluvial land along the sides of the Severn.

Alluvium.—Along the eastern side of the Severn there is an extensive tract of alluvial deposit. Its eastern boundary, which is everywhere its junction with the marl of the new red sand-stone, lies, from Shirehampton on the Avon along the edge of the hills by Over and Almondsbury to Olveston, where it turns north-west, by Ingst and Aust. This constitutes the chief portion of the alluvial district. Another division of it, connected with this by a narrow band of land between Aust and Ingst, on the alluvial level, runs in a narrow tract along the shore to Oldbury, being bounded thus far by the rising ground between Littleton and that village; from Oldbury, the boundary of this tract runs south-east towards Thornbury, up to Rockhampton, Hill, and Berkeley, where it is terminated abruptly by the Little-Avon, up the banks of which a narrow band on the alluvial level runs as far up as Stone. The shore of the Severn from this to Oldmoor Cliff, north of Purton Passage, is abrupt. Near this, another tract of small extent commences, the principal portion of which gets the name of the New Grounds, having been taken from the Severn by embankment many years ago. This alluvial deposit is generally of a light blackish-brown colour, but towards Berkeley the colour is ruddier than anywhere else. It is a calcareous clay, produced by the degradation of the clays and limestones of the blue lias, and of the marls of the new red sand-stone, through which the river runs. Under the head *Alluvium*, also, must be placed those fertile districts down the sides of the many streams which everywhere intersect the county. The nature of the soil on these, of course, varies with that of the district through which the streams flow; thus, the soil on the banks of the streams down the valleys in the oolitic district is a rich calcareous loam, while that similarly situated in the coal district is either a stiff clay or a keen sand. The land on the alluvium is almost wholly pasture. Perhaps, out of a farm of 200 acres, a field of 6 or 7 acres may be arable. The fields are not small, and they are seldom crowded with trees. The Elm is the hedge-row tree. Orchards flourish on this soil. The small extent of arable land is generally cultivated wholly for the farmer's own consumption, for which, indeed, on many farms, it does not suffice. Wheat and Potatoes are the chief crops. Beans are also occasionally grown. The average of the Wheat-crop is from 28 to 30 bushels per acre—higher than anywhere else in the district; the Potato-crop is also generally good. These crops are, however, as in all cases on clayey soil, much dependent on the weather: a wet autumn and mild winter, or a dry season in spring and summer, are equally injurious: and

in this, in great measure, consists the difference in value existing amongst clayey and deep or shallow sandy soils: in the first case, the soil is easily injured by extremes of either kind of weather, and land of this kind is here frequently termed "casualty" on this account. In the case of a shallow soil, one resting on rock, injury is received only in very dry weather—the wetter the season is, the better for it; and in the case of deep sandy soils, although the crops are dependent in some measure on the weather, yet the injury received from extremes of either wet or dry is comparatively small. It is the great advantage of drainage, when accompanied by subsoil ploughing, that it removes superabundant water during a wet season, and affords a source of moisture in a dry one, thus tending to render all soils independent of the weather. The alluvial district, being perfectly flat, and also of considerable extent, a very slight fall can be obtained for water, and the drainage of the land, when attempted, is most imperfect. Almost universally, however, no drainage has been attempted—the occasional clearing out of the ditches being the only attempt to dry the land. The scourings of the ditches, mixed with the dung taken off the pasture-land, is all that the land to be mown receives; and this cannot be given to it each year. An average crop of 25 cwts. of Hay per acre is cut each year; and the value of the early spring and autumn feed is greatly beyond that of any other district of pasture-land in the county. Out of 30 square miles, which is the extent of the alluvial district, at least two thirds are mown each year.

Gravel.—Beds of gravel occur covering the clay of the lias near Slimbridge and Frampton, and also at Eastington and Stroud. They are generally of no great thickness; in the centre of that, however, at Frampton, the wells dug for water do not reach the clay. These diluvial deposits consist of fragments of calcareous rock, generally of a rounded flat lozenge form, varying from one or two inches in length to a mere sand. They must be due to the degradation of rocks of the oolitic series, as they are formed generally at the mouths of the large valleys which here intersect those strata; and the gravelly form is more perfect, the fragments are more perfectly rounded, the farther they occur from the oolitic district. Besides these extensive deposits of gravel there are numerous cases in which mere traces of a deposit exist; and these, though existing in so small a quantity, exert a great influence in improving the character of the soil overlying them.

Agricultural Character of the Gravel.—The surface of the district covered by the gravel is level, and, as has been already said, is comparatively bare. Fewer trees exist in the hedge-rows, when we compare it with the densely-wooded country surrounding it, and the fields are larger. The land is chiefly arable. Most of that at Frampton, for instance, is arable; perhaps, however, the half of that occurring at Eastington is pasture. The soil is a calcareous loam, not generally partaking much of the gravelly character of the subsoil. It varies in depth from upwards of a foot to less than three or four inches, constituting in the one case some of the best land in the county, but being in the other easily scorched by a drought of any continuance. It is a light soil, but when wet is apt to clog, and roll up before the plough; the plough in general use is of an old-fashioned form, having a large flat wooden mould-board, inclining backwards at an angle of 30° to the line of draught. This, one would think, would form a most imperfect implement, tending rather merely to push the furrow slice aside, than to turn it over; but when the land is wet, the farmers prefer it to the more elegant iron implements used in some parts of the county. It is generally drawn by three horses in a row. The subsoil is of a more retentive character than, from its gravelly nature, might be supposed. The water stands in the ditches in the fields near Frampton, during wet weather of any continuance. The greatest improvement might be effected here by the use of the subsoil-plough. The porousness which would thus be given to the subsoil, would render drains effective, though placed at very considerable intervals. The greatest difference is observable in the management of land on the gravel. Two farms over which I went, presented a great contrast. On one the four-field system was adopted, for which the soil is remarkably suited. On the other no system at all was followed. Sometimes Wheat was followed by Beans, which were succeeded by Wheat; after which the land was fallowed, and then Wheat again taken; or Wheat was taken during two successive years; or it was followed by Barley, and then after one year Clover. Wheat was again taken; or sometimes, Wheat being twice taken in a four years' course; the intervening crops were Potatoes or Swedes, and Vetches or fallow. The consequence was, that in the one case the land was clean, and the crops good, while in the other the land was foul and the crops inferior. These instances, though occurring at a considerable distance from one another, were on precisely the same kind of soil, and they show how much the value of land depends on the cultivation it receives. The four-field course is adopted near Frampton, Wheat, Turnips or Swedes, Barley, and seeds occurring in succession. The average crop of Wheat is above three quarters to the acre: the Red Straw Lammas is the kind generally sown. Indeed, this variety is held in general estimation all over the county. White Wheats are seldom sown. The Wheat is always sown in autumn, generally towards the end of September; when, however, forced by weather to postpone the sowing till spring, Spring Wheats are seldom used—the seed is not changed. The crop following Wheat is generally Turnips or Swedes. This is sown broadcast; the plants are singled out in the usual way, when the rough leaf appears, and a second hand-hoeing is till the cultivation they receive. Large crops are therefore seldom raised, and when they do occur, are due to a fortunate meeting of circumstances, more than to any excellence in the mode of their cultivation. I should think eight or ten tons per acre was above the average of this crop on this soil. The Turnip-crop is eaten on the land by sheep, or taken to the yard, according to the necessity and will of the farmer. If he be well provided with Hay, it is given partly to fattening oxen in his yard, or feeding stalls, and partly to sheep on the land; if otherwise, however, he is forced to use it for his dairy stock. The Turnip-crop is succeeded by Barley. Being a Barley soil, good crops are raised on it; four to five quarters per acre are perhaps above the average. Clover seeds, and the common Rye-Grass are sown with the Barley, and, after remaining one year down, are broken up for Wheat. The old pastures on the gravel are close and sweet, but very short. The crop of Hay is entirely dependent on the weather; it is very easily scorched by dry weather. An examination of the waste land on the gravel, shows that the unassisted fertility of this soil is very great. Frampton Common is the finest in South Gloucestershire, and perhaps one of the finest in the kingdom. The Grass is naturally good; no weeds of any kind are to be seen. The Common is surrounded by houses and trees, for which it forms a most beautiful natural lawn. The following facts relative to the value of the soil on this deposit, show how great an improvement may be permanently effected in soil, by the admixture of earth of a kind different to that chiefly occurring in it. The land on the gravel near Frampton is valued at 25*s.* an acre. The land on the clay, on which the gravel lies, is of a most perfectly opposite character, and is valued at 20*s.* per acre. There is, between the two, a band of soil where the gravel thins out over the clay, which is valued at 35*s.* an acre. This band is about 70 or 80 yards wide. These valuations were made by a committee of farmers, appointed by the parish for the purpose of apportioning a new rate. This great difference in the value of the land around the edge of the gravel, is also observable, though not in so marked a manner, at Eastington. It was explained by one of the farmers who observed it, by supposing that while the soil on the gravel is easily burnt, and the soil on the clay easily injured by wet, that lying between the two will not be liable to injury in either way: it will possess the lightness of the gravel, and the roots of the plants cultivated on it will at the same time reach down to the clay. The soil in this narrow band is evidently due to a mixture of the clay and the gravel.

WINTER FOOD FOR DAIRY COWS.

In several Numbers of the *Gazette* opinions have been given about food suitable for dairy cows in the winter season; having experimented a little on this subject myself, I may perhaps be able to add somewhat to the stock of information already given to the public. I will first set out with the articles my experience has proved to be deleterious, as far as the flavour of butter and cream are concerned. About 15 years ago, Mangold Wurzell was puffed off by certain parties as leaving nothing to be wished for, as winter green food for dairy cows. The increase of milk from its use was said to be extraordinary, and the butter was rich in colour and highly flavoured; as one of the many dupes to this figment, I allowed about a bushel *per diem* to be given to each cow, with as much hay as she would eat; a fortnight's trial was quite sufficient to put an end to the experiment; both the butter and cream were declared to be disagreeable, and unfit, from their acrid taste, for all table, and many culinary purposes. Common Turnips and Swedes need no comment; every one that has tasted the milk or butter of cows fed with them is satisfied of their unsuitableness for the dairy, and the same may be said of Cabbages, Rape, &c. Brewers' grains, if given in any quantity, give their own peculiar flavour to the butter. The last article that I shall notice as one to be avoided, is old after-pasture, when the Grass is withered, in the last two months and in the first three months of the year; this Grass, in wet weather, imparts a disagreeable rankness to butter, that not unfrequently attaches the blame to the dairy-maid; because the cows having had nothing but Grass, the cause is unaccountable. Among the articles that give increase of milk and well-flavoured butter, good oil-cake holds a prominent place—one in the morning and one in the evening will have an astonishing effect; to this may be added bran or pollard, where it can be had reasonably; two or three gallons twice a day will greatly increase the milk; and with the bran, if the cows have a taste for it, may be mixed a gallon or two, or more, of malt-dust; all these give a rich flavour to butter, and increase the quantity of milk. Of roots, I have found three to be great and agreeable assistants to dairy produce: of Potatoes, every table-variety—Carrots, red and white, and Parsnips. The first named I use sparingly—about two gallons a day, sliced raw, and about three gallons of each of the other roots sliced also, and *mix them* all together when I have the opportunity; as long as the Potatoes are fit for table-use, so long they may be given to the cows, but as soon as they become spotted and of an earthy taste, they are no longer fit for dairy cows; the other roots may be given as long as they continue sound; nothing decayed or mouldy must be given; one ill-flavoured root will spoil a whole churning. The butter, from this plan of feeding, is delicious—superior to other winter butter I have hitherto tasted.—*J. Hinde, Epsom.*

AGRICULTURAL IMPROVEMENTS.

(Continued from page 366.)

With regard to the pecuniary relation of landlord and tenant, I shall endeavour to show that long leases and a Corn-rent (that is, the value of so many bushels of Wheat at the current price of the day) are essentially beneficial to both landlord and tenant, as well as to the country at large. Under this system landlord and tenant have but one common interest—they rise or fall together. The present custom of fixed money-rents acts alternately most injuriously on both. An unexpected war may find a tenant benefiting by an enormous price; whilst his landlord has only his four per cent., reduced, in fact, to two per cent., by all commodities having risen to war prices.

On the other hand, a tenant hires on a war lease—a sudden peace makes him bankrupt by the violent reaction; and still his landlord must let his farm at peace prices, whilst he was deprived of war benefits. The landlord is evidently the greatest sufferer, and should hasten to amend so unfair and so ruinous a system. The want of a well-founded code of rules for agricultural improvement is much felt. At present each individual claims for his own plan the palm of excellence. This should no longer be. Our Royal Agricultural Society, to which every landowner and farmer should belong, has already effected vast good; but still greater remains to be done. They should have extensive model farms, with schools and libraries attached. There should be shown, after patient investigation, the most perfect and certain modes of drainage, irrigation, and warping; the most complete, durable, and economical arrangement of buildings; the most advantageous mode of tillage and course of crops; the greatest economy of manure and labour; the minimum of seed and maximum of distance in sowing; the stage of ripeness at which grain should be harvested; the effect of steeping seeds in manures; the most profitable mode of housing and feeding stock, and the advantages of removing all trees and fences. When all these national and important subjects are accurately ascertained by a competent but limited board of paid and responsible directors, deciding regardless of personal considerations, then let a code of unerring rules be promulgated and enforced with the full weight and sanction of the Society, as a guide and beacon to the doubtful wanderer in search of agricultural knowledge, who, eager to avoid the shoals of error, is now distracted by multitudinous and conflicting opinions.

Chemistry and mechanism will, no doubt, daily lend new aids to Agriculture; but the points I have mentioned must always form the unalterable basis of our agricultural structure.

Much is being said about how we are to pay for our foreign Corn importations, whether in goods or in money. This is not our affair at all—we are purchasers. If you will have foreign Corn, Flax, and other things, that you might profitably produce at home, you must pay for them; and the seller (the foreigner) will not allow you to dictate to him how he shall take his payment, whether in goods or in money; that is his affair—not yours. The whole question of foreign Corn importation is, to my mind, trivial and insignificant, as compared with the importance of national agricultural improvement; and I hope to see the latter occupy the minds and speeches of our statesmen and orators to the exclusion of the former.

Let us grow Corn instead of timber, fences, and rubbish: we can do better without one than the other. I am told, "We must have timber! What should we do in case of war?" I answer, "How do we get our tea, coffee, wine, and every other foreign article in time of war?" So long as we have money to buy, and hearts of oak to defend and convoy our purchases, Old England can never feel a want, nor want a market to buy in. Besides, what a gross folly it is to grow our own timber in Corn-fields, at a cost of four shillings a foot (I am sure it costs more), when we can import it at one-third the price.

Some gentlemen think the removal of fences and throwing open the country would be detrimental to game. This is contrary to the proof: wherever land is thoroughly drained and the Turnip culture introduced, so surely will game (if protected) thrive and increase. Wet and pasty undrained land is inimical to game—particularly in a wet season.

A great error amongst farmers is the desire to grasp a large quantity of land, instead of concentrating their capital by improvement in a smaller compass. One of the important results of my suggestions as to valuing and making improvements, would be, that instead of 6*l.* to 8*l.* per acre being (as it is now on an average) a sufficient tenant's capital, double that amount would be required, as on my farm. This alone would find employment for considerably more than one hundred millions of additional capital, so that, in fact, when we had disposed of all our foreign bonds and securities, I doubt if we should have near money enough to carry out entirely my practical scale of improvements, except slowly and gradually.

Let Agriculture form an honourable portion of our general education—why should it not? Let Tull and Tusser range side by side with Homer and Virgil. Then would our nobility and gentry be independent of incompetent or dishonest stewards and land-agents, and be able to appreciate those of a more worthy character. Agricultural education and apprenticeships for our young farmers are indispensable. Why should there not be as much uniformity in growing a sack of Corn as in manufacturing a piece of cotton, or a hat or coat? How many a worthy person, retiring from the toils and turmoils of a busy city to enjoy the tranquil peace of agri-

culture, remove the want of agricultural knowledge!—often are his hopes and intentions frustrated and his property diminished by interested or erroneous advice, of which, till too late, he cannot judge. When I see landlords making returns of rent (in my opinion an injudicious operation), I think how much better would it be to present their tenants with agricultural libraries. Farmers, from the very nature of their occupation, and their isolated position, are seldom able to travel from county to county in search of facts; but how readily is a multitude of agricultural experiments and experience brought to their fireside by a selection of good and practical books! Some may say, "Oh, farmers are too prejudiced to read." Experience has taught me the contrary. Bring them the book, they will keenly, anxiously, and with sound sense, scrutinise all that concerns their pecuniary welfare. Reason tells us that the farmer, born, bred, and mixing with others of precisely the same way of acting and thinking as himself, cannot be expected to have so expanded a mind as a manufacturer or trader, who is daily in contact with strangers from every corner of the globe.

It is to be feared, too, that jealous landlords form too low an estimate of a farmer's character, and consider his success and elevation as degrading them—as if his gains were their loss. Let us hope this feeling will gradually give way to a better, and that a farmer who follows the hounds, and dresses and acts respectably, will be considered quite as likely to farm well and make as good a member of society as one who imitates in every respect one of his labourers.

Where individuals are desirous of improving their own estates without disbursing capital, I know of no plan so good as allowing the tenant annually a certain sum out of his rent for improvements, taking care that they are really beneficial, which is very easily ascertained and arranged: generally speaking, tenants would most readily contribute their share, particularly in the matter of drainage.

The national health is deeply concerned in agricultural improvement, for it is notorious that perfect drainage of land and buildings insures the absence of agues, fevers, and other complaints, that are sad drawbacks to the personal welfare and pecuniary comforts of our agricultural population, to say nothing of the importance, in a national point of view, of having a hardy, healthful race in lieu of a debilitated and vitiated population. The mind and the body are too sympathetic to be uninfluenced by each other. Humanity, policy, and self-interest, then, call loudly on us to unite for the worthy purpose of national agricultural improvement.—*I. J. Mechi*, 4, *Leadenhall street*.

P.S. I shall publish annually a faithful and correct debtor and creditor account of my farm, valuing the crops and stock at one uniform average price (the average price in the county of Essex for the last fourteen years). This will prevent confusion, and admit of a correct comparison of one year with another. The quantity produced, and the cost of producing, will be the principal and most interesting considerations.

ON THE APPLICATION OF MANURES.

(*Continued from page* 497.)

Now, the improvement of the plants from repeated hoeings is indisputable; that it is not promoted through the roots is, I think, probable (provable), for the hoeings are not deep enough, the earth is not moved by them to a sufficient depth to renew the decay and form a fresh portion of carbonic acid, about the roots of the plants. How, then, do they operate this improvement? I say, by letting loose the effluviæ of the decaying animal and vegetable matters contained in the soil, to the depth, or to a very little more than the depth to which their loosenings extend, (it is evident to the senses that such effluviæ do escape) and by these effluviæ being absorbed by the leaves, and not by the roots.

The same deduction may be drawn from all our field operations. In the month of February or March, if, either from the poverty of the soil or weak growth of the plants, it appears requisite, many will top-dress their Wheat crops. It is usual to top-dress Red Clover (a tap-rooted plant, and therefore one plunging deeply into the soil) between the cuttings, with a view of increasing the immediate after-growth; Grasses are top-dressed. In Ireland, where they know how to grow as heavy a crop of Potatoes, as well as to eat them, as anywhere else, a very evident improvement takes place immediately after shovelling (moulding) the beds; on the west coast of Donegal they very generally are at the trouble of carrying manure in baskets, and laying a little bit at the butt of each plant, previous to shovelling (moulding the second time) the beds, the plants being at this time from two to six inches high. They state that this is attended with very beneficial effects; that it keeps the stalks green and growing longer than they would be without this application; these people will also dibble in their Potato sets, and delay manuring them till they are breaking ground, and they say they are less weedy and more productive than if manured earlier.* In all these operations it is impossible to attribute the results to any action on the roots; they must be attributed to the absorption of effluviæ disengaged from decaying animal and vegetable matters by the leaves of the plants.

In 1831, at Killybegs, I transplanted Potato sets from a hot-bed into drills in a field; the operation (as will always be the case when labourers are entrusted with novel, and to them foolish work) was so indifferently performed that the manure was scarcely covered, yet the crop was an excessively heavy one, and the Potatoes very large. Three years ago I planted a small patch of Potatoes in rows, the sets being planted in rows six or eight inches deep. I spread short stable dung on the surface, with the intention of digging it into the ground; this was neglected, and I believe they were not even hoed, or at most not more than once; the crop was so very heavy, under a treatment so widely at variance with received opinions, that it led me to suspect that the plants had received nourishment through their leaves from the effluvia of the dung spread on the surface.

A few days ago I got into conversation with a tenant of Mr. Greville's, near this town; he was ploughing an Oat stubble for a second crop of Oats; I inquired, would he not have had a better crop had he sown it in February or March? He said no; that Oats sown on poor land, in the "darks" of April (when there was no moonlight), were a better crop than if sown before the natural heat came into the ground; (on the west coast of Donegal, as well as in many parts of Ireland, April is considered a good seed-time for Oats)—that if sown earlier it would perish the plants—meaning that the plants in their earlier growth would be sickly, (and if we admit the efficacy of steeping seeds, the sickliness of the young plant must upon the same principle be injurious to their future growth); and that the later sowing would overtake it, and prove a heavier crop at harvest; this is the general opinion of the smaller holders of land in Ireland, and is the result of an experience which we have no right to despise. I have for 25 years heard this opinion expressed, and have hitherto contemned it as that of prejudiced ignorance and a lazy excuse. We are too prone in our self-sufficiency to taunt with their failings the poorer classes of Irish, and probably with as little reason as in the present instance. To what, then, are we to attribute this fact? and fact it is—but that in poor ground, in the early season, the seed germinates so slowly that the gases let loose by the ploughing escape, and the surface becomes crusted, so as to prevent the escape of any that remain before the germ has reached the surface; when it does get above ground the young leaves are therefore starved. When the leaves of young plants look sickly and yellow, which is, I think, falsely attributed to the wire-worm, it is common to roll the ground; this breaks the crust (not crushes the worm) and the nourishment the leaves consequently receive from the escape of gases restore them to health.

The Editor of "Liebig's Chemistry of Agriculture," on the authority of "Davis's History of China," says—"In the case of everything except Rice, the Chinese seem to manure the plant itself, rather than the soil;" and Liebig himself says, "How infinitely inferior is the agriculture of Europe to that of China!" And again he says, "The agriculture of their country is the most perfect in the world." In speaking of guano he also says, "Thus in Arica, where so much Pepper (Capsicum baccatum), is cultivated, each plant is manured three times: first, upon the appearance of the roots; second, upon that of the leaves; and lastly, upon the formation of the fruit (Humboldt); from this it will be observed, that the Peruvians follow the plan of the Chinese in manuring the plant rather than the soil." Yet Liebig always supposes that plants are fed by the roots, and is even at the pains of bringing ammonia from the air, with every shower, to supply them with azote, which he states to be washed down to them with the rain-water, and adduces what I must think a very questionable proof; he says, "In the year 1834 I was engaged with Dr. Willrand, Professor of Botany in the University of Giessen, in an investigation respecting the quantity of sugar contained in different varieties of Maple-trees which grew upon soils which were not manured. We obtained crystallised sugars from all, by simply evaporating their juices, without the addition of any foreign substance; and we unexpectedly made the observation that a great quantity of ammonia was emitted from this juice when mixed with lime, and also from the sugar itself, during its refinement." Now, if the sugar had been obtained from the ascending sap, this would be a very sufficient proof that the ammonia had been imbibed by the roots from the ground; but as there can be no doubt that it is from the descending, and, if you will, elaborated sap, that the sugar was obtained, it might be asserted with more probability that the ammonia had been sucked in by the leaves; and it does appear more agreeable to the evanescent nature of ammonia, that instead of descending into the depths of the earth to seek the roots, it should, when the shower which had lodged it on the surface had ceased, with the first blink of sunshine ascend into the air, and, on approaching the leaves, be sucked in by their pores; and were it not even so volatile, Liebig himself would admit that the evaporating moisture would communicate a similar state to it. Now, we find precisely the most rapid growth of plants is in the spring months, when the showers are not so heavy or continuous as to sink into the earth, but are succeeded instantly by a hot sun; and this is called proverbially growing weather.

On the same principle I can well account for the effect which is said to attend the steeping of seeds in chemical solutions, and the success which their experience has taught the Chinese to reckon on from steeping their seeds in liquid manure until germination begins; the seeds absorb a quantity of concentrated gases, which are gradually let loose to feed the shooting germs; these also break through the surface and attain some growth before all the gases have escaped, which have been set in motion on the moving of the earth in the sowing of the seed; the plant thus acquires an early robustness, which, under ordinary circumstances, maintains its superiority through its whole growth over plants which have not been so treated.—*T. M. G., Revenue Police, Granard, Ireland.*

* In Ireland, the small farmers rarely drill their Potatoes, they generally plant them in beds from three to five feet wide, according to the depth of the soil, allowing the necessary earth for covering the Beds; the sets are either laid on the surface or dibbled in, the manure spread on the surface and covered from the furrows; where the plants appear, or before they are six inches high, the beds are again covered, and it is reckoned good husbandry to give them a third covering from the furrows.

SKETCHES OF EAST LOTHIAN HUSBANDRY.

In describing the different modes of ploughing, I shall first suppose the land to be nearly level, as is usually the case after summer fallow, or after the separation of drilled crops from the ground. As the furrows which divided the original ridges are then nearly or altogether obliterated, the foreman, provided with three or more poles of a known length, marks off the field in the usual manner, into parallel and equal divisions, corresponding in size to the intended ridges. The form of the ridges, and the situation of the intermediate furrows, are carefully preserved from year to year, especially when the former are much rounded or elevated in the crown, as is the invariable custom in strong retentive soils. The position of the furrows are never altered except in situations where the land happens to be very dry and light. In ridging up such of the fields as had been recently furrow-drained, much care is taken to have the furrows directly over the drains, in order to facilitate the escape of surface-water into them. It will be recollected, that drains are now invariably made in the furrows, either in each, or in every alternate one, as may be found necessary or convenient at the time. When the furrows are obliterated or not distinctly visible, from the effects of subsequent tillage, the situation of each drain is accurately ascertained by digging with a spade until the tiles or stones employed in filling it are reached. The feirings, which afterwards become the crowns of the ridges, are then drawn midway between the drains. In ridging up land for Wheat or other Corn crops, after having been nearly levelled down while undergoing the process of summer fallow, or the operations preparatory for green crops, the method of ploughing termed gathering, is that generally adopted in heavy soils, as giving to the ridges a greater degree of curvature than what can be done in any other way. Besides the common mode of marking off land with the aid of poles, before ploughing it into ridges, the following simple method is practised in some parts of the county, and in Berwickshire, for the same purpose:—A stout pole, called a *marker*, equal in length to the breadth of the intended ridge, is fixed to the plough at right angles to the line of draught; one end of it is attached by a simple contrivance to the beam a little before the coulter, while the other projects either towards the right or left-hand side of the ploughman, as may be required, and is kept steadily in its place by means of a rope passing from the outer end to the collar of the horse, on the same side as that to which the pole projects. A small coulter or *skirrop-tine* is attached perpendicularly to the outer extremity of the pole, which traces a mark or rut on the ground as the plough moves onward, parallel to the line of draught, and sufficiently visible to serve as a guide for the ploughman in drawing his next line. When arrived at the headland, he alters the pole to the side opposite to that on which it was last, proceeds with his plough along the track newly made by the marker, and in doing so, traces another track with the pole exactly parallel to the last. In this manner the whole field is gone over. By adopting this device, it is only necessary to mark off the first feiring with the aid of poles in the usual manner, at the proper distance from that side of the field parallel to which it is intended to run the ridges, as the marker traces the line in which the next and every succeeding feiring is to be drawn. This plan has been found to answer very well on light friable soils, and in situations where, on account of the inequalities of the surface, a considerable number of poles would be required in laying off ridges in the ordinary way.

Much pains are everywhere taken by the ploughmen, in forming these ridges, to give them a uniform degree of curvature, and to have the furrows as straight, shallow, and narrow as possible, as the land is then usually sown out with Clover and Grass-seeds. The first two furrow-slices around each side of the feiring, or crown, are ploughed shallow; the next few something deeper, and the remainder gradually lessening in depth towards the furrow; the ridge thus obtains a regular degree of rotundity or elevation. In ploughing the last, or hiating furrow-slice of a ridge in strong wet soils, one of the horses is usually unyoked from the plough, in order to prevent any injury to the land from treading upon it. Sometimes, when the soil is of a very stiff nature, the horses are yoked one before the other while finishing the ridge, both walking in the furrow. No footmarks are permitted to appear on the land after being ploughed.

When land is thus formed into ridges, it is afterwards ploughed, without marking them off anew until the furrows are effaced by subsequent tillage. In ploughing *lea* or Grass lands, the system of ploughing, termed *casting*, is that universally practised. When this mode is pursued, the feirings are always made in the furrows, and in a manner somewhat different from that adopted in the case of gathering. In casting ridges the assistance of poles is entirely dispensed with, a commencement being made by taking a slice from the left hand side of the furrow in which the feiring is to be made; small-furrow slices are next ploughed from each of the adjoining ridges—one resting upon that first ploughed, and the other falling into and occupying the situation of the original furrow; two slices of ordinary dimensions are then ploughed up to these from each ridge after

which the plough is made to pass over the space occupied by the old furrow, in order to clear a channel for the free passage of water; but where the land is dry and light, not being so liable to suffer from the retention of moisture as strong clays, this last operation is frequently dispensed with. The two ridges are then ploughed together, by turning the horses at the headlands to the right-about; that is, the ridges are hupped in, the successive furrow-slices of both ridges inclining towards the furrow between them. Another feiring is made, *after concluding* three ridges, in the fourth furrow from that in which the last one had been drawn, and the adjoining ridges ploughed together as before. Two unploughed ridges are thus left between the four already accomplished, in ploughing which, the ploughman begins at that side of either ridge adjacent to the ploughed ones, lays in a small slice directly over the former furrow, and does the same in returning along the other ridge; two furrow-slices of the regular size are then ploughed up to these, and the plough made to pass through as before, not allowing the irons to enter the soil. These two ridges are then completed by turning the horses at the headlands from right to left, that is, they are winded out, the operation concluding at the intermediate furrow, which, hence, becomes what is termed an open furrow. By this manner of ploughing, which is now the most generally practised on all kinds of land throughout East Lothian, the form of the ridges and the situation of the original furrows are preserved. All the furrow-slices of each two adjoining ridges incline in the same direction, while those of the next pair lie in the contrary way.

The principal advantages resulting from this mode of ploughing arise from the small number of open furrows thereby occasioned, only every fourth being an open one; and to any person accustomed to inspect Corn-fields, particularly in droughty summers, who compares the stunted appearance of the crop, in and about those deep open furrows, with the luxuriance and freshness of that in the close furrows, as the others are called, the utility of diminishing the number of the former will be abundantly evident. To lessen their number as far as can be conveniently done, eight ridges, instead of four, are frequently taken in at once—the feirings and open furrows occurring only at intervals of eight ridges, four of the latter being hupped in and four winded out. But in this case, where the field is not of considerable length, a loss of time in so frequently turning at the headlands is unavoidably occasioned. When the field, or ridge-lengths, to be ploughed happen, therefore, to be short, only four ridges are taken in at once; but when of considerable length, eight ridges are ploughed with one feiring. This mode of ploughing—casting the ridges—has been found peculiarly adapted to strong clayey soils retentive of moisture, in which the ridges had been raised by previous ploughings.

The only material imperfection arising from casting is, that the open furrows, from being made in the situation of the previous ones, are necessarily deeper and barer of earth than when, as in the case of crown-and-furrow ploughing, they occur in the middle of the ridge. To obviate this defect, either of the two following plans is sometimes adopted in ploughing lea:—Instead of four or eight ridges, five or nine are taken in together; the feiring is then made either on the crown of a ridge or in a furrow; if on the crown, that ridge and the two at either side (supposing nine ridges taken in), are ploughed together as before, and the others winded out, concluding in a furrow; but when, as is most generally done, the feiring is made in the open furrow, four ridges are hupped in and five winded out, terminating at the crown of the central ridge, which is thereby cloven into halves. When next ploughed, this and the four adjoining ridges are gathered, the other four winded out, and all restored to their original position.

Whilst the ploughing of the lea is being carried on, all the skill, taste, and anxiety of the ploughman are brought into action. Each man has a certain number of ridges to himself, and when several experienced ploughmen, all nearly of a match in point of skill, are working together, the greatest competition prevails amongst them. The ploughs and their irons are always kept in the best working order, and every exertion is made by each man in endeavouring to execute his work in a style superior to that of his neighbours. To excel in straightness and regularity, in cutting a good *shoulder*,* and in packing the furrow-slice closely together, is the great ambition of every good ploughman.—*T. Sullivan.*

Home Correspondence.

Guano.—Contracts for Ichaboe African Guano have been signed to be delivered from March to middle of May, 1845, at 6*l.* 6*s.* per ton, ex ship, port of Liverpool. The last news from the Island of Ichaboe was that 100 ships were then waiting their turn to load; and in order to give dispatch to the vessels waiting their turn to take in their cargoes, the crews of other ships were assisting in loading the vessels in berth. It is also said by some, that in 12 months the stock of guano in Ichaboe Island will be exhausted; but it is said there are other islands equally valuable. If that was the case, why should so many ships accumulate and wait so patiently their turn to be laden? The supply of African guano is very liberal; and although a week back the trade was very dull, the late rains have given great encouragement for the sale. It is also calculated by many importers that guano will be bought on better terms the next three months, than will happen again for years; for the number of ships on their passage to load at Ichaboe Island, and those returning laden, will overstock the market, as the season will be over before they can arrive.—*W. H. Harwood, Liverpool.*

Compost-heaps.—I have been in the habit of paring the sides of roads, ditches, &c. for the last 30 years, and have found much benefit from laying it up for compost and trenching it into the soil. If farmers and cottagers would follow my example, it would be a great benefit to them. If a clause was inserted in the Turnpike Act, to force all occupiers of land &c. to cut down all tall-growing weeds, such as Docks, Thistles, Nettles, &c. as far as their lands and premises extended, twice in the summer—say middle of June and middle of August—it would be of much benefit to the country at large.—*F. X. O.*

Bran.—"H. Lawson," (p. 421,) will find in the first volume of Boussingaults "Economie Rural," p. 464, that bran consists of gluten and albumen 20. and gum, &c., 28.10, fatty matter 5.5, woody matter and ashes 45.7., total 100.—*C. J. Lancaster.*

Vitality of Seed.—With reference to Mr. Bernays's communication in a late *Gazette*, it may be in your recollection that a few years ago, every other person one met was swallowing quantities of Mustard-seed to promote digestion—the whole of which passed off without any other perceptible change than that of being a little swollen, and thus, perhaps, made more ready to germinate. Why, then, may we not presume that the seeds of weeds pass equally unaltered through the bodies of many animals? A writer in a recent Number of the *Gazette*, stated that one cwt. of salt would destroy all the seeds in a ton of dung. Now if this be the fact, may we not first destroy the seeds by mixing salt with the manure-heap, and then, after a time, treating it with sulphuric acid? We should thus get rid of our weeds; and then by the reaction of the salt, sulphuric acid, and ammonia, we should get the fixed salts of sulphate of soda and muriate of ammonia. See Solly's "Rural Chemistry," page 41.—*Agricola.* [Our correspondent's suggestion is probably correct so far as all animals that do not chew the cud are concerned. We have heard that one of the quickest ways of obtaining young hawthorn plants, is to feed geese on the haws, and sow their manure. In all except ruminating animals, if seed given in their food be not crushed in the act of mastication, it will rarely be injured by the process of digestion.]

Liquid Manure.—When the weather is wet, I propose carting the liquid at once upon fallow ground; having at this time a very good crop of Potatoes growing on the very poorest piece of ground about me, entirely owing to having in the winter carted out upon it the overflowings of my farm-yard.—*A Beginner.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

JUDGING from the numbers and quality of the articles—Implements and Live-stock—exhibited at Southampton during the past week, as well as from the number of visitors attracted thither from all parts of the kingdom, we may believe that the late meeting of this Society may vie with any of its predecessors in point either of interest or usefulness.

In reporting the proceedings of the past week, we shall proceed in the order of time, that being a simple arrangement, and one more likely than any other to present an intelligible statement to those of our readers who have been absent.

The Judges of Implements having been occupied during Monday in ascertaining their merits, by test as well as examination, it was not till Tuesday morning that the public were admitted to the Show-yard. In the following imperfect description of what was there exhibited, a comparison has first been drawn between the Exhibition of this year and that of last, in order to which advantage has been taken of the report by the Society's Judges of the Derby meeting in a late vol. of the Journal.

The following paragraphs retain their truth. We apply them to the Exhibition of the present year:—

"The Judges have again the gratification of recording that, in number, variety, and perfection, this Exhibition greatly excelled all that preceded it. Perhaps a more substantive proof of the progress made in this great department of the Society's solicitude cannot be adduced, than that the exhibitors annually outgrow enlarged show-yards, and intreat more stringent and exact trials of their implements. It is thought that the following analysis of the contents of the show-yard may not only serve to convey a just idea, but be a proper historical record, of the magnitude and variety of the collection; and that it may tend to confirm the Council in their desire to render the catalogue of implements a perfect register of the Exhibition. As such, the catalogue would become not merely a momentary guide, but a useful annual work for native and foreign purchasers to consult, after as well as during the Show. The analysis now given, as prefatory to the award of premiums, and usual short account of some of the implements, presents a concise classification of the machinery employed in various departments of British husbandry; and it may possibly aid the Council in selecting the objects or classes which more particularly demand future encouragement by the Society. As a digest of the nature, number, and value of the implements in habitual use by farmers, it cannot fail to impress the mind with the importance of agricultural mechanism as a branch of national industry, and as consuming an immense amount of native materials."

We have made use of this analytic statement of the implements then at Derby, and, as follows, we have added a column, giving as nearly as a necessarily hurried examination would permit, a corresponding analysis of this year's Exhibition. It may be mentioned in proof of the accuracy of the first sentence quoted above, as applied to the Southampton Show, that the money value of the implements exhibited, was upward of 9200*l.*, while that of those shown at Derby amounted to 7400*l.* only.

ANALYSIS OF THE EXHIBITION.	No. of Articles Exhibited at Derby.	Southampton.
TILLAGE IMPLEMENTS.—PLOUGHS.		
Swing, moulding and ridging included	48*	51
One-wheel	15	27
Two-wheel, double-furrow included	55	56
Subsoil, common	3	..
Ditto, various	6	10
Sub-pulverisers	4	..
DRto and Surface-ploughs	3	..
Ditto and hoes	2	..
Stubble and paring	4	6
Water-furrow clearing, or Boat-plough	1	..
Draining	3	..
Drill-ploughs, one-row	2	..
Ditto, three-row	1	4
HARROWS.	—148	—162
Common, and improved	19	..
Drag, and scarifying	2	..
Extirpating	1	..
Lever	2	..
Revolving and sowing	1	..
Ditto, vertically	1	..
Ditto, horizontally	1	..
Chain-web	3	..
Folding	1	..
	—31	—28
SCARIFIERS.—Cultivators, grubbers, scufflers, included	25	26
CLOD-CRUSHERS.—Various	7	13
ROLLERS.—Various, cast and wrought iron	12	16
COUCH-RAKES.—Various	4	5
DRILLING, SOWING, MANURING, AND HOEING MACHINES.		
DRILLS AND PRESSERS.		
Drills for corn and seed, with manure	14	..
Ditto, ditto without manure	1	..
Ditto for Turnip-seed with manure	10	..
Ditto ditto, without manure	1	..
Ditto ditto, with manure-cart	1	..
Ditto for seeds, with manure	3	..
Ditto ditto, without manure	10	73
Ditto and Pressers, with manure	6	..
Ditto ditto, without manure	4	..
Ditto for solid manures only	1	..
Ditto for liquid manures only	1	..
Pressers, without drills	2	..
Seed-sowing Barrow, without manure	1	..
Drill-ploughs—(see PLOUGHS.)	—51	—73
DIBBLERS.		
Five-row horse dibbling machine and sower	1	..
Two row ditto ditto	1	..
Two-row hand or horse dibbling wheel	1	..
One-row hand ditto	1	..
HORSE-HOES.—Broad, narrow, and variously contrived, to suit drilled crops	—4 20	—8 23
HARVESTING MACHINES.		
HAY-MAKING.—Tedding machines	4	..
HORSE-RAKES:—Hay, corn, and stubble	7	13
Corn Gatherer	..	1
	—11	—14
BARN MACHINERY.		
HORSE-ENGINES:—Various powers, travelling and fixed	7	several.
STEAM-ENGINES.		
Travelling, for threshing, &c.	3	..
Applied to Corn-mills, &c.	3	..
	— 6	— 4
THRESHING-MACHINES.		
Driven by hand	4	7
Driven by horse or steam power	11	22
Threshing floor	..	3
	—15	—32
WINNOWING, CORN-CLEANING, AND BARLEY-HUMMELLING.		
Various	20	24
CRUSHING AND SPLITTING MILLS.		
Various	36	48
CORN AND MEAL MILLS.		
Metallic hand Corn-mills	8	..
French burr ditto	5	..
Grey stone ditto	1	..
Mill, with two-horse power engine	1	..
Mills for animal, engine, or other power	4	..
Metallic meal-mills	2	..
Hand dressing-machine	1	..
	—20	—19
CHAFF-CUTTERS.		
Various, adapted to manual, animal and steam-power	31	36
CAKE-CRUSHERS.		
Various	14	15
CORN WEIGHERS AND METERS.		
Weigher	1	..
Meter, self-registering	1	2
	— 2	— 2
FIELD, FOLD, AND YARD MACHINERY.		
TURNIP-CUTTERS.		
Hand and portable	11	..
Attached to cart	1	..
	—12	— 9
ROOT-GRATING, AND SQUEEZING MACHINES.		
Graters	8	..
Cider-mill, Turnip, and Potato squeezer	1	..
POTATO-WASHERS.	— 9	— 2
Various	2	2
STEAMING APPARATUS.		
Various	5	2
FEEDING APPARATUS.		
Consisting of iron pig-troughs, pens, cow and sheep cribs on wheels, mangers, racks, &c.	..	..
Fodder preserver	..	..
WEIGHING MACHINES.		
For carts, cattle, sheep, &c.	4	14
FIRE-ENGINES, &c.		
Fire-engine, with irrigator, attached to steam-engine	1	..
Ditto, hand and portable	4	..
Garden-engines, various	6	..
	—11	—14

* This phrase, though well understood by ploughmen, is not easily explained with precision. It means a particular form or appearance presented by the furrow-slice after being turned over. The advantages of ploughing Grass lands with a good shoulder are, that the surface is enabled to resist the winter rains, and afterwards to produce a proper covering for the seeds.

ANALYSIS OF THE EXHIBITION.

	No. of Articles Exhibited at Derby.	Southampton.
Stack-Yard.		
Proposed substitutes for thatch	8	4
Rick ventilator	1	2
Hay sample borer; assortments of rick-cloths, iron rick-stools, and frames, &c.	..	4
Rickstands	6	10
Sundries.		
Iron Barrow for heating and transporting tar	1	
Machine for breaking stones	1	
Fan-blower, for out or in-door forge	1	
Iron Field gates	3	
Assortments of iron Hurdles, fencing, Seats, Barrows, Trucks, &c. Saw-machines, Screw-Jacks, Cranes, Pumps, Garden-tools, &c.	..	Many lots.
Weed and Bush Extractor, assortment	..	
	— 6	
AGRICULTURAL CARRIAGES, HARNESS, AND GEAR.		
Waggons, Carts, &c.		
Waggons, without springs	7	..
,, on springs	3	..
Harvest Waggon, on springs	1	..
Market and Corn delivery carriage, on springs	1	..
Waggon, formed of two combined carts	1	..
Carts, without springs	10	..
,, for general and harvest work, on springs	3	..
,, for harvest, without springs	5	..
,, market and family, on springs	2	..
,, for liquid manure	3	..
,, for solid manure, with drills	1	..
,, with solid and liquid manure bodies	1	..
	— 28	— 46
Breaks:—Applicable to waggons, carts, and carriages of all kinds	..	..
Sets of Wheels, Axils, &c.:—Various	..	17
Harness and Gear.		
Set of single-horse Scotch harness	..	..
Sets of improved hames, saddles, bits, and reins	..	..
Whipple-trees, or coupling-bars	..	..
Drain-Tiles and Implements.		
Machines for making tiles and bricks	2	..
Set of tools for forming concrete drains.	1	..
Sets of specimens of tiles	3	..
Drainers' levels	2	..
Screen for sorting drain-stones	1	..
Draining-ploughs—(see Ploughs.)	..	..
	— 9	— 25
DAIRY IMPLEMENTS.		
Churns.		
Upright, various motions	4	
Box, ditto	4	..
	— 8	— 11
Cheese Presses.		
Single	4	..
Double	1	..
Single, with curd-crusher attached	1	..
	— 6	— 7
Curd Mills.		
Various	3	..
Milk truck and cask	1	..
	— 4	
Miscellaneous.		
Dynamometers, two kinds	4	2
Odometer, or land measurer	1	1
Veterinary instruments, various	..	..
Collections of soils and manures	..	..
Map in relief for exhibiting the water-levels, undulations, and geology of a district	1	1
	— 6	— 4
Domestic.		
Cast-iron barrel thrawl or tilter	1	..
Meat-salting machine	1	1
Egg-hatching ditto	1	1
Flour-mills, Garden-engines and tools—(see Barn Machinery.)	..	..
	— 3	— 2

AWARD OF PREMIUMS.

The following is the Award of Prizes for Implements, so far as it has yet been published.

	Premiums.
I.—Ploughs.	
To Messrs. J. R. and A. Ransome, Ipswich, for their heavy land Plough	10*l.* and Silver Medal.
To Messrs. J. R. and A. Ransome, Ipswich, for their light land Plough	10*l.* and Silver Medal.
To Messrs. J. R. and A. Ransome, Ipswich, for Lowcock's patent Plough	5*l.*
To Mr. John Bruce, Stratford-on-Avon, for his skim Plough	5*l.*
II.—Drills.	
To Mr. R. Garrett, Saxmundham, for his Drill for general purposes	20*l.* and Silver Medal.
To Mr. J. Smyth, Yoxford, for his Turnip and Manure Drill	10*l.* and Silver Medal.
III.—Scarifiers, &c.	
To the Earl of Ducie, Dursley, for his Cultivator	10*l.* and Silver Medal.
To Mr. D. Harkes, Knutsford, for his expanding Horse-hoe	5*l.*
To Mr. Garrett, Saxmundham, for his patent Horse-hoe	Siver Medal.
To Messrs. Saunders, Williams, and Taylor, Bedford, for their patent Harrows	5*l.*
IV.—Chaff-cutters, &c.	
To the Earl of Ducie, Dursley, for his Chaff-cutter	10*l.* and Silver Medal.
To Mr. Gardner, Banbury, for his Turnip-cutter	5*l.*
To Mr. Hornsby, Grantham, for his Cake-crusher	5*l.*
V.—Sundries.	
To Mr. D. Coombs, Barford, for his Oxfordshire Waggon	15*l.* and Silver Medal.
To Mr. Stratton, Bristol, for his Harvest cart	Silver Medal.
To Ditto, for his Agricultural spring-cart	Silver Medal.
To the Earl of Ducie, Dursley, for his Richmond Cart	Silver Medal.
To Mr. Stratton, Bristol, for his Water-cart	5*l.*
To Mr. Croskill, for his Clod-crusher	20*l.*
To Mr. Hornsby, Grantham, for his Drill-presser	10*l.* and Silver Medal.
To Mr. John Reid, Regent Circus, Piccadilly, for his subsoil Pulveriser	10*l.*
To Mr. Cooch, Northampton, for his Barley hummeller	Silver Medal.
To Mr. Stratton, Bristol, for Gingell's Cheese-press	Silver Medal.
To Mr. Harkes, Knutsford, for his Churn	5*l.*
To Messrs. J. Hall and Co., Cambridge, for Constable's Trefoil and Clover-drawing machine	5*l.*
To Mr. J. Knight, Maidstone, for his patent Hopkiln	5*l.*
To Mr. Stratton, Bristol, for Fry's Bone-breaker	2*l.*
To Mr. Deane, Birmingham, for his Hand-mill	Silver Medal.

Award of Premiums—continued.

To Mr. Hill, Dudley, for his Cow-crib	5*l.*
To Mr. Garrett, Saxmundham, for Springall's Rack-stand	Silver Medal.
To Mr. Hill, Dudley, for his Sheep-fence	Silver Medal.
To the Earl of Ducie, Dursley, for Clyburn's Screw spanner	Silver Medal.
To Mr. Pearce, Andover, for his Rack-band Tug	Silver Medal.
To Messrs. Tasker and Fowle, for their machinery for drawing water	Silver Medal.
To Mr. J. Reid, Regent Circus, Piccadilly, for his Fire-engine	5*l.*
To Messrs. Ransome, Ipswich, for their Horse-works with Bean-splitter, Chaff-cutter, and Linseed crusher	30*l.*
To Mr. Cambridge, Devizes, for his Steam-engine	5*l.*
To Messrs. Ransome, Ipswich, for their hand-drain, tile, and pipe machine	20*l.* and Silver Medal.

Rather than give a mere list of implements exhibited by the various machine-makers, which would not interest the generality of our readers, we have in the following statement singled out a few deserving of particular notice, enlarging at some length on their merits.

Ploughs.—We cannot give anything like a description of the very many implements of this class exhibited this year. The following remarks by the Judges, extracted from the Report of the Derby Show, apply equally to that at Southampton:—"They would particularise, as worthy of high commendation, those produced from the manufactory of Messrs. Ransome, composed entirely of iron and steel. The beams of these ploughs are constructed on the *truss* principle, which, though novel in its application to the plough, has long been appreciated by mechanics as possessing the greatest stiffness combined with lightness. It is this consideration which has induced those makers to abandon the use of wood, heretofore chiefly used by them for this part of the plough in preference to a beam of solid metal. The structure of their improved iron beam is such as to destroy lateral vibration, particularly at its root or junction with the body of the plough; it admits also of a neat and powerful fixing, as well as ready adjustment of the coulter. Tremor in mechanism is well known to consume power uselessly; and in the case of the plough, vibration in the beam, though it be insensible to the eye, renders the guidance of the implement more difficult, and its work less exact. The circumstance of increased stiffness attending mere weight of matter, may have been one cause why the heavier ploughs have not unfrequently been found to require less force of draught than lighter ones for an equal weight of soil moved; but stiffness is not incompatible with lightness, and a diminution in the weight of an implement, when perfect action is otherwise secured, must be attended with economy of power, or, what is the same thing, with a diminution of resistance, whence truer work results. It is also important that the stilts or handles should be stiff enough to transfer the effort of the holder to the body of a plough, with the least expenditure of his strength; for, the easier its guidance, the greater will be the certainty of the labourer's attention to his business. This property has also received the care of Messrs. Ransome, and, together with the simple means applied for adjusting and replacing the mould-boards, shares, and wearing parts of the various ploughs exhibited by them, testified to the thought and ability bestowed on the most minute details of an implement which still maintains its claim to be the most indispensable, as it was probably the earliest invented, auxiliary to human labour in tilling the soil."—Mr. Howard of Bedford, Messrs. Barrett and Exall of Reading, Messrs. Saunders and Williams of Bedford, and others, exhibited numerous implements in this class, with one, two, and without wheels. We select two, both of them turn-wrest Ploughs, as exhibiting much ingenuity. One of the best of this kind was exhibited by Mr. Comins of South Molton, Devon. We do not speak here of its efficacy as an agricultural implement, for we did not see it tested on the trial ground, but of the means of shifting the mould-board, share, and coulter at the land's end. This is all done by one simple operation: the implement has a double mould-board, so slightly curved as that each in succession answers the purpose of side-plate, while the other acts as turn-furrow. The under and upper side of the share are brought into action alternately, its edge being presented alternately right and left, according to the way the implement is working. The motions necessary to effect the change in the position of both mould-board and share, are obtained by shifting a lever, which rests on the handles, from one side of the Plough to another. This act gives the required half-revolution to the share, by means of a crank on a longitudinal shaft, lying in the body of the Plough, above the sole-plate to which the share is attached; and by means of a pinion upon this shaft working into rack-work, on a bar stretched between the mould-boards, this half-revolution at the same time effects the required alteration in the position of the turn-furrow.—The other Plough, that exhibited by Messrs. Ransome, named in the catalogue "Lowcock's Patent Plough," is also on the turn-wrest principle. Its body consists of two mould-boards, of a correctly-curved form, placed back to back, each with appropriate beam, share, and coulter. The two beams are connected by an iron rod, which runs the whole length of the implement, and along it the draught-bars and chains slide from one beam to the other when the horses turn at land's-ends. It will be seen that the plough does not turn; it is a completely double implement, either end working equally well. The two ploughs, of which, in fact, it consists, have handles which are common to each; and being hinged at the top of the implement, in the middle of its length, they are easily lifted over from one end to the other when necessary. In order, also, to shorten the implement, instead of having two complete mould-boards, back to back, the one is made to encroach, as it were, upon the other, so that the two would intersect, were it not that around the vertical line in which this intersection would take place a portion of a mould-board is made to rotate, one side of which fits, when in working position, to one mould-board, and the other to the other. The front curves of the mould-boards are counterparts of each other; while the hinder curves of the mould-boards are formed by a fly, which, turning on a centre, alternately presents the continuation of the curve of either the right or left mould-board, as required to be used. When the ploughman has completed the furrow turned to the right, he reverses the handles; at the same time the draught-chain, to which the horses are attached, is, by the act of their turning, carried on a rod to the opposite end of the plough. The fly on the mould-board, by its own pressure against the soil, assumes its correct position, and the implement is at once in order for turning the furrow to the left without further adjustment.—A premium of 5*l.* was awarded to a skim Plough, invented and manufactured by Mr. Bruce, of Teddington, Stratford-on-Avon. In addition to its similarity to the efficient implement exhibited by Mr. Hill, of Brierly Works, Dudley, which was rewarded at the Derby meeting, it possesses a very simple means of being raised or depressed in the ground, dependent for its action on a pressure applied to the handles.—A simple draining Plough, capable of cutting out a small drain, and laying the earth alongside of it, was exhibited by Mr. Harkes, of Mere, Knutsford, Cheshire.—Mr. Bruce exhibited a subsoil Plough, which was rewarded at Derby, and highly praised in the Report by the Judges of that meeting. The following description is extracted from the Derby report:—"The Show-yard contained implements having stirrers upon the plan of the Charlbury subsoil, *i. e.* affixed to the hinder part or heel of the plough. Mr. Bruce's contrivance is on a different, and it is thought a superior principle. He applies to the right hand side of his plough-beam, and about parallel with the point of the share, a frame containing two tines, adjustable as to width and depth, which, by means of a lever brought convenient to the ploughman, can be raised out of work at the land's-end, and set in again on the next bout with great readiness. The tines stand off from the beam so as to work to the depth of about 5 inches below the furrow-slice last turned, and thus loosen the soil previously trodden by the horses, leaving the slice also in no inconsiderable state of division. On trial, the action of the tines did not at all appear to derange that of the plough, or throw additional labour on the holder. The Judges have learned that this combination has been used and much approved by practical farmers in the inventor's neighbourhood. From observing the effect of this arrangement, it has been suggested to Mr. Bruce, that in certain soils, with the addition of Mason's knives, a very complete disintegration of the surface, as well as the loosening the subsoil, would be effected by the plough at one operation." In this instrument, as shown at Southampton, this suggestion has been attended to, probably, for we did not see it at work, with the best effect.

Scarifiers, Harrows, &c.—The Society's Prize of 10*l.* and a Silver Medal was awarded to the Earl of Ducie, for his seven-tined Uley Cultivator. This proved a most efficient implement in the trial-ground. In comparison with Biddle's Scarifier, of which several were exhibited by various makers, on the part of which Messrs. Ransome, of Ipswich, still contend that they manufacture the best scarifier, we think it possesses the advantages of a better and less-liable-to-choke arrangement of the teeth, and a better and more efficient form of the tooth as a stirrer and cleanser of the ground. Whether the means for raising and lowering the implement in the ground is practically inferior or superior to that adopted in Biddle's implement, we shall not venture to determine.—A parallel expanding Horse-hoe, exhibited by Messrs. Barrett and Exall, of Reading, presented a very simple adaptation of the principle of the parallel ruler. The advantage obtained in this case is the ability to employ curved teeth, which are far more efficient than those of the ordinary vertical form. This curved form cannot be used in implements having the ordinary radial method of widening, because in this case, if in any one position of the radial bar in which they are morticed, they face their work, then in any other position, when the machine is working at any other width, they will work sideways on, and so incur a liability to bend and break. Parallel expanding Horse-hoes were exhibited by the Earl of Ducie and other makers.—We did not see the Harrow which was exhibited last year at Derby, by Mr. Hopkin, of Ashbourne, Derbyshire. The following description is extracted from last year's Report:—"The Harrow is circular, like a cart-wheel, and lies flat on the ground, the tines passing through the felloes. A horizontal revolving motion is communicated to it, as it is drawn forwards, by means of an endless chain proceeding from a carriage in advance, and passing round a pully fixed upon, and concentric with, the rim of the Harrow, but of smaller diameter. The power is derived from the carriage-wheels, as in other cases. The execution of the apparatus was very imperfectly adapted to give effect to this novel idea, but the principle, perhaps, merits the attention of mechanics, as the double action, compounded of the progressive and circular movements, appeared to produce a very considerable comminution of the soil. Several circles of teeth may be inserted in the same wheel, and if it be found that the power used in giving the spinning or revolving motion be paid for in the quantity or quality of the effect, this construction might prove advantageous as a surface-pulveriser. The experi-

ment should be made with short small teeth." Improved as here suggested it would, we believe, prove an efficient implement.—A serrated chain or web Harrow, being an improvement upon that invented by Mr. Smith of Deanston, was exhibited by Messrs. Cottam and Hallen, of Winsley Street, London.

DRILL MACHINES.—We extract the following account of the origin and progress of drill machines from the Report of the Derby Show published in a late volume of the Society's Journal:—"The following concise history of the first introduction and progress of the manuring drill-system in Lincolnshire* has been obtained from sources on which it is believed full reliance may be placed; and its relation may have the effect of exciting the farmers of more backward districts to emulate those of a county excelled by none in Britain, in respect of the quantity of its produce, though far inferior to many in the natural fertility of its soil and character of its climate. The introduction of manure drills into Lincolnshire is comparatively of recent date. Previously to 1814, small single-row drills, attached to the plough for depositing Beans in every alternate furrow, and Turnip-seed drills, were the only seed-sowing machines used in the county. In 1814, the firm of Seaman and Hornsby, of Grantham, made a drill for depositing bones with Turnip-seed. In 1816, Mr. Gregory, of Nottingham, brought a sample of crushed bones to Grantham market, in a mahogany box, to exhibit to the farmers the perfection he had attained in reducing them to a small size. In the same year several spirited farmers purchased drills for bones. In 1817 these drills became general. In 1819 portable bone-mills were first introduced: these flourished but a short period, giving place to the large fixed steam-mills. In 1828 we first began to drill ashes mixed with bones. In 1839 originated the first attempt to improve the delivery of manure by means of stirrers in the drill-box; and by these improved machines the drilling of compost was effected. At present (1843) we presume to be able to deposit, by the drill, fold and stable-yard muck with our seed. For the rapid adaptation of the drill to this latter purpose we feel to be much indebted to the stimulus given to our mechanics by the Society. Neither Jethro Tull, the honoured father of the drill-system, nor the Rev. Mr. Cooke, the inventor of the Suffolk drill, dreamed of depositing manure of any kind with the seed; an addition which we consider to belong to the eastern counties' farmers, ambitious only at first to economise their then favourite manure, the bone. The Society's Prize of 30*l.* was awarded to Messrs. R. Garrett and Son, of Saxmundham, for their drill for general purposes. A mode of steerage was applied to this implement, which was thought to be calculated to render its use less difficult to novices, and to insure straightness in the lines. Facility in the guidance and management of these implements is a property of unquestionable importance, as providing for the more complete and safe action of the horse-hoe. It may not, however, be out of place to observe that experienced drill-men reject refined appliances of this kind as incumbrances. The late Earl of Leicester is said to have remarked that 'he would not employ a labourer who could not lead a drill-horse straight from Holkham to St. Paul's.'"—Messrs. Garrett, of Saxmundham, received the Society's Prize of 20*l.* this year also, for their Drill for general purposes. Since last year, they had added an arrangement by which the opening between the manure-box and manure-drill, upon which the quantity thrown out depends, may be easily regulated as the machine proceeds. This object has been attained in a manner much simpler, and practically, we apprehend, equally efficient, in a drill exhibited by Mr. Woodbourne. Mr. Hornsby, of Grantham, Lincolnshire, who received the Society's Prize of 10*l.* and a Silver Medal for the best Drill Presser, exhibited a variety of efficient implements under this class, among which was a two rowed Turnip Drill, which was probably the most efficient Manure Drill exhibited. The union of the traversing with the rotatory motion in the stirrers, for working pulverised manures, &c., down from the supply-box to the cups, which originated with this gentleman, was shown in several implements exhibited in the yard; but owing to its generally doing more than is wanted, and forcing the material out of the box faster than the cups can remove it, Mr. Hornsby has ceased to use it. If some simple means could be adopted for putting this apparatus easily and quickly out of gear at pleasure, as the machine proceeds, we think it would still be a useful attachment to the Manure Drill.—Mr. Newberry, of Chipping Norton, Oxon, exhibited his 4-wheel Dibbling Machine again. The efficiency of this implement has been amply demonstrated during the two seasons of Wheat-sowing in which it has been tried. A very favourable report by several practical farmers was given of this machine in a late volume of the Society's Journal. A field of Wheat near the trial ground had been sown by this machine, and was looking well.—Mr. Barnes's Drop Drill, manufactured at Nether Wallop, Hants, was constructed on a new principle. The intermittent nature of the delivery from this machine, both of the manure and seed, which constitutes its character as a drop drill, is obtained by means of an endless chain of tin cups, fastened at intervals of 9 inches on a revolving strap; these revolve in front of each coulter, each of the cups receiving a portion of the manure and seed supplied from their respective boxes, and descending, deposit their contents in succession on the ground as the machine proceeds; the motion of these straps being the same as that of the rim of the drill wheels, the seed is deposited at intervals of 9 inches in the rows, that being the distance of the cups from one another on the strap.—A Seed-Depositing or Planting Machine, exhibited by Mr. Henry Vingo, of Penzance, Cornwall, and another which had been previously exhibited at Bristol, acted on a principle peculiar to itself. The bottom of the seed-box was double, consisting of a fixed plate pierced at regular intervals, and a moveable one, also regularly fixed. The seed, it is evident, could only drop out of the box when these holes coincided; and by an arrangement, the motion of the under plate was regulated, so that this correspondence of the holes took place at regular intervals of time, producing an effect, in fact, somewhat similar to that of the drop drill. In one of these cases the motion of the under plate was a circular one, and in the other it had a reciprocating sliding motion.

THRESHING AND WINNOWING MACHINE.—Many threshing machines were exhibited by different makers, and a great variety of horse engines also, for connecting horse-power with them. In one of these a screw propeller was used for converting the horizontal rotatory motion of the horses into the vertical rotatory motion of the shaft connecting with the machine, *i. e.* the spur wheel on the vertical axle around which the horses walked was toothed obliquely into a worm on the aforesaid shaft. This simple arrangement was stated, though obviously erroneously, to lessen the power required to work the machine; the loss of power by it from friction must be very great.—A threshing machine on a new principle, invented by Messrs. Clyburn and Parsons, was exhibited by the Earl of Ducie. It consists of a revolving cone or beater, inclosed in an outer fixed concave case. The outer case is open work. The Corn is fed in at the smaller end of the concave case, and (by the difference in the velocity between the large and small end of the revolving cone or beater) the straw is carried rapidly to the larger end and discharged. The grain, as it is separated from the ear, is thrown through the trellis or open work, so that a complete separation takes place. The wind caused by the revolution of the beater is brought to operate upon the threshed grain, and blows out the greater portion of chaff; thus, at one operation, the threshing and first winnowing is performed.—Mr. Hornsby, of Grantham, exhibited a Winnowing Machine, to which was attached an admirable feed apparatus, capable of taking in and delivering regularly Grain and Chaff in the roughest condition. It consists simply of a peculiarly toothed roller, working in the bottom of a hopper. It is capable of chaffing Corn as it comes from the threshing machine, and dressing the same.—A Winnowing Maching, on an entirely original principle, demonstrating much ingenuity, was exhibited by the Earl of Ducie, Dursley, Gloucestershire, invented by Mr. Clyburn. The current of air was driven by means of an arrangement somewhat like the arm of a windmill, only that the radial arms of which it consisted were much more numerous, and twisted further round, so that, revolving as they did in a vertical plane, the air was caught by them at an angle, and propelled forward. A current of air, of a section equal to the surface of this arrangement of fans, was thus produced, and in the midst of this, a riddle, having a lateral oscillatory motion was placed; the Corn fell on this from a hopper above; the straw was separated and some of the Chaff blown off. All that passed the riddle was then collected in a very shallow hopper below the riddle, from the bottom of which it was again delivered up in a thin stream to the influence of the current of air. The double action of this current of air proved efficient as a Winnowing Machine.—A simple and apparently efficient Barley Hummeler, for which a Silver Medal was awarded, was exhibited by Mr. J. Cooch, of Harlston, near Northampton. To this implement was attached an endless chain of feeding buckets, for the purpose of lifting the grain from the floor, and throwing it into the machine—a useful attachment; for the efficiency of implements of this class depends much upon the regularity with which they are fed.

CAKE-CRUSHERS, TURNIP AND CHAFF-CUTTERS, &c.—The Society's Prize of 5*l.* was awarded to Mr. Hornsby, for the best Cake-crusher. Instead of having rollers with toothed surfaces, presenting the appearance, in fact, of a series of toothed wheels, strung, at short intervals, on a common axis, Mr. Hornby covers his rollers with a series of *pointed* teeth, or short pinnacles of case-hardened metal, the teeth on one roller corresponding in position to the intervals between those on the other.—A good Corn-crusher was exhibited by the Earl of Ducie, which differed from other machines in being grooved neither in a line with the axis nor spirally. It has a large and small roller, with a series of grooves turned in each in the form of a V, and fitting each other, the sharp edge of the V penetrating the grain; while the velocity of the grooves varying, produce a grinding motion.—Mr. Gardner, of Banbury, Oxon, exhibited his simple and efficient Turnip-cutter again, and was rewarded with a Prize of 5*l.* Many unsuccessful attempts have been made to produce an implement which shall excel this in all the points which constitute the excellence of an agricultural implement, viz. cheapness, simplicity, and efficiency. One of the best attempts is that by Mr. Phillips, of Bristol, in which the knives which cut the different sides of the pieces as they come from the machine are detached from one another. In one of the implements of this class exhibited by Mr. Phillips, a cross-cutting apparatus was attached, which shortened the finger-shaped pieces, in which the Turnip is delivered, into pieces an inch and a half long.—The Society's Prize of 10*l.* and Silver Medal was awarded to the Earl of Ducie, for his Lordship's Chaff-cutter. This implement differs from all others of this class in wanting that intermittance which characterises the cutting operation of all other chaff-cutters. The cutters consist of thin blades or knives with serrated edges, coiled spirally round a cylinder, thus insuring a continuous drawing cut, and requiring less power to cut a given quantity of material. From the peculiar arrangement of the cutters, the inconvenience and delay attendant upon removing them for the purposes of sharpening is avoided; this is done by turning the cylinder the back way round, and advancing an emery grinder towards the cutters. A simple method is also adopted for changing the length of cut, which is done by shifting the strap from one pair of pulleys to another; there are three pair; thus, when the strap is upon the large pulley on the axis of the cutting cylinder, and the small one on the shaft that drives the feed-rollers, it will cut three quarters of an inch long, and shorter by a quarter of an inch in every other pair of pulleys.—A Chaff-cutter exhibited by Messrs. Barrett and Exall of Reading, possessed a very simple mode of regulating the length of the cut at the will of the workman. The length of cut depends upon the relation between the rapidity with which the knives are made to revolve, and that of the rate at which the material to be cut is passed through the box. Now these two motions in all chaff-cutters are connected with one another by wheel and pinion, &c., and the object to be attained is some simple and easy means of varying this connection so that the one motion, that of the knives, being constant, the other, that of the material to be cut, may vary. This is effected in the instance before us by means of a disc on the axis of one of the feeding-rollers, on the face of which, in radial lines or nearly so, several series of tappets or teeth are arranged in circles about the centre of revolution. A shaft whose motion depends on that of the knives, revolves in front of this disc, and by means of a moveable pinion working into the aforesaid tappets, communicates its own motion to it. If this pinion work into one of the outer circles, the angular motion of the disc, and therefore that of the feeding-rollers, will be slow, and the chaff cut will be fine; if, on the contrary, it works into one of the inner circles, the chaff cut will be coarse. This important point, the length of the chaff, can also be regulated in another way. Suppose a toothed wheel be substituted in the stead of this disc, and in place of the pinion, a moveable worm be slipped on the aforesaid shaft; several worms for working thus into the wheel may be employed, according to the coarseness of chaff required, one taking one tooth, another two teeth of the wheel at a time, and so on. The motion of the shaft being constant, that of the disc will thus vary, and, as before, our object will have been attained. This mode of working chaff machines was exhibited by several makers in the yard. We single out one, Mr. Ward's, of Stratford-on-Avon, because of several other peculiarities in the machine he exhibited. One of them consisted in a beautiful arrangement by which the feeding-rollers were stopped while the cut of the machine was being made. It is evident that the efficiency of the worm, in communicating a motion to the disc, into which it works, and thereby to the feeding-rollers, depends on the obliquity of its thread to the axis of the shaft on which it is wound. In the case before us, the worm is of such a form, that its action in causing the disc to revolve ceases during a portion of its revolution. Two cuts being made during one of its revolutions, the thread of the worm in the course of one circle round the shaft on which it is wound is at two places oblique to the axis of the shaft, there producing motion in the feeding-rollers, and twice at right angles to it, there ceasing to produce motion; it is at the two portions of the revolution, when the feeding-rollers are thus at rest, that the cuts are made. Mr. Ward's Chaff-machine is named "Guillotine," from the nature of the cut which it makes; the arrangement for this purpose is as follows:—By means of a crank on the fly-wheel axle, a reciprocating vertical motion is given to a framework, which acts in slides in front of and across the feed-box. In this framework, a two-edged knife, inclined at an angle of about 30 deg., is placed in a vertical plane. This knife cuts off in its descent and ascent—its two edges coming into play alternately—the material protruded from the box between its motions. We have mentioned three modes of regulating the cut of chaff-machines.—A very simple arrangement, somewhat on the principle of the second kind, was shown in a machine exhibited by Mr. Gardener, of Banbury, Oxon. This implement had three knives, two of which were in action at once; and by means of a simple arrangement on this principle, the feeding-rollers stopped while each cut was being made.—A good Chaff-cutter, marked B, was exhibited by Messrs. Ransome, of Ipswich. It is made entirely of metal, and combines the best points of Messrs. Ransome's former machines, with some important improvements on them. These improvements consist in the facilities for changing the length of the cut by means of toothed wheels, and of further varying the lengths by shifting one knife without detaching it, thus doubling the length of each change. The rollers vary in distance, according to the feed; and, from their spiral form, they draw it at a uniform rate of motion. The presser-plate has a peculiar motion on the axis of the upper roller, so that whether the feed be thick or thin, a sufficient pressure is always applied; and thus the cut is made clean without drawing the short straws. Two horses will work it well, and may be estimated to cut 10 cwt. of straw per hour into half-inch lengths.

OTHER IMPLEMENTS.—Mr. Grant, of Stamford exhibited his excellent Horse Rake, which has gained prizes at many Agricultural Shows, and is now pretty

* "The Judges have set on foot inquiries relative to the origin of manure-drills in the south-eastern counties, but have not yet succeeded in establishing the historical dates to their satisfaction."

well known. As an implement of this kind we must mention the Corn Gatherer exhibited by the Messrs. Ransome; it consists of three large rakes, each attached to a common axle, and as each becomes filled, a simple act on the part of the driver releases it from its rigid position, and another takes its place. Implements hitherto made for the above purpose have been difficult to unload, even with the application of great strength to lift them over the gathered heaps. The gatherer leaves its load at the will of the driver without being lifted up, and without disturbing the heap it gathers together; while one of a treble row of tines alternately begin to gather the swathe, when the previous working tines have finished their heap, the size of which is regulated as required for one or two fork's full. The implement now exhibited is for one swathe at a time, the horse walking by the side of the swathe. For light Corn in large fields, the gatherer is made for two swathes at a time, and for very light land Corn may rake all the land (except where the row is left), clean at the same time. The principle upon which it acts is applied to horse-drag rakes, and by which much larger rows are got together than can be done by lifting up the rake, and thus save much time in getting up rakings.—The Society's prize of 30*l.* was awarded to Messrs. Ransome, for a neat and concise arrangement of three important implements, viz. Chaff-cutter, Bean-mill, and Mill for bruising other Grain; these are all driven by one and the same horse-power, and are situated within the circle described by the horse in its revolution.—Mr. Croskill exhibited his well-known Clod-crusher, which is superior to all other implements of the kind; it possesses the advantage, which the inventor has patented, of having every toothed wheel—of a series of which it in fact consists—slipped loosely on a circular axle. Each revolves in any case which requires it, independently of the others, and this not only diminishes the draught of the implement but makes it more efficient and easily turned at the land ends.—Many Waggons, Carts, Harvest-carts, &c., were exhibited by Mr. Stratton of Bristol, and Mr. Croskill of Beverley.—The Society's Prize of 15*l.* and Silver Medal for the best Waggon was awarded to Mr. Coombes of Shipton, near Burford, Oxon. It consisted of two parts, either of which might be taken apart and used as a cart; as both ends of the Waggon were alike, and shafts could be slipped in at either end.—An excellent Churn, to which a prize of 10*l.* was awarded, was exhibited by Mr. Harkes of Mere, near Knutsford, Cheshire. This, which is an upright cylinder, contains within it two frameworks of beaters revolving on the same upright shaft, one within the other, but by means of a very simple arrangement of bevil wheels, above the implement, they are made to move in contrary directions, thus producing a most perfect commixture and agitation of any fluid in the barrel.—A great variety of Weighing Machines were exhibited by Messrs. James of Fish-street Hill, and Messrs. Cottam and Hallen of Winsley-street, London.—A variety of Draining-tile Machines, of various sizes and prices were exhibited by Mr. Etheridge, of 11, Furnival's Inn, London.—A Draining-tile machine on Etheridge's principle, possessing two cylinders for holding clay, so that one could be filling while the other was at work, was exhibited by Messrs. Barrett and Exall, of Reading.—A simple Level, to be used in draining operations, was exhibited by Mr. Bailey Denton, of Southampton; who also exhibited his Model Map in relief, of an estate, shown at Derby last year. The principle of this Level lies in the fact that the vertical line from the angle of an upright isosceles triangle, the extremities of whose sides rest on a horizontal plane, will bisect the angle contained by those sides, and any lowering of one leg will be attended by a corresponding displacement of the vertical line. The implement is thus in form a pair of compasses, the legs of which are fixed at a distance from each other of 5 feet, by means of a cross-bar. From the apex is suspended a plumb, and in one leg there is fixed a sliding-sight and vernier, while on the other there are cross-hairs. To use this instrument a person has only to send forward, to the spot where it is intended to bring out the drain, a stick with a paper fixed in it the exact height of the line of sight in the instrument from the ground level; he then, with the instrument adjusted by the plumb to a true level, raises or depresses the sliding-sight in one leg until the cross-hairs in the other cut the paper in the stick. From the vernier he will read the rise or fall (per 5 feet) which will enable him to set the shifting limb to a corresponding division in the index on the bar, to which the workmen will afterwards work the plumb line.—An excellent self-recording Dynamometer, was exhibited by the Earl of Ducie, invented and manufactured by Mr. Clyburn, Dursley, Gloucestershire. This instrument records on a roll of paper the distance which the plough or other implement may have passed over, and the weight necessary to draw it through all its variations. It consists of a right and left-hand spiral spring, placed one within the other, to economise room. When the power is applied, the springs are compressed, which gives motion to a rack and pinion that has a pulley fixed on the same spindle; this pulley has a chain passing round it which gives motion to a pencil and pointer, the pencil acting upon a roll of paper, each division in the length of which is twenty-five yards of ground passed over, and each division in the width is 112 pounds of force applied to the instrument; this paper has motion given to it from a pair of wheels which roll upon the ground, while the pencil is moved backward and forward according to the power applied, thus drawing a line on the paper, shewing the draught and the distance passed over. It is impossible to suppose but that in the foregoing report of the Implement Show of Southampton, drawn up from a necessarily hurried examination, many valuable implements have been overlooked. Should this have been the case with anything possessing good claim to be classed as a *new* implement, we shall be happy to correct our error, on being supplied with the means of doing so.

Trial of Implements.—Towards noon on Tuesday those who had congregated in such numbers at the Implement yard, began to move off towards Swathling farm, on the Winchester-road, where ground had been secured for the trial of implements. This was not so much for the information of the Judges, who had already determined on the merits of the implements from a private trial of them on the previous day, as for that of purchasers and others anxious to judge for themselves in the matter. On reaching the ground, we found it extremely hard from the effects of the weather—unfit indeed to show the action of most implements. Various drilling-machines, cultivators, harrows, rollers, horse-hoes, &c., were tried in an adjoining field after the ploughing was over; some of them performed their work excellently well. Crosskill's clod-crusher—the land was just in condition for it—proved a most efficient implement. We shall not, however, describe this part of the trial, the more, because owing to the great confusion which prevailed, very little information could be gathered from an inspection of the work. In the other field 16 ploughs had started work; they were arranged as follows:—

No.	Character of Implement.	Name of Exhibitors.
1	Two-wheel Iron Plough	Mr. Hill, Brierly, Dudley.
2	One-wheel Plough	Messrs. Tasker and Fowle, Andover.
3	Swing Plough	Mr. Clyburn, Uley, Gloucestershire.
4	American Plough* (Swing)	Messrs. Hughes, Norse, and Mason.
5	Eagle Swing Plough	
6	Two-wheel Plough, W.S.	Messrs. Saunders & Williams, Bedford.
7	One-wheel Plough	Mr. Clark, Romsey.
8	Wheel Plough, J. H.	Mr. Howard, Bedford.
9	Ditto, Ransome's, Y.D.	Messrs. Sims and Brown, Tollard Royal, Dorsetshire.
10	Ditto Ditto	Mr. Howard, Bedford.
11	Smart's Turn-rest Plough	Mr. Simmons, Sittingbourne.
12	One wheel Plough	Messrs. Barrett and Exall, Reading.
13	Lowcock's Patent Turn-rest	Messrs. Ransome, Ipswich.
14	Wheel Plough, Y.M.	Ditto
15	Ditto, Y.O.	Ditto
16	Ditto, Y.L.	Ditto

When the skilfulness of ploughmen varies much, the performance of ploughs is not a perfectly accurate test of their efficiency; and in this case the land was extremely hard; the exhibition could not, therefore, be taken as fairly testing the implements tried. We find, however, from notes taken before ascertaining, except in one instance, the names of the implements, that their work was classifiable as follows in point of excellence; the figures refer to the above list:—

I. Nos. 6 and 10.
II. Nos. 7, 12, 13, and 16.
III. Nos. 1, 2, 8, 9, 11, 14, and 15.
IV. No. 3.
V. Nos. 4 and 5.

The wheel ploughs exhibited greatly superior work to the swing plough. There was much less difference between I. and II., and II. and III. than there was between III. and IV., and IV. and V. The performance of No. 3 was very poor compared with the others, and that of 4 and 5 was wretchedly bad. We must not forget to mention that close by the trial ground a field had been laid out in plots, each of which exhibited the effects of some particular manure on Rye-grass. The weather had been greatly against the trial, so that very little difference was apparent amongst them. That on which nitrate of potash had been applied appeared to be of the darkest colour; that on which oil-cake had been spread appeared to be rather the best of the number; while the plot to which farm-yard manure had been applied, differed from all the others in the number of weeds, chiefly Thistles, with which it was covered; thus singularly verifying the accuracy of Mr. Bernay's remarks in a late *Gazette*, on the inability of fermentation in manure to destroy the vitality of seeds contained in it.

On Wednesday, at 5 p.m., the Council dinner took place at the Victoria Archery Room. Nearly 400 gentlemen sat down. Lord Spencer, the President of the Society, was in the chair, and many noblemen among its chief supporters were on the platform.

After the usual loyal toasts, which were most heartily received, Lord Spencer stated that the Duke of Cambridge had been over the implement and cattle yard that morning, though unable to be at the dinner, and with reference to the latter place, he had to apologise for having broken one of the rules of the Society, his Royal Highness having gone through the yard while the Judges were still at work inspecting the animals, this being in direct contravention of a positive rule. This explanation was received with loud cheers. The next toast, "The Professors of Science," was proposed by Lord Ashburton, who, in the course of his remarks on the connexion between science and farming, or rather on the union of intellect and manual labour in the production of some of the most useful machines, stated that two, the earliest in use, and those on which most labour and thought had been expended—the ship, and the plough—were precisely those about the proper form of which we still remain in most doubt. In returning thanks for the hearty manner in which this toast was received, Dr. Buckland entered into considerable detail as to the capability of the Hampshire District of improvement. He said that many thousand acres of it were lying in a worthless condition—equally so with that of the barren mountain heaths of central and northern England—but that the insuperable difficulty in the way of the improvement of these, viz., want of a good climate, did not exist in the way of Hampshire improvers. The course of improvement to be followed by them, consists in carrying clay to the sandy soils, and chalk after drainage upon clayey soils; both of these materials are within the reach of the Hampshire farmer. The expense is from 5*l.* to 10*l.* per acre, but the improvement is certain and permanent—it will last for ever—no mismanagement on the part of the tenant can destroy it. Instances of this are frequent. Portions of Bagshot Heath and Ascot Heath have thus been converted into fertile land, and a case was mentioned of land in Ireland formerly worth 5*s.* an acre, now yielding, in consequence of this treatment, large crops of good Hay. Dr. Buckland then referred to guano, a natural manure existing in beds of such enormous thickness in many tropical islands, that to speak of it, fairly came within his province as a geologist. He spoke of the apparent failure of that and most other concentrated manures this year, in consequence of the dry weather, and advised agriculturists to let all their this year experiments go for nothing, and not be deterred from trying guano largely next year, when it would certainly be much cheaper, as upwards of 60,000 tons of shipping were already at sea in that trade.—The award of premiums for cattle, &c., was then read by Lord Spencer. We give it below entire, although the award for horses was not read on that occasion, as, stallions being removed from the yard every night, would of course not be brought back again for exhibition on the Thursday, if it became known to whom the prizes had been awarded.

AWARD OF PREMIUMS.

Prizes for Improving the Breed of Cattle, 1844.

Short-Horns.

Class 1.—To the owner of the best Bull calved previously to the 1st of January, 1842, *Thirty Sovs.*, awarded to Mr. John Cooper, of Bonkwood, Thurgarton, Southwell, Notts, for his Short-horned Bull, 3 years, 1 month, and 13 days old, bred by himself.

To the owner of the 2d best ditto ditto, *Fifteen Sovs.*, awarded to Mr. Hayter, M.P., of Wells, Somerset, for his Short-horned Bull, 2 years and 10 months old, bred by Mr. Unsworth, of Blackrod, Lancaster.

2. To the owner of the best Bull, calved since the 1st of Jan., 1842, and more than one year old, *Twenty Sovs.*, awarded to Mr. W. Foulds, of Kirklington, near Southwell, Notts, for his Short-horned Bull, 2 years, 3 months, and 22 days old, bred by Mr. Milward, of Hexgrove Park, Southwell.

3. To the owner of the best Cow in milk, *Fifteen Sovs.*, awarded to Mr. John Booth, of Killerby, Catterick, Yorkshire, for his Short-horned Cow, 3 years, 2 months, and 5 days old, bred by himself.

4. To the owner of the best in calf Heifer, not exceeding 3 years old, *Fifteen Sovs.*, awarded to his Grace the Duke of Devonshire, of Chatsworth, Bakewell, Derbyshire, for his Short horned Heifer, 2 years and 5 months old, bred by Mr. Watson, of Walkeringham, Bawtry, Yorkshire.

5. To the owner of the best Yearling Heifer, *Ten Sovs.*, awarded to Mr R. Booth, of Warlaby, Northallerton, Yorkshire, for his Short-horned yearling Heifer, 1 year, 2 months, and 3 weeks old, bred by himself.

Herefords.

Class 1.—To the owner of the best Bull calved previously to the 1st of January, 1842, *Thirty Sovs.*, awarded to Mr. W. Perry, of Monkland, Leominster, for his Hereford Bull, 2 years, 7 months, and 28 days old, bred by himself.

To the owner of the 2d best ditto ditto, *Fifteen Sovs.*, awarded to Mr. G. Brown, of Avebury, Wilts, for his Hereford Bull, 2 years and 7 months old, bred by himself.

2. To the owner of the best Bull, calved since the 1st of Jan., 1842, and more than one year old, *Twenty Sovs.*, awarded to Mr. J. N. Carpenter, of Eardisland, near Leominster, Hereford, for his Hereford Bull, 1 year, 8 months, 3 weeks, and 4 days old, bred by himself.

3. To the owner of the best Cow in milk, *Fifteen Sovs.*, awarded to Mr. G. Drake, of the Manor Farm, East Tytherley, Stockbridge, Hants, for his pure Hereford Cow, 8 years and 10 months old, bred by Mr. Price, of Pool House, Upton on Severn.

4. To the owner of the best in-calf Heifer, not exceeding three years old, *Fifteen Sovs.*, awarded to Mr. J. N. Carpenter, of Eardisland, near Leominster, Herefordshire, for his Hereford In-calf Heifer, 2 years, 8 months, and 18 days old, bred by himself.

5. To the owner of the best Yearling Heifer, *Ten Sovs.*, awarded to Mr. J. Walker, of Burton, near Worcester, for his Hereford Yearling Heifer, 1 year and 8 months old, bred by Mr. C. Walker, of Sutton.

Devons.

Class 1. To the owner of the best Bull, calved previously to the 1st of January, 1842, *Thirty Sovs.*, awarded to Mr. Geo. Turner, of Barton, near Exeter, for his Devon Bull, 2 years and 8 months old, bred by himself.

To the owner of the second best ditto ditto, *Fifteen Sovs.*, awarded to Mr. Thomas Norcombe, of Hopcott Farm, Minchead, Somerset, for his pure Devon Bull, 4 years and 9 months old, bred by himself.

2. To the owner of the best Bull calved since the 1st of Jan., 1842, and more than one year old, *Twenty Sovs.*, awarded to Mr. T. Reynolds, of Raddon Court, Thoverton, Exeter, for his pure North Devon Bull, 2 years and 5 months old, bred by Mr. A. Parsons, of Litton, Devon.

3. To the owner of the best cow in milk, *Fifteen Sovs.*, awarded to Mr. G. Turner, of Barton, Exeter, for his Devon Cow, 6 years and two months old.

4. To the owner of the best in-calf Heifer, not exceeding three years old, *Fifteen Sovs.*, awarded to Mr. G. Turner, of Barton, near Exeter, for his Devon in calf Heifer, 2 years and 2 months old.

5. To the owner of the best Yearling Heifer, *Ten Sovs.*, awarded to Mr. James Hole, of Knowle, near Dunster, Somerset, for his Devon Yearling Heifer, 1 year, 7 months, and 2 days old, bred by himself.

Cattle of the Channel Islands Breed.

Class 1. To the owner of the best Bull calved previously to the 1st of Jan., 1843, *Fifteen Sovs.*, awarded to Mr. W. J. G. Phillips, of Eling Vicarage, Southampton, for his Channel Island Bull, 2 years and 4 months old, bred by himself.

2. To the owner of the best Bull calved since the 1st of Jan., 1843, and more than one year old, *Ten Sovs.*, awarded to Mr. W. B. Cater, of West End, Southampton, for his Channel Island Bull, 2 years and 5 weeks old, bred by Mr. W. Gibbs, of Rebenor, Essex.

3. To the owner of the best Cow in milk, *Ten Sovs.*, awarded to Mr. C. W. Robin, of Petit Minage, St. Heller, Jersey, for his pure Jersey Cow, 2 years and 6 months old, bred by Mr. J. Hocquard, of Granville, Jersey.

4. To the owner of the best in-calf Heifer, not exceeding two years old, *Ten Sovs.*, no competition.

1. To the owner of the best Yearling Heifer, *Seven Sovs.*, awarded to Mr. John Blake, of Bean Regard, St. Heliers, Jersey, for his pure Jersey yearling Heifer, 1 year, 1 month, and 16 days old, bred by Major Bridgeham, of St. Laurens, Jersey.

CATTLE OF ANY BREED, OR CROSS;

Not qualified to compete in the foregoing classes.

Class 1.—To the owner of the best Bull calved previously to the 1st of January, 1842, *Thirty Sovs.*, awarded to Mr. W. Brine, of Tolpuddle, near Dorchester, for his pure long-horned Bull, 4 years and 5 months old, bred by the late Mr. Thomas Wyatt, of Hanwell Park, near Banbury.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to Mr. Thomas Jenner, of Cowdray Park Farm, Petworth, Sussex, for his pure Sussex Bull, 3 years and 4 months old, bred by himself.

2. To the owner of the best Bull calved since the 1st of Jan., 1842, and more than one year old, *Twenty Sovs.*, awarded to Mr. Thomas Dowden, of Mitcheldever, Andover Road, Hants, for his Hereford and Durham Bull, 2 years and 2 months old, bred by himself.

3. To the owner of the best Cow in milk, *Fifteen Sovs*, awarded to the Hon. M. W. B. Nugent, of Higham Grange, Hinckley, Leicestershire, for his pure Leicester or long-horned Cow, 10 years and 2 months old, bred by Mr. Ball, of Snowford Lodge, Long Ichington, Southam, Warwickshire.

4. To the owner of the best in-calf Heifer, not exceeding three years old, *Fifteen Sovs*, awarded to the Hon. M. W. B. Nugent, of Higham Grange, Hinckley, Leicestershire, for his pure Leicester or long horned in-calf Heifer, 3 years and 11 days old, bred by himself.

5. To the owner of the best Yearling Heifer, *Ten Sovs.*, awarded to Mr. W. J. Calhoun, of Binderton, near Cheshire, for his short-horned and Hereford yearling Heifer, 1 year and 2 months old.

HORSES.

Class 1.—To the owner of the best Stallion for Agricultural Purposes, of four years old and upwards, *Thirty Sovs.*, awarded to Mr. Thomas Catlin, of Butley, Woodbridge, Suffolk, for his Cart Stallion, 4 years old, bred by himself.

To the owner of the second best ditto ditto, *Twenty Sovs*, awarded to the Right Hon. the Earl of St. Germans, St. Germans, Cornwall, for his aged Cart Stallion.

2. To the owner of the best two years old ditto, foaled since the 1st of Jan., 1842, *Fifteen Sovs*, awarded to the Right Hon. Lord St. John, of Melchbourne, Kimbolton, for his Cart Stallion, 2 years and 2 weeks old, bred by his lordship.

3. To the owner of the best Mare and Foal for agricultural purposes, *Twenty Sovs.*, awarded to Mr. W. Fowle, of Market Lavington, Devizes, Wilts, for his Cart Mare and Foal; sire of foal belonged to Mr. H. Iggs, Penzelwood, Somerset.

To the owner of the second best ditto, *Ten Sovs.*, awarded to Mr. G. W. Roberts, of King's Walden, Hitchen, Herts, for his Cart Mare and Foal; mare bred by himself: sire of foal belonged to Mr. Linden, of Arrington, Cambridge.

4. To the owner of the best two-years-old Filly for agricultural purposes, *Ten Sovs.*, awarded to Mr. W. Fowle, of Market Lavington, Devizes, for his 2-year-old filly, bred by Mr. H. Delaney, of Hemmingford Abbotts, near St. Ives, Hants.

5. To the owner of the best Thorough-bred Stallion, which shall have served mares at a price not exceeding three guineas, (and with a groom's fee of not more than five shillings,) in the season of 1844, *Thirty Sovs.*, awarded to Mr. Curtis, of Ellingstoke, for his thorough-bred stallion, 4 years old, foaled by Langar, dam by Cervantes, out of Marsana, by Selim.

SHEEP.

Prizes for Improving the Breed in Sheep: 1844.

LEICESTERS.

Class 1. To the owner of the best Shearling Ram, *Thirty Sovs*, awarded to Mr. J. G. Watkins, of Woodfield Ombersley, Stourport, Worcestershire, for his pure Leicester Ram, 17 months old, bred by himself.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to Mr. T. E. Pawlett, of Beeston, Biggleswade, Beds, for his Leicester Ram, 15 months old, bred by himself.

2. To the owner of the best Ram of any other age, *Thirty Sovs*, awarded to Mr. T. E. Pawlett, of Beeston, Biggleswade, Beds, for his Leicester Ram, 28 months old, bred by himself.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to Mr. T. E. Pawlett, of Beeston, Biggleswade, Beds, for his Leicester Ram, 40 months old, bred by himself.

3. To the owner of the best pen of five Shearling Ewes, *Ten Sovs.*, awarded to Mr. J. G. Watkins, of Woodfield, Ombersley, Stourport, for his pen of five pure Leicester Shearling Ewes, bred by himself

To the owner of the second best ditto ditto, *Five Sovs.*, awarded to Mr. John Beasley, of Chapel Brampton, Northampton, for his pen of five improved Leicester Shearling Ewes, 16 months old, bred by himself.

SOUTHDOWN SHEEP.

Class 1. To the owner of the best Shearling Ram, *Thirty Sovs*, awarded to Mr. Jonas Webb, of Babraham, Cambridge, for his Southdown Ram, 16 months old, bred by himself.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to his Grace the Duke of Richmond, of Goodwood, Chichester, Sussex, for his Southdown Ram, 16 months old, bred by his Grace.

2. To the owner of the best Ram of any other age, *Thirty Sovs.*, awarded to Mr. J. Beaven, Jun., of Gore Farm, Market Lavington, for his Southdown Ram, 52 months old, bred by himself.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to Mr. T. Ellman, of Beddingham, Lewes, Sussex, for his Southdown Ram, 27 months old, bred by himself.

3. To the owner of the best pen of Five Shearling Ewes, *Ten Sovs.*, awarded to His Grace the Duke of Richmond, of Goodwood, Chichester, for his pen of five Southdown Shearling Ewes, 16 months old, bred by his Grace.

To the owner of the second best ditto ditto, *Five Sovs.*, awarded to Mr. D. Barclay, M.P., of Eastwick Park, Leatherhead, Surrey, for his pen of five Southdown Shearling Ewes, 17 months old, bred by himself.

LONG-WOOLLED SHEEP:

Not qualified to compete as Leicesters.

Class 1.—To the owner of the best Shearling Ram, *Thirty Sovs.*, awarded to Mr. C. Large, of Broadwell, Burford, Oxon, for his new Oxfordshire Ram, 16 months old, bred by himself.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to Mr. C. Large, of Broadwell, Burford, Oxon, for his new Oxfordshire Ram, 16 months old, bred by himself.

2. To the owner of the best Ram of any other age, *Thirty Sovs.*, awarded to Mr. E. Handy, of Sevenhampton, Andoversford, Gloucestershire, for his improved Cotswold Ram, 40 months old, bred by himself.

To the owner of the second best ditto, *Fifteen Sovs.*, awarded to Mr. E. Handy, of Sevenhampton, Andoversford, Gloucestershire, for his improved Cotswold Ram, 40 months old, bred by himself.

3. To the owner of the best pen of five Shearling Ewes, *Ten Sovs.*, awarded to Mr. E. Smith, of Charlbury, Oxon, for his pen of new Oxfordshire Long-woolled Ewes, 18 months old, bred by himself.

To the owner of the second best ditto ditto, *Five Sovs.*, awarded to Mr. James Linton, of Hemmingford Abbotts, St. Ives, Hants, for his pen of five Lincoln and Leicester Ewes, 16 months old, bred by himself.

SHORT-WOOLLED SHEEP:

Not qualified to compete as South Downs.

Class 1.—To the owner of the best Shearling Ram, *Twenty Sovs.* Prize withheld for want of merit.

2. To the owner of the best Ram of any other age, *Twenty Sovs*, awarded to Mr. Thomas Hutton, of Upton Gray, Odiham, Hants, for his Hampshire Down Ram, 29 months old, bred by himself.

3. To the owner of the best pen of Five Shearling Ewes, *Ten Sovs.*, awarded to Mr. W. Humphrey, of Chaddleworth, Newbury, Berks, for his pen of five Berkshire Short-woolled Ewes, 18 months old, bred by himself.

PIGS.

Class 1.—To the owner of the best Boar of a large breed, *Ten Sovs.*, awarded to Lieut.-Colonel Thornhill, of New Park, Lyndhurst, Hants, for his Boar, 36 weeks old, bred by Mr. W. P. Thornhill, of Stanton, Bakewell, Derbyshire.

To the owner of the 2d best ditto ditto, *Five Sovs*, awarded to Mr. Pusey, M.P., of Pusey, Faringdon, Berks, for his Berkshire Boar, 2 years and 1 month old, bred by Mr. J. Harris, of Hinton.

2. To the owner of the best Boar of a small breed, *Ten Sovs.*, awarded to Mr. W. F. Hobbs, of Marks-hall, Kelvedon, Essex, for his improved Essex Boar, 10 months old, bred by himself.

To the owner of the 2d best ditto ditto, *Five Sovs.*, awarded to the Rev. W. Hocken, of St. Endallion, near Camelford, Cornwall, for his improved Essex Boar, 27 weeks and 3 days old, bred by himself.

3. To the owner of the best breeding Sow of a large breed, *Ten Sovs.*, awarded to Mr. P. Pusey, M.P., of Pusey, Faringdon, Berks, for his Berkshire Sow, 1 year and 6 months old, bred by Mr. J. Blandy, of Kingston, Berks.

4. To the owner of the best breeding Sow of a small breed, *Ten Sovs.*, awarded to Mr. A. P. Falconer, of Beacon Hordle, Christchurch, Hants, for his Yorkshire Sow, 11 months and 3 weeks old, bred by Mr. J. W. Nutt, York.

5. To the owner of the best pen of three breeding Sow-Pigs, of the same litter, above four and under nine months old, *Ten Sovs.*, awarded to Mr. Joseph House, of Beatwall, near Wareham, Dorset, for his pen of three Dorsetshire Sow-Pigs, 34 weeks old, bred by himself.

Shortly after reading the above award, the company separated.

A Public Meeting for the purpose of establishing an Agricultural College was held this day at the Freemasons' Hall, at 2 o'clock. The attendance was not numerous, as most of the agricultural visitors were engaged at the implement-yard. What, however, the meeting lacked in point of numbers was made up by the great respectability of the parties present, among whom were the Duke of Richmond, Lord Ducie, Mr. Pusey, M.P.; Mr. Escott, M.P., Oxford; Mr. Goddard, Drs. Buckland, Daubeny, and Playfair.—The chair was taken by Mr. Pusey, who stated the object of the meeting, and pointed out the advantage that would accrue to the agriculturist from the establishing such a College. The project had been taken up by many of the leading agriculturists, not only in the immediate district in which it was intended to establish the College, but in other counties. Lord Bathurst had, in addition to providing a suitable farm of 400 acres, on which the College and other buildings were to be erected, advanced 2000*l.* in furtherance of the object.—The Duke of Richmond, in proposing the first resolution, said that he had declined to take shares in the proposed Society, upon the principle that every shareholder should have time to attend to the details of the Society to which he had put his name, so that by so doing he might not mislead others to add their names, upon the faith of seeing his name, and thereby supposing that he would attend to its practical operations. He would avoid that evil, as he was aware that his many other avocations would prevent him from giving sufficient attention to the details. He, however, so highly approved of the Society, that although he could not become a subscriber for the reason he had stated, yet he most gladly gave a donation to promote its establishment. He would not have the Committee be too sanguine of making any profit from the farm. He was a farmer himself, and he was aware that farming was not so profitable as most other pursuits. He was of opinion that Schools of Agriculture were much wanted in the country, and he had great pleasure in proposing the first resolution (which was seconded by Dr. Playfair):—"That Schools of Agriculture are much wanted in this country, in which a knowledge of the sciences now admitted to be essential to the successful pursuit of Agriculture may be learned, in connection with the practical working of a farm on the most approved principles."—Mr. Escott proposed the second resolution, and said that he gladly availed himself of joining a meeting that had so important an object in view. He, in common with many other persons, had long deplored the want of a proper establishment for the education of the agricultural population in pursuits adapted to their after life. A most important fact was developed and published by the agriculturists themselves, as the wish to establish a College originated from a Farmers' Club. The object of the meeting had his most cordial support, and he moved the following resolution (which was seconded by Mr. N. Goddard):—"That the plan for the establishment of an Agricultural College near Cirencester, explained by the deputies attending this meeting, is calculated to effect that desirable object."—The next resolution was to have been proposed by Lord Spencer, but the Duke of Richmond explained to the meeting that that nobleman was unavoidably absent in consequence of being in attendance on his Royal Highness the Duke of Cambridge, who was inspecting the Show-yard. In the absence of Lord Spencer, Dr. Buckland proposed, and Mr. Eyle seconded the resolution, "That this meeting warmly recommends the agricultural community to give every support and encouragement to the establishment of the College, which they regard as the first step in the right direction for training up the rising generation of farmers upon a sound foundation; and they would especially urge on farmers generally the importance of securing to their children, intended for the same occupation, the great advantages to be derived from the kind of education provided by such an institution."—The Duke of Richmond proposed, and Dr. Daubeny seconded a vote of thanks to Mr. Pusey for the service he had rendered to the agriculturists generally, and for his conduct in the chair.—Mr. Pusey briefly replied, and congratulated the meeting upon the object they had in contemplation being fully carried out, when they saw the noblemen present, and the member for the University of Oxford, as well as two of the distinguished professors, come forward to take them by the hand.

On Thursday the Cattle Yards were opened at six o'clock in the morning, and very soon began to fill. Towards noon there must have been many thousands within them. It is unnecessary to say much respecting the character of this Exhibition. There was an excellent show of Hereford and Devon cattle, which mustered in much greater numbers than the Short-horns. The show of South Downs among the sheep was also much the finest part of the Exhibition under this head. There was a good show of pigs; some of the Essex breed, exhibited by Mr. F. Hobbs, of Kelvedon, were extraordinarily fat. It is impossible to speak too highly of the general arrangements of the Show Yard, for which the Society is indebted to Mr. B. Gibbs. Notwithstanding the immense number of people within the Yard, and the immense number of cattle and sheep, &c., requiring food and attendance, everything proceeded without the least jar or confusion. Admirably arranged catalogues were to be had, containing a reference to everything in the Yard, so that a visitor could easily and without waste of time find what he wished to examine.

The Dinner of the Members of the Society took place in the evening, in the Pavilion erected for the purpose. The chair was taken by Lord Spencer at 4 P.M.; from 1200 to 1400 gentlemen must have been present. We are unavoidably compelled to give our readers, in this No. of the *Gazette*, but a meagre report of the proceedings at this interesting meeting. We select for report, the speeches connected with one of the many toasts of the evening—the toast of the Society, "Practice with Science," which was proposed by Lord Portman, and responded to by Dr. Playfair, in the absence of Prof. Daubeny. His lordship, in the course of his speech, illustrated the importance to agriculture, of well-conducted experiments, and the difficulty, though accurately performed, of deducing correct inferences from them. Of what use would it be to farmers then present, were he to detail to them experiments he had performed, connected with most important branches of agriculture, if he withheld information upon which, no less than upon the special forces he might have put in action, their results had depended?—he alluded to information on his soil, climate, his accessibility to manure, his supply of labour, &c. In responding to this toast, Dr. Playfair observed, that it was a sign of the present time, that in agriculture, as had been the case in medicine, people were beginning to trace out causes, and not merely look at their effects. Let us hope that in agriculture, as has been the case in medicine, the most beneficial results may flow from this system. He stated that the efforts of scientific men in this cause, had been productive of good within the still short period of the Society's existence. One instance of this was the success of their endeavour to bring guano into notice as a fertilising manure. At the time of the Liverpool Meeting, a single ship-load had been imported, with much anxiety as to the result, on the part of those interested in the speculation. Now, 60,000 tons of shipping were abroad to supply the demand for this article alone. Dr. Playfair then gave a curious instance of the manner in which the *dicta* of scientific men, being wrongly apprehended by the unlearned, become injurious instead of beneficial. An article was sold some time ago under the name of Dr. Daubeny's sulphate of ammonia, which, on examination, was found to be wholly innocent of any trace of ammoniacal salts. The Professor had recommended the mixture of gypsum with gas-water, the natural effect of which is to produce a solution of sulphate of ammonia, and cause a deposit of carbonate of lime. The ignorant manufacturer had retained the chalk, selling it as sulphate of ammonia, and thrown away the water containing all the ammoniacal salt that was present. It was as if the dairyman, in the manufacture of cheese, had kept the whey and thrown away the curd. Dr. Playfair then remarked on the enormous adulteration of which many manures were susceptible, without betraying it externally; and he stated that the cause of many of the contradictory results obtained from the use of manure might be traced to this fact—that manures of different kinds and intensities were thus frequently sold under a common name, while in point of fact they were as different from one another as possible. We shall probably report at additional length the proceedings of this meeting in our next.

Towards evening on this day the weather, which had been warm and clear throughout the week, changed. Rain, however, did not fall till fine weather, so far as the exhibitions and proceedings of the Society were concerned, was no longer in the least required.

FARMERS' CLUBS.

Bromsgrove.—At the annual meeting of this Club, Mr. Smith, of Deanston, delivered an instructive practical lecture on Thorough-Draining. Mr. Smith observed that water on land had two origins—that which was caused by springs from the earth beneath, and that which fell from the clouds in the shape of rain: and he had found from experience that it was better that this water should be drained away a certain depth beneath

the surface, that it should be drained off by running over the uppermost or active soil. In clay districts, where the clay was found to be stiff and impervious to water, and was thrown into ridges of, say 6 feet, the active soil being thin, the water running over the surface damaged that part of the land near to the furrows, little was grown, and the plant was found to be stiff and spiry. When the drain was first cut in a stiff clay soil, there being no opening or crack in the land, the water at first was found to lie upon it, but soon afterwards the clay began to contract, it consequently occupied less space, and fissures were quickly perceptible in the body of the clay. At first these cracks were small, but it would be found from observation that they continued to extend all over the body of the soil betwixt the two drains; in a short time the whole of the land was found to be full of fissures, and in a completely spongy state. If the water remained in these fissures, the land would soon become as impervious as ever, but the cracks, which were found to be vertical as well as horizontal, suffered the water to pass along, and eventually it found its way into the opening of the drain by the fall which had been given, and the water ran from the field altogether, the active soil by this means being left completely dry. Practical experience had shown to him that the most advantageous depth for a drain was from 2 to 3 feet. He had also remarked that when the water fell into the soil, it expelled the air; that had been found to have a most beneficial effect on the soil, and the moment the water fell down, another portion of atmospheric air found its way into its place; thus the alternate action of water and the atmosphere materially benefited the land, because by this means a much greater depth of soil was obtained than if the land had remained in its stiff and impervious state. One great advantage of a 30-inch drain over one of 18 was, that if they went to plough immediately after rain had fallen, they avoided that puddling which was certain to be caused by the weight of a horse or cart where the shallow drain had been used. Another advantage in having the water sink into the surface was this: rain generally brought large quantities of ammonia; this was left in the soil by the under-draining, and must certainly be better than if the water ran merely along the surface. In cases, too, where large quantities of rain fell, it was important that every part of the land should bear equally the burthen of it; this could not be if it was suffered to run on to particular spots. Every one knew that the great object of farming was to produce the largest possible amount of grain, or crop of any kind, from any given area of surface; but that could not be accomplished unless every bit of the land produced an equal quantity with the rest. But there were other advantages of under-draining. By it the water did not pass too quickly into the drain; and if it was allowed to pass through the land slowly, in fact, almost by filtration, it had time to deposit everything it held in suspension in the soil, which was a great advantage. In all drains, properly executed, the water ran out of the land into the drain as pure as spring water. As a proof of this, in the low districts of Scotland, where there was a scarcity of water, the inhabitants found that they could obtain as much water as they required from these drains, and that it was quite palatable and fit for domestic purposes. He had become quite convinced of the great superiority under-draining had over any other system. He would only draw their attention to the present season to prove this. It had been, he believed, the driest since 1826, and he had been at some pains in making inquiries as to the state of the plant when the lands had been thoroughly drained, and he found one uniform result, that the plant had continued to grow, and was as vigorous and healthy as in years when there had been a large quantity of rain. That distinctly showed the advantage of the system. He would next advert to the distance which it was expedient to make between each drain, and after careful investigation and much experience, he found that in the stiffest clay soils the distance ought not to be more than 18 feet from drain to drain: that would be found to suit most soils. In some parts of Scotland he had known them to have as large a space as 40 feet between the drains, but in those cases the land had been generally found to be wet at the extreme points between the drains, and the consequence was, that it had been found necessary to make a drain between the two. In Scotland the most incalculable benefit had been derived from the drainage on the clay lands; in many cases they had begun to grow Mangold Wurzel, which it had been found impossible to cultivate previously; this of itself was of great importance to the farmers, and if this system of draining were adopted in England, large crops of Turnips might be grown where none could be before, and particularly of Mangold Wurzel, because, although the attempt had been made to grow them in Scotland, they had not suitable climate, and that they had in England. One thing he would urge them to bear in mind with reference to drainage, and that was the necessity there was for their having a good level and a good outfall; if the brooks into which the water was to be discharged from the drain were insufficient for that purpose, great evils might arise from it; he had seen an instance in which a fall at the rate of 6 inches in a mile threw out 300 tons of water an hour. He divided drains into three denominations—main drains, sub-drains, and minor drains; and it ought always to be observed, where these discharged into each other, that the sub-drain should be 6 inches deeper than the minor drain, and the main drain one foot lower than the sub-drain. Another "great point also to be attended to was the constructing the drains in a regular manner. The parallel drains were decidedly the best, and a plan ought always to be kept in order to know the exact position of each drain; this was only to be accomplished by laying them down in a systematic manner. Some persons had agreed that the cross drains were the best; but as they must all terminate in a parallel drain, he thought it must follow that they should all be constructed on that principle. Mr. Smith then spoke of the manner of executing drains. In filling the drain with stones (which are better than tiles when they could be obtained for the same money), care should be taken that the stones were small and well selected. The depth of stones required he once thought was 12 inches, but from experience he now found that 8 or 9 inches were sufficient; consequently one-third of the quantity of stones originally used would now be saved. Care should be taken that the stones were well covered over with turf cut as thin as is used for thatching houses; and that the stones were completely covered from side to side; the turf should be covered over with 3 or 4 inches of soil taken from the bottom of the drain, because the more sterile its quality the better. He had executed 130 miles of draining within the last 30 years; he had since opened those drains in hundreds of places, all of which had been constructed according to the method he had described, and in not one single instance had he found any sediment between the stones. In many parts of England the expense was so great that it was found necessary to use tiles, and he did not object to them, particularly on clay-land; and they ought also to bear in mind that the tiles should never be put down without soles, because that enabled the cylinder to bear a much greater degree of pressure, and had been found in every respect much more efficacious. Mr. Smith next adverted at some length to the price, and more particularly to the construction of tiles; he declared himself to be of opinion that tiles were much the best without any holes in them, but expressed a hope that ere long a tile answering every purpose would be invented and made at a comparatively trifling cost. He had once advocated the system of putting stones over the tiles, he now found that there was nothing better than to trample clay which had been taken from the bottom of the drain firmly over them; that would be found not only sufficient to keep them in their places, but they would bear almost any weight. Mr. Smith then referred to the disposition of the surplus soil—but with this matter every agriculturist will be quite familiar—and proceeded to remark on subsoil-ploughing. The object of this was, he said, to move the sterile soil under the active soil, to free it from the water, and in time to bring it into such a state that it might be an adjunct, and, in fact, form a part of the active soil already possessed. He tried various methods to accomplish this object, and at length he got a plough made of 3 cwt., and with it ploughed 200 acres of land of his own; all his neighbours had used it; it had been in use upwards of 20 years, and had never been sent to the blacksmith's consequent on any serious derangement of the machinery, and it had turned up stones of 2 cwt. Subsoil-ploughing, as they were all aware, was merely to stir up the under soil at first, and not to throw it up; no farmer could succeed except he had a deep soil; he began farming with a soil varying from 2½ to 4 inches in depth, but after under-draining and subsoil-ploughing, he had had for the last ten years, 16 inches of mould; this was on what had previously been one of the most sterile farms that was to be met with. The subsoiling might be commenced carefully a year after draining; the first crop after draining should be Oats, and then they might begin to subsoil-plough, but it would be necessary that the work should be done cautiously. He had been asked whether subsoil-ploughing might take place before the land was drained; his reply was, that it would be very dangerous, because if an opening were made before there had been a regular course of draining, it only made a pool to hold more water. But of all things he cautioned them that the utmost care should be used in subsoil-ploughing for the first three or four years after draining. Several questions were put to Mr. Smith by Mr. Baker and other gentlemen. He said, in reply to one question, "Straw or stubble will do to put on the top of tiles on clay soils;" in reply to another, "It is improper to place light soil on the top of them;" and to a third, "It is possible, and in fact quite practicable, to drain with peat;" to a fourth, "I recommend land to be laid flat after thorough-draining;" and to a fifth, "I would not lay the land level until after the subsoiling had taken place.—*Abridged from Worcester Chronicle.*

Miscellaneous.

* *Thorough Draining.*—Mr. Aiton says—"In all clay soil and dense land the water does not filter beyond the depth of the plough furrow, unless the subsoil has been opened by trenching or subsoil-ploughing." Also, "In such land, if a pool be dug within 18 inches of the drain, and 30 inches in depth, when filled with water not a drop of it will (if the subsoil has not been rent in forming the pool) filter from the pool to the drain, but stand there until it is exhaled in vapour, by the sun, and by dry winds." The whole of these opinions have proved to be erroneous. I have found that the water does filter through the unbroken subsoil of dense clay, and that it does flow out of such pools as Mr. Aiton speaks of, to the drains. My proofs:—During the past season I opened 93 pools, and made observations for the purpose of tracing the rise and fall of the waters therein during the various changes from wet to drought, and the contrary in unbroken and broken subsoil. I have found that, in heavy blue adhesive clay, in which not the slightest porosity seemingly existed, the water was carried or filtered through the subsoil to the drains 24 feet on each side; and in less tenacious subsoils as far as 30 feet; and when the subsoil was broken, the distance from which the water was drawn was increased; but the great observable difference of effect lay in the shorter time in which it filtered to the drains. I formed the pools at right angles to the drains, at intervals of 6 feet asunder. I submit short comparative extracts from my registry:—

Experiment, No. 1.—Soil, thin blue clay on a heavy blue adhesive subsoil. The depth of the surface of the water in the pools is marked in inches.

Line of pools marked*							Weather, &c.
* 15	* 10½	* 4½	* 2½	* 2	* 2½	* 3½	26th October—10 o'clock, A.M. On the 24th, heavy showers; the 25th dry, with bright sun. Night wet.
2	1½	full.	full.	2	1½	3	28th Oct.—10, A.M. Previous day and night and this morning characterised by heavy and almost continuous rain.
13½	8½	2½	2½	3½	3½	3½	30th Oct.—Half-past 8, A.M. Part of 28th very heavy rain. Remainder of period to this date cold, frosty, and dry.
13	8½	4½	3½	1	1½	½	Rise during the wet period.
11½	6½	6½	2½	1½	2½	½	Fall during the dry period.

Experiment No. II.—*Soil*—Strong heavy clay, incumbent on a close, compact, reddish subsoil, intermixed with blue clay, and less retentive than No. I. The pools when made were at a distance from any of the drains then formed. The drain with which these observations are connected was opened 21st Oct. 1844. Thus the depth of water, and of course the effect, is observed by the comparison below.

Line of Pools marked *						Date of Registry, Weather, &c.
* 8	* 5	* 9	* 7	* 6	* 6	19th Oct. 7 A.M.—Warm sun, but little drought.
5½	4	7	5	4	4	21st Oct. 7 A.M.—Heavy rain for 3 or 4 hours, remainder of time mild but little drought.
11	3½	6½	6½	4½	5½	23rd Oct. 9 A.M.—Commenced [illegible] previous evening at 8 P.M.; heavy this morning, and ceased at 8 A.M.
11½	5½	8	7½	4	5½	25th Oct. ¼ past 7 A.M.—Heavy showers during the previous 24 hours.
13½	5½	7	6½	4½	4½	26th Oct. 9 A.M.—Heavy rain on [illegible] with during half the day; 27th dry, with bright sun—night wet.
13⅝	7½	10½	8½	6½	5½	27th Oct. ¼ past 7 A.M.—Previous day and night dry and frosty.
6½	1	4½	2½	2	3½	28th Oct. ¼ past 10 A.M.—Previous day and night heavy and continuous rain.
11½	10	12½	10½	8	7½	31st Oct. 8 A.M.—The 29th very wet; remainder of period, drying and a little frosty.
Comparison of draining effects, in unbroken Subsoil.						
6	6	5½	8½	4	3½	Fall from 21st (the day on which the drain was opened) to the 31st October.
0½	0	1	1	0	2	Fall from 8th to 21st October, previous to the drain being opened.

The above shows distinctly that the water was drawn off to a distance of 24 feet from the drains, and the fallacy of Mr. Aiton's statement, that "the water does not filter through the unbroken subsoil;" also, that "it *does not* lodge in the pools until exhaled in vapour by the sun," &c. It cannot be alleged that the subsoil was rent in digging the pools. The subsoil was unbroken, and yet the water passed off quickly; and even if the subsoil had been partially rent, the distances from which the water was drawn, on the drain being opened, proves distinctly that it percolates through the unbroken subsoil. If the operation of opening a pool 12 or 15 inches square had rent the subsoil, it could only have been a few inches around it; but this idea is absurd, as the tendency of such operation is to consolidate and render the pools more retentive of water. The following comparison shows more clearly the effect made at a distance from which the water is drawn off. One part of the ground unbroken, and the other trenched 18 inches deep:—

Line of Drains.	* Line of Pools marked *						Date of Registry, &c.
	* 14	* 12	* 12	* 14½	* 13	* 13	Trenched — 26th Nov. 8 A.M. Weather mild, but very little drought.
	9	6	9	7	4	4	Untrenched
	15	11½	12	14	14	11	Trenched — 15th Dec. 8 A.M. Previous three or four days very drying.
	15	11	13½	12	9	9½	Untrenched
	10	9½	9	9½	10½	10½	Trenched — 21st Dec. 8 A.M. Rain during the previous night.
	15	9	9½	9	6½	6½	Untrenched

There are some apparent discrepancies in this comparative registry, but arising principally from some of the

* These figures express the distance in inches of the surface of the water in the pools from the surface of the ground; the depth, in fact, which the water had sunk in the pools.

pools lying in hollows or furrows, on which Mr. Aiton relies, as on a broken road, for drawing off the surface water. From these it is evident that the water percolated from the fourth pool, or 24 feet, after which, the difference in rise and fall of the waters leaves not the shadow of a doubt as to the result, although the contrary is so confidently asserted by Mr. Aiton. A comparison of the trenched and the untrenched proves the greater distance from which the water is drawn in the former; and I know that it would be carried from a much greater distance if the land was subsoiled as it was drawn off from the extreme of the part trenched deep.—*John McArthur, in the Ayrshire Agriculturist.*

African Guano.—A friend has favoured us with the following analysis, by Mr. R. Phillips, *of* a sample of African Guano submitted to that excellent chemist for examination:—

Ammoniacal Salts, containing 7½ of ammonia and organic animal matter	46.0
Phosphate of Lime, &c.	19.8
Fixed Alkaline Salts	4.2
Sand	4.0
Water	26.0
	100.0

Artificial Manures.—Experiments with Artificial Manures, tried by T. C. Eyton, Esq., at Donnerville, near Wellington; Seed, Swedish Turnips, obtained from Skirving's, Liverpool. Sown on the 17th of May, 1843; pulled and weighed on the 23d of November.

No.	Description of Manure.	Cost per Acre.	Weight of Crop per acre.	Measure per acre.	Cost of Manure per bushel of crop.
		£ s. d.	ton. cwt.	bush.	d.
1	168 lbs. of Mur. Ammon. + 220 lbs. of Gypsum	1 10 11	7 1¼	154	2¼
2	330 lbs. of Guano	1 13 0	15 1	308	1¼
3	168 lbs. of Mur. Ammon.	1 6 6	8 16	192½	1½
4	330 lbs. of Guano + 220 lbs. of Gypsum	1 17 5	15 14½	346½	1½
5	330 lbs. of Guano + 11 bush. Wood-ashes	3 4 0	17 7½	423½	1½
6	168 lbs. of Mur. Ammon. + 11 bush. Wood-ashes	1 17 6	14 19½	385	1½
7	1322 gals. Liq. Manure, viz., Urine & Soapsuds	——	11 0½	269	—
8	66 lbs. of Bones + 8½ qts., or 33 lbs., of Sulphuric Acid + 550 gallons of Water	0 8 8½	14 6	346½	¼
9	484 lbs. of Bone-dust	1 1 7½	14 19½	308	2

Remarks.—In the above calculation fractional parts are not included: the following is an analysis of the subsoil. I was told by a former tenant of the field that it would not grow Turnips; it was, however, drained shortly before the Turnips were sown.

One hundred parts of the soil contain—

Water	11 parts.
Silica or Sand	70 ,,
Alumina or Clay	15 ,,
Red Oxide of Iron	1.5 ,,
Carbonate of Lime	1.5 ,,
Loss	1 ,,
A trace of Sulphate of Lime in weight not appreciable.	
	100

The proportion of silica is that yielded by the soil after the largest stones or pebbles had been removed from it. The Turnips all came up together, nor was there any perceptible difference in their appearance on the 27th of May; on the 14th of June No. 2 appeared to take the lead, 1, 7, 8, looking the worst, and being more backward than the others; on June the 30th they were horse and hand-hoed, Nos. 9, 10, 8, 4, 5, were equal in appearance to No. 2; on July 21st, No. 5 looked best, No. 1 the worst of all.—*From a Lecture by T. C. Eyton, Esq., to the Wellington Farmers' Club.*

Water Meadows, Hampshire.—These meadows are copiously irrigated by the bright chalk waters of the Itchen, a river whose waters are, perhaps, the most copious, considering the shortness of its course, of all the southern English rivers. The farmer who views the mass of crystal water, pouring under Winchester bridge, will hardly feel inclined to suspect that all this flood is the produce of a few springs which arise within seven miles of the city. When the farmer also notices the fertility diffused by the use of these bright waters—waters which contain such very limited proportions of either earthy, saline, or organic impurities, he will feel assured that it is an error to conclude that it is only very impure waters that are valuable for the use of the irrigator. It is, in fact, a mistake which most persons make, to suppose that even these bright and transparent waters are perfectly pure, and that they do not contain any substances which are the food of plants—for both these popular opinions have been proved to be erroneous. Thus, the waters of the Itchen contain, in 10,000 parts, 2½ parts of solid matter, viz.—

Organic matter	0.20 parts.
Carbonate of lime (chalk)	1.89 ,,
Sulphate of lime (gypsum)	0.72 ,,
Muriate of soda (common salt)	1.01 ,,

Now, that these saline substances are absorbed by plants, from these kinds of irrigation waters, has been shown by Dr. Madden ("Trans. High. Soc." vol. viii. p. 687), who found, in a gallon of the water of some springs issuing from the foot of the Pentland Hills, of

Carbonate of lime (chalk)	4 grains.
Chloride of sodium (common salt)	10 ,,

But after this water had been passed over some meadows, it was found to contain these salts in diminished proportions. The same quantity of water then contained, of

Chalk only	2 grains.
Common salt	5 ,,

Such facts would appear to confirm the conclusions of some of the ablest cultivators, that the chief advantages of irrigation are attributable to the foreign substances with which the water is charged; although, as we have elsewhere observed, almost every farmer has a mode of accounting for the highly fertilising effects of irrigation—one thinks it cools the land, another that it keeps the Grass warm in winter. And this was Sir H. Davy's opinion. He thought that a winter-flooding protected the Grass from the injurious effects of frost. In these conclusions with regard to the theory of irrigation, we have found many excellent practical farmers concur. Thus, Mr. Simonds, of St. Cross, near Winchester, considers that the great benefit of winter flooding for meadows is derived, in the first place, from the deposits made by the muddy waters on the Grass; and, secondly, from the winter covering with water preventing the ill effects to the Grass of sudden transitions in the temperature of the atmosphere. This gentleman is perfectly aware of the value of the addition of the city drainage of Winchester to the fertilising qualities of the Itchen river water, and of its superiority for irrigation after it has flowed past the city, having watered meadows both above and below the town; and he finds that if the water has been once used for irrigation, that then its fertilising properties are so materially reduced that it is of little value for again passing over the meadows; and so convinced is he, by experience, of this fact, that, having in this way long enjoyed the exclusive and valuable use of a branch of the waters of the Itchen for some Grass land, a neighbour higher up the stream followed his example, constructing some water meadows, and using the water before it arrived at those of our informant, who, in consequence, found the water so deteriorated in quality (though not sensibly diminished in quantity) that he once thought of disputing the right with his more upland neighbour. The experience of other irrigators tends to the same conclusion. In the best managed water meadows of Hampshire the farmer does not procure annually more than three crops of Grass; yet in situations where a richer water is employed, as near Edinburgh, four or five are readily obtained.—*From Mr. Johnson's Register of Implements, Southampton Show.*

Notices to Correspondents.

Rural Chemistry. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4s. 6d.

Books.—*D. L. B.*—Lectures on "Agricultural Chemistry and Geology," by Professor Johnston. With regard to your tanks, its contents, if the ammonia in them be fixed, should be used on land a fortnight before sowing Corn in spring; or you may put it on your young crops of Wheat or Grass in April.—*Cestriensis W.*—Thank you for your communication—we may, perhaps, hereafter make use of it, and shall be very glad to receive the results of your experiments on Potatoes.

Burning Clay.—*B.S.*—See a tract on this subject published in 1830—"Practical Hints on Burning Clay," by C. Poppy.

Disease in Pigs.—*Holby Bank.*—This disease is of the nature of palsy, and produced most probably by cold. Give 1 dr. of gentian, ½ dr. of ginger, ½ dr. of spirit of nitrous ether, in a little gruel, and repeat, if necessary, the following day. *W. O. S.*

Manure.—*H. A. S.*—Sulphuric or muriatic acid is the most certain fixer of ammonia. The price should determine your preference of either. With regard to its use, see two or three articles on "Fixation of Ammonia," in Nos. 26 and 27 of this Paper, and sprinkle the *diluted* acid over the manure in the yard.

Newspaper.—*A.B.C.*—The subscription is 6s. 6d. per quarter, *if paid in advance.* If you cannot get the Paper supplied you at this rate our own agent will send it you. Thanks for your paper; you are quite right.

Prof. Johnston.—*S.*—We shall answer next week.

Rabbits.—*J. P.*—The tenant of lands, or any person by his direction or command, may take or destroy rabbits on such lands without taking out a Game Certificate, and that either with a gun or in any other manner. See Exceptions to the Duties in Schedule L. of 52 Geo. III. c. 93. *W.*

Smother Burning of Peat.—*W. Bartlett.*—Will Mr. Parkes' Paper, in a former Number, on Peat-Charcoal answer your question?

Steeping Seeds.—*A Subscriber.*—Lime will dry your seed, but it will tend to decompose the substance in which it has been soaked. Charcoal dust might dry it, but probably if you steep on a large scale, practical difficulties might exist in the way of its use. What we soaked was *hoed in* wet, half-an-hour after being taken out of the water. You must not soak except in a very weak solution so long as 60 hours—at least our experience proves the danger of the practice. We should be glad to know the results of your experience in steeping seeds.

Turnips.—*W.* hopes that the Earl of Essex will kindly hereafter report the result of his lordship's interesting experiment, so as to ascertain the effect on the ripened crop of the manures applied.

***As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, July 22.—Per stone of 8 lbs.

Best Beasts, Herefords, &c.	3s	8	to	4s	0	Best Downs & Half-breds	3s 10 to 4s 2
Best Short Horns	3	2		3	6	Best Long-wools	3 6 3 10
Second quality Beasts	2	10		3	2	Kows and second quality	3 2 3 6
Calves	3	8		4	2	Lambs	4 4 5 0
Pigs	3	0		3	8		

Beasts, 2580; Sheep and Lambs, 22,980; Calves, 193; Pigs, 350.

We have a very fair supply of Beasts to-day, and in tolerably good condition. Trade is not very brisk, especially for large coarse Beasts and second qualities, but the best beasts, &c. maintain their price, in some few instances 4s 2d per 8 lbs. has been obtained, and some of the very best Short-horns have made 3s 4d. The supply of Sheep is again large, but we are not over stocked with the best qualities, and there is still a large demand for keeping Sheep; thus, although the numbers have somewhat affected the trade, and made it a little worse than on Friday, it is not sufficiently so to make any alteration in our quotations. Good Lamb maintains the price, and is rather more in demand, but middling qualities are very difficult to dispose of. Veal and Pork are rather lower.

Friday, July 26.

We have a large supply of Beasts, and very little trade; the weather having been so excessively hot during the week has hindered the Butchers from killing. A large number must be turned out; what are sold suffer a reduction of fully 2d per 8 lbs from Monday. Our supply of Sheep is not very large, but quite adequate to the demand: the weather has also caused lower prices to be taken, especially for large Sheep: the most selling Downs make about 4s, and Longwools 3s 6d. We have a great deal of plain Lamb; the best quality is worth about 5s. There is a very large supply of Calves, and 4s per 8 lbs is quite the top price. Pork is about the same as on Monday.

Beasts, 773; Sheep and Lambs, 12,270; Calves, 300; Pigs, 263.

41, West Smithfield.

HOPS, Friday, July 26.

§ The parts of the plantations which have been severely attacked with vermin are completely gone into blight, and the opinions are not very favourable respecting the good district. There is no material alteration to notice in the Market, and the duty is laid at 145,000*l.*

Patterson & Sons, Hop-Factors.

WOOL.—British, Friday, July 26.

	per lb.			per lb.	
Long-wooled Wethers	11½d	to	1s 0½	Southdown Hoggets	1s 0½ to 1s 2½
Do. Hoggets	1s 1		1 3	Kent Fleeces	1 1 1 3
Southdown Fleeces	11½		1 0½		

James Pearse, Wool Broker.

COVENT GARDEN, July 25.—In consequence of the late fine weather the market continues to be well supplied with vegetables of tolerably good quality. Fruit of all kinds in season is abundant. Fine Apples are good; they consist principally of Queens, with a few Montserrats, Ruvilles, and Providences. A considerable quantity of the imported varieties mentioned last week are still in the market; they are somewhat reduced in price. Of Hothouse Grapes there is a fair supply; Peaches, and Nectarines are very good. Apricots are for the most part small in size. Plums are pretty good, and are becoming more plentiful; they consist chiefly of Orleans, with a few Green Gages. Cherries are sufficient for the demand, but Strawberries are less abundant. Raspberries, Currants, and Gooseberries are offered in large quantities. Kitchen Apples are to be procured, but they are still small. Some good specimens of frame Cucumbers are in the market, which may be obtained at a low price. Peas continue to be brought in considerable quantities, and French Beans are sufficient for the demand. Carrots are good, but Turnips are rather inferior both in size and quality. Good Cauliflowers may be met with, but they are becoming scarcer. Cabbages are good and plentiful. Artichokes and Vegetable Marrows are not scarce. Salading and Herbs of every description are plentiful. Cut Flowers comprise Swainsona galegifolia, Lilium eximium, Bignonia venusta, Alstroemeria pelegrina, Ceanothus azureus, Heaths, Gladiolus, Pelargoniums and Gardenias, with Roses, Carnations, Picotees, Verbenas and Fuchsias, in great abundance.

FRUITS.

Pine Apple, per lb., 4s to 6s	Strawberries, per gallon, 1s 6d to 2s
Hothouse Grapes, per lb., 2s to 6s	Gooseberries, per bt.-sieve, 1s 6d to 4s
Melons, each, 2s to 5s	Walnuts, pickl., per bsh., 4s 6d to 5s 6d
Peaches, per dozen, 6s to 18s	Oranges, per dozen, 1s to 3s
Apples, Dessert, per bush., 3s to 6s	— per 100, 5s to 14s
— Kitchen, 2s 6d to 4s	— bitter, per 100, 3s to 14s
Pears, Dess., per half-sv., 2s to 5s	Lemons, per dozen, 1s to 2s
Cherries, Wall, per lb., 1s to 2s	— per 100, 8s to 14s
— Standards, per doz., 1s to 3s	Almonds, per pack, 6d
— Morello, per bf sv., 4s to 6s	Sweet Almonds, per lb., 1s 6d
Currants, per half-sieve, 2s 6d to 4s	Nuts, Barcelona, 2s
— White, per sieve, 3s to 4s 6d	— Cob, 14s
— Black, per sv., 4s 6d to 5s 6d	

VEGETABLES.

Cabbages, per dozen, 3d to 1s	Leeks, per bun., 3d to 4d
Cauliflowers, per doz., 2s to 3s	Chilis, per doz., 1s
Sorrel, per bt.-sieve, 6d to 9d	Garlic, per lb., 6d to 9d
Artichokes, per doz., 1s to 2s	Onions, per bunch, 2d to 7d
French Beans, per hf -sv., 1s 6d to 2s	— large, per bushel, 1s to 2s
Potatoes, New, per cwt., 4s 6d to 6s 6d	Shallots, per lb., 4d to 6d
New Turnips, per bunch, 3d to 10d.	— Green, per bunch, 2d to 4d
Peas, per bushel sieve, 2s 3d to 4s	Lettuce, per score, 6d to 1s 6d
Red Beet, per doz., 1s to 2s	Celery, per bunch, 1s to 1s 6d
New Carrots, 4d to 1s	Mushrooms, per pottle, 2s to 3s 6d
Basil, per bunch, 4d to 6d	Small Salads, per punnet, 2d to 3d
Horse Radish, per bundle, 2s to 3s	Watercress, p. 18 sm. bun. 3d to 6d
Savory, per bunch, 2d to 6d	Parsley, per bt.-sieve, 1s to 1s 6d
Cucumbers, Frame, each, 3d to 9d	Tarragon, Green, per bunch, 2d to 4d
— Ridge, each, 2d to 3d	Green Mint, per bunch, 2d to 4d
Vegetable Marrow, per doz., 2d to 3s	Marjoram, per bunch, 4d to 6d
Spinach, per sieve, 2s to 3s	Chervil, per punnet, 2d to 3d

MARK-LANE, Monday, July 22.

The supply of English Wheat from Kent, Essex, and Suffolk this morning was moderate; notwithstanding which, sales could not be proceeded with, excepting at a decline of 2s. to 3s. per qr., at which reduction the stands were not cleared. For Foreign, the greatest difficulty was experienced in finding purchasers, even of retail quantities, at a decline of 1s. to 2s. per qr. on middling Red, and out of conditioned parcels a greater sacrifice would have been submitted to, to induce buyers to take a quantity, but they refrained entirely from touching these descriptions.—In Barley there is scarcely anything doing, and the tendency of prices is downwards.—The value of Beans and White Peas is unaltered, but Grey are 1s. cheaper.—Oats are a slow sale, and barely maintain their late quotations.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	42	52	White	42	52
—— Norfolk, Lincolnshire, and Yorkshire	40	50	Red	45	50
Barley, Malting and distilling 27s to 30s	32	38	Chevalier	32	38
Oats, Lincolnshire and Yorkshire	20	23	Polanda	20	23
—— Northumberland and Scotch	20	23	Feed	19	22
Malt, pale, ship	58	62			
—— Hertford and Essex	60	65			
Rye	29	32			
Beans, Masagan, old and new	27	to 32	Tick	29	33
—— Pigeon, Heligoland	33	to 36	Winds.	—	—
Peas, White	34	to 37	Maple	29	33

	s.	s.		s.	s.
Red	45	50	Harrow	30	33
White	—	—	Longpod	—	—
Grind.	25	32			
Feed	19	22			
Potato	21	25			
Potato	16	24			
Grey	27	30			

ARRIVALS IN THE RIVER LAST WEEK.

Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 5147 Sks. — Brls.	8647	3590	3566	700	—	702	385
Irish . — „ — „	—	—	—	28078	—	—	—
Foreign . — „ 4140 „	9491	8025	—	4845	—	3930	1790

Friday, July 26.

The fine, hot, and favourable weather we have had for forwarding the harvest since Monday has caused a very dull trade for all descriptions of Corn: Millers refrain from purchasing, and we are consequently unable to quote the decline in Wheat, but holders would probably have accepted a farther reduction.—Barley, Beans, and Peas are nominally unaltered in value.—The Oat-trade is very heavy, and barely supports our quotations.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	3760	20	1710	4940 Sks
Irish	—	—	4360	—
Foreign	13070	9570	14310	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June	24 per Quarter.	55s 9d.	31s 10d.	23s 6d	34s 4d	36s 11d	34s 1d
—	21	55 8	32 8	23 3	34 2	37 10	35 2
—	28	55 9	34 0	23 0	33 0	38 2	36 6
July	5	55 8	34 5	22 11	33 0	38 2	36 6
—	12	54 10	34 10	22 8	34 2	37 8	37 3
—	19	54 1	34 5	21 8	33 4	37 7	37 3
6 weeks' Aggreg. Aver.		55 3	33 6	22 5	34 0	37 8	36 1
Duties on Foreign Grain		17 0	5 0	6 0	5 6	5 6	6 6

SEEDS, July 22.

Canary	per qr	50s to 54s	Linseed Cakes, Foreign, p. ton	6l to 7l	10s
Carraway	per cwt	44 50	Mustard, White	p. bush.	— —
Clover, Red, English	60	74	— Superfine	„	— —
— — Foreign	54	64	— Brown	„	— —
— White, English	100	120	Rapeseed, English, per last	20l	22l
— — Foreign	84	105	Rape Cakes	per ton	— —
Coriander	12	13	Saintfoin		— —
Hempseed	per last	35 40	Tares, Eng. winter	p. bush.	5 7
Linseed	per qr	— —	— Foreign		— —
— Baltic	—	— —	Trefoil	per cwt	— —
— Cakes, Eng. per 1000	10l	10l 10s	Turnip (too variable for quotation).		

Kingsford and Lay.

POTATOES.—Southwark Waterside, July 15.

York Reds	60s to 80s	Essex and Sussex Blues	—s to	
Perth	45 60	Wisbeach Kidneys	— —	
Early Devons	— —	— Blues	— —	
Late Devons	85 90	— Whites	— —	
Cornwall	— —	Jersey and Guernsey Blues	80	
Dutch Whites	45 55	Prince Regents	— —	
Kent and Essex Kidneys	— —	York Shaws	— —	

HAY.—Per Load of 36 Trusses.

Smithfield, July 25.

Prime Upland Hay	80s	to 100s	Clover	100s to 120s	Straw 28s to 33s
Inferior „	60	70			

Jones Cocoma, Salesman.

Cumberland Market, July 25.

Superior Old Hay	90s	to 100s	Superior Clover	110s to 112s	Straw 30s to 34s
Inferior „	84	90	Inferior „	90 100	
New Hay	80	86	New Clover	90 100	

Joshua Baker, Hay Salesman.

Whitechapel, July 25.

Old Hay	85s	to 90s	Old Clover	110s 120s	Straw 32s to 34s
New Hay „	70	80	New Clover	70 100	

METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose—1*s*. An Improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and successful manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE'S Sole Establishment, 130*a*, Oxford-street, one door from Holles-street.

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STATE LOAN of His Royal Highness the Grand Duke of Baden of 5,000,000 fls., to be reimbursed with 9,034,055 fls., in lots of 50,000, 40,000, 35,000, 30,000, 20,000 fls., &c., the smallest being 50 fls.—GRAND PUBLIC DISTRIBUTION to take place at Carlsruhe on the 1st of August next; official bulletins containing the result will be forwarded immediately to every shareholder. Price of a single certificate, 10*s*.; 11 for 5*l*.; 23 for 10*l*.; 60 for 25*l*. sterling; payable in notes, money orders, or remittances.—Apply for full particulars and certificates, without delay, to Moriz I. Stiebel, banker, Frankfort-on-Maine. To save postages, all letters addressed to Messrs. Stiebel and Co., 8, Lime-street, London, will be promptly forwarded and attended to.

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Soils, formation of
Soil, nature of
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Spirit
Spirit of salt
Spirit of wine
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W SKIRVING, NURSERY AND SEEDSMAN, Walton, near Liverpool, begs to offer the above new and splendid Climber, surpassing in beauty all others of the genus yet introduced. It is a native of Sierra Leone; a perennial of strong and shrubby habit, and a free bloomer Colour, dazzling purple, with rich yellow eye Raised at Knowsley Hall, from seed imported by the Right Hon the Earl of Derby, and presented to W S by his lordship Plants are now ready to be sent out at 10s 6d each

Orders accompanied with a remittance or a respectable reference, will be faithfully and promptly executed —Walton Nursery, 25th July, 1844.

T AND J. BACKHOUSE, NURSERY & SEEDSMEN, York beg to offer to the notice of the Public their following fine SEEDLING PANSIES.—

YORKSHIRE ECLIPSE —"No 1 is a large flower, of good form, white ground, blue purple upper petals, and broad margin of the same round the lower petals; the petals meet well above the eye, a good flower" 3s 6d

BEAUTY OF HOLDGATE.—"No. 2 is your best flower, the eye large and intensely dark ground light buff, bedding purple, upper petals the same, a brilliant and striking flower" 3s 6d (See *Gardeners' Chronicle* p 290, for 1844)

EARL OF ZETLAND is a flower of excellent form, yellow ground, bronzy crimson upper petals, with broad bedding of the same round the lower petals, which meets well above the eye; a distinct and very constant show flower 3s 6d

Strong plants are now ready for sending out, postage free when three or more plants are taken. A remittance required from unknown correspondents

TO NOBLEMEN AND GENTLEMEN'S GARDENERS

EARLY POTATO SEED.—M. SMITH having been very successful in raising Early Potatoes from the seed of the Potato Plum, is happy in being able to offer Potatoes for seed of so early and fine a quality as has not been equalled. The first is his six weeks Dwarf Seedling This is a very fine early Potato, so early that with ordinary cultivation it will be ready for use in six weeks from the time of planting It is particularly well adapted for forcing, being so dwarfish in the stem as not to exceed from four to six inches in height The Potato is very shallow eyed, and of first rate quality, but not large, the largest being about the size of a bantam's egg.—Price 20s the imperial pound

Second, his prize taking Seedling This is a very early, large, and fine Potato, shallow eyed. It has taken the first prize at the Berwickshire Horticultural Shows during the last two years for its size, beauty, and good quality —Price 15s the imperial stone.

Third, his second Early Seedling This is a Potato of first rate quality, comes in class after the Prize taker, is a rich bearer and shallow-eyed, making up the blank between the first Early and what is commonly termed American or Second Early —Price 15s the imperial stone.

Those wishing to be supplied with seed of any of the above Seedling Potatoes will address their order to Mr Smith, Gardener, Ayton, Berwickshire, with a Post-office order for the amount of their demand They are requested to give their address distinctly, that the Potatoes may be forwarded without delay to the proper quarter Early application will be necessary to obtain a supply, as the stock is limited.

All orders will be punctually attended to, and the Potatoes forwarded, packed in boxes, with moss or hay, to protect them from injury by carriage. Ayton, July 15, 1844 M. SMITH

THE WALCHEREN CAULIFLOWER.

MESSRS. MARNOCK AND MANLEY beg to inform their friends and the public that they have a few packets of the above genuine article left, which should be sown for a general crop to stand the winter from the 15th to the 20th of August. Owing to the excessive dry season, the spring sowing has not turned out so favourable as it otherwise would have done, but they will warrant it to answer every description given of it in their treatise —Nursery, Hackney, July 31, 1844.

SHILLING'S QUEEN CABBAGE.—This month and part of August being the time to sow Cabbage Seed for the Autumn and Spring Planting, J. & S. SHILLING having a little seed left of the above very superior kind, which they highly recommend to those who have not already tried it, beg to offer it to the Public generally, in half oz. packets, postage free, at 1s. 6d. each, on the receipt of postage stamps or a Post office order.—Knowle Nursery, Knowle, Farnham, Hants.

Post Agent for London, Mr. Kennan, 4, Great Russell-street, Covent Garden.

JESSOP'S NURSERY, Cheltenham, Established 1815, from its extensive connection, offers peculiar advantages to Noblemen and Gentlemen requiring Gardeners, Foresters, or Farm bailiffs, of established skill and respectability. All communications promptly attended to.

THE HAMPSHIRE BROWN COS LETTUCE.

The middle to the end of August being the time for sowing Lettuce seed to stand the winter, J. and S. SHILLING invite the attention of the Public generally to the above, which they can with confidence recommend as superior to any other kind for winter and summer use It is quite hardy, and will not run to seed They have sent a few heads to Mr. Kernan's, No. 4, Great Russell street, Covent Garden, where it may be seen. ½ oz packets at 2s 6d each, free, on the receipt of postage stamps or a Post-office order.

P S —Mr Kernan is Agent for this as well as their Queen Cabbage —Northwarnboro' Nurseries, Odiham, Hants, Aug. 1.

BENIALL'S IMPROVED PAPER FOR DRYING PLANTS.

W AND T. BENTALL earnestly invite the attention of Botanists to the above Paper; its perfect adaptation to the purpose for which it is prepared having been fully proved The following valuable testimonial has been kindly received —

"I highly approve of your new Paper for drying plants, and consider it far preferable to the Cambridge Chalk Paper, which I previously employed, but which will now be entirely discarded by me in the preparation of plants for the herbarium. I have also found it most valuable in drying Algæ, the most decisive test in my opinion, to which such papers can be subjected; and can safely recommend it to all engaged in the study of these plants"—*Rev. W. H. Harv, M.A. F.L.S., &c., Plinlimmon, Devonport*

Professor LINDLEY, C. C. BABINGTON, Esq, M.A. F.L.S. &c., H C WATSON, Esq, F.L.S &c, have also kindly allowed the use of their names as strongly recommending it. To be had of the Manufacturers, Halstead, Essex, and of their Agents, Mr. E NEWMAN, 9, Devonshire-street, Bishopsgate, London; and Mr R S MELNTOSH, 12, Catherine-street, Edinburgh.

Sizes, 16 by 10 inches (when folded), 14s. per ream; 20 by 10 inches, 20s do; 16 by 20 inches, 25s do.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and despatch.—This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by men or women It is easily set, so as to deliver the exact quantity of Seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Mangold Wurzel Seed, Wheat, Barley, Peas, and all kind of Garden Seeds. 1l 10s each. Commission allowed to Agents.

These Dibbles may be obtained through the agency of the principal Agricultural Implement Sellers, in the United Kingdom; or from the Inventor, by letter, to his address, inclosing a Post-office order for the amount RICHARD SMITH, Upper Hall, near Droitwich, Worcestershire.

LYNDON'S PATENT SPADE.—Sold by GREEN and CONSTABLE, Ironmongers, 36, King William st., London-bridge Horticultural Tool Chests, Bright Ladies' Spades, Money's Patent Water Pots, Lord Vernon's Patent Hoes, with a general assortment of Garden Implements.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	Orange Tubs, Flower Boxes, &c.
Garden Edging	

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

TO HORTICULTURAL BUILDERS.

A GENTLEMAN wishes for a PLAN and ESTIMATE for a small GREENHOUSE or CONSERVATORY, to be erected at the end of his Drawing room (which end faces the west, and the front the south, and from which a door of communication opens), size 15 feet 6 inches by 12 feet; there is a return wall of 5 feet to be glazed with Drabble's Sheet Glass, and finished in the best manner.—Direct to E. L., at the Office of this Paper

HOTHOUSES, CONSERVATORIES, &c.,' made and fixed Complete in all parts of the Kingdom One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom, warranted best material Two light Boxes and Lights complete, from 14s. 6d. Garden Lights made and glazed from 1s. per foot, at JAS. WHITE' Sash Manufactory, Chelsea-place, Old Kent-road. *** References given.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—ANNUAL COUNTRY MEETING of 1845, to be held at SHREWSBURY, in the North Wales District, comprising the Counties of Anglesey, Carnarvon, Merioneth, Montgomery, Denbigh, Flint, Chester, Salop, and Stafford. The Prizes are open to general competition. Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for Implements must be returned, filled up, to the Secretary, on or before the 1st of May, and all other Certificates by the 1st of June; the Council having decided that in no case whatever shall any Certificate be received after those dates respectively.

PRIZES FOR IMPROVING THE BREED OF CATTLE.—1845.

Short-horns.—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 30*l.*; to the owner of the second best do. do., 15*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In case of the Cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 15*l.*—5. To the owner of the best Yearling Heifer, 10*l.*—6. To the owner of the best Bull-calf, not exceeding one year old, 10*l.*

Herefords.—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 30*l.*; to the owner of the second best do. do., 15*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In the case of the cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.) 4. To the owner of the best in-calf Heifer, not exceeding three years old, 15*l.*—5. To the owner of the best Yearling Heifer, 10*l.*—6. To the owner of the best Bull-calf, not exceeding one year old, 10*l.*

Devons.—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 30*l.*; to the owner of the second best do. do., 15*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In the case of the Cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.) —4. To the owner of the best in-calf Heifer, not exceeding three years old, 15*l.*—5. To the owner of the best Yearling Heifer, 10*l.*—6. To the owner of the best Bull-calf, not exceeding one year old, 10*l.*

Cattle of any Breed (not qualified to compete in the foregoing classes).—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 20*l.*; to the owner of the second best ditto, 10*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 15*l.* —3. To the owner of the best Cow in Milk or in calf, 15*l.* (In the case of the cow being in calf, and not in milk, the prize will not be given until she is certified to have produced a calf.) —4. To the owner of the best in-calf Heifer, not exceeding three years old, 10*l.*—5 To the owner of the best Yearling Heifer, 10*l.*

HORSES.

CLASS 1. To the owner of the best Stallion for Agricultural Purposes, of any age, 30*l.*; to the owner of the second-best do. do., 15*l.*—2. To the owner of the best three years old do., 15*l.*—3. To the owner of the best two years old do., 15*l.*—4. To the owner of the best Mare and Foal for Agricultural Purposes, 20*l.*; to the owner of the second-best do., 10*l.*—5. To the owner of the best two years old Filly, 10*l.*—6. To the owner of the best Thorough-bred Stallion, which shall have served mares at a price not exceeding 3 guineas (and with a groom's fee of not more than 5*s.*) in the season of 1845, 30*l.*

SHEEP.

PRIZES FOR IMPROVING THE BREED OF SHEEP.—1845.

Leicesters.—CLASS 1. To the owner of the best Shearling Ram, 30*l.*; to the owner of the second best do., 15*l.*—2. To the owner of the best Ram of any other age, 30*l.*; to the owner of the second-best do., 15*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do. do., 5*l.*

South-down Sheep.—CLASS 1. To the owner of the best Shearling Ram, 30*l.*; to the owner of the second best do., 15*l.* 2. To the owner of the best Ram of any other age, 30*l.*; to the owner of the second-best do., 15*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do. do., 5*l.*

Long-Woolled Sheep. (Not qualified to compete as Leicesters.) —CLASS 1. To the owner of the best Shearling Ram, 30*l.*; to the owner of the second-best do., 15*l.*—2. To the owner of the best Ram of any other age, 30*l.*; to the owner of the second-best do., 15*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do. do., 5*l.*

Sheep best adapted to a Mountain District.—CLASS 1. To the owner of the best Ram of any age, 15*l.*; to the owner of the second-best do., 10*l.*; to the owner of the third-best do., 5*l.*—2. To the owner of the best pen of Ewes of any age, 10*l.*; to the owner of the second best do., 5*l.*

PIGS.

CLASS 1. To the owner of the best Boar of a large breed, 10*l.*; to the owner of the second-best do. do., 5*l.*—2. To the owner of the best Boar of a small breed, 10*l.*; to the owner of the second best do. do., 5*l.*—3. To the owner of the best breeding Sow, of a large breed, 10*l.*—4. To the owner of the best breeding Sow, of a small breed, 10*l.*—5. To the owner of the best pen of three breeding Sow-pigs, of the same litter, above four and under ten months old, 10*l.*

AGRICULTURAL IMPLEMENTS.

A sum not exceeding 300*l.*

Cheese.—To the exhibitor of the best two Cheese (of any kind) made within the district, 10*l.* To the exhibitor of the second-best do., 5*l.*

Extra Stock, Roots, and Seeds.—For Extra Stock, of any kind, not shown for any of the above Prizes, and for Roots, Seeds, &c., Prizes may be awarded and apportioned, by the Committee and Judges, to an amount not exceeding in the whole 50*l.*

Any New Implement.—For the invention of any new Agricultural Implement, such sum as the Council may think proper to award.

Seed Wheat, Barley, and Oats.—I. Fifteen Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of white Wheat, of the harvest of 1844, and grown by himself.

II. Fifteen Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of red Wheat, of the harvest of 1844, and grown by himself.

III. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of spring Wheat, of the harvest of 1844, and grown by himself.

IV. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of Barley or malting, of the harvest of 1844, and grown by himself.

V. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of Oats, of the harvest of 1844, and grown by himself.

Competitors are requested to send with their Wheat, Barley, or Oats, specimens, fairly taken, of the same in the car, with the whole of the Straw, in a sheaf not less than one foot in diameter, and with the roots attached.

Two bushels of the Wheat, Barley, or Oats, will be sealed up by the Director or Stewards, and one of the remaining bushels of each variety will be exhibited as a sample to the public; the other being kept for comparison with the produce of the next year. At the General Meeting in December, 1846, the Prizes will be awarded.]

The two best samples of each of these classes of Wheat, Barley, or Oats, without at that time distinguishing, in any of the cases, between the comparative merits of either sample, will be selected by the Judges appointed for the Meeting at Shrewsbury; and will be sown, under the direction of the Council (the winter Wheats in the autumn of 1845, and the spring Wheat not earlier than the 1st of March, 1846), by four farmers, who will make their report, upon which the Prizes will be awarded, provided there be sufficient merit in any of the samples. 10*l.* will be given at the Meeting at Shrewsbury to each exhibitor whose Wheat has been selected for trial, and 6*l.* for the Barley or Oats.

*** No variety which has been selected for trial at any previous Show shall be qualified to compete in the same class.

ESSAYS AND REPORTS ON VARIOUS SUBJECTS.

Prizes for 1845.—PRIZE ESSAYS.

1. *Farming of Nottinghamshire.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Nottingham. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Nottinghamshire since the Report of Mr. Robert Lowe in the year 1798; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

2. *Farming of Cornwall.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Cornwall. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Cornwall since the Report of Mr. G. B. Worgan, in the year 1811; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

3. *Farming of Kent.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Kent. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Kent since the Report of Mr. John Boys, in 1805; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

4. *Heath Land.*—Twenty sovereigns, or a piece of plate of that value, will be given for an account of the best method of reclaiming heath-land. Competitors will be required to describe methods which have been successfully adopted in the reclaiming of heath-land, reference being had especially to the following points:—1. The mode of breaking up, whether by paring and burning, or by simple ploughing. 2. The application of lime. 3. The course of cropping. 4. The conversion of heath-land into pasture, where either the steepness of the land, or its elevation above the sea, does not allow the culture of corn.

5. *One Horse Carts.*—Ten Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on the advantages of One-horse Carts. Competitors will be required to point out the saving in horse-labour, and other advantages which undoubtedly arise from the substitution of one-horse carts for waggons.

6. *Catch-Meadows.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on Catch-Meadows. Competitors will be required to describe the best and cheapest method of forming water-meadows on the sides of natural slopes, as practised in Somersetshire and Devonshire; the mode of managing them, and of applying their produce, the increase of value thereby given to unproductive hill-sides, and to state how far this mode of improvement might be applied to the mountainous districts of Wales and of the North of England.

7. *Fences.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on Fences. Competitors will be required to describe the best and neatest methods of maintaining hedges, whether for arable or for grazing ground; and to point out how far the present fences in various parts of England are injurious to the farmer, whether by their size, their excess in number, or the over-abundance of timber which they contain.

8. *Fattening Cattle.*—Ten Sovereigns, or a Piece of Plate of that value, will be given for an account of the best method of fattening cattle; as to the places in which they are kept, large or small yards or stalls; as well as the food, roots, hay, &c. on which they are fed during the time of fattening.

9. *Tile yards.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the cheapest and best method of establishing a Tile yard. Competitors will be required to attend to the following points:—1. Mode of working the clay, according to its quality. 2. Machine for making the tiles. 3. Sheds for drying the tiles. 4. Construction of the kiln. 5. Cost of forming the establishment. 6. Cost of the tiles when ready for sale.

10. *Curing Butter.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best description of the Dutch method of salting butter; pointing out the causes of its superiority to other salted butters

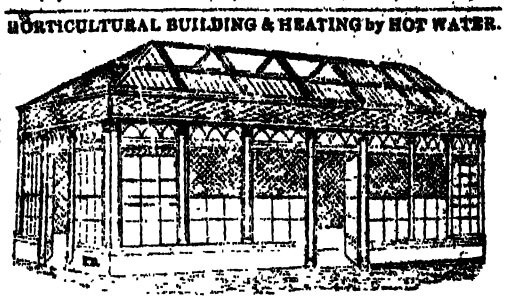
11. *Experiment in Agriculture.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for an account of the best Experiment in Agriculture.

These Essays must be sent to the Secretary, at 12, Hanover-square, London, on or before March 1st, 1845.

Rules of Competition for Prize Essays.—1. All information contained in Prize Essays shall be founded on experience or observation, and not on simple reference to books, or other sources. 2. Drawings, specimens, or models drawn or constructed to a stated scale, shall accompany writings requiring them. 3. All competitors shall enclose their names and addresses in a cover, on which only their motto, and the subject of their Essay, and the number of that subject in the Prize list of the Society, shall be written. 4. The President or Chairman of the Council for the time being, shall open the cover on which the motto designating the Essay to which the Prize has been awarded is written, and shall declare the name of the author. 5. The Chairman of the Journal Committee shall alone be empowered to open the motto paper of such Essays, not obtaining the Prize, as he may think likely to be useful for the Society's objects, with a view of consulting the writer confidentially as to his willingness to place such paper at the disposal of the Journal Committee. 6. The copyright of all Essays gaining prizes, shall belong to the Society, who shall accordingly have the power to publish the whole or any part of such Essays; and the other Essays will be returned on the application of the writers; but the Society do not make themselves responsible for their loss. 7. The Society are not bound to award a prize unless they consider one of the Essays deserving of it. 8. In all reports of experiments the expenses shall be accurately detailed. 9. The imperial weights and measures only are those by which calculations are to be made. 10. No prize shall be given for any Essay which has been already in print. 11. Prizes may be taken in money or plate, at the option of the successful candidate. 12. All Essays must be addressed to the Secretary, at the house of the Society.

(By Order of the Council) JAMES HUDSON, Secretary.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.]

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. MR. RENDLE, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

TURNIP SEASON.

GUANO (Foreign and Potter's), RAPE-DUST, BONE-DUST, CLARKE'S COMPOST, and all other MANURES for the TURNIP CROP, to be had on the best terms, of MARK FOTHERGILL, 46, Upper Thames-street.

RARE ORCHIDACEÆ FROM THE EAST INDIES.

MESSRS. J. C. AND S. STEVENS, beg to announce they will sell by Auction, at their Great Room, 38, King-st., Covent Garden, on Thursday 15th August, at 1 o'clock, a Case of Terrestrial and Aerial Orchidaceæ, which have just arrived in fine health, and gathered during the months of January and February last, on the Steeps of the Ghaus, in the Presidency of Bombay. On view two days prior to the Sale; and Catalogues had of the Auctioneers, 38, King-street, Covent Garden.

BEDFORDSHIRE.—Very Eligible Freehold Estates in the parish of Sandy, cultivated as Garden Ground, and offering to Trustees safe and profitable Landed Investments, not to be influenced by any change in the Corn laws. Also a Freehold Family Residence, and other property, at Caldecote. The whole Tithe free and Land Tax redeemed.

MESSRS. BUSHWORTH AND JARVIS are instructed by the Mortgagees, with the concurrence of the Devisees in Trust under the will, to sell by Auction, at Garraway's, London, on Friday, Aug. 23d, at 12 o'clock, in 15 Lots, (unless previously disposed of by private contract), a very desirable Freehold Property, comprising 170 acres of land, with two Farm Homesteads; situate at Beeston, in the parish of Sandy; a district proverbial for the remarkable richness and fertility of the soil, and highly valuable as garden ground; a portion of which was late in the occupation of the deceased, and the remainder is let on long leases to responsible tenants, at almost incredibly high rents; and substantial additional advantages to the property may be looked for from the newly-projected Line of Railway, direct from London to York, which is contemplated will pass over this estate. There are likewise several Cottages, a Wheelwright's shop, and Beer-house, at Beeston Green. Also a spacious Family Residence, with possession, in a fine sporting country, and having extensive stabling and out-buildings, a Licensed Ale-house, eleven Cottages near thereto, and 4 acres of luxuriant garden ground adjoining, situate at Caldecote, only one and a-half mile distant from the preceding property, and equidistant with the capital Market Town of Bedford, and only 47 miles from London on the great north road.—Printed particulars, with plans, may be obtained on the premises at Caldecote, at the principal Inns in the neighbouring towns, and in London, of Messrs. Barker, Rose, and Norton, Solicitors, 30, Mark-lane; Messrs. Gregory, Faulkner, Gregory and Bourdillon, Solicitors, 1, Bedford row; at Garraway's; and at the Offices of Messrs. Bushworth and Jarvis, Land Surveyors and Auctioneers, Saville-row, Regent-street, and 19, Change Alley, Cornhill.

SOUTHAMPTON.—SMALL CONSERVATORY FOR SALE TO BE SOLD, a most complete and modern Green-house, with span roof and bow front; 18 feet by 12 feet, with two stages, furnace, &c., and with or without a choice Collection of Plants; the whole the property of a Lady, who is removing.—For particulars apply to WITHAM and ROSSARS, Auctioneers, &c., Above Bar, Southampton.

FARMS TO LET.—240 ACRES.

TO LET ON LEASE, a FARM in the County of Wilts, near B——th, of 110 acres—40 Meadow and 70 Arable—in a high state of cultivation, and Crops; with most complete and extensive Farm Buildings, adapted for profitable Scientific Farming, which may be entered upon immediately, and crops taken at a valuation, or at Michaelmas. In addition to which, another FARM adjoining, of 130 acres, principally Arable, will be added, on the lease expiring next year. Well situated for great Markets, and Turnpike-roads and Canals running through or close by them. The Tenant must prove his having a sufficient capital. Direct to Mr. EVANS, Estate Agent, &c., 46, Milsom-st., Bath, or (Thursdays) No. 2, Bridge-st., Bristol.

NEW AND RARE PLANTS.

W. J. EPPS begs respectfully to offer the following new and valuable Plants:—

Achimenes picta, 10s. 6d. to 15s.
" hirsuta (strong plants), 2s. 6d.
Buddlea Lindleyana, 10s. 6d., strong stocky plants, 21s. 6d. (new and splendid variety, from China, flowers of a beautiful blue)
Thunbergia chrysops
Drymonia punctata, 10s. 6d. (for description see Paxton's Magazine for June)
Habrothamnus fasciculatis, 5s.
Bruguiannia parviflora, 5s.
" Knightii, 5s.
Pentas carnea, 5s.
Clerodendron laxifolium, 7s. 6d.
Gloxinia Cartonii, 10s. 6d.
" bicolor, 7s. 6d.
" magnifiora, 7s. 6d.
" insignis, 7s. 6d. (these are the finest varieties known)
Begonia coccinea, 7s. 6d.
Rose, Cloth of Gold, 7s. 6d.
Fuchsia, Kentish Bride, blue corolla, pink tube and sepals, decidedly the finest variety sent out this year, strong plants, 2s. 6d.

Orders to be accompanied with a remittance or a respectable reference.—Bower Nursery, Maidstone, Aug. 1, 1844.

The Gardeners' Chronicle.

SATURDAY, AUGUST 3, 1844.

MEETING FOR THE FOLLOWING WEEK.

Tuesday, Aug. 6 Horticultural . . . . 8 p.m.

COUNTRY SHOW.

Tuesday, Aug. 6 . . Coppice Carnation and Picotee Show.

As Musical Promenades are not matters of horticultural interest, even although they are held in a garden, we think it unnecessary to say much of that which the noble President and the Council of the Horticultural Society so liberally provided last Wednesday for the disappointed holders of Exhibition tickets. It is sufficient to state that the effect of the admirable music was quite delightful—that the scene was very gay, the visitors highly gratified, and the meeting in all respects a very pleasant one, notwithstanding a shower or two and threatening clouds. The number present was 2267.

"I have a fine Mulberry-tree," says an inquirer, "upwards of 200 years old, and perhaps 18 feet high, of which I am extremely proud; but on account of some alterations I am going to make in my grounds this autumn, its roots will be buried 5 or 6 feet below the surface, if the tree is allowed to remain as it is; and I wish to know what is best to be done under the circumstances—whether to allow the roots to be so buried, or, if I shall be obliged to raise them, how, and at what time it will be best to do so." As this is a question the answer to which will doubtless interest other persons besides our correspondent, it seems to deserve a more prominent place than is usually given to such communications.

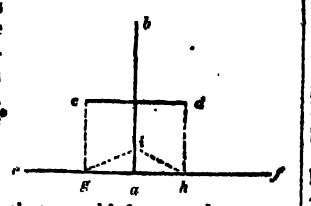
We know, from experience, that many people, otherwise well-informed, believe that roots may be buried to any depth without injury, and are surprised to find, when they act upon that belief, that their plants either perish or grow sickly. Do not we see, say they, that the roots of trees descend of themselves to great depths below the surface; and if so, why should we not also bury them to such depths? And it must be admitted, that if the premises in this case were true, the inference would be true also. But, with great deference to popular opinion, we are obliged to say, that roots never reach far below the surface of the soil, and when they do, it is owing to particular circumstances. Some years since, an acquaintance produced a Lucerne-root, 18 feet long, in proof of the common belief: but a little investigation showed that root to have been formed in the side of a gravel-pit, along the steep face of which it had pursued its course, without ever being above 6 inches from the surface.

The truth is, that roots must have access to atmospheric air, for chemical reasons into which we shall not enter just now; and the exclusion of it from roots, which necessarily happens when large masses of earth are heaped upon them, is as fatal as suffocation would be to ourselves. Under natural circumstances the tendency of the roots to keep near the surface is invincible; and this should of itself teach us how important to them is free access to air.

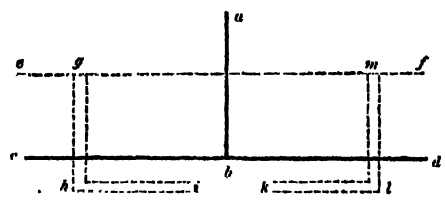
"The celebrated Duhamel," says Col. Greenwood, "wishing to protect his field from robbery from the roots of a row of Elms, cut a deep ditch between the Elms and his field. The roots, however, were not to be done. They of course followed the surface of the ground, whether down, horizontal, or up hill, and took the ditch 'in and out clever' into the philosopher's field. Duhamel thinks these were very cunning roots, and that they had an instinctive notion of the treat they were to have on the other side of the ditch, and grew *at* it. Had the philosopher built a wall in the ditch, and then filled it in, he would have beaten the roots, on account of their inability to leave the surface and get under the wall."

Nothing can be more just than this observation, and it puts in the truest light the question as to whether roots may be buried or not.

Nevertheless, although roots cannot be buried to any considerable depth without danger, yet it is possible to pile masses of earth round trees with impunity. The absorbing parts of a tree's root are its extremities, and provided they are in free communication with air, it matters little what becomes of the other part. Let us suppose that the figure *a b c d* represents a tree, of which *a b* is the height, and *c d* the spread of the branches. Then the spread of the roots would probably be equal to *e f* (a point that would have to be ascertained by examination), and if so, there would be no disadvantage in heaping up soil as high as *i*, over *g a* and *a h*, because *e g* and *h f*, where the extremities of the roots are found, would still be as freely exposed to air as before the operation.



Nor is it clear to us that earth might not be heaped over the roots of a tree to any required depth, provided air-passages were left among the roots. Let



us suppose, for instance, that *a b* represents the stem of a tree, and *c d* the spread of its roots, while *e f* shows the mass of earth placed over them. It is probable that if the shafts *g h* and *m l* were connected with the drains *h i* and *k l*, and there were several of them round the tree—say 6 or 8—it is probable that under those circumstances the tree would not suffer much or long; it would, however, be an experiment for the success of which we would not answer.

As to removing a Mulberry-tree 18 feet high and 200 years old, it is not to be thought of without considerable mutilation. If it is absolutely necessary to transplant the tree, the course which we should follow would be this:—We should get up its roots, to the extremities of the fibres, with what care we could; we should then cut off all the young wood, so as to render impossible any sudden drain upon the roots when the season for leafing returns; and we should, when transplanting it, throw a quantity of superphosphate of lime into the hole where the young roots are, so that they might be in contact with it. We should perform the operation as soon as the leaves had fallen, which would be after the first frost; and then, securing the trunk firmly in its place, we should leave the rest to Nature, with reasonable confidence in the success of the experiment.

It is not very long since an ingenious person undertook to prove, from historical evidence, that no such person as Napoleon Bonaparte ever existed. A writer in the *Hereford Times* is determined to rival the historical critic, for he asserts that the Potato was not originally brought to Europe from America, as we are simple enough to believe. On the contrary, "It would seem to be probable that the Potato was known as much as three hundred years before the Christian era, having been accurately described as the *αραχιδνα*." What a pity it is that gentlemen will not write about what they understand! A very little inquiry would have informed the correspondent of the *Hereford Times* that this Arachidna of Theophrastus was a Lathyrus, and in all probability either *L. tuberosus* or *L. amphicarpos*.

NOTES ON THE CONIFERÆ OF JAPAN.

So much interest is now taken in forming Pineta and in collecting Coniferous plants, that I have thought the following remarks on the kinds found in Japan, and lately described by Drs. Siebold and Zuccarini in the "Flora Japonica," may be of use to those interested in such matters, and also in directing those who may at some future time have an opportunity of visiting Japan, and procuring either plants or seeds of those kinds which yet remain to be introduced into England; and this is more particularly desirable, on account of their being quite hardy.

Abies leptolepis of Siebold. "Flora Jap.," Tab. 105, p. 12.—This is a very distinct dwarf kind of Larch, and is the same as Larix sibirica of Drs. Ledebour and Bunge, but is a very distinct species from that found in most English and foreign collections under that name. It is very dwarf, probably never growing more than 3 or 4 feet high; and forms a dense bush, with the leaves and cones as small as those of the American Larch. Dr. Bunge was the first who sent seeds to the Horticultural Society in a living state. The Siberian Larch described by Mr. Loudon in his last edition of the "Arboretum Britannicum," p. 1051, is a very distinct kind from that of Dr. Bunge, and is, as is there stated, only the Russian variety of the common Larch, with the branches more robust, but much less numerous. It is to be found in most collections under either of the following names—Larix sibirica, L. archangelica, or L. Rossica. The Abies sibirica of Dr. Fischer is a very different species from either of the above, and is the same as Abies pichta of the "Arboretum Britannicum," and belongs to the Silver Fir section. The authors of the "Flora Japonica," in describing this curious little plant, which always comes true from seed, should have adopted the name of Larix for that of Abies, as is now generally done; then, as Dr. Bunge's name (L. sibirica) had been previously applied to the Russian Larch, the present plant would stand as Larix leptolepis.

Abies tsuga of Siebold. "Flora Jap.," Tab. 106, p. 14.—This is the same as Abies dumosa of Lambert, Abies Brunoniana, Lindl., and Abies subdecidua, Wallich; and noticed by me in a former article in the *Chronicle*. It belongs to the same section as the Hemlock Spruce, which it very much resembles, and, like that species, only forms a large bush, or small tree, from 20 to 30 feet high. It still remains to be introduced, and would prove, no doubt, quite hardy.

Abies firma of Siebold. "Flora Jap." Tab. 107, p. 15.—This belongs to the Picea, or Silver Fir section, and greatly resembles in foliage and habit Abies pichta (Abies sibirica of Ledebour), but differs very much in the cones; the cones of Abies firma having the bracts considerably longer than the scales, while those of A. pichta are not so long as the scales; in fact, the cones more resemble those of the Picea pectinata, or P. cephalonica, than any other, but are not near so large. In the drawing given in the "Flora Japonica" the cones are represented as pendulous, but that is evidently a mistake. It is said to be a tall tree, and, no doubt, quite hardy; and probably only a northern form of the Picea pectinata, which still remains to be introduced.

Abies homolepis. "Flora Jap." Tab. 108, p. 17.—This very much resembles Abies Smithiana, of Dr. Wallich, both in cones and branches, and most probably is identical. The scales figured quite agree with those of Dr. Wallich's A. Smithiana, in the uneven margin and smaller size. This is very different from Dr. Royle's A. morinda, or Khutrow, a much taller and more robust tree. It is said to be a tree from 20 to 30 feet high, and belongs to the Spruce section; it remains to be introduced.

Abies bifida of Siebold. "Flora Jap." Tab. 109, p. 18.—This is the same as Picea Webbiana of the "Arboretum Britannicum," p. 1051, and is the P. spectabilis of Lambert, and Chilrow of the natives in the Himalayas. It belongs to the Silver Fir section, and is one of the most ornamental of the whole race of Pines, having beautiful large purple cones and silvery leaves. It forms a large tree in the Alps of Gossamthan, from 80 to 100 feet high, and is easily distinguished from all others yet known (except P. pindrow, of Royle), by its bifid leaves, and from that species in its much broader and shorter foliage. It is quite hardy, but is much injured in spring by late frosts.—*George Gordon.*

THE ROSE-GARDEN.—No. XV.

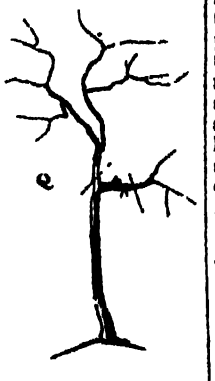
(Continued from p. 460.)

Pruning for Transplanting.—Having gone through all the detail necessary to secure the budded trees, and bring them into bearing, (observing that they are not on any account to be mangled, shortened, or the passage of the sap in any way obstructed during growth,) we now come to the time when the tree, having become ornamental, is fit to repay the labour laid out upon it, and to be planted out where its beauty may be seen. This is about the commencement of November, when the branches should all be cut down to about a foot long, and any leaves still left, cut off carefully midstalk, with a pair of scissors. Worked standards, carelessly treated, frequently do well the first season after transplantation; and then, dwindling away for a season or two, eventually die off.

Except where unavoidable, (as in the instance of the wild stock,) a tree should not be lopped root and branch at the same time; the double mutilation is injurious to it. Thus, half of each branch is continued, to keep up an intercourse with the root, and, when an action is established, cutting in the head is desirable. On removing trees, the fresh roots they have made, and the appearance of those which were left, will require attention in the application of the knife; in pruning a large root it should be cut to a lateral—in shortening a small to a fibre; where a plant has been examined and trimmed so recently, however, the knife should be sparingly used. And it may here be well to observe, that all cuts to remove branches, knots, or roots, should be quite clean, slanting (and deep enough to the stem, viz. even with it), and nothing left projecting, lest dead wood be the consequence, and the plant be eventually injured; all wounds should be carefully healed, and dead wood should, in all cases, be removed, and living bark encircle that which remains. The removal of the extraneous parts of the wild branch, and the stem left above it (if any), as subsequently directed, are best effected 18 months after budding, in March; if sooner, the bud is apt to be injured, as well as the wound left uncovered; but at this time they may be cut down to the base of bud and branch, and the mixture will secure the wound from injury. All summer and spring-made wounds, if clean cut, will partly cicatrize over the same year, and, if defended while in progress, will not do any future injury.

Replanting with a Dormant Bud.—In case of necessity a stock with a dormant bud upon it, of the summer's insertion, may be transplanted; but this is not desirable, although, if the wild branches to be cut off are large, it may be safely enough done, because a tree in its natural state, if the root and branches are in proportion to each other, has strength enough to carry its nourishment through the old wood, and then to make new. Old wood does not remain *in statu quo*, but is enlarged by a fresh

layer each year between the bark and wood, to enable it to bear the additional weight it has to support, as well as to enlarge the channels for the conveyance of sap to an increased head. Both these causes act upon trees which have their own natural weight to support, and therefore they are admirably adapted; only the last applies to evergreen and shrubbery, and therefore they can but barely be called so, being nearly of a size all the way up. On this showing, therefore, if the old wood be cut away, the injury done to the root in moving, is made up by the non-necessity of keeping up the old wood; and thus great part of the labour of the sap being saved, and its duty diminished, as well as a free course given to it, the buds succeed. This, it is apprehended, is the theory upon which all pruning for transplantation is founded. But, to explain this more fully:—Amongst trees, there are some of which the bark is so strong that the sap is confined in its ascent, and the tree becoming hidebound, is unable to increase, unless a slit be made from the top of the tree to the bottom; in order to give the sap full liberty to ascend. Those whose barks have become hardened and dry, may sometimes be seen to throw out buds all the way up the body of the branch, each bud being weaker than the lower one, the point of the branch dying away. This tendency of the sap to desert its former channels, may be observed in newly-planted thorns, particularly whenever they have not been cut back enough. Now, a transplanted tree frequently makes but little wood the first year, and consequently few leaves; and the intercourse between the roots and stem being thus, as it were, partially suspended, the bark becomes hard, and the next year the sap has a great difficulty in ascending. Where a check occurs in vegetation, a sufficient quantity of sap to start the leaves creeps up and accumulates by gradual steps; but when the warm weather comes on, and the shoots are expected to flourish, they are found to have no support from the root, and they go off accordingly. Shoots called Gourmands, on the contrary, and suckers, being soft and free, arrive to an astonishing size: witness the shoot of a Vine, which is frequently larger in the girt than the stem it proceeds from. A tree lately moved and planted with more branches than its roots can nourish, may be considered like a man in debt; the little it can do is absorbed by the demands upon it, and it is just able to keep up what it has. The next year sees it in the same state of weakness, with a hard bark, and the whole substance confined; it has a more difficult duty and unincreased means. Or if it has not sap sufficient to keep up its present head, its parts die off as the supply diminishes, and the tree grows weaker and weaker; and having exhausted all its supply, without an efficient return from the leaves, which are unhealthy, it dies off and perishes by degrees. On the contrary, a tree newly planted may be likened to a person who is promised that no demand shall be made upon him until he is enabled to answer it, when it is placed in the ground with no open buds upon it, and only enough closed ones to carry on the duty required when they are forced open, which will be sooner or later, according to the individual strength of the tree. The sap accumulates, the buds start at their proper time, and when started, the tree, weakened by its removal, has no length of half-dried wood to force the sap through, but the new buds throw out soft and large bases, the sap courses through them establish a give-and-take intercourse with the root at once; they require no more of the root than it can perform, and they are ready to repay with interest; and as a free passage for the fluids is as much the cause of health and vigour in the vegetable as the animal creation, the tree flourishes and succeeds. Thus, time to recover, and liberty in its work, are two great desiderata in removing a tree, and if these are attended to, a newly-budded stock may be removed, even from a hedge, with barely any root, into good ground, with perfect success, by the circumstance of the bud being placed as in this instance it would be, below the head, when the sap would have only half its original height to ascend; and as the weight of a hundred cubic feet of water would cause a fountain placed below it to rise to a certain height, and the same fountain, with only fifty feet of water above it, would play equally well, if it were only required to rise to a height proportioned to the decrease of force acting upon it: so a tree budded and cut as below would succeed, from the same cause.



Home Correspondence.

Melons, to fertilise.—Among some experiments which I have lately witnessed is one which, if not new, is interesting. Mr. Aitkin, gardener at Pitfour, in Fifeshire, is in the practice of treading the soil firm into the frames where he grows Melons; and he does not water the plants until the fruit attains a large size. The plants are allowed to grow until they nearly fill the frame, when they are pruned back until they show fruit-blossoms on the lateral branches. The strongest flowers are selected, and fertilised in the usual manner, the male flower or anther being left in the female blossom. The corolla is then gathered together by the one hand, while the other immediately draws the dry mould over it. The fruit is then covered until it attains the size of an Orange, when it is placed upon slates in the usual way. Mr. Aitkin uncovered a fruit, ripe with in my presence, none of which were injured by damp; indeed, his Melons in their various stages were finely grown. They are nearly white when first exposed to light, but very soon become of a bright green. Whether this system of growing the Melon may turn out of utility or not, it may at all events increase the facility for keeping vacation frees; and although the soil may be too cretic with many growers, perhaps it may suit equally well to cover them with dry sand, &c. on the slates where they are commonly set. Mr. Aitkin considers the extra temperature of the soil advantageous in the diffusion of the pollen. May this not suggest experiments regarding fertilising many kinds of flowers in dark warm cases, &c. while the leaves grow in the light?—*R. Arthur, Waterloo place, Edinburgh.*

Bees.—It has been a matter of dispute among apiarians whether it is advisable or not to co-operate with the working bees by assisting them in their warfare at this season against the drones. Some have contended that it is not; and, certainly, in the manner in which it has been usually attempted, it had better be avoided. But in the method I am about to detail, I put at rest the question as to any injury to be sustained by a family of bees, from the sudden abstraction from it of all the drones it had contained. Those who have paid attention to the habits of these, when an attack has commenced on them by the watchers, must have observed a disposition to congregate together, as if for mutual protection, in a distant part of the hive. It occurred to me that this tendency to separation might be turned to account advantageously, if the suitable means were provided. The hive on which my experiment was tried was a collateral one, viz., a centre and two side-boxes. The centre and one side-box were occupied by the bees, and pretty well filled; the other side-box was empty, the bees not having access to it. I resolved on making this a place of refuge for the drones, if they chose, and, accordingly, on the morning of the 14th June, when the work of proscription had evidently commenced, I opened a passage throughout nearly the whole length of the bottom edge of the empty box, about half an inch high, but leaving all the upper openings closed. On looking into the windows of the side box at night, I found my expectations completely verified, for the drones, to avoid persecution, had availed themselves of this asylum, and were clustered together in a compact body, like a new swarm, at the top of the side-box; and in no part of the other two boxes could I discover one. What effect the pangs of hunger might subsequently have had upon them I know not: but during the time they had thus voluntarily expatriated themselves, the drones showed no disposition to return to the parent hive, but continued to hang motionless, as I have described. In this state I left them till the following morning, when I shut off the communication between the boxes, and removed the one containing the drones. These I speedily suffocated, with the exception of about 200 that escaped. I had sometimes imagined that the number of drones in a hive at this season is larger than common computation makes it, and this was a point I wished to determine. The dead drones were carefully counted, and amounted to rather more than 2200 in number, besides those that had escaped, and doubtless many more had previously fallen victims to the working bees; of the latter not a single one was found amongst the drones. On the same day all commotion had ceased in the hive, and the bees went with unusual alacrity to work, and did well. The first drones I had observed in the stock of bees subjected to the operation, were on the 23d of May, and after their destruction I saw not a single one until the 23d of July, when a second hatching of drones commenced; but the greater part of the grubs were ejected from the hive in that state. It is needless, perhaps, to say, that so complete and sudden an abstraction of the drones, entirely refutes the notion entertained by some theorists, that their presence is essential to the fecundation of the eggs, previously laid by the Queen; but it seems also to prove that they are as little required in the hive for the generation of the necessary degree of heat in the hatching season, as has been surmised, or why is it that in a hive subjected to the cooling process of ventilation, (and the hive I have herein referred to was one of these,) the destruction of the drones usually takes place earlier than in one left in its natural state of warmth?—*H. Taylor, London.*

Preserves, to Cork.—In the receipt for preserving Currants, resin is recommended for the corks, but the brown cement, Parker's or Roman, answers much better and breaks off when wanted without any trouble. Mix it thinner than for cement, and put some over the nose of the bottles. It soon sets. The writer has used it for years.—*N. O. P.*

Large Gooseberry.—On the 29th of July, Mr. T. Gibson, of Nottingham, found a London Gooseberry, grown in his garden, of the weight of 35 dwts. 12 grains.—*J. F. W.*

Asparagus.—I can, from long experience, confirm all you recommend as to the application of salt to Asparagus beds; and I cannot comprehend the objection to this saline manure; it must either result from ignorance, or from the use of the salt at an improper season. Perhaps those gentlemen who write against it, applied it whilst the roots were in a dormant state; if so, I do not wonder at the destruction of their Asparagus plants. Let them try it just as the roots begin to move in the spring, and let the application be renewed two or three times during the growing season, and let them always select a wet day for the work, and I will vouch for it they will soon become converts to the use of salt in a proper season; but other manure must not be forgotten. I have quite renovated an old bed by an abundant use of salt. For many years I have known sea-weed, and strong sea-sand, taken wet from the receding tide, used as a dressing for Asparagus beds, and I never knew those beds to fail. Now the secret of this application is in the saline qualities of the weed and of the sand, and not in any substantial quality of the sea-weed, for when this is dissolved there is nothing left for the earth of the beds to feed upon. An attentive observer of the natural history of the Asparagus plant cannot fail to discern the propriety of using saline manures in its growth; and the same treatment as to sea-weed and sea-sand applies to sea-kale. Both these plants are indigenous in Cornwall, and there is an island near the Lizard Point, called Asparagus Island, on which that plant grows, and which I have frequently gathered it. In heavy gales of wind the sea breaks over the part of this island on which the Asparagus grows. The soil is sand, and loose decomposed vegetable substances.—*Cornubiensis.*

Acclimatising Plants.—In reply to Mr. M'Intosh, who lately desired some one to give the results of their experiments on the above subject, I would mention that I have for several years preserved many of the different kinds of Fuchsias in the open garden, in all situations, during the winter, by simply cutting them down when they have done flowering, covering them over with a spadeful of gravel and a small slate, or flag. The slate, or flag, I find useful in preventing the heavy rains in winter washing away the ground, and, consequently, starving the plants, as in this part of the country we have generally very wet winters. Last year having too very tall Fuchsias (Globosa), above five feet high, I did not cut them down, but took them up, potted them, and placed them in a room without fire, near to a window facing the north; gave them very little water, and treated them according to my notions judiciously; but to my surprise, I found in the spring that the main stem was dead; a proof that I might as well have saved myself the trouble I had been at, by cutting them down in the open ground, as above mentioned.—*Chemical Jack.*

Humphreys's Soluble Compound.—If Mr. Humphreys has professed to sell a compound whose utility depends on constituents which it does not really possess, the exposure which he has received in your *Chronicle* is no more than he deserves: but if your remarks were intended to convey the impression that in consequence of the absence of phosphoric acid, his Compound was of no value, I am bound in fairness to say that I have made some experiments with it, which show that it does possess fertilising powers of a very powerful character. They may arise from the nitrate of ammonia, and he may charge an extravagant price for his mode of making up that material: I am not able to speak on those points. But I can say that on the 22d June, I applied the Compound in the proportion recommended on the label, to a Petunia, Verbena, Fuchsia, Pelargonium, Campanula, Pulteneea stricta, and though only one application has been made, the invigorating effects are most visible. The leaves are larger, and of a deeper green than other specimens exhibit which stood by their side, and were similar in every respect, as far as I could perceive, before I made the experiment. Yellow leaves on the Pelargonium in more than one instance were turned into a fine deep green.—*C. I. D.* [Our correspondent will see that we have never said one syllable against Humphreys's Compound as a manure: our observations have been strictly confined to the question, whether it contains phosphoric acid or not? Nitrate of ammonia is a substance extremely rich in nitrogen, and well known to be valuable if judiciously applied.]

Colours.—In Notices to Correspondents lately, you ask some one to answer "N. O. P.," who wants to know why colours made by man are different by candlelight from daylight, whilst in those of Nature, hardly any difference is perceptible? I beg to answer him by denying the latter part of his position. I took a candle into my greenhouse for the purpose of testing the fact, and found that Verbena Hendersonii, which is a beautiful purple, appeared of a decided crimson. Sollya heterophylla, and angustifolia, which are of a light and dark-blue, appeared of a pale and deeper lilac. The corolla of Fuchsia formosa elegans, and globosa, which is a deep violet, appeared to be a dull dark maroon; and finally, the yellow decaying leaves of a Tropæolum pentaphyllum were of a fine deep green.—*C. I. D.*

Planting Pines in Tan.—Acting under the advice given in Mr. Hamilton's treatise on the Pine Apple, I planted out, a few days after his work appeared, 24 fruiting plants in tan, or rather tan and decomposed leaves, under the expectation that they would produce me some tolerable fruit; but to my great disappointment the experiment is a complete failure; and on examination I find the plants have not made a single root into the tan, and even where young roots were formed, they have died off. Now, these plants have neither been too hot, too wet, nor too dry, the bottom heat having been about 80°, which is regulated by a tank, and the material they were planted in was just what Mr. H. would have selected himself, being tan and leaves that had been at work about six weeks, and just in a decomposing state, mixed with about one fourth of new tan, just to give life to the mass. Six lights of strong succession plants were planted but at the same time, eighteen plants in tan, and the remaining eighteen plants in soil; the plants in tan turned yellow in a fortnight, and have made a poor sickly growth, while those in soil have grown in great luxuriance, and will shortly show fruit; and finally, six other lights planted out with suckers on the old stools in November last, in fresh loam over a tank, are growing as well as could be

desired, and will make magnificent plants by autumn. Now, with these facts and experiments before me, I think I am justified in cautioning the readers of the *Gardeners' Chronicle* against planting in tan; for though I have no doubt of Mr. Hamilton's success, or sincerity in recommending it, yet as it differs materially in quality in different localities, and as it is considered of no fertilizing power, I am sure it will be better to plant out in soil, than to run the risk of failure with tan. It is but justice to say, the plants which the experiments were made with were not stove, and were subjected to ammoniacal vapour, produced by pouring gas-water in the tank for ten days, which destroyed the points of the leaves, but did not kill the scale. Had all the plants been in tan, I should have attributed the failure to the use of ammonia; but as those planted in soil grew rapidly afterwards, I should not be justified in doing so. Such is the result of my experiments; and although I do not think a bit the less of Mr. Hamilton's book for the failure, being convinced his practice is good, yet I think it best that these facts should be recorded.—*Fedax.*

Pine-apples.—Having called upon many gentlemen's gardeners during the last nine months, the general conversation turned upon the culture of the Pine-apple; and they, finding that I was an intimate acquaintance of Mr. Hamilton, of Thornfield, inquired particularly about his mode of cultivating the Pine; but I am sorry to say, that most of them appear stiff-necked and stubborn—hard of belief. They could not, or would not believe it possible to fruit the Pine from the sucker still remaining upon the old stool; and when I stated that it certainly is possible, and that annually, whereby no succession-house was required, they some of them broke out into a rage, saying—"Do you consider us all fools, and are we to abandon the practice that we have followed all our time, and our fathers before us?" This was very mortifying to me, having known Mr. Hamilton for these 11 years, 5 of which I was a near neighbour. Although these last six we have been separated, I am well aware of his method of cultivation, following the same practice myself when I have the opportunity; and I can assert, that when we were near neighbours, we were not excelled in the neighbourhood of Manchester; and I can safely add, that Mr. H. ably maintains his ground. I dare venture to predict that the gentlemen of Manchester will not be satisfied till their tables are supplied with as noble Pines as Mr. Phillips's. About a month back I called upon Mr. Hamilton, who immediately [illegible] my attention to a stock of Pines, saying—"You [illegible] have improved in my practice since you were here last"—it being then six years since I saw him; and, taking me to a pit *of* plants—one-half of which were in pots, the other half turned out of the pots, and planted in the tan, he said, "Do you perceive any difference in this pit of plants?" Yes, I replied; this half (pointing to those that were planted out) are a year older than the other. His answer was—"No; they are all of the same age; and these were planted out the first week in March last." We then went into the fruiting-pit, and some noble fruit there was. Mr. H. then said—"Do you recollect how heavy was the largest Montserrat that you saw here?" Yes, I said; it was 5½ lbs. "Well," he replied, "that was the heaviest that I ever grew whilst I kept them in pots; but since I have turned them out, I have grown the same sort to 7 lbs." I have no doubt that there are some of the present "shows" that will attain that weight; and be it remembered that these are all suckers upon the old stools, some of them being the third and fourth annual crop. Should any of my brethren of the spade doubt this, if they will take a trip to Thornfield, Mr. H. will have much pleasure in showing them the proofs upon the premises, and convince them of the facts; and surely facts are stubborn things.—*John Hayward, Summerhill, near Newport, Salop, July 29.*

A Habit of the Common Wasp.—I felt puzzled to find a reason why female wasps frequent the common Laurel early in spring. I had observed the fact so repeatedly that I determined to watch them; and then perceived their object was to obtain the nectareous juice secreted by the three or four glands seated on either side the midrib and near its base, on the under surface of the leaf. As I presume the wasps of other parts of England have the same habits as those which are born in this neighbourhood, the above observation may be serviceable to wasp destroyers. They have only to watch the Laurels in spring when the females are thus attacking them, and they may prevent the formation of as many nests as they shall destroy females at that season. A hoop gauze net, such as entomologists use, will readily serve for their capture.—*J. S. Henslow, Hitcham.*

Peas.—The notice of the comparative earliness of some of the new Peas, published in the *Chronicle* last year, seems to have induced rather numerous trials of the sorts I then named, and the result has been in some cases in favour of, and in others against the Early May, under which name, however, it is now evident that more than one variety is known. The Pea I have called Early May is known by that designation, and also as Clutton's Early, in this part of the country, and is identical with Cormack's Prince Albert; at any rate, I cannot perceive any real difference between them. I have been told lately that it was first brought into this neighbourhood from some part of Sussex, where it is called by some other name. In order further to test the earliness of this Pea, as compared with Farnes's First Early, I sowed both sorts side by side on the 14th of February, and their after-treatment was precisely alike; the Early May was fit for use on the 24th of May, the other not till the 30th, thus giving nearly a week in favour of the former. It should be known, however, that Farnes's [illegible] is a very desirable [illegible] and is a very desirable [illegible] the Early May. Another sowing on the 15th of March gave the same result. Shilling's Early Green is about a week or ten days later. I take this opportunity to recommend the Scimetar as a more productive variety than the well-known Green Imperial. The Auvergne is also an excellent bearer, each pod containing from seven to nine peas.—*J. B. Whiting.*

Whitney's Composition.—Have you had any complaints of Whitney's Composition rendering the calico tender? I covered half a greenhouse with Whitneyed calico, and the other half with the mixture recommended by "Devoniensis;" the latter is not quite so transparent, but the calico (which is a very good one, for which I gave 6*d.* a yard) is quite sound and strong, whilst the former is as tender as cap-paper.—*W. Wilkinson Platt.*

The Poinaise Heating.—The system of heating described by Mr. Murray in last week's *Chronicle*, appears to me as objectionable as the old flue mode of accomplishing this, without its advantages, and scarcely reconcilable with our present knowledge of the subject, at least if I rightly comprehend his plan. It appears to me objectionable to place the heated air at the back of the house; our common notions on this are to place the flue or chamber as near the front as possible; that would be fully recognising the principle which Mr. M. lays down as the basis on which his system is founded, as the coldest air is at the front of the house; but how this air is set in motion does not appear intelligible by the plan. The second objection which strikes me as fatal to his system, is that of "admitting fresh air from without, keeping up a healthy atmosphere," as indicated in the plan at C, C. Now, how does the air become unhealthy? Why, by the noxious gases which escape from the stove, as there can be no other means of contaminating it. Air is the same in all cases, unless it is rendered unwholesome by the decomposition of some material, such as tan or dung, or the noxious impurities generated by flues. If hot water was used in the same house, it would be quite unnecessary to think of admitting air from without.—*R. Glendinning.*—[We are informed by a gentleman who has seen this house, that nothing can exceed the health of the Vines.]

Local Horticultural Societies. — A Horticultural Society was formed at Torquay last summer, under the title of the "Torbay Horticultural Society," and held its fourth Exhibition on the 19th of July, 1844, when Mr. L., a jobbing gardener of Dartmouth, became a subscriber, and gained an extra prize for Martynia fragrans, which I consider very unfair. In the regulation for the Exhibitions, the fifth rule says—"No article shall be exhibited for a prize unless *bonâ fide* the property of the exhibitor, for two months before the days of exhibition." The plant in question was not the property of the exhibitor, but the property of one of his many employers. Is it right, or is it fair, for a jobbing gardener to exhibit in the same class with gentlemen's gardeners? If the Secretary tolerates such things as these, the Torbay Horticultural Society will soon share the fate of the Dover, Faversham, and Eltham Societies; namely, start up to-day, flourish to-morrow, languish, and then disappear. If this practice is not checked in time, the Society will die in its infancy. If the Society wishes to offer prizes for jobbing and for market gardeners, why not have a class for themselves in which to exhibit, as is the case at Chiswick?—*A Gardener, Dartmouth.*

Flower Gardens—The Season.—Reading the Calendar of Operations, relating to the Flower Garden, I find that the writer, like many others, has suffered through the influence of this uncongenial season. I cannot, however, agree with him in the statement respecting bedded out plants. Indeed, from what has come under my own observation, I am fully convinced of the contrary. Last week I visited the gardens of the Rev. R. Boyl, Marston Rectory; likewise those of S. F. Phelp, Esq., Warminster, besides those at Longleat, the seat of the Marquis of Bath—and it is really gratifying to witness the vigour and beauty of the various beds in the different flower gardens. I have been in the habit of visiting each of those places for some years past, but never on any former occasion did they appear so exquisitely beautiful; and much praise is due to the gardeners, who, through perseverance, have rendered them such, under most unfavourable circumstances.—*E. C.*

Societies.

BOTANICAL SOCIETY OF LONDON.

July 5. Dr. Bossey in the Chair.—Specimens of the following plants were exhibited, sent to the Society by Mr. Hewitt Watson:—Carex elongata (Linn.) found abundantly in Weybridge marshes. This locality is interesting to the metropolitan botanist; the nearest habitat, previously on record, being in the county of Salop.—A pubescent flowered variety of Bromus commutatus (Schrad.) found plentifully, along with the more abundant glabrous form, in a meadow by the river Mole, between Esher and West Molesey, Surrey. This variety affords another instance to prove the little importance which can be given to the character of smooth or downy flowers, as a specific distinction in this genus. It will form an addition to the London Catalogue of British plants, (b. subnens) to be entered under Bromus (1355) commutatus.—A specimen of Lolium multiflorum, the root of which was dug up, when in flower, in a sown field last year, and the plant is now copiously flowering in Mr. W.'s garden; this proving its perennial existence, although the alleged annual root of L. multiflorum has been considered the best distinction between this supposed species and L. perenne. The other alleged differences are equally invalid.—Garden specimens of Festuca pratensis (Huds.) and arundinacea (Schreb.), to show the strongly marked differences between them; the latter being three times the size, extremely hard to the touch, and very dissimilar in its flowers, and mode of inflorescence. In F. pratensis the branches of the panicle are erect after flowering, the palese or glumes obtuse and awnless, and the sheaths of the leaves nearly smooth. In F. arundinacea, the branches of the panicle are horizontal or reflexed, the glumes acute and awned, and the sheaths and leaves very rough. Mr. W. admitted F. loliacea and pratensis to be forms of one species; indeed, he had shown this to the Edinburgh botanists, just after they had printed their Catalogue, in which F. loliacea is kept as a distinct species, while F. pratensis is united with F. elatior, (Linn). But he was not yet prepared to combine all three, and the F. arundinacea likewise, under the one name of F. elatior, as is done by Mr. Babington. Mr. W.'s plant of F. arundinacea was originally brought to his garden from the Isle of Wight, and is now a large sheaf, with hundreds of flowering stems, four to seven feet high, and the root-leaves half a yard long.—A specimen of Œnanthe pimpinelloides (Linn.), to show the cylindrical form of the fruit, which exactly corresponds with that of the Sardinian plant (admitted to be the true species), except in having less callosity at the base. This was taken from a plant in Mr. W.'s garden, the parent of which had been brought thither from a hedge bank in the Isle of Wight. Mr. W. recognised a second species in Britain, after sent to him under the name of Œ. peucedanifolia, and readily distinguished by its turbinate or elliptic fruit, on extremely short pedicels, and more resembling Œ. globulosa, than Œ. pimpinelloides. The peculiar form of the root to some other specimens, resembling that of a Dahlia in miniature, induces a supposition that there may be a third species, although he has satisfied himself that the roots vary greatly with age and situation, and do not afford such certain characters for distinction as may be found in the fruit. The Œ. Lachenalii (of Babington's Manual) is apparently the species frequently sent under the name of Œ. peucedanifolia, though occasionally named Œ. pimpinelloides by English botanists. He would illustrate this subject more fully on another occasion. Specimens of the garden Fennel, to show the little importance to be attached to the difference of the stems being fistulous or filled with pith. These specimens were sections of stems arising from a single root, of different dimensions, but of nearly equal age and stage of development. Some of them (the thicker) were hollow, others filled with pith. A question respecting a distinction of species, between the wild and garden Fennels, had been raised in consequence of one author describing the stems as fistulous, while another finds them solid; but since both conditions can exist on one root at the same time, such a distinction would be quite inadmissible for a specific character.—A stem of Hieracium Lawsoni, which had borne 20 flowers, in Mr. W.'s garden, this spring; and others had flowered more numerously than this one. In the wild state on the Grampians (the locality from which the plants were brought three years ago,) this species has usually two, three, or four flowers only. He had seen a wild Irish specimen, with six or eight flowers. No care had been bestowed upon the plants in his garden, except occasional watering in dry weather, and removal of weeds from about them. He sent the specimens merely as an example of the little dependence to be placed on the number of flowers on the Hieracia; indeed, among the Compositæ generally. A wild plant, growing free from the interference of other plants about it, might also increase its flowers five or ten fold, as practical botanists must be well aware from observation. —Read, A Synoptical View of the British Fruticose Rubi, arranged in Groups, with Explanatory Remarks, (Part 4,) by Edwin Lees, Esq., F.L.S. The paper was accompanied by drawings and specimens.

BOTANICAL SOCIETY OF EDINBURGH.

July 1.—This, the last meeting for the session, was held in the Royal Botanic Garden, Professor Graham in the chair. The Treasurer read a paper on three Genera of Desmidieæ, by Mr. J. Ralfs, Penzance, viz., Desmidium, Gloeoprium, and Schistochilum. Mr. J. M'Nab read a portion of his Journal of a Tour in the United States and Canadas. In the last notice, Mr. M'Nab gave an account of the excursion from Albany to Troy, and thence to Stillwater, with notices of the most interesting plants observed during the journey thither: the present portion is chiefly confined to observations on the Botany of the same district. July 15. Few species rewarded their exertions, the greater portion being out of flower; of those gathered, the most attractive were Lobelia cardinalis, and Habenaria fimbriata, both in great abundance, the rich spikes of scarlet flowers of the former being admirably contrasted with the delicate purple blossoms of the latter; these two species formed the bulk of the flowering plants; mixed with them, but more sparingly, Habenaria lacera and Neottia cernua occurred, with Apocynum androsæmifolium, the latter being the most abundant, and covered with a beautiful coleopterous insect, which appeared to be peculiar to it. On the sloping banks of the river, in thickets of Sumachs, Hazels, Willows, &c., a gigantic species of Solomon's Seal, *Polygonatum latifolium*, was observed; some of the specimens measured seven feet nine inches in height, with roots four inches in circumference. In several places the ground was so matted over with the stems of the Poison Oak, *Rhus toxicodendron*, that the hands of the party were much blistered in

endeavouring to extricate themselves. July 16. Having preserved a calm, the party proceeded about two miles down the river; during this short voyage they observed vast quantities of the shells of the fresh-water mussel, covering the banks newly killed by the river's edge; they had been collected by the musk rats, with which the banks evidently abounded. At this place the rapidity of the stream, which had hitherto prevented the growth of aquatic plants, became much diminished, and they now observed large portions of its surface covered with Nuphar Kalmiana and advena, together with Nymphæa rosea, all beautifully in flower, and growing from a depth of eight feet. Overhanging the banks on both sides of the river, Salix petiolaris was in fine condition, its broad, leafate stipules adding much to the beauty and singularity of its appearance; here also, some fine specimens of the Virginian Poplar, *Populus monilifera*, were seen: the largest stems measured were nine feet in circumference, and about 70 feet in height. Leaving Stillwater the party proceeded by canal to Whitehall; on the banks of the canal, and extending over the neglected fields, such quantities of the Great Mullein, *Verbascum Thapsus*, were observed as to give the idea of its having been sown for a crop: the fact of its growing on the soil which had recently been thrown out of the canal, as well as on the sloping banks, convinced them that the seed must have lain buried in the earth, probably for a long series of years, and that, therefore, it is not likely, as has been generally supposed, that this plant has been introduced by the emigrants, but rather that it is indigenous to the country. The common St. John's Wort, *Hypericum perforatum*, was also extremely abundant in this district, although sparingly seen before, and is described by Mr. M'Nab as one of the greatest evils the American farmer has to contend with, being supposed to be highly injurious to cattle, especially horses, causing blindness, which prevailed in many parts to a fearful extent. On reaching Whitehall, situated at the southern extremity of Lake Champlain, two remarkable species of Ferns were observed for the first time; namely, Asplenium rhizophyllum, and Aspidium bulbiferum, the former growing on the surfaces of moist rocks, where it throws out its fronds, which take root at their extremities; while the latter bears a number of small bulbs along the rachis which, when mature, fall off and vegetate in the crevices of the rocks. Many other interesting plants were observed, but few of them in flower, with the exception of Rubus spectabilis, Desmodium acuminatum and canadense, and a few others. Mr. M'Nab afterwards exhibited several specimens of Gooseberries and Currants, which had been kept for the last two years in glasses, containing water only, in which they had now matured their fruit for the second time; and it was remarkable that the Gooseberries (Yellow Amber), and the Red and White Currants, were as highly flavoured as the same sorts under ordinary treatment.—Mr. Trevelyan exhibited specimens of some remarkable varieties of Taraxacum officinale, found on the sandy beach near Arbroath, and a curious variety of Aspidium filix fœmina from Braemar, having the frond branched at the extremity; the specimens were afterwards presented to the Society.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

July 20.—This Exhibition of plants and promenade took place at the Society's Garden, Inverleith. The day proved remarkably favourable, and the assemblage of company was brilliant. The plants were confined to the new Hall, the centre and side-tables of which were completely filled with choice exotics in flower. The large marquee which used to occupy the principal lawn having been removed, the whole of that beautiful piece of Grass was left free to the promenaders. This was not a competition meeting, and no medals were, therefore, voted; but honorary rewards were made to the chief exhibitors. The nurserymen contributed largely. Messrs. Dickson and Son sent a magnificent collection, including many of the new Pelargoniums and Fuchsias; among the latter, Edina and Exoniensis, the former a seedling raised at Inverleith, and remarkable for the large size of its blooms.—Messrs. Lawson and Sons exhibited a tray of novelties, including Quercus Mirbeckii, Daubentonia tripetiana, and Cercidendron brevifolium.—Messrs. Purdie and Merrilees showed some well-grown Heaths, and an admirable Lilium lancifolium cruentum, having 17 flowers and buds on one stalk.—Messrs. Carstairs, Kelly, and Co., sent a collection of greenhouse plants, including Hydrangea japonica and an admirably-flowered specimen of Boella ciliata, rarely seen in such perfection. From the same establishment was a plant of Myatt's Prince Albert Strawberry, remarkable for combining the qualities of high flavour with fruitfulness.—Among the productions of Amateurs, was a collection of Seedling Calceolarias, raised by Mr. I. Anderson. Several of these were fine, and in particular Prince Albert, King of Saxony, Duke of Buccleuch, Mary Queen of Scots, Orion, and Cupid, now exhibited for the first time, besides Queen Victoria, General Robertson, Countess of Rosslyn, Hon. Mrs. P. Ramsay, and Lord Justice-General, which had been shown at a former meeting.—Mrs. R. Haig sent tastefully arranged trays of Ericas, Geraniums, and Cranulas, with handsome flowering specimens of Cattleya Forbesii, Oncidium papilio, Erythrina lancifolia, and Calathea zebrina.—From Melville Castle were well-grown Heaths; also trays containing British and exotic Alpines, besides well-managed plants of Stanhopea insignis and Miltonia spectabilis.—Some admirably grown Heaths were sent from Rosepark, particularly Erica ventricosa pruganera, and E. tricolor dumosa; and a beautifully-flowered, though small, Pimelea spectabilis, and a new sweet-scented Verbena.—Dysticium Sieberianum had two specimens of Achimenes longiflora, the largest measuring 6 feet in circumference round the branches, and marked as a cutting of last year; together with two very large and high-coloured Cockscombs, said to be the finest arborea.—Dr. Neill showed a remarkably fine Oncidium pulvinatum, having a flower-spike 7 feet long, magnificently clothed with orange and yellow blossoms; besides well-grown plants of Zygopetalon maxillare and Calanthe veratrifolia.—Mr. Oliver exhibited some capital greenhouse plants, among which Phœnocoma prolifera, Erica princeps, and E. inflata, were truly striking.—Mr. Keith sent seedling Pelargoniums, and a tray of lovely greenhouse plants.—Captain Falconar exhibited 80 varieties of French, Hybrid China, and Moss Roses.—From General Robertson was Viscaria oculata, a new hardy annual.—From Mr. Henderson were double Marigolds, Dahlias, and a well-grown specimen of Gesnera fasciculis.—Mr. Symington showed Fuchsias.—Mr. R. Girdwood, a fine flowering plant of Phlox bicolor, newly imported from the United States.—Mr. Edmond showed Pinks; and Mr. Cushnie, two fine specimens of Statice puberula, covered with flowers.—An Oleander-plant from the Society's garden excited much attention, being 5 feet high, and in full flower, although it had been hanging in the air for the last three years, and supported wholly by moisture supplied by a syphon of worsted threads, communicating with a small suspended jar containing water. Among other choice plants from the same collection were Nepenthes distillatoria, 7 feet high, and displaying its curious pitchers; large flowering specimens of Lilium japonicum and Cereus speciosissimus; with Campanula stricta and Drymonia punctata.—Mr. Montgomerie sent specimens of the Precoce de Tours Plum, from an open wall without artificial heat; the fruit had already made considerable approach to ripeness, and is found to be earlier, on the west coast of Scotland, than the White Primordian or than Wilmot's Early Orleans.—Specimens of ornamental flower-pots, and vases for containing flower-pots, constructed of zinc, were exhibited by Mr. Macintosh, of Edinburgh.

Reviews.

Essays on Natural History, chiefly Ornithology. By C. Waterton, Esq. 12mo. Longmans.

Who is there that loves the woods and the fields, and the living things which fill them, who does not admire the honest, straight-forward zeal of Mr. Waterton? which, whether directed towards the maintenance of his religious and political opinions, or the description of his adventures, or the elucidation of the habits of his winged favourites, is always full of entertainment and instruction. We are neither Catholic nor Jacobite; but the best Protestant, and staunchest Hanoverian, can scarcely read Mr. Waterton's autobiography, without having his misgivings as to the possibility of either Reformation or Revolution having been effected, had all the friends of the fallen causes possessed his energy and honesty of purpose.

What renders Mr. Waterton so particularly agreeable is, his sterling English feeling; his unconcealed contempt for *namby pamby*, in thought, word, or deed; and the skill with which he brings his great powers of observation to bear upon the subjects of his pen. With him there is no trusting to other people, no borrowing from books, no repetition of the hackneyed tales of credulous naturalists, but all is as pure as the air that blows over the lake of Walton Hall. The reader feels that he is a man to be implicitly trusted; and no one rises from the perusal of his writings, with a doubt about the perfect truth of his narrative.

The present volume is an instance of his benevolent character. It is published for the benefit of Mrs. Loudon and her little girl, and we have no doubt that it will prove a very effectual assistance to them. We can confidently say, that it will amply repay the reader for its perusal. It treats too little of botany and gardening, and too much of owls and rollers, squirrels, wrens, robins, swans, Canada geese, and caymans, to furnish us with much that can be advantageously extracted. The following extracts will, however, as we hope, tempt the lovers of natural history to become acquainted with the remainder of the book:—

"*The Wren, the Hedge-Sparrow, and the Robin.*—The song of these three well-known warblers may be termed perennial. Formerly it was very rare for me to hear the notes of the second whilst the storms of winter raged through this little valley. But now it is otherwise; for the yew shrubs, which have grown up into a spacious cover, seem to be more congenial to the habits of the hedge-sparrow than any other evergreen; and it may be seen perched near the top of these, and warbling there, from time to time, in every month of the year. Here is a problem to be solved in the economy of these three soft-billed little birds, before we can safely come to the conclusion that severity of climate, and want of food, are the real causes why our summer birds of passage leave us shortly after the sun has gone down into the southern hemisphere. Like them the wren, the hedge-sparrow, and the robin, are insectivorous, and they differ not in the texture of their plumage; still they do not accompany their departing foregoers, but prefer to remain in this cold and stormy quarter of the world, throughout the whole of the year. They may certainly suffer more or less during the chilling period of frost and snow; nevertheless, their bread is always kept up; and we find, on the return of spring, that they have not suffered more than others which are apparently better enabled to brave the rigour of the English winter from their size. There is yet another point which wants settling in the habits of these birds. I allude to their song. When we are informed that inspiration is the main inducement to melody in the feathered tribe, we have only to step out after sunrise into the surrounding evergreens, and there we are sure to hear either the wren, the hedge-sparrow, or the robin, in fine song, although not a single twig has been laid, or a piece of Moss produced in furtherance of a nest, wherein to raise their future young. Certainly, in this case, neither love nor warmth could have had any hand in tuning the winter lyre of these little sons of Orpheus. The wren is at once distinguished in appearance from our smaller British songsters by the erect position of its tail. Its restlessness, too, renders it particularly conspicuous; for, when we look at it, we find it so perpetually on the move, that I cannot recollect to have observed this diminutive rover at rest on a branch for three minutes in continuation. Its habits are solitary to the fullest extent of the word; and it seems to bear hard weather better than either the hedge-sparrow or the robin; for whilst these two birds approach our habitations in quest of food and shelter, with their plumage raised as indicative of cold, the wren may be seen in ordinary pursuit, amid icicles which hang from the bare roots of shrubs and trees, on the banks of the neighbouring rivulets; and amongst these roots it is particularly fond of building its oval nest. The habits of the hedge-sparrow are not quite so solitary as those of the wren. It will approach the window in cold weather, and there pick up a scanty meal with the robin, the chaffinch, and the house-sparrow. Still, we very rarely see three hedge-sparrows in company. As these birds inhabit low shrubs and the bottoms of Hawthorn fences, and are ever on the stir amid old pieces of wood and lumber, put apart for the use of the farm-yard, we cannot be surprised that they, as well as the robin and the wren, which are fond of such localities, should fall an easy prey to the cat, the weasel, the foumart, and Hanoverian rat, which last all the world knows to be uncommonly ravenous. The last of this sweetly-warbling trio, whose habits I am attempting to describe, is pretty cock-robin, the delight of our childhood, and an object of protection in our riper years. Wherever there is plenty of shelter for him his song may be heard throughout the entire year, even in the midst of frost and snow. In the whole catalogue of British birds, cock-robin is the only one which in his wild state can be really considered familiar with man. Others are rendered tame by famine and cold weather, and will cautiously approach the spot where food is thrown for them; but the robin will actually alight upon your table, and pick up crumbs on your own plate. When I have been digging in the pleasure-ground he has come and sat upon my spade; and by every gesture proved his confidence. You cannot halt for any moderate time in the wood but cock-robin is sure to approach, and cheer you with an inward note or two; and on such occasions he has more than once alighted on my foot. This familiarity is inherent in him, and not acquired. I am not acquainted with any other wild bird that possesses it. In Italy this social disposition of his does not guarantee him from destruction by the hand of man. At the bird-market near the Rotunda in Rome, I have counted more than 50 robin-redbreasts lying dead on one stall. 'Is it possible,' said I to the vender, 'that you can kill and eat these pretty songsters?' 'Yes,' said he, with a grin; 'and if you will take a dozen of them home for your dinner to-day, you will come back for two dozen to-morrow.'

"*The Yew tree.*—I never cast my eyes on the mouldering fabrics which once adorned this land, without renewing my veneration for the memory of the holy and useful monks who have gone before us. There is still enough left of the falling walls to show how much these faithful friends of the poor and needy must have been esteemed through the whole extent of the nation; and when I sit me down under the dark foliage of some ancient Yew-tree, which has escaped the fury of the destroying Vandals, and think of the miserable state to which the sons of poverty are now reduced, I cannot help heaving a sigh, whilst my very heart itself seems to sink within me. I am extremely partial to the Yew-tree. It has already repaid me for the pains which I have taken in its cultivation; and when I resort to my usual evening stand, in order to watch the flocks of sparrows, finches, and starlings, whilst they are dropping in upon the neighbouring Hollies, I feel not the wintry blast; as the Yew-trees, which are close at hand, are to me a shield against its fury; and, in fact, they offer me a protection little inferior to that of the house itself. I have not been sparing in the arrangement of ornamental Yew-trees. Just 60 yards from the bridge, which joins the island to the main, there is a Yew-tree crescent, 300 feet in extent; and not far from this there are some fine clumps of the same plant, producing a very pleasing effect. Should he who will succeed to them when I am low in dust have the philosophy to set at naught the modern disapprobation of ornamental planting in lines and circles, he will always command the sweet warblings of unnumbered songsters, from earliest spring to latest summer; for the Yew-tree is a kind friend to the feathered race; and the wren and the hedge-sparrow will sing sweetly amidst its foliage throughout the autumn, and even after the winter season has set in. The cultivation of the Yew-tree is sure and simple. It will thrive in any soil that is clear of swamps; but, the richer the soil, the richer is the appearance of its foliage; and if the planter will trench his ground from two to three feet deep, throwing back into the bottom the worst of what has been removed, and reserving the best for the

upper climates, but it may be handsomely managed as a rapid growing shrub. Although the Yew-tree is a hardy plant, and found in cold regions (Norway, Russia, &c.), still it will not resist severe frosts, especially when scattered sailing time on the bleak hill exposed to the wintry blast. Our readers will have no trouble in finding out the keenly on its foliage, and under the skin which is exposed to their fury in thin and wrinkled leaves. Look at the face of a metropolitan alderman made fat on Turtle, Sunday morning, after having complied through the week days of unmitigated fasting. Provided you do not care about having your Yew-tree in all the exuberance of unpruned vegetation, you may apply the pruning knife and shears with a safe and an unsparing hand; for the Yew-tree will submit to curtailment with good effect, and without any apparent diminution of vitality. If we clip its southern side in imitation of a wall, and allow that which faces the north to flourish in its natural state, we shall have from the same line of trees a walk impervious to the blast of Boreas for ourselves, and a provision of berries for the birds, at a time when their more ordinary supply of food is considerably on the decrease. Charming is the appearance of the Yew-tree after the sun has passed the autumnal equinox. The delicate crimson of its fruit, with the dark-green leaves behind it, produces an effect so pleasing to the view, that it can scarcely be surpassed by anything which the southern forests present to the lover of Botany, as he wanders through their mazes."

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

PENTAS CARNEA. Flesh-coloured Pentas. (*Greenhouse Shrub.*) Rubiaceæ. Pentandria Monogynia.—This beautiful half-shrubby plant has been lately introduced to this country from the Continent, and grown in several of the gardens and nurseries about London under the name of Spanea carnea. It was first received at the Botanic Gardens of Kew, from Mr. Mackoy of Liège, and has since been obtained by Messrs. Rollisson and others, from the Jardin des Plantes at Paris. No memoranda were furnished with these plants respecting the native country of the species, and we are, consequently, unable to state with certainty what part of the world claims it as its production. Another species of the genus, P. parviflora, having been discovered by Dr. Vogel, in the late Niger expedition, growing in the western part of Tropical Africa, near Acera, and other plants nearly allied being found in the same neighbourhood, Sir William Hooker, in the "Botanical Magazine," conjectures this to belong to the same locality. As an ornamental plant for the stove, or possibly for a warm greenhouse, this will be hailed as an acquisition of some importance. It has an excellent robust habit, and produces a number of partially-spreading branches, forming a handsome bushy plant, clothed with an abundance of large, broad foliage, concealing the stems to the very base with its lively verdure. These branches usually bear flowers as they are formed, even when the plant is in an exceedingly dwarf state, without appearing to have any injurious effect on the continuing growth of the specimen. The blossoms are collected into corymbose clusters and stand erect, displaying their lovely soft flesh-coloured hue to the utmost advantage. When the flowers are first developed they are very pale, but gradually acquire colour with exposure. If the plant is kept growing in a favourable situation, it will continue to blossom, with the formation of new branches, for the greater part of the year; and such is the rapidity of its growth, that it will form a large bush in the course of a single season. Like most soft-wooded plants of quick growth, it requires a rather large pot, and a strong soil, rich in nourishing properties. And it will probably be beneficial to use an occasional application of manure water, to increase its vigour, especially where large specimens are desirable. In the summer months there is little doubt that it will be found to succeed satisfactorily in a close greenhouse, although in winter and spring a little more warmth is necessary. It is easily propagated by taking off the extremities of the young shoots as soon as they have acquired a little firmness; and, inserting them in a pot of sand, covered with a bell-glass, and placed in heat, they will take root in ten days or a fortnight, and should be immediately potted into separate pots and encouraged to grow. The generic name, Pentas, has been applied by Mr. Bentham, from the division of the corolla being quinary instead of four-cleft, as in other allied genera. Although general, this is not constant, as flowers on the same head are four and five-parted. Three or four plants, which have hitherto been arranged under other genera, are suspected by Mr. Bentham to belong rightly to this.—*Paxton's Magazine of Botany.*

STERNBERGIA SESSILIFLORA Hartwegii. Mr. Hartweg's Stenomesson (*Greenhouse bulb.* Amaryllidaceæ. Hexandria Monogynia.—A pretty little bulbous plant found by Mr. Hartweg at the Hacienda del Ixio, on the ascent to Antisana, in the province of Quito, at the height of 11,800 feet above the sea. It has pretty orange-coloured nodding flowers, growing in pairs. It should be potted in a compost consisting of peat and sandy loam in equal proportions. In spring and summer, while the plant is in a growing state, an ample supply of water should be given; but in autumn, when the leaves begin to die off, this should gradually be withheld, and for a few weeks in winter kept quite dry. The temperature in a warm greenhouse will be quite sufficient.—*Botanical Register.*

Garden Memoranda.

Mr. Glendinning's Nursery, Chiswick.—This nursery, although one of the oldest in the neighbourhood of London, had almost dwindled into nothing; but during the last season it has undergone great improvement; and several hothouses and new erected for the cultivation of exotics. The houses, although not large, are admirably contrived to admit of watering and inspection; indeed, every plant may be said to be under the eye of the cultivator. The plants are, nevertheless, at the same time, all near the light, which is a most important point in hothouse building, and one too frequently made of secondary moment—especially when architects are employed in the erection of these structures. The propagating-house is well contrived for the purpose, and is heated by one of Eldridge and Healy's improved boilers, and the bottom heat is communicated by hot water, the iron gutters manufactured by the same party, which answers admirably. Mr. Glendinning approves of iron gutters in preference to those formed of brick, and rendered water-tight by cement; and his reasons are, that hot-waterers them more economical and more durable, and also much less likely to leak. Besides, in case of any alteration, iron gutters can be removed in a very short time, and again re-erected, without any new arrangement of brick and cement, or the material without total destruction. The gardening world, therefore, owes much to Mr. Glendinning for his ingeniously brought iron gutters. [illegible] the atmosphere of horticultural [illegible] plants in the several houses were in [illegible] numerous many new species. Among others we remarked Hallia fascida, covered with beautiful cymose flowers, about the same size, and having exactly the appearance, except in colour, to those of Chorozema; cordata was also in bloom Clerodendron infortunatum, a most beautiful species, having large and very brilliant clusters of scarlet flowers. This is a great acquisition to gardens, as it is a free grower, and produces a fine head of bloom while in a very young and dwarf state. With regard to treatment, it likes plenty of moisture during summer, and does not require a high temperature, which is apt to cause it to grow tall and straggling. Gloxinia Cartoni was blooming finely here, as was also another variety, named bicolor, having pretty lilac blossoms with a white centre. In this house Mr. Glendinning called attention to what he considered to be a new yellow-flowered Rondeletia, clothed with abundance of fine foliage, about 6 inches long, but it was not in bloom. In the same collection was the charming Thunbergia chrysops, remarkable for its "eye of gold in a field of the richest purple." This being of a somewhat shrubby nature, appears to be of a more permanent character than other species of the same genus. Hindsia longiflora, a greenhouse plant of considerable beauty, resembling the old Bouvardia triphylla in habit, and requiring nearly the same treatment, was producing its purplish-blue flowers freely; as was also Gloxinia magnifiora, a new variety with delicate pink blossoms; and near to this was situated a noble Statice arborea, producing three fine spikes of bloom. In the same house we remarked a plant of Gardenia Sherbournia, a handsome stove climber, having large bell-shaped flowers, white on the outside, and of a deep red within, which forms a fine contrast with the beautiful dark-green foliage. Among other things we observed Habrothamnus fasciculatus, which, from having the shoots well stopped in, was forming a fine bush covered with large healthy foliage. When in flower this presents an unbroken mass of crimson blossoms, and is one of our most beautiful greenhouse plants. Here was likewise a Gesnera, said to be G. macrorhiza, producing large bright-scarlet flowers in pairs; and in the same house was, also in bloom, a plant of Lisianthus glaucifolius. The collection of Heaths was in fine condition, comprising upwards of 200 of the best kinds, and including some scarce and valuable sorts. We remarked among others the beautiful free-flowering Savileana, good plants of Ampullacea, Lawsonii, with small pink blossoms; Jasminiflora alba, which is one of the best Heaths; and another variety of Jasminiflora named Vittata, together with Irbyana, and several varieties of Macnabiana, with many others in good health and equally indicating judicious management.

Miscellaneous.

The Cineraria, and its Culture.—The name Cineraria has been given after the Latin word *cineres*, on account of the ash-coloured down which covers the under side of the leaves. The most beautiful sorts of this genus come from the Cape and the Canary Islands; they have been successively introduced into Europe during a period of about 60 years. The leaves of some of them are formed like those of the Poplar (populifolia), others are in the form of a heart, and some again have a down upon their leaves (lanata); there are also certain sorts, amongst which is cruenta, whose foliage has a smooth surface. By the mutual fecundation of these different sorts, first the English and afterwards the Belgians, have raised numbers of novelties, each more beautiful than the other. These have again successively given place to other newer and more interesting kinds. It is thus that we have seen mentioned in catalogues, for about 10 years past, during which this plant has occupied attention, at least 300 varieties. Nevertheless, of these only a few are now considered worthy of cultivation. At the present time there are imported new varieties quite distinct from one another; this number is, however, very inconsiderable, and does not surpass 25 varieties. These beautiful Cinerarias, some of which have been obtained from seeds, in Belgium and also in France, will serve as new types from which to obtain, by judicious fecundation, farther improvements in this beautiful genus. Regarding the qualities of the Cineraria as a florist's flower, I have remarked for some years at the Exhibitions of Brussels, Ghent, Malines, Liége, and Antwerp, that skilful florists attach the greatest importance to those kinds which carry themselves well. They prefer those which flower abundantly, and whose flowers are large and well-made; that is, whose petals are nearly broad enough to fill the spaces between them. To these qualities a good variety should also add beauty of tint, and richness of colour. The improvements of which Cinerarias are susceptible, consist in obtaining the petals broader, and having novelty of lively and brilliant colours, and at the same time possessing the qualities above mentioned. This plant is not difficult to cultivate; nevertheless, there are some rules to follow, if well-grown plants and an abundance of bloom are to be obtained; you must prepare beforehand at least a year, if you wish to be successful. Young plants in small pots, bought in from nurseries, about the end of March, may be placed in a greenhouse, where they will not be far from the glass, but they should not be allowed to receive directly the rays of the sun. The plants ought to remain for some days in this situation, and in the mean time soil may be prepared into which to repot them. This should consist of thoroughly decomposed leaf mould, mixed with an eighth part of soil from an old hot-bed. After the first potting, when the plants have taken certain hold, repot them again, taking out the crocks without disturbing the roots. As the plants become larger, the compost may be made richer, and mixed in the proportion of about three parts of leaf-mould to one of soil. The first potting should take place about the 15th of April, and the second in about a month afterwards; at every potting take a pot broader and higher by half an inch than the ball of the plant, and see that the upper roots are not covered too deeply with soil, for that is hurtful in general to all plants. At the commencement of June every Cineraria should be stinted and exposed to the air, placing them where the heat of the sun does not penetrate upon them with too much force. During the months of June and July, great care should be taken to water them, particularly in the afternoon, and when the sun has ceased to shine upon the plants. They may also be watered in the morning before 8 o'clock, without any danger. Towards the end of August, or a little earlier, you will observe at the base of many of the plants little shoots which proceed from the roots, the stem, and the axils of the lower leaves. They speedily root in the upper layer of the ball, and should be carefully taken up, as much for multiplying the specimens, as for clearing the plants of young suckers, which would otherwise take away a part of the sap which the plant requires to strengthen it, in order to become a good specimen. If Cinerarias are treated in this manner, they will be covered the following spring with rich and abundant flowers. The little suckers taken up may be put into pots of a proportionate size, placed in a hotbed and shaded from the sun, where, in 15 days at most, in August, the roots will show themselves all round the ball. They should then be put into larger pots, placed close to the window of a greenhouse, and exposed to full light; where they may remain until spring. The parent plants should be put into a cool greenhouse, or frame, about the 15th of October, and remain there all the winter; they may receive as much light, air, and sun, as possible. Towards the end of January place them farther from the glass at the top of the house, and continue to give them as much air as possible in fine weather. If it is desirable to delay the time of flowering a month or six weeks, pot the plants again into larger pots by an inch, before the flower-stalks rise, and the flowers appear towards the beginning of March; large specimens remain in bloom at least six weeks. Cinerarias fertilise readily, and seed abundantly, particularly when they are placed in a dry situation, where they have air, and every morning receive a sufficient watering. As soon as the seeds are ripe, they should be gathered and put into a dry place, but only for two or three days. Afterwards you must clean the seeds well, and sow them immediately in very fine and rather sandy leaf mould. They will come up in a fortnight or three weeks afterwards; the young seedlings should be pricked out as soon as they have two well-formed leaves, and two others are beginning to show themselves. These seedlings should be placed for eight days in a hotbed, sufficiently warm to induce them quickly to strike root again. As soon as the young plants have unfolded and formed their first leaves, they ought to be potted afresh, and eight days afterwards placed in the open air, in order to strengthen them before autumn, so that they may the better endure the winter. The seedlings may afterwards receive the same treatment as older plants. A great number of these seedlings, provided they are well taken care of, flower in the spring. You cannot be too careful to take exact notes of seedlings raised from different varieties, until you ascertain which sorts give the best result. If green-fly attacks the plants during winter, that insect may be speedily destroyed, without danger to the plant, by fumigating the house with tobacco-smoke. In spring this should be done very gently, for if the tobacco is too strong, the plants will be injured by it, and perhaps perish. You can never throw tobacco on them in the form of snuff or otherwise, for the contact of the tobacco would quickly kill the Cineraria. It is, therefore, in spring much better to destroy the green-fly with the fingers, as fast as it appears. In fact, unless you have a greenhouse expressly for this sort of plant, you cannot burn tobacco without hurting other specimens, which are not at the time in flower. The Cineraria has very little scent; it does, however, very well, while in flower, to be placed in the window of an apartment exposed to the sun. It flowers there as well as in a greenhouse for a considerable time; on fine days in April and May, admit air into the room, at least one hour every day. In this point of view it is, perhaps, the most convenient for a drawing-room, and for this reason it may be expected to become a general favourite.—*J. de Jonghe, in Revue Horticole.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

STOVE-PLANTS which flower late in the autumn, and especially those that may be taken to the conservatory to bloom, should now, or very soon, be in their flowering-pots. The Eranthemum pulchellum, several Justicias, Aphelandra cristata, Poinsettia pulcherrima, Æschynanthus grandiflorus, and many more of that character belong to this class. Another very essential point to be observed with stove plants in general, which are removed to the conservatory while in flower, is to have the compost lighter for them, and not give them more pot-room than will just keep them healthy, with the assistance of liquid manure, as plants of this nature suffer very much in a cool conservatory late in the season, if they are growing in heavy rich composts, and in large pots; whereas, in a stove, that would be the right way to make them flourish.

Conservatory.—No matter how soon in August the Dutch bulbs for very early forcing are potted; the more roots these bulbs make before they are brought into heat, the better. In Holland, the bulbs for the first crop are well established in pots before we begin to think of "ordering" ours. Geraniums, Cinerarias, Chrysanthemums, and some of the Cornwas, will now

extent more heat; and with a little forcing they may be brought into flower a month sooner. Look well to your late autumn-flowering plants for cut flowers; Heliotrope, Sweet Briar, Mignonette, Lemon-scented Verbena (Aloysia), and Fairy Roses, with the "Hose-in-hose" Pelargonium," are always inestimable for bouquets after the middle of October, or as soon as the early frosts nip them out of doors Look to every plant like pet cats, and these order such and such treatment as the different cases may suggest. This has been a trying season for the good gardeners. Besides thus exercising our patience, a large addition is made to the stock of our experience, upon which we can fall back more readily in future —*D H*

II.—FLOWER GARDEN AND SHRUBBERIES

Out-door Department

In answer to the question propounded last week—What is to be done to counteract the evil consequences attendant upon our flower garden decoration by cold, wet, or dry seasons? it may be remarked, that an improvement will be effected in the first place by a thorough drainage and pulverisation of the soil to the depth of at least two feet This will allow of a free percolation and distribution of moisture throughout the whole mass of the soil, and that not only of the moisture which falls in the form of rain, or is supplied by the hand of man, but also of the moisture which is ever finding its way through the crust of the earth by capillary attraction Nor is it moisture only which escapes more freely by a deep stirring of the soil and thorough drainage, but also terrestrial heat All practical men know the advantage of deep trenching for kitchen garden crops, especially in dry seasons, and what is good of one crop must also be good of another. Now where flower gardens are situated on a subsoil of strong retentive clay, as is the case here, it will be the best to remove it to the depth of two feet, placing six or eight inches of brick rubbish or rough stones over the bottom of each bed, and making the remainder good with fresh top and pit loam To do this in large gardens will be attended with considerable expense and labour, and therefore as a makeshift it will do considerable good to remove only a part of the bad subsoil, and then mix the remainder with brick rubbish and half-decomposed vegetable refuse However, to follow this matter out satisfactorily will require more room than I can spare this week, and I therefore must leave the rest for another time.

Rosery—Proceed with budding where the bark rises freely, but if it is dry defer the operation until we get more rain We have lately been over our best Roses, and instead of cutting out the dead flower buds have trimmed out all the weak shoots, only leaving such as will be required at the winter's pruning The buds on these left will get much stronger in consequence, and we calculate upon a finer bloom than usual next season The half ripened wood of Chinese Tea, Bourbon, and Noisette Roses strike freely at the present time, and until the end of September, if placed on a little gentle bottom heat; and these are things which every garden ought to be covered with —*W P A* [Rabata last week.—In line 19, for "under ones," read "tender ones."]

III.—FLORISTS' FLOWERS

Tulips—These bulbs may now be divested of their superfluous skins, and thoroughly cleaned, whenever the florist can spare time. *Dahlias*—Should be constantly watched and regularly tied as they advance, as the side shoots are extremely apt to be wrenched off by the wind. *Pansies*—bed may continue to be sown, and beds made of rooted cuttings *Pinks*—Whilst the weather continues showery plant out the pipings They may also still be struck with success *Carnations*—Through every stage of their growth these beautiful flowers have their enemies, from the time of potting out till the period of planting again arrives. We have in successive Calendars noticed these depredators, and endeavoured to point out, as far as our experience went, the best way of destroying or guarding against them No season that we recollect has been more prolific in those "insidious gentry" styled earwigs, or what the north-country folks provincially call "battle-twigs," nor did we ever know them to have been more troublesome, getting into the calyx of the flower, and eating off the petals, to the florist's utter dismay and mortification. Many plans are adopted to entrap them; amongst the most simple and efficacious are dry Bean-stalks laid across the pot, in which they retreat during the day, or small pots filled with moss placed on the top of the sticks; these must be examined every morning Still we are not sure that these are effectual preventives, as most certain it is that these insects can fly Get on with layering as quick as possible, and when pods are swelling extract the decaying petals.—*J. F W*

IV.—PINERIES, VINERIES, &c

Pineries—Attend well to keeping the bottom heat regular, and to the re potting of such plants as require it, in order that the plants may receive no interruption in their growth Should the weather prove stormy (as it now is with us) the linings of pits heated by means of dung alone, will require strict attention Let all suckers worth saving be stuck into the tan, or potted immediately after they are taken from the parent plants, as they suffer much at this season by being allowed to lay exposed to the air Planted in the tan in front of any of the pits, having a bottom heat of about 90°, they soon become well-rooted plants, fit for 6 or 8 inch pots

Vineries—In the houses bearing crops of Grapes for winter use, the surface of the border should not be made wet after the middle of August, and if water at the root is at all required, it should now be given, and after this let the surface become quite dry, so that no vapour may arise from it to injure the Grapes during the dull weather that we may expect before the fruit is all cut. The Hamburgh, Chasselas, and Sweet water Grapes will ripen without any heat but that of the sun Muscats in dull weather will be benefited by slightly heating the pipes or flues.

Peach Houses.—If the lights have not been taken off the early forced Peach-house, it should be done as soon as possible, that the trees may have the benefit of the free air, rain, and dews; all of which will not only assist to feed and perfect the buds for the following season, but also to keep them from the attacks of red spider, which at this time is difficult to keep down under glass. For the management of the late houses, see last week's Calendar.

Figs—Figs are much better flavoured when ripened in an atmosphere not too moist and warm, and with a free circulation of air Keep the red spider in check, or you will have no good fruit in the autumn.

Melons.—Continue to stop and thin the shoots of the Melon plants, supply them with water when necessary, and use every means to keep down red spider and thrips.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Fruit trees—Attend to the removing the broad-wood of Apples, Pears, Cherries, and Plums; shortening the leading shoots and cutting back to a couple of inches the side-shoots of Currants and Gooseberries (unless when the latter are made to bear almost exclusively on young wood), and thinning and shortening the shoots of Apricots and Peaches, as previously recommended. Cover with mats, or thin cloth where practicable, those Cherries, Gooseberries, and Currants that you wish to preserve as late as possible, and defend the remainder from birds by netting. This is a much more pleasant method than making the vain attempt to exterminate the feathered tribe, which, to say the least of it, is very questionable for its propriety, so far as utility is concerned It is only during the short interval that blackbirds, thrushes, &c interfere with our gooseberries, and for a little speculation now they amply repay us, by the quantity of slugs, &c. which they devour in spring, to say nothing of their cheerful notes at "early morn and dewy eve." Considerable interference has been proclaimed here upon a group of starlings that build their nests for successive years in the same trees. I am not aware that the starling ever interferes with our cultivations, but the [illegible] of insects to gardeners which he destroys, for the [illegible] of his young, is truly astonishing.

Green Manure.—The severest summer I have ever gone through in summer the plot of winter Cabbage which is just attained the height of two or three feet, and planted the ruins with Brussels Sprouts, Scotch Kale, and Cabbage, for the early supply, and the vigour with which they have grown convinces me that such a method might be adopted with great advantage, where manure was scarce and ground plentiful. *Onions*.—Preparations should now be made for sowing thickly the Strasburgh, or any other hardy sort, to stand over the winter and furnish large Onions early next summer. Part of them may be drawn for Salads during winter, and the other thinnings planted out in March. Sow again in a fortnight. Ground previously occupied with early Cauliflower, or Strawberries that require digging *down*, will furnish good situations.—*Peas*.—Make the last sowing, choosing the earlier varieties. Prince Albert is the earliest I have met with by eight or ten days, but otherwise it is a small Pea, and produces sparingly. The early *May* is highly spoken of as being as early as the Albert, of a good size, and producing plentifully. *French Beans*—Sow in a situation where it will be suitable to defend them from early autumn frosts with mats, choosing the dwarfest sorts, such as the Early Dew, and the Robin egg China. *Routine*.—See former Calendars.—*R F*

VII.—COTTAGERS' GARDENS.

Proceed with the thinning of Grapes, as recommended last week, and be careful in handling the bunches to twist the stems as little as possible, for fear of injuring them, and thereby preventing the fruit from swelling. Pelargoniums, which were directed to be placed out of doors, should now be cut down, and cuttings of the best sorts prepared and inserted in small 60 sized pots, in a mixture of loam, leaf mould, and sand They should be placed in a shady situation until they have struck root, when they may be more exposed to the sun. After the old plants have made young shoots about an inch long, proceed to re pot them into pots one or two sizes smaller than those in which they are; shake the old soil from their roots, which should be pruned in to within 3 inches of the stem; and give them a good drainage, which is very essential to their future welfare. The plants should afterwards be placed where they will be partially shaded, receiving a little of the morning sun only In a short time they will have formed new roots, and may be removed to a more open situation, where they may remain until the weather becomes cold, when they should be removed under cover Calceolarias and Cinerarias, if not already done, should now have their roots divided they may be planted in shady places in the flower-borders, to be taken up and repotted about six weeks hence; or they may be put into small pots, to be shifted as they require it, which will not be for some time A small bed of Endive, if not already done, may be sown Go over Cucumbers occasionally, to stop and regulate the shoots. Attend to getting up Onions, Shallots, Garlic, &c, that have arrived at maturity, for if left too long in the ground they often make a second growth, which spoils them for keeping —*J M H.*

State of the Weather near London for the week ending Aug 1, 1844, as observed at the Horticultural Garden, Chiswick

July		Moon's Age	Barometer Max	Barometer Min	Thermometer Max	Thermometer Min	Thermometer Mean	Wind	Rain
Frid	26	11	30 110	29 908	74	55	64 5	N W	—
Sat	27	12	30 121	30 101	68	50	66 5	N W	
Sun	28	13	30 127	30 005	68	57	72 5	S W	
Mon	29	○	29 961	29 947	76	46	60 0	N W	
Tues	30	15	29 898	29 474	68	55	61 5	S W	14
Wed	31	16	29 708	29 580	72	49	60 5	W	03
Aug Thurs	1	17	29 807	29 736	71	46	58 0	W	02
Average			29 971	29 829	70 0	50 7	60 3		19

July 26 Overcast; cloudy; clear and fine at night.
— 27 Very fine hot and dry; clear
— 28 Clear very fine throughout, cloudy at night
— 29 Very fine, hot, with excessively dry air, cool, and very clear at night
— 30 Clear; overcast heavy showers in afternoon rainbow, unusually splendid ½ past 8; rain
— 31 Cloudy, with brisk wind cloudy and fine, shower, 8 P M; very fine 6 clear
Aug 1 Cloudy in her boisterous with showers, clear and fine at night
Mean temperature of the week 2 10 deg above the average

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Aug 10, 1844

Aug	Aver Highest Temp	Aver Lowest Temp	Mean Temp	No of Years in which it Rained	Greatest quantity of Rain	Prevailing Winds 2 P M	8 A M	8 P M	10 P M	8 A M	2 P M
Sun 4	75 1	50 4	61 8	9	0 44 in	1	1	1	3	3	1
Mon 5	74 3	49 2	62 3	7	0 52	—	3	1	1	3	3
Tues 6	72 1	5 0	62 5	5	0 35	—	3	1	3	4	1
Wed 7	74 1	51 1	62 8	5	0 57	—	3	3	—	3	1
Thur 8	76	49 3	62 4	4	0 28	2	3	—	3	3	—
Fri 9	77 5	52 3	64 9	5	1 06	1	3	1	—	4	4
Sat 10	76 0	51 0	63 5	7	0 30	—	1	3	2	4	1

The highest temperature during the above period occurred on the 10th, 1843—therm. 88°; and the lowest on the 6th, 1835—therm 36°.

Notices to Correspondents.

Asphalte—*J W*—This material is light, and will last a long time if kept painted. It makes good garden screens, when nailed to wooden frames But it is not a strong fabric, and therefore cannot be employed where strength is wanted.

Books.—*G Walker*—"Hooker's British Flora," last edition

——*A Subscriber*—"Bevan on the Honey-Bee"

Bromamasia floribunda—*P P*—You keep your plant too cool and too dry. It wants a damp stove, where Orchidaceæ are grown, and there it should be tied to a block of wood, and treated like an epaphyte

Cucumbers—*Anon*—Where bees and other insects have free access to your Cucumber plants, there is no need to impregnate them artificially, but it is better to make success certain by doing so

Flower gardens—*J M*—If you can furnish any practical information upon the management of flower-beds in dry, hot weather, we shall be happy to receive it. We cannot perceive anything beyond "talk" in the note before us

Ice houses—We have to thank several correspondents for the readiness in pointing out a description of an American Ice-house in Cobbett's "Cottage Economy" We propose shortly to extract it for the benefit of ice-loving people.

Insects—*W W W*—Your larva had eaten a hole in the paper and escaped it ought to have been inclosed in a quill. *R.*——*A P*—Your Cucumber (?) plants are infested by Aphides, which will be best eradicated by fumigation with tobacco. *R*——*H W B*—The caterpillars eating your Potato haulm, &c, are the offspring of Noctua (Agrotis) exclamationis, and *R W*'s caterpillars destroying the Mangold Wurzel will change to a moth called Agrotis segetum. The history and figures of the above were published in the 4th vol. of the Royal Agricultural Journal, where the best means of freeing land of these destructive animals was discussed, *but* turning in ducks and hand picking are the surest remedies. No. 1 is Tortrix fulvana; 2, Noctua orbona. *R.*——*W. C. P.*—Mr. Curtis will feel obliged by the Caterpillar being sent to 15, Robert-street, Hampstead-road.

Local Societies.—A Cheshire correspondent asks if we consider it fair to appoint as judges the same two individuals at nearly Exhibition, from the formation of a society; and those individuals nursery foremen in the immediate neighbourhood, who at the last Exhibition, were walking to and fro in the tent while the gardeners were staging the plants, &c. There can be only one opinion on the subject It is most improper for the judges to hold any communication with the exhibitors, and it is very unwise to appoint nurserymen or their foremen in judges. Not that they are unqualified, but because experience shows that people are apt to suspect them of favouring their employers; and although such an imputation may be, and often [illegible] is, unfounded, yet no well-managed society will [illegible] to the feelings of exhibitors on so tender a point. Indeed, we wonder that any nurseryman should like to be placed in the position of a judge.

Manure.—*Anon*—The burning of fruits is generally owing to irregularities in the flow of sap; when the latter is suddenly and unexpectedly urged by much heat and moisture, beyond the rate at which it had been [illegible] moving, such fruits as have thin skins, and little [illegible] comparatively with their weight, as in the case with Persian Melons, are apt to be affected by the vicissitude. In order to prevent the cracking of Persian Melons, Mr. Knight elevated the further extremity of the fruit as much as 30 degrees above the footstalk, and the same plan has been successfully adopted by others.§

Names of Fruits.—*J. L.*—Your Plum is the Myrobalan, or Cherry Plum.‖

Names of Plants—*A. R. C.*—Asclepias obtusifolia; Sedum oppositifolium.——*A K.*—Carex hirsuta.§

Pelargoniums.—*J Matthews*.—Procure the following sorts—Matilda, Garth's Witch, Foster's Sir R. Peel, Duke of Cornwall, Brenham, Oberon, Falchelium, Queen Phillippa, Wizard, Cyrus superb, Garth's Constellation, and Symmetry.*

Picotees.—*C. H. H.*—Vulmer's Princess Royal, Wilson's Picperfect, Wildman's Isabella, Sharp's Wellington, Jessop's Sir W. Middleton, John's Prince Albert, Dickson's Trip to Cambridge, Ely's Grace Darling, Brinklow's Purple Perfection, Barnard's Mrs. Barnard, Gun's Queen Victoria, and Kirtland's Princess Royal *

Pine-apples.—*Pyrenees*.—We are making inquiries. We believe that the fruit in question was never intended by the grower for exhibition, and if so it is hardly a fit subject for comment We will, however, keep your letter by us.

Rhubarb Wine.—*Rhubarb*.—We really cannot advise you to make anything so unwholesome as Rhubarb wine. If you will not be wise, then you should proceed with the stalks exactly as if you were making green Gooseberry wine. Some makers of British wines prepare Champagne from Rhubarb stalks, and abominable stuff it is.

Roses—*R. W*—There is no danger in removing Roses having a dormant bud inserted about this time. If the Rose shoots freely the dormant bud will do the same, provided it is safely united to the stock. Where buds fail other buds may be inserted on the same branch, and near the same place, but below the old wound

Seedsmen—*J B*—We really cannot interfere in little disputes between seedsmen and their customers. If we did, our columns would be filled with letters on such subjects Your remedy is not to deal again with the persons you mention.

Strawberries—*Inquirer*.—We have not an idea what has cut off your Elton Pine Strawberries, while green, close to the calyx

Trees—*A Subscriber*—Wood certainly lengthens after being formed; and therefore it is to be supposed that the stem of a forest-tree may increase in length so as to cause any given side-branch to be at a greater distance from the ground each year. We are, however, not aware of any exact observations on the subject

Wasps.—*W. W P*—We know of no means of banishing Wasps, but their nests are easily killed by pouring into them a little oil of turpentine, in the evening, when they have gone to rest, closing over the entrance to the nest with a clod of earth, pressed firm with the heel.

Whitney's Composition—Various correspondents allege that this renders Calico rotten. The following, from *J. G. H.*, may be taken as a sample of the remainder "About four months ago I applied the prescribed quantity of Whitney's Composition to glazed calico—4*d* per yard—stretched on two lights of a Cucumber-frame; for a time it appeared to answer very well, notwithstanding several showers However, about a month ago I accidentally tore one of the lights, and on examining the rent found that the whole of the calico was quite rotten—in fact become mere tinder. If you, or any of your correspondents can tell me whether the calico or the composition is in fault I shall be grateful, as I am about to erect a greenhouse with a stouter material." Perhaps Mr. Whitney or some one else can throw some light on the subject——*E. J. W*—It is out of our province to interfere with respect to short quantities The deficient bottles should have been returned to the seller. Your letter lies at our office

Miscellaneous—*A*—Treat your Pelargoniums all alike. Rose pruning will appear in the articles on the Rose garden.——*North Earle*.—If you will study the articles on Morphology, now almost brought to a close, you will have no difficulty in understanding why your Rose produces a branch in the middle We cannot name the variety.——*W. D*—A plant of Cattleya crispa, which is throwing up a spike of flowers, consisting of six buds, is a fine specimen, but we have seen as fine It is a free bloomer.——*Crassula cocinea* had better be placed out in a warm border against a south wall, until the cold weather comes, and it will probably bloom next season ?

SEEDLING FLOWERS.

Anagallis—*G F*—When flowers are crushed to pieces in letters their qualities cannot be determined. We see nothing in what remains of your seedling to make it worth distinguishing from its parent.

Carnations—*E. Derby*—Your seedling Rose flake is a flower of good form and substance, the petals are of a good shape, but several of them, and especially the guard petals, want smoothness, being too serrated on the edge; the colour is high and fine, and the flake bold and full, and the white is tolerably good; this flower had been too much pulled about, and some of the guard petals taken out. The colour, form, and substance of the flower are fine *

Fuchsias.—*C. D M*.—The tube and sepals of your seedling No 2 are carmine, and the corolla a blood-colour; hence arises that want of contrast pointed out in our late notice; and the greater proportion of the seedlings lately raised have this fault, and too much resemble each other. Your seedling is a large flower, of good form, but it resembles too much varieties in cultivation, and many others that have come under our observation. *Self* Fuchsias are not now worth keeping, unless of very extraordinary merit.*

Pansies.—*A N. M*—It is impossible to judge satisfactorily of your seedling, in the dried state in which it reached us; the colour and marking is similar to many that we have, and it appears to be very small. These flowers require to be packed in something damp *

Pelargoniums—*A Berkshire Subscriber*.—Your seedling is common in colour, and the form is not very good, the under petals being too long *

Phlox—*W P*.—Your seedling is similar to a variety noticed last week, excepting that your flower is more delicately striped, while the one sent by *J. G. H.* was slightly striped and much spotted. Your seedling will be very ornamental as a border variety, if its marking is constant, which we doubt.*

Picotees.—*R. H M*—The opinion expressed in a former Number is but little altered from seeing your flowers a second time. The bloom of Bachmeister was much larger and finer than the first sent, and our favourable opinion of that variety is increased; but as regards the other flowers our opinion remains the same.*

Pinks.—*J. B. H.*—Your Pink was too far gone to judge of, but the petals appear to be too small, and the edge too serrated for a good flower; the colour is pretty.*

*** As usual, many communications have been received too late

SEED-WHEAT.—Any one desirous of procuring Seed for next year is invited to inspect the undressed Crop of Wheat, SMEATON'S MORETON'S and MORETON'S RED STRAW WHITE, the Acres of which are now standing on WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE.

The present is the only season of the year when the value of any variety of Wheat as Seed can be discriminated by inspection; for, if the examination of a mere sample of the grain, which can be done at any time, be nearly unintelligible as to its quality in the eye of the baker (see *Ag. Gazette*, No. 9), it is entirely so as to the productiveness or habit of growth of the variety to which it belongs. These points, which are of the highest importance in the eye of the Farmer, can be ascertained only by an examination of the growing plant when in full ear.

JOHN MORGAN, Whitfield, Thornbury.

The Agricultural Gazette.

SATURDAY, AUG. 3, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Aug. 7 } Agricultural Soc'y of England
Thursday, Aug. 8 } Agricultural Imp. Soc of Ireland.
Wednesday, Aug. 7 } Meetings of the Highland Agricultural
Thursday, Aug. 8 } Society at Glasgow
Friday, Aug. 9 }

Wednesday, Aug. 14 Agricultural Society of England
Wednesday, Aug. 14 } Meeting at Dublin of the Agricultural
Thursday, Aug. 15 } Imp. Soc of Ireland.

On agricultural subjects, many of which involve interests of such magnitude—where erroneous ideas, when developed in practice, will cause loss, and perhaps ruin—it is of great importance that the terms used in demonstrating opinion, or in communicating experience, should be perfectly understood.

This remark is intended especially to apply to the use of one word often met with in works on drainage, which has certainly a tendency to mislead, and to which we are inclined to attribute much erroneous and uneconomical practice. We often hear of drains *drawing* the water from the soil—of deep drains *drawing* the water from a greater distance than shallow ones. The natural consequence, we think, in the mind of any one in the habit of hearing this word thus applied, is the entertainment of an idea, which first notions on such a subject would probably favour, that a large drain would be more powerfully attractive of any superabundance of water in the soil than a small one. And we are disposed to attribute much of the useless expenditure in the thorough drainage of land by tiles of large size, which is frequently to be met with, to some such idea as this, thus originated. Draining-tiles of a much smaller size than has hitherto been common, are now generally used: experience has ascertained their efficiency.

The fact of the matter is, that, excepting the maximum limit which it places on the flow of water from land—a limit which, in practice, is rarely if ever in action—the size of drains—we mean their sectional area—has nothing to do with their efficiency. When a drain is completed and exists as an inclined tube some 30 inches under ground, to the interior of which water can readily obtain access, the first consequence is that the water in the soil around this tube oozes into it, and whether this drying of the clay, if it be a stiff subsoil, produces cracks, as Mr. Smith contends, or not, it must evidently create a porosity in the neighbourhood of the drain, which did not before exist. The superabundant water in the subsoil near this porous part, thus falls or trickles through it into the drain, and the earth to which it was attached, in its turn losing its impervious character, becomes a vehicle for the passage of water from a still farther distant part of the subsoil.

When drains have once got fully into action, the process of drainage, which commences immediately after rain has fallen in greater quantity than is required simply to *moisten* the earth, is as follows:—Each addition to the water already present in the soil not being attracted by the already moistened earth, trickles or drops downwards wherever there is a way for it, from particle to particle, and unless a previous drought has extended deeper, as soon as it reaches the level of the drain, whether it be in the middle between two drains, or at the very side of one, there it will stop. The idea is obviously absurd that drains can afford an opportunity for water escaping from any part of the subsoil which is below them. And it is equally impossible to suppose that when they are once in full action, stagnant water will be found in any part of the subsoil much above their level in land which has not been artificially puddled in any way; for, supposing the water whose course we are tracing to have fallen in the very centre between two drains, as far from them as possible, yet as soon as so much more should come as would raise it above the level of the neighbouring subsoil, which was dry, it would trickle away to one side, and so ultimately reach the drain. Given, the porosity of a medium of any kind, and the degree of its molecular attraction for water, to find the least angle of a plane down which water would trickle through it, is a problem capable of solution, and it is upon the data of such a problem that the efficiency of drains, though dug at wide intervals, depends. If, in the case of drains 3 feet deep, water, being stagnant at 2 feet below the surface over the drain, is, in consequence of the angle of inclination of that plane to which we are alluding, to be found 18 inches only below the surface at a distance of 12 feet from the drain, the efficiency of the drain would cease at a distance of 24 feet from it; for supposing the character of the soil to remain the same, water would at that distance be found stagnant within 6 inches of the surface: it would in fact be stagnant in the active soil.

It is on this principle that the greater efficiency of deep drains is explained, for in their case this same plane of inclination, down which water will consent to trickle through such a medium, commencing as it would at a lower level, would extend a greater distance on either side, before coming so near the surface as to be injurious.

On the use of the subsoil plough as a means of diminishing the angle of inclination of this plane, and so increasing the efficiency of drains, we shall speak hereafter. Our remarks at present are confined to an exposition of the inaccuracy and injurious tendency of the terms often used in explaining the efficiency of drains. Drains do not *draw* or attract water. They simply receive that which naturally trickles down to them. If of size sufficient to carry it off as fast as it arrives, well—if of greater size than sufficient so to act, an unnecessary expense has evidently been incurred in making them so large—if of a size insufficient thus to act, they will take as much as they can, the rest accumulating in the soil till a drier season, when it will be ultimately removed; but the injury done by this accumulation of stagnant water for so long a time, will soon prove that the policy of the proprietor, or whoever it was that had this inefficient but cheap drainage executed, though it may have been penny-wise, was pound foolish.

THE CHANNEL ISLANDS.

[THE following observations were made by Colonel Le Couteur, on this subject, at the great dinner of the English Agricultural Society at Southampton.]

The islanders are either farmers, sailors, or soldiers. Enjoying a delightful climate, a rich soil, an inexhaustible supply of manure from their rock-bound shore; blessed with mild laws, liberty of the subject, a free press, an extended commerce—privileges which Englishmen dearly cherish—the people have attained a degree of wealth and contentment almost unequalled.

These advantages have not been unworthily gained. Descendants of that ancient Norman race who visited England with William the Conqueror, they have ever since continued connected with the Crown of England. King John granted them a jury and their charter some years previous to signing Magna Charta. On eleven occasions they have successfully resisted invasions from France, and on every such occasion the Sovereigns of England have granted them some new privilege.

Among other institutions connected with these islands, an Agricultural Society has been of great benefit. It has been formed on the same basis as this Society, viz., on a total exclusion of all politics from its meetings and proceedings; and a like result has attended its progress—entire harmony among its members, and a friendly rivalry for good.

The improvement of Wheat for seed, and the general cultivation of crops, have been among the objects of its attention; but the chief one has been to improve the admirable breed of cattle—admirable for the production of large quantities of rich and yellow butter. The chief defect was in the falling off of the hind-quarters; it has taken nine years of close attention to remedy this defect, and as I have personally kept a record of its progress of improvement, I would urge upon young farmers who seek to improve their stock, not to expect success in less than such a period; at the same time, roundness of barrel, a better handling, and a tendency to fatten, when dried off from milk, were points which had been gained without injury to the milking qualities. The cream of the cows of the Channel Islands was so rich and yellow, that in dairy farms where creamer's milk is sold, one such good cow to every three or four ordinary English cows, would be found useful to impart richness to the cream or butter.

With reference to the highly-instructive and interesting speech of Doctor Buckland on Wednesday, Colonel Le Couteur said, the learned Professor seemed to think that a considerable part, if not all the value of guano, evaporated in one season. He was intrusted, two years since, by the Agricultural Society of Jersey, to carry out some experiments with guano—that season was equally dry with this one—and the effects of this manure was imperceptible on either Wheat, Barley, or Grass; but this year the crop of Grass where the guano had been placed, was so rich and succulent, that the scythe could scarcely be drawn through it. Hence it would appear that it may not be quite so evanescent as is supposed; and it is useful in dry weather diluted with water, and thus applied to plants. Its effects will be found surprising in field or garden.

REMARKS ON DRAINAGE.

I CAN hardly divest myself of the idea that you must have been quizzing the Debenham Farmer's Club when you published the report of their meeting of 28th June last, as it is hardly conceivable that men who have evinced so much anxiety for improvement as to have instituted a club for discussing agricultural improvements, should, after all that has been said and written on the subject, talk seriously about making drains with straw; indeed, the whole report is so extraordinary as to court remark. In the first place, all the speakers agreed that the drains should run obliquely across the field. *Now this*, as a general proposition, has been shown to be perfectly erroneous. Vide Stephens' "Book of the Farm," pp. 537 to 542; Thomson, in "Prize Essays of the Highland and Agricultural Society," vol. xiii. p 295; and Smith's (Deanston) "Remarks on Thorough Draining," p. 9, where he says—"Drains drawn across a steep cut the strata or layers of subsoil transversely, and as the stratification generally lies in sheets at an angle to the surface, the water passing in or between the strata, immediately below the bottom of one drain, nearly comes to the surface before reaching the next lower drain. But as water seeks the lowest level in all directions, if the strata be cut longitudinally by a drain directed down the steep, the bottom of which cuts each stratum at the same distance from the surface, the water will flow into the drain at the intersecting point of each sheet or layer on a level with the bottom of the drain, leaving one uniform depth of dry soil." It would have been fortunate if the speakers at the Debenham Farmers' Club had stated their reasons for preferring the oblique direction, which is so much at variance with what may now be termed an axiom in thorough-draining. In the second place, with regard to filling the drains with straw, a material of such a very perishable nature must certainly be very improper for filling drains where every requisite for its speedy decomposition exists; let us hear what an eminent agricultural writer says on this subject. "It could," says he, "only be dire necessity that would induce any man to fill drains with straw twisted into ropes;" and again—"Only conceive what a mess such a drain must be that is filled up to the height of 8 or 10 inches either with brushwood stripped of the leaves—Oak, Ash, or Willow twigs being the best—and covered with long Wheat-straw twisted into bands."—*Book of the Farm*, vol. i, p. 607. Now, although I agree most cordially with the resolution that the landlords ought to furnish the tiles, and am satisfied that landlords who are fully alive to their own interests ought not only to do so, but see that the drains are executed in a permanent and substantial manner; still, if it can be shown that tile drains can be put in for nearly the same price as those of straw, there will be no excuse for the tenant (even if his landlord objects to assist him when asked) using the latter. Making an approximate calculation then, say that there are 68 roods of drains (6 yards to the rood) in an imperial acre, when 28 feet apart, the cutting and filling for the straw drain must cost at least 1*d.* per rood more than for tile, as the former requires to be deeper, and the filling is much more difficult and troublesome (see report in question); the straw required cannot be less than 2 imperial stones per rood, perhaps more, which, at the price of 2*d.* per imperial stone, or 26*s.* 8*d.* per ton, will make the account stand thus —

	£	s.	d.
Cutting and filling 68 roods drains, at 4*d.*		1	2
136 stones straw, at 2*d*		1	2
If twisted, the expense must be added—	£2	5	4
	s.	d.	
Cutting and filling 68 roods drains, at 3*d.*	17	0	
980, 15 inch tiles, at 20*s* per 1000	19	7	
980, 15 inch soles, at 10*s* ,,	9	9½	
8 stones straw, at 2*d*	1	4	
	2	7	8½
Leaving in favour of straw per acre only—	£0	2	4½

But I believe Ethridge's drain-pipes can be had much cheaper than 30*s.* per 1000, which would turn the balance in favour of tiles. Both of the estimates are exclusive of carriage, which would, no doubt, be greatest in the case of tiles; but as there are seasons when horses are comparatively idle on most farms, they might be employed at a trifling expense drawing the tiles (which, after all, are only three single horse-loads per acre) to a convenient place near to where they are to be used.

The most absurd part of the whole report is one individual gravely stating that he uses "plashings of ditches and borders," *i. e.* brambles and weeds, to fill the drains. Fancy a man growing weeds to such an amount on the borders of his fields as to thorough-drain his farm with them! What is the Royal Agricultural Society of England about? Where is Debenham? It was fortunate that the true interpretation of "plashings" happened to occur to me, or it might have been mistaken for the mud taken out of the ditches in cleaning them.—*John Girdwood, Featherhall, Mid-Lothian.*

ON THE FAILURE OF THE RED CLOVER CROP.

THE Red Clover in this village has failed this year to a very remarkable extent. The fact had attracted my attention, and upon inquiry I find the farmers at a loss to account satisfactorily for the circumstance. Some say it is owing to grubs, or insects, which have destroyed the plant, some suppose the land has become tired (as they express it) of growing Clover. They think our land here (which is the bed called blue-drift, by geologists) requires generally a longer rest than eight years, which is the more usual period that elapses before introducing this crop again in the regular four-course shift. All seem to agree that Red Clover is now-a-days much more liable to fail than it used to be some 10 or 20 years ago. The matter is really very serious; and the fact appears to me so curious, in a physiological point of view, that I shall invite a little co-operation from different quarters, in hopes that we may see whether we can ascertain the real cause to which the mischief may be ascribed. How

I wish some practical farmer of the agricultural body could have been found, rather, more scientifically qualified in the judgment of those eminent men of science, whose names I paraded last year as approvers of experimental co-operation on an extensive plan? This question of the failure in the Clover-crop is one of the infinite number that might be follow up by an organised band of experimentalists, who would probably settle it in a shorter period by some years, than may possibly elapse before it shall have been satisfactorily determined.

I shall venture to set before the readers of the *Agricultural Gazette* an account of a very restricted inquiry which I have been making into the circumstances under which the Clover has been usually cultivated in this parish. I shall even be bold enough to hazard a *conjecture* on the cause to which the *frequent* failure of this crop may be ascribed; and then I shall suggest a very simple method of experimenting, by which persons who may think this conjecture worth testing can assist in confirming or refuting it. In order to condense within a narrow compass a review of the various treatment to which *seven* different fields have been subjected by one or other of *four* of our farmers, I shall present their own accounts, under a tabular form. The abbreviations made use of consist merely of the first letter or two of the words signified. As the objects under culture, and their introduction in the rotation, is perfectly familiar to all practical men, they will have no difficulty in comprehending the table at a glance of the eye. It represents the modifications of the four-course system in the seven field A, B, C, &c. Wheat and Barley are the staple crop, which return in regular rotation every four years; the subordinate crops vary. The figures 1 and 2 placed against each year represent the first and second half of the year. The following abbreviations are employed:—

Ba. Barley.	Ta Tares	d. drained	
Be. Beans.	Tr. Trefoil	f. fed.	
Cl. Clover (Red).	Tu. Turnips.	m. manured.	
Ma. Mangold.	Wh. Wheat.	s. sown.	
Pe. Peas.	W.C. White Clover.	* fallow	
R. G Rye Grass.	c. cut.		

Year.	A. Poor.	B. Good.	C. Middling	D. Good.	E Inferior.	F Inferior.	G. Good
1826 2	Wh s	Wh s.	Wh s	Wh s	Wh s	Wh s	Wh s.
1827 1	Wh c	R G s.	Wh c.	Wh c	Wh c	Wh c	Wh c.
2	Ba. c. m.	Wh c.	Ba. c.	Ba. W. C. s. Ba. c.	Ba. Cl. s. Ba. c.	Ba. Cl. s. Ba. c.	Ba. s. Ba. c.
1828 1	*	R. G. f. * m.	* m.	*	*	*	*
2	Ba. c. m.	Ba. Tr. s. Ba. c.	Ba. c.	Wh. c.	Wh. c.	Cl. f.	Pe. s. Pe. c. m.
1829 1	Wh. s.	Tr. c.	Wh. c.	Wh. c.	Wh. c.	Cl. f.	Wh. s.
2	Wh. c. seeded	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1830 1	Be. Cl. s. Be. c.	Wh. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Wh. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1831 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1832 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1833 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1834 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1835 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1836 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1837 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1838 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1839 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1840 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1841 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1842 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1843 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.
1844 1	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.	Be. Cl. s. Be. c.
2	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.	Wh. c.

In all cases the Clover was looking remarkably fine at the time when the Barley was cut, and (except on G) it began to go off, generally about October, and has continued dying till now, July 27th. The following observations were made on the different fields:—

A. The Clover began to die in patches in October, on that half of the field which had been manured, until it has become nearly bare. The portion of the field which received no manure is looking very fairly, with scarcely any patches of failure, except a large one where the headin had been collected for the purposes of draining.

B. The failure not so complete as in A.

C. The Clover was most luxuriant, and some had even seeded when the Barley was cut. It began to die away in three days afterwards, and was soon so unpromising, that it was ploughed up.

D. Rooks appeared to settle on certain parts of the field before it had been observed that the Clover was dying, and it was supposed that they were attracted by grubs. The owner of this field had other Clover on lands which had not grown Tares. Some of these fields failed, and others did not.

E. The Clover here has nearly all perished, except one line across the field, which, on inquiry, I found was directly over a main drain.

F. The Clover on that part of the field which had grown the Mangold, was on the whole better than on that part which had grown the Turnips; and the crop thought better than on E.

The success in this field was attributed to the superiority of the land. A field near it belonging to another farmer had a beautiful crop of Clover on it; and there I was told the Barley had been sown *very early* in 1843.

The mode in which the failure at first shows itself, is by the Clover withering in small patches, in various parts of the field. This may begin within three days, or not until one, two, or even six months after the Barley has been cut. The withered patches gradually spread during the whole time the Clover is left upon the ground. Some plants appear to recover, but in general the evil continues to increase till nearly all are dead, over considerable spaces of the field. I was shown single individuals of a milk-white maggot in the crown of many of the decaying and dead plants. This will, apparently, be the larva of some beetle. Without pretending to any skill in Entomology, I feel pretty confident that this larva was not the real cause of the mischief. I had rather, however, leave that part of the inquiry to professed Entomologists, contenting myself with the observation that where such a very extensive failure has taken place, it seems hardly likely that a stray field, here and there, should have entirely escaped the ravages of these insects, whilst those in the immediate neighbourhood were suffering so severely. There are circumstances in the case which incline me to suspect that possibly the parent insect lays its eggs only, or chiefly, in those plants which have already shown symptoms of decay. But I speak here with the greatest hesitation.

A favourite theory, which involves a peculiar definition of the word "tired," is the supposition that the land where these failures occur may have been deprived, some eight or ten or more years ago, of a certain hitherto unascertained mineral substance, more especially essential to the healthy development of the Clover crop. Tired, in this sense, does not exactly mean that the land has been overcropped, or too much exhausted, for the general purposes of cultivation; it merely means that a homœopathic dose of this hitherto unknown "something" has been abstracted, and, consequently, that whenever the refinements of chemical research shall have ascertained what this "something" really is, there will be no further dread of the failure of a Clover crop. This "something" will be required in such small proportion, that nothing will be easier than to restore the "tired" earth to its pristine vigour, and fit it for bearing as much Clover as Atlas may feel disposed to allow us to lay upon it. Now, I do not mean flatly to deny the correctness of this favourite theory; but until this unknown "something" shall have been detected, and thus the theory have become firmly established, I shall not hesitate to oppose conjecture to conjecture, and to venture a suggestion, that the frequent failure of our Clover crops may be attributed to a physiological, rather than to a chemical or an entomological cause.

Under what circumstances is Clover usually cultivated? In every instance, so I am assured, it is sown on land which is simultaneously occupied by Barley, or by some other white crop. Therefore, during the early stages of its growth, and up to the time when the white crop is cut, the Clover is not developing under conditions which a nursery gardener, or even a botanical physiologist, would consider to be otherwise than injurious to the constitution of the plant. It is shaded and sheltered by the Barley, too much for the direct light of the sun to have such full influence upon its leaves as may stimulate them to the preparation of a full proportion of the "proper juice" essential to the perfectly healthy condition of the plant. I find the Barley-stubble is sometimes left lengthy, in order to nurse the Clover, *i. e.*, to protect it from the evils consequent on a too sudden exposure to a harder condition of life than that to which it had previously been accustomed. Experience, no doubt, has suggested the propriety of this step; but that very experience points to the primary cause (as I conjecture) of the frequent failures in this crop. The Clover has been living under a vicious system of education, and when the protection of the fostering Barley is removed, finds itself (like some over-fondled youth when he gets to Cambridge) unequal to cope with a world of evil influences to which it is now so suddenly exposed. After the Barley has been cut, there may be a variety of circumstances, more or less contributing on the one hand to restore it to a healthy state, or more or less conducing, on the other, to increase the debility of its weakened constitution, and ultimately to bring it to an untimely end. Very slight differences in the soils of different fields, or even in different parts of the same field, may have most marked effects upon plants thus circumstanced. Local differences in the Barley crop may also be among the inducing causes to a variety of results. Variations in season must be ranked among the causes which are likely to operate advantageously, or otherwise, upon Clovers growing on different soils. Another consideration presents itself to my mind, upon a review of the circumstances under which I am told those Clovers are pretty generally cultivated which are expressly intended for seed. They are either fed off in May or else they are then cut, in order that the seed may be produced from fresh shoots; experience having proved that the "virgin seed," as it is called, obtained from the first shoots, is worthless. That seed procured from plants cultivated under circumstances so disadvantageous to the formation of an adequate supply of "proper juice" should be worthless, will not appear at all wonderful to botanical physiologists. Their theory of vegetable nutrition may readily incline them also to admit, that the seed may be good which is obtained from the fresh shoots, supplied as they now will be by proper juice, which has been elaborated under somewhat improved conditions, and also concentrated, as it were (by this destruction of the first shoots), for the use of those stems which themselves are now developing their leaves under the very best conditions required for the vigorous health of the Clover. But although the seed thus obtained may be good, will it be the very best that could be raised? Let this question also be answered by the trial of fair and sufficient experiment. I am inclined to think that seed ripened from plants which may never have been half-choked by the Barley, or afterwards mutilated as late in the year as the month of May, would be more likely to produce a robust stock than seed procured in the usual way. It may possibly have been a work of years gradually to have impressed upon a hardy native stock, like Clover and Trefoil, the more tender constitution of an exotic; just as it may require the pinching of more than one generation of our sturdy peasantry, to reduce them to such dastard degradation as befits only the policy of a despotic sovereign. But peculiar management will in time work wonders in changing natures (vegetable or well as animal) from good to evil, as well as from evil to good.

The day is passed when the agricultural body were unanimous, or very nearly so, in sneering at our sciences, because we asserted we could tell them more about the "laws of nature," and the "reasons for their practices" than they knew themselves. Therefore it is that I now venture once more to direct attention to the propriety of a little co-operation in the attempt to verify a suggestion supplied by a slight acquaintance with the principles of physiological botany. I am not at all trespassing as I did last year, perhaps rather injudiciously, upon the province of the chemist. I now find that I should have spared myself the trouble of inviting the farmers of Suffolk to try our gypsum experiment, if Boussingault had only published his work some 18 months ago. It seems that he has made such advances towards a full determination of the *modus operandi* of gypsum, both *directly* upon leguminose plants, and *indirectly* in the fixation and liberation of ammonia under the forms of two salts useful to vegetation, that my little humble experiment is not very likely to be of much service in the cause; still it will be a pity not to carry it out fairly, now that it is so much advanced—and even yet it may possibly not be without its uses.

The inquiry I now suggest is, whether the Clover of 1844 may not be a more tender stock than is advisable for the description of culture to which it is subjected by our farmers; and whether we can contrive, by growing seed apart from those crops which are intended for fodder, to produce a better race of plant? Let those who sow Clover next spring leave a stetch or two in the middle of their fields, without any intermixture of Barley or anything else. They will thus have an opportunity of seeing whether such unsheltered Clover behaves itself like the rest, and whether the seed it shall produce (without the plant having been touched by tooth or scythe) may not the following year give birth to a somewhat sturdier race. If it should ever be proved to the satisfaction of all farmers, that a more careful attention to the seed-crops destined for future culture is an important step in the progress of agriculture, then, perhaps, we may see a suggestion followed out, and which has long been a favourite notion of my own also, that it would be advisable to encourage the labourers of every parish to direct their aim, in a special manner, to the growing of certain crops for seed upon those allotments, which we may hope before long will be more generally provided for them throughout the country.—*J. S. Henslow, Hitcham, July 29, 1844.*

HISTORY AND CULTIVATION OF WHEAT.

There are two sorts of Wheat cultivated in this country—Triticum hybernum, or winter Wheat, and T. æstivum, or spring Wheat.

There are many varieties of both these kinds of Wheat in cultivation. The white sorts are generally esteemed the best—the red varieties having a thicker and rougher husk, a hardier nature, and being better adapted for cold climates; but they are less productive, and yield an inferior flour to the white.

The Spring Wheat is less hardy than the winter variety, and in our uncertain climate is seldom cultivated, except in some of the more southern counties. The grain is smaller and less productive than winter Wheat. The only advantage it possesses is the security which it offers against the injurious effects of a cold and rainy spring; so that in situations where winter Wheat has failed, it can be sown as a substitute. It is the practice of some farmers, when the winter Wheat has gone off in patches, or appears thin, to raise by spring Wheat into the vacant places; by this means, if the operation be performed early enough, the uniformity of the crop is restored, for the spring-sown Wheat will arrive at maturity as soon as the winter-sown.

When spring Wheat is intended to be sown by itself, it should not be delayed beyond the end of March; from which time till its maturity, the farmer has little to dread from severe weather. Sir Humphry Davy, in his valuable work on "Agricultural Chemistry," says the nutritive parts of spring Wheat are not quite equal in quantity to those of winter Wheat, being 95½ per cent. in the latter, and only 94 per cent. in the former, of the entire bulk of the grain: the gluten exists in a greater degree; that of winter Wheat being 26, while spring Wheat is only 19 per cent.

Winter Wheat is generally committed to the ground in October or November in England, on a Clover-ley, with one ploughing, or on stubble-ground summer fallow. The land should be well manured, clean, and well manured; this being accomplished, it is of little import-

ance whether the grain is sown broadcast or in drills; three inches of harrowing is sufficient to cover the seed, the water furrows being drawn immediately; and cuts opened to carry off the surface-water to the ditches at the end of the fields. The soil on which Wheat thrives best in our uncertain climate, is a strong, rich clay. The quantity of seed which is generally sown, varies on most farms according to the quality of the seed and richness of the land. There are many conflicting opinions amongst farmers as regards the depth that the seed should be sown; some are advocates for shallow, and some for deep: in our opinion three or four inches is amply sufficient. The farmers of warmer climates are obliged to irrigate their Wheat lands during the growth of the plant. In the greater part of the temperate regions of New Spain, the farmers are compelled to adopt artificial irrigation. This is done by small canals cut through the farm, and supplied with water from the rivers and reservoirs, which can be let loose over any part or all the farm at one time, in those districts where irrigation is regularly adopted. The produce of the Mexican farms is far beyond what the richest soils of Europe could produce, the Wheat harvest being commonly 35 and 40 seeds, and some of the larger farms yielding 50 and 60 measures for one of seed. When the land is not irrigated, the annual return does not exceed more than 15 or 20 seeds.

The Wheat chiefly cultivated in Egypt and some parts of Italy is the Triticum compositum, Egyptian or many-spiked Wheat. This species is supposed to be indigenous to Africa, its stem are branched, and each bears several spikelets or ears, which are bearded, the grains are thinner and less nutritive than our ordinary varieties. This species endures, without injury, the extremes of heat and moisture, so that it is well adapted to those countries in which it is generally cultivated. Triticum Spelta, or Spelt Wheat, is supposed to have been the species cultivated by the Romans; it is cultivated to a considerable extent in the North of Africa and the Cape of Good Hope; in Spain, where it is given to horses instead of Barley or Oats; in Germany, Switzerland, the South of France, and in some parts of Ireland. There are two varieties of Spelt Wheat, one with awns and the other without them, it is generally sown as a spring crop, and grows luxuriantly; bread made from it is of a dry quality and less nutritive than the ordinary kind In some parts of Switzerland the Triticum monococcum, or one seeded Wheat, is cultivated, this species contains less gluten than the common varieties, and is very diminutive, the spike containing only a single row of grains, it is mostly used in soups and gruels, the straw, from its hardness and tenacity, is well adapted for thatching, for which purpose it is generally used.

We are of opinion that Wheat would flourish better if it were buried deeper than it generally is by most farmers. Our opinion is founded upon the following facts:—A grain of Wheat, when buried to the depth of three inches, undergoes the following transformations —As soon as the farinaceous matter of the seed is softened, a germ is pushed out, and at the bottom of that germ small roots soon appear, these roots gather strength, whilst the germ, fed on the milky fluid of the softened seed, is springing upwards. When this substance is exhausted the roots are in activity, and are collecting food for the young plant from the soil, when the germ has fairly got above the surface of the ground, and becomes a plant, a set of fresh roots are thrown out close to the surface of the ground, which search for food with the same activity as the under ones search the lower parts, and that part of the germ which separates the two sets of roots, now becomes the channel through which the lower roots supply the plant with the food which they have collected. These two distinct sets of roots serve to fix the plant firmly in the soil, and to collect nourishment from every quarter. The upper roots are situated so as to receive all nourishment which comes naturally from the atmosphere, or artificially, as manure to the surface, and serve the important purpose of being the bases of new stems, which are tillered up, and greatly increase the productiveness of the plant.

Wheat that is sowed in autumn, a Clover lea excepted, should, instead of harrowing, be covered with a shallow furrow, and the surface left rough. It will be less in danger of being killed by severe frost in winter, and less injured by drying winds in the following spring. The furrows should be left without harrowing, for the more uneven the ground is, the more the soil will be pulverised and mellowed by the frost. But if the crop which succeeds the Wheat crop should require a smooth bottom, the land, after sowing, must be harrowed, and should be rolled. Some farmers advise, when Wheat is sown on a Clover lea, to plough in the Clover with a deep furrow, then plough in the seed Wheat with a shallow furrow.

In preparing seed Wheat, the first thing to be attended to is to clear it perfectly from every injurious foreign substance; one error here may mar the whole system, and render one skill productive of as much evil as good. On poor and worn-out land, the evil of sowing seeds of weeds with our grain would be great, but when the ground is in high order, the crop is more luxuriant, the noxious plants take firmer hold, and are more difficult to eradicate. Indeed, it would be better for a farmer to make a riddle of his fingers than to sow Cockle, Darnel, Tares, and other vegetable nuisances, which are as tenacious of life as they are unworthy of it; the first preparation, therefore, should be to winnow and riddle the grain perfectly clean. When this is thoroughly accomplished, washing and steeping, for the purpose of preventing smut, should meet attention.

Wheat is exposed to a disease called smut, the real nature and cause of which have hitherto baffled the researches of our most scientific inquirers, and the cure has completely baffled all the attempts of our best agriculturists. It prevails more in wet climates than dry; white Wheat is more affected by it than red; and Wheat sown in spring is not so liable to be diseased as that sown in autumn. Sir J. Sinclair enumerates the following modes by which smut may be prevented:—1, the use of pure cold water and lime, 2, boiling water and lime; 3, water impregnated with salt, 4, urine pickle; 5, ley of wood-ashes, 6, a solution of arsenic; 7, a solution of blue vitriol. Mr. Arthur Young sowed 14 beds with the same Wheat seed, which was black with smut. The first bed was sown with this Wheat without washing, and had 377 smutty kernels. A bed sowed with seed washed in clean water produced 325 do —washed in lime water, 43 do.—washed in ley of wood-ashes, 31 do.—steeped in lime-water four hours, 2 do —steeped in ley four hours, 3 do —steeped in arsenic four hours, 1do Again, that which was steeped in ley, as before mentioned, 12 hours, had none; and that which was steeped in the same kind of ley 24 hours, had none, that also which was steeped 24 hours in lime water, had none; that steeped in arsenic 24 hours, had 5.

Wheat is subject to another disease, called rust or mildew. Common Wheat is more subject to this disease than bearded Wheat, especially if the land has been newly manured with too great a quantity of fresh dung, it generally commences in July, at the time of the filling of the kernel in the ear The remedies against it, according to Sir J. Sinclair, are as follows:—1, Cultivating hardy sorts of Wheat, 2, early sowing; 3, raising early varieties; 4, thick sowing, 5, changes of seed, 6, consolidating the soil, 7, using saline manures, 8, improving the course of crops, 9, extirpating all plants that are receptacles of rust, 10, protecting the Wheat-plants by Rye, Tares, and other crops. The above remedies are enlarged upon by Sir J. Sinclair in "The Code of Agriculture," but his observations are too voluminous to quote here If a field be evidently affected with rust, and the progress of vegetation stopped, the only way to preserve the straw and the grain, if any has been formed, from being entirely lost, is to cut it down immediately, even though the crop should not be ripe. The straw is thus preserved, either for food or litter, and it is maintained that any nourishment in the stem will pass into and feed the grain and make a greater return than could be expected For a more elaborate account of the diseases of Wheat, we refer our readers to the "Quarterly Journal of Agriculture" for June, 1837.

One of the most destructive insects to which Wheat is exposed is the Corn weevil (Curculio granarius) This insect is a beetle about the eighth of an inch in length, of a blackish-brown colour The female, by means of her long proboscis, perforates a small hole in a grain of Wheat, and in this she deposits a single egg In about a week after being deposited the eggs hatch, and the grubs continue to live inside for some time, devouring meanwhile the farinaceous parts of the grain. When they have fed, and grown to their full size, they transform into a chrysalis inside the husk, which they quit about a fortnight afterwards, when they have transformed into their beetle state Kirby and Spence calculate that a single pair of weevils may produce in one season 6000 descendants

To rid a granary of these destructive insects, it has been recommended to farmers to spread their Corn in the sun, when they will creep out of their holes, and by often stirring the Corn whilst in this situation, it is supposed that they may be completely expelled It is also said that they may be destroyed by strewing boughs of Elder or branches of Henbane among the Corn Some recommend the use of Tobacco, either green or in rolls, as a preventive against weevils, they will come to the Tobacco from all parts, and, having eaten of it, certainly die. And the Rev. F. W. Hope says that it is a common practice in some parts of Spain to expose the Corn to a heat of 150 degrees, or more, for the purpose of destroying these insects.

Ice houses have been recommended to be used as granaries, and there can be but little doubt that, if the grain is surrounded with ice, it would escape the attacks of all insects. If there were any grubs or weevils in the grain when put into these ice granaries, they would die.—*John M'Intosh.* [This idea could, however, be carried into practice in but few climates where Wheat is grown.]

ON THE APPLICATION OF MANURES.

(*Continued from page 511*)

"We know," says Liebig, "that the functions of the leaves and other green parts of plants are to absorb carbonic acid, and with the aid of light and moisture to appropriate its carbon." "The verdant plants of warm climates are very often such as obtain from the soil only a point of attachment, and are not dependent on it for their growth." "Large forests are often found growing on soils absolutely destitute of carbonaceous matter, and the extensive prairies of the western Continent show that the carbon necessary for the sustenance of a plant may be entirely extracted from the atmosphere." Indeed, from the moment the leaves are formed he attributes to them the power of supplying the plant with the requisite nourishment from organic matters, that is, the products of animal and vegetable decomposition. He says, "When a plant is quite matured, and when the organs (the leaves), by which it obtains food from the atmosphere, are formed, the carbonic acid of the soil is no further required." This, however, infers, that till then the carbonic acid of the soil is required; and, indeed, he says, "In spring, when these organs (the leaves) of plants are absent which nature has appointed for the assumption of nourishment from the atmosphere, the component substance of the seeds is exclusively employed in the formation of the roots. Each new radicle fibril which a plant acquires may be regarded as constituting at the same time a mouth, a lung, and a stomach The roots perform the functions of the leaves; from the first moment of their formation they extract from the soil their proper nutriment, namely, carbonic acid generated by the humus." But I do not see that he produces any proof of this, it appears rather a concession to the long-standing prejudice, that plants receive their alimentary juices from the soil alone, in every stage of their existence, giving to the leaves merely an elaborating power governed by a vital principle; this vital principle, however, is discarded by Liebig. Nor can I admit, with Liebig, that even from the first it is necessary that carbon should be extracted from the soil by the roots, for grain will vegetate in distilled water, and with some appearance of contradiction Liebig himself says, "That the component substance of the seeds is exclusively employed in the formation of the roots," and with moisture this component substance of the seeds appears to me to be sufficient. In a report made some few years ago by Drs. Thomson, Hope, and Coventry, to the Excise Board of Scotland, we find it stated, that in malting Barley (for the purpose of making spirits or brewing) about a day after the sprouting of the roots, the rudiments of the future stem may be seen to lengthen. It rises from the same extremity with the root, and advancing within the husk, at last issues from the opposite end of the seed, and assumes (but this is prevented) the form of a blade of Grass. As the plumule shoots along the grain, the appearance of the kernel, or mealy part of the corn, undergoes a considerable change and becomes sweet, (that is, the starch is transformed into sugar). It is the common opinion of maltsters that this change of the grain always keeps pace with the plumule—the young leaf, be it observed—each seed being altered as far as the point of the plumule extends, and no further. It does not appear that a plant ever seeks a supply of nutriment from the soil, it rather appears to avoid the locality where it is to be met with, and to push its roots beyond its influence. If with a very little care we take the earth from a Turnip-plant just attaining its rough leaf, and where manure of the most volatile nature is used, the least likely to descend into the ground—say guano—we shall find the stronger and coarser fibres of the roots have pushed down 5 or 6 inches, the finer fibres might be traced, with greater care, much deeper. It cannot be for a moment supposed that the guano could have penetrated so soon to such a depth, the roots have not them gone in quest of the alimentary juices, which manure could afford The lateral branches of the roots of a tree or plant may stretch for some distance near the surface, and in the parts where the richer vegetable mould exists, induced probably by the moisture generated by decomposing matters, but their ends, the recipient parts of the roots, tend downwards, as do all the fibrils of these root-branches. This has by some been attributed to gravity, but as the stem above the ground exceeds in gravity the root below it, the same rule should hold good with more force to bring it under the soil. If to mere gravitation we are to attribute the descent of some roots, why do not roots subject to the action of running water submit to the same rule, but that they find that which they seek nearer at hand? For the formation of the root, carbon does not appear to have been acquired from any other source than the seed in the malting process of Dr. Thomson, &c Liebig says the roots perform the functions of the leaves, but they are supplied with their nourishment in the first stages of their existence by the seed, and this I would rather say performs the functions of the leaves to them till the leaves are formed; it is the seminal leaf which feeds the root. From the moment the plumule shoots, it provides for itself by the absorption of carbonic acid from the air in the artificial growth (the formation of malt), and from the soil in the natural growth, its power of so doing and its production are simultaneous. We can fix no other period for its acquiring this power, from the moment it shoots it begins to exert this power, and if the root is broken off, by it a new formation is commenced. Drs. Thomson, &c say, "Many of them (the roots) are broken off during the turning of the malt; and, in that case, new roots generally succeed them That all substances in solution in a soil are absorbed by the roots with the water in which they are in solution cannot be denied; but I think the presumption is against organic matters thus presenting themselves The leaves of plants are equally, in all probability, without the power of refusing that which presents itself to them in solution in the gases they take in The leaves and roots of plants may perhaps occasionally perform the functions of each other, as the pores of the skin in an animal may be made inlets of food when it cannot be received by the gullet; but I believe the office of the root is solely to supply the plant with moisture, that of the leaf with those gases which, together with moisture necessary to all chemical action, become the food of plants.—*Lieut. J. M. Goodsir, Revenue Police, Graham, Ireland.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

(THE LAND OCCUPATION, *continued*)

THE ploughing of the stubble land to be green-cropped the following year, commences immediately after the labours of the harvest, and the sowing of Wheat after summer fallow and Beans and Potatoes harvest are concluded. It is

…ason, but unfrequently must it involve the completion of the…sowing, as the state of the weather and other circumstances may render convenient or necessary. The stiffest and wettest fields are thrown ploughed first, for the purpose of allowing the soil to derive the full benefit from its exposure to the effects of frost and other atmospheric changes during winter. Frost, in particular, exercises a very powerful influence in meliorating strong adhesive soils.

The general mode of ploughing stubble land is by casting the ridges in the manner already described. The furrows are now made in the open furrows; those in which furlongs had been previously made becoming open ones. The ridges are thus ploughed in a direction contrary to that in which they had been last done, the furrow-slices being reversed.

Sometimes when the land is very wet and tenacious, the ridges are cloven, furing being made in every furrow. All the furrows are kept clear for the purpose of preserving the land in a dry condition during the winter. Immediately after the ploughing of the ridges is completed, whether the field has been in Grass or in Stubble, the headlands upon which the horses turned are ploughed: they are usually of the same breadth as the ordinary ridges. In many instances a ridge is left unploughed at either side of the field, to be ploughed with the headlands, as one continuous ridge round the field. When this is not done, the headlands are generally cloven when broken up from lea, and gathered when next ploughed from stubble.

It may be proper to observe here, that the system of crown-and-furrow ploughing, although the most expeditious, is generally disapproved of, and is, therefore, but seldom practised in this county. In heavy land which has not been thoroughly drained, and in which a considerable degree of curvature is usually given to the ridges, this method of ploughing is, for obvious reasons, altogether inadmissible. Even in light dry soils crown-and-furrow ploughing has latterly fallen into disuse, because necessarily occasioning as many open furrows as there are ridges—a defect which is obviated, to a great extent, by the practice of casting the ridges.

Cross Ploughing.—In the usual management of the farm, the first operations performed in the spring are the sowing of spring Wheat, Beans, Oats, and Barley; after which the land to be that year in green crops receives a second furrow, beginning with those parts which are intended for Potatoes and Swedish Turnips. This ploughing is sometimes, but not frequently, given in a direction crossing that of the ridges. In dry, friable soils direct cross-ploughing is perhaps to be preferred, as in light, porous land no great danger need be apprehended from wet weather; but where the soil is heavy, and not thoroughly drained, considerable injury is frequently suffered by its being ploughed into large flat ridges crossing the former ones, especially should a long continuance of wet weather ensue. In such circumstances the second furrow is generally given lengthwise, or in the direction of the ridges, especially should the weather happen to be rainy or unsettled at the time. The next ploughing is usually given across; and if any more are rendered necessary from the nature of the crop to be sown, or the condition of the land, they are given in various directions, determined by circumstances. It is injudicious to plough the same land twice consecutively in one direction, if it can be safely avoided. Instead of ploughing directly across the ridges, a diagonal direction is frequently adopted, the inclination to the line of the ridges being regulated by the slope of the field.

The depth to which land is ploughed depends upon the quality of the soil, the nature of the crop, and the operations which are to follow. In ploughing lea, 9 inches wide by 6 in depth are the usual dimensions of the furrow-slice, the common calculation being that the breadth and depth should be nearly in the proportion of three to two. It is deemed injudicious to plough deeper than six inches, or to expose any new soil in ploughing Grass land, particularly old pastures. In giving the first, or winter furrow, to stubble lands, preparatory to green crops, the plough is made to penetrate as deep into the soil as it can be drawn by two horses. From 9 to 12 inches is the usual depth. The first furrow for summer fallow, and for Beans, is generally ploughed something deeper than that for Turnips or other green crops. On well-conducted farms, the stubble land is always ploughed to a considerable depth, in order to expose as much fresh soil as possible—when the subsoil contains nothing noxious to vegetation—to the mellowing influence of the winter's frosts. In the process of preparing the land for green crops, the second, or cross furrow, as it is sometimes termed, is invariably taken as deep as the strength of two horses will accomplish. When it is considered desirable to plough to a greater depth than 12 inches, as in summer fallows, three or four horses, according to the nature of the soil, are yoked together. In the case of such deep ploughing a piece of plate-iron, about 3 inches in height, is sometimes attached to the upper edge of the mould-board, for the purpose of increasing its height, and thereby preventing the earth from falling back into the trench. Shallow-ploughing is invariably practised after Turnips are eaten on the ground by sheep, that the manure may not be buried too deep; and also in covering in lime, because it usually tends to descend of itself into the soil. In ploughing down farm-yard dung—a practice which I have already mentioned as being prevalent on heavy soils in this district—it is not desirable to go only deeper than what is necessary to cover the manure, so that none may be left exposed to the influence of the atmosphere.

The general breadth of ridges is 18 feet, this size being found the most suitable for the several purposes of sowing, harrowing, and reaping. In very dry and light soils, ridges are frequently dispensed with altogether, such land being commonly ploughed into very wide ridges called *flats*, and otherwise marked off into ridges of the ordinary breadth, in order to regulate the sowing and reaping. In some places where the land is of a dry porous nature, ridges are often made 24 and 36 feet wide. There are what are here termed *bout-ein ridges*, in consequence of being reaped by a band commonly of six reapers attended by one binder. The direction of the ridges, owing to the irregularity of the fields, is very various. As the principal ridges or hills, of which the county is composed, lie in a direction from east to west, the land slopes either to the north or to the south and the ridges accordingly are made to lie in the same direction, by which the Corn at both sides enjoys nearly equal advantages from the influence of the sun. Although the direction of due north and south is, for this reason, to be preferred, when the circumstances permit, yet it is the particular inclination or slope of the field that mainly regulates the direction in which to run the ridges. The practice almost universally observed, is to form them directly up the greatest acclivity of the field, by which the land, particularly such as is of a strong retentive character, is preserved in a comparatively dry condition during winter, or in very wet weather. The operation of ploughing strong clayey soils too, can never be so surely, or so effectually performed as when the land is ploughed directly up the acclivity. When the ascent, however, happens to be very steep, the ridges are frequently formed rather diagonally, with a slight inclination towards the right hand at the top. By this arrangement, in ploughing up the acclivity the furrow-slices fall more readily from the plough, which considerably diminishes the labour of the horses. Another advantage resulting from forming ridges in an oblique direction on such land is, that the surface soil is less liable to be washed down from the higher to the lower ground by heavy rains or currents, while in droughty seasons much more moisture is retained.

It may not be improper to mention in this place, that a kind of plough having two coulters and two mould-boards was much used some time ago in East Lothian, for ploughing across steep declivities, in order that the furrow-slices may be always turned down the hill. By means of a very simple contrivance, one coulter and mould-board was depressed, while the others were elevated, at the end of each furrow, by which all the slices were ploughed to one side. Although a plough of this description was much used in such situations so far back as 30 or 40 years ago, neither it, nor any of the improved turn-wrest ploughs since invented by Mr. Smith of Deanston, and others, is now used, it being considered highly injudicious, if it can be possibly avoided, to plough directly across the declivity. An oblique direction is always preferred, because, by adopting the former practice, the soil is worked down to the bottom, where it speedily accumulates, leaving the top bare and unproductive. In speaking of ridges, I have hitherto supposed them as running through the entire length of the field; but as the land frequently slopes in different directions, and as the fields are, generally speaking, of a large size, it is sometimes expedient to alter the course of the ridges, in order to answer the inequalities of the surface, or to diminish their length for the purpose of lessening the labour of the horses. Accordingly, in very large fields of irregular surface, the ridges take various directions, so as always to have them lie with the greatest declivity, unless when the inclination happens to be very abrupt. The quantity of land ploughed in a day by a pair of horses, depends very much upon the quality of the soil, and the dimensions of the furrow-slices. As the land is for the most part very adhesive and difficult to labour, the motion of the horses is necessarily slow, but even in the strongest soils a pair of stout horses is allowed to be capable of completing in nine hours three roods when the land is in Grass, or about an imperial acre when ploughed from stubble. In very light soils, or when the land is in a loose half-pulverised state, considerably more is often done, but in an average quality of land, a statute acre is the general allowance to a pair of horses in the day.—*T. Sullivan.*

Home Correspondence.

Adulteration of Manures.—I collect from your Paper, as well as from other sources, that great adulteration either takes place, or is suspected, in that valuable manure guano. I observe too that a certain class of chemists and country druggists are desirous to have the job of analysing every bag which is bought and sold. I do not wonder at this: they will make a good thing of it, if they can persuade the farmers to come into the plan; but this they never will do, and the sooner you put an end to this wild notion, and recommend something more practicable, the better it will be for all parties. I will suggest to you a certain remedy for the evil. There are several large houses who import great quantities direct from the countries where it is found; they will, of course, always bring the best article they can find, as the charges and expenses are no more upon the good than they are upon the bad. They are highly respectable people, and may be trusted; but besides this, you have their interest on your side, because it is a great object to them that the trade should increase, which can only be by the increase of consumption consequent on the good effects of the manure. They are sure, therefore, not to adulterate it. Now all the farmer has to do is to write an order direct to the merchant who imports, and he will get the guano from the first hand, at the first price; be quite sure there is no adulteration, and save money by not going to the middle-man, where only the adulteration now so universally complained of takes place. The farmer, however, will have to pay the carriage; and in order to reduce that he may recommend to him always to purchase the very best quality imported.—*J. G.* [The plan suggested by our correspondent will be a security in a measure against *artificial* adulteration, but not against that (which, however, is not so much to be dreaded) arising from natural causes—the admixture of earthy matter with the manure by wind, for instance, on the islands where it is procured. It is the interest of those who import nitrate of soda and other salts, as much as it is of the importer of guano, to procure a pure article, for it saves them expense of carriage; but we know that the former article as imported is often adulterated to the extent of 10 or 20 per cent. The purchasers of this, however, are not cheated; they judge of the quality of what they buy from an authenticated analysis. Why may not the purchasers of guano have this security also? We reiterate our advice to all purchasers of guano, to require from all venders of it authenticated analyses in this manner, and then "put aside a pound of the substance in a glass bottle, cork it securely, and seal it up, so that it may eventually become evidence against the seller. If crops fail, or suspicion is aroused, have it formally analysed, and then if it turn out to be different from the analysis on the faith of which it was bought, proceed at law against the seller."]

Hybridising Barley.—I have endeavoured to hybridise Alpine Strawberries with Hautbois, and *vice versâ*, but have never succeeded. I have frequently thought that Hordeum pratense might be hybridised by common Barley, and that the result would be a larger grain in the Hordeum pratense. I apprehend that the first operation would not be attended with perfect results, but think that if the hybridised Hordeum pratense were again and again operated upon, by the third season the object might be attained. But this may perhaps be needless, as I think I have read of a Polish or a Russian sort of Barley that is perennial. I have also thought that if the larger grains of Hordeum pratense were selected, a larger grain might be produced; and that, if the largest of these larger grains were selected, the same sort of result as above might be attained. What, however, I chiefly seek for is a Barley of a hardy description, that might stand the winter, and be harvested earlier in the ensuing season. Perhaps some of your ingenious readers may turn this hint to account.—*M. B, G.*

Bark of Trees.—Your correspondent "Clericus, V.," inquires in last *Chronicle* for "a simple means of preventing cows from gnawing the bark of trees." I have suffered from the havoc made by sheep in this respect, and have found a preparation of soot and cowdung a pretty good preventive, the soot being the active agent; but the appearance is unsightly. I mean to try a strong infusion of Socotrine Aloes as the cheapest bitter I know of, and free from the objection to soot on the score of its colour.—*Anon.*

Late Horse-hoeing.—This is, as you say, an important question. We are told, on good authority, that Raspberries, Strawberries, Vines, and indeed all fruits, should not be dug about at all. Am I right in supposing that the seeming contrariety between this advice and yours about Turnips arises thus?—In the case of Turnips, Potatoes, Cabbages, &c., where a large system of leaves or tubers is wanted, the frequent and late digging is beneficial, inasmuch as it encourages vigour of growth in the plant, both leaves and roots; but in the case of fruits you must check the growth sometime or other, or the plant would not blossom, or, at least, there would be comparatively few blooms.—*W. C.*

Selection of Seed.—As the two following examples may prove useful to some of your readers, by impressing on them the necessity of being very careful in procuring seed for the Turnip-crop, I will transcribe them from my note-book, for insertion in your Paper. Not having quite enough Swede-seed to drill the whole of my field, I procured a small quantity from a country seed-shop to complete the job; but when the plants began to come up there was a remarkable difference in the rows where this seed was used. The plants were not only several days later in making their appearance, but came up very irregularly, and did not grow so fast as the others. The seed drilled in the rest of the field was grown last year by a neighbour, and not beaten out till this spring. They were both drilled the same day, with the same manure; thus both having an equal chance. Intending to sow a field that had been pared and burnt, with common Turnips, I procured my seed from the same source as the unsuccessful Swede seed, and prepared to sow very early. Fortunately for me the season was so dry that although the ground was ploughed it was impossible to work it for some weeks. In the meantime a farmer in the neighbourhood harvested some Turnip-seed, and I, thinking to make sure, procured some which I mixed with the rest, at the rate of 1½lbs. per acre of new seed to 2lbs. of old. I sowed five acres out of a six acre field with this mixture, and the plants are now up well and regular, but not at all too thick; in short, there is every prospect of a good crop. It is impossible to tell the age of the seed procured from the shop, though it is evident it did not vegetate to any extent; and had I depended entirely upon it, the crop would have failed. The remaining acre of the field was sown with 3½lbs. of the old seed, which came up so thick, I was obliged to harrow in some new seed. My reason for sowing all old seed on one acre was to have an acre of Tankards, the new being the White Globe. The single acre is in the middle of the field, and the Turnip-plants on each side are in a most flourishing condition.—*Arthur Hall, The Cwm, Chepstow.*

On Shell-fish as Manure.—An article in No. 29, extracted from the *Dumfries Courier*, on the successful results of experiments with shell-fish as manure, induces me to trouble you with a few remarks on the subject. Muscles and star-fish (five fingers, as the farmers call the latter) have long been an established manure in the neighbourhood of Faversham, in Kent. In a little work entitled "Practical Chemistry for Farmers and Landowners," published a few years ago, I adverted to this circumstance, and endeavoured to impress upon the attention of agriculturists residing near the coast, the advantages which they might derive from the use of these as manure, and the benefit they would at the same time confer on the community from the employment which the collection of them would afford to that hardy race of fishermen, which constitutes the nursery of our mercantile and national Navy. In the neighbourhood of Faversham, the muscles and star-fish are procured by dredging, and furnish bread to the free dredgers, who were nearly deprived of employment by the neglect or mismanagement of the oyster grounds belonging to the Corporation, on which they had depended for their subsistence. Muscles sell at 10*s.* the waggon load; "five fingers" at somewhat more—I think 21*s.* The farmers consider the latter the most efficacious manure; the reason of which the chemist would probably find in the greater proportion of phosphoric acid present in their hard covering. I have frequently counted between 12 and 20 waggon loads of one or the other leaving Faversham on a market day. There is scarcely a point of our coast which would not furnish, either by means of dredging, or by means of Leds left dry at low water, a valuable source of employment and a valuable mine of manure, which would restore a portion of those supplies of ammonia and the phosphates which our rivers are daily bearing from our sewers into the sea. In the same manner the freshwater muscle, the anodons and unios of our rivers, together with the large paludina, (a shell somewhat resembling in appearance the periwinkle or pin-patch) occasionally occur in sufficient quantities to be worth the attention of those experimenters who may be disposed to offer the unemployed population of the neighbourhood a fair price per bushel for collecting them. That small fish the stickleback has been, if it is not now, collected in large quantities for manure from the ditches of our fens, and I can see no reason why frogs should not be applied to the same purpose. They might be easily killed by sprinkling them with salt, which of itself is, in moderate quantities a valuable manure. We should thus, like the French, eat Frogs, though not exactly in the same form. But to return to the supplies of manure which marine animals are capable of furnishing:—The river Conway in Wales has long been celebrated for its pearls, which are even enumerated among the temptations which induced the Roman invasion of our island. Large pearls are occasionally found in the Unio margaritifera of the freshwater portion of the river, and small seed pearls are obtained in considerable quantities from the edible muscle (Mytilus edulis) of which there are large beds at the mouth of the estuary. The use to which these small pearls are applied, and the channel through which they are disposed of in London, have hitherto remained a secret, and the secret has conferred a monopoly of the traffic on parties who purchase them of the peasantry by the ounce, at such a price as renders the work of collecting them a source of remunerative labour, not only to women and children, but to men. The muscles, when collected, are boiled in large caldrons to cause the opening of the shells, and the mass being stirred and washed, the pearls are found at the bottom of the vessel. The refuse would form a valuable manure, but is, or at least was, a few years ago, left in large heaps on the shore. Perhaps this article, and that which you have extracted from the *Dumfries Courier*, may induce some of your readers residing near Conway, to make trial of it as manure. On stiff soils, the shells alone would be beneficial in some degree, though perhaps of little comparative value in a district where lime is so easily procured; but there can be no doubt that the mixture of the shells and boiled bodies of the animals would be highly efficacious. While we avail ourselves of the aid of commerce from the importation of foreign manures, let us not entirely lose sight of those supplies which lie unheeded at our own doors.—*J. Trimmer.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

In completion of our last week's Report of the Southampton Meeting we have to publish the following correction of Errata in our report of the award of premiums for Live Stock:—

Cattle of the Channel Island Breed.—The prize of 10 sovereigns, in Class 2d, for the best bull calved since the 1st of January, 1843, and more than one year old, was adjudged to Mr W. Woolcock, of St Peter's Parish, Hants, for his 1 year 8 months old Jersey bull, bred by Col. Le Couteur, of Belle Vue, Jersey.

Cattle of any Breed or Cross.—The prize of 15 sovereigns, in Class 4th for the best in calf heifer, not exceeding 3 years old, was adjudged to His Grace the Duke of Buckingham, for his 2 years 10 months old long horned heifer.

South Downs.—The second prize of 15 sovereigns, in class 2d, was adjudged to Mr Grantham, of Stoneham, near Lewes, for his 28 months old South Down ram, bred by himself.

Long woolled Sheep.—The second prize of 15 sovereigns, in Class 2d, was adjudged to Mr. I. Smith, of Charlbury, near Enstone, Oxon, for his 32 months old Oxfordshire ram, bred by himself.

Pigs.—The second prize of 5 sovereigns, for the second best boar of a small breed, in Class 2nd, was adjudged to Mr. T. M. Goodlake, of Wadley House, near Farringdon, for his 1 year 2 months old boar, of the Wadley breed, bred by himself.

We have also to make the following Addenda with reference to this section of our report:—

Extra Stock.

Bulls.—The Judges awarded 7*l.* to Mr. Michael Gosnall, of Eyeton Manor, near Shiffnall, for his 5 years 1 month old cow of the Leyton and Brutch cross breed. Also, 2*l.* to Mr. George Drake, of Manor Farm, East Tytherley, for his 10 months old pure Hereford bull calf. Also, 1*l.* to Mr. G. Drake, for his 6 months 3 days old cow-calf.

Long-woolled Sheep.—The Judges awarded 10*l.* to Mr. C. Large, of Broadwell, Burford, Oxon, for his 4 years 4 months old new Oxfordshire ewe.

Short woolled Sheep.—The Judges awarded 4*l.* to Mr. T. B. Northcott, of Tedworth, Marlborough, Wilts, for his 3 years 5 months old Southdown ram. Also, 2*l.* to Mr. T. B. Northcott, for his 3 years 5 months old Southdown ram. Also, 4*l* to Mr. W. Sainsbury, for his 3 years 7 months old Southdown ram.

Pigs.—The Judges awarded 3*l* to Mr. Hobbs, of Marksbell, for three months old improved Essex boar. Also, 2*l* to Mr Hobbs, for his 7 months old improved Essex boar. Also, 1*l* to Mr. W. J. Calhoun, of Binderton, Chichester, for his 10 months old Sussex sow. Also, 3*l* to Mr. Hobbs, for his 9 months old improved Essex sow.

Horses.—The Judges awarded 5*l* to Mr R. Curtis, of Basingstoke, for his 4 years 2 months old stallion. Also, 5*l.* to Mr John Thomas Glasspool, of Southampton, for his 3 years 3 months old three-parts bred mare

The following are the names of the gentlemen who officiated as judges of the stock:—

The judges of the *Short-horns* were Mr. Hugh Watson, of Keilor, near Angus; Mr W Torr, of Riby, near Caistor, Mr Charles Stokes, of Kingston, near Ragworth.

Of the Herefords—The Rev J Smythies, of Gray Friars, Colchester; Mr James Peake, of Hanwood, near Ross; Mr J. Ashdown, of Uppington, Shrewsbury.

Of the Devons—Mr J Hudson, of Castle Acre, near Swaffham, Mr J. Druce, of Eusham, near Oxford, Mr E Brankin, of Ascot, near Benson, Oxon

Of the Channel Islands Breed—Mr W. R. Browne, of Davenport-street, Bayswater; Mr J. Clayden, of Littlebury, Saffron Walden; Mr. M. Gibant, of Main Land, St. Lawrence, Jersey.

Of the Cross Breeds—Mr J Hall, of Wiseton Bawtry, Mr N. Smith, of Martley, Worcestershire, Mr H. Palfrey, of Upton-on-Severn.

Of the Leicesters—Mr. T Metcalf, Harleston, near Northampton; Mr. H. Bateman, Asthally, Witney, Oxon; Major Brown, Welbourne, Grantham.

Of the Southdowns—Mr T Weall of Woodcot Lodge, Croydon; Mr R Emery, of Harston Place, Storrington, the Hon W Gage, of Westhury, Bishop's Waltham.

Of the Long woolled—Mr W Gillett, of South Leigh, Witney, Mr J Elliott, of Chapel, Brampton, Mr. W Anderson, of Oakley, near Bedford

Of the Shorthorns—Mr J Chapman, 29 Park street, Dorset Square, Mr J Harris, of Hinton, Abingdon, Mr. T Morris, of Ranscombe, Lewes

Of Pigs—Mr John Farncomb, of 5, Patriot place, Brighton, Mr Jesse Kemp, of Utterby Grove, Louth, Mr. R J. Wiley, of Hornby, near Catterick.

Of the Horses—Mr W F Karkeek, of Truro, Cornwall, Mr Charles Bowman, of Greatford, Bourne, Mr. William Day, of Eusham, near Oxford

On Friday at noon, the general meeting of the Agricultural Society took place at the Victoria Archery-rooms. Earl Spencer took the chair. The thanks of the Society were presented to the Mayor and Corporation of Southampton, for the readiness which they had shown to meet the wishes of the Society, and to do all in their power to further its objects—also to Mr. Gater, upon whose land the light implements had been tried, for the exertion he had bestowed on the preparation of the light land; and to Mr. Spooner, of Ealing Farm, owner of the land on which the heavy implements were tried. The Marquess of Downshire then rose to propose that the thanks of the Society be given to Earl Spencer for the ability with which he had presided over the meetings of the Society during the whole of his presidency. He had no doubt that the great prosperity which the Society had attained was to be attributed mainly to the great interest evinced in its proceedings by the noble Earl, the zeal he had exhibited in carrying out its objects, and the great personal trouble and inconvenience to which he had put himself in order to give effect to its proceedings. Sir R. Price seconded the motion, which was carried by acclamation. Earl Spencer said that it had most undoubtedly been his earnest wish to promote to the utmost of his power the interests of the Society. He must be allowed the expression of his gratification that the Society in general, and this annual meeting in particular, had been so successful.—The thanks of the Society were then presented to the late Mayor of Southampton and to the Chairman and Board of Directors of the South Western Railway for the assistance they had given in bringing the cattle to the Show, and for the liberality they had evinced in reducing their charges to meet the occasion. The meeting then broke up.

Reviews.

Annual Register of Agricultural Implements, Southampton, 1844. By Cuthbert W. Johnson, Esq., F.R.S., &c., and James Hare. James Ridgway, Piccadilly.

The annual appearance of this work is very useful, as showing the progress made in English agricultural mechanics. Most of the different implements mentioned in it are illustrated by woodcuts, as well as by description. In the present case the work—a Guide to the Southampton Meeting—contains an interesting description, geological, agricultural, and historical, of the country between London and Southampton.

From this we extract the following, descriptive of the Wiltshire mode of managing water meadows:—

"In the autumn, the after Grass is eaten off quite bare, when the manager of the mead (provincially, the drowner) begins to clean out the main drain, and 'right up the works,' that is, to make good all the carriages and drains which the cattle have trodden in, so as to have one tier or pitch of work ready for drowning. This is immediately put under water, while the drowner is preparing the next pitch.

"In the flowing meadows this ought to be done, if possible, early enough in the autumn to have the whole meadow ready to catch the first floods after Michaelmas. The water then being the first washing of the arable lands on the sides of the chalk hills, as well as the first from the roads, is then thick and good; and this quality is to the superior riches of the flood-waters is commonly made in Berkshire and other parts of England. The length of the autumnal watering cannot be precisely stated, as much depends upon situation and circumstances; but if water can be commanded in abundance, the custom is to give meadows 'a thorough good soaking at first,' perhaps for a fortnight or three weeks, with an intermission of two or three days during that period, and continue for the space of two fortnights, allowing an interval of a week between them. The works are then made as dry as possible to encourage the growth of the Grass. This first soaking is to make the land sink and pitch close together—a circumstance of great consequence, not only to the quantity, but to the quality of the Grass, and particularly to encourage the shooting of new roots, which the Grass is continually forming to support the forced growth above.

"While the Grass grows freely, a fresh watering is not wanted; but as soon as it flags, the water must be repeated for a few days at a time, always keeping this fundamental rule in view—'to make the meadows as dry as possible after every watering, and to take off the water the moment any scum appears upon the land, which shows that it has already had water enough.'

"Some meadows that will require the water for three weeks in October, and the two following months, will not perhaps bear it a week in February or March, and sometimes scarcely two days in April and May.

"In the catch-meadows, which are watered by springs, the great object is to keep the works of them very dry between the intervals of watering; and as such situations are seldom affected by floods, and generally have too little water, it is necessary to make the most of the water by catching and rousing it as often as possible; and as the upper works of every pitch will be liable to get more water than those lower down, a longer time should be given to the latter, so as to make them as equal as possible."—(*Davis's Agriculture of Wiltshire*, p. 125—7.)

"In Berkshire they first flood their water-meadows about Michaelmas; these are situated principally on the banks of the Kennet. The first flooding they deem the richest in quality; this they keep on the land for about four days, then they dry it for about a fortnight, and then the water is let on for three or four days more. Those meadows which are the most readily dried are the most productive. There are none more so in fact than those which have a porous, gravelly, or broken flint bottom, from which the flood-water readily escapes, almost without drains. They begin to feed their meadows with sheep about the 6th of April, and continue feeding till about the 21st of May, when the meadows are again flooded for a crop of Hay; the land is then flooded and dried alternately for three days until Hay-time.

"The land in Wiltshire, under this kind of management, has been computed, and with a tolerable degree of accuracy, to be between 15,000 and 20,000 acres. Some considerable additions, however, have been made to the water-meadows of the district since this calculation was made. (*Davis's Wilts*, p. 122.) About the same number of acres are formed into water-meadows in Berkshire, and a still larger number in Hampshire."

Miscellaneous.

Sheep Salve.—Having left the south country, I came to Fife, and got employment on the farm of Bailo, on the Lomond Hills. At that place, power was given me to manage the sheep entirely after my own fashion, and after much thought on the subject, and seeing so much harm done by the usual salves, I set myself to consider what were the real objects to be gained by salving. I considered they were twofold; first, the destruction of vermin, and, second, the growth of wool of superior quality. Now, it is clear that the more innocent the substances used, so much the better will it be for the sheep as well as the wool; for, in looking at the composition of the usual salves, it is easy to see that the tar, the turpentine, the juice of tobacco, and arsenic, are all merely calculated to kill vermin, and cannot possibly be beneficial to wool, but rather detrimental; while the absorption of a portion of any of them through the pores of the skin cannot fail to hurt the animal more or less, according to the quantity absorbed. Butter, therefore, appeared to be the only article that could benefit the wool, and at the same time not hurt the sheep. I then considered that possibly oil of the cheapest sort, and used by itself, would serve the intended purposes; but as oil runs off too easily by the heat of the sun, or even by that of the sheep themselves, it occurred to me to mix it with a portion of tallow, which, while it is very nearly of the same nature, would tend to harden the salve, so as to retain it, and I wished to prove this by experiment. I felt assured that I would get superior wool, and I hoped and trusted that it would also prevent vermin on the sheep; but feeling some doubt on the propriety of leaving the tar entirely out, I mixed a portion amongst the oil and tallow in my first experiment. I mixed equal portions of tallow and train oil, weighing together 12 lbs., with 8 pints (16 quarts) of tar, for 100 hogs. I then smeared 400 with that sort of salve, and it proved much better in its results than anything I had ever seen before, both for quantity and quality of wool, and the vermin were also kept away. The wool-stapler said he had never had a clip come through his hands equal to it. Encouraged by this success, I next year left out the tar entirely, and smeared 400 hogs with tallow and oil alone, in the proportions given above; and I found that I had a still larger growth of wool, and of superior quality, so much so, that it realised in the market some

shillings per stone more than any wool cured by salves containing tar—at the same time the advantage to the sheep was most decidedly apparent. From these results I have no hesitation in saying that oil and tallow form the best salve for sheep of any that has hitherto been tried; and that, if the sheep-farmers of Scotland would use that salve alone, they would find their advantage in obtaining—1st, about a third more money for their wool, on account of its superior quality and purity; and, 2d, an improved condition of their sheep. But as long custom renders people unwilling to leave off old habits, it will be difficult to convince them of the propriety of the change, and particularly as to refraining from the use of tar, which was long the only substance used. For this reason I would recommend farmers to try the oil and tallow mixed with a portion of tar, to begin with, and afterwards to dispense with it by gradual decrease; or to try the oil and tallow on a few sheep only, and compare these carefully with other sheep under the usual treatment, and I have no fear of the result being entirely in favour of the oil and tallow, both in regard to satisfaction as well as profit.—*Mr. Stewart, in the Transactions of the Highland Society.*

Manufacture of Butter.—From the account of the experiments of Professor Trail, contained in the Transactions of the Highland Agricultural Society, are derived the following results:—"1. That the addition of some cold water facilitates the process, or the separation of butter, especially when the cream is thick and the weather hot.—2. That cream alone is more easily churned than a mixture of cream and milk.—3. That butter produced from sweet cream has the finest flavour when fresh, and appears to keep longest without acquiring rancidity; but the buttermilk so obtained is poor, and small in quantity.—4. That the scalding of the cream, according to the Devonshire method, yields the largest quantity of butter, which, if intended for immediate use, is agreeable to the palate and readily saleable; but if intended to be salted, is most liable to acquire, by keeping, a rancid flavour. The process of scalding is troublesome, and the milk after the removal of the cream is poor, and often would be unsaleable, from the taste it has acquired from the heating.—5. That churning the milk and cream together, after they have become slightly acid, seems to be the most economical process, on the whole, because it yields a large quantity of excellent butter, and the buttermilk of good quality.—6. That the keeping of butter in a sound state appears to depend on its being obtained as free from uncombined albumen or casein and water as it can be, by means of washing and working the butter when taken from the churn."—*Report of Commissioners of Patents, U. S.*

Rent-day.—To those agents who, by good fortune, acquire the management of estates, and who have no experience but what they borrow from their friends, the author begs them to get practical men to set out and superintend the work, and, in the face of the present times, assist the tenant in doing that which he cannot do himself, and, by so doing, enable him to procure his rent at the time it becomes due, instead of whipping him up and threatening him with distress the moment he got into arrears, and thus meet him with a face all smiles and thankfulness, instead of one as long as a fiddle, and grievances to recount sufficient to fill a sheet of foolscap paper. There is no class of men upon earth so grateful as the British farmer. I do not mean the gentleman farmer, but the man who gets his living for himself and family from his farm, and whose all is invested in it; and there is no man whose heart is so light and happy as the farmer, who, with his half-year's rent in his pocket, can meet his landlord, or the agent of his landlord, with a smiling face, pay his rent, enjoy his dinner and a pipe afterwards, and then return home with the pleasing reflection to his family that he met his landlord, and that he behaved kindly to him, and promised him various things which required doing upon his farm. It is this class of farmers, too, who want assisting, as, when the harvest is over, he has to begin to sell his spring Corn to pay his servants' wages, his Wheat, part to pay his Michaelmas rent, and before Lady-day his stock-yard is cleared. Great rises in the market he never can reap the benefit of, because he cannot keep a Wheat-stack to look at; it is only the gentleman farmer who can derive any benefit from the sudden advance of the market. The system, too, of giving back 10 or 15 per cent., and in some instances 20 per cent., is bad in principle as well as in practice—it gives the landlord a fictitious rental, and returns to the tenant a sum of money in bad times, which he cannot afford to lay out upon his land, but uses for other purposes.—*Hutchinson on the Practical Drainage of Land.*

The Cultivation of Rape.—The value of Rape for spring food has frequently engaged the attention of your correspondents and yourself. You have on several occasions recommended the mode of raising the Rape-plants in a seed-bed, to be transplanted when Flax or Corn is removed; and you seem to doubt the success of sowing the seed after these crops are taken from the ground. I have for several years sown Rape on my Flax ground, broadcast, with perfect success. I would recommend sowing it at three times: the first as early as possible, which this year may probably be about the 1st August; the second about the middle of August; and the third on the 1st September. Rape sown on the 1st August will, in an ordinary season, give a good cutting very early in April; and that sown 1st September will last till the Clover is ready for cutting. The ground occupied by the Rape may be sown with Spring Vetches in May and June, in order to succeed the second cutting of Clover. A portion of the Flax-ground may be sown late in September with Winter Vetches, and another portion in February with Spring Vetches. These will come into use a full crop between the first and second cuttings of Clover, and may be succeeded with transplanted Swedish Turnips, which may be supplied in the best manner by thinning the sown Swedes to 6 inches at first, and, when the plants are strong, removing the alternate ones for transplanting. The ground on which Flax has grown is the best adapted for the treatment described, the Flax crop being the first taken from the ground. Two full crops of green food are thus secured in the same season. Manure must be given to the Rape and transplanted Turnips; but if the house-feeding system be carried out to the full extent, there will be no scarcity of manure for every purpose; and it is good economy to get the manure into the land as soon as possible after being collected. Rape and Vetches are essential to a complete system of house-feeding; they fill up the intervals in spring, summer, and autumn, when Turnips and Clover cannot be commanded. Cabbages, to a moderate extent, are also most useful. By planting early and late Cabbages in early spring alternately, the early kinds are brought forward for use in July and August; and the late, then standing at wide distances, have room to complete their growth by October and November.—*J. A., in the Dublin Farmers' Gazette.*

Notices to Correspondents.

BARLEY.—*Youell & Co.*—Your specimens (it arrived in a mutilated state) is a long ear of six-rowed Barley. The grain appears fine and plump.

BOOKS.—*J. R. Pearson.*—Sinclair's "Hortus Gramineus Woburnensis."

CAMELINA SATIVA.—*E. B.*—Mr. Sproule's directions for the cultivation of Flax may be safely followed in most particulars, with reference to this plant. See former Numbers of the *Gazette*. Further information hereafter.

COLTSFOOT.—*T. R. Avery.*—Your note of July 23 is the only one we have received from you. The best way to rid the land of Coltsfoot is perseverance in pulling the flowers in spring, and the leaves with as much root as possible whenever they appear.

EARLY SPRING CROPS.—*J. Rosetta.*—You may have Cabbages early in April, by sowing the seed of an early sort in beds now, and transplanting at the right time. And if you sow Vetches in September, on good soil, you may expect to be able to cut them early in May.

FAILURE OF CROPS.—*Leicestershire Farmer.*—The only chance of a remedy for your case, so far as we know, lies in sowing late Turnips; and in sowing early Cabbage, to transplant in October for use in April.

FIXATION OF AMMONIA.—*S. Newington.*—Burnt gypsum contains about half its weight of sulphuric acid. The greater certainty of its operation would induce us to prefer the latter, though at greater expense. Unquestionably, it is advisable to convert the carbonate of ammonia into sulphate, or some other fixed form of ammoniacal salt. The difference in price between sulphate and carbonate of ammonia arises from the mode of their manufacture. The former is prepared from gas water, most of which used to be wasted as useless.

GAS-LIME.—*Jack Spratt.*—If you first expose it for a considerable time to the air, it may be beneficially mixed with manure.

GYPSUM.—*W. T. B.*—This manure may be adulterated with lime. Purchase only from a respectable dealer. The application of more than is necessary to fix ammonia is not injurious, and may be beneficial. Gypsum is sold in powder; if you obtain it in the solid form, it may be pulverised by burning.

MANURES.—*L. O.*—The manure from the tan-yard, which you describe, is probably superior per bulk to ordinary farm-yard manure. Old ashes in night soil dilute it, and so far injure it; but they are not injurious in themselves.

POTASH.—*Constant Reader.*—This alkali can be applied to land as nitrate. Apply 1 cwt. of saltpetre, which is nitrate of potash, per acre.

POTATOES.—*Patto.*—Your abundant haulm justifies your anticipation of a good crop. Do not roll the plant down—we never heard of such a thing. Try the effect of pulling the blossoms.

SMALL FARMS.—*An Inquirer.*—We cannot learn that any question has been received from you on this subject. We heartily wish that Cobbett's perspicuity could be transferred to all writers on rural affairs. But how is that to be done? There are few men who are very clear-headed, and no education will render persons perspicuous whose ideas are perplexed.

TANNARD SWEDE.—*A Reader.*—There is a variety of this form; apply to your seedsman.

TURNIP CUTTERS.—*W. C.*—An implement of this class was exhibited at Southampton by Mr. Philipps, of Bristol, having a cross-cutting apparatus, reducing the finger-shaped pieces in which the Turnip is delivered to a uniform length of about ¼ inch. All roots are the better of being washed, whatever the mode in which they are to be given as food. Your other questions next week.

WIREWORM.—*Fudge.*—Now that they are actually at work on your Swedes, we know of no help for you.

MISCELLANEOUS.—*Claudiocestriensis.*—We do not know Mr. Smith's address, but a letter to him at Deanston would probably be forwarded.

***As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, July 29.—Per stone of 8 lbs.

Best Scots, Hereford's, &c.	3s	8	to	4s	0
Best Short Horns	3	4	3	8
Second quality Beasts	2	10	3	4
Calves	3	8	4	8
Pigs	3	0	3	8
Best Downs & Half-breds	3s	8	to	4s	0
Best Long-wools	3	6	3	8
Ewes and second quality	3	2	3	6
Lambs	4	0	4	10

Beasts, 2633; Sheep and Lambs, 27,530; Calves, 188; Pigs, 312.

The supply of Beasts to-day is large, and the trade very heavy; on the whole, prices are lower. 4s for the best Scots, &c., is quite an extreme quotation, not being generally realised; many of the best Short-horns, also, are sold under 3s 8d, and middling qualities are very heavy on hand—several remain unsold. The number of Sheep is larger than we have known for a long period, and, considering the quantity, the prices, although lower, are better than could be expected, showing a disposition to improvement, should the supply at all decrease, which is highly probable. Lamb is a shade lower, still, there are many buyers for the best qualities, which suffer but a small reduction. Calves are rather shorter, and a little better trade.

FRIDAY, Aug. 2.

We have a fair supply of fresh Beasts, which, with those left from last Monday, cause a large market. Trade is heavy, though we cannot quote prices any lower—indeed, the trade having been pretty good in the dead market since Monday, has caused a good attendance of buyers. The supply, also, of Sheep and Lambs is pretty good, but there is a good demand, and everything makes fully 2d per 8 lbs more than on Monday. Veal is rather better trade, there being several less than last week. Pork has also improved, the weather having been during the week favourable for the sale of this article.

Beasts, 807; Sheep and Lambs, 11,330; Calves, 414; Pigs, 270.
41, West Smithfield.

WOOL.—BRITISH, FRIDAY, AUG. 2.

Our English Wool Market continues active. The demand for nearly all descriptions is good, and prices have slightly advanced.

	per lb.					per lb.			
Long-wooled Wethers	1s	0d	to	1s	1d	Southdown Sheepskins	1s	1d	to	1s	2d
Do. Mongrels	1	1		1	2½	Kent Fleeces	1	1		1	1½
Southdown Fleeces	1	0		1	1						

JAMES PEARCE, Wool Broker.

COVENT GARDEN, Aug. 2.—In consequence of the late favourable weather, the supplies are amply sufficient to meet the demand. Fine apples of good quality are brought, and among them are some good Providences, Queens, and Montserrats. Some fine-looking bunches of Black Hamburgh and Muscat Grapes are to be met with, which are offered at nearly the same prices as last week. Peaches and Nectarines are not so large as we have seen them; and Apricots, although abundant, are very small. Orleans, Green Gages, and other kinds of Plums, are becoming more abundant; but Strawberries, Currants, Gooseberries, and Dessert Cherries, are getting scarcer, particularly the former; Cherries for preserving are plentiful. Of Pears, some good specimens of Jargonelle may be met with. The supply of Apples is good, and they are of larger size than they were last week; they consist chiefly of Junneting and a few Hawthorndeans. Abundance of good foreign Melons are in the market; but good English-grown varieties are scarce. A few Figs have been offered during the week at from 4d. to 6d. each. There has been little alteration in the price of Vegetables since our last Report. The late showers have favoured the growth of Peas, which continue to be well supplied, although not so abundantly as a few weeks back. Cauliflowers are fine, but they are becoming scarcer. Potatoes and Carrots are clean and good; French Beans are sufficient for the demand, and Celery is good for this early period of the season. Salading and Herbs of every kind are abundant. Cut Flowers consist of Combretum purpureum, Ceanothus azureus, Bignonia venusta, Alstromeria pelegrina, Carnations, Picotees, Heaths, Pelargoniums, Verbenas, Fuchsias, Gardenias, Roses, and a few Camellias.

FRUITS.

Pine Apple, per lb., 4s to 6s		Plums, per half-sieve, 2s 6d to 3s	
Hothouse Grapes, per lb., 6s to 9s		Strawberries, per gallon, 1s 6d to 2s	
Melons, each, 3s to 5s		Gooseberries, per hf.-sieve, 1s 6d to 4s	
Peaches, per dozen, 3s to 10s		Walnuts, pickl., per bush., 4s 6d to 5s 6d	
Apples, Dess., per bush., 2s 6d to 4s 6d		Oranges, per dozen, 1s to 3s	
— Kitchen, 2s 6d to 4s		— per 100, 5s to 14s	
Pears, Dess., per half-sv., 2s 6d to 3s		— bitter, per 100, 3s to 14s	
Cherries, Wall, per lb., 1s 6d to 2s 6d		Lemons, per dozen, 1s to 2s	
— Standards, per doz., 1s to 2s		— per 100, 5s to 14s	
— Morello, per hf.-sv., 4s to 5s		Almonds, per peck, 6s	
Currants, per half-sieve, 2s 6d to 3s		Sweet Almonds, per lb., 2s 6d	
— White, per sieve, 4s to 5s 6d		Nuts, Barcelona, 20s	
— Black, per sv., 2s 6d to 3s		— Cob, 14s	

VEGETABLES.

Cabbages, per dozen, 2d to 1s		Leeks, per bun., 2d to 4d	
Cauliflowers, per doz., 2s to 3s		Chilis, per doz., 1d	
Borral, per hf.-sieve, 6d to 9d		Garlic, per lb., 6d to 8d	
Artichokes, per doz., 1s to 2s		Onions, per bunch, 2d to 3d	
French Beans, per hf.-sv., 1s 6d to 2s		— large, per bushel, 1s to 2s	
Potatoes, New, per cwt., 4s 6d to 6s 6d		Shallots, per lb., 4d to 6d	
New Turnips, per bunch, 3d to 10d		— Green, per bunch, 3d to 6d	
Peas, per bushel sieve, 2s to 3s 6d		Lettuce, per score, 6d to 1s 6d	
Red Beet, per doz., 1s to 2s		Celery, per bunch, 1s to 1s 6d	
New Carrots, 6d to 9d		Mushrooms, per pottle, 2s to 3s 6d	
Basil, per bunch, 6d to 9d		Small Salads, per punnet, 3d to 6d	
Horse Radish, per bundle, 3s to 5s		Watercresses, p. 12 sm. bun., 3d to 6d	
Savory, per bunch, 3d to 6d		Parsley, per hf.-sieve, 1s to 1s 6d	
Cucumbers, Frame, each, 3d to 9d		Tarragon, Green, per bunch, 3d to 4d	
— Ridge, each, 2d to 6d		Green Mint, per bunch, 3d to 4d	
Vegetable Marrow, per doz., 9d to 2s		Marjoram, per bunch, 4d to 6d	
Spinach, per sieve, 2s to 3s		Chervil, per punnet, 3d to 6d	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 2.

Prime Upland Hay	90s	to	100s	Clover	100s	to	120s	Straw 24s to 30s
Inferior „	80		90	„ New	85		105	
New Hay „	80		86					

JOHN COOPER, Salesman.

CUMBERLAND MARKET, Aug. 1.

Superior Old Hay	85s	to	105s	Superior Clover	118s	to	120s	Straw 28s to 31s
Inferior „	80		92	Inferior „	100		108	
New Hay „	84		97	New Clover	95		105	

JOSHUA BAKER, Hay Salesman.

WHITECHAPEL, Aug. 2.

Old Hay	94s	to	99s	Old Clover	120s	to	130s	Straw 24s to 28s
Fine „	92		103	New Clover	95		110	
New Hay	75		84					

HOPS, FRIDAY, Aug. 2.

THE accounts are daily getting worse, and the duty is to day at 140,000*l.* Several lots of Hops have been sold during the week at better prices.

FARNHAM & SMITH, Hop-Factors.

MARK-LANE, MONDAY, July 29.

THE show of English Wheat by land carriage samples this morning was considerable, having, in addition to a liberal arrival, some portion of last week's remaining over unsold; the Millers evincing a total indifference to purchase, but little progress could be made with sales generally, even at a decline of 4*s.* to 5*s.* per qr. Foreign was equally difficult to dispose of, although offered at a reduction of 2*s.* to 3*s.* per qr.—Barley is very unsaleable, and the turn cheaper.—With the exception of new White Peas, which sell currently at our quotations, other descriptions, and Beans, are rather lower.—There was a fair quantity of Oats offering, which met a slow sale at a decline of 6*d.* per qr.—The nominal price of Flour remains unaltered, but the trade are generally selling at rather less money.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk	40	46	Red	42	47
—— Norfolk, Lincolnshire, and Yorkshire	—	—	White	—	—
Barley, Malting and distilling 27s to 30s	Chevalier	32	38	Grind.	25	28
Oats, Lincolnshire and Yorkshire	Polands	20	23	Feed	19	23
—— Northumberland and Scotch	Feed	20	23	Potato	21	25
Irish	Feed	18	22	Potato	19	24
Malt, pale, ship		50	56			
—— Hertford and Essex		54	60			
Rye		32	34			
Beans, Mazagan, old and new	27 to 32	Tick	30	33	Harrow	30	33
—— Pigeon, Heligoland	32 to 36	Winds.	—	—	Longpod	—	—
Peas, White	36 to 40	Maple	30	32	Grey	27	30

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	7040 Sks.	— Bls.	7577	108	3807	440	—	562	399
Irish	— „	— „	—	—	—	4869	—	—	—
Foreign	— „	— „	18169	11289	—	14970	—	2486	3005

FRIDAY, Aug. 2.

The weather here since Monday having been changeable, and the accounts from many parts of the country describing it as bad, no disposition has been evinced to press sales of Wheat, either on Wednesday or this morning. The attendance of buyers was tolerably good, but holders not being inclined to accept the terms offered, very little business was transacted. The quantity entered for consumption during the week has been 47,533 qrs.—Barley and Beans are a very dull sale.—The greater part of the White Peas sold on Monday were refused; the show of samples this morning being large, they could not be disposed of, except at a decline of 4*s.* per qr. Maple and Grey remain unaltered.—The Oat-trade is very heavy, and foreign as well as stale qualities must be written 6*d.* to 1*s.* lower.

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June	21 per Quarter.	55s 6d	32s 5d	22s 5d	34s 3d	37s 10d	35s 5d
—	28 „	55 0	34 0	22 9	36 0	38 0	36 1
July	5 „	55 8	34 5	22 11	35 0	39 2	36 6
—	12 „	54 10	34 10	23 3	34 3	37 8	37 3
—	19 „	54 1	34 5	21 5	32 4	37 7	37 3
—	26 „	53 9	34 3	20 10	33 9	37 1	37 4
6 weeks' Aggreg. Aver.		54 9	34 1	22 2	33 9	37 9	36 7
Duties on Foreign Grain		18 0	4 0	6 0	5 6	5 6	5 6

SEEDS, July 29.

Canary	per qr	50s	to	60s	Linseed Cakes, Foreign, p. ton	6l	to	7l 10s
Carraway	per cwt	44		52	Mustard, White	p. bush.	—	—
Clover, Red, English		—		—	— Superfine	„	—	—
— Foreign		—		—	— Brown	„	—	—
— White, English		—		—	Rapeseed, English, per last		22l	23l
— Foreign		—		—	Rape Cake	per ton	—	—
Coriander		12		13	Saintoin		—	—
Hempseed	per last	38		40	Tares, Essex, winter	p. bush.	5	7
Linseed	per qr	—		—	— Foreign		—	—
— Baltic		—		—	Trefoil	per cwt	—	—
— Cakes, Eng., per 1000		12l		13l 10s	Turnip (too variable for the quotation).			

EDWARDS AND LAY.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating extremely very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Conservatories or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

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WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, July 26, 1844.

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Large parcels will be delivered direct from the Ship, or waterside premises. Smaller quantities may be had at the warehouses, 24 and 25, Billiter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to JAMES CLARK, 24, Billiter-street.

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Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

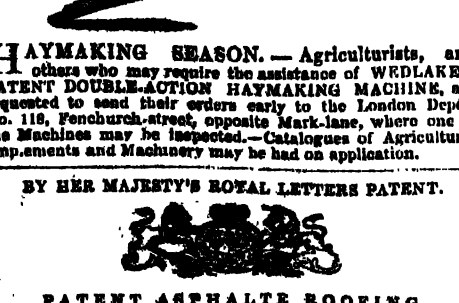
Price-current, London, June 12, 1844:—

Bones . . p. ton	£4 10s. 0d	Nitrate of Potash	£1 4s. 0d
„ crushed,	5l. 10s. to 6 0 0	Oil of Vitriol, or Sulph. acid . . p. lb.	0 0 1
„ calcined . .	7 0 0	Rape Cakes . p. ton	4 15 0
Carbonate of ammonia . . p. cwt.	2 16 0	Salts, Epsom „	9 0 0
Guano, Peruvian, p. tn.	11 0 0	„ Glauber „	7 0 0
„ Ichaboe „	9 0 0	Sulphate of Ammonia, per cwt., 16s. to	0 17 0
Gypsum . . „	2 0 0		
Nitrate of Soda, p. cwt.	0 14 0		

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The Conduct of the Council of the College of Surgeons under the New Charter.

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Charge of Manslaughter against a Person practising as a Surgeon.

HOSPITAL REPORTS:—
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Cases and Clinical Remarks, by W H. Walshe, M.D.—Phthisis, Emphysema, Hydro Pericardium.

Letter on Repeated Examinations during Medical Education.

Qualifications required in Druggists in Norway.

MEDICAL SOCIETIES —
STATISTICAL SOCIETY OF LONDON.—Vital Statistics. Account of a New Instrument for Detecting the Quantities of Air Breathed, and the Presence of Disease in the System.

Mr. Protheroe Smith's Speculum.

MEDICAL PROTECTION ASSEMBLY.—Testimony in Behalf of Mr. Wakley.

Petition to Parliament of Mr. Guthrie concerning the New Charter of the College of Surgeons.

NEWS OF THE WEEK:—
Marylebone Hospital—House of Commons: Medical Bill—Meeting of Fellows of the College—Obituary Dr. W. Elliott. Dr. Haslam—College of Surgeons—Apothecaries' Hall—Books Received—Correspondents.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 32.—1844. SATURDAY, AUGUST 10. [Price 6d.

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The new Achimenes picta, 7*s.* 6*d.* each
Gesnera tuhiflora, fine new white, 2*s.* 6*d.* each
Pentas carnea, 3*s.* 6*d.*; Thunbergia chrysops, 7*s.* 6*d.*; Inga pulcherrima, 5*s.*; Veronica speciosa, 3*s.* 6*d.*; Brugmansia floribunda, 2*s.* 6*d.* each
Fine Cineraria, Primula, Calceolaria, and choice Geranium Seed, 1*s.* per paper; and other Flower-seed, 3*d.* and 6*d.*, can be sent by post, for stamps.
Albion Nursery, Stoke Newington, London.

EXHIBITION OF LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment Florist to Her Majesty, begs to inform the Nobility, Gentry, and Amateurs, that his extensive assortment of this most beautiful Lily, which has been so much admired, is in flower, and will continue in perfection about three weeks, and may be viewed every day, Sundays excepted. Admittance Gratis.
Clapham Rise, August 10, 1844.

DUTCH FLOWER BULBS.

J. CARTER, Seedsman and Florist, 238, High Holborn, London, respectfully informs the Nobility, Gentry, and his Customers in general, that his Annual Catalogue of Genuine Dutch Bulbs, &c. will be published as usual on the 1st of September, and that it will immediately be forwarded to his Customers. In case of accidental omission, he begs to be reminded thereof.

The annexed Advertisement contains a List of such Seeds as are proper for sowing during this and half the following month, with this exception, that Double Hollyhock, Queen, and Brompton Stock should be sown immediately.

FLORICULTURAL SEEDS.

J. CARTER, Seedsman and Florist, No. 238, High Holborn, London, begs leave to recommend the following Seeds for present and autumn sowing. The Annuals he has selected will flower in the autumn if sown this month. He would recommend a second sowing early in September; for those sown in the autumn will flower earlier, and much finer than the spring sown, particularly in dry seasons like the present. 1.—Hardy Annuals in Assortments.

8 fine Calliopsis	2*s.* 6*d.*	8 fine Schizanthus	2*s.* 6*d.*
8 — Clarkia	1 6	20 — *German Stocks.	5 0
12 — dwarf Larkspur	2 6	8 — *Tenweek	2 0
8 — tall Larkspur	1 6		
7 — Nemophila	2 0	40 — hardy Annuals	3 0
8 — Godetia	1 6	20 — ditto	4 0
6 — Gilia	1 0	10 — ditto	3 0

* All Stocks require protection in winter, the others not.

2.—Hardy Biennials and Perennials.

8 fine Campanula	2*s.* 6*d.*	40 fine Perennials	10 6
8 — Dianthus	2 0	20 — ditto	5 0
8 — Pentstemon	2 0	10 — ditto	2 6
8 — new Scabious	2 0	Antirrhinum, 10 fine var. mixed	2 6
6 — Antirrhinum	1 6	Delphinium, 8 ditto	2 6
6 — Aquilegia	1 6	Hollyhock, 16 fine var. mixed	1 0
20 — Hollyhock	4 0	Scabiosa, splendid new mixed	2 6
12 — *Queen Stocks	2 6		
6 — ditto	2 0		
5 — *Brompton	2 0		

3.—Greenhouse Seeds.

10 fine Sorts	4*s.* 6*d.*	Chinese Primrose, mix.	1*s.* 6*d.* Per packet.
8 — Climbers	4 0	Finest mixed Cineraria	1 6
8 — Alstræmeria	4 0	— Calceolaria	1 6
4 — Thunbergia	2 0	— Gloxinia	1 6
3 — Portulaca	1 6	— Erica	2 6
Phlox Drummondii, scarlet	1 0	— Gladiolus	1 6
Ditto, 20 var. mixed	1 0	— Verbena	1 0
8 fine Tropæolum	2 0		

And most other Flower Seeds contained in his General Catalogue for 1844.

*** A comprehensive Catalogue of Dutch Bulbs will be published at the usual time.

EARLIEST STRAWBERRY in CULTIVATION.—Strong Plants of the PRINCESS ALICE MAUDE STRAWBERRY, which has proved itself to be the earliest grown in this country, are now ready to be sent out, at 20*s.* per 100. As an Early Strawberry it has taken the first prize at all the Horticultural Exhibitions in the early part of the season. Also Plants of the British Queen, Deptford Pine, Prince Albert, and all the leading kinds. To be had of Warner and Warner, Seedsmen, 28, Cornhill, London.

SHILLING'S QUEEN CABBAGE.—This month and part of August being the time to sow Cabbage Seed for the Autumn and Spring Planting, J. & S. Shilling having a little Seed left of the above very superior kind, which they highly recommend to those who have not already tried it, beg to offer it to the Public generally, in half oz. packets, postage free, at 2*s.* 6*d.* each, on the receipt of postage stamps or a Post-office order.—Northwarnborough Nurseries, Odiham, Hants.

*** Agent for London, Mr. Keanan, 4, Great Russell-street Covent Garden.

MESSRS. EPPS beg respectfully to offer the following new and valuable Plants:—

Achimenes pictæ, 1s. 6d.	Gloxinia Cartwelli, 7s. 6d.
A. hirsuta, strong plants, 2s. 6d.	,, bicolor, 7s 6d.
Beddies Lindleyana, 7s. 6d.	,, magnifiora, 7s. 6d
Thunbergia chrysops	,, insignis, 7s. 6d. (these are the finest varieties known)
Drymonia punctata, 10s. 6d. (for description see Paxton's Magazine for June)	Begonia speciosa, 1s. 6d.
Habrothamnus fasciculatus, 5s.	Rose, Cloth of Gold, 7s. 6d.
Bougmansia suaveolens, 4s.	Fuchsia, 'Kentish Bride,' blue corolla, pink tube and sepals, decidedly the finest variety sent out this year, strong plants, 3s. 6d.
,, Knightii, 5s.	
Pentas carnea, 5s.	
Clerodendron incisifolium, 7s. 6d.	

Orders to be accompanied with a remittance or a respectable reference.—Tower Nursery, Maidstone, Aug. 8, 1844.

THE HAMPSHIRE BROWN COS LETTUCE.—Persons desirous of possessing a very superior LETTUCE during the winter and spring will *not* be disappointed if they sow the above kind any time this month. Sold by J. and S. Sibling, in ½ oz. packets, at 2s. 6d. each.

SIBLING'S QUEEN CABBAGE, which is highly recommended for garden purposes, should be sown immediately, for the autumn and spring planting, ½ oz. packets at 2s. 6d. each, sent free on the receipt of postage stamps or a Post-office order.

London Agent, Mr. Kernan, 4, Great Russell-street, Covent Garden.

P.S.—To purchasers of the Lettuce Seed the Advertisers take the liberty of recommending a few seeds being kept to sow in the spring, to prove it for the summer.

Northwarnboro' Nurseries, Odiham, Hants.

TO NOBLEMEN AND GENTLEMEN'S GARDENERS.

EARLY POTATO SEED.—Mr. SMITH having been very successful in raising Early Potatoes from the Seed of the Potato Plum, is happy in being able to offer Potatoes for seed of so early and fine a quality as has not been equalled. The first is his six weeks Dwarf Seedling. This is a very fine early Potato; so early that with ordinary cultivation it will be ready for use in six weeks from the time of planting. It is particularly well adapted for forcing, being so dwarfish in the stem as not to exceed from four to six inches in height. The Potato is very shallow-eyed, and of first-rate quality, but not large, the largest being about the size of a bantam's egg.—Price 10s. the imperial pound.

Second, his prize-taking Seedling. This is a very early, large, and fine Potato, shallow-eyed. It has taken the first prize at the Berwickshire Horticultural Shows during the last two years for its size, beauty, and good quality.—Price 15s. the imperial stone.

Third, his second Early Seedling. This is a Potato of first-rate quality—comes in class after the Prize taker; is a rich bearer and shallow-eyed, making up the blank between the first Early and what is commonly termed American or second Early.—Price 15s. the imperial stone.

Those wishing to be supplied with seed of any of the above Seedling Potatoes will address their order to Mr. Smith, Gardener, Ayton, Berwickshire, with a Post-office order for the amount of their demand. They are requested to give their address distinctly, that the Potatoes may be forwarded without delay to the proper quarter. Early application will be necessary to obtain a supply, as the stock is limited.

All orders will be punctually attended to, and the Potatoes forwarded, packed in boxes, with moss or hay, to protect them from injury by carriage. Ayton, Aug. 9, 1844. M. Smith.

BENTALL'S IMPROVED PAPER FOR DRYING PLANTS.

W. AND T. BENTALL earnestly invite the attention of Botanists to the above Paper; its perfect adaptation to the purpose for which it is prepared having been fully proved. The following valuable testimonial has been lately received:—

"I highly approve of your new Paper for drying plants, and consider it far preferable to the Cambridge Chalk Paper, which I previously employed, but which will now be entirely discarded by me in the preparation of plants for the herbarium. I have also found it most valuable in drying Algæ, the most decisive test, in my opinion, to which such papers can be subjected; and can safely recommend it to all engaged in the study of these plants."—*Rev. W. S. Hore, M.A. F.L.S., &c., Stoke, Devonport.*

Sir W. J. Hooker, K.H., L.L.D., &c. Professor Lindley, C. C. Babington, Esq., M.A. F.L.S. &c., H. C. Watson, Esq., F.L.S. &c., have also kindly allowed the use of their names as strongly recommending it. To be had of the Manufacturers, Halstead, Essex; and of their Agents, Mr. E. Newman, 9, Devonshire-street, Bishopsgate, London; and Mr. R. S. Melntosh, 12, Catherine-street, Edinburgh.

Sizes, 16 by 10 inches (when folded), 14s. per ream, 20 by 12 inches, 20s. do.; 16 by 20 inches, 28s. do.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and despatch.—This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by men or women. It is easily set, so as to deliver the exact quantity of Seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Mangold Wurzel Seed, Wheat, Barley, Peas, and all kind of Garden Seeds. 1*l.* 10*s.* each. Commission allowed to Agents.

These Dibbles may be obtained of Messrs. Cottam and Harlem, 2, Wimsley-st., Oxford-st., London, through the agency of the principal Agricultural Implement Sellers, in the United Kingdom; or from the Inventor, by letter, to his address, inclosing a Post-office order for the amount.—Richard Smith, Upper Hall, near Droitwich, Worcestershire.

HOTHOUSES, CONSERVATORIES, &c., made and fixed Complete in all parts of the Kingdom. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom; warranted best material. Two-light Boxes and Lights complete, from 1*l.* 8*s.* Garden-Lights made and glazed from 1*s.* per foot, at Jas. Watts' Sash Manufactory, Claremont-place, Old Kent-road. *** Reference given.

CONSTRUCTION OF HOTHOUSES, &c.

THE great want of skill in the construction of Old HOTHOUSES, &c., as well as in the cultivation of that most liberal of all plants, the VINE; the loss sustained on moneys expended on horticultural erections, without studying the convenience and capabilities of such erections being made available to the double purpose of a Stove and Vinery, must be manifest to all practical men. As every Hothouse, Stove, or Greenhouse, is convertible into a Vinery 7 months in every year, it is the intention of the writer, a thoroughly practical gardener, to offer his services, and tender his advice in alterations of old or new works of this kind, on such terms as must insure his engagement by all parties about to erect or alter buildings of this description. To all Amateurs, Gardeners, and others lacking skill, whose crop of Grapes or Vines have failed, within 7 miles of London, he offers his services, advice, and direction at attendance, from 1*l.* per year; and pledges himself to insure a crop on the principle of No cure, no pay, No crop, no money. For further particulars, apply by letter, inclosing 2 penny stamps, when a prospectus, &c. will be forwarded. Direct to Mr. Protheroe, Messrs. Gibbs, Seedsmen, Half-moon-street, Piccadilly, London.

LYNDON'S PATENT SPADE.—Sold by Green and Constable, Ironmongers, 86, King William-st., London-bridge. Horticultural Tool Chests, Bright Ladies' Spades, Morley's Patent Water Pots, Scott Vernon's Patent Hoes, with a general assortment of Garden Implements.

REFINED PLEASURE to LOVERS of BOTANY.—The Nobility and Gentry are respectfully informed that the splendid WARDIAN PLANT CASES, which excited so much attention and obtained a Medal at the Mile Chiswick Fête, are now on view at No. 39, Argyll-street, Regent-street.

The suggestions of Professor Lindley have been carefully carried out by the manufacturer, Mr. Ferrs, so as to elicit the entire approval of that eminent authority. The varied charms of Nature are aided by the gorgeous enrichments of Art; and the Invalid, however exalted her station, may now enjoy, at all seasons, the beauties of Flora, in a cabinet not unworthy a place in the most aristocratic mansions.—Apply to Mr. Nottingham, as above.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

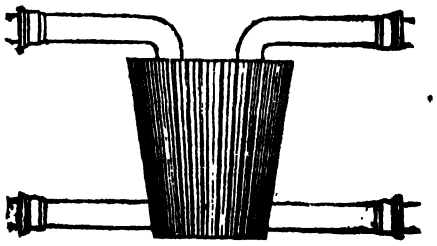
D. and E. Bailey having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. Bailey also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. Bailey were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. Bailey have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

BURRIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



Burridge and Healy respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, Burridge and Healy refer them to the Horticultural Society's Gardens, Chiswick; also to Mr Glendinning, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
In. ft.	*s.*	*s. d.*	*s. d.*	*s. d.*		
10 1 5	20	7 6	6 6	2 6	30 feet.	12 to 20
Ribbed Boiler.						
10 2 2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12 2 15	30	12 6	7 6	3 6	80 to 125 feet.	40 to 65
14 3 10	35	17 5	8 6	4 6	150 to 250 feet.	65 to 100
18 5 5	42	25 0	9 6	5 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24 8 15	50	35 0	8 6	7 6	500 to 600 feet.	

If 2-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

RENDLE'S TANK SYSTEM OF HEATING.

STEPHENSON AND CO., 61, Gracechurch-street, London, Inventors of the IMPROVED CONICAL and DOUBLE CYLINDRICAL BOILERS, having been much engaged in heating buildings upon the above system with Tanks of various materials, solicit the attention of scientific Horticulturists to an Iron Tank now fitting up on their premises, which offers most decided advantages over every other article hitherto employed for the same purpose. These tanks, which are ornamental in appearance, can be made from 10 to 100 feet long and of any width and depth, and can be connected or disconnected by any working Gardener without the slightest difficulty, thus affording the opportunity to persons in remote districts of employing this much approved method of heating without the assistance of Engineers. The Tanks can be applied to Boilers and Pipes already fixed, and from the present low price of Iron will be found cheaper than of any other material. Mr. Rendle, of Plymouth, has kindly undertaken to receive orders and furnish information to any persons in his neighbourhood, and prices for any size will be forwarded upon application to S. and Co.

CONICAL BOILERS.—The Boilers invented by John Rogers, Esq., are made of several sizes, and may be obtained of John Shewen, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware-road: Robinson's, Tooting; Pontey's, Plymouth; The Horticultural Society's Gardens, Chiswick, and in the Gardens of the Royal Botanical Society, Regents'-park.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL, and BRISTOL.
47, Lime-street, Aug. 8, 1844.

GUANO.—For Sale, in bags of 1 cwt. each; just landed, with a considerable quantity of cargoes to arrive.

There being considerable variety in the qualities of Guano imported from different places, and indeed from the same island, each parcel will be chemically analysed with the utmost precision, to show its relative productive power. A copy of such analysis will be given to buyers, and also instructions as to the most approved mode of using the Guano, furnished by the experience of eminent Agriculturists in England and Scotland.

Large parcels will be delivered direct from the Ship, or waterside premises. Smaller quantities may be had at the Warehouses, 24 and 25, Billiter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to James Clark, 24, Billiter-street.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, SEEDSMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from T. and C. Lockhart, of the late Firm of T. and C. Lockhart and Duncan, in consequence of a dissolution of Partnership, to submit to public competition, by auction, on the premises at Parson's-green lane, Fulham, and at 136, Cheapside, London, about or before the 14th September next, the whole of the late partnership's Stock and Fixtures, of which further notice will be given.—This valuable Stock consists of a unique collection of BULBS and FLOWER-ROOTS of every description, which has been carefully selected, both at home and abroad, during the last 25 years, together with a quantity of the newest and most choice Flower Seeds, well worthy the attention of the trade; a newly-erected Hothouse with boiler and hot-water pipes, a capital brick-built pit, boxes, frames, handlights, six nests of seed-drawers, two desks, two bulb stages, hardy herbaceous and other plants, standard roses, a quantity of box edging, bushel and other measures, a Chubb's patent Iron safe, scales, weights, bags, paper, garden-utensils, cutlery, sieves, pots, sundries, &c. &c. &c.

May be viewed one week prior to the Sale, and Catalogues had.

BEDFORDSHIRE.—Very Eligible Freehold Estates in the parish of Sandy, cultivated as Garden Ground, and offering to Trustees safe and profitable Landed Investments, not to be influenced by any change in the Corn-laws. Also a Freehold Family Residence, and other property, at Caldecote. The whole Tithe-free and Land-Tax redeemed.

MESSRS. RUSHWORTH AND JARVIS are instructed by the Mortgagees, with the concurrence of the Devisees in Trust under the will, to sell by Auction, at Garraway's, London, on Friday, Aug. 23d, at 12 o'clock, in 15 Lots, (unless previously disposed of by private contract), a very desirable Freehold Property, comprising 170 acres of land, with two Farm Homesteads, situate at Beeston, in the parish of Sandy, a district proverbial for the remarkable richness and fertility of the soil, and highly valuable as garden ground; a portion of which was late in the occupation of the deceased, and the remainder is let on long leases to responsible tenants, at almost incredibly high rents; and substantial additional advantages to the property may be looked for from the newly projected Line of Railway, direct from London to York, which is contemplated will pass over this estate. There are likewise several Cottages, a Wheelwright's shop, and Beer-house, at Beeston Green. Also a spacious Family Residence, with possession, in a fine sporting country, and having extensive stabling and out-buildings; a Licensed Ale-house, eleven Cottages near thereto, and 4 acres of luxuriant garden ground adjoining, situate at Caldecote, only one and a-half mile distant from the preceding property, and equidistant with the capital Market Town of Bedford, and only 47 miles from London on the great north road.—Printed particulars, with plans, may be obtained on the premises at Caldecote, at the principal Inns in the neighbouring towns, and in London, of Messrs. Barker, Rose, and Norton, Solicitors, 50, Mark-lane; Messrs. Gregory, Faulkner, Gregory and Bourdillon, Solicitors, 1, Bedford-row; at Garraway's; and at the Offices of Messrs. Rushworth and Jarvis, Land Surveyors and Auctioneers, Saville-row, Regent-street, and 19, Change Alley, Cornhill.

RARE ORCHIDACEÆ FROM THE EAST INDIES.

MESSRS. J. C. AND S. STEVENS beg to announce they will sell by Auction at their Great Room, 38, King-street, Covent Garden, on Thursday, 15th Aug., at 1 o'clock, a case of Terrestrial and Aerial ORCHIDACEÆ, which have just arrived in fine Health, and gathered during the months of Jan. and Feb. last, on the Steeps of the Ghauts, in the Presidency of Bombay. On view 2 days prior to the sale, and Catalogues had of the Auctioneers, 38, King-street, Covent Garden.

TO FLORICULTURISTS, NURSERYMEN, & CONNOISEURS.

MR. E. E. STONE will sell by Auction, on the Premises, 22, Park Place West, Liverpool Road, Islington, on Tuesday, August 13th, at 12, a Splendid and Valuable Collection of FOREIGN PLANTS, comprising a superb assortment of Meluecacti, Euphorbia, Aloes, Verbenas, Fuchsias, and other Stove and Greenhouse Plants; an excellent Tulip Stage and Utensils; also the surplus Household Furniture, a Richtoned 6½ octave Piccolo. The whole the property of a gentleman removing. May be viewed the day prior, and morning of Sale; and Catalogues had on the Premises, and of Mr. Stone, 89, St. John Street, near Smithfield.

TO BE DISPOSED OF.—An Extensive and Old-Established COUNTRY NURSERY, where a considerable Business has been carried on for many years. Any respectable person with a knowledge of the business would find this concern worthy of immediate attention. Apply to Mr. George Gray, No. 23, New Corn Exchange, Mark-lane, London.

N.B.—None but principals will be treated with.

VALUABLE CHURCH-PREFERMENT.

TO BE SOLD, THE NEXT PRESENTATION to the RECTORY of RICKINGHALL INFERIOR, in SUFFOLK. The Incumbent is in the 66th year of his age, and the Net Income arising from the Commuted Tithes, Glebes, and Surplice Fees, average about 550*l.* per annum. Also, the NEXT PRESENTATION to the RECTORY of RICKINGHALL SUPERIOR, possessing a Net Income of 437*l.* per annum.

For further particulars apply to Mr. Burcham, Auctioneer, Norwich.

TO CAPITALISTS.

TO BE SOLD, to pay a clear Five per Cent., THE TOLLS arising from the Navigation of Vessels laden with Corn, Coals, Timber, Stone, &c. &c., passing along the River Waveney, from Beccles to Bungay, Suffolk, with a Capital Residence, Malting Office, Business Premises, &c., at Bungay.

The above Property is let on Lease at 1300*l.* per annum, six years of which Lease were unexpired at Lady-day last.

For Price and further Particulars apply to Mr. Burcham, Auctioneer, Norwich.

TO HORTICULTURAL BUILDERS.

A GENTLEMAN wishes for a PLAN and ESTIMATE for a small GREENHOUSE or CONSERVATORY, to be erected at the end of his Drawing-room (which end faces the west, and the front the south, and from which a door of communication opens), size 15 feet 6 inches by 12 feet; there is a return wall of 3 feet to be glazed with Drake's Sheet Glass, and finished in the best manner.—Direct to E. L., at the Office of this Paper.

The Gardeners' Chronicle.

SATURDAY, AUGUST 10, 1844.

THERE has lately been laid before the French Academy of Sciences a most important paper on FORESTING. The author, M. Chevandier, who appears to have the charge of one of the French forests, has been investigating the effect of water upon the produce of wood, and his results are not a little startling.

From a multitude of experiments made with trees growing on the sandstone of the Vosges, he has ascertained that, powerful an agent as water is well known to be, its effects are not in proportion to its quantity, but to the manner in which it communicates with the roots of trees. For example, he found that if the quantity of timber furnished by Spruce Firs in a given time, on a given space, in the swamps (*terrains fangeux*) of the Vosges is taken as 1, the produce in dry land will be about 2, in land so situated as to receive rain water as it falls between 4 and 5, and in stations where the soakage of running water maintains a continual freshness rather more than 6. He endeavoured, he says, to collect together all the cases where the same tree growing in the same soil and aspect, nevertheless had its roots in a different condition as to water. He felled them in large numbers, keeping an exact account of their age and of all the circumstances that appeared likely to have influenced their growth; and he found, upon comparing trees of the same age, growing in the same soil, that the differences produced by the action of water were constantly in the proportions above stated, so far as Spruce Firs are concerned, to which M. Chevandier's observations appear to have been confined.

The following figures, which have furnished the proportions alluded to, express the annual increase in dry wood of the Spruce Fir:—

	Kil.		Years.
Swampy land . . .	1.84	Mean age at which the Spruce is felled . .	101.88
Dry land	3.43	Ditto	71.57
Land watered with rain water . . .	6.25	Ditto	74.45
Land watered with running water . . .	11.57	Ditto	99.45

In order to show more strongly the value of these considerations, M. Chevandier gives the following average rate of growth of the Spruce Fir, when about 100 years old:—

In swampy land less than	1	kilogramme*
In dry land less than	3	,,
In land which is watered, about	20	,,

This gives for the total weight of a tree a century old—

100 kilogrammes	or ⅓ of a stere†
300 ,,	or 1 stere
2000 ,,	or 7 steres

according to the circumstances in which it has grown. "And if we calculate the value of a tree, reckoning its price to be according to its size, we arrive at this conclusion, that a seed of the Spruce Fir will become, at the end of a century, and according to the state of the soil with respect to water, a tree worth 1½ franc, or 7 francs, or 65 francs."

It is impossible to estimate too highly the value of facts like these, which deserve the most serious consideration of all planters. Nothing can show more clearly how much of the results of planting depend upon circumstances little taken into account. The value of irrigation in particular is very striking; and M. Chevandier strongly urges the owners of mountain woods to turn the favourable position of such places to account, by introducing a good system of ditching. The plan which he finds most advantageous is to cut on the hill-side horizontal ditches, about a yard wide and deep, and 12 to 15 yards apart, which will catch the rain as it runs down, and, afterwards soak into each other, so that what the uppermost ditch loses the next below it receives, and so on. Such a plan has been carried into effect in the forests belonging to the plate-glass works of Clichy, and he finds it neither expensive to make nor to keep in good order.

The facts elicited by M. Chevandier's experiments have a very wide range, and affect every branch of husbandry quite as much as growing Spruce Firs.

OUR readers are aware that very shortly after the appearance of this Journal we pointed out the many advantages possessed by NEW ZEALAND as a country for agricultural and horticultural emigrants. From time to time we have produced evidence of the correctness of our original views upon this subject, which we have never found it necessary to modify in the smallest degree. Nevertheless, the colony has, as our columns have also shown, fallen into a state of the greatest embarrassment, and the operations of the New Zealand Company have been brought to a stand-still. It was our intention some time since to advert to this unfortunate state of affairs; but we have deferred doing so until the Report of a Parliamentary Committee, appointed to inquire into the state of New Zealand, should be made public. That Report is before us.

It now appears that the distress of New Zealand has arisen—not from bad climate, sterile or uncultivable lands, open roadsteads, or the operations of land jobbers—but from monstrous mismanagement on the part of the Government Officers. The Committee declare "that the difficulties now experienced in New Zealand are mainly to be attributed to the fact, that in the measures which have been taken for establishing a British Colony in these Islands, those rules as to the mode in which colonisation ought to be conducted, which have been drawn from REASON and from experience, have not been sufficiently attended to;" and they have passed a series of resolutions, very strongly condemnatory of the conduct of the Colonial Office, or its agents. They declare that the local authorities have made a treaty with the natives, which is only *a part of a series of injudicious proceedings;* that their acknowledgments of a right of property on the part of the natives in all the wild land *was an error which has been productive of very injurious consequences;* and that the non-settlement of land claims (one of the first duties of the Government officers) *has been productive of great confusion and mischief.*

All political discussion being studiously excluded from our columns, we forbear from making any remark upon this announcement of the Committee; indeed, we only produce it in order to show that no kind of reason exists why confidence should be shaken in the excellence of the soil and climate of New Zealand for the purposes of British cultivators, and that the disasters of the settlers are owing to misgovernment, and nothing else. We expect with impatience the evidence as to the capabilities of New Zealand that has been elicited by the Parliamentary inquiry, and shall take the earliest possible opportunity of making it known. In the mean while, it is most satisfactory to learn, that in spite of difficulties thrown in the way of the settlers by those whose duty it was to assist them, the colony is steadily rising into importance. In the words of the Report of the Directors of the New Zealand Company, dated July 31—"It appears that the natural resources of the country are sufficient to outweigh impediments to prosperity occasioned by misgovernment. In the midst of the anxieties produced by the massacre at Wairoa, and the continued operation of the causes of that calamity, five vessels in the course of three months sailed from Wellington for London, entirely laden with the produce of the Company's settlements, consisting of oil, whalebone, flax, ornamental woods, and wool."

ON THE PURITY OF WATER.

EVERY one is aware that water varies very greatly in nature—some waters being what is termed soft, and therefore well adapted for washing, and various domestic purposes; whilst other waters are said to be hard, and are unsuitable for washing, &c. In fact, when we examine the numerous operations in the arts, in which water is employed, we find that the successful performance of most of them is more or less dependent on the purity of the water employed. For some purposes soft water is requisite, whilst for others hard water is preferable.

The purity of the water employed for gardening purposes is a matter of considerable importance, and therefore the causes which affect its purity, the substances which modify its properties, and the methods of purifying it, are all subjects of some interest to the gardener. The natural waters of the earth—namely, sea and spring water—are hard; they are not pure water, but contain a portion of saline and earthy matter dissolved in them. Sea-water contains by far the largest quantity of these substances; but spring-water also contains them; and, in consequence, both these sorts of water are hard. In order to purify such water, we have only to boil it, and convert it into vapour by heat. Pure water rises in the form of steam; the impurities of the water are not volatile—they cannot be raised in vapour by heat: hence they remain behind, whilst the water is converted into vapour, and obtained quite free from impurity when the vapour is cooled or condensed.

When we thus distil water, we do that on a small scale which is every day taking place on a large scale all over the surface of the globe. The heat of the sun every day raises a large quantity of water in vapour from the surface of the land as well as of the sea; and this vapour returns to the fluid state when cooled, descending to the surface of the earth in the forms of rain and dew. Rain-water is as much distilled water as that prepared artificially in a still; and therefore, as rain-water is free from earthy and saline impurities, it is the solvent of all natural waters.

A little consideration will convince us that though the water which comes from the clouds is pure and soft, or at most contains minute traces of such substances as it may find in its descent through the air, yet that when it reaches the surface of the earth and soaks into the soil, it must soon dissolve a small quantity of such salts of lime, &c., as the soil contains, and in consequence become hard again. The water of springs is always more or less hard, yet it has previously been soft, for springs are caused by an accumulation of rain-water, which has filtered or drained through the soil and strata below it, in passing through which it dissolves a small quantity of earthy matter, and in consequence becomes hard.

The substances which commonly exist in hard water are sulphate and carbonate of lime, either separately or together; and in greater or less quantity they give to most spring waters the character and property of hardness. Sulphate of lime, or gypsum, is soluble in water, but only to a small extent, 500 parts of water dissolving about one part of the sulphate, or in other words, every gallon of water being able to dissolve about 150 grains of sulphate of lime. Perfectly pure water does not dissolve carbonate of lime, but water which contains any carbonic acid gas readily dissolves a small quantity of carbonate of lime; now rain-water always contains a portion of this gas which it absorbs in passing through the atmosphere, and the presence of which does not give it any character of hardness, or at all interfere with its economical uses; hence rain-water is able to dissolve a small quantity of carbonate of lime, and therefore in passing through a soil containing either sulphate or carbonate of lime it dissolves a little of these substances, and becomes hard.

The water with which plants are naturally supplied, is the pure soft water which is condensed from the clouds; hard water containing much lime is not well suited for the nourishment of plants, and indeed the presence of any quantity of the salts of that earth in water, is found to kill many of the more delicate plants. It is obviously impossible to purify the water for gardens by artificial distillation, and besides it is generally unnecessary, for, as has just been stated, rain-water is distilled water, and it may readily be collected and preserved in tanks for use, for any reasonable time. Rain-water, which collects from a clean slate roof, contains nothing but a small quantity of carbonic acid, ammonia, and other matters derived from the atmosphere, which is greater of course in towns and the vicinity of places where much fuel is burnt, than in the free and open country. It also generally contains a small quantity of organic matter, derived from birds, insects, and other similar sources. These impurities, particularly if present in any quantity, cause a tendency in the water to become foul, but do not at all interfere with its uses for horticultural purposes. The water which drains from tile-roofs generally contains a portion of lime, derived from the mortar; but even then the quantity, except in particular cases, is but small. No good garden should be without rain-water tanks, well made, and properly covered, to prevent earth or rubbish falling in; and rain-water alone should be used for syringing, washing, or watering delicate plants. For common purposes, and where the supply of rain-water is insufficient, river or spring-water must be employed; but such water is always inferior for horticultural purposes to rain-water, being more or less contaminated with sulphate of lime.

Water which contains carbonate of lime, dissolved in consequence of the presence of carbonic acid, may be greatly improved by several means; if it be boiled, the carbonic acid gas is expelled; the carbonate of lime being then no longer soluble, falls as a white powder, and the water becomes soft. The same effect is gradually produced by mere exposure to air; it is found that spring-water of this kind, after some days' exposure, becomes milky, and throws down a quantity of carbonate of lime, as the carbonic acid is given off from the water. Lastly, such water may be purified by the addition of a little quick-lime, which takes the carbonic acid at once, forming carbonate of lime, which is insoluble, and therefore separates, together with that carbonate of lime which the water previously contained in solution, owing to the presence of carbonic acid.

Spring or river water, holding sulphate of lime in solution, may be purified by the addition of a little carbonated alkali; thus, when carbonate of potash or soda is added to such water, these salts decompose each other, sulphate of potash or soda is formed, together with carbonate of lime, and the latter, being insoluble, separates as a white powder. If only a small quantity of the alkaline carbonate is employed, it considerably improves the water, for the alkaline salts are less objectionable than the sulphate of lime. There is one practical difficulty in the use of this process, which is, that if the water contains any free carbonic acid, the presence of that substance prevents the precipitation of the carbonate of lime, by rendering it soluble in water; this can only be obviated in the manner before stated. Carbonate of ammonia would be far preferable than carbonate of potash or soda, inasmuch as the resulting salts of ammonia remaining in solution would be not merely harmless, but even beneficial; it is, however, unfortunately the case, that carbonate of ammonia does not precipitate lime so readily as the carbonates of the common fixed alkalies; the carbonate of lime formed remains in solution, in consequence of the presence of carbonic acid. Carbonate of ammonia contains,

* A kilogramme is about 2lbs. 8oz.

† A stere is rather more than 35 cubic feet.

in proportion, more carbonic acid than either carbonate of potash, soda, or lime; hence, when it decomposes salts of lime, there is more carbonic acid than the lime can combine with, and this excess, which remains in the water, renders the carbonate of lime formed also soluble. On the other hand, carbonate of potash or soda contain, in proportion, just as much carbonic acid as the carbonate of lime; consequently, when they are employed, there is no excess of carbonic acid set free, and the whole of the lime is precipitated. If, however, hard water of this kind is exposed to the air for some time after the addition of carbonate of ammonia, the whole, or at least by far the greater part of the lime is precipitated. Any liquid containing carbonate of ammonia (such as common liquid manure) may be used for this purpose; but it must always be remembered that the carbonate of lime will not precipitate until the excess of carbonic acid is expelled or has escaped.—*E. Solly.*

TREATMENT OF HALF-HARDY PLANTS DURING WINTER.

The two principal things to be guarded against in the preservation of half-hardy plants during the winter months, are frost and dampness—both very destructive in their influence, and both exerting that influence in a different manner. But although the natures of frost and dampness are of very opposite characters, and their modes of influence widely different, the presence of the one materially augments the influence of the other; and it follows, that by preventing one, we in a great measure guard against both.

The first thing, then, that should engage our attention, is dampness, for if this is present, frost is more severe. To prevent dempness there must be a free circulation of air; the plants must be placed on a dry bottom, and if they are in a situation which will admit of a fire occasionally, it will render the pits or house dry, but it should be used very sparingly, and only when absolutely necessary. When plants are housed for the winter, it is a common practice with many gardeners to plunge them (I speak only in reference to half-hardy kinds) in some moist substance, whereby they may, by the porosity of the pots, absorb sufficient moisture for their support, without having recourse to the watering-pot. There are no doubt many advantages in such a system, but the disadvantages far outweigh them. Damp is engendered; there is a continual evaporation going on; and if the weather should be such (as is often the case for weeks together) as to prevent the removal of the lights, in order to produce a free current of air, the moisture finds no means of escape, and thus accumulating, causes the young and imperfectly organised wood often to damp off. But even with all care and attention, damp will attack some plants, and generally those that are most succulent in their nature, or the young and tender tops of others. We should therefore watch narrowly, and remove every leaf or shoot affected, as damp not only destroys the individual immediately affected, but extends its influence to those in the neighbourhood of the one so affected. It is contagious. It engenders mould, which being a species of Fungus, is rapidly disseminated, attacking and destroying wherever the damp has prepared the leaves for its reception. Neither should plants be too much crowded, as that obstructs the free circulation of air.

Watering should of course be done sparingly, but still it will be required occasionally. Care, however, must be taken to preserve the foliage as dry as possible, as there being but little sun in winter, and that not of sufficient strength to evaporate the superabundant moisture rapidly, it quickly rots the leaves, especially of Pelargoniums, and similar plants having leaves which form a kind of dish in which the water accumulates in considerable quantities. When fire is had recourse to for drying the house or pits, choose a fine day, and give all the air possible, so that the moisture dislodged by the heat may be dispersed. It is an absurd custom (but still often practised) to attempt to dry a building by fire-heat when every aperture is closed. The damp is certainly removed from all the crevices, but the confined atmosphere becomes saturated with moisture, and coming in contact with the walls and other objects at a lower temperature than the atmosphere itself, this moisture becomes condensed, and runs down in streams, or stands upon the walls in large drops, not a particle of it escaping, there being no aperture for it to do so. Many plants are no doubt placed for convenience, and from other causes, in shady situations. Some kinds require such treatment. In all such cases, however, they should be removed, as autumn approaches, to some place where they may enjoy the full benefit of the sun and air, in order that their juices may become elaborated, and their young and tender shoots get well ripened.—*Walter Wakefield.*

Home Correspondence.

Fourcroya gigantea.—Two noble Agave-like plants in the stove of the Royal Botanic Gardens of Kew, which are considered to be the Fourcroya gigantea, Ventenat (*Agave fœtida*, L.), give promise of flowering in a very short time. They are nearly of the same size, caulescent; the stem is 2 feet 4 inches high, crowned with a noble tuft of sword-shaped leaves five to seven feet long, spreading in all directions, their thickened bases giving a height of 9 foot 2 inches additional (in all 3 feet 6 inches), from the summit of which, in the centre of the foliage, the flower-stalk springs. This flower-stalk was first perceptible on Wednesday of last week (July 24th); and attention was directed to it by a remarkable appearance of the plant, the thickened bases of the leaves separating, as it were, from each other, so as to leave a space between them, into which a penny-piece might be inserted, and the lower leaves falling down so as, in a measure, to conceal the stem. On the 28th July, Mr. J. Smith found that this flower-stalk had already gained a height of 6 feet 8 inches; and on the 30th, of 8 feet 6 inches. To-day (August the 1st), at noon, its height was 10 feet, and in girth, at the base, 1 foot 2¾ inches. Its present appearance is similar to that of a young shoot of Asparagus, but more tapering, coming, indeed to a very sharp point at the top. The scales are distant, and the lower ones are beginning to spread, while the rest are pressed close to the stalk; but none of them exhibit at present an appearance of flower-buds. The growth of the flower-stalk in the two plants has kept pace, the one with the other, in a very remarkable manner; there is scarcely a perceptible difference in height between them, and as each is in a tub about 3 feet high, the whole height of the plants from the floor may be estimated, at noon on the 1st of August, at 16 feet 6 inches. The inside of the stove where they are placed being 26 feet high, some of our friends have congratulated us on having ample space, without removing the lights; but, calculating from the few instances upon record of the flowering of this stately plant in England, we must reckon upon a length of 30 or 32 feet from the flower-stalk; and instructions are already given for an opening to be made over each plant in the roof. Those of your readers who may be disposed to see them, will find them in the house usually called the Conservatory, or that one which is distinctly seen from the green (of Kew) before entering the gardens. Fourcroya gigantea appears to have flowered for the first time in Europe in the Botanic Garden of Schönbrun, Vienna, and it was figured by Jacquin, in the "Icones Plantarum Rariorum," vol. ii. p. 379. Its flowering panicle was 32 feet high. Another specimen blossomed in the Paris garden in 1723, and was figured by De Candolle in the "Plantes Grasses," tab. 126. Ventenat has given the height of the flower-stalk at different dates. It was from the 9th of August to the 4th of September before it had attained to 10 feet. By the 25th of October it had reached its greatest elevation, 22 feet; its more rapid growth having been checked by exposure to cold. In 1821, a Fourcroya gigantea blossomed at the seat of the Right Hon. Earl Powis, of Walcot, in Shropshire, and a figure was given of it by Dr. Sims in the "Botanical Magazine," tab. 2250. It had attained a height in the flower-stalk of 30 feet. None of the figures now mentioned give anything like a good idea of the stateliness of the species of Fourcroya, partly owing to the necessity of giving it upon a very reduced scale, and partly owing to the vast size of the panicle, in proportion to the foliage, gigantic as the latter are. The crown of leaves is in all shown to be sessile, or nearly sessile; whereas our plants are, as all authors describe them, caulescent. According to the first edition of the "Hortus Kewensis," it was cultivated at Hampton Court garden in 1690. Being a species of slow growth, it is possible the Kew plants may be of that age, and derived from Hampton Court. The Fourcroya longæva, of Karwinski, a species allied to this, is said by the Mexicans to flower only once in 400 years; but our species is but a dwarf in comparison of that, of which beautiful representations are given by Zuccarini, in the 16th vol. of the "Nova Acta Acad. Nat. Curiosorum," and which is said to have a stem 40 to 50 feet high, and a flower-stalk 30 to 40 feet high. — *W. J. H., Kew, Royal Botanical Gardens.*

Scorching Effects of the Sun.—The spotting of Vine-leaves under glass, so fruitful a source of speculation at present with your correspondents, and on which some conflicting opinions are entertained, depends in many instances on sun and water, but not in the manner pointed out by the lenticular theorists. A drop of water, as you have shown, on the surface of a leaf, cannot concentrate the sun's rays, so as to burn the leaf on which it rests. The under-surface of the glass of a hothouse, however, on being bespattered with water from a syringe or engine, will leave drops of water adhering to it, of various sizes and degrees of convexity, forming plano-convex lenses, which will concentrate the sun's rays and act as burning-glasses on the leaves adjacent, scorching them with brown spots and destroying their beauty, independent of the loss of green surface for the vital functions of the plant. Although pointing this out as one of the causes of the spotting of the Vine and other plants near the glass of hothouses, I would by no means hold it forth as the only one; but the above may satisfy the anti-lens gentlemen that water may burn the leaf of a plant, although not exactly in the way hitherto held out by the opposite party. Scoresby, when in Greenland, set fire to gunpowder with a double-convex piece of ice; no wonder then that a leaf may be scorched with a plano-convex lens of water.—*Vitimus.* [With much deference to our correspondent, we must regard his explanation quite as unsatisfactory as the others. Water lenses will no doubt act as well as those of glass or ice: but how do the lenses get into focus? Are not the leaves too far off the glass? And do not the drops of water shift and change their form, and run down the glass before they can act? Besides other obvious difficulties.

Scorching Effects of the Sun.—I have a plot of Scotch Firs two to three feet high, about 5000 in number; on the night of the 25th July it was a drizzling rain, and the next morning, being the 26th, the sun got out very hot; early that morning, about 9 o'clock, I passed by them and found them quite brown, and now they look as if they had had a fire amongst them. This must either be the effect of the sun and dew, or there must have been a frost in the night; but either way the sun must be the cause of it. The plot faced the east; on the north-west side I had several plots of Scotch and Larch, and only a few scorched. I perceive for the last month in this neighbourhood we have had several frosts in the night.—*F. K. O., Cliff Vale.* [This is a specimen of the sort of reasoning applied to this subject. The scorching was caused by the sun, or the dew, or the frost—or something else. Very likely; but by which? Not by the sun, because the same thing happened on the north-west side.]

Charcoal, Preparation of Cuttings, &c.—The following are the results of a few experiments relative to the application of charcoal in the propagation of plants, and also on the preparation of cuttings for insertion. In the spring of 1842, I propagated a considerable number of various kinds of plants in different ways, and some of these in charcoal; I sifted some rather fine, into which I inserted cuttings made from the young wood of Abutilon striatum, and Lantana Sellowii, together with others made from Fuchsias, and various other kinds of greenhouse plants: these became well rooted in a comparatively short space of time. The Abutilons emitted roots in great abundance, and seemed particularly fond of charcoal-grains, small particles of which adhered to the rootlets in great quantity. These cuttings were inserted in charcoal alone; but notwithstanding the success attending the experiment, I prefer mixing the charcoal with a little good soil and silver-sand. Sand is, no doubt, the best ingredient for propagation, but where it is scarce (as it is in some places), charcoal will be found advantageous. I also used charcoal in propagating Pelargoniums, for which I prepared a mixture of charcoal and loamy soil of about equal parts; the charcoal was not sifted very fine; 48-sized pots were used, at the bottom of which I placed a little Moss, and filled up the remainder with the prepared compost. I inserted one cutting in the centre of each pot, and the whole of the pots were plunged to the rim in the bark-bed in a propagating-house, containing a gentle and steady heat. I never saw cuttings do so well as they have done, many as I have seen; in the space of ten days or a fortnight the roots were protruding through the bottom of the pots. The cuttings were then taken out of the bark-bed and hardened off, and in a short time they became fine healthy plants; although it was evident that the compost was suitable for them, it is not to that alone that I ascribe my success, but, in a great measure, to another cause, viz. that of properly preparing the cuttings. It is the common practice to cut through the joint and remove three or four of the lowermost leaves, but the removal of these (I am fully convinced) is of great disadvantage, as it is generally admitted that the foliage has an office to perform, viz. that of elaborating the sap or juices of the plant. The sap ascends up the minute vessels of the cuttings, and, entering the leaves already formed, and undergoing the elaborating process, is converted into cambium, or the proper juice of plants, by exposure to the influence of light and heat. Afterwards it descends, forming wood in its course, but in considerably less quantity in cuttings than in rooted plants. After it has reached the base of the cutting, it comes into immediate contact with the soil or compost, of whatever nature that may be, and there it assumes a congealed appearance, or white warty substance, which, owing to the sap continually descending, enlarges until it is forced into different directions in the shape of roots. These supply the plant with food, growth commences and proceeds, and the plant elongates and soon becomes established. If we deprive a cutting of its lowermost leaves, we deprive it of a considerable portion of its power to emit roots. I have inserted a great quantity with every leaf attached, and these retained the same healthy appearance as before they were taken off the parent plant; many of them rooted rapidly, and not one leaf died until after they had become well-established plants. It is evident that the leaves were of service to the cuttings, from their remaining so healthy; these cuttings were inserted deep enough to bury in the soil the whole of the leaf-stalk of the lowermost leaf. It is worthy of remark that those cuttings having the largest leaves, rooted quickest; thus showing that the descent of the sap was stronger and quicker in them than in others with smaller foliage, but which, nevertheless, also succeeded well. How different was the case of some tried on the old plan of removing the leaves! Many soon became languid, some ultimately withered away, and those which did succeed were much slower in emitting roots. In removing the leaves, generally a small portion of the foot-stalk is left, which sap enters, but on account of the leaf being absent, is not elaborated; consequently, these become dropsical, and damping off very often, kill the cutting. This would not have been the case, had the leaves been left on. In preparing cuttings, do not cut through the joint, but close at its base, as the vessels connected with the lowermost leaves are then retained entire, which is an advantage not to be lost sight of; the cut should be made with a sharp knife, in order that the cutting may not receive the slightest bruise. For fear of disorganising the vessels, the cut should likewise not be suffered to become dry before insertion, as this to a great extent deprives the cutting of the power of absorption, and perhaps, in some plants, altogether. Shading is another essential point. Plants breathe, as it were, rapidly under the solar influence; consequently cuttings, being without roots, are not possessed of sufficient power for absorbing a requisite quantity of moisture to counterbalance the evaporation, and the consequence is (if shading is not resorted to) the cutting very quickly flags or droops, and is soon past recovery. To allow them to flag at all, is giving a severe check to the whole system, and in order to obviate this, recourse must be had to

shading. With regard to the Pelargonium, I would state, that to retain the leaves on the cuttings is highly serviceable. This, however, does not answer all plants indiscriminately; for on many of the hard-wooded kinds the leaves have either none or but very short footstalks; in such cases, then, a few of the lowermost leaves must be taken away; for, if buried in the soil, they *rot*, and destroy the cuttings. But, with these exceptions, there is much advantage in retaining all the foliage entire. With respect to charcoal, I may state that, for Salvias, Petunias, Fuchsias, Verbenas, Heliotropiums, Anagallis, &c., together with several climbers, as Cobæa, Lophospermums, and the like, charcoal is an excellent ingredient in their propagation, when mixed with a portion of good soil. For drainage also its value is well known, as on account of its open, porous nature, it admits a free passage for water.—*H. A. Wood, Statfold Hall.*

Pine-apples.—The perfection of Pine-growing is to produce them throughout the whole year; and to accomplish this desirable object is the ambition of all gardeners who have them in constant demand. This regular and continued supply is not to be afforded by subjecting the entire stock to one uniform treatment and temperature, or to have the plants of one age and size. Supposing, for example, a house 100 feet long, and of the usual width, divided into three compartments—plants of the same size are placed in each, and each division heated to the same temperature, and a healthy growing atmosphere maintained; the result, under such circumstances, will be nearly the same, although each of the divisions may be differently arranged, as long as the temperature and treatment nearly assimilate. If "A. B. C." had attentively studied this important part of the alphabet of Pine-growing, he would not now be living in dread of all his Pine-plants coming into fruit at once, and in autumn. Had "A. B. C." selected those plants which were likely to come up first, and which the practised eye can easily detect, and placed them in one of the divisions of his house, and then maintained a higher and drier temperature, the result would have been other than disappointment. Mr. Macintosh knows, as well as any man, the value of a good Pine-apple at Christmas; hence the remark alluded to by "A. B. C." applies, in all probability, to such plants as are very small, or mere suckers, as no gardener, in these days, would think of casting to the rot-heap such plants as those described by "A. B. C." merely because they were about to afford him good Pine-apples during winter.—*R. Glendinning.*

Pine-apples.—In a late Number are some remarks on the Pine-apple, by Mr. Roberts, who writes thus:—"I do not agree with a statement in Macintosh's 'Practical Gardener,' which says, that Pines starting into fruit in August are tantamount to being lost;" but waving this statement, I proceed to another in the same communication, where Mr. Roberts says that Queens showing fruit in August, would ripen good fruit by the end of October—a space of little more than two months. Now, I beg to say, that neither Mr. R., nor any other person, ever did, or ever can produce a good fruit in so short a time, and in particular at that season of the year.—*M. S.*

Bees.—Amongst the great mass of useful information which weekly issues from your Journal, can you supply a poor persecuted amateur bee-keeper with directions how to make himself more agreeable to his bees? I have heard that these little vicious creatures entertain strong aversion to some persons, and I am almost constrained, from the sad experience I have had of their attacks on my own person, to coincide in the opinion. I have been stung five times this season; twice for just peeping at them through one of their side-windows, while they were at work, and on the other occasions I was at least a dozen yards from their dwelling. On last Friday, while working in my garden, some 14 or 15 yards in an opposite direction to their straight flight from the hives, I heard, about my head, a fierce buzz, which I was aware portended mischief, and before I could either run, or guard against the impending danger, I received my assailant's venomous weapon in the most prominent feature of my face; the little wretch tugged and tugged to recover its lance, but so deeply fixed was it, that to extract it proved beyond its power. I immediately hastened into the house, and having pulled out the sting, I applied liquor-potassæ, which I had seen recommended in a Number of the *Chronicle*, as a certain cure; but, alas! so rapid was the course of the virus that it seemed to have outstript the remedy which I was led to anticipate from the alkali; for after assiduously applying it till the part was completely blistered, my nose became twice its natural size, to the horror of my wife, and the scarcely suppressed mirth of my children; the swelling quickly spread over one side of my face. To market it was impossible to venture the next day, and even on Sunday I fear I was considered to carry a double face in church. Now, Sir, can any of your scientific or learned contributors suggest a remedy for my distressing case? What can put me on good terms with my bees? And if this be impracticable, is there no infallible means of counteracting the effects of their sting? Dr. Bevan mentioned volatile alkali as preferable to liquor-potassæ; if hartshorn be meant, I beg to state that in my case that has failed to afford relief. Pray pity my condition, and recommend an antidote to *A would-be Lover of Bees.*

Bedding out Plants.—When I plant out a bed of anything, if the season is likely to be dry, I first make a hole for the plant, and in the bottom of this I put some rotten dung, or any sort of material that will retain water; I water this well, and then put in the plant, filling the hole to within two inches of the surface; I again water well, and then fill up the hole, and in this way I proceed with all the rest. If I am obliged to water the plants afterwards, I cause the beds to be hoed over next day, as soon as they are dry enough; plants do better under this treatment than by watering them so much as is usually done; when there is no appearance of dew I damp the leaves over late in the evening. If I was to plant a bed and water it all over, it is very probable the roots that were deep in the soil would possibly not be touched, consequently they would naturally come to the surface in search of food, and next day when the water is all evaporated, they are left under the influence of a scorching sun. Now, if we can keep roots down until the bed becomes covered with foliage, the shade soon brings the roots to the surface; for instance, if we take a Pelargonium in a pot exposed to the sun, the roots are all at the bottom; but shade the soil with Moss or a similar material, they will come to the surface, and so it is with a bed of plants in the flower-garden.—*A. Threlkeld, gr. to J. Marshall, Esq.*

Bedded-out Plants.—I beg to differ from the statement of "W. P. A." respecting bedded-out plants in flower-gardens, for at the present time I could not possibly wish to see the beds here, one and all of them, in a more flourishing condition; the plants are looking well, both with regard to foliage and flower, and that without the use of the watering-pot, which has not been once employed since the time of planting out. The manner in which the beds are prepared is described at p. 619, 1842, and I imagine, if the soil is prepared as is there stated, that even in a season like this there will be no need of the watering-pot, shading, &c., which in nine cases out of ten does more harm than good.—*J. Clarke, Tandridge Court, Surrey.*

Gooseberries.—We have received from Mr. John Fardon, of Woodstock, the following statement of the weight of Gooseberries shown by him at Oxford, for which he obtained first prizes:—

	Red.	Dwts.	Grs		*Green.*	Dwts.	Grs.
London	. .	30	0	Peacock	. .	26	4
Ditto	. .	29	0	Ditto	. .	25	18
	Yellow.				*White.*		
Leader	. .	23	14	Chorester	. .	22	6
Ditto	. .	22	4	Ditto	. .	21	12
		Total			. .	200	10

Growth of Forest Trees.—The following passage occurs in Gilbert White's "Miscellaneous Observations" appended to most editions of his "Natural History of Selborne," and it in some measure illustrates this subject, on which you reply to "A Subscriber" in a late *Chronicle.*—*T. B., Selborne.*—"It has been the received opinion that trees grow in height only by their annual upper shoot. But my neighbour over the way, whose occupation confines him to one spot, assures me that trees are expanded and raised in the lower parts also. The reason that he gives is this: the point of one of my Firs began for the first time to peep over the opposite roof at the beginning of summer; but before the growing season was over, the whole shoot of the year, and three or four joints of the body beside, became visible to him as he sits on his form in his shop. According to this supposition, a tree may advance in height considerably, though the summer shoot should be destroyed every year."—*White's Selborne.*

Strawberries.—In all probability it is mice that have cut off "στρφον's" Elton Pine Strawberries, while green, close to the calyx. If he examines them he will find that they are divested of a great portion of their seed; I have suffered this season from the same depredators to a considerable amount. The remedy I employed was kitchen droppings mixed with arsenic: spread this on thin slices of bread, cut in small pieces; late in the evening lay it round the beds, and on the following morning pick up what is not used. With one application only I have got clear of the pests.—*R. Allan.*

Wasps.—These are very abundant this season, and great is the havoc they are making amongst the fruit. I have already destroyed upwards of 70 nests. My method of destroying them is very simple and effectual. I mix sulphur and gunpowder in about equal quantities, with a little water, to the consistence of a thick paste, and while this is soft, I cut it out into pieces of about a quarter or half an inch thick and an inch long, and when dry I roll each piece in a bit of match-paper. In applying it to the nest, I take a piece of stick and cleave it at one end; in this I fasten one end of the match paper, ignite the opposite end and hold it to the hole of the nest, and, allowing it to explode, I stop the hole with a clod or my foot, in order to prevent the smoke from escaping. In an instant the wasps are suffocated. I then dig out the combs and mix them up with the earth, for if they are not dug out and destroyed, they recover from their suffocation. — *R. Allan, Drumbanagher.* [Turpentine is a far better remedy, as Prof. Henslow stated last year.]

Societies.

HORTICULTURAL SOCIETY.

August 6th.—R. W. Barchard, Esq. in the Chair. The Marquess of Titchfield, Lord Saltoun, Sir F. Goodricke, Bart., Sir J. W. Guise, Bart., Sir H. Webster, Colonel R. Ferguson, G. G. Kirby, Esq., H. R. Yorke, Esq., M.P., T. Kelsall, Esq., W. Williams, Esq., T. Rawsthorne, Esq., and F. L. Popham, Esq. were elected Fellows; and Dr. T. Cantor, of Penang, a Foreign Corresponding Member. The Exhibition included several objects of great interest. Two magnificent specimens of Fuchsia exoniensis were contributed by Mr. Ayres, gr. to J. Cook, Esq. This Fuchsia is well known to produce flowers of the finest colour and best form; but when it was shown at a former Exhibition, some doubts were entertained with respect to its habit of growth. Mr. Ayres's specimens, however, furnished ample proof that this kind has not only the finest blossoms of any sort we yet possess, but has also an excellent habit. These plants were upwards of 5 feet high, and their gracefully drooping branches covering the pot, were loaded with blossoms, and were clothed from top to bottom with abundance of fine healthy foliage.—From the same gardens were Pentas carnea and Achimenes multiflora in very fine condition, and also another sort named Bentonii, bearing much resemblance to the old A. coccinea; together with a most beautiful Clerodendron paniculatum, in a state of great perfection, producing a spike of flowers fully 18 inches long. A Knightian Medal was given for this, and a Banksian was awarded to the three first-mentioned plants.—Mr. Mountjoy, of Ealing, was awarded a Knightian Medal for a most beautiful specimen of the red-flowering Lilium speciosum, having 4 branches, bearing no less than 70 of its showy blossoms. From the same collection was also Pentas carnea, a Gladiolus named Glory of Ghent, with large vermilion and yellow flowers, and apparently raised between G. cardinalis crossed with psittacinus, and specimens of Phlox Van Houttii, which, on account of its beautifully-striped flowers, is so great an acquisition to hardy herbaceous plants. Mr. Mountjoy also sent Gloxinia cerina, flowers of a seedling Lœasa, and a Plectranthus with pale-blue flowers.—Mr. Edmonds, gr. to the Duke of Devonshire, received a Knightian Medal for an excellent Cattleya crispa, in good health, and having 5 fine spikes loaded with showy blossoms.—From Messrs. Henderson, of Pine-apple Place, were Cleome pentaphylla, Linaria triornithophora, called flava, and a fine mass of Achimenes hirsuta, in profuse bloom, growing in a shallow pan. Messrs. Henderson stated that they grow all the varieties of Achimenes in shallow pans, and they imagine that the plants flower much better under such treatment than when they are planted in deep pots. It is probable that this, as well as some of the other sorts which are apt to become too luxuriant, and consequently flower but sparingly, would do better if they were grown on blocks, and were treated similarly to Orchidaceous epiphytes. This has been partly proved in the Garden of the Horticultural Society, where a bulb of A. pedunculata accidentally got into the Moss on a block along with one of the Orchidaceous plants, where it is now growing, and although one of the worst of them to flower, it is quite a mass of bloom. Messrs. Henderson also sent a new Heath, named Hendersonii, with bright pink flowers; and a fine specimen of Babingtonia camphorosmæ, a fine autumn-flowering plant, with Heath-like foliage, and producing fine spikes of delicate pink blossoms; a Banksian Medal was awarded for the Heath, Babingtonia camphorosmæ, and Achimenes hirsuta.—From Mr. Jackson, of Kingston, was a Lobelia-looking plant, with dark purple flowers, belonging to the genus Tupa, but named a species of Cristaria. It was from South America, and is new to gardens.—Mr. Robertson, gr. to Mrs. Lawrence, sent a plant of the very useful Niphæa oblonga, Oncidium Papilio superbum, volubile, and Stanhopea graveolens, called a variety of oculata; the pale variety of Cattleya Mossiæ, with large showy lilac blossoms; the insignificant-looking but rare Epidendrum glaucum, and another Orchidaceous plant, having small green flowers, with the lip striped with brown; several fine specimens of Heaths, and a magnificent Cuphea Melvilla, covered with blossoms, for which a Knightian Medal was awarded.—From the garden of G. F. Cox, Esq., of Stockwell, were some good Orchidaceous plants, including Cymbidium lancifolium, Cycnoches ventricosum, Catasetum Russellianum, with watery-looking pale-green flowers; the rare Sophronitis cernua, Eulophia cochlearis, small, but in good health; Oncidium Papilio, and the red and white varieties of Lilium speciosum, together with the beautiful Dendrobium chrysanthum, and the true Stanhopea oculata, for which, as well as for the Dendrobium, a Banksian Medal was awarded. — Good specimens of Fuchsia exoniensis were contributed by Mr. Kendall, of Stoke Newington, and Mr. Chandler of Vauxhall, confirming the fact so abundantly proved by Mr. Ayres's plants, that this Fuchsia has an excellent habit. Mr. Kendall also sent a seedling Pelargonium, named Warrior.—From Messrs. Lane and Son was a seedling Fuchsia, named Beauty Supreme; and another, called Pickwick, was from Mr. Cormack, of Deptford.—A specimen of the pale variety of Catasetum maculatum was sent from the garden of J. H. Schroder, Esq., of Brixton.—Messrs. Veitch and Son, of Exeter, exhibited what they considered to be a new species of Cyrtopodium, sent from Peru by their collector, Mr. Lobb, but which appeared to be only a pale variety of C. punctatum; and likewise Torenia asiatica, not of sufficient beauty to render it of much moment in a horticultural point of view.—Of Fruit there were some good specimens. Mr. Henderson, gr. to Sir G. Beaumont, Bart., was awarded a Knightian Medal for two fine Queen Pine Apples, weighing 4 lbs. 5 oz. and 4 lbs. 6 oz. They had small crowns, were perfectly ripened all over, and although not so large as some that have been formerly exhibited, they were excellent specimens of good Pine-growing. Mr. Henderson also showed another, called a Globe Pine, weighing 4 lbs. 5 oz.—From Mr. Fish, gr. to H. H. Oddie, Esq., was a Providence Pine, said to have been produced by a plant only 15 months old; it was not a remarkable specimen of growth—the weight, which was 7lbs. 2oz., was its principal merit. Mr. Fish also sent specimens of his hardy green-fleshed Melon, the heaviest of which weighed 6 lbs.—Mr. Povey, gr. to the Rev. J. Thornycroft, received a Knightian Medal for a Providence Pine, weighing 8 lbs. 13 oz., and measuring 22 in. round, and 7½ high—the number of pips in height was 10.

R was a remarkably handsome fruit; the crown was however, rather large.—Mr. Hamp, gr. to J. Thorne Esq., showed a Queen Pine, weighing 3 lbs. 14 oz., and a Black Jamaica of the same weight, they were stated to have been grown on the tank system.—Finally, Mr Bolton, gr. to C. Winn, Esq., was awarded a Banksian Medal for a handsome Brown Providence Pine, weighing 6 lbs. 11 oz., and measuring 18 in. round and 9 in high Mr. Bolton stated that the plant from which this was cut is only 12 months old, the sucker was taken off the old stool without roots in 1843, it was potted, and in February last was turned out of the pot into the bark-bed and planted in chopped turf mixed with a small quantity of charcoal The plant had been only five times watered with liquid manure since February. Mr Bolton writes, that beside this three other plants of the same age produced fruit each exceeding 6 lbs in weight —Mr. Barker gr to the Rev I Thurlow sent a large mass of the fruit of Musa Cavendishii which was over ripe in the centre, while the point was quite green, thus showing the fruit which ripens in succession, in the different stages of growth —Specimens of a Seedling Cherry were sent by Mr. R Buck, of Blackheath — E. Thompson Esq, of Stanely Hall, received a Knightian Medal for 3 fine bunches of Black Hamburgh Grapes the heaviest of which weighed 1 lb 8 oz., and also for three beautiful bunches of Black Prince, (called Lombardy) weighing 1 lb 8 oz. and 1 lb 6 oz —From the garden of the Society was the well known Mormodes aromaticum Catasetum Russellianum, and a new variety of Dendrobium secundum, received from Mr. Fortune, who found it growing about Anger Point. It produces beautiful racemes of dark purple blossoms, which are quite different from the pale flowers of the old species From the same collection was also the new Achimenes picta which independently of the beauty of its flowers has a pretty greyish-striped foliage that the others do not possess. Along with this was A longiflora and grandiflora the smaller variety of Erica cubica, the well known Stephanotus floribundus, Statice Dickensoni, Myoporum parvifolium, Clerodendron fœtidum, and a collection of cut flowers of Verbenas.

COUNTRY SHOWS.

Royal Berkshire Horticultural Society July 25 —This was the second Show for the season The following is a list of Prizes

Carnations 1st Mr Willmer for Lawton's Marquess of Westminster, Willmer's Bompland, Middlesex Hero Tilbrook's Grenadier Smith's Mrs Betts, Wilson's Harriet Strong's Duke of York Defiance, Brown's do Watts's Bishop of Gloucester, Jacques's Phœbus Hedley's William Cobbett Duke of Northumberland, Hepworth's Brilliant Babbins's Squire Mayhew Queen's Duchess of Kent Holmes's Count Paulini, Willmer's Prince of Wales, and others 12 varieties Messrs Lyne and Son for Stone's Venus, Brocken's Flora's Garland Brinkley's Defiance, Ely's Mr Fuller Conquering Hero Fewcher's Dr John, Pearson's Enchantress, Headley's Achilles Smith's Duke of Wellington, Hero of Middlesex Turner's Princess Charlotte and Wilson's Harriet *Amateur's List* 12 varieties Rev A H Matthews, for Strong's Duke of York, Brickett's Defiance Cant's Victoria, Hales's Prince Albert, Strong's Esther Duke of Northumberland, Ely's Lord Milton, Ely's Lady Ely Scorah's Bloomsbury, Brown's Bishop of Gloucester Mansley and Beauty of Woodhouse *Feathers* 1 Mr Willmer for Wells's Duke, Masson's Charlotte Jessop's Sir W Middleton Fly's Criterion, Glidden's Miss Hemsell Leaver Lydia Barnard's Miss Barnard Glidden's Sir R Peel, Brutton's Queen Victoria Kirtland's Princess Augusta Sykes's Flora Willmer's Princess Royal, Queen Adelaide Wilson's Isabella Barrard's Bloomer, Ely's John Bull Green's Victoria, Cook's Veronica and Glidden's Vespasian 12 varieties 1 Rev A. H Matthews for Willmer's Princess Royal West's Matilda Burrough's Mrs Bowyer, Matthews's Enchantress Tillworth's Isabella Sir William Middleton, Matthews's Cynthia Green's Victoria Cook's Victoria, Brinkley's Perfection Matthews's Regina and Trip to Cambridge 2 Mr West for Glidden's Princess Royal Trip to Cambridge, Glidden's Vespasian Matilda Sharp's Miss Vicars, Kirtland's Queen Turner's Queen Nos 24 31 Mr Cook for Princess Royal Wilson's Flagstaff Trip to Cambridge, Wain's Victoria Cook's John Hampden, Kent and Queen, Cook's Venus West's Matilda and No 1

Guildford Horticultural Society July 25 —This was the first meeting for the season Several prizes were awarded but we have only received a list of rewards without the names of the flowers for which they were given

Northampton Horticultural Society July 10 —At this the Annual Meeting the following prizes were awarded —*Scarlet Bizarres* 1, Mr Holliday for Harvey's Conqueror 2, Mr Jenkins, for Martin's Spitfire 3 Mr Jacquest for the same *Crimson Bizarres* 1 Mr Holliday for Ely's Earl Milton 2 Mr. Cheny, for Wakefield's Paul Pry 3 Mr Carter, for the same *Scarlet Flakes* 1, Mr Carter for a seedling 2 Mr Holliday, for Addenbrooke's Lilia 3 Mr Archer for Wilson's William the Fourth 4, Mr Cheny for Chadwick's Brilliant 5, Mr Hardwick, for a Seedling *Rose Flakes* Mr Holliday for a seedling, called Duchess of Buccleuch 2 Mr Bullock for Mr George Crowe 3, Mr Hardwick for Lady Ely 4 Mr Bullock, for Mr George Crowe *Purple Flakes* 1 Mr Weston, for Harvey's Commander; 2, Mr Holliday for Evans's Queen Victoria; 3, Mr Carter, for Village Maid; 4, Mr Holliday for Queen Victoria; 5, Mr Cheney, for Bellerophon 6, Mr Jenkins for Commander 7 Mr Perkins, for Ely's Mary *Red Feathered Heavy edge* 1 Mr Jacquest, for Martin's Prince George; Mr Weston, for the same, 3, Mr Jenkins, for Green's Adelaide; 4, Mr Carter, for Sharp's Duke of Wellington 5 Mr Bullock for Prince George 6, Mr Archer, for Duke of Wellington; 7, Mr Holliday, for Barraud's Cornelius; 8, Mr Hardwick for Duke of Wellington; and 9, Mr Perkins, for Prince George *Red Light edge* 1 Mr Bullock for Wood's William the Fourth 2, Mr Holliday for Holliday's Henrietta; 3, Mr. Carter, for Glidden's Fraser; 4 Mr Cheny, for a seedling, 5, Mr Archer for Wood's Queen Victoria 6, Mr Jenkins, for Teazer, 7, Mr Weston, for Weston's Surprise; 8 Mr Hardwick, for Sharp's Bloomer *Red Feathered edge* 1, Mr Archer, for Green's Adelaide; 2, Mr Holliday for Duke of Wellington; 3, Mr Perkins, for Martin's Grenadier 4 Mr Hardwick for Duke of Wellington; 5, Mr Jenkins for Martin's Ruler and 6, Mr. Carter, for Teazer *Purple Flakes, Heavy edges* 1, Mr Holliday, for Kirtland's Princess Augusta of Cambridge; 2, Mr Bullock, for Beetham's Princess Victoria; 3 Mr. Hardwick, for a seedling; 4, Mr Carter for Princess Victoria. *Purple, Light edge* 1, Mr Holliday for Ely's Grace Darling; 2, Mr. Carter, for Kirtland's Princess Victoria; and 3, Mr. Jacquest, for the same *Purple, Feathered edge* 1, Mr. Holliday, for Wilson's Flagstaff; 2, Mr Jenkins, for Sharp's Invincible; 3, Mr. Jacquest, for Dobbler's Juliet; 4, Mr. Hardwick, for a Seedling; 5, Mr. Weston, for Gill's Enchantress; and 6 Mr Bullock, for a Seedling. EXTRA PRIZES —*Pan of Scarlet and Crimson Bizarres* Mr. Holliday, with 2 of Harvey's Conqueror and 1 of Martin's Splendid scarlet Bizarre, and 2 of Mansley's Robert Burns, and 1 of Ely's Lord Milton's crimson Bizarre *Pan of Carnations* Mr Holliday, with Harvey's Conqueror scarlet Bizarre, Lord Milton crimson Bizarre Marquess of Granby, scarlet-feathered; Lady Ely, red feathered Evans's Queen Victoria, pink-feathered *Light-edge Picotee* Mr Archer, with Stinkler's Purple Perfection.

Reviews.

Spain and the Spaniards, in 1843. By Capt. S. Widdrington, R N, F.R.S. 2 vols, 8vo. Bosne

THE author of these volumes is already advantageously known by his "Sketches in Spain," published some years since—a work which gives us the only account of Spanish natural history which is to be found in modern English literature. When Captain Cook (now Widdrington) returned from Spain with accounts of new Pines, Oaks and other plants, to be found in a quarter of Europe so often visited by English, his statement excited no little surprise, and it was only by raising them from seeds and cultivating them in our gardens, that their existence, as new species, was satisfactorily established It was, therefore, with no small interest that we commenced the perusal of his new volumes, and we have not been disappointed.

When the learned professor of chemistry at Oxford volunteered to explore the localities in Spain where phosphorite was said to exist in such abundance as to offer an inexhaustible supply of phosphoric acid to our agriculturists Captain Widdrington agreed to accompany him The work before us is the result of that tour, extended through Navarre, the Castiles, Estremadura, Grenada, Leon, the Asturias, and Galicia, during which every opportunity of acquiring information regarding the social, political, artistical, and agricultural condition of the people was seized by one thoroughly acquainted with their language and customs

The phosphorite the great object of the journey, was found at a place called Logrosan, in the heart of Estremadura so far removed from the coast as to leave small hope of its being possible to export it profitably even if it were in great abundance But in fact the quantity appears to be inconsiderable compared with the reports that had been heard of its abundance

"The town of Logrosan stands upon and is chiefly built out of a mass of very hard and compact schist mostly black, with large veins of quartz The beds of this slate are nearly vertical, and run from S S W to N N E, being in fact part of the great system of Estremadura The vein or bed of phosphorite appeared to me to be conformable with these slates, and from observation at the junction near the road where it is best seen would appear to have been raised together with them at least I could come to no other conclusion It appeared to me quite independent of the granite and other formations, and to belong entirely to the slate The vein is of unknown depth, the quality improving as you descend, according to the accounts of the people, borne out by our own observations In general it is about six or seven feet in thickness, but in the lower division rather more, and also at the higher extremity appeared to widen very considerably It is, however, not pure throughout this width but passes into silex and some pieces were sufficiently hard to form flints before the introduction of percussion locks In some parts it has a rich leaden appearance, and I received a cut in my hand by a fragment, whilst working with the hammer quite as clean as if done with a knife. By the great kindness of Senor Luna we were allowed to dig or do what we liked and to carry away any quantity of the mineral Dr Daubeny might wish, with a view to the future analysis We accordingly determined to take four mule loads, each load or carga being calculated at eight arrobas, or 200 lbs, which quantity was put into two strong bags made of the coarse linen woven in all these towns From the specific weight being very great the cargas when made up had the appearance of lead or other heavy mineral The distance to Seville is about five days' journey and the contract was made to convey it at so much per carga, return of course included The terms were extravagantly high and quite out of the question for anything except experiment, but we had no remedy should any quantity ever be required, it must be sent by cars round by the high road of Merida

"After the requisite quantity had been quarried, which was soon done we selected the most pure samples for packing up, and although this appeared to be the best site for quarrying the mineral, at least one half was useless, from its being so siliceous The finer parts have a purple and white laminated and reniform structure like some depositions of carbonate of lime. It is extremely phosphorescent when pulverised and thrown on coals or charcoal and there is no doubt the accidental discovery of this circumstance, and its very different appearance from any of the adjacent rocks, originally led to the discovery of its existence in this remote and little-frequented district."

We regret that our limited space should prevent our making many extracts from this interesting work. We must, however find room for the author's account of a Spanish Oak —

"From the southern verge of the Serrania de Ronda, above Marbella, I have traced it, during my various tours, to the centre of the mountains of, Leon, almost to the water-shed of Asturias, and from the Alcaraz above Guadalaxara, to the western parts of the Sierra de Morena. The tree is seen, almost without exception, as scrub or copse, in which state vast tracts of it are to be met with in the wide region of its habitat. I have not the smallest doubt that the genus of this tree has furnished the Quercus humilis of the older botanists, whose works have, until quite recently, furnished the materials for the compilations called the Natural History of Spain. The foliage differs considerably in size and colour, as usual in copse, and this is another reason for its figuring under different names. It is a very beautiful deciduous tree, and when in health is second to none of the European species in appearance, and I have no doubt is hardy enough for our climate. The foliage is a dark shining green, the leaves of a sort of oval shape, and serrated; they vary in size from one inch in length, or less, to four inches; so much so that only a great deal of practice would enable any one to avoid confounding and splitting it into species. I suppose from the locality this is the tree figured by Boissier, as Q. Alpestris; which absurd name he proposed to confer on it, but the Quercus Quexigo would be far more appropriate, and his plate does not much resemble this tree, although he calls it Quexigo. The timber of the Quexigo is of good quality, but as they never grow together, there are no means of comparing its absolute value with that of the Q. robur. The bark of the large trees is corrugated much in the same way as that of the Encina. The elevation of the zone the two species inhabit is exactly similar, but I have not seen the Quexigo so low to the south as the congener, and I am not aware that it is found below the centre of the Sierra Morena, and the Serrania de Ronda. The medium height at which it is generally seen is from 2000 to 3000 feet above the level of the sea, although both in the mountains of Leon, and in the Serrania de Ronda, it attains a greater elevation. Wherever they are seen in juxtaposition, as in the Serrania de Guadalupe, and also in the Leon district, the species that is placed immediately above it is the Alcar, or Quercus toza, mentioned in my former work as forming a zone in the Guadarrama and S. Nevada. This is the woolly-leaved species so common in the Landes, and at the foot of the Pyrenees, and I believe also in the Bocage of La Vendee, the most northern habitat that I can quote belonging to it."

At Jaen Captain Widdrington found in the markets 'a round Pear, not to be distinguished in appearance from an Apple, of extremely good flavour." What can this be?

The following account of the bees of Estremadura is interesting. The case of the hiveless bees is new and curious: —"Bees abound in this district, and increase to such an extent that they return an enormous profit to those who take the trouble of looking after them. The common hive is the hollow stem of the Cork-tree, which is cut in lengths and is perhaps the best material in the world for the purpose, next to it is the common straw one used in England, both these substances have the same valuable quality of being non-conductors of heat and cold. They had never heard of such a thing, much less practised it, as killing bees, and were surprised when I mentioned such a custom. I ascertained a very curious fact in their economy that is well worth attending to A gentleman was mentioned in my former work as living near Casalla, whom I visited in his cortijo there, where he was farming the property he had purchased with his own fortune, from the Carthusian convent of Casalla, and which had been restored to it, without a farthing being reimbursed, by the orders consequent on the invasion of 1823. This is the Canon Cepero, so well known in the first Cortes at Cadiz, of which he was one of the most eloquent and distinguished members. After the death of Ferdinand he recovered his property, resuming his station as canon of Seville, and was living in the house of Murillo, where I paid him a visit. He told me that being shut up in the convent of the Cartuxa at Seville by order of Ferdinand after his return in 1814, a lot he shared with nearly all who had distinguished themselves in preserving the throne during the war of independence, by way of passing the time he applied himself to study the economy of bees, which he had followed up at Casalla, and was so successful in his management that in a very short time he had a thousand hives' When the civil war commenced circumstances' caused their being neglected and dispersed, and some swarms, finding no holes or cavities to suit them, attached themselves to a beam in an outhouse, where they made their combs in a similar manner to that by which the tree wasps suspend their curious fabric from the branches. They were so well satisfied with this novel situation that they never left it nor swarmed, but kept adding successive combs, until they nearly reached the ground, and hung from the point of suspension like a huge living and waxen stalactite. The owner never disturbed them, but had the lower combs cut off as they were wanted, and the colony had now remained for a considerable period, without their showing the least disposition to change it. This is certainly rather important information for the managers of apiaries, and may serve to confirm the statements lately published on the practicability of inducing the insect to work downwards."

Garden Memoranda.

Messrs Youell & Co, Yarmouth.—The conveyance from Norwich to Yarmouth by the railroad forms a very agreeable ride; the country being level, a passenger enjoys a sight of the surrounding scenery without interruption during his transit, from the "Ancient City" to the mouth of the Yare. In a recent visit to the former place, I was induced by this easy mode of conveyance to visit the establishment of the Messrs. Youell, to see their extensive collection of Carnations and Picotees. The stage alone is furnished with more than 200 pots, and double this quantity forms a reserve, which enables them to fill up the vacancies as they occur, by which the Exhibition is kept in good condition for a considerable

three. The stage on which these flowers are arranged would probably be more effective if divided into two; for in arranging so large a quantity for general effect, it is difficult to give the due preponderance to colour, without a much larger proportion of flakes and bizarres, compared to the number of Picotees. This assortment, like all good collections, is composed of the standard varieties, which have stood the test of years; with the fine sorts more recently introduced. In their growth the stems are rather short, but the flowers are full-sized and good in colour; the flakes are particularly fine; the bizarres partake of the fault of the season, that of being rather pouncy in the white. It is through this establishment that the Picotees raised by the Rev. I. Barroughes, an enthusiastic and successful cultivator of this favourite flower, find their way to the public. I noticed a new variety raised by this gentleman, named the Duke of Newcastle, a flower of first-rate properties; it is a light-edged purple; the petals are large and of good form and substance, even on the edge; the colour unbroken, the pod good, and with less disposition to burst than is common. Another new flower, named Mrs. Benyon, from the same source, apparently a fine variety, not sufficiently open to form a correct opinion of, and a new variety named Cook's Unique, red edge, with large stout petals and good crown, are two fine flowers which will soon find their stations in general collections. The Fuchsias here are numerous and well-grown. To a collection of the finest sorts in general cultivation, are added many seedlings of great merit of Messrs. Y.'s own raising, and from seedlings of the present year, three have been selected, which are handsome and distinct varieties—named Laconii, Elegans, and Eliabs; the last-mentioned variety has a very faint pink tube, sepals tipped with green, corolla deep blood-colour, and the flowers are a good size. Among the seedling Verbenas, a few distinct varieties have appeared—one named Leonora, a rich lilac purple, with a light eye, is a very bright and beautiful flower; Rose charmante, a brilliant rosy pink of a peculiar tint; British Queen, a large handsome lilac; and Hebe, a delicate grey; Vulcan, which is a very distinct flower, has the fault of curling back, and will, on this account, be less effective. In the grounds I noticed a very extensive collection of Araucaria imbricata, in fine health and condition; Abies Deodara, and young plants of Pinus gerardiana and excelsa. This memorandum was made from the town garden—the nursery is some distance from Yarmouth.—*F. H.*

Miscellaneous.

An Easy Way of Making the Seeds of the Cedar of Lebanon Germinate.—M. Leroy (A[illegible]), a nurseryman at Algiers, employs a much more simple and natural method of raising Cedar seeds than the common one. Instead of extracting the seeds from the cones, he plants these last entire in the soil; the seeds find in this condition a moisture suitable for their germination; they unfold themselves between the scales, of which many perish of themselves. It is easy then to remove them, for after-transplantation, either into beds, into the open ground, or into pots. This way is convenient for gardeners who are engaged in the multiplication of such trees; for it comes nearest to nature, and all the fertile seeds germinate. M. Pépin has presented to the Royal Society of Agriculture some seeds of a Cedar of Lebanon, gathered from a single tree, planted in the Garden of Plants in 1735, by Bernard de Jussieu. These seeds germinated last winter in their cones, while still attached to the tree; from the end of January every gale of wind blew down several. This premature germination was doubtless owing to the mildness and dampness of the winter. This was the first time that M. Pépin remarked this fact. The greatest part of the seeds were very much swelled, others had their radicle already extended, to the length of one or two inches. The winged membrane which accompanied the seed was generally adherent. Many hundreds of those seeds collected on the ground, have been sown in February, and are in as perfect a state of vegetation as those which have been since put into the ground.—*Revue Horticole.*

Cider; the Antiquity of its Use in Normandy.—The use of the fermented juice of Apples and Pears was known in the sixth century, and perhaps before, because since 587 St. Radegonde, Queen of France, drank perry (*piratium*) daily. The cultivation of the Apple and Pear tree must have been followed in Gaul, under the government of the Romans, who, as we know, took great interest in this cultivation. As to the art of extracting a fermented liquor from these two fruits, the exact time of its antiquity cannot be fixed, but it is at least certain that it was known to the Gauls and afterwards to the Franks, long before the arrival of the Normans. Indeed, in the eighth century, in the famous Capitulary of Villis, which repeats the views of Charlemagne upon the finances and administration of his dominions, is found a curious list of the different trades which he thought necessary to be in each of his great estates. This illustrious Prince ordered that they should contain persons who were able to brew beer and beverages made with Apples, Pears, and other fruits. Other records of the same period frequently mention the use of cider; and at the time of the fourth irruption of the men of the North, into Neustria, in 862, some authorities, not less respectable, speak of the alleys of Apple-trees which surrounded the ancient abbey of Fontenelle or Saint Wandrille, which these conquerors entirely destroyed. Hugues de Goernay, in the charter of the foundation of Ghis Ruissel, given to the monastery a right to one of his Argile orchards. We also see, in a record of 1183, that the Abbey of Jumiéges received a donation in Apples, sufficient to make enough cider for their consumption. There are numbers of charters as ancient, in which one of the principal duties that the monarch requires of his vassals is to gather his Apples to make his cider. I am indebted to M. Deville, the director of the Museum of Antiquities at Rouen, for the knowledge of a curious document respecting this subject. It relates a passage of a poem, written by the chaplain of Philip Augustus, William Lebreton, who had followed this Prince at the conquest of Normandy, in 1203—1204. This is what he says—

"Non tot in autumni rubet Algis tempore pomis
Unde liquare solet siceram sibi Neustria gratam;"

Algis is the province of Auge, and from *sicera*, an ancient Latin word, which signified all fermented liquors except wine, is derived our word *cidre*, which was then written *sidre*. Noel found that cider was among the goods which went up the Seine in 1315, and that in 1407 it was sold in Paris by wine-merchants. It appears very clear to me that we are not indebted either to the people of Navarre, Biscay, or to the Northmans, for introducing the cultivation of the Apple-tree into France, and for the art of brewing Apples. But I think it is equally certain that it was only towards the end of the 13th or 14th century that the use of cider became general in Normandy. Before that period beer, then known under the name of *cervoise*, was the common drink, even in those provinces which at the present time produce the most Apples. Many facts prove it. In towns and country villages there were brewhouses, some of which are known to have been very ancient, one of which was at Lillebonne. In 1358 there were brewhouses at Rouen. The acts of Dieppe mention beer, in speaking of the liquors which the fishermen took out with them to sea; and we know, besides, that there were very few religious houses which had not mash-tubs, boilers, and other utensils necessary for brewing this liquor. If, as we doubt not, Normandy possessed great numbers of vineyards before and during the middle ages, bear, and afterwards cider, counterbalanced at a very early period the use of wine, which has never been in our country anything more than a very indifferent drink. The cessation of the cultivation of the Vine has in my opinion been caused by the disforesting of our country, for the old and lofty forests protected the sides of the hills planted with Vines from the north winds, and consequently assisted in ripening the Grapes. In proportion as the forests of Normandy, which formed an extensive net-work, were felled, the quantity and quality of the wine decreasing every year, the inhabitants had recourse to other liquors, the preparation of which depended less upon the inclemency of the weather.—*Comptes Rendus.*

CALENDAR OF OPERATIONS
For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

After the middle of August—in dull weather—established stove plants should not be watered late in the afternoon; the dryer the stove is kept at night, through the autumn the better the plants will ripen their wood; and we all know that on the perfect maturity of each season's growth depend in a great measure the success of flowering and fruiting exotic plants: therefore allow the plants as much room as possible for the next three months. This cannot be too much insisted upon. An early vinery, where the leaves are all fallen, would be a good place into which to remove some of the stronger specimens from the stove for six weeks or so; here, with dry atmosphere, and plenty of air and light, they would ripen their wood perfectly, and the Vines would not be injured by the treatment.

Conservatory.—Those with fixed roofs and narrow pits attached outside for planting stove-climbers in, for furnishing the rafters, are now coming generally into use, and the experience of a few years will suggest further improvements in this way. "Devonian's" experience this season (p. 504) has proved what I have long asserted, that none of the hardy climbers should be allowed to run into the upper portion of a house having a fixed roof. Even the Mandevilla, which flowers equally well in the stove and in the open air against a conservatory wall, will succeed better in the lower part of such a house. There can be no question about the next best climber to suit "Devonian's" house without the aid of a stove pit: it is the Stephanotus floribundus. A plant of this that has not been more than eighteen months planted out in the conservatory here, is now a complete mass of bloom from top to bottom, and growing away as freely as a Passion-flower which is against the next pilaster. Echites suberecta was planted last spring, and it promises to rival the Stephanotus. I mention these things in order to keep people from planting out such climbers in a conservatory from this time till next April. A great step in furtherance of this mode of applying tender climbers would be to procure old plants, and train them on the rafters of a stove or vinery one season before they are removed to the borders of the conservatory, but where there is a pit at the back of the conservatory to receive them this precaution is not necessary.

Greenhouse and Pits.—Many of the more tender Heaths suffer much from wet autumns, and nurserymen turn these into pits or greenhouses about this time. Pits are by far the best places for such plants, as the glass can be put off and on as circumstances may require. Chrysanthemums and Violets must be well attended to from this time; give abundance of liquid manure to both, now that they are strong enough to make use of rich food. A plant or two of the Cactus truncatus might be put into the Gardenia frame, or into an empty Melon pit, with other plants requiring heat; they would flower sooner than the general stock, and a few of them might be kept back for succession.—*D. H.*

II.—FLOWER GARDEN AND SHRUBBERIES.
Out-door Department.

In addition to a proper preparation of the soil of flower-beds, it will also in another season be advisable to place more reliance upon Annuals for an early spring display; and consequently, a proper preparation must be made by sowing a general collection of the best kinds towards the middle of September. In the spring, I recommended the planting of beds thicker than usual: and accordingly, instead of allowing one plant to every square foot, as was the rule in former years, I planted two. The result, considering the season, has been satisfactory, my beds having been filled and in full bloom for the last six weeks; but then this has been attained by an expenditure of labour which not one gardener in fifty could command, and therefore, though the beds are full, there is no particular credit in the matter, as in ordinary seasons I have seen them quite as well stocked by the middle of June, and without much care to many plants. Now, in the coming season, I intend to plant three plants on every square foot, and instead of propagating and keeping the plants in the usual way, in stock-pots, I intend to strike three plants in a large 6s. pot, filling the pot half full of soil in the first outset, and then earthing the plants up as they advance in growth; thus our plants will be all autumn-potted; and though they may require more room for the winter, turf-pits are readily built, and, with proper attention, they preserve plants as well as can be desired. No amount of labour, however judiciously directed in the spring, can make up for time lost in the preparation of plants in the autumn. Those who have the best plants in November will have the best show of flowers next June.

Reserve-Garden.—Sow ten-week stocks immediately, under the protection of a hand-glass. Do not permit the young plants to become wet, or they will damp off. They are liable to mildew, but sulphur will check it.

Pits and Frames.—Proceed with the propagation of all bedding-out plants as expeditiously as possible, making choice of the more difficult ones first, such as Nierembergias, Lotuses, and the like. Leschenaultias for turning out next season should now be strong plants; give them another shift if they require it. Propagate scarlet, variegated, and common Pelargoniums as fast as you can get cuttings.—*W. F. A.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Let the plants swelling their fruit be looked over twice or three times a week when the weather is hot, that they may receive no check for want of water. Dew the leaves over on the afternoon of every fine day. Much judgment should be exercised in watering the large successions during the next three months, as many of the pots are by this time so full of roots, that, if as much water were given to them as the roots would absorb, the result would be, by the commencement of winter, large and overgrown plants, which, however, would produce fruit of a very disproportionate size, owing to the plant having expended so much of its strength in the formation of leaves. Those who have given their larger successions the final shift will do well to prevent this overgrowth, by withholding, to a certain extent, the usual supply of water. The same effect may be produced by giving more air; but this would also check the growth of other plants in the same pit, which may rather require to be encouraged. If a pit heated with dung can be spared for growing the crowns and suckers in, it will suit them much better than putting them with the other plants in the larger pits. Prepare it by filling it with Oak-leaves, or partly-spent bark; apply but slight linings at first, to avoid having an undue degree of bottom-heat. Plunge the pots about two-thirds of their depth in a layer of tan, and shade till they become rooted.

Vineries.—Use great caution now to prevent moisture in houses where fruit is ripening, as it causes some of the thin-skinned kinds, as Muscadines and Sweetwaters, to crack. No pot-plants which require watering or syringing should be kept in the vineries with ripening fruit. Now is a good time to repair and paint, or make any necessary alterations in the early vineries. Vines in pots, when their leaves begin to fade, should be removed to the north side of a wall, and the pots laid on their sides, that the roots may be kept dry; a little litter may be laid over the pots, which will be of service to the roots, by preserving them from sudden changes.

Peach Houses.—In the late houses (the crop being now over) the trees will require to be watered and syringed with regularity. The lights should be open as much as possible to admit of a free circulation of air. After the crop is gathered, I find nothing better for clearing the trees of thrip and red spider, than applying soap leys to them with the engine.

Figs.—In fine weather too much air cannot be given where fruit is ripening. Supply the roots with water when necessary. For this no rule can be laid down, as much depends on the trees being in a state of luxuriant growth or otherwise, or on their being confined by walls. Those, whose roots are confined by walls (if bearing freely) will require occasionally a good watering with liquid manure.

Melons.—In dull weather the Melon plants will grow very fast, and will require strict attention to stopping and thinning. Give plenty of air, it will improve the flavour of the fruit. Withhold water when the fruit is ripening: a sudden supply of water at that time often causes the fruit to crack and become worthless.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Vines will now require much attention where there is a prospect of ripening the fruit. The bunches should receive their final thinning, and unless in the case of small sorts no more than one bunch should be left on a shoot. Remove all superfluous wood, in order to throw as much strength as possible into the fruit. If the spur system of pruning is adopted, leave as many shoots besides those in fruit as will be wanted next season; shorten bearing shoots one joint beyond the bunch, or to the joint at the fruit, provided the fruit is preserved, and one joint of lateral allowed to remain. Pick out a few of the buds at the axils of the leaves, towards the points of these shoots, that the buds at their base may be rendered more plump for next season. If the long or sure season rod system is followed no short shoots need be left that do not carry fruit, and these must be kept well shortened, so that by removing all useless growth and picking out the young buds in the axils of the leaves of such shoots, more strength and full exposure may be given to those long shoots you intend for bearing next year. Leaving a lateral with a leaf or two attached, has a tendency to strengthen the bud at its base, and prevents this bud bursting, if the shoot should be rather prematurely shortened; but some successful gardeners object altogether to the leaving of such laterals, considering that they render the buds three-cornered instead of plump and round. *Grafts* should now have their bandages loosened, and their shoots properly secured from winds.

Mildew.—See that it does not make its appearance on your wall trees. As a temporary remedy, nothing is preferable to flowers of sulphur. If merely the points of shoots become affected, cut them off at once. Some trees from their tender nature are very liable to its attacks, but in their case its ravages may be much modified, if not altogether removed, by paying attention to keeping the root and top of the tree in an equal state as respects temperature and moisture. Much knowledge may be gained respecting this troublesome enemy, by watching the circumstances in which it attacks the more common vegetables, as Peas, &c. *Onions.*—The remains of the autumn-sown Onions should now be got out of the ground as soon as possible. The same may be said of Shallots, Garlic, &c., as soon as their leaves decay. Spring-sown Onions may have their tops gently bent down with the head of a rake, to cause the bulbs to swell better. The sowing of seed to stand the winter, should proceed without delay upon cold stiff soils; on light soils, and warm situations, it will do a fortnight hence. No spring are better than the Strasburgh, or large White Spanish. *Celery.*—Prepare for earthing up the first general supply by removing all suckers and tying the plants neatly up. I earth up my first crops all at once, in a mass; in three weeks to a month before it is wanted. If earthed up at different times at this early season, many of the heads will run. We have had some for occasional use for more than a month. *Routine.*—Gather Herbs for drying. Plant out and hoe among winter crops. Clear Strawberry beds; make fresh plantations; sweep and roll the walks, and render the kitchen garden as much an object of interest as the pleasure-ground.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Put in, or glean the directions given in late Nos.

Coppice.—Attend to directions previously given for summer management in this department.

Young Plantations.—It is of great importance to keep the young plants and trees clear of all other stuff, cutting in, everything that overgrows or presses on them, or, that may injure their young and tender shoots. When too much shaded, young trees grow up tall and slender, and without a sufficient number

of side-branches. Remove or "shorten in" any very strong branches near the top that are likely to become rivals to the leader, or produce forks in the main stem; also "shorten in" any of the strongest side-branches, particularly where they are scanty, in order to increase the number of healthy shoots and leaves, for on this depends the increase of timber in the trunk.

Hedge-rows.—After boisterous winds the newly-planted trees should be examined, to see if they are firm at the root, and free from wind-waving.

Nursery Work.—The young plants will now be growing very fast; keep down weeds; train the young growing shoots of the present season in the proper direction.—*W. B.*

VII.—COTTAGERS' GARDENS.

As wasps are exceedingly numerous this season, protect by every possible means any fruit that is now approaching maturity. Among Plums, some recommend suspending bottles half filled with sour beer, honey and water, or any clammy liquid that will answer the purpose of entrapping them; and in favourable situations, where a Peach or Nectarine tree is cultivated, the fruit should be covered very thinly with wadding, as soon as there is the least appearance of any of them being injured. This, however, seldom happens before the fruit has attained its usual size and begun to colour. Collect any of the early sorts of Apples and Pears that are blown down, and lay them carefully aside on a dry floor or shelf. Let those that are bruised the most be placed by themselves and first taken for use. Continue to remove summer crops and prepare the ground for other vegetables. Those who are fond of Spinach may now sow a small quantity for autumn use. Where Parsley is much wanted and the spring-sown crop has either failed or is considered insufficient for a winter supply, an edging may be formed of the best curled sort, which will probably succeed better now than that sown in spring. The last sowing of Turnips for the season should also now be made, and a quantity of Vanack Cabbage may still be planted. This sort makes excellent spring Coleworts, and pushes fine sprouts from the stumps after it is cut. The last planting of Cauliflower and Broccoli had better now be got in. Tomatoes, if any, should be kept thin; cut out all useless shoots, and stop those retained at the first joint above the fruit. Keep Dahlias neatly tied up in order to prevent them from being broken by high winds, which are likely to prevail at this season. Trap Earwigs by placing inverted pots, having a little dry Moss in them, over the tops of the Dahlia stakes. In this way, by examining the pots frequently and killing the insects collected, these troublesome vermin may soon be got rid of. Stir up the surface of the ground among growing crops, and destroy weeds wherever they appear.—*J. M'H.*

State of the Weather near London for the week ending Aug. 9, 1845, as observed at the Horticultural Garden, Chiswick.

Aug.		Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain
Fri.	8	17	29.885	29.774	72	48	60.5	W.	.11
Sat.	9	18	29.902	29.470	69	52	60.5	S W.	.15
Sun.	10	19	29.923	29.695	72	47	60.5	W.	.01
Mon.	11	20	29.874	29.632	72	57	64.5	S.	.7
Tues.	12	(	29.787	29.520	71	52	61.5	S. W.	.02
Wed.	13	22	29.650	29.621	71	50	60.5	S W.	.12
Thurs.	14	23	29.712	29.614	72	47	59.5	W.	
Average			29.799	29.699	71.0	50.1	61.0		.78

Aug. 8 Quite cloudless; very fine, slightly clouded at night.
— 9 Showers and sunshine; boisterous, with showers: stormy at night.
— 10 Dusky white clouds and brisk wind, thunder and shower in afternoon; clear.
— 11 Very fine; 9 P.M., constant rain.
— 12 Boisterous; cloudy and fine; clear.
— 13 Clear, with brisk wind; heavy shower, with squall, at noon; clear.
— 14 Light clouds; fine, with brisk wind; very clear at night.
Mean temperature of the week 2 deg. below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Aug. 17, 1845.

Aug.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds						
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 11	75.8	50.6	63.2	7	0.36 In.	1	1	1	2	2	5	1
Mon. 12	75.5	50.7	63.1	5	0.11	1	1	1	3	6	4	2
Tues. 13	75.6	50.5	63.1	6	1.14	1	1	2	3	7	2	1
Wed. 14	75.1	50.2	62.6	6	0.67	3	2	1	2	4	3	—
Thurs. 15	74.9	51.3	63.1	6	0.61	1	2	3	1	4	3	3
Fri. 16	74.7	52.4	63.5	5	0.60	—	2	1	3	5	5	2
Sat. 17	74.5	52.5	63.5	10	0.54	2	1	1	3	6	2	—

The highest temperature during the above period occurred on the 17th, 1826, and 16th, 1843—therm. 99°, and the lowest on the 13th, 1839—therm. 36°.

Notices to Correspondents.

Asparagus.—*A.*—The ground for the reception of your seedling Asparagus should be prepared before the plants begin to push in spring. It should be trenched 2½ feet deep, with at least 6 inches of rotten dung, or if the latter can be afforded a foot thick, so much the better. The ground should be trenched twice over, in order that the dung and soil may be thoroughly mixed. Plant in March, when the ground is in good working order, and rather dry than wet, in beds 4 feet wide, with 2 feet alleys between the beds. There should be three rows in each bed, the first a foot from the side, then a foot between each of the rows, will leave the third row likewise a foot from the other side of the bed; the plants may be a foot asunder in the rows, and covered over the crowns with fine soil, to the depth of about 2 inches. Some cultivators, French as well as English, prefer midsummer planting.‖

Bees.—*Undecided.*—You may introduce a little smoke from Tobacco, rag, &c. in the way you mention into the top hive. If that fail to dislodge the bees, you had better take off the hive, and fumigate them with puff ball, without disturbing those in the lower hive. Then put the apparently lifeless bees into an empty hive, and put it upon the top of the box; the bees will soon join those below. Except fumigation is often repeated, bees are not injured by it. *J. Wighton.*

Books.—*R. R.*—"Mills on the Cucumber." Sulphur is the only known *remedy* for red spider. A proper supply of moisture is the *preventive.*—*M. R.*—The first Latin grammar you can buy for 6*d.* on a book-stall, is as likely as any to answer your purpose. And add to it a Latin New Testament, which you can study by comparing it with an English one.—*A Constant Reader.*—Prof. Lindley has given up the idea of publishing a 2nd volume of his "Synopsis," now that the 5th volume of Smith's "British Flora" has appeared, with all the Cryptogamic plants fully treated of in it.

Cucumbers.—*Rus.*—A fruit 18 inches long, from the open border, without bottom-heat, and a handsome fruit too, is a remarkable specimen of good growth. Would it have happened in a season less hot than this?

Forest-trees.—*G.*—The following are quick growing, and will succeed, in an exposed situation: Quercus rubra, Turkey Oak, Ulmus vegeta, Alnus cordifolia, Acer pseudo platanus, Populus monilifera, Juglans nigra, Salix Russelliana and alba, Tilia europæa, and Sweet Chesnut.¶

Fruit-trees.—*G.*—*Cherries* for an orchard may consist chiefly of the following varieties:—Bigarreau, Bigarreau Napoléon, Büttner's Black Heart, Werder's Early Heart, Elton, Downton, Flemish, Florence, Knight's Early Black, May Duke, Morello. *Plums* for an orchard:—Royale Hâtive, Green Gage, Purple Gage, Coe's Golden Drop, Kirke's, Frotheringham, Washington, Ickworth, Imperatrice, Nectarine, Blue Perdrigon, Shropshire Damson, White Magnum Bonum, Early Orleans.‖

Fuchsias.—*T. J.*—It is very true that *F. cylindrica* has unisexual flowers; but our answer referred to the common species. We have never heard of a hybrid with that species, nor can we see what good is to be expected by crossing so poor a thing. It is very improbable that a Digitalis should be fertilised by a Gloxinia or a Lophospermum; but the latter is far more likely than the former. If you can throw a decided violet into the petticoats of the self varieties of Fuchsia, you will render beautiful what are now much less attractive than they were expected to be. Self Fuchsias will be driven out of cultivation.

Grafting.—*A Reader.*—You must be a good operator to make one-year-old Beech cuttings take, as we see that you do. But although you may have succeeded, and although others also succeed sometimes by using such wood, depend upon it two-year-old wood is what it is safest to employ. Ask the nurserymen.

Heating.—*No.* 2.—Dion is an idle fellow, and says that he will do no more than he has done:—"The idea is all that I proposed to give; others must use their heads and apply it. Any clever workman will understand the mode of executing such a plan." We confess we see no difficulty in setting in brickwork such apparatus as he proposes, and in making a chimney to carry off the smoke, or in supplying fuel. There is no sort of necessity to keep the water always boiling. Once heated it will retain its heat for a long time. If not set in brickwork there would be a great loss of heat; but the brickwork might be very slight.—*F. K. S.*—The apparatus will work, no doubt. You had better construct a close iron box for the fire-place; make on one side a door for draught, and by which ashes can be raked out, and from the other carry a small pipe into the open air. In such a contrivance you may burn charcoal or good coke, without inconvenience. In raking out the ashes pour water on them, and they will not be troublesome because of their dust. Gas stoves do not suit plants—at least we should fear not; they would contaminate the air too much. You may no doubt keep your boiler in action by a Camphine or other spirit lamp, but it would be an expensive process. If expense is no object, that would be the best way of heating the boiler.

Horticultural Society.—*D. A.*—We will lay your letter before the Exhibition Committee. We do not see how holding a meeting on a Saturday is breaking the *Christian* Sabbath.

Horticultural Society of Paris.—*M.*—Upon a full consideration of the question, we have resolved not to admit any discussion concerning the Royal Society of Horticulture. French disputes must be settled in French journals. We have no means of judging what truth there is in your statement that "the prizes are never given to *things* but to *persons*," and if we admit letters on one side we must on the other. If matters are conducted as you represent, why do not the members of the Société Royale de Horticulture take the course that would be followed in England, viz., join in removing the present managers, and in introducing others in whom they have more confidence?

Hydrangeas.—*Corylus.*—In the Index for 1843 are references to the paragraphs respecting the turning these plants blue.

Insects.—*J. Fox.*—The aphides infesting your Lettuce roots, are the Eriosoma lactucæ of Curtis. I have often seen them attacking the plants in July, but generally in neglected ground. Mixing unslaked lime with the soil in the seed-beds, and trenching the land in winter, would probably eradicate the disease. *R.*—*A Constant Reader in the North.*—The scales infesting your Vines appear to be the Coccus vitis. Clear away the old leaves as they fall in the autumn, and in February or March you must strip off the old bark and burn it directly. When this has been judiciously done I have seen the most beneficial results; indeed the Vine-scale has been completely eradicated. *R.*—*L. T.*—If your Melon-leaves are spotted by insects, it is at an earlier period of the year, for we can find none on them now. From their appearance we should attribute the disease to damp. *R.*—*London.*—As we could find no insects upon your Melon-leaves, owing to their not being inclosed in a box, it is impossible to say whether they are injured by the Thrips or Aphides. The former cannot be extirpated, it is said, from their being able to bear a very high temperature; but fumigation with Tobacco will destroy the latter. *R.*—*E. Q.*—The insects you complain of are Cheilifers, and are useful in destroying the Acari which infest frames. I wish, therefore, you would observe their habits minutely, and report upon the subject. *R.*—*N. O. P.*—We are much obliged for the larva; but it is totally different from the former one, and feeds upon Aphides. *R.*—*W. C. T.*—Your beautiful Fir-galls are figured in the 3d Vol. of this Journal, p. 630, and at p. 661 are some farther observations. There are *both* apterous and winged specimens, and some pupæ, but they are all the Chermes abietis of Linnæus. *R.*—*F. H. S.*—The insects destroying your Beans are an Aphis; but surely it is not the same species which infests your Dahlias. The best means of getting rid of them is to nip off the heads or leaves which are most infested, and destroy them at once; then syringe the plants with tobacco-water, or you may dip the shoots into the liquor, when it is very warm. The Ticks are called Ixodus Ricinus, and will attack man as well as animals. *R.*

Local Horticultural Societies.—*Arbroath.*—We shall be happy to prepare the printed forms we suggested, if we find any disposition to use them. At present, however, yours is the only application for them.—*C. M. C. H. S.*—As your observations were general, not personal, and made to serve the best interests of such societies, it is discreditable to the individuals you mention that they should have regarded your communication as offensive. This shows that your statement was correct, and that the judges in whom the ill feeling has arisen are unfit to hold their offices. Since you ask our opinion, we have no objection to say—1. That it is disgraceful in any man to judge his own productions, and suicidal in a society to permit him to do so; 2. That good feeling ought to prevent all communication between the judges and exhibitors, until after the Prizes are declared; and that if this is not attended to, nobody will believe the decision of the judges to be impartial. The last question we cannot answer; nor is it necessary that we should do so, because it is quite clear that if any society is managed in the way you describe, that society must go to the dogs.—*J. L. Dartmouth.*—You have not been named as the person complained of, and we cannot enter into local disputes, which must be settled on the spot. Our correspondent's letter was intended to show one of the causes of the failure of local Horticultural Societies, and his criticism was directed against the Society rather than any exhibitor. Even if we were disposed to publish your letter, its improper language would prevent us. If you are the person meant, and the plants were your own growth, you should satisfy the committee on that point—not us.

Mildew.—If *A Constant Subscriber* will tell us what he means by mildew in a hothouse, we will endeavour to suggest a remedy. If his leaves are mildewed, he had better send some by post.

Mulberry-trees.—*M.*—Pray get us the full particulars; we shall be much obliged. They should include, 1, the diameter of the head of the tree; 2, that of the earth heaped up; 3, that of the space built round the tree; 4, the nature of the soil.

Names of Fruits.—*A. P.*—Your Pear No. 71, is not the French Jargonelle; it is the Summer Portugal. No. 35 appears to be the Old Colmar, as far as can be judged from wood and leaves, in the absence of fruit. The Apple No 80, is the Kerry Pippin;—*J. F.*—Your Cherry appears to be the White Heart.‖

Names of Plants.—*H. Regius.*—Drimia lanceæfolia, not lanceolata.—*J. B.*—The plant which has so much excited your surprise is the common state of New Holland Acacias in their youth. The greater part of them produce common Mimosa leaves at first, and then exchange them by degrees for simple leaves, which eventually become their only foliage. What species you may have seen we cannot say; perhaps *A. melanoxylon.*—*W. F. G. F.*—Catasetum tridentatum.—*R. B. B.*—Sambucus racemosa.—*A. B.*—That variety of the common Ash which is called *F. heterophylla.*—*Tyro.*—Ipomœa sanguinea. There are two plants in the gardens, called Dendr. revolutum; yours is one of them; but whether they are species or only varieties we have not just now the means of deciding.—*J. C. L.*—1. Epidendrum inversum; 2. E. squalidum. We do not know a white Acropera.—*J. W.*—1, 3. Asplenium adiantum nigrum; 3. Asperula cynanchica.—*Pan.*—Chenopodium Bonus Henricus—perennial; a bad sort of Spinach.—*C. R. D.*—Crassula obliqua.—*A Subscriber.*—No. 1, Blechnum orientale; 2, Pteris, or Doryopteris pedata; 3, Doodia aspera; 4, Davallia elegans; 5, Pteris tremula; 6, Aspidium, or Polystichum coriaceum; 7, Platycerium, or Acrostichum alcicorne; 8, Doodia caudata: 9, Rondeletia speciosa.‖—*T. O. M.*—Maudevallia infracta. The determination of Exotic Compositæ is so difficult, that we really cannot undertake it.—*Henry Winch.*—Cyenoches pentadactylon.—*X. Y. Z.*—Hypericum Elodes.

Peach-trees.—*H. C.*—Your plants are attacked by red spider, for which you have no remedy except continual syringing. If the fruit was not so near ripeness adusting of sulphur would drive off your enemy. All you can now do is to wait till the fruit is gathered, and then apply sulphur. The dry, hot weather has been the cause of the evil. It is to be presumed that your Morello Cherries have their roots in undrained soil. If so, your obvious remedy is to plant them so high that the roots cannot reach it—unless you can drain the soil better.

Plants for Bedding-out.—*Isle of Wight.*—Procure the following, and increase them this autumn. Either of these will do for the centre, viz.:—Scarlet Pelargoniums, Fuchsias, or Pentstemon gentianoides coccineus. For the smaller beds take Petunia superba, Beauty, or splendens; Gaillardia picta, Œnothera Drummondii, Verbena atrosanguinea, Bishopii, Taglionii, Queen, and Lobelia azurea. These will all flower during the summer and autumn.¶

Trees, &c.—*Delta.*—If Delta be not a gardener by trade she cannot legally remove the trees or bushes mentioned by her. *W.*

Miscellaneous.—*A Lady.*—There is no better plan of destroying green-fly on Pelargoniums in a greenhouse than that of smoking the plants with Tobacco. Oleanders and Camellias are the best plants for a large Elizabethan hall, where there is a great draught in summer, and but little sun; but they will not flower under such circumstances. There is no evergreen creeper so good as Ivy for concealing a rustic bridge. For plants for bedding out in the flower-garden, see above. Besides Oaks, Heath or Thrift form a good border edging. In raising young Oaks the Acorns are sown either in autumn or spring. The cause of your Strawberries, which have been very prolific, drying up, and not ripening their fruit properly, is no doubt owing to the dryness of the season.‡—*J. Power.*—It is a bad practice to mow the leaves off your Strawberries. See p. 755, vol. for 1843.‡—*M. A. G.*—Cuttings of the new sorts of Calceolarias will strike quicker if you give them a little bottom-heat, but they will also do without it.‡—*A Kentish Man.*—Manor Farm, Deptford.—*Dot.*—A Wisteria sinensis, a small Tecoma radicans, and a small Laurestinus will not bear moving now. It is supposed that the ants feed upon the sugar secreted by the aphides, and the motions you have seen may well be supposed to be connected with the operation. There is nothing surprising in your hybrid Cactus having formed a stem 3 feet 6 inches high in six years, or in its flowering in a sitting-room. It, however, shows that you are a good and kind nurse, or it would not reward you with bloom 16 inches in circumference and 4½ inches in depth.—*W. A. L.*—If you can lay your pond dry, why not pull the Water-Lilies out of the mud? We cannot recommend you to salt (!) them. What is to become of the salt when the pond is again filled with water?—*L. B. M.*—All glaziers can supply glass. We never recommend tradesmen, for obvious reasons.—*J. B. W.*—It is very doubtful whether your seeds are worth sowing.—*J. H. H.*—We regret to say that your very careful description does not enable us to recognise the plant to which you allude. The points to which you attended are not such as botanists can use for the purpose of distinguishing plants. If you could give us *one* blossom, however shrivelled and old, we should probably tell you what your plant is. Your description shows that it was no Vitis; and that being the case the plant has little interest.—*W. D.*—Allow your young Fuchsias to remain in small pots through the winter. In spring, when they begin to grow, shift them into pots of a larger size, and encourage them as much as possible to form good plants early in the season.‡—*C. H. Hungerford.*—Ceropegia elegans is a well-known plant, and may be procured from any respectable nurseryman.‡—*J. N. Q.*—You had better plant against your wall, riders alternately with dwarfs, the former to be removed as soon as the latter become large enough to take their places.‡—*R. D.* not received.

SEEDLING FLOWERS.

Achimenes.—*J. C.*—Your Seedlings are pretty; but they bear too much resemblance to Rosea and the Old Coccinea. We can discover no trace of Longiflora in them.‡

Calceolarias.—*J. B.*—Your seedling is a fine bold flower, ground a rich yellow, with large blotches in the centre, and having a margin of smaller spots around the outline; good form.*

Fuchsias.—*Y. and Co.*—No. 2 is a large, bright, showy flower; tube and sepals carmine, corolla large, with a tinge of violet, foot-stalks very long. 3—Tube and sepals rosy pink; the latter are very long and narrow, and curl up in a peculiar manner, which is not agreeable; corolla long, of a rosy vermilion.*—*J. T.*—*No.* 1.—The sepals and corolla of this variety are too much alike in colour, and the latter want substance. 4, 5, 6, are three flowers of the same character, and too small; they are also not new—similar varieties are in cultivation. 14 has a bad corolla; 2 and 7 are too much alike, and possess no novelty; and 3, which is the largest and most showy in the collection, has too faded an appearance in the sepals.*—*S. B.*—The three dark varieties 4, 6, 7, possess no novelty; the difference between the colour of the corolla and the rest of the flower is so trifling, that their appearance is dull, compared with many of the fine sorts that are now generally cultivated. 8 is the best, being a stout, well-formed flower, but there is a deficiency of the violet colour in its corolla. 1, 2, and 9 are specimens of an opposite character; the tubes and sepals are of the most delicate pink, approaching to white, with the latter tipped with green. 3 is the best in form; 1 is rather larger; these have rosy vermilion corollas; 9 is a smaller flower of the same character, with a tinge of violet in the corolla.*

Pansies.—*R. R., N. B.*—No. 2 is the better seedling; it is flat, and the eye well marked. In No. 1 the markings on the edges of the lip and side-petals appear too much like stains; they both want the substance of first-rate flowers.*

Pelargoniums.—*W. M.*—The Guernsey seedling is a promising flower; rich and fine in colour, with petals of good form and substance. We should like to see it again when in condition.*—*P. P.*—The form of your seedling is not good, and we have many of the same colour very superior to it.*—*De Jonghe.*—Your box was opened as soon as it arrived; but not a flower was left. The contents had been so much shaken by the journey that all the petals had fallen, except from *ruscum eroticum*, which is a small flower of good form and substance, pleasing in colour, but requiring a white centre to increase its vivacity.—Foster's Favourite, Sultana, Nymph, Pulchellum, Lord Chancellor and Nestor, Garth's Queen Philippa, Witch and Unit, Hodge's Oberon, Lyne's Duke of Cornwall, and Beck's Susanna.*

Verbenas.—*W. G.*—No. 1 rosy red; the flowers of this variety are small, and it is not novel in colour. 2, rosy purple, with large, light eye; a good flower, but not new. 3 is an excellent variety, but its place is already occupied by Amethystina.*

SEED-WHEAT.—Any one desirous of purchasing Seed for next year is invited to inspect the two varieties of Wheat, SHIRREFF'S HOPETOUN and MORTON'S RED-STRAW WHITE, 120 acres of which are now growing on WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE.

The present is the only season of the year when the value of any variety of Wheat as Seed can be ascertained by inspection; for, if the examination of a mere sample of the grain, which can be seen at any time, be nearly uninstructive as to its quality in the eye of the baker (see *Ag. Gazette*, No. 5), it is entirely so as to the productiveness or habit of growth of the variety to which it belongs. These points, which are of the highest importance in the eye of the Farmer, can be ascertained only by an examination of the growing plant when in full ear. Price, 8s. per bushel. JOHN MORTON, Whitfield, Thornbury.

The Agricultural Gazette.

SATURDAY, AUGUST 10, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Aug. 14 Agricultural Society of England.
WEDNESDAY, Aug. 14 } Meeting at Dublin of the Agricultural
THURSDAY, Aug 15 } Imp. Soc. of Ireland.
WEDNESDAY, Aug. 21 Agricultural Society of England.
THURSDAY, Aug. 22 Agricultural Imp. Soc. of Ireland.
FARMERS' CLUBS.—Aug. 22 { Richmondshire. Grove Ferry.

IT is a matter of no slight advantage attendant on the weekly publication of an Agricultural Journal, that the attention of its readers may thus be called to subjects of importance at the most fitting times. It is not meant that agricultural topics are of temporary interest only; the operations of husbandry, which, taken together, form the business of the farmer, each of them exert a special influence on the great result—the quantity of net produce, or the money income of the farm. And thus there is not a single question connected with the practice or the science of Agriculture, which can *at any time* fail to be of interest; but while the farmer may reasonably have an eye to the future, and to subjects which may hereafter require his notice, his first and best attention will probably and justly be devoted to the consideration of questions of present interest. Certainly, therefore, we cannot at present direct our readers to the consideration of a more important subject than the PROPER PERIOD FOR REAPING WHEAT.

It would appear, at first, that the farmer cannot be wrong in allowing his grain-crops to attain maturity—to become fully ripe; ancient practice, so far as it goes, would certainly justify him in doing so. This, however, is not always a good guide to go by.

If by the period of maturity the time be meant when a plant has acquired its greatest value as an article of food, certainly this stage in the growth of every kind of crop ought to be attained before it is harvested; it is, however, by no means certain that maturity in this sense is not attained by our Corn crops at an early period in the process of ripening. Indeed it may safely be asserted that grain has passed the period of perfection and has begun to lose its value before it has become dead ripe. In support of this the testimony of all Nature may be urged that strength and vigour progress with growth only up to a certain period.

General reasoning, however, of this kind could never have been so influential with any farmer as to induce him to alter so important and time-sanctioned a practice as that of leaving grain to ripen thoroughly. And, practically speaking, the question remained undisturbed, and we were vain enough to fancy that at least we knew when our Wheat was ready to harvest, till Mr. J. Hannam, of North Deighton, near Wetherby, Yorkshire, in the "Quarterly Journal of Agriculture" for June, 1841, boldly asserted that the practice of allowing Wheat to become fully ripe was an injurious one. This assertion was based on the details of a careful and elaborate experiment made during the previous year, 1840. In 1841, Mr. Hannam continued his investigations on a still more extensive scale, and the results thoroughly corroborated his former conclusions. In September, 1842, the details were published in the "Quarterly Journal of Agriculture," and the question was discussed at length, the conclusion being that *the best period for cutting Wheat is when it is raw*, i. e. *from* 10 *to* 14 *days before it becomes thoroughly ripe.*

This decision has been since confirmed by the testimony of both Science and Practice. Professor Johnston in his Lectures quotes Mr. H.'s results, and confirms them by argument. He also states in his "Elements" (p. 188, 3d Edition), as "the result of theory and experience," that "about a fortnight before full ripening is the proper time of cutting Corn—as the skin is then thinner, the grain fuller, the bushel heavier, and the yield of flour greater." Mr. Stephens in his excellent "Book of the Farm," corroborates Mr. H.'s position. Indeed both the English and American Agricultural press have supplied numberless cases in support of his facts and arguments. To these our limits will not allow us to refer; we may, however, as testimony of peculiar value, name, that amongst the authorities who support the practice Mr. Hannam advocates are several of our Farmers' Clubs; those, for instance, of Leominster, Stewponey, and Wetherby, have each passed resolutions in favour of the early cutting of Wheat. On Thursday of last week it was resolved by the Wetherby Club, that it is advisable to cut Wheat at from 7 to 14 days earlier *than is customary in the district*. This Club is in Mr. Hannam's immediate neighbourhood, and its testimony is therefore peculiarly valuable. Such, then, being the case, we cannot do better at this time than call the attention of our readers to the subject, and direct them for a full statement of the case to Mr. Hannam's papers in the "Quarterly Journal." To such of our readers as have not the means of referring to the back Numbers of that periodical, the following epitome of that gentleman's researches will not be uninteresting.

Mr. Hannam's first experiment was executed in 1840. Three samples were cut viz. respectively:—

No. I.	Green	cut . .	Aug. 4, 1840
II.	Raw	,, . .	Aug. 18.
III.	Ripe	,, . .	Sept. 1.

These were thrashed and carried to market, when the following prices were put upon them:—

No. I.	61*s.* per quarter.
II.	64*s.* ,,
III.	62*s.* ,,

In 1841, a more extensive experiment was instituted; 5 samples of half-a-rood each were cut, viz.:

No. I.	Very green	Aug. 12.
II.	Green	Aug. 19.
III.	Raw	Aug. 26.
IV.	Raw	Aug. 30.
V.	Ripe	Sept. 9.

These samples were threshed, and the samples were as follow:—No. 5 (ripe) was "bold, but coarse;" Nos. 1 and 2 (green), "fine in the skin, but small;" and Nos. 3 and 4, "equal in boldness of grain to No. 5, and superior in clearness of skin," being "unexceptionable as a sample." This desiccation, or drying-in of Nos. 1 and 2 proved that it was taken too early. The whole of the samples were shown at the Annual Show of the Wetherby Agricultural Society, Sept. 22, 1841, when the superiority of the raw-cut grain was confirmed by the Judges, who awarded to it "an extra premium, with a high commendation of the sample No. 3, cut a fortnight before ripe."—*Yorkshire Gazette, Sept. 25, 1841.*

Having in one trial ascertained the value of the samples by market, and afterwards by the opinion of a public meeting, in order to leave no loophole for doubt, Mr. Hannam determined to test their qualities at the mill. The gross quantity of each was ground and dressed by Mr. John Hardcastle, of Wetherby; and from the results we compile the annexed tables:—

No.	Grain. Quantity	Grain. Weight.	Flour.	Pollard.	Bran.	Waste	Cut.
	bush.	st. lb.	st. lb.	st. lb.	st. lb.	lbs.	
III.	$3\frac{1}{4}$	15 10	12 6	0 12	2 1	5	Raw.
IV.	$3\frac{1}{16}$	16 6	12 3	1 3	2 5	9	Do.
V	3	14 13	10 11	1 9	2 5	2	Ripe.

No.	Weight per Bushel of Grain.	Flour.	Pollard.	Bran.
	lbs.	lbs.	lbs.	lbs.
III.	$62\frac{6}{7}$	$49\frac{5}{7}$	$3\frac{3}{7}$	$8\frac{3}{7}$
IV.	$62\frac{42}{59}$	$46\frac{48}{59}$	$4\frac{35}{59}$	$8\frac{56}{59}$
V.	$59\frac{3}{7}$	$43\frac{1}{7}$	$6\frac{1}{7}$	$9\frac{3}{7}$

No.	Weight per cent. of Grain.	Flour.	Pollard.	Bran.
	lbs.	lbs.	lbs.	lbs.
III.	100	$80\frac{1}{14}$	$5\frac{5}{14}$	$13\frac{1}{7}$
IV.	100	$74\frac{3}{59}$	$7\frac{1}{59}$	$14\frac{30}{59}$
V.	100	$72\frac{1}{14}$	$11\frac{3}{14}$	$15\frac{1}{14}$

"From this we see," says Mr. Hannam, "that the bushel of No. III. gives more flour than the bushel of No. V. by $6\frac{4}{7}$ lbs., showing a gain of $15\frac{1}{7}$ *per cent.* in weight of flour upon *equal measures* of grain."

Again, we find also that there is an advantage of "nearly 8 per cent. of flour in favour of No. III. *upon equal weights of Wheat.*"

The theory upon which Mr. Hannam explains these astonishing results is, that as the sugar in the green plant becomes changed into the starch of the Wheat, so if permitted to remain till fully ripe another change will take place, the starch becoming gradually converted into *woody fibre;* for it is a well known chemical fact, that sugar, starch, and fibre, are composed of the same constituent elements united in the same proportions, and are one and the same substance in various forms—in some such way as water, ice, and snow are different forms of one combination of oxygen and hydrogen.

This gradual change to woody fibre takes place in many vegetables as they ripen, and it is by taking this into account that we can explain the curious fact shown in the Tables that the ripe Wheat contains 50 *per cent. more* "*flinty* particles"—"pollard," or "sharps,"—than the "raw cut grain." Hence it is no wonder that the flour of the ripe should be less *free* in the grain.

Mr. Hannam also claims a "better quality of flour," for the raw cut grain, and quotes the analysis of Professor Johnston, to whom samples were sent, from which it appears (see Lectures, p. 734) that the

Raw Wheat contained	9·9	per cent. of gluten.
Ripe do.	do. 9 6	" "

The other advantages claimed for cutting early, are a better quality and greater quantity of straw, a better chance of securing the crop, &c.

The quantity, *i. e.* the weight of straw must, it is evident, be increased, and it is equally true that its quality is improved owing to there being more soluble matter in the *fresh* than in the *dry* straw. In fact, the additional weight of straw is nearly all an additional weight of nutritive matter, starch, sugar, &c. which would when dead ripe have become fibre; and therefore it is of great consequence to the value of the straw either as an article of food or as a manure. We have not space to allude to the other indirect advantages which Mr. Hannam claims for early reaping Wheat, nor can we follow his arguments or facts so fully as we would wish on the points alluded to: if, however, we have been able to give our readers an idea of the case as it now stands, or to draw their attention to the further investigation of the subject, we shall have done them good service.

In conclusion, we give Mr. Hannam's estimate, based on his experiments of the money value of an acre of the same Wheat cut *raw* and *ripe.*

No. III.	Cut a fortnight before ripe . .	£14	18	0
V.	Fully ripe	13	11	8

—*H.*

APPEARANCE OF THE CROPS.

COLLECTED BY E. J. LOWE, ESQ., OF HIGH FIELD HOUSE, LENTON, NOTTINGHAMSHIRE.

ON tracing the appearance of the crops over England, and part of Wales, I have attained the following general results, viz.:—Wheat is, without a single exception, an average; if it can be called better in one county than another I should say it must be so in Oxfordshire; from this shire I have had specimens of ears of Corn sent containing upwards of 80 grains in each head. Oats hardly appear in any county to have reached an average; it is very short on the straw, and the account of it from Northamptonshire is worse than anywhere else. Early sown Barley will be nearly an average, with the exception of Westmoreland, Northampton, and Wales, where it appears to be deficient. But owing to the long drought in every county many acres prepared for Barley were not sown at all; and, also owing to the same cause, many acres were sown in the middle of May and June, which have vegetated at twice, consequently the quality will be very inferior, as well as the yield remarkably bad. Hay is a worse crop than we have known it for some years, not being half an average in any part of England, except on irrigated lands. This crop has been a complete failure in Northumberland, Cumberland, Huntingdon, Hertfordshire, Gloucestershire, &c. Clover and Grass seeds seem to share the same fate with Hay, but perhaps not to such a great extent. Beans vary very much; they are bad in Lincolnshire, Rutlandshire, Northamptonshire and Surrey. Of Peas, the best reports are from Ruddington Grange, Nottinghamshire, and Caunic Donnington, Leicestershire, where the plants are thickly sown the ground and well podded; they are very bad in Kent, land and Kent. Potatoes seem to have suffered in most counties; indeed, from what remarks I have obtained, there cannot be nearly an average. Where the Potatoes are most grown they appear the worst, from dry-rot. The accounts from Westmoreland, Lancashire, Staffordshire, Worcestershire, Wales, and Shropshire make them a failure. The Potatoes look very healthy in Nottinghamshire. Turnips, in all probability, will be an average crop, although in some few instances they have been entirely destroyed by the fly. Fruit is very abundant all over England. For full remarks on the crops I refer you to the observations from different people from every county, commencing in the North of England.

NORTHUMBERLAND. — *Berwick-by-Wooler.*—"We had a remarkably fine winter, and the months of February and March were favourable, though stormy. March was very wet till about the 22d, when it set in dry, and continued so until May 9th; then we had two wet days. It rained also on the 17th and 19th, succeeded by dry weather. Rain occurred on 7th June, followed by high winds, amounting to a gale on the 13th; it rained on the 17th and 19th, since which it has been generally fine. The season on the whole has been very dry. Wheat looks very well; spring Wheat, though thin, looks well. Clover and seeds are bad. Barley has borne the cold dry weather better than might have been expected. Oats look promising, but very short on the straw. Turnips look very well, except the early sown varieties, which are very irregular. Pastures are bare, but green."—*J. C. Langlands.*

CUMBERLAND.—*Hurraby, Carlisle.*—"We have two kinds of land—strong clay-bottomed and light sandy. On the former, crops are good; on the latter they have been burnt up by the drought—(the former land prevails). Grass is very light on all lands; Wheat very good; Oats and Barley in most places good. Turnips promise well. Fruit very abundant."—*J. Atkinson.*

WESTMORELAND.—*Kirkby Thore.*—"Wheat looks remarkably well, and a greater breadth than usual has been sown. Barley is a slender crop, less than we have had it for some years. Oats are very short, and cannot possibly reach an average. Potatoes are greatly deficient, dry-rot being general; I have seldom seen such a falling off on all kinds of soil. Turnips promise well. Clover and sown Grass will not be more than one-third of a crop; this observation also applies to meadow Grass."—*J. Crosby.*

Bowness, near Kendal.—"The crops of every description in this hilly district appear to look better than in any other portion of England that I have lately travelled over. I have consulted the best practical agriculturist in the valleys (Mr. Ullock) on the subject; the following are his remarks:—Wheat is above an average; Oats are a fair, healthy crop, though rather short; Potatoes are abundant; Grass about three-fourths of a crop, of better quality than usual."—*Mark Beaufoy.*

Lancashire.—*Chaigeley, near Clitheroe.*—"The prevailing wind for the last two months has been north-west, which has done much injury to the crops. Hay is much later than usual, though I do not expect it to be below an average. Many of the fields have reservoirs for flooding, which makes them feel the want of rain less. Potatoes have suffered the most, many of the sets never having vegetated, from the effects of dry weather. Beans are shorter than usual, but look very promising. Pasture Grass is rather below the usual average."—*W. Winstanley.*

Woolton Lodge, Woolton, near Liverpool.—"The constant dry weather we have had for the last three months has made the Hay crop very scanty; the old meadows, except on flat and moist districts, will not yield one-third of a crop. We have had rain within the last seven or eight days, which has improved the promise of Corn. Oats and Barley will be well headed, though short on the straw. Wheat looks very well. Our neighbourhood is more occupied as dairy farms, and there is a great scarcity of Grass for the cows."—*Dr. Winstanley.*

Yorkshire.—*York.*—"Grain crops generally look well, especially Wheat. Beans are very short; Turnips promise well; Grass is generally about half that of last year, or less, especially in the calcareous districts of the East Riding. Potatoes seem likely to be a good crop."—*J. Backhouse.*

Hall Gate, Doncaster.—"In this neighbourhood, although there is much sand and gravelly soil, the crops have not suffered nearly so much as was apprehended. I never saw Wheat look better. Hay crops have been light, and in some places have completely failed. Barley looks fine, and other crops look well."—*J. Hawley.*

Caernarvonshire.—*Bryngybria, near Conway.*—"Owing to the continued dry weather, spring Corn and Grass have suffered much. Hay crops are very light; Grass is very much burnt up; Potatoes very irregular; Barley very bad and very short; Beans and Oats are very short; Wheat in general looks fair, but not heavy."—*J. Williams.*

Cheshire.—*Neston.*—Wheat is an average; there is very little Barley sown, but it looks well; Oats look poor; Hay is very light, and pasture-land is burnt up; early-sown Turnips look well; south of us Corn and Potatoes look better."—*W. Quay.*

Derbyshire.—*Ripley.*—"Owing to the continued dry weather, Oats and Barley will be below an average. Wheat looks remarkably well; Hay crop is very small. I was near Chesterfield a few days ago, and should say — Hay crop there is near an average."—*J. Royston.*

Edale, High Peak.—"The crops generally look well. Wheat and Barley are very good, but much must depend upon the weather for the next two months; we do not commence harvest until the end of Sept. beginning of Oct."—*S. Langworth.*

Nottinghamshire.—*Ruddington Grange.*—"I never saw the Wheat universally, and the Barley generally, more promising to yield well. Wheat always does well upon the new red sandstone formation in a dry spring; the straw is firm, and the grain appears well fed. Barley short, but good; Beans short in the straw; Peas exceedingly well podded; Clover, where not spring cut, is a fair crop, say 30 cwt. to the acre; meadows which are not irrigated are exceedingly deficient—not more than one-third of a crop; Mangold Wurzel looks well, and also Turnips."—*C. Paget.*

High Field House, Lenton.—"Grass seems to be the chief thing which has suffered by the long drought; the Hay crop will not reach half an average; Clover and seeds look rather better; Wheat looks very well, and also Barley, though the latter is rather short on the straw. Oats, I fear, will not reach an average, and will be very short; Beans had, a few weeks ago, the appearance of a wretched crop, but are vastly improved; Peas, I think, will not attain an average; Potatoes look wonderfully well, excepting when on the sandstone rock, which are not so promising. Turnips look well, though we have a few exceptions, some fields having been totally destroyed by the fly. The soil generally is a rich clay, but part is on a sandstone bottom; on the latter the crops have suffered much for the want of rain, for we had scarcely any in the months of April, May, and June. Fruit is very abundant."—*E. J. Lowe.*

Marston Grange, Retford.—"I do not consider the effects of the weather will be serious to the crops. Wheat appears very good and rather early. Spring-sown Corn has not such a good prospect."—*R. Houghtinean.*

Lincolnshire.—*Boston.*—"Crops are greatly improved by the late rains. Wheat will be an average; Oats and Beans deficient; Barley is not grown here; Potatoes fair crop. The meadows are very light."—*S. Veal.*

Shropshire.—*Whittington Rectory, near Oswestry.*—"The pastures are very bare, and Hay very deficient, being only one-third of the usual crop; Potatoes will not be half the usual crop; Turnips are very unpromising; much Oats and Barley are short, (the former 6 inches high on poor clay land); Wheat short but very clean and good. With respect to cattle much depends upon the weather for the next six months. Some farmers have mowed their Oats to give to their cattle; others have cut for them branches of trees. Ox cabbage are not grown to any extent, but there are complaints about them: my own are doing well. Fruit is very abundant. I anticipate great destruction amongst the bees next winter, for they are scarcely collecting any honey."—*C. A. A. Lloyd.*

Staffordshire.—*Forebrook Rectory, near Stone.*—"I find the last rain in April was on the 5th; wind in that month from N.W. to N.E.; thermometer from 40° to 46°, barometer from 29.400 to 29.800; no rain in May, and wind almost always N.E. to E. In June a slight shower on 24th, two hours' rain on 25th, and in July 24 hours' rain on 4th; wind in June and July being chiefly N.W. I have been in various parts of the country, but I see we are more favoured than other places, the land not being drained, and full of springs, which has suited this season; Wheat is thin but well headed, (straw about 3 feet 6 inches high); Oats average from 2 to 3ft. 6 inches high; Barley good (not much sown); Potatoes have failed generally; I have seen no Turnips—those sown in first week in May never came up till the rain in June, and then the fly took them; Clover does not average above 10 cwt. to 15 cwt. per acre; Hay and the meadow land, where it is not watered, is a burlesque upon Hay-making."—*J. Curtis.*

Leicestershire.—*Castle Donnington, (Rectory).*—"Hay and Grass have suffered very much from the dry weather; crop very small. Wheat is very good; Barley and Oats have suffered much from the dryness, but since the rain fell have much improved, probably the crop will be below an average; Peas and Beans look very well, except the latter in places, which look badly; these are observations on the hills which are red clay, of the new red sand-stone formation. With regard to the crops in the valley of the Trent, which is composed of gravel and alluvial soil, Wheat is better than average, excepting partial failures on the gravel; Hay and Grass very failing; Barley much improved and likely to be nearly an average; Oats less favourable; Peas good, Beans improving, but it is doubtful if they will reach an average."—*S. K. Simm.*

Charnwood Forest.—"The crops are rather late, though they look well on the whole. Wheat is rather thin, but will be an average. Oats are very short; Barley full of weeds; Hay-crops remarkably light. Turnips and Potatoes look well."—*E. J. Lowe.*

Rutland.—*Empingham.*—"The depth of rain fallen during the spring quarter was only 1.52 inches, which is not much more than half the quantity that fell in the corresponding quarter of the remarkable year 1826, and the mean temperature in the shade was 10° greater than the average of several years recorded by Luke Howard, Esq., in his 'Climate of London.' Wheat is a splendid crop, owing to the dry weather; Barley was very little sown—some was sown so late as 21st June; the crop is very thin, and the late rain has caused a second crop to spring up; there will not be above one-third of a crop, and the quality very inferior—on cold land the crop looks well; Oats look very well, but short; Beans and Peas fall short of an average; Tares the worst ever known."—*W. Fancourt.*

Herefordshire.—"Wheat is a very good crop; Barley a complete failure; the same may be said of the Hay crop; Oats are light."—*J. Walker, Worcester.*

Worcestershire.—*Honeybrooke House, Kidderminster.*—"The long dry weather has been most detrimental to the Hay crops, not having any rain worth notice from Good Friday till 2d July; the generality of the crop is not more than half a ton an acre, while last year they were able to procure more than one and a-half ton. The grain is better than could have been expected—I should think on the whole a fair crop. The Potatoes turn out very badly, and as this is a Potato country, the loss will be considerable."—*A. Talbot.*

Warwickshire.—38, *Waterloo-street, Birmingham.*—"The Grass crop has been almost universally a failure. One gentleman cut only six tons from 20 acres; even low lands have been barren of produce. Wheat is an average; Rye an average; Oats rather deficient—they equal about two-thirds of a good crop; Barley is still worse, not more than half a crop; Beans are worse still; between frost and drought they will not reach more than one-third of a good return; Turnips are promising."—*S. Wright, M. D.*

Northampton.—*Courteen Hall.*—"Wheat is an average, the heavy and deep soils making up any deficiency there may be in the light and sandy lands; Barley, Beans, and Oats, are no doubt a failure. Hay there is, literally speaking, none; Turnips look well."—*W. Grew.*

Huntingdonshire.—*Little Barford Rectory, St. Neots.*—"In my situation on the plastic clays, the Wheat is thin with a good head; Peas ditto; Tares and Mangold Wurzel almost a failure."—*J. Arlington.*

Cambridge.—*Ely.*—"Wheat is an average; Barley good on heavy land, but very bad and late on light soils; many fields have been drilled in since 25th June. Oats on the high lands are bad, but on the Fens it will prove a good crop; Peas, though short, are well-podded and full; Beans are much improved of late; Hay crop is very poor; 2d crop of Clover looks well; Turnips (as some farmers say) look patchy, being two crops—those up before the rains, and those since; but on the whole I think they look well."—*G. Archer.*

Observatory.—"Wheat crop fine; Barley has failed very much, owing to the continued dry weather in spring, preventing proper tillage. No Oats sown here; Hay very light."—*J. Glaisher.*

Norfolk.—*East Dereham.*—"An average harvest—the Corn not being injured by the drought."—*J. Felo.*

Pulham, Mardeston.—"We can anticipate a full average crop. Barley will be inferior, part of the seed having vegetated since the rains, so that the crops will come in at twice; early sown Barley is very good—on the whole we shall have three-quarters of an average; Oats better than Barley, but are very little grown. The rain came in time to save the Pea crop, which will be an average; Beans have suffered very severely by the drought, there will not be above half a crop."—*R. B. Harvey.*

Suffolk.—*Thwaite.*—"The recent effect of copious showers has wrought magic in our fields; the Corn, except on light soils, is looking exceedingly fine; finer Wheat I never saw."—*O. Whitlecraft.*

Essex.—*Kelvedon.*—"Wheat looks excellent; the yield will be eight bushels more per acre than last year. Barley, Oats, &c., were looking bad, but the late rains have made a wonderful difference. A few days since we had a heavy mildew, which I am afraid will do injury. I was lately through part of Suffolk and the crops look very well."—*W. Wiseman.*

Saffron-Walden.—"The effects of the weather have been to reduce the Hay crops to quarter the usual average; Oats and Barley bad, except that early sown; Beans and Peas very dwarf. Clover and Trefoil almost destroyed on the lighter soils; Wheat a good crop, except in gravelly soils. Since the rains Oats and Barley have greatly improved."—*T. Spurgin.*

Dunmow.—"Wheat a good crop, though short in some places; Barley on clay lands, and where early sown, exceedingly good. In the Ruthing district, doubtless there will be a full average. I have had brought to me an ear of Barley having eighteen kernels on each side, and some of twenty have been picked from the same piece. Peas, though not generally a large crop, yet greater than anticipated; Beans very bad; few Oats sown, but what are, look bad; Turnips looking well; Mangold Wurzel nearly a failure."—*A. Barfield.*

Kent.—*Sandwich.*—"Wheat generally very good; Barley light and thin; Oats an average; Peas a very short crop; Beans likely to improve, but not very abundant."—*W. H. Weekes.*

Sussex.—*Parham, Petworth.*—"If the weather prove favourable there will be an average crop of Wheat; the Lent Corn is far from being good; Oats, Peas, Beans, and Barley, are all defective. The Hay crop is very light, many farmers not gathering more than half a load per acre."—*J. Morton.*

Surrey.—*Godstone.*—"Dry weather commenced on 25th March and continued till 25th June, when we had a heavy storm followed by showery weather. Wheat, more than an average; early sown Barley very good, late sown quarter less than an average; Oats an average; Beans very indifferent, full of blight, never can be an average; Peas very good; Turnips look remarkably well."—*E. Steaming.*

Middlesex.—"Hay is far below average; Wheat generally fine; Oats and Barley thin and light; Turnips do well; Potatoes are not defective. Great abundance of fruit."—*W. H. White, Royal Adelaide Gallery, London.*

Hertfordshire.—*Redbourn.*—"Wheat, with few exceptions, is above an average; Barley very bad, one patch being in full ear, the next only just up; what little was sown early looks better (great deal sown from 19th to 21th June); Oats, where sown late, suffer like Barley, but from what I see there will be near an average. The meadow Grass and Clover, with very few exceptions, were quite burnt up, so much so, that in many places they could not, on our flinty land, be mown at all. The fly has made great ravages amongst the early sown Swedes, the ground was in a bad state for their reception, being in dry hard lumps; the later sown Swedes and Turnips are exceedingly promising; Vetches, except where early sown, are very bad, both for green food and for seeding; the cold wet weather in February and March seemed to perish mine, which were rather late and on strong lands. Peas below an average, and Beans average not more than 12 inches high."—*W. R. Burnham.*

Bedfordshire.—*Luton.*—"Wheat is very promising; Barley and Oats have suffered considerably on dry gravelly soil, but the late rains have done wonders towards restoring the early sown Barley; the late sown has, in many instances, not come up at all. Grass crop is very short; meadow Grass, in some instances, is not sufficiently abundant to pay for the labour of making; there are some good crops in damp situations, by river sides, &c."—*W. Phillips.*

Buckinghamshire.—*High Wycombe.*—"The distinguishing feature of the season, comprehending April, May, and June, has been extreme dryness. The rain fallen during the three months only 1·537 in.; the next least quantity which fell in the same three months during the last 21 years was 2·990 in., and that occurred in 1834. But in further proof of the dryness of this season, I may state that the least quantity of rain in any one April, in the long period before mentioned, was in 1840, viz. 0·325 in.; in May, 1813, 0·384 in., and in June, 1826, 0·787 in. These, if added together, will make 1·493 in. The quantities this year were, as follows:—April, 0·387 in.; May, 0·625 in.; June, 0·525 in.; added together, 1·537 in. From this you will see that the excess is only 0·043 in., when the driest months out of all that occurred in 21 years were taken. Wheat very fine and abundant; Barley and Oats very good—former better in quality than produce."—*J. G. Talam.*"

Oxfordshire.—*Henley-on-Thames.*—"On the Chiltern hills, which are chalk with more or less clay, Wheat looks very well. Around Henley the Wheat will be a very abundant crop, many ears producing four and five grains in each spikelet. I can collect many containing 80 grains in each; but these are soon after mere chaff. Early sown Oats and Barley are good, but the late sown

Barley will be very deficient; much of the seed has not come up. Grass crops are also very deficient; Potatoes very irregular."—*J. W. Jeston.*

Berkshire.—*Reading.*—"No rain from March 25th to May 21st; again a cessation till June 18th. Wheat looks very well. The drought injured the summer Corn very materially. A great deal of Barley was sown in June; between Reading and Henley there are many fine fields of Barley."—*H. H. Coverlade.*

Kingston Inn, near Abingdon.—"Rain for April, 0·17 in.; May, 0 25 in.; June, 1·42 in. On June 30th we had very heavy rain. Hay very scanty, good prospect of a second crop; Wheat excellent in quality, as well as quantity; early sown Barley an average; the later sown sprang up at twice, which will hinder an average; Oats look well, but are not much cultivated; Beans tall and free from fly—in fact very good; Peas considered a good crop; Turnips very good."—*A. Murdock.*

Wiltshire.—*Warminster.*—"Wheat very good; Barley and Oats deficient on light lands."—*H. Robertson.*

Gloucestershire.—*Hanham, near Bristol.*—"Wheat very good; Barley bad; Beans partially failed; Grass very bad (from 60 acres I shall not cut 15 tons); Swedes look well; Vetches ditto; Mangold Wurzel has not come up, though sown on 10th April."—*E. Burrell.*

Somersetshire.—*St. Saviour's, Bath.*—"The Wheat crop is looking very well; Potatoes very bad; and the Hay crop a total failure. We have not had nearly so much rain here as in other parts of England. Rain fallen from 1st Jan. to 30th June, 10·43 in.; fallen in the three months, April, May, and June, 1·32 in.; Max. thermometer on 23d June, 91°."—*C. Blathwayt.*

Dorsetshire.—*West Bucknowle, Corfe Castle.*—"As to the effects of the N.E.-parching winds, and want of rain on the crops, Wheat on strong and deep land looks well; Barley and Oats in general very bad, much but just appearing above ground, for want of moisture; Hay crop very bad; Turnips look well. The late rains have improved all vegetation."—*W. Vons.*

Devonshire.—*Plymouth.*—"With exception of frequent rain during last week or two, we have had none since beginning of April. There is a great deficiency in all green crops. Wheat looks very well, and Barley an average."—*R. Bishop.*

Devonport.—"Wheat, though short in straw, is good in the ear; Barley very thin; Hay lamentably bad."—*T. Lancaster.*

Chagford, near Exeter.—"The drought commenced and continued, with exception of one or two slight showers, through April, May, and June; and so severe were its effects that pasture and meadow land was never known so scorched and barren. The soil is rather variable, in some cases rich and loamy earth, but more generally of a light sandy nature, composed of disintegrated granite, of which rock the entire substratum consists, with considerable quantities of peat in many of the vales. We border on Dartmoor, at an elevation of about 500 feet from the sea. Wheat will reach an average of about 20 bushels per acre; Spring Wheat cannot reach an average, having suffered much by the drought; Barley is very bad, except where drilled very deep in the ground; Oats good; Hay a complete failure; and Turnips look very well."—*R. Berry.*

Cornwall.—*Stratton. Rectory.*—"The rain that fell in April, May, and June, was 2 30 in. The drought has been very injurious; the Hay is light in the extreme; early sown Barley and Oats promise well, but late sown are very bad; Wheat looks well: it is rather short on straw, but has a good head. The pasture lands look very bare and burnt up."—*J. S. King.*

FARM BUILDINGS AT TIPTREE-HALL FARM.

The yards are so placed as to be entirely sheltered from the east, north, and north-west winds, whilst they are quite open to the south and west for sunny warmth: it is presumed the heat absorbed by the brick-walls and buildings during the day will be retained for a portion of the night, so as to produce a warmer atmosphere in the yards. The farm and other yards are on a perfect level; they are underdrained every four yards with stones and a pipe—same as the land. All the drains (except the roof-drains) terminate in the manure-tank; so that not a pint of water that falls directly on the yards ever escapes, except into the tank. All the water that falls on the roofs is conveyed through pipes to the brook. The sheep-yards, the bullock and horse stables, are all paved perfectly smooth with hard yellow bricks, set in cement; so that no liquid manure is wasted. This arrangement admits of cleanliness, without waste, by occasional washings. The Straw for litter being cut into chaff, is applied where required, without waste. The manure-tank is bricked, and set in cement. We put into it the solid manure as made, turning the moist bottom upon the top, as occasion requires, to prevent too violent a degree of fermentation, and adding occasionally sulphuric acid in water, especially in the summer months, or an occasional layer of earth. In winter we have always sufficient moisture in the tank. As we pump out the liquid manure from the well, which is three feet deeper than the tank, no solid manure can enter, there being proper gratings to prevent it. We choose a wet day, when nothing can be done on the land, to turn over the manure in the tank—there being a slated roof over it which keeps the men dry. It faces the north; so that the sun cannot shine on it to evaporate the ammonia and strength of the manure. In the winter, when we have a superabundance of moisture, we pump the liquid manure into Cranskill's liquid manure-cart, which holds 200 gallons, and apply it to the pastures, young Wheats, or fallows; first fixing the ammonia where required with sulphuric acid, being governed as to dilution by the strength by the dryness or wetness of the weather. We find the tank-manure of extraordinary strength, as well as density, from subsidence by fermentation and pressure. When filled to four feet above the ground, it contains about 200 loads of solid manure.

Manure, that is dropped in the day, is removed the following morning in barrows to the tank, so as to preserve its efficacy. The piggeries, paved with flagstones, discharge their moisture into the manure-well. The stone water-tanks in the yards and house are all filled simultaneously by one pump over a tank, 14 feet deep, bricked, and set in cement; into which is brought a never-failing stream of pure spring water from the valley below. This water formerly spoiled some acres, and caused the bog: but now it answers a much better purpose. I do not like the usual custom of giving manure-water to horses and cattle, instead of to the land. I presume they are, like ourselves, all the better for drinking pure water, instead of filthy compounds. The pump also supplies our copper, on which fits a perforated iron vessel, capable of steaming six bushels of Potatoes or other matter. This vessel travels backwards and forwards with wheels on a small iron rail; and by a lever, is capable of being filled, emptied, or placed over the copper by a strong lad. The cart-lodge is so placed as to avoid sun, and we consider a weather-tight implement house essentially necessary.

The barn is 130 feet long, 30 feet wide, and rises 18 feet before it springs the roof. The horse-power that drives the threshing-machine occupies 30 feet square on the ground-floor, and about 30 feet more is occupied by the granary and chaff-house, over which is the threshing apparatus.

The unthreshed Corn being on both sides of, and near to the threshing-machine, economises time in removal. On this account, and the facility of doing work under cover in bad weather, I like plenty of barn-room. I do not see the necessity of a steam-engine, as we do our threshing, chaff-cutting, &c., when we can do nothing else. The threshing-machine is of six-horse power; but we throw it out of gear, and work the chaff-cutter or corn-mill with two horses. We cut thirty-two trusses per hour into chaff. A crane (cost 50*s.*) fixed on the top of the granary in the barn, enables one man and a lad to load the sacks of Corn with ease, dropping them into the cart or waggon.

The iron gutters and pipes to our roofs may be found fault with on account of the expense, but I really cannot see the utility or profit of the present custom, that is, putting good and costly manure on Straw, and then washing it all out again with tens of thousands of gallons of pure water off the roofs, taking especial care that it shall poison the horse-pond, and then run down to enrich some stranger's meadow at the first flood. I hope in fifty years' time the farmer who does this will be considered insane. The idea of a man's throwing away his manure with his left hand, and with his right paying money to bring it back again, all the way from Peru or Africa, seems too ludicrous for the nineteenth century.

So far as we have had experience, pigs, poultry, and horses, thrive uncommonly well in our yards and stables, and no doubt our cattle and sheep will do the same. All our horse-feed is cut for the manger. Even our Tares and green food are cut up with Straw.

We contemplate clipping our bullocks when stalled in the warm stables, taking it for granted that Nature provided their long winter coats for open fields, as a non-conductor of caloric, and that they never were intended for artificial confinement. The thermometer will regulate our ventilation. They will be groomed every morning, the same as horses. There is quite as much reason for removing from their skins the insensible perspiration, as for grooming a horse. Health depends on cleanliness, as much in an animal as in a human being. In a state of nature, they would rub against a tree or fence. Having no such opportunity in confinement, we must do it for them. Some butchers agree with me that farmers often spoil the mutton as well as the fleeces, by keeping them on too long. Besides, a long coat requires support all the winter, as well as any other part of the body.

As to a good house, why, if our farmers are to be men of education and capital (which I hope they will be when they get Agricultural Colleges), I do not see why for a few pounds extra per annum, they should be deprived of the comforts of a proper residence. As my substantial brick and slate buildings are thought to be in advance of the age, I hope those who find fault with them will consider they are intended for the next generation.

If board and thatch are so very durable and advantageous in farmeries, why not apply them to towns and cities? My own opinion is, those temporary erections indicate either poverty or miscalculation. If there is "philosophy in frying a pancake," why should there not be "an adaptation of means to the end" in planning and erecting farm buildings?

In conclusion, as some of my farming operations are on so very different a plan from the common routine of proceeding, I will allow my farming friends to laugh at, but not to condemn them, till they have had an opportunity of seeing whether they answer or not. Should they by chance succeed, I shall expect those who now enjoy the joke will have the good sense to follow the example set them. If they do not, I shall certainly take care to remind them that they ought so to do.—*J. J. Mechi*, 4, *Leadenhall street.*

ON MINERAL AND INORGANIC MANURES.
No. XXIII.

By Professor Charles Sprengel.

d. Ashes.—As the ashes of the different sorts of fuel, of the various woods and peats for instance, of brown and common coals, &c., are of a very diversified composition—*i. e.*, as one sort contains much of potash, and another none at all, and so on—it follows, that their value as manures will be very different. And this is a fact borne out by experience, as we know that the ashes of some sorts of timber are very useful, whilst those of some sorts of peat are useless. Several sorts of ashes, as they contain no substance which decomposes the humus or other ingredients of the soil, act merely as food for the crops, whilst others act as solvents, as well as by nourishing plants by their component parts. The latter are, therefore, superior manures, although the former also possess comparatively a great value. As the effects of the different sorts of ashes are so diversified, we shall treat of them separately.

a. Wood and Vegetable Ashes.—Wood and other vegetable ashes are used for manure either in their original state, or after they have been washed; but, as in the former they are always very expensive, they are generally used in the latter. The refuse ashes are procured from bleacheries, potash and soap-boiling factories, being there used for the making of ley and carbonate of potash. These are always mixed with lime, which is added to it in order to make a caustic ley. If we, therefore, consider that vegetable ashes are deprived by water, not only of the potash, but also of all salts easily soluble in water (although some slight portion may still remain in them), it will be evident that ashes in their original state will always act more powerfully than after they have been thus extracted. But as the mineral ingredients of ashes, not soluble in water, are also to be found in different proportions in the ashes of the different woods and other plants, it follows that one sort of extracted ashes will benefit vegetation more than another. We shall first investigate ashes in their natural state, and explain their action, which cannot be done without knowing their chemical ingredients, which will best determine their value as manures. It would take up too much space to treat of all sorts of ashes used in agriculture; some of the most commonly used will suffice for our purpose.

1. *Ashes of the Red Beech.*—100,000 parts consist of—

5,520	parts	of silica.
2,330	,,	alumina.
3,770	,,	oxide of iron.
3,850	,,	oxide of manganese.
25,000	,,	lime.
5,000	,,	magnesia.
22,110	,,	potash, partly combined with silica.
3,320	,,	soda.
7,640	,,	sulphuric acid, combined with potash and lime.
5,620	,,	phosphoric acid, combined with lime.
1,840	,,	chlorine, combined with sodium.
14,000	,,	carbonic acid, combined with potash.
100,000 parts.		

Fresh *Beech-wood* ashes contain always less carbonic acid than is here stated, as lime and magnesia will (if the ashes are exposed to the air) attract the carbonic acid, and combine into carbonic salts; whence it follows that the per centage of this substance will be different, if the same sort of ashes be examined in a fresh state and after being exposed to the air.

2. *Ashes of Oak.*—100,000 parts consist of—

26,947	parts	of silica.
8,140	,,	alumina, oxide of iron, oxide of manganese.
17,380	,,	lime.
1,442	,,	alumina.
16,200	,,	potash, partly combined with silica.
6,730	,,	soda, ditto.
3,365	,,	sulphuric acid, combined with potash and lime.
1,920	,,	phosphoric acid, combined with lime.
2,408	,,	chlorine, combined with sodium.
15,468	,,	carbonic acid, combined with potash, lime, and alumina.
100,000 parts.		

3. *Ashes of the Pine.*—100,000 parts consist of—

6,093	parts	of silica.
17,030	,,	alumina, oxide of iron, oxide of manganese.
23,182	,,	lime.
5,016	,,	magnesia.
2,198	,,	potash, partly united with silica.
2,220	,,	soda.
2,228	,,	sulphuric acid combined with lime.
2,748	,,	phosphoric acid, ditto.
2 300	,,	chloride of sodium.
36,485	,,	carbonates of lime, potash, and magnesia.
100,000 parts.		

Fresh wood ashes contain also very often sulphuret of potassium, sulphuret of calcium, and manganate of potash; the sulphurets form (by longer exposure to air) sulphates, whilst the manganate of potash is changed into carbonate of potash and oxide of manganese.

All sorts of ashes formed under a high degree of heat, contain somewhat less potash than those formed under a less intense heat, as the potash (potassium) is partly expelled, and this should be taken into account in purchasing ashes; the former will act also less powerfully, as the great heat will cause a vitrification of the potash with the silica.

Looking at the above analyses, therefore, it will be evident that the ashes of Beech must be the most powerful, as it is the richest in lime, alumina, potash, sulphuric

and phosphoric acids. Experience has confirmed this. If 1000 lbs. of fresh Beech ashes are brought on the Magdeburg acre of land, the soil will receive thereby 250 lbs. lime, 50 lbs. magnesia, 221 lbs. potash, 33 lbs. soda, 76 lbs. sulphuric acid, 56 lbs. phosphoric acid, and 18 lbs. chlorine, whence it will be seen that several crops will be thus provided with these mineral substances. It is equally obvious that an equal quantity of Pine ashes will produce a less effect, because if the acre is manured with 1000 lbs., this will amount only to 21 lbs. potash, 22 lbs. sulphuric acid, and 27 lbs. phosphoric acid. And although the amount of lime is nearly the same in Beech and Pine ashes, still potash and the sulphuric and phosphoric acids are the most important ingredients of fresh ashes. The ashes of Pine act, it is true, also in respect of its carbonate of lime decomposing the organic matter in the soil, but the same is done by the carbonate of lime of Beech ashes, which effect is there increased by the greater amount of carbonate of potash; the more so, as potash is a stronger basis than lime.

SUGGESTIONS RESPECTING TURNPIKE TOLLS.

When I first heard of the appointment, by Her Majesty, of Special Commissioners to inquire into the grievances of South Wales, the origin of which grievances, and the subsequent insurrectionary actions of the Rebeccaites, was the unreasonable number of turnpike gates, erected by various turnpike trusts, and the consequent exorbitant demand for tolls, it immediately occurred to me that a plan of a less objectionable character might be devised for raising money to keep the turnpike roads in proper repair; I have subsequently reflected much upon the subject, knowing that the grievance was not confined to South Wales alone, but extended over the major part of the kingdom. I anticipated a general measure would have been resorted to, but finding a Bill brought before Parliament, only embracing South Wales, I venture, without entering into matters of detail, to publish a brief statement of a scheme, which I forwarded to them on the 1st January last.

In the first place I would suggest that all toll-gates should be removed, with the exception of those in the immediate vicinity of towns, where they may be allowed to remain, together with the attached houses, and made available as ticket stations. These premises would be eligible residences for Police officers and their families, who could thereby officiate in a double capacity; by attending to their constabulary duties, and also by giving tickets to, or receiving tickets from, travellers, according to circumstances.

Secondly.—All persons travelling by horse, gig, carriage, &c., and the proprietors of mail or stage-coaches, waggons, vans, &c. to take out an annual licence according to mileage or other specific arrangement. But all horses, carts, waggons, &c., used for purposes of husbandry, or carrying lime, guano, or any other kind of manure to and from farms, (except for hire,) and also for carrying agricultural produce to market, to be totally exempt. Districts to be formed under the special direction of Government; in these it would be necessary to station efficient officers for receiving, quarterly, the moneys paid for the various descriptions of licences; which moneys are to be disposed of in the following manner: viz.—to pay the creditors of the turnpike trusts interest upon their various secured sums at the rate of 4 per cent. (or the whole debt may be funded by Government at 3 per cent.), and the surplus to be divided *pro rata* £ per mile, for keeping mail and coach roads in repair; and £ per mile for other turnpike roads.

Thirdly. The present Turnpike Commissioners to be Local Commissioners, under whose superintendence the mileage allowance is to be expended.

Fourthly. Highways to be kept in repair by the occupiers of houses and lands within the respective townships, hamlets, or districts in which such roads are situate; land owners to contribute of the sum required for general improvements.

Fifthly. Vested interests in toll-gates to be protected; and, if possible, purchased.

Those persons, therefore, who make use of private carriages or horses, such as commercial travellers, &c., must take out an annual licence for that purpose, and the owner or owners of every coach, waggon, van, or other carriage used for hire or profit, with the exception aforesaid, must take out an annual licence regulated according to the average number of miles travelled during the three preceding years. From a calculation made in accordance with the foregoing suggestions, I have deduced the following result: viz.—That after paying 4 per cent. upon the sums secured to the creditors of the turnpike trusts, reserving annually a large amount for a sinking fund, and an adequate sum for surveyors, as also to meet incidental expenses, there will be a sufficiency for keeping the turnpike roads in repair throughout England and Wales. Were the above circumstances taken into serious consideration, no one, I believe, would entertain a doubt of the superiority of the scheme over that at present in force; that is to say, receiving tolls once in about every five miles. It will also be admitted, I apprehend, that persons contributing to the maintenance of turnpike roads will not have to pay nearly so much as under the present system; and likewise the charges for repairs of gates, toll-houses, law charges, clerks' salaries, and other expenses will be saved; at the same time affording just protection and encouragement to the agriculturist.—*Morris Sayce, Kington.*

Home Correspondence.

Saving Corn in Damp Weather.—In the laboratory we are in the practice of drying materials which do not bear heat, by aid of substances having strong attraction for moisture; one of which, lime, being largely used in manure, might be employed for drying the Corn, at no other cost than the labour. If the rick be made hollow, with the grain turned inward, a sufficient quantity of fresh quicklime placed within, and then all placed in from bottom to top, and covered over to exclude the external air, the lime will rapidly dry the air within, which will as rapidly draw moisture from the Corn, and so continue until the Corn is dry, or the lime saturated. And as quicklime will absorb about one-third its weight of water, a ton of lime will take between 6 and 7 cwt. of water, and thus probably dry 6 or 7 tons of Corn and Straw; for all this water must come from the Corn, if the external air is well excluded, and the lime raised from the soil by a bed of stones, gravel, or Straw. The lime must not, of course, touch the Corn, and therefore room should be left for it to swell in slacking. If there be no practical impediment to this method, the farmer may be enabled to save his Corn in the most capricious seasons, without the mortification of seeing it sprouting in the ear, as it stands or lies on the ground. It must be received only as a suggestion, having never, to my knowledge, been tried on the large scale; but its success in the laboratory gives reason to hope for its efficacy in the field.—*J. Prideaux.*

Folding of Sheep, &c.—For the sake of giving additional employment to the surplus labour of my parish, I broke up last winter an old sheep-walk on the upper chalk. As I have laid out 1000*l.* in buildings on 150 acres, I am anxious to follow the most approved principle of cultivation, and particularly desire the assistance of a practical and scientific agriculturist to determine the best manner of consuming 80 acres of Turnips, which are now, despite of the dry season, full of promise. On my clay farm I consume all my Turnips, Mangold Wurzel, &c., in yards sheltered with sheds for the cattle and sheep. I follow this practice, from the very obvious reason that in wet weather it is impossible on heavy clay to consume the crops on the ground. But this impossibility does not apply to the hill (chalk) farm. The universal practice here is to fold the sheep on the Turnips during the winter. It is plain that the exposure to wintry weather must be very prejudicial to the sheep in respect of their fattening; but then it is maintained by the old school here, that the advantage of the treading of the sheep, and equal distribution of the dung and urine on the land, cannot be compensated by any other means. I beg, therefore, the help of your counsel on this point. Would you on a light, *i. e.* chalk soil, cart your Turnips, and consume them in the yard; or would you rather erect in each Turnip field temporary shelter, such as is described in an early Number of your *Gazette*? It is clear that one must set off the cost of carting the Turnips, &c. to the yards, and then the manure back to the fields, and the loss of an equal distribution of manure on the field at the time, against the gain which the sheep will make by shelter in wintry weather. This seems to be an important subject of deliberation, applicable to all soils where the treading of the sheep would not be injurious.—*A. Hunstable.* [It is very hazardous work, acting directly in opposition to the experience of a whole district. We have no experience of a chalk soil, but we cannot be far wrong in advising you not to dispense with the treading of your land by sheep, which the farmers on chalk soils say is essential, unless you substitute something of a similar kind, such as the use of Crosskill's Clod-crusher, on your Wheats, which will enable you to adopt the economical plan (as our experience justifies us in calling it) of feeding your Turnips in sheds. Your safest plan is to draw only a portion of your Turnips at first, and feed them in sheds. The experience of a year will indicate the proper course in future.]

Carts or Waggons for Harvest Purposes.—In reference to a late Leading Article on "Carts *versus* Waggons," I can say from the experience of the two past and present seasons, that carts for harvest work, *i. e.* Hannam's harvest carts, are far superior to waggons; I will enumerate some of their advantages:—1. The cost is much less; my carts cost me 15*l.* each—they are well made. 2. They answer better than Scotch carts with wings attached for harvest work. Having one of mine fitted with wings, (I use Scotch or Cumberland dung carts, similar to those in common use, except that I have an improved way of tipping), I can speak from experience on this subject. I had three of them carrying Hay from a field about 200 yards from my homestead, where the rick was building, and having, through curiosity, noted the time it occupied to load and send them home, I found one passed my window every fifteen minutes, *i. e.* four in an hour; they were good loads well tied on and raked down—one man was pitching and one loading. As to their merits in working against waggons, I was last harvest employed in carting some heavy Oats from a field 1¼ mile from the homestead where the rick was building, and I borrowed two waggons of my neighbour, which, with three harvest carts of my own, made in all five carts and waggons. I went to the field and timed the men, to satisfy myself which took the longest time to load—the carts or waggons, (this I did unknown to the men, and it should also be remembered that my men had a prejudice against the use of single horse-carts, especially for harvest work, having been always used to waggons), and I found the carts occupied one-fifth less time loading than the waggons, each carrying the same load. I can give you another instance:—My neighbour, who all along had laughed at my doing all my work with carts, was one day busy Wheat-sowing, and beginning, as I suppose, to think of economising his horse-labour, came to me to borrow my harvest carts; I lent them of course; the next day on asking him how he got on, he told me that he had done as much work, *i. e.* had carted as many Beans with my three harvest carts and three horses as he had done the day before with three waggons and seven horses; others may think this strange, I do not. Let us see what the horses had to do. Three harvest carts will weigh rather more than 21 cwt. *i. e.* 7 cwt. each. One waggon weighs about 21 cwt.—as much as three carts; the Beans were on wet land ploughed into 8-feet ridges, with deep furrows; therefore the hind and fore wheels of the waggon must have been each in the bottom of a furrow or nearly so, in crossing the lands, and it would require a greater force to pull four wheels over two ridges than a cart over one with equal loads, for the waggon must be crossing two ridges at once. Then there is time saved in turning carts; one horse also moves much quicker than three can be moved together. Let a man once try them, and I think he would scarcely be induced to go back to waggons again, on any consideration.—*I. E.*

Liquid Manure.—For several months past many of your correspondents have dwelt voluminously on this subject: in fact, so much so, that it has become the engrossing theme of your Paper; and it is right that its merits should be discussed and made known; but it is too absurd to imagine that such wonderful results are to follow the application of liquid manure to land, as some of your able writers have described. I have a large cistern, a pump, and a liquid manure cart—all that is needful for going to work on a large scale. I have tried it on Grass lands, fallow for Potatoes, Wheat and Beans. I have applied gypsum with the same at the rate of from two to three cwt. per acre, but I have not yet perceived any very wonderful or astonishing results, although I have used it in wet weather, in dry weather, in spring, summer, autumn, and winter. It has proved useful, and done some good, and I do not wish to discourage the purchasing of pumps, carts, the sinking of wells, &c., &c.; only I would recommend that some of our most sanguine liquid manure men would be a little more moderate in their praises until evident results have been witnessed. It is *my* humble opinion that it would be far better, and more economical, to put burnt soil, turf, or road-scrapings, a foot thick, at the bottom of our farm yards, early in the autumn, to absorb the same, than to be at the expense and trouble of conveying it in carts from the cistern. It requires two horses to convey two hogsheads to the land when the ground is at all wet, and especially should the distance be far, it is a very serious expense. It is my invariable custom to put my store sheep into yards during the winter months. Last winter I had the bottom of one of the sheep yards covered with soil. It absorbed the moisture, kept the yard dry, and my sheep were remarkably healthy, free from foot-rot, and never wintered better. In turning the soil up with the manure in the spring, I found it thoroughly impregnated with the urine from the sheep. I should imagine that one cart-load of the said soil contained a very great quantity of the very best liquid manure. The expense of conveying it to the land has been considerably less than taking it from the cistern; besides I had an opportunity of putting the whole on my Turnip land at a seasonable time, whereas I could not have saved it in my cistern for the same purpose, as no place would have been large enough to have contained it. With all due deference to the opinions of the tank men, I would advise a trial of this plan previously to making cisterns, purchasing pumps, carts, &c., as I am of opinion it is the best way of securing the liquid manure, and by far the least expensive in conveying it to the land. In conclusion, I would beg my brother farmers to well digest the sage advice given by the noble President of the Royal Agricultural Society, at the late dinner at Southampton:—"Try cautiously those things which are likely to succeed, and do not expend large sums of money in things which you do not know whether they will succeed or not. If you find your experiments succeed, then go into the matter gallantly and well." So say I.—*Henry Hudson, jun., Wick, near Pershore, Worcestershire.*

Proper time to harvest Wheat.—I have to suggest, for the consideration of some of your correspondents—from whom I hope to hear through you upon the subject—the following considerations with reference to the ripening of grain crops. If a plant of Wheat be examined some two or three weeks before ripe, it will be found that the lowest joint, or perhaps the two lowest joints, are already yellow, ripe, and dead. The upper part of the straw—the ear and grain—are, however, still green and juicy. Now what I have to suggest is, that as the only connexion between the plant and the ground is useless for the conveyance of nourishment, and as the leaves, the only connexion between the plant and the air, may also by that time be considered as nearly useless and dead, the plant—straw and grain—must contain *then* all the nourishing material which it ever can acquire, however long it may be allowed to stand, to whatever stage in the process of ripening it may be allowed to reach before it is cut down. If this be so, the inference naturally follows that grain may be cut greener than is the general practice. And possibly in late districts, when the grain has been cut altogether green, the increased value of the crop (Oats for instance) as fodder, from this circumstance, may partly compensate for the loss which the farmer has sustained in losing a crop of grain.—*M. S.*

Steeping of Seeds.—I shall be happy to communicate the results of my experience in steeping seeds, when the proper time arrives for doing so, in the hope that I shall receive more valuable information in return. In the meantime I may safely state what may now be held as fact. The Corn steeped is taller than Corn not steeped,

growing side by side with it; it is also of a different colour, being of a lighter green. These remarks are true of Oats and Barley; Wheat steeped is taller, but of a darker green, and apparently later than Wheat unsteeped. Different steeps give different colours to the growing crop; thus, a steeping in nitrate of soda alone gives a darker green, and greater luxuriance than a steep compound of nitrate of soda and guano. We, in this part of the country (South of Scotland), are very much infested with black and useless ears in our crops of Oats and Barley this season. On the steeped portions of the fields there are fewer black ears; very few comparatively where the steeped seed was dried with lime, but a great many more where it was dried with soot alone. As soot is much of the same nature as charcoal dust, I do not attach much value to your recommendation to try this latter substance. Half a bushel of Oats were steeped for 24 hours in a pretty strong solution of bones and sulphuric acid (one by weight of the last to two of the first, with an equal weight of water). The Oats were sown moist and warm; black ears are rarely to be found where these were sown, while the ridges on each side are so full of them that if you walk through them you will be made as black as a sweep. My steeps consisted chiefly of guano and nitrate of soda; my rule was to give 1 lb. of each to a bushel of grain; but it was not strictly adhered to—generally exceeded, I believe. I seldom steeped longer than 48 hours, but I have reason to believe that steeping for a longer period will increase the fertility of the seed, although at the risk of injuring the vital power of it. What strength would you consider as the right strength of a solution in which Wheat is to be steeped 60 hours? Would sulphuric acid weakened with water, and thrown upon a heap of seeds, newly taken out of a steep, and afterwards mixed with lime, have the effect of forwarding or retarding the drying of the grain? I find that sulphuric acid, in strong solutions, has the effect of retarding the drying of the seeds.—*A Susbcriber.* [Your first question can only be answered by an experience which we do not possess. With regard to the second, we should certainly say the throwing of sulphuric acid of any dilution must be a very hazardous operation. If the acid be present in sufficient strength it would altogether destroy the texture of the seed.]

Bark of Trees.—Your inquiry about protecting trees from being barked by cows is answered by stating that the dung of dogs—Album græcum of chemists—mixed with lime as a wash, and applied to the trees, will prove effectual against all animals, sheep, hares, rabbits, horses, and cows. It may be coloured by soot, to take off the glare of the lime.—*X.*

Turnip sowing.—The following particulars are much at your service, should you think them worth a place in the *Gazette*; their publication may possibly prevent other parties falling into the same unpleasant predicament with myself. Owing to the very dry state of the ground I took unusual pains this season with my Turnip sowing: I procured the best varieties from an eminent London firm; I procured a box of Campbell's mixture to make a fertilising steep; and I prepared my manures in the most approved manner; besides all this my ground was in excellent order; and yet at this moment I have scarcely a single plant in three fields. I attribute this total failure entirely to the use of Campbell's steep. I have come to this conclusion from the following circumstance: I gave some of the steep to a tenant occupying a neighbouring farm, requesting him to immerse a small portion of his seed, and sow with it two bands in the middle of his field, which he did. These two bands now show a complete failure, whilst the rest of the field is covered with strong healthy plants; the entire field was drilled on the same day, and all circumstances similar, excepting the steep. Mr. Campbell's instructions were minutely followed, the seed being steeped 12 hours, and dried immediately afterwards in a current of air. The following are the particulars of sowing, &c:—No. 1. Sown in May with Laing's improved Swede: manured with a mixture of bone-dust, woollen waste, and liquid manure from the farm-yard, the whole mixed a fortnight before using, and in fine order. No. 2. Sown early in June with Dale's hybrid Swede; one-third of this plot manured with ashes and cloacine, the remainder with a mixture of farm-yard dung, woollen waste, and liquid manure, well mixed and in fine order. No. 3. Sown early in July with Gibbs's white Globe; manured with rotten farm-yard dung. In the middle of June, no plants having appeared in No. 1, it was resown, the seed steeped as before; there is now (July 25th) scarcely a plant in any of the lots, although there has been abundance of delightful rain. I am now sowing Nos. 1 and 3 with white Globe and red Norfolk, the seed unsteeped: No. 2 will be sown with Wheat in September. I am greatly disappointed, as you may suppose, and know not what will become of my cattle next winter, the hay crop being also deficient. In case of need I send you my name and address.—*E. R.*

Societies.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the Weekly Meeting of the Council on August 1, the following programme of the proceedings for the great meeting was agreed to:—The business of the Council was divided into two departments, namely, the show-yard department, and the distribution of tickets; the first of which would be transferred to the Horse Bazaar, Stephen's Green, on and after Monday the 12th of August next, while the managing committee would meet at the Society's Rooms in Sackville-street, and sit constantly from day to day, for the general dispatch of business. It was ordered—That the entrance tickets for stock into the show-yard, should be distributed by the clerk of the yard, at the Horse Bazaar, Stephen's Green, on and after Monday, the 12th inst.; and that all the tickets for admission to the different entertainments should be distributed at the Society's Rooms in Sackville-street, on the same days respectively. From the great increase of new members, and the demand for tickets, it was found advisable to confide the issue of them still to Members of the Society, Subscribers to the Local Fund, and Strangers from England and Scotland; but, that, in the meantime, every facility would be given to enable persons anxious to participate in the proceedings of the meeting to become Members of the Society, for the purpose. The Council then adjourned until the next week.

FARMERS' CLUBS.

Maidstone.—At the monthly meeting of this Club, the subject for consideration was The Comparative Advantage of Large and Small Farms. The discussion was introduced by the reading of some sound and excellent remarks on this subject from the first chapter of "British Husbandry," and a very interesting conversation ensued. On the part of small farms it was argued that they admitted of much closer attention being given to minute details, and that as the profit of farming mainly depended on small saving, the small farmers were most productive. In support of this view, the happy state of the people in Germany, Norway, and Switzerland, where the farms are all small, and worked by their owners and their families, was compared with the pauperised state of the population in Suffolk, Norfolk, and Yorkshire, where the system of large farms prevailed. It was also contended that as the small farms thus provided livelihood for a greater number of families, they were more advantageous both to the individuals holding them and to the nation. On the other hand, it was argued that the happiness of the small farmers alluded to arose probably more from their own provident habits than from the size of their farms; and it was added that in many of those countries mentioned, in Switzerland, for instance, the population was stationary, or nearly so, whilst the Irish small farmers, who were celebrated for their early marriages and improvident habits, were amongst the most destitute people in the world. An instance was mentioned in which a gentleman of large landed property, who imagined that small holdings produced most public happiness, pulled down his large farm houses, and laid out his property in small farms of from sixty to eighty acres. He soon found tenants, who went on well enough for the first year or so, as they employed no labour beyond that of their own families; and at times wanted employment to fill up their own time. This they could not get, as they were all small farmers together, neither of whom had capital to employ any one, and each wanted to be employed. The result was that in a year or two every one of these tenants gave up his small holding, and the landlord laid his estate out again in large farms. It was stated that the race of small farmers with small capital, who might be considered half farmers and half labourers, were least disposed, both from want of means and information, to adopt any improvements; they were always compelled both to buy and sell at a disadvantage; that in every period of agricultural pressure they were invariably the first to suffer; and it very frequently happened that themselves and their families, if they were not employed as labourers by the large farmers who succeeded them, were at last reduced to the union house. Such cases had repeatedly occurred under the old poor law. In the earlier part of the discussion it seemed to be generally imagined that the small farmers gave a larger amount of employment in the aggregate than the large ones, but so many instances were adduced where the reverse was the case in whole parishes, that it was ultimately the opinion that the large farmers gave the most. Even supposing, however, that three times the amount of produce was raised on a farm of 300 acres, than was raised on three farms of 100 acres each, it was still contended that it was for the benefit of the community, as well as of the farmer, that the largest possible amount of produce should be raised from a given space of land, with the smallest possible cost. It was admitted to be almost invariably the case that the small farmers only turned off their men during the winter, whilst the larger capitalists almost always found them some profitable employment. It was admitted that, from the comparative deficiency of supervision, the large farmer seldom got so much work out of his labourers as the small one, who generally also got more out of the dairy, piggery, and poultry; but it was believed that those advantages were more than compensated for by the great advantages of capital, which enabled the large farmer to adopt a uniform system, to purchase the best implements and machines, and to apply, in catching seasons, a large amount of force to any given operation. The following resolution was ultimately agreed to:—"Resolved, That it appears to the members of this Club, that in this district it is most beneficial to the community at large that arable farms should not exceed 500 acres in extent, nor be less than 250 acres."

Darlington.—At the monthly meeting of this Club, held on Monday last, the subject under discussion was, The best Method of Making and Securing Hay; also The best Season of the Year for applying Manure to Grass Land. Henry Chapman, Esq., the chairman, introduced the subjects, and read an interesting paper thereon from the pen of Mr. Davidson, a regular correspondent of the Club. During the discussion which ensued, it seemed to be the general opinion of the members present that, in fine sunny weather, experience has already taught us nearly all that is requisite to be done in making and securing Hay to advantage; but that, under all circumstances, even in the finest weather, it is desirable to keep the Hay in such a state of security that, should a change of weather take place, no considerable injury may be sustained; it is also an important matter to economise labour as much as possible, for which purpose the Hay-making machine may be used to great advantage in dry weather. In a wet season it was considered best not to have too great a quantity of Grass cut at one time, and to allow the Grass when cut to remain in swathe for some days, should the weather continue wet, occasionally turning the swathes; but when the Grass has been spread, it is desirable to have it put up into small cocks, or lap-cocks, as soon as possible, opening the cocks out during the dry part of the succeeding days, but never opening out more in one day than can be put up again in the same day, or before rain comes on, and increasing the size of the cocks as the Hay dries. The Hay-machine should be sparingly used in damp weather, as it beats out the seeds of the Hay too much; it was also believed to have an injurious tendency by the wheels running over the Hay, and pressing it upon the damp ground. When Hay has got a good deal of weather in the harvesting, it was recommended to mix about a peck of salt with each ton of Hay in the stacking, providing the Hay be tolerably dry when stacked, salt being known to improve the flavour and quality of Hay very materially that has suffered from the weather. In discussing the best season of the year for applying manure to Grass lands, there were some members present of opinion that there was no need to manure Grass land at all, and that, by pasturing it frequently, it might be kept in condition, and the manure more profitably employed upon the tillage land of a farm; yet the majority were decidedly in favour of applying manure to Grass land, believing that, by judicious management, it might occasionally be quite as profitably applied to Grass land as to tillage; and the unanimous opinion was, that the best season for applying the manure is immediately after the Hay is taken off the land, as the manure at that time gets free access to the roots of the Grass; besides, Grass newly cut generally grows rapidly, by which means the manure is soon grown over, and the roots of the Grass receive the full benefit thereof; and at this season there is no danger of any part being washed off by the rains of winter. In cases where it is inconvenient to apply manure to Grass at this season, the next best time was considered to be in the spring, just when the Grass is expected to begin growing; and, in this climate, probably the beginning or middle of March might be suitable.

Miscellaneous.

Lucerne.—Select a dry piece of land, either rather light or good mixed soil, but not stony, strong, or clayey, certainly not the least inclined to be wet or springy, with either a sand or chalk subsoil—the latter is preferable; let it be made perfectly clean, especially from Couch-grass, and deeply ploughed; but if on a small scale I would have it dug by spade, or four-pronged carrot-fork (prongs 10 inches long and a little flattened), digging in plenty of good rotten farm-yard manure. When the ground is ready for the seed, open drills with a hoe 17 or 18 inches apart, and not more than 1½ or 2 inches deep; then put the seed in a glass wine-bottle with one or two quills stuck in with the cork (which is cut on the sides to admit the quills); this will deposit the seed more regularly than by hand into the drills, which are then raked over; about 24 lbs. of seed per acre is sufficient, which can be procured of any respectable seed-merchant, at 11*d.* or 1*s.* per lb. I consider May the best time for sowing, but if the ground is not too dry for the seed to vegetate, any time before the middle of August will do; but if the land is not perfectly clean, let the sowing be put off till the spring, and without a crop of Corn. It is fit to cut for a first crop of Hay generally from the 20th to the 28th of May, the year after sowing (this year it was a fortnight earlier), and for a second crop when it comes into blossom; it takes a longer time making into Hay than Grass, as it is better only turned, not shaken out, otherwise much leaf is lost. The crop must be well manured every year in January, February, or beginning of March, and the ground between the drills kept perfectly free from weeds by hoeing in dry weather, and picking the Grass out of the drills where the hoe would cut off many of the plants. The grand secret in growing Lucerne, I am persuaded, is in keeping it clean, and, when kept so, no green crop can bear any comparison in value; it is very far superior to Tares. I have now a third crop fit to cut, 26 inches high, on the same ground I cut for Hay only five weeks since. No lime must be used for manure. I am inclined to think guano mixed with farm-yard manure would answer well. If the quantity to be laid down be more than one acre, the plough and drill must be used, in which case it should be put in not more than two inches deep.—*Correspondent of Mark Lane Express.*

Burning Clay.—"Let sods be cut of a convenient size to handle—say a foot wide and 18 inches in length; with these form a parallelogram, or 'long square;' let the walls be a couple of feet thick, and trampled or beaten firmly together, and raised at least three feet high; the kiln should be so situated that the wind may blow against one of its sides; the kiln may be from four to six yards long by three yards wide, and an aperture, within one yard of each end, and others at a distance of about five feet from these, should be left in the side walls, when building, for the purpose of forming drain-like openings across the kiln; make one of these drain-like openings from end to end in the length of the kiln; these funnels

are to be built also with sods; some dry turf, such as is used for fuel, is to be put into these funnels, and over it and between the funnels well dried sods, or any other combustible materials are to be laid on to the depth of a couple of feet over these sods, partially dried, to the level of the walls of the kiln; these materials being set on fire, a powerful heat will be produced, quite capable of burning clay, without previously drying it; care, however, will be necessary, to avoid throwing it on in too great a quantity at once, until the fire is well up, when a large quantity may be thrown on. The sod walls are to be raised as the heap rises, and as soon as it is perceived by the strength of the smoke and the glow of heat that the mass is ignited in all its parts, the apertures may be closed up, and the kiln left to become charred; should appearances indicate a likelihood of being smothered, it will only be necessary to open one or more of the funnels to secure its acting. If the land on which the burned or charred clay is to be applied be deficient in calcareous matter, earth containing it, if burned, would improve it much. Excellent crops of Turnips are produced on indifferent land by the use of the clay ashes; and there can be scarcely a better preparation for Rape. There is no process in agriculture that demands the farmer's closer attention and personal superintendence, than burning clay; for if well done, there is no improvement so cheap, and at the same time so valuable; if on the other hand the burning is hurried, or the fires neglected, the consequence will be, either the clay will be burned into lumps like brick ends, that will not fall to pieces when exposed to the air, or the clay will not be charred, or burned at all; therefore the heat should always be slow and steady, never, if possible, burning the clay red, but black—although this is difficult to manage, depending much upon the wind, stopping up the apertures on the windward side, when the wind blows fresh, and opening the opposite aperture, and particularly attending to this. The whole time the heaps are burning will take from two to three months, the time depending much on the weather; from 60 to 100 yards may be burned in a heap; and if there be not sufficient sod, coarse turf, bushes, &c., on the spot to keep up a sufficient body of fire at the commencement, wood of any kind, or small coal must be used."—*Third Report of the Monmouth Farmers' Club.*

Naturalisation of the Alpaca in Scotland.—The Alpacas arrived the latter end of August. When the weather became cold, and the nights were getting long, a wooden shed was erected for them in the park. At first they hardly ever went into it; but when winter commenced, I made the keeper (whom they follow like a dog) put up a small rack in their shed, in which was placed some Rye-grass Hay. The weather was fine, and they ate very little of it; but by and by, as winter advanced, they relished it better. I then ordered them to get a few yellow Turnips, which at first they seemed to like, but, tiring of them, I desired a little corn to be given, which they partook of pretty freely; but one day the keeper told me they would not eat their corn, especially when the day was good. Having some excellent Beans, I ordered the man to try them with a few. No sooner did the Alpacas hear the Beans rattling in the dish than they showed an eager desire to have them, and during several months, preferred them to every other sort of grain; indeed, so much so, that upon some Oats being intermixed with the Beans, the latter were picked out and the former neglected. What is extremely satisfactory is the hardiness of these animals compared to our sheep, and their indefatigable perseverance in searching for food, when sheep would to a certainty starve. I may state that this winter, 1843-4, has proved a most severe one. The park in which the Alpaca and sheep were confined, was covered for nearly three weeks with snow; and during that time there was not a vestige of herbage to be seen, with the exception of some little green tufts under the trees. The sheep required to be regularly fed with Turnips and Hay. Not so the Alpacas; they were seen in the most stormy days under the trees for hours, constantly eating the Grass, and never minding either the cold or snow. They have never had a day's illness, have never attempted to leap a fence, and are far easier to keep within an inclosure than the common sheep.—*Mr. Stirling, in the Transactions of the Highland Society.*

Notices to Correspondents.

ANALYSIS OF ONION, &c.—*J. Jackson.*—We know of none which gives the mineral component parts, which is almost the only useful part of an analysis to the farmer or gardener.

BOOKS.—*R. W. L.*—"The Farmer—Knight's Guide to Trade;" "Essay on the Improvement of Small Farms," by W. Blake, Esq.; Martin Doyle's "Flower Garden." There neither is, nor can be, any general work on Gardening, of such a price as you mention. Apply to the booksellers: we do not give prices.

CABBAGES.—*Subscriber.*—Sow Early York and Imperial in seed-beds now, to transplant before winter and to be ripe in May. Sow the Drum-head Cabbage in March for consumption about August. The first are small early varieties; the last is a large Cabbage.

FEAT IN PLOUGHING.—*M. Saul.*—Thank you for your account received some weeks ago. It was not thought of sufficient *general* interest for insertion.

GAS-LIME.—*F. C.*—You had better mix your pond and ditch mud with gas lime, turning it frequently before applying to the land; this you can do before Wheat-sowing; get old gas-lime if you can.

GRASS.—*Peel.*—Your Grass is a Lolium, or Rye-Grass, the seed of which may be usefully saved.

GREEN MANURE.—*E. B.*—The practice of ploughing green crops in as manure can rarely be characterised as economical. If your land require manuring for Wheat—if it be a stiff soil, you should have sown Vetches and eaten them off by sheep on the land. Sow one and a half bushel of Buck Wheat, broadcast, on a light soil, in the middle of May. Sow Lupines as you would Peas—plough them down when in flower. Mustard should be sown in May, 4 or 5 lbs. per acre, in rows—say 12 inches apart—or broadcast, and ploughed in just before flowering.

GUANO, &c.—*Peel.*—This manure, especially the African, is frequently delivered very damp; whether naturally or artificially so, is another question. We have known it to contain 20 per cent. of water. The value of marl depends altogether upon its composition, and frequently upon some of its smallest ingredients (*see* Sprengel on the subject in late Nos. of this Paper). The proper way to apply it is before winter, as fine as possible; when spring comes it is in a state to be spread evenly and buried. It may form a useful ingredient in a compost, especially if ultimately used on a light soil. Thanks for your paper on Rooks.—*J. C.* asks if any of our correspondents will favour him with their experience of African, Peruvian, and Bolivian guanos, also of rapedust and soaper's ashes, as manures? With *reference to* the last, see Sprengel in this and next Papers.

INSECTS.—*A. B.*—I am glad you sent the insects, for they are one of the best friends you have, being the larvæ of the Lady-birds, which feed entirely upon the plant-lice that are infesting your Swedes. *Vide* the "Royal Agricultural Journal," Vol. iii. p. 56, and pl. c. f. 13-17.—*J. W. L.*—Your Turnip-leaves are covered with Aphides, and the larger insects accused of cutting off the heads of the young Turnips are the larvæ of the Lady-birds, as you imagined, which live entirely on plant-lice, and must not be destroyed. We will make this the subject of a paper as soon as possible. *R.*—*A Leicestershire Farmer.*—The flies you sent are the Aphis rapæ, whose history you will find in the "Royal Agricultural Journal," Vol. iii. p. 53.—*A Subscriber, Waterford.*—Your last supply enables us to state that your Turnips are suffering from the Aphides, a vast portion of which are punctured by parasitic flies. You will be interested with the history of these insects given in the "Royal Agricultural Journal," vol. iii. p. 49. *R.*

LINSEED AS FOOD.—*J. C.*—We had hoped to have been able, before this, to have published on this subject. We shall do so shortly. Wheat straw, *ad. lib.*, cut into chaff and steamed with 2 or 3 lbs. of Barley meal a day, would probably answer your purpose, though in this we do not speak from experience.

LUCERNE.—*Subscriber.*—Sow 12 lbs. of seed in rows about 1 foot apart, on well and deeply-tilled ground, before the middle of April. You will be able to cut it once in the autumn of that year, and four or five times next year. (See *Miscellaneous*, No 32 *Agricultural Gazette*.

MANURE.—*G.*—If the analysis you give is correct, lime will benefit your soil: you may safely put 150 to 200 bushels per acre on it. As to the probability of muriate of soda benefiting you, this will be better indicated by your distance from the seashore, than by your analysis, which does not enter sufficiently into detail. If you are inland, apply common salt, 1 cwt. per acre.

PEAS.—*Subscriber.*—The Nimble Pea and the Early Warwick, are early Peas, much in favour with market-gardeners.

REARING CALVES, &c.—*W. C.*—The following is the way in which the best Gloucestershire dairy-farmers manage:—The calf is removed from the cow at six or eight days old, provided the dam be a cow and not a heifer; if a heifer, the calf is allowed to remain about a fortnight, because a heifer is more difficult to be milked, and the calf assists the milker. No difference is made whether the calf be heifer, steer, or bull; they are all reared exactly in the same way. At about a week old calves are allowed each two quarts of best milk twice per day: this is every thing given till about two months old, except Hay, which they generally eat well at a very early age—say three weeks. After two months old they consume a good quantity of Hay, and then we reduce the two quarts of milk to one, and add two quarts of water, which makes a mixture of three quarts, as of course they require more to drink, as they consume more Hay. At about ten weeks old they are turned to Grass, and all the milk is discontinued by degrees. The longer a calf remains with its mother the more will it feel the loss when taken away. The age of sixteen months is the correct time to put the heifer to the bull, so that she may calve at two years old, or thereabouts. This, undoubtedly is the best time for a dairy; but, should the chief object be symmetry and size, without much regard as to profit, by allowing them to remain until three years old before they calve, you gain your object. No difference is made in selecting calves, whether they are from heifers or cows; a heifer's first calf is equally good with the second. The objection to weaning the first calf generally arises from the heifer calving later in the season than cows, which is generally the case. It is not at all desirable that the heifer should suckle her first calf, except for the limited period before mentioned. The heifer should be made quiet for milking as soon as possible, which object is defeated by allowing the calf to suck.—*E. H.*

REARING YOUNG CATTLE.—*A Terfi-side Subscriber.*—See answer to similar question above. Also see Paper on this subject in No. 1. *Agricultural Gazette*, by Mr. Wilson, extracted from "Quarterly Journal of Agriculture."

SKINLESS OAT.—*Paddy.*—We do not know if the skinless Oat, introduced some years ago from China, is the same as that found in County Galway and other parts of Ireland.

VETCHES AND ITALIAN RYE-GRASS.—*A. Huxtable.*—We doubt the propriety of sowing the two together. In the only case in which we have done so on a large scale, the Rye-Grass had perished before the Vetches were cut.

WEED.—*R. T. C. J.*—Your weed is, apparently, some species of Lolium or Rye-Grass. The proper remedy is to take two fallow crops in succession—say Potato and Swedes, and clean the land well in both cases before taking a grain crop.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, Aug. 5.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	8	to	4s	0		
Best Short Horns	3	6		3	10		
Second quality Beasts	3	0		3	6		
Calves	3	8		4	4		
Pigs	3	4		4	0		
Best Downs & Half-breds	3s	8	to	4s	0		
Best Long-wools	3	6		3	10		
Ewes and second quality	3	2		3	6		
Lambs	4	0		4	8		

Beasts, 5302; Sheep and Lambs, 28,970; Calves, 197; Pigs, 310.

Our supply of Beef to-day is very large, but a great many of them are of very inferior quality; some of the best Scots, &c, are still making 4s, but this price for anything is more difficult to be obtained than on last Monday; and 3s 10d is quite an extreme price for the best Short-horns. Second quality Beasts are a very heavy sale, a great many making very little over 3s per 8 lbs; several of this description remain unsold. The supply of Mutton, although considerably shorter than on last Monday, is still adequate to the demand, which rules heavy and the advance in prices which was obtained on Friday is not supported to-day. The Lamb-trade is declining very fast—a great many of the larger sort only make Mutton price; in some few instances 4s 8d is obtained for very nice quality, but this is a rare price. Veal is rather lower than on Friday—a very nice Calf is, however, still worth 4s 4d. Pork is about the same.

FRIDAY, Aug. 9.

The supply of fresh Beasts to-day is not very great, but with what were left over from Monday, there are too many for the demand. Trade is very heavy, at barely Monday's prices—indeed, we cannot quote the best Scots, &c., at more than 3s 10d, and Short-horns 3s 8d per 8 lbs. Mutton-trade is very heavy at hardly so good price as on Monday, but scarcely a quotable difference. Lamb is going out, and for the most part is making very little more than Mutton; prices range from 4s to 4s 6d. Veal is a little lower, it being difficult to make 4s 4d of the very best; many very good Calves are sold at very little over 4s per 8 lbs. Pork, 3s 6d to 4s.

Beasts, 782; Sheep and Lambs, 11,940; Calves, 200; Pigs, 290.
41, West Smithfield.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 8.

Prime Upland Hay	80s to 105s	Clover	100s to 115s	Straw	28s to 32s
Inferior "	— —	" New	— —		
New Hay "	80 90			Jones Cocoon, Salesman.	

CUMBERLAND MARKET, Aug. 8.

Superior Old Hay	100s to 110s	Superior Clover	114s to 120s	Straw 28s to 32s	
Inferior "	80 90	Inferior "	100 110		
New Hay "	90 100	New Clover	95 108		
				Joshua Barnes, Hay Salesman.	

WHITECHAPEL, Aug. 9.

Fine Old Hay	80s to 90s	Old Clover	120s 130s	Straw	24s to 30
New Hay "	75 82	New Clover	98 110		

COVENT GARDEN, Aug. 12.—The late fine weather has caused a good supply of orchard fruit to be brought into the market. The quantity of Vegetables, generally speaking, is also amply sufficient to meet the demand. Pine-apples are very plentiful; among them we noticed some fine specimens of Providences and Queens; they are not altered in price since our last report. Large quantities of the foreign Pines formerly alluded to are in the market, and, although still much inferior to English-grown varieties, they are somewhat improved in quality; they bring from 1s. to 5s. each. Black Hambugh and Muscat Grapes, of good quality, are abundant. Foreign Melons continue to be pretty well supplied, but those of home growth are becoming less numerous. Peaches and Nectarines are sufficient for the demand; a few from the open walls have been supplied during the week. Apricots, Green Gages, and several kinds of Plum are now offered in considerable quantities. Cherries are becoming scarce, and Gooseberries and Currants are also less plentiful. Apples chiefly consist of the Junegating, Red Astrachan, and Hawthorndean. Among Pears Jargonelles are most prevalent. Filberts have just made their appearance. A few Strawberries are still to be met with. Of Vegetables the supply of Peas is becoming somewhat limited, and they are considerably advanced in price. Artichokes are good. A few Tomatoes have been offered at about 1s. 6d. per punnet. The best Mushrooms are selling at about 2s. per pottle. Cabbages are good and plentiful. Cauliflowers, although still sufficient for the demand, are getting scarcer. Carrots are good and plentiful; but Turnips are very scarce. Salading and Herbs of every kind are abundant. Cut Flowers chiefly consist of Bignonia venusta, Ceanothus azureus, Alstræmeria pelegrina, Fuchsias, Heaths, Pelargoniums, Carnations, Picotees, Verbenas, Gardenias, and Roses.

FRUITS.

Pine Apple, per lb., 4s to 6s		Plums, per half-sieve, 1s 6d to 2s	
Hothouse Grapes, per lb., 2s to 6s		Strawberries, per gallon, 1s 6d to 2s	
Melons, each, 2s to 5s		Gooseberries, per half-sieve, 1s 6d to 4s	
Peaches, per dozen, 3s to 10s		Walnuts, pickl., per bush., 4s 6d to 5s 6d	
Apples, Dess., per bush., 2s 6d to 4s 6d		Oranges, per dozen, 1s to 3s	
— Kitchen, 2s 6d to 4s		— per 100, 3s to 14s	
Pears, Dess., per half-sv., 2s 6d to 3s		— bitter, per 100, 2s to 10s	
Cherries, Wall, per lb., 1s 6d to 2s 6d		Lemons, per dozen, 1s to 2s	
— Standards, per doz., 1s to 3s		— per 100, 8s to 14s	
— Morello, per half-sv., 3s to 5s		Almonds, per peck, 6s	
Currants, per half-sieve, 2s 6d to 3s		Sweet Almonds, per lb., 2s 6d	
— White, per sv., 2s 6d to 4s 6d		Nuts, Barcelona, 2s 3s	
— Black, per sv., 3s to 6s		— Cob, 1s 6s	

VEGETABLES.

Cabbages, per dozen, 6d to 1s 6d		Leeks, per bun., 2d	
Cauliflowers, per doz., 2s to 7s		Chilis, per 100, 2s to 4s	
Sorrel, per half-sieve, 6d to 9d		Garlic, per lb., 6d to 6d	
Artichokes, per doz., 1s to 2s		Onions, per bunch, 3d to 6d	
French Beans, p.half-sv., 1s 6d to 2s 6d		— large, per bushel, 1s to 2s	
Potatoes, New, per cwt., 2s to 3s		Shallots, per lb., 4d to 6d	
New Turnips, per bunch, 3d to 10d		Tomatoes, per punnet, 1s to 1s 6d	
Peas, per bushel sieve, 2s 6d to 3s		Lettuces, per score, 6d to 1s 6d	
Beans, per bush. sieve, 2s 6d to 4s		Celery, per bunch, 1s to 1s 6d	
Red Beet, per doz., 1s to 2s		Mushrooms, per pottle, 1s 3d to 2s	
Carrots, 4d to 6d		Small Salads, per punnet, 3d to 6d	
Basil, per bunch, 3d to 4d		Watercress, p. 12 sm. bun. 3d to 6d	
Horse Radish, per bundle, 2s to 3s		Parsley, per doz. bunches, 1s to 2s	
Savory, per bunch, 2d to 3d		Tarragon, Green, per bunch, 3d to 6d	
Cucumbers, Frame, each, 5d to 9d		Green Mint, per bunch, 2d to 3d	
— Ridge, doz., 2d to 3s 6d		Marjoram, per bunch, 2d to 3d	
Vegetable Marrow, per doz., 4d to 1s		Chervil, per punnet, 3d to 3d	
Spinach, per sieve, 1s 6d to 2s 6d			

WOOL.—BRITISH, FRIDAY, Aug. 9.

THERE has been no alteration in our English Wool Market since our last. The prospect of trade continues good.

	per lb.			per lb.	
Long-wooled Wethers	1s 0d	to	1s 1d	Southdown Hoggitts	1s 1d to 1s 3d
Do. Hoggitts	1 1		1 2½	Kent Fleeces	1 1 1 3½
Southdown Fleeces	1 0		1 1		

JAMES PEARSE, Wool Broker.

HOPS, FRIDAY, Aug. 9.

The accounts from the plantations have continued to come worse daily during the week; the duty has fallen to 130,000*l*., and prices have advanced 4s to 10s per cwt.

PAVERSHAM & SMITH, Hop-Factors.

MARK-LANE, MONDAY, Aug. 5.

WITH a short supply of Wheat from Essex, Kent, and Suffolk, the market was rather better than on Monday last, and fully equal to Friday; but there is no inclination to pay any advance. In Foreign there was a fair retail sale for consumption, and its value may be considered the same as last week.—Flour has declined 3s. per sack.—Barley, both English and Foreign, is 1s. lower, and Peas have receded 1s. to 2s. per qr.—In Beans there is no alteration.—Oats are a very slow sale at late rates.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	40	48	Red .	42	47
—— Norfolk, Lincolnshire, and Yorkshire . . —	—	—	White	—	—
Barley, Malting and distilling 27s to 30s	Chevalier	31	32	Grind.	25	30
Oats, Lincolnshire and Yorkshire . .	Polands	19	21	Feed	18	20
—— Northumberland and Scotch . .	Feed	19	21	Potato	20	22
—— Irish	Feed	17	20	Potato	19	22
Malt, pale, ship		50	56			
—— Hertford and Essex		52	60			
Rye		29	32			
Beans, Mazagan, old and new 27 to 29	Tick	29	31	Harrow	30	32
—— Pigeon, Hollgoland . 32 to 35	Winds.	—	—	Longpod	—	—
Peas, White . . . . 32 to 36	Maple	32	33	Grey	31	29

FRIDAY, Aug. 9.

The weather has continued unsettled from Monday last, but we have had scarcely any rain since Wednesday; on that day there was a fair demand for Foreign Wheat, which in some instances brought an advance of fully 1s. per qr., but to-day there is less doing; Factors, nevertheless, are unwilling to accept the rates of our last quotations. We have had but little English fresh up during the week, and observe no alteration in its value.—Barley remains as last quoted, but grinding qualities are rather more inquired after.—Beans and Peas are unaltered. Oats are more in demand, at 6d. advance.

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		55s 0d	34s 0d	22s 0d	35s 0d	33s 0d	34s 1d
June	26 per Quarter.	55 8	34 5	22 11	35 0	33 2	33 6
July	5	54 10	34 10	23 3	34 2	27 3	27 3
—	12	54 1	34 5	21 5	33 4	27 7	27 3
—	19	53 9	34 3	20 10	33 9	27 1	27 4
—	26	51 0	34 0	20 3	32 6	34 7	33 5
Aug.	2						
6 weeks' Aggreg. Aver.		54 0	34 4	21 9	33 4	32 2	33 10
Duties on Foreign Grain		19 0	4 0	6 0	7 6	5 6	6 6

SEEDS, Aug. 5.

Canary . . per qr	50s to 58s		Linseed Cakes, Foreign, p. ton	6l to 9l 10s	
Carraway . . per cwt	44	48	Mustard, White . p. bush.	—	—
Clover, Red, English . .	—	38	— Superfine " .	—	2l —
— — Foreign . .	—	—	— Brown " .	—	—
— White, English . .	—	—	Rapeseed, English, per last	20l	22l
— — Foreign . .	—	—	Rape Cakes . per ton	—	—
Coriander	12	18	Rolnfoin	—	—
Hempseed . per last	35	40	Tares, Eng. winter p. bush.	5	7
Linseed . per qr	—	—	— Foreign " .	—	—
— Baltic . . .	—	—	Trefoil . per cwt	—	—
— Cakes, Eng. per 1000	10l	10l 10s	Turnip (too variable for quotation).		

KINGSFORD AND LAY.

WHOLESALE PRICES OF MANURES.

Alum . . per ton	11l 0s 0d	Nitrate of Soda cwt.	1 0 to 1 5 0
Ammonia, Carbonate cwt.	2 0 0	— Potash (Saltpet.) cwt.	2 5 to 2 7 0
— Sulphate cwt.	1 5 0 to 1 7 0	Phosph of Lime (Calc. Bones) cwt.	1 7 0
— Muriate . cwt.	2 2 0	Rape Cake . ton	5 7 6 to 5 15 0
— Sal Ammoniac cwt.	4 5 0	Salt (Common) ton	3 5s to 4 0 0
— Phosphate lb.	1 0	Soda (Dry Carbonate) cwt.	2 5 0
Bones . ton	4 to 4 5 0	— (Crystallised) cwt.	1 7 0
Bonedust . qr.	— to —	Sulph. of Mag. (p. g. 10%) cwt.	2 0 0 to 2 10 0
Guano, Peruvian ton	10l 0 0	— Potash . cwt.	1 6 0
— Ichaboe . ton	6l 0 0	— Soda . cwt.	0 5 0
— African . ton	4l 10 0	Sulphuric Acid (sp. g. 1.84) lb.	0 1½
— Potter's . ton	10l 0 0	— (sp. g. 1.70) lb.	0 1
Gypsum . ton	30s to 40 0	Superph. of Lime . cwt.	1 7 0
Muriate of Lime . ton	2l 0		

TO FLORISTS AND AMATEURS OF FLOWERS.

BRAIN'S CONCENTRATED LIQUID GUANO, for the Garden, Shrubbery, Hothouse, and Conservatory.

This preparation is peculiarly adapted for the development of flowers, furnishing them with the materials (in a soluble form) out of which they weave their delicate tissues and elaborate their beauteous colouring. It has no unpleasant smell, is easily applied, and thus recommends itself, either for the Garden or Drawing-room.—Price 1s. 6d. per quart Bottle, and may be had of most respectable Druggists and Seedsmen, with full directions for use inclosed.—Works, Thomas-st., Stamford-st., Blackfriars-road.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought to the market.

Price-current, London, Aug. 8, 1844:—

Bones .	p. ton	£4	10s.	0d	
,, crushed,	5l.	10s. to	6	0	0
,, calcined .			7	0	0
Carbonate of ammonia .		p. cwt.	2	16	0
Guano, Peruvian,	p. tn.		10	0	0
,, Ichaboe	,,		6	0	0
Gypsum . .	,,		2	0	0
Nitrate of Soda,	p. cwt.		0	14	0
Nit. of Potash	p. cwt.	£1	4s.	6d	
Oil of Vitriol, or Sulph. acid .	p. lb.		0	0	1
Rape Cakes .	p. ton		4	15	0
Salts, Epsom	,,		9	0	0
,, Glauber	,,		7	0	0
Sulphate of Ammonia, per cwt.,		16s. to	0	17	0

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of, LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London

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GYPSUM, &c.—Pure Gypsum (Sulphate of Lime) for Compost Heaps, Urine Tanks, Stables, &c.: also Sulphuric Acid, Guano (foreign and Potter's), Rape Cake and Rape Dust, and all other Manures, may be had of the Undersigned.

Synopsis of Prices, and mode of use, on application.

MARK FOTHERGILL, 40, Upper Thames-street.

TURNIPS, &c.

DR. HALLETT'S DRY SOLUBLE FERTILISERS are composed of all the useful ingredients of the best Foreign Guano, which manure is already nearly exhausted, and no two parcels of which were ever alike. They contain also other ingredients equally useful, and are always to be produced of uniform strength; they are improvers of all soils, but most so of poor ones, and cannot possibly prove injurious to soil or crop, as they contain no heating or caustic materials, being simply and purely Fertilisers. Five cwt. of either of them is equal to nearly 30 tons of horse-manure as a Fertiliser. They are used, the one for all the varieties of Corn, Peas, Beans, Chicory, &c., and the other for Turnips, Mangold Wurzel, Natural and Artificial Grasses, and all Gardening purposes. This is the best protector yet discovered against the Fly in Turnips, for it gives a first growth three weeks beyond that of any other known Manure. Price of each Fertiliser, 10l. per ton, or 12s. per cwt.

Sold by Mr. FOTHERGILL, 40, Upper Thames-street; and Mr. G. HALLETT, at the Factory, Broadwall, Blackfriars, London. The Fertilisers are manufactured under the immediate inspection of J. J. HALLETT, M.D., &c.

Agents for London, Messrs. WINSTANLEY, Chemists, 7, Poultry; Suffolk, Mr. W. REVANS, Yoxford; Norfolk, Messrs. BUÉLAND and WATTS, Norwich; Jersey, Mr. C. Kruger. Respectable country agents wanted.

TO COLONISTS, EMIGRANTS, &c. — Mrs. MARY WEDLAKE, widow of the late THOMAS WEDLAKE, at 118, FENCHURCH STREET, CITY, informs Emigrants and others that she continues to manufacture those Agricultural Implements for which her late husband was so extensively patronised by the Settlers of South Australia, Van Diemen's Land, Swan River, New Zealand, and other British Colonies. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, viz.:—

Patent Hay-making Machines	Flour-Mills—Bean-Mills
Dressing Machines	Patent Essex Ploughs, 30 sorts
Patent Chaff-cutting Machines	Subsoil Ploughs [Colonies
Oil-Cake Crushers	Threshing Machines for the
Double action Turnip-cutters	Drills of all kinds—Scarifiers
Railway Wheels	Vacuum Pumps

Please to be particular in the address, MARY WEDLAKE, 118, Fenchurch Street, London.

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THE A LEVEL, designed for the Use of Workmen, in preserving a uniform fall in Drains and Water-courses. In consequence of the approval expressed and the demand made for these Levels at the recent Southampton Show, Mr. BAILEY DENTON has arranged with an eminent London Mathematical Instrument Maker to make them in any number required. Price 30s.

This Level is as accurate as a spirit-level, and so simple, that the workman unable to read can use it with facility. When closed it forms a 5 feet staff.

Orders addressed to Mr. DENTON, Land Agent, 9, Gray's Inn-square, will insure a perfect instrument.

70, STRAND, LONDON.

RAMS FOR RAISING WATER WITHOUT LABOUR, where a fall can be obtained. FOUNTAIN BASINS IN IRON, &c.

F. ROE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in iron, which will stand the Frost and last for ages. A Ram and Fountain Jets fixed on the premises for inspection. Every kind of Garden and other Pumps, Well Engines, Baths, &c. Houses, &c. Heated by Hot Water.



ASPHALTE.—BROWN OIL VARNISH, BLACK VARNISH PAINT.—Asphalte in a pure state, without grit, 5s. per cwt., in casks 2 cwt. each, for forming or improving garden walks, terraces, court yards, stables, ground-floors, roofs, or for applying to damp walls. Brown Oil Varnish for varnishing gates, outhouses, fences, &c., 8d. per gallon—it dries very quick. Black Varnish Paint for outhouses, fences, &c., 8d. per gallon.—R. RICHARDSON, Net and Tent maker, 21, Tonbridge-place, corner of Judd-street, New Road, London.—Pitch 5l. per cwt. Stockholm Tar, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved as efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade. Thos. J. CROGGON, 8, Ingram-court, Fenchurch-st., London.

TANNER'S VITREOUS FLUID and CLOTH, a Substitute for Glass for Horticultural Purposes.—The Vitreous Cloth proves its superiority over Glass, by producing the light most suitable to vegetation, superseding the necessity of any shading, preserving a healthy moisture on the plant, retaining its bloom to a more lengthened period, less expensive, and not requiring so much attention. The above (retaining heat) is preferable to Glass for Hothouses, &c., the temperature of which is maintained with less fuel. It is equally applicable as a covering for Fruit-trees, preserving them from frost, blight, and excessive heat. The Vitreous Cloth, made by machinery, is much superior to any prepared in a different manner. By the use of the Vitreous fluid, the Cloth (after lengthened service) may be renewed.

The Fluid sold in bottles 2s. 6d. and 4s. 6d. The Cloth 2s. 6d. and 3s. per yard. Manufactured by N. W. TANNER, Chemist, Exeter. Agents for Exeter and vicinity, Messrs. LUCOMBE, PINCE, & Co, Exeter Nursery. Liverpool. Mr. CUNNINGHAM, Nurseryman, Paradise-street.

N.B. The Vitreous Cloth (if fixed in the manner recommended by the Proprietor) will stand *a much greater pressure* of air than glass.

To Mr. N. W. Tanner—Sir, we have used your prepared Cloth, and have pleasure in informing you that whilst the light admitted through it is very suitable to vegetation, there has been no necessity to have recourse to any extra shading during the very clear, bright weather which we have so long experienced; this we consider an important point. Yours, &c.

(Signed) LUCOMBE, PINCE, & Co., Exeter Nursery.

June 21, 1844. *** Respectable Agents required.

METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and successful manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE'S Sole Establishment, 130B, Oxford-street, one door from Holles-street.

Caution—Beware of the words "From Metcalfe's," adopted by some houses.

EXTRACT FROM OLD MOORE'S ALMANAC for 1844.—"AUGUST.—CARE OF HEALTH.—This is generally the hottest month in the year; languor and inability for active mental and bodily exertion is experienced by all, but more especially by ladies and those of delicate constitution. Recourse should be had to that excellent medicine, Parr's Life Pills, which will quite re-invigorate the whole system, and render the heat of this month, which is otherwise so oppressive, as delightful as any month in the year."

PARR'S LIFE PILLS are sold by all respectable Medicine Venders.

See the words "PARR'S LIFE PILLS," in White Letters on a Red Ground on the Government Stamp.

EXTIRPATION of all kinds of VERMIN.—Office, 69, King William-street, city, London.—Mr. J. A. MEYER, practical chymist, patronised by Her Majesty the Queen, H.R.H. the Duchess of Kent, the Royal Agricultural Society of England, and the Corporation of the City of London, and by special appointments to the principal Courts of Europe, begs to inform the nobility, gentry, merchants, agriculturists, shipowners, and the public generally, that he continues to CLEANSE, by contract, from one to five years, every description of PROPERTY, of rats, mice, moles, weasels, moths, fleas, bugs, &c., and as a guarantee of the efficacy of his preparation, respectfully refers to the certificates of his great success at Buckingham Palace and Gardens, Windsor Castle, St. James's Palace, Frogmore Lodge, Carlton Club House, Mansion House, Newgate Prison, Tavistock Hotel, Brewers, Chester, and Gaily Quays and warehouses in Lower Thames-street, the property of Joseph Barber, Esq., and many others of public and private establishments, which may be seen at the office. The preparations, which are free of poison or deleterious drugs, may be had as above, in pots and bottles at 5s., 10s., 20s., 50s., and 100s. each, with full directions, which must be used in proportion to the extent of premises infested, to successfully eradicate the vermin, and which can be applied without injury to property. Dwelling-houses cleansed from 1l. to 5l. per annum; mansions and estates from 10l. and upwards; ships, docks, warehouses, granaries, breweries, farms, wharfs, &c., in proportion. Caution.—None are genuine unless bearing the signature and seal "Joseph Anton Meyer."

GARDEN NETS, FISHING NETS, RABBIT NETS, SHEEP NETS, &c.—New Garden Net, 1 inch mesh, 1½d. per yard; ¾ inch mesh, 2½d. per yard. Old Fishing Nets, mended up, 3d. per yard. Fine-mesh Net, to effectually exclude wasps and flies, and allow sufficient sun and air to the Fruit, 7½d. per yard. Much-approved Fishing Nets, viz.—Fine Nets, of silk and thread; Drag Nets; Casting Nets; Hoop Nets, and all kinds of Nets for Sea, River, and Pool Fishing. Rabbit Nets, on cords from 50 to 100 yards long each. Net for fencing out Rabbits, 2d. per yard. Net to inclose Fowls and Pheasants, 2d. per yard. Sheep Nets, made of strong cord, 4½d. per yard; nearly 4 feet high. Nets of all kinds made to order.—ROBERT RICHARDSON, Net and Tent Maker, No. 21, Tonbridge Place, New Road, corner of Judd-street, London.

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TERRA COTTA FIGURES, VASES, FOUNTAINS, &c. Manufactured by DOULTON and WATTS, LAMBETH POTTERY, High-street, Lambeth, London.

D. and W., from their experience as Potters, have made considerable improvements in the manufacture of Terra Cotta, the superiority of which over Artificial Stone or Cement is well known. It is subjected to a high degree of fire, which renders it imperishable, and gives it a sharpness and surface which no changes of temperature can impair.

D. and W. are enabled to offer the Terra Cotta at a considerable reduction in price; and Drawings and Designs will be forwarded Gratis, on application.—Architectural work executed

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"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup: giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 8, 1843.

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FIDDLE and PRINCE ALBERT'S PATTERN PLATE.—A. B. SAVORY and SONS, Manufacturing Silversmiths, No. 14, Cornhill, opposite the Bank of England.—The best wrought SILVER SPOONS and FORKS, fiddle-pattern, 7s. 2d. per ounce; the Prince Albert's pattern, 7s. 6d. per ounce. The articles may be had, lighter or heavier, at the same price per ounce:—

The Fiddle	oz.	s. d.	£ s. d.	Prince Albert's	oz.	s. d.	£ s. d.
12 Tbl. Spoons	30	at 7 2..	10 15 0	12 Tbl. Spoons	40	at 7 6..	15 0 0
12 Dessert do.	20	7 2..	7 3 4	12 Dessert do.	26	7 6..	9 15 0
12 Table Forks	30	7 2..	10 15 0	12 Table Forks	40	7 6..	15 0 0
12 Dessert do.	20	7 2 .	7 3 4	12 Dessert do.	26	7 6..	9 15 0
2 Gravy Spns.	10	7 2..	3 11 8	2 Gravy Spns.	12	7 6..	4 10 0
1 Soup ladle	10	7 2..	3 11 8	1 Soup-ladle	12	7 6..	4 10 0
4 Sauce do.	10	7 8..	3 16 8	4 Sauce do.	12	8 0..	4 16 0
4 Salt Spns. (gilt strong)		1 0 0		4 Salt Spns. (strong gilt)		2 2 0	
1 Fish-slice . . .		2 10 0		1 Fish-slice . . .		3 10 0	
12 Tea Spoons	10	7 8..	3 16 8	12 Tea Spoons	14	8 0..	5 12 0
1 pair Sugar-tongs . .		0 15 0		1 pair Sugar-tongs		1 5 0	

Messrs. SAVORY and SONS recommend the Prince Albert's Pattern; it is very novel, and of unexampled beauty.

BRIGHT'S CUSTARD COMPOUND. — The ORIGINAL VEGETABLE PREPARATION, for making custards without eggs. Patronised by the Royal family, Nobility, and Gentry, with the approval and testimony, amongst many others, of the COOKS to SIX CROWNED HEADS. Sold in boxes at 1s. and 4s. each. Manufactory, 5, Holland-street, North Brixton, Surrey. Wholesale of all respectable houses, and retail by upwards of 1000 chemists, confectioners, grocers, Italian Warehousemen, &c., throughout the United Kingdom. Caution—Beware of imitations, and observe on all sent out the signature of the Inventor, JOHN BRIGHT.

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ROWLAND'S MACASSAR OIL preserves and reproduces the Hair; prevents it from falling off or turning Gray; changes Gray Hair to its original colour; frees it from Scurf and Dandriff, and makes it beautifully soft and curly.

*** Ask for "ROWLAND'S MACASSAR OIL." All others are Fraudulent Counterfeits.

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BERDOE'S SUPERIOR WATERPROOF FROCKS, SHOOTING-JACKETS, GARMENTS for the SEA-SIDE, &c.—An extensive variety of the above, in NEW and greatly improved materials always ready, guaranteed to exclude any rain whatever, and confidently recommended to those who regard a respectable appearance, or wish to avoid the disappointment and vexation consequent upon purchasing articles made by slopsellers, and sold by parties not Tailors.

FIRST-RATE CLOTHING of every description, upon the lowest terms possible, consistent with TRUE economy, and ultimate satisfaction.—W. BERDOE, Tailor, Waterproofer, &c., 69, Cornhill (north side).

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Will be published, 12mo. 3s. cloth,

A DESCRIPTIVE ACCOUNT OF A NEW METHOD of PLANTING and MANAGING the ROOTS of GRAPE VINES. By CLEMENT HOARE, Author of "A Treatise on the Cultivation of the Grape Vine on Open Walls"
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ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—ANNUAL COUNTRY MEETING of 1845, to be held at SHREWSBURY, in the North Wales District, comprising the Counties of Anglesey, Carnarvon, Merioneth, Montgomery, Denbigh, Flint, Chester, Salop, and Stafford. The Prizes are open to general competition. Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for Implements must be returned, filled up, to the Secretary, on or before the 1st of May, and all other Certificates by the 1st of June; the Council having decided that in no case whatever shall any Certificate be received after those dates respectively.

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*** No variety which has been selected for trial at any previous Show shall be qualified to compete in the same section.

ESSAYS AND REPORTS ON VARIOUS SUBJECTS.

Prizes for 1845.—PRIZE ESSAYS.

1. *Farming of Nottinghamshire.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Nottingham. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Nottinghamshire since the Report of Mr. Robert Lowe in the year 1798; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

2. *Farming of Cornwall.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Cornwall. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Cornwall since the Report of Mr. G. B. Worgan, in the year 1811; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

3. *Farming of Kent.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Kent. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Kent since the Report of Mr. John Boys, in 1805; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

4. *Heath Land.*—Twenty sovereigns, or a piece of plate of that value, will be given for an account of the best method of reclaiming heath-land. Competitors will be required to describe methods which have been successfully adopted in the reclaiming of heath-land, reference being had especially to the following points:—1. The mode of breaking up, whether by paring and burning, or by simple ploughing. 2. The application of lime. 3. The course of cropping. 4. The conversion of heath-land into pasture, where either the steepness of the land, or its elevation above the sea, does not allow the culture of corn.

5. *One Horse Carts.*—Ten Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on the advantages of One-horse Carts. Competitors will be required to point out the saving in horse-labour, and other advantages which undoubtedly arise from substituting 1-horse carts for waggons.

6. *Catch-Meadows.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on Catch-Meadows. Competitors will be required to describe the best and cheapest method of forming water-meadows on the sides of natural slopes, as practised in Somersetshire and Devonshire; the mode of managing them, and of applying their produce; the increase of value thereby given to unproductive hill-sides; and to state how far this mode of improvement might be applied to the mountainous districts of Wales and the North of England.

7. *Fences.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on Fences. Competitors will be required to describe the best and neatest methods of maintaining hedges, whether for arable or for grazing ground; and to point out how far the present fences in various parts of England are injurious to the farmer, whether by their size, their excess in number, or the over-abundance of timber which they contain.

8. *Fattening Cattle.*—Ten Sovereigns, or a Piece of Plate of that value, will be given for an account of the best method of fattening cattle; as to the places in which they are kept, large or small yards or stalls; as well as the food, roots, hay, &c. on which they are fed during the time of fatting.

9. *Tile yards.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the cheapest and best method of establishing a Tile-yard. Competitors will be required to attend to the following points:—1. Mode of working the clay, according to its quality. 2. Machine for making the tiles. 3. Sheds for drying the tiles. 4. Construction of the kiln. 5. Cost of forming the establishment. 6. Cost of the tiles when ready for sale.

10. *Curing Butter.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best description of the Dutch method of salting butter; pointing out the causes of its superiority to other salted butters.

11. *Experiment in Agriculture.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for an account of the best Experiment in Agriculture.

These Essays must be sent to the Secretary, at 12, Hanover-square, London, on or before March 1st, 1845.

Rules of Competition for Prize Essays.—1. All information contained in Prize Essays shall be founded on experience or observation, and not on simple reference to books, or other sources. 2. Drawings, specimens, or models drawn or constructed to a stated scale, shall accompany writings requiring them. 3. All competitors shall inclose their names and addresses in a cover, on which only their motto, and the subject of their Essay, and the number of that subject in the Prize list of the Society, shall be written. 4. The President or Chairman of the Council for the time being, shall open the cover on which the motto designating the Essay to which the Prize has been awarded is written, and shall declare the name of the author. 5. The Chairman of the Journal Committee shall alone be empowered to open the motto paper of such Essays, not obtaining the Prize, as he may think likely to be useful for the Society's objects, with a view of consulting the writer confidentially as to the best means to place such paper at the disposal of the Journal Committee. 6. The copyright of all Essays gaining prizes, shall belong to the Society, who shall accordingly have the right to publish the whole or any part of such Essays; and the other Essays will be returned on the application of the writer; but the Society do not make themselves responsible for the Essays. 7. The Society are not bound to award a prize unless they consider one of the Essays deserving of it. 8. In all reports of experiments the expenses shall be accurately detailed. 9. The imperial weights and measures only are those by which calculations are to be made. 10. No prize shall be given for any Essay which has been already in print. 11. Prizes may be taken in money or plate, at the option of the successful candidate. 12. All Essays must be addressed to the Secretary, at the house of the Society.

(By Order of the Council) JAMES HUDSON, Secretary.

REFINED PLEASURE to LOVERS of BOTANY.—The Nobility and Gentry are respectfully informed that the splendid WARDIAN PLANT CASES, which excited so much attention and obtained a Medal at the late Chiswick Fete, are now on view at No. 39, Argyll-street, Regent-street.

The suggestions of PROFESSOR LINDLEY have been earnestly carried out by the manufacturer, Mr. Ports, so as to elicit the entire approval of that eminent authority. The varied charms of Nature are aided by the gorgeous enrichments of Art; and the lovelist, however exalted her station, may now enjoy, at all seasons, the beauties of Flora, in a cabinet not unworthy a place in the most aristocratic mansions.—Apply to Mr. NOTTINGHAM, as above.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 172, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public in general to inspection of their various drawings and models, at 172, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient Rench apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

STEPHENSON AND CO., 61, Grocechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their most approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat is well as bottom heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not been in operation, prospectuses will be forwarded as well as references of the highest authority, or they may be seen at most of the Nobility's Seats and principal Nurseries throughout the kingdom.

S. & C. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

TO NOBLEMEN, GENTLEMEN, GARDENERS, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from T. and C. LOCKHART, of the late Firm of T. and C. Lockhart and Burnett, in consequence of a dissolution of Partnership, to submit to public competition, by auction, on the premises at Parson's green lane, Fulham, and at 136, Cheapside, London, (both of which the 1st of September next, the whole of the Life particularly adapted for Nurserymen and Florists, of which further notice will be given.—This valuable Stock consists of a unique collection of BULBS and FLOWER-ROOTS of every description, which has been carefully selected both at home and abroad, during the last 25 years, together with a quantity of the newest and most choice Flower Seeds, well worthy the attention of the trade; a newly-erected Hothouse with boiler and hot-water pipes, a capital brick-built pit, heavy frames, hamlights, six nests of seed-drawers, two desks, two dahl stages, hardy herbaceous and other plants, standard roses, a quantity of box edging, bushel and other measures, a Chubb's patent iron safe, scales, weights, bags, paper, garden-utensils, cutlery, sieves, pots, sundries, &c. &c. &c.

May be viewed one week prior to the Sale, and Catalogues had.

TO FLORICULTURISTS.

SUPERB COLLECTION OF MESSRS. ATT EUPHORBEA, &c. 22, Park Place, Liverpool Road, Islington.

MR. E. E. STONE takes this opportunity to express his regret for the error that occurred in this Journal of last week in naming the day of Sale, it having caused so much trouble to Purchasers, and begs to state that he will SELL BY AUCTION, on the Premises as above, on WEDNESDAY, Aug. 27, at 12 o'clock, the splendid Collection of STOVE AND GREENHOUSE PLANTS, by order of a Gentleman removing; also a capital Tulip Stage, the surplus Household Furniture, a fine-toned 6½-octave Piccolo by Fenchey, and Effects. May be viewed the day prior and morning of sale, and Catalogues had on the premises and the Auctioneer's Office, 93, St. John-street, near Smithfield.

TO BE DISPOSED OF.—An Extensive and Old-Established COUNTRY NURSERY, where a considerable Business has been carried on for many years. Any respectable person with a knowledge of the business would find this concern worthy of immediate attention. Apply to Mr. GEORGE GRAY, No. 23, New Corn Exchange, Mark-lane, London.

N.B.—None but principals will be treated with.

SOUTHAMPTON.—SMALL CONSERVATORY FOR SALE.

TO BE SOLD, A MOST COMPLETE AND MODERN GREENHOUSE, with span Roof and bow Front, 18 feet by 12 feet, with two Stages, Furnaces, &c., and with or without a choice Collection of Plants. The whole the property of a Lady who is remaining.

For further particulars, apply to WITHERS and ROBERTS, Auctioneers, 19, Above Bar, Southampton.

TO BE LET, on Lease of 10, 15, or 20 years, from Michaelmas next, the RECTORY FARM, LITTLE GRANSDEN, containing 300 acres, of which about 250 acres are old and 150 new land; all under-drained.—Apply to the Rev. F. Norris, Gransden Rectory, near Caxton.

LENHAM DOG AND BEAR INN AND FARM.

TO BE LET, and entered upon immediately, That Old Established free licensed Road Side Inn and Posting-house, known as the Dog and Bear, at Lenham. Attached to the premises are convenient stabling, outbuildings, and east-house, and adjoining, are 29 A. 1 R. 15 P., or thereabouts, of excellent arable, meadow, and hop land.—To view, apply on the premises, and for particulars and proposals to let, apply to W. LUCKHURST, Esq., 22, Southampton-st., Bloomsbury-sq., London.

TO THE LOVERS OF PANSIES.

S. WIDNALL, Grantchester Nursery, Cambridge, begs to inform his friends and the public that he has with great care selected his Superior PANSY-SEED, warranted to be all new of the present year, and which he can with confidence recommend. This being a favourable season for sowing, it will be advantageous to those who wish to ornament their gardens with this beautiful flower at a very cheap rate, as packets containing sufficient seed, with careful cultivation, to grow 100 plants and upwards may be had postage free at 2s. 6d. per packet, or three packets for 6s., upon receiving a post-office order.

The Gardeners' Chronicle.

SATURDAY, AUGUST 17, 1844.

MEETING FOR THE FOLLOWING WEEK.

SATURDAY, Aug. 24 Royal Botanic . . . . 4 P.M.

IT is long since we adverted to the DISINFECTION of MANURE, that most important operation, which alone will ever induce people in this country to employ habitually the fertilising materials at their command, or prevent their throwing away money in the pursuit of substitutes uncertain, dear, and comparatively inefficient. It is indispensable to find very cheap methods of destroying the offensiveness of decaying matter, or no stop will ever be put to the enormous indirect waste of national wealth which is now going on.

Among the substances which have from time to time been proposed for effecting this end, some have been dear, like chloride of lime, charcoal, &c.; others dangerous to use, and insufficient, like sulphuric acid; some slow in their action, like gypsum; others too bulky, like peat earth; and others troublesome to employ, as is the case with muriate of lime. Each of these reasons has proved a bar to the employment of such disinfecting agents. But among those which have been occasionally mentioned is one that seems more free than any others from practical objections, and that is sulphate of iron, or what is called in the shops copperas, or green vitriol.

In the year 1842, a Mr. Schattenmann published an account of his manner of employing this substance; and we mentioned his method at p. 191 of our volume for that year. As he is a practical man, and his employment of the salt was on a large scale as a farmer, his observations were entitled to the greater attention. Nevertheless, we do not find that his advice has been much followed; and therefore we beg to invite attention to the following additional evidence produced by Mr. Schattenmann in favour of the use of sulphate of iron:—

"The offensive exhalations produced by putrefying matters arise," says this excellent observer, "principally from the flying off of carbonate of ammonia and sulphuretted hydrogen gas: but if a solution of sulphate of iron is thrown among such matters, a double decomposition immediately takes place; the sulphuric acid of the sulphate of iron combines with the ammonia, and converts it into a fixed salt; the iron combines with the sulphur, and forms a sulphuret of iron. The unpleasant smell of ammoniacal vapour and of sulphuretted hydrogen disappears immediately, and the putrefying matter that is acted on retains nothing more than a feeble odour, which is not in the slightest degree disagreeable."

Now any one may easily verify this fact by taking smelling salts, dissolving them in water, and throwing in some green vitriol; when the fluid will become black in consequence of the separation of the black oxide of iron from the sulphuric acid, and the pungent smell will go off in consequence of the combination of the sulphuric acid and ammonia. In like manner if some green vitriol be dissolved in water, and a stream of sulphuretted hydrogen gas be sent through it, the fluid will become black with great rapidity, in consequence of the formation of sulphuret of iron by the decomposition of the gas; and the disgusting smell will cease to be perceived.

No doubt, then, of the accuracy of Mr. Schattenmann's statement can be entertained, and thus a very cheap and rapid means of destroying foul smells is at once obtained; not indeed so quickly as by the use of chloride of lime, but at infinitely less expense, and quite fast enough for any useful purpose. By this means the most offensive matters may be purified, and putrid substances of the worst description removed without even so much annoyance as arises from common stable manure.

Common sulphate of iron is worth, at the outside, 4*l.* 4*s.* per ton; is not liable to injury by keeping, occupies very little space, and dissolves very readily in water, in which state it is necessary to apply it.

No fear need be entertained of the sulphate of iron, because of its iron, injuring the quality of the manure; experience shows what theory indicates, that it produces no such effect, but that it secures all the advantage anticipated from it, without a single drawback.

We are tempted to introduce this subject into the Horticultural part of our Paper, because in fact, much as it interests everybody, it concerns more especially gardeners, who are either obliged to buy their manure, or, if it is furnished from a farm, are involved in incessant disputes with the farming bailiff on account of it. We advise them to think well upon this article, to disinfect all those offensive matters which are now wasted, and to show the farming bailiff that with hot-water on one side, and sulphate of iron on the other, they can snap their fingers at the farm and all the assistance that is so grudgingly bestowed by it.

"I THINK it a very fit thing," says worthy Master Gerarde, "to adde in this place a rare observation of the TRANSMUTATION of one species into another in plants; which, though it have beene observed in ancient times, as by Theophrastus, 'De Caus. Plant.,' lib. 3. c. 16, whereas among others hee mentioned the change of Spelt into Oates, and by Virgil in these wordes—

'Grandia sæpe quibus mandavimus Hordea sulcis,
Infelix Lolium, et steriles dominantur Avenæ;'

"That is—

"In furrows where good Barley we did sowe
Nothing but Darnell and poor Oates doe growe;

"Yet none that I have read have observed that two severall graines, perfect in each respect, did grow at any time in one eare; the which I saw this yeare (1632) in an eare of White Wheat, which was found by my very good friend Mr. John Goodyer, a man second to none in his industrie and searching of plants, nor in his judgement or knowledge of them. This eare of Wheat was as large and faire as most are, and about the middle thereof grew three or four perfect Oates in all respects; which being hard to be found, I hold very worthy of setting downe, for some reasons not to be insisted on in this place."

What the good Gerarde's "reasons not to be insisted on" may have been, we are unable to discover. Perhaps he was afraid of being laughed at as a dreamer; or, may be, he dreaded an indictment for heresy. Then, it is to be imagined, as now, the doctrine of the transmutation of grain was laughed to scorn; and we have numbered ourselves among the scorners.

But are the scorners right? Are we so *very* sure that one kind of grain has not been formed accidentally from another—that no room is left for argument or evidence? Some years ago we should have said yes; we now say no. We now say that we are not so *very* sure about the matter, although we do still hold hard to the orthodox faith in the matter of species. What has unsettled our belief, and changed us from sceptics into doubters, is the extraordinary, but certain fact, that in Orchidaceous plants forms just as different as Wheat, Barley, Rye, and Oats, have been proved, by the most rigorous evidence, to be accidental variations of one common form, brought about no one knows how, but before our eyes, and rendered permanent by equally mysterious agency. Then, says Reason, if these inconceivable changes have been proved to occur among Orchidaceous plants, why should they not also occur among Corn plants? for it is not likely that such vagaries will be confined to one little group in the Vegetable Kingdom; it is far more rational to believe them to be a part of the general system of the creation.

And then arises the puzzling question of—Where do the Corn plants come from—what country gave them birth—where are they still to be met with in their savage haunts? History says nowhere. The origin of Wheat is wholly unknown; so is that of Oats. Rye is said to occur wild in some of the Caucasian provinces, but that is doubtful; and the Barley which was found by Col. Chesney in Mesopotamia may have been the remains of cultivation. How then can we be *sure* that Wheat, Rye, Oats, and Barley, are not all accidental offsets from some unsuspected species?

A gentleman who lately travelled in Germany was assured, that if Oats are sown early, not allowed to produce ears for the first year, but compelled by artificial means to defer their earing till the second, they will change to other sorts of Corn. A seemingly more monstrous proposition never emanated from the father of paradox. Nevertheless, there could be no harm in putting the statement to the proof. The Marquess of Bristol has done so. At his lordship's request the Rev. Lord Arthur Hervey, in the year 1843, sowed a handful of Oats, treated them in the manner recommended, by continually stopping the flowering stems, and the produce in 1844 has been for the most part ears of a very slender Barley, having much the appearance of Rye, with a little Wheat, and some Oats; samples of which are, by favour of Lord Bristol, now before us. What is to be inferred from this?

But, it will be said, Has the question been *fairly* tried? The mode was this:—A handful of Oats was taken out of a manger, sown in a garden, diligently cared for, and finally reaped. As Oats do not usually consist of a mixture of Barley, Wheat, and Oats, it could not be suspected that any error would so arise, more especially since the Barley that has been raised is not exactly Barley, for it is longer and thinner—nor Rye, for it wants the structure of that sort of Corn. Nevertheless, there is the possibility of error; and therefore the experiment will be repeated with every precaution, and we hope to be allowed to report the result.

In the meanwhile it would be as well if a good many persons would try the experiment in different parts of the country. The question is, Whether by any means Wheat, Oats, Barley, and Rye, can be made to change into each other? The Germans say that it will happen if Oats are sown early, and prevented flowering till the second year. Gerard says that he saw it happen to some extent, though he did not know how. Is this true or not? The cause will come on for hearing at Michaelmas, 1846. Let the country be the jury; and then, "Gentlemen, what say you?" will be our inquiry.

NOTES ON THE CONIFERÆ OF JAPAN.

Abies Jezoensis, Sieb. Tab. 110, p. 19.—This belongs to the Spruce division, and resembles *A. Menziesii* in its glaucous leaves, and most probably is identical with *A. orientalis*, a kind considered by some old writers as only a variety of *A. alba* (the White Spruce of America), but which I imagine, although very much resembling that species in foliage, but not in fruit, is entitled to rank as a species, as it always comes true from seed. It also attains a much greater height, but is never so robust in the trunk as either that kind or the common Spruce. I may here state that the true Abies orientalis of Tournefort is a Spruce and not a Silver Fir, as is stated by a writer (from Nikita) in the *Gardener's Chronicle*, p. 206, 1842, and where the same writer expresses his surprise how I could have stated in the "Gardener's Magazine" for 1840, that it very much resembled the White American Spruce, an opinion entertained by Loiseleur Deslongchamps, who examined the original specimens belonging to Tournefort, and who accordingly published it as a variety of Abies alba; an opinion also entertained by the late Mr. Lambert. I am quite at a loss to know how the writer from Nikita could have made such a statement—he certainly could never have seen either living plants or dried specimens of the true kind, or even consulted any books on the subject; possibly the mistake arose from the writer entertaining the same views as some continental authors, who have attempted to reverse the divisions or subgenera of Abies and Picea.

Abies polita, Sieb. Tab. 111, p. 20.—This is the Abies Khutrow of Dr. Royle, the Abies morinda of Dr. Wallich, and the Picea obovata of Dr. Ledebour. It belongs to the true Abies or Silver section, and very much resembles the common Norway Spruce, but differs in the leaves being larger, and the cones shorter and rounder. It attains a great height, and is now very common in collections, under some one of the above names.

Pinus dasyflora, Sieb. Tab. 117, p. 22.—This belongs to the true Pine section, and has only two leaves in a sheath. In foliage it seems not to differ from that of the Stone Pine (P. pinea), from which most probably it is not specifically distinct; for although in the plate a figure is given of a full-sized cone, which is very small and conical, and very much resembles that of Pinus Massoniana, it certainly must be a mistake, as on the opposite side of the plate the figure of a young cone is given, which represents the true, round shape of that of the Stone Pine. In Japan this kind is stated to attain a height of 40 feet with a clear stem. In Italy the Stone Pine attains a height of from 40 to 50 feet, with the stem clear of branches 20 or 30 feet; and the top forming a kind of parasol. The Stone Pine (P. pinea) is frequently raised from seeds received either from Japan or China, but differs in no way from that of Europe. It has also been raised from seed collected in Arctic America.

Pinus Massoniana, Sieb. Tab. 113 and 114, p. 24.—This kind is not to be distinguished from Pinus pinaster, except in the cones, which are not more than one-fourth the size of those of the cluster Pine. The leaves are in pairs, very robust, and the buds are non-resinous and imbricated. It has been frequently raised from Chinese seed, but not the least distinction can be seen between the young plants and those of the common Pinus pinaster either in habit or foliage. The late Mr. Lambert, in his "Monograph on Pines," considered it as identical with the P. pinaster; and Mr. Loudon, in his "Arboretum Britannicum," adopted the same views upon the authority of Professor Don, who evidently had never seen cones of the true Pinus Massoniana. The Chinese Pine of Mr. Lambert (Pinus sinensis) is a very different kind from P. Massoniana, and has been erroneously published in the "Pinetum Woburnensis," as P. nepalensis; the P. nepalensis of Dr. Royle being the same as P. Massoniana of Siebold.

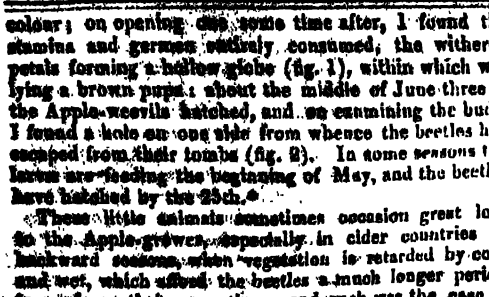
Pinus parviflora, Sieb. Tab. 116, p. 27.—This is the Siberian variety of Pinus cembra, seldom makes shoots more than a few inches long in the course of the year, and probably will never grow more than 10 or 12 feet high in England, even under the most favourable circumstances, while the Helvetic, or Swiss variety, which is the most common in collections, attains a height of from 30 to 40 feet. The leaves are in fives, and the cones are smaller and longer than those of the Swiss kind.—*George Gordon.*

ENTOMOLOGY.

THE APPLE-BLOSSOM WEEVIL, called *Anthonomus pomorum*.—Last April I received some Apple-buds; the petals had formed globes, but had assumed a rusty

colour; on opening one some time after, I found the stamina and germen entirely consumed, the withered petals forming a hollow globe (fig. 1), within which was lying a brown pupa: about the middle of June three of the Apple-weevils hatched, and on examining the buds, I found a hole on one side from whence the beetles had escaped from their tombs (fig. 2). In some seasons the larvæ are feeding the beginning of May, and the beetles have hatched by the 25th.*

These little animals sometimes occasion great loss to the Apple-growers, especially in cider countries in backward seasons, when vegetation is retarded by cold and wet, which allows the beetles a much longer period to perform their operations; and such was the case in 1815, 1831, 1832, and 1838. Like many other insects in their perfect state, they live through the winter, secreting themselves in the chinks and under the loose bark of trees, beneath stones, clods of earth, &c. In March, when the flower-buds are swelling, the beetles emerge from their retreats, when the males are seen in sunny mornings flying amongst the trees in search of the females, who generally are crawling over the branches, although they are also furnished with wings. They seem to be very careful in selecting proper objects for the reception of their eggs, and on finding a suitable bud, the female bores a hole with her minute jaws, which are placed at the tip of the slender proboscis, until she has reached the parts of fructification, and turning round, she lays an egg in the hole by inserting her ovipositor, and then closes it again with her mouth, and seems as if she were fixing in the egg; this is rather a tedious operation, and is said to occupy three-quarters of an hour; she then hastens to another swelling flower-bud for the same purpose, and is thus employed two or three weeks, viz. until the flowers begin to expand, when her labours cease; for, as the larvæ can neither bear wet nor sunshine, they require the protection afforded by the closed petals. The eggs are hatching from the beginning to the end of April, principally influenced by the variations of the season; if the weather be warm, they are matured in five or six days. During this period the bud grows, and the petals appear of their usual rosy colour, but instead of expanding, they wither, and eventually turn to a rusty brown; and on opening them, in place of the germen and stamina, which have been consumed by a single maggot, one finds rolling about in this globular chamber a grub, of a deep ferruginous colour, which is very sensitive and restless when touched (fig. 4). The maggots are curved, fleshy, and whitish, having numerous segments and wrinkles, with a few short hairs, but no legs; the head is horny and black, and furnished with small jaws (fig. 3). The exact time they remain in the pupa state has not been ascertained, but in about a month from the period when the eggs are deposited the Weevils hatch, and eating a hole through the dry petals, they disperse over the tree, and feed upon the leaves during the remainder of the summer. Like most of the Curculionidæ when approached, the Apple-weevils contract their legs and fall down, so that it is difficult to detect and capture them in any numbers, except whilst they are pairing, or when the females are engaged in depositing their eggs.



The Apple-blossom Weevil was named by Linnæus Curculio pomorum, and it has been distinguished by later naturalists as the Anthonomus pomorum (fig. 5). It is long and oval-shaped, of a reddish-brown colour, punctured, and clothed with short, depressed, whitish and ochreous hairs; the rostrum is long, subcylindrical, curved, and punctured; towards the apex are placed the antennæ, which are slender and geniculated; the basal joint is very long, slender, and clavate—the second is oblong, the six following are more or less globose, and the remaining four form an oval pedicel club; the head is subglobose, with two very prominent little black eyes; the thorax is semi-ovate, truncated before with three indistinct stripes of a pale colour; the scutel forms a white dot; the elytra are elongate-ovate, with nine punctured striæ on each; beyond the middle is a large obscure lunar patch, bearing a pale slender stripe across the centre, forming an angle at the suture, and towards the apex are two oblique spots; wings very ample; legs moderately long and ferruginous; anterior tibiæ curved, with a strong tooth beneath—the others are slender, but smaller; the anterior tibiæ are finished internally, and they are all terminated by a claw; the tarsi are 5-jointed, the third joint being bilobed, the fourth furnished with minute claws. The smaller figures denote the natural or usual size of the animals.

The whole of the beetles will also lay their eggs in the blossom-buds of Pear-trees, and it is on calm days the females are most interested in depositing them; for in windy or frosty weather they retire to sheltered situations. In genial weather, from Messrs. Paul being on the blossoms open in a week or ten days, from 8 till 5. These weevils do little mischief; but in cold, damp seasons, when the buds are three weeks or more in expanding, scarcely an Apple-blossom sometimes escapes. The best mode of destroying them is to gather the punctured withering flower-buds and burn them, by which means the larvæ and pupæ will be cut off, and the beetles may be collected by beating the branches over a net; but unless this be done as soon as they make their appearance, it will not be of much service, as the eggs will have been deposited. From various statements it seems that the females will not readily fly, and as they crawl up the trees, their incursions may be stopped, and the crops saved, by winding tarred bandages round the upper portion of the trunks.—*Rusticola.*

* See Curtis's Brit. Ent., fol. and pl. 562, where directions for the genus and species will be found.

ON THE HYSSOP OF SCRIPTURE.

At the meeting of the Royal Asiatic Society, on the 15th of June, a paper was read by Professor Royle, on the plant which he thought was the Hyssop of Scripture. Having so recently read a paper on a kindred subject, the author referred to it for the principles which should guide, and for what should be considered as proofs in such investigations; and stated that in this, as in the case of the Mustard-tree, he had been led to the discovery from the similarity of the Hebrew name to one occurring in the lists of drugs in the writings of the Arabic writers on Materia Medica. Dr. Royle then proceeded first to enumerate the passages of Scripture in which Hyssop is mentioned: first, in Exodus, ch. xii. v. 22, where the Israelites are directed to take a bunch of Hyssop, dip it in blood, and sprinkle the lintels and posts of their doors; second, in Leviticus, ch. xiv. v. 4, 6, and 52; and Numbers, ch. xix. v. 5, where Hyssop is directed to be used in the ceremonies of cleansing the leper, and for sprinkling the water of separation. To this ceremony reference is made in Hebrews, ch. ix. v. 19; thirdly, Psalm xli. v. 2, "Purge me with Hyssop, and I shall be clean;" fourthly, 1 Kings, ch. iv. v. 23, "And he (Solomon) spoke of trees from the Cedar that is in Lebanon, even unto the Hyssop that springeth out of the wall;" fifthly, The last mention is in the crucifixion of our Saviour, John, ch. xix. v. 29, "And they filled a sponge with vinegar, and put it upon Hyssop, and put it to his mouth." Matthew and Mark in mentioning the same circumstance, state that the Hyssop was affixed to a reed, or small stick. From these passages the author inferred that any plant answering to what was required, should be found in Lower Egypt, in the Desert of Sinai, in and near Jerusalem, grow naturally on rocks or walls, and be large enough to yield a stick, and be supposed to have cleansing properties, and have a name in the Arabic or vernacular languages similar to the Hebrew name. Numerous plants have been brought forward as the Hyssop of Scripture, but none of them possess all the above requisites. Some authors have adduced Mosses and Ferns, others the bitter Artemisias; but the greater number have considered some sweet herb of the family of Labiate plants, to be the Hyssop of Scripture. The Artemisias are probably the only plants which are found in all the above localities, but they do not grow upon walls; and of the Labiate plants, the Rosmary is the only one large enough to yield a stick, and we do not know any species which grows upon walls, and is found in all the required localities. In attempting, however, to identify the Hyssop of Scripture, it is necessary, the author observed, to know the names by which it is designated in Hebrew writings; in these it is written both *Esob*, and *Esobh*, and *Esof*; and in the Chaldee version, *Esofa*. Dr. Royle then stated that his attention had been drawn to the subject from observing in Rhases that there were two kinds of Hyssop, one of them growing on the mountain of the Temple, that is, Jerusalem; and this, in connection with Burckhardt describing a plant called *Asuef*, which he found in several wadies about Mount Sinai, creeping up the mountain side like a parasitic plant, its branches covered with small thorns. From the name and description, Dr. Royle inferred that this must be the Caper plant; and on investigation found that *Asuf* is one of the well-known names of this plant, as may be seen in the "Camus," also in Richardson's "Arabic Dictionary," and in the "Ulfaz-Udwieh," &c. The similarity in name being sufficiently great, the author proceeded to show that the plant corresponded in a number of the necessary requisites. Thus the Caper plant is well known to be indigenous in Lower Egypt, Bové found it near Mount Sinai, also on the ruins in the neighbourhood of Jerusalem, as has been done by others. That the habit of the Caper plant is to grow on rocks and walls, is too well-known to require to be proved. Hence we learn that: the *Asuf* has the habit, and is found in all the situations where the *Esof* must have been indigenous for the Israelites to obtain it. That it possessed, or was supposed to possess, cleansing or detergent properties, may be seen in the account of its properties from the time of Hippocrates to the present time. Pliny says it is useful in a skin disease nearly akin to leprosy: in the cleansing ceremonies for which *Esof* was employed by the Israelites. It has long formed one of the "Cathartica radices quatuor aperientes minores," or the five lesser purgent roots. It holds a place in some of the Continental Pharmacopœias, and is universally esteemed in the East. It remains only to see whether the Caper plant would yield a stick long enough for a man with his hands tied to reach up to the sponge to raise the sponge filled with vinegar to the lips of our Saviour. The cross, to be sure, is said to have been low, but not very low, for it is said that the feet of our Saviour were not raised, and therefore, an ordinary-sized Caper would be long enough for the purpose. Such a plant, a shrub like the Caper plant, growing in a congenial climate, would be able to yield, as Pliny describes the Capparis as a shrub of a hard and more woody substance. Hence, we have seen that the Caper plant has an Arabic name *Asuf*, similar to the Hebrew *Esof*,—is found in Lower Egypt, in the deserts of Sinai, and near Jerusalem—grows upon rocks and walls—was always supposed to be possessed of cleansing properties, and is large enough to yield a stick. Dr. Royle, therefore, concluded by stating, that as he could not conceive it accidental that all these circumstances are united in this plant, as they must have been in the original *Esof*, he must consider it as proved that the Caper plant is the Hyssop of Scripture.

Home Correspondence.

Watering bedded-out Plants.—I am rather astonished to find such serious complaints about the season for flower-garden purposes. I imagine that it has been much the same in all parts of the kingdom, and the only serious ground of accusation appears to be the drought. As far as my experience goes, however, I much prefer a dry season, if warm, than one in which heavy rains predominate. As, however, in a dry season watering is indispensable, and as in this, like most other processes, there are various modes as well as degrees, it becomes a matter of some importance to inquire which is the best. The importance of bottom-heat is now pretty well understood: it is also admitted that moisture is a heat-carrier. In the face of such facts, then, I cannot conceive how it is that evening watering should be so much persisted in out of doors. A great deal of the weather we experience through the months of May and June in each year, consists of sunny days with cold nights. Now, one of the most important measures to adopt in this case would be to arrest radiation by some covering; but as this is expensive, it is not to be generally recommended. However, if we cannot shut in the heat, we ought not to take active means to disperse it. There are, it would seem, two distinct objects sought to be obtained by watering in general:—The one called a thorough watering is, of course, intended to facilitate the decomposition of organic, and enriching matters in the soil, and to fill the tissue of the plant with fluids; and the other such as we apply to cuttings, &c., and designed merely to prevent excessive and debilitating perspiration from the leaf. Now, I contend (and from long experience of the matter) that this latter mode of watering is the true and most eligible one for flower-gardens, in which the great majority of mass plants are natives of intertropical climes than we can boast in Britain. As a question of bottom-heat, too, it will be admitted that it is only by slowly progressive accumulations that the temperature of the earth advances from the freezing point to 70° or 80° in summer. This accumulation, then, in the case of acclimatising, should not be too rudely dealt with; for I make little doubt that a heavy watering after a bright sunny day, will at any time rob the earth of 5° in the course of a few hours, more especially if the day has been calm; on such days the bottom-heat accumulates with great rapidity. Early morning watering, then, will be found the most eligible by far for flower-garden purposes in general, except perhaps in July and August. Moreover, the watering of newly-planted masses should not be intrusted to men who have only one idea, *viz.*, that of drenching. If the waterer will give the beds as much as will meet the demands of the plant through that day it is enough. Much depends on the way in which plants are transferred from pots into beds; plants taken from the cutting-pit only a few days previous must be expected to undergo a severe stagnation, if transferred to the beds before undergoing a gradual hardening process. This may often be perceived in such plants as the Heliotrope or the scarlet Pelargonium; the leaf of the Heliotrope frequently assumes a dark-purple hue from this sudden change. Cuttings should not be struck in a temperature unnecessarily high for stopping out. Nothing is gained in the end by such hurry. All single plants on elevated beds should, when planted, have a small basin hollowed in the soil round the stem; as the consequence is, the ground becomes battered by the application of so much water, on account of the convexity of surface, and forming ready channels to the side of the beds, escapes without conferring any benefit.—*Robert Errington.*

Flower Garden.—I can bear testimony to the gay appearance of the Flower-garden at Tandridge Court, and I believe what Mr. Cleak states to be true, viz., that he has dispensed with the *watering-pot*; but he should have mentioned that the Flower-garden at Tandridge Court was formerly a morass abounding with springs, but was filled up about eight years since with good sandy loam; at that time a precaution was taken to drain it, and consequently it became so wet, and damp that the turf had to be removed, and gravel walks with Box-edging substituted in lieu of the turf. It also, at the same time, underwent a thorough draining. Now there is no need for the watering-pot where sufficient moisture exists, as it well known to be the case at Tandridge Court. Since visiting Tandridge I have seen the Flower-garden at Barron Green, the seat of C. Masters, Esq., and I was agreeably surprised to find it quite a mass of beauty; on inquiring of Thompson, the gardener, told me that every bed had been copiously watered every evening, and that he found it quite requisite, for when water was withheld the plants lost their vigour.—*W. H. M., Godstone, Surrey.*—Another correspondent adds—"A writer in the Calendar lately has justly remarked that "this has been a trying season for gardeners;" for instead of the air parting with its moisture to vegetation, it has been making a continual drain upon the leaves; so much so, as to prevent newly turned out plants from producing either roots or branches. This, I dare say, most gardeners are aware arises from an insufficiency of moisture in the air compared with its power of carrying it. This

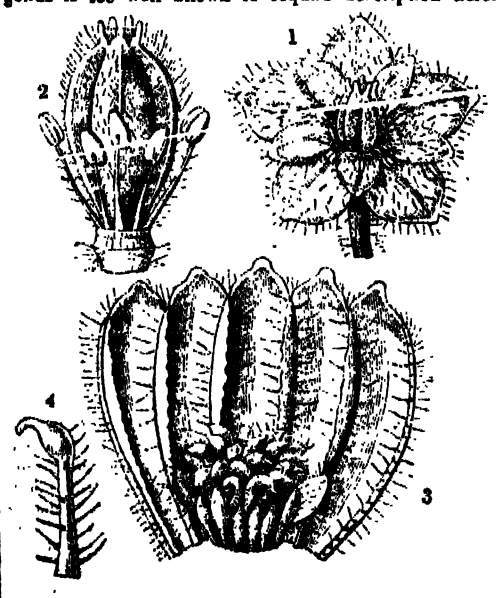
is owing to the current of air coming from the north-east, or out of a colder latitude, and passing over a warmer surface as it approached us, which caused it to ascend, becoming expanded. During the time that the north-east wind prevailed, it was no uncommon thing to see, just after sunrise, clouds portending rain, dissipated in a very short time. When the wind shifted to the south-west, we imagined vegetation would be all right; from the circumstance of the current of air coming from a lower latitude, descending and condensing as it reached us; but such was not the case, as the great heat the earth had attained, caused a powerful surface action sufficient to prevent the deposition of moisture; and it was not until contrary currents of air cooled down the atmosphere, that rain fell, and vegetation made any progress. How far we shall profit by the experience of the past season I cannot say; but I consider that "W. P. A." is entitled to our thanks for his judicious remarks. "E. C." speaks of a flower-garden being in beauty about the first week in August; but it is a very different thing to have it in perfection about the latter end of June and beginning of July. This, I apprehend, is what "W. P. A." alludes to; it is what I have been accustomed to see in other years. Had "E.C." mentioned a few of the plants he saw, and also said something about their arrangement, it would have considerably enhanced the value of his statements.—*C.*

Pine-Apples.—In a late Number, "M. S.," replying to an article of mine on the Fruiting of the Pine-Apple, states that I have said, "Queen Pines showing fruit in August would ripen fruit by the end of October." On referring to my MS., I find it there written "the end of November." I noticed the mistake in the article when it appeared, and I beg to assure "M. S.," if it is was written October in my communication, it was an error of mine, but at the time I imagined that it was a misprint. I may mention that, with houses properly constructed, it is quite practicable to ripen the Queen-Pine between the time of showing fruit in August and the end of November.—*James Roberts.*

Thornfield Pines.—A trip to Thornfield has afforded me the pleasure of spending an hour with Mr. Hamilton, and I can add my testimony to the great excellence of the peculiar plan adopted by him in the fruiting of the Pine, as shown by the beauty and size of his fruit. In my opinion, Mr. H. is anxious to have for his principles of culture, "a fair field and no favour;" and certainly if the practice, in the hands of others, proves equally successful, he may with full assurance look forward to the period of the great object of his wishes being attained. Such instances of persevering industry, and singleness of purpose, merit the favourable consideration of all.—*A. B. C.*

Planting Pines in Tan.—The remarks of "Judex" have induced me to add further testimony with regard to the bad effects resulting from planting out Pines in tan. I am exactly in the same predicament as "Judex." After consulting Mr. Hamilton's Treatise on the Pine, I planted out nearly 100 fine succession plants in new bark, similar to what Mr. H. recommends; to my dismay, however, the plants all showed fruit in a few weeks afterwards, and on examination I found that instead of making roots in the tan, they had nearly lost all they had. The tan was slightly dried before being put into the pit, and it had a nice heat in it when the plants were put out, as well as all the time they remained in it; in fact, I never paid so much attention to anything as I did to this pit of Pines: I watched them morning, noon, and night, and I am sure that the fault does not result from any mismanagement, but is wholly attributable to the tan.—*Hannibal.*—Another correspondent writes as follows:—"I visited Thornfield lately, and I am not surprised that Mr. Hayward should have considered the Pines that are planted out to be a year older than those in pots, for their appearance fully justifies that opinion. With regard to the statement of "Judex" that tan "is considered to possess no fattening power," I imagine the following instance will justify a different opinion. I had a seedling Fig in a 60-sized pot, which I plunged in a bark-bed, and to my surprise, when I came to lift it for re-potting, I found that it had pushed its roots through the bottom of the pot, so far into the bark, that after I had shaken the loose bark off there remained a mass of roots firmly matted together as large as a No. 12-sized pot. If any doubt this I would advise them to visit Thornfield, where they will find Mr. Hamilton willing to give every explanation of his mode of culture, which I have no doubt will in time entirely overturn the old system of Pine growing.—*G. Blackburn, Dewsbury.*—A third writer remarks:—"I have long been a practical gardener and a Pine-grower, but I have never seen Pines equal to those at Thornfield; they are grown on suckers attached to the old plant, and I have myself seen two fruit cut from the same sucker in one year; the second fruit ripened in the middle after the first was cut. A plant of Jamaica, which bore a fruit in December last, is now ripening another fruit, which, in all probability, will be ready for cutting at Christmas. I am quite convinced that if properly carried out, in a short time Mr. Hamilton's system will be generally practised; and why should it not? Where the necessity of fruit of superior quality can be produced in the same space. I nowhere read in Mr. Hamilton's Treatise that leaves and tan are recommended; Mr. Hamilton's system does not at all depend on whether or not the plants into the tan come are planted in compost, and some are in pots, but the greater part of them are in pots; those that are in tan, however, have made twice the progress of those in pots; but the fruit that I above allude to are produced by plants growing in soil.—*J. C. Turner, Stockport.*—A fourth communication says—"Judex" (p. 589), who states that he has been acting under the advice given in Mr. Hamilton's Treatise on the Pine-Apple, turned out into tan, or rather into tan and decomposed leaves, mixed and laid up in a heap which had been at work six weeks, 24 fruiting plants. He writes that the tan was just to give life to the mass, and adds that such a compost is just what Mr. Hamilton would have selected himself. Now, I would inquire in what page of my treatise he discovered such a compost recommended? Had he communicated to me his intention of differing so widely from what I have recommended in my Treatise (see pp. 58, 73, 66, and 193), I could have informed him what the result would have been, namely, that three parts decomposed leaves to one of tan would act like leaven, souring the whole lump as soon as fermentation commenced; and it appears that it had been put up in a heap for that purpose. It is wrong to charge me with having recommended such a compost. If "Judex" has ever read my Treatise, he must have remarked my caution against the use of impure tan, as well as of other composts. Has "Judex" used the same compost which I have recommended for tanks? If he has not, I shall not be responsible should that also prove a failure. My plants which fruited in last December are now swelling another fruit; a fact that can be proved by persons of the highest respectability, and whose veracity no one will question. Mr. Barnes's excellent remark, p. 31 of this year, is worthy of perusal. He uses sweet pure composts, similar to what I employ myself. "Judex" justifies himself by cautioning the readers of the *Chronicle* against—not the compost which I recommend, but his own bad material, of which he is the inventor. If he will visit Thornfield soon, he shall have ocular proof of the advantages of planting out Pines in tan, both with regard to plants and fruit; and I dare state that the largest fruit he ever saw, according to the size of the plant, is now ripening on my improved mode of planting in tan. The most of my fruiting plants, however, are growing in a mixture chiefly composed of soil similar to that recommended in my Treatise, and such as I will always recommend where the tank system is used. I imagine we are only learning to cultivate the Pine; every succeeding year adds something new to our experience. In conclusion I would state, that any Pine-grower adhering strictly to my system, may with ease perfect one fruit every year from the same plant. I have formerly, and still do, cut three fruit in two years from the same plant.—*Joseph Hamilton.*

Morphology.—Monstrosity of Ceratium.—The curious illustration of Morphology which is sent with this note was found a few days since on the banks of the river Wye, near Tintern, and seems to be of sufficient interest to deserve notice in the *Gardeners' Chronicle*, as illustrating those sound scientific views which have recently appeared in that Journal. The usual structure of this genus is too well known to require description here.



Explanation of the Magnified Figures.

1. An expanded flower. 2. The ovary and stamens. 3. The ovary cut open, showing the ovules. 4. An ovule.

In the present plant it will be seen that the petals and sepals have quite taken upon themselves the appearance and structure of leaves, and that the germen also clearly shows that it is formed of five leaves, attached to each other by their edges. The following is a description of these curious flowers:—Sepals 5, green, hairy, distinct, spreading, oval, differing from the uppermost leaves only by being broader in proportion, and smaller, and having a membranous edge towards the end; petals spreading, and quite similar to, but smaller and rather narrower than the sepals; filaments of the stamens covered with hairs like the leaves; anthers unchanged; germen covered with hairs, green, oblong, with five ribs and furrows, tipped with five minute yellow points, and only slightly connected at the top; ovules apparently abortive. In these specimens we see what must be a demonstrative proof to all unprejudiced minds, that the sepals and petals do not originally differ from leaves, but are the same organ adapted to the performance of a different function; and also, that the germen is nothing more than several similar leaves (for, if separated and spread flat, they differ solely in size) placed together in such a manner as to form a pouch, to include the ovules, and assist in their development into seeds. There were numerous specimens possessing this interesting structure. The soundness of the morphological views held by scientific botanists is now so well established by the numerous instances of different organs reverting to their original type, which have been brought to light, as not to require my advocacy in this place; still, it would appear that there are persons who so misrepresent, or perhaps misunderstand the facts, as to suppose and state that those who hold them are not as full and firm believers in the superintendence of a Divine Providence, and know as certainly that everything in Nature is perfectly adapted to perform the functions for which it was created, as they are themselves. To such it can only be said, that the unprejudiced search after truth cannot fail to produce a fervent admiration of the Divine power and wisdom that is displayed in the creation.—*Charles C. Babington, St. John's College, Cambridge.*

The Gray Wagtail.—Some of your readers may be pleased to hear a little more of the gray wagtail, an account of which appeared in your columns on the 21st of last October: they may like to be informed what became of it, and whether I succeeded in discovering the object of its visits to my house. I am still unable to say anything decisive on the last point; I had the window washed as I proposed, but this made no difference, the bird coming as before. Once it was seen to pursue an insect, which it caught, after alighting upon the ledge; but such a solitary instance cannot prove anything. Several windows were occasionally visited, though the first continued the favourite. After a while, we became so much accustomed to the tapping, that it scarcely excited our attention. I have learnt that two other houses in the parish were in the course of the winter visited in the same manner, and at one of them a little alarm was felt by some persons who were disposed to be superstitious: but it seems difficult to account for the appearance of so humble a creature causing alarm to any one. When I wrote before (early in the month of October), I stated that I had not observed any more wagtails of the same species about, but others arrived afterwards. Still, I believe it was throughout the same individual that visited us; and I form this opinion from having often seen my feathered acquaintance stop at a particular spot (the shallow water alluded to in my former notice), both when going to and returning from the house; and I never perceived but one in that haunt, though in other places there used to be more of these wagtails together. For the same reason, I conclude that, as our visitor came here the first, so he remained the last of this kind; I noticed one bird for some time after I had lost sight of the others, and that one frequented the haunt aforesaid. Bearing made his adieus to us at the window on the 16th of February, but he lingered in the village another fortnight; I saw him on the 1st of March, soon after which he must have commenced his journey to the north. When he left us he had not changed his dress, but doubtless he long ago put on his best suit. I trust he found a constant mate, and made a pleasant home, and if he has a family, that they are all doing well. Should he visit us again in the autumn, he shall have a welcome; and I hope he will then come somewhat less sarcastic in his looks.—*S. Warnford.*

Coniferous Plants.—Could you not direct the attention of some practical botanist to writing a little manual on the nature and habits of Conifers? A small work like Rivers' "Rose-fancier's Manual" would answer the purpose admirably; and the smallness of its price would bring it within the reach of every one. The information chiefly required is a detailed account of each variety, to what climate and country it naturally belongs, the quality of the timber, and in what description of soil it attains the greatest size. Mr. Selby, in his admirable work on British Forest-trees, speaking of the new varieties of this tribe, begs of gentlemen not to content themselves with merely planting them in pinetums and shrubberies, but to give them a fair trial among other forest-trees. We shall never know which of them are adapted to this country so long as we only plant them in the shrubbery—always the driest and most sheltered spot about the place, and where the gardener carefully shades them from the snow and winter blast. If we wish to find what they are really worth, we must put them out in our plantations, and a very few years will show which of them are likely to be acquisitions, and which are not. Some may thrive very well in a shrubbery, when protected from the snow; but be quite unfit for bearing up against a long continued storm, with their branches bowed down with six or eight inches of snow upon them. Others may do very well when sheltered from the wind, but be brittle and apt to snap over when exposed to sudden gusts. Varieties with both these faults may thrive for years in a pinetum, and yet be worthless as additions to our forest-trees. I was delighted to see in the *Chronicle*, some weeks ago, that an Irish gentleman had taken the matter up in this light, and had made a plantation of 11 acres of Deodar. If other planters would follow his example, we should soon know practically the merits of every new variety. I intend doing the same this next winter, and am now busy fencing and draining the land for a plantation of Scotch Fir and Larch, among which I shall plant as many seedlings as I can get of *P. cembra*, *P. gerardiana*, *P. excelsa*, *P. laricio*, *P. pallasiana*, Deodara, Morinda, Araucaria imbricata. The only protection they will have will be a few Oaters round them, to keep off the rabbits and hares. As the ground on which they are to be planted is a high open upland, about 1000 feet above the sea, it will be a sufficiently severe test as to whether they can stand our winters or not.—*Waldeve.*

Bees.—In reply to a "Would-be Lover of Bees," respecting the attack made on him by those insects, I beg to suggest as a preventive that he should provide himself when near his hives with a veil composed of stiff muslin, fastened right round the band of his hat, and beneath his chin, and tightened round the bottom of his coat; this will certainly prevent the being stung on the most tender organ, or any other part of the head. If a "Would-be Lover of Bees" had, immediately on his extracting the sting, gone to his flower-bed, and applied the bitter part of that vegetable, the walnut, he would have found greater protection against, might have appeared both at church and market, and have had no occasion to complain of the want of an antidote for the unpleasant attack. I have a great quantity of bees under my care, on the Canadian system, which are tolerably vicious; and I have adopted the foregoing plans with complete success. —*Tyro.* [Another correspondent, signing himself "Apis," confirms the above statement. A still better guard, however, is a fencing-mask.]

Bees.—I wish I could afford "A would-be Lover of Bees" the means of rendering himself more agreeable to those insects. Washing the face and hands, and rinsing the mouth with vinegar prior to approaching them, are generally considered most effectual. As respects the application of volatile alkali, by which I mean what is usually called *spirit of hartshorn*, I wish it had been stated how long after the wound was inflicted the alkali was applied. The venom of the bee is so quick and so diffusive in its effects, that the utility of the remedy (which I have always succeeded with) depends upon the promptitude with which it is applied.—*Edward Bevan, Esquire, Dyan, near Mold, Montgomeryshire.*

Heaping Earth over Roots.—A correspondent having obligingly informed us that he knew of a Mulberry tree over whose roots earth had been heaped without injury to it, a wall being built round the stem, we requested further particulars, in consequence of which we have been favoured with the following:—The Mulberry trees were planted in the autumn of 1816, and then measured between four and five inches in girth; the lowest branches shot forth six feet from the ground. The soil is a rich mould, to which was added at each spot a large cart-load of mortar rubbish well mixed in, and forming a circle of 10 feet diameter; and great care was taken to plant them at exactly the same depth as when taken from the nursery, and to arrange and secure the roots so that they might extend on all sides. In the sixth year they produced a very handsome dish of remarkably fine fruit, and in every succeeding year there has been an increased produce. In the year 1832, when the garden was enlarged, the soil required to be considerably raised; and to prevent the accumulation of fresh earth injuring the roots, a foundation wall was built round each tree, six feet in diameter and three feet in height; a tiled drain was made from one wall to the other, and carried on to take off the sucked water, which it does effectually. Many persons predicted the death of the trees from the great weight accumulated over the roots, and the exclusion of the sun's warmth, but they have continued to flourish even more than before, bearing fruit abundantly and making shoots yearly which average about 10 inches. It must be remarked that the wall was built on the original surface, without in any way disturbing the roots. The measurement of the trees at three feet from the ground is at present three feet in circumference. Several of the branches at three feet from the body are 18 to 20 inches in circumference. The top covers a diameter of 20 feet. The earth, which was applied to the roots in 1832 was gradually sloped down, therefore no exact diameter can be given. This is the substance of the account received from my friend. He says the idea was entirely his own, and I trust say it does him great credit. I cannot see why it may not answer as well with trees of a larger size and of course greater age.—*M.* [In this case—1, each well was connected with other wells by great drains; 2, the soil was very loose, in consequence of old mortar having been freely intermixed. Hence air had peculiarly ready access to the roots. It appears moreover, that the earth which was heaped up, was shaped away towards the circumference, and our informant does not know to what extent that took place. But this is a most important point; because it is only the roots at the circumference that are much affected by the superincumbent earth; and if it were pared away much they would not be conscious of its presence.]

Glycine sinensis.—Although it is now nearly 30 years since this elegant twining plant was introduced from China, it does not appear to me to be so generally cultivated as it deserves. What this is owing to I cannot pretend to say, as few plants are more easily propagated, or present a finer appearance in early spring, when loaded with its long drooping clusters of lilac-coloured flowers. The usual mode of increasing it is either by cuttings of the roots, or by layering, in small pots plunged in the earth, the young shoots whilst making their summer growth, and which are found to emit roots at every joint. On looking over some old memoranda lately, I met with the following particulars respecting the striking of the Glycine from cuttings. Perhaps they may be interesting to the readers of the *Chronicle*, and be the means of increasing the culture of so desirable a plant. Cuttings taken off at this season strike more freely than when made in the spring. The shoots best adapted for the purpose are those which have become firm and hard, but not too woody. In preparing the cutting, two eyes are all that are necessary to be left on each. Out of two pots containing 100 cuttings prepared in this manner, and inserted in pure silver sand, such as is generally used in the neighbourhood of London for striking with—only 5 died. They were placed in a moderate hotbed on the 20th of August, 1829, and in the course of three weeks were found to have made roots from 3 to 4 inches long, although scarcely any difference was observable in the appearance of the bits, excepting that they had swelled a little more than when put into the pots. Six weeks afterwards they were potted off into small pots, and preserved during winter in a common frame. The following spring the greater number of them sent out shoots from the upper eye, and others from the one at the bottom of the cutting: a few remained dormant until June. From the whole it appears there is little difficulty in striking the cuttings of Glycine sinensis, and this circumstance, I hope, will induce many to make the experiment. I readily admit that as a garden plant the Glycine is common, but it is as a twiner for decorating the porches and walls of cottages and lodges that I should wish to see it more extensively employed. Every one who has seen the fine specimen in the Horticultural Society's Garden at Chiswick, when in blossom, must have been struck with its beauty. In 1834 it covered a space of 800 superficial feet. Being against a south wall, the flowers remain a shorter time in perfection than when trained against a wall with a south-east, or eastern exposure. The latter shows it to great advantage, as it is later in coming into blossom, and the colour of the flowers is not so liable to be injured by the sun.—*M. E. H.*

Sports.—I have now in bloom a plant of Menziesia polifolia stricta rubra with red and white spikes upon the same branch; it has flowered so for the third summer.—*F. X. O., Cliff Vale.*

Preservation of Seed.—We have just received some seeds of the Nutmeg-tree (*Myristica moschata*), sent to us by Mr. Lockhart, of Trinidad. They were removed from the pulp and mace, packed in moist Moss, and closed in a tin box almost hermetically. They have germinated during the voyage and thrown out a radicle and a plumule to the length of an inch or more each, and apparently could not have come in a fitter state for planting with a prospect of their success. Surely the seeds of Victoria might thus be sent by some of our South American friends.—*W. J. H., Kew.*

Tropæolum canariense, &c.—The flattering notice in your columns last year (p. 573), respecting the cultivation of this, by Mr. George Davidson, has induced him this year to redouble his exertions; and notwithstanding the drought and prolonged easterly winds he has had to contend with, he has produced about six of the most splendidly-grown specimens of this plant which I have ever beheld, and which are alike creditable both to his zeal and ability. This year he has planted two plants for each mass, and he has thus procured such a dense profusion of foliage, that the whole framework round which the plants are trained is in some instances entirely concealed; and moreover the leaves at the bottom of the stem are so profuse, as thoroughly to prevent all nakedness of appearance near the roots. The plants have been sown in a rich compost of decayed leaf-mould and other matter, and this has not only acted as a powerful stimulant in their growth, but has greatly improved the size, vigour, and freshness of colour of the leaves and flowers, as any of your London readers will perceive if they will visit the western end of the long garden walk, now well deserving the name of a garden—may it ever continue so! The public are not aware of the interest taken in these grounds by those employed in them. Mr. Edwards, the chief superintendent, most liberally supplies (from his own garden), pipings from his beautiful Carnations, and the best seedlings from his Heartsease, while Mr. Baxter, the able superintendent of the greenhouse department, is indefatigable in raising cuttings and seedlings in frames of his own construction; such zeal and activity, such hearty good-will, are surely deserving of all praise. To such of your readers as have ponds in their grounds, or any pools of ornamental water stocked with fancy water-fowl, it may not be uninteresting to know that Mr. Baxter greatly improves the growth of his flowers and plants by using the home-made guano he collects himself from the margin of the round pond, where the geese and other birds yield him a very good supply, till lately never turned to any account, or thought to be of the slightest use, either to the gardener or any one else. To the poor, who live on commons where geese are plentiful, this hint may suggest a profitable employment of their children occasionally, for during an entire winter they might collect a considerable quantity, either to sell or to add vigour to their spring operations in their homely gardens.—*James Maugles.*

Hallett's Fertiliser.—Having heard of Dr. Hallett's Fertiliser, I this spring sent for one ton of it, and from what experience I have had with it, it has given me general satisfaction. I have been experimenting with various kinds of manures, but the Fertiliser proves itself to be superior to all of them in causing plants to grow rapidly. I sowed some early stone Turnips on the same day, and on the same piece of ground, side by side. Those manured with the Fertiliser are now nearly taking up, while the others, dressed with bones and farm-yard manure, are just commencing to form roots. The ground dressed with the Fertiliser has always been remarkably moist during the whole of this dry season. We have had no rain here from the 2d of March until St. Swithin's Day. I have tried the Fertiliser with advantage on Potatoes, Pelargoniums, Cape bulbs, Heaths, Dahlias, &c., as well as on vegetables of all kinds. For plants in pots I dilute it in liquid state; I have also tried it with equally good effect on Vines and on Melons, which promise well. About two years ago I planted a group of evergreen Oak, in pots, and during last year they made shoots 3 or 4 inches long; this year I shifted them into larger pots, I watered some of them with the Fertiliser, and they have made shoots 3 feet in length; whilst others, watered with pump water only, have not made shoots more than 6 or 8 inches long; they have both received precisely the same management in every other respect. To any one who may be disposed to call, I shall be happy to show the results of my experiments.—*John Wills, Guernsey.*

Manures.—I observe in the *Chronicle* remarks on the great value of nitrous or nitrie compounds in manure. Now we know that the French, when driven to it by necessity, in the beginning of the late war, contrived to form nitre beds, and to furnish themselves with sufficient for making gunpowder. This process is in English (*vide* Dr. Ure's Dictionary of Arts, p. 860), save all of them nitre beds. Might not every farmer in this country have his nitre-bed, in the same way as gardeners have their mushroom-bed?—with this difference only, that when earth has once acquired the chemical tendency to produce nitre, it does not cease to be regular when watered, but still retains sufficient of the power (if I may so call it), to attract the proper ingredients from the air. May not the true theory of compost be, that they are in fact very weak nitre-beds? This appears to me a subject worthy of your attention, and an article now and then on the best mode of making the beds, might do good, and above all lead to the general preservation of that most invaluable article household urine, which, I apprehend, would be found (together with soap-suds), one of the best ingredients of the nitre-bed.—*Horticola.*

Local Horticultural Societies.—At p. 525, there is an appeal from a "Gardener, Dartmouth," severely reflecting on the Torbay Horticultural Society. Had your correspondent made more particular inquiries before writing such unfounded aspersions, its veracity might have escaped the severe check it must now encounter. No jobbing gardener of Dartmouth gained an extra prize at our last Exhibition for Martynia fragrans. The plants in question, the property of the Hon. Mrs. Hare, Gunfield Lodge, were so said by the Exhibitor, and had attained their high state of perfection under his care and attention. They were exhibited through the kind permission of Mrs. Hare as decorative plants; and were awarded an extra prize by the special permission of the committee, because the Judges considered them the best-grown plants in the room.—*The Secretary of the Torbay Horticultural Society.*

Labourers' Shows.—Will you permit me to suggest that Shows may be very beneficially made for the poor, where neither funds nor supplies can furnish one for the rich? I came into this parish about 12 years since. My labouring classes were very inefficient gardeners. I considered that a Show of common fruits and vegetables, with small prizes, would excite their attention. For this purpose I published a list of rewards for such exertions; and as I had obtained two pieces of land to let out in allotments, I gave prizes to those who cultivated these with the greatest care. The effect has been prodigious. The articles brought to the first Show would have excited your smiles; those now brought, your commendation. My cottagers may compete with most of their class—all the result of this simple measure. Several of my wealthier neighbours have kindly sent specimens of fruits, &c., to lay on a side or honorary table. From these my poor people learned to know what skill and industry could effect; they have attempted similar things, and with success. I inclose a list of the prizes I annually offer. We can only make one Show in the year; July is considered the most suitable month, and the day is fixed earlier or later, as the season is forward or backward.

	£.	s.	d.
To the occupiers of the best cultivated allotments in Dunda's Flat and Sadler's (each)	0	5	0
To the occupiers of the next best cultivated allotments (in each of the above)	0	2	6
For the best plate of early Potatoes (six in number)	0	2	6
For the next best	0	1	0
For the best summer Cabbage	0	2	6
For the next best	0	1	0
For the best Lettuce	0	0	6
For the six best Turnips	0	0	6
For the 12 best Gooseberries, all from one tree	0	2	6
For the 12 next best, all from one tree	0	1	0
For the 12 best bunches of red Currants, all from the same tree	0	2	6
For the 12 best bunches of white Currants, all from the same tree	0	2	6
For the best Nosegay or Bunch of Flowers, of various sorts, all from the same garden	0	2	6
For the next best ditto	0	1	0
For the best bunch of Roses, all from one garden	0	2	6
For the best bunch of Stocks, raised from seed, and by one gardener	0	2	6
For the 6 best Onions raised from seed	0	2	6
For the 6 next best ditto	0	1	0
For the 6 best Carrots	0	2	6
For the 6 best Parsnips	0	2	6
For the best brace of Cucumbers	0	2	6
For the next best ditto	0	1	0
For the 12 best Strawberries raised by the same cultivator	0	2	6

The Candidates must be labouring Cottagers, and the flowers and vegetables grown in the parish of Lane-end.—*J. Peers, Lane-end, High Wycombe.*

Cabul Melons.—On reading the Leading Article at p. 571 of the *Gardeners' Chronicle* for 1843, I remember being greatly surprised at your recommending to everybody who values his comfort to expel the whole race of Cantaloupes and Rock Melons as unworthy of a modern garden. Surely, said I, some of these must have behaved very badly to deserve so severe a sentence, for in my younger days a Cantaloupe or Rock Melon was esteemed a most luscious fruit; and I, for one, cannot consent to banish them altogether, until I have further evidence to prove that they are really so very inferior to the Melons of the East. I was very desirous to obtain some seed, and this season I had the good for-

tune to have my wishes gratified by a gentleman in this neighbourhood, who presented me with four pots he had received direct from his brother, an officer in the Indian army, and one of the survivors of the Cabul affair. I need scarcely say that I grew them with great care, and was not a little pleased on perceiving one of the fruit exhibit signs of approaching ripeness. On tasting it I must freely acknowledge that, notwithstanding the little partiality I entertained for my old favourites, I found there was almost as much difference between them and the Cabul Melon, as there is between a Morello and a May Duke Cherry. The fruit proved to be remarkably handsome, of an oval shape, slightly netted, and tinged with yellow precious to becoming ripe. The flesh was white, with a greenish tinge, apparently firm, but melted in the mouth like a lump of sugar. The skin was thin, and on this account the fruit as it approaches maturity requires to be narrowly watched, as it is apt to crack and shortly afterwards begin to decay. I am now of opinion that these Melons, in the course of a few years, will supersede the very best kinds that are at present in cultivation.—*M. E. H.*

Scorching Effects of the Sun.—Without entering into the present controversy as to the cause of the spots on Vine leaves, I beg to state the following facts:—Last year I was rather profuse in syringing my Vines, particularly so on two or three occasions, when a hot sun fell on the glass before the moisture had evaporated. All the leaves became more or less spotted, and to this injury I impute the imperfect colour of my Hamburgh Grapes that season. This year I have been very sparing of the syringe, especially when the sun was out. My vinery has not a diseased leaf, whilst the Grapes are as black as sloes.—*A Subscriber, Maidstone.*

COUNTRY SHOWS.

The Coppice, Nottingham.—We had long promised ourselves a visit to the Open Show of CARNATIONS and PICOTEES, which was to be held at the Coppice, near Nottingham, on the 6th inst., to form our own opinion of the flowers raised, and the style of exhibiting by the men of the "North Countrie." Accordingly, we put ourselves inside a second class carriage (though the more was singularly unpropitious), and were in about three hours and-a-half in the Derby station. We had not much time to survey these extensive buildings, as a train was in readiness to bring us forward, and after changing vehicles, and joining several florists who had arrived by the North Midland, and bound to the same destination as ourselves, we were again (after a few ejaculations and a tremendous squeak) dragged forward towards Nottingham. This distance was speedily traversed through a highly cultivated country; we caught glimpses of the "fair vales Belvoir," and "the noble Trent," as we descended the hill, at length we neared the town. The first object that caught our eye was the Castle standing on the verge of a rock, rising abruptly from the River Leen, which rolls at its base. It undoubtedly has been an ornament to the town, but now (though as a distance it is an imposing object) it presents a sad memento, with its dilapidated and scorched walls, of ungovernable rage and popular fury. We were told that there Charles I. raised his aged when about to proceed against the parliamentary forces, and a large cavity was pointed out to us as Mortimer's hole; but our's was a brief space to view the noble wreck, and, on quitting from the station house, our first question was, "the way to the Coppice?" This question we had not to repeat, for the Committee with praiseworthy foresight, had placed placards, with a large hand pointing the way, to be put up at each turn, and through the lower part of Nottingham put us much in mind of a labyrinth, still with this clue we threaded the maze to perfection, and soon found ourselves on the opposite side of the town. A good mile and a half brought us to our destination, and here we may state that we have seldom seen a situation more adapted for the purpose intended. On getting up the hill we found a large marquee erected on the lawn in front of the house, with other conveniences for the accommodation of visitors. We found many florists congregated there, who were not exhibitors, all engaged in discussing the properties, various, &c. of the universal favourite, the carnation. We noticed Messrs. Norman, of Woolwich; Orson, of Cranham, Holland, of Maddiston; Boone, of Barnsley; &c., &c. After some little delay the doors were opened, and about 12 o'clock the Judges, Messrs. Muggleston, Mart, and Beardsley, of Nottingham, with Mr. Cowper, of York, entered on their duties, and as it was supposed that it would at least take two hours to go through them, we were anxious to look round us, more especially as the Coppice comprises part of the original forest of "Merrie Sherwoode." With our host we ascended a hill at the back of the house, and there we had a most splendid view of the surrounding country to our right; at a distance of 22 miles we saw the princely castle of Belvoir, the residence of the Duke of Rutland. Stretching away to the left, the eye roved over the hills of Charnwood Forest, whilst in the middle distance the Trent glided through the valley, its silver stream glittering in the occasional sun-beams, which, despite the rough morning, struggled through the clouds. Well, indeed, could we appreciate the fertility of the "Vale of Trent," watered as it is by so fine a river. Like a panorama lay Nottingham beneath our feet, and on either side were the artisans' gardens, looking at a distance like a "giant's draught-board." We understand that there are at least 5000 of these square plots around the town; to us it was a most pleasing sight, feeling, as we do, the rational enjoyment, the fund of health, that these small gardens must afford to their possessors. On descending we found that the Judges had not yet concluded; our host then pointed out to the foot of the hill on which the house stands, "St. Ann's Well," a spring of unusually clear and cold water, and to which great sanctity was formerly attached. On the opposite hill, before the axe had devastated the forest, which covered it, stood "Bestwood Wood," once the favourite haunt of the far-famed outlaw Robin Hood. These exciting stories, told on the spot, mix with his "merrie men" conferred their magic power. Drayton in his "Poly Olbion," Song xxvii. Marginal

"From wealthy Abbots' chests and churches abundant store,
What charitable he took, he dealed amongst the poor;
Mo Lordly Bishop came in daily remembrance by,
To him before he went, but he gave something away,
The widow in distress by accident relieved,
And remedied the wrongs of many a virgin poor."

Many more the legends that could tell of the Outlaw of this ancient domain, but enough here of Robin and his merry associations, for half-past two had now arrived, and the Judges had decided on their verdict, by which Mr. Wm. Hepton, of York, won both cups, one for Picotees, and the other for Carnations, but Lodge, of Manchester, took the second prize for Picotees, and Mr. Joseph Gibbons, of Bramcote, near Nottingham, the third. Mr. Thomas Gibbons, of Bramcote, near Nottingham, was awarded the second pan of Carnations, and Mr. Fearon, of Nottingham, the third. From what we could see, the Nottingham flowers were unassisted; assistance by the time they arrived was too late for them—in fact we were informed that they were all 24 and 36 blooms. Mr. Hepton's flowers were certainly very particularly admired amongst his Picotees, Ely's Field Marshal, which, though thin for the south, is a noble flower, Mr. Grace Darling, P. P., and Green's Queen Victoria. Rose Pearson, with Wood's Queen Victoria, R. P., were also in fine state of bloom. In Mr. Thomas Gibbons's pan, Nulli Secundus, R.F.; Lord Nelson's Prince Albert, F. P., were remarkably fine; and Wilson's Fanny Irby, R.F., and Robinson's Hero of Nottingham, were all that could be wished; whilst in Mr. Pearson's pan, Barnard's Mrs. Barnard was quite a gem. Of the Carnations, the Lion of the Day (or Blonde if you like), was Ely's lovely Ann; there was, indeed, the *ne plus ultra* of Rule and Flakes, and excited universal admiration. Mapworth's True Briton was finely marked, though the flower was rather damaged: whilst those fine flowers, Ely's Mango, P.F.; Ely's Lady Ely, F.F.; Wilson's William the Fourth, F.; Greasley's Brougham, G.B.; and Ely's Jolly Dragoon, S.B., were (to use an old Derby grower's expression), "topsum." For our own part, we had a decided *penchant* for some of Mr. Lodge's flowers. His Royal *Britain*, S.B., was a first-rate flower, and must be seen to be appreciated; Ely's Caxton, C.B., was rather thin, but brilliantly marked; whilst Euclid and Beauty of Woodhouse were in extra condition, and Rob Roy and Beauty of Cradley, S.F., were as fine as could well be imagined. Amongst the losing pans were noticed the following in splendid condition:—Ely's Lord Milton, C.B.; Hufton's Patriarch, S.B.; Ely's Lady Gardiner, R.F.; Ely's Lord Morpeth, S.F.; Simpson's Marquis of Granby, S.F.; Pollard's First-Rate, P.F.; Martin's Splendid, S.B.; Brabbin's Squire Meynell, P.F.; Hufton's Rosea, R.F. We subjoin a list of the winning flowers:—*Carnations.*—1. Mr. W. Hepton, with Hepworth's True Briton, Ely's Jolly Dragoon, Hufton's Wellington, Greasley's Lord Brougham, Wilson's Wm. IV., Leighton's Prince George, Ely's Lady Ely, Ely's Lovely Ann, Ely's Mango, Leighton's Bellerophon; 2. Mr. Lodge, with Lodge's Royal Briton, Ely's Jolly Dragoon, Soorn's Bloomsbury, Ely's Wm. Caxton, Mansley's Euclid, —— Beauty of Woodhouse, Orson's Rob Roy, Wallis's Beauty of Cradley, Ely's Lovely Ann, Ely's Lady Ely; 3. Mr. J. Gibbons, with Hufton's Patriarch, Hales's Prince Albert, Ely's Lord Milton, Greaseley's Lord Brougham, Ely's Volunteer, Orson's Rob Roy, Pullen's Queen of England, Greasley's Village Maid, Millwood's Premier, Squire's Meynell. *Picotees.*—1. Mr. W. Hepton, with Gidden's Vespasian, Ely's Grace Darling, Ely's Field Marshal, Ely's Dr. Horner, Green's Queen Victoria, Keesley's Rosea, Wood's Queen Victoria, Sharp's Hector, Wilson's John Bull, Ely's Criterion; 2. Mr. J. Gibbons, with Mark Anthony, Gidden's Teazer, Nulli Secundus, John's Prince Albert, Wilson's Fanny Irby, Green's Victoria, Nottingham Hero, Venus, Miss Hunter, Boothman's Victoria; 3. Mr. Pearson, with Queen of England, Mrs. Barnard, Fanny Irby, Marcalonessa of Exeter, Pickering's Confederate, Sharp's Wellington, Derby Willow, Nulli Secundus, Field Marshal, and Hero of Nottingham.

Garden Memoranda.

Standish's Nursery, Bagshot.—To those who are desirous of studying economy in floriculture, a visit to this nursery will be amply repaid, and afford satisfactory evidence of the perfect practicability of cultivating many highly ornamental tribes of flowering plants at a cost trifling compared with the usual outlay. Mr. S. has erected a house for the cultivation of Fuchsias and Calceolarias; it is covered with light canvas, prepared with Whitney's composition. This has been found to answer every purpose desired, and especially in bright sunny summer weather, whilst the plants are growing rapidly, when a mellowed light is so necessary. Instead of a brick parapet for the frame-work to rest upon, a low wall is made of heath-turfs, which, becoming baked with the hot sun, are almost impervious to moisture, and perfectly effective in keeping out the heaviest rains. The walls of the pit in the interior of the house are also constructed of dry turfs. There are, likewise, several pits built and covered with similar materials, in which are grown Camellias, Indian Azaleas, Heaths, &c. The house is heated by a small boiler and gutters formed of paving-tiles, which, besides being cheap, occupy very little more space than an ordinary hot-water pipe, and no more fuel is required to maintain the necessary temperature during winter, than would be consumed in a glass-house of similar dimensions. Amongst Fuchsias I noticed excellent specimens of Lowryi, a small-leaved somewhat-growing variety, with very bright scarlet calyx and deep purple corolla; an improvement on Formosa Ionans, Alacritina, the pretty little Venus Victrix, Hibley's King John, and Sanguinea nivea, two varieties with the habit of Chandleri; Antagonist, a seedling of last year with a robust habit, and leaves similar to those of F. corifolia, the sepals of the flower being short and of a bright scarlet, and the rich violet petals large and neatly rounded; Attractor, remarkable for its short sepals and the large size of the corolla; Colossus is an immense flower, with the colours of the calyx and corolla very distinct; President is another superior variety, less robust growing than the last, but flowering more profusely. Many Calceolarias are still in bloom, but the flowers are much inferior in size and colour to those produced a month or two ago; sufficient, however, may yet be seen to form some idea of their respective merits, taking the advanced state of the season into consideration. Mr. S. annually raises several thousand seedlings, and has procured many varieties with well-formed and curiously marbled flowers. Of those with a cream-coloured ground variously marked with purple of different shades, Fancy, Celebration, Delicata, and Running Rein, may be mentioned as deserving of note; and Guercino, King of Saxony, Holdenians, Acme, and the Great Western, amongst those marbled with crimson on a yellow ground. It would be fruitless to attempt to convey a distinct idea of each by description, where the arrangement of the markings is almost as endless as the changes of the kaleidoscope. In the out-door department the chief attraction consists of an extensive variety of Perpetual Roses, which are flowering profusely. Among the best are a number of crimson hybrids, such as Madame Laffay, Princess Ellen, Prince Albert, Lady Fordwich, William Jesse, Queen, and Marshal Soult. Of Bourbons there is also a choice collection, many of the best of which were not flowering. Celimene, a fine pale blush, Queen, a fine salmon-pink, and Bouquet de Montmorency, were perfect masses of flower. A variety, with deep crimson flowers, called Bosse, is eminently appropriate for planting in borders, being of a dwarf growth, and expanding flowers in succession throughout the summer season. The plants all appear to be in a healthy thriving condition, and make firm wood and abundance of roots, but the flowers are generally indifferent. This may be partly attributed to the extremely dry season, and partly owing to the nature of the soil, which is almost wholly a sandy peat, retaining moisture much better than a majority of sorts, and whilst it affords a constant supply of nourishment, never exciting to excess luxuriant growth.—*Q.*

Baroness Rothschild's Gunnersbury.—The success of Mr. Mills, as this place, in his Cucumber growing, is remarkable. His base ends just now two fruit, straight as a ramrod, ribless, blackspined, with the blossom on the end, one of which was 22 and the other 24 inches long. They are grown in one of Mr. Mills's improved pits, heated by a boiler and baths furnished by Burbidge and Healy.

Miscellaneous.

Prize Roses.—We observe by the Inverness and Elgin papers that the first Prizes for Roses, both at the Inverness and Elgin Shows, were awarded to Alexander Urquhart, Esq., at Woosepark, in this neighbourhood. At Inverness for the following cut Roses, viz.:—Fulvier, Napoleon, Archduke Charles, and Desdemona; at Elgin, for Eugene Beauharnais, Napoleon, Tetbiante, Ne plus Ultra, Lady Stuart, Aurora, Madame Buteux, Archduke Charles, 29th Juillet, Madame Broon, Clara Sylvan, and Bougare. The last-named tea-scented variety is one of the most magnificent Roses ever grown.—*Forres Gazette.*

Analysis of the Ashes of Potatoes.—These consist, according to M. Vogel, of 17·5 per cent. insoluble and 82·5 soluble salts. The former consist of 9 per cent. phosphate of lime, with some phosphate of magnesia, alumina and peroxide of iron, and of 8·5 per cent. carbonate of lime, with some carbonate of magnesia; there is no silica present. The latter consist principally of alkaline carbonates, sulphates and phosphates (5·33 phosphates, 6·93 sulphates), and traces of metallic chlorides. The soda constantly amounts to 1 per cent. more than the potash.—*Ann. de Chim. et Pharm.*, xlv. p. 265.

The Hepatica.—There are many beautiful varieties of the Hepatica in M. Van Houtte's collection, at Ghent. Some are rose-coloured, red carmine, pale lilac, and white flesh-coloured, with many other tints, among which is even repeated the colour of the stamens. Each of these varieties has a different name; they are still new, and quoted at a high price in the catalogues of this fine establishment.—*Revue Horticole.*

Carbonate of Soda in the Preparation of Coffee.—M. Pleasanel states from experience, that the infusion of roasted Coffee acquires a far superior taste, and is rendered more concentrated, consequently that a much larger amount of beverage can be prepared from the same quantity of Coffee, by adding to the boiling water, just before pouring it over the Coffee, 1 gr. of crystallised carbonate of soda for every cup, or 2½ grs. for every half ounce of Coffee.—*Med. Jahrb. des Oestr. St.*, 1843, *October.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Such plants as wall flowers this autumn may yet be well supplied with water, and occasionally with liquid manure, but all other soft plants should be watered more sparingly after this time, and it should be performed early in the day. The house may be closed early in the afternoon, even with a strong sun-heat. At this season, we consider sun-fire dispensing off, a high night temperature is not so important to them as when they are beginning to grow in spring. In dull weather slight fires may be used in the daytime, so that plenty of air may be given to the plants.

Conservatory.—Shorten the supply of water as the night temperature is a good old maxim, and more applicable to this month now than to any other, as it is generally occupied at this season with a mixed collection of flowering plants, many of which are probably stove or half-stove sorts, which require but little water in a low temperature. Cinerarias, Violets, Chinese Primrose, with Chrysanthemums, and all other plants that will flower on this side of Christmas, must be duly attended to; and such annuals as have been proved to bloom in pots in the spring should now be sown. Since, however, the practice of forcing flowers in spring has become general, these annuals have been discarded in many places, as they occupy room where better things can be wintered.

Pits and Frames.—These are now fully occupied with half-hardy plants which grow freely in such places in the autumn; the lights should be drawn off at night to let in dews, but defend them particularly from heavy showers or continuous rain; at the same time admit large portions of air, by tilting the lights at top and bottom. This is a good time to pot Camellias for blooming in the spring, and also to graft them in close frames, without artificial heat.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

It is gratifying, when so many gardeners are complaining of the unfavourableness of the season for flower gardening, to find that there are some in the country who have no cause to complain. I am, however, aware that those who speak of "present appearances" forget what their gardens were like from the middle of May until the 1st of July, which is a most unusual occasion in discussing the merits of a season. As far as my correspondence extends, and it is by no means limited, all are complaining, and I know that if the season near the metropolis has not been a "backing," I for one am not desirous of knowing what a bad season is. However, this is not the place for discussion, and when those who have expressed their opinions I may then probably be induced to reply. Scarlet Pelargoniums now require to be propagated as expeditiously as possible; some of them, where abundantly the strong growing varieties, are very liable to rot after they are put in the soil, more especially if the season be wet; for that reason it is an excellent plan to allow the cuttings to dry for a day or two after they are prepared before they are put in the ground. The foot of a south wall is an excellent place to strike the most succulent kinds. Smith's Emperor, Shrubland Star, the Globe Compactum, and Brighton Hero, are the best of the strong growing varieties. The Fragmore and Cooper's Scarlet maintain their places in some collections, and though deficient in foliage they

are very pretty blossoms; but unquestionably the finest dwarf Pelargonium in existence is that which has this season been exhibited under the name of "General Tom Thumb." It grows almost prostrate, is exceedingly rich and dense in foliage, and produces with the greatest profusion large trusses of the most dazzling scarlet flowers imaginable. I have a plant at this moment nine inches high, and six feet in circumference, studded with twenty-seven trusses of expanded bloom, and some of the trusses are five inches in diameter; and on five plants there are upwards of 100 trusses of flowers. Another fine variety is one which I got from a nurseryman in spring, under the name of "King." It is very bright in colour, the habit dwarf, and the trusses large. The Hamiltonian is also a desirable variety for bedding out. The above are the best sorts which I have met with. I have heard of better, but I have yet to see them.

Cuttings/Geraniums.—Must now be layered, either giving them a turn, or making an incision on the under side before they are pegged down. Those intended for the greenhouse may be layered in pots, and they will seldom be check from removal that is if they are gradually severed from the old plants. Give them plenty of liquid manure after they have formed roots.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Carnations.—The seed-pods of the last blooms must now be well watched, and the calyx slit down to avoid the accumulation of wet. It will be a good plan to allow them to hang downwards. Apparently this will be a good season for seed, and from the right direction given to the cultivation and impregnation of these beautiful flowers, we certainly are sanguine in soon seeing an improved breed. Many of the old varieties of Picotee will this autumn be discarded, because edges being a sad blemish. The amateur must do well to look about him for some of the newer and better varieties to supply their places. We learn from the Midland Counties that Rose Picotees, which hitherto have been looked on slightingly, are coming into favour. The only matter of surprise with us is how they have been neglected so long. Pinks.—Seed must be gathered; half of what we have this year saved will be sown immediately, and the other half next June. Shoots, slipped off and dibbled in sand and taken off, and kept moist and shaded, will root well.

Tulips.—The bed for next season's planting must be often turned, to sweeten by exposure to sun and air. The bulbs also may be examined, and any alteration made in the arrangement of the roots, according to memorandums made in blooming time. Discard all bad and inferior varieties, those with foul cups and pointed petals for ex. *Auriculas*—must be kept free from decayed leaves, and the pots regularly supplied with water. *Pansies*—Seed may still be sown. Young plants should be pricked out in beds as shrubs when any well-grown seedlings worth saving. *Dahlias.*—Thin out strong growing sorts, and pull off deformed buds as they appear.—*J. F. R.*

IV.—PINERY, VINERIES, &c.

Pineries.—It is to be regretted that we have to those who have been growing Pines over tanks have published the result of their experience. In the absence of something better, I will state what I find to be good practice with plants intended for fruiting during January and February. The tank pot must be got in readiness by putting into it a foot, and a half or two feet of fresh leaves or tan, according to the size of the pots, or the distance of the pit from the glass. I then select the plants, and shift them into pots from 12 to 13 inches wide, and one foot deep, the sides of the pots being previously well soaked, 12 holes, each about an inch and a half in diameter, and placed at regular distances. Over the drainage I place a layer of Couch grass roots, and then some turfy loam. On this I place the ball of the plant, as entire as possible; and then fill the pot up with good sound loam, without any manure, except a small proportion of flaky leaf mould. They are then plunged in the tan, or leaves, to within one inch of the rim. By February the roots will be found to be running through the holes into the bed; I then clear away the tan and rubbish round the sides of the pots, and to the whole depth of the pit, and replace it with turfy loam and rough leaf-mould. Over this I place an inch of new tan as the lower leaves of the plants will admit of, so as to bring the heat as much to the surface as possible; one disadvantage of burying the plants out and over tanks being that the heat dries pot rise freely through the soil to the surface, where the best roots should be. It will be easily seen that the use of this kind of pot has all the advantage of the turning-out system, and at the same time meets the objections of those who complain—not without reason—of old plants not sufficient room over their plants when turned out, in such cases as their not coming into fruit when expected, &c. If the weather continue cloudy, bottom, give plenty of air to the growing plants, to prevent their drawing. Success without fail with the potting of all plants requiring it.

Vines.—This damp weather will make it necessary to use every precaution to prevent the within degrees of moisture where Grapes are ripening, or ripe. Shake a little fire during the day, and give some top air. Stop all useless growths in the late houses. Do not remove the leaves of the Vines, to expose the fruit to the sun, unless they are very thick, and under the whole surface of the glass. No leaves can require removing now, if they have been properly attended to at the time of regulating and thinning the shoots as given in December.

Peach-house.—Little is required here now, except to give as much air as possible, where the lights are kept on the house, to ripen wood, necessary, and to water the trees frequently with the syringe, to keep them free from insects and dust.

Figs.—See former Calendars.

Melons.—During this damp weather, Melons will require close attention to the removal of decaying or superfluous leaves and shoots. Keep fire regularly, every day; and light a little fire, to keep up the temperature, and give air. During fine days they will require very little water now at the roots.—*W. P.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Fruit.—The present dull weather, however favourable to the destruction of the red spider, is not at all favourable for the maturation of fruit, or of ripening wood, which must be. The bunches of Grapes ought to be turned, to ripen the globes of Rice, which may be obtained at any glass-blowing establishment, and any spare lights of framing of Peach houses might now be profitably fixed against favourite Wall or Pear trees. Where wasps or flies are troublesome, the wall may be protected with gauze or thin netting; but where much attention to pinching the wood is necessary, nothing is better than covering each fruit very closely with cotton wadding. The heavy rains we have now had will prevent wasps being very troublesome for some time.

Cauliflowers.—Make arrangements to sow seed early in, about the 20th, and again in the first week in September. The first will supply a few early heads, but they will require a good deal of protection. I chiefly depend on the September sowings. Keeping them as hardy as possible during winter, and encouraging a little frost; and then, by keeping the glasses pretty [illegible] and covering up on cold nights in spring, I get the heads early as from plants sown now, besides the advantage of [illegible] over having a head starting prematurely. [illegible] depth, cultivate sown in June and July; you will find more thought of, if you can protect them during winter.—[illegible] sorts of Broccoli. *Lettuces.*—Sow now and at the end of month for winter and early spring supply. For this purpose, the Brown Dutch and hardy Hammersmith are the best. *Cabbages*, the black-seeded white, and the different varieties of the Brown Bath, are the best for the varieties. A short-stemmed variety of the latter, sent out by the Messrs. Lane, is the hardiest for standing the winter, and the longest in running to seed in the summer that I have met with. Keep planting out succession crops. *Carrots.*—Sow a small bed now and at the end of the month for drawing young in winter and spring. *Mushrooms.*—Keep collecting horse droppings and spawn-dung, and get them dried as well as you can for beds in sheds, or houses. Where shed or house-room is deficient, and there is a scarcity of material for large beds in winter, it will be a good plan to make a slight bed or two in a sheltered place now. For this purpose nothing is preferable to the bed formed of dung from an old lining in rather a dry state. If built in the ridge form, from two to three feet in width at bottom, and the same in height, and firmly beat together and defended from heavy rains, it may be spawned, earthed, and tiered, before a larger bed could be safely covered in. This is rare weather for field Mushrooms, but many gentlemen object to their going to their table; and this is no wonder, when one sees the poisonous rubbish there is often in dangerous proximity.—*W. P.*

VII.—COTTAGERS' GARDENS.

About this time in favourable seasons the cottage garden becomes an object of interest and beauty. Many of the gayest ornaments, such as Hollyhocks, Dahlias, Lobelias, &c., are now in perfection, and will require some attention. All erect growing plants should be tied up so as to prevent them from being broken in stormy weather. In doing this, however, they should not be bundled together so as to disfigure them by giving them a stiff and formal appearance; on the contrary, the stems and branches should be kept as much as possible in their natural position, and they should be tied so as to conceal the stakes that support them. Continue to keep any fruit-trees that are trained against the walls neatly fastened in, as by this means the wood gets better ripened, and the fruit receives a greater supply of light and air. Vines should be regularly attended to; thin the bunches, and regulate the shoots, stopping back all the laterals to one joint. Where those formerly stopped have made a second growth, they must be shortened back as before. If the weather is favourable, a small patch of Onions had better be sown during the week on some rich, light piece of ground, for winter and spring use. The White Lisbon being very hardy, is a good sort for the purpose. Any ground becoming vacant, by the removal of other crops, may still be planted with winter Greens. If a small quantity of Broccoli is planted about this time, or a little later, it will form a succession to the main crop, and will be found very useful. A bed of Carrots may also be sown now for use next May. Last year I made two sowings of Lettuces, one on the 20th of August, the other on the 15th of September; both sowings did well; the latter came into use about a month later than the first sowing, and formed an excellent succession. If a small quantity of Stock seed is put in now, and the plants carefully taken up and potted when they have advanced a little in growth, they will be useful for ornamenting either the window or flower border in spring. They may be preserved over winter with very little protection. If a stock of Verbenas, Petunias, Scarlet Pelargoniums, and such other showy plants as are readily propagated can be kept over winter, cuttings of them should now be got in. If inserted about this time into a light sandy soil, covered with a hand-glass, and shaded from the sun, they will soon become well rooted, and be in good condition for standing the winter before it arrives.—*J. M'H.*

State of the Weather near London for the week ending Aug. 17, 1844, as observed at the Horticultural Gardens, Chiswick.

Aug.	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Frid. 9	24	29.727	29.523	71	45	59.6	S.W.	
Sat. 10	26	29.744	29.501	76	41	60.6	N.	
Sun. 11	28	29.701	29.550	78	54	63.5	S.W.	.19
Mon. 12	27	29.698	29.576	70	54	62.0	W.	.33
Tues. 13	28	29.681	29.536	66	51	59.0	S.W.	.54
Wed. 14	●	29.674	29.541	65	49	57.0	W.	.09
Thurs. 15	1	29.744	29.562	68	47	57.5	N.W.	.03
Average		29.711	29.549	71	48.7	59.4		1.22

Aug. 9 Fine, with light clouds; densely clouded at night.
— 10 Light haze; fine, with white clouds; clear.
— 11 Very fine; slightly overcast; rain at night.
— 12 Overcast; heavy rain in forenoon; slightly clouded
— 13 Overcast; showers, constant rain; clear at night.
— 14 Overcast; rain, very heavy squall commenced suddenly at noon, with rain in torrents; very clear at night.
— 15 Dense clouds; rather boisterous, rain; overcast at night.
Mean temperature of the week 3 deg. below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Aug. 24, 1844.

Aug.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.		E.		S.		W.	
Sun. 18	76.8	51.6	64.0	4	0.31 in.	1	6	2	1	3	2	4	
Mon 19	77.0	51.8	64.6	7	0.28		1	2	1	5	5	3	
Tues 20	74.8	52.3	63.9	7	0.18	1		3	1	3	3	4	
Wed. 21	75.6	50.3	63.4	6	0.64	2	1		1	4	4	4	
Thur. 22	74.1	53.3	63.7	9	0.58		2	1		4	3	7	
Fri. 23	73.8	49.5	60.7	10	0.66	1	3			3	8	9	2
Sat. 24	74.3	51.3	62.8	10	0.54	1	3			4	3	4	3

The highest temperature during the above period occurred on the 21st, 1839—therm. 88°, and the lowest on the 20th, 1839—therm 37°.

Notices to Correspondents.

Books.—*A. Z.*—London's "Encyclopædia of Plants" refers to garden plants as well as wild ones, and is most useful for the former. Lindley's "Synopsis" will probably answer your purpose best. British Ferns are not generally grown for sale, but the London nurserymen can any of them obtain such species as are buyable.—*Maidstone.*—"Howitt's Rural Life in Germany," and "Murray's Handbook for Germany." We are not acquainted with such books for the Channel Islands. It is impossible to say how much cheaper these countries are than England. All depends upon the way of living. They are, however, very much cheaper.

Carnations.—*An Amateur.*—Good general directions for the cultivation of the Carnation will be found in the 19th No. of the "Florists' Journal," in Wakeling's "Florists' Guide," and in other Floricultural publications.*—*S. H.*—Refer to vol. i. p. 440; vol. iii. p. 191, and you will find the information you require.*

Carnations and Picotees—*H. H.*—We recommend you the following sorts:—*Scarlet bizarres*: Twitchett's Don John, Headley's William Cobbett, Ely's Lord Durham, Strong's Duke of York, Willmer's Conquering Hero, and Ely's Lord Rollington. *Crimson bizarres*: Puxley's Prince Albert, Hyde's Duke of Bedford, Wakefield's Paul Pry, Holmes's Count Paulina, Cartwright's Rainbow, and Mansley's Robert Burns. *Scarlet flakes*: Addenbrooke's Lydia, Chadwick's Brilliant, Willmott's Hero of Middlesex, Greaseley's Mary Anne, Wigg's Earl of Leicester, and Wilson's William IV. *Purple flakes*: Mansley's Beauty of Woodhouse, Pollard's Field-Rider, Millward's Premier, Willmer's Sibsmaster, Elis's John Wright, Eyre's Mungo. *Rose flakes*: Brooks's Flora's Garland, Wilson's Harriet, Greaseley's Village Maid, Pearson's Madame Mara, Willmett's Endymion, Dutton's Duke of Wellington. *Picotees*, purple edged: Kirtland's Princess Augusta, Dickson's Trip to Cambridge, Groom's Queen Victoria, Wilson's Pluperfect, John's Prince Albert, Bennett's Purple Perfection. *Red edged*: Chadwick's Sarah Jane, Widnall's Isabella, Hanger's Duke of Wellington, Barton, and Gem. *Rose edged*: Garratt's Lady Hardy, Willmer's Princess Royal, Bateman's Miss Bateman, Chilver's Queen Victoria, Baker's Eliza, and Turnpenny's Bridget.*

Ranunculus.—*A. G.*—The best general means of giving yourself a stock of Ranunculus is by putting a little soot at the bottom of small garden-pots, which should be supported on bamboo-sticks; and by burying about roots of withered Hemlock or Beans, shelter for these the insects will enter. They should be examined daily, and destroyed. Although you may not be able to extirpate them entirely by this means of being a diligent insect, you will thin their ranks very much.*

Cats.—*W. K. W. L.*—I cannot justify killing the cat any more than he did the dog of another. If, however, in the case in question, the cat were seen in the act of killing or attempting to destroy a pigeon, it might be destroyed. *W.*

Exhibitions.—*A Subscriber.*—Any amateur who wishes to offer for 20 varieties of greenhouse plants, to any public Exhibition of flowers, &c., I would be glad to assist at the person exhibiting to include in the number one Achimenes longiflora and one *A. grandiflora*, or two varieties of any other kind of plants.* We answer yes.

Fleckiness.—*An Old Subscriber.*—We may say that Elder-flower-water or Bean-flower-water will remove them; but we have not tried either with the Peach.

Grafting.—*Pen.*—We suppose you allude to these lines—

"More wondrous change, than Apples grow on Pears,
The genius of Plum varieties Cherries bears."

This is true; but Apples do not grow well worked on Pears. The rule that like only can be grafted upon like, is not here infringed, for similitude does not signify identity.

Insects.—*Entomologist.*—Your pupæ of the Emperor moth has been infested with parasites, but as they have all hatched, it is impossible to determine the species; neither can we give you the name of the spider unless you send a specimen. *R.*—*L. T.*—The subject is too difficult to decide upon without repeated examination upon the spot. All we can do is to offer to tell you what the insects are if you detect any, and will send as specimens, protected from pressure; should you succeed. It is, however, improbable we shall find the red spider is the cause of the mischief. *R.*

Layering.—*A. B.*—These may be struck from cuttings of the young wood put in about the end of August or beginning of September. They should be put under a hand-glass in a shady, rather damp situation, and treated like the common China Rose, when it is struck from cuttings.

Local Horticultural Societies.—*Stock.*—Much obliged. We will notice this matter next week.

Mildew.—*A Constant Subscriber.*—We should say that your Peach fruit is attacked by disease in consequence of damp and cold. More sun and air would, in that case, be the remedy. You will easily judge whether this is likely to be the cause. The fruit is more often than not [illegible]

Names of Plants.—*M.*—Rescue-like.—*An Amateur.*—Eutoca viscida.—*S. W.*—Epipactis latifolia.—*A Lady.*—By no means Hunter Elegans, but Verbena melanora, or some such miserable species.—*W. W.*—Your Rose appears to be the Yellow Christ.—*Jemima.*—Your Calceolaria is Myosotis.—*W.*—Alstromerias next week.—*J. M. W.*—Corydalis umbilicha, not lutea.—Veronica verna apparently, if not, we will say so next week.—*K. L.*—It is impossible to name fragments. The leaves may have belonged to a Sorbus.

Names of Fruit.—*R. N.*—[illegible] or Cherry Plum.

Pear.—*John Horefall.*—Your [illegible] granulate of tough lining, is the Sugar Pear. [illegible] can most probably supply it. It is the Poir sans Parchemin of the French.

Pelargoniums.—*C. G.*—The following are the principal sorts with sweet-scented leaves:—Citriodorum, Prince of Orange, Emily, Fair Ellen, Bagshot Park, Citronella, rose-scented, and the balm-scented.*

Pomegranate.—*C. Thurgood.*—We are acquainted with your Pomegranate, but only from Chinese drawings. It is a fine thing when it flowers, and we congratulate you on possessing it. The Chinese have specific botanical varieties of this plant. It has no name that we know of.

Transparent Varnishes.—*J. H.*—Your letter is an advertisement.

Miscellaneous.—*F.*—Hedge-mustard.—Broccoli and cream cabbage deserve [illegible] column.—*Alnwick.*—There is no objection to having your stove to face any south east.—*M. Soul.*—The Ash is a mere common tree of the common kind, and of no importance.—*T.*—Pinguicula.—Not seeds at all; but flowers of the Blue Meadow.—*An Amateur.*—Flower-seeds can be obtained from the Horticultural Society's Garden only by members.—*Zeta.*—A young man who wishes to enter the Chiswick nursery, Garnons, should proceed by making application to the gardeners.—*G. Nathorne.*—We recommend you to [illegible] for training up the rafters of your [illegible]

Seedling Pinks.—

Fuchsias.—*G. H. N.*—We have examined your collection of Seedling Fuchsias, they are generally pretty, but are not equal to the sorts generally in the florist inclinations. No. 2 is the prettiest, this arises from its having so much green in the sepals.*—*Greens-wic.*—From your blooms being put in a box without anything [illegible] there they were completely crushed up by the time they reached us.

Lobelias.—*A. Verschaffelt.*—Neither fine, with dingy purple, nor fortuous, with rose-coloured flowers, are showy enough for England. *B. marginalis* is the [illegible] with deep lapis lazuli blue flowers, the size of *L. syphilitica*, and a pair of clear white stripes in the middle of the lower lip. We recommend you to propagate this dear.

Pansies.—*C. B.*—There are several Pansies in cultivation superior to No. 1, the eye of which is not good, and the centre wants clearness; 2 is a promising flower, being well formed, flat, with the colours clear and distinct.*

Pelargoniums.—*W. G.*—Your seedling scarlet is very brilliant in colour; it depends entirely upon the habit of the plant whether it is a desirable variety for cultivation.*—*An Old Subscriber.*—Your seedling, Miss Jane, pure and substance; it is very pretty in colour and marking.*

Picotees.—*G. H. N.*—Your Picotee named *Lizzie Scarlet* is a showy flower, the white good, and colour bright; it will make an excellent border variety, but it is not sufficiently good for a stand.*

Petunias.—*W. G.*—Your seedling is a pretty delicate pink flower, but it possesses no distinct quality to recommend it for general cultivation.*—*J. J.*—The stake by which your specimens arrived rendered it impossible for us to form an opinion of them; they require to be pickled up in something cheap. Must be easily procured, as [illegible] as good a specimen as any we know.*—*Anonymous.*—Seedlings, all common in colour and character, and not differing from the sorts generally [illegible] cultivation.—*A. E.*—None seedling is a well-formed, and very pretty flower, blue-lilac veins upon a French white ground; we have seen varieties similar to your specimen, raised this season and still [illegible]—*O. S.*—[illegible] your specimens, Nos. 2 and 3 are not sufficiently distinct from the old sorts generally cultivated; No. 1, a brilliant crimson, and 2, crimson with a tinge of purple, are both good varieties; 3, but [illegible] gold flowers with dark carmine, and dark lakes and veins, but they are too much alike, and bear too great a resemblance to others; 4, a good white, with lilac-purple tube; 5, dark, rather light pink, with strong veins; 6, very large petals, with deep blue tube slightly veined; the three latter flowers, 5 and 6, are desirable flowers of good texture.—*H. S. S.*—Thank you for the blooms; the spotting was not sufficient to make the former specimens.

Rhizos.—*A. Verschaffelt.*—Your seedlings are very inferior to Van Houtte's, and are not at all desirable additions for the English market. Mingling the pale blue flowers, with a white eye; a purple in a very few [illegible] pale, and dappled flowers part-coloured purple, producing [illegible] flowers, with a pale eye, and other [illegible] the last, not worth notice.

Verbenas.—*W. G.*—Your seedlings are varied in tint; it opens of a rose-colour; the edge of the flower fades from exposure, leaving the only colour round the tube, only from the centre [illegible] colour. We consider the flowers not attractive.*

* An unusually many communications have been received too late.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are likely to be carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several eminent Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. remuneration for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London, and is brought to the market.

	Price.		Price.
Bones,	per ton £6 10 0	Nitrate of Soda,	per cwt. 1s. 6d
„ crushed,	„ 7 0 0	Oil of Vitriol,	„ 0 1
„ calcined	„ 8 0 0	Rape Cake,	per 1000 7 0 0
Carbonate of Ammonia	„ 0 1 0	Salt, Bay	„ 2 0 0
Ash,	„ 5 0 0	„ Stoved	„ 3 0 0
Guano, Peruvian,	„ 9 0 0	Sulphate of Ammonia,	„ 7 0 0
„ Columbo	„ 9 0 0	Sulphate of Ammonia,	per cwt. 0 1 0
Gypsum	„ 0 0 6	Salt,	per cwt. 1s. to 2 17 0

Wm. Newcomb, 11, Knob-lane, Fenchurch-street.

SEED WHEAT.—Any one desirous of purchasing Seed for next year is invited to inspect the two varieties of WHITE, SQUARE-HEADED and MORTON'S RED STRAW, WINTER, the seed of which are now growing on WHITFIELD EXAMPLE FARM, THORNBURY, GLOUCESTERSHIRE.

The present is the only season of the year when the value of any variety of Wheat as Seed can be ascertained by inspection; for, if the examination of a mere sample of the grain, which can be seen at any time, be nearly conclusive as to its quality in the eye of the baker (see *Ag. Gazette*, No. 6), it is entirely so as to the productiveness or habit of growth of the variety to which it belongs. These points, which are of the highest importance in the eye of the Farmer, can be ascertained only by an examination of the growing plant when in full ear. Price, 5s. per bushel. JOHN MORTON, Whitfield, Thornbury.

The Agricultural Gazette.

SATURDAY, AUGUST 17, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Tuesday, Aug. 20 Agricultural Imp. Soc. of Ireland.
Thursday, Aug. 22 Agricultural Imp. Soc. of Scotland.

FARMERS' CLUBS.

Aug. 19 Huntingdon. Aug. 21 Gloucester.
„ Marlborough.
„ Shrewsbury.

Among the various existing means of increasing the agricultural produce of the country none is so simply or palpably efficient as that which consists in THE REMOVAL OF USELESS HEDGEROWS. Much may be added to our produce of grain and even of meat also, by the breaking up of second-rate old pastures, but this must be preceded by the breaking up of the firmly-held and long-cherished opinions of the majority of English landowners—much may be added to it by the systematic attention of landowners to the drainage and permanent improvement of their estates—and doubtless the fertility of much of the land now in cultivation may be increased to a considerable extent by the adoption of a better system of agricultural management; but in the way of all these plans lie difficulties, arising from prejudice and want of capital. The removal of useless hedgerows, on the other hand, is a mere act, requiring no surrender of prejudice, and so far from being expensive it would generally be an immediate source of revenue to the proprietor. Its consequences, also, are certain—they arise from the positive addition of acres of first-rate quality to the previous extent of cultivated land.

This source of additional agricultural produce, for which there is great need, considering the rate at which mouths requiring it are accumulating, is capable of yielding it more abundantly than might at first be thought. In the reports of Whitfield Example Farm, by Mr. Morton, we are informed that about 28 acres out of an estate of 260 acres, were actually occupied by hedgerows. Now, in addition to the mere uselessness of this extent of land so occupied, an estimate must be made of the injury done by these hedgerows to the land surrounded by them before we can determine the amount of good to be effected by their removal. And if the first item in this account equals in value 10 per cent. on that of the whole estate, when we add to it the injuries arising from the souring and mildewing influence of hedgerow shelter, from the harbour they afford for all sorts of vermin, vegetable as well as animal, and from the insuperable hindrance they place in the way of any system of improved management, we may well estimate the annual loss sustained by the landowner in this respect to have been 14 or 15 per cent. upon the rental of the estate.

But this is an extreme instance, it may be said; "to make good your case that the removal of hedgerows would be the means of increasing agricultural produce to any important extent, you must bring forward the statistics not of individual farms, but of whole parishes." Well, then, we have before us a pamphlet that gives us just the kind and quantity of information that is desired.* We extract from it the following Table descriptive of the inclosures in 10 Parishes of South Devon:—

Name of Parish.	Total Acres in the Parishes.	Miles of Hedge in the Parishes.	Acres occupied by Hedges in the Parishes.	Per Centage occupied by Hedges.	No. of Inclosures in each Parish between	½ and 1 acre.	1 and 2 acres.	2 and 3 acres.	3 and 4 acres.	4 and 5 acres.	5 and 6 acres.	6 and 7 acres.	7 and 8 acres.	8 and 9 acres.	9 and 10 acres.	10 acres and upwards.	Total number of cultivated Inclosures in Parishes.
Stoke Fleming	2,000	88	264	13		338	268	96	56	34	24	16	8	6	2	2	854
Dittisham	2,000	88	264	13		338	268	96	56	34	24	16	8	6	2	2	854
Blackawton	3,000	132	396	13		428	338	120	70	42	30	20	10	8	2	2	1070
Strete	2,000	88	264	13		284	224	80	46	28	20	14	6	4	2	2	710
Stoke Gabriel	3,000	132	396	13		428	338	120	70	42	30	20	10	8	2	2	1070
Berry Pomeroy	3,000	132	396	13		428	338	120	70	42	30	20	10	8	2	2	1070
Totnes	2,000	88	264	13		284	224	80	46	28	20	14	6	4	2	2	710
Harberton	3,000	132	396	13		428	338	120	70	42	30	20	10	8	2	2	1070
Ashprington	2,000	88	264	13		284	224	80	46	28	20	14	6	4	2	2	710
Cornworthy	2,000	88	264	13		284	224	80	46	28	20	14	6	4	2	2	710
	24,000	1056	3168	13		3405	2691	952	557	335	238	168	80	60	20	20	8526

Here we see nearly 8000 inclosures in an extent of 37,000 acres: they must have averaged about 4½ acres apiece; and the hedgerows dividing them occupy nearly 3000 of those acres—7½ per cent. on the whole extent; they must have been as nearly as possible a perch wide throughout. Now one-sixth of this width is sufficient room for a well-kept fence, and one-third the length of hedgerow would inclose the land in fields of a sufficiently small size, so that, of the 2642 acres in these parishes at present occupied by worthless brambles, nearly 2500 might be made available for cultivation, or about ⅓ of the whole extent. Now if only one-sixth part of England was thus covered with hedgerows, their removal and the substitution for them of good fences, would amount to the addition of another county to the extent of our cultivable land.

This pamphlet by Mr. Grant, of Exeter—a contribution to the statistics of this important subject—the first, we believe, that has appeared on the evils of overgrown hedgerows, will well repay an attentive perusal. We extract the following paragraph as illustrative of the general argument.

"The evils of the present system of dividing farms, general over this and great part of the neighbouring counties, may be thus summed up. The hedges occupy in some cases fully 10 per cent., but on an average of these ten parishes, 7½ per cent., or one acre in fourteen: they shade and injure at least half as much, most persons, landlords as well as tenants, whose opinion I have asked, say, *quite* as much more: they harbour birds and vermin which injure the crops; and that this is no small evil any one may satisfy himself, by going into a field just before harvest. They are nurseries for weeds: they prevent that free circulation of air, so necessary to the healthy growth of plants as well as animals: they are obstacles to the drainage of the soil, the roots grown in them frequently choking up the drains. They are expensive to erect, as well as to keep in repair; the expense of new hedges in labour and planting being about 3*s.* 6*d.* per perch, and that of keeping them in order about 5 per cent. of the rental: the soil on each side of them is generally thinner, from the materials for making the banks being taken from it. So many small inclosures require a much greater number of gates, which have to be kept up and renewed: they cause a much greater number of small lanes and cart-tracks leading from one place to another. The damage from shade is also very much greater from those hedges which run east and west. To do the least damage, and to be of the greatest service as shelter, our most prevalent and severe winds being from the west and south-west, hedges should be made, and the long way of the fields be, from north to south, for the same reason that London lays it down as a rule in building a house, to make the diagonal line in that direction; namely, because the sun thus shines on every side of it every day. The fences being in most cases cropped, and the fields of every shape but right-angled, the labour of every operation of the farm, particularly of ploughing, is most materially increased. The parishes of Hardham and Pollimore will contrast favourably with the others in this respect. This evil is anything but a trifling one, especially when to it is added the labour caused by the roots of trees which shoot out into the fields."

* "A few Remarks on the Large Hedges and Small Enclosures of Devonshire, and the adjoining Counties." By John Grant, Surveyor and Land Agent, Exeter. Longman and Co.

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

(Continued from page 510.)

Bath-stone.—This rock is the highest member of the oolitic series occurring within the limits of the district. With the exception of the lower lias, it covers a larger portion of the surface of the district than any of the other rocks to be mentioned. It is about 65 square miles in extent. Its eastern boundary is everywhere the edge of the table-land, whence the high-lands are intersected by valleys, as is before very irregular; and also in the south of the district, many hills, patches of it are in some places entirely isolated. This rock, which is an impure limestone, frequently alternates, especially in the upper part of it, with beds of clay; this is the case near Didmarton, and all along its junction with the Corn brash. It tends to split into thin slates, at an angle of 30° or 40° to the plane of stratification. The oolitic structure is not so perfectly developed in this rock as it is in a lower member of the same series. It is also generally more shelly than the inferior oolite. This renders it valuable as a building stone, rendering it from suffering so much from the weather; at the same time that it admits of being hewn for ornamental work. It is distinguished among the masses from the lower oolite, which is very soft, by the mark of weather-stone.

Agricultural Character of the Bathstone.—The general appearance of this formation, at least the contrast which it presents to the others which are to be mentioned, is due, probably, as much to the climate and aspect of the country, as to any difference in its geological character. The level of the district here being 500 feet higher than that of the vale below, it is not only much colder, but is more exposed to wind from every quarter. Its appearance is certainly bleak, compared with the richness of the vale. The land is almost entirely inclosed by stone walls; very little hedgerow timber exists. A few stunted Ash-trees, or here and there a Beech or Sycamore-tree, are all that are that are to be seen. The fields are large, most of the land is arable, perhaps not above one-eighth being in pasture. The farms are generally large, varying from 300 or 400 acres up to upwards of 1000. The quantity of pasture land thus varies from 40 to 50 acres, which is sufficient to keep a small dairy. It is always placed around the farm buildings. The nature of the soil varies; it is chiefly a brashy soil, of a light-brown colour, and very shallow. In other cases it is a stiff clay. This depends on the nature of the subsoil, which, as was said, consists of alternate beds of limestone and clay. The clay is an extremely poor soil, and is productive, in common with all clayey soils, of Thorns, stunted plants of which occasionally occur in the pastures. The brashy soil is more fertile than the clay. It is in general a light soil, but when wet is liable to cling. In some spots it is what is called a sleepy soil; *i. e.* if well pulverised, it will, after rain, run together as if melted, and then it presents a surface impervious to water and air. Water will lie on such a surface; and, not only so, but the seed in the ground will hardly pierce it. Such a soil is difficult to manage. If the farmer prepare and pulverise it well before sowing, then on the first shower of rain it is injured as I have described. If he does not pulverise his soil, it is just as faulty in an unpulverised state as any other soil. There is a certain degree of dryness in which he must leave it, so that when rain comes it will break it down, without causing it to run together. Very little drainage is done on this land. The subsoil is rock, and yet the land is, in many cases, wet. The clay beds, which here and there come to the surface, render the drainage difficult. The subsoil plough it would be impossible to use on some of the lands, on other places it might be used advantageously. Where the clay and the rock join, and the rock thins out over the clay, the mixture which would be effected by the use of this implement would be productive of good. That this also is the opinion of many of the farmers, I might suppose from what I have heard said regarding the large stones lying on the surface of the land; it was stated that instead of gathering these and carting them away, it would be better to break them up small, and strew them over the surface of the clayey land. The long practice, from necessity, however, of shallow ploughing, seems to have made many farmers think that deep ploughing is injurious, and subsoil ploughing bad in principle. It is the general idea that shallow ploughing is preferable to deep ploughing, and most farmers go much shallower than there is a necessity for. The general rotation on this formation is a six-years' course:—1st, Wheat; 2d, Oats; 3d, Turnips; 4th, Barley; 5th, Seeds; 6th, Seeds. Several departures from this are made in many districts, two of them are as follows:—Wheat, Turnips, Barley, Barley, Seeds, Seeds; and Wheat, Barley, Turnips, Barley, Seeds, the last being a five-shift course, which is sometimes altered by taking Oats after Wheat instead of Barley. The fault of this system is the having two Corn crops in succession, Wheat and Barley, or Wheat and Oats. The alteration of the general system, that pointed out, and the having two Barley crops in succession, is, I should think, no improvement on it; but, although it was acknowledged that the second crop of Barley was always inferior to the first, it was stated that the seeds were always a better crop after two years' Barley than after only one. There are no leases granted on this district, and the tenant is, therefore, not bound down to any particular course of crop-

ping, but it is generally understood that three Corn crops shall not follow in succession. The Wheat crop is on an average, about 18 bushels per acre; the Red Straw Lammas is the kind chiefly sown. It is almost universally drilled in. The Wheat crop is followed by Oats, or in some few instances by Barley. The average Oat crop varies from four to five quarters, that of the Barley crop is in general less, than thirty bushels. The Oat stubble is pared and burnt in autumn, and after two ploughings the land is sown to Turnips or Swedes in May or June. This is still generally done broad-cast, but the practice of bouting and drilling is gradually becoming more general. The Turnip crop is not, on an average, above 12 tons to the acre. This low average is, perhaps, partly owing to the circumstance that no horse hoes or drill-harrows are used to stir the land during the growth of the crop, and also, to the practice of not skimming them out sufficiently. This is the only crop in the course where dung is applied to the land. The Turnip crop, with the exception of a small portion of it, which is carted home for the labouring oxen, or for any fatting oxen that the farmer may have, is eaten on the land by the sheep. This prepares it for the Barley crop, which is sown after a single furrow in the months of April or May. Clover seeds, with the common Rye Grass, are sown with the Barley. They in general remain two years on the land: an average crop of about 15 cwt. of Hay is cut. After lying down two years, the land is ploughed up for Wheat, which is sown about the beginning of September, either on a single furrow or after a double ploughing. The first furrow in the latter case is called *rafturing*, that is, the land is half ploughed, each furrow-slice being laid on its breadth of flat land. This is dragged and harrowed, and a second furrow is then taken. The plough in common use is the Beverstone wheel-plough, having a wooden mould-board. It is drawn either by three horses or four oxen. Besides these crops, one-sixth part of the farm is, in general, in Sainfoin each year. This is almost useful plant to the hill farmer. The soil of the Bath-stone is well suited for it; and large crops are grown where Clover would fail. It is sown and kept down for six or seven years—or long, in fact, as it will remain in the land. When the land is once tired of it, it is long before it will grow it again, and thirty or forty years are generally made to intervene before a second crop is taken. Immense crops of it are frequently cut during the first two or three years; 40 and 50 cwt. per acre have been cut under these circumstances. It is always broken up for Turnips or Swedes, and, being pared and burnt, a thick coat of ashes is laid over the land. In some parts of this district, a system of burning is followed, which is termed stiffe-burning, by which, according to the testimony of those who adopt it, the crop of Turnips is greatly increased, without any additional expense of cultivation. This way of performing the operation, as it was told me, has at length falsified the old proverb, that "Burning, though good for the father, is bad for the son." It consists in laying sods around the heap of Couch, Stubble, &c., to such an extent, that the combustion is retarded though not stopt altogether. The vegetable matter is thus preserved, and, instead of being sent to the winds in smoke, is chiefly returned to the soil. This seems to be the reason of its superiority to the old plan. With regard to the labour of the farm, about one-half of the ploughing is performed by ox-teams, four in each, and one-half by horses, three in each team. The oxen are in general bred on the farm, put to work when three years old, and either sold as working oxen or sent to the butcher, after an attempt to fatten them, when five years old. Four teams, it is calculated, will plough three acres a day; and certainly, considering the shallowness of the furrow, this is a light day's work. With the exception of ploughing and general farm work, all other labour is generally done by the piece. Thus, hoeing the Wheat in spring is let at 4s. an acre; hoeing the Turnip crop three times at perhaps 30s., and paring Oat-stubble, at 8s. an acre. Men and boys only are employed, except at harvest-time. Women are seldom seen in the fields at work with the hoe in their hands, although it might be more economically done if they were employed. This is certainly the best-cultivated of any of the formations occurring within the district; and although the resources of the soil have certainly not yet been driven to their utmost stretch, they have been driven harder than those of the soil of any other district we shall have to mention. There is also a much greater degree of interest taken by the farmers in this district in the progress of agriculture generally than there is anywhere else on the district. There has been a great step taken here in the improvement of agricultural practice within the last century. This district was, not 100 years ago, one uninclosed common, let to farmers at 1s. an acre, who sublet it to others. It was broken up once in five or six years, and a crop of Oats taken, seldom exceeding double the quantity of the seed sown. The land lay inactive during the intervals between these crops, and it was overrun by a few sheep, which in some degree kept down the Couch which there flourished. The generation which saw the Turnip introduced has hardly yet gone by. The farmers who were condemned for attempting its growth, out of the garden have hardly disappeared. Since then the land has been inclosed, and the Turnip and the Swede have taken that place which they must ever do in a good system of farming.—*H. S.*

DRAINAGE OF SURFACE-WATER FROM HEAVY LAND.

The very various and conflicting opinions as to what is perfect drainage, convince me that practice without theory is like a ship without a compass—dangerous, and uncertain, and expensive. Having cut, during the past year, with good effect, many miles of drain, I will describe its action, and state what I consider to be the true theories of perfect drainage.

My operation being different to the usual custom, I beg to submit my theories and practice for discussion, approval, or disproof. The question of drainage is far too important to remain longer in obscurity. The Royal Agricultural Society will do an essential public service by deciding the point.

Theory.—That in perfect drainage, twelve inches deep should percolate and leave the land, in less than twelve hours from the time the drains begin to act, the difference in time being equivalent to the proportion of water the earth chooses to retain for its use by capillary attraction.

That to effect this, the subterranean area of porosity, *i. e.* the surface of the drains, should nearly equal the surface to be drained, so that if the space to be drained were one square yard, the sides and top of the drain should present an area for percolation equal to nine superficial feet, minus the allowance for pressure.

That the continuance of water in the soil longer than it would remain by capillary retention, is injurious.

That the earth and roots will abstract from the passing water those gases for which they have an affinity, and in which they may be deficient.

That the form of drain should be deep and narrow, as affording the greatest area of porosity at the smallest cost, increasing the quantity of porous earth, available to roots.

That the material for filling the drains should comprise the greatest durability with the least power of capillary attraction.

That where pipes are used, their material should be durable but porous; their form not round or square, but a very narrow and deep oblong, the object being to get a large area of porosity.

That small, round, hard pebble-stones, with a pipe over them, as used on my farm, seem to present all the advantages desired, viz., the impossibility of choking by superincumbent earth, resistance of pressure from the sides, absence of capillary attraction; the round hard stones having but little mechanical affinity for the water, and offering but small resistance to its passage.

That the passage of water in a pipe or drain is always quicker than its percolation through the earth or material of the pipe.

That no drain should much exceed 100 yards in length (fifty or sixty would be better), without opening into a leading drain of greater dimensions. If the drain were in any part full, it would delay percolation.

That neither Bushes, Straw, or other perishable material, should ever be used in a drain.

That the deeper the drainage, the better the crops; but in no case should any portion of the drain be nearer to the surface than 18 inches.

There should be a leader to every 300 yards of drains, giving it ample capacity.

That there should be an open ditch, without fence, for every seven or eight acres drained. The absence of an occasional open ditch is what renders so much drainage useless. Long continuous narrow streets, without frequent outlets, get frequently obstructed; the same may be said of drains—a full drain with a slow egress sadly retards the filtration of water. Drains should be never more than half full of water the other half air. In this way the superior weight of water causes proper filtration by displacement of air and replacement of water by quick passage.

That the rapidity of percolation depends on the subterranean area of porosity and the depth of drain combined. Shallow drains want a greater area of porosity than deeper ones; because (as water presses equally on all sides towards the vacant space in the drain) the deeper the drain the greater the weight and column of water. Consequently, the greater the pressure the more rapid the filtration: filtration at two feet will be double that at one—at four feet four times as great, and so on in proportion to the superincumbent weight of water pressing equally on all sides towards the drain. It is on this principle that deep pipe drains act quicker and lay dry a greater extent of ground than shallow ones—consequently, the deeper your drainage, the smaller may be your area of subterranean porosity. Pipes at the depth of five feet would hardly need stones, the pressure being about two-and-a-half pounds on every square inch at first; and as the water escapes and diminishes, so will the drains run slower and slower, in a ratio proportioned to the diminished pressure.

Now, although my drainage is considered the most perfect in the county of Essex, I only consider it one-fifth as perfect as it should be. My drains have one foot of subterranean porosity for every five feet of surface, instead of having five feet: still as it is expensive even so, I must be content with it; and I will assume it to be the minimum of perfect drainage.

During the recent nineteen hours' rain, after a very dry time, the stones and pipes poured out an immense volume of water, which, on the second, third, and fourth day, gradually decreased; proving my calculations correct, for if my drains had been perfect, it would have all run away in seventeen hours, instead of eighty.

In comparing notes with a farming friend of mine, who has bush drains from 200 to 300 yards long, in the same quality land, he said, "I know not what has become of the water, for none has appeared in the ditches;" and he seemed quite surprised at my drains running so much. What is the inference?—that bush and straw drains of great length are perfectly worthless as compared with pipes and stone drains of moderate length.

In fact, on one field I drained about three acres the same time, distance, depth, and soil, with reeds or bands of straw tightly fitted over the vacant space, and find it as compared with the tile and stone drained part, almost useless, so much so, that we shall re-drain it.

The cause of my fields easing the water is, that its stagnates and remains in the soil, keeping the roots cold, wet, and sour, resulting in late crops and densely working land. I hope after this, we shall hear no more of scud or bush draining. From the moment our land was ploughed after draining, no water has ever run off the surface, whether in winter or spring, although our fields have a pleasant slope. So far my draining has answered, although I still maintain it is only perfect in degree. It would have been real economy to have spent another 5*l.* per acre, and carried out my theory completely. I am not able to say which answers best, a pipe only, the full size of the drain, or a pipe and stones. The latter I give the preference to, the stones having less capillary attraction. I consider drainage almost as important in a very dry season as in a very wet one. This spring we had a practical illustration of it at Tiptree. The crops never looked yellow as they used to do, but always a healthy green, and the very first rain caused so amazing quick growth. It is very easy to perceive that porous drained land on a cool bottom keeps moist in dry weather, by capillary attraction (like lamp sugar testing on moisture). At night the dews fill its surface. No such effects can take place in sodden land, with gaping cracks, and a baked impervious surface.

If I am wrong in my theories or practice, I shall feel obliged to any gentleman who will correct me, my object being to arrive as near perfection as possible. Permanent Grass on very stiff clays must be ploughed up before the drains can act. The impervious pan requires to be broken up. This may be a subject of regret, but it ought not to be; for I quite agree with Mr. Morton, that no permanent Grass can keep so much stock per acre as the Turnip culture and green crops, fed, folded, or stall fed, nor is it so profitable. Grass land is therefore a national loss, employing less labour, capital, and affording less profit than it would do if cultivated with roots, green crops, and corn.

Drainage of Springs.—This must always be effected by drain-pipes (without stones) fitting into each other so as to form one continuous unbroken channel; half-circular pipes, fitting on each other, are sometimes used; if properly loaded they answer, but are not so secure as the whole pipes.

I think we may lay down as a safe theory:—That as the pressure of water is from below, and frequently as much as fourteen pounds on every square inch, that spring drainage should be deep, so that the superincumbent earth be equal to resisting the pressure on the pipes. That the pipes should be always large enough to contain air as well as water. That no stones, bushes, or straw should be used in spring drains, it being evident the immense pressure I have mentioned would quickly choke them with earth.—*I. J. Mechi, 4, Leadenhall-street.*

Home Correspondence.

Drainage: Debenham Farmers' Club.—For the information of your Mid-Lothian contributor, Debenham is a small market town in Suffolk; and there are many farmers in its neighbourhood (and men of education too), who are Goths enough to doubt the efficiency of tile drains, "as done once to last for ever," and still prefer those filled with straw, stubble, or plashings, for clay land. They do not think the tiles will wash away or wear out, but on tenacious soils they often find such a portion of clay worked into the drain as to prevent the water running, where by chance or otherwise they have been induced to try tiles. The drains made in the Suffolk fashion last from 16 to 20 years; and if Mr. Girdwood will take the trouble to look into the Royal Agricultural Society of England's Journal, at Mr. Pusey's Report on Draining, he will find much of the matter of discussion at the Debenham Farmers' Club Meeting recorded in an article by the Rev. C. Hill. Tile-draining having been only tried a very few years, the Suffolk farmers would give as a reason for adhering to their old system, that it has been in use in their county nearly a century, and found very beneficial, long before tiles were even thought of, and they are loth to give up entirely an old friend, who does not lead them into expense more than they are sure of having repaid, and taking up a new comparatively untried and more expensive one. Still if it can be proved that Suffolk farmers can reap any gain from the use of tiles, they will be immediately used for all or nearly all drains even in the Debenham district; and many persons, I am told, are actually using them now, where their landlords are sufficiently liberal to supply them. Of the utility of draining land in an oblique direction, I can state an instance which I witnessed last autumn. Whilst looking over a farm not far from Debenham, where part of a field was drained down every other furrow (of ridges each three yards wide), from top to bottom of the field, and the other part obliquely across the ridges at six yards apart—the field being rather hilly but not steep—I made inquiry why that part drained longitudinally had one wet furrow and one dry one, whilst the other part drained obliquely was all equally dry, as much so as any part of that drained down the furrow. The only answer I could get, and the conclusion I arrived at was, that it being drained obliquely across the field, the surface water ran down each furrow, and fell into the drains as it came to them; and that on the part drawn longitudinally every other furrow had no drain under it to receive the water. As I do not pretend to know how the strata lay, or even

the principle of how water gets into the drains (except that it will run down hill). I am hardened in my predisposition for trashyness drains, by practical observation, contrary to the written theories of the day. I have also seen the same result on my own farm in a field drained part each way. On many of the strong clay lands in Suffolk, unless drains are made not further than six or seven yards apart, the water will not draw into them; therefore Suffolk draining becomes more expensive than your Mid-Lothian friend contemplates in his calculation. I believe the Suffolk system is not a complete and absurd one, as long leases are not the custom with the small landowners there, and farms frequently change their tenants; and though I am sure in this case to be called an old-fashioned close-headed Suffolk farmer, defending his customs against modern improvements, I can only plead guilty to a fear of casting away the old broom before I have proved the new one, even though it be recommended by the march-of-intellect-men of the present day; for I have found by experience that their advice is very apt to march the profits off a farm to a very quick time.—*A Farmer and Valuer, Newmarket.*

Mr. Johnson's Register of Implements.—With reference to your notice of Mr. Johnson's book of advertisements of agricultural implements, I fear that your readers may be mistaken in expecting it to be a complete Register of Implements shown at the Royal Agricultural Society's Meetings at Southampton. The fact of the matter stands thus:—Mr. Johnson's book contains only the names of 18 makers of implements, while the catalogue of the Society contains 97 names of makers of machines and implements, and is a larger book by 58 pages. I hope in justice to the makers whose implements are not noticed in Mr. Johnson's book, you will give insertion to this.—*A Subscriber.*

Allotment System.—Where this system is carried out with a view to give assistance to the hard-working artisan and labourer, presenting to them an opportunity of employing their spare time, with a prospect of obtaining a profitable return for their industry, the scheme offers great advantages to society at large. The visible change in the habits of the population of a district where the plan is liberally and fairly practised speaks sufficiently in its favour. It is, however, to be feared that it is too often considered a speculation by the landholder, and a means of acquiring a higher rent than is given by the farmer for the same description of land, thus rather burthening the poor man than benefiting him. In many instances another abuse also creeps in, which savours of the Irish middle-man. An individual takes a piece of land at 3*l.* per acre, and lets it out again at 6*l.*, which being far above its value, the poor man cannot pay his rent, and his crops are seized; thus, in many neighbourhoods bringing into disrepute a plan which, in itself, is calculated to do so much good and elevate the character of the lower orders. Cultivation by spade husbandry being superior to the use of the plough, if any difference is made in the rent, justice demands it in favour of the small tenant. Accommodation land close to a town, occupied as a market garden, is, of course, of increased value, in its relative position, compared with that at a greater distance, apportioned to labourers, and to which they have to walk one or two miles, either after a hard day's work, or before they commence their accustomed employment. The quantity of land allowed to the head of a family should never exceed a quarter of an acre, and generally speaking the sixth or eighth is enough. Where the object is merely to assist in housekeeping, and not as a main source of income, mischief arises from granting it with more land than he and his family can till during their leisure hours, and yet not sufficient to maintain them without other assistance. This dependence upon the land interferes with their common vocations, and reduces them to greater distress than they would have experienced without the allotment. Half measures are always bad. By a judicious distribution of lots according to the strength of a family, better cropping and manuring will be insured, rents better paid, and the honest man will not be screwed out of his last farthing to meet the exorbitant demands of his landlord and *protector*. An argument has been used in favour of high rents, viz., "A man need not take the land unless he likes," and the best answer to this is, "A drowning man will catch at a straw." Where the labour market is over-stocked, any nominal rent may be asked and promised, but the day of reckoning is a proof of how far either party have acted wisely.—*Falcon.*

Rooks.—[We have received the following communications on this subject since the date of No. 28, and we give them in an abridged form.]—In winter, while the weather is fresh, rooks follow the ploughs, which are then almost constantly in motion, to obtain the larvæ and worms turned up by them. In frost and snow they resort to roads and dunghills, and frequently attack stackyards, tearing the thatch from the heads of the stacks, and devouring the exposed grain. They are sometimes, also, known to eat Swedish Turnips, and do some mischief in that way, as the broken bulbs generally fall victims to the frost. The principal damage, however, of which they are guilty in winter is their attacks upon the young Wheat. In spring they certainly do eat grain of various kinds, scattered by the hand of the sower, but not to any great extent. Their principal employment is following the ploughs for insects, &c., and I have no doubt much good is done by them in this way at that season. Nevertheless, the first-sown fields in a district generally require watching by the farmer. In the beginning of summer, when the Potatoes begin to sprout, rooks do a great deal of damage by digging up the sets, and thus completely destroying the plants. The fields must be well looked after at this period by the farmer, and the birds scared away until the plants are of a larger size. It is often necessary to watch Potato fields for three weeks and sometimes even for a longer time. In summer, too, especially if the weather be hot and dry, rooks often do some damage to the ripening stacks in the stack-yard, tearing off the thatch, and carrying off whole heads of grain into some neighbouring field to be devoured at more leisure. Pasture lands, however, are the great resort of these birds in summer, and there they do much good, destroying numbers of grubs and other insects. They often also render a service to the farmer, by spreading abroad, in their search for insects, the droppings of pastured animals, particularly horses, as these, when left alone, produce rank tufts of coarse herbage. Towards the end of summer rooks may sometimes be observed in Turnip-fields, pulling up the young plants; but this, I am of opinion, is merely to get at some lurking insect. In autumn the farmer is again a sufferer from the depredations of the rook. Whenever the corn begins to ripen, it is attacked by flocks of rooks, and much damage is often done, especially in spots where the crops are at all laid. When the grain is cut and stacked, too, they do a good deal of mischief. When the Potato crop is nearly ready for taking up, rooks often attack it, digging into the sides of the drills and extracting whole tubers, and sometimes the farmer is again, as in spring, compelled to have his fields watched. When not engaged in these spoliations, rooks are generally to be found in pastures; or if any ploughs are at work, searching the upturned furrow-slices. In early autumn, too, they very frequently resort to moors and uncultivated ground, most probably in quest of insect food. As far as my experience goes, I am disposed to think that rooks should be encouraged to a certain extent, but that they should not be allowed to become too numerous in any district. Their numbers ought, I think, to be kept under, lest the supply exceed the demand for them, and the rook turn thief at all times and not now and then merely.—*A. J., Roxburghshire.*—On turning to Bewick, which I have interleaved, I find the following note:—"In the winter of 1829-30 I saw a Barley-stack unroofed, and heard of a cottage in the neighbourhood which had shared a like fate in the course of a few hours. The rooks, driven to this food by the severity of the weather, performed their work of destruction as effectually, though not so deliberately, as the bunting is said to do, by the author of the Journal of a Naturalist.—*Herts.*" This summer I have seen them taking to a new food. A farmer neighbour had put down several loads of ground bones, but on account of the drought did not spread them. The rooks have been very busy round these loads, and have carried off and dropped in a field belonging to another farmer really a considerable portion of this valuable manure. [They probably attacked the grubs merely, which will breed in a heap of half-rotten bones.] Having thus said what I can against this bird, let me now become his advocate. He only does this mischief when in distress. I do not believe, except under necessity, that he is graminivorous, though I have known him pick up acorns. In confinement he will leave corn for grubs of any kind. Neither, setting aside his destruction of insects, &c., is he altogether an unprofitable bird. As food, two years ago, I saw no less certainly than 200 young rooks given to the poor, and other persons had their share. I would certainly say to the farmer, the rook is your friend, despite some faults;—and who is perfect!—*Cantabrensis Jr.*—In the *Gazette* of June 15th there is an article headed *Rooks*, by "Acer." Its author is evidently a great crow-fancier, or he, surely, would never have taken the radicle of the Oats, preparing to root, for the wireworm, gorged with the milky substance of the Oat." Any person may satisfy himself of the fact, that all grain, after being cast into the ground a certain time, shows "a white streak, extended lengthwise." I cannot see any cruelty in killing these black robbers, so convinced am I of the injury they do to the crops. I have no reason for doubting that the evil they do to the farmer so far overbalances any good they may do, that it would stand in the ratio of 99 to 1, from one year's end to the other. I am not so fortunate as to be "owner of a considerable rookery;" yet, being in possession of a patch of ground in the shape of a small farm, I have had frequent opportunities of quarrelling with these birds—being placed about midway between two considerable camps of the enemy, which harass me on every side. In spring, when sowing commences, the damage they do is great; next come the Potatoes, which suffer in their turn after the grain crops have got beyond them; next the Turnips in their season suffer (this being the scarcest time of food for them in the whole year, winter excepted), so that they are forced to turn up manure in the drills in search, doubtless, of wire-worms, &c., and thus they root out the Turnip plants, and ruin the crop; next comes the early-ripened grain, the first thing in the shape of plenty that they have had for some time—they luxuriate in the midst of this all harvest time; but when the fields are well nigh cleared of grain then commences their second period of famine, and they are ready to pour down in myriads on the patches of Wheat that are here and there sown through the country, (this is not properly a Wheat-growing country). Lately the birds have begun to make havoc on Turnip fields during winter, principally among the yellow and Swedish kinds, by picking holes in the bulbs, and thereby admitting water, air, and *frost* to them. Last winter I did not leave a single Turnip field but what suffered less or more, and it was no uncommon thing to see whole fields where not a single Turnip of any considerable size had escaped them. I am convinced that there is no farmer in the neighbourhood but what suffers from 10 to 20 per cent. of loss upon his crops by the depredations of these birds: in my own case, for the last 12 months I am quite sure that I would not have suffered half so much, though I had had all the wire-worms in the county of Forfar to contend against, instead of the herculean rooks, as "Acer" would have them to be.—*Peel, Loch Lintlithan, Angus.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover-square, on Wednesday, the 7th of August; present, T. Raymond Barker, Esq., in the chair; Col. Austen; De Bunsen, Esq., M.P.; F. Burke, Esq.; J. Kinder, Esq.; J. Parkes, Esq.; J. A. Ransome, Esq.; and Prof. Sewell.

The Earl of Egmont, of Enmore Castle, near Ashmore, Somersetshire; and John Cheetham, Esq., of Norton House, near Yeovil, Somersetshire, were elected Governors, and the following gentlemen Members of the Society:—

Henderson, Colonel, Mayor of Southampton
Curtis, William, Netheravon House, Amesbury, Wilts.
Davis, Robert, East Woodhay, Newbury, Berks.
Gurney, Charles, Launceston, Cornwall
Hobby, D. Peter, Colquite, Bodmin, Cornwall
Drew, John Watkins, Southampton
Young, George Edgar, Broad Chalk, Wilton, Wilts.
Sinford, George, Bishopstone, Wilton, Wilts.
Newton, Thomas F., Bogdean, Salisbury
Cousins, Robert, Norton Farm, Sutton-Scotney, Hants.
Gilbert, Major, Bartley Lodge, Southampton
Bainshaw, Rev. Charles Simon, Trinity Church, Southampton
Taylor, John Oddin, Hardingham, Norwich
Powell, Colonel W. E., Nanteos, Aberystwith, S. W.
Harvey, Thomas, Kegilbeck, Falmouth, Cornwall
Johnston, Charles, Claremont, Cheshunt, Herts.
Bolcan, Sir J. P., Bart., Ketteringham, Wymondham, Norfolk
Treemer, James, Rauceford Lodge, Lyndhurst, Hants.
Long, John, Marwell Hall, Twyford, Winchester
Bowser, William James, Merton, Surrey
Edwards, Thomas, Compton House, Stockbridge, Hants.
Lyeight, Admiral Arthur, Southsea, Portsmouth
Glover, Rev. Frederick, R. A., Rector of Charlton, Dover
Bury, Edward, Hanslope Park, Newp rt-Pagnel, Bucks.
Dorchester, Lord, Greywell, Odiham, Hants.
Talbot, C. R. Mansel, M.P., Margam Park, Neath, S.W.
Kemp, James, C., Liverpool
Smallpiece, Job, Compton, Guildford, Surrey
Smallpiece, William Haydon, Guildford, Surrey
Haydon, Joseph, Guildford, Surrey
Campbell, Major T. E. (7th, or Queen's Own Hussars), Kenilworth, Warwickshire
Martin, R. P. Brounker, Compton House, Salisbury
of Germans, Earl of, Port Eliot, Devonport
Campbell, John H., Exton, Bishop's Waltham, Hants.
Bowring, John, Wick, Worcester
Drummond, Henry, Albury Park, Guildford, Surrey
Cosens, Thomas, 10, Chandos-street, Cavendish-square
De Grey, Hon. Brownlow N. Osborn, Fawley, Southampton
De Grey, Hon. and Rev. Frederick, Copdock Rectory, Ipswich
De Grey, Hon. George, Fawley, Southampton
Damer, Joseph Angel, New Farm, Winfrith, Dorchester, Dorset
Owen, William, Blessington, Ireland
Russell, E. R., Southampton
Speke, William, Jordans, Ilminster, Somerset
Tinker, William, Crook House, Devizes, Wilts.
Hocken, Rev. William, Great Endelion, Camelford, Cornwall
Jolliffe, Sir William G. H., Bart., M.P., Heath House, Petersfield
Clarke, Charles, Aldborough House, Lincoln
Sanders, S., Perchill, Newport, Isle of Wight
Coles, Colonel, Wells, Somerset
Burrell, Walter, 5, Richmond-terrace, Whitehall
Hooper, George, Jun., Combe Bank, Kent
Huskington, Sir Henry, Bart., 34, Montague-square, London
Pepgate, Simon Fraser, Fitzhall, Midhurst, Sussex
Fryer, John, Hints, Tamworth, Staffordshire.

FINANCES.—The *Chairman of the Finance Committee* laid before the Council the Monthly Report of the state of the funds of the Society to the end of the past month; from which it appeared that the current cash balance in the hands of Messrs. Drummond at that time (including a residue of 300*l.* on account of the subscription of 1000*l.* received from the town of Southampton) amounted to 2848*l.*; and the capital invested in the public funds to 7700*l.*: the Council, before leaving Southampton, having defrayed the expenses of the London police, amounting to 125*l.*, and placed at the disposal of the stewards and director of the yard, out of the deposit of 3308*l.*, in the hands of Messrs. Maddison and Pearce, the Society's Local Bankers, the sum of 1000*l.*, to meet the immediate claims of a miscellaneous character connected with that department. The Council then proceeded to vote the discharge of the following claims, as recommended by the Finance Committee:—

	£
Contract for the Yards and Pavilion at Southampton (balance of account)	1751
Do. Council Dinner	405
Do. Pavilion	560
Prizes awarded at Southampton	1315
Mileage, &c., to the Judges of the Show	354
Miscellaneous Bills connected with the Southampton Meeting	60
Books for the Library	154
Binding and Carriage of Journal	100
Miscellaneous Bills on general account	286
Total	£5051

TRIAL OF IMPLEMENTS.—Communications in reference to the trial of implements at Southampton, were received from Mr. Burke, Mr. Smart, Mr. Clayton, and Mr. Coates, and were referred to the Stewards of that department. The Secretary was directed to communicate with the Judges of Implements, and request them to furnish the Council with a statement of the implements submitted to trial; of the results of such experiments as were made; and, generally, with an expression of their motives for their respective awards; together with a notice of such implements as may, in their opinion, deserve special commendation or encouragement.

VETERINARY SCIENCE.—1. *New Epidemic.*—Prof. Sewell reported to the Council upon a letter referred to

him at a former meeting, received from Mr. James Dixon, of White Moss-farm, Cheshire. In that communication Mr. Dixon stated that until he had adopted the treatment of bleeding his cows immediately on their being attacked with the prevailing disease (termed the "New Epidemic"), he lost several; but none had died since he had put that measure into operation. He urges at the same time, in the most strenuous manner, that particular care and caution are required to keep a continual watch over the animals, and apply the remedy at the very instant that the symptoms of the disorder make their appearance; he, on this promptness depends all the value of the measure. As soon as the symptoms are perceived, he recommends bleeding without delay. —Professor Sewell informed the Council that this was the practice he had been in the habit of recommending; and he believed that the losses which had been sustained by the owners of animals from this complaint, had arisen more from want of close attention to their condition, and to the first changes in them from health to disease, than from any other cause; and he accordingly took that opportunity of earnestly recommending Mr. Dixon's watchful care over his stock to all other farmers in general. The first principal step of bleeding having been taken in due time, Professor Sewell would recommend the administration of the usual laxative medicines, and the application of external stimulants, to be left to the judgment of the nearest practitioner.

2. *Diseases of Domestic Animals.*—Professor Sewell then reported that the examination at the Royal Veterinary College being concluded for the session, ninety-three pupils had received diplomas; several of whom had also obtained certificates as having attended the lectures and practice on cattle, sheep, and other domestic animals; in which branch of their profession he thought their services to the farmer would be better secured by Agricultural Associations and Farmers' Clubs in the country engaging them, at fixed moderate salaries, to settle in localities where they are most likely to be required. This plan had been adopted with great success on the Continent, but it was there effected as a Government measure, and had become a long established law.

3. *Rabid Animals.*—Professor Sewell informed the Council, that keeping in view the object of the Society's connexion with the Veterinary College, he had decided on devoting the period of his professional recess during the present autumn to a practical inquiry into the most successful means by which the virus of rabid animals may be counteracted, and the fearful results of hydrophobia obviated. He accordingly requested the co-operation of the members in carrying out this inquiry, and would himself willingly pay every expense connected with the sending up to the college, from any part of the country, of such sheep, lambs, or calves, as may unfortunately have been bitten by rabid dogs during the late hot weather, or should become liable to a similar infliction at any future time. He mentioned small ruminating animals only, as being more easily managed when labouring under the worst or most violent symptoms of the disease, than horses, cows, or bullocks, which under such circumstances are not only almost unmanageable, but highly dangerous; and when such were intended to be sent to him, he would feel favoured by a previous notice by letter. The animals thus requested might be conveyed in the ordinary railway trucks or cars, or sent by canal boats. By the latter mode, Professor Sewell had received a heifer from Worcester a few years ago: sheep and lambs have been sent in covered carts; but the most rapid conveyance is preferable. A sheep or two might be put into crates used for earthenware, and the expense of engaging an entire car, be thus obviated; while the animals would be less annoying to the railway agents. Should the disease commence on the journey, the animals should be tied by the legs, and be well littered with straw. Net muzzles might be worn, or sent along with the animals in order to be in readiness. Professor Sewell felt, however, never had any fear of rabies being communicated by the bite of any animals but those of a carnivorous kind, including swine as such. Of all the numerous cases of canine madness he had seen in horses and other animals, he had not observed a single instance in which they were unable or unwilling to drink water freely. He had always found the disease commence (with a single exception) from the third to the sixth week after the bite had been inflicted. If, therefore, it should not manifest itself in the stock sent to him by that time, he would return the animals to their respective owners free of expense. In conclusion, the Professor submitted to the inspection of the Council a series of highly interesting coloured drawings, exhibiting the morbid results on the brain, nerves, and other anatomical structures of the animals which had died from the ravages of hydrophobia; and he trusted that his request might not be considered an irregular one, as he was anxious to effect an immediate communication with the members, and to lose as little time as possible in obtaining objects for his intended research.

English Silk.—Mrs. Whitby, of Newlands, near Lymington, Hampshire, presented to the Society, at a previous meeting of the Council, a specimen of the silk grown and wound off at her residence, made with only a dozen of the cocoons just formed; and accompanied the Council with the following interesting narrative of her operations:—

"I have during several years past cultivated the Mulberry (mostly used in climates where silk is grown of the best quality) and fed silkworms upon it with great success. I have had an opinion on the quality of the silk produced from them, which encourages me to hope my example will be followed by others, as a means of profit to the agriculturist, and affording employment to the industrious classes.

"I was led to the undertaking by hearing, in 1835, as I was travelling in the north of Italy, of an English gentleman, 'who had doubled his capital in three years, and who received 10 per cent. on that laid out on a silk establishment near Milan;' and wonder was expressed that the culture had not been tried in England. Agricultural produce had been at a high rate in England, and it was difficult to find profitable employment for the labourer. I determined to try and introduce the cultivation of silk. I saw the young Mulberry-trees in Lombardy blown aside by the force of the N.E. winds at each spring gales are here by S.W. gales. At this period, if [illegible] duration had prevailed, and the ground round Milan was covered with snow, and from hoar-frost. I knew that around Florence the nights were cold, and the weather uncertain, even as late in the spring as the 1st June. Judging from all this that the climate of England was equally favourable to the growth of the Mulberry, I ordered from a nursery garden at Turin 100 standard trees and 1000 dwarf Mulberry-plants of the sort called —'Of the Philippine Islands' (*Morus multicaulis*). This sort produces much larger leaves than the Italian wild White Mulberry, or that which in England is cultivated for its fruit. Its growth is rapid, and it is easily propagated by cuttings, which strike as readily as the Willow.

"My plants did not arrive in England until April, 1836. I treated them according to the directions given in Mons. Burden's book, and I did not lose one. I even gathered leaves from them the same year. I bought half an ounce of silk-worms' eggs at Novi, which is said to produce the best silk in Italy, and thus laid the foundation of a small establishment, which, I hope, will be the means of spreading the culture of raw silk throughout England, and in the course of years render her independent of foreign resources. I have had no difficulty whatever in rearing the silk-worm. I possess an old loft over an unused stable; in the former I have reared the worm; in the latter I placed a silk reel. Although my cocoons were pronounced "good," and would bear a comparison with the specimens I brought from Italy—although they were exempt from the diseases which I understand carry off at times whole colonies there —although I imported a silk reel from Italy, and went to a great expense in having a scientific apparatus laid down to heat the water, I found insurmountable obstacles in winding off the silk *fit for the loom*. I tried year after year, in vain: it was bright and beautiful to look at: it was pronounced by Mr. Bonorardis, of the firm of Prevost and Co., 24 A, Cateaton-street, to be of "*good quality, and sufficient bone and brightness*, but the winding was without the 3 necessary for the loom." This opinion encouraged me to send to France for a person acquainted with the process; the result you have in the specimens I have sent you. The yellow silk is the growth of this year, the white that of cocoons kept during my many years of trial. I have several pounds already wound off, equally good, and the French girl, aged 19, and another (English) of 15, are now busy at work winding more. All the expense I have incurred in the apparatus above named, is so much money thrown away; the wheel I have imported this year with this young girl from France, is cheap, simple, and effectual; it is also so easy of accomplishment that three of my household can wind with facility, besides a cottager's wife who is employed at six pence a-day to attend upon the worms. The eggs can always be retarded so as not to be hatched before the Mulberry is ready to put forth sufficient food. In France and Italy the hatching begins about the 1st of May; I find a month later preferable. All the books I have read describe a temperature of 75° to be essential. I have proved by eight years' experience that the insects thrive better at one much lower. In damp or cold weather, I have a very small Arnot's stove lighted, which regulates the temperature to from 65° to 70°. Ventilation is more necessary than extreme heat. The expense of this stove is trifling—as indeed is every thing connected with the cultivation of silk. This has been a dry season, and the leaves in consequence fewer and smaller than usual, but the same difficulty has occurred in France, and the father of my little winder writes word, that he was obliged to throw away this year 40,000 worms for lack of food. Mine would have suffered also had not my friends in the neighbourhood assisted in supplying me with leaves of the Red Mulberry. A scarcity of leaves happening occasionally is no proof that it cannot succeed; look around at our fields. Where are the spring crops of Barley and Oats? Where are the Turnips which ought now to make them green? Checks from bad seasons will occasionally happen to every produce of the earth in all countries; but in general the Mulberry of the Philippine Islands grows luxuriantly and multiplies freely in this part of England. The expense of an establishment such as mine would be small: that which I have incurred in my unassisted efforts to succeed must not be considered as necessary by any one willing to take advantage by my experience; and I am as desirous to see the culture of silk become general, that it will give me much pleasure to answer any inquiries you may wish to make, or give any information in my power. I almost fear I shall have tired you with this recital; but I knew not how to make it shorter, if to be clear and convincing. Be it remembered there was the same prejudice to France as now exists in England against this branch of agriculture: it was attempted to be overcome by Henry IV.; but, what is tried to enforce by edict, became general as it became better known. All I desire is, to make it known, that others may try in other parts of England.—P.S. The worms of this year were reared partly from eggs saved by myself last year, and partly from insects I purchased from Signor Anegoni, 16, Church-st., Soho."

The best thanks of the Council were returned to Mrs. Whitby for the favour of this communication.

Southampton Meeting.—At a Special Council held at Southampton, Nov. 18th, on the part of himself and Mr. Shelley, as Stewards of the Implement Department, reported the unanimous satisfaction of the Implement-makers with their arrangements, when it was moved by Col. Austen, and seconded by the Marquis of Downshire, That the best thanks of the Council be presented to Mr. Mills and the Steward, for their exertions as Stewards of the Implement Department; and for the trouble they had taken on behalf of the Society in the Implement show-yard, as well as on the trial ground. This motion was carried unanimously.—On the representation of the Earl of Ducie, on behalf of the Implement-makers, it was resolved,—That the exhibitors of implements be permitted to read the foregone proof of Mr. Parkin's Report (prepared for publication in the Journal) in the Society's Rooms, but not to make extracts from it, or publish any part of it.

On the motion of the Hon. Capt. Spencer, it was resolved,—That no examined or spayed animals be allowed to be exhibited at the Country Shows of the Society.

It was decided,—That in future the business of the Society be adjourned on the Saturday of the previous week, at 4 o'clock in the afternoon, from the office in Hanover-square to the place of the Annual Country Meeting.

Resolutions were passed expressive of the high opinion entertained by the Council of the conduct of the police at the Southampton Meeting.

Shrewsbury Meeting.—The following General Shrewsbury Committee has been appointed by the Council:—Earl Spencer, *Chairman*; Hon. R. H. Clive, M.P., *Vice-Chairman*; Duke of Richmond, Lord Portman, Hon. Capt. Spencer, Col. Austen, T. Bensley, Esq., M.P.; Thos. Raymond Barker, Esq.; Col. Challoner; J. W. Childs, Esq., M.P.; Sir Andrew Corbet, Bt.; John Cotes, Esq.; Jas. Deeble, Esq.; C. Emery, Esq.; H. Gibbs, Esq.; H. Gibbs, Esq.; W. Ormsby Gore, Esq., M.P.; W. G. Hester, Esq., M.P.; W. Fisher Hobbs, Esq.; Sir John T. B. Johnstone, Bt., M.P.; W. Miles, Esq., M.P.; Philip Pusey, Esq., M.P.; R. A. Slaney, Esq.; W. Shaw, Esq.; J. Villiers Shelley, Esq.; H. S. Thompson, Esq.

The following Special Show-yard Committee has also been appointed:—*Chairman*, H. Gibbs, Esq.; *Stewards*, Earl Spencer, Hon. Capt. Spencer, S. Druce, Esq.; W. Miles, Esq., M.P.; J. Villiers Shelley, Esq. Mr. Manning, of 251 High Holborn, has been engaged as contractor of the works for the Show-yard and Pavilion.

Notices of Motion for the Monthly Council in December.

Mr. Fisher Hobbs to move:—

I. That the Journal Committee be requested to prepare—
1. A printed List of the Members of the Society, with their addresses, for the general use of the Members.
2. A Catalogue of all Implements, Models, &c., that have been presented to the Society.
3. The Charter and Bye-Laws.

II. That the Judges shall be appointed by the Council from a list of nominations made by the Members of the Society at large at a General Meeting, and on the report of a Committee to whom such list shall have been referred.

Hon. Capt. Spencer to move:—

I. That Governors and Members of the Council shall have admission, under certain regulations, to inspect the Cattle on the Wednesday after the Judges have delivered in their awards.

II. That the Council take into their consideration the details connected with the appointment of the Judges.

Mr. Barclay, M.P., to move:—

That at the future Country Meetings of the Society, the Cattle-Show shall be open to Governors and Members of the Council at 9 o'clock on the Wednesday afternoon.

Communications.—The following communications have been received, with the thanks of the Council:—

1 The Right Hon. Sir George Rose, M.—Results in the employment of the Halmahult Bovella.
2 Capt. Watkins (Bramley-st.)—On Sea-sand as a Fertiliser.
3 Mr. Meehi—Communications on Agricultural Improvement.
4 Mr. Towers—Results of Dibbling Wheat.
5 Mr. Grant—On Fences.
6 Mr. Sheppard—Results in the Use of Guano.
7 Lord Bridport, Mr. Spencer, M.P., and Mr. Curtis—Observations on Insects attacking Green Crops.
8 Mr. Saul—On a Wheat-grub.
9 Mr. Grove—On Kentish Barley.
10 Mr. Hayter, M.P., Mr. Blaker, and Mr. Shackburn—On Apparatus for Steaming Food for Cattle.
11 Mr. Bean—On Parochial Allotments and Drainage.
12 Mr. Carson—On Guano.
13 Mr. Bowers—On the Vernon Harcourt Wheat Hoe.
14 Col. Austen—Communication from M. D'Arbuy (Member of the French Chamber, Dept.)—On the subject of his attendance at the Southampton Meeting, and thanks for attention shown to himself and the Baron Malet.
15 Dr. Ure—Present (on the part of Mr. Knight, of Foster-lane) of cake of this Linseed.
16 Kingsford and Thompson—Present of one of their Double Receiving Hatchets.
17 Mr. R. Smith—Present of Tiller Rope.
18 Mr. Quilter—Extract of Translations of the New York Minutes, and further supply of Indian Corn.
19 Mr. Cuthbert—On Publications against Incendiarism.
20 Mr. Milner—Suggestions for the re-publication, in a cheap form, for the use of Members, of Works on Agriculture, in imitation of the Surtees, Camden, and Sydenham Societies.
21 Duke of Richmond—Request of a Report on Border Agriculture.
22 Mr. Fisher Hobbs—Communication from Dr. Baker, on the Inoculation of Sheep.
23 Mr. Bolton—Treatise on the Growth of Wheat, Gypsum, &c.
24 Mr. Eaton—The Western Agriculturist (Axminster) No. I.
25 Mr. Blair—The Farmers' Magazine.
26 Dr. Bellamy—Lectures on the Education of Farmers.
27 Messing, Burnand, and Co.—On Guano Agency.
28 M. Chaumel—On Asparagus in Poland.
29 Lassell and Co.—On Conveyance of Stock by Steamers.
30 Mr. Osborne—Papers connected with the South East Herts Agricultural Society.

31 Mr. Morton—Meteorological Observations in reference to the Prize offered by the Society for the best account of Pragmatics of Weather.
32 Mr. Pearce—Present of Back-band and Tug for Gig-horses.
33 Mr. Burgess—Communication on Glanders, &c.
34 Messrs. Morton—On Bray's Draught-machine.
35 Mr. Menta—Paper on the Economy of Manures.
36 Sir Edmund Filmer, Bt.—On the Encumbered Estates of the Society.
37 Mr. Sparks—On the Rot-water.
38 Earl of Essex—On [illegible] Employment of Steam on a Steam.

Together with Reports of the Royal Veterinary College, Chippenham Agricultural Association, Royal Cornwall Society of London, Transactions of the Highland and Agricultural Society of Scotland, Caledonian Agricultural Society, and Farmers' Club.

Announcement.—The Chairman declared the Council to stand adjourned to Wednesday, the 4th of September; and failing a meeting on that day for want of a requisite number of members, further adjourned to Wednesday, the 6th of November, for the despatch of business. The Council then adjourned accordingly.

HIGHLAND AND AGRICULTURAL SOCIETY.

The annual West Cattle show of this Society was held last week in Stirling. On Wednesday a meeting of the general committee was held, for the purpose of completing the preliminary arrangements for the meeting. The chair was taken by the Earl of Kinnoull. Mr. Campbell having read the report of the local committee, Sir C. Gordon, the secretary, laid upon the table the Society's new medal, and read an abstract of the entries of stocks, which he stated were larger than upon any previous occasion. The number of lots was 1403; amongst which were 222 Ayrshire cattle, 98 West Highland cattle, 160 horses, 117 sheep, 134 lots of butter, 83 lots of cheese, and 176 implements. The meeting was the largest number ever entered before was 1974, in Edinburgh, in 1842. A dinner took place in the evening at the Trades-hall, and was attended by upwards of 200 noblemen and gentlemen; the Earl of Kinnoull in the chair. Thursday was the day appointed for the show of the stock, dairy produce, implements, &c., and for the allocation of the prizes. As a proof of the immense extent of the present Exhibition, it may be mentioned that the names of the exhibitors occupy no fewer than 27 closely-printed octavo pages, containing stock, implements, and seeds. Of the Short-horned breed there were no fewer than 29 bulls entered for competition, many of them most splendid specimens. Of the Short-horned breed there were 15 cows offered for competition; and of these, one belonging to the Duke of Buccleuch, and another shown by Sir T. J. Tradescant Trafford, of Trafford Park, Lancaster, and bred by Mr. John Fowler, attracted much notice.—In the Ayrshire breed 21 bulls of various ages were shown, the great majority of which were from this and the adjacent western counties. In this class 99 cows were shown, many of them perfect pictures of the breed. There were also some beautiful heifers and calves among the Ayrshires.—Of the West Highland breed there were 16 bulls exhibited from the counties of Perth, Argyle, Banff, and Dumbarton. The show of Horses gave great satisfaction.—In the class of Stallions above, and according eight years old, there were 38 competitors. From the counties of Lanark, Renfrew, Stirling, and Ayr (from the former especially) there were some beautiful animals.—Of entire Colts there were no fewer than 19 shown, and of draught and breed Mares there were 45 competitors, from the counties of Lanark, Renfrew, Dumbarton, Edinburgh, Haddington, Stirling, Ayr, Dumfries, &c.—In the class "Pairs of horses of any age, adapted for agricultural purposes," there were eight competitors, all of them very fine animals.—Of Sheep the entries were very numerous, and under this class a pair of South American Alpacas, accompanied by a young one, two months old, were shown by Mr. A. Cartwright Stirling, of Craybarnet, which were purchased from the stock of the Earl of Derby, in July, 1843.—The Implements exhibited were also numerous beyond all former precedent, and contained many modifications of implements in present use, which may prove highly valuable. The following are the awards in this department:—For the best collection of Agricultural Implements and Machines, ten sovereigns, to Mr. Robert Law, Shettleston, Glasgow, for the best collection; five sovereigns, to Mr. James Wilkie, Uddingstone, for the best workmanship, &c.—For a new and useful Agricultural Implement or Machine that has been satisfactorily tested in actual work, not previously exhibited in competition, seven sovereigns, to Mr. Andrew M'Kerrow, Hillhouse, for his Antler Plough; and three sovereigns, to Mr. John Watt, Lundie, for Plough with Apparatus for lifting Potatoes.—For a useful improvement in the construction of Subsoil Ploughs, five sovereigns, to Mr. James Wilkie, Uddingstone, for Subsoil Plough with Improved Mould.—For a useful improvement in the construction of the common two-horse Plough, whether for the object of the lifting and turning over the greatest quantity of the soil in a given time, with the least resistance to the draught, and which performs the work in the same time a fair and efficient furrow for ordinary or for seed, seven sovereigns, to Messrs. Robert Law and Sons, Uddingstone; and three sovereigns to Mr. James Wilkie.—For a useful improvement in the construction of Barn Fanners, five sovereigns, to Mr. William Cleghorn, Musselburgh.—For a useful improvement in Reaping Machine, seven sovereigns, to Mr. David Crais, Stevenarton.—For the most useful improvement in the construction of any of the Implements used in the cultivation of the Turnip and Potato crops, five sovereigns, to said Mr. James Wilkie; two sovereigns to Mr. Alexander Reid, Stewarton; and two sovereigns to Mr. John M'Gill, Sandrum.—For the most useful improvement in any of the Utensils or Machines used in Dairy Husbandry, five sovereigns, to Mr. Robinson, Lisburn, Ireland; and two sovereigns to Mr. Richmond, Salford.—For the most successful introduction of any Machine or Implement that is generally approved of in the practice of Agriculture in England or elsewhere, or a modification of the same, and which has hitherto been but little known or employed in Scotland, five sovereigns, to Mr. William Crichkill, Beverley; and a silver medal to Mr. Houston, Johnstone Castle.—For a Weighing Machine, adapted to general farm purposes, capable of weighing stock or produce, dead or alive, from the weight of a sheep to that of a loaded cart, and which will indicate the addition of one-thousandth part of the mass to be weighed, five sovereigns, to Mr. Thomas M'Culrick, Garalian.—For an improved method, whether patented or not, of manufacturing Drain Tiles or Pipes, whereby the price will be reduced; the Tiles or Pipes to possess the requisite qualities of usefulness and durability, and satisfactory evidence as to the price to be produced, ten sovereigns, to Mr. Etheridge, Southampton.—Besides the above, the Judges awarded various premiums in money and medals for articles not within the range of those specified. On the evening of this day the great dinner of the Society took place in the City Hall; about 1200 gentlemen sat down, presided over by the Duke of Richmond.

FARMERS' CLUBS.

North Cornwall.—At a late monthly meeting of this Club, a large party visited a field on which Mr. J. S. James had tried the effect of covering Grass with layers of Straw. The Straw had been spread over about one-third of the breadth of the field, and through the entire length from east to west. Mr. James caused the Straw to be raked off for some width up and down the line of division, and from several patches in different parts. The difference was very marked: where no Straw had been laid, all the Grasses were thin and short, and the field appeared almost as brown as the soil itself. But where the Straw had been spread, the Grass presented a lively green, and in quantity was thick and matted, corroborating Mr. James's statement of the enormous increase. He had cut and weighed it, and the increase was at the rate of a ton to the acre. The Chairman had brought from Woodley six turfs, in order to show the meeting the effects produced by Strawing the land. He also answered some objections which had been made. The increased growth evidently did not arise from contact, for the high Grass, on which the Straw principally rested, was scarcely at all acted upon. It was also clear that no unfavourable effect was produced in changing the quality of the Grasses; for they retained all their original properties—there was no new Grass, but all were very much improved. That it was not to be attributed to atmospheric influence, or a diminished evaporation from the soil, was proved from the fact that the rush had been equally susceptible of the effect. There was but one question to be solved, and that was the question of agency; the increase in quantity and quality had been proved to demonstration.—A paper was then read by Mr. Shephard, On the System of Cropping in the District—its Defects and Disadvantages, with Practical Hints for its Improvement.—He said, when I proposed to lay before you some remarks on the subject we are met here to discuss, I did not sufficiently reflect that if it were properly treated, it would include a review of nearly all our agriculture. It is a subject of great interest to all, including as it does the means of providing employment for our labourers, and the means of supporting from our own soil a rapidly increasing population. The first course of cropping I shall mention is that adopted in this immediate neighbourhood, viz.:—Potatoes—Wheat—Barley—Clover, the Clover cut for Hay and secondly for seed, the whole of it upon one dressing being planted with Potatoes. This system, confined however to this more immediate neighbourhood, has been in practice ever since my recollection, and still continues. And, notwithstanding the occupiers of the land find its production annually diminishing, they still persevere in the same objectionable course. Possibly, however, this may arise from its affording to the artisans, and the other working men of the town and vicinity, great facilities for getting a few yards of Potatoes annually. I will admit this to be of considerable importance to such parties, and would be the last man to urge anything that would deprive them of the advantage: the system may, nevertheless, be improved without doing this, and I would recommend that instead of Potatoes, Wheat should be the first crop, then Potatoes, and next Barley, which would not only clean the land but give a far better crop also of Barley and of the seeds after. Another system, which you will find among the farmers who occupy more largely, but which is still more objectionable than the former, is that of five Potatoes or Turnips, then Wheat, Barley, and Oats, or the Wheat, Barley, and Oats without the previous crop of Potatoes, or Turnips, Wheat, and two Oat-crops; the Oat-crop in either case seeded out, and generally cut for Hay the following year. This is done upon the manuring of the Potato, Turnip, or Wheat—a fact of the first crop. Now I ask can it be possible to pursue any system more ruinous than this? The land in this neighbourhood very, and consequently requires to be differently cropped; yet, let the land be what it may, never take three white crops in succession, nor two after a green crop. If you take two white crops following the green crop, you leave your land in a worse state than when you first broke it. I would recommend those who farm largely, and where there is a mixture of soils, wet and dry, to observe the following mode in preference:—On their dry land where they can grow Barley, to have Wheat, Barley, Turnips, and Barley, preparing for Wheat and Turnips; on those dry lands where they cannot grow a fair crop of Barley, they should have the intermediate crop Potatoes instead of Turnips, bearing in remembrance that all the lands that grow Barley in this neighbourhood are capable of growing Turnips. On those wet lands where the green crops cannot be grown with advantage, they should have Wheat and Oats, and allow the land to remain out two years. I could wish more farmers to adopt the system I have found indispensable in my own case; to take for instance 60 acres out of their estate, and crop it as I have mentioned, they would have 10 acres of Wheat, 20 of Barley, 10 of Turnips, 10 of seeds, and 10 of Lea, which would be put into Wheat in the autumn of every year. Were they to adopt this system they would find that the rusty appearance of the land in the spring of the year, so characteristic of this neighbourhood, would in a very short time disappear. Some persons I have observed in the last few years, have adopted a course of cropping, I suppose with a view to profit; I can only hope that for their own sakes they may not be deceived; all depends on the period they remain in their estates—that is, Wheat, Barley, and Turnips, Wheat, and Barley seeded. It would appear from this that farmers had no objection to see their land too free from weeds; for as soon as they succeed by judicious management in getting a good crop of Turnips, they seem to look with a jealous eye upon the good condition of their land, and again take the two white crops from it. I now come to the system adopted on the moors, which is Wheat, and two Oat crops, the last crop partially seeded, and the land allowed to remain out of tillage for years. I am not sure that there are not some farmers who believe that years rest in Grass is the cause of the land's increase in fertility; but I presume that every person who has studied the matter at all knows that land is enriched, not by rest, but by the quantity of food that cattle consume on it; or, in other words, the quantity of manure it returns. Here, then, there is a great field for improvement; and I am disposed confidently to assert, that were 1000 acres of waste or moor land which we have around us brought under a proper system of cultivation, the two great and desirable objects with which we set out would be attained—that of providing employ for our labourers, and food for our increasing population.

Miscellaneous.

Proper Time to Harvest Wheat.—Some experiments lately made indicate that there may be an improvement as to the usual time of securing the crop. By the Quarterly Journal of the Royal Agricultural Society, it appears that Wheat cut a fortnight before it was ripe produced an increased quantity and weight in flour and straw, with a better quality of bran. Mr. John Hannam of North Deighton, near Weatherby, in England, cut a sheaf in his field, August 4, 1840; the Wheat was then green—*i. e.* both the straw and ears were in full vigour and sap; the grain was perfectly formed; but the chaff so strongly adhered to it, that it was scarcely possible to separate them by friction in the hands; it was then plump, but no juice, that on the slightest pressure it yielded its milk. He let it stand in the field a fortnight, and then housed. On the same day this was done (August 18), he cut another. This, too, was yet green, or at least not ripe, or what is usually termed raw; the straw, though looking green, when closely examined was fast approaching to yellow, and a foot from the ground was quite yellow. The ears, also, were more open; the chaff of various shades of yellow and green; and the grain though soft and pulpy, yet not so full of fluid as before. In a fortnight after, the whole field was ripe, when he cut his third sample (Sept. 1). The same day he housed the second sheaf. This third was not so far ripe that the straw would break, and the ears curl, and the grain shake out; but it was in its usual state when reaping commences, when the straw is entirely yellow. This third sheaf was left (as in the case of the former ones), a fortnight on the field, and then carefully housed. From each sheaf 100 ears were selected and put away in a bag, preserving also the straw of each. On threshing them the following was the result:—

COMPARATIVE WEIGHT.

	Gross Produce.	Equal Measure.	Equal Number of Grains.
No. 1, cut August 4 (green)	756	568	192
No. 2, cut August 18 (raw)	736	540	224
No. 3, cut September 1 (ripe)	640	470	256

The comparative weight of the straw was:—

No. 1 (green)	540
No. 2 (raw)	478
No. 3 (ripe)	440

As to the value of the same, by the judgment of an extensive grower, the following was the result:—

No. 1, 61 shillings per quarter, or 1 dollar 672 per bushel.
No. 2, 64 shillings per quarter, or 1 dollar 76 per bushel.
No. 3, 63 shillings per quarter, or 1 dollar 764 per bushel.

A miller valued them at the same rate, with the exception of No. 2 at 63 shillings, and No. 3 at 61 shillings. Mr. Hannam's deductions are—that the Wheat reaped a fortnight before it was ripe has the advantage of the ripe in every point of view: 1st, in weight of gross produce, thirteen and one-fifth per cent.; 2d, in weight of equal measures, nearly one-half per cent.; 3d, in weight of equal number of grains, nearly two and one-fifth per cent.; 4th, in quality and value, above three

and one-fourth per cent.; 5th, in weight of straw, five per cent. That reaped a month before it was ripe has the advantage of the ripe 22 per cent. in point of straw; but in other points the disadvantage thus: 1st, weight of gross produce, eleven and five-thirteenths per cent.; 2d. weight of equal measures, rather more than one-third per cent.; 3d, weight of equal number of grains, better than 13 and one-tenth per cent.; 4th, quality and value, rather more than four-fifths per cent. The advantages, then, of cutting the crop a fortnight or so before it is fully ripe may be thus summed up: 1st, straw of better quality; 2d, a better chance of securing the crop: 3d, a saving in securing it. It is stated that, with regard to the crop of 1839 in England, the beginning of the reaping was late, and the result in the North of England was, that fully 75 per cent. of the whole Wheat crop was damaged. The saving of securing the crop is two-fold: there is less waste in reaping or from strong winds; and the expense of it is said to be less. Mr. Hannam tried another experiment, which showed a result in 100 lbs. of grain grown, as follows:—

	Flour.	Seconds.	Bran.
No. 1 was cut one month before fully ripe	75lbs	7lbs	17lbs
No. 2 was cut three weeks before fully ripe	76	7	16
No. 3 was cut two weeks before fully ripe	80	5	13
No. 4 was cut one week before fully ripe	77	7	14
No. 5 was cut when ripe	72	11	15

Thus, No. 3 gave more a bushel than No. 5, by six-and-a-half, and a gain of about 15 per cent. on the flour of equal measure of grain. In grinding, it was found that No. 5 ground the worst of all; there were a greater quantity of flinty particles which would not pass the bolt than in any of the others. The bran from No. 5 was coarse and heavy, while that from No. 3 was as "thin as a bee's-wing." He then sums up the advantages of cutting two weeks before it is fully ripe; 1st, there is a gain of 15 per cent. of flour, and equal measure; 2d, a gain in the weight of straw of 14 per cent.; 3d, a gain of 163 in the value of eight bushels, and a gain of about 583 on every acre of Wheat producing 28 bushels—his calculation being founded on the price of Wheat at that time in England. An experiment of cutting the grain ten days earlier than usual was also tried by a farmer in Michigan, on 60 acres—the berry being soft and in the milk; and the result was, that it yielded more flour and less bran than usual. Another advantage of early reaping is stated, on good authority, to be security from rust. A farmer is said to have tried an experiment on this subject. Finding one of his fields of Wheat in a very raw or green state was badly struck with rust, he determined at once to cut it, and did so amid the laugh of his neighbours, who thought him crazy. The fields adjoining suffered little from rust, and stood till fully ripe; yet at threshing, that which was first cut gave the finest Wheat and the best yield.—*Report of Commissioners of Patents, U.S.*

Mr. Borthwick, of Crookstons, Wood-thinner and Tree-pruner.—In the thinning of plantations, or the cutting of trees in any situation, it is always an object of attention, and often of difficulty, to take care that they do not injure other trees, valuable shrubs, or fences, &c., in their fall. In cutting out a Larch or Fir, for instance, from some surrounding Ashes, Elms, or Planes, if this consequence is not provided against, how often has one to regret the smashing of a fine hard wood tree, or valuable shrubs, or the breaking down of some expensive fence. To provide against such evils, means are taken to make the tree or trees that are cut fall in such a direction as to avoid them. If the trees are of any size, perhaps 20 or 30 years old, or even of less age and growth, it is generally found to be necessary to attach a rope or ropes to the upper part of the tree, to be held and pulled by one or more persons, according to circumstances, so as to cause the tree, when cut, to fall in the proper direction. To accomplish this purpose, it has been customary to employ climbers, or persons to go up the tree by means of a ladder, to fix the ropes; an operation which is attended with much labour, loss of time, danger to the persons employed, and inefficiently, from the difficulty of knotting the rope sufficiently near the top of a tree, which is necessary in order to increase the lever or purchase upon it. The inconveniences of these expedients led me to the invention and adoption of the following instrument:—It consists of a hook, the interior curve of which may vary in size from 4 to 6 or 8 inches in diameter. A ring, attached to it, must be of sufficient size to take in a rope of sufficient strength—say of what is called by the rope-makers from 9 to 18 threads. The handle or shaft, which must not be shorter than 15 or 18 feet, may be made of any light and strong wood, such as the shafts of hay-forks are made of. The hook is provided with a socket, into which the handle is fitted, but is not fastened by any nail. This simple apparatus is carried by the forester's assistant easily in his arm. A proper place, such as the insertion of a branch, is chosen for placing the hook round on the tree to be cut. The rope, which is spliced through the ring of the hook, being unrolled, the shaft is inserted in the socket of the hook, and being held in the hand of the forester or his assistant, the hook is held up by it to the part of the tree selected as most proper to pull from; the hook is put round this part, the handle is then withdrawn from the socket; and, by means of the rope, the hook is pulled firmly into its place by the assistant, who takes his proper position so as to guide the tree, and he sometimes to pull as the forester advances in cutting the stem of the tree; and, whilst he aids the cutter by widening the opening of the cut, draws the tree over, in the direction wished for, where it gently falls and crashes down, without injury to anything.—*Transactions of the Highland Society.*

Smut in Wheat.—Mr. Bevan made an extended course of experiments in England, which are found in the ninth volume of the "English Agricultural Magazine." He took both sound and smutty grain—the first being designated in the following table of results by the letter A, and the second by the letter B:—

	Number of smutted ears in a sheaves.		Bushels of good Wheat per acre.		Cwt. of Straw per acre.	
	A.	B.	A.	B.	A.	B.
Solutions of potash	1	81	31.6	13.6	38.6	29.1
Muriate of potash	3	212	20.2	10.1	36 0	21.1
Nitrate of potash, (saltpetre)	17	115	23,8	14.3	35.6	31.0
Soda	9	199	20.2	11.7	25.6	26.7
Muriate of soda, (com. salt)	—	290	24.6	14.5	41.5	33.8
Sulphate of soda, (Gl. salts)	12	241	21.6	12.3	31.1	27.6
Muriate of ammonia, (sal. am.)	1	180	19 8	17.8	35.4	30.2
Common soot	—	123	20.8	11.4	34.8	25.3
Lime saturated	—	2	21.9	12.4	38.7	25 9
Muriatic acid, (spirit of salt)	—	13.6	20.7	16.1	35.7	34.1
Sulphuric acid, (oil of vitriol)	—	—	20.4	17.8	35.4	34.1
Dry, in its natural state	—	6.923	20.3	14.7	35.7	31.0
Washed in common water	none	soon.	19.7	18.3	—	35.8

This course of experiments indicates lime-water to be the most effective. Putsche, in his "German Encyclopædia of Agriculture," gives the following as the receipt of M. Schraitz, of Düren, in the province of Juliers, in Prussia. So confident was M. Schraitz of its efficacy, that he offered a standing reward of a ducat for every head of smutted Wheat found in his field. For every 500 pounds of seed Wheat, take 1 pound of alum, 1 pound of copperas, ½ pound of saltpetre, ½ pound verdigris: pulverise these ingredients, and dissolve them in a sufficient quantity of boiling water. When the solution has become cold, add as much more water as will be required to moisten the whole thoroughly. The heap should be turned several times within the ensuing 24 hours, well mixed: it is then ready for seeding.—*Report of Commissioners of Patents, U.S.*

Selection of Seed Wheat.—An able writer in the Journal of the Royal Agricultural Society of England, in relation to the subject just mentioned, gives the following directions:—"In making a comparative trial with varieties of Wheat, it is necessary to select a portion of land uniform in texture, subsoil, and expense, and which for years has been cropped, manured, and laboured in all respects alike." "The lines of separation (of the varieties) ought to be well defined to guard against the mingling of the different varieties in the operation of sowing and harvesting. I recommend the seed to be deposited by a drill across the ridges, with a vacancy of three feet intervening between the varieties, and the seeding of all the land to be executed on the same day." "Respecting the quantity of seed, I can testify, from experience and observation, that even with the same variety of Wheat, any material difference in the state of the plant, all other circumstances being alike, influences the size of the ear, length of straw, and time of ripening, and the quantity and quality of produce, as well as the effects of red gum and mildew." He says, "a thin plant (*i. e.* a small number of young plants of Wheat standing on a given space of ground) generally enlarges the ears and corn, and retards the ripening, and aggravates the effects of red gum and mildew, while the straw is shortened both by a very thick and a very thin plant. It is therefore desirable, in comparative trials, to have all the varieties of the same thickness of plant." Another source of error which he mentions, is "the different propensity of different Wheats to tiller, or send out side shoots." He recommends, therefore, the trial Wheats to be sown "not by equal measures, but by measures calculated to contain the same number of seeds;" and also that the seeds should be sown "so thick as not to call forth the tillering propensity." He recommends, also, that journals of comparative trials should be kept, "embracing the appearance of the crops at all the different stages of growth, with the weather," or any other influences which may occur. A German writer of great celebrity further recommends that an estimate of the number of kernels of a kind be made by counting the number contained in a small measure, so as to give still greater accuracy to experiments made on this subject. The following are considered, by an authority on this subject in our own country, as suitable characteristics to be taken into consideration in selecting Wheat for our crops:—"1st. The general hardiness of the plant, and capability to resist the Hessian fly, or throwing out by frost and winter-killing, rust, and mildew. 2d. A good strong upright stalk, with just enough straw for the object, and no more. 3d. No beard is desirable; a head filled and heavy, and retaining the grain as long after it is ripe as possible. 4th. A predisposition to tiller well. 5th. A plump full berry, capable of yielding a large quantity of white flour, with a large proportion of gluten, and as little bran as possible."—*Report of Commissioners of Patents, U.S.*

Notices to Correspondents.

Analysis.—*J. Brewing.*—We cannot undertake analysis of soils. There are many gentlemen to whom you may apply, as an inspection of our advertising columns will inform you.

Cabbages.—*North Earle.*—The Early York, if sown in a bed now, and transplanted when ready in autumn, will be fit at the time you name.

Disease in Cows, &c.—*J. K* says that he has had four cows dead lately, one later in the chest and a decay in the lungs; and three calves, of a swelling in the knee and other joints. The cause of death in the cows was in all probability the dreadfully fatal epidemic called *Pleuro-Pneumonia*, which word signifies inflammation both of the substance of the lungs, and also the membrane covering them and lining the interior of the chest. The actual cause of this fatal disease is unknown, but it is doubtless produced by some poisonous gases or effluvia in the atmosphere. Cattle in good condition are more likely to be attacked than others, and in them it is more likely to be fatal. It is believed to be more prevalent in high and inland localities, where the air is keen and bracing, than where the atmosphere is milder. When the disease is thoroughly established, there is but a poor chance for curative treatment. The conflagration is so extensive and rages so fiercely that we cannot put it out. If one half the previous value of the animal can be realised by the carcase, the butcher's knife will be the best resource. In applying a remedy, it is all-important to commence early, when a slight cough or the least impairment of health is perceived. We should then bleed freely, give a dose of Epsom salts (a pound with two drachms of ginger), blister the sides, and put setons in the brisket. If this is delayed till a certain stage, the bleeding will do harm instead of good. The salts and the setons will be advisable as preventives, and the latter should be stimulated with hellebore ointment. If the disease in the calves is confined to the joints and limbs, and the chest is not affected, it is that which is locally denominated joint-evil, and in various districts receives different names. If, however, the chest is affected as in the former disease, we have reason to fear it must be connected with it. If the former disease, it is an inflammation of a rheumatic character of the membrane lining the joints, sheaths of the tendons, and fibres of the muscles, and often flies from one part to another, and baffles all treatment. It is probably owing to exposure to cold and want of shelter, and if the young animal has been very badly kept in the winter, it is more likely to be attacked by the disease the succeeding spring and summer. As to treatment, give a mild purgative, and follow it by ginger, gentian, and spirit of nitrous ether—a quarter of an ounce of each in a pint of warm ale. Rub turpentine and oil, or a stronger stimulant, on the affected parts, and if the pulse feels strong, bleed. Warmth, shelter, attention, and care, are indispensable.—*W. C. S.*

Drilling Machines.—*A. S.*—We know of none answering your description. You had better apply to some first-rate agricultural implement maker. Of course we cannot recommend.

Feeding Cattle.—*A. O.*—Cattle may doubtless be fattened on oil-cake and straw; but the profitableness of your scheme depends so much on the price you would be able to get for your manure, and upon your skill in the purchase and sale of stock, that, in our ignorance of these, we cannot answer your question.

Grass.—*Lumpy.*—Sow early in spring, Alopecurus pratensis 14 lbs., Avena pubescens 4 lbs., Dactylis glomerata 5 lbs., Festuca duriuscula 2 lbs., F. pratensis 2 lbs., Lolium perenne 12 lbs., Poa pratensis 1 lb., Medicago lupulina 1 lb., Trifolium pratense 4 lbs., T. repens 5 lbs., and Rye 1 bushel, per acre. These are the kinds and quantities recommended by Lawson as seed on light soils for permanent pastures. You will have to sow only those in which your pasture is deficient.

Guano.—*J. B. B.*—It will keep uninjured if kept in a close apartment. Your plant is Melilot Trefoil—Melilotus officinalis.——*T. White.*—Peat charred mixed with guano will tend to hinder the escape of ammonia: peat ashes will not do so; indeed, if they were mixed when fresh, they might expel the ammonia. The use of guano will not put an end to that of lime; the latter will be required just the same as before. Possibly it may be better to spread the super-phosphate of lime on the young Wheat in spring than to plough it in with the seed in autumn; it will not be so liable to waste. We should be glad to know your experience of this manure.

Liquid Manure.—*R. S. T.*—Throw all this from the house into the tank. You may add soot to it; but the cheapest way is to pump the whole over compost heaps of manure, rubbish, soot, &c. The drainings of your yard are valuable as liquid manure.

Suffolk Duns.—A wishes that some of our Suffolk correspondents would inform him in what the excellent milking properties of the Suffolk Duns consist—whether in affording large quantities of milk or butter, or both combined? Whether they have ever been tried at a distance from their own county, and found to retain these valuable properties as an object? Some book authorities he finds considerable diversity of opinion to exist.

Tanks.—*R. B.*—Dig a cylindrical hole, say 10 feet deep and 10 feet in diameter, making the bottom basin-shaped; surround it at bottom with brick paving, at the sides with an ordinary stone or brick and mortar wall, carrying the wall down behind it, and at the top with a flat stone and lime stone, leaving an opening by which to enter it, and a sufficient number of small openings round the edge for the liquid to enter it. A pump, communicating by means of pipe and rose, within 6 feet of the bottom, is wanted to complete the work.

White Beetroot.—*A Reader* asks for information about the culture of White Beetroot for sugar, and how far it is likely to succeed under *great heat*, where the soil, however, is rich and a supply of water for irrigation attainable.

Winter Tares.—*No. 5.5.7.*—If they are sown in about four weeks' time, we apprehend you may expect a crop in June. The weight of green food it will afford you depends so much on the quality of the land that we can hardly answer your question: it will probably be from 7 to 10 tons per acre.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Aug. 12.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 0 to 4s 0		Beas Downs & half-breds	3s 10 to 4s 0		
Best Short Horns	2 8	3 10	Best Long-wools	3 6	3 10	
Second quality Beasts	2 6	2 6	Ewes and second quality	3 4	3 6	
Calves	3 8	4 0	Lambs	4 0	4 6	
Pigs	3 4	4 0				

Beasts, 741; Sheep and Lambs, 21,000; Calves, 282; Pigs, 220.

The supply of Beasts is much shorter to day, especially of the best qualities, which experience a rise in price of fully 2d per 8 lbs from last Monday's quotations: the Short-horns are selling much more readily at our top quotations than on Monday last, but very few make anything over 4s 10d per 8 lbs; there is a heavy trade amongst the middling qualities, although they are rather more readily disposed of than of late. There is also rather a less quantity of sheep, but the number is still considerable; trade is very dull at about last Monday's prices for the best qualities: Ewes and plain Sheep, which are plentiful, do not find so ready a sale as they have done, and make rather less money. Lamb trade is very heavy. Veal trade continues steady. Pork is a little more in demand.

FRIDAY, Aug. 16.

The trade for the best Beef is about the same as on Monday; the supply is moderate; some of the best Scots make 4s 2d, but the more general price is 4s, and Short-horns 3s 10d per 8 lbs: middling qualities are still very heavy on hand, and make from 3s to 3s 4d. The Mutton trade is rather improved, there being a good clearance at the dead market, and rather a shorter supply here this morning; there is nearly 2d per 8 lbs the advance on the best qualities; second-rate remain about the same. Lamb is no better; the price continues from 4s to 4s 8d, with very few at the latter. Calves are a slow trade, but some of the nicest still make nearly 4s 4d. Pork remains steady, at from 3s 4d to 4s.

Beasts, 781; Sheep and Lambs, 1960; Calves, 340; Pigs, 280.

41, West Smithfield.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 13.

Prime Upland Hay	100s to 108s		Clover	100s to 120s	Straw	28s to 32s
Inferior „	80	95	„ New „	—		
New Hay „	80	95				

Jesse Cooper, Salesman.

CUMBERLAND MARKET, Aug. 15.

Superior Old Hay	100s to 110s		Superior Clover	110s to 120s		
Inferior „	90	96	Inferior „	100	110	Straw 28s to 32s
New Hay „	90	100	New Clover	100	110	

Joshua Baker, Hay Salesman.

WHITECHAPEL, Aug. 16.

Fine Old Hay	90s to 98s		Old Clover	120s	130s	Straw 28s to 30s
New Hay „	75	88	New Clover	90	110	

WOOL.—British, Friday, Aug. 16.

Our English Wool Market remains unaltered. The demand is good, but prices have not advanced.

	per lb.				per lb.	
Long-woaled Wethers	1s 0d	to 1s 1d	Southdown Ewes		1s 1d	to 1s 2d
Do. Hoggets	1 1	1 2½	Kent Fleeces		1 1	1 2½
Southdown Fleeces	1 0	1 1				

James Parker, Wool Broker.

COVENT GARDEN, Aug. 17.—The market has been well supplied during the week with fruit and vegetables of almost every kind; the latter are rather improving. Pine apples are good, and quite sufficient for the demand. Amongst Grapes are excellent bunches of White Muscat; and Black Hamburghs, in particular, are good. Peaches and Nectarines are rather scarce; forced sorts are nearly over, and those from the open wall are not yet abundantly supplied. Apricots are plentiful, the best bringing about 3s. per dozen. Orleans, Damask, and Violet Plums are abundant. A considerable quantity of Jargonelle and Windsor Pears are also in the market. Among Apples, we noticed good specimens of Dutch Codlin and Kerry Pippin; other sorts are also good and plentiful. The best Morello Cherries are selling at about 2s. 6d. per half-sieve. Gooseberries are nearly over, and Currants are becoming very scarce. Filberts are rather on the increase. Of Vegetables, Cauliflowers are good, and sufficient for the demand. Cabbages and Turnips are improving. French Beans are good, and very abundant, and there is also a good supply of Windsor Beans. Onions are plentiful; Peas are becoming less abundant. Carrots are good, and Shallots are sufficient for the demand. Salading and Herbs of every kind are abundant. Cut Flowers are chiefly composed of Ceanothus azureus, Hypocrite zonalis, Tallow and Perpetual Roses, Sweet Peas, Heaths, Verbenas, Fuchsias, Scarlet Pelargoniums, Gardenias, Pinoteas, and Carnations.

FRUIT.

Pine Apple, per lb.	Currants, per half-sieve, 2s. 6d. to 3s. 6d.
Grapes, Hothouse, per lb. 2s. to 3s. 6d.	Gooseberries, per half-sieve, 1s. 6d. to 2s.
— Spanish, per lb. 1s. to 1s. 6d.	Filberts, per 100 lbs., 20s. to 30s.
Melons, each, 2s. to 3s.	Oranges, per dozen, 1s. to 2s.
Peaches, per dozen, 4s. to 6s.	— per 100, 6s. to 14s.
Apricots, per doz. 2s. to 3s.	— bitter, per 100, 10s. to 14s.
Plums, per half sieve, 2s. 6d. to 3s.	Lemons, per dozen, 1s. to 2s.
— Orleans, per half-sieve, 1s. to 2s.	— per 100, 4s. to 10s.
— Green Gages, 4s. to 6s.	Almonds, per peck, 6s.
Apples, Pears, per bushel, 4s. to 6s.	Sweet Almonds, per lb., 2s. 6d.
— Kitchen, 2s. to 3s.	Nuts, Hazelnuts, 3s.
Pears, Bon Chretien, 2s. to 3s.	— Brazil, 1s.
Cherries, Wall, per lb., 1s. to 1s. 6d.	— Cob, 1s.
— Morello, per half-sieve, 1s. to 2s.	

VEGETABLES.

Cabbages, per dozen, 1s. to 2s. 6d.	Leeks, per bun., 4d.
Cauliflowers, per doz., 2s. to 3s.	Shallots, per lb., 6d. to 8d.
Sorrel, per half-sieve, 2d. to 3d.	Garlic, per lb., 6d. to 8d.
Artichokes, per doz., 1s. to 2s.	Onions, per bunch, 2d. to 3d.
French Beans, per half-sieve, 1s. 6d. to 2s.	— Spanish, per bushel, 1s. to 2s.
Potatoes, New, per cwt., 3s. to 3s. 6d.	Shallots, per lb., 6d. to 8d.
New Turnips, per bunch, 3d. to 4d.	Tomatoes, per punnet, 1s. to 1s. 6d.
Peas, per bushel sieve, 2s. to 3s.	Capsicums, per score, 6d. to 1s. 6d.
Beans, per bush. sieve, 1s. 6d. to 2s. 6d.	Celery, per bunch, 1s. to 1s. 6d.
Red Beet, per doz., 1s. to 2s.	Mushrooms, per pottle, 6d. to 1s.
Carrots, 4d. to 6d.	Small Salads, per punnet, 2d. to 3d.
Basil, per bunch, 3d. to 4d.	Mushrooms, per 12 pun. 3s. to 6d.
Horse Radish, per bundle, 3s. to 4s.	Tarragon, per doz. bunches, 1s. to 2s.
Savory, per bunch, 2d. to 3d.	Asparagus, Cayan, per bunch, 3d. to 6d.
Cucumbers, Frame, each, 6d. to 1s.	— Grass, per bunch, 2d. to 3d.
— Ridge, each, 2d. to 3d.	Chervil, per bunch, 2d. to 3d.
Vegetable Marrow, per doz. 4d. to 1s.	Chervil (turnip rooted), 3d. to 4d.
Spinach, per sieve, 1s. 6d. to 2s. 6d.	

HOPS, Friday, Aug. 16.

Our Market continues very active, and prices advancing. The Duty has fallen to 100,000*l.*

Perryman & Sons, Hop-Factors.

MARK-LANE, MONDAY, Aug. 19.

The supply of Wheat from the home counties this morning was the smallest received all the year, including a very few samples of new, which were good, but some, apparently, rather coarse—the quantity was too small to form a correct opinion, either of its general quality or value; old brought 1s. to 2s. over the prices of this day se'nnight. Business in Foreign was not extensive, being restricted by the advanced prices, at which it was generally held, and it must be noted 1s. dearer than on Monday last.—Barley and Peas remain unaltered; the former meets rather more inquiry.—Beans are also more in demand.—Oats sell more freely, Irish at 6d. and Foreign 6d. to 1s. above last week.

BRITISH, PER IMPERIAL QUARTER.

	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk, White	42	50	Red	44	48
—— Norfolk, Lincolnshire and Yorkshire	—	—	White	—	—
Barley, Malting and distilling grs.	30s	Chevalier	31	32	Grind.	25	30
Oats, Lincolnshire and Yorkshire	—	Potatoe	19	21	Feed	18	20
—— Northumberland and Scotch	—		Feed	19	21	Potato	20	25
—— Irish	—		Feed	17	20	Potato	19	2—
Malt, pale, ship	—			70	72			
—— Hertford and Essex	—			68	70			
Rye	—			32	36			
Beans, Harrogate, old and new	32	to 36	Tick	30	34	Harrow	30	32
—— Pigeon, Hedgehog	34	to 38	Winds.	—	—	Longpod	—	—
Peas, White	36	to 38	Maple	31	32	Grey	31	32

ARRIVALS THIS WEEK, LAST WEEK.

	Flour.	Wheat.	Barley.	Malt.	Oats.	Rye.	Bns.	Peas
English	2010 Sks.	— Bshls.	3004	400	2010	175	—	510	670
Irish	—	—	—	800	—	10400	—	—	—
Foreign	—	11465	5478	—	—	3503	—	6058	663

FRIDAY, Aug. 16.

Having had a great deal of rain from Monday to Wednesday, and during the Market of that day, prices of English Wheat advanced 1s. per qr., and at the close a rise of 2s. upon our quotations was pretty generally obtained on Foreign. Although the wet weather continued here yesterday, the accounts from the country this morning lead us to believe that no material injury has yet been sustained by the Wheat still in the fields, nevertheless, the few sales made at the opening of the Market were about 1s. over the rates of Wednesday, but the day proving fine, very little business was subsequently transacted.—Barley, Beans, and Peas fully maintain their late value, and Oats must be written 6d. to 1s. dearer.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	1810	300	690	3720 Sks
Irish	—	—	10440	—
Foreign	13010	14090	1890	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July	8 per Quarter.	38s 6d	34s 8d	27s 11d	32s 0d	38s 2d	39s 6d
—	12	34 10	31 10	25 9	30 4	37 3	37 3
—	19	34 3	30 5	24 5	30 4	37 7	37 3
—	26	33 9	30 2	23 10	28 9	37 1	37 4
Aug.	2	34 0	30 0	23 9	27 5	36 7	36 5
—	9	33 10	34 6	23 7	25 0	35 0	34 2
6 weeks' Aggreg. Aver.		35 10	34 5	24 4	30 5	36 3	36 0
Duties on Foreign Grain		18 0	6 0	3 0	7 0	6 6	6 6

SEEDS, Aug. 13.

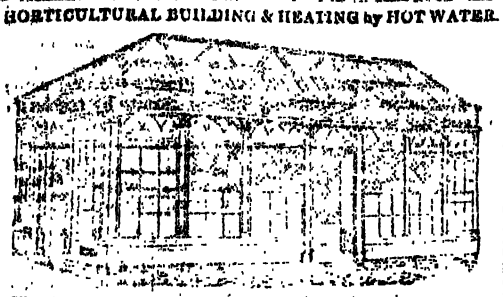
Canary	per qr	60s to 64s	Linseed Cakes, Foreign, per ton	11l 0s	11l 10s
Carraway	per cwt	44 52	Mustard, White, per bush.	—	—
Clover, Red, English	—	—	— Superfine	—	—
—— Foreign	—	—	— Brown	—	—
—— White, English	—	—	Rapeseed, English, per last	29l	29l
—— Foreign	—	—	Rape Cakes, per ton	—	—
Coriander	—	12 18	Saintoin, per bush.	—	—
Hempseed	per last	35 40	Tares, New, winter p. bush.	5	7
Linseed	per qr	— —	Foreign	—	—
—— Baltic	—	— —	Tuscan, per cwt.	—	—
—— Cakes, Eng. per 1000	10l	10l 10s	Turnip (two varieties for quotation).		

Rimmington and Law.

WHOLESALE PRICES OF MANURES.

Alum	per ton	11l 0s 0d	Nitrate of Soda	cwt.	0s to 0s 0
Ammonia, Carbonate	cwt.	36 0	— Potash (saltpetre)	cwt.	36s to 38 0
— Sulphate	cwt.	0 to 17 0	Phosph. of Lime (Cale. Bones)	cwt.	7 0
— Muriate	cwt.	22 0	Rape Cake	ton	0 to 11 15 0
— Sal Ammoniac	cwt.	44 0	Salt (Common)	ton	3l 0s to 3l 5 0
— Phosphate	lb.	1 0	Soda (Dry Carbonate)	cwt.	22 0
Bones	ton	0l to 0l 0 0	— (Crystallized)	cwt.	7 0
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On the Possibility of Supporting Life on a Vegetable Diet, by Dr W Lambe.
On the Use of the Stomach pump in Infants, by Mr. Thompson.
On the Preservation of the Ergot of Rye, by T. Rawle, Esq
CHEMISTRY, PHARMACY, AND MATERIA MEDICA.—On the Inorganic Constituents of Plants, by Drs H Will and R. Fresenius
The New Medical Reform Bill.
General Meeting of the Medical Protection Assembly.
Medical Institutions in Germany.
Homicidal Mania.
HOSPITAL REPORTS.—Guy's Hospital.—Pleuro-Pneumonia. Remarks.
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TWELFTH ANNIVERSARY MEETING of the PROVINCIAL MEDICAL and SURGICAL ASSOCIATION, held at NORTHAMPTON.
UNIVERSITY OF LONDON.—Questions Proposed in the Examination for the Degree of Bachelor of Medicine, August, 1844
Petition of the Medical Officers of the Horse and Foot Guards, relative to the New Charter of the College of Surgeons.
Letter on the Examinations in the University of Edinburgh.
Note on Clinical Instruction.
Mortality Table.—College of Surgeons.—Apothecaries' Hall.—Election of Physician at the Finsbury Dispensary.—Books received.—Correspondence.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 34.—1844. SATURDAY, AUGUST 24. [PRICE 6d.

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RAY SOCIETY, instituted 2nd February, 1844.—This Society has been formed upon the principle of the Parker, Camden, Sydenham, and other Societies, for the purpose of securing to those attached to the study of Natural History, such Works on the various branches of Zoology and Botany as could not be obtained by other means; and will consist of original works; of new editions of works of established merit; of rare tracts and MSS.; and of translations and reprints of foreign works. Every subscriber of one guinea annually will be considered a member of the Society, and will be entitled to a copy of every work published by the Society. The Council have great pleasure in stating that the number of Members already exceeds 300, and beg to call the attention of their friends to the necessity of sending in their names as early as possible, in order that they may be enabled to determine the number of copies of their works which they ought to print. The Council hope to publish two volumes before Christmas, the first of which will consist of translations from the German and Italian, of Reports on the progress of Zoology and Botany during the last few years.

Communications on the business of the Society are requested to be addressed to the Secretaries, Dr. George Johnston, Berwick-upon-Tweed, and Dr. Lankester, Golden-square, London. Subscriptions to be sent, by post-office order or check, to the Treasurer, J. S. Bowerbank, Esq., 45, Park-street, Islington.

GEORGE JOHNSTON, M.D.
EDWIN LANKESTER, M.D. } Secretaries.

INGA PULCHERRIMA. (Figured in "Paxton's Magazine of Botany" for August, 1844.)—Fine Plants of this extremely elegant and beautiful Exotic, with most of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices:—

Inga pulcherrima, 7s. 6d.
Achimenes picta, 10s. 6d.
Æschynanthus Horsfieldii, 7s 6d
Amycia zygomeris, 7s. 6d.
Clerodendron splendens, 10s. 6d
" squamatum, 5s.
Hindsia, or Rondeletia longiflora, 15s.
Epacris campanulata rosea (the finest selected from 1000 seedlings), 7s. 6d.
Habrothamnus elegans, 15s.
Tremandra Hugelii, 10s. 6d. to 21s.
Veronica speciosa, 5s. to 15s.
Erica elegans, fine and healthy, 15s., 24s., and 30s. per doz.
Drymonia punctata, 3s. 6d.
Phlox Van Houttei, (flowering plants), 2s.
Spiræa Reevesiana, 5s.
Viburnum cotonifolium, 3s. 6d.

Also the following, in collections:

100 Cape Ericas of 100 distinct sorts, (including many fine sorts) 5l.
12 Epacrises of 12 distinct sorts, (including Campanulata rosea) 21s.
12 Azalea indica, of 12 distinct sorts, (including fulgens) 21s

THOMAS JACKSON, Kingston Nursery, Surrey, August 23.

MESSRS. J. AND H. BROWN are now sending out to any part of the Kingdom the following very desirable plants:—

The beautiful new Lilium lancifolium album and punctatum, flowering plants, 3s. 6d. and 5s. each; very strong plants, 25s. each; good bulbs that will bloom next season, 18s. and 24s. per dozen.
Lilium venustum, sanguineum, longiflorum, and eximium, 12s. per dozen.
Chrysanthemums, newest and best varieties, 9s. p. doz., sent post-free.
The best new Fuchsias of 1844, 18s. per dozen; other approved kinds, 6s. and 9s. per dozen.
Bouvardias, 4 varieties, 6s. per doz.; strigosa, 5s. each.
12 varieties of Tea-scented Roses, 9s. per doz.
Yellow Noisette, Yellow and White China, 9s. per doz.
Fine new buff Rose, Eliza Sauvage, 18s. per doz.
New crimson odorata, 12s. per dozen.
Fine new Rose, Le Pectole, pale primrose, 2s. each, or 20s. per dozen.
Queen of the Bourbons, a beautiful Rose, 2s. each, or 20s. per dozen.
All these Roses—or established in small pots—could be shaken out and sent by post.
The new Achimenes picta, 7s. 6d.; hirsuta, 1s. 6d. each.
The dwarf orange Brugmansia, flowering plants, 3s. 6d.
Pentas carnea, 3s. 6d.; Veronica speciosa, 3s. 6d. each.
Gesnera tubiflora, fine new white, 2s. 6d. each.
Inga pulcherrima, 5s. each.
Niphæa oblonga, 2s. each.
Centradenia rosea, 2s. each.

Albion Nursery, Stoke Newington, London.

NEW AND RARE PLANTS.

W. JACKSON AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, have now the pleasure to offer the following Novelties:—

Cineraria Celestial, No. 1. . . . . 5s. each.
" Fairy, No. 2. . . . . 5s. "

See DR. LINDLEY'S opinion in the *Gardeners' Chronicle*, of April 6, page 216, under the letters, C. L. N. "Seedling No. 1, a bright blue. The flowers of this variety are rather small, but they are very abundant, and bright and beautiful in colour. No. 2, pure white centre, with the termination of the petals of a delicate azure blue. This is also an abundant bloomer with well-formed flowers, lively in appearance, and forms a distinct and desirable variety." Discount to the Trade on the above when six plants of each are ordered.

Boronia ledifolia, 5s.; Chorozema triangularis, 5s.; Epiphyllum, Conway's Giant, 3s. 6d. to 5s.; large E. Russellianum, 2s. 6d.; Gastrolobium spinosum, 5s.; Gompholobium polymorphum luteum, 5s.; Hydrangea Japonica, 2s. 6d.; Mirbelia speciosa, (Loddiges') 5s.; Oxylobium acutum, 5s.; Pimelea spectabilis, 2s. 6d.; Thunbergia chrysops, 7s. 6d.; Veronica speciosa, 2s. 6d. to 7s. 6d. each, large.

W. JACKSON and Co. beg to state that their 60 beautiful Seedling Calceolarias, selected from upwards of 2000, will be sent out early next Spring, a descriptive Catalogue of which will be printed. Railway communication to all parts of the kingdom. A reference from unknown correspondents is respectfully solicited.—Cross-lanes Nursery, Bedale, Yorkshire.

TO THE LOVERS OF PANSIES.

S. WIDNALL, Grantchester Nursery, Cambridge, begs to inform his friends and the public that he has with great care selected his Superior PANSY-SEED, warranted to be all new of the present year, and which he can with confidence recommend. This being a favourable season for sowing, it will be advantageous to those who wish to ornament their gardens with this beautiful flower at a very cheap rate, as packets containing sufficient seed, with careful cultivation, to grow 500 plants and upwards may be had postage free at 2s. 6d. per pckt., or three packets for 6s., upon receiving a post-office order.

VALUABLE NEW PLANTS.—The following are confidently recommended as being infinitely the most beautiful of their respective tribes, and worthy a place in all choice collections:—

Achimenes picta, 7s. 6d. to 15s. each; Gloxinia cartonii, 5s. to 10s. 6d. do.; Cereus carnata, 3s. 6d. do. The Subscribers feel so confident of this Plant giving entire satisfaction, that they are willing to engage to return the money to all who are not pleased with them. They have also now to offer 12 Plants of choicest kinds of Geraniums, including Duke of Cornwall, Sunrise, Fair Maid of Devon, Lord Ebrington, and others equally good, for 21s. the 12, or 2s. 6d. each. 12 most splendid new kinds of Verbenas, 6s. 12 choicest Fuchsias in cultivation, 10s. 6d., sent free by post.—R. WHITE and Co., Poole Nursery, Dorsetshire.

THOS. CRIPPS respectfully offers the following New FUCHSIAS at 24s. per dozen, reserving the selection to himself; or 30s. per dozen if selected by the purchaser, viz.:—Maranck's Princess Sophia, Sidmouthii, Pullen's Adonis, Pendli, Stormontii, Le Chinois, Audot, Queen, Magnet, Pawley's Prince of Wales, Kentish Bride, Duke of Wellington, Bridegroom, Transparens (Oudin's), Akbhar Khan, Sanguinivea, Cylindrica Superba, London Rival, Edwardsii, Victorine, Queen Adelaide (Holmes's). A splendid collection of older kinds at 12s. per dozen.

Also the following select plants, viz.:—Achimenes picta, 10s. 6d.; Habrothamnus fascicularis, 3s. 6d.; Gloxinia rosea alba, 5s.; Thunbergia chrysops, 10s. 6d.; Brugmansia Knightii (new double white), 5s.; Brugmansia floribunda, 5s.; Statice pseudo armeria, 3s. 6d.; Mimulus Moodiana (fine), 2s. 6d.; Mimulus Coleii (the finest scarlet yet out), 3s. 6d.; Hydrangea japonica, 2s. 6d.; Ribes albidum, 3s. 6d., Veronica speciosa, 5s. A remittance or respectable reference accompanied with the order is respectfully requested.

Tunbridge Wells Nursery.

PINE PLANTS.—Persons in want of the above have an opportunity of choosing from a particularly strong and healthy stock, warranted clean, at moderate prices. Apply personally or per post to W. DAVIS, Green-street, Marlboro'-road, Chelsea.

T. AND J. BACKHOUSE, NURSERY & SEEDSMEN, York, beg to offer to the public strong plants of the following new and rare species:—Achimenes picta, 10s. 6d.; Aristolochia gigas, 10s. 6d.; Lisianthus nigrescens, (small) 2s. 6d.

T. and J. B. have also a good stock of Lisianthus Russellianus, Phlox picta, Van Houttei and bicolor, 1s. 6d. each; Achimenes hirsuta, 2s. 6d.; and Pentstemon Murrayana, 2s. 6d.

AURICULA SEED from Stage Flowers, to be had in Packets at 2s 6d., of W. J. NUTTING, Seedsman, 46, Cheapside, London.

NEW PANSY SEED.

WILLIAM CLARK, 25, Bishopsgate-street-within, London, is now sending out Seed just gathered, warranted from the best Flowers and can confidently recommend the same, knowing the kinds collected from; in papers of 2s. 6d. and 5s. each. Also, J. H. Cox, Esq.'s, superb PICOTEE SEED, 5s. per paper. Very fine CALCEOLARIA, from the first flowers, 1s. and 2s. per paper. CINERARIA, from 12 best varieties, 1s. per paper. GERANIUM, fine mixed, 1s. per paper. May be had on receipt of a post-office order.

EARLIEST STRAWBERRY in CULTIVATION.—Strong Plants of the "PRINCESS ALICE MAUDE" STRAWBERRY, which has proved itself to be the earliest grown in this country, are now ready to be sent out at 30s. per 100. As an Early Strawberry, it has taken the First Prize at all the Horticultural Exhibitions in the early part of the season. Also Plants of the "British Queen," "Deptford Pine," "Prince Albert," and all the leading kinds. To be had of Messrs. WARNER & WARNER, Seedsmen, 28, Cornhill, London.

DUTCH HYACINTHS AND OTHER FLOWER ROOTS.—The undermentioned has received, per Rotterdam Steamer, "Emerald Isle," in FINE CONDITION, an assortment of the above. Early orders for which will secure Good Roots, and upon terms equal to any other Dealer.

T. D. WATKINSON, Seedsman, 6, Market-Place, Manchester.

MR. HOYLE'S NEW SEEDLING GERANIUMS.

WILLIAM MILLER respectfully announces to the Nobility, Gentry, Amateurs, and the Trade, that he has purchased the entire stock of the following superb SEEDLING GERANIUMS raised by G. W. HOYLE, Esq., of Guernsey, viz.:

1844.	each.— £	s.	d.		each.—£	s.	d.
Titus	3	3	0	Claude	1	1	0
Pompey	3	3	0	Sarah Jane	1	1	0
Champion	2	2	0	Amelia	0	10	6
These three for six guineas.				Majestica	0	10	6
1843.				Rosalia	0	10	6
Unique	1	1	0	Flora	0	10	6
Queen of England	1	1	0	General Pollock	0	10	6
				These nine for five guineas.			

The entire set 10 guineas, with a discount of 20 per cent. to the Trade. A remittance must accompany the order from unknown correspondents.

Titus received a seedling prize at Chiswick, June, 1844; Pompey, Champion, and Unique were pronounced by Professor LINDLEY, in the *Gardeners' Chronicle* of June 29, 1844, to be "three flowers of good substance, size, and variety;" and Mr. Gleuny, in *Gardeners' Gazette* June 22, 1844, says, speaking of the Geraniums at the Chiswick Fête—"Mr. Hoyle had by far the best lot there; Pompey was the best of them, and Titus next." Blooms of the others were likewise exhibited at the June Fête, Chiswick, 1844, and attracted very extraordinary attention, and were universally admired. On the whole, the above varieties, for substance, roundness of form, and general excellent qualities, are among the best ever offered to floriculturists. Printed Lists, with full descriptions, can be had on application. To commence sending out plants in October.

W. M. has been supplied by Mr. Hoyle with some choice GERANIUM SEED, which he saved from his own beautiful Seedlings, and the newest and best varieties sent out by other growers. Sealed packets of 100 seeds, 12s.; do. of 50 seeds, 7s. Also, Hybridised Seed, saved from his own extensive collection of Pelargoniums; packets of 100 seeds, 10s.; of 50 seeds, 5s.

Providence Nursery, Ramsgate.

T. DAVIES and Co. beg to offer, at very reduced prices, the following plants, of which they possess a fine healthy stock:—

	£	s.	d.
Auracaria imbricata, 3 to 5 in. high, per 100	4	4	0
Rose Cloth of Gold, per plant . . .	0	5	0
Habrothamnus fasciculatis . . .	0	3	6
Hydrangea japonica	0	2	6
Epacris coccinea	0	5	0
Ilex latifolia, from 15s. to . . .	1	10	0
Berberis tenuifolia, 10s. 6d. to . .	1	1	0
Primula sinensis alba pleno, 3s. 6d. to .	0	7	6
Camellias of almost every kind in cultivation, from 2s. 6d. to	0	5	0

T. D. and Co. can also supply the following SEEDS, which have been collected by them with the greatest possible care:—

GERANIUM.—Positively gathered from their Show-Plants, which have gained all the leading Prizes this year in the neighbourhood of Liverpool, and which cannot fail to produce excellent varieties, if not superior new kinds, 2s. 6d. to 5s. p. packet.

CALCEOLARIA.—From the best varieties out, mixed with their own dark-spotted seedlings, 2s. 6d. to 5s.

CINERARIA.—The most of which has been gathered from the bright blue, mixed with other light varieties, 2s. 6d. to 5s.

PANSY.—Collected from flowers of almost every hue, and of the finest form, 1s. to 2s. 6d.

The larger packets of all, except the Geranium, will produce from 100 to 200 plants.

A liberal discount allowed to the Trade, taking large quantities.—Wavertree Nursery, near Liverpool, Aug 24.

FOR FRAMES, GREENHOUSES, &c.

JOHN HAYES respectfully offers his Composition for rendering Brown Holland, Calico, and Irish Linen Transparent and Waterproof. His own Greenhouse is covered with cloth prepared with this Composition, and answers admirably; the cloth requiring only a coat of boiled oil once a year to render it as lasting as the wood frames; and the plants, which require only half the usual quantity of water, are more vigorous and healthy than under glass.

Specimens of the prepared cloth may be seen at Messrs. BATT and RUTLEY'S, 412, Strand, of whom, or at his Nursery, West-street, Farnham, Surrey, the Composition may be had at 3s. 2d. the quart bottle, sufficient for 100 feet of cloth.

TO AMATEURS.

AN AMATEUR who has a First-rate Collection of CARNATIONS and PICOTEES would be willing to make an exchange with any Gentleman for named TULIPS and RANUNCULUSES.—Direct to A B., Post-office, Tavistock.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND-MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and despatch.—This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by men or women. It is easily set, so as to deliver the exact quantity of Seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Mangold Wurzel Seed, Wheat, Barley, Peas, and all kind of Garden Seeds. In Tin, 1l. 10s. each; or with Copper Box and Tube, 1l. 15s. each. Commission allowed to Agents.

These Dibbles may be obtained of Messrs. COTTAM and HALLAN, 2, Winsley-st., Oxford-st., London, through the agency of the principal Agricultural Implement Sellers in the United Kingdom; or from the Inventor, by letter, to his address, inclosing a Post-office order for the amount.—RICHARD SMITH, Upper Hall, near Droitwich, Worcestershire.

LONDON'S PATENT SPADE.—Sold by GREEN and CONSTABLE, Ironmongers, 26, King William-st., London-bridge. Horticultural Tool Chests, Bright Ladies' Spades, Money's Patent Water Pots, Lord Vernon's Patent Hoes, with a general assortment of Garden Implements.

TANNER'S VITREOUS FLUID and CLOTH, a Substitute for Glass for Horticultural Purposes.—The Vitreous Cloth proves its superiority over Glass, by producing the light most suitable to vegetation, superseding the necessity of any shading, preserving a healthy moisture on the plant, retaining its bloom to a more lengthened period, less expensive, and not requiring so much attention. The above (retaining heat) is preferable to Glass for Hothouses, &c., the temperature of which is maintained with less fuel. It is equally applicable as a covering for Fruit-trees, preserving them from frost, blight, and excessive heat. The Vitreous Cloth, made by machinery, is much superior to any prepared in a different manner. By the use of the Vitreous fluid, the Cloth (after lengthened service) may be renewed.

The Fluid sold in bottles 2s. 6d. and 4s. 6d. The Cloth 2s. 6d. and 3s. per yard. Manufactured by N. W. TANNER, Chemist, Exeter. Agents for Exeter and vicinity, Messrs. LUCOMBE, PINCE, & Co, Exeter Nursery. Liverpool Mr. CUNNINGHAM, Nurseryman, Paradise-street. London: Messrs. BUTLER and MUCKLEY, Herbalists and Seedsmen, Covent garden.

N.B. The Vitreous Cloth if fixed in the manner recommended by the Proprietor) will stand *a much greater pressure* of air than glass.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

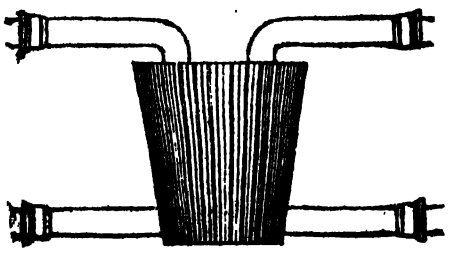
D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



BURBIDGE AND HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success; for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.			Patent Door and Frames.	Fire-bars & Dead Plate	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in.	ft.	s.	s. d.	s. d.	s. d.	s. d.		
10	1 5	20	7 0	6 0	2 0	6	30 feet.	12 to 20
Ribbed Boiler.								
10	2 2	20	10 0	7 6	2 0	6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	30	12 0	7 6	3 0	6	80 to 125 feet.	40 to 65
14	3 10	35	17 5	8 6	4 0	6	150 to 200 feet.	65 to 100
18	5 5	42	25 0	8 6	5 0		300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24	8 15	60	35 0	8 6	7 6		600 to 800 feet	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & C. beg to inform the Trade that at their Manufactory in New Park st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

CONICAL BOILERS.—The Boilers invented by JOHN ROGERS, Esq., are made of several sizes, and may be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware road: Rollisson's, Tooting; Pontey's, Plymouth; The Horticultural Society's Gardens, Chiswick, and in the Gardens of the Royal Botanical Society, Regent's-park.

GUANO.—For Sale, in bags of 1 cwt. each; just landed, with a succession of cargoes to arrive.

There being considerable variety in the qualities of Guano imported from different places, and indeed from the same island, each parcel will be chemically analysed with the utmost precision, to show its relative productive power. A copy of such analysis will be given to buyers, and also instructions as to the most approved mode of using the Guano, furnished by the experience of eminent Agriculturists in England and Scotland.

Large parcels will be delivered direct from the Ship, or waterside premises. Smaller quantities may be had at the warehouses, 24 and 25, Billiter-street; or delivered within any reasonable distance, at a trifling additional cost.—Apply to JAMES CLARK, 24, Billiter-street.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, Aug. 23, 1844.

GYPSUM, &c.—Pure Gypsum (Sulphate of Lime) for Compost Heaps, Urine Tanks, Stables, &c.; also Sulphuric Acid, Guano (foreign and Potter's), Rape Cake and Rape Dust, and all other Manures, may be had of the Undersigned.
Synopsis of Prices, and mode of use, on application.
MARK FOTHERGILL, 40, Upper Thames street.

GUANO.—The undersigned is ordered to offer the following GUANO of the first analysis and soundest quality, in any quantity, about 40 tons, ex Magnet from Ichaboe, lying at Fenning's Wharf, also a choice cargo of 400 tons hourly expected, to be delivered free at any safe port in the British Isles. CHARLES RIVERS, Sworn Guano Broker,
5, Water lane, Tower-street.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, Aug. 23, 1844:—

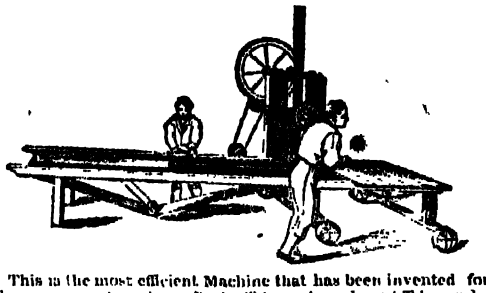
Bones . . p. ton	£4 10s. 0d	Nit. of Potash p. cwt.	£1 4s. 6d
,, crushed, 3/. 10s. to	6 0 0	Oil of Vitriol, or Sulph.	
,, calcined . .	7 0 0	acid . . p. lb.	0 0 1
Carbonate of ammonia . . p. cwt.	2 16 0	Rape Cakes . p. ton	4 15 0
Guano, Peruvian, p. ton	10 0 0	Salts, Epsom ,,	9 0 0
,, Ichaboe ,,	6 0 0	,, Glauber ,,	7 0 0
Gypsum . . ,,	2 0 0	Sulphate of Ammonia, per cwt.	10s. to 0 17 0
Nitrate of Soda, p. cwt.	0 11 9		

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

TO FLORISTS AND ADMIRERS OF FLOWERS.
BRAIN'S CONCENTRATED LIQUID GUANO, for the Garden, Shrubbery, Hothouse, and Conservatory.

This preparation is peculiarly adapted for the development of Flowers, furnishing them with the material (in a soluble form) out of which they weave their delicate tissues and elaborate their beauteous colouring. It has no unpleasant smell, is easily applied, and thus recommends itself, either for the Garden or Drawing room.—Price 1s. 9d. per quart Bottle, and may be had of WM. JACKSON, late GEO. BUTLER, 93, Cheapside, corner of King-street, and most respectable Druggists and Seedsmen, with full directions for use inclosed.—Works, Thomas st., Stamford-st., Blackfriars rd.

HATCHER'S BENNENDEN TILE-MACHINE, Manufactured and Sold only by COTTAM and HALLEN, Engineers, Agricultural Implement Makers, &c., 2, Wimsley-street, Oxford-street, London.



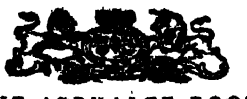
This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With the amount of labour, the product of a day of 10 hours is as follows, viz.:—

1 inch diameter of Tile,	11,000
1½ ,, ,, ,,	8,000
1½ inches diameter of Tile,	5,800
2½ ,, ,, ,,	3,300

The Machine is movable down the drying-sheds, so that it requires no extra boys to carry the Tiles, nor are shelves required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Cranbrook, Kent. No charge made for Patent dues or licence. The purchase of the Machine includes free use of it.

ASPHALTE.—BROWN OIL VARNISH, BLACK VARNISH PAINT.—Asphalte in a pure state, without gum, 3s. per cwt., in casks 2 cwt. each, for forming or improving gutters, walks, terraces, court yards, stables, ground floors, roofs, or for applying to damp walls. Brown Oil Varnish for varnishing gates, outhouses, fences, &c., 8d. per gallon—it dries very quickly. Black Varnish Paint for outhouses, fences, &c., 8d. per gallon.—Asphalte Roofing Canvas, very thick, 1s. per square yard.—ROBERT HARRADINE, Maker of Garden Nets, Fishing Nets, Sheep Nets, Rabbit Nets, Tents, Marquees, and improved Tarpaulins, 21, Tenbridge place, corner of Judd street, New-road, London.—N.B. Several thousand Police Capes on Sale.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade.
THOS. J. CROGGON, 8, Ingram-court, Fenchurch-st., London.

70, STRAND, LONDON.

RAMS FOR RAISING WATER WITHOUT LABOUR, where a fall can be obtained. FOUNTAIN BASINS IN IRON, &c.

F. ROE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in iron, which will stand the Frost and last for ages. A Ram and Fountain Jets fixed on the premises for inspection. Every kind of Garden and other Pumps, Well Engines, Baths, &c. Houses, &c. Heated by Hot Water.



TO COLONISTS, EMIGRANTS, &c. — Mrs. MARY WEDLAKE, widow of the late THOMAS WEDLAKE, at 118, FENCHURCH STREET, CITY, informs Emigrants and others that she continues to manufacture those Agricultural Implements for which her late husband was so extensively patronised by the Settlers of South Australia, Van Diemen's Land, Swan River, New Zealand, and other British Colonies. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, viz.:—

Patent Hay-making Machines	Flour-Mills—Bean-Mills
Dressing Machines	Patent Essex Ploughs, 30 sorts
Patent Chaff-cutting Machines	Subsoil Ploughs [Colonies
Oil-Cake Crushers	Threshing Machines for the
Double action Turnip-cutters	Drills of all kinds—Scarifiers
Railway Wheels	Vacuum Pumps

Please to be particular in the address, MARY WEDLAKE, 118, Fenchurch Street, London.

METCALFE'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most effectual and extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes, of improved graduated and powerful friction. Velvet Brushes, which act in the most surprising and successful manner. The Genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE'S Sole Establishment, 130a, Oxford-street, one door from Holles street.

Caution—Beware of the words "From Metcalfe's," adopted by some houses.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6*, 1844.—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup: giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 6, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

EXTIRPATION of all kinds of VERMIN.—Office, 69, King William-street, city, London.—Mr. J. A. MEYER, practical chymist, patronised by Her Majesty the Queen, H.R.H. the Duchess of Kent, the Royal Agricultural Society of England, and the Corporation of the City of London, and by special appointments to the principal Courts of Europe, begs to inform the nobility, gentry, merchants, agriculturists, shipowners, and the public generally, that he continues to CLEANSE, by contract, from one to five years, every description of PROPERTY, of rats, mice, moles, weasels, moths, fleas, bugs, &c., and as a guarantee of the efficacy of his preparation, respectfully refers to the certificates of his great success at Buckingham Palace and Gardens, Windsor Castle, St. James's Palace, Frogmore Lodge, Carlton Club House, Mansion House, Newgate Prison, Tavistock Hotel, Brewers, Chester, and Gallery Quays and warehouses in Lower Thames-street, the property of Joseph Barber, Esq., and many others of public and private establishments, which may be seen at the office. The preparations, which are free of poison or deleterious drugs, may be had as above, in pots and bottles at 5s., 10s., 20s., 50s., and 100s. each, with full directions, which must be used in proportion to the extent of premises infested, to successfully eradicate the vermin, and which can be applied without injury to property. Dwelling houses cleansed from 1l. to 5l. per annum; mansions and estates from 10l. and upwards; ships, decks, warehouses, granaries, breweries, farms, wharfs, &c., in proportion. Caution.—None are genuine unless bearing the signature and seal "Joseph Anton Meyer."

TO FLORICULTURISTS, CONNOISSEURS, AND NURSERYMEN.

MR. F. E. STONE will sell by Auction on the premises, No. 22, Park Place West, Liverpool Road, Islington, on Tuesday next, August 27th, at 12 o'clock, a valuable Collection of Cacti, Monstrous, Euphorbia, Aloes, and other Stove and Greenhouse Plants. Also an excellent Tulip Stage 40 feet by 10 feet, and the surplus Household Furniture, a fine-toned 6½-octave Piccolo by Peschey, and other effects. May be viewed on Monday and morning of sale, and Catalogues had on the premises, and of the Auctioneer, 83, St. John street, near Smithfield.

TO MARKET FARMERS AND OTHERS.

WANTED, a MARKET FARM, or Land convertible to that purpose, sufficiently near London to be within reach of the Markets.—Direct to G. M., Post-office, Guildford.

THE FINEST DUTCH HYACINTHS and OTHER BULBS DIRECT FROM HAARLEM.

YOUELL AND CO. beg to inform their Friends and the Public they have just received their first Importation of the above in the finest possible condition, Catalogues of which can be had on application. They are enabled to offer "the finest Double or Single Blue, Red, White, and Yellow Hyacinths at 16s. per dozen."

Very fine ditto . . . . . 12s. per doz.
Fine ditto . . . . . 6s. „

And other Roots at equally moderate prices.

P.S.—Bulbs will be added as compensation for long carriage.

Great Yarmouth Nursery, August 22, 1844.

The Gardeners' Chronicle.

SATURDAY, AUGUST 24, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Sept. 3 Horticultural . . . . . 3 P.M.
FRIDAY, Sept. 6 Botanical . . . . . 0 P.M.

COUNTRY SHOW.

TUESDAY, Aug. 27 Knaresborough Horticultural and Floral.

AT the request of a correspondent, we beg to state that those who are desirous of using SULPHATE OF IRON for the purpose of disinfecting manure may procure it wholesale of Mr. WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street; or Mr. FOTHERGILL, in Thames-street.

NEW flowers or new fruits are not often fit subjects for Leading Articles. But a case has arisen to which it seems desirable to attract particular attention.

Among the countless species of rare plants, for the introduction of which this country is indebted to the Indian Government, there is a little hardy evergreen shrub called "THE SMALL LEAVED OLEASTER," or Elæagnus parvifolia, having the aspect of the Bohemian Olive when out of flower, but being greener, and, like it, exhaling a delicious fragrance when in blossom. The shrub would not attract notice if it were not for its sweetness and being evergreen. The warm summer has brought the plant into fruit, in the Garden of the Horticultural Society; and it is this which leads us to notice it.

Under a south wall it is loaded with clusters of the most beautiful berries, not bigger than a Pea, and totally unlike any fruit as yet found at the dessert. They are oval, and bright red, but all over their skin are scattered innumerable silvery scales, which dim the redness, except where it peeps out between them, and gives the berries a singular mottled appearance. Inside is an angular stone, with a thin shell. The flesh which covers it is of the consistence of a Plum, and of so very pleasant sub-acid a taste, that, if there were more of it, the fruit would certainly be held in as much esteem as Plums.

Now it strikes us that in this instance we have at last the promise of a new class of fruits, if gardeners will set themselves to cultivating it. The plant possesses the important attributes of hardiness, abundant bearing, and good quality; but the fruit is in the usual state of wildings—lean and bony. The latter defect was once the fault of the Peach, the Plum, and the Cherry: we see what cultivation has brought them to; and the success of persevorance without skill in working upon those fruits, seems to justify our hoping as much from the Elæagnus, when subjected to perseverance aided by skill. What chance has brought about in the course of centuries, science may be expected to effect in a few years. In short, we believe that the fruit of the Elæagnus may be brought to the same condition as the Plum, by judicious management.

The course to take is this:—As soon as the plant again shows fruit, every means that experience may suggest should be taken in order to increase the size of a small number of the berries. Those means are excessive thinning, constant watering with liquid manure, and full exposure to the sun. Such means may be expected to increase the size of the berries immediately. The seeds of those berries should be sown in very rich soil; the vigour of the seedlings should be promoted by ample room for the roots, active manure, copious watering, and the brightest sunlight. In two years such appliances will have produced strong seedlings, with an abundance of firm well-formed wood. In the beginning of the third year, the oldest and best wood should be grafted on the common Bohemian Olive (Elæagnus angustifolia), stocks of which should be got ready for the purpose. The succeeding year, the grafts may be expected to bear. When that happens, the same process of manuring, thinning, and sunning should be followed, until the fruit is ripe. Little doubt can exist that the first seedling fruit will indicate a manifest tendency to enlarge; if so, the point is gained—for the moment we can succeed in producing in a plant a disposition to change, we know, from experience, that the change will go a long way, provided we continue to encourage the disposition.

Another way would be, to hybridise this small-leaved Oleaster with the Zinzeyd, or Elæagnus hortensis, whose fruit is as large as an Olive, and eaten in Persia, although it is too insipid for European tastes. By that means an immediate enlargement of the fruit would be certainly obtained; but, perhaps, at the expense of its quality.

Should these remarks attract the attention of any ingenious experimenter, we would suggest, in addition, that some experiments ought at the same time to be made upon grafting the Oleaster, because the operation is not at present practised, and it is uncertain what method may be most successful. And if this point were not determined beforehand, the seedling scions might die, after all the pains of rearing them, and the whole work would require to be commenced over again, or at least an entire season might be lost.

There will probably be some difficulty just now in procuring the Small-leaved Oleaster, but the Fellows of the Horticultural Society will easily obtain it another year. In the meanwhile, if nothing else comes of these suggestions, it is useful to make the tree known, as a capital shrub to be introduced into game preserves, for the sake of its berries. Any quantity of the seed can be procured from the Botanic Garden, Saharunpur.

AMONG the luxuries which seem necessary to the state of a great man's household are all sorts of flowers, fruits, and vegetables, forced into unnatural maturity at unheard-of seasons. The *alienis mensibus æstas* is the measure of patrician gardening; and so completely has the taste for precocious enjoyment fastened on the public mind, that the "forced" things, which opulence only can command, are valued at a great price, while the very same objects, left to Nature for perfection, are too often consigned with indifference to the multitude. Did the expense connected with such unseasonable gardening insure equivalent advantages, it would be a harmless indulgence, and wise mode of eliciting skill and stimulating to exertion. Were the subjects of it, brought to maturity three or four months before their customary period, really improved in quality, or even rendered as good as they naturally are, there would be still greater reasons for its encouragement. But, in the majority of cases, the *pallida poma* of the Romans are only another name for the forced productions of modern England; and many of the objects thus early acquired are inferior, in every important respect, to what they are when suffered to mature at the allotted time. Their great recommendation is, that there must have been an unusual outlay of money and skill in rearing them. Such an outlay may, no doubt, be defended on many grounds, and we are the last to depreciate the consummate skill with which it is often applied. We would only impress upon gardeners that it is not, as is often supposed, the *sole* end of their profession.

The great end of gardening is to improve the qualities assigned to plants by Nature, to the utmost extent of possibility, and it is a secondary object to bring such things into use at any period besides the natural one.

It is therefore a question of some moment, whether those means, which are so efficient in forcing, might not be more usefully employed in ameliorating the same productions at the natural season; and also, whether intrinsic excellence ought not to be sought for more than that fictitious value which attaches to unseasonableness. Let no one fear that wealth would lose its mark if this were so. There can be no difficulty in seeing that money and talent will always keep in advance of limited resources in the hands of the ignorant, and that the distinction which is now attained by forcing would be equally, and we think better, established by superiority of produce. That too is surely a less enviable distinction which depends on having things out of season, than the one which is founded on real and decided excellence of quality.

The majority of vegetables and fruits that are forced are less nutritious, less digestible, less palatable, than natural crops; the standard by which their merit is measured is not so much their good quality as their earliness and external appearance. We, however, regard the highest aim of the grower to be the production of positive rather than comparative superiority; and this can only be effected by assisting Nature at the right time, instead of overstraining her energies by an artificial stimulus. Certainly there are exceptions, but they do not affect the general argument, and we pass them by for the present.

Let it not, however, be supposed that we depreciate forcing, properly so called. We would simply urge that it is not of first-rate importance, and that the greatest share of a gardener's attention should be bestowed on giving his produce the best quality at the season when it naturally appears.

With respect to flowering plants, no one needs telling that their productiveness, their beauty, and the fragrance of their blossoms, are materially lessened by forcing; and yet how many of them are hardly ever grown except for blooming early. The Hyacinth, for instance, is universally used for decorating plant-houses or drawing-rooms, but how few cultivate it as a border flower. To get bad forced Roses in March, is regarded as a matter of more importance than to produce the finest natural Roses in June. To be sure it is very desirable to have Roses, Lilies of the Valley, &c., blossoming in winter. The evil is, that the possession and improvement of plants in such circumstances is often more cared for than when they flourish in all their natural conditions.

It is doubtless a proud feeling for a Gardener that he can chain Nature to his side, and, refractory as she is, that he can bend her to his absolute will. It is a great thing thus to assert his superiority over the menial servants of a household; and we trust that he will ever maintain that empire of intellect which raises him, in the minds of thinking people, above the herd of domestics. But we would submit to him that his power may be exercised and his empire maintained in more ways than one; and that the improvement of the absolute quality of a plant is quite as much worthy of his notice as the forcing its unwilling stores to be given up at all seasons at his imperious command. We none of us like much to act upon compulsion, and we may depend upon it plants agree with us in that respect.

ON "FIXERS" AND "RETARDERS" OF AMMONIA.

I THINK I perceive a little confusion of ideas in the way in which some writers apply the term "fixer" of ammonia to a variety of substances which they recommend for this purpose. I have more than once seen the *Gardeners' Chronicle* quoted as authority on this point; as, for instance, at p. 41 of Mr. Hannam's useful little work on "Waste Manures." Now, surely, it is not judicious to apply the same term "fixer" to the effect produced on carbonate of ammonia by sulphuric acid and certain sulphates, and to that produced by charcoal, bog-mould, &c. By the former class of substances the carbonate of ammonia is decomposed, and the sulphate of ammonia is formed; that is, a volatile salt is replaced by a fixed salt. Here we may say the ammonia is "fixed." But the other class of substances, the charcoal, &c., effect no decomposition of the carbonate of ammonia: they merely "retard" its escape into the atmosphere; they cannot even retain it for an indefinite period. We are, therefore, producing two very different results according as we use a "fixer" or a "retarder." In the former case we shall apply to the soil a result (the sulphate of ammonia) which must undergo a fresh change before it can be serviceable to vegetation; whilst in the latter we apply the carbonate itself ready for action. Without speaking positively, I think we may argue *à priori* that a "fixer" will produce a more permanently valuable effect on manure than a "retarder," if we reason according to the present position of the still advancing inquiry that is making into the theory of vegetation. According to Boussingault it is probable (and Liebig states the same thing), that the sulphate of ammonia must be decomposed, and the carbonate of ammonia restored, before the nitrogen can be fixed in a plant. I find some writers on Agricultural Chemistry very careless in the terms they make use of: they talk of ammonia when they mean carbonate of ammonia, and of lime when they mean carbonate of lime. This conventional negligence may not mislead proficients in chemistry, but we, who are only partially initiated, are sometimes apt to be puzzled by such inaccuracies. Precision in the application of technical terms is the very soul of science. I have penned these remarks in consequence of seeing that Mr. Mechi, in his third letter on Agricultural improvement, speaks of introducing into his tank "a layer of earth or gypsum between each layer of manure," so as to secure the ammonia. I do not know whether it has occurred to him that the action of the two substances here named must be different; the former being what I have called merely a "retarder," whilst the latter may very possibly be truly a "fixer." I have just read Mr. Mechi's letters with very great pleasure. This is indeed something like coming to the point. If Mr. Mechi be correct in his speculation,—and his arguments appear to be generally such as should command attention,—then must our present race of farmers turn over a new leaf, or most assuredly some of them will get pushed from their seats. Mr. Mechi reposes a laudable confidence in what practical men have shown to be advisable, and a wholesome faith in what science has proved to be true. He is now trying, on a very bold scale, to apply the best resources of practice and science to the regeneration (I think we may call it) of a wretched hungry soil, and its conversion into sound fertile land. Let all farmers watch him narrowly, but let them be very cautious of pronouncing him, as it seems by his own account many of them are disposed to do. If his speculation should only prove half as successful as his enterprise and intelligence deserve, the laugh will be sorely against some of our farmers of the old school. Let them rather read Mr. Mechi's letters, and digest them; then, whether this particular speculation of his prove successful or not, they will not fail to profit largely by his reflections, and improve their own notions by his suggestions.—*J. S. Henslow, Hitcham.*

THE ROSE-GARDEN.—No. XVI.

(*Continued from page* 524.)

Annual Pruning.—The annual pruning of the tree Rose takes place in the first week in March. Previous to detailing the manner in which this must be done, it

may be well to observe that the growth of a tree is thus:—the rings round the bottom of both stem and branches are the depositaries of dormant buds, which will not be called into action unless the buds above be injured, or unless the sap arise so profusely as to be unable to expend itself by the upper parts, in which case the buds below break out; though, indeed, they will occasionally do so, as the natural act of the tree, in preference to rising higher. This is more observable in the Wild Rose than almost any other plant, and perhaps may, in some degree, explain the reason why budded Roses are shorter lived than those on their own bottom; for any one who has at all observed the growth of wild stocks must have noticed that the original head is seen generally on hedges in much worse plight than the shoots which have been subsequently formed at its base. This tendency of the Dog-Rose to break out below must be checked in two ways: the first, by destroying every sucker and shoot as it starts; and the second, by finding full work for the sap above, and by giving it a free passage. If, then, upon cutting in a tree at pruning time, a couple of buds be left on every shoot of last year's growth, or three at most upon a very strong one (with free growers no rule can well be given), there will be quite enough to occupy the sap, keep the tree within bounds, make it much handsomer, save the sap the expense of maintaining old wood, and give it a free course.

Grafts differ from buds in this respect, viz., that an inserted scion must be considered as a tree which has finished throwing up its suckers, and whose vitality and appearance depends upon the shoots to be produced from buds at the points or sides of the wood already formed. An inserted bud may be considered in the light of a seed sown at the top of a stock, instead of in the ground; it seems to retain the same habits (though limited in extent), and to form its roots, as it were, at the point of insertion, throwing up suckers from thence as it would have done from the ground. Such large shoots, then, as spring at once from an inserted eye, do not come under the same restrictions as those at the points of old wood, which are necessarily more feeble, and the buds upon the bases of which are in a more forward state of preparation for breaking out than the base buds of a vigorous shoot direct from the eye. The latter must be treated according to the position it is intended to occupy; to its strength, and to the state of the wood, and the buds which are upon it. If the buds at the base appear very undefined, and consequently disinclined to break, cutting it in low causes a fresh production of free-growing wood; while, if the same shoot were moderately shortened, the buds at its summits would not only break out freely, and continue the regularity of the tree, but, in the event of excess of sap, recourse would be had to the base buds to expend it. Gardeners, in general, trim such shoots as may be here denominated suckers, or crown shoots, low or high, in proportion to the rest of the tree; but with reference to the health and appearance of the tree, it is only necessary to observe that close cutting is calculated to produce wood, and moderate amputation flower.

If there be more sap than enough, a fresh shoot will likely enough start from the crown of the graft, or the rings upon the first year's shoot, and increase the head of the tree, as well as bring it back with new wood nearer home—a matter always desirable, as tending to keep the head from straggling.

Cutting to the lowest buds always leaves the sap with but a short channel to pass through, strengthens the branch below the buds, and is every way beneficial, if care be taken that a sufficiency be left to occupy the sap.

There are, however, several sorts of Roses, which are, with more or less difficulty, brought to flower when thus treated; and such plants as are found to throw nothing but wood, must frequently be allowed to retain a considerable portion of the last year's produce to insure their flowering: in these cases, a much greater degree of experience is necessary, than when a decided rule can be laid down; the operator must be able to distinguish between flower and wood buds, the former of which are oval, the latter pyramidical: he must learn not only the quantity to be left on each shoot, from the general appearance of the tree, but in a degree also with reference to the shoot itself; thus, pruning the plant altogether in a different manner to that above pointed out, it is obvious that, under such circumstances, it is far more difficult to keep the head near home than when trimming year after year to a stated number of buds; the removal of wood which has straggled away is also more frequent, and the form of the head altogether much more difficult to preserve. Whenever a tree is destined to remain year after year where planted, an equal attention should be paid to the appearance of the future, as well as of the present; but where the current season only is of importance, the plant should be encouraged to produce the greatest possible quantity of flowers; a mode of treatment which has been known to kill fruit-trees entirely. Such plants as throw little or no flower, are in general, from the nature of the thing, more healthy and vigorous than when the contrary is the case, and half standards will therefore be found less productive than whole ones, while the wood is in general finer, the stem more rapidly enlarged, and the head stronger. The larger the shoot, the more likely are the buds upon it to form wood; the bolder the buds, the more likely are they to throw flower; the fifth bud from the base is generally a wood-bud, those above it producing flowers; with a light soil, however, and a hot sun, flower will be produced under any pruning; nor is it by any means uncommon to see a brilliant show of flowers upon old shoots which are annually cut down and layered for the sole purpose of multiplying the number of plants, and of producing wood only.

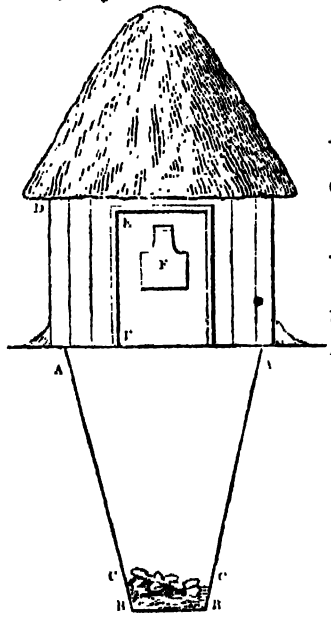
If the tree be not pruned at all, it will lose its shape entirely in a single year, and become more and more unsightly, each succeeding one. Trimming the shoots has nothing essentially different in the manner of execution to trimming the stock; in trimming to a bud, barely the thickness of a sixpence should be left above the bud, and the excision should form a slant about equal to that caused by dividing a square from angle to angle: if more were left above the bud, it would die down to the bud, and prevent the bark from healing over the wound; in general, the line of the bud is the slant the knife should make in its passage through the shoot.



Cutting out old wood should always take place where it is feasible, the desirable point being to keep near home, as it is called; when, therefore, a tree throws out a fresh and vigorous shoot, close to the base of an old branch which has straggled too far from the graft, the old wood should be cut out in March, close to its base, and the young shoot left to supply its place, and receive its nourishment. This principle, well applied, will always keep the trees in bounds; but as this requires judgment, and cannot well be explained in writing, it may be requisite to take a lesson upon the subject, the first convenient opportunity, from a scientific gardener.

ICE-HOUSES.

Perceiving in a late Number a letter from a correspondent desirous of building a small ice-house at a cheap rate, I beg to inclose a plan of a very cheap one. It would be better to have three or four such small ice-houses than one large one, as the air gets in, and causes the ice in the latter to dissolve before a third of it is consumed. The following plan is proved by experience to be at once cheap and efficacious for its purpose.—*B. D., Greys.*



REFERENCE TO PLAN.

A B A conical hole in the ground.

C B. Stones or rubble, to act as a drain, 18 inches.

A D. Slabs, 4 feet high above the surface.

E. Door.

F. A Trap-door, to answer a similar one on the opposite side, to be opened in a dry air, and carefully closed when the circumambient atmosphere is damp.

THE FLORIST REFORMER.—No. II.

THE POLYANTHUS.

Among Polyanthuses there have not been so many candidates for floral honours as among other florist flowers, consequently there are less synonymes in this class than in any other. The few that have been twice named have been done so apparently by mistake; and those few were raised by Mr. Hufton, of Nottinghamshire, well known for having introduced many good Carnations and Picotees, as well as Polyanthuses. It is said that Mr. Clegg, of this neighbourhood, who bought the stock, named them, and that Mr. Hufton also did the same; they are known principally by the name the latter gave them, in the midland counties.

The Polyanthus has experienced less improvement than any other class of florist flower, and this is principally owing to the great sameness in seedlings to the parent from which they were raised. The following list contains the whole of the Polyanthuses cultivated in this neighbourhood; they are classed according to their merits, and are not distinguished by the colour of the ground—as dark, red, and scarlet.

First Class.

Barrow's Duchess of Sutherland
Buck's George the Fourth
Bullock's Lancer
Clegg's Lord Crewe, *alias* George Canning
Crowshaw's Invincible
Collier's Princess Royal
Cox's Regent
Eckersley's Jolly Dragoon
Gibbon's Sovereign
General Bolivar
Fletcher's Defiance
Hilton's President
Hufton's Earl Grey, *alias* Clegg's Lord John Russell
Hufton's Lord Rancliffe, *alias* Clegg's Prince of Orange and Clegg's Golden Hero
Hufton's Lord Lincoln
Maude's Beauty of England
Nicholson's Bang Europe
Ollier's Beauty of Over
Pearson's Alexander
Saunders's Cheshire Favourite
Wood's Espartero
Goud's Independent.

Second Class.

Beauty of Coven
Buckley's Squire Starkie
Burnard's Formosa
Dew's Britannia
Faulkner's Black Prince
Fillingham's Tantarara
Queen's Earl Fitzwilliam
Hepworth's Elizabeth
Jolly Sailor
Nicholson's Ranger
" Nonsuch
" King
Sir Sidney Smith
Head's Telegraph
Turner's Emperor Buonaparte
" Princess
Timm's Defiance and
Yorkshire Regent

—*John Slater, Cheetham Hill, Manchester.*

Home Correspondence.

Ice-Houses.—Ice being water in a solid form, acquires its solidity by the process of losing its heat. It is a law of matter, that when a mass of ice shall, by absorption, imbibe a certain amount of heat, equivalent to that which it has lost during the process of congealing, it assumes its natural or fluid state. If two bodies of equal solidity are placed near each other, the one heated, the other of the temperature of the surrounding atmosphere, it will be found that, after a short time, the heated body will, by the law of radiation, lose its heat, and the cold body, by absorption, will imbibe a portion of that heat until both indicate the same temperature. The more compact a body is, the slower it is in acquiring heat, and it is equally slow in parting with it. Now I consider the ice-house and the surrounding atmosphere as two bodies, the one (the atmosphere) being heated, and the other cold; consequently the colder body, viz. the ice, will absorb the heat radiated by the surrounding medium, the result of which is, that the ice resumes its fluid state. From these remarks it would appear that one great object in the preservation of ice is to exclude the air by every possible means. Many do take this precaution; but in contradiction to this, I beg to mention the practice of a gentleman who frequently, during the warm days of spring and early summer, (for he never has any ice afterwards,) orders the ice-house doors to be thrown open for a few hours, to dry, as he expresses it, the ice and walls of the building. This he denominates the American mode; and, for those who wish to hasten the departure of their ice, a most efficient mode it is. With respect to the situation of the ice-house, if the place is dry and well screened from the sun, little importance is to be attached: the great secret lies in the body of ice being compact, in order that it may resist, as much as possible, the absorption of heat; and, for becoming as solid as possible, there is no substance so good as snow, which possess all the qualities of ice. I am sure that if snow was well beaten and trodden until the ice-house was quite full, beginning the treading at the bottom, and gradually proceeding, making quite firm each thin layer, to the top, the body of snow would acquire such compactness as would resist the heat of our summers. For instance, how often do we see the snow-balls which the schoolboy makes, resist the action of the open air and sun for days, while a heap of ice of equal size would disappear in half the time, from the fact that it is less compact, and therefore absorbs heat more readily? If ice could, by any means, be reduced to powder similar to snow, the result would be far better than under the present method, although the water, which is necessarily mingled with it, would, in some measure, spoil its keeping. In Italy, where ice is looked upon not only as a luxury, but as a necessary of life, the inhabitants of the mountains, in order to meet the demands of the valleys, collect the snow, and, packing it into the fissures of the rocks on the shady side of the mountains, find no difficulty in keeping a supply when the heat of summer has arrived. From this source is derived all the snow which cools the drinks of the thirsty Neapolitan, and which enables him to wash down his favourite dish of maccaroni, or cool his palate beneath a cloudless sky.—*Walter Wakefield.*

Bees.—The history of the bee has been written with so much truth by Huber, that little is left for inquiry. I know but of one error, which is, I presume, by the translator. The extraordinary fecundity of a queen is stated to be 200 eggs a day. A queen which deposited no more eggs than that, could never produce a swarm, on account of the daily loss of bees which go out to the fields. I have had queens which laid 1000 eggs daily for three months in succession. This summer, in a glass hive containing one comb four feet square, the queen deposited 800 eggs a day, or 16,000 in 20 days, 2000 of which were males. My glass hive is two feet square; the glasses are one inch and a half apart, which compels the bees to build but one comb. The object of this communication is to inquire if any correspondent can solve the following queries:—As the queen knows when she is to lay a drone or male egg, in what way is that knowledge acquired? What difference is there in the size of male and common eggs? Does one ovary contain male eggs only, or are they to be found in every ovary?—*A Lover of Truth.*

Guano.—A neighbour of mine has found among his guano a perfect egg. Is this usual? The egg is about the size of a duck's: it is discoloured by the guano, but does not appear to have been speckled or mottled. The shell is very firm, and the interior is so dried as to rattle on shaking the egg.—*Frederick H. Sankey.*

Liquid Manure.—The dryness of the season has been very unfavourable to the growth of summer Cauliflowers. I sowed some seed about the end of February, on a slight hot-bed, protected only by mats; after being planted out, they suffered severely, both from the weather and from grubs; and it was only by means of frequent watering that I saved a fair quantity. Having good faith in liquid manure, I gave each of them one good dose of it, and notwithstanding the dry weather, I have had a much better crop than I expected. I cut a head last week which weighed 3lbs., and another since—dressed in the usual manner for cooking—which weighed 5½ lbs. It measured 10 inches in diameter, and 30 inches in circumference; this is a proof of the value of liquid manure for this much esteemed vegetable. The plants were not over-grown, but were close and compact, and were not attacked by grubs, which were very troublesome during spring and summer. I am not aware of any effectual mode of destroying them, and would be glad to receive a hint on the subject. I contemplate

dressing a piece of ground with lime and soot, having it well dug, and allowing it to lie exposed to the weather all winter, in the hope that this may eradicate the evil. I have lately applied a good dose of liquid manure to all my winter Greens, and I can already perceive a most beneficial result; they have made rapid growth during these last few days.—*Henry A. Wood, Statfold Hall.*

Growth of Trees.—As you say, in reply to my question about the growth of forest-trees, that you are not aware of any exact observations on the subject, and as your correspondent of last week only repeats an old story of an observation very imperfectly taken, you will, I hope, allow me to state the result of my experience, which causes me to doubt the generally received opinion, that wood lengthens after being formed. The Fir-tribe offer the most convenient subjects for inquiry, as the growth of each year is in them clearly defined, as far as the lower branches are permitted to remain on them; and I find that Spruce-trees in a sheltered situation, in the fifth year of their growth, form top-shoots measuring as much as 2 feet 4 inches, and in the seventh year, as much as 3 feet; and in the same kind of tree, equally sheltered and in the same soil, I find that on trees aged 18 years the shoots, which were formed in the fifth and seventh years of their growth, do not exceed those measurements. I have also found that an Oak-tree of about 30 years' growth which I measured in two places, which I marked, for the purpose of ascertaining its increase in circumference, did not lengthen between the marks, although it increased in circumference about 2 inches in one year.—*A Subscriber, Ireland.*

Miltonia Spectabilis.—At the last Glasgow Horticultural Society's Exhibition there was, among other well-grown specimens of plants sent by Mr. Turnbull, gardener at Bothwell Castle, a very fine one of this rare plant, about 3 feet in diameter, with some 35 expanded blossoms, and a good many more to open; the leaves were of a very dark green, which is also quite unusual with the plant.—*A Subscriber.* [We have seen nothing like this in the south.]

The Polmaise Heating.—I believe there are upwards of ten or a dozen different systems of heating hothouses described in the *Chronicle*, but perhaps none of them possess the essential properties to such a degree as the Polmaise system, namely, simplicity and efficacy. I have seen the new vinery that has been erected at Polmaise, by William Murray, Esq., and it only requires to be seen at present to be admired; the luxuriance of the Vines, the size and number of the bunches and berries, all testify that the system upon which the house is worked is one that agrees well with the growth of the Vine. If those who have not seen it would only imagine luxuriant shoots, with leaves approaching in size to the foliage of the Tussilago Petasites, with clusters of the black Hamburgh Grape more than a foot long, with enormous shoulders supported with small cords, they might have some idea of the plants and fruit at present growing in the vinery at Polmaise, heated by means of hot air issuing from a chamber at the back of the vinery. There is another thing attending the Polmaise heating, which, perhaps, may be worth noticing, namely, the crest-fallen appearance of some who considered themselves among the best Grape-growers in Scotland; they have watched the progress of the Vines from time to time, and at present they consider themselves beaten. Some of them may not be fond of innovations, but in order to raise their dejected spirits, and maintain their character as successful cultivators of the Vine, some change must be made in their present system. I was informed by Mr. Carmichael, the gardener, that the difference of temperature between the front of the house and that part where the hot air enters is only about 5 degrees; he also showed me a graft which he put upon one of the Vines. This season, it has made a shoot corresponding in strength with the other Vines in the house; it has also a bunch of Grapes upon it: the variety is the Muscat of Alexandria. It is thought by some Grape-growers that this variety should have a small vinery for itself, as it requires a higher temperature; but a short time will prove how it agrees with its new situation. At present, the Vines in the house grow as freely as common Cabbages in a well-manured garden, or Willows by wet ditches.—*Peter Mackenzie.*

The Grey Parrot.—"A Constant Reader" wishes to be informed if any remedy can be applied to prevent a favourite bird picking off its feathers. The usual food has been bread and milk, chicken bones, &c., but notwithstanding every attention to diet, the unsightly bird continues to devour every wing and tail feather as soon as they appear.—*N. S. H.*

Destroying Wasps.—The mode of destroying wasps described at p. 541 is a very old affair, and by no means so simple and effectual as the one with turpentine, discovered by Professor Henslow, and detailed in the *Gardeners' Chronicle*, p. 637, 1842. Even on this latter method, however, a great improvement has been made by putting the turpentine in a bottle, instead of a cup, and inserting the neck of the bottle in the hole leading to the nest, and surrounding it with some earth, in the way recommended by a correspondent, "B. C. K.," at p. 556, vol. 1843. Very little turpentine is required—merely as much as will wet the sides of the bottle. If applied in the dusk of the evening, every wasp will be dead by the following morning. In no instance have I known it to fail of the desired effect, excepting in cases where the nest was deeper in the ground or at a greater distance from the mouth of the hole than I had anticipated. A partial failure may sometimes occur where there happens to be two entrances to the nest instead of one, but a second application the following evening is sure to prove effectual.—*M. E. H.*

Abies Douglasii.—The following account of the loss of a very fine Abies Douglasii may prove interesting to some of your readers. In the year 1830 I received from the Horticultural Society's Garden, at Chiswick, two plants of Pinus ponderosa, one of P. cembra, and one of A. Douglasii. They were all planted in a shrubbery here together with a young Deodar plant, the soil being a fine light loam, formerly a garden. All throve well for about five or six years, when the two Ponderosas were attacked by an insect which fed on the pith of the young shoots, and every year destroyed them. The plants, consequently, got stunted and deformed; one was taken up, and the other, though still alive and making efforts to recover, presents a wretched spectacle of disease. The others throve apace; the Cembra is a noble-looking tree, a picture of health and beauty; but the Douglasii and the Deodar became the admiration of all who saw them, and confessedly, so far as I was assured by many well-informed gardeners and nurserymen, the finest specimens in Scotland. The Douglasii had attained the height of more than 30 feet, being a growth of more than 2 feet (about 2¼ feet) per annum. During the summer before last (1843), we remarked that two of the lower branches dried up and withered; but as the tree still looked vigorous, we hoped it was owing to some accidental cause. In the winter, however, I remarked a less healthy hue stealing over other branches; and in spring, while the other trees were beginning to make their shoots, the unfortunate Douglasii was observed gradually to change colour, like a branch separated from the stem: no swelling of the buds took place, and by the end of May, when I returned from an absence of some months, it had become red as if scorched with fire—the tree was dead. A friend in the neighbourhood, who has very extensive plantations, and who has studied the matter much, having called one day and seeing what had occurred, suggested that the cause would probably be found to be in the roots having struck through the congenial soil into some unfriendly stratum below; and that, as all of the Silver Fir species love a moist soil, this had in all likelihood penetrated to the dry gravel which forms much of our subsoil. His forester having come some days after, examined the spot with my gardener; and, on digging beside the tree, found that the roots had struck into a dead sand, where they had been literally starved. The unusually dry weather of this spring had accelerated the catastrophe. The Cembra continues as healthy and vigorous as ever; and the Deodar, though not more than 11 feet high, spreads its thick pensile branches over a circumference of 10 yards, resembling a fountain of green waters in the regularity of its weeping boughs.—*James B. Fraser, Moniack, Inverness.*

Local Horticultural Societies.—Mrs. Thomas Lewin, principal secretary and treasurer of the Eltham Horticultural Society, presents compliments to the Editor of the *Gardeners' Chronicle*, and begs to contradict the statement lately given in it of the falling to the ground of the above Association. Being assured it cannot be his wish to discountenance the smallest exertions in such a cause, she begs to tender her assurance, that though its object is little more than parochial improvement, and had not been supposed worthy of notice in such a register as the *Chronicle*, yet that its Editor may record it as doing successfully, and affording an example easy of imitation to all parishes where a few persons will take the management of it.—*Barn House, Eltham.* [We hope our correspondents will be in future more cautious in their reports of dead Societies. We rejoice to find that the Eltham is flourishing, and wish it all the success its managers can desire.]

Flower Garden at Tandridge Court.—I imagine that if my neighbour, "W. H. M." had resided in the neighbourhood at the time the Flower Gardens were made here, which is nearly ten years ago, he would have found that the first operation was draining. If he had referred to my former statement, he would have found the pond mentioned in it. To our great disappointment, we found only one spring, and the water from it is conveyed through the garden in an iron pipe. "W. H. M." might have stated that, in order to add to the number of beds, the present design of the Flower Garden is the third that has been made on the same spot. He might also have stated that some of the beds are on a sandy bank, and look equally well with those in the horse-pond.—*J. Clark, Tandridge Court, Surrey.*

Pine-Apples.—In February last I had about 100 Pine-suckers potted into six-inch pots, and plunged over the rims of the pots, in a bed composed of two-thirds leaves, and one-third fresh tan, 20 inches deep, and heated by means of hot-water tanks below. In May the plants having filled the small pots with roots, were shifted into pots 10 inches wide and 9 inches deep, the sides being perforated. These were plunged in the same pit, so that the rims of the pots were 2 inches below the surface of the bed. The plants grew very well, making stiff short leaves of the finest healthy hue. On the 12th of this month I took them out of the pit again, and found that not only the pots were filled with roots, but that they had extended through the holes at the sides, and over the rims of the pots, in many cases as much as 20 inches. The plants were not watered during the whole season, but merely syringed overhead on the afternoons of fine days. The bed was always in a medium state of dryness, and the soil in the pots was the same. Perhaps those who are now engaged in discussing the relative fitness of leaves and tan for Pines to root in, will be able to draw some conclusion from these facts that may help to set the matter at rest. I will only add, that nothing could be more satisfactory to myself than the present state of the plants, many of which I hope to have in fruit in February next.—*G. Fleming, Trentham.*

Valerian Root.—No doubt many unverified traditions have been perpetuated, and some from a remote antiquity, without sufficient inquiry. How is this, as to the continually re-asserted predilection of cats for Valerian? Thinking it might have remedial effects, in case of indisposition, I tried it. I found the cat would drink an infusion of druggist's Valerian, with plenty of milk, but not at all without. I found no disposition to touch or smell the drug, or the fingers which had handled it. The same indifference was manifested for the leaves, stem, and blossom of fresh Valerian. I find no difference between cat and kitten in this respect, and can discover no appearance of truth in the story. Can you either affirm or deny it? The same questions apply to the Mint called Nepeta Cataria. But I cannot try it, as I do not know the plant, or where to find it.—*A. H.* [If your Valerian roots are fresh, and given to male cats, you will soon find that the influence of it is perceptible enough.]

Transmutation of Corn.—In the *Gardeners' Chronicle* of the 17th inst., I observe an article in which you give an account of an experiment tried by Lord Bristol, suggested by the old German notion that one species of grain, if cut over in an early stage of its growth, will in the following year produce grain of another description. Having heard of this hypothesis several years ago, I determined to test it. Accordingly I sowed a small patch in the kitchen garden with Oats, and cut them over several times before the flowering stems appeared. The following spring many of the plants were dead, but the leaves of those which remained had very much the appearance of Barley. I showed this to Mr. Smith, of Deanston, and several other eminent agriculturists, who thought that the plants were of the Barley species; and I had not previously informed them why I wished to have their opinion. They grew luxuriantly, and in the course of a few weeks I felt the ear in the sheath, which, when it opened, showed magnificent seeds of Timothy Grass. Whether this was a transmutation, or whether the Oat plants had died, and dormant seeds of Timothy Grass had taken their place, I know not. I determined to try the experiment again, and did so with Oats, Barley, and Wheat. I gave these the same treatment as in the former case; and the second year, although many of the plants had died, those which survived showed ears of Oats, Barley, and Wheat, just as they had been sown. I am determined again to test this theory, and, by way of greater security, I mean to sow the grains in flower-pots—two seeds in each, having the mould well examined to prevent, if possible, the presence of any other seeds. Although rather late for this season, still I shall try it this year, as well as next at an earlier period.—*J. S. R.*

Foreign Correspondence.

Extract of a Letter from one of the Secretaries to the Wellington (New Zealand) Horticultural Society; dated Wellington, 19th Feb., 1844.—His Excellency has granted to our Society 10 acres of land in a very convenient situation, for the purposes of a garden, and we only want increased funds to avail ourselves to the utmost of this liberal provision. I was led to recommend the packing of fruit and other trees in zinc cases through an inadvertence it is needless to explain; and I regret this the more, as it may be productive of injurious consequences. The trees—Apple and Pear—to which I alluded in my former letter, and which, after being nine months out of the ground (the vessel not sailing until five months after the time stipulated in the advertisement), are now flourishing in my garden, some of them having borne fruit this season, were packed in a deal case, in Moss only, and without straw. At Valparaiso I witnessed another successful instance of this way of packing. A Frenchman arrived there, after a voyage of nearly four months, with several cases of flowering shrubs and trees from France, in the very best order. They had each a small ball of earth to the roots, which were afterwards wrapped in Moss, and the plants were packed in the same material to prevent their being disturbed. I am anxious to correct any error, because a case of plants was sent to us by the London Horticultural Society, packed air-tight, and they all perished. In the warm latitudes these air-tight cases prevent evaporation, and this causes fermentation, especially if straw be used, as in the instance of a case I received, with the other alluded to above, containing Peach, Plum, Gooseberry, and Currant-trees, all of which died. I hope a better fate is reserved for the Vines you are good enough to promise us, and which I expect with great impatience. They shall receive every care, and I have provided for them an excellent situation. I feel greatly obliged by your promise of the Poppy and other seeds; if I may venture a suggestion, you cannot forward them in a better way than by post, inclosed in brown paper, as a letter, or as you sent the Trifolium, every seed of which grew, and it has since been widely disseminated through this and the neighbouring settlements. You would also greatly oblige me by sending in this way a few Cucumber and Melon seeds; Cucumber seeds I have not yet been able to save in the colony. I am making another effort this year. From the inquiries I have made I find neither Box for borders nor the Lily of the Valley are to be obtained in Sydney or Van Diemen's Land; the common Primrose and double and single Violets, we have. I must confess a great partiality for the established favourites of the gardens of our fatherland; they have a double charm, from early associations.

I am anxious to make a collection of Roses—in my opinion the most magnificent flower in a garden; I have nine varieties, and have written to England for 20 others. It requires some philosophy and patience to tax the imagination while we indulge in the pleasures of anticipation, until at length we have those of fruition; but I believe the collection of useful and ornamental trees or plants in the colony is more complete than could be reasonably expected in so short a time. While on this subject, I may mention a curious fact I learned at Tahiti. Some 30 years since a well-meaning person thought to confer a benefit on the island by introducing the Guava. It has since spread most rapidly, and is now the pest of this place, as it is necessary to eradicate it whenever cultivation is attempted, it is, in truth, the only clearing required. I will take care to make a collection of dried specimens for you, as you wish, and forward them by some convenient opportunity. I refer you to those *Gazettes* containing an account of the establishment of an Agricultural Association, and two articles written by myself advocating its uses, to show that your suggestions have been attended to, where any hope of success presented itself. You will be glad to learn that the harvest this year has been very good, they are now busy cutting, the weather is very fine, and there is every prospect of an abundant return.—*Robert Stokes.*

COUNTRY SHOWS.

Cambridge Florists' Society, July 25.—At this Exhibition the following Prizes were awarded CARNATIONS—Mr Twitchett, P P, Hendly's Empress of Purples *Scarlet, Bizarres* Mr R Headly, Rainsforth's Gameboy, Mr Twitchett Twitchett's Don John; Mr Ready, do *Crimson Bizarres* Mr Twitchett, Kly's Lord Milton Mr Marshall, Munsley's Robert Burns Mr R. Headly, Lord Milton Mr Wood, Putley's Queen, Mr Rickard, Jacques's Georgiana; Mr Ready Wakefield's Paul Pry *Scarlet Flakes* Mr R Headly Addenbrooke's Lydia Mr Wood Lydia; Mr R Headly, do; Mr Headly, Wilson's William IV Mr Rickard, do *Purple Flakes* Mr Twitchett, Headly's Empress of Purples; Mr Ready Lascelles's Queen of Sheba Mr Wood, Keaney's Excellent, Mr R Headly Munsley's Beauty of Woodhouse, Mr Twitchett Headly's Incognita Mr Ready Macbeth *Rose Flakes* Mr R Headly, Bates's Bride Mr Twitchett, Hudson's Lady Flora Hastings Mr Ready Lily's Lady Gardiner Mr R Headly, Brookes's Flora's Garland, Mr Wood, Lily's Lovely Ann, Mr Twitchett Wilson's Harriet SEEDLING CARNATIONS *Scarlet Flake* Mr Twitchett Twitchett's Hannibal *Purple Flake* Mr Ready Read's Mary Ann PICOTEES—Mr Wood, P P, Wood's Princess Alice Maude *Red (heavy edged)* Messrs R Headly, Rickard, Ready Green, Dickerson, Sharp's Duke of Wellington *Red (light-edged)* Mr Ready, Sharp's Hector, Mr Rickard, Sharp's Gem *Purple (heavy edged)* Mr Wood, Wood's Princess Alice Maude Mr Marshall Brinkler's Conductor, Mr Ready Church's Victoria Mr Twitchett, Sharp's Invincible, Mr R Headly Mitchell's Nulli Secundus *Purple (light-edged)*: Mr Ready, Brinkler's Purple Perfection Mr R Headly, Seedling, Mr Twitchett Purple Perfection, Rev J Thackeray, Giddins's Laura Mr Twitchett Lily's Grace Darling *Rose (heavy-edged)*: Mr R Headly, Wilmore's Princess Royal Mr Green, Green's Queen Victoria *Rose (light-edged)* Mr Twitchett, Crouch's Ivanhoe Mr J Marshall, (Seedling) Marshall's Augusta; Mr Twitchett Brinkler's Beauty of Caulfield Mr R Headly, Wilmore's Victoria Mr Wood, do Mr Twitchett Crouch's Prince Charles *Yellow Picotees* Mr Rickard, Howlett's Paragraph; Mr J Marshall Matthew's Victoria Mr Ready do., Mr Wood do SEEDLING PICOTEES—*Light edged Purple* Mr. Twitchett Twitchett's Queen Mab *Light-edged Rose* Mr J Marshall, Marshall's Augusta *Heavy-edged Purple* Mr Twitchett Twitchett's Cassandra 2 *Balsams* 1, Mr Ready 2 Messrs Hudson *Cockscombs* Mr R Headly. *Specimen Plant* 1, Messrs Hudson, Hoya carnosa, 2, Mr Ready, Fuchsia globosa.—*Cambridge Chronicle.*

Devon and Exeter Botanical and Horticultural Society.—This was the 46th Exhibition; the weather was most auspicious, and the company numerous. From the garden of Miss Wells were a fine Cattleya Harrisoniæ, Stanhopea oculata and insignis; Eyanthe Deppei and Skinneri, &c. Of *Stove or Hothouse Plants*, Ixora coccinea, a good I. crucata, Cyrtoceras reflexa, Rondeletia speciosa, Achimenes hirsuta and multiflora, &c. Of *Green House Plants* Phœnocoma prolifera and Cruasula cotcinea, Baschnaultia formosa, Boronia pinnata, Pimelea Hendersoni, &c. The *Heaths* were remarkably fine, containing good specimens of ampullacea, reflexa, alba, tricolor, inflata and jasminiflora, &c. *Pelargoniums* comprised Beck's Leonora, Admiral, Meteor, Lynch's Sunrise, and Duke of Cornwall, &c. A fine plant of Lilium lancifolium, and some cut Flowers were also from the same collection. From the garden of J. W. Buller, Esq., were Cattleya Harrisoniæ, Oncidium flexuosum, O. Papilio, Aeropera Leddigesii. *Stove Plants* Pavetta caffra, a noble plant 9 feet high, and covered with 200 bunches of white blossoms; a fine Clerodendron squamatum, and C. paniculatum, Ixora coccinea, Rondeletia speciosa. *Greenhouse Plants* A fine plant of Boronia ciliata, Aphelexis humilis, a good Baschnaultia formosa, Michelia dilatata, Boronia crenulata, Tecoma jasminoides, and a fine specimen of Fuchsia exoniensis. From Mr Buller's were also a collection of Verbenas, Cinerarias, and Balsams. Mr. R. Webber had a stand of *Carnations* and *Picotees*, among them we noticed Hogg's Champion, Queen of Sheba, Wilson's William IV, Harry Giddings, Lady Paget, Countess of Surrey, Heath's Superb, Duchess of Kent, Clark's Wellington, Burtle's Lady Talbot. Of PEARS there was a fine display, for which the following prizes were awarded.—*Pine Apple* 1, Enville, 7½ lbs., E Lousada, Esq; 2, Queen, 6 lbs., Mrs Wells Dish of white *Grapes* Muscat of Alexandria, E Lousada, Esq Best flavoured *Melon* Blackhall Green-flesh, 3 Kingdon, Esq *Apricots* Moor Park, J. W. Buller, Esq. *Nectarines* 1, Red Roman, Sir J Kennaway, Bart., 2, Kingdon, H. Porter, Esq *Plums*: Orleans, H. Porter, Esq. *Cherries* Bigarreau, Sir J Kennaway, Bart; May Duke, F. Cross, Esq. *Red Gooseberries* Roaring Lion, H. Porter, Esq *White ditto*; Batt's Favourite or Old Dutch H Porter Esq., *Yellow ditto* Royal Sovereign, H Porter, Esq; *Green ditto* Ocean, J W. Buller, Esq *Red Raspberries* Antwerp, J W Buller, Esq. *Dessert Apples*; Jennating, T W Gray, Esq *Dessert Pears*: Citron des Carmes, H. Porter, Esq *Strawberries* Elton, H. Kingdon, Esq.—*Exeter Flying Post.*

Forres and Nairn Horticultural Society.—This was the summer Exhibition. The show of flowers was equal, if not superior, to that of any former meeting. Fruit and Vegetables were rather scarce, owing to the late unfavourable season. The Prizes awarded are as follow.—*Calceolarias* 1st, Mr Mackenzie, gr. to J Dunbar, Esq., for Duchess of Buccleuch, Lady Constable, Lady Peel, Armosa, Ellen, Grandiflora, Lord of Richmond Hill, and Bain's Queen Victoria. *Pelargoniums* Mr. Hopkirk, gr. to Major C. Bruce, M P., for Prince Queen's Alicia, Gem of the West, Garth's Perfection, Carnoustie, Miss Rupert, Britannia, Alexandrina, Victory, Fancy Band, Princess Royal. *Stove Plants* Mr Hall, gr. to Sir John Dunbar, Bart., for Hoya carnosa, Thunbergia alata and Gloxinia speciosa. *Greenhouse Plants* Mr. Hall, for Acacia Riceana, Thunbergia alata, Pimelea spectabilis, Epacris grandiflora, and Fuchsia globosa; 2, Mr Mackenzie, for Acacia [illegible]

Mr to N. M'Leod, Esq., for Hindostan; Dingillah. Epiphyllum Jenkinsonii, Echinocactus, Cereus speciosissimus, and Leschenaultia formosa. *Specimen Fuchsia*; Mr. Hall, for Chandleri (Variegata Mr. Hopkirk, for Splendens, Royal Sheen, King, and North Star. *Petunias*: Mr. Mackenzie, gr., May House, for Superba, Vesuvius, Squib's Seedling, Magnificissima, Mrs Weymss, and a seedling. *Stove Plant* 1, Mr Hall, for Manettia bicolor; 2, Mr. M'Kenzie, for three varieties *Pelargoniums*. Mr Mackenzie, for Jewess, Victory, and Alexandrina. The following articles were sent for exhibition from Delvey.—The carious Pitcher Plant (Nepenthes distillatoria), the Butterfly Plant (Oncidium Papilio), Erica ventricosa superba, v praguana, tenella, ignea, celsii hybrida, perspicua, &c; Polygala speciosa, Leschenaultia formosa, and Pimelea decussata; also a Ward's case containing Heaths, Oncidium flexuosum, &c. From Altyre—Gloxinia maculata, rubra, Youngii, and several seedlings. From Mr. J. Gillan, Epiphyllum Jenkinsonii, Ackermanni and speciosum, Cereus speciosissimus and flagelliformis. from Spa Park—Erica ventricosa, and ovata, Leschenaultia biloba, and Statice arborea. From Holm—Gloxinia candida, double Yellow Rose, &c. From Springfield Cottage—Victoria Rhubarb.—*Forres Gazette.*

North Riding Horticultural and Floricultural Society, July 30.—This was the second meeting for the present season. The plants in pots cut flowers fruits, and vegetables were numerous and in great perfection. The Prizes were awarded as follows.—*Stove Plant in Pot* 1, Miss Parkin, for Achimenes grandiflora, 2 Mr Pinkney gr to I S Walker, Esq for Hedychium coronarium *Greenhouse Plant in Pot* 1 Mr May for Lilium lancifolium punctatum 2 Mr Jackson for Erica ventricosa superba *Fuchsias* 1, Mr May for Staniwelliana, 2 Mr Jackson for Formosa elegans Among Fruit, Mr Graham obtained a first Prize for Frontignan Grapes

The Norfolk and Norwich Horticultural Society.—This was an excellent show for the season. The collections of Picotees were larger than on former years. A seedling exhibited by Mr H Cooke, was said to be of first rate quality. The petal is of the Rose form, of fine substance; the crown is well up and the habit excellent. The Fuchsias were well grown and presented a rich appearance. A Yucca gloriosa in bloom was exhibited by Mr Short, gr to Mr J Stracey. Mr Short, gr to H N Burroughes, Esq., showed a seedling Dahlia of good form and substance which if it retains its habit will be a valuable flower. Its colour is a deep velvety dark maroon. Melons, though numerous, were scarcely so fine as on former occasions. Strawberries were fine in size, but they were not well flavoured. From the gardens, Bracondale, were Erica Hartnelli Irbyana, viridiflora ampullacea, Epacris Tasmanii, Jasminum nitidum, refulgens, gemmiflora, Fuchsia Britannia, Paragon, Kentish Hero, Mrs Busta, Princeps, Alata, Eclipse, Nobilissima, Majestica, Duke of Wellington, Brockmanni, Lindleyana, Maria Champion, Exoniensis, Campanula fragilis, Achimenes longiflora, grandiflora, and rosea, Rivina humilis, Crowea saligna, Lycopodium stoloniferum and denticulatum, Polypodium aureum, Nerium splendens, Sollya salicifolia, Lasianthus Russellianus, Acrostichum alcicorne. The following prizes were awarded—*Dahlias (white ground)* R Fellowes, Esq., for Kirtland's Queen Victoria, Miss Bacon, Miss Jane, Miss Irby, Rose Harry, La Polka, Princess Royal, Teazer, Purpurea elegans, Rod River, Rebecca, Joan of Arc, Sir W Middleton, Harlequin, Maid of Orleans, Mrs Bevan, The Queen, Nottingham Hero, Burroughes's Seedling, Parmegiano, Fair Flora, Grace Darling and Nulli Secundus. *Fuchsias* Mr Short, gr to H N Burroughes, Esq for Formosa elegans, Stylosa minima, St Clare, Globosa major, Conspicua, Rubella, Standishii, Blanda, Insignis, Magnifica, Dalstonii, Venus Victrix, Chandleri, Grandis, Youngii, Invincible, Carnea, and Racemifera, Maurandya Barclayana alba, C Middleton Esq Ipomœa Learii, Mr Short *Pine Apples* Queen Mr Stewart, gr to W Bagge, Esq, M P *Grapes* Black Hamburgh, Mr Gale, gr to H N Burroughes, Esq, Grizzly Frontignan, extra prize, C K Thompson Esq.—*Norwich Mercury Aug 3*

Reviews.

Gramina Britannica, or Representations of the British Grasses, with Remarks and occasional Descriptions. By J. L. Knapp Esq. 2d Edition, 4to. Longmans.

THE late President of the Linnæan Society called the first edition of this book "an elaborate work," and not without reason. Its fault has always been its rarity—an evil now remedied by the issue of a second edition.

It is a volume of 119 coloured 4to plates of Grasses, drawn with great care, and offering such excellent likenesses that a person of no botanical skill cannot fail to recognise the species by their assistance. And this gives Mr. Knapp's book great value, for the larger part of the persons interested in the art of distinguishing Grasses are country gentlemen and farmers, who know nothing of Botany, and cannot use the technical descriptions or analytical figures of Botanists. To that great class such a book is invaluable. It ought, in fact, to form a part of the library of every one interested in rural affairs who can afford to buy it, for there are few plants so difficult to distinguish as Grasses, not any more so, and none which it is more important to know correctly, because of their various uses and qualities. With Mr. Knapp's book before him no one can have the least difficulty in making himself master of the subject.

We must also add, that the plates are tastefully drawn and carefully coloured, and the printing a beautiful specimen of typography, so that the work, independently of its practical value, forms a handsome drawing-room volume. Indeed, we know of no book of its kind so exactly what would be wished for by a lady who is turning her attention to the study of this interesting branch of Botany.

Orchideæ in the Collection of Conrad Loddiges & Sons. 12mo. 1844.

A NEW edition of this remarkable Catalogue has just appeared. In addition to its other merits, it now includes references to the books in which species are figured, which makes it extremely useful as a book of reference. The enormous extent of Messrs. Loddiges' collection may be judged of when we mention that the numbers of Orchidaceæ cultivated by them now, extend to 1916. The highest number in the last Catalogue was 1654.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

Myrsiphyllum asparagoides. Smilaceæ. Stove Climber. Native of Madagascar. Introduced by Messrs. Veitch, of Exeter, from Mauritius. Flowers white, in small axillary umbels. Leaves linear, in fascicles of 3 to 6. Stem climbing, smooth, and armed with numerous prickles. Flowers in July and August.

Cinchona micrantha. Cinchonaceæ. Greenhouse Shrub. Native of Peru. Introduced by Messrs. Veitch, of Exeter, from Mauritius. Flowers white, in terminal panicles. Leaves ovate, acuminate, glabrous, and shining. Flowers in July and August.

Pentandra Hookeryana.—The generic distinction is taken from this species, which has the stamens alternately longer and shorter. Cinchonaceæ. Stove Shrub. Native of Ceylon. Introduced by Messrs. Veitch, of Exeter, from Mauritius. Flowers white, in terminal panicles. Leaves ovate, acuminate, glabrous, and shining. Flowers in July and August.

Viola odorata. Violaceæ. Hardy Perennial. Native of Britain

[illegible] hardy and permanent shrub. These judicious kinds of exposing plants will do much to place a proper value on those from the high regions of tropical mountains, and will read a lesson to many who select warm corner and sheltered sites for plants otherwise accustomed to brave the scourge of the four winds of heaven.—*R. G.*

Miscellaneous.

Culture of the Double Rocket.—The double garden Rocket (Hesperis matronalis flore albo pleno), is one of the most interesting plants we have. Although it is three centuries since it was introduced from Italy into this part of the world, it has still a great number of admirers, although it is very capricious as regards soil, and rarely lives many years in most gardens. I have cultivated this plant for many years, and with much success. It is true, that the soil of my garden is considered to be particularly favourable for its culture; nevertheless, I am convinced that if particular care were not bestowed on the plant, as I shall point out farther down, the soil alone could not secure us against the loss of our plants. I consider it quite hardy, little affected by light or shade, not caring whether the soil is stiff or light, damp or dry, and able to support any degree of cold. It has many enemies, but, if I am not mistaken, one only that is fatal; if haste is not made to prevent its bad influence, this enemy will soon destroy the plant, which seldom escapes from its attacks: I therefore regard the Double Stock as an ungrateful plant, which makes an ill return for all the care that is bestowed upon it. The enemy in question is the larvæ of an insect, at present unknown, which probably deposits its eggs in the stem of the plant, or even in the crown from whence the young shoots proceed. These larvæ, when they are allowed to exist, eat out for themselves a way, till they come to the young shoots, which they infallibly destroy, along with the mother plant, the following spring. The latter appears, at first, to be sound and well, and the young branches unfold; but in a few days the leaves turn yellow and wither, the stem droops, and the interior, when examined, is found to be hollow, and gnawed at its base. It is often seen that at the same time the upper leaves are surrounded and held together by the threads of a little grub. People fancy that this grub is the cause of the death of the plant, but that is a mistake, for such grubs may be found upon either healthy or unhealthy plants, and in reality only eat the ends of the leaves, without attacking either the flowers or the stems. The destruction of the larvæ in question, at the right time, is therefore one of the most important things in the culture of the Hesperis matronalis; it is not difficult to effect, and does not require much attention; the little trouble that it occasions is well repaid by the success. Here is my method:—After the flowering, towards about the middle of August, cut off the stem close to the ground, for the purpose of exciting the root to make some shoots. About the end of September—a week sooner or later, according as the shoots are strong—take the plant entirely out of the ground, and separate the shoots one by one. That done, divide the old root in two by a vertical incision. If the inside is quite healthy, green, and full of pith, without circles or violet streaks, the shoots may be planted with perfect success. If, on the contrary—and it is generally so—the old root is hollow, violet or black inside, or only marked with circles and streaks of those colours, the shoots must be examined attentively at the part where they joined the mother plant; cut a little piece off, and you will always find, before you come to the first radical fibres, a little white curved grub the size of a grain of rape-seed. It must be killed, and then the shoot will become a healthy and vigorous plant. I have never discovered two maggots in the same shoot; nevertheless, all the shoots that the infested stock produces in the autumn will perish the next year. If by chance the grub is not found in some of the shoots which have the symptoms before described, they must not be planted among the others, for you may be sure that they will perish in the spring like those which might not have been examined; for the grub is often hidden and difficult to find. It is necessary that the separation of the shoots from the old stump should be done with care, to be better able to examine each; and if some are without roots they may be treated like cuttings, for they will soon produce roots. When the plants have made many shoots in the autumn, they may be again divided in the spring, either to multiply the number of plants, or more especially, to obtain stronger and handsomer bunches. To look for grubs in the middle of spring is useless, for there are none. Cuttings of three or four eyes, separated from the stem, easily take when they are placed in the shade, and kept moist; the best time to make cuttings, is when the lower flowers are over. When they are made later, we reject those which are hollow or violet inside; for although they make some roots like others, they are sure to perish in the spring. It is useless to winter old plants, for out of 20 stems which they may throw up, 18 at least will perish in the spring, and the remaining two will only bear insignificant flowers. Otherwise, the culture is so simple, that it is not necessary to say one word about it. Stagnant water in winter, and excessive heat in summer, alone kills them.—(*Annales de l'Association, Hort. de Prusse, xv. p. 77.*)—*Note.*—The insect which the author of this article indicates as the most destructive enemy of the Hesperis is the larva of a fly, called by Entomologists Anthomyia brassicæ. It appears to be the same insect that causes the excrescences that are sometimes found on the roots of Cabbages, and also [illegible] the spring of gardeners.—*Revue Horticole.*

The Common Heron.—The animosity prevailing against this fine bird arises from his frequenting the ponds for a few small fish. For this offence he falls a prey to the gun of the keeper, and the miserable emblems of his success greet the eye, nailed against the barn-door or other more convenient site. Thus, for the preservation of a few fish, is this noble bird allowed to fall a sacrifice to ignorance and cruelty. I remember a keeper anxiously in pursuit of one who had made his appearance on the edge of a magnificent piece of water, and ventured to plead, but in vain, for his preservation. The water in question was of such an extent, that vast indeed must have been the congregation of these birds to have made any serious diminution of its inhabitants.—*J. M.*

Pot Drainage.—We have received from a correspondent "A." at Lincoln, some samples of zinc clippings, cut circular, and punched full of holes, so as to serve for the drainage of the bottoms of water-pots. If they do not choke up, they will be very useful, because they will effectually hinder worms from drawing into the pots. Our correspondent assures us that they answer the purpose perfectly.

Stones made Buoyant.—A stone crossed the Firth with the S.W. wind of the 5th. A single plant of seaweed had grown upon it, and, being covered with numerous air-bladders, migrated with the stone to the north shore. Upon being lifted out of the water, the stone weighed 3 lbs. 11 oz., and the material of the plant 2 lbs. 3 oz., making in all a weight nearly of 6 lbs., which the buoyancy of the air inclosed in a multitude of small pods had safely ferried over. The plant did not seem to be loaded to its full floating power; although some of the pods had been injured and some burst, enough remained entire to transport the stone, thus suggesting an idea to all makers of floating jackets, chairs, and other contrivances to be used in shipwrecks, never to inclose the air in one mass, but in a great number of subdivisions, each watertight, and containing each a number of little balls filled with the gas. A slight injury, such as perforation of a pin, may now render the best Macintosh-floater fatal. Not so, however, with the algæ when they go a-sailing, and execute on a small scale what icebergs are said to have performed in transporting the large boulder stones over the globe.—*Caledonian Mercury.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Almost all the soft-wooded stove plants that can be grown into large specimens by one or two seasons' growth, like Pelargoniums, may be conveniently treated like that popular tribe; cut them back after they are done flowering; keep them dry for a week or ten days, and then shake them out of the mould; shorten their large roots, and pot them in light rich compost in as small pots as their roots can be got into. This is a good time to look over a collection for this purpose. Where a large conservatory is to be kept gay all the year round, this class of stove-plants is by far the most useful to cultivate, as you can always winter them in little room, whereas fine woody plants will soon get too large and take some years before they are fit to appear in a good conservatory. Another great advantage is, that as soon as you get these plants established in the new pots, they will only require to be kept in that condition through the winter, and therefore will not require more than 50° of heat for three or four months.

Conservatory.—Pelargoniums that have been struck from cuttings early last March, and planted in the reserve garden early in June, should now be fine plants for flowering late in autumn, their first attempt at blooming in the open ground has been checked, of course, and now as their second flower buds are well formed they may be taken up carefully and re potted. Some people commit a great error at this stage, by putting such plants into heat at once; this should never be done; the grand point is to keep the leaves as free from excitement as possible, until the roots get hold of the new soil; a cool close frame covered with canvass is the best place for them; but in the absence of this, the north side of a wall or hedge will do; sprinkle them over the leaves twice a day, and in ten days they get over the check, without losing a leaf. Chrysanthemums and all other plants that are planted out for a summer's growth—a very excellent practice—should be treated in this way, and should not be allowed to remain in the ground too late; keep the conservatory dry from this time, and little air is required, except for keeping down sun-heat, now that the growth of most plants is nearly over.

Pits, Frames, &c.—There are many of the new Verbenas that will force admirably through the winter, with little heat; this is the time to get a supply for this purpose. The new Veronica speciosa also forces well for early spring, and although nearly a hardy plant, will stand as much heat as an Ixora. Pentas carnea and Manettia bicolor will answer likewise, and all lovers of the lovely Chinese Azaleas, who can afford it, ought to have the new varieties of them mentioned last May and June. The Nurserymen have been very successful in propagating them, and they may now be had reasonable. The old Locelia is as much sought after as if it were a plant of recent introduction, a proof that it is not a long liver under cultivation; it flowers freely in loam, but for pot cultivation and in the hands of beginners hardly any loam should be used; equal quantities of peat, leaf-mould, and sand will keep it in good condition for many years. When it is growing freely it can hardly have too much water, therefore it should have a good drainage, and ought to be under-potted. Every one knows by this time that it grafts as freely as an Apple-shoot on several stocks.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

Before the propagation of plants for turning out is proceeded with to any material extent, it is as well that a proper arrangement should be made as to what number of plants are required in another season. To keep up the interest of a garden, especially if planted on the grouping system, requires some considerable skill and forethought, to vary the scene in each succeeding year so as to prevent the arrangement becoming monotonous. Thus if warm colours prevail to any material extent this season, it would be as well to introduce a majority of cold colours next season and so edge each bed of the latter with its complementary warm colour. Indeed the system of edging beds with contrasting colours imparts a highly interesting feature to the flower-garden, and more especially to such beds as may be distributed over the lawn without any methodical arrangement. For these purposes the plants are so well adapted as those which have variegated foliage, and for that reason a large stock of variegated Pelargoniums should be provided. The best of these is Mangles's variegated, the common and golden variegated, and the different varieties of the variegated ivy-leaved Pelargoniums. The tree-scented varieties are an interesting variety, as is also a very dwarf variety called Dandy. This variety makes the neatest edging or a small bed of any plant that I am acquainted with. Of common Pelargoniums some of the best for beds are the Duchess of Orange, Alexandrina, Oliver Twist, Coronation, Gentilité, Ellen, Sidonia, Gipsy, Garth's Perfection, and most of the very free blooming varieties. Of the Oak-leaved kinds, Mowle's Victory is very neat, Rollisson's Unique also makes a fine bed, and the old Fair Ellen is not without interest.

Bedding.—Attend particularly to the regulating of overgrowths, especially in Petunias and strong-growing Verbenas; keep them well out in so as to form neat beds, and yet do not let them be any appearance of their having been cut. Mow, sweep, roll, and keep all neat and clean, and if there is any worm-casts in the walks water them with lime-water.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Carnations.—Layers must be regularly and carefully watered whenever dry weather makes it necessary, and all weeds should be removed as they appear. Those who layered their plants early will have many sufficiently well rooted to remove. Amateurs and others commencing the cultivation of these beautiful flowers (and they are, we are happy to find, on the increase), will do well, as we before have urged, to obtain their layers in good time. The following list of very fine varieties we have proved, and recommend them with the greatest confidence to young beginners; and those growers who do not already possess them should add them to their stock:—*Scarlet Bizarres*: Elliot's Duke of Sutherland, Hepworth's True Briton and Gameboy; *Crimson Bizarres*: Ely's Lord Milton, Wakefield's Paul Pry, and Greasley's Lord Brougham; *Scarlet Flakes*: Buckmall's Ulysses, Greasley's Marianne, and Wilson's William the Fourth; *Purple Flakes*: Brabbin's Squire Meynell, Pollard's First-rate, and Ely's Mango; *Rose Flakes*: Ely's Lovely Ann and Lady Ely, with Hudson's Lady Flora; *Red Picotees, light-edged*: Sharp's Hector and Gem, and Wood's Queen Victoria; *Heavy-edged*: Jessop's Sir William Middleton, and Sharp's Wellington; *Purple Picotees, light-edged*: Brinkler's Perfection, Gliddon's Vespasian, and John's Prince Albert; *Heavy edged*: Dickson's Trip to Cambridge, Sharp's Invincible, and Musson's Charlotte; *Light-edged Rose*: Gliddon's Favourite, and Bernard's Mrs. Bernard; *Heavy edged*: Green's Queen Victoria, and Wilson's Fanny Irby. *Ranunculuses.*—Seedlings in pans or boxes, which ought to have been kept growing as long as possible, should now, if the Grass is withered, be taken up; this must be done with great care, as many of the roots are very minute. *Dahlias.*—Earwigs are more than usually annoying: small pots in which a little dry Moss is placed may be fixed on the supports, and examined every morning.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—The cloudy weather that has prevailed of late has been favourable for the plants lately repotted. Those which are found to have commenced rooting may have air admitted as usual, and shading may be dispensed with. If the surface of the soil is exposed to the atmosphere it will be necessary to water occasionally; but if covered an inch or two with tan nothing more will be required than syringing over the leaves on the afternoons of fine days. Pay attention to the pits heated by dung, turning and renewing the linings, when the heat is found to be declining. Take an early opportunity before winter of laying in a stock of soil, if it be not already done. Choose the turf about two or three inches thick, from a field or common where the soil is of a firm, loamy nature. It will be in good condition for Pine-growing by February, if laid up now in narrow ridges in a dry, airy situation, where the sun and wind can act upon it. In October, after a few drying days, it may be thatched with dry Fern, or, what is much better, covered with a moveable roof, slanting both ways, to throw off the rain, and supported by posts at the corners sufficiently high to allow of a current of air passing between the covering and the soil.

Vineries.—The Vines intended to be started in November may be pruned now, if the leaves are fading. Do not shorten the spurs of these too much, as the chances of their showing well are very much less than if they were not to be started before the end of January; and by leaving two or three eyes there is more certainty of a regular crop; and it is easy to rub off the top buds at any time, if the bottom ones show. Prune also the Vines in pots, for early forcing. There are few better purposes to which any spare lights can be applied from this time till the Vines are started than placing them over the borders to keep them dry; and if a board is placed on edge under the lights, so as to exclude the cold air, a great deal of heat may be accumulated in the soil by the end of October, when the lights should be removed, to give place to a good thick thatch of dry Fern. Something of this kind, if well done, would contribute much to the success of early forced Vines. The wet weather, after the long drought, has caused an increased growth in most late Vines, and care must be taken not to stop the laterals so much, as to cause any of the principal eyes to start. Be careful to prevent drip, and persevere in guarding against damp, from whatever cause, where ripe Grapes are. I do not recommend the top dressing of Vine borders, at this late period, so long as the Vines are growing; but as soon as they are pruned, let a mixture of the best dung, chopped turf, and road-scrapings, be laid on the border, to assist the Vines in the following season.

Peach-houses.—The trees in the early house have now completed their growth, with the exception of an occasional rank shoot or two, which should be stopped as often as they start. Let the surface of the inside border be loosened up, and as much of it removed as possible without injury to any of the fibres. Replace this with a mixture of half-decayed turf, from a rich pasture and soot—eight barrowfuls of turf to one of soot.

Figs.—Where Figs are on the back wall of a late Vinery, let them on the first fine day have their final watering for the season, as it will be injurious to the Grapes to moisten the soil beneath them after this time.

Strawberries.—If the earliest laid plants have filled the pots in which they were laid, cut the runners, and a few days after shift the plants into six-inch pots, using a compost of decayed turf and dung, laid together two years previously. Stand the pots in an open situation, on boards, or slates, or a preparation of ashes, to prevent the ingress of worms.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Strawberries.—Proceed with making fresh plantations, choosing well-rooted runners, or such as have been taken up and pricked out in beds previously. It matters little whether they are planted in beds or in rows, provided the plants have a sufficiency of room. The ground should be well trenched and manured, and if the soil is of a stiff nature, the addition of a considerable quantity of gritty matter will be of advantage for keeping the ground open, as no spade ought to be inserted among them until they are finally dug down. For general purposes, no sorts are preferable to Keen's and the Elton Pine, and by planting on different aspects they will furnish a very early by planting on different aspects they will furnish a very early and a very late supply. Some of the new sorts I have not seen, and of others, such as Myatt's British Queen, I, as well as others, have got a spurious kind. Other sorts that have come under my notice are not comparable to the above two sorts, when both flavour and productiveness are taken into consideration. Rows or beds intended to produce next season should now have all their runners removed, and the plants thinned out, that the buds left may be fully matured. By adopting the latter practice, and surface manuring, one plantation will produce plentifully for a series of years, though this is not generally desirable, as it would interfere with a rotation of cropping.

Cucumbers.—Those on ridges have generally done well this season, but we cannot expect them to do so much longer, unless there are means for protecting them. Take every opportunity of securing bearing material to keep in a healthy vigorous state there is reason to expect. If you can command plenty of dung you may think yourself very fortunate; but if the making more of it, you have not a very large mushroom-bed, you will not think

of taking any vegetable matter, capable of undergoing that fermentation, to the vinous heat, which it has lacked while in the trance-ground state, a drop of these will sometimes make their fermentation [illegible] of us. It is of little use cutting them down and leaving them [illegible] of having them conveyed to the rubbish heap, as many do, when, though scarcely in bloom, certain constituents enough of their stems for the perfecting of their seeds, said this, nevertheless, take care to insure us with a supply next season. The method I adopt is to have all weeds in flower carefully conveyed to any building where there is a strong heat, which I find sufficient to destroy the germinating powers of the seeds of our common weeds. *Mushrooms*—Where a heat is wanted stirring, and there is no hall exhausted linings to go to, get some good fresh dung from the stables, re[illegible] the very longest; make a bed from a foot to 18 inches thick, where you can protect it from rain; beat it firmly, and as soon as the heat rises here it with holes all over; watch the bed carefully, and as soon as the heat gets about milk warm fill the holes nearly full, wait to see if it does not heat again too violently, and then spawn and earth up as usual. Fine Mushrooms will be thus produced, but much judgment will be requisite to spawn at the proper time.—*R. F*

VI.—ARBORICULTURE.

Old Woods—For the ordinary routine, refer to directions given in late Nos. Make preparation for any additional planting that is contemplated, by hoeing or trenching the ground; this should be done in autumn where the soil is dry, but in cold and wet situations spring is the best time for the operation.

Coppice—Attend carefully to young shoots from stools that were cut over during last winter and spring; regulate, thin, and train those shoots that are growing vigorously; pinch the ends off the weakest shoots, and reserve only as many of the strongest as will be required for use. I prefer shortening the supernumerary shoots to taking them clean out, for the first and second year, as it prevents them in a great measure from being so easily broken off by wind, or barked and bitten off by hares and rabbits. A stake and bandage will be often required in order to secure an upright leader to any favourite tree or plant that has been headed off, or otherwise lost its leader; many trees that have been injured or deformed might be effectually recovered by a little attention.

Young Plantations—Prepare ground for new plantations, if wanted, by inclosing, trenching, or hoeing. Remove any dead plants, (of which I fear there will be plenty this year,) and expose the soil to the atmosphere until the season for planting arrives.

Nursery Work—Attend to the directions given in No. 32 of the *Chronicle*.—*W. B.*

VII.—COTTAGERS' GARDENS.

About this time, when the hues of autumn begin to make their appearance, and symptoms of the year's decline to press upon our attention, the cottager should particularly attend to neatness in everything about the garden, and endeavour to preserve the beauty of the flower-border as long as possible. Keep all plants in flower neatly tied up, and remove their flowering-stems as soon as they become unsightly, if this is properly attended to, the flower beds, which are now in their highest state of perfection, will for some time to come amply repay the labour by their gay appearance. Dahlias, which are now coming finely in to bloom, should be occasionally supplied with liquid manure; keep them neatly tied, and see that the early ones do not pinch them. For entrapping earwigs nothing is better than bean stalks; place short lengths of them amongst the branches, examining them every morning, and killing the insects collected. Look over beds of Verbenas, &c., and assist them in regularly covering the space allotted for them by pegging them down on any vacancies that may yet remain to be covered. Cuttings of scarlet Pelargoniums, Verbenas, and other plants for bedding out, should, as mentioned last week, be got in as speedily as possible, in order that they may become well rooted before winter. Growing crops still require to have the soil well stirred between the rows with the hoe, not only to kill weeds, but to prepare and loosen it for being drawn to the plants as they advance in growth. Where circumstances have prevented winter Greens from being earlier put out, they may still be planted, as vacancies occur by the removal of other crops; but the sooner they are planted out now the better.—*J. M'H.*

State of the Weather near London for the week ending Aug. 20, 1846, as observed at the Horticultural Garden, Chiswick.

Aug.	Moon's Age	Barometer Max.	Barometer Min.	Thermometer Mean	Thermometer Min.	Thermometer Mean	Wind	Rain
Wed.	19	0	29.918	29.668	77	57	67.0	W	01
Thurs.	20	1	29.880	29.722	69	47	58.0	W	
Fri.	21	2	29.698	29.660	69	48	58.9	N W	
Sat.	22	3	29.719	29.641	72	50	61.0	N W	01
Sun.	23	4	29.801	29.776	70	51	60.5	W	
Mon.	24	5	29.797	29.727	65	52	58.5	W	
Tues.	25	6	29.797	29.696	67	42	54.5	W	
Average			29.815	29.687	71.0	50.1	60.6		

Aug. 19 Clear and very fine; densely clouded at night.
— 17 Cloudy and fine; slightly overcast, clear.
— 18 Overcast; very fine the night out, fair throughout.
— 19 Clear, very fine slight shower in the evening.
— 20 Lightly overcast fine cloudy all night.
— 21 Clear, cloudy and fine; overcast and mild.
— 22 Morning fine with light clouds; dark clouds in afternoon, cold at night.

Mean temperature of the week 3 deg. below the average.

Result of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Aug. 31, 1846.

Aug.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest quantity of Rain	Prevailing Winds							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Mon. 24	71.8	51.9	61.8	8	0.41 in.	2	1	1	0	4	4	1	5
Tues. 25	72.7	49.7	60.7	6	0.61	—	2	0	0	5	5	4	2
Wed. 26	72.9	49.9	61.4	6	0.46	—	2	2	1	4	5	3	4
Thurs. 27	72.1	51.5	61.8	8	0.80	—	2	2	1	4	5	2	4
Fri. 28	71.8	50.0	60.9	7	0.58	1	2	1	0	3	4	2	6
Sat. 29	72.1	50.2	61.2	8	0.98	—	2	1	—	2	6	4	4
Sun. 30	69.8	49.8	59.8	10	0.98	—	1	1	1	2	6	4	4

The highest temperature during the above period occurred on the 29th and 30th Aug., 1826—therm. 88°; and the lowest on the 30th, 1827—therm. 39°.

Notices to Correspondents.

ANTIRRHINUM.—*A. Z.*—Your seedling is a good variety, but not a new one.*

BEES.—*E. B.*—We cannot afford to this subject more space than it at present occupies, nor do we think it desirable to do so. If the information contained in our columns from time to time is not enough, you should study some such writer as Bevan on "The Honey-Bee."

BOOKS.—*J. W. J.*—Stephens's "Book of the Farm," Loudon's "Suburban Gardener," Mackintosh's "Greenhouse and Flower Gardener," Lindley's "Theory of Horticulture."

CHRYSANTHEMUMS.—*A. B.*—These will be satisfactorily benefited by Potter's Guano if it be mixed in the soil. The quantity necessary for each plant depends much on the condition, and the size of pot in which it is growing. When a plant is in good health and growing in an 8 inch pot, which is the size generally used, 1 oz. or 1½ oz. may be mixed in the compost.

CAPE HEATHS.—*A Subscriber*.—The following are named kinds, and may be easily procured, viz.—Hartmanii, pink; Aristata major, red; Accumiata longiflora, purple; Tenuiflora, white with pink shade; fastata, white; Archeriana, scarlet; Depressa, yellow; Elegans, light purple; Cavendishii, yellow; Mundsleii, light purple; Retorta major, pink; Lamprosi regia, flesh-coloured; Hyemalis, purple, tipped with white; Tricolor, red; Linnæoides superba, purple, with white tip; Jasminiflora alba, white, and all the varieties of Ventricosa.

GRAPES.—*J. R.*—The premature decay of the shanking and dropping of some of the Berries of your Muscat Grapes is doubtless an important supply of nourishment. This may be owing to various causes; the border may be at present too dry, and the roots may have previously suffered from cold and wet; or the foliage may have been too scanty, or too unhealthy for contributing a due share of elaborated sap for invigorating the roots in the preceding season.

GOOSEBERRIES.—*A. B. M. M.*—The following are the names of 12 of the finest flavoured:—Red Champagne, Red Warrington, Red Turkey, Keen's Seedling, Warrington, Yellow Champagne, Heaborn Green Gambo, Crumpled Champagne, White Fig, Woodward's Whitesmith, Taylor's Bright Venus, Early White, White Honey.

INSECTS.—*Q. Q. Q.*—Your caterpillar is possibly the Noctua meticulosa; but have the goodness to tell us what mischief it was committing. Did it destroy your Carnations, and if so, in what way? *R.*—*Green Horn*.—You should have sent us specimens. We recommend hand picking, also your perusal of the 4th vol., p. 100, of the "Royal Agri. Journal," where the subject is discussed. *R.*—*H. A.*—The light-coloured aphides you will find described in the "Royal Agri. Journal," vol. iii. p. 49, but we cannot be certain of the species, as there are no winged specimens. The black ones are possibly the Aphis Fabæ but as you do not say what Beans they are attacking, we cannot advise you as to a remedy. *R.*—*A Subscriber*.—If you will apply to any chemist, he will supply you with a liquor which will attract and destroy all your house flies. *R.*—*G. R.*—Your grubs will change to Dilophus febrilis; we imagine they feed upon the roots of plants, but whether they will affect the health of your Pelargonium we cannot say. *R.*

LOCAL HORTICULTURAL SOCIETIES.—*A. B. C.*—We cannot interfere. It seems injudicious but circumstances may *possibly* render it advisable, though not probably.—*A Gardener, Dartmouth*.—We must beg you to excuse us. Anonymous discussions cannot be carried by us any further than they have gone, but must be settled on the spot. We are too far off to sift out the truth, which is, moreover, of no *public* interest.

MANDEVILLA SUAVEOLENS.—*A. B.*—This may be easily propagated by cuttings of young wood, either now or in spring. Insert the cuttings in silver sand, cover them with a bell glass, and give them a little bottom heat.

MANURES.—*A. B.*—For plants in pots, superphosphate of lime is most suitable when diluted in water at the rate of 1 ounce to 3 gallons. For Fuchsias, Pelargoniums, Chrysanthemums &c. this may be repeated every three weeks or a month; but for others, such as Epacrises, Heaths, &c., once or twice during the season is quite sufficient.

MELONS.—*B. B.*—The Beechwood is a much-esteemed green-fleshed Melon.—*M. D.*—You will doubtless find that your Melon plants, grown above a hot water tank and from which the fruit is now dropping are too dry at the roots.

MONSTROSITIES.—*An Irishman*.—Such instances as yours are not uncommon. That in the annexed woodcut is a similar instance. They are buds assuming the appearance of Potato-tubers, and proving the latter to be gouty branches. The cause of their appearance is uncertain.



MULBERRY.—*B. B.*—You must sparingly cut the roots of your Mulberry tree against a wall just before the leaves fall in autumn. Pinch the shoots in summer, so as those near the base may have plenty of light to enable them to perfect fruit buds.

NAMES OF PLANTS.—*W.*—Alstroemeria Ligtu, and a very fine purple variety of A. pelegrina.—*Col.*—Not an Orchidaceous plant, but Lycopodium lepidophyllum. Your specimen is dead. The species is not known in cultivation.—*Derby*.—Psoralea pinnata.—*E. R. I. F.*—Malva Munroana.—*S. W.*—Amaryllis tenella, and Hallo a nigra.—*Indiana Meta*.—Lycium barbarum. For colours you must apply to the dealers in them. In flower painting every kind of tint is occasionally required. All the advice we can give you is not to use Prussian blue, or any metallic colours.—*T. Cripps*.—Either Trifolium minus or tuberosum.

NAMES OF FRUITS.—*A. B.*—The Apricots were too far gone when received. No. 1 only could be judged to be the Moor park from the perforation along the edge of the stone. Plums: 2 Azure Hative, 4 Drap d'or, 5 Fotheringham.—*A. B., Fulham*.—No. 1 appears to be the Nectarine Plum; 2 Washington.—*J. B. M. H.*—Gooseberries.—No. 1 appears to be Red Turkey; 3 Ironmonger, not Red Champagne; the latter grows very upright, and its fruit is more oblong and not so dark coloured as that of the Ironmonger; 3, Ashton Seedling, same as the Red Warrington; 4, Early Sulphur; 5, Red Walnut; 6, Crystal; 7, Golden Drop; 8, Probably the Amber.—*W. S.*—The Plum you found in a hedge row, where it must have been planted and which flowered in February bearing abundantly, though in a bleak place and very barren soil, is the Myrobalan or Cherry Plum. Its uses have not been fully ascertained. It would probably answer for kitchen purposes.—*T. L., Kilmarnock*.—Your Apple is the Scarlet Crofton, a winter Apple.

PANSIES.—*An Irishman*.—Brown's Curlon, Pearson's Black Prince, Buxton's No pius Ultra, Cook's Mulberry Surpass, King's Sulphured Elegans, and Magin's Bridegroom. Sow your seed immediately.*

PEAR-TREES.—*B. B.*—If you stop the shoots of your Pear-trees, by merely taking off the extreme points in the beginning of June, and then shorten back one half of them to 6 or 8 inches at midsummer, and the remainder to the same extent in the beginning of July, the trees will most probably soon come into a bearing state; and if they do not, as subsequent growths will prevent root-pruning, you must have recourse to ringing.

PELARGONIUMS.—*W. J. R.*—The Polemonium you mention, when it comes true, is one of the best for cultivation; the form, size, substance of petal, and the size of the petals when fully expanded, constitute it a first-rate flower. In colour it is fine also, but, unfortunately, there is with it the flower a strong disposition to spot. During the past season more particularly, not half the flowers were true. It is too early to answer your other question; lists of the new flowers not being yet sent out.

THE PINE SCALE.—*B. R.*—We quite agree with you that if your gardener has really discovered some certain and simple remedy for this insect, he deserves to be rewarded; and we have no doubt that advertisements would procure him plenty of customers. The difficulty is to try it. The Horticultural Society does not cultivate Pines now; but the remedy would probably destroy other scales as well as that of the Pine Apple; and if so, its value would, of course, be the greater. If you wish it, we will have the experiment tried; but your own testimony would surely be sufficient to satisfy persons of the efficacy of the means employed.

POTATOES.—*A Subscriber*.—Never soak Potatoes in water before quickly them. If it be deemed requisite the water should be poured off, and the Potatoes set on one side of the fire to dry, before they are peeled. That is the way to have them mealy. Steaming them is a still better way. Never cover them up after they are ready to be dished up.

SAND.—*Wallenste*.—Certainly use sand, if well washed, may be employed for all plants that do not dislike lime; but as it always contains considerable quantities of small shells, it is on that account unsuited for some things. Pit sand, although reddened by oxide of iron, is better, if well washed. Fine white pit sand is best of all; but it, too, is apt to bind if used in large quantities. Roadside sand always binds—we suppose because it is angular.

STRAWBERRIES.—*S. S.*—The distance between the rows of Strawberries should not be less than 2 feet, and from 12 to 18 inches from plant to plant in the row, according to the vigour of the variety and richness of soil. Yours being planted 9 inches apart each way, if they are Scarlets you may dispense with every other row; if Pines, every other row as well as every alternate plant in the row.

VINES in a Greenhouse.—*D. G.*—As you do not wish to force the Vines in your greenhouse, no fire in winter is required on their account. Having been only planted this spring, they should be cut back to a few eyes in autumn, and not allowed to bear in the ensuing season.—*J. F. C.*—The characters of the Vines you mention are not known.

MISCELLANEOUS.—*A Constant Reader*.—Keep your Caladium bicolor during winter in a pot where it gets very little water, and replace it in the tank next summer when it is beginning to shoot again; having previously got it by degrees into good growth.—*R. N.*—The sizes of flower-pots vary considerably in different parts of the country. The dimensions of the different sizes in the neighbourhood of London are given at p. 331 of the volume for 1844.—*W. C.*—Brachycoma latifolium is a very short trailer, with deep dull crimson flowers. Kennedya or Hardenbergia Comptoniana, is a plant of great beauty, which will grow to a considerable size if permitted. A temperature of 50° is too high in winter for most greenhouse plants.—*F. D.*—We really know of no means of distinguishing correctly stove and greenhouse plants. So many species can be cultivated with more or less heat, that all positive distinction is broken down. For this reason the Horticultural Society of London has always found it necessary to allow them to be shown in the same class. The Achimenes, for example, will grow, and in considerable beauty, in a greenhouse, though it does best in a stove. Suppose a man starts it in a Cucumber frame, which he can easily do, and then transfers it to a good well managed greenhouse, who could then say it was a stove plant? In truth, all plants that go to rest in the autumn losing their leaves, may be cultivated in a good greenhouse if once fairly started. Is a Balsam a stove or greenhouse plant?—*Oulton Hose*.—The Number you want to complete your set is out of print.—*D. C. L.*—We can hardly deal with the condition of the New Forest without a personal inspection. If we can manage it, we will pay Hampshire a visit this autumn, and, in that case, give our opinion.—*Dud's*.—Walnut trees have probably been dying from their roots being in a cold wet bottom.—*Subscriber*.—We are not able at present to recommend you what new Pelargoniums to add to your collection, the lists of the new sorts not being all published.*—*A Reader of the Chronicle*.—Your specimen is a curious sport, and forms an illustration of morphology.*—*X.*—Plants of Salpiglossis should be treated as tender annuals. They should be raised in heat, and should be potted off singly into small pots as soon as the first rough leaf appears; afterwards they should be kept warm and rather moist. If allowed to grow large before they are potted or removed from the seed-pot, they are almost sure to become sickly, or die. They require a soil composed of sandy loam and a little leaf-mould; and great attention should be paid in watering them. Purge may be cut any time between November and March. Ten week Stocks may flower if the autumn is mild; but they will be worthless, as the colours always run. Keep Heaths that are just up in the seed pots until next spring, place them in an airy and rather dry situation. Keep the bulbs of Lilium tigrinum in the pots until spring. Nos. 13 and 14 for this year may be had.¶—*A. S. Y.*—We have on several previous occasions stated all we know of the Patent Asphalte Covering; namely, that it is light and warm, tight, and will, apparently, last for some years, if properly fixed and painted. We never recommend one dealer in preference to another.

SEEDLING FLOWERS.

CALCEOLARIAS.—*W. H. M.*—Of your seedlings 10 and 11 are bright and high coloured, the latter a self bright brown, the former having a rich velvety brown spot, with a margin of very bright brown. Both these flowers are well formed, but rather flat in front. 6, cream, with large crimson spot; 1 and 3, yellow grounds with brown spots, good in general form but too flat; 7 and 8 are very pretty, but too small for the present advanced state of this flower. 10, 11, and 8 are the most desirable.*

FUCHSIAS.—*J. Y.*—Both your seedlings have rather coarse sepals, and the difference is too slight between the tube and corolla; they are stout bold flowers, but not equal to the best sorts cultivated.*—*W. W.*—The variety most worth preserving among the sorts sent up is No. 219, the colours are very distinct, and the form of the flower elegant; 218, which is somewhat similar in colour, is neither so bright nor so graceful in form; 220 and 217, very large, but coarse in the sepals, and not distinct in colour; 222, bad form; nor do any of the other sorts appear sufficiently novel or distinct in colour to bring out as new varieties.*—*E. B.*—Your seedling from *F. splendens* does not appear sufficiently novel to recommend it for general cultivation, it differs from others principally in the brightness of the tube; the foliage is rather large and heavy.*—*J. W. Vectis*.—The distinction you point out in your seedling is looked upon as a defect.*—*J. J.*—No. 1, sepals coarse, and the colours not sufficiently distinct; 2, the divisions of the corolla are too narrow—they unfold and remain separate; 3, too coarse in the tube and sepals.*

PENTSTEMONS.—*J. J.*—The bigeotia arrived in good condition. The flowers are rather coarse, and the purple appears uncertain; it too much resembles a dash of colour in the corolla.*—*Curator*.—The best and most distinct of your specimens are 3, a deep mottled variety; 2, a clear, bright, rosy crimson; and 6, having a light ground with dark veins. 1 and 4, though good flowers, are not so much in colour; and 5, a deep, rich, mottled crimson, we have seen in other collections, but not so large; this, and No. 3, appear disposed to break into more decided colours.*

VERBENAS.—*S. S.*—Your seedling, to be, indeed Queen of England.—Rosy pink, with yellow eye, is a large and magnificent variety.*

*** As usual, many communications have been received this week.

LIQUID MANURE.
ENGLAND INDEPENDENT OF THE WORLD FOR CORN

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.
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The Agricultural Gazette.

SATURDAY, AUGUST 24, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Aug 29 Agricultural Imp. Soc. of Ireland.
THURSDAY, Sept. 5 Agricultural Imp. Soc. of Ireland.
FARMERS' CLUBS
Sept. 2 Usk. | Sept 10 Aberguvenny.

THE condition of AGRICULTURAL MECHANICS in a country is the best possible criterion by which to estimate the character of its cultivation—for this must be carried to a high pitch before a demand can exist for well-constructed and efficient, but necessarily expensive implements; and thus the improvement which has of late years taken place in British Agriculture is in nothing more satisfactorily apparent than in the superiority of our present farm implements over those formerly in use. Scarifiers and cultivators have now, for many purposes, taken the place of the tedious plough; drilling-machines, as well as machines for scattering seed broadcast, have taken the place of manual labour; the threshing-machine has been substituted for the flail; and chaff-cutters and Turnip-cutters are generally used where such implements were formerly unknown.

Although these substitutions have not all been effected within the last few years, yet any one who has had the opportunity of attending the Annual Meetings of the English Agricultural Society, and of comparing the implements there exhibited from year to year, must acknowledge that great improvements have taken place in the Mechanics of Agriculture even within the still short period of that Society's existence. Speaking of the exhibition of implements at Derby in 1843, the Editor of the *Gardeners' Chronicle* last year made the following observations:—"The most rapid strides have been made in this department. The show of implements at Oxford was not very good; nothing very new or perfect was exhibited there. At Cambridge it was much better; Liverpool and Bristol surpassed the preceding; and at Derby there was the greatest collection of every kind of implement—from the simple plough to the portable steam-engine—which had ever been brought into one spot. For three days we spent many hours delightfully in following the new inventions and the improvements pointed out by the different makers; and many more days would have been required to notice all that was worth the attention of the agricultural mechanician."

Our Report some weeks ago of the Exhibition at Southampton shows how far this rapid progress of improvement has been sustained.

Those who have been unable to visit the show-yards of the Society at its Annual Meetings may easily estimate the extent of this improvement by comparing the works which have been published on the subject. The latest of these, that by Mr. J. Allen Ransome, of Ipswich, is incomparably the best that has appeared; it is descriptive of a greater variety of better implements than any of its predecessors, and it exhibits a thorough acquaintance with the principles on which the efficiency of the different machines depends. We shall have opportunity, in the course of future Articles on Agricultural Mechanics, of noticing Mr. Ransome's opinions on various farm implements; and it is therefore unnecessary at present to refer particularly to his descriptions of them. In illustration, however, of the improvement in them to which we have been alluding, we take the liberty of extracting the following remarks on their condition centuries ago:—

"In our own island, ploughs were, during the early and dark ages of its history, rudely constructed, intolerably heavy, and of all kinds of shapes; a result which might have been reasonably anticipated, for by an old British law, every ploughman was required to make his own plough. The harrows, and other agricultural implements, were equally ill-shaped. Drills were utterly unknown until about the sixteenth century; and when, about the year 1730, the celebrated Jethro Tull endeavoured to banish the flail from the barn, his neighbours loaded him with execrations. The tradition of the neighbourhood of Prosperous Farm, near Bungerford, which Tull cultivated, still is, that he was 'wicked enough to construct a machine, which, by working a set of sticks, beat out the Corn without manual labour.' This is the first traditionary notice of a threshing-machine with which I am acquainted."

The chapter on threshing-machines in this work—one of the best in the book—details the successive steps in their improvement since that period. We shall endeavour hereafter to describe, and fairly to estimate, the value of the various farm-implements now used, in the condition to which they have been brought by that process of improvement to which we have been alluding; and we are glad to be able to say, that in preparing these descriptions, and in forming these estimates, we have been promised the assistance of many eminent manufacturers—that of Mr. Ransome, among others.

WE have been asked by a correspondent if the practice suggested by Mr. Haunam, and detailed in a late Number of this Paper, on the subject of HARVESTING GRAIN CROPS, is applicable to Barley and Oats, as well as Wheat.

In the latter case this point has been already determined by almost universal practice—upon other grounds, however, than those indicated by Mr. Hannam's experiments. Oats are generally cut before their straw has lost its green colour, simply because, when left till quite ripe, they are very liable to shed their seed, its attachment to the stem being much slighter than that either of Wheat or Barley. Most probably, however, this practice is productive here, as well as in the case of Wheat, of a better quality of grain than we should otherwise be able to grow.

With reference to Barley, again, the almost universal practice is to let it remain on the field till it is dead ripe. Whether this practice be correct or not, Mr Hannam's experiments cannot, we think, be held to condemn it; they only determined the influence which the time of harvesting grain exerted on its quality *as food*. Barley being generally grown for malting, is seed to be sprouted, not grain to be eaten; and there is but little in the experiments to which we allude to indicate the effect of early or late cutting on the quality of grain *as seed*. On this subject Nature is as yet our only guide, and if it be safe to follow her, farmers are certainly right in permitting Barley to become thoroughly ripe before cutting it, for seed is naturally never shed or sown till dead ripe.

The practice, however, of permitting Barley to remain on the field till thoroughly ripe, has not, we believe, arisen from any notion of the propriety of imitating Nature in the matter, but from the circumstance that it is of importance in malting grain that it should all sprout together, so that the process may take place fully within the time allotted for it; and it is probable that the evenness of sample which is thus so essential in malting Barley can only be obtained by ripening it thoroughly. The only way to obtain grain all of the same stage of ripeness is to make it all dead ripe.

Whether, if it were possible, with our variable soil and irregularly sheltered fields, to cut the crop all in one stage of growth before it became thoroughly white, the quality of the grain for malting purposes would thereby be improved, remains an unanswered question.

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

(*Continued from page 562*).

Fullers' Earth.—Below the Bathstone lies a bed of clay, from 40 to 50 feet in thickness, in which, near Bath, the fullers' earth is found. This bed crops out below the limestone rock, under which it lies, and its course, dependent as it is on the windings of the hills and valleys, is most tortuous. It is, however, easily traceable along the lower edge of the Bath-stone. This bed of clay is generally of a yellow colour, and near and beyond Bath the fullers'-earth occurs in it in isolated masses, in search of which pits are dug at random. It throws out a great many springs; many streams take their rise from above it.

Agricultural Character of the Fullers' Earth.—The surface of the narrow band in which this bed of clay is exposed is most irregular. It may be easily traced at a distance by the contrast in this respect which it presents to the surface of the ground on either side of it. This unevenness is sometimes owing to the occurrence here and there of masses of debris, which have fallen from the rock above, but may be more generally due to the wide cracks made in the clay during the summer, and to the slight slips which consequently take place on the fall of rain. This bed of clay is of very little consequence in an agricultural point of view; it is not only of very little extent, being a mere band, but is steep, being situated on the side of the hills. It is almost wholly in pasture, and this pasture is of the poorest description. When left to itself, as in commons, it becomes covered with the Bramble, the Sloe, and the Briar, which are characteristic of clayey land in general. When arable the soil is very stiff and clayey. It is well seen at the top of a row of fields immediately below the road into Bath, as it winds along the edge of Charney Down. The soil is there a dark (nearly black) stiff clay, forming a narrow band along the upper edge of the fields, which are chiefly of a brashy soil, of a ruddy brown colour, overlying the rock of the inferior oolite. It is adapted for the growth of Wheat and Beans, but, in the few instances in which it is arable, it usually forms, as in the case just cited, merely a portion of fields, including both it and the soil on the rock below it, and thus seldom receives a cultivation peculiar to itself, only taking part in that of the whole field. Now, as the soil both on the inferior and the upper oolite, the one immediately below, and the other immediately above the clay of the fullers' earth, is of a brashy nature, and peculiarly a Barley soil, it is evident that the soil on the clay between them, receiving the same kind of cultivation as they do, can seldom be cropped and cultivated in a manner suited to it. It is only when a crop of Wheat is taken that this is the case, and even then it does not show that superiority as a Wheat soil that might be expected, being so wet that crops of no kind will succeed on it till it is drained. The clay of the fullers' earth, when it runs out on the inferior oolite below it, does not appear to produce that improvement which might be expected to follow the mixture of soils of such opposite characters. This is perhaps owing to the extreme wetness of the land during six or eight months in the year, the whole of the rain falling on the upper oolite being turned out by the clay, over the surface of which it runs until it meets the rock of the lower oolite, through which it sinks.

Inferior Oolite.—The member of the oolitic series upon which, in the descending order, we next come, is the inferior oolite. This consists of two beds, the upper a limestone rock, and the lower a calcareous sand. This rock comes out to the surface all along the edge of the hills, as will be seen by a reference to any geological map of the district. This limestone has much more of the oolitic structure than the upper limestone of the series. It is a softer rock, capable of being worked with the saw as well as the chisel, and is more easily worked for ornamental purposes. It does not, however, stand the weather well. The whitest and finest stone is found in the lower beds of this rock, the impurity of the limestone, owing to the presence of clay, increasing upwards. The uppermost bed, which varies from 20 to 30 feet in thickness, contains as much clay as lime. This top bed consists chiefly of large concretions of shells; it gets the name of *Rag-stone*. The lowest bed of this rock, that, resting on the sand, differs from the rest of it in not being much affected by the weather, is a weather-stone, and accordingly, in quarries and other sections, where both are exposed, it projects uninjured from the midst of the debris produced by the action of the weather on the rock above. This bed does not exceed two or three feet in thickness. Below the limestone rock, and of about equal thickness with it, occurs a bed of calcareous sand, generally of a yellow colour. This sand, in the neighbourhood of Wotton-under-edge, is ferruginous in a high degree, and presents a curious oolitic appearance, which is not common to it. There are also concretions and hardened masses occurring in the midst of it, generally in layers. These are provincially termed *Sand-bats*. They are owing either to a more indurated state of the sand, or to the presence in abundance of shells, of which generally there are but few.

Agricultural Character of the Inferior Oolite.—The soil on the lower oolite is of two kinds; that on the limestone rock necessarily differs from that on the sand. The one is very shallow, full of fragments of rock, and of a brown or ruddy-brown colour; while the other is a light sandy soil, partaking more or less of the yellow colour of the subsoil, according to the degree of cultivation it may have received. The stony brashy soil on the rock is generally situated on the steepest part of the hill-side; and being thus too steep for arable land, and too shallow for good pasture land, it is generally covered with wood. The Beech is the tree natural to the thin calcareous soil occurring on this rock. The valleys of Hawksbury, Wotton-under-edge, and Waterleigh, and a great part of the valleys of Ozleworth and Uley, are thus surrounded by wood. This is the case very generally along the whole of the oolitic escarpment, and some of the finest Beech woods in the kingdom are to be found here.

Where the land is arable, the practice of the farmers varies very much. Some take successive crops of Wheat and Potatoes, and thus sell everything off the land; others take Wheat, Potatoes, Barley, and fallow or seeds or Turnips, in succession; but whatever the principle be, if there be any which they adopt, whether it be good or bad, the mode in which they carry it in o practice and follow out the details of cultivation is slovenly. This is attested by the foul state of the land. The Barley and Wheat crops are, during the spring months, buried in Charlock, the wild Mustard, and a hundred other weeds.

The slovenly state in which this land is generally to be seen is, perhaps, owing to its being let in small farms, and to the practice of sub-letting, which is common, especially when the Potato crop comes round. To this, however, though it is general, there are exceptions. Even a bad system may, in the hands of an active farmer, be made the means of cultivating his land well. The soil on the sand is of a much more valuable kind than that on the rock. Where both exist in their natural state, as in the many commons occurring on this rock, a shower of rain, after a long drought, will enable one to trace to an inch the junction between the two; the Grass on the sandy soil becomes as green as the contrast which it presents to the withered herbage on the brashy soil can make it. The soil on the sand is chiefly in pasture, and some of the richest pasturage in the county is to be obtained on it; whoever has witnessed the freshness and richness of the verdure which the many beautiful valleys intersecting these strata present to the eye after a genial rain, will not doubt this. It also forms good arable land; and where this is flat, as in the case of Mr. Dimmery's farm at Stinchcombe, a report of which by Mr. Morton appeared in the first

volume of the Society's Journal, the land is most valuable. When situated on the hill-side, it is necessarily not so well suited for arable land; and in consequence of the continued practice of ploughing down hill, the tops of many of the fields thus situated have the soil entirely removed from them, and expose the yellow sand of the subsoil; this renders them still less valuable as arable land.

It is on this soil, in the Nailsworth Valley, that the only water-meadows occur that are to be found in our district. The following statement, with which the proprietor of these meadows favoured me, of the expenses and returns of irrigation in this particular instance, shows most conspicuously the advantage of the operation:—The extent of the meadows is about 15 acres. Before being irrigated they were valued at prices varying from 10*s.* to 3*l.* per acre and averaging about 30*s.* In the original state the land rented sheep, and was therefore unsafe, except to put fat sheep on just before going to the butcher The expense of building bridges, laying out and digging the water-courses, &c., in fact the whole expense of irrigation, amounted to about 15*l* per acre This is higher than is the case in many instances, owing to the number of bridges and aqueducts rendered necessary by the narrowness of the valley. The annual expense, including repairing the hatches, clearing out the water-courses &c., amounts to 15*s* per acre, to this is to be added 15*s* as the expense of harvesting the hay crop. The return from this outlay is in the form of a greatly increased value of spring and autumn feed, and also in the entire destruction of any tendency in the land to rot sheep The meadows are generally shut up during the first week in May, and the crop is cut in less than two months, it averages 35 cwt If it were allowed to grow three weeks longer, it would probably average 45 cwt per acre, but this would be at the expense of a deterioration in the quality of the hay and in the value of the latter-math The value of the early spring feed till May, and the autumn feed till December, is estimated at 1*l* per acre The following, then, is a statement of the profits per acre, per annum, arising from irrigation, in this instance —

Dr Cash	£	s	d
To 35 cwt of Hay, at 30*s* a ton	5	5	0
To value of spring and autumn feed	2	0	0
	£7	5	0

Contra Cr	£	s	d
By former value of the land per acre	1	10	0
By 5 per cent on out lay of 15*l* per acre	0	15	0
By annual expense of irrigation	0	15	0
By annual expense of harvesting Hay	0	15	0
Balance — profit per acre	3	10	0
	£7	5	0

To this is to be added the immense advantage to the farmer of being able to carry the crop off the land each year without injuring it. The manure arising from the consumption of the Hay-crop thus goes to enrich the fields of an arable farm in the neighbourhood. The good done by irrigation in this instance does not seem to be owing to the deposition of any soapy or oily matter which the water may occasionally contain from having passed through the mills higher up the valley. In an instance of a water meadow at Longfords, one of a series possessed by the proprietor of those just alluded to, there were two descriptions of water employed: the one contained the washings and sweepings, &c., of the streets of Minchinhampton, the market town in the neighbourhood, and the other was brought directly from a spring close to the field, the beneficial effects of irrigation were greatly more manifest in that part of the field over which the pure spring water* was used than in that watered by the washings of Minchinhampton This is certainly not the result which would have been expected, and it shows that land is benefited by the process, not so much by the deposition of sediment, as by the protection given to it during the frosts of winter.—*M.*

* It should be stated that the spring water was highly impregnated with the carbonate of lime.

ON THE APPLICATION OF MANURES

In former communications I expressed an opinion that the main uses of the roots of a plant were two-fold, the one to fix itself in the ground, the other to seek water. It is in search of water, and of that alone, that the young root in the first instance descends into the earth: did it seek other nutriments, it would rather remain near the surface, where such matters abound. But that Providence, which always works by the simplest means, where simple means are sufficient for the end, has by this one attraction made the root by fixing it in the ground, a holdfast also for the fabric over head The plant has no foresight of the necessity of securing itself in its position, but impelled by this powerful attraction to supply itself with the water necessary for the growth of its stem, its radicle shoots several inches into the soil to insure a supply; and before the plumule raises its head to seek the light of heaven, it has thus firmly established its hold on the earth. Does the existence of the attractive influence of water require illustration? A root has been uncovered, a wet sponge placed near it in a direction different from that in which the root was proceeding, the roots soon altered their position, and turned towards the sponge. The attractive power of water may be exemplified in other methods than those on the roots of plants:—When a wet sponge is held under the leaves of a tree, they bend down in order to touch it If a vessel of water be put within six inches of a growing Cucumber plant, in less than twenty-four hours the latter will alter its direction; the branches will bend towards the water, and never alter their course until they come in contact with it. Any root, not naturally fibrous, will become so if exposed to the action of running water. It thus increases in mouths, and the necessity no longer exists of striking its roots deeper into the soil. Liebig states, "Fruits, leaves, seeds, nearly every part of the plants of a former world, except the roots, are found in the brown coal formations." In that age of the world, when the alluvial formation of these layers took place, the surface must have been so moist as to preclude the necessity of plants sending their roots deep into the earth in quest of water; the roots were small and fibrous on that account, and not because of deficiency of carbon in the soil, as assumed by Liebig.

But it may be asked, Does not the same cause act on the plumule? I would say no; or rather, that it is counteracted by an opposite and stronger attraction, to which the plumule is by its nature more subject It is the attraction of light, and light alone (not heat, for the surface of the earth is warmer than at any distance from it) that compels the stem to rise into the air, it has no need to seek water, but it requires for all its purposes light, and by it the stem is brought into the region where all that is further necessary for the support of the plant is to be found—the gases of the atmosphere and the various effluvia which exhale from organic matters in a state of decay on the surface of the earth, or buried skin deep within her bosom That light has an attraction powerful enough thus to make the plant shoot upwards is a matter of every-day observation, the Pelargonium in the cottager's window sends out its branches to the light of day, it extends them not into the darker, though by many degrees warmer recesses of the chamber A very strong and curious proof of the attractive power of light offered itself to me in 1827, at Feahle in the county of Clare To ascertain the effect of certain steeps, I had sown some Oats in a small room into which the light was admitted by a single pane of glass, the stems tended in direct lines to this pane, but there happened to be a stone about 6 inches high in the direct line between the pane and some of them, all the stems so situated declined from the right line to the pane, from the perpendicular, and from the stone, and took such a direction as to strike the ray of light that proceeded from the pane over the stone at right angles, that is, they took the shortest possible line to arrive at the ray of light, and on reaching it curved directly towards the pane When seeds are sown too thickly, the plants are drawn up, according to the popular phrase—they are drawn up by the attraction of light, on the contrary, when the seeds are sown thinly and light is admitted around the plants, they spread out and become branchy

But requisite as the presence of light is to the growth of the stem, it is probable that its absence is as favourable to the growth of the root, there has long been a cherished opinion of the working gardeners and farmers in favour of sowing seeds in 'the darks," that is, when the moon reflects not the light of the sun (she does not reflect his heat) Martin Doyle cites (though he smiles at it) the authority of a Wexford gardener for sowing his Cauliflower seed when the nights are dark in the month of May We are too generally prone to scepticism when the extent of our reason falls short of the depths either of Revelation or Nature it is not impossible that popular belief may be here, as it frequently is better founded than we are disposed to admit Whether the absence of light be favourable or not to the germination of the root, as the dark nights are probably passed away when the plumule is fit to be acted on by light, the moon's full lustre may serve the plants essentially in this their early and it may be their more susceptible period of growth —*J M Goodeff, Revenue Police Granard Ireland*

ON SWING AND WHEEL-PLOUGHS

It is evident that the wheel has been an addition to the simple original form of the plough Whoever added it did so no doubt, with a view to its improvement, probably in order to assist his own imperfect management of it Again, there is no doubt but that an implement is perfect in proportion as its work is independent of the skill of him who manages it Upon this fact, those who prefer the wheel-plough found their first argument in its favour They say that it requires less skill for its management than the swing-plough does—that a boy may guide it This is, doubtless, true They say, in the second place, that the draught of the swing plough is greater than that of the wheel-plough This point, however, has not been so definitively settled by experiment, but that it will be fair to give the arguments of the opponents of the wheel ploughs on this point. These shall be stated in their place In the mean time, it may be said that, supposing the two implements to be guided each by a man of ordinary skill, the draught of the wheel-plough will at any rate be more uniform, and so far, easier to the horses. They state, in the third place, that the depth of the furrow is by this plough preserved constant and uniform, and is not liable to that irregularity which marks the unskilful ploughman. These, so far as I know, are all the arguments used by the wheel ploughmen. They are answered as follows:—To the second one, it is said that the draught of the wheel plough may be less in particular instances than that of the swing-plough; but it is not so as a general rule The plough may be so regulated as to "swim fair," though it be a swing-plough, so that he merely holding it in an upright position it will work at a tolerably depth. If the plough does not swim fair, all the effort to keep it in its place draws upon the ploughman, whose labour is thus increased, so much so, that he will not hesitate to affirm that a wheel-plough will draw lighter than a swing-plough that requires such effort. Now, the wheel-plough will not swim fair, unless the various means of adjustment, till he gets the implement to work properly. In the case of the wheel plough, on the other hand, the plough may not be properly adjusted; but it will, nevertheless, keep to its depth, being hindered from going in by the wheels, which thus hinder that inconvenience for the ploughman to which in the other case he was subjected; and he therefore continues working it in that state, and will not alter it, though it should so much dip in as to jerk forward, as if it were running on tiptoe. In the one case the horses are sure of being properly treated, for their comfort depends upon the very same circumstances as that of the workman, while in the other the horses must suffer from the increase in the amount and in the irregularity of the draught, because the comfort of the man is untouched by that increase. With respect to the third argument, its force is acknowledged upon level land, but the very thing which insures uniformity of depth in ploughing level land will, it must be remembered, increase the irregularity of this point in the case of uneven land.

The truth of the first argument in favour of the wheel-plough is acknowledged; but its force is questioned, and I think with justice, when we look at the agricultural character of the districts into which it is admitted, and at that of those where it is not used. It is urged that the implement which performs its work in a passable way, independently of any attention bestowed on it by the workman, is not necessarily on that account to be considered a good one, for this reason, that it tends to produce carelessness in the workman; and, therefore, that the use of the wheel-plough tends to deteriorate the class of agricultural labourers as regards their skill, their industry, and activity. It will not do to say that we can employ boys instead of men with the wheel-plough; many practical men will acknowledge, to a considerable extent, the truth of the remark made by a practical farmer on this subject—that for each boy he had on his farm he was forced to keep a man to look after him.

I perceive, however, that notwithstanding my attempt to state simply the opinion of the two parties, and then judge between them, I have already expressed my own opinions on the subject. It is possible that a spot so level, and workmen so careful and attentive may be obtained, that the wheel-plough may be superior for its cultivation to the swing plough; but for general purposes I certainly believe the swing-plough to be the superior implement. There is one advantage which it has over the wheel-plough, viz, that there are few soils which are not ready for ploughing, and which may not be ploughed by the swing-plough, before the farmer could get on it with the wheel-plough, for the wheel clogs with the wet earth, and thus not only is a continual hindrance to the operation, but by getting an increase, in the shape of earth, to its circumference, the depth at which the implement works is variable

The wheel plough is also objectionable as an invasion of the original simplicity of the implement, and it certainly is so in some of the monstrous forms which it assumes—that, for instance, of the old Berkshire plough. —*M.*

ON MINERAL AND INORGANIC MANURES.

No XXIV.

By Professor Charles Sprengel

The ashes of most herbaceous plants have a greater value than those of wood, being richer in several important salts The analysis of Rape straw will serve as a sample. 100 000 parts of the ashes of Rape straw contain.

2,065	parts	of silica.
2,323	,,	alumina, oxide of iron, oxide of manganese.
16 912	,,	lime.
3,100	,,	magnesia.
18,800	,,	potash, partly combined with silica.
11 210	,,	soda.
13 340	,,	sulphates of lime and potash.
9 900	,,	phosphate of lime.
11,350	,,	chloride of sodium.
11,000	,,	carbonates of lime, potash, and magnesia.
100,000	parts.	

If, therefore, an acre is manured with 1000 lbs. of ashes of Rape straw, the soil will receive 169 lbs. lime, 188 lbs potash, 112 lbs. soda, 133 lbs. sulphuric acid, 99 lbs. phosphoric acid, and 113 lbs. chlorine; and thus it appears that its effects will be greater than those of wood-ashes. The ashes of Rape straw, however, are not the richest in saline matter they are surpassed in that respect by those of Maize and Bean straw, the herbage of Potatoes, and the stems of Tobacco. In order to manure with Rape, it is best to spread the straw thickly over the field, and to set it on fire. The heat will act beneficially on the soil, and kill also all vermin; on which account the result of this operation is always very productive.

Most people believe that the ashes of wood and herbaceous plants improve vegetation only by neutralising the coal (humic acid) contained in the soil, or by bringing the coal of humus to decomposition; this is, however, a mistaken idea. The carbonates of potash, lime, and magnesia, which alone could accomplish this, do not occur in it in that quantity which would enable them to act powerfully: thus, 200 lbs. of potash neutralise only 800 lbs. of humic acid; 200 lbs. of lime no more than 2000 lbs.; and 100 lbs. magnesia only 600 lbs. Consequently, the whole of the carbonic acids contained in 1000 lbs. of ashes would only serve to [illegible] acid; whilst the humic acid of an acre and whilst there

...ashes have been used, contains at times 30,000 lbs. of humic acid. I measured one acre of a sandy soil, containing very much free humic acid, with 2400 lbs. of Scotch ashes, and found—as it could not be expected otherwise—that after the lapse of one, two, and three years, it acted upon chemical tests in the same way as previously; but on, notwithstanding, it produced very fine Oats, Clover, and Potatoes, there is good reason to assume that the ashes nourished the plants, which is the most probable, as we always find them as a component part of crops which have been grown after ashes have been employed. Besides, if it were not the salts of ashes which improve and nourish plants, why should they not be all equally beneficial? We always see that those ashes manure best which are rich in gypsum, phosphate of lime, common salt, and sulphate of potash; and as these salts do not act on the humus of the soil, it is evident that they directly nourish the plants. The silica, alumina, and the oxides of iron and manganese contained in ashes, must not be considered useless; because, though the soil contains a sufficient quantity of these substances, they are not contained in it in such fine particles as in ashes. Silica, especially, may serve the plants as food, the more so, as it is at times combined with potash in such a proportion as to become soluble in water, which also may be the reason why Oats, which are most rich in silica, succeed mostly after ashes.

If ashes are used to the amount of 500 or 600 lbs. per Magdeburg acre, this palpable effect will last only two or three years; as the easily soluble salts are not so much absorbed by the plants as they are extracted by rain. The substances which are hardly soluble in water, like phosphate of lime, carbonate of lime, &c., remain longer in the soil; but this quantity is too small for them to assist vegetation to any great extent. The quantity of ashes used at one time ought not, however, to be too great, else the plants, instead of being improved by the easily soluble salts, will be injured, and a great waste of the salts will take place by rain-water. It is, therefore, always better to use repeated manurings with ashes in small quantities, and this ought to be the general rule with all manures containing many substances easily soluble in water. Clayey soils, however, require always a greater quantity of ashes than sandy soils, and it will not be too much to use 1000 lbs. to 1200 lbs. on one acre of the former, the greater or lesser amount being determined by the proportion of potash they contain. Soils very rich in humus require also much ashes, as in this case a part of the superabundant humic acid is to be neutralised. Fresh ashes will avail such soils chiefly by supplying them with the deficient potash, and it is obvious that those ashes will be preferable which contain most of this alkali. In order to spread ashes well they should be somewhat wetted, and either strewed on the surface in calm weather, or harrowed in with the seed. Generally speaking, in order that the carbonate of potash may not be hurtful to plants, it must be first changed into humate of potash. If, therefore, a soil contains little humic acid, the quantity of ashes used must be very small, and whoever takes no care of this will injure his fields by ashes, rather than improve them.

The manuring with fresh ashes in the neighbourhood of large towns is, comparatively speaking, not very expensive, as we can buy the ashes here at the rate of two-thirds of a dollar per 100 lbs.; if, therefore, even 1000 lbs. should be used per acre, it would only amount to six and two-thirds dollars per acre. We have also constantly to bear in mind, that the constituent parts of the ashes which are absorbed by the plants are soon again returned to the soil in the shape of dung, as only a small portion thereof is retained in the bodies of the cattle. By manuring with ashes the soil is therefore improved for many years to come. It is to be understood that ashes must be kept in a place well protected from rain, else they would soon lose their powerful ingredients.

Experience has shown that vegetable ashes will chiefly improve the growth of leguminous plants, as Lucerne, Clover, Peas, Vetches, &c., which is easily explained by all plants belonging to that family requiring much soda, potash, sulphuric and phosphoric acids, lime and magnesia, and chlorine, for their nourishment, large quantities of these substances being found in their ashes. If wood-ashes are strewed over meadows which produce bad Grasses and Moss, the effect is the appearance, as if by enchantment, of a variety of Vetches and Clovers springing up. On meadows exposed to inundation, ashes cannot be used, any more than upon very wet fields. All plants grown after manuring with wood-ashes are not only much relished by cattle, but are also very nutritious, because they then contain also those mineral substances in great quantity, which are required for the chemical constitution of animal bodies; potash, lime, soda, and magnesia, will also saturate the vegetable acids, and contribute (as has been shown under the head of Marl) towards the forming of much albumen, sugar, and other nutritious substances. Ashes from potash-boilers, bleach-works, and soap-boilers, are used even more than fresh ashes, being much cheaper.

As these extracted ashes will contain but traces of potash, common salt, and other saline matters, easily soluble in water, and will also have lost much of the nitrogen they formerly contained; they will never act so powerfully as fresh wood ashes, on which account large quantities are always to be used—say, two or three tons will not be too much per acre. In this case their effects will not be too much per acre. In this case their effects will not be too much per acre. In this case their effects

cultural Society of England were to publish a Register of the Implements, and Models of the kinds that prizes were awarded to, at their shows, for distribution in the agricultural districts, would be conferring a great benefit on the Country at large.—*Farmer.*—[The Liverpool Ploughs will be very interesting to others exhibited—at least to the curious in such matters.]

Natural Old Land.—It is well known that the soil of an old garden is generally rich for many plants, and that a fresh or new soil is not favourable to them. A list of these plants would more than fill your columns; but I will select three common ones—Strawberries, Turnips, and Potatoes. Every grower of Strawberries must have noted how they delight in new earth. The old garden would produce leaves, but the new soil fruit, remarkable both for quantity and quality. In this case, unfermented vegetable matter may be the cause of plenty. Garden Turnips are never so sweet, or mild, or crisp, as those grown in fields, where, perhaps, they are grown every fourth year with a moderate allowance of manure. In fields too, when Turnips were first grown, they were grown from the same freshness of soil more easily and of better quality than they have been grown since, with all the advantages of modern farming. Twenty years ago I was on a visit to a friend in a part of West Norfolk, where on a good soil Turnips were introduced about 1750. He related to me the experience of his uncle, a strong-headed practical man, who remembered their introduction. I made no note of his recollections, but the substance was this:—That Turnips were grown on this farm without manure, yet with ease and certainty; they were large, and so good in quality, that Scotch bullocks were fattened on them, with Straw and Hay, without any artificial food. The old gentleman used to describe how they were gradually obliged to use manure, and yet that the Turnips lost quality; then they bought Linseed cake, and after a few years introduced Swedes. I once had a garden, in a part of which was a Grass plat some years old, of about ten yards in width. This I had dug over one autumn, for a crop the following spring. Potatoes were planted in April, beginning ten yards to the south of the Grass, the rows running across it as far as ten yards to the north of it. They were a pretty good common kind, and yielded well, but certainly half as much again in the ten yards where the old Grass had been. At the table the difference in quality was most striking; firmness, dryness, flavour, and a peculiar look of the kind, were appreciated in parlour and kitchen. Chemically speaking, what is this Freshness in the soil, and can it be restored by any of the appliances of science? "Common manure will do such effect.—*Rambler.* [So far as we know, your question has never yet been completely answered. Among the reasons why plants flourish better in soil new to them, than in soil on which they have long been cultivated, are, 1st, the extraction and removal from the old soil of those mineral and other substances required as food by the plant, of which it may be supposed the new land has an unexhausted store; and, perhaps, 2d, the accumulation in the old soil of excrementitious matter from the plants grown there, rejected by them as unsuited or injurious to their growth.]

Steeping Seed.—In the early part of this year you promised to make use of Mr. Campbell's steeps, and in due time to give the result of your trial, and your opinion of their merits. The time, I hope, has now arrived, and you are prepared to pronounce your opinion respecting those steeps. Just now are the small farmers who are anxiously waiting your judgment, for the railways have so reduced the supply of manures, and the feeding of cattle, as manufacturers of manure, has been so ruinous of late, that it has become a great question with them what measures to adopt in lieu thereof. If the steeps should be found as effective as the vendor pronounces them to be, they will be most valuable to the poorer farmer, who ought to be an object of your notice. The Ducie's, Miles's, Pusey's, &c. can experiment for themselves. It is said that Professor Johnston has given a recipe for steeps at a much cheaper cost; if so, you will, perhaps, be so kind as to notice them.—*J.M.* [When our Wheat is thrashed out, we shall be able to state the result of the experiment alluded to, and we hope to be able at the same time to publish the experience of our readers on the subject; but our correspondent has only to look at the correspondence on the subject, which has already appeared in late Numbers of the *Gazette*, to ascertain the slight degree of importance to be attached to a single experiment. There is a great deal of contrariety in the accounts we have already received. Let the result be what, within the bounds of probability, it may, these steeps, our correspondent may rest assured, will not render applications of manure unnecessary. Indeed it as seems probable, the vigour of germination and first growth, which the use of the steep probably imparts to the seed, be just as it were an endowment of the young plant with so many additional parts to sustain—so many additional mouths to feed—the use of manure, so far from being rendered unnecessary, will be all the more required. Professor Johnston's suggestion on the subject will be found in No. 29, *Agricultural Gazette.*]

Societies.

HIGHLAND AND AGRICULTURAL SOCIETY.

On one of the days of the late annual meeting of this Society, at Glasgow, a public breakfast took place, under the auspices of some of the leading members of the Agricultural Chemistry Society, in order to have some conversation on agricultural subjects. The question for discussion was—The best Means of making the Practical Farmer acquainted with recent Discoveries in Science, and enabling him to apply them to the Cultivation of his own Farm.—Sheriff Allison explained the object of the meeting. It was of the highest importance that the greatest amount of information regarding the science of agriculture should pervade the community, as upon agriculture, as well as upon manufactures and commerce, depended our national prosperity—national existence. In Great Britain there were twenty millions acres of arable land under the plough; twenty-seven millions in Grass and pasturage; fifteen millions which could be rendered arable; and fifteen millions of mountain pasturage. Supposing, therefore, the twenty millions to be under crop, it appeared from Mr. M'Culloch that the average produce per acre was three and a-half quarters of grain, and by the recent applications of science the average must now be more. Supposing that in addition to the present twenty millions, ten millions more are improved or put under crop, this would be equal to thirty millions acres, and at the average of three and a half quarters per acre, the produce would be one hundred and five millions of quarters of grain or other nutritious aliment. Besides, there are twenty-seven millions of acres of Grass lands, besides the mountain pasture for the rearing of cattle. The average consumption of grain by each individual in Great Britain is estimated as equal to one quarter per annum, so that even independent of the aid of science, the soil of Great Britain is capable of sustaining one hundred millions of inhabitants. And what then would be the state of our manufactures? The value of our home consumption of manufactures was estimated at a hundred and thirty-three millions per annum, and the exports, including the colonial, fifty millions, the foreign alone being thirty-five millions. Now, if the population should increase to a hundred millions, the home consumption of manufactures would increase to four hundred millions a year—eight times the amount of our whole present exports, and twelve times greater than the exports to foreign parts. It was thus demonstrated what our agricultural resources were, and how essentially necessary it was to attend to their development. During the last half century the population had doubled, and attention during that period had been chiefly turned to the development of our manufactures, yet in the 50 years ending in 1836, the amount of grain imported had been gradually diminishing. It seemed to be a law of nature, that as the population increased the power of producing food was also increased. In Poland there were ten cultivators for every one otherwise employed. In the countries west of the Mississippi there were seven cultivators to one otherwise employed; in the United States, an exporting country, three to one; while in Great Britain, by the late census, there was only one cultivator to three otherwise employed. In Great Britain there were ten millions of arable acres never yet ploughed; and, were science properly applied to agriculture, the same results would follow as had followed the application of science to travelling.—Mr. Burnet, of Gadgirth, gave instances of the benefit he had derived from the application of the discoveries of science to agriculture. Land which some time ago was not worth 15*s.* an acre, was now valued at 45*s.*, and produced large crops of excellent Wheat. In some cases where, by the ordinary practice, thirty bushels had been obtained, he had, by the application of ammoniacal manures, raised forty; and by applying saline manures, he had obtained fifty. He had applied gypsum to Clover and Grass, and found his crops doubled; the cattle preferred the Clover, and it remained three years in the ground instead of two years. He had tried gypsum with Turnips, and found it doubled the crop of Aberdeen Yellows, but had little effect on the Swedish; and he found also that gypsum had not the same effects on the crops if the soil had been previously dressed with manure mixed with sulphuric acid.—Mr. Colquhoun, of Killermont, said it is the duty of the landlords to make the experiments—they are somewhat expensive, and often fail at a first trial, and the owner of the soil, who is ultimately to be the gainer, should pay the expense. He had on this point said to an individual, "You seem to make no experiments in your business, and yet you are getting rich, while there is another individual, your neighbour, who makes many experiments, and continues poor." He admitted the fact, but the secret was, that nine out of ten of his neighbour's experiments failed, but when the tenth succeeded, he availed himself of it, and so saved the expense. Science was of the greatest importance in agriculture; but to make it available generally, it must be plainly illustrated and brought to the farmer's hearth. He hoped every one interested in agriculture would endeavour, in his own district, to disseminate information. The information conveyed in the "Quarterly Journal" was not calculated for plain practical farmers: it was too puzzling for them. It was somewhat like going to a doctor, and, on telling the complaint you were troubled with, you should be told the various medicines applicable to the disease, and asked to choose for yourself, instead of taking a prescription to the apothecary to make up for you what you was to drink.—Professor Johnston said, it was undoubted that the application of science to the soil would greatly increase the farmer's profits; but unless the Scottish farmer was put into possession of the knowledge necessary for the proper application of science—not merely a practical knowledge of agriculture, for in that they excelled—they could not profit by it. One great point would be to spread the broad-sheet among the farmers. Wherever he went, he had audiences of 200 or 300 farmers attending him, who paid the utmost attention to him, and seemed to drink in with avidity the information given them. They should, as far as possible, promote the formation of clubs, meetings for lectures, and the circulation of practical papers.

YORKSHIRE AGRICULTURAL SOCIETY.

At the seventh Annual Meeting of this Society, which occurred last week, at Richmond, a very interesting discussion took place, after the Council dinner, upon the subject of drainage. The following account is abridged from the *Durham Advertiser*:—Mr. Lister stated the mode which he pursued:—The substratum of the land upon which I have drained is principally stiff clay, my practice upon which has been this:—The minor drains are cut parallel to each other, and run directly up the hill, the depth of them being from 30 to 36 inches—the latter depth where the clay is very stiff, as I consider the more tenacious the clay the greater ought to be the depth. The main drains run partly at right angles in the hollows, being somewhat deeper than the others. Having a great abundance of stone at hand, I use it in preference to other materials. I break the stones into two sizes, viz., one about the size of road-stone and the other rather larger. In the branch drains I lay a covering of the smaller stones from three to four inches deep, and then cover them with a layer of the larger stones, upon which I put another layer of smaller stones, making altogether a depth of 9 or 10 inches. I then put clay where it can be had, and where not, turf: the clay where used is well beat over the stones; where turf is used, I put part of what has been thrown out of the drain upon the top of the turf and beat it well down—the object of which is to prevent the finer particles of the soil being washed into the drain. I find no difference in effect between covering the stones with clay and turf: the effect of both, in my opinion, is the same, except that where the drain is covered with clay it is much more durable. I would recommend those who use tiles to lay clay over them also where practicable. I am alluding to a clay subsoil; in many parts the clay is very tenacious. I think that the surface-water ought not to run into the drain through the filling in; for then the water must make its way between the active soil and the subsoil, which would be a very imperfect drainage. I differ with Mr. Arkell, who wrote the Prize Essay in the "Royal Agricultural Journal," vol. iv. He says that land lying in ridges is more easily drained, from its lying in a round form, one of these ridges only requiring drains 16 yards apart; whereas if the surface was level it would require the drains to be placed at a distance of six or eight yards from each other. I think this is not the fact; but a level surface would be as easy to drain as a round one. The active soil of my land is from six to eight inches deep; I do not use tiles; and I do not think I could fold sheep upon the Turnips advantageously, except in a favourable season. Not having to lead stones more than half a mile upon the average, I estimate the average expense of my draining per acre 6*l.*, or rather less. It is difficult to say what is the comparative improvement, because my mode of management is so materially altered. I used to have open summer fallows; now I grow Turnips, and carry out the four-course shift. I may observe that land drained is greatly improved by using the subsoil plough. The result of two experiments this year, according to my estimate, is, that my Wheat on the drained and subsoiled land will yield about 40 bushels per acre, while the land of the same character in the adjoining field, which has not been subsoiled, will only yield about 20 bushels per acre.—The Chairman, the Earl of Zetland, said: In offering a few observations upon this subject, I do not wish to throw any doubt upon the statements which we have just heard from Mr. Lister. My object is to state to you the result of the many inquiries that I have made, especially in Scotland, and I will just observe in the outset, that according to the statements which have been made to me, the plan of drainage which Mr. Lister has supported will not succeed so universally—that it is not, in fact, calculated for every kind of soil. My own opinion is certainly in favour of the system of drainage recommended by Mr. Smith, of Deanston. I should recommend that in particular lands a drain at least 24 inches deep should be cut, and that, in filling it up, parties ought not to put the clay immediately above the tile. I have lately returned from a visit to Scotland, and while there I have conversed with the farmers upon this subject, and, amongst other things, I find that one of the plans advocated by Mr. Smith is universally condemned by the agriculturists with whom I have spoken—namely, that of placing the clay immediately above the tile. All those that I have spoken to on the subject—at least all those who have tried this plan in that part of Scotland where I have been—are opposed to it. When I spoke to a farmer in Stirlingshire upon the subject, he replied, "Oh! there is not a farmer in this part of Scotland but would condemn that system." To give you an illustration with respect to this plan of Mr. Smith's:—A tenant of mine in Scotland, in draining part of his farm, turned up some stiff clay. He did not puddle the drain, but filled it up as it came to hand. The clay was of a very strong and tenacious description, and this was placed immediately above the drain, as recommended by Mr. Smith; and if I remember right, the drain was formed 24 inches deep. This land was drained only 10 years ago, and the gentleman to whom I have alluded informed me that this year he was going to take up all these drains, because he found that the water lay upon the top of the ground, and that, too, immediately over the place where the old drains were formed. It could not percolate through the clay, and he had come to the determination of taking up the old drains, and of throwing six inches of loose stones on the top. Where the old drains existed in the clay

able to obtain very indifferent crops, while on those parts which have been properly drained his crops have been most abundant; and he feels assured that, by constructing proper drains in the whole of the land, his crops will be good throughout the farm. There is another fact to which I wish to allude, as I am desirous of throwing as much light upon the subject, and giving as much information as I can, hoping that it may induce gentlemen to try experiments, and thus discover what is really beneficial and of advantage. Last year it was stated that the Duke of Portland had made about 7000 miles of drains in his property, 18 or 20 inches deep, but that he was going to take them up, and sink them deeper. When I saw this statement in the *Mark Lane Express* I was unacquainted with the grounds upon which it was made, and I therefore wrote to the agent of the Duke of Portland for information upon the subject. I received an answer in due course, in which the statement was contradicted. The agent stated that he did not know upon whose authority the assertion was made, but certainly neither on his or the Duke of Portland's. My own opinion upon this subject is different from that of Mr. Smith. I think that drains in clay land cannot be made too shallow, so that the active soil is not disturbed. I believe that drains 18 inches deep—or as shallow as they can be made without disturbing the active soil—are the best.—Mr. Charnock then said—The gentleman who commenced the discussion spoke wholly on stone drainage. Now I apprehend that no stone drainage can be good and efficient unless you have a very considerable fall to commence with. And it ought to be recollected that the greatest portion of the drainage either formed or to be formed in this county is on land having a much flatter surface than is desirable in making drains of the description advocated by Mr. Lister. Perhaps you will permit me to allude to one or two subjects which I consider of primary importance to the attainment of effective and sufficient drainage. With respect to tiles, I think it highly desirable that the agriculturists of this county should be impressed with the desirableness and importance of choosing tiles of a smaller, in preference to those of a larger description. I conceive that there are many objections to the use of large tiles in the majority of cases. In the first place, they are of greater burden and more liable to sink into the clay on which they are placed than small ones; and in the next place they are far more expensive. With reference to the shape and length of a tile, much has been said and many opinions expressed, but I consider that this important question is yet almost unsettled. To-day I inspected some specimens of tiles without any internal foot or sole, which I consider would answer very well in a clayey soil; and in places where this tile can be used I should recommend its adoption, because by doing without a sole you effect a saving of perhaps 25 per cent. per acre. But there are other lands to which this tile would not be applicable. Then, as to the method employed in the filling up drains, I may mention that upon a former occasion I strongly urged the necessity of filling up immediately over the tiles with some porous substance; that is, suppose the drain were to be cut not less than 30 inches deep—but for my own part I should recommend that it generally be cut 36 inches deep—then I think that it is desirable to cover the tile over for 3 or 4 inches with some porous substance, and nothing can be used for this purpose better than loose stones or ling, and then to have the clay trodden down so as to prevent any substance from being washed by the water into the drain. In speaking upon this subject, I will just take this opportunity of stating that I think it is desirable that the water should not filter down through the drain, but that it should percolate from the arch at the bottom. And, from my own observations, I am led to think that, in general, the great bulk of the water, particularly in wet soils, finds its way into the drain from the bottom. There are many matters connected with this subject, which must remain in great doubt until actual experiment shall have set the matter at rest, and I will take the liberty of suggesting whether it is not desirable that the Council of the Society should institute some experiments for the purpose of eliciting, as far practicable, information upon the various points connected with practical and successful drainage.—Mr. Thompson, of Kirby, observed, with respect to the shape of tiles, that most people were now in favour of pipe-tiles; but he would mention a case that occurred within his own knowledge, in order to show that they were not always to be depended upon. It would be, perhaps, known that, in the earlier days of draining, the common brick was the only tile used, and this was made to form a pipe about an inch and a half in diameter. About two years ago, he had occasion to open an old drain formed of bricks in this manner: the drain had almost ceased to be of any use, and he was anxious to discover the reason of the imperfect drainage of the land where this old method had been adopted. On examining them he found that the bore or hole of the drain was as nearly as possible filled with the oxide of iron. He ought to have observed that the land was nearly though not quite level, and at first when the drain was formed, it would be found sufficient to carry off the water, but the ground being impregnated with iron, the oxide had collected, and in the end, as he had stated, nearly filled up the aperture of the drain. This was the result of the experiment which he had made with reference to small pipe-drains, and he apprehended that in all cases of a similar description, it would not be a safe plan to use them. He had also opened another pipe-drain which had been formed for a period of upwards of 20 years. The width of this drain was very considerable—being no less than six inches, and upon opening it he found that it had become stopped up in consequence of the growth of a certain description of weed which is sometimes found in drains.—Mr. Turner, agent to the Earl of Zetland, said: There is a very important fact which I think all parties ought to take into their consideration when about to drain land, and that is with respect to the after treatment of the soil. Suppose that it is intended to lay the land into permanent pasture, and that it is never intended to let a plough enter it, then I state with confidence that the nearer you place your drains to the top the better. I do not mean with reference to shallowness; but supposing that you sink, say 30 inches, then I would fill the drain nearly to the top with stones. While, however, I recommend this plan with respect to pasture land, I should think that I was displaying the utmost ignorance did I pursue the same system on an arable farm. In this country we are as yet but little acquainted with the advantages likely to result from the use of the subsoil plough, and all persons who can lay aside their prejudices and use this plough, will take care to lay their drains in such a manner as not to interfere with the use of such a valuable implement. There is another circumstance which I wish to mention to agriculturists generally, as it seems to have been lost sight of by the champions of the respective systems of drainage. These gentlemen seem to have forgotten that we have a natural drain-maker at work, namely, the earth-worm, and that in time, however tenacious or strong the clay may be, the soil must become more or less porous through its exertions. I think, therefore, that it is utterly impossible for you permanently to prevent the water from entering the drain. Some gentlemen have stated, and I have seen the theory advocated by certain of the public journals, that the water really passes down to the top of the drain; and there are others who contend that it enters from the bottom, but for my own part I am of opinion that it enters the drain at the sides. In forming a well, you find the water comes in at the bottom; but the cases are not parallel, because parties when they bore for a well merely sink to a spring. With regard to the best and cheapest material to be employed in making drains, until the time arrives when tiles may be obtained for 20*s.* per 1000, I think it is the duty of every agriculturist to drain with stone where practicable.—Mr. Etheridge stated that it was impossible to lay down a law suitable to every case. Surely it must be admitted that there ought to be some difference made between a surface spring and an under spring. The clayey soil of Sussex ought to be treated differently from the soil of Kent, or from that of Northumberland. With respect to the description of tile to be adopted, he considered the pipe-tile upon the whole to be disadvantageous. It was well known that on all clayey soils they were sure to meet with sand or other porous substances in digging for drains, and let the person employed in digging be ever so clever or practical a man, he would be unable to remove this matter entirely away. The consequence was that when the drain was filled up, this matter would in all probability be pressed into the joints of the pipe, which would soon become partially filled or disturbed, and, owing to its small diameter, it would in a short time become useless. He had not heard any complaints with respect to double tiles, which fitted into each other so as to prevent any matter from entering at the joints. The tiles would cost generally 14*s.* or 15*s.* a thousand, but the price would depend in a great degree upon the locality. The first item would be the price of the clay, the next the labour, and the next the quality and the distance the coal would have to be led. He could show that where the common double tile is used the expense ranged from 10*s.* to 15*s.* a thousand.—Mr. Salvin then said, by delaying to drain the land great injury was inflicted upon the farmer. The cost of manuring an acre of land with artificial manure amounted to more than 5*l.* per acre, and should this manure be put on the ground before it was drained, the consequence would be that in many cases it would hardly ever reach the seed. To show the increased productiveness of land after drainage, he stated that while in Kent he was informed by an agriculturist, that upon part of his farm the average produce formerly was not more than 24 bshls. of Wheat per acre; whereas, after it had been drained, the same land produced 40 bushels.—Mr. Crompton then spoke on the subject of liquid manure. Within the last four years he had constructed four tanks for the purpose of collecting the liquid manure from his fold-yard. The first was a very small one; and here he would impress upon any gentleman who intended to construct a tank not to follow his example, but to make it large in the first instance. He should recommend him to make it about half the size of the area of his fold-yard, and then it would contain all the liquid manure that ran from the yard. Two of these tanks were erected in stiff clayey soil, and two in porous land. Those in the clayey land held water immediately, while those in the gravelly soil had to be cemented before they became sufficiently tight. He filled these tanks three times a year, but he had found by experience, that if they had been sufficiently large, so that he could empty them at one season, the beneficial effects would have been far greater. Were he enabled to water the whole of his Grass with this manure in the spring the effect would be truly astonishing; he was convinced that if applied in the proportion of 30 cubic yards to an acre of Grass, it would be found to produce as heavy, if not heavier, crops than any quantity of other manure that could be applied. Indeed, the crops were so heavy that were they to be increased they would prove injurious to themselves. He had tested the quality and quantity of the Grass produced on the land watered by this manure with that of Grass grown on land manured with another description, and the result was decidedly in favour of liquid manure. The Earl of Zetland had published, in the Transactions of the Society, the result of an experiment which he had made with respect to the application of farm-yard manure to Grass land. The quantity of Grass grown on a certain portion of land so manured, together with its weight, was there stated. Now, when he read this statement he determined to make a comparison between the produce of this land and an equal portion which he caused to be watered with liquid manure. The Grass was dry, and the result was that he found the quantity of Grass produced on the land watered by the liquid manure was nearly double to that which had been reported by his Lordship. In this experiment he watered the land at the rate of 25 cubic yards to the acre, though generally speaking 30 cubic yards were the quantity which he used, and with this he was convinced that he obtained as good crops as any agriculturist would wish. He was only able to manure 12 acres in this manner, but then he ought to observe that he cut the whole of this twice in the year, and each time he obtained a good crop. Two years ago he applied a quantity of this manure—at the rate of 25 cubic yards an acre—to a field of seeds, and the result was, that the crop was certainly one-third larger than any other in the country which he heard of. That was the only experiment which he had made with this manure on light soil, the rest having been laid on clayey land. Mr. Crompton then stated that when he began to use this manure he pumped it out of the tank with a copper pump. In less than 18 months, however, the corrosive matter in the manure completely destroyed the pump. He then got one made of cast-iron, but in less than two years this was rendered useless. He then ordered his joiner to make him a wooden one, and this had been found to answer the purpose most satisfactorily. It had been now in use five years, and did not exhibit any symptoms of decay.

Lecture in the Town-Hall.—At two o'clock on Tuesday, in the Town-Hall, Dr. Robinson, of London, author of "Chemistry for the Use of the Agriculturist," &c., delivered a lecture on The Utility of a Knowledge of Chemistry to the Agriculturist, as a Means of saving him from the Frauds practised in the Adulteration of Artificial Manures. After some general observations, in the course of which he showed the impossibility of ascertaining, without the aid of chemistry, the genuineness of artificial manures, he explained the nature and properties of guano, which is the deposit of fowls that feed on fish. He illustrated the manner in which the purity of this and other valuable manures of a highly fertilising character might be tested. The first experiments related to the blue stone vitriol, or sulphate of copper, which, though not used as a fertiliser, is known to be of considerable importance to the agriculturists in many districts, being used in the preparation of grain for seed. He said that, some six years ago, whilst at Rochester, he was waited upon by some farmers to test something which was offered by the agent of a London drysalter as blue vitriol, at 3½*d.* a pound, the usual price being 7*d.* or 8*d.* a pound. At the first sight he could not tell whether the article was blue vitriol or not, but by applying a common chemical test—namely, by dissolving a portion of real blue vitriol in a glass, and a portion of what was called blue vitriol in another glass, and adding to each a little ammonia (or hartshorn)—he at once detected the imposition, the solution of the genuine article remaining perfectly blue, while the spurious one turned black, and he thereby discovered that what was offered was green vitriol, or sulphate of iron. In order to render the latter less easy of detection, it had been powdered, and he cautioned agriculturists, as a matter of prudence and a check to imposition, never to purchase anything they might require in a ground state, if it could otherwise be obtained. Turning to the subject of guano, Dr. R. said, when pure it contained two highly fertilising properties in great abundance, namely, phosphate and urate of ammonia, as well as very fine bone-dust; and he showed by an experiment, that when genuine, it would dissolve in diluted muriatic acid or spirit of salt. After some remarks on nitrate of soda, a valuable stimulant for many kinds of Grasses, he tested it by applying a quantity to red-hot coal. The pure was shown by a beautiful bright blaze, unaccompanied by any noise; whilst, when adulterated by common salt, the presence of the salt was ascertained from the dulness of the blaze and a continued crackling. This test did not apply when nitrate of soda was adulterated with common washing soda. It then required that it should be dissolved in water, and the presence of the washing soda would be indicated by effervescence on the application of oil of vitriol; while salt was readily dissolved again in ammonia. The concluding experiment related to gypsum or sulphate of lime, and it proved that pure gypsum would not effervesce on the addition of oil of vitriol, but when common chalk, with which it is often adulterated, was present, it was indicated by rapid effervescence. All the experiments were of the most simple character, and were all performed by means of two or three common tumbler glasses.

Miscellaneous.

Experiments on Irrigation.—The first field experimented upon in irrigation contains about one-and-a-half acre imperial measure, which was lying a few years ago in a state little better than useless. From its proximity to the farm-steading, it had for many years been used as a park for the calves, which were reared upon the farm for a few weeks, until they were weaned and put to other pasture. But, as a proof of its great sterility,

when we entered to the farm at Whitsunday, 1839, we put two calves into it in the month of June, and were obliged to take them out two or three weeks afterwards, as it did not grow as much Grass as to support them. Its herbage was of the coarsest description, and although in a sheltered situation, much of the ground was unewarded, and stunted heather was beginning to show itself upon some of the driest parts, while a few straggling rushes were a sickly appearance upon those parts which were saturated with wet. In January, 1840, we turned it over with the plough, and found the soil to be much inclined to Moss, especially in the lower part of the park. It appeared as if it had been burned at some former period, as the soil was partly mixed with ashes. In the lower part of the park the subsoil is a stiff gravelly clay, while across the middle it becomes hard and stony, and is only covered with a few inches of surface; from this part a large quantity of mineral water flowed, and left a brown ochrey sediment on the surface; nearer the top the soil is a dark-coloured earth about six inches deep, and the subsoil a fine clay. We sowed it with Oats in the spring, and, excepting a small space at the upper end of the park, it was a very poor crop. We furrow-drained it in autumn, and planted it with Potatoes in the spring following, with farm-yard manure at the rate of about 25 cubic yards per acre; the crop was middling good, being about 28 bolls, or 7 tons per acre. We then ploughed it into ridges about 18 feet broad, to answer the declivity. In the following spring we spread upon it the small quantity of about 10 bolls, or 60 bushels, of lime shells, per acre, and harrowed them in with the Oats and Grass seeds. Perennial Rye-grass of excellent quality, which had been cut after the nineteenth year, and a few pounds of red and white Clover, were the only seeds sown; the crop of Oats was middling good, being about 7 bolls, or 42 bushels, per acre; but the sward of Grass in autumn was far from luxuriant. We applied the water to it in the month of November, which was done in the following manner:—A small rill, which has its source from a few drains at a little distance, had trickled by the steading for a great length of time, without being used for any other purpose than to afford drink to cattle, for which purpose, at times, from the smallness of the run, it was scarcely sufficient. During wet weather, however, in the winter season, it sometimes swelled to a considerable size, and as it then brought the washings of the farm-road along with it, from a distance of about 300 yards, we thought it might be turned to some useful purpose in irrigation. We were in the habit of collecting all the urine from the offices into a reservoir, and carting it to the fields; but there was at times a considerable loss of that valuable liquid from the dunghill, which, when fully saturated, ran over. If, therefore, we could by any means raise the water of the rill to a sufficient height to come in contact with the refuse liquid of the dunghill, and form a small reservoir, it would then in wet weather catch all the rich washings of the premises, and conduct them over the park in irrigating rills. We managed to effect this, and we have not been disappointed. When we got the water raised to a sufficient height, we formed a main conducting feeder along the head of the ridges, and made small feeders from it to conduct the water occasionally into each ridge. The supply of water was small, and to prevent waste, we laid the bottom of the feeders with clay, which we got puddled at the clay-mill in the vicinity. The water was generally not more than sufficient for one ridge at a time, so we commenced at one side of the field, and regularly watered it ridge by ridge. We usually allowed the water to flow only about two days over a ridge, when we turned it off into another. We spread it over the ridges by damming the cuts with pieces of slate or stone. When we got once over the field, we commenced again at the other side, and continued to do so during the winter. That part of the park which lay at the greatest distance from the water was apt to get a less supply than the rest; but, fortunately, a few drains emptied themselves into a ditch which ran along the side of the park, and of this we took advantage, by raising the water in it to a sufficient height, where it had ample declivity to run along a cut made across the ridges; and we found that, from the feeding qualities of this water, and partly from a little of the more fertilising liquid soaking into it from the flooder above, that it had a most wonderful effect in promoting fertility. Indeed the effects of the irrigation were visible in a few days after this contrivance was applied. Whenever the weather was fresh during the winter, the Grass assumed a green appearance, and nothing could exceed the luxuriance of its growth when the spring set in. We allowed a few ewes and lambs to pasture on it the first two weeks of April, which kept it back a little, but commenced cutting the Grass about the beginning of June, and cut and consumed it green by horses and cows for nearly two months. Before it was all cut it was much too ripe, and some beginning to rot at the roots; but as the cattle continued to relish it, and it was so conveniently placed, we were loth to make any of it into Hay. We, however, measured and won a portion of it to ascertain its weight per acre, and found it to be 402 stones, of 22 lbs. to the stone per imperial acre. This portion was cut about the middle of the field, and might be reckoned a fair average sample. It was cut July 26, and weighed August 16. The second crop was excellent, being exceedingly heavy where the first crop was earliest cut. We commenced cutting it the second time on the 20th of August, and we cut a beautiful third crop from a considerable part of it till the frost came on the 13th of October, when its growth was completely checked, and we then allowed the cows to eat up the foggage. When cutting the second and third crops, the sward was so close, that the swathe might almost have been rolled up like a fleece of wool. Thus we have reason to believe that, by the continued application of the water, small as its allowance is, the ground may still, in future years, increase in fertility, and, of course, prove a valuable acquisition to the farm. It is now worth as many pounds a-year as it was before worth shillings, and the means which have been used to improve it have not been expensive, and any future charge that may be incurred to maintain and increase its fertility, will cost nearly nothing, seeing that the application of no fertilising ingredient is required but what heretofore ran to waste. The second portion of irrigation consists of about three imperial roods, which lie in a steep acclivity on the banks of a river. It is too steep to be brought under cultivation by the plough, and, being a dry gravelly soil, the want of sufficient moisture in summer seldom failed to render it almost useless. Having, two years ago, furrow-drained the field immediately above it, we led the main-drain in a direction where we could catch another small supply of water that came from the surrounding fields. This was nearly all that was required; we had merely to make a small cut as a flooder along the top of the bank, and another across about half way down, when we let a small supply of water into each, and the steep declivity rendered it an easy matter to spread it over the surface. We kept the water upon it throughout the whole winter, and during summer, until a week or two before commencing to cut the Grass. When the supply of water was very small, we let it run a few days in one flooder, and then in the other; but we found that it did no damage when it was allowed to run continually upon the same part. The first year the irrigation was applied, being 1842, it had no great effect, and the Grass which was cut from it was foul, and not highly relished by the cattle; but in autumn a beautiful sward appeared; and in the present year, 1843, nothing could exceed the luxuriance of its growth, the water being still applied in the same manner. The Grasses were much finer in quality than in the preceding year, and the cattle devoured it greedily. We measured and won a part of it to ascertain the weight, and found it to be the extraordinary weight of 440 stones, of 22 lbs. to the stone, per imperial acre; the Hay was cut on the 7th of August, and weighed on the 28th of the same month. Thus another small portion of land has been brought from comparative barrenness into a state of great fertility, by means both simple and cheap, as a very small amount of labour and attention have been required, and for which, certainly, we have been most amply repaid.—*Mr. Wilson, of Penicuik, in the Transactions of the Highland Society.*

On Rolling Wheat.—Agriculturists in general allow that a friable soil is favourable to the growth of Wheat; and they even recommend a harrowing in spring, to loosen the soil and promote the action of the air and the sun. In an experiment I have tried, I set out on a principle entirely opposite, founded on a practical fact. We like to trample the sprouting Wheat in October and November by flocks of sheep, for the purpose of pressing the soil. The treading of these sheep causes every trace of vegetation to disappear: yet the Wheat fields so treated look the finest in spring, and yield the best crops. This trampling by sheep must not be confounded with folding, to enrich the soil, for the sheep, in treading a field, drop very little dung, which would only fertilise the spots where it fell; but the fields thus trodden exhibit a vegetation uniformly vigorous. In the month of October, 1842, I passed my heavy roller, above 4 feet long and 4 feet diameter, and weighing about 3 tons, once over a field of about 5½ acres. The Wheat had come up, and the rolling was even and complete. In this operation I had in view to condense the soil that it might not absorb moisture, and that no water should lodge upon it, because this, in freezing, would, of necessity, injure the young plants. I also thought that compressing the soil, which promised to be particularly favourable to Wheat, would retain moisture in fine weather more effectually, and that the roots, fixed more firmly in the ground, would push up more vigorous shoots. My anticipations were realised beyond expectation; the field was uniformly covered with plants, which shot up early in the spring, and continued to flourish until harvest. All the neighbouring farmers observed it with astonishment. The 5½ acres of Wheat compressed by the roller consisted of light sandy soil, mixed with a little clay, not well adapted to Wheat, which prefers strong soil; and it had been cropped the year before partly with Wheat and partly with Oats. I had, therefore, transgressed the ordinary rules of rotation by sowing Wheat again; but I hoped to compensate this disadvantage by manuring the land. From these 5½ acres I reaped 213 bushels of Wheat, weighing about 5½ tons, and about 12 tons of straw. This is a very satisfactory produce on a light soil of moderate quality. By mistake, my whole field was rolled, and therefore I could not ascertain the difference between portions that were rolled and those that were not; but, judging from the crops of my neighbours, I must believe that the rolling of my field augmented the produce one-fourth. The compressed state of the field continued until harvest; and, from the first, I was struck with its compactness. I remarked that a weed, which grows only on highways much frequented, was collected on my field, whilst other weeds were very rare, notwithstanding the frequent rains of 1843. However, I found no difficulty in working it, and I sowed it with Turnip and Rape, some parts of which were rolled immediately after the seed was put in. I had some portions watered with solutions of salts of ammonia, and I have rolled some Wheat, leaving parts of the field untouched. Next year I shall be able to speak more positively of the effects of heavy rolling. I make a successful use of my high-way roller on my meadows in early spring. A single rolling is sufficient to produce a hard, smooth surface, conducive to the growth of herbage, and easy to be closely mown.—*M. Schattenmann, in the "Annales de Chimie et de Physique," Ayrshire Agriculturist.*

Sale of Guano at Liverpool.—A cargo of guano brought by the ship Hamilton, Ross, from Ichaboe, was offered for sale on Friday, by Mr. Alexander Allen, broker, at the Sale-room in Oldhall-street. The quantity announced was 350 tons, but only 250 tons were offered, the difference having been disposed of by private contract. The article was said to be the best ever imported, and the analysis showed that it was of superior quality. It was divided into four lots of five tons each, and twenty-three lots of ten tons each. The biddings commenced for the first lot at 5*l.* per ton, and rose slowly by half-crowns to 5*l.* 10*s.*, at which it was knocked down, and the purchaser took the next lot, making ten tons altogether. The third and fourth lots were put up, and sold at the same price. The first lot of ten tons was offered at the same rate, the broker stating that no more would be sold at that price, but there were no higher biddings, and it was withdrawn at 6*l.* Twenty tons were all that was sold. The attendance was rather numerous, but there was little or no competition.

Notices to Correspondents.

ALLOTMENTS.—*S. L. S.*—We quite agree with you, and will have the subject attended to fully.

ARE RABBITS GAME?—Rabbits are not game within the Game Act, 1 & 2 Will. IV. c. 32. We have not seen the opinion in *Bell's Life in London* referred to, and therefore do not know the precise point upon which it was given. The opinion given in a former Number is correct. We understood the question of our then correspondent to be—Whether a tenant could use a gun to kill rabbits on his land without taking out a game certificate, and we referred him to the exception in Schedule L. of 52 Geo. III. c. 93, to show that he could. *W.*

BARLEY AND RICE.—*T. C.* asks for information on the nutritive qualities of Rice and Barley-meal, and also on the relative nutrition of the bran and flour of Wheat. Have any of our readers experiments on these matters in the fattening of cattle to report?

CLOVER DODDER.—*G. Kirk.*—It has probably a foreign origin, being introduced into this country with Clover seed. Mr. Babington, of St. John's College, Cambridge, requested some time since that farmers would send him specimens of this weed, and of the seed, with information as to where the seed was obtained.

DRAINING LEVEL.—*Constant Reader.*—A very excellent level was exhibited at Southampton, by Mr. Bailey Denton, as you will see in our report of the Exhibition. We do not know Mr. Webster's.

GYPSUM.—*A. H.*—We will endeavour to get the title of the book you refer to for you, next week.

NAMES OF PLANTS.—*J. Y.*—The small sweet-scented plant from South America is Melilotus parviflora. It has been cultivated in Botanic Gardens, but not as an agricultural plant that we ever heard of.

PROFESSOR JOHNSTON'S STEEP.—*A Correspondent* was last week erroneously referred to No. 29 of the *Agricultural Gazette* on this subject; it should have been to No. 19, where he will see the following substances recommended as a steep for Corn and Beans:—Phosphate of soda, sulphate of magnesia, nitrate of potash, common salt, sulphate of ammonia—1 lb. of each, in 10 gallons of water, to steep 300 lbs. of seed. To be dried with gypsum or quicklime.

RATS.—*Proteus.*—Mr. Meyer's Rat Poison is continually advertised in our columns.

STALL-FEEDING.—*A Teifiside Subscriber.*—A field of six or eight acres should answer your purpose, one third of it to each of the three roots, Parsnips, Carrots, and Mangold Wurzel. Give your cows 10 or 12 lbs. of hay each day, and as many Carrots and Parsnips as they will eat besides; which will probably be from 80 to 100 lbs. Mangold Wurzel should not be given till March or April.

SULPHATE OF IRON.—*C. B.*—See the advertisement over the Leader of the *Agricultural Gazette* last week.

WOOD-ASHES.—*Peter Drill.*—See Sprengel's Paper on this subject in this Number of the *Gazette*. You may put on 15 or 20 cwt. per acre. You need not deprive the ashes of causticity if you apply them on fallow land a fortnight or so before putting other manure in the ground. Plough them in immediately. We do not think the addition of sulphuric acid is advisable.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, Aug. 19.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 10	to	4s 2	Best Downs & Half-breds	3s 10	to	4s 0
Best Short Horns	3 8		3 10	Best Long-wools	3 6		3 10
Second quality Beasts	3 0		3 6	Hows and second quality	3 4		3 8
Calves	3 4		4 4	Lambs	3 8		4 4
Pigs	3 4		4 4				

Beasts, 2726; Sheep and Lambs, 24,320; Calves, 138; Pigs, 295.

We have again a short supply of Beasts, and a brisk trade. Although we cannot make any alteration in our tabular statement from last week, yet there is a slight advance on the best qualities; everything is readily disposed of; the second quality is also more in demand than of late, but does not make any more money; a large proportion of the supply is of very middling quality. There are a larger number of Sheep and Lambs than last week, but the demand is also increased, and the advance realised on Friday is fully supported to-day—namely, a little more than 4*s* for the best Downs, and rather over 3*s* 10*d* for the best Longwools, but not a quotable advance. Lamb-trade is still worse; the season for this article is nearly closed. Veal is a rather worse trade, very few of the choicest quality making 4*s* 4*d*—indeed many very good ones are sold at 4*s*. Pork is much more in request at an advanced price.

FRIDAY, Aug. 23.

We have a fair supply of Beasts to-day, but most of them of middling quality; the trade is about the same as on Monday: the best Scots, &c., are readily sold at from 3*s* 10*d* to 4*s* 2*d*, and Shorts-horns about 3*s* 10*d*—in some instances a little over; a good clearance is effected. We have not quite so many Sheep and Lambs, but the trade is very dull, and it is very difficult to support Monday's prices; the best Downs make no more than 4*s*, and Longwools nothing over 3*s* 10*d*, Ewes and second quality 3*s* 8*d* to 3*s* 6*d*. Veal-trade is still heavier, and the best Calves cannot be quoted at more than 4*s*. Lamb-trade is very bad; very few make 4*s* 4*d*. Pork remains steady.

Beasts, 780; Sheep and Lambs, 9760; Calves, 200; Pigs, 290.

41, West Smithfield.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 22.

Prime Upland Hay	100s	to 110s	Clover	100s	to 130s	Straw	34s to 36s
Inferior ,,	85	95	,, New	——	——		
New Hay ,,	90	90				Joint Coupon, Salesman.	

CUMBERLAND MARKET, Aug. 22.

Superior Old Hay	100s	to 110s	Superior Clover	120s	to 130s		
Inferior ,,	90	95	Inferior ,,	100	110	Straw 32s to 33s	
New Hay	90	100	New Clover	110	120		
						Joshua Bates, May Salesman.	

WHITECHAPEL, Aug. 23.

Fine Old Hay	85s	to 105s	Old Clover	120s	130s	Straw	32s to 33s
New Hay	90	95	New Clover	110	120		

COVENT GARDEN, Aug. 21.—In consequence of the steady state of the weather the market has been well supplied during the week with both fruits and vegetables, and generally speaking little alteration has taken place in the prices of most articles. Trade is, however, far from being brisk. Pine-apples of good quality are plentiful, and Grapes are also quite sufficient for the demand. Peaches and Nectarines are abundantly supplied, as are also Plums of every kind; Greengages are exceedingly plentiful; Apricots are becoming scarcer. Of Apples and Pears there is abundance; but there is little demand for them. Melons are good and plentiful; Morello Cherries are selling at very nearly the same prices as last week. Gooseberries are nearly over; a few, however, may still be seen in the market. Currants are scarce. Filberts are becoming plentiful and are in consequence getting cheaper. Tomatoes are supplied, but not in large quantity; they are very good in quality. Among Vegetables, Cauliflowers are good and plentiful, as are also Cabbages. French Beans are sufficient for the demand, and a few Windsor Beans are also in the market. Onions are plentiful. Peas continue to get less abundant. Celery is tolerably good; it has not altered in price since our last report. We observed a few samples of Cape Broccoli in the market. Among Cut Flowers were Stephanotus floribundus, Euphorbia splendens, Bignonia venusta, Ceanothus azureus, Camellias, Heaths, Sweet Peas, Verbenas, Fuchsias, Scarlet Pelargoniums, Roses, Pæonies and Carnations.

FRUITS.

Pine Apple, per lb., 4s to 6s	Cherries, Wall, per lb., 1s 6d to 2s 6d
Grapes, Hothouse, p. lb., 2s to 4s	— Morello, per hf.-sv., 1s 6d to 2s 6d
— Spanish, per lb., 2d to 1s 6d	Gooseberries, per hf.-sieve, 1s 6d to 2s
Melons, each, 1s to 4s	Filberts, per 100 lbs., 70s to 80s
Peaches, per dozen, 1s to 4s	Oranges, per dozen, 1s to 2s
Nectarines, per doz., 1s to 4s	— per 100, 6s to 15s
Apricots, per doz., 1s to 2s	— bitter, per 100, 8s to 18s
Plums, per half-sieve, 1s 6d to 3s	Lemons, per dozen, 1s to 2s
— Orleans, per hf.-sv., 2s to 4s	— per 100, 6s to 15s
— Green Gages, 4s to 6s	Almonds, per peck, 6s
Figs, per doz., 2s to 4s	Sweet Almonds, per lb., 2s 6d
Apples, Dess., per bush., 2s 6d to 4s 6d	Nuts, Barcelona, 22s
— Kitchen, 2s to 5s	— Brazil, 16s
Pears, Dess., per half-sv., 2s to 3s	— Cob, 14s
Currants, per hf.-sieve, 1s 6d to 2s 6d	

VEGETABLES.

Cabbages, per dozen, 6d to 1s 3d	Spinach, per sieve, 1s 6d to 2s 6d
Cauliflowers, per doz., 2s to 3s	Leeks, per bun., 2d to 3d
Broccoli, per bundle, 1s to 1s 6d	Chilis, per 100, 2s to 4s
Sorrel, per hf.-sieve, 6d to 9d	Garlic, per lb., 4d to 6d
Artichokes, per doz., 1s to 2s	Onions, per bunch, 2d to 3d
French Beans, p.hf.-sv., 1s 6d to 2s	— large, per bushel, 1s to 2s
Potatoes, New, per cwt., 2s to 3s	Shallots, per lb., 4d to 6d
New Turnips, per doz. bch., 4s 6d to 5s 6d	Tomatoes, per half-sieve, 4s to 7s
Peas, per bushel sieve, 2s 6d to 3s	Lettuce, per score, 6d to 1s 6d
Beans, per bush. sieve, 1s 6d to 2s 6d	Celery, per bunch, 1s to 1s 6d
Red Beet, per doz., 1s to 2s	Mushrooms, per pottle, 6d to 1s
Carrots, per doz. bchs., 3s 6d to 6s 6d	Small Salads, per punnet, 2d to 3d
Basil, per bunch, 2d to 4d	Watercresses, p. 12 sm. bun. 2d to 4d
Horse Radish, per bundle, 2s to 3s	Parsley, per doz. bunches, 1s to 2s
Savory, per bunch, 2d to 3d	Tarragon, Green, per bunch, 2d to 3d
Cucumbers, Frame, each, 3d to 9d	Green Mint, per bunch, 2d to 3d
— Ridge, doz., 2d to 3s 6d	Marjoram, per bunch, 2d to 3d
Vegetable Marrow, per doz., 4d to 1s	Chervil, per punnet, 2d to 3d

HOPS, FRIDAY, Aug. 23.

THE Market is very firm, and Sussex Hops are sought after at 2s to 4s advance on last week's prices. Duty, 165,000l.

FARNHAM & SMITH, Hop-Factors.

MARK-LANE, MONDAY, Aug. 19.

SINCE Thursday the weather has become fine, and the accounts from the country are more favourable than could be expected—indeed it is the general opinion that much injury has not been sustained from the rain, and harvest is progressing rapidly. On Monday last there was some degree of life in the trade, which was increased on Wednesday, owing to the bad weather continuing. Foreign Wheat on Friday was sold at 2s. to 3s. over Monday's prices. There were about 1000 qrs. of New Wheat up for to-day's Market, the quality of which was fine, and condition generally good; it sold from 52s. to 58s. per qr. The trade for Old and Foreign was dull at about 1s. above the rates of this day se'nnight.—Barley meets a good demand, and fully maintains our quotations.—Beans are 2s. dearer.—White Peas unaltered in value, but Maple and Grey 1s. higher.—Oats are a difficult sale, and barely maintain the prices of last week.

BRITISH, PER IMPERIAL QUARTER.

	s.	d.		s.	d.
Wheat, Essex, Kent, and Suffolk	46	50	Red	44	48
—— Norfolk, Lincolnshire, and Yorkshire	—	—	White	—	—
Barley, Malting and distilling 27s to 30s Chevalier	31	32	Grind.	28	30
Oats, Lincolnshire and Yorkshire	19	21	Feed	18	20
—— Northumberland and Scotch	19	21	Potato	20	23
—— Irish	17	20	Potato	19	22
Malt, pale, ship	56	56			
—— Hertford and Essex	54	60			
Rye	29	32			
Beans, Mazagan, old and new	28	to 31	Tick	30	35
—— Pigeon, Heligoland	35	to 37	Winds.	—	—
Peas, White	32	to 36	Maple	29	32

Harrow	32	34			
Longpod	—	—			
Grey	26	30			

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	8630 Sks.	— Qrs.	2745	260	7091	505	—	846	317
Irish	—	—	—	—	37	1192	—	—	—
Foreign	—	112	28080	18542	—	28080	—	1566	3589

FRIDAY, Aug. 23.

The arrivals of English Wheat since Monday have been moderate, and prices remain nominally the same as on that day; the fineness of the weather, and disinclination on the part of the holders of Foreign to submit to any reduction in its value, causes the transactions to be of a limited character. The quantity of Wheat cleared in during the week at the 18s. duty was about 36,000 qrs.—Barley and Beans continue to meet a good inquiry, and the terms of Monday are in some instances rather exceeded.—In Peas there is no alteration.—The Oat trade is very inactive, and late rates scarcely maintained.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	2880	80	1760	3800 Sks
Irish	—	—	5518	—
Foreign	9160	12600	18580	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July. [13, per Quarter.	54s 10d	34s 10d	23s 3d	34s 1d	37s 8d	37s 3d
— 19	54 1	34 3	21 6	36 4	37 7	37 3
— 26	53 9	34 5	20 10	36 9	37 1	37 4
Aug. 2	51 0	34 0	20 5	37 6	34 7	36 5
— 9	49 10	34 0	20 1	35 0	35 0	34 3
— 16	49 1	34 6	20 0	35 11	35 7	33 7
6 weeks' Aggreg. Aver.	51 9	34 5	20 10	35 7	36 5	36 0
Duties on Foreign Grain	19 0	6 0	6 0	7 6	6 6	6 6

SEEDS, Aug. 19.

Canary, per qr	54s to 58s	Linseed, Baltic, Foreign, p. ton	6l to 7l	10s
Carraway, per cwt	44	50	Mustard, White, p. bush.	—	—
Clover, Red, English, per cwt	—	—	— Superfine, p. —	—	—
— — Foreign	—	—	— Brown, p. —	—	—
— White, English	—	—	Rapeseed, English, per last	22l	25l
— — Foreign	—	—	Rape Cakes, per ton	—	—
Coriander	—	12	18	Hempseed, per qr.	—	—
Hempseed, per last	36	40	Tares, Essex, winter p. bush.	6	7
Linseed, per qr	—	—	— Foreign, per cwt	—	—
— Baltic	—	—	Trefoil, per cwt	—	—
— Cakes, Eng. per 1000	10l	10l 10s	Turnip (too variable for quotation).		

WOOL.—BRITISH, FRIDAY, Aug. 23.

	per lb.			per lb.	
Leicestershire Washers	1s 6d	to 1s 7d	Southdown Hoggets	1s 1d	to 1s 8d
Do. Hoggets	1 4	1 8½	Kent Fleeces	1 1	1 9½
Southdown Fleeces	1 6	1 7			

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Ditto Coffee-pot	15	0	Ditto Coffee-pot	15	0
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 35.—1844. SATURDAY, AUGUST 31. [PRICE 6d.

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PRIZES OPEN TO ALL ENGLAND will be awarded by the THANET FLORICULTURAL SOCIETY, on Thursday, the 12th September.

Best 24 Dahlias, 4l.; Second-best ditto, 2l.

Place of Exhibition, Ranelagh Gardens, St. Peter's, near Margate. No entrance money demanded.

FUCHSIA "CONSTELLATION."

WILLIAM MILLER begs respectfully to inform his Friends who have kindly favoured him with their orders for the above splendid Fuchsia, that his stock only consists of a few plants, and he is therefore obliged to defer sending it out this year.

N.B.—Wanted a quantity of seedling Beplasrum fruticosum. Providence Nursery, Ramsgate, Aug. 27, 1844.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs Warner and Warner, Cornhill, London, after the 7th September

ACHIMENES PICTA

W. J. EPPS begs to announce that he has the finest and largest Stock of this valuable plant, which he can supply strong plants of at 5s. to 7s 6d; also the new and splendid blue Buddlea Lindleyana 5s, Drymonia punctata 5s, Aristolochia Gigas 5s., Clerodendrum Wallichii (a distinct and beautiful variety) 5s. Strong plants of nearly all the new Fuchsias sent out this year, 15s. per dozen.—Bower Nursery, Maidstone, Aug. 28th, 1844.

EXHIBITION OF LILIUM LANCIFOLIUM

HENRY GROOM, Clapham Rise, near London (removed from Walworth), by Appointment FLORIST TO HER MAJESTY, begs to inform the Nobility, Gentry, and Amateurs that his extensive assortment of this most beautiful Lily, including the rare and splendid variety "speciosum" which is held in such high estimation by the Japanese, is now in flower, and will continue in perfection about a fortnight, and may be viewed every day, Sundays excepted. Admittance Gratis.

JOHN SLATER, FLORIST, Cheetham Hill, near Manchester, respectfully calls the attention of the Floricultural Public to his large and select collection of the following Florists' Flowers.—TULIPS, AURICULAS, POLYANTHUSES, CARNATIONS, and PICOTEES; catalogues of which may be had on prepaid application. 12 plants of named Auriculas, of different varieties, for 20s, package included.

TO CALCEOLARIA GROWERS

THE present being a good time to sow CALCEOLARIA SEED, the Advertiser begs to offer a few packets of his splendid New Spotted kinds, saved with great care, with printed directions to raise the young plants, at 5s. per packet. —J. STANDISH, Nurseryman, Bagshot.

INGA PULCHERRIMA. (Figured in "Paxton's Magazine of Botany" for August, 1844.)—Fine Plants of this extremely elegant and beautiful Exotic, with most of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices:—

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Amycia zygomeris, 7s. 6d.
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" squamatum, 5s.
Hiadela, or Roudeletia longiflora, 12s.
Xyuris companulata rosea (the finest selected from 1000 seedlings), 7s. 6d.

Also the following, in collections:

100 Cape Erices of 100 distinct sorts, (including many fine sorts), 12.
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Habrothamnus elegans, 15s.
Tremandra Hugelii, 10s. 6d. to 21s.
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Drymonia punctata, 5s. 6d.
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Spiræa Reevesiana, 5s.
Viburnum colvilleanum, 5s. 6d.
12 Azalea indica, of 12 distinct sorts, (including fulgens) 21s.

Thomas Jackson, Kingston Nursery, Surrey, August 29.

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N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

Great Yarmouth Nursery, August 20, 1844.

TO THE LOVERS OF PANSIES.

S. WIDNALL, Grantchester Nursery, Cambridge, begs to inform his friends and the public that he has with great care selected his Superior PANSY SEED, warranted to be all new of the present year, and which he can with confidence recommend. This being a favourable season for sowing, it will be advantageous to those who wish to ornament their gardens with this beautiful flower at a very cheap rate, as packets containing sufficient seed, with careful cultivation, to grow 300 plants and upwards may be had postage free at 2s. 6d per packet, or three packets for 5s, upon receiving a post-office order.

T. AND J. BACKHOUSE, NURSERY & SEEDSMEN, York, beg to offer to the notice of the Public their following fine SEEDLING PANSIES —

YORKSHIRE ECLIPSE.—"No. 1 is a large flower, of good form, white ground, blue purple upper petals, and broad margin of the same round the lower petals, the petals meet well above the eye, a good flower." 2s. 6d.

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EARL OF ZETLAND is a flower of excellent form, yellow ground, bronzy crimson upper petals, with broad belting of the same round the lower petals, which meets well above the eye, a distinct and very constant show flower 3s. 6d.

Strong plants are now ready for sending out, postage free when three or more plants are taken. A remittance required from unknown correspondents

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Ditto " 15 " . . . 20s. "
Ditto " 1 foot high . . . 15s. "
Ditto " 3 years old . . . 10s. "

J. G would recommend all who require them to furnish themselves immediately with these Pines, and to plant them forthwith Spring planting is exceedingly hazardous; and when followed by such a season as was experienced during the commencement of the present summer, the young trees are sure to be killed.

Cedrus Deodara raised in the open ground, being the strongest plants yet offered in England, 10s. each. Araucaria imbricata, Pinus excelsa, Laricio, Austriaca, &c. &c. on reasonable terms

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" Eliza	5 0		
Emperor, early variety from Keen's Seedling	3 0	Elton Pine	3 6
		Keen's Seedling	3 6

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WILLIAM E. RENDLE has much pleasure in offering to the Nobility, Amateurs, and Trade the following new varieties of GERANIUMS raised by P. E. Lyne, Esq, the entire stock of which he has succeeded in obtaining.

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Lyne's Princess Alice	each	1	1
Lyne's White Perfection	"	1	1
Lyne's Imogene	"	1	1
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Lyne's Confidence	"	1	1
Lyne's Sappho	"	1	1

The whole set as above for six guineas. The usual discount to the Trade

"Princess Alice" has received two seedling prizes in London. "White Perfection," first prize at Torquay, and the Gold Medal at Plymouth. "Imogene" is described in the *Chronicle*, June 24th, 1843. They all possess most desirable properties, and can be highly recommended as being first rate flowers.

W. E. R. has been induced to offer the above at prices considerably lower than usually obtained for such valuable varieties, in hopes thereby to meet with a more extensive demand. Descriptions can be obtained on application.

Orders will be executed in strict precedence. Plants will be delivered in October next. References or remittances required from unknown correspondents. Plants will be added to compensate for carriage.—Union Road Nursery, Plymouth, Aug. 28

NEW AND RARE PLANTS.

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Cineraria Celestial, No. 1. . . . . 5s. each.
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See Dr. LINDLEY'S opinion in the *Gardeners' Chronicle*, of April 6, page 216, under the letters, C. L. N. "Seedling No. 1, a bright blue. The flowers of this variety are rather small, but they are very abundant, and bright and beautiful in colour. No 2, pure white centre, with the termination of the petals of a delicate azure blue. This is also an abundant bloomer with well-formed flowers, lively in appearance, and forms a distinct and desirable variety." Discount to the Trade on the above when six plants of each are ordered.

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W. JACKSON and Co. beg to state that their 60 beautiful Seedling Calceolarias, selected from upwards of 2000, will be sent out early next Spring, a descriptive Catalogue of which will be printed. Railway communication to all parts of the kingdom. A reference from unknown correspondents is respectfully solicited.—Cross Lanes Nursery, Neadle, Yorkshire.

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AURICULA SEED from Stage Flowers, to be had in Packets at 2s 6d., of W. J. NUTTING, Seedsman, 46, Cheapside, London.

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These Dibbles may be obtained of Messrs. COTTAM and HALLEN, 2, Wimsley-st., Oxford-st., London, through the agency of the principal Agricultural Implement Sellers in the United Kingdom; or from the Inventor, by letter, to his address, inclosing a Post-office order for the amount.—RICHARD SMITH, Upper Hall, near Droitwich, Worcestershire.

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NEW LARGE DOUBLE ANEMONES.		
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The best 40, distinct	15	0
The best 12, do.	6	0
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SWEET JONQUILS.		
Largest double, per doz.	3	6
Large do.	2	6
Single	2	6
EARLY TULIPS.		
Duc Van Thols, per 100	7	0
Do., per doz.	1	0
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Tournsol (fine)	3	6
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20 new sorts, per 100	5	0
Do., mixed ,,	3	6
Largest blue ,,	2	6
,, white ,,	2	6
,, yellow ,,	2	6
,, striped ,,	3	0
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Florabundus, per dozen	3	6
Cardinalis ,,	4	0
Ramosus and many others.		

Narcissus, Ranunculuses, Tulips, Snowdrops, Lilies, &c., in extensive collections.

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From collection of 270 sorts.
Best Double.

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Bouquet Pourpre	0	9
Bouquet d'Orange	1	0
Acteur, large pink	0	9
Comtesse de la Costa, red	0	9
Comte de Vory,—very dark purple	1	0
La Vestale, pure white, bright green tips	1	0
La Reine, pearl white	1	0
Jeannette, blush	0	6
Kroon Van Indien, dark blue	1	0
Jaune Pyramide, yellow	1	0
La Favorite, fine primrose	0	9
Groot Voorst, large blush	0	6
Giraffe, pink	0	6
Don Gratuit, pure white	0	9
Grand Vedette, light blue	0	9
Demodocis, rose colour	0	6
Hirsilia, deep red	0	9
Duchesse de Normandie, fine blue	0	9
Endracht, dark rose	1	0
Flos sanguineus, red with green tips	1	0
Penelope, white and pink	0	6
Perrugne Royale, red	1	0
Duchesse de Bedford, large white, with pink eye	1	0
Gaiste Vlies, fine white	0	6
Rex rubrorum, red	1	0
Nannette, pure white	0	6
Zyrene, white, green tips	1	0
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Lord Wellington, do.	0	9
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Ami du Cœur, do.	0	6
Appius, very dark	0	9
Tulma, large red	0	9
Le plus noir	1	0
Orondatis, large blue	1	0
Toison d'Or, yellow	0	9
Henriette Sontag, red	1	0

Messrs. SUTTON and SONS, Reading, Berks, respectfully present the above as a select list of the sorts most worthy of cultivation, and recommend early application, while they possess fine roots of every variety.

N.B.—Parcels delivered free to any part of London, and properly packed for conveyance to any distance.

THE NEW SUPERB SEEDLING PICOTEE,
"BURROUGHES'S DUKE OF NEWCASTLE."

YOUELL & CO. have much pleasure in announcing they will send out for the first time the above splendid light-edged purple Picotee, raised by the Rev. J. Burroughes. It is guaranteed to surpass any Purple Picotee that has yet been raised. Without commenting further upon its superiority, Y. and Co. beg to refer to a report in a late No. of the *Gardeners' Chronicle*, as follows:—

"The *Duke of Newcastle* is a flower of first-rate properties; it is a light-edged purple; the petals are large, and of good form and substance; even on the edge; the colour unbroken; the pod good, and with less disposition to bar than is common" It obtained the first prize, as the best seedling, at the Norfolk and Norwich Horticultural Exhibition. Price 21*s* per pair, and will be sent out the latter part of next month. The stock being limited, to prevent disappointment early orders are respectfully requested. Y. & Co. will also be enabled to supply at the same time the following superb Picotees, raised by the same gentleman, all possessing first-rate properties, and having been exhibited and obtained first class prizes at several of the metropolitan Exhibitions of the present year. They are as follows:—

		s.	d.
Burroughes's Mrs. Bonyon, Red Picotee		7*s.*	6*d.*
,,	Lady Alice Peel, Rose Picotee	7	6
,,	Miss Jane, Purple Picotee	7	6
,,	Miss Bevan, Red Picotee	7	6
,,	Enchantress, Scarlet Picotee	5	0

CARNATIONS AND PICOTEES.

Y. and Co.'s collection of this beautiful tribe of flowers will be found the most extensive and select in Europe, comprising every known variety of merit. The plants are remarkably strong and healthy, and will be ready for sending out to any part of the United Kingdom and the Continent the latter part of September, at the following prices:—

				£	s.	d.
12 pairs extra fine and very superior first-class Show Flowers				2	10	0
24	ditto	ditto	ditto	5	0	0
12	ditto	ditto	Show Flowers	1	10	0
25	ditto	ditto	ditto	3	0	0

The selection being left to Y. and Co.

Great Yarmouth Nursery, August 29, 1844.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	Orange Tubs, Flower Boxes, &c.
Garden Edging	

EDWARD BUCK will be happy to answer any inquiries, either personally or by post.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Plantes, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

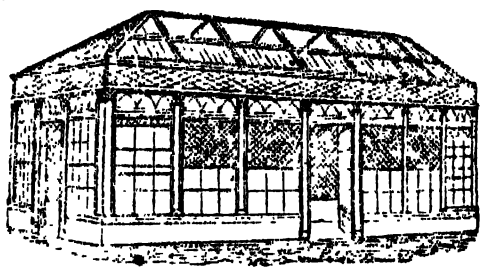
D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane square.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, Aug. 30, 1844.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, Aug. 30, 1844:—

Bones	p. ton	£4 10*s.* 0*d*	Nit. of Potash	p. cwt.	£1 4*s.* 6*d*
,, crushed		5*l.* 10*s.* to 6 0 0	Oil of Vitriol, or Sulph. acid	p. lb.	0 0 1
,, calcined		7 0 0	Rape Cakes	p. ton	4 15 0
Carbonate of ammonia	p. cwt.	2 15 0	Salts, Epsom	,,	9 0 0
Guano, Peruvian, p. tn.		10 0 0	,, Glauber	,,	7 0 0
,, Ichaboe	,,	6 0 0	Sulphate of Ammonia, per cwt., 16*s.* to		0 17 0
Gypsum	,,	2 0 0			
Nitrate of Soda, p. cwt.		0 14 9			

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

TO FLORISTS AND ADMIRERS OF FLOWERS.

BRAIN'S CONCENTRATED LIQUID GUANO, for the Garden, Shrubbery, Hothouse, and Conservatory.

This preparation is peculiarly adapted for the development of Flowers furnishing them with the materials (in a soluble form) out of which they weave their delicate tissues and elaborate their beauteous colouring. It has no unpleasant smell, is easily applied, and thus recommends itself, either for the Garden or Drawing-room.—Price 1*s.* 9*d.* per quart Bottle, and may be had of WM. JACKSON, late Geo. Butler, 93, Cheapside, corner of King-street, and most respectable Druggists and Seedsmen, with full directions for use inclosed.—Works, Thomas-st., Stamford-st., Blackfriars-rd.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

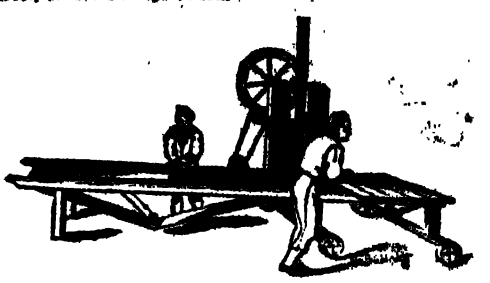


PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 24 inches wide, at 1*d.* per foot, super. A discount to the trade. TEES. J. CROGGON, 8, Ingram-court, Fenchurch-st., London.

GYPSUM, &c.—Burn Gypsum (Sulphate of Lime) for Compost Heaps, Urine Tanks, Stables, &c.; also Sulphuric Acid, Guano (foreign and Potter's), Rape Cake and Rape Dust, and all other Manures, may be had of the Undersigned.
Synopsis of Prices, and mode of use, on application.
MARK FOTHERGILL, 46, Upper Thames-street.

HATCHER'S BENNENDEN TILE-MACHINE. Manufactured and Sold only by COTTAM and HALLEN, Engineers, Agricultural Implement Makers, &c., 2, Winsley-street, Oxford-street, London.



This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With this amount of labour, the product of a day of 10 hours is as follows, viz.:—

1 inch diameter of Tile,	11,000	1½ inches diameter of Tile,	5,000
1½ ,, ,,	8,000	2½ ,, ,,	3,200

The Machine is movable down the drying-sheds, so that it requires no extra boys to carry the Tiles, nor are shelves required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Cranbrook, Kent. No charge made for Patent dues or licence. The purchase of the Machine includes free use of it.

DRAINING OF LAND.

THE A LEVEL, designed for the Use of Workmen, in preserving a uniform fall in Drains and Water-courses. In consequence of the approval expressed and the demand made for these Levels at the recent Southampton Show, Mr. BAILEY DENTON has arranged with an eminent London Mathematical Instrument Maker to make them in any number required. Price 30*s.*

This Level is as accurate as a spirit-level, and so simple, that the workman unable to read can use it with facility. When closed it forms a 5 feet staff.

Orders addressed to Mr. DENTON, Land Agent, 9, Gray's Inn-square, London; or to Mr. CHARNOCK, Wakefield, Yorkshire, will insure a perfect instrument.

HOTHOUSES, CONSERVATORIES, &c., made and fixed Complete in all parts of the Kingdom. One, two, and three-light Cucumber and Melon-Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom; warranted best material. Two-light Boxes and Lights complete, from 1*l.* 8*s.* Garden-Lights made and glazed from 1*s.* per foot, at JAS. WATTS' Sash Manufactory, Claremont-place, Old Kent-road. *** Reference given.

MESSRS. PROTHEROE AND MORRIS have received instructions from T. and C. LOCKHART not to proceed with the Sale as advertised in the *Gardeners' Chronicle* of the 10th and 17th inst.

T. AND C. LOCKHART, FLORISTS and SEEDSMEN, 156, Cheapside, London, having dissolved Partnership with Mr. ANDREW DUNCAN, beg to inform their Customers and the public generally that they will carry on their business as usual at the above address. Their Catalogue of BULBS and FLOWER-ROOTS for the present season has just been published and will be forwarded, post-free, on application.

NURSERY STOCK, KING'S ROAD, CHELSEA.

MR. KIRKE respectfully begs to announce that he has received instructions to Sell by Auction, on the premises, (late The American Nursery) King's Road, Chelsea, on Wednesday, September 11th, at 11 for 12 o'clock, by order of the proprietor, the ground being required for other purposes, the Valuable Collection of CACTUSES, GERANIUMS, CAMELLIAS, ORANGE, LEMON, and CITRON TREES; ALOES, FUCHSIAS, YUCCAS, CHRYSANTHEMUMS, AZALEAS, and SUCCULENT PLANTS; the whole in pots, and arranged in small and large lots to suit the convenience of purchasers; GREENHOUSES, &c. &c.—May be viewed two days prior to sale. Catalogues had on the premises; of Messrs. DIXON and Co., Covent Garden; of Messrs. T. and C. LOCKHART, Seedsmen and Florists, Cheapside, City; and at the Offices of the Auctioneer, 29, Brompton-row, Brompton.

TO BE LET, on Lease of 10, 15, or 20 years, from Michaelmas next, the RECTORY FARM, LITTLE GRANSDEN, containing 400 acres, of which about 250 acres are old and 150 new land; all under-drained.—Apply to the Rev. F. NORRIS, Granaden Rectory, near Caxton.

FARMS TO BE LET ON LEASE.

TO BE LET ON LEASE, HOLMSTEAD FARM, consisting of 239 Acres of Excellent Arable, Pasture, Meadow, and Wood Land, free of Corn Tithes, with a good Farm-house, convenient Out-buildings, and walled-in Cattle-yards well supplied with water. Also HULKS FARM, comprising 185 Acres, with a Capital Newly-erected House and Farm-buildings. There are about 60 acres of Woodland, which may be had with this if required.

The above Farms are situated in the parishes of Cuckfield and Bolney, Sussex; and are about 15 miles from Brighton, skirted by the London turnpike-roads, and 2½ miles from the Haywards-heath Railway station. Possession may be had at Michaelmas.

For further particulars, apply to A.C., 13, Charles-street, Middlesex Hospital, London; or at Holmstead.

STOCK FARM.

TO BE LET, at Michaelmas next, a very compact Farm, with convenient Buildings, consisting of 445 acres of Arable, 98 Pasture, and 188 of Downs Land, in a good state of cultivation, and part of it may be entered upon immediately. —For further particulars apply to Mr. SAMUEL DRUCE, Eynsham, near Oxford.

TO GARDENERS, NURSERYMEN, AND OTHERS.

TO BE LET, with immediate possession, within 20 miles of London, a small NURSERY, and PUBLIC-HOUSE doing a good business. The Nursery is well stocked with choicest American Shrubs, Fruit, and other Trees; is situated within a few minutes' walk of a railway station. Every particular can be procured by application to Mr. KNIGHT, 6, Great Russell-street, Covent Garden; and Mr. MASS, Nurseryman, Wandsworth Common. No person without capital need apply.

BRIGHTON FLORAL and HORTICULTURAL SOCIETY.—The Exhibition of the above Society will be held at the Town Hall, on Wednesday, Sept. 18, 1844, when, in addition to the premiums offered by the Society, there will be two Prizes given for Grapes—one a handsome Silver Dessert Knife and Fork and Spoon, in case, for the best dish of Grapes of any colour, not exceeding 4 lbs. weight; the other a Prize of two large Silver Table spoons, for the best dish of Black Grapes, not exceeding 4 lbs. weight. The above is open to all England. Entrance, 2s. 6d. each. Persons who intend to exhibit are requested to send their names and address on or before the 16th Sept. to the Secretary, Mr. R. COLLINGS, Duke-street, Brighton.

The Gardeners' Chronicle.

SATURDAY, AUGUST 31, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Tuesday,	Sept. 3	Horticultural	3 P.M.
Friday,	Sept. 6	Botanical	3 P.M.

WE resume the consideration of HYBRIDISING. Some of its actual results have already been pointed out (p. 459); others will suggest themselves to any one acquainted with gardening. Let us now consider what further may be hoped for.

What further? Why, we have only stepped over the border, and the whole field of hybridising lies widely spread before us; its boundaries are lost in the horizon, and we shall find them still receding as we advance.

In directing attention to this part of the subject, we do not here propose to include the plants cultivated by the farmer, but to confine ourselves strictly to garden plants. What agricultural applications hybridising may have will be found hereafter in the other department of our Journal.

The ends which it is hoped to gain by all operations directed towards improving the races of plants are many.—To increase the size of flowers, To improve their colour, To approximate their form to some assumed standard of perfection, To enlarge the foliage, as in esculents, To render tender plants hardy, To make barren races fertile, To improve flavour, by changing acidity or austerity into sugary matter, To exchange early for late varieties, are all results that have been gained by hybridising, and which, therefore, may be gained again. We propose to consider each of these points separately.

How far the *size of flowers* may be thus increased can be judged of from the Rose, the Dahlia, the Fuchsia, Pansy, Pelargonium, and Cactus. All these plants are, in their wild state, small-flowered; cultivation alone has increased them greatly, but crossing has rapidly carried it further. By inoculating the common Heartsease with the large-flowered Pansy of the Altai mountains, a degree of vigour was infused into the former which we could not have hoped to obtain by any other means. In other cases, as in that of the Dahlia, by observing the first symptoms of a tendency to enlarge in the natural seedlings, and then crossing the best of them, the tendency has received an immediate impulse, which has by degrees brought about the enormous flowers we are all familiar with. The flowers of Cereus speciosissimus were inoculated with the pollen of Cereus grandiflorus by Messrs. Davis and Co., of Wavertree; and the *immediate* result was a seedling from C. speciosissimus, whose flowers were 10 inches in diameter.

In prosecuting this branch of improvement, care should be taken to select the finest possible flowers on both the father's and mother's side, and to render them unnaturally large by destroying all their neighbours. The plants, too, should be in the most robust health; for we may be sure that no point of constitutional vigour is to be neglected in the parents when a general and permanent increase of it is desired in their offspring. It is moreover conformable to the experience of the late Mr. Andrew Knight, that even the plumpest seeds are more likely to bring a fine seedling than the weaker.

Among the commoner plants to which attention might be drawn under this head, are not merely those which, like the Verbena, the Petunia, and the Cactus, are already in the florists' hands, but others, that have yet gained little attention. Take the Clematis, for example: our wild Traveller's Joy is unknown in gardens, although it has a fine foliage, and a great vigour of growth. Why not cross it with C. florida, or Viticella, or even Flammula? Clematis Viticella is a bad grower, but has beautiful blossoms; it, too, may certainly be improved by some of the finer species. Then, again, the Minores Clematis, with its fine speckled blossoms, is tender, and flowers very late; what would be the effect of an intermixture of it and C. montana, which is so hardy, and flowers so early? What a noble plant, too, is C. azurea to work with! It must not, however, be crossed with any of the red species, for reasons that will be explained hereafter. Can anything be more worthy of attention than this charming genus, which nobody seems to have thought about? To those whose leisure enables them to prosecute such an inquiry we may state that in all probability the species of Clematis will cross most readily in the following order, viz.—1. *C. flammula, vitalba* and *cylindrica*; 2. *C. florida, azurea, viticella, balearica*, and *montana*; but there is no apparent reason why they should not all also intermix, in skilful and patient hands.

Another important race of Climbers are the Honeysuckles. The flowers of our common Honeysuckle are little more than an inch long; but those of the beautiful Tuscan species (Caprifolium etruscum) are twice as large, and in the Caprifolium longiflorum of China the blossoms are full three inches in length. Here are the best opportunities for an improvement of one of our most favourite plants.

Nor do we regard the case of the common Jasmine as hopeless. It is true that it does not produce its berries with us; but if it were kept under glass, and artificially fertilised, it probably would do so. Why not intermix it with the beautiful species from the Azores. It would, in all probability, give its hardiness to that plant and receive in return a finer foliage and more abundant bloom; or, at least, it would hardly refuse to mingle with the Catalonian Jasmine, which is so like it, and then our cottages might be covered with plants as beautiful as those of Barcelona and Italy.

The Laurustinus is another plant entirely neglected by growers of new plants, and yet there is no reason why its flowers should not become as large as those of the Guelders Rose—itself an artificial production. What would be the effect of inoculating the finest of the varieties of the Viburnum opulus, the parent of the Guelders Rose, with the Laurustinus? Either, we should expect, an evergreen Snowball-tree, or a Snowball Laurustinus; or, at least, a considerable enlargement of the flowers of the latter; or, may be, the issue would be a hardier Laurustinus than we had before. But that is beside the present question, which we confine to an enlargement of the blossom.

The double Japan and Chinese Cherries (Cerasus japonica and sinensis), among the finest of our spring shrubs, would be infinitely improved if the size of the common Cherry could be communicated to them; and there is no apparent reason against it. And in like manner the little Dwarf Almond (Amygdalus nana), not now much grown, though a very pretty bush, might, and most likely would, be readily improved by a mixture with the common Almond, or still better with that magnificent variety called in the gardens Amygdalus macrocarpa.

If we turn from shrubs to herbaceous plants, there is the same abundance of materials on which to work. Why not attempt to mix Tropæolum brachyceras or canariense with the common Nasturtium? or the beautiful Hypericum Coris with H. androsæmum, or H. erectum with calycinum? or the annual Larkspurs with Delphinium grandiflorum? or the whole race of Dianthus, including the Indian Pinks and Sweet Williams, with the Cloves and Carnations? or the gay Sea Lavenders with such plants as Statice arborea and Dickinsonii? or, finally, our wild Buttercups with the gaudy Ranunculus of the florists?

In all these suggestions there is nothing in the least contrary to probability; the plants that are adverted to are all of common occurrence, and easy for any one to operate upon—indeed they have been selected for that reason; and they offer an abundant reward to skill and patience.

The other points above alluded to must be considered hereafter.

DISEASES OF PLANTS.—No. II. *See p.* 131, 1844.

[MOSSES, LICHENS, &c.]

BEFORE we enter on the consideration of those morbid appearances which are produced in plants by the agency of Fungi, we proposed to consider how far other cryptogamic species are injurious. In the few cases in which they are so, it is not by the production of any particular disease, but by simply overrunning the leaves and branches, and thus blocking up the stomata, preventing the proper influence of light, keeping up an unnatural moisture, or affording a nidus for the development or preservation of injurious insects. Several species of Mosses and Marchantia, Vaucheria terrestris, and Microcoleus, &c., are very noxious weeds, especially in the case of small and tender plants preserved in frames, and the delicate seedlings of Ferns are frequently destroyed by Palmella botryoides and others of the smaller terrestrial algæ; and they are in some measure the more annoying to the cultivator, because they are extremely difficult of extirpation. If the gardener complains sometimes that his lawns are spoiled by many of the more common Mosses, though in certain situations they add very much to the beauty of his close-shaven sward, the farmer with greater reason laments over his pastures overrun with Moss and Lichen till they are all but useless.

In these cases, however, they are injurious simply by encroaching on the ground which was destined for more useful tenants, and however hurtful occasionally, they cannot be regarded in the light of diseases. In damp situations I have seen trees much infested with the common green Chlorococcus, an Alga of the most simple construction, not only the trunk and branches being covered as with a green wash, but the leaves themselves becoming entirely coated with it, at once to the great disfigurement and injury of the plants thus invested. But the injury produced does not arise from the rootlets penetrating into the tissues and nourishing the parasites at their expense, with the juices intended for the support of the mother plant, but merely as a coat of any other coloured wash, by clogging up the pores and hindering a due assimilation of the sap. In hot countries the leaves of many phœnogamous plants, and the fronds of the more rigid Ferns, are frequently overrun with various species of Moss and Jungermannia, but it is principally the older leaves, whose functions are nearly past, that are thus infested; and it is possible that in some cases they may even be of use in retaining a certain quantity of moisture about them. In these cases, again, there is not the slightest penetration of the rootlets into the tissues of the plant on which they grow. It is scarcely necessary to mention that the Mosses which so often and to such an extent adorn the trunks of our trees, grow upon them, merely because the cracks in the bark and the mouldering surface itself affords a fit soil for the germination of their spores and the support of the full-grown plant. Lichens vegetate on the hardest bodies, as granite, quartz, and glass, and not unfrequently the same species which flourish on the hardest rocks abound also on trees. There can be no question, then, in such instances, of real parasitism. There may, indeed, be a few cases amongst those Lichens which are produced on tropical leaves, in which there is a certain connection between the tissues of the matrix and parasite, for several of these approach very nearly to Fungi; and some of the cortical species (also allied to Fungi), common both to the new and old world, are certainly very intimately connected with the bark, without, however, destroying the subjacent tissues; yet, in general, it may be said of cryptogamic plants, with the exception of Fungi, that they merely choose other plants as a base on which to rest their fronds, without, in the majority of cases, having any but the most superficial union. In the officinal barks, for instance, those specimens which are covered with healthy Lichens abound in the peculiar principles which make them valuable as medicines, while those portions which are covered by the beautiful Hypochnus rubro-cinctus, and other Fungi, are totally worthless, because their tissue has been penetrated and preyed upon by the mycelium, or in other words, the delicate rootlets of the Fungi. Still, it must be confessed that where the growth of trees is slow from an ungenial soil, or where the atmosphere is such as to encourage the development of Lichens on the smaller fruit-bearing shoots, their fertility is often very much injured. This does not appear, however, to be always the case. In the deep recesses of large woods very vigorous trees are often found much covered by Lichens, and Meyen tells us, that in the Riesengebirge and the Harz mountains, the Firs in the neighbourhood of little waterfalls are absolutely covered with Mosses and Lichens, and yet grow with the utmost luxuriance; and it is notorious that in tropical woods, a single stem in the most vigorous health often bears upon its trunk and branches a whole garden of Ferns, and other false parasites, without the slightest injury. Most gardeners, however, must know by experience that old fruit-trees which have become covered with the common yellow Lichen (L. parietinus), and scarcely produce any fruit, will, if carefully cleaned, recover sometimes much of their former vigour, sending out new shoots, and producing abundance of excellent fruit. In such cases, it is probable that the Lichen prevents the proper action of the light upon the tender bark of the terminal shoots, and thus weakens the buds, or by encroaching on the buds themselves, destroys them. This may not always be the case, and trees almost smothered with Moss and Lichen may be excellent bearers; but if so, it is probable that this arises from the strength and healthy state of the roots, and the genial nature of the soil, which makes the buds so vigorous that the new shoots outstrip the Lichen. Where it is thought necessary to prevent the growth of Lichens and Mosses on trees, the best method, perhaps, is to use a wash of quicklime, which has the advantage of destroying a large number of insects, if it does not at all benefit the tree directly. Except in the case, however, of fruit-trees, this indirect benefit hardly compensates for the loss of picturesque effect; and to the more attentive observer few objects, even amongst phœnogamous plants, present more beautiful forms, or more admirably blended colours, which in some cases are of great brilliancy, than many of these humble productions, which so often entirely escape the notice of the casual eye.—*M. J. B.*

ON THE PRESERVATION OF FRUITS.

THE preserving of fruits forms an important part of the art of gardening, but it is in very few places that sufficient attention is paid to it, for in many gardens, after the fruit has been gathered, and that not in the most careful manner, it is carried into the fruit-room and there laid upon the shelves, sometimes covered with hay or straw, and sometimes exposed to the atmosphere of the house. Nothing can be more injurious to their keeping than being subjected to all the currents of air to which the house or room may be exposed.

Many contradictory opinions are given on this subject by different authors, but they all seem to arrive at this conclusion, that the prevention of excess of air in the room where fruits are kept, is the most important point to be attended to, and is generally the least regarded. Some persons recommend packing the finest fruits in earthenware jars amongst moss, and excluding

the air by stopping up the mouths of the vessels, and then plunging them a foot deep in dry sand, in preference to keeping them on open shelves in the fruit-room: but mass is objectionable, as it communicates a musty flavour to the fruit. Sand has been adopted with success in the following manner:—Having procured some air-tight vessels, of any description or size, then put in a layer of sand, and a layer of Apples or Pears alternately, until the vessel is full; the sand must be well dried before being used, either by exposure to the sun or by fire-heat. After the vessel is full the lid should be perfectly secured to prevent the admission of air, by means of a piece of oil-cloth or leather, made larger than the rim of the vessel, so that it may lap over three or four inches; then take a piece of strong string and tie it after the manner that housekeepers tie up their pots of jelly. Some prefer sealing the lids, but this is attended with a disadvantage, as the covering is required to be removed every time that fruit is wanted. After the vessels are all properly secured, they should be placed in a cool airy room or cellar, with a temperature varying from 32° to 40°. There should be vessels of different sizes, for the different varieties of fruit, and on no account should more than one sort be put in each vessel, as some kinds ripen sooner than others. Each vessel should be numbered to correspond with a list of the sorts, so that it can be easily got at when wanted.

If there is not the convenience of a room, the vessels containing the fruit may be plunged in the open ground to the depth of from four to five feet; there they will be secure from any sudden change in the atmosphere. After the hole is made, put in a layer of charcoal, and then insert the vessel, filling up the intervening space with charcoal, pressing it firmly with the foot; the charcoal will be found to keep all cool and clean.

Amongst the numerous materials employed in preserving and packing Apples and Pears, I am not aware that charcoal has been employed; but it will be found upon trial to answer as well, if not better, than sand, as it is not so liable to absorb moisture. In the use of charcoal instead of sand, I would recommend it to be ground fine and sifted over the Apples as they are laid in, which should, in all cases, be done in the most careful manner, as the least bruise in one will spoil all.

The late Mr. Knight, in one of his papers in the "Hort. Soc. Trans." says, "The most successful method of preserving Apples and Pears, which I have tried, has been placing them in glazed earthenware vessels, each containing about a gallon, and surrounding each fruit with paper; but it is probable that the chaff of Oats, if free from moisture or any offensive smell, might be used instead of paper, and with much less expense or trouble. These vessels being perfect cylinders, about a foot each in height, stand very conveniently on each other, and thus present the means of preserving a large quantity of fruit in a small room. If the spaces between the top of one vessel and the base of another be filled with a cement, composed of two parts of the curd of milk and one of lime, by which the air will be excluded, the later kinds of Apples and Pears will be preserved with little change in their appearance, and without any danger of decay, from October till February and March. A dry and cold situation, in which there is little change of temperature, is best for the vessels. I have found most Pears to be greatly improved by their being taken from the vessel about ten days before they are wanted for use, and kept in a warm room; for warmth at this, as at all other periods, accelerates the maturity of the Pear." Here, then, we have the following important information, viz., the exclusion of air, and a low temperature, as the principle for keeping or retarding the ripening of fruit, and warmth for bringing it to maturity. The latter may be done at any period after the fruit has been gathered, by placing the vessels in a temperature of 60° to 70°.

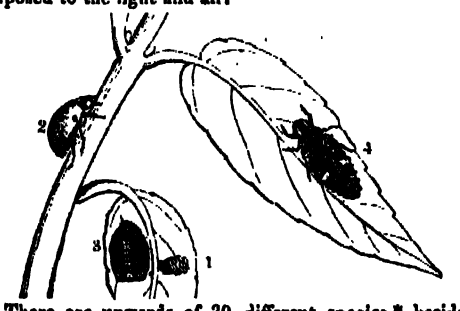
I, however, differ from Mr. Knight in the use of Oat-chaff and paper; in the first case, it is difficult to procure the chaff of Oats free from moisture or an offensive smell, of which the fruit is sure to partake; and paper, except what is generally termed silk-paper, imparts a disagreeable flavour to the fruit. In fact, paper should not be used at all, for it is apt to damp and destroy the fruit in whatever situation it may be placed.

The fruit-room should be fitted up exactly like a pair of bed-room drawers, of some hard wood. Fir, being apt to spoil the flavour of the fruit, should never be employed. These drawers must be made to fit as tight as possible, in order to exclude air, and should be numbered in regular order, to correspond with a list which should always be kept in the fruit-room. When all is ready for the reception of the fruit, place in each drawer a quantity of fine dry sand or charcoal, then a layer of Apples, until the whole is full; then shut up the drawers and let them remain until the fruit is required for use; if any are wanted let them be taken out some days previously and placed in a warm room, or hothouse, until they are fit for the table. The advantage of such a fruit-room must be obvious to every practical gardener. First, we have the entire prevention of air, which is allowed by all to be injurious to their preservation; second, the sand or charcoal checks the evaporation of the fruit, thus preserving their flavour, and at the same time any moisture yielded by the Apples is absorbed by these materials, so that the Apples are kept dry and mustiness is prevented. The fruit preserved in this manner will be found as fresh in May and June as when first put in.—*J. McIntosh.*

ENTOMOLOGY.

THE SEVEN-SPOTTED LADY-BIRD, named *Coccinella septem-punctata*.—No one connected with the country, or who takes the slightest interest in the cultivation of a flower, can be ignorant of the services rendered to him by the pretty lady-birds, which have even escaped the sad prejudices of our nation as regards insects, so that children caress these handsome and most useful creatures in England, and in France they seem to be equally esteemed, being called *Vaches à Dieu*, and *Bêtes de la Vierge*, cows of God, and insects of the Virgin. It seems, however, that many persons are unacquainted with the early stages of their existence; and as this has led to the fatal error of destroying the larvæ, which are amongst the most valuable aids the cultivator has, in keeping under the aphides, it becomes very important that the farmer, as well as the gardener, should be at once enabled to distinguish his friends from his enemies.

If we examine the underside of the leaves of Turnips, Hops, or any plants, where they are greatly infested with plant-lice, we shall be sure to find little clusters of orange or buff-coloured eggs (fig. 1) deposited close together on their ends, and considerably resembling those of the White Cabbage butterflies at the first glance, but they are very different when magnified; they are more elliptical, fleshy, and smooth, not being sculptured as those of the papilios are. The first brood hatches in May, when the pearly empty shells alone remain, and the little black animals issuing from them run over the leaves in search of food; at this time they are rough with hairs, and have six short strong legs; as they grow they change their skins, and eventually those of the largest species (C. 7-punctata) attain the length of five or six lines (fig. 2); the larva now has a slate-coloured skin, smooth but dull; the body is attenuated towards the apex, and extends far beyond the six black sprawling legs, so that it looks like a little gay alligator, which it likewise resembles in its voracious and carnivorous habits. The head is rather small, trigonate, and of an orange-colour, but black at the base, the little black eyes and antennæ being scarcely visible, but the mouth is well developed; the black palpi are comparatively large, and the two rust-coloured jaws sharp; the 1st thoracic segment is broad, of an orange-colour, with a black spot on the centre and one on each side; these are covered with rough tubercles terminated by bristles; the two following thoracic segments are broad, with spined black tubercles, and the nine abdominal ones are shorter, each having six spiny tubercles forming as many lines down the back and sides; they are very black, excepting the lateral ones on the 4th and 7th segments, which are bright-orange; the six legs are shining black, tapering, bristly, and terminated by a single claw. When these larvæ are full fed, they attach their tails to the leaf on which they lived, or seek some more sheltered situation in the bark of trees or under paling, especially those which are to rest through the winter, and pass into pupæ (fig. 3), which are somewhat oval and convex, black, variegated with yellow and orange; in this state in spring and summer they remain only 12 or 14 days—probably less in fine weather—when the skin bursts down the thorax, and the perfect lady-bird issues forth, of a pale yellow or ochreous colour, gradually assuming its natural tints of red and black, as it is exposed to the light and air.



There are upwards of 30 different species,* besides endless varieties of these useful and beautiful little animals inhabiting this country, one of the largest and most abundant being the lady-bird with seven spots, called by Linnæus Coccinella septem-punctata. It is oval, convex above, flat beneath, shining, and black; the antennæ are short, clavate, and 11-jointed; the jaws are strong and sharp, and the palpi large;† upon the head are two white dots, and there are two larger ones on the anterior angles of the thorax; the elytra are bright brick-red, with seven black spots, the 1st upon the base of the suture, the others forming two triangles; wings two and ample; the tarsi are 4-jointed and terminated by two claws (fig. 4).

There is a smaller species, named C. dispar, or C. bipunctata, often with two black spots on the red elytra, but sometimes black with red spots, which is equally abundant. The lady-birds are probably to be found during the whole year, as they winter under bark, in chinks of posts, paling, &c., and are seen in the earliest days of spring, if the weather be fine, and late in the autumn also. I have met on the sea coast in September with immense numbers, which I imagine had deserted the Hop-grounds and were about to offer their good services to the farmer in his Turnip-fields.

The vast quantities of aphides which the larvæ of the lady-birds destroy cannot be calculated, for they seem never to cease from feeding, except when they are moulting, and consequently increase very rapidly in size; and the ladybirds themselves are equally active. One sees these pretty scarlet animals running over the plants until they meet with an aphis, which they immediately seize with their broad feelers, and keep squeezing out the saccharine contents, until the crumpled skin alone remains; they then attack another, and will thus proceed until, leaf by leaf, the plant is freed from this disagreeable and destructive blight. I was astonished to see how rapidly one of these little creatures picked up and ate the small apterous aphides on a Pelargonium, at the rate, I should say, of three or four in a minute; and a pair which I placed upon two Pelargoniums, cleared off all the plant-lice, with which they were greatly infested, in the course of 24 hours, so completely, that I could not find a living specimen. On the Continent their valuable services are so well understood, that the lady-birds are collected and placed upon Rose bushes, &c. to extirpate the aphides.—*Ruricola.*

* Vide Curtis's Guide, Genus 439.
† Curtis's Brit. Ent. pl. 260.

Home Correspondence.

The Hyssop of Scripture.—At p. 556 appears an interesting article on the Hyssop of Scripture. Its object is to prove that the Caper-plant is that Hyssop. Professor Royle has argued very ingeniously, and it is not my present purpose to dispute his general conclusion. I only wish to make a few observations on the last point of resemblance adverted to by the Professor. He seems to have found most difficulty in explaining how the Caper-plant would yield a stick long enough for a man to lift a sponge upon it to our Blessed Saviour's lips. Now, I am of opinion that there is no necessity for supposing that the stick was of Hyssop; indeed, it appears plain to me that it was not. St. Matthew and St. Mark both say that the sponge was put upon a reed; St. John alone mentions that they put it upon Hyssop. But a very obvious way of reconciling both, is to suppose that the sponge was placed among the small twigs of a bunch of Hyssop previously tied to a reed, and so lifted up to our Blessed Saviour's mouth. The bunch of Hyssop would not only safely support the sponge, but its twigs and leaves would receive the vinegar which might drop from the sponge, and prevent its running down the reed, and annoying the soldier who held it. St. Augustin is clearly of this opinion; for, having previously said that the sponge was put upon some Hyssop, he writes thus:—"Nor need we wonder how the sponge could be put up to his mouth, ... for, as we read in the other Evangelists, which this one (St. John) omits, it was done by means of a reed *. The very learned and acute commentator Estuis † inclines to what he considers a very probable opinion, that the Greek word in St. John, ὑσσώπῳ (*Hyssopo*), is an erroneous reading, and should be ὄσσῳ (*Hysso*), which means a spear-handle or a long stick, and which corresponds with the word *reed*, used by the other Evangelists. This would do away with the Hyssop altogether. But we may also very probably conjecture, with another very useful expositor whom I have examined, that a soldier very naturally used his lance, which was ready in his hand, on this occasion, and that this was meant by the word καλαμος, used by St. Matthew and St. Mark. For, though this word is translated a *reed*, it was very commonly used for a lance or spear; and it is very fair to suppose that the soldier would fix the bunch of Hyssop on the point of his lance, and so raise the sponge to the lips of our crucified Redeemer.—*F. C. Husenbeth, Cossey, near Norwich.*

Valerian Root.—Your correspondent, "A.H.," has been singularly unfortunate in the experiments he has made, with the view to ascertain if cats are enamoured of Valerian. This fact, I beg to observe, is undoubted. I verified it myself about three months since, and it stands thus entered in my Note-Book.—"May 21st. Purchased at Covent-garden market a root of Valerian, quite fresh. Conveyed it home mysteriously in an omnibus, much to the horror of the passengers, who eyed the bag in which it was contained as if it would breed a pestilence. Several parties quitted the omnibus abruptly, sniffing, and casting a look behind them not readily to be forgotten. I sat by, unmoved as a stoic, of course disclaiming all connection with the bag. Arrived at my journey's end, I hastily dismounted, dragging my charge after me, and was soon lost to sight. At night I tied the Valerian up in two sheets of thick brown paper, suspending it about 18 inches from the ground, and fastening it round the root of a tree. In the morning I found the paper very much torn and scratched. It exhibited, too, distinct traces of the various cats' teeth that had been engaged on its destruction during the night. Early next morning I contrived, unnoticed, to watch the passing scene. There sat seven sleek grimalkins, evidently in high enjoyment; while an eighth (no doubt a tom-cat), was rolling himself over and over on the Valerian, which was now strewn all over the ground. In a few minutes the whole were in a wonderful state of excitement, their festival terminating with a chorus, the harmony of which caused me to issue instantaneously from my concealment, and liberally reward the performers with the handle of a long rake. By this exploit I effected the 'lay of the last Minstrel!'"—*William Kidd, New Road, Hammersmith.*

Growth of Trees.—In the *Chronicle*, p. 541, there is a short article headed "Growth of Forest-trees." To me it is not satisfactory. We all know that if a tree is fastened to a wall, we never see the shreds moved upwards by the elongation of the stem; or when the stem gets to the coping of the wall, I never knew of the coping being moved by the pressure. We see plenty of strong shoots issuing from the old wood, but I do not believe that the old wood ever elongates.—*A. S.*—"A Subscriber, Ireland," states on this subject, that the result of his experience causes him to doubt the generally rumoured opinion that wood lengthens after being formed. In opposition to this, I will mention a fact that has come under my own observation. In the month of July,

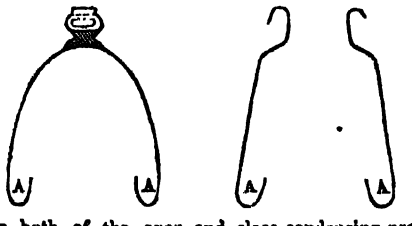
* S. Augustinus in Evang. Joann. Tract cxix. de Cap. 19.
† Estuis in loca difficiliora S. Scripturæ, in Joan. 19.

1839, whilst looking at a fast-growing plant of Abies Deodara, in my plantation, a friend who was with me remarked, that the top shoot of the year was going up with two leaders, and immediately removed one with his fingers, just within his reach. The annual growth of the tree in question, in height, is well defined; and now in 1844, the bottom of the leading shoot of 1839 appears out of the reach of any man of the common stature. It may be said that in so trivial a circumstance as pinching a shoot off a tree, I may probably be mistaken in my date, but the fact is, I made a memorandum at the time of my friend's visit; and he was never here before, nor has he been since.—*A Subscriber.*

Mulberry-trees.—A correspondent, p. 523, speaks of having a fine Mulberry-tree about 200 years old, of which he appears (and most justly) proud: he adds that the alterations he is obliged to make will compel him to bury the root five or six feet below the surface of the ground. These alterations will inevitably be fatal to the tree, for the root of the Mulberry cannot bear that pressure. He has, therefore, no alternative but to remove it, and he must then remember that he is dealing with one of the most difficult plants he possesses, at a very advanced age, and in the removal he must have the hand and eye of the master assisting. If autumn is the time for the removal, he should first select an eligible situation to which to remove it, and, taking the tree at the size he describes, make a pit in a circular form, six yards in diameter and two feet deep; and if the bottom of the pit is not congenial, as for instance gravel, tile it, then put in about three or four inches of the best fine-riddled loamy soil that can be got—nothing is better than old rotten turf; the bed being now ready for the plant, take care to have an ample quantity of good materials at hand for filling up the pit. These things being finished prepare to take up the tree, by removing the soil to the extent of six yards all round the trunk, until you lay the main roots bare; erect three poles round the tree to be raised with a pulley, which must be fastened carefully to the tree under the main branches; give the pulley a steady pull, and ascertain whether you can raise the tree, but by no means force it or tear the roots. If you cannot stir it, secure the pulley where it is, and ease the roots of the soil with increased care, then try the pulley again: repeat this every two hours, adding additional caution as you get the finer roots, and always take care to bind your pulley, as this will always show you the resisting root, and call your attention to the point where your careful exertions are wanted; in this way you will raise the tree, but do not let it fall from the pulley poles. When it is up take it to the place where you intend to plant it with as much care as that with which you took it up, and lower it in the way you raised it, taking care to place all the roots in their natural position and at ease; then cover the roots three or four inches thick with the same sort of soil as you have under it as lightly as you can, keeping the tree perfectly steady. Now water moderately with guano water, and lay on about four inches of loose warm stable manure, and in like manner proceed until you get to the surface, always before watering raising and settling the tree a little so as to let the soil to the roots. In the upper layers use any compound that is at hand, which is light and nourishing, with either slaughter-house, pig, or artificial manure, and then bank it up and turf securely, steadying the tree with three or four props for the winter, and covering the whole up with two or three feet of warm stable manure, which should be exchanged from time to time during the winter. Give the roots at intervals a moderate watering by removing four turfs and putting in about four bucketfuls of sockage-water, chamber-water, or guano-water. In this way I removed two large Nut-Almond trees about three years ago, larger than what "A Correspondent" describes, and they did well; the year before they had fine full-grown shelled nuts. Some years ago the Duke of Devonshire also removed a much larger tree than the one described at p. 523, from Derby to Chatsworth, a distance of upwards of 25 miles, with success. About 18 years ago I removed a fine Yew, of more than 20 years' growth, from a distance, with complete success, and it is now a very fine tree; it required my personal attention for two years.—*J. W. Buchanan, Nuneaton.*—Another correspondent writes as follows:—If a very large limb of the Mulberry-tree is well stocked and planted, it will take root and grow very well. I imagine that "A Correspondent" may hasard the burial of his old friend, and proceed with his improvements. Having had much to do in planting and laying out grounds, it has happened frequently that I have buried many trees 3 or 4 feet in the soil. Old trees in many instances died—young ones in most cases flourished the more. Young trees, but more particularly Poplar, Elm, and Beech, will throw out rootlets 3 or 4 feet above what before sustained and supported life. I have never found that Oaks liked the operation of covering in and embedding them to any extent, except in a small way, viz., in making roads on the slopes of planted hills: the soil thrown on the lower side amongst them always gave them fresh vigour, as it does all trees, even the Fir tribe.—*K.*

Van Mons's Pears.—Your remarks on the best mode of improving the fruit of Elæagnus parvifolia brought to my recollection the principles on which Professor Van Mons, of Brussels, the producer of so many of the fine new Belgian Pears, proceeded in obtaining them, which, as I had the details from his own mouth, may be worth stating, especially as I do not recollect to have seen a distinct explanation of his views in any English horticultural work. He paid no attention to impregnation with the pollen of superior sorts, as practised by Mr. Knight, nor, as far as I remember (though on this head will not speak positively), did he care whether the pippins which he first sowed were of Pears of first-rate quality or not. His great object was to raise a large stock of young seedlings. From these (of which he showed me probably a quarter of an acre, growing in the rich alluvial soil of his nursery, in the lower part of Brussels), he selected those plants which, from their vigour of growth and largeness, and (I think) thickness of leaves, he judged likely to answer his purpose, and transplanted them (I incline to believe more than once, to hasten their blooming), waiting patiently the six, eight, or ten years that elapsed before they bore fruit. He did not care of what quality this fruit proved. He sowed all the seeds of all the kinds, and again selected the best plants. These again were transplanted, and usually bore fruit after a less number of years' growth than the first generation, and several of the Pears always proved of good quality. But a third sowing and similar selection and treatment were necessary to obtain his finest kinds, and almost the whole of the produce of this third generation was excellent; and it was in this way he raised his Marie Louise, and other fine sorts. Thus, as far as my recollection serves, his great principle was to select from successive generations, out of a large stock of seedlings, those which from long observation he knew would be most likely to produce good sorts, and it was not till the third generation that he calculated on producing first-rate fruits. He told me that he had originally been led to follow this plan from his experience in raising Roses from seed, of which he had gained many fine varieties, and he pursued a similar method in obtaining new Apples. Might it not be worth while to add to the course of treatment which you have so well pointed out for Elæagnus parvifolia, the selection of the most vigorous and promising plants for two or three successive generations from seed? And probably a similar selection might also be important in trying to raise improved varieties of Raspberries, Currants, &c.—*W. S.* [We have before heard something of this plan: but it is to be remembered that Dr. Van Mons obtained very few good Pears out of thousands of seedlings; and that Mr. Knight obtained very few bad ones out of a very small number of seedlings. We prefer our own method.]

Bulb Water Cucumber Glasses.—I some time ago made several experiments with these, in opposition to the dry cylinder. I found that the fruit in the bulb glasses, after ten days' growth, was about one-third longer and twice the weight of those grown in dry cylinders; and finding that with these advantages the quality was not injured, I proceeded last year to make various experiments upon Peaches, Pears, and Grapes. The constant evaporation of water upon the fruit increased the size of the Peach, but injured its flavour; upon the Pear no beneficial effect was apparent; the Grapes were, in some instances, improved in size and quality; those that hung nearest the water were preferable, and some of the berries at a distance from the water prematurely decayed. In the meantime, however, my object in writing is to call attention to a propagating glass (which I have constructed constantly to evaporate water by heat, and condense it by cold alternately), for keeping the cutting or plant in a constant state of moisture, similar to Ward's cases. I have placed a few in the hands of my gardener, who reports favourably of them. The accompanying is



a plan, both of the open and close condensing propagator. The close condenser, No. 1, should be somewhat of the form of a conical dome, or between the cone and the parabola, in order to allow of the drip, on adhering to the interior of the glass, to descend into the channel A, for the reception of the water; the channel being once filled needs no farther attention, as the diffusion of moisture by heat, and its return and alternate condensation, not only feeds with moisture the plant or cutting more regularly than by syringing, but by its condensed particles adhering throughout to the interior surface of the glass, the drip is prevented. No. 2 is an open condenser applicable to Grapes, either in or out of the house; it would require more frequent supplies of water than No. 1, as the greater portion of the water would fly off by evaporation, and would not be condensed again into the glass. Ribbed glasses are perhaps preferable, for preventing drip, to plain glasses.—*Apsley Pellatt, Falcon Glass Works.*

Asparagus, &c.—"If you please, Sir," said my gardener to me a day or two ago, "I want some more salt." "Salt!" I replied, "have you not plenty of liquid manure fixed and prepared with sulphuric acid? What can you possibly want with salt?" "Why, Sir," returned the man, "we want that too; but you know, Sir, you said in the spring, that we never had such fine Asparagus before, and depend upon it, it was all owing to that 'ere salting we gave the bed last year." I quite assented to the fact and the inference, and more salt was ordered. I was turning away, when the man again arrested my attention: "We must not make the new Asparagus bed yet, Sir?" "And why not?" I replied; "the weather is fine, and you have plenty of dung?" "Why, you see, Sir, them young plants a'n't done growing yet; and as we had such a capital crop of Strawberries because we didn't cut off the leaves, I should think what's good for the Strawberries is good for the Grass; and John Squinell killed all his Asparagus by cutting off the tops in June." Here are two practical proofs of the value of the advice contained in the *Gardeners' Chronicle*, viz. the salting of Asparagus, and not cutting off the leaves of the Strawberries. I give the colloquy as it occurred, because the testimony is all the stronger for being unsought. Your correspondents who have failed in the use of salt, have doubtless applied too much. The quantity I used to my bed was a pound to every square yard, applied after cutting off the tops, and early in the spring in rainy weather. With regard to the Strawberries, I think my gardener's argument unanswerable—"What's good for the one is good for the other." I certainly never had such fine plants in the spring, or better crops in the summer, than I have obtained since I left the leaves alone. Can you explain the reason why Myatt's Eliza has completely failed this year, both in my own and neighbour's garden? The stock was good and true, and bore well last year; but this, I have not had a dozen fruit on three beds.—*C. R. Bree, Stowmarket.* [Dry weather?]

Destroying Wasps.—Your correspondent's plan of putting the spirits of turpentine into a bottle instead of into a cup, is a decided improvement. If he has an opportunity of doing so, would he try a plan I have suggested more than once, but do not know whether it has yet been tried? Let a small quantity be squirted into the hole as far as possible, and then let the hole be blocked up with clay. It is possible the soil may imbibe so much of the turpentine as to prevent success, but the experiment is worth trying.—*J. S. Henslow, Hitcham.*

To destroy Ants.—"It happened that a piece of camphor was laid in a drawer containing sugar, and which was sadly infested by ants. On opening it a few days afterwards, the bottom of the drawer was literally strewed with dead ants. The experiment was repeated with success—a small piece of camphor placed in a corner of the drawer being quite sufficient. Camphor dissolved in alchohol and diluted with water might destroy them if sprinkled on trees or walls, or if poured into their nests."—*John J. Godfrey, Albany, New York, March* 3, 1832. "Proteus" forgets where he met with the foregoing extract, neither has he tried it; but, concluding from late Numbers of the *Chronicle* that the destruction of ants is an object of interest to some of his fellow-subscribers, he contributes his mite to their service.

Sting of a Bee.—I beg to inform a correspondent in a former Number, who applies for a remedy for the sting of a bee or wasp, that the application of a washerwoman's blue-bag, moistened, is the best remedy, and acts almost like a charm instantaneously; "it is far preferable to liquor potassæ, or any alkaline solution.—*Medicus Corvagiensis.*

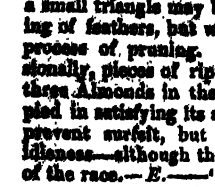
Gooseberry Caterpillar.—Being for many years annoyed by this destructive pest, I have endeavoured to get at the root of the evil by studying the habits of the insect. In a flower-pot filled with earth, and covered by a finger-glass to prevent the caterpillar wandering, I placed on a leafy slip of the Gooseberry tree six caterpillars, supplying them every second day with a fresh sprig, and thus watched their progressive changes until they dropt from the branch, and buried themselves. In this manner I discovered that there are two seasons in the year for the ravages of this pest. The first caterpillars appearing about the middle of May, and eating for five weeks, in this time the usual mischief is done, and the fruit is destroyed, unless the trees are carefully picked; but I imagine that few persons are aware that the evil is only half met by this one picking. The Saw-fly (Nematus Ribesii), according to Stephen, again emerges from the pupa state in the beginning of August, or a few days earlier, according to the season; and after having again defoliated the trees, deposits itself in the earth until the May of the following year. The early decay of the Gooseberry leaf—the indifference about the tree when the fruit is gone by—may be the cause why this second swarm is not taken notice of; but certain it is that on the second picking depends the extent of the plague for the next year. If then carefully picked there will be no larvæ in the ground for the next season. If neglected, the increasing plague of insect life goes on. Two successive years of autumnal picking, I can say from my own experience, will banish the Gooseberry caterpillar, though one careful looking over the trees on the third year in autumn may not be misplaced. Perhaps gardeners are not aware that seedling Arbutus are a favourite food of the same caterpillar.—*A Lady Gardener, County Cork.*

Sporting Character of the Peach.—A rather curious instance of this has occurred here. A Peach tree—the Vanguard—has produced a very fine red Roman Nectarine. The Peach tree has a fine crop of Peaches, and the Nectarine looks singularly curious among the Peaches. In what way can you account for it? I never saw anything of the kind before.—Did you?—*M. Busby.* [Yes—often. These occurrences are called sports, and it was doubtless thus that a Nectarine was first obtained.]

The Gray Parrot.—In reply to "A Constant Reader," I would mention that a good way for preventing a favourite bird from picking off its feathers, is to brush or rub the parts that it is fondest of picking with a strong solution of bitter aloes soaked in water. If this is done for a short time I imagine the bird will soon desist from playing these tricks.—*M. H. W.*—Another correspondent remarks that the bad condition of "A Constant Reader's" bird is occasioned by "want" of "attention to diet." "Bread and milk, chicken bones," &c. are not to be met with every day in the African woods.

Discard this system, and begin by giving a drop or so of castor oil dabbed on a small piece of bread, previously saturated with honey or with sugar and water. Remove with a sharp file the apex of the lower mandible, so that a small triangle may be formed; this will stop the drawing of feathers, but will not interfere with the necessary process of pruning. Feed on Hemp-seed, with, occasionally, pieces of ripe fruit, and now and then two or three Almonds in the shell. The time necessarily occupied in satisfying its appetite with the seed will not only prevent surfeit, but will stop the screaming through idleness—although the gray parrot is not the most noisy of the race.—*E.*——"A Lady" writes—"I purchased a gray parrot that had scarcely a feather, and it continued to pluck them until it was taken off all greasy food, also meat, and even bones, as the marrow gives them a taste for blood, and they will even pluck their feathers for the sake of the blood at the roots: they will lose this habit after a time, should this plan be strictly adopted:—Capsicum twice a week should be given till they assume a healthy appearance. Seeds are what they like. My bird in a few months had a fine plumage."——Another writer recommends change of food, viz., bread scalded in water, Indian corn, and occasionally a few Almonds. The heat of the skin is the cause of Poll's troubles. It should also have tepid water to wash in, and should always be kept out of draughts; the latter are most injurious, and generally fatal to the tribe, or any birds accustomed to a warm climate.—*Falcon.*——A fifth correspondent, signing himself "Medicus Corcagiensis," says that "A Constant Reader's" treatment of his parrot is the cause of his depriving himself of his feathers. The same writer states that animal food in any shape or form, if given frequently and long continued, will produce this effect.——Do not allow the gray parrot to pick any more chicken-bones, or any kind of meat; confine her strictly to bread and milk, and a little hemp-seed, if she will eat it. Ripe sweet fruit may be offered occasionally; give her now and then a shallow pan of water, tepid, to dabble about in like a duck. I should like to hear the result of this regimen in the course of two or three months.—*Psittace.*——Milk and chickens' bones are bad for a gray parrot, but particularly the latter. Parrots are fruit-eating birds, but, like their fellow bipeds, are fond of food that is not good for them. Animal food induces a feverishness in the skin, which causes them to pick their feathers; these easily come out, and they get a little soft picking on the ends of the quills, and thus it goes on till, unlike the Kilkenny cats, not even a vestige of their tails remain. They delight in a mealy Potato, or bread soaked in water, which agreed right well with one in my possession for some time.—*B. F.*——"N. S. H." asks, "If any remedy can be applied to prevent a favourite bird picking off its feathers?" To this I answer, No. This is one of the inveterate bad habits peculiar to some birds, from which they never can be weaned. Your correspondent will, I fear, have an unsightly bird to look upon, as long as his parrot survives, if, indeed, it is considered a matter of "necessity" to reckon him as one of the family, and so preserve his life. I have had several birds during the last six years, inoculated with this annoying propensity, and in every case I have found it expedient to shorten their lives. Their *personel* has rendered this a simple act of humanity.—*William Kidd, New-road, Hammersmith.*

Plan of keeping up a Moist Atmosphere.—"A." has found the following mode of maintaining a moist atmosphere, during the propagation of cuttings, successful:—



Reference to Plan.

a The cover of a handglass.
b The framework of ditto.
c A tray, or riddle, having a bottom made of copper wire, or perforated zinc, to receive soil wherein to plant cuttings.
d An earthen pan, filled with water.
e Cuttings.

Place the pan upon the ground, and the tray upon the pan, and over these put a handglass.

Foreign Correspondence.

Hong-Kong, March 21, 1844.—You have, doubtless, often heard of the celebrated Fatee Gardens, near Canton, the flowery land, as the name implies, from whence a great number of those fine plants were first procured which now decorate our gardens in England. They are situated two or three miles above the city, on the opposite side of the river, and are, in fact, Chinese Nursery Gardens, where plants are cultivated for sale. I visited them for the first time last summer, on my arrival in China, before proceeding to the northern provinces; and again a week or two ago. There, I suppose, I beheld a specimen of the far-famed system of Chinese gardening, about which we have heard so much in England, and of which I shall tell you something fully. The plants are principally kept in large pots arranged in rows along the sides of narrow paved walks, with the houses of the gardeners at the entrance through which the visitors pass to the gardens. There are about a dozen of these gardens, more or less extensive, according to the business or wealth of the proprietor; but they are generally smaller than the smallest of our London nurseries. They have also stock-grounds, where the different plants are planted out in the ground, and where the first process of dwarfing their celebrated trees is put in operation. These gardens contain large collections of Camellias, Azaleas, Oranges, Roses, and various other well-known plants, which are purchased by the Chinese when in flower. The most striking plant in autumn or winter is the curious fingered Citron, which the Chinese gather and place in their dwellings or on their altars, when it is much admired both for its strange form and also for its perfume. The Mandarin Orange is also much grown at Fatee, where the plants are kept in a dry state, and flower and fruit most profusely, producing large, flat, dark, red-skinned fruit. The Chinese have a great variety of plants belonging to the Orange tribe; and one which they call the Cum quat—a small oval-fruited variety—is most excellent in their preserves. The Murraya exotica, Aglaia odorata, Ixoras, and Lagerstræmia, are also very ornamental here in autumn. In spring the Fatee Gardens possess the greatest attractions. Now they are gay with Azaleas, Cydonias, double-blossomed Prunus, Judas-tree, Rubus rosæfolius, Bletia hyacinthina, Roses, and Camellias. The Azaleas are most splendid, and reminded me of the Exhibition in the garden of the Horticultural Society of London, only on a much larger scale. The principal kinds grown are Indica, Indica alba and phœnicea, lateritia, variegata, and the yellow Azalea sinensis. By the by, I found this plant wild on the Ningpo Hills, so that there is no doubt of its being a genuine Chinese variety—a fact which you seem to doubt in the "Botanical Register," where this plant is figured and described. The air at this season around Fatee is perfumed with the sweet flowers of Olea fragrans, and the Magnolia fuscata, both of which are grown extensively in these gardens. Dwarf trees, as you may easily imagine, occupy a principal station, and are highly prized by the Chinese; they are trained into the most grotesque and curious forms, resembling pagodas, dwelling-houses, and various kinds of animals; but during my stay in the town of Ningpo, in the north, I saw some which far surpassed any about Canton. These were Pine-trees, clipped and trained in the form of deer—horns, legs, eyes, and everything complete. A Mandarin there very kindly offered to make me a present of one of them, but I was obliged to decline his civil offer, as it was of no use to me, and as my collection of plants was already large, and difficult to move about with. The plants which stand next to dwarf trees in importance with the Chinese are certainly Chrysanthemums, which they manage extremely well—perhaps better than they do any other plant. So high do these plants stand in the favour of the Chinese gardener, that he will cultivate them extensively, even against the wishes of his employer; and, in many instances, rather leave his situation than give up the growth of his favourite flower. I was told the other day that the late Mr. Beale used to say that he grew Chrysanthemums in his garden for no other purpose than to please his gardener, not having any taste for this particular flower himself. Moutans are not natives of the South of China, but are brought down in large quantities every year, about the month of January, from the northern provinces. They flower soon after they arrive, and are rapidly bought up by the Chinese to ornament their houses, after which they are thrown away, as they do not thrive well so far south as Canton or Macao, and will not flower a second season. They are sold according to the number of flower-buds they may have upon them, many of them fetching rather high prices. One of the old gardeners here, whose name is Aching, does a considerable trade in seeds with the English and American residents; but, unfortunately, he has got a bad name, owing to his seeds generally failing to grow when they are sent home. It is now currently reported that the old man boils them, in order that his trade may not be spoiled by some enterprising propagator at home; but I do not credit any statement of this kind, and you will, therefore, confer a great favour on him if you will contradict this report, and save his good name. Although the botanist will find but little that is new to him in these gardens, yet they are well worth a visit; and in the spring months, when most of the plants are in bloom, they have really a gorgeous and imposing appearance, worthy of the poetical name of Fatee, or flowery land, which the Chinese have given them. The garden which formerly belonged to the East India Company is still in existence; it is but a small place on the river side, not more than 60 paces each way, having broad chunamed walks round it, and a clump, with a few trees in the middle, and a few more between the walk and the wall all round. Since Mr. Reeves's time no one seems to pay any attention to the plants here, and if there ever were any rare species, they are all gone now. A few Palms, Plantains, Magnolia grandiflora, Clerodendron fragrans, Justicia adhatoda, Ligustrum, Murraya exotica, the Lechee, and two or three other well-known things, are all that it contains. The factory itself is still in ruins, but the Consul is getting them cleared away, preparatory to the construction of new houses for the English merchants. In front of the American factory there is a very nice public garden, at least six times the size of the Company's, with fine broad walks for recreation, and containing numerous shrubs and trees indigenous to the country; nothing, it is true, of any rarity, but sufficient to make the garden look extremely well. A good garden and promenade is of much importance here; for it is likely to be some years before foreigners enjoy the same liberty at Canton as they do in the other parts of China.—*R. F.*

Societies.

BOTANICAL SOCIETY OF LONDON.

Aug. 2.—J. Reynolds, Esq., Treasurer, in the Chair. Mr. G. S. Gibson, and Mr. J. Tatham, Jun., presented specimens of a new British plant, Spergula stricta of Swartz (*Arenaria uliginosa*, Schleich. and Decand.; *Holosteum stricta*, Fenzl and Reichenbach), discovered by them in June last (in company with Mr. J. Backhouse and Son, and Mr. S. Thompson), near the top of Widdy Bank Fell, about ten miles west of Middleton, in Teesdale, and five from the High Force, in Durham; the elevation was about 1900 feet. The locality was confined to a very small space.—Specimens of Anemone ranunculoides, were presented by Mr. M. Stovin, found wild in a wood near Worksop, Nottingham. Specimens from this locality were presented in June last; and in a letter to the Secretary, Mr. S. observes, "The more I see and hear of this plant, in the Nottingham station, the more am I convinced of its being wild."—The concluding portion of Mr. Lees's elaborate paper, on the British Fruticose species of Rubus was read, and several specimens and drawings exhibited in illustration of the views contained in the Essays.

Rebietus.

The Favourites of the Flower Garden, arranged according to the Natural System of Botany. By G. Francis, F.L.S. 12mo. Simpkin & Co.

This little book is intended for the use of very young people, who desire to acquire some knowledge of Botany as an amusement, and it is well suited to that purpose. Compared with the juvenile introductions to the Linnean System of Botany, it is a considerable stride; and it shows most clearly how ignorant was that outcry which arose a few years ago, when it was first proposed to substitute amongst students, for the threadbare artificial arrangement of Linnæus, the more philosophical classification of Ray and Jussieu. People now inquire what the difficulties are which terrified the ancient Botanists of 1830, and wonder what their clamour was about. The fact is, that the one method of studying Botany is as easy as the other, if set about in the right way. The object of Mr. Francis is to point out that way, and he has done so zealously. We doubt, however, whether, for the purpose of teaching, the work is quite exact enough. However, it is only to be regarded as a preparation for further information; as the means, in fact, of exciting, rather than satisfying, a taste for the study of the common flowers of our gardens. By aid of an abundance of etchings and woodcuts, the subject is rendered so easy to understand, that the most dull of apprehension may quickly learn how to use the natural system for common plants. The Author's account of the Daisy will illustrate his mode of dealing with the popular part of his subject.

"Everybody knows the Daisy of the fields, and every one with the least taste for poetry must have read some little poem written in its praise; but our young friends may not be aware that the numerous varieties of Daisies found in the garden are all derived from this little wilding. These garden favourites are of much difference of form and colour; one variety is of a very dark-red, another of pink and white, others pure white, while a fourth kind has one large flower [head] and several smaller ones growing out of it; so that it has been compared to a hen surrounded by her chickens, and called accordingly the *Hen and Chickens Daisy*. These denizens of the garden have not, however, the charms of the wilder plant—they blossom but at one season, they are often killed by the drought of summer, and the damp of winter; but the little darling of the wild, and which has been emphatically called 'Nature's Favourite,' the 'Poet's Darling,' the 'Eye of the Day' ('Day's Eye' or 'Daisy'), and many other names, blossoms everywhere and at all seasons, suggesting a thought of innocence and home, for it is especially an English flower; and delighted must Dr. Carey have been to see one spring up in India, from among some other seeds brought from England. This circumstance has given rise to some exquisite lines by the poet Montgomery, which are too long to quote, but which conclude thus—

Thrice welcome little English flower,
To me the pledge of hope unseen,
When sorrow would my soul o'erpower
For joys that were, or might have been.
I'll call to mind how fresh and green
I saw thee waking from the dust,
Then turn to Heaven, with brow serene,
And place in God my trust!

"It was a delightful thought of the ancient Celts to suppose that the employment of new-born infants, removed to heaven, became henceforth the scatterers of flowers upon the earth. The virgins of Morven, to soothe the grief of Malvina, who has lost her infant son, sing to her:—'We have seen, O Malvina, we have seen the infant you regret reclining on a light mist. It approached us, and has shed on our fields a harvest of new flowers. Look, O Malvina—among these flowers we distinguish one with a golden disk, surrounded by silver leaves—a sweet tinge of crimson adorns its delicate rays; waved by a gentle wind we might call it a little infant playing in a green meadow, and the flower of the bosom has given a new flower to the hills of Cromla.' Since that day the daughters of Morven have consecrated the Daisy to infancy; it is, said they, 'the flower of innocence—the flower of the new-born.'

* * * That old favourite the Daisy, born
By millions in the balmy vernal morn,
The child's own flower.—*Carrington.*"

Garden Memoranda.

Groom's Nursery, Clapham Rise.—At this nursery there is now in bloom many large and well-grown specimens of all the varieties of Lilium lancifolium. Several of the plants are between 6 and 7 feet high, and, having from 8 to 10 stems, each producing from 12 to 20 fully expanded blooms, they present a most magnificent appearance. On one specimen of L. l. album, or speciosum, there are as many as 30 flowers and buds on a single stem. Not only are these Lilies extremely

handsome on account of their large showy blossoms of the richest colours, but they also possess an agreeable aromatic fragrance which adds considerably to their value. For decorating the greenhouse and conservatory at this season, when flowers are scarce, they are invaluable, as they keep in bloom for a considerable length of time, and in beauty they have no rival. It may be remarked that in some collections we have seen, scarcely two plants have the same shade and disposition of colour. There is a regular gradation of tints, from pure white to the rich colour of L. sp. rubrum. In some, the rich crimson spottings are more numerous; in others, they are larger; and in a few they are almost wanting. Mr. Groom, who is a most successful cultivator of these plants, has grown nearly all the kinds in the open air for three years, and he considers them sufficiently hardy to stand our winters, if planted in light soil, and at a good depth. This season he has large beds of them planted out, which are producing an abundance of bloom. Mr. Groom remarked that the plan he generally pursues in the pot culture of these Lilies is, to grow them in pots of a large size, having plenty of drainage, and to use peat only with a little fine sand for the soil. One great point is to keep the bulbs, particularly the largest, at a sufficient depth to allow soil enough above the bulb for the stem-fibres to grow freely. When they require repotting, which should only be performed whilst the bulbs are dormant, they should be turned out of the old pots, and have the crocks carefully removed, so as to avoid injuring the fibres, or even disturbing the soil. The bulbs are then to be repotted in a larger-sized pot in peat and sand, with good drainage. They are easily increased by placing some pieces of turfy peat round the stem at a sufficient distance to allow room for some finer peat to be placed next the plant. In this way a fine stock of them may soon be obtained.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

BERBERIS UMBELLATA. Umbellate Berberry. (*Hardy Shrub. Berberacem.* Hexandria Monogynia.—This is a hardly sub-evergreen bush, about three feet high, growing freely in the common garden soil, flowering freely in June, and easily increased either by seeds or layers. It was raised in the garden of the Horticultural Society, from seeds received from the East India Company, at different times, and under various names, but more particularly those of B. Wallichiana and floribunda. It is no doubt in many other collections under this or similar names. B. floribunda, however, has spiny leaves, not at all glaucous on the under side, and B. Wallichiana, which also differs in these respects, has sessile fascicles of flowers, and is quite another thing. This is easily known by its narrow, spineless leaves, slightly glaucous beneath when fresh, and becoming more so when dry. Dr. Wallich has distinguished a plant called B. angulosa from his B. umbellata, but our specimens of it from him present no tangible mark of distinction. As for the name umbellata, it is unfortunate that it has been introduced into systematic works, for the shortness of the racemes, from which circumstance it has been taken, is apparently accidental and unimportant.—*Botanical Register.*

GLOXINIA SPECIOSA. Garden varieties. (*Stove Herbaceous plant.*) Gesneraceæ. Didynamia Angiospermia.—1. Gloxinia magnifica. 2. G. insignis. 3. G. bicolor. 4. G. Carton.—"For the few last months our gardens have been furnished with some new varieties of this beautiful plant, which have excited universal admiration; especially those in which pink is the predominant colour. We have, therefore, thought it desirable to take advantage of an opportunity afforded by Mr. Glendinning, of the Chiswick Nursery, for bringing together the most distinct among them. The account Mr. Glendinning has given of their origin is as follows:—"These beautiful varieties were raised from G. speciosa rubra fertilised with the pollen of Sinningia guttata. The flowers, however, give little evidence of the male parent, although the branching habit which distinguishes Nos. 1, 2, and 4, are proofs of their alliance to Sinningia, particularly that of magnifiora, which has very hairy leaves and stems, and an erect growth. They were first raised in the gardens of the Duke of Northumberland at Syon, by his grace's gr., Mr. Carton, who has been long celebrated for producing various interesting novelties by hybridising. Plants of them were exhibited by me before the Horticultural Society in Regent-street, in June last, when they were awarded a Banksian Medal. The same individuals have continued to bloom ever since very profusely, and are now, August 14th, still in flower. On that account, as well as their great beauty, they are likely to prove permanent objects of interest in our gardens."—*Botanical Register.*

Miscellaneous.

Brazilian Beet, a Plant for either Kitchen or Pleasure-Gardens.—It is about 10 or 12 years since the Brazilian Beet (Beta braziliensis) was introduced into the gardens of Belgium; but there it was only considered as an ornamental plant, and the beauty of its leaves makes it certainly quite worthy of being so, for the golden-red and crimson-coloured ribs produce a beautiful effect among other plants. It does not, however, appear that, at present, anybody has ever thought of cultivating the Brazilian Beet as a vegetable; on the contrary, we have remarked that in most of the gardens where it was formerly cultivated it is now disappearing, to make room for other ornamental plants. Perhaps also, this plant is not a favourite with amateurs, as its flowers are rather insignificant. Before we speak of its cultivation, it would be better to give its description:—The root is fleshy, and divides itself in the soil; the leaves are from 16 inches to 3 feet long, according to the fertility of the soil and its exposition. The middle of the leaf forms a midrib from 2 to 3 inches broad, fleshy and succulent, and becomes thinner towards the top. It is yellow or red, and varies in all the shades of these two colours. The width of the leaf is 6 inches; the upper surface shining, puckered, of a beautiful green, crossed with veins of the same colour as the midrib. The stem developes itself the second year, and resembles in this, and also the flowers and seeds, those of the Garden Beet. It produces an abundance of seeds, and is consequently very easy to propagate. *Cultivation.*—To cultivate this plant, you must sow the seed at the end of March or beginning of April upon a cold bed, or a well exposed border; the seeds come up in about 8 or 10 days, and in three or four weeks the young plants are strong enough to be transplanted. To each plant is given 3 feet square of ground, if it is good and fertile; in a moderate soil 1 foot 8 inches is sufficient. The Brazilian Beet flourishes in almost all kinds of soils, but a maiden soil, composed of sandy loam, suits it best. During its vegetation, particularly at the beginning, it must be well hoed and watered in dry weather. It is not necessary to take away the weeds, because they are smothered by the large leaves of the Beet. *Uses.*—When the season is rather unfavourable the leaves may be cut off every five weeks, beginning in June, taking the outside ones, and leaving those which form the heart, or else cutting off the neck of the root, with all the leaves, which does not hurt the plant. It may be prepared for table like Spinach, in which case the green part must be separated from the leaves; the coloured ribs may take the place of Asparagus, and be prepared in the same manner, after they have been boiled in water; they may be eaten with either oil or vinegar; at all events the skins which cover them must be peeled off the ribs. In order to obtain this plant in winter, or early in the spring, it is necessary to make a seed-bed late in June or July; to prick out the young plants upon a cold bed, where they will remain until February; then they must be transplanted upon a hot-bed, where they will give an abundant crop. They may also be taken out in the autumn, before the winter sets in, and be planted in a cellar, where they will produce leaves during all winter, which may be eaten cooked or as a salad. We can recommend the cultivation of this plant, for its produce is not only sure, but as agreeable as wholesome, and in all respects deserves the preference to the common garden Chard Beet.—*Revue Horticole.*

The White, or Barn Owl.—Another species, the victim of all who, ignorant of his value, can get a shot at him. "As a constant destroyer of rats and mice," says the historian of British Birds, "the services performed by them for the agriculturist have obtained for them a toleration which they well deserve." I fear this remark applies to some very enlightened localities: here he obtains no mercy. The number of mice this bird must destroy is very great, as a vigilant observer has seen him return to his nest with his prey every five minutes. The gardener complains of the destruction of his early crop of Peas by mice, but he feels no hesitation or remorse at having a shot at the bird who would be of essential service to him in preserving his produce from these depredators.—*J. M.*

CALENDAR OF OPERATIONS
For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

THE beginning of September, when slight fires will be necessary in dull or cold weather, is a critical time for stove plants. The house must now be kept more close, air being given in the middle of the day only. An increase of heat by artificial means is more likely to retard the ripening of plants now than if they were left cool and dry: the thermometer should not, however, be allowed to fall below 60°: for the next six weeks, and during this time, it is of as much importance to keep the atmosphere of the house dry as in the dead of winter. These rules, however, do not apply to plants whose habit is to grow in winter, as is the case with many bulbs—Orchidaceæ and a few other plants. Clerodendron splendens is one which grows late in the autumn, and may now be encouraged; it will flower for a long time in winter, and established plants of it should not be forced to grow in the spring or early summer: like some other plants it requires a long time of rest after flowering.

Conservatory.—The management of the conservatory will be more uniform now than in summer: no syringing will be necessary unless for a plant here and there, which may require it for keeping down insects; where blinds have been in use to keep off the sun they cannot be dispensed with yet altogether, but use them as little as possible from this time; get all the watering done in the morning, and give no more of it to any stove plants which are brought into this house for their flowers than just enough to keep them from drooping their leaves. The few species of Lantana which we cultivate in this country are well suited for flowering in this house late in summer and through the autumn, and there is no doubt but some kinds of them would interbreed and make fine hybrids. There are between 40 and 50 sorts of Lantanas in the Berlin Botanic Garden, many of which, no doubt, would be welcomed in this country, and might easily be procured through the nurserymen. The old Turnera elegans is a very useful and gay plant: it flowers from April to October in the conservatory, and even out of doors in summer; but it requires a house rather warmer than a greenhouse in winter, and is the first to go off in damp winters. Young plants of it in small pots, well drained, and filled with sandy loam only, might now be put in a spare melon frame to ripen them off; when they have filled the pots with roots, harden them by admitting plenty of air. In winter place them on a shelf near the glass, in a cool part of the stove.—*D. H.*

II.—FLOWER GARDEN AND SHRUBBERIES.
Out-door Department.

Now that the weather is so fine it will be as well, where such convenience is requisite for the preservation of the more hardy of the tender plants through the winter, that provision be made for the formation of a good-sized temporary pit. Turves of dry peat, where they can be readily procured, are as good a material as can be used, but in the absence of them, turves of a loamy nature will be found a good substitute. The situation where the pits are built should be dry and sheltered, and the turf walls should not be less than fifteen inches thick. Make the walls firm as you proceed, and when of the requisite height dress the sides off square and neat with an old hay knife, or some such instrument. The top layer of turves must be secured in their places by driving pegs through into the lower ones, and if the whole of the walls of a pit of this kind could be covered with Croggon's Patent Asphalte Roofing, which is a very inexpensive material, they would be rendered doubly secure, as so long as they are dry there is no fear of frost penetrating; but if they become wet, which the asphalte would prevent, their protective influence would be materially deteriorated. I intend, as an experiment, to build a pit with mud walls, in imitation of the mud cabins in Ireland, and some parts of this country. These houses are very warm, and if they were built with hollow walls they would be still warmer. My mode of procedure will be as follows:—Having procured a quantity of strong clay, which will be worked to the consistancy of mortar, and also liberally intermixed with chopped straw or refuse hay to bind together, I shall place down planks fifteen inches apart in the direction of the walls, and then fill in between them with the clay, making it as firm as possible. As soon as the first layer is dry—for it should not be more than six or eight inches deep—I shall proceed with another one, and so on until the walls are of the requisite height. When the walls are dry they may be plastered over with clay and cowdung, just to give them a uniform appearance. These pits I expect will stand for years, and answer admirably.

Reserve Garden.—Prepare a piece of ground for sowing a general collection of hardy annuals, which in late situations may be sown immediately, but in favourable soils the middle of September will be soon enough. Wallflowers, where they are too thick, must be pricked out into nursery beds for transplanting when the borders are cleared for the winter.

General Tom Thumb Pelargonium.—In answer to numerous inquiries, I may state that plants of this kind are not at my disposal, but in the spring will be plentifully supplied by the nurserymen.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Polyanthus.—Now will be a good time to get in fresh varieties, so that they may get well established before winter. If plants come from a distance, and are planted on the border, a hand glass should be placed over them, and carefully shaded. Loam and leaf-soil, in equal parts, will be found a simple and good compost to grow them in. In the "Florist Reformer" of last week, I see a fine Polyanthus raised by the late John Hufton is omitted; it was let out only partially in his own neighbourhood, and I believe it has not yet been honoured with an *alias*. The sort we allude to is Squire Ray. *Carnations.*—Attend to the directions given last week; and carefully extract all decayed petals from the calyx where there is any chance of seed. Prepare soil to pot layers in, when they are ready to take off. It should be loam, river-sand, and decayed leaves, well turned and thoroughly examined, and run through the hand, so that no wire-worm or grub may escape. The flower-stalks, where there is no seed, may now be cut off close to the surface, and the sticks or supports removed, cleaned, and put away till next season. *Pansies.*—Planting beds for blooming next season ought not to be delayed much longer; we have found the following compost to be excellent, in securing strong healthy plants and fine blooms:—Two parts fresh maiden loam, one part decayed cow-manure, one part street-sweepings, one part leaf soil or decayed vegetable matter. This, if well mixed and sweetened by repeated turnings, previous to forming the bed, will we are confident not disappoint the Amateur's expectations. Turn over the soil of the Tulip bed, and if fresh compost is required, see to it in time.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Where the autumn arrangement of the plants has not taken place, it is time it was set about, as the less they are disturbed after this time the better. The plants in fruit, those for fruiting next spring, and the later successions should, if possible, be arranged in separate pits, as the treatment required by each differs. The plants for fruiting next year, as well as those in fruit, will require to have slight fires made in dull cold weather; let the fires be made in the morning, so as to admit of a little air being given every day. Keep a less humid atmosphere for the spring fruiters from this time, as it is more desirable now to give strength and firmness to the plants, or I may say to thicken the sap of the plants, than to cause them to increase in size. Suckers and crowns that are rooted should have air admitted daily, to prevent their drawing up weakly.

Vineries.—Continue the attention recommended in former Calendars, for the preservation of ripe Grapes from the effects of damp. If wasps are troublesome, it will be found useful to have some thin bunting stretched over the spaces left open for ventilating: woollen netting, such as is used for wall-trees in the spring, is a good material, if the meshes are sufficiently small. All long growths or Vines (whether bearing or not) should now be stopped, as it is too late for Vines to be much benefited by foliage made after this time. Continue to stop all laterals as they are produced; but with late Vines still growing vigorously, care must be taken not to shorten them too much at once.

Peaches.—Let those trees that have shed their foliage have a thorough washing with clean water, to free them from cobwebs and dust, and after this a washing with soap-suds, to check the increase of any of the Coccus tribe which may be upon the young wood, till the trees get their winter-dressing.

Figs.—Continue to pay strict attention to the state of the atmosphere where there are still Figs ripening and swelling, making slight fires in dull cold weather to assist in ripening the fruit; but little syringing and watering will from this time be required.

Melons.—Continue to pay attention to the stopping, thinning, &c. If we have fine weather very good fruit may yet be ripened; keep up a brisk heat by means of fire or linings, in order to admit of plenty of air being given.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Raspberries.—As soon as the fruit is gathered, clear away all the old wood, and any extra shoots left at the summer thinning. Tie the young shoots to stakes or rails, and if very long pinch off their points, but do not shorten them too much now, as from the exposure of the pith, a severe winter would be apt to make the canes shorter than you would wish to have them at spring pruning. Fork in a coating of manure, for, like the Vine, the Raspberry delights in rich feeding. If the above course is adopted, you will be rewarded with well-ripened prominent buds for next season. *Vines.*—Attend to the directions previously given; thin out all useless shoots, remove leaves where they are too thick, and where you do not want the buds in their axils for next season; but while exposing the bunches to more light, be careful to leave a sufficiency of leaves to shade them from the direct influence of the sun's rays. *Gooseberries and Currants.*—A number of bushes protected by netting might now be inclosed in mats, or any other dense substance, for preserving them longer. One advantage of covering some now is, that the buds will be well ripened for next season. The best method I have seen for this purpose was that adopted by the late Mr. Phillips, gardener, at Fingarth. A round frame (large enough to be set over a bush) was surrounded with waterproof gauze, or bunting, and the top furnished with a moveable lid of zinc or tin. Some gardeners very economically preserve Currants until after Christmas, by surrounding the bushes with the straw ropes they had used for protecting their Peaches, &c. in spring. The difference in the appearance of bushes properly pruned in summer, and those that were neglected, is now very striking. Does any correspondent know of a Gooseberry, as well flavoured, and a week or two later than the old Warrington? Keen's Seedling is a fine fruit, but there are plenty of others fit for the table when it is in condition. At present the Warrington stands alone. *Fruit-room.*—Get this in good order for the reception of fruit, and gather not only the finer wall-fruit as it ripens, but also portions of favourite Apples and Pears, so that by sweating part of them by dry sweet hay, you will be enabled to prolong their season.

Routine.—Attend to Mushroom beds in a bearing state, and continue to make fresh ones. Sow Cauliflower for the spring crop, Radishes for autumn and early winter, and a good breadth of Lettuces. The latter, if sown now or a fortnight hence, in an open, airy space, will often stand the weather better than stronger plants growing in more fortunate protected situations. Dig all vacant ground. Continue planting out winter stuff. Hoe, fork, and dig among advancing crops, and give an appearance of thought and system to everything under your management.—*R. F.*

VII.—COTTAGERS' GARDENS.

About this season little is required to be done beyond the ordinary routine of keeping the garden neat and clean. Con-

time to remove all decayed stems and flowers from plants in the flower border, and clear away all vegetables that are no longer useful, so that the ground may be put into proper condition for the reception of other crops. Onions sown about the end of February, or beginning of March, will now be in a fit state for taking up; and advantage should be taken of this fine weather for drawing the bulbs out of the ground, and spreading them over the beds. They should be laid with their roots upwards, and in the course of a few good sunny days they will become sufficiently dry and matured for keeping good during winter. Care must, however, be taken not to bruise the bulbs in pulling them out of the ground, or in handling them at any time afterwards. They should be turned at intervals until they are perfectly dry and fit for removal, when they may be deprived of their roots and the greater portion of their leaves, and placed in some dry airy situation where they can be attended to and turned over occasionally, always picking out those that are in any way damaged to be used first. Many cottagers string their Onions, which is an excellent mode of preserving them. Gather any Apples or Pears that are *ripe*, and go over Vines regularly, stopping them, and *removing* all useless growths, and particularly any that are *formed* above the fruit, which is generally abundant this season, and should be well attended to. Thin out all small berries from the bunches, and keep the branches neatly fastened in.—*J. McH.*

State of the Weather near London for the week ending Aug. 29, 1844, as observed at the Horticultural Garden, Chiswick.

Aug.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain
Fri. 23	9	29.796	29.678	69	38	53.5	S.W.	
Sat. 24	10	29.760	29.659	71	49	60.0	S.W.	
Sun. 25	11	29.976	29.892	73	50	61.5	N.W.	
Mon. 26	12	30.052	30.007	66	47	56.5	N.W.	
Tues. 27	13	30.082	30.078	71	38	54.5	W.	
Wed. 28	○	30.137	30.110	75	40	57.5	W.	
Thurs. 29	15	30.186	30.113	79	42	60.5	E.	
Average		30.079	29.934	72.4	43.4	57.9		.60

Aug. 23 Lightly overcast and fine; clear at night.
— 24 Clear; very fine; dark clouds; overcast.
— 25 Light clouds and fine throughout.
— 26 Overcast, cloudy, and fine.
— 27 Overcast; light clouds; very dry air; clear and cold at night.
— 28 Clear; hot and dry; clear above, with slight low fog at night.
— 29 Clear, with slight low haze; cloudless and very fine throughout.
Mean temperature of the week 4 deg. below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Sept. 7, 1844.

Sept.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. M.	A.	M.	E.	S.	W.	N.	N.
Sun. 1	69.0	49.8	59.3	10	1.50 in.	1	3	1	2	2	4	2	2
Mon. 2	70.7	48.8	60.1	8	0.92	4	2	—	1	2	2	5	—
Tues. 3	69.8	48.2	59.0	8	0.46	1	2	—	1	2	4	5	1
Wed. 4	69.7	49.4	59.6	10	0.55	4	2	—	—	4	2	3	1
Thur. 5	69.7	48.8	59.3	8	0.39	2	4	1	—	2	2	4	1
Fri. 6	70.2	48.2	59.2	9	0.70	—	2	2	—	1	7	5	1
Sat. 7	68.8	49.3	59.0	11	0.56	1	2	—	2	4	6	2	1

The highest temperature during the above period occurred on the 3rd, 1838—therm. 82°; and the lowest on the 1st, 1841—therm. 36°.

Notices to Correspondents.

FUCHSIAS.—*Clericus.*—It is, we fear, now too late to hybridise these plants, because the fruit will scarcely ripen unless the plants are brought into a greenhouse. Ricartonia is a better female than male, because of its hardiness, while fulgens is tender, and should only be employed as a male. We should try to cross exoniensis with Chandleri, Venus Victrix, or plants of that class, which we should also endeavour to improve by crossing the white and violet sorts with each other. *F. gracilis* would be a good male parent for Venus Victrix. There is no printed guide to these things. We trust to communicate useful information on the subject from time to time. In the mean while, hybridisers should keep very exact records of what they do, and report the result, be it what it may.——*G. H. N.*—Thompson's *F. formosa elegans*, Exoniensis, Eppe's Kentish Bride, Venus Victrix, Youell's Queen Victoria, and Hailey's Sanguinea.*

GENTIANELLA.—*Q.*—Sow the seeds of this as soon as they are ripe (otherwise they soon lose the power of vegetation), in pans filled with rather heavy peat. Sow on the surface, without any covering except a slight sprinkling of silver sand; then place the pans either in a cold frame facing the north and kept close, or on the north side of a wall, where they are completely screened from the sun, and cover them with a handglass.¶

GLAZING.—*H. T.*—Probably your greenhouse roof is too flat; in that case no glazing will prevent the rain coming through, unless the laps are puttied; and if that is done you will still be annoyed by drip. Unless this explains your difficulty, it is not likely that the cause can be determined without actual inspection. The mildew on your leaves apparently arises from damp, or insufficient ventilation.

GLOXINIA TUBIFLORA.—*R. H.*—We never before heard of the flowers of this plant dying off. If you have bloomed five plants, and all, more or less, have died off, and always the top flowers, you have been unusually unfortunate. Perhaps you keep it too damp.

GRAPES.—*M. H. W.*—When Grapes ripen in the open air, they are always well coloured, with a copious bloom. The circumstance, therefore, of your Black Hamburgh Grapes in your house being almost without colour and bloom, although the bunches weigh from 3 to 4 lbs., must be owing to the want of a sufficient circulation of air. In your new Vine-border you may use all the manures you mention, namely, cow-dung, stable do., pigs' do., pigeons' do., leaf-mould, guano, and, though last, the most important, bone-dust; provided you thoroughly mix the whole with the soil by several turnings over.‡

HEATING.—*H. W.*—A very small boiler, say a second size, is large enough. Heat it by tanks by all means, because of their dampness. If you can manage to use open tanks in a chamber below the bed you will be able to steam your house at pleasure, by opening ventilators in the sides of the chamber. No self-acting ventilators answer the purpose in hothouses. The dampness of the air soon puts them out of order. Besides, if you want much ventilation, such contrivances will not give it; if you want very little you may dispense with it wholly. It is a good plan to bring cold air into the house through a pierced pipe; but you had better carry it into the house in such a way as to get the air warmed before it mixes with the plants. Could you not carry it through the chamber of your bed before the air is discharged into the house? You do not want to introduce cold air into either stove or greenhouse, it is fresh air that is required.

HENBANE.—*M.*—This loves deep sandy land. It should be sown at Midsummer or a little later. It is fit for gathering when in full growth the following year, while in flower and before it becomes at all yellow. Then it must be dried gradually in the shade. The seeds are the most active part.

INSECTS.—*R. B.*'s insects are the common cockroaches. The best mode of reducing their numbers is to keep a hedgehog in the infested apartment. *R.*——*R. T.*—We are much obliged. The aphis inhabiting the roots of the Lettuce is the Eriosoma lactucæ. *R.*——*G. L.*—Your spider's web is very remarkable, and we presume it was found in a wall which the ants frequented. We shall feel obliged by your giving us the particulars, and sending one of the spiders. You are aware that what are called ants' eggs are the cocoons. *R.*——*W. R.*—The Elder-tree is infested with plant-lice called Aphis sambuci, which appeared early on the Elder-shoots this season. *R.*——*J. Wigston.*—The curious insects taken from the wasp's nest are females of a beetle called Stylopsis paradoxa, figured and described in Curtis's Brit. Ent., fol. and pl. 19, 2d edit., where you will also find their history; and at fol. 198, that of a parasite named Anoplotrix vespæarum. *R.*——*B. Chilo.*—Your grub is probably the caterpillar of Noctua meticulosa; but you should have said what it fed upon, that we might rear it, and ascertain the species. *R.*——*M. C.*—The little scarlet insects are the Acarus autumnalis; they inhabit Grass fields, Kidney Beans, &c., and are very troublesome in August and September by causing little tumours in the legs, with insufferable irritation. *R.*

LOCAL HORTICULTURAL SOCIETIES.—We learn that the statement that the Eltham Horticultural Society was dead arose from an error of the press, our correspondent, "F. H. S.," having written Eltham, a place between Canterbury and Folkstone. "F. H. S." much regrets that this should have given pain to the lady who acts as secretary at Eltham.

MANURE.—*Experimentalist.*—We are obliged to make it a rule not to recommend tradesmen, unless there should be some urgent necessity, and must therefore refer you to our advertising columns. Humphreys's compound is nitrate of ammonia, with a minute quantity of phosphoric acid, as has been lately shown in former Numbers of this Paper, to which we must refer you. Liquid guano may be given advantageously to all kinds of flowers, provided the dose is not too large. Roses can hardly be over-dosed with it; herbaceous plants may be, because it will make them run to leaf if there is too much of it. The rule for applying liquid manures of all sorts is to do it when plants are growing, and in small quantities frequently repeated. To apply manure when plants are not growing is to waste it. No doubt your fruit trees would be improved by the addition of any sort of manure. Is not their soil too dry? If the Mulberry does not ripen its fruit, you must have a very bad climate, or a very cold bottom, and we can suggest no remedy for those difficulties.——*Suburban.*—Our observations were applied to manure and not to heating apparatus. When stable-litter is heaped over Sea-kale it does not act as a manure, but as a heating material.——*A Constant Subscriber.*—Nitrate of ammonia is a very powerful agent, and must be used with caution, or it will kill plants instead of curing them. The best way of applying it seems to be to dissolve about a teaspoonful, or even less, in a common watering-pot full of water.

MORPHOLOGY.—*W. V.*—Your Cucumber is only an instance of a leaf accidentally growing to the side of the fruit. It does not arise from any breaking up of the system. Such cases are not unusual.

NAMES OF FRUIT.—*L. P. F.*—No. 1. Alfriston; 2. Kerry Pippin; 3. Keswick Codlin; 5. Downton; 7. Bedfordshire Foundling; 8. Scarlet Nonpareil; 10. Margil; 11. Court of Wick.‖——*Miss S. S.*—No. 1. Alexander; 2. Golden Pippin; 4. Nonsuch; 5. Hollandbury. The Plum No. 6 does not appear to be any of the grafted varieties; it resembles the Wine-sour.‖

NAMES OF PLANTS.—*R. G.*—Warrea tricolor.——*H. P.*—Your plant is Portulaca splendens. It shows you how much the Linnæan System is liable to exceptions. The species of Portulaca vary greatly in the number of their stamens.——*B. T. S.*—No. 1. Lepidium campestre; 2. Thlaspi arvense; 3. Rubia peregrina.§——*P. J. O.*—Apparently Fuchsia Thompsonii.*——*B. B. C.*—We assure you that Grasses cannot be named unless in flower.——*Eltham.*—Not a plant, but Oak-spangles, which are described at p. 52, vol. 1843.‡——*F. F.*—Your Fungus is a smooth state of the Scleroderma vulgare, resembling very much Scleroderma geaster, a species which has not yet been found in Great Britain. Smooth specimens of Scleroderma are often confounded with the White Truffle, and in Belgium, where they abound, are collected and sent to Paris, where they are substituted for the real Perigord Truffle, greatly to the annoyance of the *bon vivants*, who complain that the Perigord pies are not what they used to be. *M. J. B.*——*W. D.*—Zephyranthes Atamasco.

PEACHES AND NECTARINES.—*M. D.*—The excessively dry weather, together with the very severe attacks of the red spider, has, in many instances, occasioned the premature dropping of these fruits.‖

PELARGONIUMS.—*An Amateur.*—The following sorts will improve your collection:—Beck's Susanna, Garth's Witch, Pulchellum, Sultana, Foster's Sunshine, and Sir R. Peel. We are not aware to whom the Pelargonium named Fair Rosamond belonged; probably the advertisements will soon make it known.*

REMOVAL OF ROSES AND ORNAMENTAL SHRUBS.—*D—t.*—These cannot be removed by a tenant quitting, unless he is a gardener. *W.*

SULPHATE OF IRON.—*Anon.*—Sulphuric acid will fix ammonia perfectly, and if that is all your object there is no use in employing sulphate of iron. The object of employing the latter is to sweeten manure, partly by fixing ammonia, and otherwise by decomposing the intolerably offensive sulphuretted hydrogen. We presume rather more than twice as much sulphate of iron as sulphuric acid will be required.——*A Constant Reader.*—This dissolves readily in cold water. If to be added to putrid fluids, it may be dissolved in just as much water as it requires and no more. But if it has to be applied to solid masses, then it should be largely diluted, or it will be wasted; say in the latter case ¼ lb. to a gallon of water. It is not probable that any animals would lap it up, because of its unpleasant taste; but it is as well not to leave it about. In small quantity it is hardly a poison.

TULIPS.—*B—k—g.*—Refer to No. 24 of the *Gardeners' Chronicle* for the present year, p. 398, and you will find the information you seek about Tulips. Change of soil and situation afford the best chance for breaking them.*

UNDERWOOD.—*H. W.*—The best description of shrubs to be placed in a plantation of large trees to fill up the blank appearance of the ground, is Privet, Holly, Common Laurel, Blackthorn, Buckthorn, Yew, and Furze, or Broom.

VINES.—*Clericus.*—Follow Mr. Roberts's advice. If you get them forward before planting them out in March, you must be very careful to mulch the ground all round their roots with plenty of warm stable litter. The grand thing this year is to get the wood thoroughly ripe, and that can only be done by keeping them in a hot, dry, airy situation until the wood is hard.*

YELLOW PICOTEES.—*B—k—g.*—Procure the following sorts:—Barraud's Favourite, Euphemia, Wilson's Isabella, Willmer's Romulus, Rajah Ramahun Roy, Khouli Khan, Charles X., Brocks' Prince of Wales, Queen, Mars, Lady Chetwynde, Countess Ashburnham. Save your own seed.*

MISCELLANEOUS.—*A. E. D.*—We cannot name your Gesneras by description. Anicia zygomeris is an odd-looking, rather handsome yellow-flowered papilionaceous plant. Tremandra Hugelii is a pretty greenhouse bush; Drymonia punctata is a curious stove trailer, with the habit of a Columnea.——*A Subscriber.*—The Isle of Wight, like all islands, is much warmer than the mainland, and is also sheltered by it; and then its coast lies high and dry; both which circumstances sufficiently account for the mildness of its winters. Arbutus seed may be obtained from old trees in this country; Bay and Myrtle-seeds from Italy. All such things are troublesome to procure, because they are not common articles of trade. We regret our inability to assist you. If they come into the market, any nurseryman will know how to obtain them.——*Orbelana.*—Peucedanum Sowa likes a fresh, loamy soil, dry in winter and damp while it is growing. Silene maritima is growing luxuriantly in a stiff, loamy soil, just before our windows. Winter Savory is Satureia montana.——*P. J.*—Of course they will be advertised.——*Dianthophilus.*—Neither of the specimens you have sent is the true *Clove* Pink of our gardens; they are not the true colour, nor do they possess the delicious spicy fragrance of this old favourite, which is of a rich red maroon colour. Your biscuits are purple, and nearly scentless.*——*A Novice.*—Your Fuchsias, lately removed to the open ground, that are becoming sick, and whose leaves are turning brown, have not been sufficiently supplied with water. Fuchsias are thirsty plants, and should be well attended to in this respect, or they very soon lose their leaves.——*Glerioses.*—The chief thing to be attended to in plants for winter or early spring flowering, is to get the wood thoroughly ripened. After that they may be introduced into heat at any time. Pelargoniums cut down in June last may be made to flower next February or March, if they are forced.‡——*C. M.*—In striking cuttings of Fuchsias, at this season of the year, it is advisable to place them on a slight hotbed.‖——*W. C.*—To your conservatory climbers you may add Ceanothus azureus, blue; and Passiflora Loudoni, crimson.‡——*B.*—Rhododendron lapponicum, chamæcistus, and chrysanthum, are among the very rarest plants. By all means preserve them in pots during the ensuing winter in a cold pit, which you can keep free from too much damp. Place them near the light, and give them air whenever you are able.——*A Reader.*—Much information respecting Vegetable Ivory is given at p. 836, vol. 1843.‡——*A Subscriber.*—The directions respecting the preparation of ground for Asparagus, given at p. 844, are good; but by adding a little more manure, if you have plenty of it, the plants will grow all the better, provided you do not put it too thick, as in that case it is apt to become soddened and rot the plants.‡——*A Beginner.*—Strawberry-plants for forcing, when taken from the striking-pots (60s.), are generally shifted into 32s. We do not consider that they would do better for having an intermediate shifting into 48s. There is no better way of destroying green-fly in a Cucumber-frame than smoking them with Tobacco, provided the operation is rightly performed. It should be done when the leaves are dry.‡——*B. F.*—It is published in time, for the morning mails.——*Amicus.*—Messrs. Lane and Son, Berkhampstead.

SEEDLING FLOWERS.

CARNATIONS AND PICOTEES.—*P. C.*—20, a bizarre Picotee, with yellow ground; the flower is large and full, with a good crown, and large guard petals; but the edges of the petals want smoothness, and the colour is too much distributed over the surface of the petals; it is a good border variety. Of the two lemon-coloured *selfs*, 12 is decidedly the better of the two, the petals being larger and stouter than in 13; but seedlings like these are very common.*

DAHLIAS.—*J. B. R.*—Your seedling is of a good colour, but the petals unfold irregularly; the centre is also confused and deficient in petals; it shows the yellow disk.*——*W. A.*—Your *Islington Rival* is a very promising specimen; the arrangement of the petals, their form and substance, are good, and the eye is well elevated; it is a compact and finely-formed flower; colour, deep maroon.*——*T. R.*—The bloom of your white Dahlia had broken short off, and was much bruised and damaged. The petals are of a good form, and well arranged, and the flower is of a good general form; the centre in the bloom sent was imperfect, and we fear this part of the flower will prove too thin.*

FUCHSIAS.—*J. W., Pittenzie.*—Your seedling No. 1 is an elegant flower, of good texture, and though wanting the violet colour in the corolla, it still makes a pleasing variety.*——*J. H. C.*—The form of the bud of No. 39 is curious, being so perfectly globular; but it possesses no other qualification to recommend it to general cultivation. 54—Tube and sepals bright carmine, smooth and shining, but the corolla wants colour, and it is no improvement upon globosa major. 83—Not sufficiently compact, and deficient in colour. 99 very much resembles Venus Victrix, but not equal to that variety, from the corolla possessing less of the violet colour, and the tube and sepals not being so light. 64 is very pretty, and singular in appearance, from the corolla being of a very peculiar colour (a dove colour), with delicate pink tube and sepals, tipped with green; an elegant little flower.*——*R. and S.*—Your seedling 1-44 is a showy and desirable variety; the tube and sepals are of a light delicate flesh tint—the latter with green tips; corolla rosy vermilion; flower-stalks long; the largest of its colour we have seen.*——*Y. Z.*—Your seedlings are very good flowers—fine in texture and good in colour. The violet purple corolla in No. 1 forms an excellent contrast with its bright carmine tube and sepals; this is a large and elegant flower. 2 is also a large and fine flower, with less violet in the corolla. Next to this we place 7, as the colours are more brilliant, and the form more graceful than 8, which is rather a stouter and larger flower; in the two latter specimens there is not so strong a contrast in the colours, and they much resemble each other. 6 is an elegant flower, with a fine violet corolla, but not superior to some of the older sorts in cultivation; the same observation applies to No. 4.*——*W. D. B.*—The seedling from fulgens which you have sent is a very handsome variety; the bunches are large, the one sent containing more than 60 flowers, the tube of which is slender, of a delicate flesh colour, with pale-green sepals; the corolla is of a bright vermilion, seen in the spaces between.*——*Clericus.*—Your Fuchsia is a very good flower, rich in colour, and of a good shape; it, however, wants novelty, and there is nothing sufficiently distinct from other varieties to render it preferable to them for general cultivation.*——*J. H.*—Your seedling in form is better than those we are in the habit generally of seeing, it is also good in colour and moderate in size; it, however, bears too strong a resemblance in its general appearance to some of the sorts lately introduced, particularly in its want of violet in the corolla; nevertheless, if the habit be good it is worth growing, being a finely-proportioned flower.*

LOBELIA FULGENS.—*F. B.*—Both your seedlings are very handsome varieties, particularly *L. fulgens multiflora*, the lip of which is large and broad, of a rich and dazzling scarlet. *Fulgens pyramidalis* is also a fine variety; not so large as the former, but of the same brilliant scarlet. They are both very desirable flowers.*

MIMULUS.—*J. W. E.*—Your seedlings do not differ from other varieties we have seen; the orange, No. 7, and the scarlet, No. 6, are the best; the other colours are what we generally see in all collections raised from seed.*

PANSIES.—*W. H. M.*—Your seedlings are inferior to sorts similar in character; 1 is too long in form, and 2 is poor in colour.*

PETUNIA.—*X. Y. Z.*—Your seedling reached us in such bad condition, that the shaded appearance to which you allude could not be perceived.*

PELARGONIUMS.—*J. C.*—Your specimen wants both size and substance.*

PHLOX DRUMMONDII.—*S. G.*—The two specimens sent—seedlings from your variety named *splendens*—are fine in colour, and the lighter variety is good in form also.*

VERBENAS.—*Z. C.*—Neither of your seedlings appear to be new or striking; the rose-coloured variety is very pretty in colour, but rather deeply indented, and the divisions curl about, which gives it a confused appearance; the light variety wants novelty.*——*S. G.*—The best seedling in your collection is one named *Rose d'Amour*; this is distinct in colour, being of a bright and lovely pink colour; a large and good flower. *The Lovely Rambler*, light lilac with pink eye, is also a good flower. *Messenger*, a good lilac, too much resembles some of the older varieties. *The Giant*, a light lilac with dark eye; the head of the flower is large, but the colour wants clearness; and *Mulberry*, though a good flower, is surpassed by others in cultivation. *Belvoirii* and also *Intensiva* are not worth cultivation, in the present improved state of this flower.*

ERRATUM.—In Mr. Miller's advertisement of Seedling Geraniums, inserted 24th August, the price should be 5s. for 40 seeds, and not 6s.

SEED-WHEAT.—Any one desirous of obtaining Seed-Wheat for use this autumn, may ascertain, by application to me, the particulars of the crops of two excellent varieties—Shirreff's Hopetoun, and Morton's Red-Straw White, which have been grown on
WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE, during the last 3 years. This year's crop is on sale at 8s. a bushel.—JOHN MORTON, Whitfield.

The Agricultural Gazette.

SATURDAY, AUGUST 31, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Sept. 3 [Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

Sept. 3 Ush. | Sept. 10 Aberguveny.

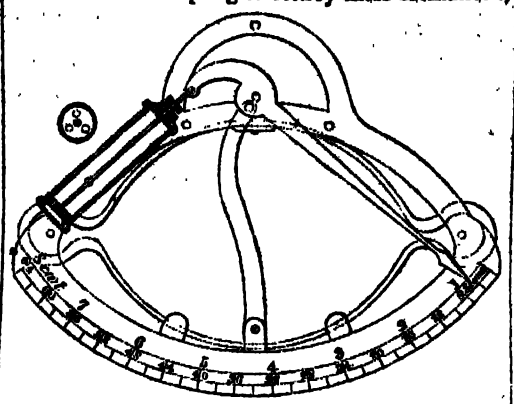
THE ECONOMICAL VALUE OF ANY FARM IMPLEMENT—if, for the moment, we disregard its cost price—depends, first, upon its efficiency—*i. e.*, the degree in which its work approaches perfection; and secondly, upon the expense connected with its use—*i. e.*, the horse-power and manual labour required in working it. There are thus two subjects of inquiry connected with every machine, viz., its construction, first, as affecting its efficiency, and secondly, as affecting the power required to work it.

Let us take up the consideration of a particular class of implements; the first to which our attention is naturally due are those of cultivation. All these, including draining-ploughs, subsoil-ploughs, common ploughs, harrows, scarifiers, grubbers and horse-hoes, rollers and clod-crushers, admit of this two-fold consideration, and require it in order that their real value or usefulness to the farmer may be fairly estimated. There are a great many forms of all these implements: that is the best of each, in which excellence of work and lightness of draught are united in the most profitable proportion.

In estimating the efficiency of the different implements which claim our notice, we shall have to consider the object for which they are used, and how far they are respectively successful in effecting it. This will be better done when we come to describe them each in its turn. At present, we may make a few remarks on the other subject, which we have said affects machines generally—that of draught, and on our present means of measuring it in farm implements.

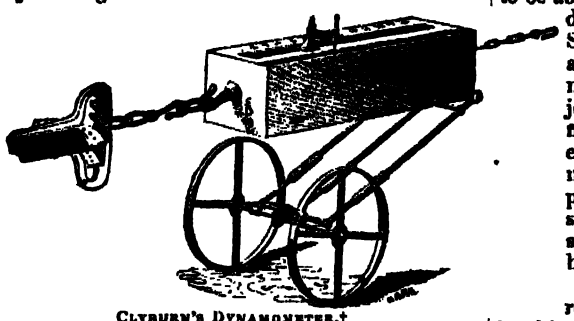
The first AGRICULTURAL DYNAMOMETER, and till lately, we believe, the only one in use, consisted simply of an elliptic spring; and the degree in which this spring collapsed, on being pulled asunder lengthwise, was taken as an index of the strain to which it had been subjected. One of the sides of the ellipse being fastened to a metallic plate, on which the spring lies, its collapse, on subjecting it to a longitudinal strain, (as, for instance, by making it a link in the draught-chain of a plough,) causes the other side to approach it, and this motion is communicated by means of rack-work and pinion, or by a compound leverage, to a radial index on the other face of the metallic plate, where a circular scale, to which this index points, has been divided, by previous trials, into cwts. and stones. The position of the index on the scale is thus indicative of the amount of longitudinal strain to which the spring may be subjected. If it be attached to a plough, the effort of the horses in drawing the implement through the ground will be exhibited by the position of this index; for when the strain is greatest, as where the ground is hard, it will, owing to the greater collapse of the spring, point to a greater number of cwts. and stones as the measure of the horse's exertion, than when the soil being loose the implement is more easily pulled through it. This instrument has been a good deal used in determining the draught of ploughs, but with little service, owing to the extreme variability of the strain which it is here required to measure. The density of soil, as the plough is drawn through it, is so rapidly and incessantly variable, that so far from being able to judge of the average draught from watching the rapidly-oscillating index of this dynamometer, the operator is unable to state at any one time what the position of the index actually is. In order to remedy this defect in this instrument, Messrs. Cottam and Hallen, of Winsley street, London, have contrived a modification of it, of which the following is a figure. A cylinder and piston, represented in section, are here interposed between the two sides of the spring by the same system of levers which work the index, and the motion of the piston is rendered difficult by the cylinder being filled with oil, which must pass through small holes pierced in the piston before the latter can shift its position. A sluggishness is thus imparted to the index, which allows its average position to be more accurately estimated. Still, however, in using this instrument, the operator has to depend a good deal on his own judgment in pronouncing what the draught of the implement under trial is; and this is an imperfection.

Instead of attempting to destroy these oscillations,



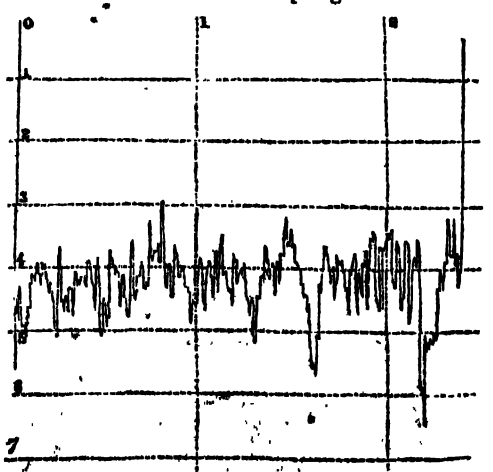
COTTAM'S DYNAMOMETER.*

much the better method is to adopt an arrangement by which they may be recorded by pencil on paper, in the same way as in anemometers the variable force of the wind is recorded. Mr. Clyburn, engineer to the Earl of Ducie's iron works at Uley, Gloucestershire, has constructed an instrument on this principle, which is represented as at work in the subjoined figure.

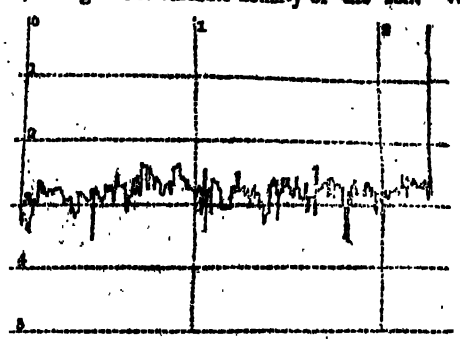


CLYBURN'S DYNAMOMETER.†

The spring in this case is spiral, and the strain which it is intended to measure is made to compress it. The motion of the plough is communicated by means of the wheels, which hang from the instrument and roll on the ground, to a cylinder within the case of the spring, and as this revolves it unwinds and rolls up a strip of paper which is wound on another cylinder close by it, within the same case. This paper is marked as in the following figures, with transverse (vertical) and longitudinal (horizontal) lines, the one corresponding to the positions of the dynamometer's index, under the strains successively of 1, 2, 3, 4, &c. cwts., and the other dividing the paper into sections of a width corresponding to 25 yards of ground passed over, as calculated from the size of the wheels communicating the motion of the plough. As already stated, when the power is applied, the spring is compressed, and this gives motion to a rack and pinion that has a pulley fixed on the same spindle; this pulley has a chain passing round it, which gives motion to a pencil and pointer; the pencil oscillates in a line, parallel to the cylinders just described, and it is kept by a spring pressing upon that cylinder, which, as the plough proceeds, is winding up the strip of paper which we have been describing. The consequence is, that the paper carries off, marked upon it, an irregular line, the position and character of which depends upon and indicates the intensity and irregularity of the strain to which the spring has been subjected. The curious and interesting figures below are reduced (½) from actual drawings by the pencil of this dynamometer when attached to two different ploughs.



They make good our remarks as to the extreme variability of the draught of implements of cultivation, owing to the variable density of the soil. We



do not know of what ploughs these record the draught, nor whether they were working at the same depth in similar soils at the time; but it is evident that they are far more instructive than the most lengthened and detailed description, of the nature and intensity of the effort which the horses made in drawing the implements through the ground.

We see that the draught of the first plough averaged 4¼ cwts., and that of the second not more than 2¾ cwts.; the draught, also, of the first plough is obviously more intensely, but not more rapidly variable than that of the second. We hope hereafter to be able to lay before our readers an Essay on the draught of some of our best English and Scotch ploughs under similar and under variable circumstances—written, not by ourselves, nor by any other experimenter on this subject, but by the unerring pencil of this dynamometer; and we are sure that a simple examination of the paper of Clyburn's dynamometer, after being applied to different ploughs working at various depths in various soils, will be far more interesting and instructive than a detailed description of the trial by a most accurate and attentive observer.

We hope to be able to inform our readers, as we proceed, of the draught taken by this dynamometer of the different machines we describe.

* The price of this instrument is 7*l*. † Price 14*l*.

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

(Concluded from page 578.)

Marlstone.—Below the sands of the inferior oolite lie a series of beds which, near Dursley, where they are most fully developed, consist of an indurated sand, containing vast numbers of shells. This rock, which receives the name of Marlstone, is generally of a light-brown colour, while the shelly concretions which everywhere pervade it are of a grayish blue. It is exceedingly tough, and is extensively used as building material. Immediately above it, and separating it from the sand of the lower oolite, a very thin bed of clay occurs, containing thin layers of limestone rock, precisely resembling the lias limestone. It frequently is not easily traceable, from being here and there obscured by overlying debris; a very excellent section of it, however, may be observed on descending Frocester Hill, towards Coaley Hamlet; after passing the limestone, and then the sand of the inferior oolite, we there find that they rest on this stratum, averaging 10 or 12 feet in thickness, of a light-coloured clay, in which as many as a dozen courses of a grayish limestone, each not above 3 inches in thickness, occur. This bed is also well seen at Tick's Hill, below Coaley Wood, and at Waterleigh Valley, on the other side of Stinchcombe, in each of which places thin limestone beds are to be seen. It is also seen at Horton Hill, where it is a dark-blue clay; and it is visible at intervals along the foot of the hills between these places. The junction between the marlstone and sand of the lower oolite is easily traced when this bed of clay which separates them is visible. This, however, is not everywhere the case, and, therefore, though at Dursley, where the character of the rock is well developed, boundaries are easily traced, this is not easily done near Bath, where its character is much altered. At Dursley the marlstone forms an extensive terrace, stretching out from the foot of Stinchcombe Hill half a mile into the valley; beyond Wotton-under-Edge, however, and in the southern part of our district near Bath, it does not form so important a member of the oolitic series, being thinner, and losing the indurated and rocky character of the Dursley rock; and as the bed of clay above it there disappears, or is not easily traceable, it is not easy to distinguish it from the sand, which there occupies so considerable a portion of the escarpment. The section at Frocester Hill just noticed, exhibits also the character of the marlstone. It there consists of a series of beds of rock, of the character described above, from three to thirty feet thick, alternating with beds of blue and brown marl, varying from ten to twenty feet in thickness, and comprising in all a thickness of about 100 feet. Not far from this section the bed of clay above the marlstone is of a dark colour, which, many years since, gave rise to the idea of the then proprietor of the land, that, probably, coal was not far off, and trials were accordingly made. A shaft was sunk, which, of course, has been long since filled up, but the mound of the material excavated still remains, a monument of the geological ignorance which then existed.

Agricultural Character of the Marlstone.—The bed of clay above the marlstone is of very little agricultural importance, being of such insignificant extent. In one field—the only arable one in which I know it to be exposed—the soil is full of fossil shells of the ammonite. It is a clayey soil on which good crops of Wheat are raised. Clover seeds with Rye-grass have frequently been tried on it, but, with the exception of one corner of the field, which is lower than the rest, where the marlstone is exposed, they have uniformly failed. The Rye-grass sown along with them, however, grows well. The soil on the marlstone differs from that on the upper lias in being lighter. It is a sandy loam of variable depth, and is wet or dry, according as it overlies the calcareous sandstone or the clayey strata of the rock. When dry it is one of the most fertile descriptions of soil occurring in the district. The general rotation over the Dursley district, where the land is chiefly arable, is one of three years' duration. Wheat is followed by Barley or Beans, and that by seeds or Potatoes; a portion of the land being near the rock, and therefore brashy, is well suited for the growth of Barley. The heavier portions, again, are adapted for the growth of Beans. No Turnips are cultivated in this district. The common field system exists over a great portion of it, and the right which, under this system, certain of the proprietors and occupiers in the several parishes have, of folding their stock over the whole of the unineloscd land during winter, effectually hinders any attempts at Turnip culture. The average of the several crops is as follows:—Wheat per acre, 26 bushels; Beans, 30 bushels; Barley, 30 bushels; Potatoes, 70 sacks. The general seed-time is needlessly late. Barley sowing, for instance, rarely commences till the month of May; the period of harvest is consequently late. Wheat is generally harvested by the end of September. Beans by the middle of October; and it is thought sufficiently early if the Potatoes be housed by the time of Dursley Fair, which occurs on the 4th of December.—*M.S.*

ON FLAX SEED AS FOOD.

In a series of Papers which have already appeared in previous Numbers of the *Agricultural Gazette*, the cultivation and management of Flax have been minutely described; but as the application of the seed on the farm has lately attracted much attention in several districts in England, it has been suggested to me that it would be desirable to place that subject more prominently before the public than I have already done. With a view of procuring further information in this new and important department of husbandry, I have lately, in a visit to certain parts of the eastern counties, where attention has first been prominently directed to it, had an opportunity of seeing Flax-seed extensively and efficiently employed for this purpose, and the results of this it is my present purpose to place before the readers of this Journal.

The practice described in the Papers referred to in the preceding paragraph is that recently introduced into Ireland by the Belfast Flax Improvement Society, and it will be seen from a perusal of them, that the production of fibre is there regarded as the especial purpose for which the crop is cultivated, the seed being entirely a secondary consideration. In the majority of cases, indeed, so little importance has hitherto been attached to the seed that it has been entirely disregarded, partly from the circumstance of its value not being understood, and partly, also, from an erroneous opinion being entertained that the saving of the seed would be injurious to the fibre. Under these circumstances it will be perceived that the full value of the crop was not taken advantage of, and from the returns thus obtained no just estimate of the value of the Flax plant could be formed. This will be more apparent when it is considered that in circumstances unfavourable to the production of fibre an extra quantity of seed will be obtained, and *vice versâ*. Properly speaking, therefore, where advantage is taken of both products a failure can rarely be experienced, although where only one or the other is regarded, such an occurrence may be expected occasionally to take place. Where the fibre only is the object of cultivation this is more especially the case; and this circumstance caused the extent of land appropriated to the growth of Flax in Ireland to become annually less, so that without the intervention of the vigorous measures resorted to by the Belfast Flax Improvement Society, the cultivation of Flax, one of the staple productions of Ireland, would soon have been known only in name.

The defective management so long practised in Ireland resulted chiefly from ignorance as to the value of the seed apart from its application for the purpose of reproduction. Until lately, the husbandry of that country was wretchedly defective in every particular. The domestic animals were for the most part dependent for food on the spontaneous productions of the earth, little attention being paid to the growth of green crops. Under these circumstances it may be supposed that the use of oil-cake was entirely unknown. In this country, however, where improvements in cultivation scarcely kept pace with those effected in the rearing and feeding of the domestic animals, oil-cake has long been extensively used, and justly esteemed as a rich and nutritious article of food; and the Flax-plant not being generally cultivated here, large importations of that article annually took place. The oil-cake is well known to be the refuse of the Flax-seed after the oil has been expressed; the money-value of these ingredients being nearly in the proportion of one to four in favour of the latter. The value of the seed as an article of food before expression is therefore apparent; and it is not a little singular that it should have hitherto been so little employed for this purpose.

It is a curious coincidence that while exertions were being made in Ireland for the improvement of the growth of Flax, having reference chiefly to the production of fibre, attention was in this country directed to its cultivation for the production of seed, the fibre being disregarded, or at all events being a secondary consideration. Indeed, the returns obtained by Mr. Warnes, of Norfolk, from the seed alone, are much greater than those usually realised in Ireland from the fibre; and that gentleman has satisfactorily shown that without taking the value of the fibre into consideration at all, the Flax plant could successfully compete with other cultivated crops. The latter is, however, too valuable to be disregarded in any case, as, how ever inferior in quality it may be, it can still be profitably disposed of to the manufacturer.

Flax is usually regarded as a highly exhausting crop; and this opinion, has, in many cases, retarded the extension of its culture, even where the returns obtained from it were sufficiently remunerating. That it is in a greater or less degree an exhauster of the soil must be admitted; and this quality may be supposed to be increased by allowing the seed to ripen fully before taking up the crop; but the consumption of the seed on the farm will alter the character of the crop in this respect, and render it restorative instead of exhausting.

The process of saving the seed has been already described at length, and need not again be further adverted to, the present paper merely relating to its application as an article of food. It is perhaps unnecessary to apprise the reader that this subject was first prominently brought before farmers by Mr. Warnes; and after a perusal of the statements and experiments in the sequel it will be seen that he has laid his countrymen under very considerable obligations for his exertions. Having ascertained the advantages to be derived from the system, he persevered in advocating its extension until a society was organised in Norfolk for the purpose, which at present has numerous auxiliaries in connexion with it in Norfolk and Suffolk; and considering that the culture of Flax was previously unknown in that part of the country, and that the management to be adopted in almost every stage of it is very different from the usual farming operations, it must be regarded as not a little extraordinary that the extension of the crop has proceeded with undeviating regularity, and that fields of several acres may be frequently seen throughout the districts over which the influence of these societies extends. Although the seed is there the principal object, the preparation of the fibre has not been forgotten. In this respect, the example of the Belfast Society has been imitated, the services of Belgian and Irish operatives having been secured to teach the different processes of the manufacture.

Flax-seed has been found to be equally suited to the different animals of the farm, for all of which it is a nutritive and valuable article of food. It is not available for this purpose in its natural state, as, if given whole, it would pass through the animals almost unchanged; nor can it in any case be given in large quantities, for then the effect of it would be at once to subject the animals to violent purging. It is also necessary that it should be combined with other matters of a less nutritive character, in accordance with the established fact in the animal economy, that the ingredients necessary for the support of life are not advantageously used in a highly concentrated form, and that quantity no less than quality must be regarded. The Flax-seed is ground into meal, and at once combined with the other ingredients, the whole being afterwards boiled or steamed, or it is boiled alone with water, and then merely mixed with the other matters.

The indirect advantages obtained by the consumption of Flax-seed on the farm are various. It is well known that the chief difficulties to be contended with on the heavier class of soils—and these constitute a very considerable portion of the surface of the country—is the production of a sufficient supply of nutritious or green food to be consumed with the refuse grain and hay and straw; but this difficulty may in a great measure be removed by the use of Flax-seed. It will render any mixture of these, however coarse, sufficiently nutritious, not only for feeding, but for fattening. Though adapted to a wide range of soil, Flax is best suited to those of the heavier class, and it is on these also that the production of green food is the greatest desideratum. Great difficulty is usually experienced on such soils in converting the superabundant supply of straw into manure, as no considerable portion of it can be consumed by the domestic animals by itself; by the aid of Flax-seed, however, it may all be converted into nutritious food; and when such combination is extensively used, every exertion will be required to economise the refuse matters for litter, instead of otherwise ineffectually attempting to convert them into manure.

The use of Flax-seed may further be made auxiliary to the extension of the practice of soiling or house-feeding during the summer. The advantages of this system of feeding are well known, as economising the supply of food, by which an increased number of animals can be maintained; and also as greatly adding to the stock of manure, and consequent increase of fertility in the soil. On all the inferior kinds of soils, soiling has hitherto been found impracticable, the natural produce in such cases not being sufficiently nutritious for the maintenance of animals in a state of confinement; but here the aid of Flax-seed may be rendered available, as the jelly produced by boiling it, combined with the coarser Grass, will form a nutritious compound, relished by every species of live stock. It will at once be perceived that the use of Flax-seed will add, among other advantages, in a great degree to the fertility of the soil, by the production of a greatly increased quantity of manure, and that of a very superior quality. In no other respect, perhaps, can it be regarded of more importance than in this, as the increase of the productive powers of the soil should be steadily kept in view.

Premising these general remarks on the subject, it will perhaps be more satisfactory to the reader to detail the management adopted in the use of Flax-seed, with some of the results thereby attained. Here a reference to facts is necessary; and for this purpose I shall describe the system followed at Horkesley Hall, near Colchester, by the Rev. Mr. Blair Warren, to whom I am indebted for many of the statements which follow, which may therefore be implicitly relied on. Though long aware of the value of Flax-seed as an article of food for live stock, I cannot forbear expressing the surprise and great gratification which I experienced in the inspection of the system of feeding at Horkesley, where sheep and other stock are fattened with a proportion of Flax-seed jelly, both in houses and out of doors.—*J. Sproule.*

(To be continued.)

NOTES OF A JOURNEY THROUGH SOUTHERN AND WESTERN ENGLAND.

I do not pretend either thoroughly to know the English farming, or to be capable of entering into a minute investigation of its merits or demerits, for I have spent little more than ten days in the country, and those have been chiefly occupied in travelling on railways and coaches; but there are various points so obvious as to strike the eye of the most cursory observer.

The following remarks have reference to Berkshire, Wilts, Gloucester, Worcester, Stafford, and Cheshire. On leaving London by the Great Western Railway, and proceeding through Middlesex to Reading, we pass through a fine, level, rich country, a considerable extent of which is in crop, principally Wheat, which presents a good appearance, and (August 3d) is mostly ripe; Oats are generally a light crop. To the west of Reading the railway runs through cuttings of chalk, mixed with flint nodules; at the Oxford junction line the soil is poorish, low-lying, and mossy; from that to Chippenham is a fine country, lying chiefly in meadow Grass, subdivided into small fields, surrounded by hedge-rows, ditches, and trees; around Chippenham it is hilly and rather poor, and on to Bristol still hilly; between Bristol and Gloucester is a fine undulating country, still principally in Grass.

I believe I am correct in saying that in the whole of the country named, and on to Birmingham and Liverpool, there is not above one-third in crop, if so much; and the remaining two-thirds are lying in meadow Grass, a portion cut and made Hay, the rest pastured; the modern improvements of draining, soiling cattle, proper rotation of crop, including Turnip, Clover, and Rye-grass, deep ploughing and thoroughly cleaning the land, seem to be anything but generally adopted. When we see the fields laid out into ridges of 2 or 3 yards in breadth, the furrows in many instances being almost bare of crop, how can we account for it but on the supposition of the land being wet? Again, I do not think I exceed the mark when I say, that for every 10 acres of surface there is 1 acre rendered useless—nay, worse than useless, absolutely injurious—by hedge-rows, ditches, and trees; almost every paltry field of 2 or 3 acres must have its hedge and ditch, and in very many instances its row of trees. Did these hedges do no more harm than occupying the ground, they would be bad enough; but they afford shelter and nourishment to all sorts of weeds, insects, and vermin, rendering it almost impossible for the farmer to keep his land clean; untouched, they furnish annually a crop of seed-weeds, blown by the wind through the fields, defying all attempts to keep the land clean; and when the field is in crop, if the season happen to be at all wet, the crop must be lost from the want of a free circulation of air.

When travelling on the Great Western Railway, we heard some people remark, they would rather see the fine green fields of England, with her hedge-rows and trees, that contribute so much to beautify and adorn her, than see nothing but corn fields. Utility, however, before ornament, say we, so long as England cannot grow corn enough to support her inhabitants. While we have the strange anomaly of plenty of capital with a superabundance of labourers, vast numbers of whom are bordering on a state of destitution; when so many of our countrymen, finding it difficult to earn a subsistence at home, are annually emigrating to other countries, and seeking to themselves a home in remote quarters of the globe—it seems strange that so large a portion of the fine and fertile soil of England should remain only half cultivated; that we should assist in exporting our countrymen to reclaim wild land in America and Australia before first properly cultivating our own.

In travelling through these counties one is surprised to see in some parts ploughs (large, clumsy, wooden articles, with two large wheels fixed at the end of the beam) drawn by three or four horses in a line, with a man or boy besides the ploughman driving the horses; and one can hardly restrain a laugh at such a needless waste of animal labour, knowing that two horses will in general do more work yoked abreast to a plough than four yoked before each other in single file, because some of the power of the foremost horses is always wasted in its passage along the sides of the hind horses, and while turning, the hindmost one has the whole draught to bear. In Scotland, and many well-cultivated parts of England,

all ploughing, except perhaps subsoiling, whatever be the land, light or heavy, is performed with but two horses yoked abreast; and with a properly-constructed plough these are found amply sufficient.

Having now run over shortly what I think are the leading defects that struck my notice in my short journey, let me as shortly point to the leading remedies:—First, then, the landlords as a body ought to grant long leases of 19 years at least, and on grain rents, or at so many bushels of grain per acre, at the average price of the county; for what man will invest his capital in improving land, without having a vested right in his improvements? or who would run the risk of spending his means in draining or otherwise improving his farm, with the liability instantly after of being turned adrift at the mere caprice of his landlord? The landlords should also take upon themselves the payment of the whole burdens, whether in the shape of tithes or poor-rates, &c., so that the tenant would have a fixed rent before him, and have nothing to fear—nothing to prevent him laying out his capital to the best advantage. The law of hypothic should also be abolished. This was enacted for the protection of landlords, but it is very questionable if it does not react upon themselves, by preventing the tenant from borrowing money to carry on improvements in the same way as other classes of the community. If a manufacturer, for instance, has 1000*l.* on machinery, he finds little difficulty in borrowing money to the extent of at least half its value; not so the farmer. Who will lend to him, when his landlord has a preferable claim on the property?

The next thing to a proper cultivation of the soil is a sufficient supply of manure; and this cannot be procured without keeping a large stock of cattle, for which in the counties named there is no means of subsistence: to overcome this difficulty it is necessary, instead of as at present having two-thirds nominally in Grass but in reality producing little, to introduce green crops, crops of artificial Grasses, Turnips, and other roots; for it is well known that the same ground which in poor pasture would only feed a few cattle in summer, will, under the crops mentioned, feed three or four times the number all the year round, if they be kept in the house, the food being brought to them: three or four times the quantity of manure will thus be produced. Again, take a farm of 300 acres, only one-third of it being cultivated, the remainder in Grass—how few people are employed here! Change the system, and we have three or four times the number employed. Were this universally adopted where required, and were the land drained and rendered fit for bearing crops, and subsoiled, and thoroughly cleaned and manured; were those useless hedgerows, ditches, and trees, that take up so much ground, and damage so much more, swept away, we should find no redundancy of labour in the market; there would be no anxiety about the unemployed—no talk of exporting the strength and sinew of the country, and no fear, as at present, of annually importing a large quantity of foreign grain.—*A Strathearn Farmer.*

Home Correspondence.

Knap-weed.—Our pastures are nearly covered with a coarse Grass, which they call here knot-weed, and it is this year making its appearance even where they were mown for Hay. Neither cows nor horses eat it. Is it of any use in protecting the more tender Grasses? or is it so injurious, by taking up the room and nourishment of better sorts, as to make it worth while to have it pulled up by hand? Now the ground is wet some of the stalks pull out with a portion of the root; but as many break off it will require pulling several seasons before it can be eradicated. It seems to grow most where the ground has been drained. Would it not pay generally to pull out all the coarse weeds from permanent pasture land?—*J. B.* [Persevere in pulling it up, or cutting it off with the spade; no weed can continue long in the ground if treated thus.]

Protection to Bark of Trees.—Twisted Hay or straw-bands bound round the stems of fruit-trees, and slightly coated with gas-tar, will prevent sheep or cattle injuring them. Painting the bark with any kind of mixture may close up the pores of the outer skin, and thus retard the growth of the tree. By the above plan, the air has free access to the boll.—*Falcon.*

Sowing Corn.—The simplest way of sowing Corn over lea land, is to do it broadcast over the first furrow. The seed in this case will fall between the lips of the furrow, and all the advantages of drilling will be obtained, along with the cheapness and speed of sowing broadcast. It is evident that in this case there will be an advantage in having much earth raised in the form of ribs, between which the seed will lie, as then the seed will be sure to be covered. The greater the quantity of earth thus raised, the more efficient will the covering be when the harrows drag it down; and this appears to be the proper office of the harrow. In some districts heavy drags are used to stir the furrow to the bottom; now this is not the office of the harrow, but that of the cultivator, scarifier, or whatever it may be called, which will do it more effectually, and with less difficulty. The office of the harrow is to drag weeds to the surface, and to reduce clods or any unevenness of surface; and, to enable it to do this effectually, its teeth should not be long, but rather so short that the framework of the implement may rub over the ground.—*M. S.*

On Raftering or Ribbing Land.—Each sod or furrow-slice is, in this operation, turned over upon the own breadth of last land which has not been ploughed. The ridged surface of ground ploughed in this way is greater than that of ground ploughed in ordinary fashion. There are two opinions on the value of this mode of ploughing—opinions, too, which are held to stoutly by their respective owners. The one party holds forth the advantage of the plan especially in ploughing before winter, by which a great surface is exposed to the frost; and the other holds forth the evil of only half ploughing the land. It is evident that in raftering, only every alternate sod is moved, the other being firm land, on the top of which the sods are laid; and this does not so effectually cover the land as to hinder the growth of weeds. Having been accustomed to see land ploughed deeply and effectually before winter, and having no experience of the advantage of raftering land, I cannot give an opinion of its merits. It appears to me, however, that the weather which cannot penetrate fast land as it can that which is loose, cannot have the effect on the half ploughed or raftered field that it can on the field which is perfectly ploughed.—*M. S.*

On Reaping Grain.—The observations and testimonials in the *Gazette*, on the proper period of reaping Wheat at an earlier stage than is now commonly practised, are only confirmatory of an opinion that has long prevailed, and been partially practised, but not generally been adopted on account of the slow rate of progress in agricultural improvements, and the extreme backwardness with which anything new is received. I remember being told by an old practitioner a quarter of a century ago, that Oats should be cut when "paddy-hued," or when the pickles are striped like the back of a paddock, and I have in many cases cut Oats in that state. I have got the straw more juicy, and better in quality, and the farina finer. In the case of Barley being cut in that striped state, I found it always preferred by the maltsters, the skin being thinner, and the sprout quicker and more vigorous. With these two grains the results were quite decisive. In the case of Wheat, I had a field in Leicestershire cut fully ten days before the usual time, the straw being greenish, and the pickle hard, beyond shrinking, not admitting the striped test, as neither the calyx nor corolla adheres. It was threshed in due time, and sold to a miller of much experience, who remarked the very superior quality of the flour in point of fineness and gift, and could give no reason till he asked me if it grew on the field cut so early, and which in public opinion was so much hurt thereby. He saw the cause at once, but the fact convinced none else. He even declared it the finest article he ever saw. It may be very reasonably supposed that fruits and seeds have passed the adolescent state when the quantity of matter is fully gathered which forms the body; and when this has happened, the matter is in its finest form, and a coarseness takes place immediately on verging into confirmed maturity. The processes of nature universally confirm this observation, and in the case of cutting grain, it only remains to judge at what time the matters composing the pickle have acquired a consistency sufficient to prevent shrinking after the crop is cut. It will be found that this period has arrived some time before the straw and ears have attained the common marks of ripeness—a yellow, gold, or white colour; when they are thus fully ripe, the pickles are pushed much more forward in maturity than the appendages of support. My experience enables me to say, that in most cases our grains are 10 to 14 days too late in being cut; and I am glad to be able to add my testimony to the authorities already adduced.—*D.*

Cone Wheat.—Having recently noticed some very fine Cone Wheat growing near this city, I have had the curiosity to ascertain the length and weight of two ears taken indiscriminately, after removal of the crop from the land, and consequently in a dry state.

Length of ear.	Number of seeds.	Weight (Apothecary's).
6 inches	106	150 grs. or 2½ drs.
5¾ inches	110	156 grs.

In both cases the stalk measured about 5 feet 6 inches.—*F. S., Gloucester.* [Very fine ears.]

Vale of Evesham.—The harvest in this rich and beautiful vale commenced in good earnest about the first week in August. Although the weather was at first fair and promising, on the second week the barometer fell very low and the farmers' spirits more so; however, a brisk wind and bright sun cleared away the storms, and many a thousand load of Wheat was secured in excellent condition. Various were the implements used for cutting down the Wheat: in some fields might be seen the celebrated Welsh bagging-hook, in others the Scotch scythe, and lastly, though not the least effective, the old English sickle. Many commenced reaping this season earlier than usual: some, tempted by the fine weather, others from the numbers of reapers applying to be set on; those who delayed, thinking the Corn was not sufficiently ripe, had a considerable quantity shed upon the ground. The Wheat was remarkably free from rubbish, and consequently soon ready for carting to the stack-yard. The autumn-planted Wheat will average from three to four bags per acre more than that planted late in the spring. Had it answered as well this season as the three last years, a vast many might have been tempted to deviate from the general rule of planting in the autumn; and then, had such a failure as the present taken place, the consequences to the country might have been very serious. Notwithstanding this deficiency in the spring-planted Wheat, the crop undoubtedly is a full average one; and the grain was never known to be finer. The Barley will be a very indifferent crop. Beans are also very short in the straw, and although in some fields well-podded, the crop is far short of an average. Peas, both White and Grey, were secured in excellent condition, and there is little doubt of their proving good boilers; their colour is excellent, and the straw will prove valuable for store stock. Swedes and Turnips are a failure: although the young plants came up tolerably well, no sooner did they make their appearance than the little spotted fly commenced devouring them, and in a very short time afterwards the aphis joined in the work of destruction. After both these annoying little insects had done their best to annihilate the plants, a white grub began gnawing the roots, and finished the greater portion of those that had escaped. Some tried lime, others soot, but the most effective plan that I have heard of in destroying the aphis was adopted by a neighbour of mine. He sowed lime over the young plants, and afterwards passed a hurdle drawn with willow branches, both ways over them—the crop is good. Scarcely one farmer in a parish has a good field of Swedish Turnips; many have sown three or four times, and others have given up in despair. Never was the Swede land more expensively dressed with bones, guano, and all kinds of stimulating manures; notwithstanding which, all have failed. The loss of the Swede crop will be most seriously felt by the large stock owners. The young Clovers amongst the Barley and Wheat present a very poor appearance; few grounds will bear stocking before the spring. Farmers will do wisely to plant as many Vetches as they can—spring keep will be highly valuable. Although reports of the Potato crop are favourable, on a closer inspection they will prove to be incorrect. The early sorts have nearly all rooted again since the rain, and very many of the late Potatoes are full of root without any tubers; only those planted just before the rain in the early part of July are good. The fruit in the Apple and Pear orchards is exceedingly fine and free from blight, and promises to make excellent cider and perry. It is a matter of great thankfulness that the Wheat crop is so good this year. It is now evident that the British farmer can grow sufficient for the increasing population; scarcely a bushel of foreign Corn will be required before another harvest.—*H. H., Jun.*

Are Rabbits Game?—In your *Gazette* of 27th ult. you state "that the tenant of lands, or any person by his direction, may destroy rabbits on such lands without taking out a game certificate;" and you quote Schedule L. of 52 Geo. III. c. 93. Now in two recent Nos. of *Bell's Life* (I think the last published, and the No. 14 days before), an answer to a correspondent gives an opinion quite the reverse. On a point of consequence, it is strange that two such authorities should so differ in their opinions. Would you oblige a subscriber with correct information upon this point?—*No. 5.5.7.* [See Notices to Correspondents in last week's Paper.]

Vetches and Italian Rye-grass.—Mr. Huxtable inquires if Vetches and Italian Rye-grass may be sown together? You remark, "We doubt the propriety of so doing;" you invite information from your correspondents. I now furnish the result of my own experiments. In May, 1842, I sowed a field of four acres with Vetches, Oats, Cow-grass, and Italian Rye-grass; the first crop that season consisted principally of Vetches and Oats, which I took care to cut before the Vetches could destroy the other Grasses. The second crop (that season) consisted of all the Grasses, but now the Italian Rye-grass and Cow-grass prevailed over the Vetches and Oats. We now come to 1843; May 22d I commenced mowing my Italian Rye-grass and Cow-grass, the former prevailing greatly over the latter. The whole field was mowed three times that season, and part of the field four times. Some of the Italian Rye-grass grew to the length of 5 feet 7 inches. Subsoil, gravel and large pebble-stones; previous crop Oats; land very foul, requiring four ploughings; was well limed, and after mowing manured with stable dung, pig's dung, ashes from iron-stone, calcined with anthracite coal, and also the ashes of anthracite coal.—*William Courtes, Ynisceedwyn Iron Works, near Swansea.* [Perhaps you will be kind enough to give us the quantities of the different seeds you sowed per acre. How were they sown?]

House Manure.—Could you not suggest some mode by which the drainage of large mansions might be made use of as manure? In most of our country houses, when not situated near a stream, the drains are, I believe, allowed to lose themselves in the ground at a certain distance from the mansion. Might they not be made of infinite service, by being conducted to a cesspool, into which cesspool, from time to time, might be thrown disinfecting agents, sufficiently powerful to destroy the offensive odour arising from the same? In Belgium these excrements are looked to as the richest manure, but I believe little pains are taken, if any, to overcome its fetid smell, on being drawn forth for the purpose of application to the growing crops—the proprietors of the land being willing to submit to the nuisance for the sake of the value of the article producing it. I have long caused the urine collected from the bed-chambers to be emptied on the dunghcap, as well as the water in which soap has been used; but I should like to make more use of the valuable manure created in my house; and as I am about entering a new residence, in which I can make any alterations I like in the drainage, I shall be glad to receive any hints you may be disposed to give, which may throw a light on this subject. It has struck me that, taking into consideration the quantity of water which would run into a cesspool from the water-closets of a modern mansion, a pump placed in the same would afford a rich and valuable supply for flowers or vegetables, or, if a water-cart were used, for irrigating Grass land with a liquid manure.—*A Constant Reader.* [Instead of letting the drains lose themselves in the grounds, let them all deliver into a tank at any convenient spot, causing everything first to pass through a cesspool, in which the solid matters may subside. The contents of this should be mixed with fresh vegetable mould, and

applied as ordinary manures; and the liquid manure should have its ammonia fixed by sulphuric acid or sulphate of iron (see *Gardeners' Chronicle*, No. 33), and may be used in garden or field, as you choose].

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

On the last day of this Society's meeting at Southampton, Dr. Buckland delivered a lecture on Artesian Wells, in the course of which he made the following remarks on the means of improving land which Geology affords:—In his address, last Wednesday, to the Council of the Royal Agricultural Society, he had spoken of the capabilities of permanent agricultural improvement in Hampshire, and other southern counties of England, especially in the districts between the sea-coast and a line drawn from Dorchester through Salisbury and Winchester to London, including Wareham Heath, Poole Heath, the New Forest, and Bagshot Heath. If the improvement of these wastes by the mineral manures that lie beneath their surface were taken up in a scientific manner, and on a large scale, by great proprietors, or by a land improvement company; small portable steam-engines, and portable tram-roads, may be employed to raise from shafts that may be sunk in any part of this district, and transfer to profitable distances, and spread upon the surface the chalk, and clay and marl, that lie at various depths under the area of these sandy wastes. Thus the silt of the Humber has, with very great profit, been lately transferred by tram-roads to be spread on the surface of barren peat. In Norfolk vast tracts of sandy rabbit-warrens have during the last half century been converted to productive Corn-fields, by adding to their surface a top-dressing of marl, clay, chalk, or shelly sand and gravel, locally called *crag*. The cost of such top-dressings of mineral manure need rarely exceed 10*l.* an acre, and the benefit thereof is the conversion of waste into permanently valuable arable land. On Lincoln Heath, where, not 100 years ago, a land lighthouse was erected to guide the benighted traveller across a barren sandy desert, the application of scientific agriculture and capital had converted thousands of acres of unprofitable heath into pleasant and productive Corn fields. The chalk hills also that form the wolds of Lincolnshire, and the wolds of Yorkshire, had been made rich by processes which were now beginning to be introduced in Hampshire. On Thursday last the Prussian minister had called the attention of the assembled agriculturists of England to the example of good farming that is set them by the most illustrious of living warriors, the Duke of Wellington; and near Strathfieldsaye may now be seen rich fields of Barley and Turnips on naturally heavy clay lands, which two or three years ago were reeking with moisture, and incapable of that rotation of green and grain crops which all good farming requires. The Duke of Wellington was year after year improving his clay lands, first by thorough draining, which is the indispensable precursor of all other improvements, and after drainage spreading large quantities of chalk over the surface of the clay. Not less than 1000 waggon loads of chalk had, during the last year, been brought from Basingstoke to the neighbourhood of Strathfieldsaye. Similar improvements of poor sandy soils may be made by laying upon them a good top-dressing of clay and chalk, in addition to ordinary manures; and Geology had ascertained the existence of several kinds of marl and clay at various depths beneath the poor sandy heaths which form so large a portion of South Hants and Dorset and Berks. The place of these clay beds is often indicated by the oozing of water and growth of rushes near the base of the sloping sides of the shallow valleys or combes that traverse these sandy plains, having their base frequently covered with peat. Between Christchurch and Poole many such oozing streamlets point out spots from which, by the aid of a small steam engine and tram-road, clay may be brought up to reclaim the sandy wastes around each of these centres of supply of fertilising mineral manure; and the efficacy of this process had been shown on a small scale near Poole in little inclosures, made by a few industrious peasants. In Hampshire he rejoiced in the occasion of recording a much greater example of improvements of this order now in progress on the property of Sir W. Heathcote, who has already converted to good arable land large inclosed portions of the sandy surface at Anfield and Cranberry Heath, by enriching them with the permanent mineral manures of clay and chalk. Sir W. Heathcote has also adopted on the farm he occupies at Hursley, the practice of stall-feeding oxen, which is essential to produce the great quantities of manure that are required for the fertilisation of all soils that are naturally poor, and without which the improved fertility of the chalk and sandy lands in Lincolnshire could not be sustained. The conversion of barren soils to fertility, is an example of the practical application of geology to the useful purposes of life, and the sciences of agriculture and civil engineering must obviously be imperfect in some of their most fundamental points, without a knowledge of the composition of soils and structure of the earth.—*Hampshire Independent.*

HIGHLAND AND AGRICULTURAL SOCIETY.

At a public breakfast, on the occasion of the late Annual Meeting of this Society in Glasgow, the following interesting conversation took place, on the subject of Failures in the Potato Crop:—Professor Johnston stated that the disease in the Potato was not confined to this country. It was experienced in France, Germany, Holland, Prussia, Russia, and all over the Continent, as well as in North and South America, showing that some elementary principle was required to cure the evil. The universality of the disease only increased the necessity for discovering its cause; and he expected to derive much information on the point from gentlemen connected with England and Ireland, as well as their own country. He took the opportunity to read a communication from Mr. Girdwood, of Bute, of which the following are extracts:—"In 1838, while residing at Bute, I succeeded in raising a good many varieties of the Potato seed, about half a dozen of these promised to be good kinds, and I continued to grow them till I removed to Ayrshire, in 1841, where I carried a sample of them with me; they succeeded well in 1841 and 1842, and I had every reason to expect they were going to turn out valuable field varieties. Last year, however (1843), they were almost a total failure; still the few that did grow were preserved, have been planted this year, and have become healthy and vigorous. Again, on the same field last year (1843), a plot of smooth beds showed symptoms of disease—in fact, there was a good many blanks, and the whole plot was stunted and weakly. I have this year, by way of experiment, planted a portion of the produce of this plot; farther, I intentionally planted them late when the soil was exceedingly dry, and after the sets had lain out for a week, they have come quite regularly, and look healthy. I shall only further remark, that I have known the plan of keeping those intended for seed in the ground all winter, having tried it for several years past with uniform success."—Mr. Burnet, of Gadgagh, in stating the results of his own experience, said he never planted Potatoes without thoroughly draining and subsoil-ploughing the land. He had experienced no failures in the Potatoes till last year, and that in only one variety, the Rough Reds. This year he had experienced a failure in another variety, the Russian Dons; but this description of failure was very different from that of last year. The general crop is extremely healthy; but here and there, sometimes one and sometimes two have failed. On examining the Potato which had been planted, it was found to be quite fresh, with the skin unbroken, but the plant, which had at first grown up well had withered and died. As to other kinds of Potatoes, he had planted them this year both whole and cut, and there were no failures. He had planted about three acres with guano alone, and without any farm-yard manure, and they had come up invariably vigorous and healthy, except in a very few instances, where the land was not pulverised; and he attributed this, not to the Potato, but to the hardness and roughness of the land, the rest of the field being the most healthy crop he had seen. Another experiment he tried was this:—Last year he planted a variety of Potatoes, and particularly those that were likely to fail, between October and the end of September, at a depth of 12 inches (!) some of them with manure on the top, and some without, and the result was, that those varieties which had failed before failed again. About three-fourths of the crop, however, was good. With regard to the failure that took place in the winter-planted Potatoes, it was somewhat different from that which took place in the spring-planted Potatoes. They began to vegetate in spring, but instead of sending up a sprout, it came only a short way, and formed a tuber on the top.* A less proportion of those planted in spring were good; and he had invariably found that Potatoes left in the ground came up fresh and vigorous without any failure at all.—Mr. Alexander, of Southbar, had grown Potatoes very extensively, and could say from his own experience, that he never had a failure but where the Potato was ill-treated by previous management, by being heated, or otherwise. They were pitted in too large quantities, and these bins all heated more or less. He had never seen a failure in Early Potatoes, which was, in his opinion, accounted for by their never being stowed away in such large quantities; and they were, besides, never so ripe. He found great advantage from putting in Potatoes early, while the land was still moist, and then covering them over with dry gypsum.—Mr. Allison, of Mearns, said, he believed vegetable life was just like animal life, in so far as it would be injured by bad treatment. He had seen whole Potatoes grow frequently where cut ones failed, though if the latter did not fail, they produced better crops than when whole. He also found that the Potatoes were stronger for seed when they were reared from whole Potatoes. If they were raised for two years from whole Potatoes, his experience led him to believe that disease would be cured; they should just allow them to remain in the ground, and never touch them.—Mr. Anderson, who has the management of large estates in the northern parts of Ireland, had watched narrowly the progress of Potato-growing for many years. He had found that where the land was well drained and pulverised, failures seldom occurred. His plan on his own farms was, to drain thoroughly, pulverise the soil, open the drills, and put in the sets, and cover all up in half an hour with the plough; and with this treatment he never had a failure; and when he left them exposed to the sun he found that they always failed. He tried the practice of digging the Potatoes before they were top ripe. The farmers around complained of this, and would not take their seed from him, because they were not ripe; but he had derived great advantage from the practice. He employed careful people, too, to select for seed those Potatoes that had not been injured, and he never planted a Potato that had been injured by the grape or otherwise. In stowing away seed Potatoes he used a long pit, two and a half feet wide at the bottom, and well drained, covering it well up to keep out the air, and never opening it till the seed was to be planted. While cutting the Potato for seed, if it dried into a mealy, starchy substance, then it was considered good, and sown; but if it was watery, then it was rejected. He had sometimes got the farmers to wash the seed in pure fresh water, and then had the ground pulverised all over with lime, &c. He might say that, during many years, he never had a failure in Potatoes, except in one instance, when, during his absence in Scotland, they were allowed to become too ripe, and the land-steward put a large body of them together, when they heated and rooted. In Armagh, through a great part of which he had travelled investigating this subject, he found that where the land was thoroughly drained and subsoil-ploughing attended to, there was no failure.—Mr. Stefling, of Kenmure, gave some interesting details regarding the introduction of the Potato into this country. He said Gerard, an old English botanist, raised seedling Potatoes in 1590; they were planted in the open field in England in 1684; and they were planted in a similar way in Scotland by Thomas Prentice, a day labourer, at Kilsyth, in 1728; they were introduced to Ireland about 1610, by Sir Walter Raleigh. In reference to the taint in Potatoes, he might state that there was no failure 30 years ago, although it was often roughly treated; now disease existed in almost every country where the Potato was cultivated, whether in Europe or America. The oldest varieties, viz., the Rough Red and the Common Red, are most subject to disease; the Cups, one of the newest sorts, blossoms, but seldom bears apples in Scotland; it is one of the most healthy kinds, but within the last two years has begun to fail in Ireland. He believed the disease in this plant was caused by our having allowed it to bear seed annually for so long a period of years—not, as some supposed, by having encouraged it to put forth its productive powers below the surface, but by allowing it to shed its seed to waste on the surface of the soil; he believed that the taint did not arise from fungus, or disease by contact, for his friend Mr. Houston had this year manured a patch of Potatoes with a cart load of decayed ones, and they gave promise of a good crop. The strongest presumptive evidence which he could offer in favour of his views was, that the late varieties, which blossomed freely, are those which are tainted with this disease, whilst the early varieties, which rarely blossom, are free from it. Why then does not the farmer pluck the blossom in his Potato fields, when it has been proved that this practice gives an extra weight of produce? It is because he is not convinced that by allowing the seed to ripen he exhausts not only his soil but his Potato plant, and loses starch from the tubers. He at one time thought that by plucking off the blossoms of our present stock of Potatoes, the disease might be arrested or cured; but he learned last week that some varieties raised from seed a year or two ago were already decaying—thus proving that a "corrupt tree could not bring forth good fruit." Under these circumstances he saw no alternative but to get a fresh supply of seed—and the sooner the better—from Peru, or any other native country of the Potato, where fresh plants have been allowed to come up every successive year. Unless something were done, the Potato might degenerate altogether.—Sir Robert Bateson, from Ireland, begged to state a few facts from his own experience. On one occasion he left Potatoes in the drill during the winter, covering them well up, and the next season, when planted, they grew up a very fine crop. These, from the time they were in the ground, must have been dead ripe. The only drawback to this was, that it prevented the farmer from occupying the ground with other crops; but he thought it would be found advantageous to lay aside a field for this purpose. He planted a field in autumn, which came up without a single miss, and most vigorously, but, strange to say, they continued growing to a later period than those planted in the spring. Perhaps this was caused by their being planted deeper than the spring Potatoes, to protect them from the frost. He learned a fact from Mr. Reid, of Derry, which was worthy of attention. This gentleman raised his Potatoes and spread them in the sun, till they became dried and unfit for food; he then stowed them away, and when planted, never knew a failure. He found that whole Potatoes never failed, but they yielded a smaller crop, and much smaller Potatoes than the cut ones. It was his practice, as soon as a few shaws became ripe, to dig the Potatoes, as he entirely disapproved of ripening too much. Mr. Fleming, of Barrochan, could confirm the fact, that if Potatoes were left in the ground the whole winter through, they never failed; and the later Potatoes were in being planted, and the less ripe they were, the less likely were they to fail. He had always found, that the worst eating Potato, the worst in quality, was the best for seed, and the least likely to prove a failure. Several years ago he had tried to raise Potatoes from seed, under the idea that the plant had become degenerate; but after innumerable trials, and raising many thousands of plants, he had never produced one single healthy variety; therefore, they must look to something else than the mere seed to produce healthy Potatoes, and, in his opinion, the only thing likely to do this was the introduction of some other mode of treatment. What he had found as likely to produce a more healthy Potato for planting was dressing the Potato with nitrate of soda, and sulphate of soda and magnesia. This gave a crop which, when planted, grew more surely than others. His Potatoes, dressed in this way, were all growing well this year, and they had more vitality than when raised by the common farm-yard manure.—Mr. Alexander said a person who made a great deal of starch got his Potatoes from a person in his neighbourhood, and it was found that the best Potato for starch was the worst for seed.—Mr. Anderson said,

* The depth at which they were planted was evidently one cause of the failure of the winter-planted Potatoes.

several years ago he tried the experiment of cutting the flowers and apples off every four alternate drills before they came to maturity, and allowed the Potatoes in the other drills to bring forward their seed to maturity. He planted the Potatoes, but never could see the slightest difference between the one and the other; in short, it would not pay the expense.—Mr. Fleming had always observed that Potatoes shallow planted, and where there were a good number exposed to the air, so that they became quite green, made the best seed. A great injury was done to Potatoes by deep planting, as it was absolutely necessary that they should have free access to the atmosphere.—The Chairman said, it would be of great advantage to the meeting if, after the valuable information they had received, Professor Johnston would sum it up before them, and perhaps endeavour to reconcile some contradictory statements which had been made.—Professor Johnston then went over the leading facts brought forward by the previous speakers, and pointed out their value in so far as they suggested to others the propriety of making them the subject of experiment. For example, the plan followed by Mr. Burnet and others of planting Potatoes in autumn, as a surer way of getting a good crop; the course of treatment before planting recommended by Mr. Alexander, viz., to keep them in small bins to prevent heating; the proposal of Mr. Allison to plant whole Potatoes; the suggestions of Mr. Anderson, who recommended well-drained and pulverised land, also opening the drills, putting in the manure and the seed, and covering them up immediately, together with his plan of using green Potatoes for seed; the opinion of Mr. Stirling, that the failures are owing to the seed being grown over a long period of years; and the suggestions of Mr. Fleming and others—all these were matters of great importance, and such as gentlemen should take into consideration, and make the subject of experiment for themselves.—Sir Robert Bateson said he had found a small Potato which grew out of the stem, produced by the juice, which when planted produced excellent crops.—The Chairman then shortly addressed the meeting. They had been engaged in a question of vital importance, and he would appeal to every gentleman present if they had not received much information. He would only express his hope that the meeting that day would be followed by other meetings of a similar character, and he would suggest that sound practical farmers, like Mr. Allison, should be brought forward to such meetings to give the results of such experiments, from which all might derive solid and truly useful information; while men of science, like Professor Johnston, could digest that information, and reconcile what appeared inconsistent; and he had no doubt, notwithstanding the forebodings of Mr. Stirling, that the cultivation of so invaluable an article of food as the Potato would be greatly improved and extended. The meeting then separated.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

The following remarks on the great Annual Meeting of this Society, at Dublin, on Aug. 14th and 15th, are extracted from the *Dublin Farmers' Gazette*:—Amongst the live stock exhibited were very many which, in the opinion of the Judges, would not only have been creditable, but which could hardly be excelled at either of the national Shows of England or Scotland, especially amongst the Bulls; but in all the other classes, together with some splendid animals, the great majority were very inferior; neither in any other of the Cattle Classes did the stock come forward in the usual proportion to the entries; and the vacant stalls thereby occasioned gave a scattered appearance, which bore the semblance of an attempt to spread a few cattle over an immense extent of ground. Much of this deficiency was doubtless caused by the unfortunate prevalence of the distemper; but much more, we fear, by the classification which the Society, departing from the track that has led to such happy results in other Societies, has struck out for itself. The novel distinctions of "Pure and Distinct Breeds of Cattle for Breeding Purposes," and of "Pure and Distinct Breeds for Fattening Purposes," were not understood by our breeders. Up to this time, the effort has been to produce animals possessing both qualities in the highest degree of perfection; and being now, for the first time, called on to produce pure and distinct breeds for each purpose, and left in ignorance as to the meaning of the terms of competition, no wonder they should refuse to send forward their animals, or having sent them, find that they might better have kept them at home. The competition in sheep was by no means so extensive, nor were the lots individually, with some exceptions, equal to our expectations. The Horse Class contained a few fine animals, and may be characterised as respectable; and, as regards swine, we have seen a greater number, and, with few exceptions, superior animals at many of the provincial Shows. We have now arrived at a department of the Exhibition which was really excellent—that of the Agricultural Implements. In mechanical invention, evident efficiency and workmanship, nothing which we have ever before seen could be compared to the implements offered for competition by the Scottish manufacturers, Wilkie, Law, and Grey. As a general collection, that exhibited by the Messrs. Drummond was most creditable, containing, as it did, a full assortment of the most valuable implements; nor were the large contributions of Messrs. Sheridan, Courtney, and Stephens, Lestrange and Bambrick, and Murphy, and Messrs. Paul and Vincent, much inferior, either in execution or apparent efficiency. Mr. Robinson's, of Lisburn, churning and steaming apparatus were most deservedly admired.

The following is the award of Prizes for the Implements exhibited:—

For the best general assortment of collected Implements, to Messrs. Drummond and Co., Dublin, 5*l*.

For the best general assortment of Implements of Irish manufacture, to Messrs. H. and J. Sheridan, Dublin, 4*l*.

For the best Swing Plough exhibited, to Messrs. Drummond, of Stirling, for Barrowman's Plough, the Society's Medal.

For the best Swing Plough manufactured in Ireland, to Messrs. Sheridan, Bridgefoot-street, Dublin, the Society's Medal.

For the best Subsoil Plough exhibited, to Mr. Wilkie, Glasgow, the Medal.

For the best Subsoil Plough manufactured in Ireland, to Messrs. H. and J. Sheridan, Dublin, the Medal.

For the best Turnwrist Plough, to Mr. Wilkie, Glasgow, the Medal.

For the best Turnwrist Plough manufactured in Ireland, to Messrs. H. and J. Sheridan, Dublin, the Medal.

For the best Grubber, to Mr. Wilkie, of Glasgow, for his Finlayson's Grubber, the Medal.

For the best Horse Hoe, to Mr. Wilkie, of Glasgow, the Medal.

For the best Turnip Drill, to Messrs. Drummond and Co., Dublin, the Medal.

For the best Turnip and Bone-dust Dropping Machine, to Messrs. Drummond and Co., the Medal.

For a Machine for sowing Carrots, to Messrs. Drummond and Co., the Medal.

For the best Corn and general Drill Machine, to Patrick Gogarty, of Castlebellingham, 2*l*., and the Medal.

To Joshua Anderson, of Dublin, for a model of an improved method of Slating, 2*l*.

To Mr. Bigg, Crawford-st., London, for his Sheep-dipping Apparatus, the Medal.

To Messrs. Courtney and Stephens, Dublin, for their improved Hay-tedder, the Medal.

To the same, for their Water Barrel, the Medal.

To the same, for a Clod Crusher and Bar Roller, 2*l*.

To Mr. F. W. Etheredge, for his patent Tile-making Machine, 5*l*. and the Medal.

To the Hon. C. J. Trench, for his Model of a Cottage with Offices, the Medal.

To John Gwynne, of Bushmills, county Antrim, for a collection of Draining Tools of native manufacture, 2*l*. and the Medal.

To W. Langford, of Newtownbarry, for his Self-adjusting Tumbling Carts, 2*l*. and the Medal.

To Robert Law, of Shettleston, Glasgow, for his Farm Cart, the Medal.

To the same, for his collection of strong and useful Implements, 3*l*.

To John Martin, Peter-st., Dublin, for Rodway's Horseshoe, the Medal.

To John Molloy, Rutland-square, for his newly-invented Hames, trace fastening to swing bar, the Medal.

To Messrs. Paul and Vincent, Blackhall-place, Dublin, for their Threshing Machines, the Medal.

To same, for their simple Beam and Scales, 2*l*.

To James Richmond, of Salford, for his Improved Chaff Cutter, the Medal.

To the same, for his Beam and Oat Crusher, the Medal.

To the same, for his Improved Churn with right and left-hand motion, the Medal.

To the same, for General Excellence of Workmanship, 3*l*.

To Messrs. H. and J. Sheridan, Dublin, for their Improved Weighing Machine, the Medal.

To Mr. James Willis, Dublin, for Herbert's Patent Flower Mill, 1*l*. and the Medal.

To Mr. James Wilkie, Glasgow, for the superior workmanship of his collection of Implements, 5*l*.

To D. J. Wilson, Esq., Belvoir, for his Model of a Labourer's Cottage, the Medal.

To Richard Robinson, of Lisburn, for his Steaming Apparatus, the Medal.

To the same, for his Water-case Churn, the Medal.

To the same, for his General Scientific Arrangement, 3*l*.

To R. Gray, of Uddingston, for a collection of good and well-executed Implements, 3*l*.

To F. M'Neill and Co., for their Roofing Felt, the Medal.

To T. G. Stoney, Esq., for his Model of an Agricultural School, the Medal.

FARMERS' CLUBS.

Wetherby.—The first quarterly meeting of this Society was held on the 1st inst. The attendance of members was numerous, and after an interesting and highly-instructive discussion upon the subject proposed, viz., The best Method of Harvesting Wheat and Barley, including the Period and Method of Cutting and Securing, the following resolutions were agreed upon:—1st, That the best time to cut Wheat is when the grain is in a raw state, and the Straw beginning to assume a yellow hue up to the ear, or from ten to seven days earlier than is customary in this district. 2d, That the best time for cutting Barley is when the Straw and grain are fully ripe. 3d, That the best method of cutting both Wheat and Barley is by mowing; and where Clover or Grass seeds are growing, it is desirable to leave the stubble not shorter than four inches. 4th, That round stacks are better than long ones.

Miscellaneous.

Improvement of Cold and Heavy Soils by Burnt Clay.—The first field, (5 acres,) is valued at 7*s*. 6*d*. per acre. I entered upon it 1839, a foul Bean-stubble; the following May it was skim-ploughed to the depth of about 1½ inch, and all that the plough raised burned with faggots, at the cost, including spreading, of 42*s*. per acre. It was then ploughed and scuffled, and the weather being favourable, was rendered perfectly clean; then planted in October with Vetches, which, the following summer, were eaten off by sheep folded upon them; succeeded by Wheat (1842), which produced 226 bushels, of 62 lbs.; or 1 bushel more than 45 bushels per acre. It was sold at 7*s*. per bushel; and this crop therefore produced more than the fee-simple of the land in its former state. This field is laid down, and is looking very well. A small field of three acres adjoining was similarly treated at the same time, with nearly equal results; the difference in the Wheat-crop, which was not quite so heavy, being attributable to the Vetches having been eaten off by horses tethered on them instead of by sheep. The second instance of the power of ashes, unaided, in rendering exhausted land capable of producing a crop, is, I think, even more conclusive than the first, as it may be said that the great crop of Wheat produced in the former case was attributable to the manure left by the sheep in consuming the Vetches; and this is correct in a degree, but I know not how that crop of Vetches could have been obtained to create that manure without the ashes. In this case, however, the land received no such assistance. It is a field called the Brake Ground—10 acres of exceedingly stiff clay, valued at 25*s*. per acre; and was (Michaelmas, 1829) an awfully foul piece of two years old—I was going to say, seeds—however, it had been down two years; and, for want of something more fit, I was induced to plough and plant it with Wheat—and a miserable speculation it proved. The seed-time of that year, as most of us in this part of the country very well remember, was exceedingly wet. This, combined with the bad state of the land, left me no resource but to dibble it; this was done as well as it could be, and after being twice hoed the following spring, the crop was as nearly as possible 16 bushels per acre. Here then was a stubble in the best possible state for burning, and the weather being dry after harvest, it was skim-ploughed, and attempted to be dragged, but that was impracticable—it was so tied together that it could only be parted with forks, which increased the expense of burning this piece to 50*s*. per acre; but it was well repaid: the quantity of ashes burnt could not have been less, upon by far the greater part of the field, than from 150 to 200 yards per acre. It was then planted, after being ploughed, with Vetches; but such a crop of Crowfoot, Charlock, and rubbish of all descriptions came up the following spring, that I had all mown off together, and carried to the fold-yard. I then proceeded to fallow it, but, as if this field was to be unfortunate, the latter part of the summer proved wet, and it was very imperfectly done, and after draining, was left till April, 1842. The whole of that month proved dry; the field was forked, at an expense of 25*s*. per acre, and by that means rendered clean at last. No rain fell till the night of the 11th of May, and on the 12th and 13th it was drilled with Barley, the produce of which, fit for and sold to the maltster, was 56 bushels per acre. The next crop was Beans, mixed with a few Grey Peas, and certainly the greatest crop of straw I had ever seen. What the produce may be I cannot yet say, but I shall be enabled to inform you, as it is stacked by itself; but I should suppose nearly or quite as many bushels as there were of Barley. All these pieces of land to which I have now alluded had the ashes burned and spread upon the field, at the expense, as I have said, of from 40*s*. to 50*s*. per acre; the greater part done with wood out from the hedges, the value of which I can scarcely state. When that was all exhausted (a good deal having also been used to put upon the tiles in draining) I had recourse to coals, and can state the expense. Three tons of raked stack, which costs here from 9*s*. to 10*s*. per ton (at the pits 3*s*.) will burn in the summer in heaps of about a cart-load each—more than 100 yards to the acre. I have had in some cases much more than this done; and as the labour of burning with coal is rather less than with wood, the whole can be well done at a cost of 3*l*. 10*s*. per acre. But there is another mode of procuring ashes, which, though somewhat more expensive, has its advantages; these are, that it can be done at a time of year when the other mode would be impracticable from wet; and also, that in doing it, the banks, borders, and high headlands, frequently seen in old inclosures, are removed; it is by burning these in large fires of 50 to 200 yards with coal, and carting and wheeling the ashes upon the land. I have done a good deal in this way; and the cost, not including horse labour—which, of course, varies with the distance to which the ashes have to be drawn—is as follows:—

	£	s.	d.
100 yards per acre, labour to burning, at 6*d*.	2	10	0
2 tons of coal, at 9*s*.	0	18	0
Wheeling and spreading a distance of 50 yards from the heaps, and filling and spreading the remainder, 100 yards, at 1½*d*.	0	12	6
	£4	0	6

I give you the following as an instance of the effect of this latter mode:—A field of clay-land, called Bitton—20 acres, worth 28*s*. per acre—was Wheat in 1842. During the following autumn and winter I had the banks and headlands all round the ground burned, which produced 2400 yards of ashes, 400 of which were drawn to another field. Part of the piece, about 5 acres, was planted with Vetches, which were mown while green for fodder for the sheep, to eat while consuming the Turnips upon the other 15. Upon these 5 acres a dressing of ashes, 100 yards to the acre, were spread when the Vetches were removed; and after being cleaned by the requisite ploughings and scuffling, it is now planted with Wheat. The crop upon this portion of the field must therefore depend entirely upon the ashes: it has derived no benefit from the Vetches. Upon the 15 acres, which were dressed in like manner during the winter, where no attempt was ever before made to grow Turnips in consequence of the tenacious quality of the land, and without the aid of manure of any description, except the ashes, I have had a very excellent crop; and the most extraordinary part of the matter is, that though the greater part has been eaten off in the months of October and November last, which were very wet, by nearly 400 sheep constantly kept upon them, the nature of the soil has been for a time so changed by the ashes, that I have been enabled to plough close behind the sheep, and drilled the Wheat as fast as ploughed. For those who, like myself, have undertaken the task of getting a considerable tract of foul and poor clay-land into a tolerable state of cultivation, there are, to my knowledge, no means by which it can be accomplished in so short a time, and with so great a certainty, as by burning. Let it be accompanied in all cases by draining; let the first crop be a green one consumed upon the land, and the land will be at once established, and may ever after, at the least possible expense, be maintained in a productive state, provided it be kept clean and cropped in a fair and reasonable manner.—*C. Randell, in the English Agric. Soc.'s Journal.*

Bone-dust on Pasture Land.—There is, perhaps, no county in England where the pasture lands (particularly the poorer soils) have been so much improved during the last ten or twelve years as in Cheshire; and this principally by the application of what is termed bone-dust. This extraordinary manure has a peculiar effect upon the poor clay land pastures, for on the application of boiled bones a sudden change takes place in the appearance of the fields, and instead of the carnation-leaved, or pink Grass, which so much abounds on this kind of land, a luxuriant herbage presents itself, consisting of red and white Clover, Trefoil, and other Grasses, of which the cattle are so fond that they eat up almost everything before them; even Thistles and Rushes are very much weakened, and eventually reduced, by being constantly eaten off by the stock after the pastures have been bone-dusted.'—*Mr. Palin on Cheshire-farming, in the English Agricultural Society's Journal.*

Growth of Beans and Cabbages together.—The Beans are dibbled in February in double lines four inches apart, and with an interval of three feet to the next row. This enables the double mould-board or the subsoil-plough to pass freely along without injury to the Beans, as often as the state of the soil may require it, until the time of planting the Cabbages. The latter are of the thousand-headed sort, and should have been raised the previous autumn, then pricked out in March (in a corner of the garden), and finally planted in their places between the rows in the field in May or June, taking advantage of showery weather for the purpose. The distance from plant to plant is about two feet; they should be from five to eight inches out of the ground. They do not grow much until after the Beans have been removed, which is generally done early in August. When the latter are gone, the space they occupied is ploughed, and the Cabbages grow with such rapidity as effectually to prevent any weeds from making head that season. No one, ignorant of the practice, sporting over the field in the beginning of September, would imagine that the then luxuriant crop was the second of the season. The Cabbages yield a great bulk of green food towards Christmas, and if their leaves are then pulled, a second sprouting takes place at the end of March or the beginning of April; but as food is of much more consequence to a breeding flock at the latter period, they have been left (without plucking from them in December) till the Turnips are over. They are then eaten on the ground by couples, and the land is ready with a single ploughing for any sort of spring Corn. The quantity of keep derived from them by this arrangement is equal to what the same extent of Turnips would give, but inferior to Swedes. I was led to try the experiment for the first time in 1838, from having accidentally read an account of the husbandry of M. de Fellenbergh, at Mofwyl, in Switzerland, in which a similar custom is mentioned. The success has been complete, and it has never been omitted for a single year since its introduction at Ookham; and I see that, so far from the Bean crop being diminished (in consequence of the greater distance at which the rows are planted to admit the Cabbages between them), it has, on the contrary, been increased from about 35 bushels, the average yield for five years before the mixture, to 41 bushels, the average yield for five years, since the Cabbages were introduced. —*Earl of Lovelace in the English Agricultural Society's Journal.*

Cottage Allotments.—About three years ago I selected two pieces of land, together about 30 statute acres, from a farm of Lord Crewe's, which land had been very hard tilled, and, lying more than a mile from the homestead, had not for many years received any support in the way of manure—besides which it was naturally a weak light soil, with a bad subsoil; and so little did the tenant prize it, that he said I was quite welcome to take it from the farm if I would release him from the rates and taxes paid in respect of it, and make any deduction from his rent I might think proper: this I did to his satisfaction, and set it out in proper allotments, averaging about half an acre each. I allowed the poor men draining-shells, which they put down themselves under my directions, and charged them as much rent as was just sufficient to cover the rent formerly paid by the farmer, together with all levies, tithe, rent-charge, &c.; and although the land has only undergone this superior method of cultivation for three years, and was in the lowest condition to commence with, and consequently will improve for years to come, yet notwithstanding these disadvantages the crops grown upon these 30 acres of poor land last summer were as follows:—1497 measures of Potatoes, 298 measures of Wheat, 22 measures of Barley, 10 measures of Vetches, and 70 measures of Oats; which crops, after paying the rent, poor-rates, tithe, and all other charges, amount to nearly 250*l.*, even calculating them at the present low prices of agricultural produce. It is, therefore, impossible that this amount of produce could be distributed amongst these poor men without adding greatly to the comfort of themselves and their families; besides which all these necessaries of life were procured by the application of those leisure hours which would, most likely, have been spent in the beer-house, and might have produced the bitter pains of domestic strife and wretchedness, instead of making the cottage a peaceful and happy home, and the allotment a healthy training-school for the children. I am extensively concerned in the management of cottage property, and necessarily come in contact with some hundreds of cottage tenants (and, I hope, I pay some attention to their habits, wants, and feelings), and I am decidedly of opinion that no able-bodied labourer ought to have less than half an acre of land, which will enable him to raise Potatoes sufficient for his own consumption and to fatten a couple of pigs, besides growing a little bread-corn; and I think it would be for the general good of the agricultural community if every cottager with a family was enabled to keep his cow.—*Mr. Palin on Cheshire-farming, in the English Agricultural Society's Journal.*

Utility of Peat-Ashes.—Peat-ashes cannot be said to have been totally overlooked or disregarded throughout England, though they are so very much in Scotland and Wales; and, indeed, they are only very partially used in England, where their manufacture is almost exclusively confined to Berkshire and Hampshire, and some few spots of Bedfordshire, but from whence they are carried by land for upwards of thirty miles, and sold at about 9*d.* per bushel. Indeed, so strong and powerful is the peat-ash that is burned in immense heaps at Woolhampton, near Newbury, that ten bushels per acre are sufficient to apply, but the usual average elsewhere runs about thirty bushels per acre. Considerable doubts have been expressed as to the quantity of peat-ashes to be used per acre on an average; but this cannot be exactly defined, as so very much must always depend upon two several points—first, the preparation of the ashes, and their sorts; and, second, the various soils, and their various natures, on which the ashes are to be used. One general rule as to the method of preparing the ashes may suffice, as the best and most approved one, which is to have the peats cast in their proper season, and properly dried, and to be burnt in a kiln, properly covered in at the top, with a quick draught. This is the method of treating the "best cast peats," but the top, outsides, and the sedgy and even foggy peats, may be burned in conical piles, and may still be brought into useful application, by making a freer use of them, as this mode of burning this class of peats will cost but very little, and the outside cover has only to be pared away to get at the under and best ashes. But taking the average run of peats, neither the best nor the worst, the quantity per acre may fairly be stated, as an average, at from twenty to thirty bushels per acre, and for old upland meadow, or any old green-sward, this quantity will produce as much or more Dutch Honeysuckle and small herbage as either soot or ashes from sea-borne coal, at one-sixth of the cost, and, when mixed with lime or fine sand, will not only be a very superior top-dressing for all upland and other meadow, and Red Clover without Rye-grass, but will also prove a most valuable compost and manure for Carrots, Parsnips, or Mangold Wurzel, when used in stiff ground, with a strong and large dibbling stick, as is used in Leicestershire or Warwickshire, in all heavy grounds,* and for Potatoes in common drills. The value of the peat-ashes in Warwickshire and Leicestershire is from 9*d.* to 1*s.* per bushel, and as climate, or too great a similarity of soil may be brought forward as an objection, the writer begs leave to say he has tried these ashes in the bleakest and least protected part of Aberdeenshire, with greater success than he ever did in Hertfordshire, Warwickshire, or Leicestershire, and he feels confident that these peat-ashes need only be generally tried to be as generally esteemed and used all over Scotland.—*The Earl of Strathmore, in the Transactions of the Highland Society.*

* This method of dibbling Carrots, Parsnips, and Mangold Wurzel, with peat-compost in the heavy lands in Leicestershire and Warwickshire, has uniformly succeeded where every other culture and manure have failed, and is managed thus:—Plough your land in the end of September or beginning of October with a good strong furrow, and in the month of March (about the middle) let your dibblers begin, always dibbling backwards, and making a hole about as wide as a pint bottle, and thirteen inches deep; fill up the hole with the peat-compost to within four inches of the top. Put into each hole eight or ten seeds, cover them over with the peat-compost till level with the ground, then draw a slight but strong "bush harrow" over them. When they have shot, let the three best shoots be left, and the rest weeded out carefully, as they may do to transplant and fill up any vacancies where the seed may have failed. This will be done by women and children better than by men. Let the remaining plants be earthed up, and this will be as good as one hoeing, and, on a second and final looking over the middle-holes, let all the plants be removed but one, and earth that well up. In the very deep lands in Leicestershire, which will not bear a cart in the spring, dunlaps are used with large cushions to carry the compost up and down each furrow, which dispenses very well, and does not poach the ground like horses and the lightest mounted carts.

Notices to Correspondents.

Alpaca.—*Viverium*—It is the name of that variety of Llama which yields wool. The other variety, which is nearly naked, is used in Peru as a beast of burden. See article "Llama," Penny Cyclopædia.

Application of Galvanism.—*Anon.*—Perhaps the following extract from a New York paper may assist you. We do not know, though it came from America, whether or not it be, what it looks like, an Americanism:—"At a late meeting of the Farmers' Club in New York, Mr. Ross presented a Potato 7 inches in circumference, and others no larger than Peas, all planted in the same soil, at the same time—the 25th of May. The large one was from a small plot under the influence of a galvanic battery. Plates of copper and zinc were placed at distances of about 200 feet apart, the Potatoes planted between. They were connected by a copper wire. This formed a battery, the moisture of the earth exciting the galvanic fluid, which was thus constantly passing through the soil in which the Potatoes were planted."

Boast's Patent Manures.—*P.*—We have no experience of them. Purchase guano in a safe quarter, and you *know* you buy a useful fertiliser.

Books.—*T. Wighton.*—Low's "Elements of Practical Agriculture."

Cultivation.—*Humbug.*—Use a scarifier or grubber, and work the land lengthwise and across; harrow, gather weeds together, and burn; then you may plough, and use the scarifier again across the furrows; harrow as before and burn the weeds; that will clean your land. Cart on 30 cubic yards of farm-yard manure per acre, and sow Wheat; or, which would be better, plough the land up in ridges, let it lie all winter, cultivate and manure well in spring, and drill in Turnips, which you may eat on the land with sheep, and sow Wheat in November of next year. Good 1st-years' Clover, and Rye-grass may keep 8 to 14 sheep per acre (according to its quality and the size of the sheep), in improving condition for six months in summer.

Depth of Roots.—*J. R.*—We have traced the radicle of the young Wheat plant to a depth of 1 foot when the leaf was not three weeks old. How deep the root of the perfect plant extends we do not know. Perhaps some of our readers have ascertained this; if so, we should be glad to hear from them.

Grass Land.—*Inquirer.*—A farmer would require to see the Grass land which it is proposed to break up, before he could judge whether or not he would profit by permission to cultivate it. If he should prefer it as arable land, he would, of course, be willing to pay a higher rent for it in that condition; if occupying a stiff and wet soil, he would not break up his pasture, though permitted. We do not know if there be a particular species of Oat adapted for winter-sowing. Wheat will diminish in bulk before summer, after threshing in winter, in the proper-portion in which it may have become drier; how much it may generally diminish from that cause we do not know. Can any one give information as to Daniell's manure having proved useful as a manure for Wheat?

Gypsum.—*H. D.*—We cannot imagine that the small quantity of iron mixed with your gypsum can render it at all injurious to vegetation.

Insects.—*J. M. V.'s* grubs are the caterpillars of a moth called Noctua exclamationis, whose history was given in the Royal Agr. Jour., vol. iv. p. 106, together with figures of the insects. We can recommend no better mode of freeing crops of this pest than hand-picking. Its effects have been lately shown with regard to the wireworm in a calculation published in the last Number of the same Journal. *R.*—*W. L., W.*—Your grubs are the same as the above, and we beg to call your attention to their history in the work just alluded to, where the various modes of extirpation are discussed. We feel much obliged by your remarks regarding the wireworm, and would recommend you to try the effect of gas-water upon them in a cup, and ascertain the length of time they can resist its effects. If it be satisfactory, you can prosecute your experiments in the field. The curious snake-like animal changes to a fly called Thereva. *R.*—*A Cotswold Farmer.*—Your Turnips are infested with plant-lice, or aphides; and the animals transmitted are the larvæ of the lady-birds, whose history you will find in this day's *Chronicle*. They are amongst the best friends you have. *R.*

Parsnip.—*J. B. F.*—We do not know the Giant-Cow-Parsnip. It is, doubtless, propagated by seed. We cannot recommend seedsmen.

Sulphate of Magnesia.—*A. L. M.*—The mode in which alum is manufactured, both on the Continent and in Yorkshire, is to roast clays containing sulphuret of iron and potash. The sulphur is converted by heat and subsequent exposure to the air, into sulphuric acid, which combines with the alumina; this is dissolved out, and as it rarely occurs that the clay contains sufficient potash to form alum, (which is a sulphate of alumina and potash), a solution of potash is added to the ley obtained from the roasted clay; it is then boiled, after which the iron is allowed to deposit; and lime as sulphate of lime, if lime exist in the clay, when it is evaporated and crystallised. If magnesia existed in the clay the sulphate of magnesia would be found in the mother water, for water of crystallised sulphate of magnesia and carbonate of ammonia do *not* mutually decompose each other, therefore it is incapable of fixing the ammonia in liquid manure. But ammonia in its caustic state *will* decompose a solution of sulphate of magnesia, precipitating the magnesia as a bulky hydrate of magnesia. Dr. Turner says "The bicarbonates and the common carbonate of ammonia do not precipitate magnesia."—*A. G.*

Water for Cattle.—*Improver.*—Soft water is decidedly more wholesome for both horses and cows than hard water, the latter owing its hardness chiefly to the presence of sulphate of lime (gypsum), or carbonate of lime (chalk), neither of which is desirable as an addition to the element as it comes from the clouds, but renders it more apt to cause spasm of the bowels (cholic). Rain-water is certainly the purest that can be obtained, and only requires care that it does not contain the impurities from the roof of the building, and that it does not remain unused long enough to putrefy. *W. C. S.*

Wheat.—*Improver.*—If you will send your address we shall be happy to forward some for experiment.

Winter Vetches.—*A Subscriber* may begin to sow immediately for his earliest crop if his land be late. The middle or end of next month will be sufficiently early on oozy soils. We do not know the Emperor Cabbage.

Wood-ashes.—*T. W.*—Fresh ashes contain caustic alkali, which, whatever be the form of the ammonia with which it may come in contact, will take from it, by virtue of its greater affinity, the acid which holds it fixed, and thus let it free. If the ashes be old, they will not thus volatilise the ammonia, because the alkali will, by uniting with the carbonic acid of the air, have lost its causticity. The use of guano will not diminish any necessity which may at present exist for the use of lime. If the act of liming increases the produce your land, it will do so just the same, whether the fertility of your land be as it is now, or as it would be were you to use guano. Guano must not be used on land which has been lately limed, for caustic lime would volatilise the ammonia just as caustic ashes do.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Aug. 26.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	10	to	4s	0		
Best Short Horns	3	8		3	10		
Second quality Beasts	3	2		3	6		
Calves	3	8		4	4		
Pigs	3	4		4	4		

Best Downs & Half-breds	3s	10	to	4s	0		
Best Long-wools	3	6		3	10		
Ewes and second quality	3	4		3	8		
Lambs	3	8		4	4		

Beasts, 3063; Sheep and Lambs, 26,500; Calves, 140; Pigs, 220.

The supply of Beasts to-day is larger, but a considerable quantity of very inferior quality; the increase in numbers has, however, had an effect upon the trade, and we cannot this week quote 4s 2d for the best Scots, &c., although some few make it; the Short-horns of good quality find almost as ready a sale as anything, they being now in season, and several have made very nearly 4s per 8 lbs; trade is very heavy among the middling qualities, and some remain unsold. Sheep are again very abundant, and the trade is excessively heavy, we have a very great many Ewes and middling Sheep, but are not over-supplied with the best qualities, consequently the prices with some difficulty are maintained for good Sheep, but several Ewes, &c., cannot be sold at all. Lamb is almost out of the market. Veal is a dull trade—3d is hardly realised for anything. Pork is tolerably brisk.

Friday, Aug. 30.

The supply of good Beef is still but moderate; the trade for that description continues about the same as on Monday; on the whole, the supply is large, and trade heavy; many middling Beasts cannot be disposed of; what are sold make nearly the same as on Monday. The number of Sheep and Lambs is about the same as of late, and prices are about as on Monday; trade seems somewhat more brisk for the best qualities. Veal trade is a little more lively, but the prices are no better. Pork remains steady.

Beasts, 2264; Sheep and Lambs, 26230; Calves, 264; Pigs, 220.

61, West Smithfield.

HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 30.

Prime Upland Hay	100s	to	108s	Clover	-	85s	to	110s	Straw - 24s to 30s
Inferior „	80		95	„	New —	—			
New Hay „	84		95						

Jesse Cooper, Salesman.

Cumberland Market, Aug. 30.

Superior Old Hay	100s	to	108s	Superior Clover		120	to	126s	
Inferior „	80		90	Inferior „		100		110	Straw 20s to 24s
New Hay	84		100	New Clover		114		120	

Joshua Baker, Hay Salesman.

Whitechapel, Aug. 30.

Fine Old Hay	85s	to	105s	Old Clover		120		125s	
New Hay	80		85	New Clover		105		120	Straw 22s to 24s
				„	Inferior	80		90	

WOOL.—Bermondsey, Friday, Aug. 30.

Our Wool Market is much the same as we last reported it. The prices demanded by the Farmers are higher than the Staplers can afford, and the stock of Wool at present in the Market keeps prices from advancing.

	per lb.				per lb.	
Long-woolled Washers	1s 0d	to	1s 1d	Southdown Hoggets	1s 2d	to 1s 4d
Do. Hoggets	1 1		1 2	Kent Hoggets	1 1	1 3
Combdown Hoggets	1 0		1 1	Super Fleece, Wool Market.		

COVENT GARDEN, *August 31.*—The continuance of the late fine weather has caused an abundant supply of Fruit and Vegetables to be brought into the market. Wall fruit, in particular, is very plentiful. Trade is, however, unusually dull for the season of the year. Pine-apples of good quality are sufficient for the demand; and hothouse Grapes are also well supplied. Peaches continue to bring nearly the same prices as last week. Nectarines are a little cheaper. Apricots are scarce. Of Plums there is abundance; some good samples of Coe's Golden Drop have been offered during the week; Orleans and Green Gages are somewhat reduced in price since our last report. Among Apples a few good specimens of Ribston Pippin have made their appearance; and a considerable quantity of Williams's Bon Chretien Pear are in the market. Filberts although not abundant are rather on the increase; they bring from 65s. to 80s. per 100lbs. Melons are good and sufficient for the demand. Morello Cherries have not altered in price since our last report. Tomatoes are a little cheaper. Cucumbers are nearly the same as last week. Among Vegetables, French Beans are good and plentiful, Cauliflowers are sufficient for the demand, and Cabbages, Turnips, and Carrots are abundant. Windsor Beans are scarce; Peas are also becoming scarcer, and have advanced a little in price. Little alteration has taken place in the price of Celery, which is rather improving in quality. Onions are plentiful, and Shallots are becoming more abundant. Endive is also supplied in considerable quantities. Cut Flowers chiefly consist of Euphorbia splendens, Ceanothus azureus, Bignonia venusta, yellow and perpetual Roses, Chinese Asters, Lobelias, Heliotropes, Camellias, Sweet Peas, Verbenas, Fuchsias, *Pelargoniums*, Phloxes, and Carnations.

FRUITS.

Pine *Apple*, per lb., 2s to 3s	Cherries, Wall, per lb., 1s 6d to 2s 6d
Grapes, Hothouse, p. lb . 2s to 4s	— *Morello*, per hf.-sv., 1s 6d to 2s 6d
— Spanish, per lb., 1s to 1s 6d	Currants, per hf.-sieve, 2s 6d to 3s 6d
Melons, each, 1s to 3s	Filberts, per 100 lbs., 65s to 80s
Peaches, per dozen, 6d to 4s	Oranges, per dozen, 1s to 2s
Nectarines, per doz., 6d to 3s	— per 100, 8s to 16s
Apricots, per doz., 1s to 3s	— bitter, per 100, 10s to 18s
Plums, per half-sieve, 1s 6d to 5s	Lemons, per dozen, 1s to 2s
— Orleans, per hf.-sv., 1s to 3s	— per 100, 8s to 16s
— Green Gages, 2s to 4s	Almonds, per peck, 6s
Figs, per doz., 2s to 4s	Sweet Almonds, per lb., 2s 6d
Apples, Hess, per bush., 2s 6d to 4s 6d	Nuts, Barcelona, 22s
— Kitchen, 2s to 3s	— Brazil, 16s
Pears, Dess., per half-sv., 2s to 3s	— Cob, 14s

VEGETABLES.

Cabbages, per dozen, 6d to 1s 3d	Leeks, per bun., 2d to 3d
Cauliflowers, per doz., 2s to 3s	Chilis, per 100, 2s to 4s
Broccoli, per bundle, 1s to 1s 6d	Garlic, per lb., 4d to 6d
Sorrel, per hf.-sieve, 6d to 9d	Onions, per bunch, 2d to 6d
Artichokes, per doz., 1s to 3s	— large, per bushel, 1s to 2s
French Beans, p.hf.-sv., 1s 6d to 2s	Shallots, per lb., 4d to 6d
Potatoes, New, per cwt., 2s to 3s	Tomatoes, per half-sv., 2s 6d to 4s 6d
New Turnips, per doz. bch., 4s to 5s	Lettuces, per score, 6d to 1s 6d
Peas, per bushel sieve, 2s 6d to 4s	Celery, White, per bunch, 6d to 1s
Beans, per bush. sieve, 1s 6d to 2s 6d	— Red, per bunch, 1s to 1s 3d
Mad Heet, per doz., 1s to 2s	Endive, per score, 1s to 1s 6d
Carrots, per doz. bchs., 2s 6d to 4s 6d	Mushrooms, per pottle, 1s to 1s 6d
Basil, per bunch, 2d to 4d	Small Salads, per punnet, 2d to 3d
Horse Radish, per bundle, 2s to 3s	Watercresses, p. 12 sm. bun. 3d to 6d
Savory, per bunch, 2d to 3d	Parsley, per doz. bunches, 1s to 2s
Cucumbers, Frame, each, 3d to 6d	Tarragon, Green, per bunch, 2d to 3d
— Ridge, doz., 2d to 2s 6d	Green Mint, per bunch, 2d to 3d
Vegetable Marrow, per doz., 4d to 1s	Marjoram, per bunch, 2d to 3d
Spinach, per sieve, 1s 6d to 2s 6d	Chervil, per punnet, 2d to 3d

HOPS, Friday, Aug. 30.

The Market continues very firm. A slight improvement is said to have taken place in the best grounds, which has caused a few purchase to back the duty as high as 130,000*l*; the blighted districts, however, make but little, if any progress, and we still think the duty over rated, unless we get warmer nights. One packet of the new crop arrived on Wednesday, from Herling, Kent, and was sold at 2*l* 12s per cwt: they were very thin and unripe: if this is a fair specimen of the new crop, it will prove very inferior to last year's growth. Picking ought not in our opinion to commence for a fortnight at least, the Hops being so backward.

Patteson & Smith, Hop-Factors.

MARK-LANE, Monday, Aug. 26.

The supply of Wheat by land carriage samples this morning was moderate, and consisted almost entirely of New—the condition and quality much worse than last week, a great proportion having been damaged by the weather; fine dry qualities commanded the prices of this day se'nnight, but the damp and inferior must be written 1s. to 2s. cheaper, and some quantity remained unsold at the close. There appeared some inclination to purchase old Foreign Wheat, where it could be done at reduced terms, but as Factors generally evinced great firmness, the business transacted was not extensive.—In Barley and Peas there is no alteration.—Beans are in good request, and bring very full prices.—Oats sell slowly, and barely maintain our quotations.—The supply of new Mustard-seed consisted of about 600 qrs. in nearly equal proportions of White and Brown.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	42	50	Red .	44	48
—— Norfolk, Lincolnshire, and Yorkshire	—	—	White	—	—
Barley, Malting and distilling 27s to 30s	Chevalier	31	36	Grind.	25	26
Oats, Lincolnshire and Yorkshire . . Potnads		19	21	Feed	18	20
—— Northumberland and Scotch . . Feed		19	21	Potato	20	23
—— Irish . . . . Feed		17	20	Potato	19	22
Malt, pale, ship		50	56			
—— Hertford and Essex		54	60			
Rye		29	32			
Beans, Mazagan, old and new 29 to 31	Tick	30	33	Harrow	29	34
—— Pigeon, Heligoland . 25 to 27	Winds	—	—	Longpod	—	—
Peas, White . . . . 29 to 30	Maple	29	32	Grey	26	30

ARRIVALS IN THE RIVER LAST WEEK.

Flour.	Wht.	Barl.	Malt.	Oats.	Rye	Bns.	Peas
English . 4404 Sks. — Brls.	3638	20	3619	672	—	329	718
Irish . . — " — "	—	—	32	6845	—	—	—
Foreign . — " 3871 "	11688	15033	—	20063	—	2118	2208

Friday, Aug. 30.

We have had little English Wheat up since Monday, but the reluctance of Millers to purchase renders it impossible to obtain the rates of that day. In Foreign a few sales were made on Wednesday, at rather reduced prices, which, from the small amount of business doing, must be considered nominal. There is a slight inquiry for Wheat in Bond for export to France and Holland.—Barley and Beans continue inquired after, but cannot be noted higher.—Peas are neglected.—Oats meet an improved demand, and needy buyers are obliged to pay a slight advance.

ARRIVALS THIS WEEK

	Wheat.	Barley.	Oats	Flour
English . .	3638	10	210	4390 Sks
Irish . .	—	—	6900	—
Foreign . .	7280	31350	4100	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans	Peas.
July 19 per Quarter.	44s 1d	30s 5d	21s 5d	30s 7d	37s 7d	37s 8d
— 26	43 9	34 6	20 10	33 9	37 1	37 4
Aug. 2	41 0	34 6	20 8	37 6	34 7	36 9
— 9	40 10	34 6	20 1	35 0	35 0	35 2
— 16	40 1	35 0	20 0	35 11	35 7	37 7
— 23	39 1	35 0	20 4	36 6	35 10	36 0
6 weeks' Aver'g. Aver.	41 0	34 9	20 6	35 5	35 11	36 5
Duties on Foreign Grain	19 6	6 6	5 6	5 6	7 6	7 6

SEEDS, Aug. 26.

Canary . . per qr	38s to 52s	Linseed Calcutta, Foreign, p.bsh.		40s to 42s	
Carraway . . per cwt	44	52	Mustard, White . p. bush.	2s	11s
Clover, Red, English . .	—	—	— Superfine . .	3	12
— — Foreign . .	—	—	— Brown . .	2	5
— White, English . .	—	—	Rapeseed, English, per last	25l	28l
— — Foreign . .	—	—	Rape Cake . . per ton	—	—
Coriander . . .	19	18	Tarcsseed . . .	—	—
Hempseed . . per last	36	40	Tares, Essex, winter p. bush.	3	3
Linseed . . per qr	—	—	— Foreign . .	—	—
— English . .	—	—	Trefoil . . per cwt	—	—
— Baltic, Eng. per 1760	30l	32l	Turnip (too variable for quotation)		

Linseed Cake 14l 15s.

NATIONAL TESTIMONIAL to Mr. ROWLAND HILL, Author of the Penny Postage, under the Management of the City of London Mercantile Committee on Postage.

Sir George Larpent, Bart., Chairman and Treasurer.

The Committee engaged in this undertaking beg to intimate to the several provincial Committees and others, who are co-operating with them, that it is their wish to close the Subscriptions in the month of September.

To those who have not yet contributed, the Committee again appeal for their Subscriptions, in the confident expectation that few would wish the opportunity of rewarding the author of a plan which has conferred such great social, moral, and commercial benefits on the country to pass by without their having taken part in it.

When the Collection is completed, the mode in which the amount raised is to be presented to Mr. Hill will be determined and made known to the public.

Subscriptions may be paid through any of the London Banks, or remitted by post-office orders, stamps, or otherwise, to the Secretary, Mr. George Wansey, Solicitor, No. 3, Lothbury, London.

INTERESTING TO LADIES. — To MESSRS. ROWLAND & SON, 20, Hatton Garden, London.— "Percy Place, Landport, Portsmouth, April 4, 1844. Gentlemen,—I think it but an act of justice to inform you of the benefit I have derived from the use of your admirable Macassar Oil. About six months ago I found my hair getting daily more weak and thin, and much discoloured from a practice I had adopted of wetting it continually; fearing that I should lose it entirely, and hearing of the efficacy of your Macassar Oil, I have for some time past constantly used it, and the result is, that my hair is now perfectly restored and much improved in appearance and colour, having become thick, dark and glossy; it also curls freely without the use of paper, which it never did before. To all my friends I have warmly recommended your Macassar Oil as an excellent restorative and preservative for the Hair. As I have an objection to see my name in print, I beg you will not publish it; but you are at liberty to show this letter, or make any other use you please of it, and refer applicants to me if necessary, in proof of the efficacy of your Macassar Oil. Your Obt. Servant *"

ROWLAND'S MACASSAR OIL preserves and reproduces the Hair; prevents it from falling off or turning Gray; changes Gray Hair to its original colour; frees it from Scurf and Dandriff, and makes it beautifully soft and curly.

**** Ask for "ROWLAND'S MACASSAR OIL." All others are Fraudulent Counterfeits.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6*, 1844.—The cabin of the Great Western has been regularly supplied with Lea & Perrins's Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) James Hosken."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup: giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 8, 1843.

Sold Wholesale by the Proprietors, Messrs. Lea and Perrins, Worcester; Messrs. Barclay and Son, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus; and B. & H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices, to 130, Fleet street.

EXTIRPATION of all kinds of VERMIN.—Office, 69, King William-street, city, London.—Mr. J. A. MEYER, practical chymist, patronised by Her Majesty the Queen, H.R.H. the Duchess of Kent, the Royal Agricultural Society of England, and the Corporation of the City of London, and by special appointments to the principal Courts of Europe, begs to inform the nobility, gentry, merchants, agriculturists, shipowners, and the public generally, that he continues to CLEANSE, by contract, from one to five years, every description of PROPERTY, of rats, mice, moles, weasels, moths, fleas, bugs, &c., and as a guarantee of the efficacy of his preparation, respectfully refers to the certificates of his great success at Buckingham Palace and Gardens, Windsor Castle, St. James's Palace, Frogmore Lodge, Carlton Club House, Mansion House, Newgate Prison, Tavistock Hotel, Brewers, Chester, and Gulley Quays and warehouses in Lower Thames-street, the property of Joseph Barber, Esq., and many others of public and private establishments, which may be seen at the office. The preparations, which are free of poison or deleterious drugs, may be had as above, in pots and bottles at 5s., 10s., 20s., 50s., and 100s. each, with full directions, which must be used in proportion to the extent of premises infested, to successfully eradicate the vermin, and which can be applied without injury to property. Dwelling houses cleansed from 1l. to 5l. per annum; mansions and estates from 10l. and upwards; ships, docks, warehouses, granaries, breweries, farms, wharfs, &c., in proportion. Caution.—None are genuine unless bearing the signature and seal "Joseph Anton Meyer."

TERRA COTTA FIGURES, VASES, FOUNTAINS, &c. Manufactured by DOULTON and WATTS, Lambeth Pottery, High-street, Lambeth, London.

D. and W., from their experience as Potters, have made considerable improvements in the manufacture of Terra Cotta, the superiority of which over Artificial Stone or Cement is well known. It is subjected to a high degree of fire, which renders it imperishable, and gives it a sharpness and surface which no changes of temperature can impair.

D. and W. are enabled to offer the Terra Cotta at a considerable reduction in price; and Drawings and Designs will be forwarded Gratis, on application.—Architectural work executed.

DRESS AND FROCK COATS.—Superfine Cloth Dress Coats, 30s. to 35s.; Extra Quality, 40s. to 50s.; Frock Coats, with Silk facing, 35s. to 42s.; with Silk Velvet Collar and Silk facing, 50s.; Waterproof Cassterfield, Codrington, and Travelling Coats, 12s., 15s., and 21s.; Waistcoats, &c. 6s. to 8s. 6d; rich Satin, Silk and Cassimere, 8s. 6d. to 12s. 6d.; Trowsers, 6s. 6d. to 10s. 6d.; Doeskin and Kerseymere, 12s. 6d. to 21s.; Shooting Jackets, 10s. 6d., Boys' and Youths' Cloth, Russar Suits, 21s. to 30s. A Suit of Superfine Black Cloth, 2l.; Extra Quality, 3l. 10s. to 4l. At Fisher & Co.'s, Tailors, 31, King William-street, City, ten doors from London-bridge.



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MIDHURST HORTICULTURAL SOCIETY.—The Seventh Annual Meeting of this Society will be held at the Grammar School, on Tuesday, the 17th instant, when Prizes will be given for Flowers, Fruits, and Vegetables,—the particulars of which may be had on application to Mr JOHN THORP, Jun, Secretary

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12 Extra Fine ditto, do 18s "

Catalogues of which may be had on application

CHRYSANTHEMUMS (Sent postage free)

Fifty of the newest best varieties by name, 10s per dozen for names and colours of which see Advertisement of June 15th.

PETUNIAS per post free

Extra Fine Varieties 12s per doz including Miller's Punctata
PANSY "JANE ARCE PERI (for particulars of which see Advertisement of June 1 1844), 3s 6d per plant
ARAUCARIA IMBRICATA, in pots, 3 years old, 30s per dozen, or 10l per 100
CEDRUS DEODARA 3ft to 4ft 6in, 10s 6d per plant

N B All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

☞ For Particulars of their EXTENSIVE COLLECTION OF CARNATIONS AND PICOTEES, see their Advertisement of last week.

Great Yarmouth Nursery, Sept 5, 1844

HOLLYHOCKS

WM. JACKSON AND CO beg to inform the admirers of these Noble Plants that their unrivalled Collection comprising every variety and shade of colour, is now in splendid bloom —Cross Lanes Nursery, near Bedale, Yorkshire, Sept 7 1844

JAMES WALKER, Florist, &c, Rhodes, Middleton, near Manchester, Lancashire, begs to call the attention of Gentlemen and Amateurs to his choice collection of Geraniums, Catalogues of which may be had on pre paid application

1 Doz of new and choice varieties £3 10 0
1 do of good show . . 1 1 0

Rhodes, Sept, 3, 1844

GERANIUM "CELESTIAL"

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, have now ready to send out young plants of the new Geranium "CELESTIAL" which has been so much admired. The flowers being very large and with a beautiful white throat, it is one of the most conspicuous varieties that has yet been raised Plants, 10s 6d each

C and Sons have also to offer healthy young plants of CAMELLIAS of sorts, with flower buds at 30s per dozen, larger plants 42s per dozen and good plants of the newest sorts 60s per dozen Also good plants of the best sorts of CHRYSANTHEMUMS at 12s per dozen larger plants, 18s per dozen The package included in the above prices A remittance or reference for payment in London will be expected from unknown correspondents

DUTCH FLOWER ROOTS, &c

JAMES DICKSON & SONS, 32, S. Hanover-street, Edinburgh beg to intimate the arrival of their supply of DUTCH BULBS, consisting of all the esteemed varieties, in excellent condition, and respectfully solicit early orders, which shall meet with immediate and most careful attention

At their Nurseries at Inverleith and Broughton Park, J D & S have always a large stock of EVERGREEN and FLOWERING SHRUBS, FRUIT and FOREST TREES, seedling and transplanted, all of which are of excellent quality this season.

In the Floricultural department they can with confidence recommend their collection of GREENHOUSE, STOVE, and HERBACEOUS PLANTS, with choice assortment of FLORISTS' FLOWERS of every description, to which they respectfully invite the inspection of Amateurs

Catalogues of every article to be had on application.

☞ Experienced Overseers, Gardeners, and Foresters recommended —Sept 1844

TO THE LOVERS AND AMATEURS OF ROSES.

WOODLANDS NURSERY, Maresfield, near Uckfield, Sussex.

WM. WOOD AND SON have the pleasure of announcing to their Friends that their newly arranged CATALOGUE OF ROSES is now ready, and may be had GRATIS on application. It will be found to contain all the newest and best varieties in cultivation.

W W and Son take this opportunity of informing Amateurs that their extensive collection of autumnal flowering Roses are now in splendid bloom. Admittance daily, Gratis (Sundays excepted).—Woodlands, Sept 6.

AURICULA SEED from Show Flowers, to be had in Packets at 2s 6d., of W. J. Rowland, Seedsman, 46, Cheapside, London.

WOODLANDS NURSERY, Maresfield, near Uckfield, Sussex.

W. WOOD & SON beg leave to announce that they are now [illegible] for inspection, their newly-arranged CATALOGUE OF ROSES, containing a full and comprehensive description of all the most popular varieties, in addition to the novelties which have appeared this season.—Woodlands, September 7.

JESSOP'S NURSERY, Cheltenham, Established in 1813, from its extensive connexion, offers peculiar advantages to Noblemen and Gentlemen requiring Gardeners, Foresters, or Farm bailiffs, of established skill and respectability. All communications promptly attended to.

INGA PULCHERRIMA. (Figured in "Paxton's Magazine of Botany" for August, 1844)—Fine Plants of this extremely elegant and beautiful Exotic, with many of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices —

Inga pulcherrima, 7s 6d
Achimenes picta, 10s 6d
Æschynanthus Horsfieldii, 7s 6d
Amycia zygomeris, 7s 6d
Clerodendron splendens, 10s 6d
" squamatum, 5s
Hinlenia, or Rondeletia longiflora 18s
Paeonia campanulata rosea (the finest selected from 1000 seedlings), 7s 6d

Also the following, in collections:

100 Cape Ericas of 100 distinct sorts, (including many fine sorts) 8l.
12 Ixias in choice, of 12 distinct sorts, (including fragrans) 10s.
12 Sparaxises of 12 distinct sorts, 5s

Habrothamnus elegans, 12s.
Tetrandra Hugelii, 10s. 6d. to 21s
Veronica speciosa, 1s to 18s
Erica elegans fine and healthy, 18s., 24s., and 30s per doz.
Dymonia punctata, 1s 6d.
Pilinx Van Houttei, (flowering plants), 5s
Spir a Reevesiana, 5s
Viburnum coriaceum, 2s, 6d.

THOMAS JACKSON, Kingston Nursery, Surrey, Sept. 6.

MR HOYLE'S NEW SEEDLING GERANIUMS.

WILLIAM MILLER respectfully announces to the Nobility, Gentry, Amateurs, and the Trade, that he has purchased the entire stock of the following superb SEEDLING GERANIUMS raised by Mr. W. Hoyle, Esq, of Guernsey, viz.

			each—£	s.	d.
1844—	Titus		0	5	0
	Pompey		0	2	6
	Champion		0	2	6
	These three for six guineas.				
1843—	Unique		1	1	0
	Queen of England		1	1	0
	Claude		1	1	0
	Sarah Jane		1	1	0
	Amelia		0	10	6
	Majestica		0	10	6
	Rosalia		0	10	6
	Flora		0	10	6
	General Pollock		0	10	6
	These nine for five guineas.				

The entire set 10 guineas with a discount of 20 per cent, to the Trade A remittance must accompany the order from unknown correspondents

Titus received a seedling prize at Chiswick, June, 1844; Pompey, Champion and Unique were pronounced by Professor Lindley, in the *Gardeners' Chronicle* of June 29, 1844, to be "three flowers of good substance, size, and variety;" and Mr. Glenny, in *Gardeners' Gazette* June 22, 1844, says, speaking of the Geraniums at the Chiswick Fête—"Mr. Hoyle had by far the best lot there Pompey was the best of them, and Titus next" Blooms of the others were likewise exhibited at the June Fête, Chiswick, 1844 and attracted very extraordinary attention, and were universally admired. On the whole, the above varieties for substance, roundness of form, and general excellent qualities, are among the best ever offered to florists. Printed Lists, with full descriptions, can be had on application To commence sending out plants in October.

W M has been supplied by Mr Hoyle with some choice GERANIUM SEED, which he saved from his own beautiful Seedlings, and the newest and best varieties sent out by other growers Sealed packets of 100 seeds, 12s.; do of 50 seeds, 7s. Also, Hybridised Seed saved from his own extensive collection of Pelargoniums; packets of 100 seeds, 10s.; of 50 seeds, 6s.

Providence Nursery, Ramsgate.

TRUE HIGHLAND PINE

JAMES GRIGOR, NURSERYMAN, Norwich, begs to call the attention of the Land Proprietors of England to this very desirable variety of Pinus sylvestris, which has been raised from seeds collected on the mountains of Strathspey, and of which he has strong plants ready to be sent out. For introducing this tree Messrs Grigor, of Forres and Elgin, were awarded several premiums by the Highland and Agricultural Society of Scotland; and in that part of the country this Pine is rapidly superseding the common soft-wooded variety For all economical purposes it is chief merit consists in the hardiness and durability of its wood hence it is much sought after as pressit for railway sleepers Pictorially considered, or as a landscape ornament it rivals even the Cedar of Lebanon. Mr Walter Scott describes it as assuming much of "the bold and contorted figure of the Oak" and in the last No. of the *Gardeners' Review* it is recommended as a fit tree to be planted in churchyards and cemeteries

Strong plants in pots, such as rabbits and hares will not destroy			5l. each.
Ditto not in pots, 18 inches high			30s. per 100.
Ditto	15	"	20s. "
Ditto	1 foot high		15s. "
Ditto	2 years old		10s. "

J G would recommend all who require them to furnish themselves immediately with these Plants, and to plant them for fall with Spring planting in exceedingly luxurious; and which followed by such a season as was experienced during the commencement of the present Summer, the young trees are sure to be killed

Cedrus Deodara, valued in the open ground, being the strongest plants yet offered, in Bundles, 10s each Araucaria imbricata, Pinus excelsa, Lambii, Benthamiana, &c. &c on reasonable terms.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the gratification of those splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs WARNER & WARNER, Cheapside, London, after the 7th September

TO CALCEOLARIA GROWERS.

THE present being a good time to sow CALCEOLARIA SEED, the Advertiser begs to offer a few packets of his splendid Seed Specified Kinds, saved with great care with printed directions to raise the young plants, at 5s per packet —J. DARNELL, Nottingham, England

EARLIEST STRAWBERRY in CULTIVATION —Rooting Plants of the "PRINCESS ALICE MAUDE" STRAWBERRY, which has proved itself to be the earliest grown in this country, are now ready to be sent out at 30s per 100. As an Early Strawberry it has taken the First Prize at all the Horticultural Exhibitions in the early part of the season. Also Plants of the "British Queen" Deptford Pine," "Prince Albert," and all the leading kinds. To be had of Messrs. WARNER & WARNER, Seedsmen, 28 Cornhill London

GEO. LIGHTBODY, Falkirk, respectfully informs the cultivators of the RANUNCULUS, that his CATALOGUE of SELECTIONS is now ready, and may be had on application A few Varieties of Superior New Seedlings will be set out this season Gentlemen wishing Auriculas and Ranunculus Seed are requested to make early application, as but a small quantity has been saved this season Packets 2s 6d each

DOUBLE ROMAN and PAPER-WHITE NARCISSUS 4s per dozen The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance and the latter for its purity and elegance have been just received at A. COMPERT'S, late Mr. BARRON'S, Italian and Foreign Warehouse, 18, Pall Mall Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c &c Price Catalogues of which may be had per Post

THE BEST CALCEOLARIAS OF THE SEASON, exhibited by Mr KINGHORN, at the Chiswick Show, in May, and at the Botanical Society in June N GAINES Surrey Lane, Battersea having purchased the Stock of the following beautiful Calceolarias, intends letting them out in a few weeks and as there will be but few plants, early orders are requested

LADY ANN CHARTRIS — Nearly a rose flower, richly mottled with bright yellow and rich light and dark reddish brown, nearly equal of each, full average size, shrubby habit very handsome and effective as well as novel "

DUCHESS OF SUTHERLAND —"The largest and best of its class, nearly as deep as it is across richly blotched and speckled with dark-brown upon a gold coloured ground, not equalled in form; shrubby habit"

PROFESSOR WILSON —"Spotted like the leopard upon brilliant yellow ground, brighter and better than Lady Constable, and more inflated a very distinct variety, and worthy of the very best collections"

KINGHORNII —"A very distinct variety full of shaded clouded spots, or very short stripes, upon a dark yellow ground shrubby and rich in habit"

COUNTESS OF MORNINGTON —Darker than the Duchess of Sutherland; good form and very distinct, shrubby habit, and handsome

FLASH —Brighter than any other grown of good habit, very shrubby handsome plant

The first four of these varieties were described by Mr GLENNY in the *Gazette*, and were selected by him from the entire collection as the best, not less for their colours than their excellent form They were also noticed in the *Chronicle*, as the best exhibited at the May Chiswick Show. The last two were not in flower at the time, but have been selected for their approximation to them in most of the particulars

JOSEPH FRYER begs to offer to the notice of the public good Plants of the following —Thunbergia alata superba, and Aurantiaca superba, 4s each; Verbena, 1s 6d; Calantica nigricans 6s; Do Russelliana, 2s 6d; Veronica speciosa, 2s 6d Finest varieties of Fuchsias sent out this year, 2s 6d each; last year's varieties 9d to 1s Finest varieties of Pansies, 6s to 1s per dozen; New Seedling do, Standard 2s each Pansy seed just saved from J F's extensive collection 1s to 2s 6d per packet

The above will be sent by post free as far as practicable, and a remittance is respectfully solicited from unknown correspondents —Clarendon Nursery, Camberwell Sept 6, 1844

CAMELLIA "EMPEROR"

T. DAVIES AND Co beg to inform their friends and the Public that they now intend sending out the above magnificent Seedling, raised and flowered by them in 1843, when it was exhibited at the rooms of the Horticultural Society of London, where it was awarded a Prize, and afterwards spoken of by Dr Lindley in his Report of that Meeting in the following terms, in the *Chronicle* of 25th March, 1844 — "Messrs DAVIES & Co, exhibited a very handsome Seedling Camellia, raised from the seed of C. colvillii, fertilized with the pollen of C. reticula. In the foliage it resembles the older sorts, but the flower, which is large and well filled up, partakes of the form and colour of its male parent A certificate was awarded for it" Price from 21s to 42s Stock positively limited

CEREUS GRANDIFLORUS RUBRA This splendid new variety of Cereus was raised by J. D. Acto in the manner described by Dr. Lindley in the leading Article of last week's Chronicle. Blossoms measure 10 inches in diameter are of a pale red colour, with a shade of purple in the centre The expand about 7 o'clock in the evening and last nearly the whole of the next day, being an advantage over the night blooming, which generally close early the next morning Strong plants are now ready for sending out at 10s 6d each Remittances or remittances required from unknown correspondents —Knowsley Nursery, near Liverpool 7th Sept 1844

DUTCH HYACINTHS

WARNER AND WARNER, SEEDSMEN, No 28, Cornhill, London, respectfully inform the Nobility and Gentry their Dutch Flower-roots have arrived in superior condition, consisting of the choicest and newest varieties The Bulbs are unusually handsome and large at moderate prices Catalogues forwarded by post on application.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and dispatch — This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by man or woman It is easily set so as to deliver the exact quantity of Seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Rape Seed, Wheat, Barley, Peas, and all kinds of Garden Seeds. In kind, if 10s each; or with Copper Rack and Pin, 12s each Commission allowed to Agents.

The Dibbles may be obtained of Messrs. CUTHAN and Son, Whisley at Oxford at London, through Messrs Ransome's Agricultural Implement Makers to the Royal Agricultural Society; or from the Inventor, by letter, to his address, Dunhall, near Droitwich, Worcestershire Post-office order for the amount —RICHARD SMITH,

EXHIBITIONS AT THE GARDEN OF THE Horticultural Society of London,

FOR THE YEAR 1845.

NOTICE IS HEREBY GIVEN that the following are the RULES to be observed at these Meetings —

EXHIBITORS —All Persons, whether Fellows of the Society or not, will be at liberty to send Subjects for exhibition

FLOWER STANDS —Exhibitors of Cut Flowers must SUPPLY THEIR OWN BOXES OR STANDS No box or stand should exceed eight inches in height at the back, or 12 inches in depth from front to back The ends of all boxes must either be loose or made to unhinge

MEDALS AND REWARDS —The Society distributes the following Medals and Rewards,—namely,

	value	£.	s.	d.
C The Certificate		0	10	0
SB Silver Banksian Medal		1	0	0
SK Silver Knightian Do		1	5	0
LS Large Silver Do.		1	15	0
bG Large Silver Gilt Do		4	0	0
GB Gold Banksian Do		7	0	0
GK Gold Knightian Do.		10	0	0
LG. Large Gold Do		20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate *If within one month after the third Exhibition of the year* no intimation shall have been received from an Exhibitor of the manner in which he desires his Medals to be disposed of, all the Medals due to him may be prepared and *transmitted to him through the usual public conveyances without further notice* In case an Exhibitor shall receive a First Prize in any one letter, he shall not be entitled to receive any other Medal in the same letter, except in *K A, M M*, and *N N*

IT IS, HOWEVER, TO BE PARTICULARLY OBSERVED that if any Exhibitor shall obtain the award of a Medal, and it shall be afterwards ascertained that he has gained it by exhibiting plants not *bonâ fide* his own property, or that of his master such award shall be cancelled, in favour of the Exhibitor next below him, whose Medal shall in like manner be transferred to the person immediately following him in the award, and so on

SUBJECTS OF EXHIBITION —These will be divided into Classes as explained further on No articles not of Horticultural produce will be allowed to be placed upon the tables Exhibitors will do well to make themselves acquainted with the arrangements described in the following List, as they will in ALL CASES BE REQUIRED TO SIGN A PRINTED FORM OF DECLARATION TO BE FURNISHED TO THEM IN THE GARDEN, stating under what letter their plants are to be shown; and they are particularly requested to TAKE NOTICE that if errors in the awards of the Judges should occur, in consequence of mistakes on the part of Exhibitors in filling up such Declarations, the Society cannot undertake to rectify the errors afterwards

Names fairly written are to be attached by Exhibitors to all Florists' Flowers; and the Judges are restrained from awarding any Medal to such Exhibitions, whatever their merit may be, if this regulation is not complied with By Florists' Flowers are meant not only flowers usually so named but also Auriculas Pelargoniums, Roses, and Calceolarias It is also hoped that all other subjects of Exhibition will be neatly and legibly labelled with their names

CLASS I —FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A Pelargoniums, in collections of 12 new and first rate varieties cultivated with superior skill, in pots of 24 to a cast GB—SG—LS

B Pelargoniums, in collections of 12 varieties, in pots of 24 to a cast GB—SG—LS

C Pelargoniums, in collections of six varieties in pots of 8 to a cast LG—GK—SB

D Roses, in pots, Amateurs to show in collections of 12 Nurserymen in collections of 25, distinct vars GB—bG—LS

N B It is the wish of the Society in a future season, to require Roses to be shown exclusively in pots, and not to admit cut specimens to be exhibited at all

E Roses in pots single specimens displaying superior cultivation bK—SB—C

F Moss Roses, in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety, in 12 varieties SK—SB—C

G Other Roses exhibited as in the last letter, and in 50 varieties LS—SK—bB

N B No one who exhibits in this letter can also compete in the following

H Other Roses exhibited as in the letter F, and in 25 varieties SK—SB—C

N B Higher Medals than those here offered for Roses cannot be given by the Judges And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete

I Cape Heaths, in collections of 20 entirely distinct varieties GK—SG—LS

N B It is expected that the same plant shall not be exhibited on more than one occasion

K Cape Heaths; in collections of 12 entirely distinct varieties GB—SG LS

L Cape Heaths in collections of 6 entirely distinct varieties SG—LS—SK

N B No person will be allowed to show in more than one of the classes *I, K*, and *L*

M Cape Heaths single specimens displaying very superior cultivation LS—SK SB

N Calceolarias, in sizes; in pots of 24 to the cast. LS—SK—SB

O Carnations, in pans of 24 distinct varieties LS—SK—SB

P Picotees, in pans of 24 distinct varieties LS—SK—SB

Q Pinks, in pans of 24 distinct varieties bK—SB

R Ranunculuses, excluding Turbans, in stands of 12 distinct varieties for Private Growers, and 24 for Nurserymen LS—SK—SB

CLASS II —FLOWERS, for which all persons are admitted to equal competition.

S Stove or Greenhouse Plants; in collections of 40 plants. LG—GK—GB

N B Calceolarias Fuchsias, Orchidaceæ, and Pelargoniums to be excluded from *S, T, U* and *R*

T Stove or Greenhouse Plants; in collections of 12 plants, SK—LS—bK

U Stove or Greenhouse Plants; in collections of 6 distinct species LS—bK—bB

V Greenhouse Azaleas; in 12 distinct varieties GB—SG—LS

W Greenhouse Azaleas, in 6 distinct varieties SG—LS—SK

N B No one can show in both classes of Azaleas.

Z Stove or Greenhouse Climbers; in collections of 6 species SG—bK SB.

Aa Exotic Orchidaceæ; in collections of not fewer than 20 species LG—GK—GB

N B Exhibitors cannot show in more than one of the classes *Aa BB* and *CC*

BB. Exotic Orchidaceæ; in collections of 12 species GK—GB—bG

CC. Exotic Orchidaceæ; in collections of 6 species. GB—SG—LS

DD Scarlet Pelargoniums; in 6 distinct vars. LS—SK—SB.

EE. Pelargoniums, in 6 distinct varieties. SG—LS—SK.

N B By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden greenhouse

FF Achimenes, in collections of 6 species, grown in pans not less than a foot in diameter. LS—SK—SB.

GG Distinct varieties of Tall Cacti in flower. GK—SG—LS.

N B The GB and SG Medals are not to be given if fewer than six varieties are exhibited

HH Fuchsias; in collections of 12 truly necessary varieties, of which one-half shall have a light tube. LS—SK—SB

II Cineraries; in pots, in collections of 12 distinct varieties. SK—SB—C.

KK. New or extremely rare ornamental Plants SG—LS—SK.

N B These classes will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as one which has been exhibited in the Garden in a previous season.*

LL Single specimens of very superior cultivation. SG—LS—SK

MM Miscellaneous subjects SK—SB—C.

N B Exhibits under *MM* will not be thereby entitled to a pass-ticket Nosegays, Mantlepieces, Epergnes, and bouquets are altogether excluded from exhibition.

NN. Seedling Florists' Flowers. SK—SB—C

N B Every seedling must be shown singly, and marked with the name it is to bear The same seedling cannot gain a prize more than once in the season Pelargoniums are to be shown in pots, and not in a cut state No person will be allowed to exhibit more than 6 seedlings at each meeting. Exhibitors under this head will not be thereby entitled to a pass ticket. For seedling Pelargoniums exhibited the first year no higher prize shall be given than a Certificate, and this is to be awarded to flowers of decided merit Seedling Pelargoniums of the second year must be shown in pots not smaller than 32s, and each exhibitor may produce six of them, but not a larger number

IN ADDITION to any Medals assigned to the classes *I, K, T*, and *AA*, the SK SB, and C are offered for the collections in those classes which shall be best named by the Exhibitor.

N B The Society's Officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names but of the accuracy of the spelling, and the neatness of the writing

CLASS III.—FRUIT, for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the Market, and Private Growers, exhibit independently of each other

N B All Fruit must be FULLY RIPE and WELL COVERED and PROPERLY NAMED by the Exhibitor as far as practicable; if the contrary it will be disqualified

OO Miscellaneous Collections of Fruit, consisting of at least three different kinds, Peaches and Nectarines being considered as only one kind GK—GB—LS

N B —Cucumbers, Tomatoes, Gourds and similar Kitchen Garden produce, are excluded from this letter.

PP Grapes SG—LS—SK—SB

QQ Pine Apples bG—LS—SK—SB.

RR Peaches or Nectarines, in dishes of six specimens SK—SB

SS Other kinds of Fruit bK—bB—C

JUDGES —The Judges have the power of *increasing* or *diminishing* the number and value of the Silver Medals offered by the Society for particular objects, and also of *conferring* Silver Medals or Certificates in cases not contemplated in these regulations, if they think it necessary to do so.

The Judges are also required to bear in mind that the Society's Medals are offered less for new and curious objects than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the Collector as to reward the skilful Gardener They are also not to make any award in cases where the objects exhibited do not appear worthy of a Medal, otherwise a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

By order of the Exhibition Committee, JOHN LINDLEY,
Aug 31, 1844 Vice Secretary.

*** Copies of these Regulations can be procured upon application at the Society's Office, 21, Regent street.

TO GENTLEMEN BUILDERS, NURSERYMEN, & OTHERS

MESSRS PROTHEROE AND MORRIS are instructed to Sell by Public Auction (under a bill of sale), on the premises Essex Nursery, Loughboro' road, Brixton-road, on Monday 16th September, 1844, at eleven o'clock, the whole of the NURSERY STOCK, consisting in choice Evergreens and Flowering Shrubs, Standard and Dwarf Roses; also two newly erected Greenhouses, Frames about 2000 Greenhouse Plants, a quantity of Rock Work, Utensils in Trade, &c; may be viewed prior to the sale Catalogues may be had on the premises of the principal Seedsmen, and of the Auctioneers, Leytonstone.

NURSERY STOCK, KING'S ROAD, CHELSEA

MR. KIRKE respectfully begs to announce that he has received Instructions to Sell by Auction, on the premises, (late the American Nursery) King's Road, Chelsea, on Wednesday, September 11th, at 11 for 12 o'clock, by order of the proprietor the ground being required for other purposes, the Valuable Collection of CACTUSES, GESNERIUMS, CAMELLIAS, ORANGE LEMON, and CITRON TREES; ALOES, FUCHSIAS YUCCAS CHRYSANTHEMUMS, AZALEAS, and SUCCULENT PLANTS; the whole in pots, and arranged in small and large lots to suit the convenience of purchasers; GREENHOUSES, &c &c —May be viewed two days prior to sale. Catalogues had on the premises of Messrs DIXON and Co, Covent Garden of Messrs P. and C LOCKHART, Seedsmen and Florists, Cheapside, City; and at the Offices of the Auctioneer, 29, Brompton row, Brompton

TYDDEN, FIVE MILES FROM DOVER.

FOR SALE BY PRIVATE CONTRACT.—Three Hundred and Four Acres of FREEHOLD, and One Hundred and Ninety four Acres of LEASEHOLD LAND, together with the Rent charge in lieu of Rectorial Tithes, over the parish of Lydden.

The FREEHOLD comprises, with Farm Buildings—

	a.	r.	p.
Coolinswood Manor Farm (Arable Land)	109	3	4
Warren Farm (Arable Pasture, and Woodland)	117	2	30
Folly or Bell Farm (Arable and Pasture)	71	0	0
Cannon Land (Arable and Woodland)	5	1	36
Total	304	0	1

and Nine substantial Cottages and Gardens

The LEASEHOLD consists of—All that capital Farm-House, Lydden Court with ample Farm Buildings, in a good state of repair, and One Hundred and Ninety-four Acres, 1 Rood, of Arable, Pasture, and Woodland, with a Rent-charge in lieu of Rectorial Tithes, valuable under the Act for the commutation of Tithes, together with a like Rent-charge over the remainder of the parish of 317a., subject to a like variation.

The Land is in a high state of cultivation There are Thirteen Years unexpired of the Leasehold

For Particulars, and to treat for the Purchase, apply to Mr COLEMAN, Kennardy Court Farm, near Dover

NEW LYNDLEY SEEDLING CINERARIUMS.

WILLIAM E. RENDLE has much pleasure in intimating to the Nobility, Amateurs, and Trade the following new varieties of CINERARIUMS raised by R. B. Lynch, Esq., the entire stock of which he has succeeded in obtaining.

[illegible] each 2l. 1s.
[illegible] " 1 1
[illegible] " 1 1
[illegible] " 1 1
[illegible] " 1 1
[illegible] " 1 1
[illegible] " 1 1

The whole set in three for six guineas; [illegible] discount to the trade.

"Rendle's Alice" has received two first-class prizes in London, "White Perfection," three prizes at Hackney, and "Rendle's Gold Medal" at Plymouth, "Rendle's" is exhibited at the Adelaide, June 20th, 1843. They all [illegible] and can be highly recommended to [illegible] after flowering.

W. E. R. has been induced [illegible] these at prices considerably lower than [illegible] for such valuable varieties, in hopes thereby to create [illegible] demand. Descriptions can be obtained on application.

Orders will be executed in their [illegible]. Plants will be delivered in October next. Guineas or remittances required from unknown correspondents. Plants will be added to compensate for [illegible].—Union Road Nursery, Plymouth, Sept 6

The Gardeners' Chronicle.

SATURDAY, SEPT. 7, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

SATURDAY, Sept 14 Royal Botanical 4 P M
Tuesday, Sept 17 South London Floricultural 1 P M
COUNTRY SHOW—Wednesday, Sept. 11 Tottenham 2 P M

THE decision of the Horticultural Society as to the subjects for which medals are to be offered at the EXHIBITIONS IN THE GARDEN next year will be found in another column. It has been arrived at after a careful consideration of the subject, and of the suggestions of many persons taking an interest in those meetings.

The main differences between the present schedule of prizes and that of last season consist in the following particulars:—

Several new classes are introduced; viz, Roses in pots, Cape Heaths in 12s and as single specimens, Ranunculuses, Stove and Greenhouse plants in 12s, Orchidaceous plants in 12s, Scarlet Pelargoniums, Pelargoniums as species, and Achimenes.

The large collections of Stove and Greenhouse plants are made to contain more plants; but Heaths, Azaleas, Rhododendrons, and Cacti, are again admitted into them, it having been found by experience that gardeners cannot make up such collections without the assistance of those kinds of plants.

Medals of higher value than before are offered in some of the classes. The Large Gold is offered for the best large collection of Stove and Greenhouse plants; two Gold Banksian Medals are offered for Pelargoniums, instead of one, and the Gold Knightian is offered for Heaths, instead of the Gold Banksian. Upon the whole, the increase in the general value of the medals may be judged of from what has been done with respect to those of gold. In 1844 there were offered fourteen gold medals, of the value of 128*l.*, for each Meeting; in 1845 their number is nineteen, and their value 177*l.*

Rhododendrons in pots, single Orchidaceous plants, and plants in Ward's Cases, no longer make separate heads of exhibition.

The declaration as to whether plants have been previously exhibited, is not to be required in future.

A new regulation has been introduced in the following words: "If any exhibitor shall obtain the award of a medal, and it shall be afterwards ascertained that he has gained it by exhibiting plants not *bonâ fide* his own property or that of his master, such award shall be cancelled in favour of the exhibitor next below him, whose medal shall in like manner be transferred to the person immediately following him in the award, and so on." This has been rendered necessary by the system of borrowing plants for exhibition, which some persons are said to have practised elsewhere this year with considerable success—a practice most disgraceful to the parties concerned in it, and such as no man with a grain of honesty would be guilty of. Gardeners have now only to look sharp after such men, whose names are in our possession, and who are well known; and if their tricks pass current in the Garden of the Horticultural Society they will be more cunning than we take them to be.

When we first proposed to Gardeners that they should turn their attention to the cultivation of Roses in pots, we were met by a cry on the part of a good many people, that the thing could not be done; that Roses would not grow well in pots; that they could not be carried from place to place; and other foolish objections of the same kind. Experience has, however, shown that the thing can be done by men having sufficient skill and patience, and the clamour of opposition has died away. Now, indeed, could any man again talk of the impossibility of growing Roses well in pots, after the beautiful displays of them made at the London Exhibitions of the last season?

That there are difficulties in the way of this cultivation is doubtless true: it was that very circumstance, indeed, which led to its introduction. There would have been no credit in producing plants which every bungling gardener could grow; but it was a great triumph to do that well which demanded unusual knowledge of the principles of horticulture. Of course in this as in all other branches of cultivation, a good many mistakes were made in the beginning, and experience was only gained by degrees; for there are things which no general principles can anticipate, and for which we are constrained to trust to practice; not that they are contrary to established laws, but because we do not know how to apply the laws of nature correctly. For this reason he who, having himself overcome preliminary difficulties, volunteers to communicate the result of his experience to others, does the community good service, and deserves encouragement; for he saves his neighbours from the errors into which he himself has fallen. We, therefore, think it a simple act of justice to Mr. Wm. Paul, of Cheshunt, to mention that he has lately published a very useful little treatise* on the Pot-culture of Roses, which all gardeners will find it worth their while to procure. We shall not make extracts from that which everybody should study in the original. Mr. Paul's extensive practice, and well-known skill as a good cultivator, will insure to his precepts the attention they deserve.

There is, however, one thing that we feel called upon to notice. In giving lists of the Roses which are to be preferred for pot-culture, brief descriptions of the colours are uniformly added. This practice, which has been employed by Mr. Rivers and a few other nurserymen in their sale catalogues, cannot be too much commended. But such descriptions, to be quite as useful as they may be, should contain some information as to the habit of the varieties; for mere colour, in plants like the Rose, is by no means all that a buyer wants to be apprised of. We could therefore have wished that Mr Paul had introduced the manner of growth into his useful little publication.

As to sale flower-catalogues, consisting merely of names and prices, we do trust they will soon be numbered with the things that *were*.

There is now such a host of so-called varieties, that it is impossible for any one, except those who have seen the plants in flower to make a selection with any degree of certainty as to what the result may be. Kings, Queens, Prince Alberts, and such charming names as Buyckii, Smouti, Merghelynchii, Canterburyensis, Altontowensis, and Sickmanni, together with the long muster roll in which eximia, splendens, superba, magnifica, grandiflora, and *omne quod exit in issima*, cut so conspicuous a figure, convey no idea of the merits of plants or of their colour, whilst a very short description, not exceeding the extent of the line on which the name stands, would enable every one to exercise his own judgment in giving his orders. This observation applies to all florist's flowers, as well as to Verbenas, Fuchsias, Pelargoniums, Calceolarias, Petunias, and the like.

Of this we can entertain no doubt, that those nurserymen who adopt the plan, will carry off their customers from those who do not. They, too, may count upon the largest number of orders who, in preparing their catalogues, show the greatest desire to inform their customers of the true qualities of the plants they deal in.

Some weeks ago we expressed our willingness to print a form, which, when filled up, would explain the actual condition of any Horticultural Society; and we expressed a hope, that if a considerable number of such forms were filled up correctly, the comparison of them would throw light upon the true cause of the prosperity or adversity of the numerous local associations of this kind.

We have now to announce that these forms, of which the following is a copy, are ready for delivery, and will be sent to any one who may express a desire to have them.

HORTICULTURAL SOCIETY OF ———

When established
How many exhibitions annually
——when and where held
How many and what classes of exhibitors
Average amount of income
——from what source derived
Amount of subscription to constitute a member
Amount charged for admission to exhibitions
Highest and lowest sum offered as prizes
Number of prizes offered at each meeting
Total value of prizes offered at last meeting
Present state of the Society
Supposed cause† of its actual condition

(Signed)

* "Observations on the Cultivation of Roses in Pots; in whatever Forcing and Fumigations, with a List of Varieties best suited for Pot Culture." By Wm. Paul. 12mo. Sherwood and Co. 35 pages.

† If the Society is not flourishing, the probable cause of its want of success, such as want of funds, clashing of rival Societies in the neighbourhood, jealousies among exhibitors, dissatisfaction with the Judges, disputes among the Managers, &c. &c., should be stated.

We earnestly invite the secretaries of local Societies throughout the United Kingdom to co-operate with us in this work, which we trust and believe is capable of producing some solid advantage to the great cause of Horticulture.

MANY PERSONS PURCHASING PLANTS from what is generally advertised as "Dr. Lindley's opinion," are disappointed when the blooms appear in their own collections. It is worth while to inform the public that such opinions as appear in the *Gardeners' Chronicle* under the head "Seedling Flowers," are formed upon single blooms forwarded to the office. It is, therefore, very unjust to charge the disappointment purchasers may meet with to the account of any other than the party forwarding the blooms. Our recommendation is not to purchase except from a report upon the plant itself. A *really good thing* will always pay for the expense of appearing in that state. We have before us now a *border*-flower which in the greenhouse is everything it was stated to be in "Dr. Lindley's opinion:" out of doors it is really worthless.—*B.*

SUCCULENT PLANTS.

THE following is written with a view to draw more of the public attention to the cultivation of succulent plants. No group offers more facility for almost universal distribution, and every dwelling can have a few species in healthy, vigorous growth, and beauty of bloom. The humblest cottage-window may be enriched by their pleasing flowers, or made interesting by their curious forms. In the town of Cove, near Cork, the Fig-Marigold is as common as Stone-crop; hung up against the small shopkeeper's window is the Mesembryanthemum inclaudens, with its pinky-edged green leaf and purple rose-coloured blossom, shining in the light for weeks in the early summer, and gratifying the eye and taste, as well as the pleasing feeling of the owner, that under his or her protection a living creature flourishes and blooms. The M. bicolor is there too, and the silky-blossomed M. blandum, with others whose names are not easily traced for want of accessible illustrations of the family. I mention these circumstances, because the means to have these flowers is so inartificial, that many may give them a place in their attentions who are not aware of its facility, from the broken jug, teapot, or teacup, down to the very eggcup, the Mesembryanthemums are located in Cove, and all they require for some progress is light, and not to be too much watered in wintry or in cloudy weather. I do not recommend this treatment as the best, but it shows the endurance of many of the species, and invites to extended trials of what may be done in making them more general among the community. But to bring the succulents more under cultivation, so as to make them objects of interest to the florist, some aid is required. An accessible monograph of illustrations is much wanted, as the descriptions in systematic works cannot be popularly understood so as to determine the kinds, except they be accompanied by figures.

To know the names of the objects we care for, increases, because it individualises and appropriates our regard; and for this reason we desire to distinguish one thing from another, but more, we may be giving space in our rooms, and our care to plants which rarely bloom, to the exclusion of more grateful companions, who would, if domesticated, constantly express their thanks by throwing their smiles upon us. I have been trying the adaptation of circumstances to them in the open air. As to "acclimatisation," I do not believe in it. The M. aureum, planted in a hole in a wall, grew out and flourished and bloomed well for two years; rain, however, in the winter of 1842, swamped it to death. I obtained a series of species, which I potted in gravel and earth; I had all well struck and placed on a demi-wall facing the east, but the drip of an Ivy hedge blocked them in the autumn, and they became the favourite food of numberless devourers, "both those that crawl and those that fly." I was, however, quite successful with those which I put in an old window of a turret in the open air, the shelter being merely the depth of the "reveal," about nine inches or so; I covered the window stool with coarse gravel, kept together by bricks at the edge, and partly in pots and some in clumps turned out, I have my "blind window" an object of admiration. In winter a little coarse rubbish is a good great-coat for these things, but they must have sufficient drainage, or they are gone.

Drainage at the root being made certain to insure vigorous growth, these plants may be copiously syringed over the head every bright day in summer, and once a week in spring and autumn, in winter they need not be watered at all. I have now a series of Mesembryanthemums on trial as to their winter behaviour in a state of liberty, and I hope these Africans will show themselves worthy of freedom in our climate, although new to them. My preparation is this:—I have made holes fully twelve inches deep, and filled them with large clean river gravel, into this I have turned my rooted succulents, and then, having drawn the peat over the top, left them to our sunshine and showers; what they may do in the winter, time will tell, but their beauty now is most striking—they have made magnificent leaves, and M. blandum, the only one which has blown as yet, is a great beauty; indications is coming out, and promises very well, but the leaves or fronds on various species are so altered in hue, in depth of shining verdure, and crystalline encrustment on those "who wear diamonds," that a person would scarcely know them; they now

differ far more from their forms when imprisoned in pots than many species do from one another. In these felicitous Post-office times such tenacious-lived plants may be sent everywhere. A card pen-box with a bit of wood in it to prevent the stamp from crushing it, would carry three or four species for a postage of as many pence; and if the kinds were well described, the prices of them would soon be published. I have no doubt that curious and valuable hybrids might be raised from seed; and if the gravel and peat do well, we are only beginning our exotic civilization. Noland prostrata, and many fleshy-leaved plants, or other groups not called succulents, enjoy this treatment extremely; but even if we are driven by the rain of winter, to keep our plants succulents within doors, we cannot do well without an accessible index to them. In fact, the Mesembryanthemum, which has grown down the wall out of its sheltering alcove, has borne last winter well, and has blown a perfect sheet of dazzling purple bloom for nearly all the summer—must have its worth unrecorded for want of knowledge.—*R., County Cork.*

ON THE PRESERVATION OF FRUITS.

Amongst the different materials for preserving fruits, recommended by different authors, are found the following:—Charcoal, Sand, Moss, Oat chaff, the Husks of different Grains, Oats, Sawdust, Paper, Bog-mould, Beech and Hazel Flowers, Bran, Canvas, Sealing-wax, Hay, Straw, and Fern.

The Husks of the different varieties of Corn, as Oats, Barley, Wheat, have been by some recommended for keeping fruit in; but I disapprove of them, on account of the obnoxious gases they absorb during the process of kiln-drying; before being ground, however, these, as well as Oat-chaff, answer well for packing, if the fruit has been previously surrounded with fine paper or linen, dried before the fire previous to being used.

Oats.—I have been informed that in Portugal Apples and Pears have been preserved the whole year round by being packed in air-tight vessels and surrounded with Oats, which received no injury by being in contact with the Apples. This material is not, however, generally used for packing, as the grains of the Oats are apt to bruise the Apples.

Sawdust.—This should never be used, except it can be procured from hard-wooded trees, such as Oaks, Beech, &c. The sawdust of resinous trees should on no account be used for this purpose, as it is never entirely free from a resinous smell, which gives the fruit a disagreeable flavour; it might, however, be used for packing fruits in, that are to be sent to a short distance, but each fruit, previously to being immersed in the sawdust, should be well surrounded with linen or paper.

Paper.—This material is employed for preserving fruits, but it becomes expensive where there is a large quantity to be preserved. If charcoal or sand are used, this and all other covering may be dispensed with.

Bog-mould.—I have been informed that this has been tried for preserving Apples during winter, and that it is found to answer the purpose; but having little experience with it, perhaps some correspondent that has used it will favour me with the results.

Beech and Hazel Flowers.—I can recommend the use of these for packing and preserving fruits, especially the more delicate kinds. They answer well for packing Grapes, Peaches, &c., first putting in a layer of the flowers, and then a layer of Grapes, or Peaches, until the box is full; the fruits will be found as fresh at their journey's end, as when first put in, with the exception that the bloom of the Grapes will be destroyed. However, it may be renewed by dusting fine flour over the berries, holding the bunch by the stalk, or stem, during the operation. Beech and Hazel flowers can easily be procured; they should be collected soon after they have fallen from the trees, and put into an airy room to be thoroughly dried before they are used.

Bran.—When this material can be procured, it will, perhaps, answer equally as well as the former; and being of a finer nature, it will more readily fill up the crevices between the fruit.

Canvas.—This material has been strongly recommended by some, with a view to prevent any dust from settling on the fruit; it also tends to prevent their evaporation, by preventing the air from acting on them.

Sealing-wax.—This is much employed in France, and other parts of the continent, for preserving Pears. It is applied by melting it at the end of the wick as you would seal a letter, only not putting quite so much on. In this way fruit is preserved for months.

Hay, Straw, and Fern.—These have been used for a long time, for covering Pears and Apples in the fruit-room, and likewise for packing; and I consider them coarse for packing, when other materials of a lighter nature can be procured.

Pitting.—Apples may be kept in pits after the manner of Potatoes; we have seen this practised both in France and England with success; but the fruit does not keep long after it is taken out; consequently, only a small quantity should be taken out at one time, and the pit should be instantly closed up, to prevent the admission of air. Apples kept in this manner will be found quite sound and good in the months of May and June, or even July, if they have been pitted in a careful manner, all bruised ones being rejected, which would destroy the others. A little powdered charcoal should be carefully sifted over the Apples as they are laid up, which should be done in regular layers. The charcoal absorbs any moisture that is given off by the Apples, and keeps all cool. After this is done, take some clean Wheat-straw, or Hay, and lay it over the fruit, to the thickness of a foot, fastening it down with rope mats of the same material, then cover them up with earth to the depth of another foot. This covering will prevent any change in the atmosphere from reaching the Apples. The operation should be performed in dry weather.

Preserving fruits on detached shoots has been adopted, but with little success. The experiment was tried with Grapes, which were detached from the main branch, a piece of the shoot, about a foot long, being cut with the bunch. Some were immersed in bottles of water, others were suspended in the fruit-room, and part was left on the shoots in the Vinery. It was found that those in the Vinery kept as long as the others. A good plan is to cut the bunches, and turning them upside-down, suspend them in a room with a steady temperature a little above 32°. Another method is to cut off the bunches, with a foot of the stem on each side of the bunch, sealing up the cut ends with sealing-wax, and suspending the bunches at the above-mentioned temperature. The following is a good way of preserving ripe Grapes:—Procure some tin cases of any convenient size, and put in a layer of dry sand or charcoal and then a bunch of Grapes, until the case is full; seal down the lid and make all air-tight, and bury them to any convenient depth in the ground. This plan will likewise answer for late Cherries, Plums, Gooseberries, Currants, &c. These fruits in some gardens are retarded in their time of ripening, by being covered with mats or nets, which is an excellent plan, and ought to be more generally adopted, as it insures a succession. Grapes, Peaches, Apricots, in the open air, may be kept for some time hanging on the trees after they are ripe, by the same means, but their flavour will not be good. Red and white Currants in the same manner will even keep good till the end of December. Ice-houses have been recommended for preserving fruits; but they are objectionable, on account of the damp moisture which they contain. A dry, cool, and airy room, free from all atmospheric changes, is the only place where fruits can be preserved for any length of time.

It will be found that some of the finer sorts of Pears and Apples are liable to crack before they are quite ripe; therefore they should always be gathered and taken into a hothouse, in order to ripen them as quick as possible. It often happens that one half cracks while the other remains sound. Those that are sound should remain on the tree until the proper time for gathering them arrives, which is known by gently lifting them up, and then letting them down with a slight jerk; if ripe, they easily detach. I have seen the following plan adopted with success:—When ripe fruit was wanted before it had arrived at proper maturity in the open air, those were selected which appeared to be ripest; they were placed in a hot-house, and suspended over the hottest part of the flue, in a basket, till they were fit for use; the remainder was left on the trees for a succession. The ripening of Peaches, Nectarines, Apricots, Plums, Cherries, Strawberries, Gooseberries, Currants, &c., may be accelerated in this manner with the utmost advantage. I am not aware that any method has been adopted for the preservation of the Pineapple, for any length of time. I have seen it cut up and immersed in bottles containing spirits—as brandy, whisky, &c., to which it imparts a pleasant and delicious flavour; Plums, Cherries, and Apricots, are used for the same purpose in France.

The sweating of Apples is not to be recommended, as the flavour of the fruit is much deteriorated by it. The less fruit is handled the better; and the less it is exposed to atmospheric changes, after being gathered, the longer will it remain plump and sound, without becoming dry and mealy.

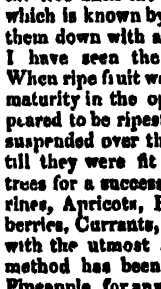
Green Fruits—For preserving, must be gathered when quite dry. Having provided some wide-mouthed bottles, or tin cases, commence by cutting off the berries, one by one, from the stalks till the bottles are full; cork them up tight, and seal them over with some wax, then place them in some cool, airy room, or, what is better, plunge them into the open ground, surrounding each bottle with some charcoal, or dry sand.

Shell Fruit, as Walnuts, Nuts, Chesnuts, &c., may be preserved for a year or two by being divested of their outer shell, and thoroughly dried. In jars, or tin cases, put in a layer of charcoal or dry sand, then a layer of Nuts. Proceed in this way until they are full, properly securing each lid, to prevent the admission of air; when finished, bury them in the open ground, or in some cool and dry cellar.—*J. McIntosh.*

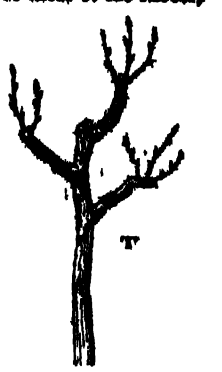
THE ROSE-GARDEN.—No. XVII.

(*Continued from p. 572*)

Shape of Trees.—A tree well formed, with a promising head, and in health, ought, the spring succeeding the budding, to have a clean, straight stem, no lumps nor knots, one shoot quite at the summit, and two, or at all events one other shoot as near as possible also to the top; if there are two shoots only, at opposite sides to each other; if three, forming a triangle; if more, as nearly equidistant from each other, in the diameter of the stock as possible (and here be it observed that the more shoots, at the top of the tree, the handsomer and quicker is the head formed,) each with a bud inserted in it, close to the stem; and at the cross cut, where the back of the bud usurps the place of the original bark of the stock, a sufficiency of sap ought to have exuded, not only to have joined the back of the bud with the unmoved part of the bark above it, but also to have joined the separated part of the bark of the stock to the same place, and thus linked the two barks of bud and stock to the single bark of the stock above them.



The edges of the vertical slit in the bark do not heal by attaching themselves to each other, but the bark of the bud underneath them forms a connecting link, and the edges above mentioned perish insensibly away, leaving little or no scar behind. The second spring, the tree becomes more perfect, the extraneous parts of the stock, if any remain, are cut off, as well as those of the shoots, and the head so arranged as to throw its buds where they are wanted to make it round, even, and handsome. If, however, some shoot be obstinately bent on growing in any direction, spoiling the appearance, and crossing the others, it should by no means be removed on that account alone; but if a little twig be placed across from it to any other convenient branch, to confine it for the season in the place desired, the ligature may be removed in the succeeding spring, or even in the same autumn, when the sap is down, and the shoots preserved.



T. In order to keep them distinct and clear, the annexed cut shows the shoots at a much greater distance from the stem than they will in reality be, the buds they spring from having, as before-mentioned, been placed as near to it as possible.

Lastly, the third spring the tree should show itself with all its wounds nearly closed, its buds strong, full, and healthy, and it should look perfectly natural, those parts of the shoots upon which the buds were placed being incorporated with the stock. The bark clean; no dead wood; and wherever a shoot has been shortened, the place so grown over as to leave no blemish, which will be the case for some time wherever any wood more than one season old is cut away, and a thin shoot of a single year springs at the end of it. This is the reason why forest-trees look so ill if shortened when old, viz., the taper appearance is destroyed, wood of five or six years' growth is continued by the shoot of a single spring, and thus a piece of wood, of the diameter of half a dozen inches, has a little mean-looking shoot, or in all probability half a dozen, not thicker than horsewhips, at the end of it.

Whatever it is worth while to do, it is worth while to do well; work properly commenced does not require that constant superintendence which a bad beginning is certain to render necessary, and which eventually involves a much greater expenditure of time than any labour bestowed at the outset could have demanded.

Home Correspondence.

Provincial Horticultural Societies.—Your remarks on these, p. 499, are well-timed. All country societies of the kind move, as it were, by fits or jerks; and there will, of course, be no permanent cure for this fitfulness until we are well acquainted with the causes. I have attended many Shows of the kind for the last 10 or 12 years, sometimes as exhibitor, and frequently as judge; and have therefore had a little experience in the matter, the result of which I hope may be of service in the investigation. Fashions, we all know by experience, will change; therefore I am afraid it is useless to expect that the public will long patronise one set of objects, however dazzling their appearance or high their cultivation, without relief of some kind. This seems to point out a necessity for variation in the objects of societies, year by year; which change, of course, rests in a very considerable degree with the respective Councils. Now, without wishing to cast any imputation on any given society (a thing I will endeavour studiously to avoid as quite foreign to the purpose), I must say that the Councils of provincial societies are frequently very inefficient in character, as to the objects sought to be attained—viz., thoroughly satisfying that portion of the public which possesses a more refined taste, and so remunerating the various grades of exhibitors as to send them home satisfied, and eager to show their faces at the next meeting. Now, whence the inefficiency complained of? A spring meeting is convened to arrange the future campaign; the Council meet, and instead of being composed of one-half practical gardeners, is chiefly made up of tradesmen and mere florists, who care little for the progress of general horticulture: the former esteeming a huge Cauliflower or Cucumber, and the latter a bed of Tulips, to be the *ne plus ultra* of all gardening. Something more definite should be observed in regard of these Councils, especially as to the number of their members. They are generally too few in number; there should be seven at the least, in my opinion, which might be thus constituted:—two respectable tradesmen; two florists or amateurs of good standing; three general gardeners; at these meetings, the general awards should be classified distinctly as to what portion of the funds should belong to the amateur, what to the florist, what to the general gardener, and also the cottager; last, though not by any means least, a proper arrangement of the mode of competition; for it is found in gardening as in horse-racing, that if the company is too good there is small chance of competing with success. The secretary should, by all means, be a paid officer—what is done without stipend, is sometimes half done, and much depends on the secretary's punctuality and courtesy in taking care to make all parties, more especially subscribers, acquainted with every move of the society, so that nothing appear to be done in secret. To this end I

would have a balance-sheet of the state of the society's funds, posted at every meeting at the corner of the show-room, with an invitation appended to it, for those subscribers who felt inclined, to examine the secretary's books in to the details, after the business of the day had passed by. There is no small difficulty at country Shows in obtaining good judges, gardeners who are exhibiting in several classes being by no means eligible; and few gardeners are so well off as to travel a distance of twelve or fifteen miles at their own expense, and give their services gratuitously into the bargain. The consequence is, that very frequently incompetent judges are selected, and if a first-rate gardener happens to be joined to them, he has it all his own way, and the others are reduced to mere automatons. Much difficulty exists in getting the subscriptions—this is shameful, but it is too true. A good plan, in my opinion, would be to collect the subscriptions very early in the spring, and to state in the circulars that no other would be considered available to the purposes of the current year, than what were received by an appointed day, soon after which the arrangements would be completed, and the subscriptions published in the county newspaper. It is customary to charge a small sum at the doors for visitors inspecting the rooms who are not subscribers this is, in many places, not adhered to so strictly as it ought to be. The door-keeper should be a stranger to the neighbourhood if possible, and have strict orders to exact the sum appointed from all who did not possess tickets. The chief cause of failure, however, is want of sufficient funds—the conductor of these meetings has, in most cases, one of his hands tied. There is a good deal of expense incurred in the mere machinery of such meetings, and after such is deducted from these cramped subscriptions, the rest is obliged to be cut out into such meagre prizes, that few but those who are independent, care to compete for them: ninepenny and eighteenpenny prizes are by no means uncommon at the country Shows, and many a poor wight goes home with a half-crown in prizes, who can ill afford to pay his travelling expenses. There can, therefore, be no permanency or strength in these societies, until the amount of subscriptions is considerably improved. The above facts, though not applicable to the great metropolitan societies, are, I am well assured, to many of the provincial ones.—*Argus.*

Pelargoniums.—I have had some of my plants change on the edges of the leaves like the inclosed, giving the plant the appearance of a variegated sort. The leaves appear quite healthy, with a regular pale border, which is principally confined to the old leaves. The only thing I can suppose it to arise from is, that some time since I had the Pelargoniums watered with sulphate of ammonia, which had been exposed to the air for some considerable time, and had become quite fluid; and it is possible that it might have been partially decomposed, and a free acid (sulphuric) left, which we know has the power of bleaching vegetable colours.—*H. Groom* [This is a curious case. The leaves have a pale border, about ¼ inch deep, as regularly limited as if it were really a permanent variegation.]

The Robin and Hedge Sparrow.—It is my misfortune to live in a large town, so that, when at home, I see none of the feathered race except that bold, impudent, sooty, but withal comical fellow the house-sparrow. My small garden is some half mile off in the suburbs, and I do all in my power to induce the birds to frequent it, though, as an incessant warfare is kept up against them by every "idle apprentice" who can lift a gun, they are far from numerous. I formed this garden in the winter of 1836, and immediately a robin took up his quarters with me in the greenhouse, going out during the day, and returning at night to his roost in some of the shrubs therein. I was at first puzzled to find out how he got in, till I noticed that a triangular piece of glass had fallen out of one of the small panes in the roof, which are three inches broad, and saw him enter by alighting on the edge of the pane below, stoop his head, hop through the hole, and expanding his wings fly to his roost. Of course he could not get out by that opening, and therefore on entering the house every morning I gave him the option of making his exit for the day, which he generally did at once. If, however, the weather was stormy, or a keen frost or snow was on the ground, he used to return in a few minutes with all his feathers standing on end, and very intelligibly, though mutely, beg for admittance to his old quarters, where, having plenty to eat and drink, he spent his time in watching my movements, or hunting about amongst the plants. In very cold weather he prefers a stove heat, and should I leave the door leading into it from the greenhouse ajar, I am sure soon to find him after me. When there he appears to enjoy himself much, he gathers his puffed out plumage tight about him, and looks as he does in summer-time. His large, beautiful, intelligent black eye (only equalled by that of the nightingale) is in constant watch of my motions from his usual perch upon the suspended orchidaceæ, or the rods intersecting the roof from which they are hung. In this manner he has passed every winter since 1836, returning to his quarters about November, and leaving them in February or March. He has now become so tame that he feeds from my hand, and when perched thereon sometimes amuses himself by picking out any crumbs, &c., that may have lodged underneath my finger nails when preparing his food. When in the stove, the moment he sees me enter the greenhouse he flies to the door which separates them, fluttering against the glass in his attempts to reach me, and as soon as I open the door, alighting on my hand, seems grievously disappointed if there is nothing eatable in it, although he may have plenty of food within reach. In summer he and his mate build their nest close by, and are very familiar, though they will not come to the hand. Another pair have built twice with me this season in the same mouse's hole in an old hedge which I retain in my garden, and allow any of the family to approach close to them without being alarmed, popping out their heads in reply to the challenge of a whistle to them. So tame are my young robins, that during summer and autumn it positively requires that one watch their movements to avoid injuring them when hoeing and raking, so closely do they come about one; and it is no uncommon thing for my sisters, when working amongst their flowers, to have three or four of these youngsters in constant attendance during a whole morning. The hedge-sparrow is another of my especial favourites, for I consider it the most affectionate of birds, neither yielding to the dove or the love bird in this respect. They always go in pairs, and having once taken each other "for better for worse," never separate, and seem unhappy when out of each other's sight even for a moment. They are most inoffensive, subsisting chiefly on insects and their larvæ, and ought to be kindly treated by every gardener. Two pair of them seem to consider my garden their home, as they remain with me summer and winter, building in the shrubs, and in cold weather keeping about the open sheds, &c., and coming regularly to be fed. I often stand and watch their movements upon the lawn, which they haunt over in search of insects, in that half-hop, half-flight, so characteristic of this bird, always within a yard or two of each other, and keeping up their low twittering note. Should one of them happen to get out of the other's sight, the moment it is missed you hear the call of its partner, and can see how distressed it is at its absence, whilst the well-known reply, and the delight on their meeting, almost invariably elicits the song of the male. "Bless their kind hearts!" say I, with Mr Waterton, the quotation from whose delightful work in your last has induced me to send you this.—*Pons Ælii.*

Wasps and Bees.—I have tried Professor Henslow's method of destroying wasps, and found it to answer admirably. I put a small quantity of spirits of turpentine into a bottle, and at night, when the wasps were all at home, the bottle was inserted in the mouth of the nest; a spadeful or two of puddled earth was put over this, about a foot in thickness, in order to make the work secure. My man, who had never employed anything but gunpowder and brimstone for this purpose, was doubtful about success. In twenty four hours, however, all the straggling wasps having disappeared, the nest was opened, and all were quite dead. My man said they would come to life again if he did not smash them with the spade; but before doing so he took out about a dozen of the white waxy-looking sealed up bags, containing the young embryo wasps, these were wrapt in paper and taken home, in a day or two the paper was opened, when some of the bags had been converted into mature wasps, others appeared as large moveable maggots, and some were the same as when first taken out of the cells. I have a hive of bees not far from the spot where the wasps' nest was found, and I had noticed wasps about the hive. I have watched them go into it, the bees did not appear to resist their entrance, nor did I see any symptoms of fighting. I diminished the entrance of the hives to two small holes, which are only capable of allowing one bee to go through at once, and since that alteration a larger number of bees are generally about these holes. This morning I did not see one wasp enter the hive; they came and flew about, went once or twice near the entrance, and flew away. Will any bee-keeper inform me whether or not the destruction of bees is the consequence of wasps entering the hive, or whether robbery would set by the intruders? whether or not the bees would fight them after they had entered the hive? and whether or not the diminished entrance will do any injury to the bees?—*Jasper Stokes, Birmingham.*

Gray Parrot.—I have one of this species which once suffered in the same way as a "Constant Reader's," but is now in perfect health, the cause, I doubt not, was the want of water. My pet is thus managed.—As soon as convenient after breakfast, the door of the cage is opened, and Miss Polly then mounts to the top of her cage, and there expands her wings, gives them a good shaking, and gets rid of a great deal of white dust, which, I doubt not, is dried skin. While she is thus employed her cage is thoroughly cleaned out, the bottom strewed with sifted gravel and about a tablespoonful of Hemp seed put into one side of her tin, and her cup filled with fresh water, bread or toast is soaked for a minute or two, but not made pappy, and then given to her, at dinner, or luncheon, she has a bit of meat or a bone not closely picked, but all fat or butter must be carefully removed from it; if we have a milk pudding she has her share, at tea the toast is again prepared, but in no case is more given than the bird can consume. A cup of clean spring water always stands in the bottom of the cage; but if a "Constant Reader's" polly is as mischievous as mine, it had better be fastened to the wires, my bird hangs in a large porch furnished with flowers, and more than once I have received the contents of the cup on my head or back. When moulting, a Clove or two should be put in the water, and by way of a *bonne bouche*, she has from time to time a bit of captain's biscuit. Parsley must be carefully withheld—it is most injurious to parrots. With the above treatment no bird can be in better health, more lively, or in better plumage. The "Constant Reader's" parrot should have as much air as possible on fine days, and as much liberty on the top of her cage as convenient, when in the house.—*Y.*—Miss Kenworthy, of No. 5, Russell-street, Liverpool, is so obliging as to say that, if a "Constant Reader" will send her his address, she will be most happy to give him such information as will effectually cure his bird, and restore its plumage.

Bees'-Eggs.—At p. 572, "A Lover of Truth" says—"As the queen knows when she is to lay a drone or male egg, in what way is that knowledge acquired?" Again, he asks—"Does one ovary contain male eggs only; or are they to be found in every ovary?" According to Hunter, the eggs are not contained in ovaries, but in twelve small ducts; but it is hard to say how the male and female eggs are situated. I shall, however, hazard an opinion respecting their being deposited in the cells. The queen bees differ from other insects that lay their eggs only at certain times, and that have the male and female eggs mixed together; if the season permitted, she would lay eggs to produce working bees during the whole year, and those to bring forth drones only at certain periods. Now the latter may be situated in the duct or ducts, so that they can only exist at certain periods, and the insects know of course by instinct, the proper cells for their production. It may be worthy of remark that after the queen bee has layed drones' eggs and a few to produce queens, she lays only workers' eggs; while in autumn, others of her race, such as humble bees, wasps, and hornets, rear none except drones and queens, especially the yellow pests, who often shave off the workers' cells from the upper combs as materials for forming queens' cells below. Drones are reared in cells of the same size; all this is quite in accordance with the manner in which they increase their species. In reply to the query respecting difference between the size of male and common eggs, I may state that I have fancied that the former were a shade larger, but the exact age of the eggs ought to be known, for they of course swell before the larvæ burst them. "A Lover of Truth" mentions the number of drones' eggs his queen bee lays, and also that of workers' eggs, which he says was 1000 daily for three successive months. This not only exceeds Huber's number—200 daily—but also Schirach's highest number, which is 100,000 in a season.—*J. Wighton.*

Flower Gardens.—I beg to confirm "E. C.'s" statement (p. 525) respecting the appearance of these. On visiting Marston Rectory I was delighted with the brilliant display in the flower garden; the beds, both with regard to flowers and foliage, were all that could be desired, and I was informed that they have been equally beautiful for four months past. This, taking into consideration the bleak situation of the garden, and very bad soil of which it is composed, reflects the greatest credit on Mr. Melville, who is gardener there. The other gardens alluded to by "E. C." are, and have been, the very acme of perfection. The beds are planted with the same kinds of plants that are generally to be met with in good gardens.—*A. A.*

Strawberries and Asparagus.—I beg to offer a few remarks upon the statement of Mr Bree, of Stowmarket, respecting the culture of these plants. Of Strawberries he says, that "he had such a capital crop, because he did not cut off the leaves." The discussion which took place last year about cutting off Strawberry leaves, induced me to adopt the following system by way of experiment.—Of one Strawberry bed I cut the leaves all off one half, and the other half I did nothing to; I cannot, however, speak in praise of the latter half; having other two beds both in the same aspect, I was anxious to learn from which of the two I could obtain the most fruit. From one bed I cut all the leaves and manured it immediately. From the other I cut all the runners, and left the stools entire, and then manured it, which I could easily do, as I plant my Strawberry rows 3 feet apart. The bed that I thus treated was but one year old, the other bed was three years old—that from which I cut all the leaves. I can vouch that I had quite as many Strawberries from the old bed as I had from the new one: this I did not expect, both the beds were of the same sort, viz. Elton Pine. Have any of your readers made a similar experiment? With regard to Asparagus, Mr. Bree goes on to say, that "J. Squinell killed all his Asparagus by cutting off the tops in June." This I have no doubt was the result, but, as was stated at p. 317, of this year, I imagine that salt should only be applied when the plants are in full growth. I consider that Mr Bree practised nearly as dangerous a system as his friend "Y. S." in applying salt at the time when the roots were in a state of rest. I should say that salt would be applied with more advantage in spring—say in the month of March; put it on immediately after the beds are dressed. If the weather is dry, water the beds well, previous to putting on the salt, and then 2½ lbs of salt to the square yard might be used, which I have no doubt would give great satisfaction.—*Villagius.*

Vines.—I have two vineries; No. 1 has the canes trained to the rafters, one only to each. This house is heated with hot water in iron pipes, and has besides about eight cart-loads of tan in it. In No. 2, the Vines are trained horizontally, the whole length of the house (about 20 feet), this house is also heated with the same sized pipes, but no tan is used in it. Now it so happens that this house has matured its produce better, in every respect, than the house with the tan. From what cause has this arisen? Was it the horizontal mode of training which caused it, or was there too much moisture in the tan to allow the Grapes to colour, from excessive evaporation. Heat and air were allowed to both houses in nearly the same degree. Perhaps I ought to mention that the tanless house is situated considerably higher than No. 1, to reach which the Vines are carried a greater distance

follow their fruiting habit was allowed to expand. Has this a tendency to determine the sex more than in Dic.? Perhaps some of your correspondents may throw light on this subject.—*A Subscriber, Maidstone.* [The last circumstance is probably the cause of the effect observed.]

Morphology.—It is an important consideration in connexion with this subject to know, that the proper food of plants consists of the elements of which their structure is composed; and that if a soil be destitute of those elements, no susceptible development will be apparent, so far at least as the nutritive tissue analysed is concerned. Such being the case, it naturally follows that what the stem is to the bell, the flowers and fruit are to the branches, namely, a higher structural result; or in other words, the flowers and fruit may be said to be rooted in the stem and branches, and supported by more perfect tissues than the original roots afforded. Am I correct in these conclusions?—[Yes.]

Culture of the Onion.—I beg to mention a method I have been practising for the better growth of Onions. The soil here being the worst I ever met with for the culture of Onions, forced me upon trying an experiment. Late in the autumn of last year, I caused a piece of ground to be dug deep and left in a rough state. I then procured a quantity of hog manure, which was spread over a portion of the prepared ground; at the same time I got some horse and cow manure, which were also spread separately on the remaining portions of ground. Previous to laying on the manure, the ground was well salted with common salt. I suffered the manure spread over the surface to remain through winter until April, when it was forked off and wheeled away. Onions were drawn from the seed-bed, and transplanted on this piece of ground, and the result has been as fine a crop as could be desired. Of the three kinds of manure tried, I find that the hog manure has answered the purpose best, but the Onions on all the portions are good, whilst in other parts of the garden not so prepared, they have failed, and are not worth gathering for keeping, as three parts of them are grubbed, while the piece experimented on is perfectly free from grub.—*J. L. Snow, Swindon Park.*

Long Vitality of Seeds.—Some time since a well was sunk in the Isle of Wight 300 feet in depth, and out of the earth from the very bottom Charlock sprung up. When and how could that seed have got there? The whole of the place in which I reside was, about thirty years ago, garden ground. Last year a sewer was made in the public road, and I had some of the sandy gravel laid in my garden; this spring a number of young Cabbage plants have sprung up out of the gravel, and as I have had no Cabbage-seed, they must have lain dormant and have sprung into vitality upon being exposed to the influence of light and air.—*Semen.*

Strawberries.—How do scientific gardeners account for the habit of Strawberry-plants forced under glass in spring continuing to form blossoms and fruit afterwards during the whole summer, when turned out into the open air? For many years past I have forced Keen's Seedling Strawberry by keeping it under glass from February till the beginning of May, when the fruit is just turning ripe. I then place them on a south border in the pots in front outside my Grape-house; this gives them a high flavour—even higher than those planted in the open ground. This year I had an immense crop in May from my forced pots as treated; and, finding as large a supply of blossoms the end of June, when the first crop was gathered, instead of planting them in the open ground, I gave them a watering of liquid guano, and the second crop in July was as abundant as the first in May. Mr. Markham, gardener to the Hon. R. Clive, of Hewell, came and looked at them, and expressed, with other gardeners, his surprise at the very abundant second crop. The beginning of this month, finding more blossom peeping through the leaves, I gave them another watering of diluted guano in rain-water; and a third crop is setting, and from the vigorous appearance of the plants, I expect they will go on to produce fruit till cut off by autumn frosts. How is this? We know that, with the exception of the Alpines, the other Strawberries bear but once in a summer, in the natural ground. Why should the forcing in the spring give the disposition to flower the rest of summer?—*John Wellbourn, Wilmcote.*

Nepaula Cucumber.—I beg to inform "A H," p. 573, in answer to his inquiry about this, of the following circumstances:—I had a few plant of it last year, which disappeared unaccountably at the time. I attributed it to the carelessness of the gardener or the ignorance of young weeders; I searched the border where it grew, and found a stout seedling, which I surrounded with a fence of twigs stuck firmly into the ground. It became a flourishing plant, and I gained much upon my contrivance to preserve it; but the frosts and the plants were totally destroyed not many nights after, and upon examining the plants, I found the surface of the ground where it grew completely flattened and smooth, and having a quantity of cat's hairs well pressed into it.—*J. B.*

Potter's Guano.—I have tried Potter's guano on Turnips, Cauliflowers, &c., with success. The proportions were, one fifth guano, four-fifths night-soil; on the first I spread it broadcast, and watered it well afterwards; on the other plants I removed the earth about half an inch deep round the stem, and to the extent of about six inches in a circle, and then spread a handful of the guano on the ground so prepared, and covered it over again with the removed soil. All the plants were well established before using the compost, and now appear remarkably healthy. My garden is a stiff clayey soil. Potter's guano is an expensive manure.—*Fulcon.*

Scorching Effects of the Sun.—I should think it is probable that the cause of Vine leaves becoming discoloured under the influence of the sun, after being syringed, was in consequence of the water containing some ingredient that [illegible] the water has been [illegible] from the various accounts given [illegible] all complain of [illegible] ment; I should, therefore, [illegible] who have experimented [illegible] hot sun, to ascertain [illegible]

The Palmetto. [illegible] experienced in gardening, especially [illegible] desert this system, [illegible] it we have received in [illegible] of a system to involve the [illegible] some who considered [illegible] in Scotland; or to allege [illegible] grow as freely as common Cabbages as a well-managed garden, or Willows by wet ditches." A man may as well say that Abercrombie, Nisbet, and others of the old school, never did grow Grapes at all. Why, some of the best Grapes ever exhibited before the Horticultural Society were grown in houses heated by common flues. But surely those gardeners would have been glad to substitute hot water pipes for dirty smoke-flues. Every gardener of experience is as well acquainted with the advantages of hot water, as he is with the disadvantages of flues, however well constructed; and any modification of them is but a *poor apology for a perpetuation of the evil.* In the name of gardeners and gardening let us have more satisfactory reasons for abandoning our experience of the last 20 years, of a system which all men of science and practice defend, and which all liberal men, who can be liberal, adopt.—*R. Glendinning.*

Coniferous Plants.—Allow me to observe, with reference to the remarks of "Waldeve," p. 557, that a small work on the Coniferæ suited to the climate of Britain is now in course of preparation, but as it will include all necessary information regarding the recently-introduced Pines, which have not yet been properly tested, it will take a few months to perfect the somewhat contradictory opinions which are abroad respecting them. With regard to the Deodar, Araucaria, P. excelsa, and others, it would be well if planters were to take the trouble to ascertain whether the young trees they purchase have come immediately from under glass, or have been growing under the open firmament. Plants which have been forced into unnatural luxuriance in glass-houses, and are immediately removed to cold and exposed situations, must of course suffer greatly from the change, while the same species reared in the open air will succeed perfectly well.—*J. Gregor, Norwich.*

Societies.

HORTICULTURAL SOCIETY.

Sept 3.—Colonel Fielding in the chair. M. C. B. Cave and W. Stirling, Esqs., were elected Fellows. Of Orchidaceæ there was a considerable number, but among them there was nothing rare or remarkable. Mr. Don, gr. to F. G. Cox, Esq., sent small but good specimens of Cymbidium giganteum, Zygopetalum maxillare, Brassia Cloweslana, Stanhopea venusta, and another species, apparently Wardii, having a fine spike of bloom, together with the variety of Miltonia candida called flavescens, Zygopetalum cochleare, and a good Cattleya Harrisoniæ. From the same collection was also Calanthe variabilis, a small Sarcanthus teretifolius, Eucomis punctata, and a plant of Werrea tricolor, together with the downy variety of Justicia carnea, and an Achimenes pedunculata in good condition, for which a certificate was awarded.—From Messrs. Rollisson's, of Tooting, were plants of Stanhopea venusta, guttata, and a variety of insignis called atrorubens, producing pretty dark-brown spotted blossoms, together with specimens of Oncidium sanguineum, Cymbidium lancifolium, Miltonia Cloweslana, and a variety of the same, named nebulosa.—Mr. Redding, gr. to Mrs. Marryat, sent a fine Cattleya crispa, having five spikes bearing 21 blooms, but almost out of flower; a plant of Eulophia macrostachya, and a specimen of the old Guzmannia tricolor, a dry stove plant, seldom seen in bloom, for which a certificate was awarded.—A cut spike of Stanhopea graveolens, a fine noble looking flower, but emitting an odour by no means pleasant, was contributed by Mr. Errington, gr. to Sir P. G. Egerton, Bart.—Of Fuchsias two seedlings were produced, one from Messrs. Lane, of Great Berkhampstead; another, called Unique, from Mr. Mallyon, gr. to T. Brandon, Esq. The colour of the flowers was somewhat in the way of Chandlerii, from which the latter was raised.—Messrs. Henderson, of Pine-apple-place, sent a plant of Acropera Loddigesii, finely in bloom; Eriosternon scabrum, the small white flowering Erica peritata or purialis, Begonia Martiana, with flesh-coloured blossoms, and a good specimen of Echites splendens, having one flower in good condition, which served to show what a beautiful thing it is. It was introduced a year or two ago by Messrs. Veitch and Son, of Exeter, and is one of the finest climbing plants we have obtained for years. It not only produces fine trusses of bloom for a length of time, but each flower is said to continue in perfect bloom, for seven or eight days, and sometimes even longer.—Mr. Cordon, gr. to T. Hopkins, Esq., received a Banksian Medal for a magnificent plant of Lælia lanifolium album, having eight stems, each bearing from eight to ten expanded blooms, and showing what it is possible for good management to do with one of the finest plants in cultivation for adorning the conservatory at this season.—From Mr. Glendinning, of Chiswick Nursery, was Clerodendron fallax, in [illegible] condition.—Mr. W. P. Ayres, gr. to J. Cook, Esq., received a certificate for a collection of cut blooms of Pelargoniums, comprising some of the best varieties in cultivation.—Of Fruit [illegible] sound, and weighing 3 lbs. The diameter of pips in height was 12. This [illegible] largest which were produced before the Society, and excepting one lately sent from the same garden, it is unfortunately weighed 15½ lbs., it is probably the largest ever grown in England. Independently of its size it was beautiful in form, and is a remarkable specimen of fine cultural skill; there was no disproportion between the crown and the fruit. It was stated to have been raised by a plan constructed by Mr. Mills for growing Cucumbers in. The large silver medal was awarded for it. Mr. Mills also sent a fine specimen of his Champion Cucumber, measuring 21 inches long. Other Pines present, although [illegible] were passed by this time were by no means unworthy of notice.—Mr. Henderson, gr. to Sir G. Buxton, received a Banksian Medal for a handsome Globe Pine, weighing 6 lbs. 13 oz. and measuring 9 inches high and 17 inches round. The number of pips was 9.—And Mr. Fish, gr. to H. H. Oddie, Esq., sent 3 Pines, one a seedling weighing 3 lbs. 11 oz., the other two Providences, the heaviest of which weighed 3 lbs. 7 oz., and measured 8 inches high and 19 inches round. The number of pips was 9. It was a fair specimen of good cultivation; a certificate was awarded for it. Mr. Fish also sent a Valencia white-fleshed Melon, weighing 5 lbs. 4 oz.—From Mr. Murray, gr. to the Marquess of Bute, were 3 Globe Pines, the heaviest of which weighed 6 lbs., and measured 7½ inches high and 16½ inches round. The number of pips was 6.—And, finally, from Mr. Saunders, gr. to C. Hoare, Esq., was a seedling Pine, weighing 6 lbs. 14 oz. It was a well-formed fruit, but was not in such good condition as could have been wished, being ripe on the under part and not at the top.—Mr. Parsons, gr. to A. George, Esq., received a Banksian medal for five fine bunches of Muscat of Alexandria Grapes, and a certificate was awarded to Mr. Jones, gr. to Sir M. Dixey, for good specimens of Grosse Mignonne Peaches. Excellent specimens of Peaches and Nectarines also came from the garden of the Rev. J. Cook, of Newton-hall, Northumberland. They consisted of Red Magdalen and Violet Hâtive Peaches, and Elruge Nectarines, and were remarkable for their size and fine colour. They were stated to have been grown on the open wall, at an elevation of 500 feet above the level of the sea, and exposed to the whole of the blasts of the German ocean. Unfortunately, however, they arrived after the list of awards was made up and in consequence of this no Prize was assigned them.—From Mr. Murray, gr. to the Hon. R. H. Clive, were three varieties of Russian Apples, named Yellow Transparent, Long-striped Whrau, and Yellow Whrau. The transparency in the first was, however, wanting, as is generally the case in specimens produced in this country.—S. Pardoe, Esq., sent specimens of a seedling Apple grown by S. Platter, a cottager at Aylsham; being of last year's growth, they were a little shrivelled, but were nevertheless in a state of good preservation. They were stated to have been, until within the last few weeks, quite firm and juicy. They looked like some sort of Russet, and had the useful property of being preserved in good condition over a second season. A certificate was awarded for them.—Among miscellaneous objects was a Ward's case, from C. B. Warner, Esq., containing Ferns; and two arrangements of the leaf, fixed on paper in a triangular form, by Lieut. T. Tilley, R.N. The first arrangement consisted of the Elm leaf in its upward and downward progress, or through all its growing and fading changes, from the young leaf in April to that of the skeleton, or last stage of decay, in the April of the following year, embracing a period of 12 months. The ripe leaf formed the apex of the triangle, or the point where progress ends, and decay begins. The other design was the Poplar leaf in a skeleton state. A few other leaves of different kinds were added, which not only served to show their structure, but proved that vegetable anatomy might become a very interesting pursuit.—From the garden of the Society were plants of Erica Irbyana, Fuchsia serratifolia, Clerodendron fallax, Achimenes coccinea, and Begonia Dregii, together with Oncidium microchilum, and the rare Achimenes discolor, with beautiful crimson bracts or scales, out of which the pretty Violet blossoms grow. From the same collection were also cut specimens of Rhodothamnus cyaneus, a new Mexican shrub, producing fine terminal clusters of deep porcelain-blue flowers. This species, although inferior in beauty to R. fasciculatus, is nevertheless a great acquisition to gardens. It is expected to prove sufficiently hardy for planting out-of-doors during the summer months; it will, however, require some kind of protection in winter. Along with this were likewise Cut Flowers of a new species of Lupine called L. pubescens, sent from Quito by Mr. Hartweg, having very downy leaves; and eleven plants of Fuchsia fasciculata, a garden variety, showing the effects produced on this kind of plant by the use of different sorts of manures. The plants were all taken from the cutting-pan at the same time, and potted into 32-sized pots. The compost consisted of peat and loam in equal proportions. Of the three eleven plants, which made the best, No. 1 received 1 teaspoonful of Harris's liquid manure to half a pint of water; 2, half the quantity of liquid spread on the surface of the soil; and 3 had the same mixed in the soil. These 3 were nearly equal in every respect. Of the next 3, viz. 4, 5, and 6, the two first had each 1 oz. of charcoal, the one on the surface, the other mixed in the soil; 6 received half an ounce of superphosphate of lime mixed in a pint of water. There were also nearly

equal, but more somewhat inferior to the first three. Other three, 7, 8, and 9, one of which received an ounce of cow-dung mixed in the soil, another a quarter of an ounce of phosphate of ammonia mixed in half a pint of water, the third, half an ounce of sugar mixed in the soil, were still inferior to the second three; and Nos. 10, to which one teaspoonful of Mallet's concentrated liquid manure was given to half a pint of water, was the least luxuriant of the whole. Each of these substances was repeated on the 15th of July, and in order to give them a fair chance, the plants were never repotted after they were taken from the cutting-pan. All these plants were larger and better than No. 14, to which nothing was applied, and which the others were contrasted in order to ascertain the comparative merits of the different substances applied.

Garden Memoranda.

W. Joliffe Croup, Esq., Greenwich.—The glass structures here, although in the town, are of a description which one would little expect to find in such a locality. They consist of a conservatory, a Camellia house, a Camellia house, a large stove fifty feet long, twenty feet broad, and the same in height; a pit for Musas, &c. fifty feet long, and an Orchidaceous house of the same size. The collection of plants is large, and includes many rare specimens. *Mr. Clark*, who is gardener there, pointed out in particular, an Acoanthus Abissinus, 5½ inches in diameter, being considerably larger than one lately noticed in a previous Number of the *Chronicle*.—*D. D.*

Burghill, near Dorking, Surrey.—A quarter of an hour's walk from Dorking, on the Guildford Road, through a pleasant neighbourhood, brings the tourist to the delightful residence of *Mr. Barclay*, at Bury-hill. The approach is through the park, with a wooded eminence on the one hand, and a fine open glade on the other; beyond this the eye ranges over a most beautiful prospect, in which Box-hill, with its white chalky surface studded with numberless—here crowded, there scattered—specimens of wild English Box, stands conspicuous. In front of the mansion, a broad lake spreads over a considerable surface, with several weeping Willows hanging gracefully over its indented margins, and near the centre, a small island crowned with a clump of closely planted Pines. The flower garden is beyond the house, not far removed from the border of the lake, and is neatly laid out with beds, gay with Verbenas, Heliotropes, and similar showy summer garden plants. Pleasant walks have been formed to wind up the wooded hill behind the house, and spaces have been cleared at intervals and devoted to Pines. Many of the Mexican and Himalayan Pines of recent introduction have stood the winter without protection, and without sustaining any harm, with the exception of *P. Devoniana*, and are now growing as freely as many of the more hardy kinds, several having made excellent shoots. The hill is covered with an exceedingly sandy soil; indeed in many parts near the summit it is almost entirely sand, and as the situation is likewise airy without being exposed to severe storms, it affords one of the best situations for growing plants that are scarcely sufficiently hardy to stand our climate generally. *Pinus Lindleyana, Tsuga, cocarpa*, Knightia, *pseudo-strobus*, *insignis*, and many of the more rare species appear to succeed well. The grounds contain a considerable number of species, several of which are large and fine specimens. *Abies Douglasii* is above 30 feet high, and produced cones of perfect seeds last year.—*G.*

NOTICES of NEW PLANTS WHICH are EITHER USEFUL OR ORNAMENTAL.

*Habrothamnus** *elegans*. Elegant Habrothamnus (*Green house Shrub.*) Cultivated Pentandria Monogynia.—The beauty of Habrothamnus fascicularis is so striking that attention is strongly drawn to the discovery of other species as likewise; and the Belgians have already superseded an addition, that now presented, which, although not comparable with it in peculiarities, is evidently a graceful and gay looking plant. We received fresh specimens from Mr Van Houtte, Ghent, in January last, and with them a coloured figure by Mr Van Lindens. We understand that the corolla is of a bright carmine. We have not seen this plant in cultivation in this country but it is evidently a soft-wooded species, to be treated in the same manner as *Polygonums*. It differs from *H. fasciculatus* in its small leaves, and less conspicuous flowers, which moreover are smooth, not downy, from the tomentosa in the shortness of the lobes of the corolla, the broadness of the leaves the smoothness of the calyx, and the terminal not axillary flowers; from *H. corymbosus* is not being destitute of hairs.—*Botanical Register*.

Epidendrum radiatum, Ray-flowered Epidendrum (*Stove Epiphyte*) Orchidaceæ Gynandria Monandria. Allied to both *E. ciliare* and *fragrans*, this pretty species is distinctly known by the cleft form and crisp margin of its lip, which moreover is stained nearly in the middle and very delicately streaked with purple. Its petals too are both shorter and broader than in either of those two species. Its habit is precisely theirs; and the three, considering their constant flowering and very neat appearance, deserve a place in all collections. Besides, this species is ornamental by Cinnamon. A plant of this, received from Mexico from Mr. Hartweg flowered in the garden of the Horticultural Society. We also possess specimens gathered by that enterprising traveller at the Hacienda de la Laguna, by Dr. Schiede. It should be potted in turfy heath-mould, mixed with finely broken pot sherds. During the growing season an ample supply of water should be given, and the atmosphere kept moderately humid. In summer when the sun is strong, the house should be slightly shaded, in order to keep the temperature as near 80° to 85° as possible, without admitting much air. For a few weeks in October [illegible] or no water should be given, providing the house can be dried with steam once a day.—*Botanical Register*.

Cohnemorpha nasturtiana. Nasturtium Cohnemorpha. (*Greenhouse Shrub.*) Icosandria Pentandria Monogynia.—This is one of the most striking of the Swan River shrubs, but owing to some difficulty in cultivating it, the specimens that have been produced Mr Knowles are very inferior to the native ones. In the latter the bracts are large, and of the most vivid reddish-orange, thus rendering the plant indescribably gay; the [illegible] appear from July, gay, and [illegible], a short or branch, in allusion to the beauty of the species.

[illegible] stained with [illegible] interspersed by these bracts, are produced [illegible] upon the plant. We entertain no doubt that [illegible] of the plant shall have been more fortunately [illegible] a general favourite. In the meanwhile pots [illegible] in very sweet-scented. A plant of it flowered last spring belonging to Mr. Groom of the Clapham Nursery. It succeeds best when potted in rough peat, well mixed with coal-ashes or silver sand. During the summer months liberal supplies of water should be given, and as much air as possible. In winter it should be treated in the same manner as *Cape Heaths*—never applying fire heat except to keep out frost. It may be propagated by cuttings in the usual manner.—*Botanical Register*.

Andromeda speciosa. Showy Andromeda. (*Greenhouse Shrub.*) Decandria Monogynia.—A very neat shrub, introduced lately by Messrs. Lodiges with whom it flowered for the first time in January last. It was originally discovered in West Florida, at a place called Apalachicola, by the late Mr. Drummond, from whom we have a specimen. We place the plant, with Sir W. Hooker, in Andromeda, for these reasons. In the first place there seems no sufficient ground for separating from Andromeda the genera proposed by the Dons, which, to our apprehension, are neither limited by solid characters, nor so contrived as to form useful divisions. Secondly, the plant before us will not suit any of them exactly; so that M. Decandolle, who admitted the proposed divisions, although he thrust it into Pieris, a name in which he admits there is no common sense, does so with doubt, and questions whether it may not form a new genus of itself. For ourselves we cannot separate it from Andromeda polifolia. One of the most striking characters in this very distinct species is the peculiar darkness of its leaves, which thus are able to set off the snow white flowers to great advantage. They look like pearls on a negro's neck. It is a pity that the plant should not be hardy, but of that we fear there is no probability. It is, however, probably about as hardy as a Fuchsia, and capable of enduring the mildest winters in the open border. It requires peat soil and the same kind of treatment as Andromeda floribunda, like which it may be increased by layering, which should be done when the plant has finished its growth early in the autumn. It only requires the young shoots to be pegged down, and lightly covered with light sandy peat, and afterwards kept moist. The layers require two years before they are fit for removing from the mother plant.—*Botanical Register*.

Miscellaneous.

Sophora Japonica.—The first tree which was introduced into France is still alive, in the Garden of Plants at Paris, in the ancient School of Trees of Tournefort. It is a single plant, produced from a seed sown in 1747 by Bernard de Jussieu, who received some seeds at that time from Japan. Five seeds of it were put under the care of the head gardener, the father of André Thouin, three of them grew, two of which were given away. This plant was called Arbor incognita sinarum until 1779, when it flowered for the first time. This Sophora is now about 72 feet high. The trunk, measured at 3 feet from the ground, is 2 feet 7 inches in circumference, the height below the branches is nearly 11 feet.—*Revue Horticole*.

Guano.—The island from whence the guano is taken, is about three miles from the shore, on the south west coast of Africa. It is a barren rock, about a mile in circumference, has no soil, nor the least sign of vegetation. The guano lies to the depth of about 20 feet, and without any variation in quality. The continent is very sandy, and in high winds (hurricanes, for instance), will cover a ship's deck nearly 100 miles from the land. The birds on the island are a kind of penguin, and cannot fly to any distance, if at all, their wings being a kind of fin. It is believed that the captain of the vessel who brought the guano was the first human being who set foot on the island, which is very difficult to approach, there being no harbour, and a heavy surf. On walking on it, he could scarcely set his foot without treading on the birds, and they took no notice whatever of him, except perking at his feet, he being barefoot, and on a gun being fired, they merely fluttered a good deal and made much noise. There is no fresh water, it is believed, for some hundreds of miles along the coast, and no rain. The importer, Mr Rae, informs me, in a letter with which he has just favoured me, that his son is the discoverer of the guano isle or islets, for it would appear that there are several of them so remarkably situated. That he was led to go in search of them in the beginning of last year, from remembering having, when a boy at school, looked into the sea-journal of an American whaler, in which mention was made of such spots. And that his first attempt was unsuccessful, and nearly proved fatal to himself and all concerned—he and his boat's crew, in exploring the islets, having almost perished from want of water, before they could rejoin their little "surveying vessel," and then (she, too, being in want of water), having had to sail 1500 miles before they could obtain a fresh supply.—*Dr. Davy, in the Edinburgh New Philosophical Journal*.

The Kestrel, or Windhover.—Of course the whole of the hawk tribe fall under the ban of the keeper. The species mentioned above is that which chiefly prevails in this locality, and whenever the gun can reach him, he is a certain victim. In addition, the nest is eagerly sought for, the young taken, and too frequently with a piece of wood chained to the foot, may be seen in misery hopping, as well as they can, to snare smaller birds from the produce of the garden. The utility this bird confers by the number of mice he destroys, is, of course, never taken into consideration; he is "vermin," as the keeper phrases it, and that is enough. His utility to the agriculturist, from his mice-destroying propensities, has been well described by *Mr. Waterton*. He is a feeder, also, on the cockchafer, but all is of no avail, death awaits him whenever he comes within range. Those who have professional his beautiful action, when hovering over a field in search of his prey, cannot but deeply regret a course which, if pursued in, will ever long deprive them of this pleasure, at least in the neighbourhood of large game preserves. "Would but our country gentlemen," says the same entertaining writer, "put a stop to the indiscriminate slaughter of birds by their ruthless game-keepers, we should not have to visit Holland in order to see the [illegible] habits of the stork, nor roam through Germany to enjoy the soaring of the kite,—a bird once very common in this part of Yorkshire, but now a total stranger to it."

A few evenings past the writer met a cottager, with an undressed hawk and six goldfinches in a basket alive, which he was evidently bringing up for sale. In the other hand were six miserable sparrows fresh from the nest-holes. "Oh, man's ā kill'd all I can get near!" was the rustic's sentence upon remonstrance on his cruelty.—*J. M.*

The Magpie.—This singularly beautiful bird is, unhappily, doubtless keeper's doomed list. But for its habits of extreme caution and sagacity, very few would survive the keeper's vengeance. With, perhaps a little truth in its reputation for depredation amongst a few partridges' eggs, and in all probability resorted to in absence of other food, this aberration is more than compensated for from the incredible number of grubs and slugs, lodged under manure in the pastures, which it destroys. In France and Sweden it is *never* molested, and with the Norwegians they are especial favourites, and with a delightful feeling of Christmas, that they should be partakers of the festivities of that season, a sheaf of corn is placed at the end of their houses for their use. How pleasant would it be if our rich farmers would thus distribute some of their grain for these beautiful birds, in imitation of this simple minded peasantry.—*J. M.*

The Thrush.—Turn in our list as we grieve to say, this early harbinger of spring, and, insensible to the benefits derived from the number of snails he destroys, we behold him if he ventures to help himself to a solitary Cherry. During the prevalence of the unusual dry season (June 1844), the thrush was driven for food to the Holly-bush for its berries; and we grieve to report that 60 of this cheerful songster fell a sacrifice to the gun on a Sunday! In the next summer when wasps and other insects have full possession of the garden, this proceeding—the mixture of ignorance and cruelty—will bring its own punishment.—*J. M.*

CALENDAR OF OPERATIONS
for the ensuing Week

I.—HOTHOUSE CONSERVATORIES, &c.

Many useful plants in that section which flowers in winter and early spring in the stoves, may be brought sooner into flower by checking their growth about this time; this is done by diminishing the usual quantity of water, and by keeping the house drier; others of the same sort may be encouraged to grow as late as they will, in order to succeed them. Every pot plant should be looked over once by the at any time when the weather is bad, during this or the next month. It is not enough, however, that the surface of the pots and the surface of the soil are cleaned over—this days for such gardening is done by the hails must also be turned out of the pots, worms looked after, the drainage renewed from time to time, and if the pot is at all covered with green slime, do not use it, but take a dry clean pot of the same size, than add a little fresh soil to the surface, of the same nature as that already in the pot. When a worm escapes from you in the operation of picking them, or when you suspect one to be in the ball, but cannot find it, mark the pot by putting a stick in it, and by turning out the balls occasionally, you will be sure to come at them some time.

Camellias.—From this time to the end of October, there will be a good deal of potting for flowering galetins for this house. Tropæolum tricolorum and others should now be potted to come in in April. Primula sinensis and auriculas.—The last of the [illegible] should be potted; and also the beautiful varieties of Lobelia fulgens, which, if potted about July, should now be in pots; but October is time enough to pot all these, if they are not wanted for to their usual time. By way of experiment, some of all these and others should be kept back as long as possible, in order to have late flowers of them. The spring-flowering Cyclamens are very desirable plants they should now be potted, and the summer ones should all allowed to get dry, in order to be [illegible] of the latter kind of plants of this genus should always be kept growing in pans, as they are apt to be overlooked; and unnoticed till they are [illegible] while the others are in full growth it may happen that they might receive wrong treatment. See Gardeners excellent papers on this family, vol. [illegible] The earliest sorts of Hyacinths, Narcissus, Tulips, &c. should now be making roots freely in the new pots, and they, as the whole host of bulbous plants must be looked over and arranged for potting. There are few in this order that will do for [illegible], but by potting some of them early in September, and their [illegible] in the autumn, their flowering season may be prolonged, and so with Oxalises. Oxalis purpurea and cernua are two that will stand any degree of forcing, and if potted now and kept near the glass in a stove or forcing pit they would be in bloom by the middle of March. The Oxalis cernua has flowers of a fine yellow as those of the Almanda cathartica. Violets may be potted and [illegible] forcing—look to what has been said about them in former volumes.

Pits, Frames &c.—I have often [illegible] said that one cannot enter into the treatment of plants in [illegible] the nurserymen's system with the different soils, but this is an error. For instance, in the nurseries they are now busy housing many of their finest plants, but it is not much to say that no plants which has been out of doors [illegible] the summer in gardens, should be housed till after the first frost of October are over. Of course they must be [illegible] guarded against frost and beating rain, this is [illegible] the time when waterproof transparent [illegible] most useful. There is a new description of pits also [illegible] wanted for this time of the year—may from the middle of [illegible] until Christmas, according to the season. They are [illegible] wholly inapplicable for this season, owing to [illegible]. We want skeleton frames for the purpose that will let in the wind from every point of the compass, that will exclude rains and dews at pleasure. They should be also so contrived that the sides and ends may be shut up quickly, and be close enough to exclude 6° or 10° of frost. There is nothing new in general use that will suit [illegible] for our greenhouse and half-hardy plants as well as a [illegible] or pit at the beginning of winter.—*D. D.*

II.—FLOWER GARDEN AND PLEASURE GROUNDS.

Out-door Department

Few plants make finer beds, or are more to be depended upon in all seasons, whether wet or dry, hot or cold, than the Ice-plant, and some of the varieties of shrubby Cinerarias, *C. viscosissima*, with its flowers of deep orange, though by no means so splendid as it ought to be, is undoubtedly the most beautiful of the class. It is rather difficult to strike by cuttings, unless when brought in a proper state, and that is when the young wood is a little more than half ripe, at which time they strike freely, if planted in a gentle bottom heat. A hybrid variety, raised from this above by a friend of mine, is not less interesting, being equal in colour, and destitute of that clammy mass of foliage from which *C. viscosissima* derives its name

C. leucrantha, with large yellow flowers, and C. l. nitidifolia, with rather paler flowering ears both free-growing and very useful kinds; and C. rugosa, with smooth-surfaced leaves, is not less interesting. These are the best of the old yellow and orange kinds; but there are many Hybrid varieties raised, which make splendid beds, though they are not so much to be depended upon in the blooming sorts. These are Cleopatra striata, Harlequin, Indian Chief, Stewartii, and one or two others. All these flower freely at the present time. The old Persicifolia, grandiflorum and macranthum are both excellent border flowers, and may be increased either by autumn dividing or through the latter are preferable. Of Lobelias, Salvias, and Gentianellas, both very pretty, but are never likely to become general favourites, perhaps is scarcely worth cultivation. Of Phloxes, Dianthus, &c. there is no need to procure at this time, as plenty of these flowers may be obtained in autumn from a few plants judiciously managed and will produce abundance in the spring.

Auriculas.—Those who have not yet potted off the offsets from their plants should not delay doing so much longer, or the beginning of August will arrive before they are established in their pots. Fill the pots with good rich compost, not too heavy, and put a large piece of broken pot over the hole for drainage, and a small piece of turf over that to prevent the soil washing away. Plant the offsets in the centre of the pot. They should afterwards be placed in a shady situation, and watered until they are established.

Pinks and Picotees.—Continue to propagate plants as fast as possible, and if those that are already potted can be hardened against the winter, by having a slight degree of fresh air every day, they will be much better for them.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Polyanthuses.—If offsets are not planted out, let it be done without delay, on a shady border, for plants made as well established before winter. The plants both of these flowers and Auriculas, will require regular watering and attendance during the dry weather. Layering is usually advisable to be taking place in public opinion with respect to these magnificent flowers, and the properties constituting a perfect flower are much better understood. Loam in time is getting in fresh and good varieties, if flowering bulbs are not to be had, procure offsets—they will grow freely, and a dozen from a maiden root will often prove pleasant. We have heard a high character of a feathered Hyacinth, "Lady Middleton." *Carnations*.—Let the rooted layers be put singly in pots, and where the stock is large, it is usual to have two in each; water very sparingly, without touching the foliage or grass, and place them in a close frame for a few days, till they get fresh root. *Ranunculuses*.—Pick out seedlings as they get large enough to pan the. *Dahlias*.—Good occasional waterings with liquid manure will prove highly beneficial. Thin the buds, and tie up regularly; keep a sharp look out for earwigs. Cuttings may be struck in heat.—*J. R. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—All plants requiring their fruit to be properly supplied with liquid manure, and syringing and moistening the pits after sunshine. Presuming that the necessary arrangement of the plants for the winter is by this time complete, it is necessary to pay strict attention to the keeping a regular bottom heat of about 80°, together proper ventilation (most favourable occasions, and gentle syringings on shutting up the houses in clear weather. Be careful to damp during the heat of the day all plants not yet ripened, and in a growing state. This dry weather affords an excellent opportunity for laying up soils for future use and if not done, this very important part of a Pine grower's business should no longer be put off. For further suggestions on this head, see page 578.

Vineries.—Thoroughly damp during hot weather all Grapes that are ripe, to prevent their losing their pulpiness. This is the first time the latter has been noticed in the case of shanking ripe Grapes and some may say "How unnecessary!" or perhaps "How ridiculous!" Nevertheless, I consider it equally important to have fresh plump Grapes through the winter till March, as to have new open in September. April; and when the fruit has had enough of the Vine, and is sufficiently ripened, I feel convinced that it will keep much better, if shanked from the withering effects of a clear sun. Remove the loose rough bark from the pruned Vines and after washing them well with soft water anoint the whole of the Vine with a mixture of soft soap and sulphur, with warm water, in the proportion of ½lb of soap and ½lb of sulphur to 2 quarts of water. Rub it into every crevice with a sponge, going over the Vines twice or thrice.

Peach House.—Continue to wash the foliage of the trees in the same manner, and give all the air possible, by letting the lights well down, and opening the front ventilators and doors. Proceed with the operations recommended before for the early house; and if the top lights have not been removed before, they may now be taken off to keep the house as cool as possible.

Fig-house.—Not yet fit for Gardeners.

Melon-house.—Endeavour to form temperate fine weather to the best account, by giving plenty of air, shutting up early, and keeping the foliage regularly thinned. Cold nights make a little fire-heat necessary.—*G. S.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Peaches and *Nectarines* should now be looked over every day, and the fruit gathered before it is dead ripe. If placed on shelves in the fruit-room, with soft tissue or silk paper under each fruit, they will keep better than if allowed to hang on the tree. After gathering what fruit was ripe the trees might be sprinkled with fresh water in an afternoon after three fine days, but unless in extreme cases it would not now be advisable to water any more at the roots, as the sooner the growing wood can be stopped and the maturing process completed, or assisted by the autumn rains, which we may expect before long could be thrown off the borders by tiles paddled with clay, or by boarding &c. We should advise fresh borders for winter. If the borders have been allowed to get dry in July and August, and or deluged with rain in the latter end of September and October, unless the Gardener has paid particular attention, a second growth will take place, the consequence of which is barrenness with a superabundance of watery fruit, and a severe winter causes black and brown spotted, shrivelled, cankered, and dead wood in the spring will be the inevitable result. Should Apricot trees have their leaves slightly spotted, with soft wood, instead of ripening at the roots, the leaves might be syringed with sulphur and water.

Kitchen Garden.—Endeavour whilst protecting the last sown put of Beans in case of unusually cold nights frost warded off may chance to supply for a night or two. Where hoops and mats are not applicable, as should have fixed upon stakes, so as to be moved obliquely or horizontally as occasion requires will answer the purpose. Onions should now be got up and dried in the sun, until the tops are thoroughly withered. Then is the best season for gathering them and stringing them, and hanging them against a wall, or such a pole which they will be safe from frost. A Gourd Pole may conveniently be placed out; and the frost can be kept off in a wet day, to prevent them sprouting early next season. *Mushroom spawn*.—Those who grow Mushrooms only at certain seasons cannot do better than procure it from some nurserymen, who generally obtain it from many who obtain it extensively for sale. Where Mushrooms are constantly wanted the gardener can use the spawn more liberally, when he makes a quantity himself. Take heed to all particulars about the materials, horse-droppings and bedding, in a dried state, proportions, with a little road-drift, well mixed together, answer very well. It may be made into bricks with a mould, and put in a shed to dry, or merely spread out on an upward piece under cover about two inches thick, and divided into the size of bricks by cutting with a sharp edging iron. Make two holes in each brick for spawning, and keeping them dry enough for that operation is all that will now be required. *Celery*.—The first crop is beautiful this season, owing to those being the best to set the centre of large beds. Give successive hoeings, a good watering before earthing them up. *Beetings*.—As in former Calendars.—*R. F.*

Fruitful.—For "Fingarth," in last month's Calendar, read this head, line 21 from top, read "Fingarth."

VI.—ARBORICULTURE.

Old Woods.—Where planting is to be done in the ensuing season, the ground should now be trenched and levelled for the purpose.

Coppice.—Attend to grubbing the stumps, cutting the roots of dead and wet weather continuing, prepare them for being hedged. Fill up vacant spaces, as in the Fir, Spruce, Pine, Larch, Tyrannus, holm, and dwarf the oak, if subsequently during the planting season arrives.

Young Plantations.—Preparations for planting, and making good all failures in last season's planting should be completed with all expedition. In mild and open weather, the autumn planting should be preferred; but in all cold, wet, and bleak spring is the best time for the operation.

Hedge rows.—Dead plants of last season's planting should be taken up, and the holes left open sufficiently for filling up with fresh plants as soon as the season arrives.

Nursery Work.—Hoeing, weeding, and training young shoots of the present year's growth, is the principal work to be attended to here at this season.—*W. B.*

VII.—COTTAGERS' GARDENS.

Although there is everywhere an abundant crop of Grapes this season, yet in consequence of the bad weather we had in spring, they will be late in ripening, and will not on that account be well flavoured. The shoots should be kept closely fastened in, so as to receive the full benefit of the wall, not only for the sake of bringing the fruit faster to maturity, but also for thoroughly ripening the wood intended for bearing next year, before winter. It will also be advisable to go over the Vines again pinching off the laterals, and removing all useless growth. Gather and store Apples and Pears as they ripen on dry days too much care cannot be taken to prevent bruises, and be sure also that the kinds are ready for gathering. A good way of ascertaining this is to divide one; when if the seeds are brown they may be gathered. A few Lettuces and Endive planted out now in a favourable situation will be strong good plants by November. A plantation of Cabbages may also now be made; plant them one foot apart as for Coleworts, and in spring every intermediate row may be drawn out for use as Coleworts, and the remainder left to form hearts for Cabbage. Do not omit to attend to growing crops; keep them free from weeds, and in dry weather draw a little earth to them as they advance. All decaying Annuals should be removed from the flower border and let everything about the cottage be as neat as possible.—*J. M. H.*

State of the Weather near London during the week ending Sept. 7, 1844, as observed at the Horticultural Garden (Chiswick).

Aug.	Mornings	Max.	Min.	Max.	Min.	Mean	Wind	Rain
Fri 6	1	63 1/2	2 1/2	73	42	57	E	
Sat 31	12	60	50	70	41	55	N	
Sept.								
Sun 1	18	60	50	64	46	55	N	
Mon 2	19	60	50	70	45	57	E	
Tues 3	8	61	47	71	42	57	E	
Wed 4	0	59	49	73	43	58	E	
Thurs 5	22	59	48	74	44	59	E	0.05
Mean		60	49	72	43	57		0.05

Aug. 31. Slight showers at night.
Sept. 1. Slightly overcast early; fine and dry; slight showers at night.
— 2. Foggy with heavy dew; hazy and dry; wind slight; hazy.
— 3. Fine throughout; clear at night.
— 4. Fine throughout; clear at night.
— 5. Hazy; slight rain; clear at night.
— 6. Cloudy and fine; slight rain at night.
Mean temperature of the week above the average 1.4

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Sept. 14.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Fall in Inches	Prevailing Winds
Mon. 9	68.4	47	58.2	9	0.60 in.	
Tues 10	68.3	47	58.1	11	1.50	
Wed 11	68.2	46.2	57.2	8	1.8	
Thur 12	68.1	46.1	57.1	7	1.45	
Fri 13	68.0	46.0	57.0	6	0.75	
Sat. 14	67.9	45.9	56.9	9	0.9	

The highest temperature during the above period occurred on the 14th 1841, when it was 84 and the lowest on the 10th 1841, when it was 37.

Notices to Correspondents

Balsams.—*O*.—The following are desirable sorts, viz., Double Lilac, Double White Rose White Scarlet Scarlet Black, Red Lake Purple Flake Mottled Purple Mottled Red, Mottled Scarlet and Purple.

Bees.—*F. F*.—If the Bees sent all were furnished with stings, except one. The cause of their death apparently is want of food. Although you state that there is no appearance of any robbery going on, we imagine that if you watch attentively you will find that such is the case. We were shown a hive lately under similar circumstances, the honey of which was nearly all carried off by intruders, and many of the inmates were in consequence in a weak and dying state.

Bugs.—*A Dup*.—Mr Hearne's work on the Vine is under consideration.—*W. R. S*.—There is no small book published exclusively on the subject you mention; but much of the information you want is to be found in "Harriman's Horticultural Calculator."

Heating.—*V*.—If you use back ventilators you cannot employ them in a north or north east wind. We much prefer ventilators in the roof or at the side. Your south aspect is a disadvantage and we would not go to the expense of moving the house. With moveable sashes in the roof, and sliding sashes at the sides you will have all the air you can want. If you adopt the Potmanse system we shall hope to hear the result.—Of this you may be sure, that if you can conveniently make the inside fittings of wardrobe, or some such soft material, it will be far better than wood.—*An Irish Gardener*.—Put one flow and one return table in your kitchen, one flow and one return 4-inch pipe round your house. Have the pipes clear with evaporating pans on them, which you can use or not at pleasure. Leaves may be placed on the pipes, but do not use sawdust, which is a very bad conductor. *R.* — may have the boiler partly inside the house if you like, but be sure that when you are repairing you put on the top of it. If you use oil it should not have a tin pipe to it, but a copper one. You should read what has been said on this subject in former Numbers of this Paper.

Insects.—*R. Abingdon*.—The Frog-hopper, are described in the Index of Titles Cleroderma you will find their economy and best modes of destruction, in the Vol. VII. p. 561.—*R. Sch. R*.—*W. Jones*.—The Caterpillars feeding on the Elm are the larvæ of a Saw-fly, probably Emphytus Grossulariæ figured in Curtis's Brit. Ent. pl. 81. Please to send your address, as he wishes to communicate with you.—*J. B. W*.—The Grub on complaint of are the covering of the Pinetum exclamatio is, whose history will probably be found in this Journal. You will find hand picking the best remedy.—*R. Lawns*.—*J. R*.—To improve your lawn the first thing is to grub up all the weeds and very shovel Grasses; the next to throw down casts of the Crested Dogstail, Meadow Fox, and Hooper's Retour Grasses, with a good supply of white Clover, and the Perennial Rye. When done, it should give it a good dressing of soot, with additions composed of small quantity of guano, and about ½ part of salt per acre. We never give Gishurst compost and similar rubbish.

Manures.—*A Subscriber*.—Your information he thinks for at p. 571 of this year's.—*Beadell*.—Guano is thoroughly soaked with urine as may do for coarse purposes, provided it is not fit for sweet but it is a bad material. You had better burn it and use the ashes.

Mildew.—*A B*.—Drought, in conjunction with the Red Spider, have caused the destruction of your Beech-wood Melons.

Mushroom Spawn.—*W. F*.—We dare say your spawn is good, but that can only be ascertained by trying it. There is some advantage in having it in cakes, as known also instead of bricks; and we think with you that it is a convenience to the buyer.

Names of Fruits.—*A Poor Parishioner*, 1, Noblesse; 2, Royal Charlotte, 3, Grosse Mignonne, 4, Late Admirable. The Nectarine is the Violette Hative.—*E. B*.—Your Plum is the Blue Perdrigon.—*W Veale*.—Your "early pear," between the Green Gage and the Orleans, is not equal in quality to the Washington Plum, which in other respects it very much resembles. Its real specific name is——*G. L*.—No. 1, Coe's Golden Drop, and appears to be the Red Pearmain; and 2 is, probably the Pomme Royale.—*A M*.—Fulham, No 2, Williams's Bon Chrétien; 3, Summer Boncrétien; 4, Passe Colmar.

Names of Plants.—*A Reader*.—Bignonia grandiflora. The little bulbs on Achimenes pedunculata will make fine young plants.—*Superstition*.—Such spots on roses, though not very uncommon.—*J. W*.—Quamoclit is the Mexican name of the plant.—*A Reader*.—Viburnum tomentosum, from the Himalayan mountains.—*Subscriber*.—Your specimens received; we do not know.—*W. P. A*.—1 Dianthus Caryophyllus; 2 Saponaria officinalis; 3 Dianthus plumarius; 4 Campanula Trachelium.—*A Constant Reader*.—Orchis latifolia.—*Inquirer*.—Not enough to identify.—*T. S*.—Bryum cuspidatum, by any means common in some parts of the country.—*A Devonian*.—Ipomæa, now called Convolvulus purpureus.—*G. B. R*.—Variety of Pelargonium.—*Campanulatum*.—*A. T*.—Apparently Spondias Cytherea, which never attains a large size. A greenhouse would suit your purpose better.—*W. T. Folsome*.—Figured in Bot. Mag. as Fungi, t. 1164, under the name of Lycoperdon cerinum.

Oxalis.—*Q*.—These thrive well in almost any light sandy soil, such as peat or leaf mould. After flowering, they naturally lose their foliage, which they should be kept dry to last weeks. As soon as they show symptoms of growing, they should be repotted, and placed in a greenhouse; but let water be sparingly given until they begin to show flower. They may readily be multiplied from seed, or by dividing the bulbs which they generally form above their roots.

Pansies.—*W. R. S*.—These will be quite strong enough to stand the winter if planted out when the weather becomes moist, towards the end of September or the beginning of October, but they must not be planted either in very rich soil or in a damp situation.

Peaches.—*Alligon*.—Noblesse and Royal Charlotte are the two you should take. We conceive it is quite practicable to dress Peaches in boxes.

Pears.—*E. F*.—The Vicar of Frome and Marie Charlotte, are recommended for the earliest sorts. In succession, the Alvergat will fulfil most of the desirable properties you enumerate.

Wasps.—*J. R*.—Your mode of destroying these insects is the old and inconvenient plan. If you will try turpentine you will never again have recourse to so clumsy an expedient as gunpowder.

Whitney's Composition.—We have received from Mr Whitney some Black Hamburgh Grapes grown under his caloo sashes, and we can state that they are perfectly well coloured and good berries. Mr. W. states that the average weight of the berries was 140 grains, and that the foliage is "particularly beautiful."

Miscellaneous.—*C. B*.—You will find many plans of Hothouses in our columns. We do not give estimates, that is the business of a builder.—*W. S*.—Nos. 10, 22, and 42, may be had at the Office; and 8 is out of print.—*A Scottish Botanist*.—We know of no precise distinctions between such genera, species, and varieties, are founded, nor is there in any publication a brief and clear enunciation of their differences. The common definition is this:—A species is a collection of individuals which were originally created distinct from all others, a genus is an assemblage of species more like each other than anything else; in order to a similar collection of genera we have a consistent system of species.—*Bella*.—Wistaria consequana is the plant more generally called Chinese sinensis, with which you are doubtless well acquainted. We know nothing of W. speciosa. W. frutescens is like the first, but very inferior in every respect, and not worth growing except as a variety.—*R. G*.—We saw the Pomegranate, and wrote to Mr Grimstone about it, to inquire if it was true. As we have instructed him reply, we presume the story to be a mere exaggeration.—*A. R. Harris*.—It is true that deformed Cucumbers are frequently preferred for seed. The reasons are, that they are less fit for table, and bloodier more seed. That accidental deformity does not impair the quality of the seed.—*J. N. G*. will find a select list of Conservatory plants and climbers given at pp. 580 and 581 of the present year's.—*A Quiet Observer*.—The examination of the Flower and the report of the Committee have appeared in the Horticultural Register. You had better apply to Mr. Lodge.—*South Lancashire*.—Both Plocrest and Cuthbertson the Derwent brook, the Dianthus Carnation Flora, which you obtained first we do not know.—*A Y*.—We find a list of Roses given at p. 779 of last year's.—*D. D*.—Your word Vegetable Marrow is Cougourda in Martin of the Provence.

THE HARDY FLOWERS.

Fuchsias.—*W. L*.—Both your seedlings are bright and well-coloured flowers, but wanting the violet colour in the corolla, these do not materially differ from many others, nor can they be distinguished from many others; we only name.—*Y. L*.—Miss Gould's are large flowers, but the tube and sepals in both are coarse, and they are no improvement upon sorts already out. No 3 is superior to the other two in the tube and sepals of a finer quality; the latter curl up exposing the entire corolla, which is crimson, with a tinge of purple; this is the largest and most showy flower of this character we have seen.—*H. C*.—Your seedling is a very pretty variety, delicate in colour, moderate in size, and good in form; tube and sepals of a very delicate pink colour, the latter tipped with green; corolla well expanded, of a peculiar rosy colour having a slight tinge of violet; it will form a desirable variety in a collection, if the habit be good.—*L. N. G*.—Your seedling is very large and showy, but you have sent an imperfect bloom, so that it is impossible to judge of the corolla; we fear this part of the flower is deficient.

Hawthorns.—*W. T*.—It is difficult in the present day to raise seedling Pæonies that will rank as first-rate flowers. Among your seedlings there are, of course, different degrees of merit; they generally possess good qualities, very seldom fail in the eye, which is an important part; the side petals must move the eye, with the colour and form good also; but generally they want the size and substance of the flowers we see in the habit of sorts at nurserymen's. The inferior sorts sent are Nos 1, 3, 6, 7, 9, 8, 10, 11, 12, 14, 15, 16, 18, and 21; these possessing good properties, but rather under the standard size, are 2, 4, 5, 13, 17, 22, 23, 24, 27, 28, and 19, 20, 26, are fine in size and substance."

SEED WHEAT. [illegible] WHITFIELD FARM, [illegible] during the last [illegible] —JOHN MORROW, Whitfield.

The Agricultural Gazette.

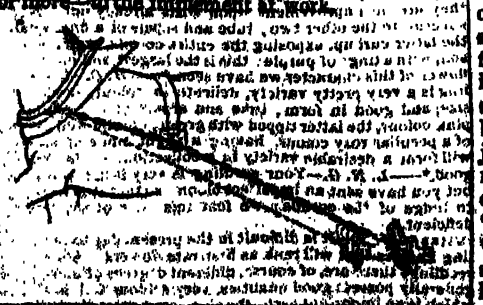
[illegible]

Before proceeding further with our report on Agricultural Mechanics, we shall place before our readers the following remarks by a correspondent on the subject of our last week's Article, THE DRAUGHT OF FARM IMPLEMENTS.

"If I understand your plan aright, you intend to describe the construction of each of the machines you notice—1st, in reference to its efficiency; and 2dly, as affecting the power required to work it. The first of these subjects has but few general bearings. To be sure, in entering upon the consideration of implements of cultivation, you might have prefaced your observations by an inquiry into that condition of soil to be produced by their combined action which is most suited as a seed-bed, or as a vehicle for conveying nourishment to the roots of full-grown plants. This, however, you have greatly supplied, but the subject of draughts in our agricultural farm implements generally, and it is one of great interest and importance. Your descriptions and illustrations of the means we have of measuring it are satisfactory and well placed; but, with the exception of a few sentences on the want of constancy in the density of soils as producing an extreme variability in the draught of all implements of cultivation, your remarks on the subject have not that general bearing which they might possess. In order, therefore, that your introduction to the subject of Agricultural Mechanics may not be characterised by any glaring incompleteness, will you allow me to make a few further remarks on the draught of farm implements?

"I do not allude to the mere *quantity* of draught—the sources of power employed—the economy, in certain cases, of using steam-power—the comparative expense of horse-labour, and that of oxen—a subject, by the way, highly worthy of discussion in your columns; nor do I allude to the variety of the methods adopted in arranging the cattle before the implements they are to draw—as in *tandem*, *randem*, *unicorn*, teams, and teams of two or three horses abreast. The merits of these various modes of arrangement must be determined almost solely by a consideration of the facilities they severally afford for enabling the horses advantageously to apply their strength; and a slight consideration, though I do not intend entering upon it now, will, I think, point out the superiority to all others of the mode of harnessing cattle abreast. There are farmers, however, who defend their practice in this particular, upon the assumed safety it affords against injury to the ground by trampling. Reasoning of this kind must be fallacious, because, if two teams be of equal number for every furrow that is opened, the same number of horses must walk across the field, whatever be the mode in which they may be harnessed to the plough. The only possible distinction in this respect between two 2-horse teams, the one abreast and the other tandem, is that while the trampling of the latter is all in the furrow, and tends to the production of a hard pan or bed a furrow's depth from the surface, that of the other—as I think, less liable to be injurious—is partly in the furrow and partly on the unturned land.

"In the remarks, however, which I have asked permission to make, I allude more particularly to the mode of harnessing cattle—be they horses or oxen, one or more—to the implement at work.



"In the above figure it will be seen that the draught-chain of the plough, instead of proceeding in a straight line from its attachment at the frames to the plough-beam, makes an angle at the back-band with those points.

"The back-band is in fact so short that it carries the chain-lever from the point of its attachment to the collar; and thus, as I may incidentally mention, it constitutes a simple mode by which the ploughman can alter the line of draught. If the plough tend to smack into or out of the ground, or more readily to run [illegible] he can [illegible] by merely shifting the chain-lever in the [illegible] fair at the desired depth; and the back-band, by being [illegible] affords the means of altering in either way the direction of the line in which the effort of the animal is to be exerted.

"But the chief merit of this simple arrangement is, that it takes a portion of the draught from the shoulders, on which all of it formerly fell, and brings the muscles of the back into play. There are several advantages derived from the use of this back-band; the bringing of the back of the animal into work increases its capability as effectually as if a new source of power were called into action, and not only so, but the arrangement by which both shoulder and back are made to pull, tends to compress and force together the acting muscles of those several parts, and thus to produce that firmness and rigidity of its parts, which must give the horse additional confidence in its own powers. The arrangement of draught harness upon draught animals is thus a matter of considerable importance; and as it is equally so, whatever be the implements at work, I thought these remarks upon it would be properly in place at the commencement of your Articles on the Machines of Agriculture.

"It is a very general and probably accurate idea, that power, to be advantageously applied, should be near the work to be done; though how to explain satisfactorily the advantage which appears to arise from this practice, I do not know. The only two apparently influential causes in producing this effect, viz., the additional weight of draught chain to be carried, and the indirect application of the animal's power owing to the slight additional bending of the line of draught consequent upon lengthening it, appear insufficient to account for it. Be this, however, as it may, the advantages of the mode of harnessing that I have been describing, are such as to justify the slight increase which it occasions (see woodcut) in the distance of the horse from the implement it is drawing.

"It is no small advantage of the system of harnessing draught-cattle abreast, that it affords an opportunity for the adoption of this simple mean of so materially assisting the effort of each of the animals in the team, taking it from the few muscles which are brought into play by resistance to a pressure on the shoulder only, and distributing it more evenly amongst these and others."

To this we have only to add, in proof of the importance of a right way of harnessing cattle, that, though in working most Scotch threshing-machines an arrangement is made by which the effort of no horse can exceed a pull of 10 or 12 stones in weight, while in ordinary plough-work a pull of 15 and 20 stones is often exerted, yet the work at the threshing-machine is universally considered the more severe upon the animals: the reason, so far as we can see, being that, in the former case the resistance to be overcome being all above them, no such advantage as has been here stated to arise from the use of the back-band can be experienced.

A THIRD edition has been lately published of the excellent pamphlet by Mr. H. Davis, on THE WASTE OF CORN IN THICK SOWING; and we take the opportunity of noticing it, in order at the same time to publish the results of an experiment on the proper width of drilling Wheat, to which we have before alluded (p. 413). A 10-acre field was divided into various lots of nearly one width, and sown with Wheat in November last, the drills being at intervals of 7, 9, 12, 15, and 18 inches, respectively. The soil is mineral uniform as regards the width of the field, but it varies in its character longitudinally. It is a loamy [illegible] upon the [illegible] sandstone formation, and, about two-thirds of the way down the field, a bench of rock [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of springs occur, and formerly the land there used to "poach badly in wet weather;" but, by the [illegible] [illegible] [illegible] [illegible] springs, that the operations of draining and levelling having now been completed, the soil is in a friable and [illegible] [illegible] [illegible] tion of the field, therefore, as well as that where the soil is shallow, has been excluded from the following calculations. In the month of July two lines, parallel to one another, and 5 chains apart, were laid out across the field, including between them the greater portion of the upper part of it, the soil of which, as far as the farmer can judge, is of a perfectly uniform character. The plots, being about one chain wide, thus consisted of about half an acre each. To this, however, an exception must be made; the land on the north side of the field having been pared and burnt [illegible] [illegible] [illegible] rest of it in the [illegible] experienced, was excluded from [illegible]. In determining the number of [illegible] [illegible] [illegible] that side, though of the same [illegible] as the others, was only [illegible] [illegible] [illegible] thus, on walking across the field from south to north, were experimental plots [illegible] [illegible] [illegible] rows 9 inches apart, the seeding being at the rate of 6 pecks per acre; [illegible] [illegible] were 18 inches apart, and the seeding three pecks an acre; on No. 3 the rows were 6 inches apart, and the seeding 9 pecks an acre; on No. 4 the rows were 12 inches apart, and the seeding 4½ pecks an acre; on No. 5 the rows were 15 inches apart, and the seeding 3½ pecks per Acre; on No. 6 [illegible] [illegible] inches apart, and the seeding 6 pecks an acre. The land last year [illegible] [illegible] [illegible] fair and uniform crop.

We are thus careful in detailing the particulars of this experiment, in order to assure ourselves from what experimenters on any point in Agriculture are peculiarly subject to a liability to mislead others, and still further to insure an accurate appreciation of this experiment, it must be stated that the weather has, during this season, been one of almost unparalleled drought—one, indeed, in which thick sowing was advisable, if ever it has been so. We must say generally of this experiment, that the extent, the character of the soil, and the general attention which has been paid to secure its accuracy, has all along given us confidence in its results, whatever they might be—a confidence which, if nothing existed to impair it before, could, of course, be rendered now that the results are known. With the exception of one point [illegible] harvest, viz., the general superiority of the crop on the north side of the field over that upon the same width on the south side of it, we know of nothing to hinder us from believing that on siliceous sandy soils in good condition, with such a season as the present has been, the following results of this experiment would be generally experienced:

No. of lots.	Width of rows.	Quantity per acre.	Number per acre.*
	inches.	Bushels.	Bushels.
1	9	[illegible]	[illegible]
2	12	[illegible]	[illegible]
3	6	[illegible]	[illegible]
4	15	[illegible]	[illegible]
5	18	[illegible]	[illegible]
6	9	[illegible]	[illegible]
7	9	[illegible]	[illegible]

* These were ascertained from the yield carefully weighed and measured, and from the size of the different pieces exactly measured. Excepting No. 1, the plots differed but little in size, and averaged half an acre each.

No mention is made of failing Corn, for the simple reason that there was none. The grain was all well berried and plump, [illegible] [illegible] more than 64lbs. per bushel. There was a few tares, as they are provincially termed (*), [illegible] separated from their husk, amounting, perhaps, to one bushel in sixty; these were not separated before weighing, but on afterwards [illegible] them by sieve, there appeared to be more where the grain was sown thickly than in the other plots, probably owing to the produce being finer there, and the husk thus more readily breaking off along with the grain in the threshing.

What inferences are to be drawn from this experiment? The appearance of superfertility in the crops on the north side of the field has been fully borne out by the results, and in point of fact there is a much greater difference between two of the plots (Nos. 1 and 3), in which Wheat was sown in equal thickness, than there is between two plots (Nos. 2 and 3) in which the Wheat was sown in thicknesses differing most from one another. However, no great results can arise from comparing adjacent plots, and let any advocate of thick sowing compare the produce of the 18-inches drilled Wheat with that of the 9-inch Wheat on the one side, and that of the 6-inch Wheat on the other; and say if, considering the drought of the season, he is not surprised at the slightness of the difference between them—a difference so slight that it is almost compensated by the saving in the seed.

May we presume that the superior fertility of the north side of the field is the result of a *uniformly* increasing superiority of soil as we walk across it from south to north? If so, then subtracting the 0 bushels and 10lbs. from No. 7—the amount in which it exceeds the produce of plot No. 1 sown equally thickly—6 bushels and 10lbs. from No. 6, 6 bushels and 32lbs from No. 5, and so on uniformly

* A provincial term, descriptive of a 3-horse team, 2 being abreast, and 1 in front of them.

decreasing to 0 as the amount to be subtracted from No. 1, we obtain the following results:—

Number of Lots.	Width of rows.	Grain per acre.
	Inches.	bushels. lbs.
1	9	76 56
2	12	64 14
3	6	84 47
4	12	31 56
5	15	25 09
6	9	35 46
7	9	80 60

If this be a justifiable step in estimating the results of this experiment—and from the manner in which it assimilates the produce of the plots which were sown equally thickly we may presume that it is—then, though the weather has been such as most remarkably to favour thick-sown crops of all kinds, yet it has not been sufficiently dry and scorching to hinder the plants of plot No. 2 from as nearly as possible equalling in produce those of plot No. 3, though not, by two-thirds, so thickly planted in the ground.

The subject of the quantity of seed per acre from which the maximum benefit is derivable, is one of great interest to the farmer; the seed-Wheat alone of many farms equals a quarter of their rent in value, it is a subject which we hope to see taken up by many of our practical readers. We have this week received an interesting account of experiments performed last year near Bath, which we shall publish in our next Number, and we hope that the experience of others will be placed at our disposal, in order that from the comparison of numerous results a trustworthy conclusion may be arrived at.

We conclude by quoting from Mr. Davis's pamphlet the following defence of the practice of thin-sowing Wheat. His practice on the large scale is to sow but 3 pecks per acre.

"The yield of an average ear of thick-sown Wheat is about 30 grains (I say thick-sown, for thin-sown yields very much more), and therefore, as the ordinary return off every acre is at most about 30 bushels, it follows that this quantity, no matter how much has been sown, can at most have come from the growth of the ears from one bushel of seed (and that, too, is allowing only one ear to grow from each grain, and 30 grains from an ear). This being the fact, of what use can more seed be, or rather let me ask, must it not prove injurious; what becomes of the remaining six or eight pecks of seed which are commonly sown; and how is the excess of plants, thereby produced, to be gotten rid of without injury to the remainder? In allowing one ear only to grow from a grain, and each ear to contain only 30 grains, I am very far from taking what should be the produce; for a single grain, having room, will throw up 10 or 12 ears, and these ears will each contain from 60 to 80 grains, so that in fact the yield, were room given to each seed to tiller out, instead of 30 for one, which is all a bushel of seed allows, would be many hundred-fold; and hence any provision for the loss of seed from vermin or birds is unnecessary, for supposing half, or much more of my small allowance, to be taken away or destroyed, the deficiency of plant will be immediately met by the tillering and the larger size of the ear, which takes place wherever room admits of the increase. Among the many proofs I have had of the advantage from thin sowing, the following is a striking and, among my people, well-known fact. In the autumn of 1840, I had to sow with Wheat a field of eight acres, and to do this seven bushels of seed were given out, but owing to an error of the drill-man in setting the drill, when he had sown half of the ground, he found he had not put on half of the seed; then that I might not discover, by the overplus, his mistake, he so altered the drill as to sow the rest on the remainder of the field, and in this way our half had little more than two pecks to the acre, whilst the rest had nearly four pecks. I did not know what had been done, and was therefore surprised and frightened in the winter by finding part of the field very thin, and, had not the rest looked very much better, should have ploughed it up; but in spring and summer, a decided superiority in the growth of the thinner portion became perceptible, and at harvest this part proved the best, and I should never have known of the error in the sowing but for this result having induced the drill man to point it out to me."

It is only by experiment and observation, whether of a designed or accidental, but especially of the former character, that truth in the matter can be ascertained.

ON FLAX-SEED AS FOOD.

(Continued from page 594.)

EVERY farmer is aware of the value of oil-cake as food for cattle, which is merely the refuse matter of Flax-seed after the expression of the oil. Indeed, such a nutritious article of food has this been found, and so much superior for the production of fat to any article of farm produce, that animals fed on it have usually been disqualified from competition at the national and local farming societies' Shows. But much valued as it has hitherto been, there is good reason to believe that it would have been still much more valuable were it free from adulteration. Flax-seed, like every other article of farm produce, is very various in quality; so that strict uniformity in the quality of the oil-cake produced from it, is not to be expected. The variation will, however, be greater in the quantity and quality of the oil than in that of the cake; so that, were no means employed for adulteration, the quality of the latter would be found more uniform than it usually is; nevertheless, in nine-tenths of the oil-cake exhibited in the British markets, the refuse of other seeds, frequently those of weeds, will be found to constitute a large if not the greater portion of it. Oil-cake, however, still continues to maintain its ground among cattle-feeders, notwithstanding the extent to which it is adulterated by the admixture of foreign substances—a fact which speaks volumes in its favour as an article of food. It is, of course, impossible to state to what extent its value is depreciated by such admixtures; but the loss, in a national point of view, from this source alone, must be very considerable, when so much as from fifty to one hundred tons of oil-cake are annually consumed, in some cases, by individual farmers.*

It does not appear that we are in possession of any correct proximate analysis of the seed of the Flax-plant, which is evidently of more importance in the estimation of its feeding properties than an ultimate analysis, of which latter several have been published. In the somewhat imperfect proximate analysis quoted by Professor Johnston in his Lectures, the principal ingredients are stated to be as under—in 100 parts:—

Oil	11.3
Husk, &c.	44.4
Sugar	10.8
Gum	7.1
Soluble albumen (casein)	15.1
Woody fibre, starch, wax, and resin, &c.	11.3

This analysis, continues the learned Professor, shows that the seed of Flax contains considerable proportions of gum and sugar, and a large quantity of a substance here called soluble albumen, of which nitrogen is a constituent part, but which differs in its properties from the gluten and albumen of the seeds of Corn-bearing plants, and has much resemblance to the curd of milk. Besides their fattening properties, therefore, which Flax and other oil-producing seeds owe in a great measure to the oil they contain—this peculiar albuminous matter ought to render them very nourishing also; capable of promoting the growth of the growing, and of sustaining the strength of the matured animal.†

It is certain that the loss sustained by the expression of the oil in Flax-seed, as food for the domestic animals, is much greater than the money value of the oil itself; and that, therefore, besides guarding against imposition, *in the form of adulteration*, it would be more economical, on the part of the feeder, to use the Flax-seed itself, in preference to the oil-cake. Nor is the management to be adopted in the latter case difficult to be carried into effect. The seed is merely reduced to meal and boiled, when a jelly is formed, abounding in mucilage and other nutritious matters, which may be used in combination with almost every other kind of food. For every pound of meal, two gallons of water may be employed, to which may be added, after the mixture has boiled a few minutes, a proportion of bruised Oats, Barley, refuse Wheat, or other similar matters, with a quantity of cut Hay or Straw, sufficient to impart a degree of consistence. After simmering over a slow fire for a few minutes, this will absorb the mucilage, and the mixture will be ready for the animals when cold enough for use. A little experience will show in what proportions the various ingredients which may be used can be most economically employed. Potatoes, or other roots, cut Hay or Straw, Clover—in fact almost every article of farm produce—may be used in conjunction with this mucilage, as food for every one of the domestic animals.

But it is not necessary to dwell at great length on this part of the subject, as no difficulty will be experienced in the preparation of the food. I shall, therefore, proceed to describe the management at Honkesley Hall, alluded to in my last paper on the subject, which I am enabled to do through the obliging attention of the Rev. Mr. Blair Warren, whose course of management in reality seems to be well worthy of imitation. The system which he carries so well into operation is, however, that of Mr. Warnes, of Norfolk, whose exertions in this department of farm management have been noticed in my last paper on this subject.

The preparation of the compound may take place in a common boiler, but where a considerable number of animals are to be fed, the process will be much more economically and conveniently performed by steam; and the expense of the erection of an apparatus for this purpose will soon be repaid by the saving of labour and fuel thereby effected. By means of pipes steam is conveyed from the boiler in which it is generated to one or more vessels placed convenient to it; and the water in these vessels may be boiled altogether through the instrumentality of the steam thus introduced; or a portion of it may be drawn off from the boiler itself, by means of a stop-cock—in which latter case the preparation of the food will be materially hastened. While the water in these vessels is kept boiling in this manner by the steam conveyed to them, the required quantity of Flax and meal is to be gradually added, the mixture during the time being stirred about. Flax-seed, in its whole state, is well known to require lengthened boiling before it can sufficiently impart its mucilaginous properties to the mixture; but when ground into meal it does so rapidly; in fact it is only in this state that its nutritious properties can be properly developed. After the Flax-seed has been added, and the whole boiled a few minutes, the farinaceous matters to be afterwards added should be in readiness, observing that the grain or pulse employed should be bruised, and the Hay or Straw cut into chaff. The quantity and proportions of each of these matters will, as has been already observed, depend on the peculiar circumstances of the farm, and the intention of the feeder. The refuse grain, which, could not in other cases be perhaps profitably appropriated, is here economically applied. But the presence of other farinaceous matters, though desirable, is not absolutely essential in using Flax-seed jelly. It may be advantageously employed in conjunction merely with cut Hay or Straw, or any description of green feeding, as Clover and Grass, Vetches, Lucerne, &c., after being cut by the machine, to prevent waste.

The system of feeding on compound of Flax-seed, &c., may be carried on in conjunction with pasturage or any other plan of house-feeding. During the summer months, when the cattle and sheep are on their pastures, they may be supplied with a portion of the Flax-seed mixture once or twice a day; and one of the beneficial effects of such a course of feeding will be, to make the animals relish and eagerly consume the most inferior descriptions of herbage, on which they would otherwise starve. The supply of Grass may also by these means be greatly economised, especially in the case of sheep feeding, as they may be confined by hurdles to a given extent of the Grass until they have eaten it down, and this will not only economise the Grass, by causing it to be all eaten as gone over, but will also contribute materially to enrich the land, by the folding of the sheep. In this manner, in fact, a plot of ground is gone over regularly by piece-meal, with as much uniformity as if undergoing the operation of the scythe. In certain situations sheep or cattle cannot be fattened during the summer months advantageously, owing to the innutritious quality of the herbage; but it will be apparent that in combination with the mixture described, the most inferior natural herbage may be successfully employed for fattening. But the ultimate effects of this course of management in such situations, as regards the improvement of the soil itself, are even more important than the immediate one of being able to put on flesh. It is evident that if persevered in for a time, whether the Flax-seed employed be of home or foreign growth, the fertility of the soil will eventually be permanently increased, by the production and application of the increased quantity of valuable manure which is thereby occasioned. Compared with such a system of manuring, the application of guano or any of the numerous fertilisers to which attention is now directed, is comparatively unimportant. It is an important fact to bear in mind that no manure can ever successfully enter into competition with that of the farm-yard, when of home production. Being a bulky article, however, its value is seriously diminished when it is to be conveyed any considerable distance; and hence the advantage possessed by the portable manures in this respect.—*J. Sproule.*

(To be Concluded next week.)

* Mr. Warnes's "Suggestions for Fattening Cattle on Native instead of Foreign Produce."—London, 1842.

† See Professor Johnston's Lectures, &c., p. 772.

ON THE APPLICATION OF SCIENCE TO PRACTICE IN AGRICULTURE.

LAST year I made an effort to stimulate the farmers of Suffolk to adopt a system of experimenting on a cheap and easy scale, for the purpose of securing a multiplicity of facts by which men of science might be able to test their theories, and elicit the principles upon which a correct practice of Agriculture depends. More than a twelvemonth's additional experience has added to my convictions that very few farmers possess any just notion of what is meant by the application of real science to practice. I perceive, indeed, that the subject is commanding increased attention, and that numerous attempts have been made and are making with various success in the right direction; but still I think the application of science to practice ought to be advancing at a much more rapid rate than it is. I have already directed attention to some remarks of Sir John Herschel, in his popular "Discourse on Natural Philosophy," and I shall here extract another passage which places the difficulties in the way of applying science to practice, in a just point of view. I quote it as preliminary to a few remarks I wish to make upon some observations of practical men (which I have lately noticed), with reference to certain attempts which they consider to be failures, in the application of scientific principles to the improvement of Agriculture. "Art is the application of knowledge to a practical end. If the knowledge be merely accumulated experience, the art is empirical; but if it be experience reasoned upon and brought under general principles, it assumes a higher character, and becomes a scientific art." "Applications come late; the arts continue slowly progressive, but their realm remains separated from that of science by a wide gulf, which can only be passed by a powerful spring. The whole tendency of empirical art is to bury itself in subtleties, and to place its pride in particular short cuts and mysteries, known only to adepts; to surprise and astonish by results, but to conceal processes. The character of science is the direct contrary; it delights to lay itself open to inquiry, and is not satisfied with its conclusions, till it can make the road to them broad and beaten; and in its applications it preserves the same character, its whole aim being to strip away all technical mystery, to illuminate every dark recess, and to gain free access to all processes, with a view to improve them on rational principles. It would seem that a union of two qualities almost opposite to each other—

a going forth of the thoughts in two directions, and a sudden transfer of ideas from a remote station in one, to an equally distant one in the other—is required to start the first idea of applying science."

I lately noticed in the *Gardeners' Chronicle* my admiration of the bold attempt which Mr. Mechi has made to carry out the views of modern speculators in the improvement of Agriculture. I saw a notice this last week in one of our local papers that a practical gentleman has pronounced his attempt to be a complete failure, and he also states it is so considered to be by the whole of the neighbourhood. Possibly these statements may be somewhat premature; but still, if Mr. Mechi should prove an Agricultural Curtius, and by his vigorous hazard succeed in shutting to close the gulf which at present yawns between science and practice, his fearless devotion must command the respect of all who are not so apathetic to admire the zeal he has manifested for the interests of Agriculture. Very possibly some parts of his scheme have been injudiciously laid, and may be improved upon; and perhaps some of his calculations may have been grounded on insufficient premises. It is very possible, also, that whilst Mr. Mechi possesses a laudable faith in the abstract truths promulgated by scientific men, yet he may have fallen into a common error of practical men, in supposing that science is already sufficiently advanced to dictate to practice whatever may be executed on a grand scale. Now practical men must still be assured that the leap to which Sir John Herschel alludes has not yet been taken. Science is at present only training the athlete for the leap he must take if Agriculture is to become a scientific art; but she is not exactly requiring him to part with all his flesh and muscle, and so contrive to lose the stakes for want of strength sufficient to spur an unwilling horse. The method which science for the present proclaims to be most advisable for securing the advance of Agriculture, is that which I have so perspicuously pointed out in the several writings of some of her best mouth-pieces, viz., "experimental co-operation upon an extended scale." My schedules A are now coming in, and I already see with increasing conviction the importance of this plan. A gentleman devoted to Agricultural Chemistry was here at the beginning of this week, and he remarked to me that he had himself found how impossible it was to trust to the results of any one, two, or a dozen such experiments as those which must be tried. He admitted it is necessary they should be attempted by hundreds and by thousands. A correspondent in the *Agricultural Gazette* a week or two ago, sneers a little at "March of Intellect Men," and complains that some of their schemes have so far misled him as to have marched the profits off his farm. I suspect we must class your correspondent among those "Hist of Intellect Men" who so frequently verify the old proverb of "the more haste the worse speed." They fancy that some well-established principle in science will lead immediately to great practical results; and then they proceed to apply it according to their own conceits, in a way which insures to them abundance of disappointment. When they thus fall in their calculations, they fall in dudgeon with science, and sit down abruptly in "the seat of the scorner," and declare they will have nothing more to do with "new-fangled schemes."—*Ed. gr.* The value of liquid manure is now pretty generally acknowledged by gardeners at least, if not by farmers. It was asserted, many years ago, that its value was duly appreciated in the more advanced agriculture of some foreign nations; and some of our English farmers, with their usual enterprise, bought manure carts and dog tanks, and then failed in applying this manure beneficially. The tanks were filled up, and the carts allowed to rot. But it was mismanagement in the application which led to these failures. Science was right—foreign farmers were right—English inexperience was at fault. Within the last week I have heard of a farmer who built a large tank, about two years ago, and carefully filled it with liquid manure. He found it produce no beneficial result. My informant ascertained that he had delayed the application too long. He had suffered it to putrefy; and had not attempted to prevent the escape of the carbonate of ammonia; and had only applied it after it had become comparatively worthless. If farmers wish to see science successfully applied to practice, they must either obtain for themselves a sufficient knowledge of chemistry, botany, entomology, geology, &c., to enable them to perform the requisite experiments, or they must trust to the guidance of those who are acquainted with those sciences, as to the sort of experiments it is necessary they should undertake. A time will come when the leap shall have been taken, but, in the mean time, we can only say "God speed the Plough," as heretofore.—*J. S. Henslow, Hitcham.*

ON THE APPLICATION OF MANURES.

Admitting the accuracy of the principles I have advanced in these papers, the proper mode of applying manures is easily ascertained. Exhalers of manures—popularly so called. As the root has hitherto been considered the only inlet of nourishment to plants, the leaves have been treated of only as digestive organs, the ground has been considered the only storehouse, and we have closed our eyes to the evident indications of nature in the volatility of decomposing animal and vegetable matters. In a vain attempt to force these matters on the roots of plants, we have buried them at depths which we thought would prevent the escape of their effluvia. Now as their volatile parts are taken in by the leaves, in lieu of burying we should lay them on or as near the surface as to be accessible to our surface operations, which let loose the effluvia, while the plants are growing; and as a plant from its earliest growth, from the first sheeting of its plumule, takes in these effluvia, and as on a strong and vigorous early growth the future strength of the plant will much depend, a portion at least of these matters, in an advanced stage of decomposition, should be placed at or as near the seed as possible; guano may be usefully and, from its portability, steadily employed. Whether we think proper to top-dress a growing crop or not, frequent surface hoeings are requisite to keep up a continuous discharge of these effluvia from the soil. There can be no doubt that repeated, continued hoeing, by giving to the plant its food, must promote its more rapid development; but in order to continue these operations to a late period of its growth—for at a late period they are most valuable—we must make our rows at considerable distances, in grain crops at much greater indeed than we have been accustomed to do: from eighteen inches to two feet I think would give us distance enough; and from experiments stated hereafter, this will give a greater return of grain and straw than any other distances. At such a distance I feel assured a greater number of stems would be found in a given space of ground than would be in a broad-cast or narrower drilled crop, and these would carry a better head, have a more standing crop, be reaped with greater facility, and, from the absence of weeds, be carried much sooner. But the advantages of a wide row system are not confined to the growing crop—they extend to future and far distant ones. Apart from the cleanliness produced, the constant fallowing process so opens the soil, as to induce the solution by the atmosphere of those inorganic bases which are required by plants, and the want of which makes the alternation of crops necessary; the soil may thus, by this thorough cultivation, be made to bear the same crop successively, or at shorter intervals; or, which amounts to the same thing, to yield a heavier return in the course. The dews and light rains, instead of evaporating, enter the soil to assist the chemical changes, provoked by the moving of its parts; light pervading all the spaces between the plants, in these wide rows, enables the leaves to appropriate and decompose the carbonic acid of the air. In the country from which I write, the general adoption of the wide-row system would be necessarily attended with peculiar public good. Here there is a want of capital, which alone frequently places a difficulty in the way of the small farmer, in seeding his ground, and often delays him till the proper season is past; and from this a want of employment follows. Here in the wide-row system a remedy, to a considerable extent, is at hand. The value of the excess of seed, which is everywhere shed over the ground, would pay for an amount of manual labour that would leave none but the will-be-idle unemployed throughout the growing season of the year. From three-fourths to two-thirds of the seed would be saved, and this alone is a national object.—*J. M. Goodiff, Granard.* —— P.S.—About twenty-four years ago a small plot of ground was sown with Barley—it was divided into five equal parts; on the first, the seed was thrown broadcast by the hand; on the second, it was sown in rows 7½ inches asunder; in the third, 15 inches asunder; in the fourth, 22½ inches asunder; and in the fifth, 30 inches asunder. The produce both in grain and straw (separately), was carefully weighed as soon as possible after being cut. No. 1 gave the least return in both Corn and Straw, Nos. 3 and 5 gave an equal return, but more than 1 and 2; and No. 4 gave the greatest return of both. The distance between the rows in this case from which the greatest return was derivable was between 15 and 30 inches. The following year a strip of Lammas Wheat was sown, chiefly with a view of ascertaining how late Wheat might be sown in wide rows; on the 25th March in rows 22½ inches asunder, in a field where the same description of Wheat was sown the November previous in drills 9 inches asunder, the strip of wide rowed Wheat was reaped before the rest of the field was carried, say within ten days after the rest was reaped (it is the custom in Ireland to leave the Wheat in field-stacks some short time, generally till the whole is cut and fit to be carried). When the wide-rowed strip was in stook, I drew at random five straws from it; I did the same from the stacks of five or six Wheat-fields in the neighbourhood, and with private marks to the samples I showed them to several farmers; they all were of opinion that the wide-rowed sample was the best. I have this year nearly half a statute acre of Chevalier Barley sown in rows 18 inches asunder, with the exception of one patch 15 yards by 6 yards, sown at 9 inches; this has not been hoed but hand-weeded; the rest has been hoed three or four times; the patch was at once distinguished some time before harvest by the lightness of its green. The wide drills were sown at the rate of six stones to the statute acre in the middle of May (could I have sown it in April I would not have given more than three or four stones to the acre); in the patch a double quantity of seed was sown—that is at the rate of 12 stones to the statute acre; yet I do not think there are more stems in it, and I would challenge any broadcast field to produce more of good Corn. Notwithstanding the late rains it is a standing crop. When the crop is cut I will forward a statement of its produce. [Thank you.]

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Harvesting.—East Lothian being somewhat celebrated as a Corn-growing county, a brief description of its mode of harvesting, or manner of cutting and securing grain-crops, may prove acceptable at this season, before noticing the cultivation of individual crops.

There is some diversity of opinion amongst agriculturists respecting the degree of ripeness necessary before cutting down Corn, but the practice of the best farmers in this county appears to sanction the performance of this operation before the grain and straw become dead or thoroughly ripe: grain-crops, particularly Wheat, are therefore generally cut before attaining perfect maturity. The common criterion of sufficient ripeness, as indicated by the straw, is when it begins to shrink and become white about an inch below the ear. The circulation of sap to the grain is then cut off, and all further benefit arising to the crop from remaining longer uncut is consequently terminated.

Although the scythe is now, and has been for many years, much employed by some farmers, reaping, or shearing, as we here term it, with the sickle, is by far the most general mode of cutting down the Corn-crop. There are two kinds of sickles made use of—the serrated and the smooth-edged or scythe-hook; the latter is generally preferred, as being more expeditious and less difficult to work with than the former; but as the farmers now find it extremely troublesome to prevent the reapers, when the scythe or smooth-edged sickle is used, from cutting down the crop in a peculiar manner, termed *slashing*, which is at the best but a very imperfect and objectionable process, strictly prohibited by good farmers, the serrated instrument is again coming into general use. Low reaping is particularly insisted on, and, generally speaking, everywhere practised. Some farmers are in the habit of giving a small additional allowance, as an encouragement or reward to such reapers as have, during the course of the harvest, executed the lowest and cleanest work. The ridges being usually 18 feet in breadth, three reapers are placed upon each of them; one man, denominated a bandster, binds and stooks the sheaves to six reapers.

In ordinary cases, the stooks, or shocks as they are in some places termed, are made in every alternate ridge; but when the crop is light, two neighbouring bandsters often stook together. In the case of Wheat, six pairs of sheaves make a stook; but when the crop is Oats or Barley, the stook may consist of only two, three, or four pairs of sheaves, according to the state of the weather and the inclination of the farmer. In many places two hooding sheaves are placed on the top of each stook to protect the grain from the effects of inclement weather; but they are here entirely omitted, of whatever kind the crop or season may be. As binding and stooking are operations of the greatest importance, to which too much attention cannot be devoted, none but the most careful and expert are employed in that department. The stooks are invariably set in a direction from north to south, that the sheaves may be equally dried on both sides.

Small-sized sheaves are always preferred, but especially when the crop has been cut rather prematurely, or in a damp state. In general cases, the binding and stooking are carried on simultaneously, but it frequently becomes necessary in this county to cut part of the crop in a wet condition; and in this case, instead of the usual method of binding, the sheaves are loosely tied near the corn-ends. Each sheaf stands singly on its own basis, the bottom being drawn out in a circular manner to maintain it erect. This operation is termed *gaiting*. It is applicable only in the case of Oats and Barley, and being attended with a considerable deal of after-trouble, is never resorted to except when the Corn is cut while in a damp state. When ready for stacking, the gaits are all firmly bound in the usual manner, and either conveyed immediately to the stackyard, or stooked in the field until it becomes convenient to remove them.

Reaping with the sickle is decidedly the most general mode of cutting down grain crops in this county; but the scythe, as already observed, has been long though partially employed for the same purpose, and is, on the whole, gaining ground, as with it the straw is cut much closer to the ground, and the whole operation performed more cheaply and expeditiously than can be done with the sickle. The principal objections here urged against mowing grain-crops are—that the Corn is not laid down with the same regularity, nor the ears made to lie in one direction, so uniformly as when the sickle is used; that the grain is more liable to vegetate and sprout while in the stook, in moist weather; that the stack of mown sheaves has a rougher appearance; and exposes more grain to the weather and the depredations of birds; and that mown sheaves are more difficult to be threshed, either by the flail or threshing-machine. It is contended, on the other hand, by the advocates of scythe-cutting, that the irregularity and imperfection imputed to mowing arise chiefly from the want of skill, dexterity, and care on the part of the mower and his attendants; that a man can bind and stook one-fourth more sheaves in a given time, when mown, than he can when reaped; that mown sheaves dry quicker, and are ready for stacking several days sooner than reaped ones; and, above all, that the scythe possesses a great superiority over the sickle in point of economy and despatch. In Aberdeenshire, and some others of the northern counties of Scotland, the whole of the grain-crop is mown without exception, and the labourers there have acquired, from continued practice, much dexterity in the use of the scythe. A considerable quantity of Oats was last year mown by Aberdeen men, in this county, and the farmers appear anxious to introduce and extend the practice. The usual custom is for the farmer to contract with one man for performing the mowing, lifting, binding, stooking, and raking per acre. This man, who engages to have all these operations executed to his employer's satisfaction, hires a sufficient number of persons—men and women—from his own country to cut all the Corn he can obtain. A contractor, or undertaker of this kind,

has generally several sets of mowers and their attendants working at the same time, on contiguous farms. Numerous contracts have been made for the present harvest, not only in this, but in several other counties in the south of Scotland.

The scythe employed by the Aberdeenshire mowers, and which is expected soon to become general throughout this county, differs considerably from the common one in the shape and length of the handles. It has two short handles, one projecting from the other, which, by placing the operator in a less constrained position, render it more easily worked than the common one. This scythe has no cradle or other appendage; each mower is attended by a woman, to make bands and place the Corn in sheaves upon them, and a man immediately follows to bind and stook the sheaves. A stout boy provided with a large corn-rake having curved iron teeth, can rake to three scythes.

Reaping by the sickle is also sometimes, but not frequently, performed by contract. The county is abundantly supplied with reapers from Ireland and the Highlands; they are hired by the week, and paid according to a certain rate of wages agreed upon by the farmers at weekly meetings held at Linton and other places. The average rate of wages for reapers during the last few years has been about 9*s.* a week, not including their diet, which is commonly reckoned at 8*d.* per diem. In the generality of farms, four men are considered to be capable of cutting and stooking an acre of Corn on an average daily throughout the harvest; these, at 1*s.* 6*d.* each per day for wages, and allowing 6*d.* for diet, make the expense of reaping with the sickle 8*s.* 8*d.* per acre. The cost of cutting with the scythe is considerably less: a good mower will cut down 1½ acre of Wheat, or 2 acres of Oats or Barley, of an average quality and not much laid, in 10 hours. Taking the Oat-crop for an example, the cost of mowing, binding, stooking, &c., 2 acres, will be as follows:—

1 man (mower)		2*s.* 6*d.*
1 man or woman (gatherer)		1 6
1 do. (binder)		1 6
1 man can rake to three scythes		0 6
Wages	5 6	
Diet	2 6	
Cost of cutting 2 acres	8 0	
Do. of 1 acre	4 0	

—*T. Sullivan.*

(To be continued.)

Home Correspondence.

Drainage.—In looking over the strictures of "A Farmer and Valuer," on my remarks on the Report of the Debenham Farmer's Club, the first thing that strikes me as extraordinary, is that an individual, who it would appear is unwilling to give even the authority of his own name to his statements, should expect that his *ipse dixit* would affect the observations which I made, backed as they were by what I conceive sound reasons and the experience of the best practical drainers in this or, I will venture to say, any other county. As I conceive it to be the duty of every individual to contribute his mite to the overthrow of error, and as I think the cultivation and use of "plashings," as practised at Debenham, a most grievous agricultural error, I shall make no other apology for criticising the remarks of your Stowmarket correspondent. He complains of tile drains becoming choked with clay, but it must be evident to every one acquainted with the subject, that that is the fault of the execution of the drains, not of the tiles, as no well executed tile drain can have "clay worked into" it; indeed, from the very nature of clay, there is no kind of soil in which drains are likely to last so long, and there are many tile drains in this county, but especially in East Lothian, in all varieties of soil, from plastic clay to sandy loam, which have been in use for twenty years, which are found to work as well as they did when newly put in. I would recommend to "A Farmer and Valuer," the next time he is induced to try tile-draining, whether by "chance or otherwise," to put the tiles out of the reach of any working whatever. One of the reasons given by your Stowmarket correspondent in favour of his much-loved "plashings" really deserves the epithet—ludicrous; it is, "that it," that is draining with straw and plashings, "has been in use in their county for nearly a century, and found very beneficial." I have no doubt his ancestors in the days of yore found it very beneficial to live in a cave or a hut, but that is no argument against the use of a modern house. Does your correspondent carry out his principle by grinding his Wheat in a quern, in preference to what I presume he will term "march of intellect" nonsense—a flour-mill? Is his plough a crooked tree? Does he prefer the ancient wild breeds of cattle and sheep to the short-horn and new Leicester? All these had the merits of ancient usage, and of being beneficial in their days; that day has gone by. I have no patience with men who rail at what they are pleased to term the "march of intellect;" they ought to know that it is to this that their country owes the status which she holds; that it is by this that we are enabled to maintain a population our fathers never even dreamed of; that it is to this, under Providence, that they are indebted for a large proportion of their comforts and enjoyments. Your correspondent says "that he does not pretend to know how the water gets into the drains, except that it will run down hill." What an extraordinary operation the draining of a perfectly level field must be to him. I consider the quotation from Mr. Smith's work on the advantages of draining parallel to the declivity, quite unanswerable, and every one acquainted with the literature of agriculture knows that he, as well as the other writers whose opinions I quoted, are practical men; the words about "written theories" were altogether misplaced. I am not at all surprised that a field drained in any way with "plashings" should not be dry; and with regard to the portion drained obliquely, I think your correspondent's statements very ingenious; but if I had found the water running down the furrows till it fell into the drains, I would have been inclined to call it all equally wet, instead of dry. It would appear that he has some indistinct notion of another way by which water gets into drains besides running down hill, notwithstanding his assertion to the contrary, for he says "that unless the drains are made not further than six or seven yards apart, the water will not *draw* into them." I happen not to have the Number of the Royal Agricultural Society's Journal by me, referred to by your correspondent. Does he mean to assert that Mr. Pusey advocates the cultivation and use of "plashings?" In conclusion, I have just to say what I asserted before that tile-draining was nearly as cheap as that with straw, and I now assert, in consequence of information regarding some of the new tile machines, that in a country where clay can be got, tile-draining is cheaper; and I would give "A Farmer and Valuer" an advice I often see in the *Gardeners' Chronicle*, that no one should write about things they do not know about, far less about what they do not even pretend to know about.—*J. Girdwood, Featherhall, Midlothian.*

Allotments.—Since addressing you on the allotment system, I have read with pleasure a letter published in a provincial journal, from Sir R. Bunbury, calling upon the landowners in West Suffolk to form a society for the alleviation of the distress of the working classes. I am rejoiced to find that one of the modes proposed to effect this object is the allotment system, under the direction of a committee of management, whose duty it will be to provide land for the labourer at a fair farming rent, and not at the exorbitant price generally demanded for small patches of ground. Should the praiseworthy example of West Suffolk be followed by other localities, it will be the means of extricating the poor man from the rapacity of his neighbour, having land to let out, but too idle to work it himself. I have often looked with pity on the labourer, who, after having hardly earned his daily bread by the sweat of his brow, has repaired to his allotment to expend his remaining strength in the vain hope of raising a few Potatoes for winter consumption; when I knew that his utmost exertions would barely enable him to pay the rent, leaving nothing either for himself, or to purchase manure for the following spring, or buy a pig to assist the muck-heap. The allotment system, to answer a benevolent end, must be based on equity, giving the small tenant every facility for turning his lot to the best account, instructing him how to procure the cheapest manures, and how to use them to the best advantage. As you have, in your notices to correspondents, expressed a determination to bring the allotment system fully before the public, I think I cannot leave it in better hands, and will, therefore, not trouble you again on this subject, unless anything unusual calls for remark.—*Falcon.* [We shall always be glad to assist our correspondent, and others interested in the allotment system, in keeping alive a discussion on this subject by the detail of facts and arguments not hitherto published. It is a subject which should be kept constantly before the public.]

Failure of Crops.—We are all in despair in this neighbourhood; the most flourishing of the early sown Turnip crops are daily disappearing. We hope in the next *Agricultural Gazette* for advice on this serious calamity, as it is a most unusual cause of destruction which I am about to describe; and we trust you will suggest remedies, either to arrest the ravages of the insects, or prevent the evil from spreading so rapidly, should it appear next season. About a week since the weather was cloudy, cold, and windy, and suddenly the ground was partially covered with innumerable minute frogs and toads, and the Turnips appeared to have received a check in their growth. At this period my crop was very flourishing; in a day or two the finest plants withered in patches, and now the evil seems almost hourly to increase. The complaint, I grieve to say, is very general, and as no remedy seems to be known, what would you advise being now sown to replace this valuable crop? I send you specimens of the different insects, in the several stages of existence; pray name them, and describe their habits—how they may be destroyed, and in which state they commit the greatest devastation. We observe the Swede suffers less than the Turnip; and where Charlock abounds it is first attacked. —*A Cotswold Farmer.* [We do not know how to help you. Cabbages (the early York), Rye, and Vetches are, as you probably know already, among the earliest of our spring crops. How would it answer your purpose to purchase young Savoy plants of the market-gardeners, and prick them out in your Turnip-beds? They would be ready about Christmas. Your insects have been sent to *Ruricola*. The subject of this communication is a most important one, and any practical farmer who has any suggestion to make, would benefit his "neighbours" by communicating it through us.]

Farm Implements.—After your remarks on the Improvement of Agricultural Mechanics, I wish you could inspect the simple implements which enable 22 persons to gain their living in comfort on 13 acres in my neighbourhood, and two of these families, who had been in the Union-houses of Hallingly and East Bourn, to become rate-payers instead of rate-receivers. They have not a plough amongst them; the 3-pronged fork, 14 inches deep, which the late Dr. Yelloly recommended to the Statistical Society at Liverpool, is better to stir the ground than any plough; and the seed is put in admirably straight lines by a hoe—the Vernon hoe—the seed being deposited by children; and where there are hands enough to do this work, can the most perfect machine moved by a horse be so advantageous, either for the individual occupier or the community, as manual labour? For, by the law of the land, all human beings in England who cannot support themselves must be supported out of rates levied on the land, before one farthing can reach the owner as rent. Witness Chelmsbury, as quoted in your Paper some time since. Why not, then, lessen those rates by letting willing hands do all the work that is within their power? for horses need not be kept—men must. Large farms have been the fashion of late years. Will large farms, with fine agricultural machines, drawn by fine horses, yield most rent, or send most produce to market? On the contrary, my little tenants, without a plough, harrow, or any animal of draught, have for a series of years paid me more rent than my greatest tenants. In 1840 I took in hand 1000 acres from a tenant, who also had a better farm in occupation in another parish, to learn why my rent was so low and the poor-rates so high; and I think an investigation into the result would be worth your pains. Not long ago, J. Harrod, of Pevensey, who was in the Hallingly Union in 1840, told the Earl of Devon, who came from London on purpose to see him and other allotment tenants, that he was supporting his family and wife and four children in comfort on three acres, and hoped soon to have nothing but salt to buy for them; and since then, he has reaped his Corn, and says he is satisfied any man can get his living on three acres. My having employed more manual labour on this 1000 acres than my tenant did, and let about 26 acres for spade husbandry, has lowered the rates from 5*s.* 3*d.* to 2*s.* 6*d.* in the pound; and, by the same means, the rates have been similarly lowered in other parishes. By the general adoption of my system, the incendiary fires which raged in Sussex in 1830 would cease, and the Income-tax be rendered unnecessary, and 5,000,000*l.* out of 7,000,000*l.* of the rates in England and Wales would be saved by the produce of a greater quantity of human food raised by the prong than by the plough.—*M. A. C.*

Egyptian Wheat (Triticum compositum).—I send you the inclosed sample of a small patch of Egyptian Wheat, obtained by dividing and transplanting from 9 grains, so very diminutive and poor, that for a time I thought it useless to put them into the ground. I have beaten out the grain from five ears, and I find in the smallest 70 grains, and in the largest of them 176 grains. I am not a judge of the quality of the grain, but I think it has been somewhat injured by being cut a day or two too early. The straw is about 5 feet in length; the piece I send is cut from the second joint from the root.—*Henry Moule.* [The ear sent is a very fine specimen of the variety.]

Analysis of Onion.—In answer to Mr. Jackson's query as to the mineral ingredients of the Onion, allow me to state that Fourcroy and Vauquelin found in it sulphur, citrate of lime, and phosphate of lime. There is also reason to believe that it contains much muriate of potash.—*G. W. Johnson.*

Preparation of Seed.—I have, this year, a field of Oats, the centre part of which was drill-sown with seed that had been steeped for 24 hours in the contents of a cess-pool (in which the water from the cow-byer, stable, &c. collects), and subsequently sprinkled in the usual way with lime: on one side of this centre portion the corn was sown by the hand, and on the other drilled, the seed being, in both cases unprepared; the result has been that the plants from the prepared seed have not one single blighted, or black head of corn; but on both sides of it, where the seed was unprepared, they abound. The seed was thrashed from the same stack, the land in the same state of culture, and sown the same day.—*F. D. Johnson, Aykleyheads, near Durham.*

Egyptian Barley.—A young friend of mine had six grains of Egyptian Barley given her last spring, which she planted in her little garden about three inches apart. They have tillered greatly, and now the produce amounts to 70 good ears of six-rowed Barley, of about 63 grains each. Call it 60 only, and here are 4200 grains from 6 grains, or 700 for one.—*S. H.*

Potato-crop.—I have read in your Paper the communication of one correspondent who attributes the failure of this crop to the tubers being unripe as one cause, and this I know from experience to be erroneous. About 33 years ago, I lived in a district where a considerable breadth of land was annually planted with early Potatoes for the Manchester market; and about the end of June, when the small Potatoes were not disposable at market, the Potato-growers picked the largest of the small ones out, and threw them on the ground a few days to harden, and to green a little by exposure to sun and air. Finding them after this to answer the purpose of seed well, I adopted the practice, and have ever since saved the seed Potatoes from the earliest and second sorts in this manner, and have not had one failure in the whole time. This year I planted from seed saved this way at various times from the beginning of April till the middle of June, and in all the various plantings, although the shoots of some of the latest had been broken off twice, previous to planting, I have not one in a hundred that has not come.—*J. Jackson.*

Chemical Analysis.—Can you not urge for general adoption what I have suggested here, "that Agricultural Societies should employ a chemist, who, at a certain fixed rate, should analyse soils and manures for

all members of the Society—the member paying one-half of the expense, and the Society the other?"—*A. L. M., Lincoln.* [This is just what we have taken every available opportunity of advocating.]

Produce of Wheat.—At the end of August, 1843, I planted in my garden 32 grains of Wheat, at 6 inches distance, an inch and a half deep; the seed was of the first-rate quality. This seed produced this year 32 plants, having from 10 to 28 stems and ears each; the average number of ears was 16; the average weight of each plant 12 ounces. An acre of land would contain, at 6 inches distance, 174,240 plants; the produce 304,920 oz., or nearly 9,000 lbs., or 320 bushels, or 40 quarters per acre. The expense of sowing would be more than half of the diminished quantity of seed required. I do not wish to state that such a result would be obtained upon a large scale; but I think it is worthy of trial, when we know that the average produce is only 22 quarters per acre, and that it is possible (?) to grow 40: it will be allowed that there is ample scope for improvement. Try a breadth of your fields an inch and a half deep; put 1 grain, and 1 only, in each hole—plant it at 6 or 8 inches distant—be sure to plant good seed—get as much produce as you can, but go for 40 quarters per acre.—*Bath Herald, August 22.*

SOCIETIES.

ROYAL HORTICULTURAL SOCIETY OF ENGLAND.

The Council stood adjourned to Wednesday last, the 4th of September, but no meeting was held on that day, in consequence of the absence of members from town. The adjournment accordingly now stands over the autumn recess, until the 5th of November, when the meetings will be resumed.

Gossip.—Lord Kenyon having announced to the Duke of Richmond, as President of the Society, his intention to give a Prize of Twenty Sovereigns, at the ensuing country meeting at Shrewsbury in 1845, for the best Essay on the subject of Corn as food for cattle, &c., the following schedule of the terms and conditions of that Prize have been received from Philip Pusey, Esq., M.P., Chairman of the Journal Committee:—"Twenty Sovereigns, or a piece of plate of that value, offered by the Rt. Hon. Lord Kenyon, will be given at the Annual Country Meeting of the Royal Agricultural Society, to be held at Shrewsbury in 1845, for the best account of the use of Corn for the food of cattle, horses, or sheep, founded on actual experience. Competitors will be required to state the following points:—

1. The quality of land on which the Corn is grown.
2. The age of the plant when cut.
3. The mode and expense of cutting.
4. The mode and expense of preparing for food.
5. The mode of feeding with the Corn, and the quantity of other food given therewith.

All Essays competing for this Prize to be sent to the Secretary of the Society, No. 12, Hanover-square, London, on or before the 1st of May, 1845."

The Society have received from Mr. Barton a communication on experiments relating to the application of Sulphate of Ammonia to the Growth of Wheat; from Mr. Towers, a further statement of his results from Dibbled Wheats; from M. Hugues, of Paris, a memorial addressed to the President, calling the attention of the Society to his new Drill, and soliciting a practical trial of its merits; from the Hon. Robert H. Clive, M.P., Vice-Chairman of the General Shrewsbury Committee, and Mr. Poole, town-clerk of that borough, communications on the subject of the facilities intended to be afforded in the conveyance of passengers and stock to the Shrewsbury Meeting, and the preparation of the 20 acres of light and 20 acres of heavy land, in the immediate vicinity of the town, for the trial of implements; from the Rev. Dr. Buckland, a copy of the Address delivered by him at the Southampton Meeting to the Mayor and Members of the Artesian Well Committee; from Mr. Hillyard, of Thorpelands, near Northampton, a copy of the new and enlarged edition of his work on Practical Farming and Grazing, dedicated, by special permission, to H.R.H. Prince Albert; from Mr. Morton and Mr. Atkinson, communications on a proposed reduction of the meteorological observations made extensively throughout the country, under the direction of Mr. Morton, with a view to ascertain the practical value of the rules for predicting changes of weather, contained in the Essays competing for the Society's Prize of the Gold Medal; from Mr. Wyon, R.A.'s Chief Medallist, announcing the completion of the medals struck at the Royal Mint for the Exhibitors at the Southampton meeting, to whom they had been awarded; from Mr. Shaw, copies of the "Farmers' Magazine;" from Mr. Youatt, copies of the "Veterinarian;" from the Royal Asiatic Society, the last Part of their printed proceedings containing notes on Indian Agriculture; from the Royal Agricultural Society of Ireland, a copy of the Essays on the Cultivation of the Sugar-cane, written in competition for the Earl of Elgin's Prize of 100*l.*; from Mr. Mann, a copy of his work, descriptive of the Bee and Frame Hive invented by him; from Mr. Oakes, a copy of the Prizes of the South-East Kent Association, for the encouragement of industrious and meritorious Agricultural Labourers; from Mr. Allen, copies of the "American Agriculturist;" from Mr. Lillie, a copy of his Agricultural Tour in Ireland; from Mr. Peter Hulme, of Philadelphia, a most interesting collection of American Agricultural publications, presented to the Society by Mr. Edmund Ruffin, of Virginia; and from Mr. Palmer, of Axminster, the 24 Number of the "Western Agriculturist," containing the continuation of the Rev. W. D. Conybeare's contribution on Agricultural Chemistry.

FARMERS' CLUBS.

Gloucester.—The following paper on The Best and Cheapest Means of Carrying Stock through Winter during Scarcity of Hay and Roots, was read by Mr. Gyde, of Painswick, at the late meeting of this Club.

My object is to draw attention to those substances produced on the farm, which are capable of being substituted for hay and roots as food for cattle, and to point out the quantities which practice, as well as science, would indicate as equivalent to good meadow hay, in feeding properties. In a paper which I formerly read before you, I showed you how the doctrines of Animal Physiology might be applied to the feeding of cattle. It will be necessary to briefly review the leading points then alluded to. The body of an animal may be divided into three distinct classes of matter, namely, the muscular portion, including all those structures containing nitrogen; the fatty portion, which is devoid of nitrogen; and the earthy and saline portion, consisting of saline matter and bone. Until within the last few years physiologists supposed that the food underwent, in the stomach of the animal, some change during the process of digestion; that the stomach, in fact, had the power of making out of the Grass and roots taken as food, those substances of which its body was composed; this power they termed the *vis vitæ*. But the investigations of modern chemists show that no chemical alteration takes place in the constituents of substances during digestion, but that the elements of the animal body are prepared and elaborated in the vegetable. In the vegetable, we find a principle identical in composition with the muscle of the animal, and known as gluten, vegetable albumen, and casein. We have carbon for combustion in the lungs, to keep up animal heat, supplied in the starch, gum, and sugar of the plant; and we have also oil for the purpose of forming fat, with earthy and saline matter for the bone and blood; these substances are all that the animal requires, of which to build up its structure. This being admitted, it only becomes necessary to ascertain the amount of those constituents of the body daily thrown out of the system by the various channels of waste, to enable us to point out, with some truth, the quantities of each substance necessary to replace the daily loss in the animal economy; or, in other words, to say how much gluten and starch of the vegetable will be required to supply the waste of muscular and other constituents of the animal. Practice says that an ox requires 2 per cent. of his live weight in hay per day; if he works, he requires 2½ per cent.: a milch-cow, 3 per cent.; a fatting ox, 5 per cent. at first, 4½ per cent. when half fat, and only 4 per cent. when fat; or 4½ on an average. Sheep grown up, take 3½ per cent. of their weight in hay per day to keep in store condition; and growing animals should never be stinted. Science has ascertained, by the most carefully-conducted experiments, that a full-grown man voids, in his urine alone, about ½ oz. of nitrogen every 24 hours, and that a small quantity passes off in the solid excretions and by the skin. The carbon consumed by the lungs to keep up animal heat, averages about 11 ounces in the 24 hours; and the saline and earthy matter voided is in direct proportion to the amount taken in the food. It appears that the food consumed by an ox, horse, or sheep, is in direct proportion to their weights when compared with man. Hence we find that an ox would require, to replace the daily loss of muscular fibre, from 20 to 24 ounces of dry gluten or vegetable albumen, which would be supplied in

120 lbs. of Turnips	17 lbs. of Clover-hay
118 lbs. of Wheat-straw	12 lbs. of Pea-straw
75 lbs. of Carrots	12 lbs. of Barley
67 lbs. of Potatoes	10 lbs. of Oats.
20 lbs. of Meadow-hay	5 lbs. of Beans

The consumption of carbon by a cow amounts to 70 ounces; and that of a horse to 89 ounces on an average in 24 hours, which is supplied by the starch, gum, and sugar of the food consumed. Fatty matter is required to supply the fat of the animal, and this also exists more or less abundantly in all vegetable food. Earthy phosphates and saline substances are found in the inorganic portion of all vegetables, and these supply the daily waste of bone, &c., of the body. Hence we see that the animal requires a variety of substances, all of which exist in greater or less abundance in its daily food. In one article of diet we find one substance in abundance, and in another other substances. Thus, farinaceous seeds are made up of starch and vegetable albumen or gluten, with much fatty matter and phosphates. In the oily seeds, as Lint-seed, Hemp-seed, &c., the predominating ingredient is oil, and matter called casein, which is capable of supplying muscle. In the Potato, starch is the ingredient in greatest quantity, combined with vegetable albumen. In the Turnip, sugar and gum supply the place of starch; and in the Grasses and Clovers, woody fibre with albumen, a little starch, and much saline and earthy matter. From a knowledge of these facts, with the assistance of the accompanying Tables, which show the quantities of water, woody fibre, starch or gum, gluten, albumen or casein, fatty matter, and saline matter, contained in 100 lbs. of most of the products of the farm (see Table, No. 1), and the amount of these constituents contained in the produce per acre (see Table, No. 2), the judicious feeder will be enabled so to mix those crops which he has at his command, as to render everything available as food. He may keep his stock in condition by supplying with gluten, starch, and saline matter, the natural waste of the body, or he may fatten, by increasing the amount of food, particularly those articles containing much fat; always remembering that a mixture of food is better than confining to one article of diet, since it rarely occurs that one contains all those substances required by the animal, and without which healthy and vigorous life cannot be sustained for any considerable time.

TABLE I.—Showing the Composition of 100 parts of the more commonly cultivated crops.

—	Water.	Woody Fibre.	Starch, Gum, or Sugar.	Gluten or Albumen.	Fatty Matter.	Saline Matter.
Wheat	16	15	65	10 to 15	2 to 4	2.0
Barley	13	13	70	12	2.5	2.0
Oats	15	10	42	14.5	4.5	2.5
Rye	13	15	60	12	3.0	1.0
Indian Corn	12	15	70	7	5	1.0
Beans	14	15	40	25	2	3.0
Peas	13	14	50	24	4	2.0
Potatoes	75	2	17	2.25	0.2	1
Turnips	85	3	10	1	0	1
Carrots	85	4	10	1.5	0	1
Meadow Hay	14	28	30	7	4 to 6	8 to 10
Clover Hay	14	25	40	14.5	2.0	3
Pea Straw	10 to 15	25	45	12.3	4.5	5
Oat Straw	12	25	37	4.7	2	2
Wheat Straw	15 to 18	30	30	3.5	2	2
Barley Straw	do.	30	30	3.5	3	3
Rye Straw	do.	30	35	4.5	3	3
Indian Corn Straw	12	25	50	3.0	2.7	4

TABLE II.—Average Produce of Nutritive Matter of different kinds from an acre of the usually cultivated crops.

—	Gross Produce.	Husk or Woody Fibre.	Starch, Gum, Sugar, &c.	Gluten, Albumen, &c.	Fatty Matter.	Saline Matter.
	bush.	lbs.	lbs.	lbs.	lbs.	lbs.
Wheat	25	1500	225	150 to 220	30 to 60	30
—	30	1800	270	180 to 260	36 to 72	36
Barley	35	1800	970	245	45	36
—	40	2100	315	280	52	42
Oats	40	1700	340	230	95	50
—	50	2100	420	280	110	75
Rye	25	1200	180	120	40	12
—	30	1500	150	200	48	18
Indian Corn	30	1800	270	210	90 to 170	27
Buckwheat	30	1300	320	180	5	21
Beans	25	1500	150	450	32	48
—	30	1900	190	530	36	57
Peas	25	1500	150	300	45	45
	tons.					
Potatoes	6	12,500	675	1620	45	120
—	12	27,000	1350	3240	90	210
Turnips	20	45,000	1350	4500	?	400
—	30	67,000	2010	6700	?	600
Carrots	25	50,000	1500	3500	1750	500
Meadow Hay	1½	3400	1020	1360	70 to 170	220
Clover Hay	2	4500	1120	1800	135 to 225	400
Pea Straw	—	3700	675	1200	40	135
Wheat Straw	—	3000	1500	900	15	150
—	—	3600	1800	1080	18	180
Oat Straw	—	3700	1210	958	30	135
—	—	3500	1470	1190	38	175
Barley Straw	—	2100	1050	630	15	105
—	—	2500	1250	750	20	125
Rye Straw	—	4800	1800	1500	20	1200
—	—	4800	2300	1800	24	240

TABLE III.—Showing the relative value of different articles of Food, as ascertained by practice; good meadow Hay being taken at 100.

Hay	100	Carrots	250 to 300
Clover Hay	80 to 100	Turnips	300
Green Clover	450 to 500	Cabbage	200 to 300
Wheat Straw	400 to 500	Peas and Beans	40 to 50
Barley Straw	200 to 400	Wheat	50 to 60
Oat Straw	200 to 400	Barley	50 to 60
Pea Straw	100 to 150	Oats	40 to 70
Potatoes	300	Indian Corn	50
Old Potatoes	400	Oil Cake	30 to 40

The above Table represents the average results from a number of experiments made in France and Holland.

TABLE IV.—Showing the amount of different articles of food of equal value as indicated by theory; good meadow Hay, being taken at 100.

Hay	100	Turnips	600
Clover Hay	90	Carrots	350
Vetch Hay	95	Cabbage	500 to 600
Wheat Straw	320	Peas and Beans	30 to 35
Barley Straw	350	Wheat	95
Oat Straw	450	Barley	60
Pea Straw	60	Oats	80
Potatoes	300	Indian Corn	60
Old Potatoes	400	Oil-cake	35

This Table represents the supposed value as food of the different articles, calculated from the amount of nutritive or fattening principle, they are capable of yielding to the animal.

Reprints.

The Alpaca, its Naturalization in the British Isles considered as a National Benefit, and as an Object of immediate Utility to the Farmer and Manufacturer.

By William Walton. Blackwood & Sons, Edinburgh.

For most of our cultivated plants, and indeed for many of our domestic animals also, we are indebted to other countries. With regard to the former, the history of their introduction is in many cases well established in detail; but it is so long since the latest of them, the Potato, the Turnip, or the Mangold Wurzel or Carrot, for instance, was first cultivated in our country, that farmers have fairly settled down into the belief that they must make the best of the subjects they have on hand, for that Nature has nothing further in her stores suited, in our climate, for the wants of man or beast. And with regard to the latter, the introduction of the very latest dates so much further back, that we must estimate the prejudice as stronger still which scouts at the idea of any further addition being made to our stock of domestic animals from the store of other countries. Of course, in speaking of this universal prejudice, we allude simply to the generality of those who at present occupy and cultivate our soil, and who form their opinion probably without very well knowing the grounds upon which it rests.

There is every probability, notwithstanding the general notion to the contrary, that a useful addition will shortly

be made to our stock of domestic animals. The Alpaca, from the experience of it which has been compiled from various quarters in this country by Mr. Walton, really seems likely hereafter to play an important part in the stock-farming of the hilly districts of the kingdom. This animal is indigenous in the mountainous regions of Peru, where two domesticated species of it occur. The one receiving the name of Llama is used as a beast of burden; the other—the Alpaca—to which we at present allude, is a wool-bearing animal, and of it large flocks were formerly possessed by the Incas, sovereigns in former days of that country, and by other wealthy inhabitants of it. The climate of the districts in which this animal flourishes is described by Mr. Walton as follows:—

"The woolly native possess a hardiness of constitution, and a goodness of structure, admirably well adapted to the nature of their birthplace. There, during half the year, snow and hail fall incessantly, whilst in the higher regions, as before noticed, nearly every night the thermometer falls below the freezing point, and the peaks, consequently, are constantly covered with an accumulation of ice. The wet season succeeds," &c.

On the applicability of the Alpaca to our soil and circumstances we quote the following remarks:—

"The hardy nature and contented disposition of the Alpaca, cause it to adapt itself to almost any soil or situation, provided the heat is not oppressive, and the air pure. The best proof of its hardiness is its power to endure cold, damp, hunger, and thirst, vicissitudes to which it is constantly exposed on its native mountains; while its gentle and docile qualities are evinced in its general habits of affection towards its keeper. No animal in the creation is less affected by the changes of climate and food, nor is there any one to be found more easily domiciliated than this. It fares well while feeding below the snowy mantle which envelopes the summits, and for several months in the year clothes the sides of the Andes. It ascends the rugged and rarely trodden mountain path with perfect safety, sometimes climbing the slippery crag in search of food, and at others instinctively seeking it on the heath, or in rocky dells shattered by the wintry storm; at the same time that, when descending, it habituates itself to the wet and dreary ranges on the lowlands, so long as it is not exposed to the intense rays of the sun.

"Many of our northern hills would try the constitution of any sheep, and yet there the weather is never so inclement or so variable as on the Cordilleras of Peru. With so many advantages, why then shall not the Alpaca have an opportunity of competing with the black-faced sheep, the only breed that can exist in those wild and inhospitable lands! Of the two, the stranger would fare best on scanty and scattered food, at the same time affording to the owner a far better remuneration."

The Alpaca wool is at present used largely in British manufactures. Mr. Walton estimates the quantity hitherto consumed since its introduction in 1832 at 12,000,000 lbs. The price of it varies from 1*s.* 8*d.* to 2*s.* 6*d.* per lb., and the average weight of the fleece may be put at 10 lbs. Were the animal fairly naturalised on some of our bleakest hill districts, such land would soon increase in value from the increased worth of its annual produce in Alpaca wool. And it appears from the experience of several gentlemen who have small flocks, that, when its habits shall be thoroughly understood, little difficulty will be experienced in doing so. The following is a statement by Mr. Stirling, of Craigbarnet Place, Lennoxtown, Glasgow—a gentleman better qualified to speak on the subject than any one we could name:—

"I can have no doubt that, when the subject is better understood, the animal itself better known, and a more expeditious method contrived to bring them to Britain, we shall have thousands of them. When known, their docility, their temperate habits, their hardiness, and, I may add, their easy keep, will ere long bring them into general notice. I can answer, without the fear of being contradicted, that they will thrive and breed in Scotland, equal, if not superior to our native blackfaced sheep."

To those who would laugh at the idea of bringing over here, and domesticating on our hills, a Peruvian camel or sheep—for the Alpaca has properties in common with both—we would point to Australia as a country which not many years ago possessed no quadruped but the kangaroo, and yet, notwithstanding its many peculiarities of climate, is now thickly peopled with our sheep and oxen. But the question must not be left to generalities of this kind—the experience of a few short years on the larger scale, which extended importations will enable, will determine it satisfactorily; and if, as in all probability will be the case, the Alpaca should become one of our domestic animals, the best thanks of the country will be due to Mr. Walton for the persevering energy with which he has pressed the subject on public attention. His book is an exceedingly interesting and neatly got up little volume, and will, we doubt not, prove a useful publication.

Miscellaneous.

Extraordinary Produce.—A correspondent says—In the course of last week, as I was taking in some Peas for seed, curiosity induced me to count the number produced from several Peas separately; and among others it gives you the following as a sample:—I found one Pea had produced 94 pods, containing altogether 544 Peas; another 99 pods, containing 868 Peas; a third had produced 102 pods, containing 418 Peas; and a fifth had produced 105 pods, containing altogether 432 Peas. The lengths of the haulm, measured from the ground upwards, are as follow—first, 2 ft. 2 in.; second, 2 ft. 10 in.; third, 2 ft. 6 in.; and fourth, 3 ft.—*Gloucester Journal.*

Notices to Correspondents.

Books.—*Tyro.*—There are many good ones. De La Beche's "Manual;" Lyell's "Elements;" Phillip's "Guide," and his "Treatise" in Lardner's Cyclopædia; Tennent's "Practical Geology and Mineralogy." We have been informed that Prof. Johnston recommends the last to his class.

Bone-dust.—*Querist.*—Apply 3 qrs. of ordinary bone-dust, broadcast, per acre, on your pasture-land, now. We do not know how to destroy wireworms. Work your land thoroughly; lay it well open to the frost; and in your spring cultivation, use Crosskill's clod-crusher, or some equally efficient presser. Perhaps that may help you. See Mr. Childs's Paper on the wireworm, in the English Agricultural Society's Journal.

Dibbling Wheat.—*Constant Reader.*—If you intend to adopt this system on the large scale, use Newberry's dibbling-machine. The seed you will save by its use on 100 acres will pay for it the first year. But if your object is a merely experimental one, a simple dibble used in some places will answer your purpose; it consists of an inverted T with pendant dibbles about 2 inches long at intervals of 8 inches. This makes, perhaps, six holes at each blow, in each of which two grains should be placed—one to grow and one for the birds, if they choose to have it. If you will forward your address, we will publish the facts you state. To decompose common salt, shake caustic lime with a saturated brine, and leave it spread out for a week. The carbonate of lime which is at first formed, decomposes the muriate of soda. Carbonate of soda and muriate of lime—an extremely deliquescent salt—being the resultant compounds.

Distemper.—*T. D.*—Pleuro-Pneumonia only attacks horned cattle. Your dogs have probably got the distemper.—*W. C. S.*

Drainage.—*T. T.*—Many thanks: your views are, we believe, quite correct, and we shall give them prominence as soon as possible.

Draining.—*D. E. F.*—Many thanks for your offer, which we gladly accept.

Flax Dodder.—*B. B. H.*—You must cut it out of your Clovers, gather it in a heap carefully, and burn it. We shall, probably, publish next week for our agricultural readers, the substance of communications on this subject, in the *Gardeners' Chronicle* last year.

Indices of Well-drained Land.—*Querist.*—Land may be well drained though it dries patchy in spring; this may be owing to a variability in the composition of the soil, or to the former existence of occasional peat deposits in the field from stagnant water; it may be well drained, though after heavy rains you find at the lower ends of the furrows the sands and silt washed down and deposited, evidencing a flow of water over the surface; this will often occur after showers on land which is thoroughly dry, either naturally or artificially; it may be drained sufficiently, though water should stand twelve hours after rain in the foot-marks of horses; in ordinary clay soils, the least puddling or breaking of the surface will cause the retention of water on the surface, even at the very edge of a ditch; and land may be sufficiently drained though even twelve months after the completion of the operation, Rushes and Sedges be found in the Grass: their destruction by drainage is a work of years, not of months. But we doubt that it cannot be considered sufficiently drained if a hole 2 ft. deep near drains 30 inches deep retain the water for many days after rain. You must, if this be the case, adopt some measure in dry weather for loosening the subsoil—by subsoil ploughing, for instance. On land such as you describe, 6 yards is a sufficient interval between drains 30 inches deep, to effect its drainage, *i. e.* provided you adopt all possible means of loosening the subsoil after the drains have been some time in action.

Kelp and Guano.—*Subscriber.*—The addition of finely powdered kelp to guano would be advantageous, provided no caustic alkali existed in it. Mix equal quantities. The best mode of using graves for Potatoes or Turnips, though we never before heard of such an application, is, probably, to let it ferment together in a heap covered by fresh mould, and apply probably 4 or 5 cwt. per acre in the drills.

Mangold Wurzel.—*Subscriber.*—We think that the food for cattle afforded by the under leaves of this plant can rarely be worth sufficient to balance the injury done to the plants by taking them off.

Pipe Drain-tiles.—*J. B.*—The publication of the information you require would subject us to advertisement duty. We cannot recommend tradesmen. Mr. Fetherige said at Durham the other day, that you could make them on your own land for 15*s.* a thousand. You had better apply to him about it.

Preparation for Grass.—*Admirer.*—Do not be afraid of spoiling your Grass by tearing it to pieces. A strong harrow will not be sufficiently efficient—you had better use a scarifier and work it to and fro thoroughly, then sow your seeds, and roll with a heavy roller. Do it in wet weather if possible. Much the best plan is to break up your land if it be foul; but this you say you cannot do. Lawson recommends for dry gravelly situations which resist a sward from all ordinary means, Agrostis vulgaris 6 lbs., Festuca rubra 3 lbs., and Poa pratensis 6 lbs. per acre.

Report of Discussion on Potato Failure.—*W. E.*—Thank you: you will see that you have been anticipated.

Tanks, &c.—*A Subscriber.*—Make them circular, basin-shaped at bottom, and cover them over with a flat dome. A depth of 8 ft. and width of 12 will be a convenient size for a stable of 6 or 8 horses. The liquid should have sulphuric acid or sulphate of iron added to it occasionally; and may be removed by a pump and spread directly on the land, or indirectly by making dung heaps. We know of clay lands on which farmers use Cone Wheat only, and on comparatively light soils Red-straw Lammas is used. From experience on both clay and sand we can recommend the varieties advertised in our columns by Mr. Morton.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Sept. 2.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	0d	to 3s	0	Best Downs & Half-breds	3s	10 to 4s 0
Best Short Horns	3	6	3	10	Best, Long-wools	3	6 3 10
Second quality Beasts	3	0	3	2	Ewes and second quality	3	0 3 4
Calves	3	4	4	0	Lambs	3	8 4 4
Pigs	3	4	4	0			

Beasts, 2811; Sheep and Lambs, 20,240; Calves, 118; Pigs, 200.

We have a large increase in the supply of Beasts to-day, occasioned, in some measure, by several of the freshest Beasts being draughted from the droves intended for Barnet Fair and put into this market; we have not, however, too many of the best qualities in other; still, the prices are lower; nothing can be said to make more than 4*s* per 8 lbs—indeed, only the choicest realise that sum; a very great many remain unsold; 3*s* 10*d* per 8 lbs is also an extreme price for short horns. Our supply of Sheep and Lambs is nearly as large, and the trade worse, especially for big Sheep, owing to the hot weather, and the lower and middling quality are very unsaleable; only the best quality of moderate size maintain their price; these are still worth 4*s* 4*d* per 8 lbs. Veal is lower, and a very heavy trade. Pork-trade is also rather worse, owing to the hot weather.

Friday, Sept. 6.

There is scarcely anything doing in the Beast-market to-day, although the supply of fresh meat is not very large; what are sold make fully 2*s* per 8 lbs less than Monday—Scots, &c., at one time 3*s* 10*d*, and Short-horns, at 4*s* per 8 lbs. The very hot weather during the week has produced a great deal of meat, and prevented the Butchers killing what they have on hand, consequently there is scarcely any demand to-day for either Beasts or Sheep. The best Downs cannot be quoted at more than 4*s* 10*d*, and Long-wools 4*s* 2*d* per 8 lbs. Veal trade is rather improved—a fine Calf is worth 5*s* per 8 lbs. Pork is very heavy.

Beasts, 653; Sheep and Lambs, 2110; Calves, 209; Pigs, 230.

HOPS, Friday, Sept. 6.

Our Market remains firm, and the duty from 180,000*l.* to 220,000*l.* A few more pockets of the new crop have arrived, but being so very inferior, we can as yet form no opinion as to what the quality of the growth may be when it arrives at maturity.

Farebrother & Ellis, Hop-Factors.

COVENT GARDEN, Sept. 7.—Most articles have been abundantly supplied during the week. The demand for some things has, however, by no means equalled the supply. Pine Apples are good and plentiful, as are also Grapes. The supply of Greengage and Orleans Plums is a little diminished, but other kinds are sufficient for the demand. Peaches and Nectarines of good quality are abundant; Apricots are becoming scarce. A few good samples of Morello Cherries are in the market, but there is little demand for them. Apples of many varieties are plentiful. Among Pears are fine specimens of Williams's Bon Chretien. The supply of Filberts is increasing. Of Melons, three is sufficient for the demand, and Cucumbers are good and plentiful. Tomatoes are somewhat reduced in price. Among Vegetables, Cauliflowers have not altered in price since our last Report; Broccoli is becoming more abundant, and Cabbages of excellent quality are sufficient for the demand. Carrots and Turnips are good and plentiful. Owing to the favourable weather that we have had, Celery is unusually good in quality; it is quite clean, and free from rot. Endive, Lettuces, and other kinds of Salading are good and plentiful. Cut Flowers chiefly consist of Gladiolus psittacinus, Gardenia radicans, Combretum purpureum, Fuchsias, Pelargoniums, Lobelias, Heaths, Camellias, Verbenas, Roses, Carnations, and Picotees.

FRUIT.

Pine Apple, per lb., 3*s* to 6*s*		Morello Cherries, per half-sv., 1*s* 6*d* to 2*s* 6*d*	
Grapes, Hothouse, p. lb., 1*s* to 3*s* 6*d*		Currants, per half-sieve, 2*s* 6*d* to 3*s* 6*d*	
— Almeria, per lb., 1*s* to 2*s*		Filberts, per 100 lbs., 30*s* to 70*s*	
Melons, each, 1*s* to 3*s*		Oranges, per dozen, 1*s* to 2*s*	
Peaches, per dozen, 1*s* to 6*s*		— per 100, 6*s* to 10*s*	
Nectarines, per doz., 1*s* to 4*s*		— bitter, per 100, 10*s* to 15*s*	
Apricots, per doz., 2*s* to 3*s*		Lemons, per dozen, 1*s* to 2*s*	
Plums, per half-sieve, 2*s* 6*d* to 3*s*		— per 100, 8*s* to 16*s*	
— Orleans, per half-sv., 1*s* to 2*s*		Almonds, per peck, 4*s*	
— Green Gages, 2*s* to 3*s*		Sweet Almonds, per lb., 2*s* 6*d*	
Figs, per doz., 2*s* to 4*s*		Nuts, Barcelona, 12*s*	
Apples, Dess., per bush., 2*s* 6*d* to 4*s*		— Brazil, 16*s*	
— Kitchen, 2*s* to 3*s*		— Cob, 14*s*	
Pears, Dess., per half-sv., 2*s* to 4*s*			

VEGETABLES.

Cabbages, per dozen, 6*d* to 1*s* 6*d*		Leeks, per bunch, 2*d* to 4*d*	
Cauliflowers, per doz., 2*s* to 3*s*		Onions, per bunch, 2*d* to 4*d*	
Broccoli, per bundle, 6*d* to 1*s*		— large, per bushel, 3*s* to 4*s*	
Sprouts, per half-sieve, 6*d* to 9*d*		Shallots, per lb., 4*d* to 6*d*	
Sorrel, per half-sieve, 6*d* to 9*d*		Cucumbers, per half-sv., 3*s* to 4*s* 6*d*	
Artichokes, per doz., 1*s* to 2*s*		Capsicums, Pkts, per 100, 4*s* to 8*s*	
French Beans, p. half-sv., 1*s* to 2*s*		Tomatoes, per 100, 1*s* to 2*s*	
Potatoes, per cwt., 2*s* to 3*s*		Radishes, per dozen, 2*d* to 3*d*	
Turnips, per doz. bch., 1*s* 6*d* to 2*s*		Lettuces, per score, 2*d* to 3*d*	
Peas, per bushel sieve, 3*s* 6*d* to 4*s*		Celery, per bundle, 6*d* to 1*s* 6*d*	
Red Beet, per doz., 2*d* to 1*s* 6*d*		Celery, White, per bunch, 6*d* to 1*s* 6*d*	
Carrots, per doz. bchs., 2*s* to 3*s*		— Red, per bunch, 1*s* to 1*s* 6*d*	
Basil, per bunch, 2*d* to 3*d*		Endive, per score, 1*s* to 1*s* 6*d*	
Horse Radish, per bundle, 4*s* to 7*s*		Mushrooms, per pottle, 1*s* 6*d* to 2*s* 6*d*	
Savory, per bunch, 2*d* to 3*d*		Small Salads, per punnet, 2*d* to 3*d*	
Cucumbers, Frame, each, 6*d* to 9*d*		Watercress, p. 12 sm. bun., 2*d* to 3*d*	
— Ridge, dozen, 2*s* to 3*s* 6*d*		Parsley, per bunch, 2*d* to 3*d*	
Vegetable Marrow, per doz., 6*d* to 1*s*		Garlic, per bunch, 2*d* to 3*d*	
Spinach, per sieve, 1*s* 6*d* to 2*s*		Mint, per bunch, 2*d* to 3*d*	
Leeks, per bun., 2*d* to 3*d*		Marjoram, per bunch, 2*d* to 3*d*	
Chills, per 100, 2*d* to 1*s* 6*d*		Chervil, per punnet, 2*d* to 3*d*	

MARK-LANE, Monday, Sept. 9.

The accounts from all parts of the Kingdom this morning represent the weather during the past week as having been remarkably fine for the harvest, which is progressing rapidly. This morning the supply of English Wheat was moderate, the quality and condition generally bad, and sales could only be effected at a decline of 2*s.* to 4*s.* per qr. The demand for Foreign was very limited, and we reduce our quotations 1*s.* per qr.—We had a few samples of new Barley at Market, the quality was various, and the value must be noted 26*s.* to 28*s.* per qr.; one very superior parcel from Kent obtained 40*s.* The sale of Foreign was not large, but its late value is supported.—Beans, as also Grey and Maple Peas, are 1*s.* dearer; White are little inquired after.—Oats are in good request, and in some instances a trifling advance is obtained.—We reduce our quotations of the best Mustard 1*s.* per bushel; inferior and damp samples are very unsaleable at a greater decline.

BRITISH, PER IMPERIAL QUARTER.		*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk	White	40	50	Red	42	48
—— Norfolk, Lincolnshire, and Yorkshire	——	——	——	White	——	——
Barley, Malting and distilling 27*s* to 30*s*	Chevalier	31	32	Grind.	25	30
Oats, Lincolnshire and Yorkshire	Potatoe	19	21	Feed	19	20
—— Northumberland and Scotch	——	19	21	Potato	20	22
—— Irish	——	17	20	Potato	19	22
Malt, pale, ship		56	58			
—— Suffolk and Essex		54	60			
Rye		30	32			
Beans, Mazagan, old and new		29	32	Tick	31	34
—— Pigeon, Heligoland		34	36	Winds.	——	Longpod ——
Peas, White		32	36	Maple	30	34
—— Grey		27	31			

ARRIVALS IN THE BRITISH PORTS LAST WEEK.

Flour.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
English . 5584 Sks.	4328	11	62	—	332	604
Irish . — „	—	752	15483	—	—	—
Foreign . — „ 1035	11667	26218	6970	210	1700	2357

Friday, Sept. 6.

The arrivals of all Corn since Monday have been moderate, and the value of English Wheat sometimes to have a downward tendency. The attendance at Market being very small, scarcely any business in Foreign has been transacted, and prices must be considered nominally unaltered.—Barley is a limited sale at late prices.—Beans and Peas remain as on Monday.—The Oat-trade is heavy, and barely supports our late rates.

ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English	4520	60	780	5170 Sks.
Irish	—	—	2092	—
Foreign	2770	3360	1020	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July	26 per Quarter	39*s* 6*d*	34*s* 5*d*	22*s* 2*d*	32*s* 2*d*	37*s* 1*d*	37*s* 4*d*
Aug.	2	41 6	34 6	23 3	37 6	34 7	36 5
—	9	40 10	34 6	23 1	40 9	35 0	36 2
—	16	40 7	34 6	23 0	35 11	35 7	33 7
—	23	40 4	33 3	23 4	37 6	35 10	36 0
—	30	40 11	34 11	23 7	34 3	37 0	33 10
6 weeks' Aggreg. Aver.		40 6	34 3	23 4	35 8	35 10	34 10
Duties on Foreign Grain		20 4	6 9	5 0	7 6	7 6	8 6

SEEDS, Sept. 2.

Canary	per qr	52*s*	to 56*s*	Linseed Cake, Foreign, p. ton		6*l*	to 8*l*
Carraway	per cwt	34	38	Mustard, White	p. bush.	5*s*	10*s*
Clover, Red, English		—	—	— Superfine	„	10	12
—— Foreign		—	—	— Brown	„	10	12
—— White, English		—	—	Rapeseed, English, per last		22*l*	25*l*
—— Foreign		—	—	Rape Cakes	per ton	—	—
Coriander		12	16	Saintfoin		—	—
Hempseed	per last	38	40	Tares, Essex, winter	p. bush.	5	7
Linseed	per qr	—	—	—— Foreign		—	—
—— English		—	—	Trefoil	per cwt	—	—
—— Cakes, Eng. per 1000		10*l*	11*l*	Turnip (too variable for quotation).			

Kingsford and Lay.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 5.

Prime Upland Hay	100*s* to 110*s*	Clover	85*s* to 110*s*	Straw	30*s* to 36*s*
Inferior „	90 84	„ New	— —		
New Hay „	91 96				

James Cooper, Salesman.

CUMBERLAND MARKET, Sept. 5.

Superior Old Hay	100*s* to 110*s*	Superior Clover	100*s* to 120*s*		
Inferior „	90 100	Inferior „	70 100	Straw	30*s* to 38*s*
New Hay „	90 105	New Clover	— —		

Joshua Baker, Hay Salesman.

WOOL.—British, Friday, Sept. 6.

Our English Wool Market continues in the same state as last reported. Our advices from Bristol report the Fair as having been heavy; the transactions in Long Wools were limited, but prices fully equal to our late quotations, and holders evinced no disposition to give way.

	per lb.			per lb.
Long-wooled Washers	1*s* 0*d*	to 1*s* 1*d*	Southdown Hoggits	1*s* 1*d* to 1*s* 2*d*
Do. Hoggits	1 1	1 2	East Flocces	1 1 1 2
South-down Fleeces	1 0	1 1		

James Penney, Wool Broker.

TO GARDENERS, NURSERYMEN, AND OTHERS.

TO BE LET, with immediate possession, within 20 miles of London, a small NURSERY, and PUBLIC-HOUSE doing a good business. The Nursery is well stocked with choicest American Shrubs, Fruit, and other Trees; is situated within a few minutes' walk of a railway station. Every particular can be procured by application to Mr. KENNAN, 4, Great Russell-street, Covent Garden; and Mr. NEAL, Nurseryman, Wandsworth Common. No person without capital need apply.

NURSERY TO BE LET.

TO BE LET, with immediate possession, an Excellent COTTAGE and NURSERY GROUNDS, containing about 8 acres well stocked with a Miscellaneous Collection of Standard and other Rose-trees, Evergreens, &c. The above Stock to be purchased at a fair valuation. It is situated in the vicinity of Croydon, 9 miles from the Bridges, and the soil is extremely well adapted to the growth of all kinds of Nursery Stock. Application to be made to Mr. BARRY, Bedford Nursery, Hampstead road; and to Mr. WILLIS, Rutland, New-road, Croydon, near the Railway-station.

VERY ELIGIBLE FARM.

TO BE LET on LEASE, from Michaelmas next, Forest Lodge (otherwise Llowood), six miles from Brecon, and 16 from Merthyr; containing 700 Acres of Land of the best quality, and in excellent condition. It has a Threshing machine and a Corn and Bone-mill, all worked by water; extensive Barns and Cattle-sheds, a very large Piggery, a Steaming-house, Liquid Manure Tank, and all requisites for the scientific cultivation of the Farm. An excellent Sheep-walk of 700 acres can be attached, if desired. The whole is well situated as to roads.—Apply to Mr. DRAYCOTT, Glanusk, Lenny Bridge, Brecon; or to Mr. LAWES, Basset Down House, Swindon.

FARMS.

TO BE LET, together or separate, at Michaelmas, next, two advantageous FARMS of 800 acres (more or less) of Grass and Arable Land, with a Sheep Walk of 150 acres. For further particulars, inquire of Mr. DANCE, Eynsham, Oxfordshire.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

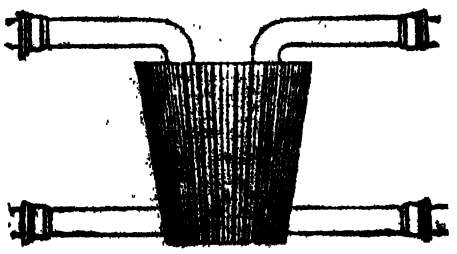
D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also contract in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 180, FLEET STREET, LONDON.



BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.		Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in.	£ s.	s.	s. d.	s. d.	s. d.		
10	1 5	20	7 6	6 6	2 6	30 feet.	12 to 20
Ribbed Boiler.							
10	2 2	20	12 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	30	12 6	7 6	2 6	80 to 125 feet.	40 to 65
14	3 10	30	17 6	9 6	4 0	150 to 250 feet.	65 to 100
18	5 5	42	25 0	8 6	5 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24	8 15	50	35 0	8 6	7 6	600 to 800 feet.	

If 3 inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

CONICAL BOILERS.—The Boilers invented by JOHN LOUDON, Esq., are made of several sizes, and may be obtained of JOHN SEWARD, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware-road; Rollinson's, Tooting; Foster's, Plymouth; The Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's Park.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that their Manufactory in New Park st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

GYPSUM, &c.—Pure Gypsum (Sulphate of Lime) for Compost Heaps, Urine Tanks, Stables, &c.; also Sulphuric Acid, Guano (foreign and Potter's), Rape Cake and Rape Dust, and all other Manures, may be had of the Undersigned.

Synopsis of Prices, and mode of use, on application.

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The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

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A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, Sept. 7, 1844:—

Bones . .	p. ton £4 10s. 0d	Nit. of Potash	p. cwt. £1 4s. 6d
,, crushed	£5. 10s. to 6 0 0	Oil of Vitriol, or Sulph. acid . .	p. lb. 0 0 1
,, calcined . .	7 0 0	Rape Cakes .	p. ton 4 15 0
Carbonate of ammonia . .	p. cwt. 2 15 0	Salts, Epsom	,, 9 0 0
Guano, Peruvian	p. ton 10 0 0	,, Glauber	,, 7 0 0
,, Ichaboe	,, 6 0 0	Sulphate of Ammonia, per cwt., 16s. to	0 17 0
Gypsum . .	,, 2 0 0		
Nitrate of Soda	p. cwt. 0 14 0		

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

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And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
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47, Lime-street, Sept. 7, 1844.

TO FLORISTS AND ADMIRERS OF FLOWERS.

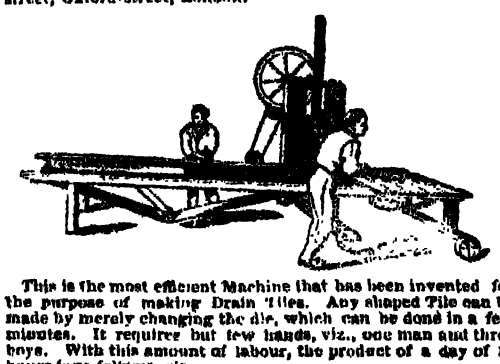
BRAIN'S CONCENTRATED LIQUID GUANO, for the Garden, Shrubbery, Hothouse, and Conservatory.

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This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With this amount of labour, the product of a day of 10 hours is as follows, viz.:—

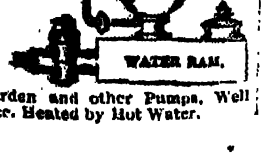
1 inch diameter of Tile, 11,800	1½ inches diameter of Tile, 5,600
1¼ ,, ,, ,, 8,000	2 ,, ,, ,, 3,200

The Machine is movable down the drying-sheds, so that it requires no extra boys to carry the Tiles, nor are shelves required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Cranbrook, Kent. No charge made for Patent rights or Licence. The purchase of the Machine includes free use of it.

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Patent Hay-making Machines	Flour-Mills—Bean Mills
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Patent Chaff-cutting Machines	Subsoil Ploughs } Colonies
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Double action Turnip-cutters	Drills of all kinds—Scarifiers
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THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade.

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MCKIBBIN'S Improved ROOFING FELT is peculiarly applicable as a substitute for Slate, Zinc, Tiles, and other articles used for Roofing, from its ECONOMY, LIGHTNESS, and DURABILITY.

The disadvantages attending other materials used in roofing, preventing, in agricultural districts, many useful houses and sheds being erected or rendered waterproof, it is submitted that the improved Roofing Felt will in a great measure—and in some instances altogether—obviate them, and prove most serviceable from its lightness, durability, and impermeability to water and damp, in covering Houses, Cattle-sheds, Workshops, Ropewalks, &c., and for the sides, as well as roofs, of light structures for plants, being likewise a non-conductor of heat; besides its economy in repairs, the timber where it is used may be so light as to save its whole expense; it requires no other coping, and may be applied by any person of common ingenuity; being flexible and portable also, it is free from breakage, the expense of carriage is inconsiderable in comparison with slates, tiles, &c., and it is not liable to contraction like zinc.

Sold in sheets 32 inches by 20, at 8d. each (being less than 9s. 6d. per square of 100 feet), with printed directions for applying them.

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"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup: giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 8, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

SILVER PLATED DISH COVERS.—A. B. SAVORY and SONS, Manufacturing Silversmiths, 14, Cornhill, opposite the Bank of England, submit for choice in their Plate rooms many patterns of SILVER PLATED DISH COVERS, of Sheffield Manufacture, from 15 to 20 guineas the set, viz.:—

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1 Pltd Dish-cover,	20 in.	5	15	0	1 Pltd Dish-cover,	20 in.	5	17	0
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2 ,, Dish-covers,	14 in.	5	12	0	2 ,, Dish-covers,	14 in.	6	0	0
Per set .		£13	15	0	Per set .		£16	17	6

The above have silver handles and mountings, and silver shields for engraving the crest or coat of arms. A price current, illustrated by drawings, and containing every information relative to the purchase of silver or Sheffield plate, may be had on application, or will be sent into the country, free of postage, in answer to a paid letter.

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OF Saturday last, August 31, contains

PROPRIETORS' CONFERENCE of the DOVER RAILWAY GOODS' BUSINESS—The LOW FARE QUESTION, LONDON and BRIGHTON RAILWAY—On the COMPULSORY APPOINTMENT of POLICEMEN by MAGISTRATES—OFFICIAL NOTICE of BOARD of TRADE

REPORTS OF MEETINGS.—London and Blackwall, with the Minutes and Accounts—Brandling Junction—Edinburgh and Glasgow, with the Report—Chester and Holyhead—Bradford and Leeds, with the Report—Maryport and Carlisle—South Devon, with Report and Accounts—North Wales Mineral, with the Report—South Eastern, Liverpool Proprietary—Birmingham and Gloucester, with Contract and Accounts

TRADING REPORTS.—Scottish Midland Junction—Barnsley Canal—Eastern Counties—Northern Lines, Meeting at Bramford—Worcester and Grand Junction—South Wales—Belfast and Ballymena—Manchester, Bury, and Accrington—Workington and Cockermouth—London and York—Kentish Railway—Caledonian—The Britannia Line

VALUE OF SHARES—Returns from London, Liverpool, Manchester, Leeds, York, Hull, Glasgow and Paris, with comparisons and respective dividends

CORRESPONDENCE.—German Railways (with Engraving of Turntable at Nuremberg)—Forrester's Wrought Iron Railway Wheel (with Engravings)—Baldwin's Patent Steel Tire—Ingalls's Patent for Economising Fuel—Practice of an Axle.

PARIS WEEKLY LETTER.

CALLS, DIVIDENDS, TRANSFERS, SCRIP, IRON TRADE, PATENTS, CONTRACTS, TRAFFIC TABLES, &c &c.

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Original Cases and Observations on Diseases of Women, and on Uterine Ruptures, illustrated with Midwifery, by G Oakley Rees, M.D., &c.—On Pellagra (Mal), and some Affections which are frequently mistaken for it (continued)

On the Influence of Jaborandi on the Urinary Organs, and on their use during the Acute Period of Inflammatory Disease, by Dr. Henry Bennet.

On the Nature of Neuralgia and Tic Douloureux, by Dr Edward Rhupe.

Midwives' Midwifery, by Dr Robert Barnes.

The Hydropathic Mail.

REVIEWS AND BIBLIOGRAPHICAL NOTICES:—Graefenberg; or a true Report of the Water-cure, by Sir Robert Hay Graham.—Two Lectures introductory to a Course of Anatomy and a Course of Clinical Surgery, by Dr. M. S Buchanan—Cholology; Introductory, Descriptive, and Practical, by David Thomas Ansted, Esq.—Elements of Comparative Anatomy, by Dr. Rudolph Wagner—The Physical Causes of the High Rate of Mortality in Liverpool, by Dr W H Duncan

MEDICAL JOURNALS:—On Venereal Complications, their Pathology and Treatment.—The Influence of Civil Institutions in Diminishing Disease—Means of Avoiding the Electric Current—Dr. Symonds on Fever—The Long Issue in Cerebral Affections—The Mortality and Morbidity in Disease—Therapeutical Application of Electricity—On the Causes, &c of Acute Hyperæmia of the Internal Membranes of the Spinal Marrow—Anatomy of the Branch of the Splenic Artery.

CHEMISTRY, PHARMACY, AND MATERIA MEDICA:—On the Inorganic Constituents of Plants, by Drs H Will and R Fresenius.

A Method for the Analysis of the Ashes of Plants

The Council and the Members of the College of Surgeons

Meetings of the Profession in the Country.

Medical Protection Assembly.—Meeting at Exeter Hall.

Meeting of the Medical Profession at Leamington.

Meeting of the Medical Practitioners at Bolton.

Proposed Meeting of the Members of the College of Surgeons, on Tuesday, the 3d of September.

Resolutions of the Society of Apothecaries.

The Editorship of the College of Surgeons and the Junior Members of the College

The Queen's Bill

Edinburgh Medical Degrees.

HOSPITAL REPORTS.—Royal London Ophthalmic Hospital—Cyst in the Anterior Chamber of the Eye. Royal Free Hospital—On the Distinctions in Diagnosis between Aneurism and other Tumours

UNIVERSITY OF LONDON.—Bachelor of Medicine—Medical Examination. Anatomy and Physiology. Chemistry. Materia Medica and Pharmaceutical Chemistry.

Apothecaries' Hall.—Examination Paper

Mortality Table.—College of Surgeons.—Apothecaries' Hall.—Correspondents.

London: JOHN CHURCHILL, Princes street, Soho; and may be obtained of all Booksellers and Newsvenders.

On the first of September will be published,

JOHNSON AND [illegible]'S FARMERS' ALMANAC for 1849 Suggestions for its improvement and corrections are earnestly requested. All Advertisements for its advertising sheet must be sent by the first of October to the Publisher, J. Johnson, 162, Piccadilly

HORTICULTURAL SOCIETY OF LONDON

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Messrs Perry and Co. may be consulted [illegible] their residence, 19, Hanover street, Oxford-street, from 11 till 2, and Sunday till 3 On Sunday, from 10 till 12

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21st THE CHINESE By J. F Davis, Esq, Governor of Hong Kong Vol III completing the work.

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London: CHARLES KNIGHT & Co, 22, Ludgate-street.

THE HORTICULTURAL MAGAZINE.—On the 1st of October will be published, price One Shilling, the INTRODUCTORY NUMBER of this new periodical.—Orders received by all booksellers It is earnestly requested that members of Horticultural Societies, and all persons who take an interest in a garden, will forward to the Editor the results of their experiments and practice.—Office, 162, Strand, London, where advertisements and communications for the Editor may be forwarded.

To the Nobility and Gentlemen of the United Kingdom of Great Britain and Ireland, and to their Gardeners, Land Stewards, Foresters, and Farm Bailiffs.

THE UNITED GARDENERS' and STEWARDS' JOURNAL; or, The NOBLEMAN'S and GENTLEMAN'S CULTIVATOR of the GARDEN, the FARM, and the FOREST. A Weekly Journal of the Contributions of a combination of the Cultivators of the Earth and her Products, conjointly with the ordinary News of the Day, will be published on SATURDAY, the 4th of JANUARY, 1849, providing a sufficient number of Subscribers come forward to enable the Society to do so: the proceeds of which are intended to form a Fund for the Relief of Aged and Indigent Gardeners, Land Stewards, Foresters, and Farm Bailiffs, and for their Widows and Orphans.

The Gentlemen's Gardeners have long complained that, while every other profession has its "club" for the relief of their unfortunate brethren, they have nothing of the kind, which in all probability has hitherto arisen from their isolated situations

The Gentlemen's Gardeners' Benevolent Institution, now formed of some of the leading Gentlemen and Stewards in that neighbourhood, is about forming Sub Committees of the principal gardeners and stewards in every county and division of counties in the kingdom, to assist in the management of the Charity.

We have been advised to write an appeal to the feelings of the Nobility and Country in behalf of our Charitable Institution; but as such circulars are every-day performances, which have been becoming worse the longer for ages, we think it by far the most original course to adopt such measures as are sure to meet their approbation, and secure their patronage and esteem.

To Advertisers, the Journal will offer the lowest possible charges for everything connected with Horticulture, Agriculture, Floriculture, and Arboriculture, and all new inventions either of Manure or Implements.

The plan hitherto adopted in this business has been, that every Member has paid a Quarter in advance (6s. 6d.), but now arrangements are so far advanced with our printer, that persons who scruple to do so, until they have received the first Number of the Journal, will oblige by forwarding their addresses.

All letters and parcels for the Journal to be addressed to the care of our Printers, WERTHEIM BRAYMAN & Co, Peterborough Court Fleet street

Price 7s, Illustrated with Wood-cuts of Birds, Cages, &c.

NATURAL HISTORY of CAGE BIRDS; their Management, Habits, Food, Diseases, Treatment, Breeding, and the Methods of Catching them. By J. M. BECHSTEIN, M.D.

"It will be welcome to every gentleman's library or drawing-room table. It is superbly got up, with an immense number of vignettes, and in fact rivals the beauty of the Annuals."—*Weekly Chronicle.*

"A very delightful book of its kind. . . . . It seems to us an indispensable book for the bird-fancier."—*Spectator.*

London: W. S. Orr and Co.; and W. R. CHAMBERS, Edinburgh.

TO SPORTSMEN, TOURISTS, &c

BERDOE'S SUPERIOR WATERPROOF FROCKS, SHOOTING JACKETS, GARMENTS for the SEA SIDE, &c.—An extensive variety of the above, in new and greatly improved materials always ready, guaranteed to exclude any rain whatever, and confidently recommended to those who require a respectable appearance, or wish to avoid the disappointment and vexatious annoyance upon purchasing articles made by shopkeepers, and sold by parties not Tailors

FIRST-RATE CLOTHING of every description, upon the lowest terms possible, consistent with extra economy, and ultimate satisfaction.—W. BERDOE, Tailor, Waterproofer, &c., 69, Chancery lane.

EXTIRPATION of the WEEDY BUG, THRIPS, &c.—These pests to Gardens can be readily and effectually extirpated without injury to the most delicate plants, by HERSMAN'S VEGETABLE DILUTUM, sold in bottles at 6s, 10s, and 20s each, free of carriage to all parts of Great Britain.—Address, with a remittance, either to SAMUEL HERSMAN, Romsey, Hants, or Messrs. MANWOOD and MANLY, Nurserymen, &c, Hackney, who are the sole London Agents

SIX POUNDS OF TEA, whether Black or Green, for 17s; and small bright Gunpowder, in 12 lb boxes, at 4s 6d per lb. East India Tea Company's Offices, 9, Great St. Helen's Churchyard, Bishopsgate-street.

TERRA COTTA FIGURES, VASES, FOUNTAINS, &c, Manufactured by BOULTON and WATTS, LAMBETH POTTERY, High-street, Lambeth, London.

D and W, from their experience as Potters, have made considerable improvements in the manufacture of Terra Cotta, the superiority of which over Artificial Stone or Cement is well known. It is subjected to a high degree of fire, which renders it imperishable, and gives it a sharpness and surface which no changes of temperature can impair.

D and W. are enabled to offer the Terra Cotta at a considerable reduction in price; and Drawings and Designs will be forwarded Gratis, on application.—Architectural work executed

HOTHOUSES, CONSERVATORIES, &c., made and fixed Complete in all parts of the Kingdom One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom; warranted best material. Two light Boxes and Lights complete, from 3l. 8s. Garden Lights made and glazed from 1s per foot, at JAS. WATES' Sash Manufactory, Claremont-place, Old Kent-road *** Reference given

ROWLAND'S ODONTO, OR PEARL DENTIFRICE, patronised by "HER MAJESTY," H R H Prince ALBERT, the Royal Family, and the several Courts of Europe. A FRAGRANT WHITE POWDER, prepared from Oriental Herbs of inestimable virtue, for strengthening, preserving, and cleansing the teeth. It eradicates the fetitious formation of tartar, and by the removal of that extraneous substance lends a salutary growth and freshness to the gums. It removes from the surface of the teeth the spots of incipient decay, polishes and preserves the enamel, substituting for discolour and the aspect of impurity, the most pure and pearl like whiteness; while, from its antiseptic and disinfecting qualities, it gives sweetness and perfume to the breath, bestowing at once cleanliness, and the appearance and reality of health. Price 2s. 9d. per box, duty included.

CAUTION.—To protect the public from fraud, the Hon. Commissioners of Her Majesty's Stamps have authorised the Proprietors' Signature to be engraved on the Government Stamp thus,—A. ROWLAND and Son, 20, Hatton Garden, which is affixed to each Box Ask for ROWLAND'S ODONTO. Sold by them, and by Perfumers and Chemists.

*** All others are SPURIOUS IMITATIONS.

Printed by WILLIAM BRADBURY, of No. 6, York place, Stoke Newington and FREDERICK MULLETT EVANS, of No. 2, Church row, Stoke Newington, both in the county of Middlesex, Printers, at their Office in Lombard-street, in the parish of St. Mary Woolnoth, in the City of London; and published by them at the Office, No. 5, Clarke-street, in the parish of St. Paul's, Covent-Garden, in the said county, where all Advertisements and Communications are to be delivered to the Editor.—Saturday, September 7, 1848.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37.—1844. SATURDAY, SEPTEMBER 14. [PRICE 6d.

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UNIVERSITY COLLEGE, LONDON.—Faculty of Medicine.—Session 1844-45.—The CLASSES will commence on Tuesday, the 1st of October, when Professor COOPER will deliver an INTRODUCTORY LECTURE on the Study of Surgery, at 2 o'clock precisely.

Classes in the order in which Lectures are delivered during the day.

Medicine, Principles and Practice of—Professor Williams, M.D.
Anatomy and Physiology—Professor Sharpey, M.D.
Chemistry—Professor Graham.
Anatomy—Professor Quain.
Comparative Anatomy—Professor Grant, M.D.
Materia Medica and Therapeutics—Professor Thomson, M.D.
Midwifery—Professor Murphy, M.D.
Dental Surgery—Lecturer, Mr. Durancé George.
Surgery—Professor Cooper and Mr. Liston, Professor of Clinical Surgery.
Practical Anatomy.—The pupils will be directed in their studies during several hours daily by Mr. Ellis and Mr. Potter, under the superintendence of Mr. Quain and Dr. Sharpey.

SUMMER TERM.

The following subjects will be taught during the summer term:
Botany—Dr. Lindley.
Midwifery—Dr. Murphy.
Pathological Anatomy—Dr. Walshe.
Comparative Anatomy and Zoology (Elementary Course)—Dr. Grant.
Forensic Medicine—Dr. Thomson.
Practical Chemistry—Mr. Graham.

Hospital Practice daily throughout the year:—
Physicians—Dr. Williams, Dr. Thomson, Dr. Taylor, Dr. Walshe.
Obstetric Physician—Dr. Murphy.
Consulting Surgeon—Mr. Cooper.
Surgeons—Mr. Liston, Mr. Quain.
Assistant Surgeon—Mr. Morton.
Dental Surgeon—Mr. Durancé George.
Medical Clinical Lectures—Dr. Williams and Dr. Thomson, and also by Dr Taylor, Professor of Clinical Medicine, whose special duty it is to train the pupils in the practical study of disease at the bedside during the visits, and also by a series of lessons and examinations on the physical phenomena and diagnosis of disease, to classes consisting of a limited number and meeting at separate hours.
Surgical Clinical Lectures—Mr. Liston, Mr. Quain.
Obstetric Practice under the superintendence of Dr. Murphy.

Prospectuses may be obtained at the office of the College.

Residence of Students.—Several of the Professors, and some of the Masters of the Junior School, receive Students to reside with them; and in the office of the College there is kept a Register of parties unconnected with the College, who receive boarders into their families; among these are several medical gentlemen. The Register will afford information as to terms and other particulars.

The Report of the Distribution of Prizes in the Faculty of Medicine for the past Session, with the Examination Papers, is ready. Former Students of the College may have it forwarded to them on sending their address.

THOMAS GRAHAM, Dean of the Faculty.
CHAS. C. ATKINSON, Secretary to the Council.

August, 1844.

The Lectures to the Classes of the Faculty of Arts commence on the 15th of October.

The Junior School opens on the 24th of September.

LAST FLORAL FETE OF THE SEASON!

ROYAL SURREY ZOOLOGICAL GARDENS, TUESDAY, SEPT. 17th, 1844.—GRAND DAHLIA AND MISCELLANEOUS FLOWER SHOW, for Flowers, Fruit, and Vegetables, combined with the following attractions:—Picturesque Grounds, Superb Menagerie, Gigantic Model of Old London, Blight's Corinthian Brass Band, Modal of Venice, Feeding of the Carnivora, Promenade Concerts, introducing Beethoven's Battle Sinfonia, Spohr's "Consecration of Sounds," &c., and Great Fire of London, allowed to be the grandest Pyrotechnic Display ever witnessed. No Establishment in Europe presents so many, varied, and unique attractions.

Admittance 1s. Open at One. Conflagration at Eight o'clock

NEW CARNATIONS, PICOTEES, AND PINKS.

MESSRS. N. and B. NORMAN'S CATALOGUE of SHOW VARIETIES can be had on prepaid application.—Bull Fields, Woolwich.

THE ROYAL BOTANIC SOCIETY of LONDON, Incorporated in 1839, for the promotion of Botany in all its branches, and for the formation of an extensive Botanical and Ornamental Garden within the immediate vicinity of the Metropolis, will meet for a PROMENADE in their Garden in the Regent's Park every WEDNESDAY in MAY, JUNE, and JULY, 1845 (weather permitting), excepting those Wednesdays selected for the Exhibitions of Plants, Flowers, &c.

J. DE C SOWERBY, Secretary.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The following days being the first WEDNESDAYS in MAY, JUNE, and JULY, 1845, are appointed for the EXHIBITIONS of PLANTS, FLOWERS, &c., in the Garden of this Society in the Regent's Park:—

MAY 7th,
JUNE 4th,
JULY 2d.

But should the Ascot Races be fixed for the first week in June, then the June Exhibition to be on Wednesday, the 11th.

J. DE C. SOWERBY, Secretary.

GRAND DAHLIA SHOW, SEPT. 25, Bazaar, Baker-street, Portman-square, London.—Committee:—Messrs. Widnell, Girling, Brown, Atwell and Brown, Keynes, Harrison, Sorrell, Bragg, Stein, Turner, Whale, Sparrey, Hansard, Edwards, Low, Mitchell. Prospectus, of any of the Committee, and at the Bazaar. Entrance, on or before the 20th. Seedlings to come out in the spring will be shown, six blooms each; Seedlings of the present year, one bloom each. A Dinner will take place at half-past three.

EXHIBITION OF LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment FLORIST TO HER MAJESTY, begs to inform the Nobility, Gentry, and Amateurs, that he has above 4000 blossoms of this most beautiful LILY, now in flower, including the rare and splendid variety "Speciosum," which is held in such high estimation by the Japanese. May be viewed every day, Sundays excepted. Admittance, gratis.—Clapham Rise, Sept. 11, 1844.

HURST AND M'MULLEN, 6, Leadenhall-street, beg to inform their Friends that their importations of DUTCH AND CAPE BULBS have just arrived, in very fine condition. Catalogues may be had on application.

"PRINCESS ALICE MAUDE" STRAWBERRY. Plants of this splendid Strawberry, the earliest known, 25s. per 100.
Myatt's British Queen, 6s. per 100.
Myatt's Deptford Pine, 25s. per 100.

PINE-PLANTS.—To be Sold by Auction (if not previously disposed of), at the Gardens, Foxholes, on WEDNESDAY, Sept. 25, at One o'clock, the entire Stock of PINE-PLANTS, consisting of Montserrat, Providence, and two Seedlings named the "Black Prince" and "Prince Alfred," in all 300 Plants. The Seedlings grow to a great size, and are of good flavour. A Pit of these Seedling Pines in fruit may now be seen at Foxholes, near Rochdale, averaging 8 lbs. weight.—Sept. 12.

THE NEW SUPERB SEEDLING PICOTEE, "BURROUGHES'S DUKE OF NEWCASTLE."

YOUELL & CO. have much pleasure in announcing they will send out for the first time the above splendid light-edged purple Picotee, raised by the Rev. J. Burroughes. It is guaranteed to surpass any Purple Picotee that has yet been raised. Without commenting further upon its superiority, Y. and Co. beg to refer to a report in a late No. of the *Gardeners' Chronicle*, as follows:—

"The *Duke of Newcastle* is a flower of first-rate properties; it is a light-edged purple; the petals are large, and of good form and substance; even on the edge; the colour unbroken; the pod good, and with less disposition to bar than is common." It obtained the first prize as the best seedling, at the Norfolk and Norwich Horticultural Exhibition. Price 21s per pair, and will be sent out the latter part of next month. The stock being limited, to prevent disappointment early orders are respectfully requested. Y. & Co. will also be enabled to supply at the same time the following superb Picotees, raised by the same gentleman, all possessing first-rate properties, and having been exhibited and obtained first class prizes at several of the metropolitan Exhibitions of the present year. They are as follows:—

Burroughes's	Mrs. Benyon, Red Picotee	7s. 6d.
,,	Lady Alice Peel, Rose Picotee	7 6
,,	Miss Jane, Purple Picotee	7 6
,,	Miss Bevan, Red Picotee	7 6
,,	Enchantress, Scarlet Picotee	5 0

CARNATIONS AND PICOTEES.

Y. and Co.'s collection of this beautiful tribe of flowers will be found the most extensive and select in Europe, comprising every known variety of merit. The plants are remarkably strong and healthy, and will be ready for sending out to any part of the United Kingdom and the Continent the latter part of this month, at the following prices:—

				£	s.	d.
12 pairs extra fine and very superior first-class Show Flowers				2	10	0
25	ditto	ditto	ditto	5	0	0
12	ditto	ditto	Show Flowers	1	10	0
25	ditto	ditto	ditto	3	0	0

The selection being left to Y. and Co.
Great Yarmouth Nursery, Sept. 13, 1844.

RARE AND BEAUTIFUL COLUMBINE, &c.—The Subscribers beg to intimate that they have saved Seeds of a superb variety of Aquilegia glandulosa. This splendid Columbine is a hardy Perennial, and forms one of the most gay border-plants in cultivation; it grows to the height of from 12 to 18 inches, abounding in two-coloured blossoms—blue and white—of the size and shape of the common Passion-flower. Packages of about 150 Seeds are sent free at 1s. per packet, or for stamps of that value. The trade can be well supplied with seedling and transplanted native Scotch Firs and Larches. Choice named Carnations, &c.

JOHN GRIGOR and Co., Nurseries, Forres, N.B.

EARLIEST STRAWBERRY in CULTIVATION.—Strong Plants of the "PRINCESS ALICE MAUDE" STRAWBERRY, which has proved itself to be the earliest grown in this country, are now ready to be sent out at 20s. per 100. As an Early Strawberry, it has taken the First Prize at all the Horticultural Exhibitions in the early part of the season. Also Plants of the "British Queen," "Deptford Pine," "Prince Albert," and all the leading kinds. To be had of Messrs. WARNER & WARNER, Seedsmen, 28, Cornhill, London.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of those splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs. WARNER & WARNER, Cornhill, London, after the 7th September.

TO CALCEOLARIA GROWERS.

THE present being a good time to sow CALCEOLARIA SEED, the Advertiser begs to offer a few packets of his splendid New Spotted kinds, saved with great care, with printed directions to raise the young plants, at 5s. per packet.—J. STANDISH, Nurseryman, Bagshot.

T. AND J. BACKHOUSE, NURSERY & SEEDSMEN, York, beg to offer to the notice of the Public their following fine SEEDLING PANSIES:—

YORKSHIRE ECLIPSE.—"No. 1 is a large flower, of good form, white ground, blue purple upper petals, and broad margin of the same round the lower petals; the petals meet well above the eye; a good flower." 3s. 6d.

BEAUTY OF HOLDGATE.—"No. 2 is your best flower; the eye large and intensely dark, ground light buff, belting purple, upper petals the same; a brilliant and striking flower." 3s. 6d. (See *Gardeners' Chronicle*, p. 280, for 1844.)

EARL OF ZETLAND is a flower of excellent form, yellow ground, bronzy crimson upper petals, with broad belting of the same round the lower petals, which meets well above the eye; a distinct and very constant show flower. 3s. 6d.

Strong plants are now ready for sending out, postage free when three or more plants are taken. A remittance required from unknown correspondents.

INGA PULCHERRIMA. (Figured in "Paxton's Magazine of Botany" for August, 1844.)—Fine Plants of this extremely elegant and beautiful Exotic, with most of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices:—

Inga pulcherrima, 7s. 6d.	Habrothamnus elegans, 18s.
Achimenes picta, 10s. 6d.	Tremandra Hugelii, 10s. 6d. to 21s.
Aeschynanthus Horsfieldii, 7s6d	Veronica speciosa, 8s. to 18s.
Amycla zygomeris, 7s. 6d.	Erica elegans, fine and healthy, 15s., 24s., and 30s. per doz.
Clerodendron splendens, 5s, 10s.6d	Drymonia punctata, 8s. 6d.
,, squamatum, 5s.	Pilox Van Houttei, (flowering plants), 2s.
Rhodia, or Rondeletia longiflora, 18s.	Spirea Reevesiana, 5s.
Epacris campanulata rosea (the finest selected from 1000 seedlings), 7s. 6d.	Viburnum coteaifolium, 3s. 6d.

Also the following, in collections:

100 Cape Ericas of 100 distinct sorts, (including many fine sorts) 5l.	(including Campanulata rosea) 21s.
12 Epacrises of 12 distinct sorts,	12 Azalea indica, of 12 distinct sorts, (including fulgens) 21s.

THOMAS JACKSON, Kingston Nursery, Surrey, Sept. 13.

SPLENDID NEW SEEDLING CINERARIAS.

MICHAEL BREWER, Sen., begs to return his best thanks to his numerous friends who last season favoured him with their orders, and to apprise them that in addition to his own extensive List of varied Self and party-coloured new and truly splendid Seedlings of the present year, he made purchase of every new advertised and well-described kind, which having propagated and seeded to great extent, he is now prepared to execute orders for strong seedling plants, fit for furnishing to the Greenhouse, through the autumn and winter months, a varied, lively, and continuance of elegant bloom, comprising every shade of deep rich purple, dark and light blue, &c., at 9s. per doz., basket, &c. included. Also seed of the same, which he confidently recommends on account of all being grown mixed together. Mixed and collected in packets, 2s. 6d. each.

Letters, inclosing post-office orders or stamps, will be immediately attended to.—Nursery, London-road, Cambridge.

KINGHORN'S SPLENDID CALCEOLARIAS.—In reply to numerous correspondents, WILLIAM MAY begs to intimate that the Calceolarias he advertised are not the same as advertised by another party, but totally and distinctly different. W. M. having had the choice of the whole collection, he selected five of the most distinct and best varieties, which he purposes sending out in March next, that being the best season for receiving Calceolarias.—Hope Nursery, Bexley, Sept. 12.

ROSES.

A. PAUL AND SON, respectfully announce that their Annual Descriptive ROSE CATALOGUE will be ready for circulation in a few days, and may be obtained from the Nurseries post-free, upon application inclosing two postage stamps. Their stock is very large, and having been grown on new ground, the plants are more than usually robust and healthy. All the really valuable new Roses are in their collection.

TO NOBLEMEN and GENTLEMEN PLANTING.—A. PAUL and SON would also call attention to their Fruit and Forest Trees, Ornamental Trees, Shrubs, Evergreens, &c. &c., which are growing on upwards of 25 acres of ground, and are on sale upon the most reasonable terms. The soil is a stiff loam, from which Trees remove in perfect safety, having abundance of fibrous roots, and the earth adhering thereto. The proximity of the Nurseries to the Metropolis, and the advantageous terms of sale, recommend them especially to gentlemen planting.

Nurseries, Cheshunt, Herts, 13 miles from London, near the Waltham Cross Station on the Cambridge Line of the Eastern Counties Railway.

TRUE HIGHLAND PINE.

JAMES GRIGOR, Nurseryman, Norwich, begs to call the attention of the Land Proprietors of England to this very desirable variety of Pinus sylvestris, which has been raised from seeds collected on the mountains of Strathspey, and of which he has strong plants ready to be sent out. For introducing this tree Messrs. Gaicon, of Forres and Elgin, were awarded several premiums by the Highland and Agricultural Society of Scotland; and in that part of the country this Pine is rapidly superseding the common soft-wooded variety. For all economical purposes its chief merit consists in the hardiness and durability of its wood; hence it is much sought after at present for railway sleepers. Pictorially considered, or as a landscape ornament, it rivals even the Cedar of Lebanon. Sir Walter Scott describes it as assuming much of "the bold and undecided figure of the Oak;" and in the last No. of the *Quarterly Review* it is recommended as a fit tree to be planted in churchyards and cemeteries.

Strong plants in pots, such as rabbits and hares will not destroy	. . . . .	6*d.* each.
Ditto, not in pots, 18 inches high	. .	30*s.* per 1000.
Ditto " 15 "	. .	20*s.* "
Ditto " 1 foot high	. .	15*s.* "
Ditto " 2 years old	. .	10*s.* "

J. G. would recommend all who require them to furnish themselves immediately with these Pines, and to plant them forthwith. Spring planting is exceedingly hazardous; and when followed by such a season as was experienced during the commencement of the present summer, the young trees are sure to be killed.

Cedrus Deodara raised in the open ground, being the strongest plants yet offered in England, 10*s.* each. Araucaria imbricata, Pinus excelsa, Laricio, Austriaca, &c. &c. on reasonable terms.

JOHN SLATER, Florist, Cheetham Hill, near Manchester, respectfully calls the attention of the Floricultural Public to his large and select collection of the following Florists' Flowers:—TULIPS, AURICULAS, POLYANTHUSES, CARNATIONS, and PICOTEES; catalogues of which may be had on prepaid application. 12 plants of named Auriculas, of different varieties, for 20*s.*, package included. 20 pairs of Carnations and Picotees, good named varieties, for 20*s.*, package included.

NEW PANSY SEED.

WILLIAM CLARK, 25, Bishopsgate-street-within, London, is now sending out the above from the best flowers grown, in papers of 2*s.* 6*d.* and 5*s.* each. Also J. H. Cox, Esq.'s Superb Picotee Seed, 5*s.* per paper; fine Cineraria, Calceolaria, Polyanthus, and Auricula, 1*s.* per paper—may be had on receipt of a post-office order.

ACHIMENES PICTA.

W. J. EPPS begs to announce that he has the largest stock of this valuable Plant, which he can supply strong Plants of at 5*s.* each, or 2*l.* 2*s.* per dozen. Also the New and Splendid Buddlea Lindleyana, 5*s.*; Drymonia punctata—strong flowering plants, 5*s.*; Aristolochia gigas, 5*s.*; Clerodendrum laevifolium (a distinct and beautiful variety), 5*s.*; Gloxinia Cartonii, 5*s.* to 7*s.* 6*d.*; G. bicolor, 5*s.*; insignis, 5*s.*; G. magnifica, 5*s.* Strong plants of nearly all the new Fuchsias sent out this year, 15*s.* per dozen.

Bower Nursery, Maidstone, Sept. 12, 1844.

CINERARIA "SILVER QUEEN."

A. PAUL AND SON, Nurserymen, &c., Cheshunt, Herts, beg to offer the above novel and beautiful Cineraria, which was exhibited at the Horticultural Society's Rooms, in Regent-street, and awarded a certificate there.

"A singular and handsome seedling Cineraria, showing a disposition to quill, by the purple rays of the flower being drawn together for some distance from their bases, and thus forming a tube having a silvery appearance."—*Gardeners' Chronicle.*

"From Messrs. Paul and Son, of Cheshunt, a Cineraria, doubly quilled, of a lilac or beautiful and singular silvery appearance."—*Gardeners' Gazette.*

Strong Plants now ready, 5*s.* 6*d*, including package, or post free, 6*s.* An order on Waltham Cross post-office expected from unknown correspondents. The usual discount to the Trade when six plants are taken.

DUTCH HYACINTHS.

WARNER AND WARNER, Seedsmen, No. 28, Cornhill, London, respectfully inform the Nobility and Gentry their Dutch Flower-roots have arrived in superior condition, consisting of the choicest and newest varieties. The Bulbs are unusually handsome and large, at moderate prices. Catalogues forwarded by post on application.

CAMELLIA "EMPEROR."

T. DAVIES AND Co. beg to inform their friends and the Public, that they now intend sending out the above magnificent Seedling, raised and flowered by them in 1843, when it was exhibited at the rooms of the Horticultural Society of London, where it was awarded a Prize, and afterwards spoken of by Dr. Lindley, in his Report of their Meeting, in the following terms, in the *Chronicle* of 25th March, 1843:—"Messrs. Davies & Co., exhibited a very handsome Seedling Camellia, raised from the seed of C. colvillii, fertilised with the pollen of C. reticulata. In the foliage it resembles the older sorts, but the flower, which is large and well filled up, partakes of the form and colour of its male parent. A certificate was awarded for it." Price from 3*l.* 3*s.* to 4*l.* 4*s.* Stock positively very limited.

CEREUS GRANDIFLORUS RUBRA. This splendid new variety of Cereus was raised by T. D. & Co. in the manner described by Dr. *Lindley* in the Leading Article of last week's *Chronicle*. The flowers measure 10 inches in diameter, are of a pale-red colour, with a shade of purple in the centre. They expand about 7 o'clock in the evening, and last nearly the whole of the next day, being an advantage over the night-blooming, which generally close early the next morning. Strong plants are now ready for sending out at 10*s.* 6*d.* each. Reference or remittance required from unknown correspondents.—Waverlree Nursery, near Liverpool, 14th Sept., 1844.

MR. LYNE'S NEW SEEDLING GERANIUMS.

WILLIAM E. RENDLE has much pleasure in offering to the Nobility, Amateurs, and Trade the following new varieties of GERANIUMS raised by P. E. Lyne, Esq., the entire stock of which he has succeeded in obtaining.

Lyne's Princess Alice	each	*s.* 1	*d.* 1
Lyne's White Perfection	"	1	1
Lyne's Imogene	"	1	1
Lyne's King of Saxony	"	1	1
Lyne's Redworth	"	1	1
Lyne's Confidence	"	1	1
Lyne's Sappho	"	1	1

The whole set as above for six guineas. The usual discount to the Trade.

"Princess Alice" has received two seedling prizes in London, "White Perfection," first prize at Torquay, and the Gold Medal at Bath. "Imogene" is described in the *Chronicle*, June 24th, 1843. They all possess most desirable properties, and can be highly recommended as being first-rate flowers.

W. E. R. has been induced to offer the above at prices considerably lower than usually obtained for such valuable varieties, in hopes thereby to meet with a more extensive demand. Descriptions can be obtained on application.

Orders will be executed in strict precedence. Plants will be delivered in October next. Reference or remittance required from unknown correspondents. Plants will be added to compensate for carriage.—Union Road Nursery, Plymouth, Sept. 13.

ROSES.

WOODLANDS NURSERY, Stradfield, Near Uckfield, Sussex. WOOD & SON have the honour to announce that they are now issuing GRATIS, on application, their newly-arranged CATALOGUE OF ROSES, containing a full and comprehensive description of all the most popular varieties, in addition to the novelties that have appeared this season.

Catalogues may be had at Edinburgh, of Mr. R. T. M'Intosh, 12, Catherine-street. Woodlands, September 13.

T. AND C. LOCKHART, Seedsmen and Florists, 155, Cheapside, London, beg to announce that their CATALOGUE OF FLOWER-ROOTS for the present season will be forwarded post-free on application.

GERANIUM "CELESTIAL."

CHANDLER AND SONS, Nurserymen, Vauxhall, London, have now ready to send out young plants of their New Geranium "CELESTIAL," which has been so much admired. The flowers being very large, and with a beautiful white throat, it is one of the most conspicuous varieties that has yet been raised. Plants, 10*s.* 6*d.* each.

C. and Sons have also to offer healthy young plants of CAMELLIAS of sorts, with flower-buds, at 30*s.* per dozen; larger plants 42*s.* per dozen; and good plants of the newer sorts 60*s.* per dozen. Also good plants of the best sorts of CHRYSANTHEMUMS, at 12*s.* per dozen; larger plants, 18*s.* per dozen. The package included in the above prices. A remittance or reference for payment in London will be expected from unknown correspondents.

DOUBLE ROMAN and PAPER-WHITE NARCISSUS, 4*s.* per dozen. The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. Corbett's, late Mr. Barron's, Italian and Foreign Warehouse, 13, Pall Mall. Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c. &c. Price Catalogues of which may be had per Post.

ARAUCARIA IMBRICATA.

SPLENDID NEW PINUS.—Fine healthy Plants about 9 inches high, can be had at Hurst and M'Mullen's Seed-shop, No. 6, Leadenhall-street, London, at 5*l.* per 100.—September 13.

CAMELLIA JAPONICA.

ROBERT LAWSON, Esq., of Tiverton, intends disposing of his stock of Camellias, which he has collected at much expense, and successfully cultivated for many years. They are in the highest state of health, and most abundantly set with blooming buds. Mr. L. disposes of them solely in consequence of their having become too large for his conservatory. They are as follows:—

				£	*s.*	*d.*
Reticulata,	from 7 to 8 feet in height,	a very fine specimen, quite healthy and green	. . .	10	10	0
Imbricata,	from 7 to 8 feet in height,	do.	.	8	8	0
"	" 5 to 4 "	. . .	.	1	10	0
Eximia	" 7 to 8 "	a magnificent plant		7	7	0
Chandlerii	" 6 to 7 "	a fine plant		5	5	0
"	" 5 to 4 "	. . .	.	1	10	0
Lady Hume's Blush	6 to 7 "	.	fine	4	4	0
Double White	6 "	. . .	.	5	5	0
"	" 5 to 6 "	. . .	.	3	10	0
"	5 "	. . .	.	2	10	0
Invincible (Gray's)	5 to 6 "	. . .	.	3	3	0
Fordii	" 4 to 5 "	.	very fine	4	4	0
"	" 2 to 3 "	. . .	.	1	1	0
Double Striped	5 to 6 "	.	fine	2	10	0
Anemoneflora Alba	4 to 5 "	. . .	.	2	10	0
Speciosa	" 4 to 5 "	. . .	.	2	2	0
Woodal	" 4 "	.	fine	2	10	0
Warratah	" 4 to 5 "	.	fine	2	2	0
Florida	" 4 to 5 "	. . .	.	2	10	0
Corralina	" 3 "	. . .	.	1	5	0
Lawsonii	" 2 "	.	new	1	10	0
Colvillii	" 2 "	. . .	.	0	10	6
Donckiaarii	" 2 "	. . .	.	0	10	6
Insignis	" 6 to 7 "	.	very fine	2	10	0
Eclipse (Press's)	6 to 7 "	. . .	.	2	3	0

The Prices affixed are for the separate plants, of which not less than 3 can be taken together. If the whole are taken in one lot a considerable reduction will be made. Mr. Lawson will be happy to show them, or give any further particulars that may be required.—Tiverton, Sept. 12th, 1844.

HYACINTHS AND OTHER DUTCH BULBS.

CLARKE & CO. beg to intimate to their Friends and the Public, they have just received their annual supply of the above roots, direct from the first rate growers in Haarlem.—Catalogues may be had, post free, which will be found to comprise every novelty of the season. London, 86, Highst., Boro'. Sept. 13,

BRACONDALE HORTICULTURAL ESTABLISHMENT.

JOHN BELL begs to inform his Friends and the Public, he has just received his Importation of DUTCH HYACINTHS AND OTHER BULBS, direct from Haarlem. Catalogues of which may be had at the Nursery, or his Seed Warehouse, 3, Exchange-street, Norwich.

SEEDLING FUCHSIA "NORFOLK HERO."

JAMES BARKWAY respectfully begs to call the attention of Amateurs and others to the above splendid Fuchsia; it has been pronounced by all that have seen it to be the best light one yet out. See Dr. Lindley's opinion in the *Gardeners' Chronicle* July 13th:—"*J. B.*—Your seedling is a finely-formed flower; tube and sepals of the most delicate pink, approaching to white; corolla rose, with a slight tinge of purple; a clear and brilliant flower; the best of its class we have yet seen." Also, August 10th, when sent with five other seedlings,—"No. 3 is the best in form." It obtained a prize at the Norfolk and Norwich Horticultural Show, as a seedling, July 31.

Plants of the above-named are now ready at 7*s.* 6*d.*; strong plants, with three or four side shoots, 10*s.* 6*d.* each, carriage, &c. included, if sent by post or otherwise.

J. B. has been very successful in raising Seedling Calceolarias, of which see Dr. Lindley's opinion June 8th and August 10th, of which price, &c. will be given when ready to send out.—East Dereham, Norfolk.

F. C. BALL, successor to Mr. John Young, Nurseryman, Taunton, begs to offer 20 or more varieties of IXIAS at 4*s.* per dozen. A List of Ixias and other bulbs will be forwarded on application. An allowance to the Trade. Fine Plants of Geneeria zebrina at 1*s.* 6*d.* each.—Sept. 12, 1844.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	Orange Tubs, Flower Boxes, &c.
Garden Edging	

Edward Buck will be happy to answer any inquiries, either personally or by post.

HYACINTHS, IRISES, ANEMONES, &c.

SUTTON AND SONS respectfully recommend the readers of the *Gardeners' Chronicle* to observe their List of Prices, published in the 2nd page of the *Chronicle* for 31st Aug. J. S. and Sons consider their Collections of IRISES, HYACINTHS, and ANEMONES, which they have imported this season, to be fully equal to any in Europe, and the prices will be found remarkably low. Descriptive Catalogues (as recommended by Dr. Lindley in last week's *Chronicle*) may now be had gratis at their Seed-shop, 7 and 8, Market-place, Reading, Berks.—N.B. Parcels delivered free to the Railway and Packet Offices in London, or any Station of the Great Western Railway within 60 miles of London.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND-MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and despatch.—This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by men or women. It is easily set, so as to deliver the exact quantity of seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Mangold Wurzel Seed, Wheat, Barley, Peas, and all kind of Garden Seeds. In Tin, 1*l.* 10*s.* each; or with Copper Box and Tube, 1*l.* 15*s.* each. Commission allowed to Agents.

These Dibbles may be obtained of Messrs. Cottam and Hallen, 2, Winsley-st., Oxford-st., London, through the agency of the principal Agricultural Implement Sellers in the United Kingdom; or from the Inventor, by letter, to his address, inclosing a Post-office order for the amount.—Richard Smith, Upper Hall, near Droitwich, Worcestershire.

HOTHOUSES, CONSERVATORIES, &c., made and fixed Complete in all parts of the Kingdom. One, two, and three-light Cucumber and Melon-Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom; warranted best material. Two-light Boxes and Lights complete, from 1*l.* 8*s.* Garden-Lights made and glazed from 1*s.* per foot, at Jas. Watts' Sash Manufactory, Claremont-place, Old Kent-road. **** Reference given.

TO GENTLEMEN, BUILDERS, NURSERYMEN, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Public Auction (under a bill of sale), on the premises, Sussex Nursery, Loughboro'-road, Brixton-road, on Monday, 30th September, 1844, at eleven o'clock, the whole of the NURSERY STOCK, consisting in choice Evergreens and Flowering Shrubs, Standard and Dwarf Roses; also two newly-erected Greenhouses, Frames, about 2000 Greenhouse Plants, a quantity of Rock Work, Utensils in Trade, &c.; may be viewed prior to the sale. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone.

FREEHOLD NURSERY-GROUND, ST. ALBAN'S, HERTS.

MESSRS. PROTHEROE & MORRIS have received instructions from the Executors of the late Mr. Robert Fullwood, the mortgagee, to submit to public competition at the Auction Mart, Bartholomew-lane, on Thursday, 3d October, 1844, at One o'clock, THE KEY FIELD NURSERY AND NURSERY PREMISES, adjoining the town of St. Alban's, comprising a comfortable and convenient Dwelling-house and Shop, fronting the High Road from St. Alban's to London, and about six acres of very productive Nursery and Garden Ground. The whole Freehold and Land-Tax redeemed, and immediate possession may be had. The Premises were late in the occupation of Mr. David Watson, who for many years and up to the period of his death carried on the business of a Nursery and Seedsman. May be viewed at any time, and particulars had at the principal Inns in the neighbourhood, at the Auction Mart, of J. S. Story, Esq., Solicitor, St. Alban's; of George Drew, Esq., 185, Bermondsey-street, Borough; and of the Auctioneers, Leytonstone, Essex.

BUNNEY'S FINAL SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor (in consequence of the Lease having expired), to submit to Public Competition by Auction, on the Premises, Kingsland Nursery, Balls Pond-road, on Monday, Oct. 7, 1844, and following days, at Eleven o'Clock each day without reserve, the whole of the valuable NURSERY STOCK, consisting of FRUIT and FOREST TREES, a considerable quantity of EVERGREENS, AMERICAN PLANTS, STOOLS, &c. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their Grounds; also the Trade, from its excellence, and comprising an excellent collection of Ghent AZALEAS, MAGNOLIAS, RHODODENDRONS, &c. May be viewed prior to Sale. Catalogues may be had on the Premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone.

MANSION, MANORS, AND ESTATE, IN KENT, TO BE LET,

MAYTHAM HALL, near Rolvenden, ten miles from the Staplehurst Station, on the London and Dover Railway, and two miles from the Tenterden Station on the projected Rye and Hastings Branch.

The MANSION, with beautiful Pleasure Grounds, productive Gardens, Pinery with Vines, Melon and Forcing Ground, Fruit Walls, and extensive Orchard, is delightfully situate in a finely timbered Park, commanding most extensive and highly picturesque prospects.

The MANORS, comprising from 1500 to 2000 acres, have been strictly preserved for many years past, and not having been much shot over last season, are now well stocked with pheasants, partridges, hares, and rabbits.

The MANSION is elegantly furnished, and adapted for a nobleman or gentleman of opulence, and is capable of accommodating a numerous establishment.

A tenant may be accommodated in a short time with any quantity of land he may desire.

May be viewed with tickets only, which, with particulars, may be had of Mr. P. K. Bearden, Solicitor, Birkenhead.

BICKLEY PARK MANSION, BROMLEY, KENT.
IMPORTANT SALE.

MR. SEPPINGS is again honoured with Instructions from the Proprietor to proclaim, by Advertisement, that he will SELL BY PUBLIC AUCTION, upon the PREMISES (in consequence of the Mansion being let), on Monday, September 16th, 1844, and Five following days, at 11 for 12 o'clock precisely each day, some splendid Oil Paintings by Lee, valuable Engravings and Prints, excellent Bed and Table Linen, costly and substantial Furniture, a Patent Grand Pianoforte by Broadwood and Sons, a variety of Cut and Plain Glass, Dinner, Tea, and Coffee Services, Kitchen requisites, &c. Also a large and choice Collection of Greenhouse and other Plants, consisting of very fine specimens of Camellias, Ericas, Chinese Azaleas, Cactus, Bed of Tulips, and a variety of other rare Plants, with a large Assortment of Flower-pots, Garden utensils, Hand-glasses of various sizes, Cucumber-frames, with lights, &c. Late the property of John Wells, Esq.

Cards of permission to view the Property, and Descriptive Catalogues, may be had by personal application, or by letter, postage-free, on the Wednesday, Thursday, and Friday previous to the Sale, of Mr. Fawley, White Hart Hotel, and Mr. Baxter, Druggist, Bromley; at Mr. Hitchcock's, Gray's-Inn Coffee-House, Holborn, London; at the Offices of Messrs. Seppings, and Jones, 1 Exchange-street, Norwich; and at the Terrace, Swaffham, Norfolk.

RAY SOCIETY, instituted 2d February, 1844.—This Society has been formed upon the principle of the Parker, Camden, Sydenham, and other Societies, for the purpose of securing to those attached to the study of Natural History, such Works on the various branches of Zoology and Botany as could not be obtained by other means; and will consist of original works; of new editions of works of established merit; of rare tracts and MSS.; and of translations and reprints of foreign works. Every subscriber of one guinea annually will be considered a member of the Society, and will be entitled to a copy of every work published by the Society. The Council have great pleasure in stating that the number of Members already exceeds 300, and beg to call the attention of their friends to the necessity of sending in their names as early as possible, in order that they may be enabled to determine the number of copies of their works which they ought to print. The Council hope to publish two volumes before Christmas, the first of which will consist of translations from the German and Italian, of Reports on the progress of Zoology and Botany during the last few years.

Communications on the business of the Society are requested to be addressed to the Secretaries, Dr. George Johnston, Berwick-upon-Tweed, and Dr. Lankester, Golden-square, London. Subscriptions to be sent, by post-office order or check, to the Treasurer, J. S. Bowerbank, Esq., 45, Park-street, Islington.

GEORGE JOHNSTONE, M.D.
EDWIN LANKESTER, M.D. } Secretaries.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 14, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Sept. 17 South London Floricultural . 1 P.M.
SATURDAY, Sept. 21 Royal Botanic . . . 4 P.M.
COUNTRY SHOW.—TUESDAY, Sept. 17 . Midhurst Horticultural.

FIFTEEN pounds and a quarter avoirdupois was the WEIGHT OF A PROVIDENCE PINE-APPLE presented to Her Majesty the other day by the Baroness de Rothschild; fourteen pounds and a quarter was the weight of another exhibited by this lady's gardener, to the Horticultural Society; eleven pounds eight ounces was that of a third; and two others, each weighing ten pounds and three quarters, were cut green, and sent to France. Supposing that each of the latter would have gained only four ounces in weight (and it would be more reasonable to assume that they would have weighed one pound four ounces more), we have the incredible fact of five Pine-apples weighing sixty-three pounds.

This extraordinary result has been obtained by Mr. George Mills, so well known for his great success in Cucumber-growing; and his name is thus imperishably connected with the history of Horticulture, whose annals record no such event in former days. We have heard, indeed, of thirteen-and-a-half pounds having been the weight of one single Pine; but who before could boast of five huge Pines at one cutting, the lightest of which is almost without a parallel? Let it be remembered, too, that these were no monsters, half-green and half-ripe, with a swelling on one side and a paralytic affection on the other,—with one pound of stalk and two pounds of gills and crown—but honest thoroughly well-grown fruit, with all the parts well-proportioned, and a skin so full of juice, that the pips were puffed and swollen with its enormous accumulation.

And how has this been done? By disrooting and re-rooting? By shifting and re-shifting? By coaxing the unhappy plants to grow, and then cutting off their means of existence? By potting and re-potting, and potting again? By skinning a rich old pasture and carting the fee-simple of an acre into the potting-shed? By the aid of succession-pits, and succession-houses, and fruiting-houses? Of steam, hot-water pipes, or tanks? Of an apparatus, which no one without the revenues of a Rothschild could dare to think about? Not at all. By no such appliances; by nothing more important than a pigeon-holed Cucumber-pit, peat, and GOOD GARDENING. By what, in fact, every farmer can command, except the last; and that, it must be confessed, is rather important.

Without pretending to be better informed than our neighbours, or to have access to information which is not current all round the neighbourhood of Madame de Rothschild's residence, we will undertake to say that the following is very nearly the plan pursued by Mr. Mills. Conceive a sunk brick-pit, some eleven feet long and three feet wide, built of 4-inch brick-work, and pigeon-holed for three or four courses at the bottom. Let this be covered with common Cucumber sashes, and surrounded by hot dung. Then let us suppose that rough faggots or the larger boughs of trees are thrown into the bottom of such a pit to the depth of a foot, over which peat is laid to the same thickness. And now all being ready, suppose that a healthy sucker of a Pine is planted in this soil under the centre of each Cucumber light, and, unless we are much mistaken, we have the whole of Mr. Mills's preparation, except the good gardening, which neither bricks, nor faggots, nor soil, nor heating materials, can form, however much they may assist it.

Let not our country readers be incredulous about all this. What we have seen with our own eyes we may venture upon recording; and yet we should be disposed to pardon those who, in the face of such a statement, should exclaim, "I would not believe that, not even though I saw it myself;" for it does seem impossible to those who have been accustomed to ordinary Pine cultivation. We shall, however, surprise them still more when we add, that we are not yet satisfied. Great as Mr. Mills's success has been—and too much honour cannot be given to him for it—it is not great enough. Pines may be grown still larger and better; and we shall never rest contented till we see a Providence weighing 20 lbs. Then, and then only, shall we believe that growing Pine-apples will go no further.

Now that the HYACINTH SEASON is at hand, it is as well to remind our readers what they are to do in order to obtain good flowers.

Pick firm, plump bulbs, as round as may be. These are always the soundest, and are not likely to damp off.

When they are placed in glasses, take care that the water does not come within one inch of the bulb; put them in a dark closet that is rather warm, or, which is better, wrap them all over the glass and bulb, with old flannel, and keep them in a warm place till the roots are an inch long at least. Some recommend that the glasses should be dark; but that is of little consequence, provided the place in which the bulbs are set to root is dark.

The reason for this very important rule is, that roots should always be formed before leaves; otherwise, when the latter begin to grow they have nothing to feed them. Nature is most careful about this, as we may see when a seed begins to germinate and a tree begins to fruit. But ignorant people pop their bulbs at once into a glass of water, place it in a window, or upon a mantel-shelf, where light has free access, and the consequence is, that roots, which abhor light, will not come, while leaves, who love the light, rush forward to enjoy it. Then follows a long cluster of foliage, and a top-heavy plant, which when it does flower, if it ever gets so far, topples over every time it is jarred or disturbed. Get plenty of roots first, and leaves and flowers will take care of themselves.

The reason why the water should not touch the bulbs is, that if the plant is slow in growing, the organisable matter of the bulb is distended with fluid before it can decompose it, and so becomes putrid, when it communicates disease in all directions by virtue of its contagious properties. On the contrary, if the roots are active, and the leaves are beginning to grow, what water is taken up is immediately converted into some of the matter that Hyacinths feed on.

After roots have made a fair appearance water may be allowed to reach their tips, but not sooner, and it is only when the leaves are green and unfolding that it should be permitted to touch the bulb.

At that time, that is to say when the leaves are green, a lump of charcoal as large as an egg may be advantageously dropped into the water. It will prevent the water becoming putrid, and will, besides, act as a manure.

None of these precautions can, however, be of any avail unless the Hyacinths are kept close to the light continually, from the time when the leaves are first turned green. Thus, and thus only, will a healthy growth be preserved, and a fine vigorous head of flowers insured. Above all things, too, be careful to make the plants grow as slowly as possible at first, so as to accumulate vigour against the blooming season.

ENTOMOLOGY.

SURFACE-GRUBS and *surface caterpillars* are terms applied by gardeners to the larvæ of several night-flying moths, and amongst them are Noctua (Agrotis) exclamationis, and N. segetum, which bear the English appellations of the Heart and Dart, and the Common Dart moths, amongst collectors. As these caterpillars have made their appearance in great force in many parts of the kingdom, and numerous inquiries have been made respecting them, I lose no time in addressing the cultivator upon the subject, hoping that by calling his attention to their economy, his efforts to check their ravages may be successfully directed.

All the caterpillars called surface-grubs are exceedingly destructive to various crops, both in the field and garden, frequently devastating entire fields of Turnips and Mangold Wurzel, and not sparing the Potatoes. The larvæ first attack the Turnips in July, and destroy the plants by eating off the crown (fig. 2); in the two following months they sometimes swarm in fields, eating into the bulbs, and rendering them, to a great extent, unfit for use. I have known the Mangold Wurzel suffer severely in June, from these caterpillars biting through the roots, just below the surface of the soil; and they will attack the Potatoes when first pushing out of the ground. At night I believe they sally forth to feed upon the leaves, and after detaching them they are often dragged to their burrows, which resemble those of the earth-worm, and being drawn in, they are enabled to feed in security, and protected from the rays of the sun during the day—for they shun both light and heat. Having decapitated one young plant, the caterpillar directs his course to another with extraordinary rapidity, and thus destroys many more than he can consume for food. Later in the year, when the Turnip crop is more advanced, multitudes congregate round the plants, 10 or 12 being sometimes found about a single bulb.

The Surface Caterpillars transmitted to me this summer from many different localities were those of the Noctua exclamationis and N. segetum, which are equally mischievous, and very similar in appearance; they walk very fast, curl themselves up when disturbed, but speedily become active again, and bury themselves in a few seconds. Where the eggs of N. exclamationis are laid has not been recorded, but it is stated that the moth of N. segetum deposits hers in the earth. The caterpillar of the former is somewhat cylindrical, but a little depressed above, having six pectoral, eight abdominal, and two anal feet; it is of a dull lilac colour, with a broad paler stripe down the back, the margins of which form a darker line along each side, and there is a double dorsal line extending the whole length; the head is horny and brown; the minute eyes and two curved lines, as well as the jaws, are black; the first thoracic segment is rather horny and dotted; the following segments have four little tubercles on each, producing hairs, as well as similar ones on the sides; the stigma black (fig. 1). When full fed it is an inch and a half in length, and buries itself, forming an oval cell of earth, in which it changes to a shining rust-coloured chrysalis (fig. 3) to pass the winter in, and the following June, or perhaps earlier, the moth hatches. By Linnæus it was named Noctua exclamationis, and is now a member of that vast family, but called Agrotis,* and by English collectors the Heart and Dart moth. It is of a clay-colour, the wings reposing horizontally (fig. 4); the horns are like bristles, but slightly pectinated in the males; the tongue is long; on the front of the thorax is a transverse dark patch; on the upper wings there are two waved lines near the base; to the second is attached a long, longitudinal, deep-brown streak; above it is a spot varying in size and form, and beyond it a large kidney-shaped one; then follow a transverse, pale, waved line; and near the cilia is a more irregular one; the under wings are white, the upper margin and nervures brown; but in the female these wings are entirely dark-brown; their expanse is 1⅝ inch.



The caterpillar of A. segetum is more cylindrical than the foregoing species; the sides are greener, and there are three black dots by the stigma; but for the present I must refer the reader to the "Royal Agricultural Journal" for figures and descriptions of this species.†

It has been pretty well ascertained that salt and water will drive away these caterpillars; lime-water, and an infusion of Tobacco, are also distasteful to them. It appears that soot would be a great protection to Turnips and Cabbage crops, if applied early in the year, and laid an inch thick on the surface. If 1 lb. of soap be dissolved in 16 gallons of soft water, and applied warm to the infested ground, especially round the roots, the Surface Caterpillars will dart out of their burrows, and may thus be readily collected; but no time must be lost, as they will retire under-ground as soon as its effects have subsided. Hand-picking is also unquestionably the most effective means of ridding a field of this pest; it may be carried into effect either at night, when they come out to feed, or by day they may be searched for under stones and clods, and if the earth be scraped away from the bulbs, multitudes will be discovered in an infested field. Ducks and poultry would also assist in reducing their numbers. The pupæ are so securely protected in their tombs that it is perhaps impossible to assail them, and any means of attracting the moths at night by fires, by old sugar hogsheads, or boards smeared with beer and sugar, although it might tend to the capture and destruction of vast numbers, yet it would effect little, it is to be feared, as the males alone would thus fall a sacrifice, the females remaining, with few exceptions, in obscurity.—*Ruricola.*

* Curtis's Brit. Ent., fol. and pl., 166. † Vol. iv. p. 706, pl. G.

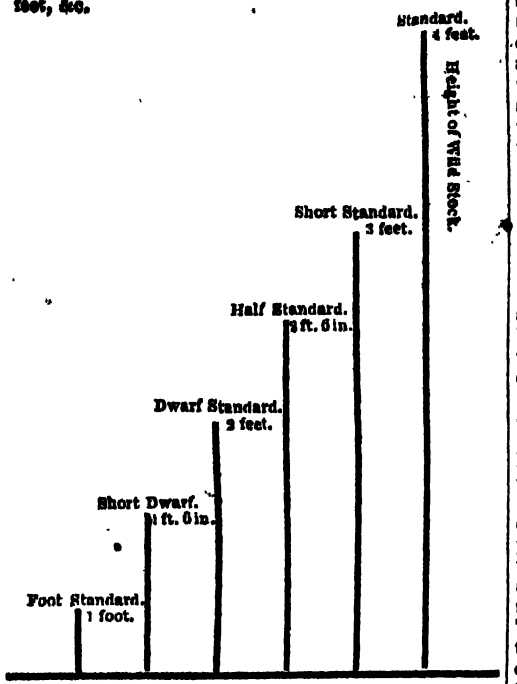
ROSE GARDEN.—No. XVIII.

(*Continued from page* 604.)

Planting Out.—Having thus brought our subject to a close, as to the operative part, in preparing and perfecting the tree, it may not be amiss to spend a few moments in the consideration of the effect expected to be produced by it when planted out.

There are three causes of beauty in a tree—shape, foliage, and flowers. Shape (to a certain degree) is artificially obtained, foliage and flowers must depend upon species; the foliage is the more permanent, the flower the more striking. Planting out, then, must depend entirely upon the effect desired, and the taste of the party planting, as to variety of foliage, height, flower, its colour, and continuity; a tree with rambling shoots suits one place, and with a cauliflower head another. Tree Roses never look well in a round clump; they must

have a single appearance or be in some sort of line. If the effect of a sloping bank of Roses be desired, they must be planted in successive heights, viz. each under each; but if they are to have a less forced and regular appearance, and a more single and light look, an intermediate height may be left out, as thus: a two feet in front of a three feet, &c.



Be it observed, that a three-feet standard is most in keeping with the head it carries, and being nearer the ground has a very natural appearance, and in confined places is unquestionably the most desirable; but if the tree is to be distant from the eye, or the shrubbery or walk be large and increasing in distance, a four-feet standard is certainly more distinguishable, and has a much greater effect. A foot standard is of little or no use, except it be intended to approach the edge of a border, or is grafted for the convenience of affording nosegays, or increasing the quantity of the plant placed upon it. The heights most in use having been shown, it may be remarked, that for a weeping Rose to stand singly (perhaps surrounded with a wire guard and creepers upon it, to have a more marked effect), no stem can be found too high, if it be proportionally strong. A fine plant of this sort, six, seven, or even eight feet high, budded with a Noisette, or Boursault, looks beautiful, and its long free branches, covered with clusters of Roses, have a wild and luxuriant appearance, which give it a distinct and peculiar character. The trees being planted out and the earth made good around them, each tree must be supported by a neat clean hazel stake (unless the stock be so strong as not to require it), the top of which should be sawn off exactly level with the top of the wild stem, which conveys a great air of neatness, and attached to it with a piece of bass, or a small strip of pitched rope, which is still more durable.

Observations.—The following may be considered a more entertaining and less slovenly mode of propagating the Rose, as well as having the advantage of economy, as the cuttings of the pruned trees, which would otherwise be lost, are made use of. It must be remembered, however, that it should only be practised upon free, well-rooted stocks, as otherwise the delay in the rising of the sap, and the uncertainty of the supply, frequently defeat the purpose. Grafting, therefore, should succeed budding on the same stock, not precede it; as a bud failing on the stock, if the branch be not destroyed while the sap is up, leaves the stock still vigorous in the ground; if therefore this mode be preferred, it should be practised upon stocks that have had a spring to root themselves. The points to be desired are, that the barks of scion and stock should be cut quite smooth, and not separated from the wood they grow upon—that neither should be bruised—when they are put together should fit, close—a supply of sap should commence as soon as possible—that all sun, wind, and rain should be kept from the wound till healed, and that no ligament should be removed, nor shake given to the parts newly placed in contact, till they are perfectly healed; as any jar to the scion when placed is likely to defeat the purpose.

Home Correspondence.

Summer Pruning of the Vine.—In many places where I have visited of late, I have been surprised to see, generally speaking, such a total neglect in the summer pruning of this most generous of all our exotic fruits; it being, as it ought to be, well understood that, by kind treatment, there is no fruit-tree requiring artificial cultivation, the Peach-tree excepted, that will more easily bend to the will of the operator, nor produce more uniform crops of fruit. From the many articles that have appeared from time to time in the *Chronicle*, as well as in books treating exclusively on the culture of the Vine, I am surprised that the work of reformation has not commenced. Amateurs complain that year after year, even at a great expense for fuel, &c., they are never able to produce more than five, six, or seven bunches of Grapes upon each Vine, and of these, three or four bunches are at the extremity or top of the house, two or three in the middle, and the rest of the Vine is totally barren. The question that suggests itself to the mind of a practical man, on entering the houses of amateurs is, Why is each Vine allowed, as it were, to vie with its fellow in luxuriance, and to expend its strength, that ought to have been stored up in order to throw it into fruitfulness?—which no doubt every one would desire, but which it is quite clear is never attained; indeed, they have much the appearance of Vines planted out against some rustic seat, where they are allowed to ramble and luxuriate for the sake of displaying their foliage and tendrils. In some places where there is a scanty scattering of ill-ripened fruit, you find many of the spurs have never been stopped, but are allowed to run perhaps to the length of four feet; these again are loaded with laterals running right and left; others that have been stopped have in many cases sent out a host of laterals, each vying with the other in vigour similar to the common Hop in a hedge-row. If the question was asked, Why such is allowed to be the case? the answer is, "Oh, they are always the same; they are not good kinds; they never bear fruit, therefore we do not think that it is worth while spending time over them; at winter pruning we cut them well in, but they are still as you see, unfruitful. From such neglect it is clear that not one year in ten do they ripen their wood, from want of summer pruning. I would recommend instant application in removing all laterals and tendrils, not at one fell sweep (or the remedy might prove as bad as the disease), but by taking away a few each day, and in the course of a fortnight the Vines could be brought into a better state as regards the more perfectly ripening the wood, without which all labour will prove of no avail. Further, when the wood assumes a russet-brown, or approaches ripening, I would by all means recommend disbudding, as mentioned in my Treatise on the Vine, an operation ever attended with the best results, to Vines of any age, and one, in my opinion, that does not receive the attention which is due to it. If Vines are grown on the long rod system, leaving the eyes 18 or 20 inches apart on each side of the shoot, and all laterals have not been previously removed from each eye, but stopped at one joint, you will there find an eye upon each of them, which take out, leaving the leaves uninjured, with the exception of one or two at the extremity of the shoot. With regard to the spur system, choose a bold eye, third or fourth from the base of the spur, cutting all the others out above and below, with the exception of one well placed at the base, which must be retained in order to produce wood for the following year. I consider a fruitful eye on the Vine as easy to discern as a blossom-bud from a wood-bud on the Peach. A fruitful eye is round, plump, and well filled at the base of the leaf, whereas an unfruitful one is long and pointed. If the above hints were more generally practised by amateurs, they would have less cause to complain; for, by the above treatment (the roots in a proper state) they would be gladdened with more uniform crops of fruit annually, extending from below the angle of the rafter to the extremity of the Vine.—*James Roberts, Hampsthwaite, Harrowgate.*

The Robin.—In May last (see p. 335) I communicated some curious facts connected with the natural history of the robin—a bird to whose remarkable peculiarities, both in a wild and tame state, I have paid particular attention for the last six years. The anecdote I related to you, although authenticated by my name and address, has, I find, been by some doubted, by others marvelled at; nor is this, to me, a matter of surprise, for I verily believe the robin whose merits I record may justly rank as one of the wonders of the world. When last I addressed you my little friend was, as I mentioned, a denizen of the fields, the woods, and the orchards. Free as air he was roaming about with his fond mate and thriving young family (four in number), into whose infantine minds he was doubtless busily instilling a course of sound elementary instruction. These lectures have now terminated. His children, grown up, are gone abroad to see the world, and his ladye-love (as is the custom with these feathered songsters) has taken the veil for six long months. The consequence is, as I anticipated, a *réunion* between myself and this bird of song. No longer afraid, from prudential motives, of venturing too near the habitation of man, he re-appeared on Thursday, the 5th inst., *in propriâ personâ*, an independent, fearless bird. The friend and associate of my leisure moments (for I rise regularly at 5 A.M., to attend to my feathered family), he now comes at my call, however distant he may be. He sits on my finger and on the bridge of my nose, as of old; eats from my hand; sings like a seraph as he runs along the ground, and even allows me to play with him in my open hand, as he lies upon his back! In justice to my *protegé* I must add that his plumage is exquisitely bright, his eye beaming with intelligence, and his whole demeanour noble. Have we not here a convincing proof of the retentive memory, peculiar instinct, and remarkable affection of the robin?—*William Kidd, New-road, Hammersmith.*

Mulberry-tree.—On taking up a Broccoli plant that was recently planted, and which had sustained injury, I found a leaf-stem that had been half broken through, and the fractured part buried in the earth had sent out rootlets. It has been my practice in dibbling Kale plants to coil lengthy stems, which have always struck out roots at the bends. In planting out Cabbage with long stems I have nicked them in two or three places, with the same result. M. De Candolle observes in his "Organographie Végétale," vol. i. p. 246, "Une seconde circonstance, qui a engagé les naturalistes à admettre la prétendue identité des racines et des tiges, c'est la facilité avec laquelle l'un de ces organes donne naissance à l'autre." "Si l'on fait une ligature ou une incision à l'écorce d'un arbre il se forme au-dessus d'elle un bourrelet; si l'on enveloppe celui-ci de terre et de mousse humide il y pousse des racines."—"A second circumstance which has induced naturalists to admit of the supposed identity of the root with the stem is the ease with which one of these organs may be made to give being to the other." "If we attach a ligature or make an incision in the bark of a tree, a lump forms above it, and if this is surrounded with moist earth and moss it will send out roots." I imagine, therefore, that if the "Inquirer," (see p. 523,) who has a fine Mulberry tree upwards of 200 years old, is satisfied with its present locality, he may save himself the expense, labour, and risk of raising it, by making incisions in the stem in the part which will be below his new level; the communication of the leaf-roots being thus cut off from the tree-root will, attracted by the moisture of the new soil, strike into it, and the stem will thus send out lateral roots to seek any benefits that may be derived from proximity to the surface, while the original root will continue to draw water from below.—*John Goodiff, Granard.*

Song Birds.—I observe, with admiration, the humane remarks, thrice repeated, of your worthy correspondent, "J. M.," on the subject of wanton cruelty to birds. Too true it is that many hundreds of our choicest, prettiest warblers fall victims at this season of the year to the gun of the savage-breasted Cockney, or to the niggard parsimony of those heartless individuals who grudge the appropriation of a little paltry fruit, in return for the outpouring of hearts full of melody, gratitude, and love. Unfortunately I am myself among those who suffer from this devastation by beardless boys and Cockney sportsmen; but I am not altogether without a remedy; and this remedy I suggest to the notice of your correspondent "J. M." Let him, as I do, keep some choice blackbirds, thrushes, and other varieties of birds, in large, capacious cages (for confinement should not be made punishment) and let him hang them on the walls and trees of his garden. The song of these warblers will assuredly attract others; and by these means he may concentrate all the harmony of the feathered tribe in his own immediate locality, thereby protecting them from the danger of random shots, and from the cruel manœuvres of bird-catchers, bird-haters, and other similar "varmint," as "J. M.'s" enemy, the gamekeeper, has it. When thus assembled, the birds will come regularly to be fed on fruit, seed, bread-crumbs, or berries, and they will never stray further than is necessary for their further supplies of food. I am one of the true Waterton family; I never hear the report of a gun in the winter season but it goes to my heart. It is not a sufficient argument for me to be told that a man or a boy is a bad shot. By their want of skill their victims are too often maimed, when death would have been a blessing. Scandalous is it that humanity should be thus outraged, and that God's lovely and loving creatures should be thus wantonly deprived of their lawful, innocent enjoyment of life, to gratify the worst feelings of which human nature is susceptible.—*William Kidd, New-road, Hammersmith.*

Pruning Forest Trees.—From time to time articles have appeared in your columns, from the pens of various correspondents, advocating what I still call the pernicious and absurd practice of pruning forest-trees. I call it by these epithets in relation to the extent and the mode in which it has been heretofore recommended and practised, and not in regard to what I consider "judicious pruning," for which I am an advocate as well as those who have controverted my opinions. A writer, in your Number of July 27, who signs himself "W. H.," quotes a sentence of mine, I think rather incorrectly, viz.—that "I never saw a magnificent stem that had not a proportionally large head;" and proceeds to ask me whether I had not seen a magnificent head that had not a proportionally large stem? I answer, yes; and there are some specimens very near me now, and the cause of the disproportion is pruning—extreme pruning, vulgarly called pollarding. My opinion formerly expressed, and not correctly quoted by "W. H.," is—that I never saw a magnificent stem but what, at some period of its life, had a proportionally large head; for I have seen many magnificent stems with little or no head at all, but that is quite beside the question. Your correspondent is quite right in preserving any and every tree that is an ornament to his grounds, whatever its proportions. It is worth considering, however, whether his magnificent heads would not be quite as ornamental if they had also proportionally magnificent stems? I quite agree with "W. H." on the propriety of planting Oak wherever the character of the soil and other circumstances are favourable to its growth; not, however, to the exclusion of other things. I agree with him also as to the desirableness of clean, straight timber, for useful purposes, &c. I commend him for his attention to his plantations—a pleasing contrast to the general neglect and mistaken management we so often witness. His 40 years' experience entitles his opinion to respect; but, query—What is "judicious pruning?" It is a phrase, I fear, mistakenly—as it is variously—understood. Were "W. H." here, I could shew him abundance of Oaks out of which "the builder might cut his stout beam or girder," not only 25 or 30 feet, but 35 or 40—some even 50 feet, that, in all likelihood, were never touched by a pruning instrument in their lives. Now, again, what is "judicious pruning," and how long is it to continue? If those who are so zealous in advocating the process generally, would define what it is particularly,

and to what period of a tree's existence it is to be continued, we should then be able to form more correct ideas of how far "W. H." is justified in his concluding affirmation—"that increased vigour, stature, and bulk are its sure result;" a position which, though backed by 40 years' experience, I must still very seriously question.—*Quercus.*

Swan Marking.—For the sake of the reader who is unacquainted with what is called "swan marking," I shall briefly state how that is done, without entering into details as to when and how such laws or regulations relative to swans were established. When swans are kept on large streams by different proprietors, their servants meet about the last week in August, and besiege, as it were, the river, and cut the same kind of mark on the beaks of the young swans as that on the bills of the parent birds. They also pinion, or cut off the two first joints from one wing—one joint not being enough—then return the bird to the water. By that means each proprietor's swans are known. When it happens that swans belonging to different proprietors mate together, the brood are equally divided, the odd cygnet always going with the cock bird. In order to settle disputes, the old swans are caught and claimed by the marks already noticed. Some speak against pinioning of swans. I suspect, however, that the necessity of it is apparent; for, supposing they were not migratory, and had the use of their wings, is it likely they would suffer themselves to be caught by the neck with a crook, as a shepherd does his sheep? Even in the pinioned state it is attended with difficulty, especially in large rivers. On the Yare I lately observed a brood of 10 swans, being the greatest number I ever saw or heard of. Those acquainted with Ornithology know that our common swan is not identical with the wild sort that visits us in winter, but with what is called the mute swan common in Russia, and is met with in some parts of this country, without a master.—*J. Wighton.*

Strawberries, Asparagus, &c.—With all due deference to "Villagius," I must demur to the inferences contained in his letter last week. In nine cases out of ten, according to my experience, if you manage two Strawberry-beds in the same way—one bed being one, and the other three years old—you will have the best crop from the latter. Therefore it is quite clear, as his crops were equal according to superficial observation, his experiment proved against the mutilating, unscientific system of cutting off the lungs of the plants. Now, as to the time of applying salt to Asparagus, I have stated the result of practice, not theory. I have applied salt, after dressing in the autumn and early in the spring—1 lb. to the square yard—with the most striking advantage. Now the questions to decide upon this interesting subject are—1st, Do we actually apply the salt to the dormant root, by covering the surface in autumn? To this question I answer in the negative; inasmuch as the salt has to be washed through a considerable depth of soil before it reaches the root, and it is only reasonable to infer that when it does arrive there, its caustic character will have materially altered by dilution and chemical decomposition. 2d, Will not the salt do decided harm by being applied to the delicate green, living texture of the young shoots late in spring? Let "Villagius" try it, and I will wager him the best hat I cut next year that he will destroy or materially injure his plants. But, as I said before, I made my statement from practice, not theory. My beds are now looking beautiful, with lofty, flourishing plants. As soon as they begin to die back, I shall cut and dress them, and apply the salt as heretofore on the surface, to be gradually washed in by the winter rain. Should I fail, I hope "Villagius" will tell me where to send him the lost wager.—*C. R. Bree, Stowmarket.* [We quite agree.]

Toads and Frogs.—A few weeks ago, among "Notices to Correspondents," I observed an inquiry in reference to toads: the question was—Do they eat slugs? I am now enabled to say that they do. I am satisfied that they are carnivorous, and that they do not eat either fruit or vegetables. I referred to the "Penny Cyclopædia," and found an excellent article under the word "Frog." I there learned that they live on slugs and other small animals; that they take their prey with great rapidity and swallow it immediately, without mastication. I went into my garden, found a slug, and put it on the end of a stick, and gently introduced it before a toad; I kept my eye upon it, and soon it disappeared; and at the same time I saw the toad swallow: so rapidly, however, had the toad taken the slug in with his tongue, that I did not see it done. I believe both frogs and toads live on the pests of the garden. I am always glad to see them. Last summer I had many slugs, and they destroyed several crops; this summer I have had plenty of frogs and toads, and very few slugs.—*Jasper Stokes, Birmingham.*

Pine-apples.—As the system of growing and fruiting Pines without pots is becoming general, it is desirable to become acquainted with those substances which are most conducive to their growth. It is evident that Pines when planted out attain more robustness, and this mode is certainly more natural than that of confining them in pots; but whether it is more favourable to the production of larger fruit than the old plan, remains to a certain extent undecided. Pines will grow in any soil, and other plants will do the same, but the results will be different. A strong soil favours the production of large fruit, and in this the habit of the plant is more compact; a light substance, such as leaves or tan, has an opposite effect—the plant and fruit grow quite disproportionate. Pines growing in leaves half decomposed, will, in a given period, be larger plants than those growing in loam; the leaves are equally broad and the roots are more abundant, but they are altogether deficient in substance and compactness. I cannot suppose there is any advantage to be derived from laying up a heap of soil before it is wanted for use, particularly when a few inches only of the surface is taken. When spread about that depth it is more exposed to every atmospheric change than when it is in one mass and turned several times during a twelvemonth. In preparing a bed over a tank the first stratum should consist of rough gravel for two or three inches in depth; above that the same depth of leaves or other litter should be laid; then the last layers, consisting of two parts loam, one leaf-mould, and one horse-droppings, well mixed together, should be fifteen or eighteen inches in depth. Pines grown in such a compost, and duly attended to with heat, will reward the owner with excellent fruit. Sometime ago I was informed by a gentleman, lately residing in India, that in some of the Pine districts near the sea, where the soil is naturally strongly impregnated with saline substances, Pines flourish and produce enormous fruit. The ocean, at times, flows over the ground; probably, therefore, a little salt introduced into soil for Pines might prove efficacious to them. —*Mémet.*

Gray Parrot.—I have read the different statements respecting the treatment recommended for keeping a favourite bird from plucking off its feathers. My treatment in regard to its food is quite the reverse of many of your correspondents. I have two fine birds, which I have had for this last seven or eight years; their food has been bread and butter in the morning, meat two or three times a-day, or anything the family may have—such as Potatoes, pudding, cake, fish, fruit — everything except salt meat; that is avoided, if too salt. Their tins are filled with clean water every day, and their cages cleaned out and sand put in; they take tea, and spirits with water when given them; they are taken out on the hand every day, and fondled over two or three times to exercise their wings, which I consider is very beneficial to their health and the beauty of their plumage. I have never given them any seed or soaked bread. With the above treatment my birds have always been in good health; their plumage has always been good, and they have never lost their feathers till the time of moulting, and even then they have never looked unsightly.—*James Woods, Harwich, Essex.*

Variegated Leaves.—Mr. Groom has stated in last Number that the leaves of some of his Pelargoniums have become regularly edged with white in consequence of his having watered the plants with sulphate of ammonia which had been exposed to the air for some time. Last autumn I planted many young Box-trees; and I have for some weeks observed that nearly all the young leaves in most of them are symmetrically tipped with white, giving the young branches a mottled appearance. I counted twelve trees thus affected. The older leaves are rarely tipped, with the exception of two bushes, in which they are regularly tipped, and the younger ones much less so. Mr. Groom states that in his Pelargoniums the older leaves are chiefly affected. The Box-trees are quite healthy, and growing well. I gave to some of them nitrate of soda, but it has made no difference in this variegation. Those growing in deep shade are not tipped, nor are some older trees. These facts may appear trivial; but I think the first appearance, even if not permanent, of any peculiarity which tends to become hereditary (as I fear is the case with the variegated Sycamore) deserves being recorded. — *C. Darwin.* Mr. *H. W. Bucknall*, of Bedminster-lodge, Bristol, also forwarded leaves taken from three Greengage Plum-trees, which were regularly edged with yellow. Mr. Bucknall writes that the trees were watered with ammoniacal liquor diluted with five times its bulk of water by mistake, instead of ten times. The whole of the leaves of each tree have turned yellow round the edges, the rest remaining a healthy green. The trees perfected their fruit well, and are otherwise in good health. The same mixture, he adds, was used on Peaches and Nectarines, but did not affect them.

Lilium lancifolium album, &c.—In the spring of 1843 I paid three guineas for a flowering bulb of one of these fashionable Liliums, which flowered well, and also ripened a pot of seed, which I sowed in a shallow box; this was kept during the whole summer in a Melon-frame, and was watered and nursed with particular care. Notwithstanding this, however, not more than half a dozen plants ever appeared; these did not produce more than one leaf, and put forth small bulbs about the size of a grain of Wheat. After these were fully ripened, I proceeded to take them up, and in so doing I was surprised to find the whole of the soil in the box full of bulbs, superior even to those that appeared; they were an inch deep in the soil on which the seeds producing them had been laid upon the surface; the seeds, as they swelled by moisture, were barely covered. I have thus most unexpectedly found myself in possession of 180 bulbs; and I should like to know how these wholesale underground operations were conducted. This circumstance should induce others to examine narrowly their seed-pans before discarding them; as, before this was known to me, I am sure that I have sacrificed thousands of bulbs. —*N. M. T.*

Transmutation of Corn.—Is it possible that Wheat, Barley, and Oats, can change, from being kept from coming into ear? If so, then perhaps it may be true that Primroses, turned root upwards and made to grow so, become Cowslips. I have always laughed at the idea, but it is believed in some parts of Wiltshire. I have been also told that if single Primroses, Tulips, Polyanthuses, and Auriculas, are turned root upwards, they will become double in a year or two. Can it be? Mignionette kept from flowering for a year becomes a shrubby plant and perennial, but still it remains Mignionette, only much more powerful as to scent.—*A Non-believer.*

Wistaria sinensis.—I have a plant of this truly beautiful and ornamental climber, about five years old, which has been allowed to grow in a very irregular state; no attention has been paid to it during that period. Early in March of this year I thought, on seeing the noble specimen in the Horticultural Gardens at Chiswick, that something might be done to assist Nature in forming a similar specimen, in course of time, out of my deformed plant. Accordingly, I cut and trimmed all the branches to within a quarter of a foot of the stem, leaving two wood-buds, and also flower-buds, varying from one to three on each spur; after which it has bloomed well. About the middle of March I commenced giving it a plentiful supply of water, twice or three times a week. This I continued to do for about six weeks, occasionally loosening the ground about the roots, so as to prevent the earth becoming baked under the influence of a May sun. It went on growing, and still continues doing so; but two of the principal shoots, measuring 26 feet, the growth of this year, have turned by a freak of Nature into monstrosities as flat and about the same thickness as a penny-piece. They are about 7 feet in length, turning upwards and dividing into two branches at the extremity: one branch measures two and the other one foot from the division. Will you inform me what plan, under these circumstances, had better be adopted, in order to insure a healthy and vigorous growth next spring.—*T. D. Gordon.* [Your branch is what botanists call fasciculated; it is of no consequence, for the new branches, &c. will come from it all the same if you get it ripe. It arises from over-luxuriance.]

Country Shows.—We have a Society in our village, and on the morning of its July meeting I met a respectable tradesman whom I shall call Mr. Smith, and said: "Well, Mr. S., I suppose I shall see some of your plants at the Show to-day?" Mr. S. "No you won't, ma'am. What is the use of my sending plants when —— and —— and —— will beat me out and out? Haven't they the use of the greenhouse, stove, manures, and all that their masters' purse can buy; and what chance can I have with my frame only? Depend upon it, ma'am, those Horticultural Societies will not last long, if they don't alter! Now, if I had a chance of a prize I would send my plants, and I would take my family, and some of my friends would go too, and then they would get as many shillings towards their funds; but now I stay at home, or I go to the Stag and smoke my pipe instead." X. "Then you think there should be a prize for tradesmen, or those persons who possess a frame only?" Mr. S. "Certainly I do; but, bless you, they'll never do anything till they let the women have a share." X. "Then you think there should be a lady's prize?" Mr. S. "No, I don't mean quite that—I mean that there should be prizes for women only; let there be two of them—one for ladies, and the other for women in a lower rank, or it will be just the same as it is now with the men. Why, ma'am, it would do no end of good; instead of being stitch, stitch, stitch, all day long at that worsted-work, why they would get out into the air, and it would do them a world of good." X. "Well, Mr. S., I should be glad to see your suggestions carried into effect; but I fear——" Mr. S. "Ah, well, ma'am, all I can say is, that if something is not done our Society will die of consumption; and if they will only use a little common sense about their rules, why they will prevent consumption in others, for instead of spending our evenings at a tavern, we should be tending our plants." We then separated, and I send Mr. Smith's hints, as showing what I know to be general sentiments respecting garden societies.—*X.*

Onions.—A piece of garden ground, 13 yards long, and 4 feet wide, cultivated by Mr. Everitt, gr. to D. Hoste, Esq., Barwick House, Norfolk, produced this year 28 st. 12 lbs. of White Spanish Onions. Is not this an unusually fine crop?—*W. E.*—[Very.]

Wasps.—A few weeks since I observed in the *Chronicle* a statement made by a correspondent to the effect that a wasps' nest might be easily destroyed by means of turpentine. I have since tried the experiment, and, in accordance with your correspondent's directions, I inserted the neck of a bottle containing a small quantity of turpentine into the mouth of the hole, and plaistered it round with clay. The result was, that it not only did not destroy the nest, but the next morning a wasp, perfectly alive, actually came out from the bottle! I wish to know wherein I was wrong in making my experiment, and how your correspondent reconciles this fact with his former statement.—*H. P.* [Spirits of turpentine poured into wasps' holes will certainly kill them; the bottle experiment we have not tried].

Growth of Trees.—Respecting the elongation of the spaces between the tiers of branches on a tree after they are formed, it is said, that after a year's stem-shoot is fully formed, it will elongate, and that a side-branch at one time—say any given number of feet from the ground—shall in a few years afterwards be raised considerably higher from the surface. Whoever defends such a notion has surely never attentively observed the growth of trees. Take a Fir, for instance, after it has been planted, even 20 or more years, it will be found that the lower branches are as close to the surface of the ground as when it was planted, and of course the distance between each successive tier of branches remains of the same length, as those spaces never elongate after they are formed.—*W. Billington.*

COUNTRY SHOWS.

Bury Floral and Horticultural Society, Aug. 21.—This was the second meeting for the exhibition of Carnations, Picotees, Stove and Greenhouse-plants, Dahlias, Fruits, and Vegetables, &c. It was held in the Victoria Gardens. The morning was rather unfavourable; but the number of articles for exhibition was, nevertheless, so numerous, that the marquee, which is 22 yds. long by 16 yds. wide, was scarcely large enough to contain them. We were pleased to see the Cottagers had taken the advantage of the opportunity offered them to contend for the prizes given by the Society. Thirty-eight exhibited in this class, and their productions did honour both to their table and the exhibition. We hope that the success which has attended the Exhibitors in the Cottager's class will be the means of making many earnestly set about cultivating their little gardens and bringing their productions to future Exhibitions. The wealthier classes expressed their astonishment at seeing such good fruit, flowers, and vegetables as were exhibited on the Cottager's table, and are anxious to afford them every means of encouragement. The prizes were awarded as follows: CARNATIONS—*Scarlet Bizarre*: 1, Ely's Jolly Dragoon, Mr. J. Cheetham; 2, Omnium Primum, Colonel Lee; 3, Kershaw's Duke of Richmond, Mr. W. Leach; 4, Duke of Leeds, Mr. J. Cheetham; 5, Don John, Mr. J. Cheetham; 6, Gameboy, Mr. R. J. Kaye. *Crimson Bizarre*: 1, Lord Milton, Mr. W. Cheetham; 2, Paul Pry, Colonel Lee; 3, Seedling, Mr. J. Hurdman; 4, King Alfred, 5, William Caxton, 6, Rainbow, Colonel Lee. *Scarlet Flakes*: 1, Chadwick's Brilliant, 2, William the Fourth, 3, Ringleader, Colonel Lee; 4, Potter's Champion, Mr. J. Scholes; 5, Beauty of Bradley, Mr. R. J. Kaye; 6, Marquis of Granby, Colonel Lee. *Rose Flakes*: 1, Duchess of Devonshire, Colonel Lee; 2, Lovely Ann, Mr. R. J. Kaye; 3, Duchess of Sutherland, Mr. Holland; 4, Apollo, Mr. R. J. Kaye; 5, Dobbin's Mountaineer, Colonel Lee; 6, Lady Ely, Mr. Dunderdale. *Purple Flakes*: 1, Euclid, 2, Princess Charlotte, Colonel Lee, 3, Elizabeth, Mr. J. Hurdman; 4, Bellerophon, 5, Mungo, 6, Commander, Colonel Lee. PICOTEES—*Purple, heavy-edge*: 1, Nulli Secundus, Mr. J. Cheetham; 2, Beauty of Wurley, Mr. R. J. Kaye; 3, Victory, 4, Bonny Bet, Mr. W. Leach; 5, Kaye's Monarch, 6, Jackson's Delight, Col. Lee. *Purple, light-edge*: 1, Nulli Secundus, Mr. W. Leach; 2, Field Marshal, Mr. T. Smith; 3, Grace Darling, Mr. W. Lodge, 4, Prince Albert, Mr. J. Scholes; 5, Royal Adelaide, Mr. W. Lodge; 6, Seedling, Mr. Holland. *Red, heavy-edge*: 1, Duchess of Cambridge, Mr. R. J. Kaye, 2, Marshal Soult, Mr. Holland; 3, Marc Antony, Colonel Lee; 4, Mrs. Horner, Mr. Lodge; 5, Little Wonder, Colonel Lee; 6, Duke of Wellington, Mr. R. J. Kaye. *Red, light-edge*: 1, Mrs. Maynell, Mr. Holland; 2, Mrs. Horner, 3, Nonpareil, Colonel Lee; 4, La Superb, Mr. Lodge; 5, Princess Sophia, Mr. Holland; 6, William the Conqueror, Mr. R. J. Kaye. DAHLIAS—*Dark*: 1, Essex Triumph, H. Openshaw, Esq.; 2, Garrick, A. Wood, Esq.; 3, Standard of Perfection, 4, Sir R. Sale, Mr. J. Gaskell. *White or Blush*: 1, Antigonist, 2, Emma Noke, Mr. Gaskell; 3, Lewisham Rival, 4, Coronation, A. Wood, Esq. *Yellow or Orange*: 1, Aurantia, Mr. Lodge; 2, Argo, Mr. Gaskell, 3, Parkmount Rival, Mr. Lodge; 4, Lady Stamford, Mr. Gaskell. *Lilac or Purple*: 1, Standard of Perfection, Mr. C. Noyes; 2, North Midland, Mr. Lodge; 3, Lady Harlam, H. Openshaw, Esq.; 4, Pickwick, Mr. Gaskell. *Scarlet and Red*: 1, Eclipse, 2, Tournament, Mr. Gaskell; 3, Duke of Cornwall, H. Openshaw, Esq.; 4, Scarlet Defiance, Mr. T. Davenport. *Rose and Crimson*: 1, Attilla, 2, Miss Abbot, Mr. Gaskell; 3, Mrs. Shelley, Mr. J. Ashworth; 4, Competitor, H. Openshaw, Esq. *Edged and Tipped*: 1, Lady Antrobus, Mr. C. Noyes; 2, Beauty of the Plain, Mr. Lodge; 3, Lady Antrobus, Mr. T. Davenport; 4, Madame Chouvieri, Mr. Lodge. AMATEURS—24 *varieties*: Mr. T. Davenport. AMATEURS AND GENTLEMEN'S GARDENERS—12 *varieties*: 1, H. Openshaw, Esq.; 2 and 3, Mr. J. Gaskell. GREENHOUSE PLANTS: 1, Mr. Thos. Davenport; 2, Daniel Grant, Esq. *Single Specimens*: 1, Lilium lancifolium, Mrs. Ramsbottom; 2, Helichrysum proliferum, R. Ashton, Esq.; 3, Fuchsia formosa elegans, Mr. T. Davenport; 4, Rose Louis-Philippe, 5, Rosa odorata, Miss Grundy. STOVE PLANTS—1, Luntana manionina, L. crocea, Nerium [illegible] 2, Gloxinia tubiflore Thu[illegible] crenulata, R. Ashton, Esq.; [illegible]ata, &c., D. Grant, Esq. *Single Specimens*: 1, Thunbergia alba, J. Fenton, Esq.; 2, Achimenes pedunculata, R. Ashton, Esq.; 3, Zygopetalum maxillare, J. Fenton, Esq.; 4, Cockscomb, Mr. Gaskell; 5, Ardisia crenulata, D. Grant, Esq. *Pansies*, 24 *varieties*: 1, Mr. T. Cross; 2, Mr. N. Cronshaw; 3, Mr. Cross, 4, Mr. Noyes. 12 *varieties*: 1 and 2, Mr. N. Cronshaw; 3, Mr. Cross; 4, Mr. N. Cronshaw. *Pines*: 1 and 2, Providence, 3, Montserrat, J. Fenton, Esq. *Black Grapes*, 1, Lombardy, J. Fenton, Esq.; 2, do., Mrs. Ramsbottom; 3, Black Hamburgh, D. Grant, Esq. *White Grapes*: 1, White Muscat, D. Grant, Esq.; 2, do., Mrs. Ramsbottom; 3 do., Mr. Richardson. *Melon*: 1, Mr. Noyes; 2, Cantaloupe, D. Grant, Esq.; 3, J. Fenton, Esq. *Peaches*: 1 and 2, D. Grant, Esq.; 3, Miss Grundy. *Nectarines*: 1 and 2, D. Grant, Esq.; 3, Miss Grundy. *Apricots*: Miss Grundy. *Plums*: D. Grant, Esq. *Dessert Apples*: Mr. Cross. *Culinary Apples*: 1, Mr. Noyes; 2, Mr. Cross; 3, R. J. Grundy, Esq. *Dessert Pears*: 1, R. Hucking, Esq.; 2, Miss Grundy; 3, Mr. Noyes. *Culinary Pears*: 1, Mr. Noyes; 2, Mr. Cross, 3, R. Hucking, Esq. *Alpine Strawberries*, J. Faulkner. *Orange tree in fruit*: 1, D. Grant, Esq.; 2, Mrs. Ramsbottom. *Lemon tree*: 1, Mr. Richardson. *Cucumber*: 1 and 2, Mrs. Ramsbottom; 3, R. Ashton, Esq. *Mushrooms*: 1 and 2, R. Ashton, Esq.; 3, J. W. Swannick, Esq. *Peas*: 1, Mr. Davenport; 2, A. Wood, Esq.; 3, Mr. Ashworth. *Broad Beans*: 1, Mr. Cross; 2, Mr. C. Jackson; 3, R. Hucking, Esq. *Kidney Beans*: 1, Mr. Faulkner; 2, A. Wood, Esq.; 3, D. Grant, Esq. *Celery*: 1 and 2, A. Wood, Esq.; 3, Mr. J. W. Swannick. *Cauliflower*: 1, Mr. Faulkner; 2, Mrs. Ramsbottom; 3, Mr. Faulkner. *Broccoli*: 1 and 2, J. Fenton, Esq.; 3, D. Grant, Esq. *Cabbage*, 1, Mr. J. W. Swannick, 2 and 3, R. Hucking, Esq. *Red Cabbage*: 1, Mrs. Ramsbottom; 2, R. Ashton, Esq. *Parsnips*: 1, Mr. G. Jackson; 2, J. Fenton, Esq. *Turnips*: D. Grant, Esq. *Carrots*: D. Grant, Esq. *Artichokes* 1, J. Fenton, Esq.; 2, Mr. Noyes. *Beet-root*: 1, D. Grant, Esq.; 2, J. Fenton, Esq. *Onions* (Autumn-sown), Mr. J. Jackson. (Spring-sown): 1, Mr. Noyes; 2, Mr. Cross; 3, Mr. H. Smith. *Endive*: Mr. J. W. Swannick. *Parsley*: 1, A. Wood, Esq.; 2, D. Grant, Esq. *Lettuce*: 1, R. Ashton, Esq.; 2, J. Fenton, Esq. COTTAGERS—*Pelargoniums*: 1, T. Holt; 2 and 3, T. Allen. *Dahlias*: J. Sykes. *Apples*: 1, J. Foster; 2, T. Greenhalgh; 3, J. Knott. *Pears*: 1, J. Foster; 2, T. Booth; 3, T. Greenhalgh. *Plums*: T. Greenhalgh. *Peas*: 1, R. Olivant; 2, T. Booth; 3, J. Chatterton. *Beans*: 1, R. Pickstones; 2, C. Hilton; 3, A. Taylor. *Celery*: J. Kaye. *Cabbage*: W. Tweedale. *Red*: 1, T. Pollett; 2 and 3, T. Booth. *Carrots*: 1, J. Fletcher; 2, M. Mullet; 3, J. Sykes. *Turnips*: 1, D. Astley; 2, H. Partington; 3, M. Mullett. *Onions*: 1, J. Pollett; 2, W. Bowker; 3, T. Pollett. *Lettuce*: T. Booth. *Parsley*: T. Booth. [We have inserted this at the particular request of the reporter; but we cannot again depart from our rule of excluding reports without the names of the flowers or fruit that win.]

Hunts. Horticultural Society.—This was the annual Show of the Huntingdonshire Horticultural Society: the display of fruit and flowers was small compared with former years.—CARNATIONS.—*Scarlet Bizarre*: 1, Barringer's Fair King, Mr. F. Barringer; 2, Hepworth's Leader, Mr. Giddings; 3, ditto, Mr. J. Barringer. *Purple*: 1, Barringer's Surprise, Mr. J. Barringer; 2, ditto, Mr. Wood. *Flake Scarlet*: 1, Lydia, Mr. F. Barringer; 2, ditto, Mr. J. Barringer. *Purple*: 1, Beauty of Woodhouse, Mr. F. Barringer; 2, Queen of Sheba, Mr. Franklin; 3, Barringer's Apollo, Mr. F. Barringer; 2, ditto, Mr. J. Barringer; 3, Sir George Grewe, Mr. Franklin; 4, Barringer's Apollo, Mr. F. Barringer. PICOTEES.—*Purple*: 1, Wood's Princess Alice, Mr. Wood. *Dark Red*: Duke of Wellington, Mr. Franklin; 2, ditto, Mr. F. Barringer; 3, Sir Robert Peel, Mr. Giddings. *Scarlet or Pale Red*: 1, Sir Robert Peel, Mr. Barringer; 2, Duchess of Sutherland, Mr. Franklin; 3, Hector, Mr. Franklin. *Rose*: 1, Queen Victoria, Mr. J. Barringer. *Yellow*: 1, Maid of Middelburgh, Mr. J. Barringer. *Best Picotee, by Amateurs*: Queen Victoria, Mr. Price. GOOSEBERRIES.—*Heaviest Red*: 1, Wonderful, Mr. Giddings; 2, ditto, Mr. Giddings. *Yellow*: 1, Piggot's Leader, Mr. Giddings. *Green*: 1, Plumper, Mr. Giddings. *White*: 1, Ostrich, Mr. Newman. *Extra Prizes* were given to Mr. Slight for a beautiful Achimenes grandiflora; to Mr. J. Barringer for Cockscombs; and to Mr. Giddings for Ritou Strawberries.—*Cambridge Chronicle.*

Isle of Wight Horticultural Society, Aug. 26.—This was the second and last Exhibition for the season. The Prizes were awarded as follows:—*Stove or Greenhouse Plants.*—1, Mr. Barnicle, gr. to J. Percival, Esq., for Lisianthus Russellianus, Amaryllis striatiflora, Erythrina crista-galli, Hibiscus sinensis roseus, Hibiscus Cameroni, and Vinca alba; 2, Mr. Jobling, gr. to the Rev. A. Hewitt, for Statice arborea, Vallota purpurea, Crassula falcata, Gesnera zebrina, Achimenes pedunculata, and Clerodendron speciosissimum. *Twelve best Roses.*—1, Mr. Meehan, gr. to Col. Harcourt, for Lamarque, Emile Courtier, Jatifolia, Abbé Mirland, Lyonnais, Henri Berbet, Bernard, Dou Carlos, La Biche, Pourpré supérieur, Clara Sylvain, and De Neuilly; 2, Mr. Jobling for Jaune Desprez, Lady of the Lake, Aimée Vibert, Philip the First, Noisette multiflora, Lee's Crimson, Madame Desprez, Bougare, Hymenée, and Fabvier. *Fuchsias.*—1, Mr. Barnicle for Pageana, Coronet, Modesta, Vesta, Neptune, Coccinea, Toddiana, Moneypenii, magnifica, insignis, tricolor, and Albion; 2, Mr. Meehan for Eppsii, Defiance, Brockmanii, Exoniensis, St. Clare, Formosa elegans, Toudiana, magnifica, tricolor, conspicua arborea, transparens, and racemiflora. *Cockscombs.*—Mr. Bone, gr. to Mrs. Lind. *Dahlias.*—1, Mr. Bone for Squibb's Defiance, Princess Royal, Stella, Majestic, President of the West, Ne Plus Ultra, Scarlet Eclipse, Grace Darling, Lady Bathurst, Rival Sussex, Phenomenon, and Beauty of Sussex; 2, Mr. Barnicle for Springfield Rival, Admiral Stopford, Scarlet Defiance, Squibb's Defender, Virgin Queen, Marquess of Lothian, Bonaparte, Purple Perfection, Rival Sussex, and three seedlings. *German Asters.*—Mr. Jobling. *Verbenas.*—1, Mr. Barnicle for Boule de Feu, Queen, Bridesmaid, Stewart's Purple, Renown, Ingramii, Prince of Wales, Groomiana, Strata coccinea, Mortlock's Superb, Unique, and Buisii (these were in pots); 2, Mr. Jobling for Teucroides carnea, Unique, Groomiana, Stewart's Purple, Queen, Joan of Arc, Hendersonii, Melindres superba, Laconii, Lucisa, Ingramii, and Renown. *Seedling Pansy.*—Mr. Meehan for a dark variety. *Grapes.*—Mr. Jobling for Black Hamburgh. *White Grapes.*—1, Mr. Bone for White Sweetwater; 2, Mr. Barnicle for the same. *Peaches.*—1, Mr. Meehan for Chancellor; 2, Mr. Bone for Noblesse. *Nectarines.*—1, Mr. Meehan for Newington; 2, Mr. Jobling for White Nectarine. *Plums.*—1, Mr. Meehan for Greengages. *Apples.*—1, Mr. Thompson for Kerry Pippin; 2, Mr. Barnicle for Quarrenden. The following *Extra Prizes* were awarded:—To Mr. Bone for Balsams; to Mr. Meehan for a stand of 24 Pansies (chiefly seedlings), for Hollyhocks, and for a single specimen of Clerodendron speciosissimum; to Mr. Jobling for *Phloxes*, viz.: Wheelerii, Sheppardii, speciosa, omniflora, cordata grandiflora, excelsa, pendulifolia, Drummondii varieties, Pyramidalis, reflexa, and incarnata: to Mr. Barnicle for Gloxinia maculata, and for a seedling Dahlia (white, tipped with vermilion), for six Cockscombs, and for two bunches Black Hamburgh Grapes; to Mr. Thompson for six Newington Nectarines.

Morningside Practical Gardeners' Society.—This was the third meeting for the season. The following prizes were awarded:—*Seedling Pelargonium.*—1, Mr. J. Downie, gr. to General Robertson, for Miss Easton; 2, Mr. Gibb, gr. to Mrs. Stark, for Gem. *Seedling Pansy.*—1, Mr. Stevens, gr. to Alexander Russell, Esq., for Queen; 2, Mr. J. Downie for Little Wonder. *Roses.*—Mr. H. Gibb for Crested Moss, Madame Hardy, Village Maid, Louis-Philippe, Ne plus Ultra, and Fulgens. *Pinks.*—Mr. T. Ovens for Queen Victoria, Nimrod, Tweedside Beauty, Miss Brandland, Nymph, and Rainbow. *Verbenas.*—Mr. J. Downie for Vivid, Princess Royal, Burleyana, Tweediana picta, Howardii, and Ingramii. *Calceolarias.*—Mr. J. Downie for Standish, Duchess of Buccleuch, and Lady Constable. *Salvias.*—Mr. J. Downie for Fulgens, Patens, and Grahamii. *Picotees.* Mr. J. Young for Duchess of Kent, Incomparable, and Nulli Secundus. *China Asters.*—Mr. W. Denholm, gr. to Sir J. Forest, bart. *Stocks.*—Mr. J. Young. *Herbaceous Plants.*—Mr. J. Browne for Phlox omniflora, Delphinium Barlowii, Double Scarlet Lychnis, Lathyrus latifolius, Campanula grandis, and Cuclone barbata. *Grapes.*—Mr. J. Fergie for Black Hamburgh. *Melons.*—Mr. W. Denholm for Duke of Bedford. *Gooseberries.*—Mr. J. Gould for Porcupine. The Prize by Messrs. Dickson and Son, Nurserymen, Inverleith, for the best one-head of *Cauliflower*, was won by Mr. T. Wood, gr. to A. Falconar, Esq.—The Prize by Mr. M'Intosh, Agent for Messrs. W. Wood and Son, for the best 6 Roses, was won by Mr. J. Downie with Boule de Nanteuil, Kean, Triomphe de Montmorency, Bourbon Queen, Mousseline, and Louis-Philippe.—Mr. J. Gould, gr., Canaan Cottage, exhibited a very fine plant of a seedling Maurandya, for which an extra Prize was awarded.—There were also exhibited from Grange Bank some pretty seedling Pansies.

West Bromwich Floral and Horticultural Society, Sept. 20.—This, the first Exhibition of the Society, went off much better than was expected. A. Kenrick, Esq., sent a miscellaneous collection of stove and greenhouse plants, not for competition, amongst which were fine plants of Gesnera zebrina, Achimenes grandiflora, longiflora, and rosea; Vinca alba, and V. rosea; Erica ampullacea, and tribyana; Fuchsia formosa elegans, and Lanei; Citrus Aurantium, and two fine plants of Nerium splendens, gracefully bending under the beautiful trusses of rose-coloured flowers.—Messrs. Pope and Sons also sent a collection of plants, not for competition, containing fine specimens of Cycas revoluta, Cereus lanuginosus and pentagonus, Erica tribyana, ampullacea, and viridiflora; and other plants of equal merit. The following is the list of Prizes:—*Fuchsias.*—1, Exoniensis, Mr. Woodward. *Best Three.*—Lanei, Ballooni, and Conspicua arborea, Mr. Woodward. *Greenhouse Plants.*—1, Agapanthus umbellatus, Mr. Woodward. *Best Three.*—Fuchsia corymbiflora, the Pelargonium named Sylph, and a seedling Calceolaria, Mr. Woodward. *Extra Prizes.*—Nerium splendens, Mr. Woodward.

Ancient Society of York Florists, Sept. 5. (Established prior to 1768)—This was the Dahlia Show, which is the last Meeting for the season. The Prizes were awarded as follows:—*Premier Dahlia*: Mr. Quarton, Standard of Perfection. *Dark Puce, Maroon, or Crimson*: 1, Mr. Quarton; 4, Mr. Edward; 5, Mr. Summers, with Essex Triumph; 2, Mr. Edward, with Sir H. Pottinger; and 3, Mr. Quarton, with Admiral Stopford. *White or Blush*: 1, 4, Mr. Quarton; and 5, Mr. Summers, with Bridesmaid; 2, Mr. Edward, with Beauty of Bucks; and 3, Mr. Edward, with Mrs. James Richardson. *Light or Dark Rose*: 1, Mr. Quarton, with Mrs. Shelley; 2, Mr. Quarton, with Wignall's Queen; 3, 5, Mr. Summers; and 4, Mr. Barrinee, with Mrs. Shelley. *Buff or Orange*: 1, Mr. Edward, with Crantz; 2, Mr. Quarton, with Marquis of Lansdowne; 3, Mr. Edward, with Orange Superb; and 4, 5, Mr. Harrison's Seedling. *Light or Dark Purple*: 1 and 3, Mr. Quarton; 2 and 4, Mr. Edward; and 5, Mr. Harrison, with Standard of Perfection. *Yellow or Sulphur*: 1 and 4, Mr. Quarton; 2, Mr. Edward, with Cox's Defiance; 3, Mr. Summer, with Prince of Wales; and 5, Mr. Harrison's Seedling. *Scarlet*: 1, Mr. Edward, with Cattough's Eclipse; 2, Mr. Quarton, with ditto; 3, Mr. Harrison, with Nonpareil; 4, Mr. Edward, with his No. 13; 5, Mr. Harrison, with Nonpareil. *Light Edged or Tipped*: 1 and 2, Mr. Quarton, with Beauty of Sussex; 3 and 4, Mr. Edward, with Princess Royal; and 5, Mr. Summer, with Princess Royal. *Shade or Bubious*: 1, Mr. Edward, with President of the West; 2, Mr. Quarton, with Girling's Prince of Wales; 3, Mr. Edward, with Madame Charivari; 4, Mr. Quarton, with Rouge et Noir; and 5, Mr. Harrison, with Lord Howden. *Lilac*: 1 and 2, Mr. Quarton, 3 and 4, Mr. Edward, and 5, Mr. Summers, with Miss Abbott. *Seedlings*: Mr. Harrison.

Reviews.

A Descriptive Catalogue of Roses, cultivated for sale by Messrs. Wood & Son. 1844. Taylor.

THIS is another of those descriptive catalogues, the importance of which we last week insisted on. It is divided into two parts, the first including Roses that flower in June and July, the other such as flower from July to November—a very useful variation from the common plans of arrangement, considering how large a part of the wealthy class never see their country residences before the beginning of August. Its orthography has apparently been carefully attended to; but we really abandon all hope of ever ascertaining how the majority of Rose names should be spelt, and therefore cannot blame Messrs. Wood and Son for any errors that have escaped the quick eyes of the reader in Messrs. Taylor's printing office. It is, however, evident that Berlise should be Berlèze, after the writer on Camellias of that name; Casimir Perrier spelt his name, we believe, with one r; Mamoras should certainly be Marmoras; General Kloeber should be Kleber, we presume; and we imagine that for Hypocrate, Columbrieux, and Jean d'Arc, we should read Hippocrate, Colombine, and Jeanne d'Arc. However, these are things that Rose-growers think little about.

The Meteorological Ephemeris for 1845; *with Ruled Pages for Observations.* By Henry Doxat, Esq.

MR. DOXAT makes no pretence to weather prophecy, further than may be gained by a very attentive consideration of those influences which may be naturally supposed to influence atmospheric changes. He was so very nearly right this year in some of his anticipations—for they are neither guesses nor predictions—that we intend to watch his "Ephemeris" carefully next year, and we recommend others to do so likewise.

The Mother's Primer; a Little Child's First Steps in Many Ways. By Mrs. Felix Summerly. 12mo. Longmans.

"MY experience with children," says the Authoress, "is, that learning to read may be a pleasant instead of a painful task." We think so too, and recommend mothers to study, by the help of this pretty little book, how to make it so.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

ALONA CŒLESTIS. Sky-blue Alona. (*Greenhouse Shrub.*) Nolanaceæ. Pentandria Monogynia.—It has long been known to botanists that Chile and Peru abound in shrubby plants allied to Nolana, few of which are yet published, but including among them some species of remarkable beauty. Hitherto our gardens have possessed no others than N. prostrata, tenella, paradoxa, and atriplicifolia, of which the first and last alone remain in cultivation. But they are annuals, and, with the exception of the last, of small importance for the purposes of decoration. The shrubs are still to procure. Of these one species, viz. this one, has at last been raised from some of Mr. Bridges's seeds, by Mr. Best, gr. to A. Park, Esq., of Merton Grove, Surrey. It proves to be a very fine thing, with pale sky-blue flowers, each of which remains in beauty for several days. Its habit is that of a soft leaved Heath, and it appears likely to form a bush of some such size as a common Pelargonium. What its proper treatment may be we are unable to tell, having had no opportunity of studying the plant; but we presume it will thrive with the same cultivation as Scarlet Pelargoniums, and we hope it will prove a capital thing for bedding out during the summer. We would, however, suggest to gardeners, that as all the Nolanas appear to be shore plants, salt in small quantities may be found useful in the soil. A plant of it was exhibited to the Horticultural Society in July last, when it received the silver Knightian Medal.—*Botanical Register.*

Garden Memoranda.

Hewell Hall, near Bromsgrove.—At p. 663 of our volume for last year we gave an amateur's sketch of this interesting place. At the risk of repetition we now offer an account of it by a correspondent of great skill as a gardener. Our readers may be anxious to compare the views of two different persons concerning the same array of facts. Hewell Hall is situated in one of the finest parks in England. The mansion is a noble Grecian building, placed in the very worst situation in the whole park. One cannot help admiring the princely liberality that suggested the idea of such a pile, and pause to condemn the taste that could place it in such a situation, and in such a park too! Few demesnes afford so much choice in the site of the mansion as this, having such a diversified surface, and grouped in all directions with huge masses of stately timber. An extensive lake has also been formed near the house, certainly in the best situation for such an ornament. The outline, however, wants boldness and variety; for although conceived on a scale commensurate with the magnitude of the place, it is nevertheless destitute of interest from its inartistical form. This is very strikingly exemplified in the opposite shore running nearly parallel with the mansion: and as the latter does not occupy an elevated situation, the defect becomes more apparent and objectionable. The splendid groups of timber trees which meet the eye in all directions, are, in most instances, judiciously placed. They are composed, however, of trees assimilating greatly in form, and want the Cedar of Lebanon, and in some instances the Lombardy Poplar, to give variety and style to the general character. The

lawn near the mansion can boast of one of the finest pieces of turf in this country; it is the very perfection of what turf should be—quite free from Moss and Plantain, and as smooth as a billiard-table. On this lawn are large masses of shrubs, herbaceous plants, and gay annuals, mixed together and surrounded with a kind of wicker-work, which gives an idea of their being huge baskets of evergreens and flowers. For ourselves we should prefer to see the branches of the Portugal Laurels and other evergreens resting quite unobstructed on the beautiful sward, and the wicker-work inclosing lesser-sized clumps, judiciously distributed, and filled with Scarlet Pelargoniums, Salvias, &c. &c. On this lawn are two very fine Pinus cembra; near it, and connected with the house, is a Dutch garden on a small scale. The walks from this lead to a range of conservatories, filled with plants in the highest health and culture. Mr. Markham pointed out some Camellias to us of an immense size, which he had transplanted in consequence of the alteration and re-erection of these houses; they had not, apparently, received the least check—indeed, nothing could surpass the health and vigour of these truly magnificent specimens. Near this is a rock-garden, formed out of a gravel pit. This is one of the few things of the kind we can bear to look upon. It is a pity, however, that geometrical forms should have been admitted in the arrangement; they are most certainly out of place here; the basins of water for aquatics are raised above the surrounding walks and beds, which should never be in any case; the beds also were rendered too gay with Scarlet Verbenas. The mind in such a scene reverts to those plants we find in rocky wilds and alpine regions, and this feeling should not only be created, but maintained with scrupulous severity. The water in the basins was as pure as crystal—no trifling matter, in our estimation, when water is introduced in garden scenery. How often do we find these receptacles for plants foetid pools, covered with Duckweed, and swarming with frogs and tadpoles! We observed the walks leading to this garden, and in places where the trees overhang them, edged with a kind of tile. Edgings of this kind are admissible in geometrical gardens of some kinds, but they do not associate well with rural scenery. When the shrubs are not surrounded with turf we should prefer edgings of Ivy, which answers admirably, and would harmonise well with the beauty and character of such a situation. The French garden, as it is styled, is upon an extensive scale, and designed with great judgment and skill. It is just now looking brilliant, from there being an immense display of all kinds of profuse-blooming plants, well arranged and superbly managed. An improvement could readily be effected in this garden by the introduction and right disposition of fastigiate evergreens flanking the broad walks of turf and gravel; such, for example, as the Irish Yew, Cypress, Juniperus excelsa, Cupressus thurifera, Cupressus torulosa, &c., &c. At some distance from the house, in an outer park, is the kitchen garden, which is equally well managed; the fruit trees of every kind are loaded with fruit; the Peach and Nectarine trees against the open walls were quite free from red spider. The kitchen-garden crops were in luxuriant health, evincing none of the signs or effects of this dry season. The Pine-apple, the Grape, the Peach, and the Fig, are here all cultivated in the highest possible perfection; indeed, it would be difficult to point out another place where these are all equally well done. The Pines are chiefly grown in pits, heated by hot-water gutters; the gutters were formed of zinc, but this kind of metal has proved a failure, and Mr. Markham is about introducing Burbidge and Healy's cast-iron gutters, being perfectly satisfied that this is the most efficient mode of obtaining bottom-heat. Mr. Markham has been long celebrated for his superior management of the Grape-vine, and we trust he will, through the medium of the *Gardeners' Chronicle*, favour his less fortunate brethren with his system of culture. The writer of this article has had several opportunities of witnessing the extraordinary success, during the last ten years, attending the culture of the Vine at Hewell, and he can safely aver that he has never seen anything equal to it in Great Britain. It is almost unnecessary to repeat that the whole of these extensive gardens and grounds were in the highest possible keeping; the same order prevails, from the rubbish yard to the lawn and conservatories. The whole of the turf looked as if it had all been mown that morning—the walks all swept, and the whole of the surface of the ground, whether in the flower or kitchen gardens, just stirred and raked. Our attention was directed by Mr. Markham to a most important circumstance, which would have drawn on the incredulity of Mr. Knight himself. That celebrated physiologist considered the Golden Pippin Apple to be in the last stage of decay. Here, however, it is in its youth, growing as vigorously as any Apple in the garden, both old and young trees producing fruit abundantly, without in either the least signs or indication of progressive decline. This doctrine of the deterioration and degeneracy of some of our best old Apples, is unquestionably opposed to analogy in trees generally; and although this instance is somewhat remarkable, it at least leaves the question open for further investigation.—*R. G.*



Miscellaneous.

To Cook Tomatoes.—Take a ripe Tomato, quite red, but not soft. Cut out the stalk and scoop out the seeds, leaving as much of the flesh as possible. Fill the inside with forcemeat (which will be better if mixed with a little chopped ham or tongue). When well-stuffed set it in a Dutch oven, in a dish, before the fire, with a piece of butter on the top of the Tomato, and leave it to roast till brown. Care must be taken that it does not burn.

New Discoveries concerning the Pollen of Plants.—Mr. Siegfried Reisseg announces that he has discovered that pollen will produce its tubes in the parenchyma of the stem and leaves, as for instance, that of an Allium in Potato tubers; that it then grows into conferva-like cellular green plantlets; and that pollen will change, under certain circumstances, into animalcules, such as those of Ehrenberg's genus Astasia! What next?

The Jay.—Having the reputation of being partial to the eggs of young birds is quite enough to include this beautiful bird in the list of destructives; its principal food, however, being Acorns and Beech-mast. This terminates, it is believed, those birds that come under the gamekeeper's denomination of "varmint." The rook has been omitted, as it is believed that farmers have now become sensible of the advantages they confer; and instances are known that where, in their ignorance of the utility of the rook in clearing their lands of grubs, &c., they have prevailed on their landlord in getting the rookery destroyed, in a very short time, finding out their error, they have earnestly entreated for its restoration. Still the eye is too frequently disgusted in seeing one of these birds suspended in the field, under the idea of saving a few miserable potatoes, &c. &c. The gardener's list is rather more numerous; it will not be necessary to enumerate all which come under his ban. If the money spent in powder, pay of boys kept from school, and the original cost of the gun, were expended in teaching net-making to those in the parish who are lame, or otherwise infirm, a saving would be obtained, and a moral benefit conferred. Too much praise cannot be awarded to the benevolent exertions of the late Rev. Charles Bathurst, for introducing this art into his parish, superintending it personally, and for the little volume which records his proceedings, with the mysteries of the art of reticulation.*—*J. M.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

After the stove has been kept dry for some time, as is always done more or less from the end of August, the red spider makes its appearance in some collections, in greater numbers than at other times. This is the worst time in the year to permit the ravages of this insect, as if the foliage is now disfigured it must remain an eyesore till next season's growth; therefore on the first appearance of this evil, apply sulphur to the pipes, &c.; and any plants more liable to the attack may now have their winter pruning, rather than be a harvest for the red spider. See that Gloxinias are well ripened before they are set to rest, and likewise that a proper label is fixed to all those kinds which rest periodically. All woody plants ought now to be done growing in the stove; slight fires may be made in the morning; the watering got over early in the day, and a free current of air admitted on all fine days for a few hours.

Conservatory.—Plants in this house, the greatest portion of which are expected to be in flower, may be kept as still as if they were in a Ward's case from this time till the beginning of the growing season; merely giving air to keep down sun-heat occasionally; indeed, sun heat will do no harm from this time, although it should raise the temperature up to 70° or 80° for a few hours, as the excitability of plants is now over. Plants thus treated will get over the winter much easier than where the ventilators are in requisition at every change of our variable climate, as was the case in my younger days; but we affect that unless your plants, pots, borders, walls, trellises, &c. be kept as clean as a drawing-room, this system will not answer with you, as the effluvia rising from decaying leaves, ill-drained pots, and mossy borders, will soon contaminate the confined air, and you must have recourse to constant ventilation, as in the olden times.

Greenhouse, Pits, Frames, &c.—There is no plant, however hardy it may be, that will endure with impunity the drenching rains of autumn, if planted in a pot. An Oak, Ash, or Elm might thus be injured in wet seasons; how much, then, must half-hardy plants endure if exposed to the wet! And yet it is no less injurious for them to be housed early; that is, after they have passed the nursery stages. All young and delicate plants, such as Heaths, &c. should now be put into frames, not through fear of cold, but to guard them from the frosts and heavy dews; and all large and more hardy sorts should now be placed in the full sun on the south side of hedges, walls, or other screens, and some means of throwing off the wet from them devised. Cinerarias, Chinese Primroses, Calceolarias, and the like, which have been grown on north or shady aspects, should now be changed to face the south. Sufficient quantities of peat, loam, sand, and leaf-mould in a dry state, for winter and early spring potting, should be put under cover at any time now, when they are in a dry state. Our success or failure depends on the state and condition of our compost more than many are aware of.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

We have few finer tribes of plants for bedding out in the summer season than the Petunia, and few genera in which a greater improvement has been effected as to the quality of the flower. One of the finest varieties of the purple class for forming groups is undoubtedly Violacea superba, a variety sent out some years back by the Horticultural Society, and which has the property of holding its colours until the flowers are quite withered. Prince Albert is another variety possessing nearly the same properties, with a little improvement in form; and Duncan's seedling Elegans with a white throat, Beauty, Gem, Newmanii, and Newmanii superba, are flowers of nearly the same colour (purple), the last four are of unusually large size. The great disadvantage of the last four is the looseness of the flowers, and their tendency to burn or lose their colour under bright sunlight. Lady Peel has the same fault, and though a remarkably free bloomer must be discarded in consequence. Of the pale colours some five varieties have this season been sent out; a very distinct sort is Ivery's Pet, a small flower, not much larger than a Nierembergia, with a pale ground, the throat pencilled with dark purple, and the edge of the flower beautifully mottled with dark-rose. Magna Charta is a larger flower of the same character, the mottling being distributed over a broader surface; and this mottling is not the result of decay, as is the case with "Miller's Punctata," but is the natural and proper colour of the flower. Reliance has a finely pencilled throat, on a ground of very pale lilac, and slightly edged with purple. Kentish Beauty has a very dark pencilled throat, on a deep lilac ground; and Enchantress has the same character of throat on a rich peach-blossom surface. Ovid is a large flower of superior form, and of a deep purplish-lilac colour. Triumphans, or Rosea alba, has a white flower edged with deep rose. Erubescens is an old but an abundant flowering kind, of a pale lilac colour; and Lady Sale has very delicate pale lilac flowers slightly edged with pale rose. These are the only varieties which a careful examination of the best metropolitan collections has enabled me to recommend as distinct. They may all be propagated by cuttings, which root freely in a gentle heat; but as they are liable to become long-legged, spring propagated plants are preferable for bedding out.

Reserve Garden.—The sowing of Annuals to stand the winter must not be delayed; a light free soil is the most suitable, but it is not desirable to have them in a very sheltered situation. At this place we find them to stand the best when the seeds are scattered over the rockwork.

Bulbs.—Where these are required to be got in for the flower-garden in the spring, no time should be lost in making a selection of them, and it is worth remarking that good bulbs, though they may cost a little more, are very preferable to going to a cheap market and getting indifferent kinds.—*W. R. A.*

III.—FLORISTS' FLOWERS.

Carnations.—As we have before insisted, parties desirous of having layers which will healthily pass through the coming winter, will do well to pot them off as soon as rooted; and where new and fresh varieties are required, the best plan is to see them taken off. Should layers come from a distance, examine that part of the stem which communicated with the parent plant—it will sometimes have a cankered or decayed appearance; this must be carefully removed with a sharp knife, and the stem cut back to where it is healthy. Should there be no appearance of decay the stem must then be cut across at the joint, which will frequently emit fresh roots. As the layers are taken off, the compost in which they have been grown may be turned into the Tulip-bed, either as a substitute for that which previously formed the bed, or to ameliorate that which is already there.

Pinks.—It is now a good time to plant out those intended for flowering on the best bed next year. By putting them out at this season there is a much greater certainty of their coming or blooming in true character next season. Headley's Duke of Northumberland, Norman's Splendid, Beauty of Weston, Kirtland's Gay Lad, Bunkell's Queen Victoria, and Wilmer's Miss Jones, are worth adding to collections, lacing well and being all "rose-leaved," or nearly so. *Tulips.*—Prepare a bed for offsets; they ought to be in the ground at least a month before the main bulbs are planted. Continue to turn the soil of the best bed at intervals, giving it the benefit of sun and air. *Auriculas.*—Take care to have the frames intended for the reception of these plants properly cleaned, and the broken squares of glass repaired, &c.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Pines showing fruit after this time, although they cannot be expected to produce as fine fruit as if earlier in the season, will yet be found very useful, and should have every encouragement given them, while the season still continues favourable. The warmest situation in the house should be allotted to them, and when dry they should have a little liquid manure, for the next three or four weeks. Plants that appear likely to show about November or December, if kept at a temperature of 60° or 70°, should have the heat lowered gradually to 60° by night, and 70° by day, which would be just sufficient to keep them from standing still, and would retard their coming up. After the season begins to turn there is a much better chance of swelling off fine fruit. Begin now to lower the temperature for the younger successions, letting the decrease be very gradual. Do not let them want for water, but continue to look them over twice a week, lest any of the plants near the pipes or flues should become too dry. Plant all suckers as soon as taken from the plants, as they soon shrivel by laying out, and are consequently much weakened.

Vineries.—If damp is kept from the late vineries, the damaged berries cut off the bunches, and the ingress of wasps prevented, little else will require attention for some weeks. Where there are not many vineries to protect from wasps, a cheap way is to make bags of tissue paper, to draw up over the bunches, wetting the mouth of the bag round the stalk. If this is carefully performed the bloom need not be injured. I like these bags—they are a cheap, simple, and effectual prevention from insects and dust. Prune the Vines as soon as the leaves fade, and let them be thoroughly cleaned from dust and insects. When this is done let all alterations, repairs, whitewashing, and painting be done, when the houses may be used as greenhouses, till required for forcing. Continue to stop all laterals in the late houses.

Peach House.—If any fresh trees are to be removed from the walls to the Peach-house, the sooner it is done now the better, as the shifting will check the present season's growth, and the wood will ripen sooner. The tree will make new roots enough this autumn and winter to enable it to produce a good crop next season if of sufficient age. In preparing the place in the Peach-house, remove all the old soil that can be taken away without material injury to the other trees in the house, and fill up with fresh deavesd turfy loam, rather poor than of any posture. No manure need be used. Keep the tree high to allow for sinking, and give a good watering to settle the soil round the roots. Continue to prune the trees in the late houses, if the leaves are not gone.

Fig House.—Figs in tubs and pots, still bearing, should be assisted with liquid manure when dry; but in less quantities at a time as the power of the sun declines. It is not well to give much water to the Fig borders now, as the trees should be induced to ripen and go to rest early.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Peach Trees.—In paying attention to the fruit at this season do not let the trees be forgotten, but take every opportunity for hastening the maturing of the wood. The points of the shoots might now be shortened, and the large leaves on strong shoots cut through the middle. The shortening the shoots will cause the buds left to swell better, and unless the trees receive too much moisture at the roots there will be no danger of the buds then bursting. In extreme cases of luxuriance the stronger roots might be pruned with advantage.—*Wasps* are now getting extremely troublesome, after we began to think ourselves secure from their ravages. Every means must be resorted to to keep them in check, by covering with gauze, &c., but even then they will often discover a cranny by which they may enter. For fine single fruit nothing is better than wrapping them round thinly with wool, or cotton wadding; and Grapes that are worth preserving should be bagged at once.

Tomatoes will now require considerable attention to get the fruit well ripened, by stopping the shoots, and cutting off the leaves very liberally, so as to expose the fruit fully to the sun. *Onions* should now be dried and got off the ground as soon as possible; and the ground well dug, with the addition of a little dung, will make a suitable place for the main plantation of Spring Cabbages, which had better be got in without much further delay. The last crop of Autumn-sown Onions, and the last sowing of Lettuces may also now be made. *Small Salads.*—We have seldom alluded to these, as where they are in demand, the sowing of them is a weekly occurrence. Normandy and American Cress may now be sown for the Winter. *Kidney Beans.*—A quantity of the Early Dun, Cream-coloured, or Speckled Dwarf China, may be sown in pots in a warm place, to perfect their produce under the protection of a frame or pit afterwards. No more need be sown, where the plants cannot have the advantage of fire-heat. *Mushroom-house.*—There is little difficulty in procuring Mushrooms after this period, until May next season, in houses where a sufficiency of heat can be commanded by artificial means; such as thick covering, fermenting material inside the house, or flue or hot-water pipes. If in a house with shelves, upon the Oldacre system, the depth of the bed must be regulated by the quantity of materials at your command, and the period you expect them to produce. A bed of 3 or 5 inches thickness of dung may be en-

* "Notes on Nets."

pected to produce for six weeks; and, as I am scarce of material, as soon as a bed finishes bearing profusely, the top part is removed, fresh droppings added to the depth of two other inches, the old and the new mixed together, spawned, and earthed at the proper time—the same as in a fresh bed. It is not of much consequence whether the material of the bed is rather dry or rather wet; only in the first case, after spawning, a covering of wet cow or horse-dung is added, and in the second case, the spawn should be wrapped in a handful of dry litter before being inserted. In all shallow beds, the earth should be put on after spawning as soon as the state of the bed will permit, regulating the thickness of the earth from 1 to 2½ inches, according to the thickness of the bed, and the time you expect them to produce; as, the thinner your covering of earth, the sooner will you obtain Mushrooms,—at the expense, in general, of solidity in the Mushroom, and permanence in the crop. Both with in-door and out-door beds the heat should be rather on the decline, and just about milk-warm, before spawning; and then if, after earthing-up, the heat should not be sufficient, you may throw what you wish into the bed by covering. Before you could remedy too much heat, the spawn is worthless.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Proceed with preparations for fresh planting, if any is to be done during the ensuing season, by clearing the ground of any useless shrubs, such as Briars, Thorns, Furze, &c. Trench and hole the ground where any additions are to be made.

Coppice.—Refer to last week's *Chronicle*, and attend to what is wanted to be done at this season. Remove any useless stuff, where something more profitable may be substituted.

Young Plantations.—Attend to former directions. Too much attention cannot well be paid to these where it is wished to have them profitable, as well as creditable to the owner and to the person intrusted with the management of them.

Hedge rows.—Make ready for fresh planting, if required. Filling up the places where trees have died should be proceeded with at every opportunity.

Nursery Work.—The most important work at this time is eradicating all weeds as they appear—they make great progress in a little time at this season. Train the leading shoots of the plants until they have done growing for the season, and pinch off the ends of the strongest side-shoots that extend too far from the stem.—*W. B.*

VII.—COTTAGERS' GARDENS.

The principal operations to which attention is now to be directed are the protecting of Grapes and the gathering of fruit. The Grapes, which should now be swelling fast, had better be put into small gauze bags, to preserve them from the attacks of wasps, &c., which are now troublesome. With regard to the gathering of fruit, such as Apples and Pears—the sorts that Cottagers generally cultivate—great care is necessary to keep them from being bruised. They should be handled like eggs, in order to insure their keeping. The time when the fruit is ready for gathering is indicated by its beginning to drop of its own accord from the trees, by its parting freely from the stem on being slightly moved, or if, on cutting open one of the fruit, the seeds are of a dark-brown colour, it is fit for gathering. In performing this operation, however, the fruit should never be shaken from the trees, as is often done, but it should be all hand-picked on a dry day. In storing it, let it be taken from the basket, and placed where it is to remain with great care; and, if possible, let it be arranged side by side, and not placed one upon another. With respect to Vegetables, look over the seed-beds, and keep them clear of weeds. Onions, if not already done, should now be dried and stored as soon as possible, in order that the ground may be got ready for other crops. Owing to the late favourable weather, the flower-borders still maintain much of their beauty. Scarlet Pelargoniums are in fine condition; and I have lately seen in the open ground some noble bushes of Fuchsia Riccartonii in luxuriant health, and loaded with blossoms. This is an excellent border variety; it is a very profuse bloomer, and may be easily kept over winter by covering the root with a little litter or leaf-mould, so as to keep out frost. Herbaceous plants that are done flowering should be cut down, and have their stems removed whenever they become unsightly. Dahlias, on the contrary, that are still in fine bloom should be trimmed and tied up. If the ground is weedy, run the hoe through it, and endeavour to keep the whole as neat and clean as possible.—*J. M'H.*

State of the Weather near London for the week ending Sept 19, 1844, as observed at the Horticultural Garden, Chiswick.

Sept.	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Frid. 6	25	29.834	29.837	76	57	66.5	S.W.	
Sat. 7	26	29 913	29.896	77	55	66 0	S.W.	.01
Sun. 8	27	29.873	29.759	79	55	67.0	S.E.	.23
Mon. 9	28	29.747	29.717	66	54	60.0	W.	.24
Tues. 10	29	29.854	29.820	69	40	54.5	S.W.	
Wed. 11	30	30.014	29 995	73	44	58 5	N.	
Thurs. 12	●	30.089	30.011	70	51	60 5	W.	
Average		29 98?	29.862	73 3	50.8	61 8		.53

Sept. 6 Cloudy and fine; overcast and mild at night.
— 7 Slight rain, cloudy; exceedingly clear and fine.
— 8 Very fine; clear; heavy rain with thunder and lightning in the evening
— 9 Overcast, fine; densely clouded; showers in afternoon; lightning with heavy rain in the evening.
— 10 Densely overcast; fine; slightly clouded.
— 11 Heavy dew; clear above, with slight low fog; exceedingly fine; clear.
— 12 Overcast; very fine throughout; clear at night.
Mean temperature of the week 3 deg above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Sept. 21, 1844.

Sept.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain	Prevailing Winds.							
						N.	NE.	E.	SE.	S.	SW.	W.	NW.
Sun. 15	67.0	45.8	56.4	8	0.66 in.	2	2	1	4	1	11	5	5
Mon. 16	67.7	47.5	57.6	6	0 80	1	3	2	—	3	1	1	1
Tues. 17	68.8	47.8	58.3	7	0.90	1	1	2	2	4	4	4	2
Wed. 18	68.7	46.5	56.4	9	0.70	—	4	1	1	2	5	3	2
Thur. 19	67.1	47.2	57.1	9	0.80	3	1	3	—	4	4	1	2
Fri. 20	67.2	45 8	56.2	7	0.45	1	2	2	3	—	4	4	3
Sat. 21	66.6	45.5	56.0	8	0.30	2	—	1	3	2	3	2	2

The highest temperature during the above period occurred on the 17th, 1949—therm. 84°; and the lowest on the 17th, 1840—therm. 35°.

Notices to Correspondents.

ASPARAGUS.—*A Subscriber.*—Consult a letter from Mr. Bree in to-day's Paper.

BRAZILIAN BEET.—*Toby.*—We shall be much obliged.‡

BULBS.—*Flora.*—Grow the hardy bulbs in a good peat border, in which there is a tolerable proportion of loam. All the tender ones must be planted in loam and kept from too much sunshine, in a well-ventilated greenhouse. We cannot go into details, for each of your 40 sorts would require a separate set of directions, for which we have no room; nor indeed can we undertake to answer such a crowd of questions.

CANKER.—*R., Clapham.*—There is no known remedy for canker in Apple trees. Some varieties are more subject to it than others, and in some soils it is induced on every variety planted in them. Wood that is produced in wet cold seasons is apt to canker in succeeding years. If it is owing to the variety, this may be changed; if the soil is the cause, endeavours must be made to better it. Lime will probably do good. Shoots produced in a bad summer should be well shortened in, and the diseased parts of the old branches should be cut out. Your method of numbering Labels is the old well known plan.‡

CARNATIONS.—You will find lists of Carnations in No. 9, p. 136, and in No. 38, p. 589, of the present year, from which you can select the number you require; and a list of Polyanthus also, No. 9, p. 136.*

COPPICE SHOW.—*C. W., York.*—The Judges at this Show placed several seedlings which, owing to informality on the part of the exhibitor, did not receive a prize. We especially noticed a scarlet bizarre, a noble striking flower; it had, however, a very slight serrature on the edge of the petals, but we should say it is better than two-thirds of the varieties comprising that class. The scarlet flake was also fine; white, good, high coloured, and the petals of good texture and well ribboned. A purple flake, we understood a seedling from Ely's Mango, had all the good properties of that esteemed flower, with a darker stripe. *W.*

CINERARIAS.—*C. K.*—You will find an excellent variety in the following 12 sorts, viz.: Eclipse, Rival King, Victoria Regina, Triumph, Goodeii, Emperor, Red Rover, Black Knight, Fanny Elsler, Captivation, Compacta, and Criterion.*

CYPRIPEDIUMS.—*A. H.*—We believe the secret of keeping these in health is to preserve them during winter in a frame whence frost and wet are excluded. They like peat. Upon the management of the bee and spider Ophrys we regret to say we have no information. Perhaps some correspondent has.

EVERGREENS.—*C. R. D.*—Cut down your bushes in the beginning of April; and serve them all alike.

FRUIT.—*J. B.*—The maturity of fruit is influenced by so many different circumstances, such as soil, elevation, aspect, and latitude, that every one must be his own adviser on that point. To give weekly directions would only mislead.

FUCHSIAS.—*M.M.G., F.H.S.*—Procure the following 12 sorts: F. Exoniensis, Formosa elegans, Epp's Kentish Bride, Smith's Vesta, Robusta, Bell's Queen, Conspicua arborea, Pride of Peckham, Youell's Queen Victoria and Countess Tyrconnel, Halley's Sanguinea, and Standish's Candidate.*

HEATING.—*T. E F.*—The circulation of water is the same, whether the flow-pipe is quite full or not.——*A Subscriber.*—You are right in having plenty of water: we cannot, however, recommend you to construct your hot-water tank of bricks and cement; for it is found in practice almost impossible to prevent the joints breaking, in consequence of expansion and contraction; unless, indeed, the tanks are constantly filled with hot water, in which case they will probably stand. By all means have some pipes in addition, and manage, by means of a stop-cock, to heat them or not, as you please. A second-sized boiler will do.

HERBACEOUS PLANTS.—*O. G.*—The following are 12 handsome and rather new hardy sorts:—1, Aquilegia fragrans; 2, Statice pseudo-armeria; 3, Campanula grandis; 4, Cynoglossum longiflorum; 5, Sedum Sieboldii; 6, Epimedium macranthum; 7, Hotela japonica; 8, Phlox Van Houttei; 9, Salvia hians; 10, Potentilla insignis; 11, Pentstemon crassifolium; and 12, Anemone vitifolia.¶

HORTICULTURAL SOCIETY.—*An Exhibitor.*—We cannot insert letters at a moment's notice; yours will appear next week.

INSECTS.—*S. A. S.*—There is a Clover weevil, but we should feel obliged by your sending Mr. Curtis some of the injured leaves and specimens of the insects alive with them in a small box.*R.*——*N. Esk.*—If you will favour Mr. Curtis with a portion of a Melon-leaf and some of the leaping insects, in a box protected from pressure, your queries will be attended to; but the leaf was so dry and matted together that it was impossible to find anything. He would also like to see the insects injuring the Calceolarias.——*T.*—The destructive grubs you sent are the offspring of a moth called Noctua exclamationis, whose history is given in our columns of this day. *R.*——*C. J.*—Your caterpillar, it is expected, will produce a Saw-fly, called Trichiosoma Lucorum, but in future we beg that with inquiries you will favour us with specimens. *R.*——*W. H. R.*—From your interesting letter we are inclined to believe that your Wasp's nest is the work of Vespa Britannica, vide "Curtis's Brit. Ent.," *vol.* 760. Mr. Gray, of the British Museum, will inform you if the specimen would be acceptable. *R.*——*John Cat.*—Your beautiful larva is the Privet caterpillar, and will produce Sphynx Ligustri. *R.*——*J. M.*—One of your insects is the young larva of a Lady-bird, lately figured and described in this Journal; the other is too much injured to decide upon its name. It may be the larva of a small moth. We cannot advise you how to exterminate the Rose maggots, but if our correspondents will furnish us with sufficient materials in the spring, we will turn our attention to the subject. *R.*——*C. B.*—It is generally impossible to give advice regarding Melon plants, for without examining them we are often unable to ascertain whether the mischief arises from atmosphere or insects. *R.*——*Q. Q. Q.*—The caterpillar last sent will change to a moth, called Spilosoma lubricipeda, figured and described in the 1st vol. of the *Gardeners' Chronicle*, p. 700. *R.*

LAVENDER.—*A Subscriber.*—If your ground is in readiness, and plants at hand, they may be put in with advantage now. The distance between the rows should be two feet, and the plants in the row should stand about one foot apart. If, however, the ground is not in readiness, you had better defer planting till spring. The soil in that event, if wet, should now be well drained, and laid up in ridges to be exposed to the action of the weather, until about the end of March or beginning of April, when the ridges may be levelled down, some well decayed manure dug in, and the Lavender planted. The best plants are those raised from seeds. It likes a light dry soil.‡

NAMES OF FRUITS.—*Tyro.*—Your Cherry, called the August Heart, has not been found under any other name. Some Correspondent will probably afford information regarding its locality, and where plants of it may be obtained.‖——*J. W.*—Black Morocco Grape.‖——*C. C.*—1 and 3, Hawthornden; 2, Old English Codlin; 4, Pomme de Neige. Plums, 1, Diamond; 2, Coe's Golden Drop; 3, Blue Imperatrice. Pears: 1 and 3, Jargonelle; 2, Beurré de Capiaumont, of some, but not the true one.‖——*G. B.*—1, 2, 4, 9, Royal George; 5, 8, Grosse Mignonne; 6, Red Magdalen (of Miller); the Nectarine, No. 3, is the Elruge. The specimens were fine.‖——*H. W. B.*—No. 1, Yellow Ingestrie; 2, Summer Pearmain (of some); 3, Court of Wick; 4, Ribston Pippin.‖——*R. M. K.*—No. 1, Henri the Fourth Pear. Plums: 2, Purple Gage; 3, Winesour; 4, bruised—probably the Nectarine Plum. Apple: Beauty of Kent.‖

NAMES OF PLANTS.—*F. J. Z.*—Apparently Cuscuta chilensis, which will soon strangle everything that comes in its way.——*J. C.*—Your fragments seem to belong to Kutoca viscida.

PELARGONIUMS.—*J. R.*—To your collection you may add the following:—viz.: Sultana, Lord Chancellor, Luna, Queen Phillipa, Hodge's Oberon, Beck's Susanna, Unit, Hoyle's Titus, and Pompey, and Lyne's Imogene. A very few of your sorts may be discarded; these will suggest themselves. Some of the high-coloured varieties, although not good in shape, are useful in adding splendour to the general effect, and should be kept till others are produced of the same colour, with finer properties. The list of flowers in your postscript we cannot recommend, as your taste lies in an opposite direction. The growers' lists not being all published, we may have to add to the above list.*

PETUNIA.—*M. M. G.*—A variety named Medora, Calceolarias are so numerous that it is impossible to answer your question.*

PLANTS AND TREES.—*J. M. S.*—The following trees and shrubs are suitable for planting on an elevated situation near the sea, in the south of Devon:—Leycesteria formosa, Fuchsia arborea, bella, and cunninghamii; Hydrangea hortensis, Arbutus procera and others; Berberis aquifolium and darwinii; Alnus cordata, Quercus cerris, Fulham, Rex, coccinea, and ambigua; Ulmus vegeta, rubra, nigra, and stricta; Crataegus Douglasii, orientalis, prunifolia, and Aronia; Garrya elliptica, Rhipophae conferta, Cytisus elpinus; Magnolia grandiflora and conspicua; Pinus pinaster, insignis, and pinea; Abies declara and canadensis; Arundo donax, Allantus glandulosa, Syringa persica, and the common Lilac.¶

ROSES.—*A. P. B.*—Any of the great Rose-growers will tell you, better than we can, what are the best Roses to grow for competition. You had better send your order to them with no other directions except as to the climate they have to be exposed to.

SEEDLINGS.—*J. N. C.*—Your double Canterbury Bell has nothing remarkable about it.——*A. C.*—Your seedlings are between Achimenes, Specs and species; they are pretty, but not very distinct, and we do not attach importance to them.——*J. D.*—Your Achimenes is too much like cotechea; it would not improve much by having a larger pot.

STRAWBERRIES.—*G.*—Give your Strawberries a good top-dressing of guano, mixed with six times its bulk of light soil, in the end of February. If good it is suitable to them.

THE VINE.—*N. B.*—There is no good or even tolerable analysis of this plant. The nearest approximations to a good one are those of Geiger and Proust, but they are vague and incomplete.

THUNBERGIAS.—*O.*—These are stove plants, and do not succeed well in a greenhouse. If they are not grown in a warm moist atmosphere, they either become stunted or are attacked by red-spider.¶

TOBACCO.—*Alpha.*—In order to cure Tobacco, so as to render it most effectual for the destruction of insects, it is not sufficient that the leaves be taken off and merely dried like specimens. Liebig states, that in the process of curing, the addition of water is necessary for the formation of that peculiar oil to which the virtue of the article is attributable. He also mentions fermentation; but if this be at all allowed, it must be in an extremely slight degree, otherwise the article is materially wasted in quantity, whilst the quality is rendered decidedly bad. When mature, the leaves slightly yellow, pull up your plants, or cut them very close by the roots; hang them by the root end in a dry place, without stripping off the leaves. In a day or two they will occupy less space, and should then be kept in a heat of 70° or 80°, till even the midribs of the leaves are dried up, and the leaves in the state in which they would easily crumble to snuff. They are very absorbent, and by wetting the floor and otherwise damping the situation very much, the leaves will soon acquire the quantity of water absolutely necessary for the oily formation above alluded to. After several days, drying may be again commenced, and continued till such time as the leaves are considerably dried, yet still retaining sufficient pliability to admit of their being stripped from the stems without breaking. They should then be spread out flat above each other, in handfuls, pressed, then finally well dried, and packed up close till required for use. Thus managed, you will find it superior in quality to much of the imported Tobacco, for the destruction of insects on wall trees, &c. It is impossible to say how much of the imported Tobacco is rendered inferior, of a burned foxy colour, in consequence of improper fermentation, and of water not being supplied during the process of curing.‖

TULIPS.—*N. N. P.*—Three Bizarres: Polyphemus, Charbonier Noir, and Catafalque. There is no method of getting a speedy increase of bulbs. There are no plates of these flowers.*

VINES.—*A. B.*—As soon as the Fruit is cut you may remove as much of the old wood as will admit sufficient air and light for the maturity of the young wood.‖

WASPS.—*L. Short.*—If you know of a better way of destroying these creatures than by turpentine, pray say what it is. We doubt the possibility of anything being more effectual. But why do at three different times what may be done so easily at once?

MISCELLANEOUS.—*X. A.*—Achimenes longiflora cannot be grown to any good purpose in an open border. You cannot make a fountain without a head of water or some good mechanical contrivance for producing the requisite pressure. The little self-acting fountains are the most childish things imaginable. A heavy rain extinguishes them.——*Omega.*—The ordinary allowance of labour is a man to an acre. For what is called a single-handed place, you may get a man for a guinea a week. Sashes for frames are usually 3 feet 9 inches broad, and 6 feet long. If your pits are sunk they will be more easily kept warm; but then, if the soil is not well drained they are apt to be damp. By all means heat them with some sort of apparatus; of which the sort will depend upon the purpose to which you mean to apply them. You will find many statements respecting that subject in our previous Numbers. Glaze with sheet glass; it is rather expensive, but much the cheapest.——*M. M. G.*—For the pronunciation of Dahlia refer to vol. ii. p. 737.*——*D. J.*—If your object is to procure double flowers, rid your bed of the single ones.*——*N. N. P.*—Double Pansies are not worth cultivating.*——*A. G.* is answered in another column.‡——*A. C.*—We have not received the parcel you mention.‡

SEEDLING FLOWERS.

DAHLIAS.—*F. and A. S.*—Your seedling *Lady Sale* is a promising flower—a bright-yellow regularly tipped with crimson; it is novel in colour and good in form. The centre is well up, but the bloom sent was too young to judge whether this part of the flower developes itself sufficiently.*

FUCHSIAS.—*T. F.*—Your seedling is an elegantly-formed flower, with fine violet corolla, but it differs too slightly from other varieties in cultivation.*——*J. M.*—Your seedlings were not only bruised and damaged by their journey, but the labels were all torn from the flowers, so that it is impossible to determine to which they belong; some of the light-coloured varieties are very pretty, but they are very much discoloured, from being so much bruised.*——*Anon.*—Three seedlings, which are fair flowers, but not possessing novelty sufficient to send out. No. 2, which is the best, is disfigured by having very long and narrow sepals; in other respects it is good, as the tube and sepals are of a transparent and delicate pink, with a deep vermillion corolla: 3 too much resembles others in cultivation; and No. 1, which is a good stout flower, has the same fault.*——*A Kentish Florist.*—Your four seedlings are all good flowers, but they too much resemble each other; 3 and 4 have slightly the advantage, being the brightest and most distinct, and having also the best-formed corollas.*——*J. N. C.*—Nos. 1 and 4 are large, rich-coloured flowers, but the sepals of both are coarse. No. 3 is pretty, but none of them are equal to sorts in cultivation.*

PETUNIAS.—*J. A.*—The best flower among the Seedlings sent is No. 2; light lavender, with dark purple veins; 1 and 3 are common and colourless; 4 is a very fine colour, but too small.*

VERBENAS.—*W. G.*—Your seedling is a good flower, colour crimson maroon, and though it strongly resembles some of the varieties out, from its size and manner of opening, it is equal to any of the same colour.*

PANSIES.—*J—n.*—It is impossible to tell the merits of a flower when sent folded up in paper; it becomes dry and discoloured by the time it reaches us. The centre appears to want distinctness, and the petals substance.*——*A Subscriber.*—No. 22 is a very pretty flower in its young state, fine in form and good in substance; but when fully expanded the margin round the side petals becomes weak and watery, especially in the upper part, where it unites with the ground colour; the eye is also insufficiently marked on the side petals, which shows more in the larger flower. It is a flower of fine form, but deficient in the points we have mentioned. 5 is not so fine in form as 22, but it is of good substance, flat, clean, and good in colour, with a very fine eye.*

PICOTEES.—*Lelièvres.*—Your seedling is pretty in colour, but the petals are too small in size and few in number.*

VERBENAS.—*W. M.*—No. 1 was too much decayed to judge of the true colour of the flower could not be seen; the pink variety, No. 149, is of a beautiful tint, clear, and lively.*

SEED-WHEAT. — Any one desirous of obtaining Seed-Wheat for use this autumn, may ascertain, by application to me, the particulars of the crops of two excellent varieties—Shirreff's Hopetoun, and Morton's Red-Straw White, which have been grown on
WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE,
during the last 3 years. This year's crop is on sale at 8s. a bushel.
—JOHN MORTON, Whitfield.

TO AGRICULTURISTS.

CAMPBELL'S CORN STEEPS.—The Material for Wheat is on Sale by the undermentioned Agents, at 2s. 6d. per gallon.

Notwithstanding the extreme drought of the last spring and summer, the results of the experiments, in very many instances, have been surprising, averaging a saving on seed, in the first instance, of 3s. per acre, and yielding a produce of 20 per cent. additional in straw, and 40 per cent. in grain. Had the season been more moist the result would have been at least double.

From Report of the Judges, Glasgow Cattle Show, Aug. 7, 1844.

"Among the remaining articles of the Exhibition (of Roots, Seeds, &c.), the Judges would direct attention to a series of specimens exhibited by Mr. James Campbell, of Dundee, consisting of various Grasses (they were Wheat, Barley, Naked Barley, and Oats), raised from Seed steeped in a Fertilising Liquid. These were contrasted with others which had not undergone the process, and were in all cases decidedly superior."

Agents:—Messrs. G. Gibbs, 26, Down-street, Piccadilly; Thos. Gibbs, corner of Half-moon-street, Piccadilly; and Edw. Purser, 40, New Bridge-street, London. W. E. Rendle, Plymouth Manure Company; J. Campbell, 5, Mersey-street, Liverpool; F. Bruce, Merchant, Hull; Crouch and Co., 66, Close, Newcastle-on-Tyne; W. F. Karkeek, Truro; John Mayer, High Offley, Staffordshire; George Griffith, Bewdley; J. B. Baden, Warminster; Phillips and Whittem, Coventry; John Towers, Maidenhead; Samuel Waldie, Carlisle; John Rodway, Carmarthen; James Black and Co., Aberdeen; W. Campbell, Merchant, Wick; Wm. Cuthbertson, Printer, Annan; J. and D. Campbell, Thurso; Maxwell Dick, Irvine; Dickson and Turnbull, Perth; Drysdale and Co., Glasgow; Drummond and Sons, Stirling; Wm. Dalrymple, Cupar Angus; John Dykes, Kilmarnock; James Haldane, Lauder; J. Bell, Dundee; Thos. Kennedy, Dumfries; A. Kennedy, Thornhill; P. Lawson and Son, Edinburgh; Wm. Low, Forfar; A. M'Farlane, Kinross; John Ogg, and Shield and Co., Arbroath; Geo. Robertson, jun., Kirkwall; John Rae, Elion; A. Simpson, Macduff; A. B. Telfer, Ayr; Wood and Co., Stonehaven.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 14, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

FARMERS' CLUBS.

Sept. 20—Debenham, Stoke Ferry, Wrentham.
Sept. 21—Cardiff, Gloucester.
Sept. 23—West Hereford, W. Firle, Fairford, W. Market, Yoxford.
Sept. 26—Framlingham, Isle of Thanet, Rayleigh.
Sept. 20—Richmondshire.
Sept. 27—Halesworth.

THE month of August is the gala month of British Agriculture. To those who would estimate its resources, its capital, energy, and skill, no season is so favourable; for the success arising from their application is at this period evidenced both in the golden maturity of our crops, and in the splendid Exhibitions of stock and mechanical ingenuity which OUR THREE NATIONAL SOCIETIES afford us.

Not only do the Exhibitions of these Societies promote improvement in stock and machinery, but indirectly they cannot fail to diffuse agricultural knowledge and improvement in general. For can it be supposed that great numbers of persons, from all parts of the empire, can be brought together at a season when the success or failure of the previous year's operations are written on the face of the country, in a language so plain that he who runs may read, without much information being received? And we cannot suppose that, coming as they do with minds ready to criticise what they see and hear, men of science, practice, and capital, can associate without much that is useful being conceived and propounded. From these considerations, therefore, it is obvious that the results of our Annual Agricultural Meetings constitute a meter by which may be indicated to us the intensity of that energy in agricultural improvement which has already done so much for the country. One pleasing feature developed at these meetings promises us important results, viz., the desire which was everywhere apparent to seize the opportunity presented by the assemblage of scientific men, in order to unite scientific knowledge and practical skill in the investigation of subjects of agricultural interest. And the necessity for such an investigation exists all the more, because the results of discussions at Glasgow simply prove our entire ignorance of many of them. It is thus alone that we may expect improved methods of culture to be made known, the causes of failure in our crops to be ascertained, prejudices to be removed, knowledge to be diffused, and a spirit of observation and inquiry to be encouraged.

The actual results of the meetings alluded to are, however, the best illustrations of what may be expected. Thus, at the Glasgow meeting "the best means of making Science promote the Practice of Agriculture," and "the Causes of the Failure of the Potato-crop," were discussed; and at the Southampton meeting of the Agricultural Society of England, and at the Irish Society's Show at Dublin, the subjects of "Agricultural Education;" of "the Best Description of Stock for special purposes;" and of "the Cultivation of Flax," were respectively mooted. The first of these is a matter of general and permanent interest. We have already seen morasses, waste lands, and heaths, converted, by its aid, into golden corn-fields and profitable pastures. Heather has given place to the Oak, and the rabbit to the sheep.

The cause of the failure of the Potato-plant, again, on account of the money value of the crop, is a question of immediate importance. At the present time especially, when that failure has been so general throughout the country, and when, in addition, the Hay and the Red Clover crop have also failed, and when, as report says, the Turnips are failing, it is worthy of most anxious investigation.

In estimating the importance of a knowledge of the *specific* qualities of stock, we must look only to two products—beef or milk, mutton or wool;—and some of our purest breeds of stock, and certainly of our multitudinous crosses, must be inferior to others in both these respects. The breeding and grazing of such is therefore a loss which might be prevented. The cultivation of Flax also—the subject introduced at the Dublin meeting—is not uninteresting to us. It has been shown to be a crop worthy of a place in the rotation of a judicious farmer on good soils; and to the farmer of poor lands, as well as to all, its cultivation is of consequence, for it provides us with Linseed-cake, one of the best substitutes for our green crops in a season like the present, and a most excellent fattening food in any season.

At present, of course, we cannot give even an outline of the information brought to bear on the subjects alluded to. Each is worthy of extended consideration. Our object now is merely to call attention to these discussions, as they indicate the existence and activity of a spirit of improvement, and as they evidence a power which our Agricultural Societies possess of promoting the progress of the science, and the practice of the art; and should the spirit of research and observation which was excited be the only result of these proceedings, that power will not be ineffective. "Let us," said Mr. Alexander, at the Glasgow meeting, "go home, and put in force the various suggestions we have heard; a little labour will enable us to test many opinions, and a little time put us in possession of a great amount of knowledge" The sentiment was unanimously applauded and appropriated. With this spirit abroad, can we fail to learn that from which safely to deduce principles whereby our practice may be regulated?

Let us, however, suggest that if it be intended to adopt the discussion of any question on a future occasion, the subject should be publicly announced, and our local clubs recommended to take it into consideration. The experience of the whole country would thus be brought to bear upon it, and the matter would be thoroughly sifted. In carrying out this design, instead of mingling argument with conviviality, and trusting to one or two speakers for information on any subject they may select, as is the case at our English Society's meetings, we would advise the adoption of the method practised at the Highland Society's Show at Glasgow, which is, to have public breakfasts, at which questions may be discussed, and information given or received by any one who may think proper to attend; these interfere neither with the duties of the day nor the pleasures of the evening. Anniversary dinners are unfitted as times for the discussion of business questions; after-dinner hours are as essentially the hours of relaxation and amusement amongst Englishmen as those before that period are of business and reflection.

On the strength of this peculiarity our Continental neighbours term us a "dining race:" and thus it cannot be expected that a concourse of Englishmen, with spirits elevated, can settle themselves down, contrary to their wont, after a day of pleasing toil, to the calm discussion of difficult questions. From neglecting these considerations many discussions at agricultural dinners have failed; and the extraordinary *éclat* with which those of the Highland Society went off during the last meeting, are undoubtedly to be attributed to the arrangement we now recommend—an arrangement which, by *discussing business at business hours*, does not oppose itself to the customs of society, but, on the contrary, enlists them in its service.

This lesson will, we trust, not be lost; it is not the first which we have with advantage derived from the experience of the *parent* Society beyond the Tweed. —*H.*

SEVERAL complaints have lately been made by Correspondents of the ravages of that extremely injurious parasitic plant—THE CLOVER DODDER. Many such complaints were made at this season last year, and they elicited from the scientific and practical readers of the *Gardeners' Chronicle* much useful information, from which, according to our last week's promise, we now proceed to make a few extracts. In the Number for Sept. 9, DR. LINDLEY writes as follows:—

"As soon as the seed of the Dodder is ripe, it falls to the ground, and usually seems to lie dormant till the succeeding year. When the spring returns, the embryo sends one end down into the earth to form a root, and with the other it rises upwards, like a small white thread or worm. At this time it is not a parasite, but seems to derive its food from the soil, like ordinary plants. It cannot, however, do so long, but withers and perishes, unless it touches some living branch or stem. If it succeed in doing so, it immediately seizes the live stem by means of a sucker, which is protruded from the point of contact; and then, twining from left to right, and forming more suckers as it twines, it establishes itself on its victim, and ceases to have any further connexion with the soil. From that time forward it is a true parasite, feeding on the juices of the plant it has seized upon. After making a few turns round the branch, and securing itself firmly in its new position, it again lengthens, and catches hold of some other branch, when more suckers are protruded; and thus it goes on—branching, and twining, and sucking, and branching again—until it forms that appearance which Professor Henslow well describes as resembling 'fine, closely-tangled, wet catgut.' Now the Dodder has a new and independent seat of life wherever it has twined round a branch; and as it is incessantly twining and separating, and twining again, a single plant is speedily in the condition of a polype—so that if it be cut into a thousand pieces, each piece will immediately go on growing, as if nothing had happened to it. Tearing the Dodder to pieces, then, so far from extirpating it, only multiplies the mischief, instead of arresting it.

"This short statement will show that it is a formidable enemy that has been thus unfortunately introduced to our fields; and, as these things are not very nice in their food, it is not impossible that the Clover Dodder may next take a fancy to our Wheat-fields, unless we can speedily put an end to its presence. It is of little use to cut it in pieces,—it is of no use whatever to do so, if the fragments are left where they can catch hold of anything else.

"As it is only an annual, it would be killed if we could prevent its flowering; but that is difficult, because of its hiding itself among the lower branches of plants, where it cannot well be seen: and a few heads of flowers will soon renew it in a succeeding year. The right plan would be to dig up the Clover where the Dodder appears, so as to form a circle considerably beyond the patch apparently formed by it, and then to burn it in heaps; or, in cases where the entire field is infected by it, to sacrifice the whole crop, and burn it. This may appear a violent remedy, but it is the only one likely to be effectual; and even this will fail, if (which is not yet the case, but soon will be) the Dodder is allowed to form its seed: for, they will fall on the ground, lie hid in the crevices, and reappear with the next crop,—when all the labour will have to be done over again."

The following remarks on the rapidity of its growth are by PROFESSOR HENSLOW:—

"I find one of the patches, which I stated to be two yards in diameter three weeks ago, is now six yards in diameter, which gives us a ninefold increase in area. The mere raking which this patch had received appears to have promoted the spread of the Cuscuta, possibly by having retarded the development of the flowers, and by thus fitting the numerous fragments left upon the Clover for making independent and more vigorous shoots. Another patch is now a perfect mass of cream-white flowers, upon which a number of flies have stationed themselves, in seeming enjoyment of the succulency of the heads of flowers. As you have thrown out a suggestion that this Cuscuta may possibly become a future pest in our Corn-fields, unless it shall be timely checked, I directed my attention to the plants upon which it is now growing, and I observed it was attached to and evidently attacking the following species:—Geranium dissectum, Daucus carota, Carduus arvensis, Euphorbia exigua, Viola tricolor, Malva sylvestris, Linaria spuria, Senecio vulgaris, Medicago lupulina, Alopecurus arvensis, and another Grass, which seemed to be Agrostis vulgaris."

The seed of this plant appears to have been imported from Cabul along with the seed of Trefoil. The following is an extract from the communication of a correspondent, with remarks by DR. LINDLEY:—

"I have the pleasure of sending you a packet *in the state in which it was purchased at a bazaar* with that which produced the Cuscuta above mentioned. Close examination may possibly detect the seeds of the parasite mixed with those of the Trefoil."

We have carefully examined the seed alluded to in the foregoing letter, and we are able to state that the seed of Cuscuta trifolii was in it. Out of a small packet we have picked *thirteen* seeds, each with its snake-like embryo perfectly alive and fit for growth.

We are also enabled to state something more important; namely, that the Dodder-seed may be readily separated by sifting. Lucerne-seeds are about 2 lines long and 1¼ broad. Clover-seed is much the same; the Dodder-seed is spheroidal, and scarcely a line in diameter. It is of a pale-grey colour, in form like the quarter of an Orange, and looks more like fragments of grey clay than an organised body.

In a subsequent paper we are informed that Dodder seed may be separated from Clover-seed by the use of the sieves called No. 17.

From the information thus accumulated, it appears that the existence of this weed in our Clover-fields is matter of serious importance. Those who have the misfortune to be attacked by it ought to place the spots where it has made its appearance under the strictest quarantine. Let them act upon Dr. Lindley's

advice, dig the land round the isolated patches to hinder it spreading further, and then carefully pare and burn the patches themselves.

ON FLAX-SEED AS FOOD.

(Concluded from page 610.)

Flax-seed, it has been already observed, is applied to the feeding of the various animals on the farm at Horkesley Hall, in the manner above described—a steaming apparatus having been recently erected there, instead of a common boiler, formerly employed. The arrangement of the houses and sheds for using the Flax-seed compound does not materially differ from that adopted at all the improved farmeries for stall-feeding. It is merely necessary to provide simple and convenient troughs to contain the food, which admit of being washed out with facility, to keep them sweet; and further, to provide a dry and comfortable bed for the animals. When fed on this compound, the quantity of urine will not, however, be so great as when Turnips are used; but the manure made when feeding on it is superior to that produced from any other kind of food. According to Mr. Blair Warren's arrangements, the liquid manure is not separated from the more solid matters, and hence no tank or reservoir is necessary for its reception. The sheds and other apartments in which animals are fed in this manner are slightly excavated, and in these the manure accumulates for weeks, fresh additions of litter being made as they are required. The troughs in which the food and water are supplied are of course fixtures, but arrangements are made for raising or depressing them, by means of a sliding groove, so that as the manure accumulates the troughs can be raised to the height most convenient for feeding from, and after the boxes are cleared out, the troughs are again lowered with facility. The treading of the animals prevents any considerable degree of fermentation from taking place until the manure is removed to the heap, and small quantities of finely-powdered gypsum are sprinkled over the surface, to prevent the escape of any ammoniacal gas which may be disengaged. This may appear to many a slovenly system of management, and one calculated to maintain the animals in a foul atmosphere; but such is certainly not the case. The manure thus produced, taking both the nutritious quality of the food and the plan of storing it into account, is the most valuable which can be conceived. The attention which is paid to properly littering the animals, and to prevent the formation of gaseous exhalations, effectually guards against the presence of any unpleasant smell. These circumstances it is particularly necessary to allude to, as Mr. Blair Warren conceives the increase in quantity, and improvement in the quality of the manure, which is effected by means of the system he follows, as important features in estimating its value; which they confessedly are. The smallest particle of liquid matters is not allowed to flow from the yards, and still the state of the manure at its removal does not indicate the slightest appearance of any excess in this respect. The animals have a perfectly dry bed; and cattle-sheds more free from any noxious effluvia than those now described cannot be conceived. At the period of the removal of the manure from the sheds, powdered gypsum is liberally employed in being sprinkled over it as it is freshly turned up, and by these means it is applied to the soil without being deprived of any of its fertilising properties.

There is, perhaps, no animal of the farm to which confinement in houses or sheds has been considered more unsuitable than the sheep, whether the inaptitude to take on flesh under such treatment, or the supposed tendency to become diseased is considered; but the success which has attended Mr. Blair Warren's management in this respect shows that such opinion is not well founded. A portion of his sheep get an allowance of compound, formed as already directed, on their pastures, and others are supplied with their food in the houses, in which they are divided into lots of half-a dozen each, when they put on flesh rapidly, being littered with Bean or other straw, which they convert into excellent manure. No arrangements are necessary in their case for carrying off any portion of their urine, which is absorbed by the litter, and adds to its value as manure. They are supplied with this compound four times a day, about a ½lb. of linseed and 2½lbs. of inferior grain being given to each animal in the twenty-four hours. During the summer months sheep may be advantageously fattened, penned on their pastures; but when the weather becomes cold they should be removed to the houses, to protect them from the vicissitudes of the weather, the injurious effects of which, as retarding the acquirement of flesh, I have already noticed in recent papers on the subject in the *Agricultural Gazette*. Even during the months of summer it has been ascertained that sheep may be successfully fattened in close houses, being there habituated to a greater uniformity of temperature than when in the fields—protected alike from the oppressive heat of the noon-day sun, and from the colds of the night.

The compound now under notice forms an equally valuable food for horses as for cattle and sheep, and is more highly relished by them than any other food which can be given them. Advantage may be taken of the nutritious properties of the Flax-seed, to substitute the inferior for the more valuable grain for horses, and this, too, without any loss of condition being occasioned. The sleek coat of such as are fed in this manner is quite conclusive as to the adaptation of the food to the animals. To feed farm horses economically their Hay should be cut into chaff, and mixed up with farinaceous matters, and the addition of the Flax-seed jelly enables this system to be carried into operation with facility. The quantity of Hay which a horse will destroy and consume when given to him in its natural state, is, in fact, more than double that actually required when cut into chaff.

But enough has, I trust, been said relative to the advantages of this system of feeding, to convince the most sceptical of its value. It, indeed, only requires a fair trial to insure its adoption. The following are a few of the returns which have been obtained by it at Horkesley Hall, selected almost at random from the farm accounts kept by the steward, which were kindly placed at my service. The quantities supplied to each of the animals have not been correctly ascertained, but a usual proportion has been about three parts inferior grain, and one part of Flax-seed meal, somewhat less than a stone of this mixture being daily consumed, with cut Hay and straw, by an ordinary sized bullock. As the details of Mr. Warren's system were not intended to be placed before the public, no comparative experiments as to the value of this compound and other articles of food have been made; but from the experience he has already had, he is quite convinced of the superiority of the compound to any other article of food, both as regards cheapness and the possession of nutritious qualities. The value of the compound is about 5*d.* per stone of 14 lbs.

A lot of heifers, 3 years old, which cost 10*l.* each, after having had a rather small allowance of Mangold Wurzel for a month, were placed on the compound on 21st November last, and sold on the 23rd January following at 9*s.* 2*d.* per score, dead weight, and realised at this rate, 17*l.* 16*s.* 1½*d.* each. This result would have been more satisfactory had the improvements effected by the first month's feeding on the Mangold Wurzel been ascertained.

A lot of two-year old bullocks were laid in on the 21st November, at 7*l.* each, and fed on compound with cut Hay and a small quantity of Mangold Wurzel daily, during a part of the time. These were sold in the beginning of May following at 14*l.* 10*s.* each.

Four two-year old steers, purchased on 29th December, at 6*l.* each, and fed in the same manner as the bullocks, realised 13*l.* each for six months' feeding.

A lot of sheep were laid in the end of September last, at 16*s.* 6*d.* each, and sold on the 13th July at 34*s.* 6*d.* During the last ten weeks these sheep were fed in boxes in the farm-yard on the compound, until which they had been folded on Turnips during the winter in the Turnip-field, and on Clover during the month of October.

Another lot of sheep were purchased on 17th June, at 22*s.* each, and sold on the 26th of August (last week), in Smithfield, at 29*s.* a head. These were folded on Clover by means of hurdles, and supplied with compound morning and evening in troughs in the field.

Further cases of the results of feeding on Flax-seed compound might be adduced, but it is hoped the foregoing will be sufficient to induce many farmers to give it a trial, and report also the results which they obtain. No additional apparatus will be required for the purpose, as it is conceived a Hay and Straw cutter, and machinery for bruising grain are already on every well-managed farm. A common boiler will, in the first instance, suffice for the preparation of the jelly, so that no extra expenditure need be incurred for fixtures until the result of any necessary experiments are ascertained.—*J. Sproule.*

MANURE FOR HOP GARDENS.

About this time last year I read an account, I think in the *Gardeners' Chronicle*, of a Vine-grower in Germany, who had manured his vineyard for some years with the cutting of his Vines. It then occurred to me that our Hop bines, now completely wasted—for they are generally burnt in the field to get rid of them—might be turned to the same use. Not being a Hop-grower, I got one of my tenants to cut up some of the bines into pieces of about one inch long. This was done with a common chaff-cutter at an expense of about 3*s.* an acre, *i. e.* cutting up the bines of one acre; part of these were spread dry into the ground immediately; the rest were put in heaps, of about four bushels in a heap, and covered with earth and left in that state to rot till the time for digging the garden, when it was found that the bine had decomposed into a rich black mould; this was spread about the land and dug in; part of this and part of those that were dug in in the autumn, were dunged with half the quantity of dung given to the other part of the garden—the other half had no dung. The bines throughout have grown as rapidly, looked as well, and at this moment the Hops appear quite as good on the part only manured with the bines, as where dung only was used; nor do I perceive any difference where the dung was added to the cut bines. My tenant is so satisfied with the experiment that he is now making a cutting-box to cut all the bines of his garden, as he is convinced that he will be able to save at least one half the expense of the dung, which he cannot put on under 5*l.* per acre. Now it appears to me but reasonable that this should answer, as it is returning to the soil in a state easily taken up by the growing plant, the very elements that had been taken from it the year before; and all that seems requisite to add is manure to make up for the weight of the Hop, which is carried away. As the cultivation of the Hop plant is very local, it is possible that this experiment may not have attraction for your general readers; still I am anxious to draw attention to it at this moment, when Hop-picking is about to commence, and earnestly hope that other Hop-growers will test the experiment apparently so successfully made by my tenant. —*John Maxwell Tylden, Milsted, Kent.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

(Continued from page 612.)

When the grain first cut becomes thoroughly dried and ready for removal to the stackyard, such of the farm-servants as are usually employed in driving horses are withdrawn from the reaping, for the purpose of leading in or conveying the Corn from the fields to the stackyard. The reaping, leading in, and stacking, are thus for some time carried on simultaneously. The corn-carts previously noticed, of which every farmer has a few, are now put in requisition; but when a sufficient number of these are not obtainable, frame-works fastened to close carts are made to answer the same purpose. A man attends in the field to fork the sheaves to each set of carts, leading to one stacker, and a boy or woman is employed in raking up any stalks remaining on the ground after the stooks are removed. Another boy is also occasionally required on the stacks to hand the sheaves to the builder.

The stacks, which are always circular in form, vary in size according to the kind and condition of the crop and the taste of the farmers. Some take a pride in erecting and possessing gigantic Corn-stacks, notwithstanding the manifest loss of valuable time which their building necessarily occasions. When the Corn has been well won, and got in in a dry state, the stacks are made of large dimensions, but if imperfectly dried, smaller sized ones are adopted. The usual breadth at bottom for Wheat-stacks is 16 feet, and for Oats and Barley 14 feet. It is held as a general rule by East Lothian farmers that all Corn-stacks should be made only of such a size that one of them may afford employment to the threshing-machine and the persons attending it for a yoking of five horses, two such stacks being threshed and dressed in a day. Stacks of this size will contain from 25 to 30 qrs. each, according to the quality of the Corn.

Corn-stacks are now generally built upon raised stands supported by low cast-metal pillars, having projecting caps at their upper extremity, on which the frame-work of the stand rests. The caps also prevent the entrance of vermin into the stack. These stands are usually of a septagonal form, and when firmly constructed, with the timber frame-work of substantial materials, will last for a very long period. They not only admit of stacking the Corn much sooner than what can be done with ground stands, but also effectually prevent the depredations of vermin. Cast-metal stands of this description may be put up in the most substantial manner for about 2*l.* 10*s.* each—a sum which they will soon amply repay. Elevated stands of a more temporary and less expensive character are employed by some farmers; instead of the cast-metal pillars, ones formed of wood or stone are used, upon which the most suitable sticks which can be conveniently procured are placed, without any further preparation; but these require to be renewed or repaired every year. These stands are here commonly formed without the usual accompaniment of a conical funnel projecting perpendicularly from the centre of the frame-work.

Although raised Corn-stands of either of the above descriptions are now pretty general throughout the county, stacks are still not unfrequently formed on the ground, in which case the site on which to build the stack is usually prepared in the following manner:—The centre of the site for the intended stack being ascertained, a stout pin of wood is there driven into the ground; three sticks previously prepared, of an equal and suitable length, and connected at the top by means of a pin passing through perforations in them, are then planted in an upright position over the centre, and the lower extremities of the sticks are stretched out in a circular manner around, and about 3ft. from the centre. A straw rope is next wound round the sticks near the ground, for the purpose of preventing the sheaves from falling into the open space. A tress* from 3ft. to 4ft. in length, made for the purpose, and fixed on the site between the funnel and the margin, allows the free access of air into the interior of the stack. A layer of dry straw placed on the ground, and made circular by means of a string attached to the pin previously inserted to mark the centre, completes the preparation of the site. When the Corn is considered to be sufficiently dry, the funnel or kiln, as it is also termed, is omitted as being unnecessary.

The manner of forming the stacks themselves need not be here described. The head, or conical part, is made rather smaller now than formerly, in order to economise time and straw in thatching. As the kiln or open space in the centre of the stack seldom reaches to the eaves, it is customary to continue the aperture to near the summit by means of a sack filled with straw, which is pulled up as the building proceeds. A flat board is then usually laid across the stack, on which a few draining-tiles are placed. There is thus formed the means of an uninterrupted circulation of air throughout the interior of the stack, from its base to its summit, the influence of which upon the quality of the straw and grain is obviously beneficial. After being built the stacks are thatched without delay, if the weather appear unsettled, but in most cases they are allowed to subside for a few days. Three persons are engaged together at the operation of thatching—two on the stack, one above another, and one on the ground, to fork up the bunches of drawn straw used as thatch. When thatched, the stacks are immediately roped, to keep on the straw. One of the thatchers remains on the stack for this purpose, standing on a long ladder, while the other descends to assist the men already on the ground in fastening the extremities of the ropes either to the stack itself, or

* Similar to those used by builders for supporting platforms, &c.

what is most general, to a stout rope passing round it immediately below the eaves.

In consequence of the variable climate to which this country is subject, much damage is often sustained by the Corn, from sudden or unexpected falls of rain. To be, in some measure, prepared for such contingencies, it is customary on some large farms to have a band of men solely for carrying on the process of thatching and roping. The usual practice is only to half rope the stacks at first, and afterwards to return and finish them off in as neat a manner as time will allow.

Harvest-time is peculiarly a period of anxiety and exertion. No useful hands are then allowed to remain inactive, and no time is permitted to be lost or trifled away. Economy of time and labour is shown in various ways. The straw ropes employed in securing the thatch upon the stacks are manufactured on the wet days occurring during the summer and harvest. Straw is also drawn into bundles for thatching when other operations cannot be carried on. In the wet and dewy mornings, when the leading in is suspended, the men engaged at it are busily employed in setting up fallen stooks in the field, in thatching and roping stacks already erected, and in preparing sites and kilns for others. By a studious attention to these minutiæ of management, the men are seldom employed at any operation on a dry day that may be done in a wet one; the main work is never delayed when suitable weather for its performance occurs, and much valuable time of men and horses is consequently gained.

Many of the stack-yards deserve a passing notice, not only on account of the plentiful appearance they present after the in-gathering of the harvest, but also from the manner in which the ground is arranged. If naturally wet it is in most instances perfectly drained, and afterwards disposed into wide ridges raised in the crown, and every third one reserved for a road, which is covered with broken stones, coal-cinders, &c. A low stone dyke frequently incloses the whole. An elevated well-exposed stack-yard is, for obvious reasons, always preferred. Wheat and Beans, particularly the latter crop, which, from the succulency of its straw, and the late period at which it is cut, is peculiarly difficult to be got sufficiently dry in unfavourable seasons, are often stacked by themselves in some exposed situation near the field in which they grew—a practice by which the best samples of grain are obtained.—*T. Sullivan.*

ON MINERAL AND INORGANIC MANURES.
No. XXV.

By Professor Charles Sprengel.

(*Continued from page 570.*)

b. Ashes of Soap-boilers.—Formerly all ashes of soap-boilers consisted of extracted wood-ashes and lime, the latter either caustic or combined with carbonic acid. They were, therefore, a superior manure, as they improved vegetation by the phosphate of lime, magnesia, and gypsum, as well as the lime admixed. Since, however, many soap-boilers used soda instead of wood-ashes or common salt, ashes are turned out which consist merely of caustic lime or its carbonate, which have, therefore, not so much value as mere burnt lime. Whoever, therefore, purchases ashes from soap-boilers has to attend to that.

If the ashes of soap-boilers consist of extracted wood-ashes and lime, they are amongst the best mineral manures, still a good marl is always preferable, as any one can see by comparing the chemical constituents of both.

How they act on the ingredients of the soil, does not require to be again referred to in detail. It is also superfluous to speak on the manner in which they nourish plants, as everything just said of extracted ashes applies equally to these. It is the general opinion, that the ashes of soap-boilers act especially by the potash contained in them; but this is a mistake, because, although I have several times subjected them to chemical analysis, I have always found but small quantities of that substance. 100,000 parts of a sort of soap-boiler's ashes, which experience had proved to be a superior manure, consisted of

35,000	parts	of silica.
35,010	,,	lime, mostly in a caustic state.
2,330	,,	manganese.
1,500	,,	alumina.
1,700	,,	oxide of iron.
1,840	,,	oxide of manganese.
0,500	,,	potash, combined with silica into a silicate.
0,180	,,	soda, ditto.
0,190	,,	sulphuric acid, combined with lime into gypsum.
3,500	,,	phosphoric acid combined with lime.
0,090	,,	common salt.
18,160	,,	carbonic acid, combined with lime and magnesia.
100,000	parts.	

Of soap-boiler's ashes, 2000 to 3000 lbs. (in a dry state) are generally used on one acre of land. By 3000 lbs. the soil would obtain about 920 lbs. lime, 70 lbs. magnesia, 15 lbs. potash, 5 lbs. soda, 12 lbs. gypsum, 230 lbs. phosphate of lime, and 8 lbs. common salt, by which it is to be seen, that they owe their manuring properties mostly to caustic and the carbonate of lime, to magnesia and phosphate of lime; as their 15 lbs. potash, 12 lbs. gypsum, &c., may produce a very inconsiderable effect, the more so, as the potash is also combined with the silica into a substance not soluble in water.

After manuring with soap-boiler's ashes, plants of the Clover tribe will grow best, but all other crops will be benefited; and the fresher they are, the more effective, as they then contain much of caustic lime, by which, especially, the carbonic humus, or the organic matter in the soil are affected, and changed into humic acid. Soils which contain very little lime, will be always best improved by them, and in this case they will be very useful, whether employed on fields or meadows. According to the amount used, this effect will last six to nine years; which, however, will be only the case when the soil is not deficient in humus, and such other substances of which the ashes contain but a small quantity.

Soap-boiler's ashes are strewn (like wood-ashes) either over the crops already growing, for instance Clovers, Lucerne, Grasses, &c., or they are harrowed in with the seed of the winter or summer crops, and they act partly like extracted ashes, and partly like caustic lime; they can be also used to great advantage on new marshes.

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

(*Continued from page 579*).

Lower Lias.—With the exception of the Bath stone—the uppermost member of that portion of the oolitic series which we have described—the strata constituting the lower, or as it is generally termed, the Blue Lias, cover a greater portion of our district than any other occurring within its limits. From the edge of the hills, under which it dips, being overlaid by the rocks we have already described, it extends to the Severn, at Purton Passage and beyond the northern limits of the district. From Purton Passage, where it overlies one of the members of the Silurian series, its western boundary runs south-east, near Berkeley. The marl of the new red sandstone here appears below it, and the junction of the two is easily traceable by Lower Wick Green, along the edge of a slightly rising ground by Charfield, up the eastern side of the valley which extends beyond Wickwar. Here its boundary is irregular; the rock being intersected by valleys exposing the marl and magnesian limestone of the new red sandstone. From Wickwar, the western limit of the lias runs south by Sodbury, overlying the old red sandstone and the mountain limestone, along the edge of the basin already described, of which, with the marl of the new red sandstone there exposed, it forms the eastern boundary. It passes Waterleigh, Siston, and Doynton, leaving exposed there a small district very curious in a geological point of view, which shall be described in its proper place. From Doynton it runs south-west by Barrow Hill, &c., to Hanham, where the line of its junction with the new red marl crosses the Avon to Keynsham, and thence it lies along the irregular edge of the hills to Bristol. Besides this tract, which extends the whole length of our district, and varies from upwards of four miles as at Purton and Pucklechurch to less than one mile in width, as at Wotton-under-edge, there are numerous cases in which it occurs in smaller extent capping the hills and covering the highlands which occur on the other side of the basin. Thus, proceeding from Bristol to Gloucester, the first ten miles of the road lie along a district of this kind. The boundary of this tract, commencing at Montpelier by Bristol, runs along the edge of the hills by Stoke as far as Itchington, where it crosses to Abbey Common by the Gloucester road, overlying the mountain limestone between the two places. From Abbey Common it proceeds by Alveston, Almondsbury, Over, Compton, round by the edge of the vale of Henbury, by Charlton, above Westbury, near Redland, to Montpelier, whence we started; thus inclosing a tract of about 20 square miles in extent. Besides this, which is by far the most extensive of these outlying masses of lias, it occurs at Aust, at Henley Hill, and the hills overlooking the town of Thornbury, on the south; at Eastwood hills, and Whitecliffe Park, near Berkeley, overlying the new red marl. It also covers the red marl at Tortworth-coppice, also between Charfield and Wickwar. Its occurrence so frequently, and at such distances on nearly one level, shows that at one time it must have covered nearly the whole of the vale. The lower lias consists of two members:—an impure limestone-rock, of a blue or white colour, deposited in layers varying from 6 to 10 inches in thickness, with thin seams of clay between them; and a stiff calcareous clay, of a blue or yellow colour. This last is the general character of the lias in the northern part of the vale. There is little or no rock to be found north of Almondsbury, Stoke Gifford, and Westerleigh. To the south, however, of a line drawn through these towns, the lias consists chiefly of the rocky member. The lias varies in thickness; in one instance, at Codrington, it thins away altogether, and leaves a tract of mountain-limestone exposed in the midst of it. The rock of the lias is burnt for lime when lime of a better quality, as at Stoke Gifford, Bristol, &c., cannot be had in sufficient quantity. It is suited for underground and water-works; the price is generally 18*s.* a hundred bushels. The chief portion of the expense in the quarrying consists in the necessity of removing the great quantity of clay between the beds of rock; and hence, a quarry is frequently carried over the whole extent of a field, three or four only of the beds being dug, and the surface being thus lowered 2 or 3 feet as the quarry proceeds. In the northern part of the vale—at Slimbridge and Frampton, &c.—the clay of the lias is covered by beds of gravel, as has been already said.

Agricultural Character of the Lias.—The surface of this formation is in the northern part of the district, which is chiefly clay, nearly level, the undulations being very slight. South of Westerleigh and Dyrham, however, where it is chiefly rocky, many valleys intersect it, leaving ridge-like hills and abrupt eminences. It is very much covered by wood. This wood is chiefly Oak. Down at Purton Passage the country has a most forest-like appearance, and this is generally the case over the clay of the lias. Thus, at Hawksbury, several square miles of an Oak plantation occur on land otherwise worth very little, as is attested by the wretched state of the commons surrounding it. On the rocky part of the lias the country is not so thickly wooded; a view of the country in the neighbourhood of Pucklechurch from Hinton Hill, near that town, is very bleak. The soil on the lias is of two kinds. It is clayey or brashy, according as it is on the clay or the limestone. North of Almondsbury and Dyrham it is a dark, nearly black calcareous clay, the subsoil being either blue or black. In the neighbourhood of Newport it is a brown or light-coloured clay, the subsoil in this case being of a yellow colour. Towards Doynton and Wick, the soil is a black clay, full of fragments of the blue and white limestone, on which it rests. Over the whole of the formation the land is almost entirely in pasture, which is very much overshadowed and soured by the hedgerow timber. The fields are generally small, and the hedgerows wide. The pasturage is of a very poor kind, as might be expected on a soil which is so thoroughly soaked during six or eight months of the year. It consists, in great part, of Sedges, with a few plants of Plantain, and plenty of Rushes. The way in which these dairy farms are managed varies greatly. It is generally allowed that, to take more than one, or, at the most two, successive crops of Hay off the land is bad management. The value of the spring feed is nothing; the land being rarely in a state fit to allow of being stocked, till it is time to shut it up altogether for the Hay crop. The Hay is harvested in the month of July. It seldom averages more than 15 cwt. per acre. After mowing, the land is stocked till November, or later, if the land be sufficiently dry. If a crop of Hay is to be taken next year, the farmer tries to manure so much of his land each year. This is sometimes laid on not long after the mowing, in August or September, though generally it is done during the frosts of winter. If the land is not to be mowed the next year, this manuring is put off till next autumn, the land being depastured during the interval. In general, however, one year's grazing supplies the place of manuring. After all, the manuring the land receives is not calculated to do it much good. The scrapings of the ditches, mingled with the droppings from the cows that have been collected from the fields, where they have been consuming the Hay during the winter and spring, is all that it gets, and this is not laid on plentifully. In a great many instances, however, the land does not receive such good management as this. Frequently two-thirds of the land is mowed, and the other third depastured each year; that which is furthest from the buildings being mowed, and that next the farm and the buildings, and therefore more convenient for the dairy, being grazed. None of this land is efficiently drained; it is always soaked during winter; indeed, the farmers deny that it is possible to keep it dry. The prejudice, however, which still exists in many places against underground draining, is disappearing gradually. Many farmers would willingly pay 5*l.* per cent. on money laid out by the landlord in this way. But the chief way in which water is carried off is still by open gripe, which are cleaned out once every two or three years, and the earth laid in heaps and mixed with the cow-droppings to be spread over the land. The mole-plough is in considerable use also. It is either worked by a windlass or by horses—in the latter case a great many are employed; I know of one instance in which eighteen horses in a row were used by a farmer to make a drain only 18 inches deep. The loss of power in such a case must be immense. A more effectual way of draining land is also to a considerable extent adopted; this is termed clay-draining. The labourer stands on the surface of the ground, and, with a tool for the purpose, digs a trench about 20 inches deep, 2 wide at bottom, and perhaps 10 at the top; after clearing this out, he uses a wooden mandril, made of pieces of wood of the size of the drain, connected together by hinges, so that it is to a certain extent flexible; this fits the bottom of the trench, and fills it up to a depth of 6 or 7 inches; clay is hammered on this, and the drain is filled in; the mandril is then drawn forwards, clay is hammered down on it again, and the drain is again filled in, and so the work proceeds. This is much more effectual than the mole-plough, but not so permanent as draining with stones or tiles. The general objection to draining deep with tile or stone is the statement that water will not sink through the clay to them; the use of the subsoil-plough is thus called for, and if the pastures were broken up and well cultivated, and properly laid down again after the use of this implement across a thorough drainage with tile, their value would certainly be greatly increased. This effect would also probably follow the use of the mole-plough across the direction of deep stone or tile drains, although the land were not ploughed up, but merely pastured with sheep for four or five years. There is, as has been said, very little arable land on this soil. Many farms are entirely pasture; some, however, have a few acres under the plough. This is generally cultivated without any system, Wheat and Potatoes being the chief crops, and these are taken to supply the house. When it occurs in larger quantity the system on which it is cultivated is not only generally faulty, but the way in which it is carried into effect is slovenly: in many instances nothing but Tenales are grown, of which occasionally good crops are raised on this soil; but these will not pay for the injury which the land must receive from so scourging a crop, repeated so many successive years.

There are many instances in which a farmer, who has obtained permission to break up a field of Grass, has taken crops of Wheat after Wheat off it, until the land would not carry it any more, and then having laid it down for a series of years, till it is refreshed sufficiently, has broken it up again to give it the same treatment. The general rotation on the lias is a three-year course—Wheat, Beans, fallow. The kind of Wheat sown is the Blue Cone or Red-straw Lammas; generally the former, which seems to be well suited for a stiff clay. Eighteen or twenty bushels per acre is an average produce. This is a very low one for a clayey soil, but it is owing to the extreme state of wetness in which the land lies during six months of the year. If the land should get worn out with this treatment, it is laid down for several years; a very small crop of seeds is, however, obtained. Occasionally a portion of the land in fallow is sown to Vetches, which are cut for the stock. In some districts a crop of Oats is taken between the Beans, and the fallow, or Vetches. The crops then come round once in four years; viz., 1st, Wheat; 2d, Beans; 3d, Oats; 4th, Vetches, or fallow. This formation, when compared with the others in an uncultivated state, is certainly one of the lowest in the scale of fertility. This is well seen in Wickwar and Yate Commons. The land is covered with brambles and briers, the scanty pasturage being nothing but Sedges and Rushes. The Sloe and the Thorn, indeed, are not confined to the commons; it is hard to keep them out of the pasture lands. This aptitude to grow Thorns may almost be made a means of laying down the boundaries of the formation. Thus, on going from Alveston to Itchington, the Thorns disappear entirely as soon as we step off the clay of the lias on to the rock of the mountain limestone. The lias joins on to the gravel and the marlstone, by which it is covered, and to the new red sandstone, the mountain limestone, and old red sandstone, which it covers. In none of these cases but that of the gravel, which has been already mentioned, is that increased fertility consequent on a mixture of the two rocks observable. At its junction with the mountain limestone, the soil on the lias is benefited, or otherwise, according as the clay thins off abruptly or gradually from the rock. In the latter case the nearness of the rock to the surface acts as a drain. The improvement, which in some instances, I was told, existed in the nature of the soil just at the junction of these two rocks, is due more, I think, to this drainage than to any mixture of the clay and the limestone. The lias is the first formation we have mentioned, on which, within this district, the use of lime is sanctioned by experience. On most of the arable land on this formation, lime is used to the extent of about 70 or 80 bushels per acre. It is laid generally along the headland of the field on which it is to be spread, and being covered with earth is allowed to slack perfectly, after which it is carted or wheeled over the ground. The expense of liming, and all the chief expenses of cultivation, are made to precede the Wheat-crop, on which principally the farmer depends for his return. I met on this soil, near Frampton, with a curious instance of the extent to which long experience and observation may teach the same lessons as a knowledge of the science of geology would lead to. It was observed by a farmer, over whose farm I had been walking, that a good soil never existed where those shells (pointing to a number of fossil shells in the soil) were found in it. The shell was a graphite characteristic of the lias. The experience of the agriculturist had led him to connect the faults of the soil in some way with the existence in it of these shells. The geologist would at once know the nature of the subsoil from their presence in such abundance; and, throughout this district at any rate, the soil over that subsoil is bad.

Home Correspondence.

Woes of Farming.—I am a little man, with a little land, no experience, very little money, and a very great demand for it. I wanted to make my capital of 1000*l.* work a farm so as to keep myself and family in comfort, my daughters playing their piano, my horse having his groom, and I some good old port in the cellar for myself and friends. This was, I think, a very natural desire; and an old friend of my father's who had been a farmer in 1810, and had made a fortune, told me that I might be sure to do well, if I was but attentive to my business. Well, sir, I took a farm of 100 acres two years ago, and I paid great attention to it for a twelvemonth; but at the end of the year I found my capital all gone, although I took all the care I could of my money. Seeing that affairs had taken such a bad turn, I borrowed another 1000*l.* of my brother-in-law, discharged my bailiff, and took to farming scientifically. I bought guano, nitrate of soda, Potter, Poittevin, and Humphrey; but one turned out clay and brickdust, another salt, while chalk, charcoal, and sawdust was all I could make out of the others. They seemed to be no good, but I was told they were scientific, believed, and tried them. And now I am worse off than ever; I have wasted my own money, I have spent my brother's, and what is worse, I am deeply in debt. What am I to do? It seems to me that the friend who recommended me to take to so beggarly a trade as farming ought to pay my losses. But he will not; in fact, he says I am a lunatic, and fit for nothing but a strait waistcoat. I answer, I have straits enough without that, and I hope you will advise me what I should turn to next.—*Edward Pinthorn, Barkinfield.*

[It seems to us that the friend is right, and that advice is wasted upon one whose ignorance is even greater than his folly.]

Allotments.—A stranger hearing that I let land near the Seahouses, Eastbourne, at 1*l.* a rod, which is 8*l.* an acre, including rates, tithes, and taxes, blamed me, supposing the rent unreasonably high. When Benjamin King, who receives the rent of upwards of 400 allotments for me, was called in, he said not one farthing rent had been deficient in ten years, and that he had more applications for allotments at 8*l.* an acre near the fishermen's houses, than at 4*l.* near the church, though before the little tenants broke up the old turf it was called poor, sour land; and B. King said this land at 160*s.* an acre was more coveted than land at 6*s.* an acre on Beachy Head, also including rates, tithes, and taxes, though this last land had at that rent yielded the tenant at the rate of forty-eight bushels per acre of Wheat—I think the 7th year after breaking up the turf, which as a sheep-walk does not keep one ewe per acre. The land on the Down was not equally coveted, because it was two miles off, and up an ascent of 500 feet, which could not be accomplished at the odd hours which the land near at hand profitably employed. I presented, as dessert, to the stranger who objected to 160*s.* per acre, rent, rates, tithes, and taxes, a Cabbage—one the tenants had just given me—which weighed 22 lbs., produced by means of the manure his fish afforded. If gentlemen would oblige their neighbours by accepting the high rents their neighbours would gladly tender them, all parties would be served. Near Penzance, in Cornwall, about 20 years ago, 1000 acres of land were let for 10,000*l.* a-year; and Mr. Cuthbert Johnson's pamphlet on liquid manure, sold by Ridgway, says, the Grass lands round Edinburgh, watered by the town drainage, are yearly let in small portions by auction, at from 20*l.* to 30*l.* per acre; 130 acres belong to W. Miller, Esq., and the rest to the Earls of Moray and Haddington.—*M. A. G.*

Wide Drilling.—In the *Gazette* of 6th July, "Home Correspondence," this subject is treated of by "Lusor," referring to your article on the subject in p. 413. Having referred to it, I now send you an experiment of my own, made last year on Wheat. In farming my own land for the last eight years, I had always used a Suffolk drill for grain crops at 10 inches apart. Last year I had convinced myself that 12 inches would be better, and from 5 to 6 pecks of seed per acre instead of 3 bushels, usually applied; being of the same opinion on this head with Mr. Hewit Davies, who has written on this point. I was, however, induced to make a practical experiment on a wider drill, through my becoming acquainted with the results of a crop of Wheat—Golden Drop—which a neighbour had harvested the year before, put in at 2 feet apart in his swy brush land; he reaped a most abundant crop. Not having had all the results of his experiment, which I found had been carelessly carried out, until January last year, I had not time to try a similar one at my autumn sowing, so I determined to make a spring experiment of it, on a close of land that had been part of a coppice wood which I had grubbed up four years previously, but had not had Wheat in it before, and was then preparing for Beans, being heavy rich land, shallow, brush sub-soil. I, however, marked out two plots of 10 perches each, adjoining each other, and had the seed hoed in drills, north and south, one at 1 foot, and the other at 2 feet, as follows. It came up well, and progressed admirably. There were no weeds;—it was hoed at the commencement twice.

No. I.—Seed, Red-straw Lammas—the Wheat which suits this neighbourhood best. Hoed in on the 18th Feb., 1843, at the rate of 5 pecks per acre, in drills 1 foot apart, in a direction north and south, on 10 perches of rich heavy land; harvested September following, threshed, cleaned, winnowed, and weighed immediately:—

Produce of grain	2 bushels
Weight	124 lbs.
Straw	270 lbs.

Good sample and very little tailing.

No. II.—Seed, same as No. I. Hoed in same day, but with little more than half the quantity of seed, viz., at the rate of 3 pecks per acre, at 2 feet apart, on 10 perches of same land, and adjoining No. I.; harvested the same day:—

Produce of grain	1 bushel 3½ pecks
Weight	114 lbs.
Straw	284 lbs.

Sample better than No. I.

The Red-straw Lammas is essentially a winter Wheat; the crop, therefore, would have been greater had it been put in in November instead of February; or, if I had used a spring Wheat instead; and it being close to the wood the birds attacked it greatly. I have not thought it worth while to make another experiment as to 2 feet-drilling, because I am convinced that such a distance could never answer as a universal method, it being too far apart to support itself in exposed situations. The above results of No. II. would have been greater had it not been partly laid: the sheltered situation saved it from being more so. This experiment has, however, been a useful one. It clearly demonstrates that Wheat requires space to expand its roots in; therefore, broad-cast or narrow drilling cannot be a correct method. My crops of Wheat this year, just harvested, being very fine and abundant, all drilled in at 1 foot, with 5 pecks of seed only, there will be very little tailing. As the above experiment may be worthy of your notice when making a comparison with the others, I understand from the *Gazette* to be in progress, I have thought it well to send it you.—*Henry T. Davis, Waterhouse, near Bath.*

Wide Drilling and Dibbling.—Having recently observed in your Paper, and in others, several paragraphs on the advantages of dibbling seed-corn, and of sowing a much smaller quantity of seed than is usually done, it occurs to me that the result of a small experiment I made on a patch of ground adjoining my garden might not be uninteresting, and, by confirming previous statements, might lead others to make experiments on a somewhat larger scale. The following Tables will furnish you with the particulars of my experiment:—1st. As to produce of a single grain of three kinds of Wheat. 2dly. The total produce of 50 grains of the same description; and 3dly. The quantities per acre.

TABLE No. I.

Time of Sowing.	Sort of Wheat.	Quantity Sown.	No. of Ears Produced.	No. of Grains.
Nov. 18, 1843 ..	Red Lammas.	One Grain	20	1207
Ditto	Creeping Red.	Ditto	34	928
Ditto	Prolific.	Ditto	31	1040

TABLE No. II.

Time of Sowing.	Description of Wheat.	Quantity Sown.	No. of Grains destroyed.	No. that produced Corn.	No. of Ears produced.	Average No. of Ears to each Corn.	Total No. of Grains.	Measure of Grain.	When Cut.	Quantity of Ground.	Mode of Planting.
1843, Nov. 18	Red Lammas.	50 Grains.	16	34	642	19	19,128 or 562 to each grain.	2½ Half Pints.	Aug. 1st, 1844.	12 square feet.	Dibbled 6 in. apart
Ditto.	Smith's Creeping Red.	50	15	35	765	21	19,925 or 569 to each grain.	2¾ Half-pints.	Ditto.	Ditto.	Ditto.
Ditto.	Smith's Prolific Red.	50	12	38	637	16	19,711 or 518 to each grain.	2¾ Half-Pints.	Ditto.	Ditto.	Ditto.

TABLE No. III.—Produce per Acre.

Description of Wheat.	Quantity of Seed.	Quantity Produced.	Weight per Bush.	Quantity of Straw.
Red Lammas.	121,000 grains or six 4-5th quarts.	66 Bshls.	60 lbs.	65 cwt.
Smith's Creeping Red.	Ditto.	70½ Bshls.	62 lbs.	49 cwt.
Smith's Prolific Red.	Ditto.	66 Bshls.	60½ lbs.	63 cwt.

In order to form a correct judgment of the above Tables, it is necessary that I should add some particulars. There is no doubt the produce would have been very much greater, had the season and other circumstances been more favourable. The loss sustained in various ways is far more than any deduction that may properly be made from the above figures, as being the result of a garden experiment. In the first place, the soil, though recently broken up, was unfavourable for the season—a stiff, dark, heavy loam (lying in a clay subsoil), full of vegetable matter and very wet; the consequence was that about one-third of the whole plant was destroyed by the slug, and the rest was much weakened; again, the long-continued dry weather, although generally favourable for the Wheat crop, in this instance was otherwise, as nearly all the outside plants were injured by the roots being so much exposed, through the very large fissures in the soil. Although the average number of ears to each grain is about 19, in many cases only 6 or 8 ripened; the remainder died away, having become loosened from the ground. Very considerable additional loss was sustained by the birds; for although I had a girl five weeks tending it, yet of so little effect was it, that in order to secure it at all, I was obliged to cut it quite green, which very much lessened the bulk—of course, not only the measure, but also the weight. I have, however, given you the exact result. The samples and quantities answering to the above Tables I have by me, and may add that I have seen to the matter entirely myself. I intend this autumn planting an acre on the same principle. I hope others (practical men), will be induced to do so, as it is by experiment alone that the comparative merits of thin and thick sowing can be ascertained.—*E. W. M.*

Potato Failures.—I quite agree with Mr. Alexander's remarks in page 596, and think the following is a further proof of the correctness of the observations as to the land being moist, so as to bring out the latent powers of vegetation. A farmer near this for some years, and with great success, has adopted the following plan:—If the season be very dry he has the manure well watered before any of it is put into the drills; this causes a great moisture to the earth in the drills; no time is lost in getting the Potatoes in and closing them up. This year he has a most abundant crop, and his neighbours a complete failure whose manure was dry when put into the drills. Where guano and manure have been used together for Potatoes, they have answered well this season, and for this reason guano, when deposited in the earth, produces a moisture similar to salt when it dissolves in the earth, or by dampness.—*M. S.*

What is the action of common Salt on Carbonate of Lime?—I should be extremely obliged if any of your chemical readers would inform me whether salt and carbonate of lime (under the form of sea-shells) would, if

slightly moistened and left in great masses long together, act in any degree on each other? It is, I believe, known that masses of the same substances will act on each other, of which smaller quantities will not. I do not ask this question for agricultural purposes (though possibly the answer might be of some interest in that point of view), but from having found in Peru a great bed of upraised recent shells, mixed with salt, which are decayed and corroded in a singular manner, so that the surfaces of the shells are scaling off and falling into powder. I may mention, as explaining one element in the value of sea-shells as manure, that they are dissolved by water with greater facility than apparently any other form of carbonate of lime: one proof of this I observed in a curious rock, from Chili, chiefly composed of small fragments of recent shells, which are all enveloped and cemented together by a pellucid calcareous deposit; but in some parts of this rock the little included fragments are in every stage of decay and disappearance; in other parts they are entirely dissolved, the little calcareous envelopes being left quite empty. Here we see that water, capable of dissolving shelly matter, has penetrated through their thin films or envelopes of carbonate of lime, without having acted on them; these films, moreover, being a deposition from water within quite recent times.—*C. Darwin.*

Potter's Guano.—I received this analysis from Mr. Mason. The sulphate of soda cost me 3*l.* 10*s.* a ton, and was very good, with a slight excess of sulphuric acid, not injurious, I think, to vegetation. I obtained the sulphate of ammonia at 17*l.* a ton, but I diminished the proportion of gypsum and salt, in order to employ a larger quantity of sulphate of ammonia. A compound resembling the manure which you have sent me for analysis, may be made as follows:—

Bones ground fine	200 parts
Sulphate of lime	100 ,,
Common salt	100 ,,
Sulphate of soda	75 ,,
Sulphate of ammonia, mixed with urine.	25 ,,
	500 parts.

—*X.*

Guano; Superphosphate of Lime.—Last year I had some Guano sown over part of a field of Wheat, which had been manured with between thirty and forty bushels of lime per acre, in the autumn, at the time of sowing the seed. There was not more grain at the time of harvest, where the guano was sown, than where there was none, but much more straw. The expense of the guano appears to be almost thrown away. With regard to superphosphate of lime, I used about four bushels an acre, drilled with the seed; but from the strong and rank appearance of the leaves, I should think a less quantity sufficient.—*J. W.*

Transmutation of Species.—In Rodsley's "Annual Register" for 1759 (p. 381), is an account of some Oats which the second year produced in Sweden Rye, having been cut off two and three times. I sowed some in March, 1832, and cut them several times, but the roots died in the winter. The experiment was a source of great ridicule and amusement to my neighbours. Did not Bruce find Wheat apparently growing wild about the source of the Nile?—*C. M.*

New Soil.—Surely your correspondent, "Rambler," (p. 580), is incorrect in stating that Potatoes are generally better in a new than old soil. Every person I have conversed with on the subject, allows that the produce is larger [that is probably what he meant,] but that the quality is much inferior, being waxy. This year I had a piece of pasture double dug (the Grass sods being removed), and set with Potatoes and various manures; the quality from all the manures is bad.—*R. J.*

Clover Dodder.—I have inclosed a piece of what I believe is the Dodder plant, Cuscuta europæa, the stem being thread-like, yellowish, branched, and twining. The seed of this horrid parasitic plant I have no doubt has been introduced into our Clover in the foreign seed which is generally sold to the farmers. The havoc the Dodder has made amongst the Clover is quite astonishing; immense patches of yellow silk-like net-work may be seen all over one of the fields near this place, and in a field of my own, although I had taken the precaution to have a space cut all round the Dodder, and the plant itself cut and thrown together, yet so tenacious does it seem of vitality, that it has spread afresh and commenced blooming. I have this time had it cut and burnt, as I feared much that, should it be allowed to seed, I should have had a troublesome enemy in the land, awaiting to destroy any plant that might be brought or grown in its neighbourhood.—*Ruri rusticus.*

Failure of Hay Crop.—I do not see that your attention has been called to the serious consequences of the almost total failure of Hay in the grazing and dairy districts, where for the most part not more than 20 or 30 acres out of 100 are under the plough. In the neighbourhood of Aylesbury, the average crops of Hay have not exceeded 5 cwt. per acre, instead of from one to two tons; and many meadows have not been cut at all, from the shortness of keep in the pastures. Many have been relying on rain in July and August, to mow in September and October, but this is now out of the question. The object of this communication is to invite discussion and information as to the best mode of supplying dairy stock with food, in lieu of Hay, during the winter, in a district where green crops, and especially Turnips, are scarcely known. On my farm of 300 acres, about seven acres sown with White Carrots and Mangold Wurzel, have wholly failed; and my Turnips, although they came up abundantly, and are untouched by the fly, are dying away in the present drought.—*A Farmer.*

FARMERS' CLUBS.

Darlington Farmers' Club.—This Club held their monthly meeting on Monday last, at the offices of Mr. Thos. Dixon, Land Agent, their Honorary Secretary, when there was a pretty good attendance of members present. The subject under discussion was The most beneficial Time for Reaping Wheat and other Corn, and the profitable Mode of Cutting and Securing it. Henry Chapman, Esq., the Chairman, introduced the subject, and said, that having formerly himself been a pretty extensive farmer, for a good many years, more particularly in Derbyshire, he had had opportunities of observing the cutting and harvesting of Wheat under different circumstances, and he was decidedly in favour of cutting Wheat before being fully ripe, as by that means a finer sample is obtained, as well as having the crop cut with less waste; but although he was an advocate for reaping Wheat before being fully ripe, yet he did not recommend cutting it very raw; for although a brighter sample was by that means obtained, yet he was strongly of opinion that it yielded a less quantity of flour; not, however, having himself made any experiments in proof of this position, he merely gave it as his opinion.—The Secretary then said, that from the experience he had had, he considered it judicious to cut Wheat a little earlier than what has been generally practised, as by that means not only is a brighter and better sample obtained, but if the crop is broken down, as is sometimes the case, it could be cut up much cleaner in a raw state than if fully ripe; the straw is also of a better quality, and in a wet harvest both the corn and straw stand the weather much better than when cut ripe. And in support of this position he mentioned the circumstance of the Wheat on the farm on which he was resident in the wet and unsound harvest of 1816 being cut in a very raw state, and the consequence was, that when all the neighbouring farmers' Wheat was completely sprouted in the stook, by the long-continued wet weather, the Wheat on this farm was comparatively sound; and in the succeeding winter and spring, when other farmers of the neighbourhood sold their Wheat in Darlington Market at 22*s.* per sack, the Wheat from this farm sold for 28*s.*; and he believed that the principal, if not the only reason, was that the Wheat on this farm having been cut in a much earlier stage of ripeness than the rest of the neighbourhood, it was not so easily affected by the weather. He then read some extracts from the "Quarterly Journal of Agriculture," detailing some experiments made by Mr. J. Hannam, of North Drighton, near Wetherby, by which it was clearly shown that it was injurious to allow Wheat to stand until fully ripe before cutting, and that the best period for cutting Wheat was from 10 to 14 days before fully ripe.—An animated discussion now ensued both as to the proper period for reaping and the best mode of cutting and securing the crop, and several members considered hooding the stooks of great service in securing the Grain from the ill effects of the weather; whilst, on the other hand, several others were of opinion that, if properly stooked, it was as well without hooding. As to the best mode of reaping, it having been up to this time almost the universal practice in this neighbourhood to cut Wheat with the sickle, there was no advocate for deviating from the old practice; but as regarded the proper period for reaping, the members present were unanimous in opinion that it is best to cut Wheat in a rather raw state—perhaps a week, at least, before being fully ripe.

Miscelianeous.

Cultivation of the Turnip.—The land is ploughed up as early as possible in the autumn, and receives one, two, or more ploughings, as opportunity offers. In the early part of the winter such portions as require draining are thoroughly drained with pipes of two inches' bore, having the opening heart-shaped—the widest part of which is placed downwards—upon the top of which stone is placed to about three inches in depth, consisting principally of small flints and pebbles, picked from the surface of the land; as soon as the land is sufficiently dry it receives two deep cross-ploughings early in the spring, is rolled and harrowed until a fine tilth is produced, and is then formed into ridges, or small stetches, 37 inches each in width, which is thus effected:—A straight furrow is first ploughed, and a double-breasted plough is then used, having a marking instrument attached, which consists of a small straight tough pole fixed at right angles from the beam of the plough by means of a hook, and placed as far back as possible, so that it does not derange the operation of the plough whilst working; at the end of this stick an iron is fixed exactly the width of two of the intended ridges, which is connected diagonally by a chain with the whipple-tree of the horse; this, as the plough proceeds, marks out the next furrow, occupying the space of two ridges. The work thus proceeds followed by a similar plough, or by the ploughman returning, who, by passing his plough down the middle of this space, divides the stetch of 6 feet 2 inches into two smaller ones of 37 inches each, the marker still defining the distance at which the plough should be held; the ridges being formed, are ploughed off with four furrows to each, and then every fifth ridge is drawn out to enable the manure to be carted on without injuring the form of the ridge. After the manure is carted on, at the rate of 16 loads of 40 bushels each, the ridges are then ploughed by four furrows, leaving a small bank in the centre so as to divide the ridge into two spaces for the manure, which, from being partially decomposed, is easily spread in this double furrow; the land is then ploughed at four furrows to each ridge, and the manure being covered in, is rolled and harrowed, and is again rolled with a light roller. The Turnips are then drilled—two rows upon each ridge 11 inches apart, at the rate of 4 pints to the acre, thus standing at alternate spaces of 11 inches and 26 inches between the rows. As soon as the Turnips appear, they are singled out by boys and women at 15 inches apart, and are left standing diagonally with each other; they are then carefully and deeply hoed with a heavy hoe, and the furrows are kept clean with the horse-hoe, but the Turnips are invariably set out by hand and never by the hoe, the deep hoeing that is given being considered a main point in the system over and above that pursued with the common light Turnip-hoe; and the singling by hand is assisted by a small measured stick 15 inches in length, enabling the children employed to set the Turnips out regularly and diagonally, so that when finished they stand thus ·.·.·. In the months of November and December the Turnips are all pulled, avoiding the use of hooks or cutting instruments for trimming them, merely wringing off the tops and dislodging the greater portion of the earth attached to the fibres without cutting them. The Turnips are then carted to the respective fields where they will be required for winter use, and one moiety of them is left in the field for using there; those left are put into heaps of about 40 bushels each, are thatched over with straw, and the earth shovelled up and placed round the heaps to the top, which ends in a point. Those taken from the field are carted to the headlands of other fields where they will be required, which are principally those upon which Wheat was grown in the preceding year after Clover. The old hurdles used for folding are then selected for this purpose; one is placed first at the end across the space to be occupied by the Turnips, and two more are put at right angles, forming a space made by the double row of hurdles, in which the Turnips are placed, taking care to cart them when dry, and adding more hurdles lengthwise until sufficient space is obtained, and the Turnips are disposed of in rows about 7 ft. wide and 4 ft. in height. The Turnips are then protected by the earth being dug up and placed on both sides, leaving air-holes at about 4 or 5 feet distance, level with the surface of the land, which may be formed as the work proceeds by introducing small faggots tied loosely, or by any other mode, leaving the sides of the whole open so as freely to admit air, and extending across from side to side, which is of especial importance towards the preservation of the Turnips, as they might otherwise get into active fermentation, which when it takes place frequently destroys the greater part of them. The top of the heap is then covered with Barley-straw and thatched, and thus the Turnips are preserved from injury by frost and game during the most severe weather, and will remain in excellent condition until May following, very little impaired by keeping. The application of them is by feeding them upon the eddishes, and upon the land upon which they are grown by sheep in fold. The Turnips are all sliced, and the sheep are regularly fed in troughs, having a new fold every day, and with from ½ lb. to 1 lb. each of oil-cake per day. The sheep, for the most part, consist of lambs of the last year, and cost from 16*s.* to 20*s.* each—these in the following spring are shorn and sent to market, and produce from 30*s.* to 32*s.* each; the fleeces from the half-bred Leicesters weighing each about 6½ lbs., and selling from 12*d.* to 16*d.* per lb.—*Mr. Baker, on Essex Farming, in the English Agricultural Society's Journal.*

African Guano.—The guano, in the state in which it was received, formed a moist chocolate-brown powder, intermixed with numerous particles of a whitish substance. It possessed no urinous odour, but smelt strongly of ammonia. On examination under the microscope, no crystals of any kind could be detected in it; but it contained numerous remains of plants, partly in a state of decomposition, but still exhibiting a green colour, and globules of starch in the cells, likewise brown and white feathers, fragments of egg-shells and fish-bones. The aqueous solution was of a light reddish-brown colour, was strongly ammonical, and deposited on slow evaporation an abundant crop of crystals of the triple phosphate of ammonia magnesia. On adding nitric acid to the filtered liquid, an abundant flocculent brown precipitate subsided, which consisted of humic acid and extractive. The insoluble portion was of a light sandy-yellow colour. On boiling with solution of potash and precipitation of the filtered solution with hydrochloric acid, a light-brown flocculent substance subsided, which amounted to 5·50 per cent. This was first regarded as uric acid, but on further examination it proved to contain but slight traces of that ingredient, and to consist of a substance allied to humic acid. To determine the absolute amount of ammonia, one of the ingredients on which the value of guano chiefly depends, a weighed portion of the guano in its normal state was analysed according to the method described by Varrentrap and Will, and afforded 9·70 per cent. The other ingredients were determined in the usual way, and according to the results of analysis, 100 parts of the guano in question consist of—

Volatile salts, as oxalate of ammonia, chloride of ammonium, carbonate of ammonia, and combustible organic matter, containing 5·50 per cent. humic acid, uric acid and extractive	32·80
Water	27·13
Ammonia	9·70
Phosphates of lime and magnesia	22·37
Insoluble residue in nitric acid, consisting of sand .	0·61
Alkaline salts, chiefly phosphates, muriates, and small quantity of small sulphates (chiefly potash).	7·08
	100·00.

From the above examination, it is evident that the African guano differs considerably from the Peruvian and Chilian, *i. e.* that it has been more exposed to the decomposing influences of atmosphere and water than either of those kinds, and tends rather to confirm the

slaves of Fritzsche, Ilgen and Boussingault, Girardin and Didard, that the Peruvian guano is in a state of fossilisation. The most remarkable guano hitherto analysed is that described by Fritzsche,* whose investigations, as far as we are aware, have hitherto remained unnoticed in this country. We need, therefore, not apologise for giving a brief abstract of them in this place, more particularly as they will prove how requisite it is that the agriculturist, before purchasing guano, should have a sample submitted to analysis by some competent chemist. Fritzsche describes the guano submitted by him to examination as a dry coarse powder, in which some large compact masses occurred of a yellowish-brown colour. The compact pieces from which the powder had originated were distinctly composed of superposed strata, seldom horizontal, but most frequently compressed and undulate. The strata are of two kinds, one of a brownish-yellow colour, and consisting principally of urate of ammonia; the other of a blackish-gray or dark brown colour, and formed principally of clay. Both layers alternate with each other irregularly, their relative proportions varying considerably. The argillaceous strata are of a more compact nature than those of the urate of ammonia. All the layers of clay are coated with a whitish rind, which cannot be readily washed off with water. This coating consists of urate of ammonia, and proves beyond a doubt that the guano in question has acquired its present state through the agency of water. Feathers, vertebræ, and fragments of other fish-bones occur frequently, as well as remains of plants and some seed. The guano had a strong urinous smell and a faintly saline taste. 16 oz. of the pulverulent mass in its moist state afforded on solution in caustic potash and precipitation with muriatic acid, 7 oz. 2 drs. of a yellowish-brown coloured crystalline hydrate of uric acid = 37 per cent. anhydrous uric acid. 200 grs. of a compact fragment, with very few seams of clay, gave, on being similarly treated, 118 grs. or 59 per cent. of anhydrous uric acid. The residue of these experiments consisted for the greater part of clay, which readily subsided, probably on account of the earthy phosphates contained in it. From the occurrence of so few organic remains, and from the interposition of the argillaceous masses between the layers of urate of ammonia, it is evident that the guano in question cannot have been deposited by the birds in the state in which it occurs at present; the coating of urate of ammonia, which adheres so firmly to the seams of clay, decidedly shows that water must have acted some part at the formation of this deposit. Let us suppose a clayey shore, which is flooded at high tide and left dry at ebb, and behind it a lake to which the tide rises, and flocks of sea-birds which visit the coast at the time of low water; all the requisite conditions are given. Fish and other marine animals, left by the tide, attract the birds, which, in taking their food, at the same time loosen the soil. Meantime a tropical sun dries and breaks up the soil; the tide returns, and carries these loose masses of clay, and the excrements deposited on them, into the basin. In their progress a process of lixiviation takes place; the lighter organic remains, which have not time to subside, are carried away by the effluent water, while the heavier urate of ammonia and fragments of clay subside. At some depth the bottom of the basin is not disturbed by the flood, and here a solution of urate of ammonia may be formed, which subsequently, on drying, covers the layers of clay with a white coating, and serves to unite the pulverulent urate of ammonia and loose clay. The amount of soluble constituents in the guano (20 per cent.) is not opposed to this view, for if the urine of these birds is secreted, like that of serpents, in a concrete form (containing, therefore, solid urate of ammonia), it would be impossible for the salt water to deprive it of much of its soluble constituents during its transfer, and its rapid subsidence in the basin would prevent subsequent extraction. Now it is quite evident that the African guano has been exposed to entirely different conditions to that of the Peruvian just described; for while this contains the enormous amount of 59 per cent. uric acid, scarcely traces of it occur in the former, it having undergone total decomposition. Moreover, the amount of soluble constituents in the African Guano (above 60 per cent.) entirely excludes all idea of its having been subjected to any such lixiviating process as that supposed by Dr. Fritzsche. We may, in conclusion, venture a few words with respect to the comparative value of the African guano as a manure. This depends, first, on the amount of phosphates, and secondly, on that of the ammonia, or substances capable of affording that ingredient. But it is also evident that the state in which the nitrogenous compounds are contained in the manure must be of some importance, i. e. whether they exist in the form of ammonia, as is the case with the guano submitted by us to analysis, or in the state of uric acid.† It is probable that this African guano would prove extremely stimulating to vegetation at first, but that its power would soon be spent, unless previous to its employment it were mixed with some substance capable of fixing the ammonia, such as gypsum or charcoal, as recommended by Boussingault and Payen; while that containing uric

* "Bulletin de l'Acad. de Petersbourg." t. No. 6.

† "The value of a manure depends, therefore, on the proportion of nitrogenised organic matter, and especially in relation to the non-nitrogenous organic substances, and lastly, on the decomposition of the quaternary substances being gradually effected, and so keeping pace with the progress of vegetation." And again, "A manure entirely decomposable into its soluble and gaseous products in the course of a single year will be capable of producing as great an effect on the first crop as five times the quantity of another manure which would require five years for its ultimate decomposition, but then the latter will furnish useful products during a period five times longer."—*Payen and Boussingault in "Ann. de Chim. et de Phys.," t. lii. pp. 67 and 70.*

acid would, from the slow decomposition of this substance, prove for a long time a constant source of nitrogen proportionate to the growth of the plants.—*Chemical Gazette.*

Employment of Boys as Farm Labourers.—Gangs of boys from 10 to 15 years of age are constantly employed, at wages from 4*d.* to 8*d.* each per day; with every 10 or more boys a man is placed, who is made responsible for their properly executing the work, and also for their application. Narrow hoes are used in preference to wide ones. The Wheat, Beans, and Peas first receive attention, and are all thoroughly hoed and weeded at a cost of about 3*s.* to 4*s.* per acre; the boys also dibble in the Mangold-seed, and single the plants of both that and the Turnips ready for the hoe, weed all the Lent corn, each being furnished with a glove, and then assist in making the hay, shaking it out with their hands without using forks; the smallest are then released for the month of harvest, to follow gleaning, and the largest are all kept to various work, such as hoeing and cleaning the Turnips, and assisting in the harvest-work as required, but always accompanied by the man. As the season advances, the pulling and carting of the Turnips again occupies them, and it is only during the depth of winter that the smallest are not employed. Frequently two or three gangs of from 10 to 15 in each gang are at work; the light hoeing is thus executed at a less cost than could be effected by men, and the boys are at the same time taught early to work and to become industrious.—*Mr. Baker, on Essex Farming, in the English Agricultural Society's Journal.*

Notices to Correspondents.

Rural Chemistry. By Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Hon. Mem. of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, has been reprinted from the *Gardeners' Chronicle*, with additions, and may be had of all booksellers, price 4*s.* 6*d.*

Books.—*Ebor.*—Low's "Elements of Practical Agriculture." The subject of dibbling Corn shall be attended to.

Chinese Oat.—*N. N. P.* asks for information as to where he can obtain the Chinese Skinless Oat.

Churn.—*Anon.*—Next week.

Dairy Vessels.—*Hacienda.*—We have no experience on the deleterious effects of zinc on milk, but we believe the assertion to which you allude to be true. The acids formed or existing in milk are solvents of the metal. We do not know the medicinal properties of sea-water.

Decrease in Value from Inundations.—*Mallow.*—We cannot answer your question in our ignorance of the amount of risk to which you are subject. In certain districts bordering on the Severn, at one stage of its course, an inundation involving the total destruction of the crop once in ten years is calculated on; here the effects of liability to such risks obviously affects the value of property simply to the extent of 1-tenth.

Drains.—*H. C.*—Use soles to your draining-tiles; about 9inch arvensis, see Home Correspondence.

Old Pastures.—*W. C.*—Decidedly the best way of breaking them up is by paring and burning. This could be done in spring before Turnip seed-time. You will not otherwise be able to get the land reduced sufficiently for the proper cultivation of the crop. You are certainly judicious in taking a crop of Turnips as the first after Grass. If you pare and burn you may grow Clover on the third year as you propose. The flesh of the alpaca is spoken of as resembling venison.

Potatoes.—*Suburban Farmer.*—If the stalks or haulm are green you cannot cut them off without injuring the crop.

Seed-Wheat.—*J. E.*—The Childham Wheat is a prettier Wheat in the berry than Mr. Morton's, but so far as our somewhat limited experience of it goes, it is not so productive a variety. Shirreff's Hopetoun is a white Wheat and we should greatly prefer it to the Red Lammas. Will you favour us with your name and address?

Turnips.—*Brassica.*—They can only be propagated by seed.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Sept. 9.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 10 to 4s 0	Best Downs & Half-breds	3s 10 to 4s 0
Best Short Horns	3 8 3 10	Best Long-wools	3 8 3 10
Second quality Beasts	3 0 3 4	Ewes and second quality	3 0 3 4
Calves	3 4 4 0	Lambs	3 8 4 4
Pigs	3 4 4 4		

Beasts, 2917; Sheep and Lambs, 23,070; Calves, 151; Pigs, 270.

The number of Beasts to-day is much smaller than last Monday, yet there is a fair average supply; the trade is rather brisker, and in some instances the very best qualities are making 2*d* per 8 lbs advanced price; as a general statement of the market, however, we cannot alter our last quotations; the second quality Beasts find more purchasers than of late, and make a little better price. There are a few less Sheep, but still a very large supply; there are, however, more buyers in the Market than of late, which causes the trade to be a shade better; still, there is not a quotable advance in the price. There is a little more demand for Lambs. Pork-trade is rather better.

FRIDAY, Sept. 13.

The supply of Beasts to-day is large, and trade very dull at fully 2*d* per 8 lbs lower than on Monday; as 10*d* is quite the top price for the best qualities, and many good Beasts are sold at 3*s* 8*d* per 8 lbs. The supply of Sheep continues about the same, but owing to the improved state of the dead markets since Monday, the best qualities are making a little more money, but not quite 2*d* per 8 lbs advance; middling quality is still difficult to dispose of. Veal-trade is a little more lively, but it is difficult to make over 4*s* per 8 lbs of anything. Pork-trade continues pretty good.

Beasts, 957; Sheep and Lambs, 8320; Calves, 338; Pigs, 330.

4*l.* West Smithfield.

HOPS, Friday, Sept. 13.

About 500 pockets of the new crop of Hops have arrived at Market, for the most part diseased and unripe, and consequently are not much in demand; what few have been sold have realised about as follows:—Farnhams, 10*l* to 10*l* 10*s*; Mid Kents, 9*l* 10*s* to 10*l* 10*s*; Weald of Kents, 7*l* 7*s* to 9*l*; Sussex, 7*l* to 8*l* 8*s*. We expect picking will be general on Monday next, and that the Market will be well supplied during next week. The duty is estimated at 130,000*l.*, and no doubt prices will be high.

Farebrother & Smith, Hop-Factors.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 12.

Prime Upland Hay	90s to 110s	Clover	100s to 120s	Straw	28s to 30s
Inferior „	80 90	„ New	100 120		
New Hay „	80 100				

Jones Cooper, Salesman.

CUMBERLAND MARKET, Sept. 12.

Superior Old Hay	100s to 110s	Superior Clover	120s to 128s		
Inferior „	80 100	Inferior „	90 100	Straw	28s to 30s
New Hay „	— —	New Clover	— —		

Jones, Baker, Hay Salesman.

WHITECHAPEL, Sept. 13

Prime Old Hay	95s to 105s	Old Clover	120s 130s		
Inferior „	80 95	New Clover	100 115	Straw	28s to 30s
New Hay	— —	Inferior „	— —		

WOOL.—British, Friday, Sept. 13.

Business continues to be a good deal of business done in our English Wool market. The prices of Fleece Wools remain unaltered. We think the demand for Combing Wools a little better, but for low short Wools, particularly white, there has been a good demand.

	Per lb.		
Leicestershire Wethers	1*l* 0*d* to 1*l* 1*d*	Southdown Hoggets	1*l* 2*d* to 1*l* 3*d*
Dry Hoggets	1 1 1 2	Kent Fleeces	1 1 1 2
Scots Down Fleeces	1 0 1 1		

COVENT GARDEN, Sept. 14.—The supplies of both fruit and vegetables have been very large and considerably exceed the demand; trade is consequently dull. Some fine specimens of Pine Apples are in the market, and hothouse Grapes are also good and abundant. There is no difference in the price of Melons since our last report. Peaches and Nectarines still continue good, and are sufficient for the demand. Of Plums there are some good samples of Coe's Golden Drop. Green Gages are almost over for a season, and Orleans are very scarce. Of Damsons there is abundance. Figs are offered at nearly the same price as last week, and very little alteration has taken place in that of either Apples or Pears. Among the former we noticed some good samples of Ribston Pippin, Hawthornden, and Emperor Alexander, and among the latter were fine looking specimens of Williams's Bon Chrétien, Marie Louise, and Louise Bonne (*of Jersey*). Siberian Crabs are now in the market, as are also Walnuts, which are selling at from 10*s.* to 28*s.* per bushel. Filberts are well supplied. Of Vegetables there is abundance. Cauliflowers bring nearly the same price as last week; they have somewhat improved of late. Broccoli is tolerably plentiful, and Cabbages and Coleworts are abundant. French Beans are good, and still continue sufficient for the demand. Onions are plentiful. Capsicums and Mushrooms are not altered in price since last week. Carrots and Turnips of good quality are abundant, as is Celery. Lettuces, Endive, and other kinds of Salading are plentiful. We observed amongst Cut Flowers, Combretum purpureum, Gladiolus puttacinus, Gardenia radicans, Agapanthus umbellatus, China Asters, Amaryllises, Camellias, Heaths, Pelargoniums, Fuchsias, Verbenas, Carnations, and Roses.

FRUITS.

Pine Apple, per lb., 2*s* to 6*s*	Morello Cherries, per hf.-sv., 1*s* 6*d* to 2*s* 6*d*
Grapes, Hothouse, p. lb., 1*s* to 3*s* 6*d*	Currants, per hf-sieve, 2*s* 6*d* to 3*s* 6*d*
— Spanish, per lb., 1*s* to 1*s* 6*d*	Filberts, per 100 lbs., 70*s* to 80*s*
— Portugal, per lb., 1*s* 6*d* to 2*s*	Walnuts, per bushel, 10*s* to 20*s*
Melons, each, 1*s* to 3*s*	Oranges, per dozen, 1*s* to 3*s*
Peaches, per dozen, 2*s* to 4*s*	— per 100, 7*s* to 14*s*
Nectarines, per doz., 2*s* to 4*s*	— Bitter, per 100, 10*s*, to 16*s*
Apricots, per doz., 1*s* to 2*s*	Lemons, per dozen, 1*s* to 2*s*
Plums, per half-sieve, 2*s* 6*d* to 4*s*	— per 100, 8*s* to 14*s*
— Orleans, per hf.-sv., 1*s* to 2*s*	Almonds, per peck, 6*s*
— Coe's Gold. Drop, p. pun., 4*d* to 1*s*	Sweet Almonds, per lb., 2*s* 6*d*
Damsons, per half-sieve, 1*s* 6*d* to 2*s* 6*d*	Nuts, Barcelona, 20*s*
Figs, per doz., 2*s* to 4*s*	— Brazil, 16*s*
Apples, Dess., per bush., 2*s* 6*d* to 4*s* 6*d*	— Cob, 14*s*
— Kitchen, 1*s* to 2*s*	
Pears, Dess., per hf.-sv., 1*s* 6*d* to 2*s* 6*d*	

VEGETABLES.

Cabbages, per dozen, 6*d* to 1*s* 6*d*	Garlic, per lb., 4*d* to 6*d*
Cauliflowers, per doz., 2*s* to 5*s*	Onions, per bunch, 2*d* to 4*d*
Broccoli, per bundle, 6*d* to 1*s*	— large, per bushel, 2*s* to 4*s*
Sorrel, per hf.-sieve, 6*d* to 9*d*	— Spanish, per doz., 2*s* to 3*s*
Artichokes, per doz., 1*s* to 3*s*	Shallots, per lb., 6*d* to 9*d*
French Beans, p. hf.-sv., 1*s* to 2*s*	Tomatoes, per half-sv., 2*s* to 4*s*
Potatoes, per ton, 80*s* to 90*s*	Capsicums, Ripe, per 100, 4*s* to 8*s*
— cwt., 2*s* 6*d* to 3*s*	— Green, per 100, 1*s* to 2*s*
— bushel, 1*s* 6*d* to 2*s*	Radishes, per doz., 6*d* to 1*s* 6*d*
— Kidney, per bush., 2*s* 6*d* to 3*s*	Lettuce, per score, 6*d* to 1*s* 6*d*
Turnips, per doz. bch., 1*s* 6*d* to 2*s*	Celery, White, per bunch, 6*d* to 1*s* 6*d*
Peas, per bushel sieve, 2*s* 6*d* to 4*s*	— Red, per bunch, 1*s* to 1*s* 6*d*
Red Beet, per doz., 2*d* to 6*d*	Endive, per score, 1*s* to 1*s* 6*d*
Carrots, per doz. bchs., 2*s* to 3*s*	Mushrooms, per pottle, 1*s* 6*d* to 2*s* 6*d*
Basil, per bunch, 2*d* to 3*d*	Small Salads, per punnet, 2*d* to 3*d*
Horse Radish, per bundle, 2*s* to 3*s*	Watercress, p. 12 sm. bun., 3*d* to 6*d*
Savory, per bunch, 2*d* to 3*d*	Parsley, per doz. bunches, 1*s* to 2*s*
Cucumbers, Frame, each, 3*d* to 6*d*	Tarragon, Green, per bunch, 2*d* to 3*d*
— Ridge, doz., 2*d* to 3*s* 6*d*	Green Mint, per bunch, 2*d* to 3*d*
Vegetable Marrow, per doz., 4*d* to 1*s*	Marjoram, per bunch, 2*d* to 3*d*
Spinach, per sieve, 1*s* 6*d* to 2*s*	Chervil, per punnet, 2*d* to 3*d*
Leeks, per bun., 2*d* to 3*d*	Chilis, per 100, 1*s* 6*d* to 2*s*

MARK-LANE, Monday, Sept. 9.

The supply of English Wheat this morning from the home counties was small, and taken off slowly at the prices of this day se'nnight: Foreign met a moderate retail demand on the terms of last Monday, being rather over those of the forced sales made at the close of Friday's market.—English Barley must be written 1*s.* lower: Foreign meets a slow sale, and barely maintains late rates.—Beans fully support our quotations.—White Peas are unaltered. Grey and Maple 1*s.* cheaper.—The Oat trade is firm, and last week's prices readily obtained.—The top price of Flour is reduced to 44*s.*

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . . White	40	50	Red .	40	46
—— Norfolk, Lincolnshire, and Yorkshire .	—	—	White	—	—
Barley, Malting and distilling 27*s* to 33*s*	Chevallier	31	36	Grind.	25	30
Oats, Lincolnshire and Yorkshire . . Potands	19	21	Feed	18	20
—— Northumberland and Scotch . . Feed	19	21	Potato	20	22
—— Irish . . . . . Feed	17	20	Potato	19	22
Malt, pale, ship	50	56			
—— Hertford and Essex	54	60			
Rye	32	36			
Beans, Mazagan, old and new 29 to 32	Tick	31	34	Harrow	33	35
—— Pigeon, Heligoland . 32 to 33	Winds.	—	—	Longpod	—	—
Peas, White 32 . . . . 32 to 36	Maple	30	33	Grey	27	30

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 3736 Sks. — Brls.		5429	53	4927	362	—	338	340
Irish . — „ — „		—	—	5	2631	—	—	—
Foreign . — „ 182 „		5730	6216	—	7325	—	1255	1269

FRIDAY, Sept. 13.

The little English Wheat fresh up since Monday has been taken off at the prices of that day; in foreign there is very little business doing, but its value is fully supported.—Barley, Beans, and White Peas, maintain our late quotations, Maple and Grey are the turn cheaper.—The quantity of Oats offering ex ship being very small, dealers refrain from purchasing, and prices may be considered unaltered.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . .	5429	338*	362	3736 Sks.
Irish . .	—	—	—	—
Foreign . .	1429	5970	4300	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug.	2 per Quarter.	51*s* 6*d*	36*s* 6*d*	26*s* 1*d*	34*s* 9*d*	35*s* 0*d*	34*s* 8*d*
—	9 . . .	49 10	36 6	26 1	34 9	35 0	34 8
—	16 . . .	49 1	34 6	25 0	33 11	33 7	33 7
—	23 . . .	50 4	33 8	25 4	33 8	35 10	34 0
—	30 . . .	50 11	34 11	25 7	34 2	37 0	33 10
Sept.	6 . . .	49 6	33 9	25 0	34 4	33 1	33 10
6 weeks' Aggreg. Aver.		49 9	34 6	25 5	33 9	35 0	34 2
Duties on Foreign Grain		20 0	4 0	6 0	7 0	5 0	5 0

SEEDS, Sept. 9.

Canary . . per qr	42*s* to 50*s*	Linseed Cakes, Foreign, p. ton	6*l* to 6*l*		
Caraway . . per cwt	44 52	Mustard, White . p. bush.	8*s* 11*s*		
Clover, Red, English . . —	— —	— Superfine „ .	10 12		
— Stavger . . —	— —	— Brown „ .	10 12		
— White, English . . —	— —	Rapeseed, English, per last	28*l* 28*l*		
— Foreign . . —	— —	Rape Cakes . . per ton	— —		
Coriander . . . 1*l*	1*l*	Hempseed . . . —	— —		
Hempseed . . per last	35 40	Tares, Reg., winter p. bush.	5 6		
Linseed . . . per qr	— —	— Foreign . . —	— —		
— Baltic . . . —	— —	Trefoil . . per cwt	— —		
— Calcutta, Reg. per 1800	10*l* 11*l*	Turnip (see variable for quotation).			

Kinnersley and Lake.

WHOLESALE PRICES OF MANURES.

Alum . . per ton	11*l* 0*s* to 0*l*	Nitrate of Soda . cwt.	1*l* 6*d* to 1*l* 6*s*
Ammonia, Carbonate . cwt.	10 0	— Potash (Saltpetre) best	3*l* 5*s* to 3*l* 0
— Sulphate . cwt.	1*l* 5*s* to 1*l* 7 0	Phosphate of Lime (Calc. Bones) cwt.	1 0
— Muriate . . cwt.	0 0 0 0	Rape Cake . . ton	7*l* 10*s* to 8*l* 0
— Sal Ammoniac cwt.	4*l* 0	Salt (Common) . . ton	0*l* 0*s* to 0*l* 0
— Phosphate . . lb.	1 0	Soda (Dry Carbonate) . cwt.	0*l* 0
Bones . . ton	6*l* to 7*l* 0 0	— (Crystallised) . cwt.	1 0
Bonedust . . cwt.	0*l* 0*s* to 0*l* 0	Sulph. of Mag. (nitre) cwt.	0*l* 5*s* to 0*l* 0
Guano, Peruvian . ton	14*l* 15*l* 0	— Potash . . cwt.	1*l* 0
— Ichaboe . . ton	0*l* 0 0	— Soda . . cwt.	0 0
— African . . ton	0*l* 0*s* to 0*l* 0	— Iron . . ton	0*l* 15*s* to 0*l* 0
— Peter's . . ton	12*l* 12*l* 0	Sulphuric Acid (sp. gr. 1.84) lb.	0 1
Gypsum . . ton	2*l* 5*s* to 2*l* 0	— (sp. gr. 1.70) lb.	0 0*l*
Muriate of Lime . . ton	3*l* 0	Superph. of Lime . . cwt.	1 0

TO NURSERYMEN AND SEEDSMEN.

TO BE SOLD, BY AUCTION, by Mr. STEPHEN, (without reserve), on MONDAY, the 23d of SEPTEMBER, 1844, at 12 o'clock in the forenoon, on account of the decease of Mr. RICHARD TODD, the late proprietor, all the Shrubs, Forest Trees and Plants, Shop and House-Fixtures, Greenhouse, &c., situate on the Leicester-road, Loughborough, in the county of Leicester.

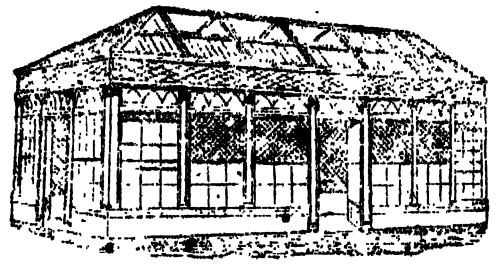
TO GARDENERS, NURSERYMEN, AND OTHERS.

TO BE LET, with immediate possession, within 20 miles of London, a small NURSERY, and PUBLIC-HOUSE doing a good business. The Nursery is well stocked with choicest American Shrubs, Fruit, and other Trees; is situated within a few minutes' walk of a railway station. Every particular can be procured by application to Mr. KENNAN, 4, Great Russell-street, Covent Garden; and Mr. NEAL, Nurseryman, Wandsworth Common. No person without capital need apply.

VERY ELIGIBLE FARM.

TO BE LET on LEASE, from Michaelmas next, Forest Lodge (otherwise Llosccod), situate from Brecon, and 15 from Merthyr; containing 700 Acres of Land of the best quality, and in excellent condition. It has a Threshing machine and a Corn and Bone-mill, all worked by water; extensive Barns and Cattle-sheds, a very large Piggery, a Steaming-house, Liquid Manure Tank, and all requisites for the scientific cultivation of the Farm. An excellent Sheep-walk of 700 acres can be attached, if desired. The whole is well situated as to roads.—Apply to Mr. DRAYCOTT, Glanusk, Lenny Bridge, Brecon; or to Mr. LAWES, Rothamsted, near St. Albans.

HORTICULTURAL BUILDING & HEATING by HOT WATER.



J. WEEKS and Co., ARCHITECTS, &c., Gloucester-place, King's-road, Chelsea, Hothouse-Builders, and Hot-water Apparatus Manufacturers, beg leave to inform the Nobility and Gentry, that their business, which has been extensive throughout the country for many years, is entirely confined to the BUILDING OF HORTICULTURAL ERECTIONS of every description, and the HEATING of them by HOT WATER.

CONICAL and other BOILERS of all sizes; their largest consumes but a small quantity of fuel, only requiring attention once in 10 hours, and will heat a range of Forcing-houses 300 feet in length.

Their improved plan of BOTTOM-HEAT FOR PITS, by means of an open trough under the bed, is now being universally adopted.

References may be had, and their works seen at most of the Nobility and Gentlemen's seats in the country, nearly the whole of the London Nurseries, and a great variety of Horticultural Erections and Hot-water Apparatus, Models, Plans, Estimates, &c., at their Horticultural Manufactory, Gloucester-place, Chelsea, near Sloane-square.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. & C. have also to state that, at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen-apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in the country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Greenhouses or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

GUANO (GENUINE PERUVIAN & BOLIVIAN), ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL; And by their Agents, COTESWORTH, POWELL, AND PEYTON, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL. 47, Lime-street, Sept. 13, 1844.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To secure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, illustrated by Practical Results."

Large parcels will be delivered direct from the ship or water-side premises; smaller quantities may be had at the warehouses, 24 and 25, Billiter-street, or delivered within any reasonable distance at a trifling additional cost. Apply to JAMES CLARK, 24, Billiter-street.

POTTER'S GUANO MANURE is the only Guano that can positively be depended upon, and has stood the test of three seasons. The imported article, it is well known, is seldom twice alike, even when genuine, and is subject to a most extensive system of adulteration. Orders addressed early to the Works, 28, Upper Fore-street, Lambeth, will have instant attention. Testimonials will be sent per post, if required.

POTTER'S LIQUID GUANO may be had as usual of most Chemists and Seedsmen.

*** Beware of being imposed upon by inefficacious imitations.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, Sept. 7, 1844:—

Bones	p. ton	£4	10s. 0d	Nit. of Potash	p. cwt. £1	4s. 6d
,, crushed		5l. 10s.	to 6 0 0	Oil of Vitriol, or Sulph. acid	p. lb.	0 0 1
,, calcined		7	0 0	Rape Cakes	p. ton	4 15 0
Carbonate of ammonia	p. cwt.	2	15 0	Salts, Epsom	,,	9 0 0
Guano, Peruvian	p. ton	10	0 0	,, Glauber	,,	7 0 0
,, Ichabue	,,	6	0 0	Sulphate of Ammonia, per cwt., 16s.	to	0 17 0
Gypsum	,,	2	0 0			
Nitrate of Soda	p. cwt.	0	14 9			

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

GYPSUM, &c.—Pure Gypsum (Sulphate of Lime) for Compost Heaps, Urine Tanks, Stables, &c.; also Sulphuric Acid, Guano (foreign and Potter's), Rape Cake and Rape Dust, and all other Manures, may be had of the Undersigned.

Synopsis of Prices, and mode of use, on application.

MARK FOTHERGILL, 30, Upper Thames-street.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also, those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

IMPORTANT TO AGRICULTURISTS, &c.

ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. MITCHELL and FIELD (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil, in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 5A, Hawley-road, Kentish Town.

HATCHER'S BENNENDEN TILE-MACHINE, Manufactured and Sold only by COFTAM and HALLEN, Engineers, Agricultural Implement Makers, &c., 2, Winsley-street, Oxford-street, London.



This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With this amount of labour, the product of a day of 10 hours is as follows, viz.:—

1 inch diameter of Tile,	11,000	1½ inches diameter of Tile,	5,600
1¼ ,, ,, ,,	9,000	2½ ,, ,, ,,	3,200

The Machine is movable down the drying-sheds, so that it requires no extra boys to carry the Tiles, nor are shelves required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Cranbrook, Kent. No charge made for Patent dues or licence. The purchase of the Machine includes free use of it.

DRAINING OF LAND.

THE A LEVEL, designed for the Use of Workmen, in preserving a uniform fall in Drains and Water-courses. In consequence of the approval expressed and the demand made for these Levels at the recent Southampton Show, Mr. BAILEY DENTON has arranged with an eminent London Mathematical Instrument Maker to make them in any number required. Price 30s.

This Level is as accurate as a spirit-level, and so simple, that the workman unable to read can use it with facility. When closed it forms a 5 feet staff.

Orders addressed to Mr. BENTON, Land Agent, 9, Gray's Inn-square, London; or to Mr. CHADWICK, Wakefield, Yorkshire, will insure a perfect instrument.

WHEAT SOWING.

FREDERICK BRAIN begs to call the attention of the Agricultural world to his GUANO MANURE, prepared expressly for Wheat crops: it abounds in all the ingredients that are necessary for a good grain crop. He particularly solicits persons who found the Foreign Guano a failure last season to give his a trial, it being much more powerful, and free from adulteration, so lately complained of in the Foreign by Agriculturists, as well as by all the leading Agricultural Journals.

Testimonial to Brain's Guano Manure.—"5A, Hawley Road, Kentish Town, London, Aug. 15, 1844.—This is to certify that we have used Brain's Guano to a most patient and rigorous analysis, and find it contains all the necessary constituents of a good manure, and is well calculated to give fertility to a soil which is either naturally barren, or has been exhausted by over-cropping, by supplying the land with those substances which are absolutely requisite to a healthy vegetation: (it is not adulterated, and can always be depended on, being of uniform composition.)—(Signed) JOHN MITCHELL and FREDERICK FIELD, Analytical Chemists, of the Royal Polytechnic Institution, London."

Also, BRAIN'S highly-concentrated LIQUID GUANO, for Grass Lands, Gardens, Shrubberies, Hothouses, and Conservatories, price 1s. 6d. per quart bottle, with full directions for use, (enough for 80 gallons of Liquid Manure), to be had of most respectable Florists, Seedsmen, and Chemists in town and country.

Works, Thomas-st., Duke-st., Stamford-st., Blackfriars-road.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade. THOS. J. CRODDON, 8, Ingram-court, Fenchurch-st., London.

TO LANDOWNERS, AGRICULTURISTS, BUILDERS, ARCHITECTS, &c.

McKIBBIN'S Improved ROOFING FELT is peculiarly applicable as a substitute for Slate, Zinc, Tiles, and other articles used for Roofing, from its ECONOMY, LIGHTNESS, and DURABILITY.

The disadvantages attending other materials used in roofing, preventing, in agricultural districts, many useful houses and sheds being erected or rendered waterproof, it is submitted that the improved Roofing Felt will in a great measure—and in some instances altogether—obviate them, and prove most serviceable from its lightness, durability, and impermeability to water and damp, in covering Houses, Cattle-sheds, Workshops, Ropewalks, &c., and for the sides, as well as roofs, of light structures for plants, being likewise a non-conductor of heat; besides its economy in repairs, the timber where it is used may be so light as to save its whole expense; it requires no other coping, and may be applied by any person of common ingenuity; being flexible and portable also, it is free from breakage, the expense of carriage is inconsiderable in comparison with slates, tiles, &c., and it is not liable to contraction like zinc.

Sold in sheets 32 inches by 20, at 5d. each (being less than 9s. 6d. per square of 100 feet), with printed directions for applying them.

Orders will meet with prompt attention if addressed to H. C. BOWDEN, 18, East India Chambers, Leadenhall-street, London, or to the following agents:—Liverpool, Messrs. Grueber & Co., 11, Mancaty-lane; Plymouth, Thomas Stevens, Esq.; Birmingham, William R. Loyd, Esq.; Sunderland, and Newcastle-on-Tyne, Messrs. John Ritson and Son; Hull, William Ward, Esq.; Bristol, Messrs. Moor and Hewitts; Ramsgate and Deal, Messrs. Edward Hodges & Co.; Whitehaven, William Todd, Esq.; Glasgow, Malcolm Carmichael, Esq., St. Enoch-square; Cork, Messrs. Richard Wallis & Co.; Belfast, Messrs. Grueber & Co., Dunbar's Dock; who have also on sale McKIBBIN'S Improved SHEATHING, BOILER, RAILWAY, and other FELT.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus; and B. & H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices, to 130, Fleet-street.

GLASS MILK PANS, patronised by the ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—Glass Milk Pans have been long and extensively employed in Germany, which led to their introduction in England. The chief advantage is cleanliness, as they require neither scouring nor hot water after use, but are readily rinsed in cold or tepid water.—White Glass Transparent Milk Pans, to hold 8 quarts, 5s. each; Green Glass ditto, ditto, 3s. 6d. each; Ditto, to hold 4 quarts, one-third less in price; Cream Vases, to hold 8 quarts, or 4 quarts, same price as the above; Six-inch Butter Plates, 1s. 6d. each; Condensing Covers, 2s. each; all large sizes, at 1s. 1d. per lb. Manufactured by APSLEY PELLATT, Falcon Glass Works, Holland-st., Blackfriars-road; also sold at the Baker-street Bazaar.

PELLATT'S CONDENSING PROPAGATORS.—The prevention of drip and a moist atmosphere are desiderata in striking cuttings, &c. The above simple invention, by filling the trough with water, alternately evaporates and condenses, and when once filled seldom requires replenishing. Price:—8 inches diameter, 10d. each; 6 inches ditto, 1s. 4d. each; 7 inches ditto, 2s. each. All larger sizes, 1s. 4d. per lb.—Manufactured by APSLEY PELLATT, Falcon Glass Works, Holland-street, Blackfriars Road; and also Sold at the Baker-street Bazaar.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6*, 1844.—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent sauce to Captains and Passengers for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup; giving a zest far superior to the long-established favourites; more wholesome and of less cost."—*Naval and Military Gazette*, April 8, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

NATIONAL TESTIMONIAL TO MR. ROWLAND HILL, ESQ., AUTHOR OF THE PENNY POSTAGE.

Under the management of the

CITY OF LONDON MERCANTILE COMMITTEE ON POSTAGE.

SIR GEORGE LAUREN[illegible], Bart., Chairman & Treas.

The Committee have the pleasure of announcing to the [illegible] that in consequence of the request very generally made to [illegible] from all parts of the country, they have determined to keep [illegible] the Subscription to the above Testimonial for a few weeks [illegible].

The Committee are further encouraged to [illegible] of their labours by the success which has hither[illegible] they feel confident that their object only requires [illegible] generally known to insure the active co operation [illegible] of society, for all have derived benefit from the sche[illegible] with is the Author

The Subscriptions already received in London amount to £3000. Further sums to the extent of £500 have been actually collected in various parts of the country, and returns have yet to be received from 200 places, at which 2000 Subscription Cards are yet in circulation.

In the subjoined List will be seen the names of places at which Collections have been made and remitted to London The inhabitants of Cities Towns, and Villages not there mentioned, are entreated to aid the exertions in aid of this National acknowledgment of the services of one who has laboured for and established a National benefit

Where no Committee has been, or can be formed, Subscriptions forwarded by post office orders or otherwise, to Mr. George Wansey, Solicitor, 7 Tokenhouse-yard, the Secretary of the London Committee, will be acknowledged, and he will also supply Subscription Cards and afford every information required.

By order of the London Committee, G. WANSEY, Secretary.

London, Sept 13th, 1844.

Amount previously advertised £3415. 8s. 7d.

Additional Subscriptions.

Lt Col. Angerstein	£5	0	0
Col Middleton Biddulph, Chirk	2	0	0
R Divett, Esq. M.P.	5	5	0
Sir Isaac Lyon Goldsmid	5	5	0
Sir William Wynne, Bart.	5	0	0
John Bowring, Esq. LL.D. M.P.	1	1	0
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Hon. W H Dawnay, M.P.	1	0	0
J. Hardy, Esq, M.P.	1	1	0
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Sir W. C. Medlycott, Bart	1	0	0
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Eyton & Co., Mostyn	10	10	0
Mrs. Harriet Pierce	10	0	0
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Imperial Fire & Life Assurance	10	10	0
Peninsular & Oriental Steam Navigation Company, (Managing Directors of,)	10	10	0
Wesleyan Conference Office	5	5	0
The Worshipful the Company of Leathersellers	5	5	0
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The Spectator Newspaper	5	5	0
Illustrated London News	2	2	0
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Greenwich Society for the Diffusion of Useful Knowledge	1	1	0
Maidstone Savings Bank	1	1	0
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G Scovell, Esq. (collected by	0	6	4
Angus Jennings, Esq (collected by)	5	6	9
W. Coles, Esq	5	0	0
T. Hodgson, Esq	5	5	0
Maia, Reid, & Co.	5	5	0
T. B. and L. Rowe, Brentford	5	1	0
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J. Sykes, Esq.	5	5	0
R. Sykes, Esq.	5	5	0
Wilde, Rees, Humphry, and Wilde	5	5	0
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E. F.	3	3	0
— Foord, Esq.	3	3	0
Kennersley and Sang	3	3	0
Charles Knight & Co.	3	3	0
Sharpe, Field, and Jackson	3	3	0
Anonymous (from Rugby)	2	2	0
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A. R. Adams, Esq.	2	0	0
John Atkins & Son, Portsmouth	2	2	0
Bentley, Harris, and Dixon	2	2	0
Bidgood, Jones, and Wilson	2	2	0
Henry Birkbeck, Esq.	2	2	0
Bradbury and Evans	2	2	0
Thos. Brockell & Son	2	2	0
Brown and Forster	2	2	0
W. Buckmaster & Co.	2	2	0
Burgess and Son Ramsgate	2	2	0
Jno Clark, Esq (Lane's Field, Evesham)	£2	2	0
Robt. Clarke & Sons	2	2	0
Cobb & Co., Margate	2	2	0
Wm. Cubitt & Co.	2	2	0
Robert Dawbarn, Esq.	2	0	0
Dixon & Whitings	2	2	0
Edw. Doughty, Esq.	2	0	0
Duke and Hill	2	2	0
Dunn, Wordsworth, and Dunn	2	2	0
John Fairrie, Esq.	2	2	0
Thomas Farmer, Esq.	2	2	2
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Thos. N Fyfe, Esq., Leith (coll by)	2	0	0
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Hackblocks, Clark, and Meek	2	2	0
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J. and D. Parker	2	2	0
Roger Peake, Esq	2	2	0
J Chas [illegible]	[illegible]		0
Mrs Rawson, Liverpool, (collected by).	1	16	0
Rippon and Burton	2	2	0
Thomas Russell & Co.	2	2	0
J. Schwappe and Co.	2	2	0
W J. Thompson & Son	2	2	0
H. N. Turner and Co.	2	0	0
Mr Watt, (collected by)	1	9	6
B. W. W & J Wilson	2	2	0
Edward Wood and Co	2	2	0
J. Wood, Esq, Preise	2	2	0
J. B. Wrightson, Esq. (collected by)	1	1	0
A Trifle through a Friend, Hampstead	1	1	0
A Well Wisher	1	0	0
R T. Abraham, Esq, Exeter	1	1	0
W. Ackroyd, Esq. Timperley	1	0	0
Acton and Sons	1	1	0
C and T. Adlard	1	0	0
Daniel Allen, Esq.	1	1	0
J Penn Allen, Esq.	1	1	0
John Arrowsmith, Esq.	1	1	0
Messrs Atkinson and Co (collected by)	1	1	0
G Baker and Son	1	0	0
Fletcher Norton Balmain, Esq.	1	0	0
T F Basham, Esq., M B, Exeter	1	1	0
Batho and Kingdon	1	1	0
Isaac Beeman Esq	1	1	0
J L. Benham Esq	1	1	0
Kemp Berry, Esq	1	0	0
Bickerton and Sons	1	0	0
H. Bidgrod, Esq.	1	0	0
Henry Black, Esq	1	1	0
W. G. Borrow, Esq., Lenkhills, N.B.	1	1	0
John Boyd and Co.	1	1	0
Bramah, Prestage, & Ball	1	1	0
Breckell, Turner, & Co.	1	1	0
S. Briggs, Esq.	1	0	0
Henry Brown, Esq.	1	0	0
Bruce and Wyld	1	1	0
Burrows and Sons	1	0	0
Alex. Calder, Esq.	1	1	0
Cash, Lamb, and Co.	1	1	0
Edward Carter, Esq.	1	0	0
E. F Cassell, Esq	1	1	0
Catchpole & Williams	1	1	0
George Charlwood, Esq.	1	0	0
Jno Charrington, Esq.	1	1	0
Children of Joseph Travers, Esq.	1	1	0
John Childs and Son, Bungay	1	0	0
John Christy and Co.	1	1	0
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John Stapp and Son	1	1	0
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T Whitehead & Brothers, Rawtenstall.	1	0	0
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—— Wiltshire, Esq	1	0	0
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N. Wood, Esq., M.D.	1	1	0
Wright and Smith	1	1	0
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Printers at Mrs. Littler's, Sherton Abbey	1	0	0
Additional Sums under 1*l*, Post-office Stamps, &c.	70	11	5
Country Subscriptions			
Abergavenny	10	17	5
Aberystwith	3	2	8
Alnwick (by J Forster, Esq)	9	12	0
Ditto (2d remittance) by J Brown, Esq.	2	6	0
Alresford	1	14	6
Alston	2	0	0
Ambleside	3	11	0
Andover	3	17	6
Appleby	5	15	6
Arbpath, N.B.	9	10	0
Aylsham	5	0	0
Baldock	1	11	6
Ballinasloe, Ireland	3	6	6
Ballindollock, N.B.	0	10	0
Bampton	1	8	6
Banbury	7	1	10
Banff, N B.	11	16	0
Bath	50	0	0
Bawtry	2	0	
Betley	0	7	7
Bradford, Yorkshire.	100	0	0
Braintree	0	5	0
Burnham	2	6	0
Brechin, N B	5	0	0
Brecon	0	6	6
Ditto (2d remittance)	4	2	6
Bridgewater	14	9	4
Brighton	1	13	1
Bungay	7	5	0
Burnham-Westgate	3	15	0
Burnley	27	2	2
Bury St. Edmunds	17	17	6
Callander, N.B	5	4	1
Cambridge (2d remit)	1	12	6
Cardiff	6	0	6
Carlisle	26	17	0
Castle Hedingham	0	9	0
Chalbury	4	10	9
Chepstow	1	3	0
Chester	0	15	6
Chipping Sodbury	2	5	4
Chudleigh	1	17	3
Cirencester	17	7	9
Coalbrookdale	11	18	0
Cockermouth	2	1	0
Collumpton	3	16	0
Colyton	1	0	1
Cookstown, Ireland	3	10	3
Cork	3	1	0
Coventry (2d remit.)	8	15	6
Cranbrook	1	7	6
Crediton	3	10	3
Crewkerne	6	14	6
Dalmeney and Kirkliston, N. B.	2	13	4
Darlington	37	5	10
Deal	3	5	10
Dedham	4	2	6
Diss	3	17	1
Ditching	0	5	0
Dorking	1	15	6
Dundee, N. B.	25	17	8
East Stonehouse	2	4	6
Ennisworthy	4	2	1
Epping	2	3	6
Eye	3	14	2
Fairholme by Larkhall, N. B.	0	12	0
Folkestone	3	6	0
Fraserburgh, N. B.	1	15	1
Frome	4	9	0
Gateshead	10	2	9
Godalming	3	0	0
Gosport	2	16	0
Grantham	5	0	6
Greenock, N. B.	25	4	2
Ditto (2d remittance)	1	4	2
Hadleigh	1	15	0
Halesworth	3	14	0
Harlow & the Vicinity	2	15	0

[*Testimonials to Mr. Rowland Hill, continued*]

Horncastle	£1	12	0
Huntingdon	10	0	0
Ilkeston	20	0	0
Ipswich, N.B.	22	9	10
Irvine	1	5	0
Kilbeggan, near Maddleigh	2	0	5
Kilrush	0	15	6
Villages of Hockton, Yorkshire	1	1	0
Holbeach	3	6	0
Holyhead	2	10	3
Villages of Horbury and Thornes	6	17	2
Horsham	9	0	0
Idle	7	0	0
Ilminster	5	7	0
Keith, N. B.	7	0	0
Kidwelly	1	0	0
Parish of Kilmadock, N. B.	3	0	0
Kincardine on the Forth, N. B.	3	0	0
Kingsbridge	9	9	0
Lady Parish, Isle of Sanday	1	6	6
Langran by Hawick, N B.	2	19	4
Lauder, N. B.	2	4	0
Launceston	10	3	0
Lechlade	0	7	8
Leeds	91	6	0
Leominster	6	0	0
Lerwick, Shetland	7	3	5
Lesmahago, N. B.	2	12	6
Limerick	13	17	0
Litcham, near Swaffham	5	11	5
Littlebourne	3	0	0
Littlehampton	0	11	6
Longton	12	10	0
Lossiemouth, N.B.	1	5	0
Louth	11	0	0
Lynn	11	9	6
Maidstone	3	4	4
Malton	2	7	6
Mevagissey	2	0	10
Midhurst	7	11	0
Monmouth	2	15	0
Mount Mellick, Ireland	16	14	5
Mountsorrel	3	6	4
Nayland	1	10	6
Needwood	1	2	6
Newark	14	17	10
Newbury, Berks	5	8	0
Newcastle-on Tyne	100	0	0
Newent	0	7	10
Newick	1	9	6
Newport, near Bishops Stopford	1	6	6
Newport, Isle of Wight	7	11	9
Newton Stewart, N B.	6	9	6
North Berwick, N.B.	1	13	10
Northwich	21	15	0
Nottingham	120	0	0
Peterborough	3	14	0
Petersfield	5	5	0
Pickering	1	5	0
Portmadoc	1	9	0
Queensferry, N.B.	4	17	0
Ramsay, Huntingdon	0	10	0
Parish of Rayne, near Braintree	1	2	0
Richmond, Surrey	4	2	0
Ross	1	17	0
Rugby	3	9	7
Sandgate	0	6	7
Sandwick, Zetland	1	4	0
Sandwich	3	5	0
Selby	4	16	6
Sevenoaks	1	18	6
Shefford	3	11	0
Shepton Mallett	3	12	0
Sidmouth	5	15	7
Southborough	0	15	0
Spalding	3	12	0
St. Neots, Huntingdonshire	2	17	0
Staines	4	13	0
Stirling, Bannockburn and St. Ninian's, N.B.	10	0	0
Stokesley	3	4	6
Stone	6	6	0
Stonehaven, N B.	12	12	0
Strachan, N.B.	1	5	0
Stratton	1	12	0
Stroud	3	11	0
Ditto (second remittance)	1	1	0
Sturminster	1	3	0
Swindon	3	11	0
Tamworth	1	10	0
Tarporley	2	10	6
Taunton	5	15	0
Tean, near Cheadle	3	0	0
Thame	2	3	0
Thornbury	1	11	0
Tiverton	14	10	5
Tonbridge	3	1	10
Tottenham	15	1	0
Truro	6	3	0
Wakefield	18	2	0
Wallingford	7	2	0
Wateringbury	3	6	0
Wellington, Salop	5	15	6
Wellington, Somerset	3	5	0
Wemyss, N.B.	2	0	0
Weston, near Hadling	2	12	3
Wigton	11	16	0
Wigtown, N.B.	6	10	0
Wincanton	3	15	0
Wisbech	3	11	6
Witham	1	10	0
Woodbridge	6	15	0
Worcester	27	0	0
Workington	3	15	0
Yealand	1	17	6

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 38.—1844. SATURDAY, SEPTEMBER 21. [Price 6d.

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Schisanthus Hookeri, 6d. "
Intermediate Stock, 6d. "

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With many other good Biennials and Perennials. Also, Myatt's new Deptford Pine Strawberry, Myatt's British Queen do.; Prince Albert do., Lady's Finger do., Keen's Seedling do., Old Pine do., &c. &c.

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White Clover, Rape, Winter Tares, Rye, and Italian Ryegrass, for early green food. Catalogues may be had on application. All Mr. Rivers's Dwarf and Standard Roses may be ordered through J. K.

Curtis's and other new Budding and Pruning Knives.

4, Great Russell-street, Covent Garden, Sept. 1844.

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Nursery, Hackney, Sept 19, 1844.

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Fine ditto . . . . . 6s. "
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YOUELL AND CO. are now sending to any part of the United Kingdom the undermentioned highly-desirable Plants, full particulars of which will be found in their former Advertisements.

FUCHSIAS—per post free.
12 Extra Fine varieties, 12s., the Selection left to Youell & Co.
12 ditto ditto 21s., the Selection left to the Purchaser, *comprising most of the new varieties sent out this season.*
50 Fine varieties . . 40s., the Selection left to Youell & Co.
50 Extra Fine ditto . . 60s., the Selection left to the Purchaser.
VERBENAS—per post free.
12 Extra fine Varieties, 6s., the selection left to Youell & Co.
12 Ditto " 10s., the selection left to the purchaser.
PANSIES. [Sent postage free.]
12 Fine Show Varieties, by name . . 10s. per dozen
12 Extra Fine ditto, do. . . 18s. "
Catalogues of which may be had on application.
CHRYSANTHEMUMS. (Sent postage free.)
Fifty of the newest best varieties by name, 12s per dozen, for names and colours of which, see Advertisement of June 15th.
PETUNIAS—per post free.
Extra Fine Varieties, 12s. per doz., including Miller's Purpurata,
PANSY "Lady Alice Peel," (for particulars of which see Advertisement of June 1, 1844) 3s. 6d per plant.
ARAUCARIA IMBRICATA, in pots, 5 years old, 20s. per dozen, or 16d. per 100.
CEDRUS DEODARA, 3 ft. to 3 ft 6 in., 10s. 6d. per plant.
FINEST SHOW PINKS, by name, 12s. per doz.
N.B. All Orders above £2 are delivered carriage free to London or Hull, or plants added to compensate for the same.

☞ For Particulars of their Extensive Collection of CARNATIONS and PICOTEES, (Catalogues of which may be had on application) see their Advertisement of last week.

Great Yarmouth Nursery, Sept. 19, 1844.

EARLIEST STRAWBERRY in CULTIVATION. —Strong Plants of the "PRINCESS ALICE MAUDE" STRAWBERRY, which has proved itself to be the earliest grown in this country, are now ready to be sent out at 20s. per 100. As an Early Strawberry, it has taken the First Prize at all the Horticultural Exhibitions in the early part of the season. Also Plants of the "British Queen," "Deptford Pine," "Prince Albert," and all the leading kinds. To be had of Messrs. Warner & Warner, Seedsmen, 28, Cornhill, London.

CAMELLIA JAPONICA.

ROBERT LAWSON, Esq., of Tiverton, intends disposing of his stock of Camellias, which he has collected at much expense, and successfully cultivated for many years. They are in the highest state of health, and most abundantly set with blooming buds. Mr. L. disposes of them solely in consequence of their having become too large for his conservatory. They are as follow:—

			£	s.	d.
Reticulata,	from 7 to 8 feet in height,	a very fine specimen, quite healthy and green	10	10	0
Imbricata,	from 7 to 8 feet in height,	do.	8	8	0
"	" 3 to 4 "		1	10	0
Eximia	" 7 to 8 "	a magnificent plant	7	7	0
Chandlerii	" 6 to 7 "	a fine plant	5	5	0
"	" 3 to 4 "		1	10	0
Lady Hume's Blush	6 to 7 "		4	4	0
Double White	6 "		5	5	0
"	" 5 to 6 "		3	10	0
"	" 5 "		2	10	0
Invincible (Gray's)	5 to 6 "		3	3	0
Fordii	" 4 to 5 "	very fine	4	4	0
"	" 2 to 3 "		1	1	0
Double Striped	5 to 6 "	fine	2	10	0
Anemoneflora Alba	4 to 5 "		2	10	0
Speciosa	" 4 to 5 "		2	2	0
Woodsii	" 4 "	fine	2	10	0
Warratah	" 4 to 5 "	fine	2	2	0
Florida	" 4 to 5 "		2	10	0
Corrallina	" 3 "		1	5	0
Lawsonii	" 3 "	new	1	10	0
Colvillii	" 3 "		0	10	6
Donkelaerii	" 3 "		0	10	6
Insignis	" 6 to 7 "	very fine	2	10	0
Eclipse (Penn's)	6 to 7 "		2	2	0

The Prices affixed are for the seperate plants, of which not less than 3 can be taken together. If the whole are taken in one lot a considerable reduction will be made. Mr. Lawson will be happy to show them, or give any further particulars that may be required.—Tiverton, Sept. 20th, 1844.

MR. LYNE'S NEW SEEDLING GERANIUMS.

WILLIAM E. RENDLE has much pleasure in offering to the Nobility, Amateurs, and Trade the following new varieties of GERANIUMS raised by P. E. Lyne, Esq., the entire stock of which he has succeeded in obtaining.

		£	s.
Lyne's Princess Alice	each of	1	1s.
Lyne's White Perfection	"	1	1
Lyne's Imogene	"	1	1
Lyne's King of Saxony	"	1	1
Lyne's Redworth	"	1	1
Lyne's Confidence	"	1	1
Lyne's Sappho	"	1	1

The whole set as above for six guineas. The usual discount to the Trade.

"Princess Alice" has received two seedling prizes in London. "White Perfection," first prize at Torquay, and the Gold Medal at Plymouth. "Imogene" is described in the *Chronicle*, June 24th, 1843. They all possess most desirable properties, and can be highly recommended as being first rate flowers.

W. E. R. has been induced to offer the above at prices considerably lower than usually obtained for such valuable varieties, in hopes thereby to meet with a more extensive demand. Descriptions can be obtained on application.

Orders will be executed in strict precedence. Plants will be delivered in October next. Reference or remittance required from unknown correspondents. Plants will be added to compensate for carriage.—Union Road Nursery, Plymouth, Sept. 20.

TRUE HIGHLAND PINE.

JAMES GRIGOR, Nurseryman, Norwich, begs to call the attention of the Land Proprietors of England to this very desirable variety of Pinus sylvestris, which has been raised from seeds collected on the mountains of Strathspey, and of which he has strong plants ready to be sent out. For introducing this tree Messrs. Grigor, of Torres and Elgin, were awarded several premiums by the Highland and Agricultural Society of Scotland; and in that part of the country this Pine is rapidly superseding the common soft-wooded variety. For all economical purposes its chief merit consists in the hardness and durability of its wood; hence it is much sought after at present for railway sleepers. Pictorially considered, or as a landscape ornament, it rivals even the Cedar of Lebanon. Sir Walter Scott describes it as assuming much of "the bold and contorted figure of the Oak;" and in the last No. of the *Quarterly Review* it is recommended as a fit tree to be planted in churchyards and cemeteries.

Strong plants in pots, such as rabbits and hares will not destroy . . . . . 6d. each.
Ditto, not in pots, 18 inches high . . 30s. per 1000.
Ditto " 15 " . . 20s. "
Ditto " 1 foot high . . 15s. "
Ditto " 3 years old . . 10s. "

J. G. would recommend all who require them to furnish themselves immediately with these Pines, and to plant them forthwith. Spring planting is exceedingly hazardous; and when followed by such a season as was experienced during the commencement of the present summer, the young trees are sure to be killed.

Cedrus Deodara raised in the open ground, being the strongest plants yet offered in England, 10s each. Araucaria imbricata, Pinus excelsa Laricio, Austriaca, &c &c on reasonable terms.

ROSES.

WOODLANDS NURSERY, Maresfield, Near Uckfield, Sussex. WOOD & SON have the honour to announce that they are now issuing GRATIS, on application, their newly arranged CATALOGUE OF ROSES, containing a full and comprehensive description of all the most popular varieties, in addition to the novelties that have appeared this season.

Catalogues may be had at Edinburgh, of Mr. R. I. M'Intosh, 12, Catherine street. Woodlands, September 20.

SHRUBBY CALCEOLARIAS, PANSIES, &c.

H. MAJOR, of Knosthorpe, near Leeds, begs to intimate that he can supply healthy plants of the best twelve varieties of Calceolarias he sent out for the first time last spring, for 24s. post-free. Plants procured now will bloom early in the spring.

H. M. has plants of most of the leading sorts of PANSIES; the following 24 select kinds he offers for 24s post free—viz, Bridegroom (Major's), Bridegroom (Widnall's), Black Prince, Black Bess, Conservative, Carion, Eclipse, Glory of Knosthorpe, Maid of Milan, Oliver Moonshine, Queen of Whites, Success, Unique, William Tell, Mrs. Harcourt, Sulphurea elegans, Exquisite, Regulator, Miss Batty, Lady Alice Peel, Azurea, Leader, Hector, and Black Dwarf. The present is a proper time for planting Pansies for a spring bloom. Additional plants will be sent to compensate for carriage by hamper.

Packets of Select Pansy-seed, saved from most of the leading varieties, and from several superb Seedlings, at 2s. 6d and 5s. per packet.—A remittance or an unknown correspondents is respectfully requested.

Mr. M. will next spring have to offer a new set of splendid Seedling Calceolarias, raised this year, as well as several Seedling Pansies, among which will be found an excellent white (superior to any out), a creamy white, one with clear white centre and delicate blue border, and one similar in character to his unrivalled "Bridegroom," but of different colours. Also a few choice Carnations and Picotees, correct in name, sort, and colour.

DOUBLE ROMAN and PAPER-WHITE NARCISSUS, 4s. per dozen. The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. Corbett's, late Mr. Barron's, Italian and Foreign Warehouse, 16, Pall Mall. Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c. &c. Price Catalogues of which may be had per Post.

DUTCH HYACINTHS.

WARNER AND WARNER, Seedsmen, No. 28, Cornhill, London, respectfully inform the Nobility and Gentry their Dutch Flower-roots have arrived in superior condition, consisting of the choicest and newest varieties. The Bulbs are unusually handsome and large, at moderate prices. Catalogues forwarded by post on application.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs. WARNER & WARNER, Cornhill, London, after the 7th September.

SPLENDID NEW HEAVY-EDGED PURPLE PICOTEE, WOOD'S "PRINCESS ALICE."

JOHN WOOD begs to announce that the stock of this superb flower is now ready for sale at 15s. per pair, postage included. It has gained the following prizes:—At Cambridge Florists' Show, 1843, it was the 1st seedling, and the 1st heavy-edged purple; at the same Show, in 1844, it took the premium prize, beating all the Picotees exhibited. At Huntingdon, 1843, it was 1st seedling and 1st purple Picotee; at the same place, 1844, it was 1st, 2d, 3d, and 4th, excluding every other flower. At Peterborough, 1843, it was the 1st seedling, took 1st pair of purple, and was in the best stand of six Picotees; in 1844, at the same Show, it took the 1st pair, and was again in the 1st stand of six.

J. W. flatters himself that this statement precludes the necessity of farther comment. Plants of the above may also be had of HURST and M'MULLEN, 6, Leadenhall street.

J. W. has a few pairs of that splendid Pink Garratt's "Queen of Roses," for sale, at 7s. 6d. per pair; his Catalogue of Carnations, Picotees, &c., may also be had on prepaid application; and those about to commence growing, he will supply as follows, if left to his selection.

CARNATIONS AND PICOTEES.

		£	s.	d.
50 pairs good sorts, one pair of each		3	0	0
25 do. do. do.		1	10	0
24 do. fine show flowers		2	0	0
12 do do.		1	0	0

PINKS.

50 pairs good kinds, one pair of each		1	0	0
25 do. do. do.		0	10	0
24 do. fine show flowers		0	18	0
12 do. do.		0	9	0

N.B.—Remittances must accompany the orders of unknown correspondents.—Nursery, Huntingdon.

Mr. HOYLE'S NEW SEEDLING GERANIUMS.

WILLIAM MILLER respectfully announces to the Nobility, Gentry, Amateurs, and the Trade, that he has purchased the entire stock of the following superb SEEDLING GERANIUMS raised by G. W. HOYLE, Esq., of Guernsey, viz.

1844—Titus	each—	£3	3s.	0d.
Pompey		3	3	0
Champion		2	2	0
These three for six guineas.				
1843—Unique		1	1	0
Queen of England		1	1	0
Claude		1	1	0
Sarah Jane		1	1	0
Amelia		0	10	6
Majestica		0	10	6
Rosalia		0	10	6
Flora		0	10	6
General Pollock		0	10	6
These nine for five guineas.				

The entire set 10 guineas, with a discount of 20 per cent. to the Trade. A remittance must accompany the order from unknown correspondents.

Titus received a seedling prize at Chiswick, June, 1844; Pompey, Champion, and Unique were pronounced by Professor LINDLEY, in the *Gardeners' Chronicle* of June 29, 1844, to be "three flowers of good substance, size, and variety;" and Mr. Glenny, in *Gardeners' Gazette* June 22, 1844, says, speaking of the Geraniums at the Chiswick Fête—"Mr. Hoyle had by far the best lot there; Pompey was the best of them, and Titus next." Blooms of the others were likewise exhibited at the June Fête, Chiswick, 1844, and attracted very extraordinary attention, and were universally admired. On the whole, the above varieties, for substance, roundness of form, and general excellent qualities, are among the best ever offered to floriculturists. Printed Lists, with full descriptions, can be had on application. To commence sending out plants in October.

W. M. has been supplied by Mr. Hoyle with some choice GERANIUM SEED, which he saved from his own beautiful Seedlings, and the newest and best varieties sent out by other growers. Sealed packets of 100 seeds, 12s.; do. of 50 seeds, 7s. Also, Hybridised Seed, saved from his own extensive collection of Pelargoniums; packets of 100 seeds, 10s.; of 50 seeds, 6s.

Providence Nursery, Ramsgate.

INGA PULCHERRIMA. (Figured in "Paxton's Magazine of Botany" for August, 1844.)—Fine Plants of this extremely elegant and beautiful Exotic, with most of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices:—

Inga pulcherrima, 7s. 6d.	Habrothamnus elegans, 15s.
Achimenes picta, 10s. 6d.	Tremandra Hugelii, 10s. 6d. to 21s.
Æschynanthus Horsfieldii, 7s. 6d.	Veronica speciosa, 5s. to 15s.
Amycia zygomeris, 7s. 6d.	Erica elegans, fine and healthy, 15s., 24s., and 30s. per doz.
Clerodendron splendens, 10s. 6d.	squamatum, 5s.
Hindsia, or Rondeletia longiflora, 15s.	Drymonia punctata, 3s. 6d.
Epacris campanulata roses (the finest selected from 1000 seedlings), 7s. 6d.	Phlox Van Houttei, (flowering-plants), 2s.
	Spiræa Reevesiana, 5s.
	Viburnum cotonifolium, 3s. 6d.

Also the following, in collections

100 Cape Ericas of 100 distinct sorts, (including many fine sorts) 5l.	(including Campanulata roses) 21s.
12 Epacrises of 12 distinct sorts,	12 Azalea indica, of 12 distinct sorts, (including fulgens) 21s

THOMAS JACKSON, Kingston Nursery, Surrey, Sept. 20.

FUCHSIA "PRINCESS ALICE."

G. H. BUNNEY having purchased the stock of the above splendid Fuchsia—which was awarded the first Prize at the Royal Botanic Society's Exhibition, Regent's Park, in June last, when it was very much admired for its profusion of fine thick flesh-coloured and pink flowers, and fine habit of plant; it also was awarded the first Seedling Prize at the South Essex Exhibition in Wanstead Park, on Sept. 4, the only place exhibited—plants of the above Fuchsia will be sent out early in October at 5s. per plant, with a discount to the trade when six plants are taken; likewise 4 Seedling Cinerarias.

BUNNEY'S KILLEAN, 3s. 6d., fine red, gained 1st Prize at the Royal Botanic Society, Regent's Park, June Show, and Wanstead Park.

BUNNEY'S DIANA, 3s. 6d., white, deeply margined with purple, fine broad petals, and excellent habit.

BUNNEY'S NERO, 2s. 6d., very dark-blue, fine habit.

BUNNEY'S VESTA, 2s. 6d., light blue, very distinct colour.

Or the above 4 for 10s.

MIMULUS SPLENDENS, 2s. 6d., fine scarlet profuse bloomer, of fine shrubby habit, was awarded a Prize at the Royal Botanic Garden, July Show. All orders for the above, addressed to G. H. BUNNEY, Maryland Point Nursery, Stratford, Essex, (late of the Kingsland Nursery) will be punctually attended to.

CHOICE FLOWERS AND PLANTS IN POTS.

HUMPHREYS'S INODOROUS SOLUBLE COMPOUND. A few grains dissolved in water and used occasionally, are effective. Sold in bottles price 1s. 9d. each, by FLANAGAN and SON, Mansion-house-street; HURST and M'MULLEN, Leadenhall-street; W. CLARKE, Bishopsgate-within; SMITH, Islington Nursery; GRIMLEY and Co., Covent-Garden; BATT and RUTLEY, 413, Strand; WILLIAM and JOHN NOBLE, Fleet-street; THOMAS GIBBS and Co., Piccadilly; SMITH, Covent-Garden; CHARLWOOD, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KERNAN, Great Russell-street, Covent Garden; LOCKHART, 155, Cheapside; SHUTTLEWORTH, Pantheon; MINIER, ADAMS, and NASH, 63, Strand; THATCHER and SON, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS ANSELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. E. RENDLE, Plymouth; DICKSON and Co., Edinburgh; PONTEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THORNE, Shepton Mallet; and other leading SEEDSMEN in town and country. Wholesale Agents, DAVY, MACKMURDO, and Co., 100, Upper Thames-street, London.

NEW SEEDLING AZALEAS AND CINERARIAS.

WM. IVERY, FLORIST, &c., Peckham, near London, begs to inform his Friends and the Public that he is ready to supply the undernamed Plants, which he can with confidence recommend.

AZALEA LATERITIA FORMOSA, bright red, 21s. to 31s. 6d. each. "A Certificate of Merit was awarded to Mr. Jas. Ivery, of Betchworth, having large flowers, clean and bright in colour, and expanding freely."—DR. LINDLEY in *Gard. Chron.*, *May* 25.

AZALEA COCCINEA SUPERBA, bright scarlet, good shape, and free bloomer, 15s. each; Azalea delicata, bright pink, good shape, and abundant bloomer, 15s. each.

CINERARIAS.—Beauty of Wonham, very large white beautiful eye and dwarf habit, 5s.; tricolor, white and pink, brown eye, compact flower, 5s.; Nosegay, purplish blue, good petal, and noble truss, 5s.; Washington, very large crimson, good petal, 5s.; Captivation, white ground, with beautiful mazarine purple tips, gained first Prize at the West Kent June Exhibition, 5s., Criterion, mazarine blue, beautiful white centre, gained first Prize at Dorking May Exhibition, 7s. 6d.; Red Rover, bright crimson, beautiful prolific bloomer, 5s.; Fanny Elsler, white crimson tips, prolific bloomer, 5s.; Pickwick, bright purple large flower, and fine shape, 3s. 6d.; Compacta, small, white, and beautiful round flower, 5s.

The whole set of Seedling Cinerarias, 2l. 5s.

The following CINERARIAS can be recommended as good:—Ivery's Beauty of Syston, bronzy purplish blue, fine winter flowering var., 3s. 6d.; Emperor, 2s.; Pride of Peckham, 2s. 6d.; Regulata, 2s.; Delicata, 1s. 6d.; Regina Victoria, 2s. 6d.; Triumph, 2s.; Rival King, 1s.; Imperial Blue, 1s.; Royal Blue, 1s.; Iveryana, 1s. 6d.; Princess Royal, 1s. 6d.; Queen Victoria, 1s. 6d.; Exquisite, 3s. 6d.; Wee Pet, 3s. 6d.; Henderon's Azurea, 1s. 6d.; Pilot, 1s. 6d.; Unique, 1s. 6d.; Magnet, 1s. 6d.; Prince of Oldenburgh, 3s. 6d.; Sombre Agreeable, 3s. 6d.; Eclipse, 1s. 6d.; No. 7, 1s. 6d.; Enchantress, 1s 6d.; Compact Blue, 1s. 6d.; Bell's Decora, 1s. 6d.; Good's Compacta, 3s. 6d.; Gaines's True Blue, 1s. 6d.; Prince Albert, 1s. 6d; May's Queen of May, 2s. 6d.; Youngii, 1s. 6d. Good varieties from 5s. to 12s. per doz. Fine Cineraria Seed, 2s. 6d. to 5s. per packet.

Fine PETUNIA, noticed in "Calendar of Operations," *Gard. Chron.*, Sept. 14. Ivery's Pet, 1s. 6d. to 2s. 6d.; Magna Charta, 1s. 6d. to 2s. 6d.; Reliance, 1s. 6d. to 2s. 6d.; Ovid, 1s. 6d.; Prince Albert, 1s. 6d. to 2s. 6d.; Kentish Beauty, 1s. 6d.; Enchantress, 1s.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND-MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and despatch.—This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by men or women. It is easily set, so as to deliver the exact quantity of seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Mangold Wurzel Seed, Wheat, Barley, Peas, and all kind of Garden Seeds. In Tin, 1l. 10s each; or with Copper Box and Tube, 1l. 15s. each. Commission allowed to Agents.

These Dibbles may be obtained of Messrs. COTTAM and HALLEN, 2, Winsley-st., Oxford-st., London, through the agency of the principal Agricultural Implement Sellers in the United Kingdom; or from the Inventor, by letter to his address, inclosing a Post-office order for the amount.—RICHARD SMITH, Upper Hall, near Droitwich, Worcestershire.

HOTHOUSES, CONSERVATORIES, &c., made and fixed Complete in all parts of the Kingdom. One, two, and three-light Cucumber and Melon-Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom; warranted best material. Two-light Boxes and Lights complete, from 1l. 8s. Garden-Lights made and glazed from 1s. per foot, at JAS. WATTS' Sash Manufactory, Claremont-place, Old Kent-road. *** Reference given.

EXTIRPATION of the MEALY-BUG, THRIPS, &c.—These pests to Gardens can be readily and effectually extirpated without injury to the most delicate plants, by HERRMAN'S VEGETABLE DILUTIUM, sold in bottles at 5s., 10s., and 20s. each, free of carriage to all parts of Great Britain.—Address, with a remittance, either to SAMUEL HERRMAN, Romsey, Hants, or Messrs. MARNOCK and MANLY, Nurserymen, &c., Hackney, who are the sole London Agents.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

Sales by Auction.

TO GENTLEMEN, BUILDERS, NURSERYMEN, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Public Auction (under a bill of sale), on the premises, Sussex Nursery, Loughboro'-road, Brixton-road, on Monday, 30th September, 1844, at eleven o'clock, the whole of the NURSERY STOCK, consisting in choice Evergreens and Flowering Shrubs, Standard and Dwarf Roses; also two newly-erected Greenhouses, Frames, about 2000 Greenhouse Plants, a quantity of Rock Work, Utensils in Trade, &c.; may be viewed prior to the sale. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone.

FREEHOLD NURSERY-GROUND, ST. ALBAN'S, HERTS.

MESSRS. PROTHEROE & MORRIS have received instructions from the Executors of the late Mr. Robert Fullwood, the mortgagee, to submit to public competition at the Auction Mart, Bartholomew-lane, on Thursday, 3d October, 1844, at One o'clock, THE KEY FIELD NURSERY AND NURSERY PREMISES, adjoining the town of St. Alban's, comprising a comfortable and convenient Dwelling-house and Shop, fronting the High Road from St. Alban's to London, and about six acres of very productive Nursery and Garden Ground. The whole Freehold and Land-Tax redeemed, and immediate possession may be had. The Premises were late in the occupation of Mr. David Watson, who for many years and up to the period of his death carried on the business of a Nursery and Seedsman. May be viewed at any time, and particulars had at the principal Inns in the neighbourhood, at the Auction Mart, of J. S. Story, Esq., Solicitor, St. Alban's; of George Drew, Esq., 186, Bermondsey-street, Borough; and of the Auctioneers, Leytonstone, Essex.

BUNNEY'S FINAL SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor (in consequence of the Lease having expired), to submit to Public Competition by Auction, on the Premises, Kingsland Nursery, Balls Pond-road, on MONDAY, Oct. 7, 1844, and following days, at Eleven o'Clock each day without reserve, the whole of the valuable NURSERY STOCK, consisting of FRUIT and FOREST-TREES, a considerable quantity of EVERGREENS, AMERICAN PLANTS, STOOLS, &c. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their Grounds; also the Trade, from its excellence, and comprising an excellent collection of Ghent AZALEAS, MAGNOLIAS, RHODODENDRONS, &c. May be viewed prior to Sale. Catalogues may be had on the Premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone.

ISLINGTON NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to submit to Public Competition, on MONDAY, 14th October, 1844, and following days, at 11 o'clock, (in consequence of the ground being required for building,) a portion of the valuable NURSERY STOCK, consisting of about five thousand Belgian Azaleas, in 40 fine varieties; several thousands fine Hybrid Rhododendrons, well furnished with bloom buds; Green and Var. Hollies, Chinese and Siberian Arborvitæ, about five thousand Laurels, with a fine assortment of Fruit and Forest Trees, Flowering Shrubs, &c.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

SIX DAYS' SALE OF VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE & MORRIS will submit to Public Competition, by Auction, at the American Nursery, Leytonstone, Essex (about one mile from the Railway Station, Stratford), on Monday, 21st October, 1844, and five following days, at 11 o'clock, (to close Executors' accounts), the celebrated NURSERY STOCK, consisting of the choicest kinds of Fruit and Forest Trees, fine Evergreens, Ornamental, Deciduous, and American Plants, of every variety, in considerable quantities, and lotted to suit every description of purchasers. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, from its having many rare specimens that are only to be found in first-rate collections (also of the Trade, from its excellence), and comprising several thousands Azaleas, Rhododendrons, Ledums, Andromeda, all in fine condition for potting, being well furnished with bloom buds.

N.B. The ground is proverbial for safety of removal, the mould adhering to the roots. May be viewed prior to the Sale. Catalogues, One Shilling each, returnable to purchasers, may be had of the principal Seedsmen in London, at the Auction Mart, and of the Auctioneers, Leytonstone, Essex.

VERY ELIGIBLE FARM.

TO BE LET on LEASE, from Michaelmas next, Forest Lodge (otherwise Lloscood), six miles from Brecon, and 15 from Merthyr; containing 700 Acres of Land of the best quality, and in excellent condition. It has a Threshing-machine and a Corn and Bone-mill, all worked by water; extensive Barns and Cattle-sheds, a very large Piggery, a Steaming-house, Liquid Manure Tank, and all requisites for the scientific cultivation of the Farm. An excellent Sheep-walk of 700 acres can be attached, if desired. The whole is well situated as to roads.—Apply to Mr. DRAYCOTT, Glanusk, Lenny Bridge, Brecon; or to Mr. LARGE, Bassel Down House, Swindon.

TO MARKET GARDENERS.

TO BE LET at EALING, six miles and a half from London, a GARDEN of 11 ACRES, with House, Stable, &c. Possession may be had immediately.—For particulars apply at Mrs. ROBERTS's, on the Green, at Ealing.

TO AGRICULTURISTS.—Any person wishing to enter into a Large Farming Business, 30 miles from London, and near a Railway Station, at Michaelmas next, may hear of a very favourable opportunity by addressing a letter to A. B., Penshurst, Kent.

CONICAL BOILERS.—The Boilers invented by JOHN ROGERS, Esq., are made of several sizes, and may be obtained of JOHN SHERWEN, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware-road; Rollinson's, Tooting; Pontey's, Plymouth; The Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's-park.

POTTER'S GUANO MANURE is the only Guano that can positively be depended upon, and has stood the test of three seasons. The imported article, it is well known, is seldom twice alike, even when genuine, and is subject to a most extensive system of adulteration. Orders addressed early to the Works, 29, Upper Fore-street, Lambeth, will have instant attention. Testimonials will be sent per post, if required.

POTTER'S LIQUID GUANO may be had as usual of most Chemists and Seedsmen.

*** Beware of being imposed upon by insidious imitations.

NEW PLANTS.

MESSRS. VEITCH AND SON have now ready for sending out the two undermentioned beautiful New Plants, viz. :—

HINDSIA VIOLACEA. Strong plants at 63s. It is figured by Dr. LINDLEY, in the "Botanical Register" for August last, who there says—"The Hindsia violacea is one of the finest things obtained from South Brazil. It has been imported by Messrs. Veitch and Son, of Exeter, who received for it the Large Silver Medal at the Horticultural Society's Garden Exhibition in May last. It will doubtless prove a very easily cultivated Greenhouse Plant; and is certainly unsurpassed in beauty by blue-flowering shrubs."

CLITORIA PULCHRA. Strong plants at 42s. This plant was exhibited at Chiswick, in May, under the name of Centrosema species, and received the Knightian Medal. See Report in *Gardeners' Chronicle* for May 28. It is figured in "Paxton's Magazine" for July last.

Messrs. V. and Son have also to offer the following fine plants, viz.:—

Achimenes picta	Gardenia Sherbournea
Allemanda grandiflora	,, tetrasperma
Barbacena squamata Veitchia	Gesneria polyantha
Clerodendron lævifolium	Gloxinia Cartonii
,, splendens	Hindsia longiflora
Cyrtoceras reflexa	Inga pulcherrima
Echites atropurpurea	Luxemburgia ciliosa
,, hirsuta	Passiflora actinea
,, splendens	Pentas carnea
Gardenia Rothmannia	Thunbergia chrysops, &c. &c.

N.B.—Messrs. V. and Son's General Catalogue can be had on application.—Exeter, Sept. 19, 1844.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 21, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

SATURDAY,	Sept. 28	Royal Botanic	4 P.M.
TUESDAY,	Oct. 1	Horticultural	3 P.M.
FRIDAY,	Oct. 4	Botanical	8 P.M.

COUNTRY SHOW.—TUESDAY, Sept. 24, Chichester Horticultural 2 P.M.

THE Vine, say English GRAPE-GROWERS, likes a moist rich soil; so give it plenty of manure, of horseflesh and swineflesh, and other good things; make it grow rank, fill your houses with strong long rods, and when you have got them—cut them off again. The Vine inhabits one of the hottest countries beyond the tropics; so, say English Grape-growers, plant it on the outside of a house, where the soil is coldest, if you want to force it. It fruits in perfection in the burning soil of Syria and Sicily. When the spies came to Moses out of the land of Canaan, "they came unto the brook (valley) of Eshcol, and cut down from thence a branch with one cluster of Grapes, and they bare it between two on a staff." But our climate gives our Vines deluges of cold water, or we warm their roots by fermenting stable-litter, whose influence hardly extends beyond the surface of the ground; and, strange as it may seem, by such means English gardeners get the finest Grapes that are known beyond the limits of Vine cultivation in the open air.

It would, therefore, seem that we are right, and that the peculiarities of our climate render necessary this departure from the natural habits of the Vine. But seeming may not be reality; and it is quite possible that if gardeners grow admirable Grapes by violating every principle that one would think should guide them, they may grow them still better by attending to those principles. We cannot seriously believe that the Vine loves the coarse and watery food we give it: all that we can imagine is that it will bear it.

"Some years since," says Mr. Hoare, in his recent work on the Vine,* "I received a bundle of Vine-cuttings from one of the most celebrated Vineyards in Spain. They were the entire growth of the year, as each had a portion of the preceding year's wood attached to it. The longest shoot measured 8½ feet, but the average length was about 8 feet. The wood was perfectly cylindrical, of the closest texture, and *almost as hard as heart of Oak*. The buds were large, prominent, and highly symmetrical, *and stood out in bold relief on the sides of the canes.*"

Now, who ever saw such wood in England? and how can we expect to have Grapes of Spanish excellence without wood of Spanish quality? And hence, for such and other reasons, which are urged with full knowledge of his subject, Mr. Hoare maintains that the system of English Grape-growing requires to be changed.

We are not prepared to go so far as he does; for he should have shown to what size the bunches of Grapes had arrived which were obtained from his Spanish Vines, before he accepted them as conclusive proof that such hard short-jointed wood is indispensable to good Grapes. But we think that his arguments deserve very serious attention, and cannot fail to lead to most important changes in the cultivation of the Vine. What we most doubt is, whether the hard-wooded short-jointed Spanish wood produces large bunches of juicy berries as well as Grapes of high flavour. If it does not, our own *unprincipled* practice will still prevail to a great extent. Mr. Hoare seems to be of opinion that it did or would.

As we cannot change our sun and air, we must try to mend our ways. Since frost and snow will come, and cold rain will lodge in our Vine-borders, in spite of all our dislike to it, we must oppose those disadvantages by skill. Mr. Hoare, considering, it may be presumed, that houses are sufficiently well heated, and Vines as well pruned and managed as they can be, directs attention to the Vine-border—to the badness of which, in one respect or another, he attributes all the disasters of Grape-forcing; and his little book is written principally to advocate this side of the question. That he will have offended prejudices by his views is certain; that the clans Do-little, Do-nothing, and Stand-still, will ridicule his book, we doubt not. But he need not be alarmed; although these once were formidable bodies, and ruled the land of gardening, they are now but broken men, without a head to lead them. We happen to know that Mr. Hoare's statements are the result of actual experience, and that all which he recommends has been repeatedly and cautiously examined experimentally. For many years his observations have been conducted with the utmost care. By depositing a great variety of substances in excavations made for the purpose, mixing them in different proportions, changing them in almost every conceivable way, planting Vines in them, and then, after a year or two, pulling the plants up again, and then examining their roots minutely, he has been able to ascertain what the substances are which the Vine roots select to feed upon. And by repeating this process for many years, he has arrived at the conclusions which have led to the recommendation contained in the work before us. Need we say more to insure to them the attentive consideration of sensible men?

We shall not pretend to repeat the arguments upon which Mr. Hoare grounds his opinions; we shall only say that they are for the most part satisfactory to us. Our previous observations would, however, have no practical application if we did not mention what the materials are which he proposes to substitute for the ordinary Vine-borders. "These are *broken bricks, lumps of mortar, charcoal* and *bones*. The three first should be reduced to the size of a hen's egg, or thereabouts. Larger or smaller fragments will do, but when they are about this size they are better calculated to retain the requisite degree of moisture in connection with the greatest possible extent of surface. The bricks should not be too hard burnt, because their porosity is thereby lessened. Old mortar should be preferred to new, when it can be procured. The bones may either be broken into fragments or deposited whole, and the fresher they are the better. Any description of bones will do, provided they are those of animals arrived at maturity, and are therefore of a solid and lasting nature. Such as have marrow in them should be broken asunder, that the interior surface may be available to the roots of the Vines; and the lighter and more porous the charcoal is, the better will it answer the intended purpose. The whole of these materials should be used in equal proportion, measure for measure, and should be well mixed together. But before this is done, the bricks, mortar, and charcoal *should be well soaked in urine, and then used immediately.* And as these substances convey to the roots of Vines an extraordinary supply of nutriment in a highly concentrated form, a small quantity in bulk, in proportion to that of common soil, will be amply sufficient to support a single Vine for a long series of years."

In addition to this, he protests most strongly and sensibly against planting Vines that are to be forced in borders exposed to the open air. Surely nothing can be more obviously wrong than this. What Mr. Hoare says is very true. The roots of Vines in a cold border do not move because the branches leaf. On the contrary, for months the leaves are supported by the sap contained in the buds and branches, while the roots are still asleep; that sap becomes exhausted; nothing replaces it, for the benumbed roots cannot stir; and then, when the fruit should swell off and repay the expense incurred in Vine-borders and Vine-houses, it shrivels and shrinks—produces verjuice instead of sugar.

But this subject is capable of more extended application, in Mr. Hoare's opinion, and we must revert to it next week.

SINCE our observations upon the value of SULPHATE OF IRON for purifying offensive collections of decaying matter were printed (p. 555), some further information upon this subject has reached us.

Sulphate of iron seems to fulfil every condition that can be required of such an agent, where the material to be sweetened is inclosed in receptacles of some kind, the contents of which do not escape. But where the offensive matter is acted upon by water, which is continually escaping through drains or floating off by sewers, it is to be expected that a considerable waste of a material so soluble as this iron salt will take place; for it is obviously impossible to calculate with any sort of accuracy how much putrid fluid has to be operated upon in a given time, or the strength of such fluid.

For this reason it has been proposed by M. Siret, a French gentleman having great experience in the purification of drains and sewers, to unite the very soluble salt of iron with some material which will prevent its rapid dispersion, and he has found that the following mixture answers the purpose perfectly. Take

Sulphate of iron	. .	200 kilogrammes.*
Sulphate of zinc	. .	25 ,,
Vegetable charcoal	. .	10 ,,
Plaster of Paris	. .	265 ,,
		500 ,,

Blend these substances thoroughly, and then add water to them till they form a solid mass. Of such a mass 75 kilogrammes, or about 165 lbs., placed at the mouth of a sewer, will keep 500 yards sweet for a fortnight; "the fluids gradually dissolving themselves as they pass over it, and thus becoming pure. At least such is the result of the experiments at Meaux, in the Brassat sewer, which takes the drainage of the leather-dressing factories. The use of plaster of Paris, which holds together the disinfecting powders, does not decompose them; on the contrary, it excites rather than diminishes their sweetening effects."

We do not understand the necessity of adding a salt of zinc to the "Siret cake," and are not without fear as to its effect upon manure, which it may render less fit for vegetation than without it. The experiment is, however, worth the making, and also, considering the vast interests involved in such an inquiry, the varying, according to circumstances. A man must have very little ingenuity who cannot perceive to how many places besides sewers and drains the "Siret cake" is applicable, not merely in the country, but in London. Parish officers especially should, without loss of time, turn their attention to the application of some such processes as those of Messrs. Schattenmann and Siret, to purposes, the necessity for which need not be more particularly alluded to.

WASPS.

SOME of your correspondents, as well as other parties, have not been so successful as they might have been in applying spirits of turpentine to the destruction of wasps' nests. I observe that one person says he found the wasps alive on the morning after he had applied the turpentine. If he refers to the former accounts, describing successes, he will see that 24 hours is the time specified before the wasps are killed. If he had waited till the following morning he would probably have insured success. The attack may be rendered more powerful by stuffing tow or cotton-wool into the bottle, well soaked with turpentine. Where the destruction of the nest is the only object, I should very much like to have it ascertained whether anything further is necessary than to inject the turpentine, and block up the hole. From what I have observed of the nests I have examined after 36 hours from the time I had applied the turpentine, they were so much filled with dead wasps, and there was such an evident tendency to incipient mouldiness and decay about them, that I should suppose the whole would have become a mass of corruption in a day or two more; and that all the maggots in the cells must then inevitably have perished. When the nest is taken out before it becomes corrupt, those maggots which have assumed the pupa state readily hatch; of which I have at this moment ample experience in a nest I took up a fortnight ago, and have kept in an outhouse for purposes of observation. The wasps are flying in and out of the door by hundreds. The best way of preserving these interesting objects is to dig up a cubical mass of the earth, and carry it away with the nest in the middle: which can be done where the soil is sufficiently tenacious. The soil may be wetted with a weak solution of glue, which will bind it firmly together when dry. The nest may then be exposed on two opposite sides, leaving the other two to support the roof. A portion of the outer case must be removed, for the purpose of extracting the dead wasps, and also as many of the live maggots as can be got at with a long pair of forceps. This opening also serves to expose the internal arrangement of the cells. It is interesting to preserve the entrance-hole entire. I believe there was not one person in this village who was at all acquainted with the actual appearance which an entire wasps' nest presents, until I exhibited some which I had prepared. They had blown up many with gunpowder, and had dug them out in a confused mass, and were not even aware that they had an outer coat, as the wasps hollow out the large cavity in the ground, from the roof of which they suspend the nest, by carrying out the earth in small particles, and the stones continue subsiding to the bottom, and may always be found forming a rude pavement below. Some large stones are sometimes so gradually exposed whilst the nest is increased, that I have found them completely embedded in the midst of the comb. Indeed, there are many little interesting particulars connected with the economy of wasps which I have noticed since I came to reside in the country; and if those of your correspondents and readers who take delight in contemplating the works of Nature, will be at a little pains in examining and preserving some of the wasps' nests they wish to have destroyed, they will not find their labour lost. I will mention, for the sake of

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* A Descriptive Account of an Improved Method of Planting and Managing the Roots of Grape-Vines. By Clement Hoare, 12mo, Longmans, 1844.

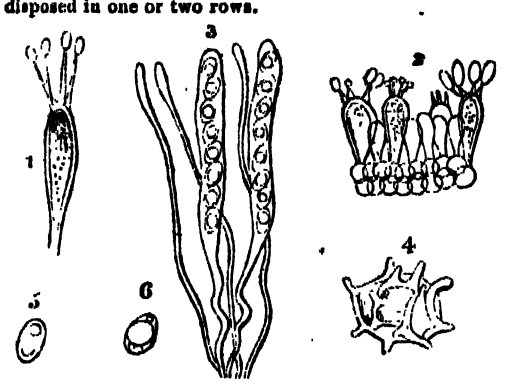
* A kilogramme is rather more than 2 lbs. 3 oz. The substance may of course be made on a small scale, with 20 lbs. of sulphate of iron, 2½ lbs. of sulphate of zinc, 1 lb. of charcoal, 26½ lbs. of plaster of Paris.

persons unacquainted with entomology, that we have four species of wasps in England; two of these build their nests above ground, and two under ground. Of those that build above ground, the hornet (Vespa crabro) makes use of materials collected from rotten wood, and the other (Vespa britannica) from sound wood; and the same distinction in the materials is also observed in the nests of the two underground builders. The common wasp (V. vulgaris) uses the fibre of sound wood, whilst the anchor-faced wasp (V. rufa) collects only from rotten wood, like the hornet. The two underground species appear to be equally common in this neighbourhood. Beautiful figures of Vespa rufa are given in Mr. Curtis's "British Entomology." The materials of which the comb is made so closely resemble paper, that I have a specimen where the wasps had worked up a piece of blue paper to serve their purpose; and I think it very possible that they may not unfrequently avail themselves of similar substances, though we should hardly detect the source from whence they had obtained their materials, if it did not happen to be so highly coloured as in the instance I have noticed. How marvellous it is that a single queen should have been ascertained to lay as many as 20,000 eggs! I have found as many as 500 young queens in a large nest. I once brought home in a bandbox a hornet's nest, which I took out of the roof of a cottage, after destroying all the neuters, partly by turpentine and partly by catching them with a forceps. Upon placing the nest under a large bell-glass, with a little spirits of turpentine, out came about 150 hornets, half of them drones, and the rest young queens. It was rather lucky there were no neuters left, or I might have been more severely stung than would have been agreeable; the queens were too sluggish to attack me.—*J. S. Henslow, Hitcham.*

DISEASES OF PLANTS.—No. III.

[Fungi.]

Before we enter more particularly upon the subject of the diseases of plants, as produced by Fungi, it will be right to say a few words respecting the parasites themselves. *They are divided into two great classes, distinguished by the structure of their parts of fructification.* In the one, (figs. 1 and 2) the reproductive bodies are produced externally, and very frequently in definite numbers, as two or four, at the extremity of certain privileged cells or threads, which arise from the common mass of cells, forming a more or less compact tuft or disc, or built up into variously-shaped processes, as gills, tubes, &c., which distinguish the several genera; or, in the second case, (fig. 3) within the cavity of certain cells distinguished generally, as in the former case, from the other constituent cells, and most frequently eight in number, disposed in one or two rows.

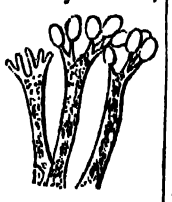


1. — *Agaricus elixus*, (Sow.) Sporophore, with its four long sterigmata and small spores.
2. — *Agaricus semiovatus*, (Sow.) Sporophores, with their four sterigmata, and spores in various degrees of development.
3.—Helvella elastica; asci, and sporidia.
4.—Sporidium of Tuber magnatum (Piedmontese truffle), with its ascus, from a sketch sent by Dr. Montagne.
5.—Sporidium of Peziza aurantia, with its two nuclei.
6.—Single sporidium with its large globose nucleus.

This distinction, however, though apparently so simple, and confessedly of the very greatest importance, is, unfortunately, not always very easy of application. In some cases, from the minuteness and tenderness of the parts of fructification, and the extreme flaccidity of the neighbouring cells, it can only be ascertained by very nice manipulation, and a practised eye; and often, in particular stages of growth, the vegetation is so rapid, that an hour or two will induce such changes as completely to mask the original structure. In other cases, the two modes of structure approach each other by such nice gradations, that it is not always easy to determine with precision to which particular type a particular form of fructification ought to be referred. In the latter case, however, as in that of analogous difficulties amongst phænogamous plants, the question frequently is solved by watching the progress of germination.

Such difficulties, however, attend the naturalist in every branch of science; the most important characters are often those which are most difficult of access; but, as in the study of phænogamous plants, it is not necessary for every ordinary lover of plants to enter into all the minutiæ of structure which engage the attention of the physiologist, though all satisfactory arrangement of organised beings depends upon such points being rightly ascertained and understood. So in the study of Fungi, a little experience and tact will enable a person, without much difficulty, to refer a species to its proper place in the system.

To the first division, then, belong the greater part of those Fungi which are most attractive from their size and qualities, such as the large tribe of Mushrooms and Toadstools, together with the species, often of a leathery or corky texture, which grow on timber, producing the various forms of dry-rot, and supplying the amadou of commerce. The greater part of these have the hymenium perforated with thousands of pores, by means of which the fructifying surface is multiplied; but not a few have the sporiferous disc perfectly even, or at least only indistinctly or irregularly rugose. To the same group belongs the Puff-ball Tribe, whose structure, however, in consequence of the early stage of growth at which it is entirely effaced, has only very lately been ascertained; as is the case also with the tribe of Phalli, of which one species is well known, even to superficial observers, from its disgusting odour. A portion also of the underground Fungi has been shown by Vittadini, Klotzsch, Tulasne, and others, to possess a similar structure. And still more lately the pretty little cups like birds'-nests, which are never seen without attracting admiration, have been shown most unexpectedly, by those admirable botanists, the Messrs. Tulasne, to belong to the division in which the spores are produced externally on certain cells of the hymenium. In a portion of the Puff-ball tribe, however, which in a young state are creamy or mucilaginous, amongst which is reckoned the frothy yellow Fungus so common in hothouses, and so annoying from the dirt produced by its multitudes of sooty spores, the structure has at present not been ascertained precisely, though there is great reason to believe that they will be found to resemble, in this respect, the more known form of Puff-balls, with which they have been so long associated. After these may be reckoned the Fungi which grow on the green parts of living plants, penetrating their tissues and preying on them, which will occupy much of our attention under the various heads of Mildew, Blight, &c. To these may be added a number of minute species of various characters, which, though interesting to the systematist, are mostly of little importance as regards our present object. And lastly, a large portion of the moulds, properly so called, which are often active agents of destruction, and, as will be seen by the annexed sketch of Botrytis curta, perfectly resemble the elements of which the larger and more perfect Fungi are composed.—*M. J. Berkeley.*



APPLE ORCHARDS IN DEVONSHIRE.

A few years since, after a long and tedious ride from London, on the outside of a coach, during a drizzling damp day and night in autumn, I found myself comfortably settled down in Devonshire. I was much delighted with the large extent of Apple orchards: some were loaded with large quantities of pretty tempting cherry-cheeked fruit, and of others the fruit was collected into heaps, perfuming the air with such a mouth-watering fragrance that on the first opportunity I was naturally led to gratify my wishes by tasting such pretty-looking objects. I soon discovered, however, that they were not so good as they looked to be, but were grown for the purpose of being ground down for cider, which is certainly a very good and pleasant beverage when well made. In making it I find that good fruit, good, clean, sound casks, and strict attention to continually racking it when showing the least symptoms of being moved or fermented, are the principal and grand secrets for securing, in good condition, this favourite beverage.

Perhaps now, after residing in this cider-county, amongst the Apple orchards for some years, it may not be uninteresting to give some account of the method of cultivation followed in such orchards here. The trees are planted, to a large extent, apparently without considering what sort of soil or situation is best, and without making any previous preparation; a situation is chosen, a pit is dug with a curious clumsy bit of iron, having a large socket-hole at one end of it, in which is driven a long strong pole, which answers for a handle; it is worked with both hands over one knee; the depth that the roots are buried does not seem to be of any moment, provided the trees are firmly fixed, so as to prevent the wind from driving them down. I have never observed any pruning performed, except such as is done by bullocks, horses, donkeys, &c.; and as I have never observed any "horse-ladders" here in use, of course the pruning is not very effectively performed about the top part of the very lofty trees. The only digging or stirring the surface of the ground among the trees that I have observed is done by pigs, which are occasionally allowed to rove in some orchards at certain seasons of the year, with the rings taken from their snouts. In a moist season these intelligent animals occasionally turn up the ground in a tolerably regular manner; and where this is the case the good effects of their industry are obvious! However, it is only on rare occasions that they are allowed to perform this surface operation. The animals that do the pruning are the principal business-performing creatures, as, in addition to that operation, they tread down the under crop of Grass, weeds, and other rubbish, take the fruit to the cider-mill, and the cider to the consumer; besides, on rare occurrences, a little manure is conveyed by them and placed over the roots, close to the trunks of the trees; it is sometimes, although rarely, placed at the great distance of three or four feet from the trunk. Bipeds, notwithstanding, perform some of the most interesting and essential parts, such as planting, collecting the fruit, consuming it in part, and assisting in making the cider; together with shooting at the trees annually on old Twelfth Night. Let it rain, hail, blow, or snow, this very essential and interesting ceremony is always commenced at 12 o'clock at night, a tremendous fire being kept up for several hours afterwards. They repeat or sing the following interesting song, with all the might which their lungs will permit. The juice of the fruit is generally made use of for many hours, pretty freely, previously to this interesting ceremony, so that a perfect ripeness of address and expertness in gunnery is the result. Guns and fire-locks long laid by are on this remarkable occasion brought forward. The following is what I have heard sung on these occasions, although much more is added in some localities:—

"Here's to thee, old Apple tree,
Whence thou mayest bud, and whence thou mayest blow;
And whence thou mayest bear Apples enow;
Hats-full! caps-full!
Bushel—bushel—sacks full!
And my pockets full too!
If thee does not bear either Apples or Corn,
We'll down with thy top, and up with a horn."

[*Here the natives shoot at the trees.*

Not being acquainted with the custom here on the first old Twelfth Night, I must acknowledge that I was somewhat alarmed at such a continual loud and rattling report of fire-arms in every direction, living as I did in a rather retired spot, away from any other residence. It was a cold, gloomy, dark, and still night, and being suddenly awoke by the loud reports of fire-arms, I could not guess the meaning of it at that untimely hour; I imagined at first that it was an affray with gamekeepers and poachers, or with smugglers and blockade-men; and, suddenly hearing a shrill vacant kind of hallo in a plantation close by, I fancied at first that it was some poor fellow who had been wounded in the affray: on getting up, however, I found that it was a couple of owls answering each other; they were as happy as could be, and the firing, I soon found, was in no particular spot, but went pop, bang, east and west, north and south. On making an early inquiry next morning, I was informed that it was the yearly custom.

The Apple trees, with few exceptions, are entirely left to nature, consequently they are entirely covered from top to bottom with long Moss and Lichens; the wood and branches are as thick as those of a weeping Willow; the fruit is generally very small and corey. The varieties are not numerous: they seem all in this locality to cultivate the same kinds. I have sometimes thought other good sorts could be beneficially cultivated—some of the large, free-bearing, juicy varieties, such as the Hawthornden, Keswick Codling, Kentish Beauty, Kentish Fill-basket, &c. When I make mention of those sorts, and a number of others, I am always informed that they will not answer hereabouts, although I have never met with one person that had ever attempted, or that had ever heard of any one else attempting to introduce them! I should be rather inclined to think that those large juicy kinds, cultivated for mixing with the little Bitter-sweets, would not be amiss, although I dare say, under the present system of cultivation, they would not be produced very large or juicy. The leaves of the trees show great poverty; they are small, thin, and are not much larger than Damson leaves; they turn yellow, and fall off in some localities long before the fruit has arrived at perfection; and the abundance of long Moss and Lichen in my opinion to a certain extent indicates poverty.

I will here attempt to describe three different orchards, under the management of three different persons. The first is an orchard of above 12 acres in size; the owner never digs, manures, or prunes himself, but leaves those operations to be performed by his cattle; he does not allow pigs to run in his orchard, therefore he has no digging done; and the consequence is, that he does not get a tree to bear fruit once in seven years. He lately informed me that he should not have Apples enough this autumn to make four hogsheads of cider; that the seasons were now so unfavourable he could get no Apples; and were it not for the grazing for his cattle underneath the trees, he should have no return, which was now become a very poor one. I asked him why he did not manure the trees; in reply, he observed, they have all that the cattle make among them; we do not mow, or carry anything away from them. The second is a small orchard about one acre in extent, the owner of which manures about his trees every season; here, however, there is no digging done. The trees are healthy, they grow and make wood, and produce large thick dark-green leaves and strong buds; they are not so thickly covered with Moss and Lichen, and rarely fail to bring forth a heavy crop of good fruit. This person's cider is much sought after, being good, and of course of more value. He makes a larger quantity of cider than the person mentioned above, with his 12 acres. The last is a small orchard held by another individual, who keeps no other cattle besides pigs, which are allowed to rove at freedom about the orchard; and as the rings are taken out of their snouts in autumn, when the ground is nicely softened by the rains, and the worms are working near the surface, those worthy animals rout and turn up the surface in a tolerably regular way. From the digging and manuring by the pigs, and from what the holder can muster, this is the best bearing, healthy, orchard in the district. It produces the best cider and the least Moss and Lichen. This shows how beneficial a little surface-stirring with the addition of a little manure is. A considerable quantity of cider made and consumed hereabouts is very poor, the visages of the men who are in the constant habit of drinking it are sallow and wrinkled. Only fancy drinking daily, old cider sour as vinegar!—*Zur.*

Home Correspondence.

Horticultural Society of London.—I see by the list of prizes offered by this Society for next year, as advertised lately in the *Chronicle*, that although the prizes given for some classes of plants have been justly raised in value, no addition has been made to the prizes offered in the Fruit-growers' class, at which, considering the competition that has taken place of late, and the great interest felt on the subject by all the growers of fruit, I have conversed with on the subject, I am much surprised. It appears that the Horticultural Society are placing the practical forcing gardeners in a lower class than that of the plant-growers. I hope that exhibitors of fruit at the Chiswick Shows will not rest satisfied until their exertions are as handsomely rewarded as those of the growers of stove and greenhouse plants. I shall say no more at present, but hope my brother-exhibitors will endeavour to persuade the Council of the Horticultural Society to place them on the same footing as the two other classes for which the large gold medal is awarded.—*An Exhibitor of Fruit at Chiswick.* [The best answer to this letter is, that *there was not one single letter sent by a fruit-grower* to the Vice-Secretary for the consideration of the Committee; the conclusion from which was, that the fruit-growers were satisfied.]

Gathering of Fruit.—The proper time for gathering fruit differs with almost every variety; but, generally speaking, there are only two periods for gathering, viz., summer and winter—the former for such kinds as drop from the trees between midsummer and the middle of October, and the latter for such sorts as hang upon the trees until frost brings them down. The proper time for gathering the first sorts is indicated by their colour, or more certainly by their beginning to fall; when you see a few down go to work, and, looking over the tree, pick off all the ripest, which always come down first, leaving the others on the tree until they in their turn show symptoms of being easily detached from the bough when slightly grasped by the hand; or, as before, take them when they begin to tumble to the ground. The next operation is to lay them out carefully, one by one—not placing them one upon another—in some place that is fully exposed to the sun's rays during the whole day. In a week you will see a wonderful alteration in the appearance of them, and in three weeks they will be in a fit state for storing. By this method they acquire a very superior flavour and appearance. The advantage of exposing them to the sun is, that every individual Apple sweats itself dry, which renders it fit for keeping for a length of time. Early on the second or third morning of exposure, they will be found to be bathed in sweat, and thus their acid qualities are expelled and their saccharine matter is concentrated. Of second or late sorts which show no symptoms of ripening on the tree, of course they cannot have the same advantage of the sun's rays as the summer varieties; when frost is expected they should be gathered, and, if possible, exposed in Melon-pits or frames in which air circulates freely; they should be treated as nearly like the others as the season will admit. The next thing to be considered is the storing of them, and this is of some importance. How creditable it is to have a good Ribston Pippin, for example, fit for table in April or May, instead of its being unfit for use in January, as is generally the case! My Apple-room was at one time fitted all round with racks; the bars of wood were two inches thick, with a space of one inch between them. The Apples were laid singly upon a layer of Wheat-straw, but I found that this did not answer; for when the door and window were shut, the fruit became covered with mould and damp; and if I gave air, they were sure to shrivel. I could find no medium between these evils until I had my room fitted upon its present plan. It has a northern aspect, and is covered with a good thickness of thatch. This answers better than slates, as it keeps the cold and frost out in winter, and also the heats in summer. Inside I have it fitted up all round with drawers 8 inches deep, 2 feet wide, and 2 feet long. They are made to fit tightly. Each drawer has the name of the fruit which it contains labelled on the outside. These drawers are half-filled with fine paper-shavings, and the fruit is carefully packed therein; or, in the absence of paper-shavings, I find clean Oat-chaff to answer equally well, each fruit being first wrapped in silk papes. By this method I can have good fruit during the greater part of the year.—*James Wilson.*

Water Wagtail.—The reading the remarks on the Water Wagtail last year, p. 392, revived in my memory a circumstance which occurred in my youth, that I shall probably never forget. The subject being again lately introduced, induces me now to offer the anecdote:—In the autumn of 1830, we had the house full of company. Being the eldest son, and occupying one of the best bedrooms, I was requested to turn out; I did so, and slept in a room in the roof. Some of my young friends were arranging an early start the following morning to shoot rabbits. With the bed-candle in my hand, on the point of retiring, I volunteered to join the party. I was laughed at and told they should be back again before I was up. I offered to bet them a shilling each I would be the first up. It was readily taken. About 5 o'clock I was awoke by a dactyl rap. I started, and thought it was quite up with my shillings, when I heard it repeated; and presently I perceived it was done by a Wagtail at the window. I felt somewhat easier for the fate of my shillings, which feeling was not decreased on opening the door, and hearing nothing but most sonorous sounds all through the gallery. I soon roused my friends, whom I rejoiced to find performing similar notes to the company's servants above. It was now my turn to laugh. The elegant little creature performed this kind office just before sunrise every morning during the fortnight I occupied the room. I generally took its gentle hint, astonished all the family, and almost established a character for early rising. Opening the window seemed to disappoint my little friend and put very much, which led me to suppose he came purposely to admire himself in the glass. Your correspondent says, in his case this could not have been so, as there was no blind to the window; nor was there always in my case. Neither do I think a blind absolutely necessary to produce reflection; the interior of a house being darker than the exterior, the window-glass will generally reflect exterior objects as well, or even more perfectly, without it. I have inquired, but cannot learn that the bird visits any other window in the house. Servants, unless superstitious, seldom regard such a matter. My housekeeper, who has occupied this room for the last five years, says every year during the summer she is frequently awoke by a bird tapping at the window. It had not occurred for a month or more. She does not exactly know what bird it is, but thinks it is the Dishwasher, which I imagine must be the Water Wagtail, though probably not the same kind as your correspondent's "Boarula;" for his friend, I observe, visits him only during winter, whereas we have the yellow and another here all the year round. The former is larger, and I think a rather more graceful bird.—*B. Chilo., North Devon.*

Dog Rose.—Does the old name of Canker, or Canker-rose remain in use amongst the vulgar (the most enduring repositories of the vernacular), in any part of the kingdom? It must have been in familiar use in Shakspeare's day:—

D. John. I had rather be a Canker in a hedge, than a Rose in his grace.—*Much ado about Nothing.*

Hot. To put down Richard, that sweet lovely Rose,
And to plant this thorn, this Canker Bolingbroke.—*K. Hen. IV.*

And yet it is curious that Gerard does not mention it in his account of the plant; although it is, I suppose, erroneously introduced into his Index, thus—"Canker-rose, *i. e.* Poppy," for it is not to be found in his "History of the Poppy and his kinds." Gerard did not live in the country, properly speaking, and dealt more with Dioscorides and Theophrastus, Mathiolus and Lobelius, than with the wits of his time, and therefore probably never met with the country name of Canker. I am puzzled to know why it was called the Canker-rose. The commentators on Shakspeare quote a contemporaneous authority or two in illustration of the use of the word, but afford no other light on the subject. Johnson goes no farther than the definition. Booth, to whose "Analytical Dictionary," (1835), I often refer with great satisfaction, under the head Dog-rose, says it was called Canker-rose because of its hairy galls. This is not very satisfactory, and does not carry us near enough, I suspect, to the original appropriation of the term. Is there any authority for such a German compound as kanker-gallen, or gallapfelen—spider-gall? and has it been applied to the excrescence in question? If so, then one's mind is led to think of a Gothic or Celtic original for canker, cancer, *κάγχρος*, sea and land spiders, and other rough things, and such like pleasant etymological reveries.—*P. P.*

Pelargoniums.—I am pleased to see that the beautiful Cape Pelargoniums are likely to come into fashion again. A favourite plant with me is P. echinatum. A few cuttings, struck at three times in the year, will keep up a succession actually all the year round. It strikes very freely under almost any circumstances, while in a growing state, and thrives in loam, peat, and white sand. My large plant has now fourteen trusses, and looks like a cloud of white butterflies with pink spots on their wings.—*Micklewell.*

Hints to Botanical Collectors.—Much unnecessary anxiety might be spared those to whose care newly introduced plants and seeds are consigned, if collectors would attach some memoranda to them, not only concerning the soil in which the plants delight, with some cursory remarks on their habit, which is, in many cases, all the directions given by which the cultivator is to be guided in their treatment, but also the climate, the degree of temperature at various periods of the year if possible, and above all, the situation in which they grow. When I speak of collectors, I do not refer to persons whose sole object in exploring distant regions, is collecting not only the productions of various climes, but also giving an account of their habits, &c.; I allude to persons who, by some cause either of business or pleasure, are induced to visit distant climes, and being for the most part entirely ignorant of botany and gardening, and, consequently, their knowledge of plants in general being limited, collect indiscriminately everything which comes in their way, thinking, because they had never previously seen them, they must be unknown in this country. In this way a host of rubbish is constantly being introduced, to be a trouble and anxiety for, perhaps, two or three years, and then to be cast away. But supposing that there should be one plant out of the many worthy of cultivation, how are we to be guided as to its treatment? Many a beautiful plant has undoubtedly died in its infancy solely from a want of proper treatment, arising from the above causes. The only guide which those collectors deign to give, is something after this manner:—"A beautiful blue flower from New Holland;" "Liliaceous plant;" "A shrub resembling a Symphoria;" and such-like vague descriptions, from which nothing of any importance relative to the proper treatment of the plant can be gathered. A plant may be a native of a very warm country, and yet, growing on elevated situations, would require a temperature very opposite to what would be supposed from the mere knowledge of its coming from such and such a country. Suppose two plants were brought from Mexico, one from the plains, the other from a mountain several thousand feet above the level of the sea, and the only guide to their cultivation given was, that they were natives of Mexico—the consequence would be, both would be subjected to the same treatment—probably a hot one; in which, while one may luxuriate, the other—it may be the more valuable specimen—would perish. In a word, gardeners in general should study the physical as well as geographical situation of plants, as a means of rendering their labours more easy, and as pointing out a shorter way to the attainment of the desired end, viz. successful cultivation.—*Walter Wakefield.*

Flower Gardens.—Will some of your correspondents point out the best method of ornamenting the flower-garden at this time of the year, with those beautiful plants, the improved varieties of the Pelargonium? I have one now in the open border, which was very hardly treated during the winter, and did not bloom in spring, which is blossoming as well as if it were in Mr. Catleugh's greenhouse. They will probably not last as long in blossom as the scarlets, but they would be very beautiful for a considerable time. They seem, like the Fuchsia, to grow and blossom, and blossom and grow. I think they might possibly be made the most beautiful of all border flowers, by a little delaying management. Why should all gardeners attend so exclusively to spring flowers, and so totally neglect the autumnal? I am very much inclined to think it is because of the London market; but they should recollect that the same affluent people who live in London in the spring, live in the country in autumn, and are as vain of their gardens as peacocks of their tails, if they happen to have them in tolerably showy order.—*Autumnus.*

Monstrosities.—Why do Vines, Fuchsias, &c., put out roots frequently at their joints? Even Pelargoniums, in small pots and a feeding atmosphere do this, as do also Melons and Cucumbers, even with full scope for their roots. Potatoes show the same inclination; and the stem in some instances thickens, which growth certainly arises from the tuber not having a sufficient supply of moisture to induce it to throw out roots to increase its kind in the way natural to it; and, taking advantage of all its leaves can collect, and the parent tuber supply, what would be leaves and young side-shoots are converted into tubers. The should-be-eyes for the same purpose throw out small leaves, no stems, and again Potatoes (green Potatoes) instead of green leaves and stems are produced. Of this I had a beautiful exemplification last year on my Pansy border; the ground the previous year had been planted with Potatoes, (the Early American and Blue Laurel); some of these being left in the soil grew. The ground had been double-dug, in order to prepare it for the flowers, and the tubers were cast too deep to be got up without injury to several plants; the spot where they grew became the regular path, trodden and baked hard. The stems grew, as I have stated, and were borne down by the weight of tubers, which increased rapidly; I laid weeds, a few at a time, upon some of them; they thus lost a little of their deep green appearance. I then put a compost consisting chiefly of decayed leaves over the weeds, slightly earthing them; after a time some of these tubers protruded, that part acquiring the colour of all exposed Potatoes, that covered being white; the eyes of one part sunk, while the green had the vegetating appearance of the uncovered ones on the stems. The part I tried this upon was the middle of the stem, and I covered rather more than ½ of it. The stem retained its verdure much longer than the others, but from lying on the ground many of the tuberous excrescences were entirely eaten by snails. One plant that was dug for, had not one Potatoe at the root; the others were covered with straw and earth, and were to remain till spring; they were, however, lost or thrown away, I was anxious to see what they would do when cultivated this year.—*A. W.*

Wasps.—I am sorry to learn from "H. P." that he has not succeeded in destroying a wasp's nest by means of spirits of turpentine. It must be borne in mind that the nest of wasps is seldom perpendicularly under the entrance; the instinct of the animal, no doubt, directs a different arrangement, as a security against wet. I have found that after the wasps enter the hole, they proceed for a few inches in a line almost horizontal, and then take a more perpendicular route to the nest, which will be at some distance from the entrance. The bottle containing the spirits of turpentine is here of great value, because you can insert the neck in the direction of the horizontal passage, and then the turpentine will go direct to the nest; if these conditions are observed, and all air excluded by means of mud or clay round the top, it is impossible that the wasps inside can escape destruction. Although a small quantity of turpentine may be sufficient, yet as it is a cheap article I would recommend about a quarter of a pint for each operation.—*Jasper Stokes, Birmingham.*——Another correspondent, signing himself "A. K." says, "I tried the experiment of destroying wasps' nests by turpentine in a bottle, on two nests; in one which was not deep in the ground it completely succeeded; in the other, which was much deeper, it failed. My gardener then poured hot Stockholm tar into the hole, and this answered perfectly; all the wasps were destroyed. He has since destroyed another in the same way."——*Rougham* remarks that "an easy, cheap, and effectual way of destroying a wasp's nest and the swarm is to pour a pint of gas-tar into the hole, or if the hole is large and placed inconveniently for pouring, stuff into it a wisp of straw dipped in gas-tar. No wasp can rush out to attack you, and every wasp which may be abroad will be caught and disabled on his return home."——*Did*

"H. D." who complains that turpentine had not killed his wasps, (*ante* p. 621,) stop up both holes? as wasps have generally two entrances to their nest, and without both are closed the fumes of the turpentine could not of course act. I can speak to its complete success if properly attended to.—*D.*

Strawberries.—Respecting the cutting off the leaves of Strawberries, I beg to mention that in a border containing 45 beds of the following kinds, viz., Keen's Seedling, Downton, Roseberry, Wilmot's Superb, Pine, Hautboy, Myatt's Pine, Elton Seedling, Carolina, and Knevet's Seedling, after the fruit was gathered last autumn, I mowed the leaves off every second bed, and raked them off lightly, making straight the sides of the beds, and hoeing the alleys; I then threw the soil over the beds that had been loosened with the hoe; the other beds had nothing done to them except weeding when it was necessary. During this season there was no difference between the crop on the beds that had not been touched, and that on those which had had the leaves mowed off. I have had the management of Strawberries for nearly 60 years, and I have for the most part grown them in 4-feet beds, and, except near walks, I have treated them as above, and I have always fine crops of excellent fruit. As to manure, I never thought of it, except for Myatt's Pine; I always found my plants to grow quite strong enough, and even rather more so than I could have wished. On Strawberries grown in beds the fruit is always clean, which is not the case with that on single rows; besides, the small quantity of soil spread over the plants from the alleys, supports and strengthens them, as well as assists the young runners in striking root. I have always found the produce of the third year after planting the best. I am sure that the bed system of culture is the most suitable in every respect for market-gardeners: the produce is nearly double that of single-row culture. I have read the remarks at p. 555, 1843, which I consider excellent; but as I have always obtained good crops from my old method, I still continue to practise it.—*J. H.*

Cats and Valerian.—With regard to Valerian and cats, a correspondent signing himself "Autumnus," by way of suggestion, writes:—"Might not gamekeepers use bundles of Valerian to catch wild cats in the cover? Might not the owners of barns, outhouses, ships, and other places infested with rats, use the Valerian to assemble their enemies, and our friends the cats?"

Scorching Effects of the Sun.—In the *Chronicle* I have read, with some surprise, statements which I have thought resulted from want of observation, upon the spot on Vine leaves, &c. Nothing coincided with my practical observation except the paragraph by "Vidimus," p. 540, which I see, unfortunately for my own opinion, you do not encourage. You say, How do the lenses get into focus? Another question appears to me to answer this—Do not the drops of water shift and change their form, and run down the glass before they can act? It is not while the glass is covered with steam sufficient to form streams, and constant and frequent droppings of water, that the injury is done, for the course of these drops is devious; a larger drop of steam being added to the current, one hastens as well as directs it progress, and the leaves upon which these drops fall being still moist, the additional moisture readily spreads over a larger surface than it would do if they were dry, and a general evaporation and absorption takes place; the glass also dries by degrees; but large drops of water will hang upon it for a long time after the sun has dried the surrounding surface; these tremble, oscillate, sparkle like brilliant suns, sometimes drop, sometimes run, and, meeting at the next fold of the glass a little more moisture, or on the flat pane a dew-drop, there stop, either to oscillate into the focus to form a burning-glass under which the foliage suffers, or, the addition being too great, it runs forward and drops, or is evaporated at a fold, or stands till it can get through, performing its work of destruction. My observations were made upon a Melon-pit, 17 feet by 7 feet wide: and, as I was the sole worker of it, the spots and mildew or fungus proved an annoyance; and when I searched gardening books I was no wiser. Gardeners said, with great composure, "We all have the same complaint; there is no remedy but pulling off the spotted leaves; it may be a flaw in the glass, &c.;" and I was no better off, but resolved to have some idea of the truth. My pit was constructed with a flagged footway at the back, from which the centre could be reached; this I mounted to make my observations, and the result was as above. Then for the remedy. My frames were made so that I could let air or steam out at the upper part, without admitting a thorough draft by the entrance of air at the bottom; and by thus permitting my glasses to dry, I secured the plants from spot. In very hot weather I watered from 8 to 9 o'clock, A.M., and also while the sun was on the frame in the afternoon, and shut up early; when my fruit was setting and swelling, at 5 or 6 o'clock; and 4 in cloudy weather. I never failed having abundant crops of high-flavoured well-grown fruit. With the Persian Melon in pots in the same pit I was equally successful, neither spot nor spider showing themselves. In the same frame I have grown the Manchester Green Spine Cucumber 26 inches long, and had six, seven, and eight to cut at once of this size while my Melons were setting and growing; but when the Cucumber Vines began to interfere with the Melons, I cut them up or cut them to one stem, and trained it along the bottom of the pit below where the Melons run. I worked my frames with what gardeners called a scalding heat, but I never had a twig hurt by it, and my pit was never filled till April, yet I could generally obtain two crops of fruit off the same roots.—*A. W.*

Destroying Worms.—In the Calendar of Operations of the 7th, "*D. B.*" directs gardeners to look over all their plants in pots, in order to see if the drainage is right, and that there are no worms in them. This is attended with some disadvantage, especially if the plants have had large shifts, and have not had time to fill the pots with roots. Let persons be ever so careful in turning a plant out of the pot, they are sure to disengage the drainage. I have been much annoyed by worms getting into my cutting pots, and on turning over a compost heap, on which I had put a small quantity of gas-water, and finding that there was scarcely a worm to be seen, I took four gallons of gas-water and poured it over the bottom of a three-light box, which I was about to use for cuttings; over this I spread about four inches of sifted cinders, and the result has been equal to my expectations; not a worm has dared to come through as yet. The gas-water covered over to that depth has not affected the cuttings, neither is there the least disagreeable smell from it. On no account, however, use gas-water in any house, pit, or frame, without covering it over with some kind of material, or it is sure to destroy your plants. When I fill my tan-beds, I intend putting a quantity of gas-water all over the bark, about a foot below the surface, and also below all plants standing out of doors.—*A. Threlkeld, Headingly House.*

Bees.—As the questions put by "A Lover of Truth" (p. 572) appear to me not to be satisfactorily answered, I beg leave to say a few words on the subject. Dr. Bevan and others say that a queen-bee lays three sorts of eggs, and that she knows what sort of eggs she is going to lay. It is even stated that queens commence to lay drone-eggs at certain seasons of the year, and that the great laying takes place about the beginning of May. Last year I hinted that a queen lays only one sort of eggs, and this I still affirm. In March or April take a strong and a weak stock, containing equal quantities of drone-comb, occupying the same place in each hive; the strong one will commence to breed drones about four weeks sooner than the other. Exchanging the queens will make no difference. If one hive contain double the number of drone-cells, double the number of drones will be bred in it, even though the queens are exchanged. If we were to place a bit of drone-comb in the centre of the weak stock, where brood is just hatched, it would breed drones before the strong one. "A Lover of Truth" will now, I think, naturally and justly conclude that the season of drone-breeding, and the number of drones bred, do not depend on the laying or eggs of the queen, but on the situation and number of drone-cells in the hive, and that if the comb which he speaks of had consisted solely of worker-cells, there would perhaps not have been a single drone hatched in it. It would, however, be uncandid not to acknowledge that a pretty weighty objection can be brought against this assertion, viz., that the queen-bee lays only one sort of egg; but I imagine that this will not overturn it, and that those who dispute this point will find it difficult to maintain their assertions by fact and argument.—*A. Pettigrew.*

Cape Iridaceæ.—I have flowered a few of these for several years with uniform success. My simple means and directions are as follow:—Listen to no printed and reprinted stories about cold frames and south borders. The cold frame plan is uncertain at best; and as to the south borders, look at your Ixias after a thunder shower. The place for the delicate and lovely little things is the greenhouse, where their frail beauty will bloom unruffled, and will be, as it invariably is, the attraction of all eyes on entering the house. Purchase selected roots from a respectable seedsman every year; get them as soon in the season as you can, and pot them immediately in any of the prescribed composts, provided it be turfy, sandy, and peaty, and mixed with cow-dung.—*Micklewell.*

Sulphate of Iron.—Your Leading Article of some two or three weeks since, on this subject, has misled some men who pin their faith on your judgment. You stated it could not cost more than 4*l.* 4*s.*, but I find from my invoice that a ton costs 5*l.* 11*s.*; and one of the first manure merchants in London writes—"I am of opinion its general application or its cheapness cannot be put in competition with sulphuric acid."—*Suffolk.* [We repeat that sulphate of iron can be had of Mr. W. Northcott, 13, Rood-lane, Fenchurch-street, at from 3*l.* 15*s.* to 4*l.* 4*s.* a ton, according to the quantity taken. It is much more convenient to employ than sulphuric acid, as well as more useful; because it decomposes sulphuretted hydrogen, and removes bad smells, which sulphuric acid will not do.]

Societies.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

Sept. 17.—This Exhibition, the last for the season, was held in the Surrey Zoological Gardens. The display of Dahlias, which always form the principal feature of the September Meeting, was not upon so extensive a scale as on former occasions. The Chelmsford Show having been appointed for the same day kept some of the usual exhibitors away; but the general appearance of the stands was good, and several of them excellent. The Silver Cup, value 5*l.* 5*s.* presented by the Committee, for the best 24 Dahlias, was awarded to Mr. Cook for Princess Royal, Perpetual Grand, Phenomenon, Prince of Wales, Mrs. Shelley, Model of Perfection, Widnall's Queen, Admiral Stopford, Competitor, Essex Triumph, Burnham Hero, Nonpareil, Standard of Perfection, Queen of Trumps, Victory of Sussex, Indispensable, Crimson Perfection, Beauty of Sussex, Hero of Stonehenge, Blue Bonnet, Lady Antrobus, Pet Rival, Favourite, and President of West.—Among *Amateurs* the 1st Prize was awarded to Lady Paget, Chelsea Hospital, for Burnham Hero, Widnall's Queen, Princess Royal, Sir Robert Sale, Mrs. Shelley, Admiral Stopford, Antagonist, Aurantia, Hodge's Competitor, and Dodd's Prince of Wales—Mr. Bushell, of Kennington, obtained a small Silver Medal for the following, viz., Emma, Hampstead Rival, Admiral Stopford, Widnall's Queen, Victory of Sussex, Lady St. Maur, Pickwick, Mrs. Shelley, Prince of Wales, Essex Triumph, Vivid, Great Mogul, Regina, Bianca, Pet Rival, Hudson's Princess Royal, Applause, Mara, Queen of Trumps, Aurantia, Nonpareil, Uxbridge Magnet, Beauty of Sussex, and Mrs. Hanley.—To other stands no names were attached. Several seedlings were exhibited, but none of first-rate quality. Several blooms of a very fine seedling Pansy, named *Pisarro*, was exhibited by Mr. Thompson, of Iver, to which a first class Certificate was awarded. This is a well-formed flower, of considerable substance, centre clear yellow, with good eye; the top petals are of a deep bronzy purple, with a broad margin of the same colour surrounding the lower petals; the side petals meet well above the eye, where the belting joins, making the shield of the ground colour complete; a rich and fine flower.—A very pretty variety of the Petunia was shown, named *Invincible*, having a light rosy-lilac ground, with dark throat, and a broad margin of rose colour on the margin of the corolla; if constant this will form a very good variety. Miscellaneous collections of plants were deficient. By far the best present was that sent by Mr. Bruce, gr. to B. Miller, Esq., who received a large Silver Medal for well-grown specimens of Achimenes longiflora, a large plant of Crowea saligna, in good health, but scarce of bloom; a neat specimen of Erica rupestris, a dwarf-growing species, having small white flowers, and a pretty dark-green foliage; together with Cliffortiana, covered with a profusion of slender white blossoms, delicately tinged with pink; and cruenta, a very useful autumn-flowering sort. Mr. Bruce also sent several species of Clerodendron, among which was a beautiful specimen of squamatum, having a fine head of scarlet flowers; an excellent plant of Erythrina Crista-galli, having eight stems loaded with bloom; a large Ixora coccinea, Justicia oblongata, and a plant of Pancratium fragrans, well managed, together with some others, in equally good condition.—A Middle Silver Medal was awarded to Mr. Hamp, gr. to J. Thorn, Esq., for a second group, comprising among others a small but healthy specimen of Gardoquia Hookeri; a good Crowea saligna; Achimenes grandiflora in good condition; and Portulaca splendens, producing beautiful purple flowers; together with a pretty plant of Angelonia salicariæfolia, and a specimen of Lilium lancifolium album.—In the Nurserymen's class the best collection was sent by Mr. Jennings, of South Lambeth; it consisted chiefly of Petunias and Fuchsias, among which was Exoniensis in fair condition, along with the different kinds of Achimenes, and some Roses.—Mr. Jennings also contributed a group of Fuchsias; the sorts were Exoniensis, Halley's King John, Eppsii, Epps's Bridgroom, and Kentish Bride; Smith's Paragon, Dalatonii, Stanwelliana, Brockmanii, Gem, Compacta, excelsa, and Iveryana.—The large Silver Medal offered for the best specimen plants of six distinct Genera, was awarded to Mr. Bruce, for a beautiful small plant of Erica Aitoniana, bearing a profusion of pretty white blossoms; Ixora grandiflora; a fine Clerodendron squamatum, and a plant of Pentas carnea in good condition; together with Russelia juncea, and a plant of Siphocampylus betulifolius. Mr. Bruce also showed, as a single specimen, a magnificent plant of Witsenia corymbosa.—G. T. Cox, Esq., of Stockwell, received a Middle Silver Medal, for plants of Angelonia salicariæfolia, Justicia oblongata, Gomphocarpus salicifolius, and a plant of the showy Aphelandra cristata.—Collections of Orchidaceæ were exhibited by Mr. Schroder and Mr. Cox. In Mr. Schroder's group, which was the best, we observed good specimens of Odontoglossum grande, and Stanhopea Wardii, the latter producing a fine spike of flowers; along with Cattleya intermedia, in fair condition. Mr. Cox sent, among others, the showy Cattleya Harrisoniæ, in a creditable state; Cymbidium giganteum, and a plant of Warrea tricolor.—Mr. Groom, of Clapham Rise, produced several small but handsome specimens of Lilium lancifolium rubrum or speciosum, which is one of the most beautiful of our autumn-flowering plants.—The large Silver Medal given by Mr. Groom to amateurs for the best specimen of either variety of Lilium lancifolium, was awarded to Mr. Schroder, for a plant of L. lancifolium album.—Among miscellaneous objects was a collection of well-bloomed Cockscombs, from Mr. Scorer; and another was contributed by Mr. Atterton, who also showed a group of Globe Amaranthus.—Mr. Jennings sent some dwarf Cacti; and Mr. Bridges obtained a middle Silver Medal for the best twelve Asters. The first prize for the best collection of cut flowers among amateurs was awarded to Mr. Davis; among gentlemen's gardeners to Mr. Bruce; and among nurserymen to Mr. Wood. Mr. Parsons obtained a middle Silver Medal for the best twelve bunches of cut Roses; and in the nurserymen's class Mr. Paul was awarded a middle Silver Medal for the same.—Of FRUIT and VEGETABLES some good samples were exhibited. Among gentlemen's gardeners Mr. Kay obtained a middle Silver Medal for the best four sorts of fruit; and Mr. Atterton was awarded the same for vegetables. Among nurserymen Mr. Burdill and Mr. Gaines were first. Mr. Parsons received a middle Silver Medal for good specimens of Black Hamburgh and Muscat of Alexandria Grapes; and fair bunches of Black Hamburgh Grapes were also shown by Mr. Chapman.

BOTANICAL SOCIETY OF LONDON.

Sept. 6.—J. Reynolds, Esq., Treasurer, in the Chair. Mr. T. Ingall presented a specimen of Teucrium Botrys found in a stony field at the back of Box Hill, between Brockham and the upper part of Headley Lane, Surrey, 4th August last.—Read, Dr. Taylor's description of some new Musci and Lichenes, from the Australian Colonies; namely, Dicranum Menziesii, Bryum leptotheciun, Bartramia tenuis, Hypnum excavatum, Usnea scabrida, and Parmelia tubularis, all of Tayl. MSS.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

Sept. 5.—This was the Quarterly Meeting. Collections of fine Carnations, Flaked Bizarres, and Picotees, were produced by Mr. Young and Mr. Thomson, but no competition being announced for this day, no award was made.—Specimens of a seedling Apricot, raised by Mr. J. Thomson, were tried, and found to be saccharine, juicy, and as high-flavoured as the Moorpark from the same wall, and considerably earlier, having been ripe more than a fortnight ago, and being now nearly past.—Various fruits from the Society's garden were also tried; particularly the Washington, Sharpe's Emperor, and Coul Orleans Plums; Moorpark, Breda, and Red Roman Apricots, with the Raisin Grape, which was considered hardy, having ripened its clusters in a cold greenhouse. Several very beautiful specimens of exotic plants, in full flower, from the hothouses in the Society's garden, ornamented the Hall; particularly Stanhopea insignis, and S. insignis speciosa; Miltonia spectabilis, having several flower-stems, and Clerodendron splendens.—The Secretary read a communication from Mr. J. Lothian, gr. to Mr. Campbell, on the use of Sea-weed as a manure. From the garden being situate on the shore of Loch Killis, ample opportunities are afforded for procuring sea-ware, and for trying its effects on various kinds of soil, and for different crops. Mr. Lothian's experience shows that it is best suited for very light or sandy soils, being of no advantage on heavy loams, and on clayey damp soils positively injurious. When trenched into a sandy soil, sea-ware was found to afford capital crops of Potatoes, Peas, Turnips, and Cabbages. The drift-ware (mixed with Sertulariæ, Flustræ, &c.,) when used as a winter covering for Asparagus and Artichoke beds, proved an excellent fertiliser. When sea-weed was dug in during autumn, between the Gooseberry and Raspberry lines, it was found very useful in destroying vermin, and promoting the vigour and fruitfulness of the bushes.—A number of new members were on this occasion added to the Society.

REGENT'S PARK GARDENERS' SOCIETY.

As a proof that Morphology is exciting considerable interest, a public meeting for its discussion has been held during the week, in the room used for the meetings of the Regent's Park Gardeners' Society. A rather protracted discussion took place, and many interesting specimens, illustrative of the subject, were exhibited. The chairman (Mr. Raith) made some remarks on the history of the science, and then read some paragraphs from Dr. Lindley's "Introduction to Botany," in explanation of it.—A person present then moved a resolution, to the effect that nothing had yet appeared in support of the monstrous doctrine, at all reconcileable with reason or common sense.—Mr. C. Moore observed, that a few months since he was prejudiced against it, but that he had since seen reason entirely to change his views, and had brought specimens to the meeting, for the purpose of proving that Morphology indeed rested on proofs. He produced a specimen of the viviparous variety of Aira cæspitosa, the panicle of which, instead of developing blossoms in the ordinary manner, had produced a quantity of buds, and these, on being spread over the surface of damp soil, had become rooted and established plants; in this case, the glumes never having expanded, he conceived the production of plants from the parts which should have perfected seed, as strong and incontrovertible evidence, that flowers and leaves are natural modifications of the same elementary organ. Allium scorodoprasum, with viviparous heads, was also produced. He strongly advised the dismissal of prejudice in considering such a subject, and a close examination of facts before a conclusion was arrived at.—The person above alluded to spoke in opposition, and endeavoured to explain the cause of plants becoming viviparous, by assuming that the internal parts of the flowers had been enabled to perform their functions, and produce seed, although they had not been visibly expanded; and that this seed had germinated whilst attached to the stem, and thus produced the young plants (!) With reference to the branches produced from the centre of some flowers, he contended that this was a monstrosity similar to what sometimes happens in the animal kingdom, such as a child born with two thumbs, or a lamb with two heads or tails (!) He denied that any of the parts of a plant or flower were not essential, having each a peculiar and allotted function to perform; and contended that God had made nothing in vain, but had formed all things perfect, and that nothing could border more strongly on atheism than this most dangerous and pernicious doctrine.—Mr. Maher, who had before him some beautiful morphological specimens, followed in vindication of the science. He said, that it was absurd to speak of the animal kingdom as furnishing any analogy with the subject in question, because, whilst the animal being (taking the perfect members as these only which were understood) was but one individual, or centre of vitality, the vegetable is composed of a numerous congeries of individuals, or distinct points of vitality, and therefore the monstrosities of the animal kingdom have no bearing on the question. He would indeed willingly allow that the Creator had made nothing in vain; but as a proof that this fact did not become opposed to Morphology, he cited numerous instances of plants which produce perfect seeds, and re-produce their species, and are yet wanting in some of the parts which are held to be essential, or even indispensable, by anti-morphologists: thus, the Oak, which produces perfect leaves and flowers of its own peculiar nature, is entirely devoid of the corolla, which is present in the majority of plants; and in the Salpiglossis, which, when fully developed, has a very handsome and conspicuous corolla; he had observed a seedling of which the flowers were devoid of a corolla, but had, nevertheless, borne seeds, and produced perfect plants. He entirely repudiated the charge of atheism, which was inapplicable to those who professed the doctrine; they being fully imbued with a sense of the Divine power, and even less atheistical than the florists, who had been and were busily engaged in perfecting the perfection of the Creator. The further discussion of the subject was postponed to the next meeting.—*M.*

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

INGA PULCHERRIMA. Prettiest flowering Inga. (*Greenhouse Shrub*). Leguminosæ. Polygamia Monœcia.—In a genus of plants like the present, abounding in noble trees and handsome shrubs, airy and elegant in their foliage, and bedecked with specious inflorescence, the propriety of bestowing a name denoting superlative beauty upon any individual species may be somewhat questionable. Whatever of hyperbole there may appear, however, in that assigned to this plant, the beauty and loveliness of its characters entitle it to some corresponding epithet to distinguish it; and though there may be other species equally meriting admiration and distinction, these is none more worthy of ranking amongst the fairest ornaments of the tribe. One hundred and thirty-six species of Inga are enumerated by Don in his "System of Gardening and Botany," and it would appear from our catalogues, that fully one hundred of these have never yet graced a British collection. We may, therefore, hope that many, when introduced, will prove useful acquisitions to the stove or the greenhouse. This plant flowered last February in the collection of Mr. Jackson, of Kingston, from whom healthy plants may be procured. Uniting with its superior ornamental qualities a propensity to disclose its beauties at a season when the general paucity of flower induces us to regard every fugitive blossom with a favourable eye, it is still more valuable. It bears a striking similarity in its general aspect to I. kermesina. It has, however, much smaller foliage, and the drooping tassel-like blossoms, though scarcely equal in size, shine with a deeper and more lustrous hue. The irritability common to the leaves of many species of Mimosæ, and especially M. pudica and sensitiva, is also displayed, though to a less striking degree, in the plant under notice, particularly when grown in a warm stove. If the young leaves are pressed roughly by the hand, exposed to a strong current of air, or a sudden depression of temperature, they rapidly contract and fold together, but soon expand and raise themselves again to their usual position. When cultivated in the greenhouse the leaflets never expand, even in the brightest and warmest days throughout the whole course of the winter season. In its cultivation, the chief things to be thought of are the selection of a suitable medium for the roots, to provide a congenial atmosphere in the growing season, and afterwards conditions favourable to a suspension of vegetative activity. A light loam added to an equal proportion of peat and sand, enriched with well-reduced leaf-mould, may be used with propriety. A greenhouse temperature is decidedly most proper during the summer season, and till the autumn is far advanced. In winter it should be kept in the stove, where it may remain till May or June. It is stated to be a native of Mexico, in Loudon's "Hortus Britannicus," and introduced to this country in 1822. The generic title is a South American name adopted by Maregrav, a naturalist who wrote on the Natural History of Brazil, about the middle of the seventeenth century.—*Paxton's Magazine of Botany.*

ODONTOGLOSSUM LÆVE. Smooth-lipped Odontoglossum. (*Stove Epiphyte*) Orchidaceæ. Gynandria Monandria.—Both Mr. Skinner and Mr. Hartweg found this plant abundantly in Guatemala, and sent it home to their friends, so that it is by no means rare in collections. It is not, however, much esteemed, because of the flatness of colour in its flowers. Nevertheless, they have cinnamon-brown blotches on the yellow ground of the petals and sepals; and the lip, which is white, is banded with violet across the middle; besides which, they are fragrant. The name Odontoglossum, or tooth tongue, has been given to these plants because they are usually furnished with strong teeth on the lower part of the lip, and these teeth are not unfrequently very conspicuous. Here, however, they are reduced to a couple of trifling notches, and might be easily overlooked. This species should be potted in turfy peat, and placed in a moist stove. A liberal supply of water should be given during the growing season, and the house should be shaded in sunny weather, in order to keep the temperature as near 80° by day as possible. In winter, like many other bulbous Orchidaceous plants, it requires very little water for a few weeks, but would be much benefited (especially in clear weather) if the house in which it is grown could be filled with steam once a day. The temperature should at that time never be raised above 60° by fire-heat.—*Botanical Register.*

Garden Memoranda.

Dalvey Gardens, near Forres.—On recently visiting these gardens, we were gratified by observing a number of rare and pretty plants in bloom, among which we particularly noticed in the new stove, a large plant of Zygopetalum Mackaii, bearing a number of spikes of flower; the delicately coloured Cattleya Harrisoniæ; the highly fragrant Stanhopea oculata, in fine flower; along with a large plant of Oncidium flexuosum; the butterfly plant, O. Papilio; the beautiful Saccolabium guttatum, producing its graceful raceme of flowers like a pendant feather; Vanda multiflora, with small yellow flowers barred with brown, and the deep yellow Dendrobium chrysanthum, marked in the centre with a dark velvety spot. The beauty of this house was much heightened by the different species of Achimenes. There was also in good bloom the beautiful, bright yellow-flowered Echites suberecta, and the exquisitely tinted Ipomœa Learii. In one of the houses we observed a large plant of Lilium punctatum album, with four flower-stalks, seven feet high, bearing nearly forty beautiful white flowers; a good L. punctatum, with three stalks, six feet high, bearing upwards of a score of delicate tinted pink and white blossoms; and the scarce L. speciosum, with one stalk, four feet high, bearing nine exquisitely beautiful rose and white flowers. In this house there was also in bloom many of the new varieties of Fuchsia now in cultivation, some of which were covered with very large and showy flowers. The open grounds were ornamented with Dahlias, Hollyhocks, &c., just coming into bloom, many of which are fine sorts.

Miscellaneous.

Mutual Indentation of Two Forest Trees.—Near the walk which leads to the flower-garden at Walton Hall, near Wakefield, may be seen an English Elm and a Scotch Fir growing in close embrace. They are now 15 feet in height, and 1 foot 10 inches in circumference at the base. By twisting the leading shoot of one tree annually round that of the other, the trees have become deeply embedded in each other's folds. The Elm being of stronger vegetation than the Spruce, I have taken the precaution of curtailing the lateral branches of the former, lest it should prove too much for its weaker partner.—*Waterton's Essays.*

Insect Revenge.—At Leintwardine, lately, a swarm of bees, which had been brushed off the mouth of the hive, where they had clustered, became so irritated, that they set upon everything in their way, and stung to death 26 chickens and young ducks. The old poultry got out of their road, or they probably would have shared the same fate. After sundry gyrations, and other onslaughts upon man and beast, the night approaching, they returned quietly to the hive.—*Scotsman.*

New sort of Tamarisk.—At Mudjèlibé, or Babel, part of ancient Babylon, there grows on the summit of ruins, which are supposed to have been the suspended gardens of Semiramis, a lonely tree of which all travellers speak. Some call it *cedar*, others say that it is a tree, the like of which is not to be found anywhere else; finally, a very ancient tree, perhaps, even as old as the time of Herodotus. This tree, according to dried specimens, gathered by Aucher, in 1835, is the Tamarix pycnocarpa. Other species of Tamarisk grow in those countries, among others, the Tamarix articulata, which is very common in Asia, as well as Tamarix gallica, which is found almost everywhere. This last species is not rare in the gardens of Europe, whilst the other two are not yet known there. —*Pépin, in Revue Horticole.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

STOVE PLANTS, and indeed all house-plants, have ripened better this season than they generally do, owing to the hot, clear weather, in the end of the spring and through the summer. This corresponds with the treatment generally recommended for some years past, which is—after vegetation has fairly begun in spring, to increase the temperature of the houses, and by way of gentle forcing to assist nature. Plants thus treated, and stove plants in particular, cannot be too cautiously watered late in the autumn. Nothing is now wanted, but to keep the soil from getting quite dry. In dull or rainy weather slight fires should be made in the forenoon, not so much for the purpose of raising the temperature, as for drying the house. Allow a little ventilation, as stoves generally are too much crowded, and so damp that, more or less, air is always necessary to maintain a healthy atmosphere.

Conservatory.—On the contrary, everything in the conservatory should be clean and sweet; the plants should never be crowded, therefore little air is wanted through the ventilators while the plants are at rest; indeed, letting in strong currents of air at this time does a good deal of mischief, by drying the soil in the pots too much, and thus rendering large doses of water necessary when none at all is wanted. Plants in sitting-rooms now require a very different treatment; housemaids will ventilate their rooms as long and as often as they can, and make large fires in cold weather, very much to the injury of plants, which must have water freely every day, and should be changed as often as the stock will permit.

Pits and Frames.—By the middle of September Violets should be planted out in pits, within a few inches of the glass; after they are well watered lay well an inch of very dry soil over the surface, in order to keep down the damp until the plants are firmly established and hauled to confinement. Pots of Mignonette must also be protected from rain; but they should not be kept close. Heliotropes often get too strong about this time, if they are in the open air; when this happens they never flower so freely in winter; a short allowance of water with some covering will soon check them. China Roses of all classes that have been close pruned in August should now be encouraged in pits, and they will soon begin to bloom. Dwarf Nerriums that have been hard forced to make young wood after flowering should be hardened to stand over the winter in cold pits, merely keeping the frost from them.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

Where extensive alterations and improvements in pleasure-grounds are contemplated, the sooner they are proceeded with after this time the better. There are many advantages in commencing early: first, much more work can be done in a given time, now that the ground is in a workable condition, than it is possible to perform after the rains of winter have set in, and not only can much more be done, but it can be performed in a much more satisfactory manner; secondly, by commencing early we have the choice of the nurseries for such plants as are required, and there is a better chance of the transplanted shrubs succeeding, because, if the autumn is mild, they will strike root at once, and if it is not mild they will get so firmly fixed in the ground as to receive little injury; thirdly, new ground work should always, if possible, be got over before Christmas, and all planting should be completed by the middle or end of November. Choice Evergreens, especially if removed from nursery-beds, I prefer transplanting in April, as I have always found them succeed better than when removed in the autumn. Since April last I have removed hundreds of both evergreens and deciduous shrubs and trees, some of them from 10 to 20 feet high, and in full leaf; and dry as the season has been I have not on an average lost more than one in a hundred. The last, and perhaps greatest advantage of autumn planting is, that it sets the gardener's hands at liberty for spring work, which, if anything like high keeping is desired in the grounds, is essentially necessary.

Pits and Frames.—In about another fortnight the season for propagating will be gone by; therefore, where sufficient stock is not already got in, there is little time to lose. Plants that are standing out to be hardened should be so arranged as to be readily covered in case of frost, which may now be expected; and choice plants in beds which it is intended to take up and pot, should also be protected on cold nights.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Tulips.—Seed may now be sown in shallow pans or boxes, covering it very slightly. Continue to make additions to your collection, always preferring quality to quantity. Many fine

varieties are broke in different parts of the country, from seedling breeders, which will drive many old sorts from the amateur's bed. *Carnations.*—Now is a most excellent time to take off and pot layers; if wireworms are in your compost, and your layers are destroyed, who will be to blame, after the repeated warnings given, to look well to it yourself? There is nothing like the grower's eye to detect these mischievous depredators. *Dahlias.*—Cuttings of anything very choice may be struck in a very gentle heat; they will form excellent pot roots for spring. *Pinks.*—Do not delay another week the formation of your beds for next season's exhibition. As we have before observed, very much depends on autumnal planting. *Auriculas.*—Keep these from the heavy autumnal rains, but by all means let them have all the air possible. *Polyanthuses*—May be removed with safety, but the sooner the better.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—More attention, if possible, will be required from this time in regulating the temperature of the Pine pits, as the necessity for using artificial heat increases. Keep the plants in fruit at 68° by night, and give a portion, however small, of fresh air every day, if at all practicable. Syringe the plants occasionally with water at 80°, and look frequently to the state of the soil, as regards moisture. The successions need not be kept higher than 65° on chilly nights. Great attention must be paid to renewing the linings when necessary of pits heated by dung. Those pits stewed heat which have a hot-water pipe carried round them, to dry up damp and raise the day temperature in cloudy weather, so as to admit of a portion of air being given every day, to sweeten the atmosphere and refresh the plants. There is no doubt that dung-heat is the best for growing Pines; but without the assistance of fire the plants sometimes unavoidably experience changes of temperature not favourable to them. Where there is not the convenience of a small boiler to such pits, now is a good time to supply the deficiency.

Vineries.—Do not defer the pruning of Vines intended for early forcing too long, or they will bleed when cut. Vines that ripened their fruit in April last will now break readily with but very slight encouragement. Some old Vines here, which I intend doing away with, are now swelling their buds fast, although they have all the air which it is possible to give them. I will now encourage them to break, and I have no doubt that some very early Grapes may be obtained, as the fruit will be set before the power of the sun has got to its lowest. After the crop is cut, there will be ample time for the young Vines planted in their place to make a good season's growth. I do not, however, recommend commencing to force at this early season, except in similar cases to the above, for it is ruinous to good Vines to excite them to growth at this season. Continue to carry on any alterations or repairs in the Vineries, while the season is favourable.

Peaches.—I again recommend losing no time in forwarding whatever work requires doing in the early house, and particularly in planting fresh trees in the place of any that may be worn out. Make choice of trees for this purpose that are in a bearing state, and that have been moved last autumn. These will certainly bear fruit the first season if taken up now. Peaches and Nectarines planted now in fresh soil, will go on making new roots nearly all the winter. In pruning the trees that have lost their leaves, be careful not to leave them too much crowded; but if the summer pruning has been properly done, but very little indeed will be required now. The Noblesse Peach should not have its young wood shortened or much thinned till after the fruit is set, as it is liable to break badly, and many of the fruit-buds drop off. By leaving the whole of the young wood till the fruit is set, a more regular crop will be insured as well as a better choice of young shoots for filling up the tree. Peach-trees in pots should now be pruned and top-dressed.

Cherry House.—The directions for the Peach-house will also apply to this, except that in planting fresh trees the soil should be of a somewhat lighter nature than for Peach trees.

Strawberries.—If the recently-potted plants have not been removed from the shady situation they were placed in after being potted, it should no longer be deferred, as they require all the sun possible now, as well as a free air to prevent the foliage becoming drawn, and to mature the plants.

Melons.—The weather has been unfavourable for ripening the late Melons, and they must be assisted by having a good top and bottom-heat, and a considerable portion of air in the middle of each day, or the fruit will be worthless.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Strawberry-beds.—Notwithstanding the repeated observations in the *Chronicle* respecting the impropriety of cutting off the leaves, upon the proper development and full exposure of which the maturation of the buds for next season depend, the practice is still extensively adopted, and it is no unusual thing to meet with individuals who proudly contrast the neat appearance of their beds with the somewhat rough aspect of those where the runners have only been removed, the smallest buds singled out, and full exposure given to those remaining. The treatment of Strawberries, as of everything else, should be varied according to circumstances and the object aimed at. The mowing off the leaves will succeed better in light soils, and in warm situations, than it will do on cold, stiff soils, as in the first case the mowing will be earlier performed, and a succession of healthy leaves will be produced, but produced at the expense of the stored-up nourishment existing in the bud. It may also be adopted in those cases where the unworkmanlike practice exists of depending chiefly on the runners of the present season. It is true that abundance of Strawberries may be procured by such a system, but the results of my practice and observation would say, that such fruit is not for a moment to be compared, either in quantity or quality, to that produced by the plants, where their leaves are left unmutilated. Besides, this system of cutting off the leaves renders the plants very susceptible of injury from the first keen frosts. The space between the rows may now be slightly forked, and a little manure put on the first opportunity.

Cauliflower.—Those who prefer August to September for sowing this, may now be getting it planted; where it is to receive the protection of hand-lights they should not be put on until indispensably necessary, as this will prevent much trouble afterwards. The rains we have had will save watering all the newly-planted vegetables, and has afforded an opportunity for tying mats, making tallies, looking after seeds, and putting all the rooms and sheds in good order. If fine weather succeeds, it will be very serviceable to late *Peas* and *Beans*, but if the former are so sown that little rain can reach the roots, they may still require artificial watering, as if the surface is kept moist by rains, and the roots are still in a dry condition, it is very favourable to the production of mildew. All the rain which we have had has wet the ground very little as yet.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—These, from the varying tints of the decaying foliage, now present a beautiful appearance. Look over them, take out some trees in order to make room for others, or plant trees of different kinds in order to improve or beautify the scenery by the diversity of colour; prepare for the thinning and planting season, which is at hand.

Coppices.—Fill up any vacancies with the same, or more valuable "stuff," clear away all that is useless, and trench, hole, and drain the ground where it requires it.

Young Plantations.—Frequently contemplate what should be done in this department before the thinning and planting season arrive. In thinning, whether indiscriminately, as is the too prevailing custom, or in groups or masses, keep each kind by themselves. I would strongly, for various reasons, advocate the grouping system; and in all new plantations let what are designed to become permanent trees be planted in groups, each kind by themselves, intermixed with nurses, some to be taken out and others to be kept low or headed off at certain heights for forming permanent undercover; the Beech, Hornbeam, Silver and Spruce Firs, are excellent for this purpose, particularly in Larch plantations.

Hedge Rows.—Refer to the two last Numbers of the *Chronicle*.

Nursery Work.—Follow the directions in the last week's Calendar.—*W. B.*

VII.—COTTAGERS' GARDENS.

Although the beauty of the garden may now begin to decline, do not cease to keep it equally neat and clean as before, but even more so, if possible. Leisure hours cannot be better spent than in attending to the little plot which, owing to the late favourable weather, still maintains a tolerably gay appearance. Dahlias, which are still blooming well, should have great attention bestowed upon them. Allow no decaying flowers to remain, and keep them neatly tied; clear away the haulm and decayed stems of such vegetables as are no longer useful to the manure-heap, and prepare the ground for other crops. If a sowing of Cauliflower has not already been made, no time should be lost in getting a few seeds put in. Choose the bottom of a south wall for the purpose, where they will probably stand the winter with scarcely any protection. A small sowing of Lettuce may also now be made on a warm border. Keep Strawberry beds free from weeds and runners. If fresh plantations are wanted, they may still be made. Keen's Seedling and the British Queen are the two most profitable Strawberries for a cottager. Those who grow Tomatoes must keep them free from all useless growths; stop them well back, in order to expose the fruit, which is excellent this season, as much to the sun as possible. Be content with an ordinary crop rather than allow the plants to run too far in hopes of obtaining a very large one, which, being late, will not ripen well. Attend to fruit-gathering; on dry days it is better to gather it a little under-ripe, than to allow it to hang on the trees until it is quite ripe, as in that case wasps, which in some parts of the country are exceedingly troublesome, will have a large share of it. For methods of destroying them see another column of to-day's Paper.—*J. M'H.*

State of the Weather near London for the week ending Sept 19, 1844, as observed at the Horticultural Garden, Chiswick.

Sept.		Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Frid.	13	1	30.149	30.138	73	51	62.0	S.W.	
Sat.	14	2	30.078	30.030	74	57	65.0	S.W.	.03
Sun.	15	3	29.957	29.890	72	61	66.5	S.E.	.05
Mon.	16	4	29.848	29.802	73	61	67.0	W.	
Tues.	17	5	29.789	29.708	72	53	62.5	S.W.	.47
Wed.	18	6	29.849	29.789	62	57	59.5	N.E.	.11
Thurs.	19	☽	30.068	29.933	65	49	55.5	N.E.	.01
Average			29.961	29.886	70.1	51.5	60.8		.67

Sept. 13 Overcast; very fine throughout; overcast at night.
— 14 Heavy dew; slightly overcast and fine.
— 15 Densely overcast; heavy clouds; hazy; rain in the evening.
— 16 Very fine, cloudy; clear and fine at night.
— 17 Uniformly overcast; showery in forenoon, heavy rain at night.
— 18 Rain; slightly clouded and fine in the evening; night 24 deg. colder than that of the 16th.
— 19 Clear and cool; very fine; clear at night.
Mean temperature of the week 4 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Sept. 22, 1844.

Sept.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 22	66.8	45.3	56.1	9	0.40 in.	—	1	3	1	5	5	2	1
Mon. 23	66.2	45.9	56.1	9	0.38	—	2	3	1	5	3	2	1
Tues. 24	65.2	47.0	56.0	8	0.75	—	2	2	1	4	6	2	1
Wed. 25	65.8	46.6	56.2	8	0.30	1	3	1	1	8	5	3	1
Thurs. 26	66.4	47.1	56.7	12	0.49	—	2	2	1	7	6	—	1
Fri. 27	64.7	45.6	55.2	10	0.57	—	1	1	1	3	4	6	2
Sat. 28	64.6	46.6	55.1	7	0.52	—	2	1	1	7	4	1	2

The highest temperature during the above period occurred on the 28th, 1832—therm. 82°; and the lowest on the 27th, 1830—therm. 34°.

Notices to Correspondents.

*** In consequence of the Editor's absence from London, he has to crave the indulgence of a few correspondents, particularly *Micklewell, E. G. L., A Lady, G. L. C. F., A Regular Subscriber. Nemo, an Old Subscriber, D. O., A. B., A. M., A. W., G. B., William*, until next week.

Blight.—*Rus.*—That which has attacked your Scarlet Runners is doubtless the red spider, for which no complete remedy is yet known.‖

Cardoons.—*J. F. S.*—Your Cardoons have been too early sown. The leaf-stalk is the part used.‖

Celery.—*Inquirer.*—Some earth up Celery by degrees, commencing early; others allow it to grow large, and then at once earth it up, and by so doing the plant acquires greater bulk. The stalks, however, are more tender when their lower parts are gradually covered; but a good portion of top should be left clear till the approach of severe weather, as regards the main winter crop; that for early use, of course, should be fully earthed up a fortnight previously to its being taken up.‖

Clubbing.—*Rus.*—The disease called clubbing certainly originates in the soil; but the grub which causes it sometimes attacks the plants whilst in the seed-bed. Doubtless brick-ash, burned earth, or burned turf, would prove beneficial, as you have experienced it to be. Marl is an excellent application, perhaps the best of any for old garden soil in which the Cabbage tribe is affected with the disease in question.‖

Fig trees.—*Inquirer.*—*Jubo.*—All that your Fig-trees require at present is protection from the early frosts, even if these should be but slight. The foliage of the Fig ought never to be killed by frost; for if this is allowed to take place, then the extremities of the shoots, on which the embryo Figs are situated—all that could be depended on for perfecting fruit in the following season—likewise perish. It is better not to remove the half-grown Figs; they will soon die without wounding the trees.‖

Growing Letters.—*X.*—Excuse us. We do not believe the story. That imagination may *fancy* letters on a Calceolaria flower is possible, but that they should be as plain as if painted is rather too incredible.

Heating.—*Nessicus.*—If you are far north would not the Polmaise plan be worth consideration, combined with a tank for propagation? At all events you must have hot-water pipes for air-heat, as well as a tank for bottom-heat.—*A Young Gardener.*—We have not a word to say in favour of your plan. Why on earth go back to flues? And how do you think you will clean those which are placed under your bed? This scheme has been tried, and always proved a failure. Flues are very bad things in themselves, and detestable as a means of bottom-heating. If you do employ them never expect to see any Pines above six ounces.

Insects.—*A Far-North Man.*—Thanks for the specimens; they are the larvæ of the Lophyrus rufus, allied to L. pini, figured and described in Curtis's Brit. Ent. pl. 54. As they feed generally on the leaves, they seldom do any serious mischief, I believe, in this country, and probably will not make their appearance next year. *R.*—*H. D.*—We must request you to send Mr. Curtis a twig of an Erica with the scales upon it, as your quill contained only a little earth. We fear, however, that you will not be able to extirpate them. *R.*—*W. Jos.*—Many thanks for your pupæ, which we hope to rear, and will then discuss the economy of the Lophyri. *R.*—*Abenezar.*—Your insect is the male Stag Beetle, Lucanus Cervus, which is supposed to wound trees and feed upon the sap; vide Curtis's Brit. Ent., fol. and pl. 490. *R.*—*W. H. H.*—We must refer you to our Entomological article of last week, where you will find the grubs destroying the Cabbage-plants described and figured under the name of Noctua excla-

mationis. *R.*—*s. A. s.*—The Weevils, for which we are much obliged, appear to be the Apion flavifemoratum. *R.*

Names of Fruits.—*A. A.*—1 and 3, Bellegarde, probably; 2, Late Admirable. The Plum, No. 4, which you obtained from Italy, resembles the Quetsche, or German Prune, and was received from the Boiwiller Nursery, under the name of Quetsche d'Italie.‖—*D. P. Q.*—1, Wormsley Pippin; 2, Mank's Codlin; 3, Stone Pippin; 4, Pearson's Plate; 5, Beauty of Kent; 6, Alfriston; 7, Brabant Bellefleur; 8, King of the Pippins; 9, Hollow-crowned Pippin; 10, Blenheim Pippin. Pears: 11, Doyenné Blanc; 12, Passe Colmar; 13, Meoriowi Egg. Peaches: 14, 15, and 16, Royal George.‖—*F. G. H.*—1, Russet Nonpareil; 2, Downton; 3, Spice. Pear: No. 1, Hampden's Bergamot.‖—*Amygdalus.*—1, Appears to be the Bellegarde; 2, Old Newington; 3, Late Admirable. It is almost impossible to distinguish some varieties of Peaches, especially after bearing carriage, without the leaves and size of the flowers.‖—*A Subscriber.*—1, Grange Pippin; 2, King of the Pippins; 4, Monstrous Leadington; 6, Gray Leadington; 7, Dumelow's Seedling; 8, White Impératrice Plum; 9, A sort of white Damson.‖—*T. Davidson.*—Your seedling Plum, small, purple, with a Damson flavour, can be proper only for kitchen use.‖—*R. Headly.*—Your seedling Nectarine is as good as a Newington, and is, like the latter, a clingstone; but such are not now in estimation.‖

Names of Plants.—*G. H. B.*—Goodenia ovata.§—*S. Lee.*—1. Centaurea Cyanus; 2. Medicago sativa; 3. Lychnis dioica; 4. Malva rotundifolia; 5. Arenaria rubra.§—*H. D.*—Not an Epacris, but a Callistemon of some sort, which, without a flower, cannot be named.§—*G. S. Gibson.*—Not Galium spurium, but *G. tricorne*, abundant in some parts of the country.§—*W. G.*—Campanula patula.§—*A Subscriber.*—Crassula tricuspidata and coccinea.§—*Emma.*—Zinnia violacea.—*W. C.*—Hippeastrum reticulatum.—*Tuscan.*—Certainly not. Cupressus etruscum is perfectly smooth.—*B. T. S.*—Your plant, not being in flower, cannot be named with certainty. It looks like Adiumia cirrhosa.—*T. B.*—Aplos tuberosa.—*F. H.*—1. Stigmaphyllon ariatatum; 2. Triopteris jamaicensis.

Pomegranates.—*Ryde.*—The late growth of your plants will no doubt render them more susceptible of cold than they would have been otherwise. It is therefore necessary that they should be more carefully guarded from hard frost when it comes. It will also be as well to shorten back, next March, all the branches which have burst into twigs; there is no fear of their dying. When they have lost their leaves we should transfer them from their old tubs to the new ones, and take the opportunity of renewing their soil, where it is loose, with fresh loam, such as would suit a Peach-border. In order to secure bloom hereafter they must be kept, while growing, in the hottest and most sunny place in the garden; if in front of a south wall so much the better. The flowers hitherto produced were prepared in the hot summer of Paris, and until similar effects shall have been produced on the trees by similar weather, no abundance of flowers can, we fear, be expected.

Potatoes.—*A Subscriber.*—Your Potato is the Purple Kidney, an excellent late variety.‖

Red Spider.—*A Subscriber.*—There is no plan of destroying this pest except by means of sulphur. The best way of applying it is to heat your flues or hot-water pipes, and then, while they are quite hot, to wash them with lime and flowers of sulphur. We fear the white worms you speak of are the grubs of some insect; and if so your soil must all be changed or burnt.

Roses.—*Green.*—What is to be gained by budding Roses on evergreen stocks? That will not make the former evergreen. If you want evergreen Roses you must trust to the China Rose and its allies.—*Octavia.*—If your Roses are transplanted carefully they will take no harm. Shorten the branches after they are removed. We have not made up our minds about reprinting the "Rose Garden." Do not allow this year's buds to bloom this year.

Underwood.—*L. Q. Z.*—The following ornamental evergreen and deciduous plants may be recommended for planting under trees:—Common and variegated Holly, Aucuba Japonica, Laurustinus, Berberis Aquifolium, Viburnum opulus and oxycoccus, Ribes sanguineum, Cornus sanguinea, Leycesteria formosa, common and Portugal Laurels.‡

Vines.—*W. C.*—The circumstance of your Vine-roots being 2½ feet below the surface, and in cold, stiff soil, partly accounts for the berries neither swelling off nor colouring. The great slope of the border has probably occasioned it to be too dry in summer; for borders are generally too wet and cold for the roots of the Vine in winter, and allowed to be too dry in summer. You had better make a fresh border with rich turfy soil, using the surface of the old, which you say has lately been made good, for mixing with the turf and other materials proper to be introduced. Young Vines certainly; those that are 30 years old could not be replanted with advantage.‖

Miscellaneous.—*A. W.*—We would willingly repeat incessantly answers to questions continually asked; but where are we to find room for them? It surely is not asking too much of our readers to consult a few indexes for information which has been very often given. In the particular instance to which you refer we could not repeat the recommendation, the having given it at all being contrary to our rule, and only forced upon us by indispensable necessity. It is very possible that we may be sometimes imposed upon. Who is not? But we are not aware of any recent instance. Do not suppose that we are always ignorant of the authors of facts, which are only signed for the public eye with the initials of the writers. We are much obliged for your good wishes. Our opinion about guano is exactly the same as your own.—*A Subscriber* is answered in another column.‡—*D. W.* will find a select list of greenhouse climbers given at p. 392 of the present year.‡—*A Lady.*—We are unacquainted with any Fig with such a name as the Dough Fig or the Velasca. Very little is known in this country about this kind of fruit. Lindleya grafts readily on the Whitethorn, and will, in all probability, prove quite hardy in South Devon.—*Thomas Hughes.*—See a Leading Article to-day.—*J. W.*—Write to the keeper of the Bazaar. We have no other information than the advertisement.

SEEDLING FLOWERS.

Dahlias.—*W. H. S.*—Your seedling wants fullness in the centre, and the flower altogether wants depth.*

Fuchsias.—*J. P.*—Your seedlings are large, stout, and fine flowers; but the market is stocked with varieties from which it would be impossible to distinguish your specimens; the dark varieties are of no use. Picta, the light variety, is a good flower and worth keeping.*

Lophospermums.—*Joseph Fryer.*—Your seedling is curiously mottled, but it wants brightness of colour; it will always have a faded appearance.§

Pansies.—*F. T. G.*—Your seedling is a flower of good size and substance; top petals deep purple, with a narrow margin of yellow; the lower petals yellow, with good eye.*

Pelargoniums.—*L. L.*—Your seedling is a well-formed and very good flower; it, however, bears too strong a resemblance to an excellent variety in cultivation named Hodge's Oberon.*—*J. R.*—Both your flowers are rather deficient in form. No. 1, which is fine in colour, has the lower petals too long and narrow, and the divisions between are large; in colour, texture, and substance, the flower is of a superior order. No. 2 has richly-coloured top petals, but altogether the flower is rather coarse, the centre somewhat discoloured, and surface of the petals velvy.*

Erratum.—At p. 660, article *Potter's Guano*, instead of "one-fifth guano and four-fifths *night*-soil," read "one-fifth guano and four-fifths *light*-soil."

TO LANDOWNERS, AGRICULTURISTS, BUILDERS, &c.

McKIBBIN'S Improved ROOFING FELT is peculiarly applicable as a substitute for Slate, Zinc, Tiles, and other articles used for Roofing, from its ECONOMY, LIGHTNESS, and DURABILITY.

The disadvantages attending other materials used in roofing, preventing, in agricultural districts, many useful houses and sheds being erected or rendered waterproof, it is submitted that the improved Roofing Felt will in a great measure—and in some instances altogether—obviate them, and prove most serviceable from its lightness, durability, and impermeability to water and damp, in covering Houses, Cattle-sheds, Workshops, Ropewalks, &c., and for the sides, as well as roofs, of light structures for plants, being likewise a non-conductor of heat; besides its economy in repairs, the timber where it is used may be so light as to save its whole expense; it requires no other coping, and may be applied by any person of common ingenuity; being flexible and portable also, it is free from breakage; the expense of carriage is inconsiderable in comparison with slates, tiles, &c., and it is not liable to contraction like zinc.

Sold in sheets 32 inches by 20, at 5d. each (being less than 9s. 6d. per square of 100 feet), with directions for applying them.

Orders will meet with prompt attention if addressed to H. C. BOWDEN, 18, East India Chambers, Leadenhall-street, London, or to the following agents:—Liverpool, Messrs. Grueber & Co., 11, Manesty-lane; Plymouth, Thomas Stevens, Esq.; Birmingham, William R. Loyd, Esq.; Sunderland and Newcastle-on-Tyne, Messrs. John Ritson and Sons; Hull, William Ward, Esq.; Bristol, Messrs. Moor and Hewitts; Ramsgate and Deal, Messrs. Edward Hodges & Co.; Whitehaven, William Todd, Esq.; Glasgow, Malcolm Carmichael, Esq., St. Enoch-square; Cork, Messrs. Richard Wallis & Co.; Belfast, Messrs. Grueber & Co., Dunbar's Dock; who have also on sale McKIBBIN'S improved SHEATHING, BOILER, RAILWAY, and other FELT.

*** The "IMPROVED ROOFING FELT" will be found much more durable than the Common Felt made in lengths, and not subject, like it or continuous sheets of other material, to be stripped by storm; it can also be more easily repaired, and from the simple mode of application recommended, the wet can not percolate through nail-holes, being only fastened down at the overlaps.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 21, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

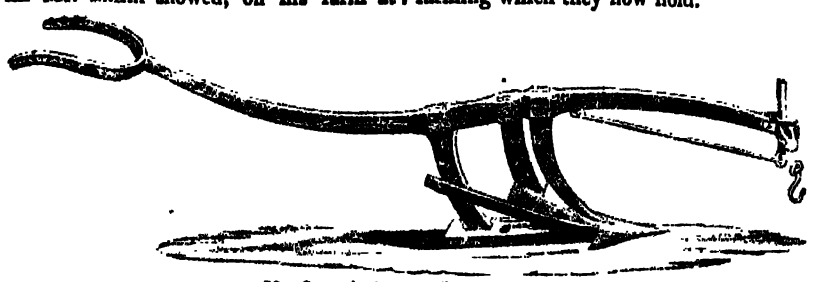
THURSDAY, Sept. 26 Agricultural Imp. Soc. of Ireland.
WEDNESDAY, Oct. 2 Flax Imp. Society of Ireland.
THURSDAY, Oct. 3 Agricultural Imp Soc. of Ireland.

FARMERS' CLUBS.

Sept. 23—West Hereford, W. Firle, Fairford, W. Market, Yoxford.
Sept. 24—Framlingham, Isle of Thanet, Rayleigh.
Sept. 26—Richmondshire.
Sept. 27—Halesworth, Hadleigh.
Sept. 30—Chepstow.
Oct. 2—Harleston.
Oct. 4—Collumpton, Abergavenny.

A DESCRIPTION OF THE IMPLEMENTS OF CULTIVATION cannot be better prefaced than by an article on those employed in drainage, for this process lies at the foundation of all good—*i. e., economical* Agriculture. Opportunities will hereafter occur of referring to the draining-plough, the mole-plough, and other smaller tools required in draining. the first is rarely useful, except on the most homogeneous clays; the second is used to a considerable extent on pasture lands—by means of it a very imperfect, and by no means permanent description of drainage is effected; and the others are not individually of sufficient importance to justify the occupation of space here by further allusion to them. Our present object is to describe THE SUBSOIL PLOUGH, which is, strictly speaking, a drainage implement.

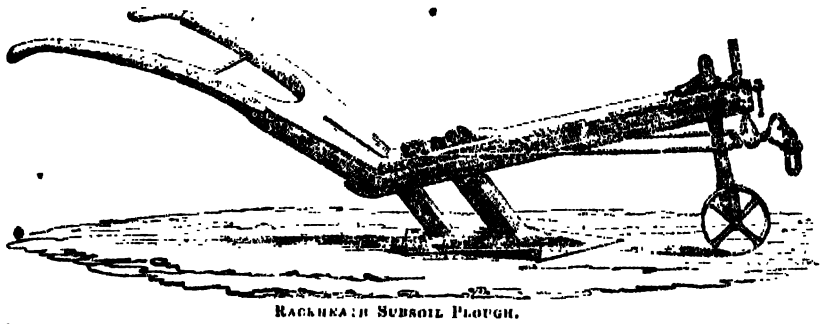
Land cannot with benefit be rendered loose, to any considerable depth, if it be wet. The subsoil plough is not useful to the farmer of wet soils; his land must be dry, artificially or naturally, before this implement can be beneficially used by him. We do not wish our readers to depend on a mere assertion of this; but, without defending the statement at any length, it appears sufficiently obvious, that to deepen a wet soil would be to render it almost uncultivable by horse-labour—for draught animals require a firm footing, and this, in wet districts, it will be found, is always preserved for them by the shallow cultivation which experience teaches such lands should receive. And it is not unlikely that the practice of subsoil-ploughing, (or stirring, as it might more properly be called,) which, we find, from some of the County Reports to the Board of Agriculture,* prevailed half a century ago, has died away in those districts where once it existed, because it was unconnected with any efficient system of drainage. It was not till Mr. Smith showed, on his farm at Deanston, the great advantages following the adoption of both these operations together, that either of them obtained that high place in the practice of good farming which they now hold.



MR. SMITH'S SUBSOIL PLOUGH.

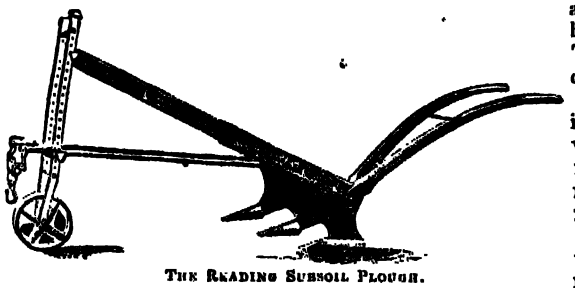
Mr. Smith's subsoil-plough consists of the ordinary framework of a plough, without the mould-board, made strong enough to stand the shocks and the strain to which an implement requiring the force of four or six horses to work it must be subjected. This framework is about 15 feet long. A sole-plate, on which a feather-shaped or pointed sock slips, is attached to it by means of two uprights and a curved coulter. The height of the plough, when held in a working position, from the sole-plate to the beam, is about 22 inches. It is thus enabled to go to a depth of 20 inches. From the furrow side of the sock a spur projects, over which the mass of subsoil cut by the coulter and share is raised and broken, and falls down again. By the action of this spur, and of the whole implement, the subsoil is effectually stirred, without any of it being lifted to the surface. The effect of subsequent deep ploughing, after the action of the air has thus sufficiently meliorated the subsoil, will be beneficial, while without this previous cultivation it would have been injurious. The subsoil-plough requires at least four horses to work it efficiently. The draught in a rather clayey soil was 11½ cwt., going from 16 to 18 inches deep. The draught of the common plough, which preceded it, and turned out the furrow in which it worked, was about 5 cwt., so that the work for the horses was about the same in either case. It is found that the wider the furrow is turned out, the more efficient is the operation. In a subsoil ploughing-match, held at Stirling in 1840, it was found that the best work was done by that subsoil-plough which was preceded by the old Scotch plough, which casts a very wide furrow. It is evident that this does not necessarily imply that the subsoil-plough shall pass along a fewer number of furrows in a given width of land than where the furrow is narrower, for the width of the furrow depends not on that of the furrow-slice, but on the width of the plough, which thrusts the furrow-slice from the fast-land. The expense of the operation of subsoil-ploughing is considerable, varying from 24*s.* to 30*s.* per acre, according to the nature of the land; and it is evident that in rough strong land, where the pickaxe is afterwards required to remove the obstructions which the plough has met with, the expense will be much greater than this. This is a statement of the debit side of the farmer's account of subsoil-ploughing. To find its credit side, he must compare his land as it was—wet or scorched, according to the weather, on which it was wholly dependent—with his land as it now is after the operation, free and friable, dry and open; and he must take the crop he raises now at less expense, too, than formerly; for the land, being drier, is more easily tilled; and he must compare this crop with that he used to raise on the same land. The difference will generally yield a large per centage on the capital he has laid out; the experience of Mr. Brodie, of Abbey Mains, East Lothian, on this subject, is given by Mr. Sullivan in another column of this Paper.

Since the construction of the Deanston subsoil-plough, one of a lighter form, made of wood, has been invented by Sir Edward Straccy, of Rackheath.



RACKHEATH SUBSOIL PLOUGH.

It is used just as Mr. Smith's implement, but the absence of the lateral spur which characterises the Deanston subsoil-plough, must render it a less efficient implement. In this, however, never having seen it at work, we do not speak from experience.



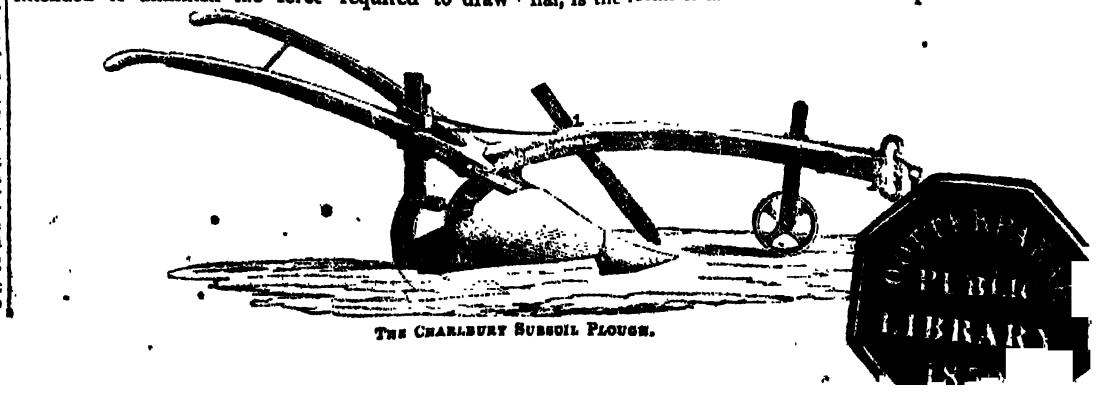
THE READING SUBSOIL PLOUGH.

The same objection exists to another form of the subsoil-plough, of which a figure is given below, which was invented and is manufactured by Messrs. Barrett and Exall, of Reading.

The triple-toothed form of this implement was intended to diminish the force required to draw it. It will be easily seen that when in full work the uppermost tooth is in advance of the second, and that again in front of the lowest, so that the tenacity of the soil and subsoil which hinders the motion of the implement is, as it were, overcome piecemeal, and probably with less resistance than would be presented to the action of any other method. The efficiency of this implement as a stirrer of all the subsoil is, however, far from perfect.

Attempts have been made to combine in one implement the subsoil with the common plough which ordinarily precedes it. Perhaps the most successful of these is that which has resulted in the construction of an implement now manufactured by many parties, which appears and acts first as a common plough worked by two horses, and then, by a simple removal or lifting of the mould-board, is fitted to act as a subsoil-plough, and, in returning, to stir the bottom of the furrow which has just been opened.

The Charlbury subsoil plough, figured below, invented by Mr. Pusey, and described in the first volume of the English Agricultural Society's Journal, is the result of another of these attempts.



THE CHARLBURY SUBSOIL PLOUGH.

* Thus, in the Report of Lancashire, by Dickson, there is the following notice of the "miner, or deep-stirring plough:"—"This is another tool of the plough kind, somewhat similar in its nature, which was introduced into the county nearly about the same period as the trench-plough. It simply consists of a ploughshare firmly fixed to a strong beam, by means of a strong sheath and handle, without any mould-board. It is usually drawn by four or more horses, being made to follow, in the furrow, the common plough, so as to penetrate into, loosen, and stir up the undersoil, without turning it up, to the depth of from 8 to 12 inches below the tract in which that plough had gone." A more accurate description of the way in which the implement is used than is contained in this paragraph of 1813 could not be given now.

This figure is sufficiently instructive as to the nature of its construction; it is not, we believe, found to act well in practice, as the tendency of the attached tooth is to lift the implement behind so as to hinder its efficient action as a plough. Another implement, which probably originated in this invention of Mr. Pusey's, was first exhibited by Mr. Bruce, of Teddington, Stratford on-Avon, at Derby, and is mentioned approvingly by the Society's Judges. It differs from the Charlbury subsoil-plough in the position of the stirring-teeth, which are situated not in the wake of the mould-board but considerably in front, and to the right side of it, so that they work in the last furrow that was opened, and stir the bottom of it just previously to its being filled and covered by the furrow-slice in the act of being turned. This arrangement is said to be effective without at all deranging the action of the implement, or throwing additional labour on the holder. The most efficient mode of subsoil-ploughing is, however, doubtless that recommended by Mr. Smith of Deanston, in which a good wide plough precedes his implement, drawn by 4 or 6 horses.

The advantage of subsoil-ploughing land which has below it a sufficiently frequent occurrence of channels—be they natural or artificial—through which the water held in it may rapidly escape, is unquestionable. The gardener does not hesitate to take every opportunity of deepening his soil, and the farmer's interest is identical with that of the gardener. To increase the fertility of the soil, by rendering a greater depth of it permeable to the roots of plants, and by rendering it independent of our variable climate, should be the object of both; and no means are so likely to accomplish it as subsoil-ploughing *after* draining.

Among the various subjects connected with the practice of Agriculture which offer themselves to us for comment, there is one of great importance, to which we are desirous of calling the special attention of our readers. We allude to the improvement which may be effected in the condition of the agricultural labourer by the general introduction of the allotment system.

To improve the condition of the agricultural labourer is a highly important object—one well deserving the attention of every person engaged in the cultivation of the soil. To remove the depression and distress which too often constitute the lot of himself and his family, and to elevate them in their moral and intellectual character, is a noble project; the accomplishment of which would annihilate the most prolific sources of pauperism and crime, and substitute a cheerful, willing, and able workman in the place of a discontented and depressed one.

Of all the measures which have been adopted for the promotion of this important end, none appears to be more easy of introduction, or more efficient in the accomplishment of its purpose, than the system of allotting to the labourer a small portion of land, which may be cultivated by himself in his hours of leisure, and by his wife and children, without infringing on the time occupied in the service of his master. The size of the allotment should vary with those circumstances of the family which affect their capability to cultivate—such as the age, strength, and leisure of the man, and the number and age of the children. Half an acre may be considered as a medium size.

Provided with such an allotment the labourer has a savings bank—if we may adopt the term—in which he may invest all his spare money and labour; and one of the first results will be that these will flow into the channels thus provided for them, instead of being lost or squandered in the beer-house. The produce of the allotment increases his income materially, and adds to his family comforts; he becomes contented and happy, and regards with pleasing satisfaction the stake which he possesses in the property of the community. A happy effect upon his moral character is the consequence. Placed in a situation of comfort, independence, and contentment, he is more likely to discharge his duties towards society than if in a state of dependence and misery; one is the atmosphere of virtue, the other of pauperism and crime.

The benefit thus conferred on the labourer is productive of great advantage to the community, and to every individual of it. The labourer pays a good rent for his land, and pays it with punctuality. He cultivates it highly by manual labour, and supplies it abundantly with manure from his cottage and his pig. The produce is therefore large. Neither himself nor his family are burdensome to the community, either in a workhouse or a gaol, but instead of dependent paupers or lawless criminals, society obtains orderly and productive members.

The allotment system has been carried out to a large extent in various parts of the kingdom, and the fullest evidence has thus been afforded of its many advantages. The Agricultural Employment Institution, which was established in 1833, turned its attention to this subject, and collected some striking facts, which were published in the form of a pamphlet, but are probably little known. The Institution is since extinct. We extract a few of the most remarkable cases.

"*Colerne, near Bath.*—In 1618, twenty-nine acres of land left in trust for the poor, under the superintendence of the clergyman, were divided amongst thirty families. Prior to the year 1818, this land was let to a large farmer, at only 15*l.* per annum.

"Results:—The tenants and their families have been rendered all honest and respectable; *they have been kept entirely free from parish relief*, and become the farmers' most steady and industrious labourers; the land is so greatly improved by spade husbandry, as to be worth double its value at the time it came into the hands of the poor."

"*Croudall, Hants.*—The allotment system has partially existed in this parish (which contains nearly 1200 inhabitants) since 1819, but of late years has been increased, until 150 acres have been divided amongst 120 labourers, some of it being the very best land, and let as high as 3*l.* per acre, free of tithes and rates.

"Results:—The land is improved, poor-rates are reduced, rents are regularly paid, and new applications for land are made every year. Croudall, which was notorious for thieves and poachers, is now quite altered, and not a man from thence joined in the riots of the agricultural labourers which occurred in the neighbourhood in 1830."

"*Long Newnton, Wilts.*—This parish in 1830 contained forty-two labouring families, all wretchedly poor, the rates paid to them in six months, from October, 1820, having amounted to 206*l.* 8*s.* Every cottager was offered as much land at a farmer's rent as he and his family could cultivate, without interfering with the labour required by the farmers, if they would endeavour to raise themselves above the poor-rates by their own industry. All accepted the offer, except four infirm old men and two poor widows with large families. They had their land on lease, one acre and a half each of arable land; and, when any of them could purchase a cow, were allowed three acres of meadow land, at the rate of 5*l.* 4*s.* per annum for each cow.

"Results:—By the autumn of 1823 every labourer in the parish, except two infirm old men, had not only emancipated himself from the poor rates, but had also punctually repaid the sum of 44*l.*, which had been lent them to purchase tools and seeds; each family had got into cultivation their acre and a half of land; and two or three of them had claimed their Grass-land, having saved money enough to buy a cow; and one family had two cows. The rates for the six months from October, 1823, was only 4*l.* 12*s.* 6*d.* The labourers were reclaimed from idle and bad habits, and became most valuable servants. The widows, before this time, had also taken land, and supported themselves and families without parish relief, although one had six and the other eight children."

"N. Atherton, Esq., of Calne, having come into possession of some property at Kingston, St. Michael's, Wilts, about 6 years ago, immediately let out to the poor forty acres of land in allotments of from three to four acres, at the farmers' rental. This land is well cultivated, and considered to produce 50 per cent. more than any other land in the neighbourhood; *the labourers are raised from a disgraceful state of pauperism* to an honest independence, and the poor-rates are reduced to a comparative trifle."

"*Dauncey, Wilts.*—Some years back the farmers of Dauncey let to the poor labourers of their parish with families, three acres of land each, at 2*l.* per acre; and soon afterwards the late Lord Peterborough built a barn for them, where they could thresh their corn.—Those men struck their names off the parish books, and brought up their families in habits of industry and honesty, and all of them cheerfully paid towards the support of the aged and infirm of the same parish."

What evidence could be offered more striking than this, to prove the efficacy of the allotment system in diminishing—we may almost say annihilating—pauperism and crime, and improving the moral, intellectual, and physical condition of the labourer? What solid objection can be urged to the universal adoption of the system? and why, with evidence such as this, afforded so long ago, do we not find every agricultural labourer in England, who has a wife and family around him, and every single labourer in circumstances to be benefited by it, settled on his allotment of land, an independent and a happy man?

We purpose continuing our remarks on this subject, offering further evidence in support of our views, answering objections which have been raised against the system, and pointing out what we conceive to be the best practical method of effecting its general introduction, and promoting its beneficial operation.—*F.*

ON THE BEST SPRING CROPS FOR FOOD.

[The following paper was read by the Rev. R. Mounts, of Eatington, at a late meeting of the Farmers' Club, at Stratford-on-Avon.]

The points for consideration are—the earliness, quantity and quality, cost of production, and the influence on the succeeding crops of the different kinds of artificial spring food for cattle.

The various sorts may, perhaps, be comprised under Lucerne, Rye, Rape, Rye-grass, Italian Rye-grass, Trifolium Incarnatum or Annual Crimson Clover, Red Clover, Cow-grass, Winter Barley, Cow-cabbage, and Winter Vetches.

Lucerne may be managed in two ways:—Either by preparing a good piece of land, got quite clean and well filled with manure, and reduced to as fine a mould as possible, and drilling the seed, in April or May, from twelve to eighteen inches apart. It should not be sown too early, for its first growth being very delicate, the late frosts in the spring will destroy it. And I should give the preference to eighteen rather than twelve inches, because you can then run the plough between the rows at the end of autumn, and thereby afford a greater facility for cleaning it early at the beginning of the year; and the greater distance also enables you more readily to manure it. After the first cutting, if the spaces between the rows be well hoed and cleaned, it will add much to the growth of the plant. By adopting this plan, supposing Lucerne sown this year, it will be fit for the first cutting in the middle of April next; it may be cut twice or even three times in the first year, and then it will bear cutting five or even six times. Or should this be thought too expensive and troublesome a process, it may be sown broadcast, and harrowed in with Barley, in the same manner as Clover and other artificial Grasses are sown. The quantity of seed should be about 20 lbs. an acre. A field of 11 acres so sown, was mown three times the first year; in the second, it supported from the first mowing, with a small addition of Oats, 30 horses for seven weeks; from the second, 20 horses for seven weeks, without anything else; and from the third, with a small addition of Oats, 20 horses for six weeks. The value of the produce may be estimated at 11*l.* an acre, after deducting all the expenses, rent, and other charges. In the third year it maintained 35 horses for eight weeks, with a small addition of Oats, from the first mowing; from the second, nearly the same; and from the third, although not so productive, yet it was of great value and benefit, on a farm where there was little pasture. It would be easy to adduce many other instances of the productive power of Lucerne. This plant will stand and grow vigorously for 10 or 12, or even 15 years, if nurtured with soot, malt-dust, farm-yard manure, or guano. It produces a great deal of milk in cows and ewes, and it is highly relished by them. It should be cut just before it has come into blossom; and being mown on the preceding evening, it should be removed for use on the following day. Should it be objected that it is a long time in coming to perfection, it may be answered that it is not more so than Clover; and that this "plant of plants" is a giant from its infancy, advancing from strength to strength. There are many varieties of it, but the purple-flowered is the most profitable to the cultivator. It ought to be added, that it may be made into hay, and forms excellent fodder; but it is much better adapted for what is called *soiling*. This most valuable Grass is best cultivated on a good, dry, warm Barley-soil; still it answers very well on a stiff clay, as I have proved by my own experience, and that of a neighbour, on a similar land. Whenever the land returns to the ordinary rotation of crops, it has been found more congenial to production. It has been stated by one of our most intelligent and practical farmers, "that no farm, if it has a suitable soil, should be without Lucerne, in the proportion of one acre (at the least) to every four horses."

Rye is the earliest Grass used as spring food for cattle, next to Lucerne; and this, together with its bulk, forms its chief recommendation; for, unless cut quite young, it is not much relished by cattle. It flourishes on a poor sandy soil or heathy land, where other Grasses would not grow. In the work on British Husbandry, published by the Society for the Diffusion of Useful Knowledge, it is stated that the soils most appropriate to the growth of Rye are those that contain the greatest proportion of sand; and, on the authority of Von Thaër's "Principes Raisonnés d'Agriculture," that it is the only Corn which can be grown upon land which is composed of a mixture of more than 85 per cent. of sand with other earths. The preparation and culture of Rye are essentially the same as for Wheat, than which it is much more hardy, but infinitely less valuable. Within the memory of man, it formed a chief part of the food of the poor of this kingdom, as it does now in the North, and other parts of the Continent; but I fancy the use of it with us, after having been accustomed to good Wheat bread, would occasion a good many *wry* faces. It should be sown at the latter end of August, or early in September, in the proportion of three bushels and a half to the acre. The land should have been previously manured. It may be sown either broadcast or in drills, but the latter is preferable, as it affords an opportunity of hoeing and cleaning the land. Being a hardy plant, it will stand the winter, even when very severe indeed. In a Prize Paper in the Journal of the Royal Agricultural Society, it is stated in reference to the management of Rye—"So soon as the Wheat is cut in the autumn the plough should be set to work. This may be done even before it is carted, during the mornings of harvest. A single ploughing is given, and a very slight dressing of any kind of short manure. In some cases, where the farmer

lays on his manure in the autumn for Turnips the ensuing year, it might be better to lay it on before the ploughing. It should be remembered that the slight dressing should not at all be considered as given to the Rye; in reality, it becomes incorporated with the soil, and more intimately mixed with it than by the ordinary mode of spreading it on in the autumn, and any part of it which the Rye may abstract, will be more than compensated by the droppings of the stock, and the carbonic acid gas which they evolve while consuming it, and which the soil more readily absorbs in the spring than in any other part of the year, evaporation going at that period to a much smaller extent than in any other. The advantages of its cultivation are summed up thus:—Provision of excellent green food is made at a season of the year when, of all others, it is most wanted. It is produced without sacrificing any portion of the usual rotations pursued on a farm, and with little extra labour; nor does it interfere with the management of any preceding or succeeding crops. It will grow on any soil, but it is especially calculated for poor loose land, when every other green esculent is more or less uncertain. It will bear any degree of frost to which our climate is subject, and is sufficiently hardy to defy the effects of the coldest situations in the country, being there cultivated instead of Wheat for a corn crop, from necessity. It is as inexpensive, or more so, than any Grass or leguminous plant. It is readily consumed by stock, especially young animals. It improves rather than deteriorates the soil upon which it is grown. On the other hand, it is only fair to state the observations of others in answer to these high praises. Loudon remarks that husbandry must be bad or unfortunate which requires the necessity of having recourse to it. The opinions of practical agriculturists, so far as I have been enabled to obtain them, are divided. From one I find that, after several years' trial, he has at length abandoned the use of it, from a conviction that it injures the succeeding crop; and that he could always tell, to a yard, from the appearance of the following, where the Rye had preceded it. Another considers there is something poisonous in its nature to other plants, and that he has invariably found the wire-worm most destructive after Rye. From others I have been informed they always grow a certain portion on their best land, and they are satisfied that the early and abundant quantity of green food it supplies is of the greatest value. It may be matter for consideration in the present peculiar season, whether it would not be advisable for the farmer, at all events this year, to supply himself with this earliest food for his cattle, in default of Swedes, Hay, and indeed, Bean and Barley straw.

(To be continued.)

PROPER TIME TO REAP WHEAT.

The discussion and remarks in some of your late Numbers respecting the best time to harvest Wheat as regards its state of ripeness, has recalled to my remembrance a circumstance which occurred some five or six years [illegible] was visiting a friend in an excellent Wheat-growing district beyond Hounslow, and when conversing with a neighbouring gentleman in whose Wheat-field we were walking, my friend remarked that his piece of Wheat was the forwardest thereabouts, and would be fit to cut in a fortnight. The gentleman said he meant to cut early, as he had understood was often done in parts of Hertfordshire, the millers liking the Wheat all the better for it; and he intended to begin on Monday week. Upon which I remarked that if the grain had ceased to derive nutriment from the straw it might be cut to-morrow, and that it would be easy to ascertain that by examining the thread-like connection of the grain (which I shall call the umbilical thread) to the receptacle, whether the grain had ceased to receive nutriment. Whereupon we first searched for and found at the edge of the cart-way a plant in a quite green and growing state, and examining it, saw that the umbilical thread was in a healthy and growing state, and the grain still milky. We next selected several ears from the crop (not the ripest), and on examining them saw that the umbilical thread was in a withered state, and incapable of conveying nutriment. Afterwards we selected some of the ripest ears, and saw the umbilical thread quite withered and dry. But these ripest ears were far short of being dead-ripe. The gentleman said, "This examination has convinced me, and I will begin to-morrow." He did so, was satisfied with the result, and continues the practice. His immediate advantage was that he was enabled to prepare his land and get a good crop of mouse-tail or stubble Turnips. The harvest of that year was generally prolonged by very rainy weather, and in about a month after the examination I saw his Turnips being hoed and a neighbour's sprouted Wheat being carted on the same day. Now there are many reasons why Wheat should be harvested as soon as it can be without loss of quantity or quality of the grain; and I will suppose that it may be, and ought to be, done at least a week earlier than is usual by the present general practice, and then the following may be some of the advantages to be gained:—viz., a week's time in operating upon or cultivating the land, in consequence of the crop having been so much the sooner cleared off; the avoidance of a week's plunder by sparrows, other cone-billed birds, and feathered game; which, in consequence of being deprived of a week's corn-food, may confer a benefit by feeding on the seeds of weeds, such as Polygonum aviculare, and other Spergula, instead; less grain will be wasted by scattering, as ears are less liable to be broken off and the chaff less liable to loosen, than when fully or dead ripe; the Straw must be of better quality for every purpose. If the crop of Wheat should be thin, then, if seeds should have been sown or the field foul with weeds, there will be a week's less growth of green rubbish to retard the drying of the Straw in sheaf; and if the crop of Wheat should be heavy (which would as a matter of course half starve any seeds sown), then the young seeds would a week sooner begin to gain strength against the winter. I am not a practical farmer, and for that reason cannot precisely say what all the advantages would be, but I hope some of your correspondents will enlighten your readers on the subject. I do, however, know a little of botany, so far as English plants are concerned, and though still less of vegetable physiology, yet I venture to assert that the plan of examination of the umbilical thread will be a sure guide. —*J. C. X.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

[The communications of the two past weeks from Mr. Sullivan, on the operations of the harvest, were published in order that they might be seasonable, before his previous papers on Tillage operations were concluded. The following is the last of the latter series.]

Fallowing.—Although the practice of fallowing has existed from the earliest ages, it appears to have been entirely unknown in Scotland till about the commencement of the last century. The singular means by which it was introduced into East Lotnian, and the unfavourable light in which the practice was there first regarded, are thus given by Somerville in his Survey of the County, drawn up for the Board of Agriculture:—"Two persons of high respectability are mentioned as being the first who followed the practice; the one a proprietor, the other a farmer. The proprietor was the Right Hon. Thomas, sixth Earl of Haddington, who set the example upon his own estate. The farmer was Mr. John Walker, in Beanston, as we are informed from respectable authority, who took the hint from some English travellers, while they spent a night at his house, and with whom he had a good deal of conversation upon the subject, so much to his satisfaction that he made an experiment upon six acres the following summer, which he carried through in spite of the animadversions of his neighbours, who were divided in their opinions as to the sanity of his mind or the stability of his circumstances. The result of the experiment gave them a better opinion of both, and the return was so abundant as to induce him to extend his next year's fallow break to twenty acres; soon after which the practice began to spread, and so early as 1724, fallowing upon all the deep strong soils was common throughout the county."

The practice of fallowing thus soon became general throughout East Lothian upon all kinds of land, but the extension of furrow-draining and of drilled crops, which admit of considerable after-culture, has greatly contributed to render bare-fallowing less frequently indispensable upon strong adhesive soils, and altogether unnecessary upon those of a light friable description. The land in this county is too high rented and too valuable to devote any portion of it unnecessarily to an entire year's cultivation without producing any immediate return; fallowing, therefore, is now almost exclusively restricted to the strong cold adhesive clays, which have not been yet properly drained, and on which the cultivation of Turnips would be very unprofitable in many seasons, and most laborious and expensive in all; or to land which has become so much infested with Couch-grass (Triticum repens), Knot-grass (Arrhenatherum avenaceum), and other weeds, that their complete destruction could not be effected while preparing it for green crops. The extension of the culture of drilled crops has, no doubt, greatly diminished the extent of land annually under bare fallow; but for many reasons, which it is unnecessary here to specify, these crops have not entirely superseded the process, and are not likely to do so for a considerable time to come. Wheat, the staple crop of East Lothian, is the most valuable production of our strong heavy soils, and for it summer fallow evidently affords an excellent preparation; but independently of this, another and perhaps a stronger reason for annually devoting a certain portion of the farm to fallow, arises from the fact that almost the whole of the operations connected with the process are performed at a time (from the conclusion of Turnip-sowing till harvest) when the men and horses, at least the latter, would be otherwise comparatively idle. Although strong, stiff, adhesive clays—the only description of land upon which bare fallows are held to be indispensable—derive undoubted benefit from aeration during the summer months, yet no farmer here ever thinks of sacrificing so much rent and labour in fallowing land merely to afford his men and horses constant employment, or to give the soil rest and the benefit of exposure to the atmosphere; but when a field, or some part of it (for an entire field is seldom fallowed indiscriminately), becomes, after a course of cropping, excessively foul with root-weeds, bare or naked fallow is resorted to as the only effectual means of extirpating the greatest enemies with which useful crops have to contend.

The first or winter furrow for fallow is seldom given until the other stubble land intended for green crops has been ploughed. Either of three methods of ploughing is adopted, according as the land may be in a wet or a dry condition. In wet retentive soils, the ridges are either gathered up or cloven out into halves, keeping the furrows open in order to preserve the land in a dry state in winter; but the general mode of ploughing is casting.

The second ploughing is sometimes given after the spring seed-time is past; but unless the weeds happen to be very numerous and luxuriant, it is most frequently delayed until the Potatoes and Swedish Turnips are sown. If gathered up before, the ridges are now cloven down, and *vice versâ*. This ploughing is also not unusually made in a direction crossing the ridges, but in whatever manner the land may be ploughed, it remains in that state until the Turnip-sowing is completed. Should a fall of rain, however, occur after a continuance of dry weather, advantage is taken of it, and when the surface becomes sufficiently dry again, it is harrowed with facility into a fine state, which effectually disengages the weeds from the soil and exposes them to the atmosphere.

As soon as the Turnip-sowing is finished, which is usually about the end of June, the working of the fallow is again resumed. After the weeds, brought to the surface by previous operations, have been gathered off, the land is ploughed in a direction crossing the former ploughings, and as deep as the strength of the horses can accomplish. Deep ploughing is deemed indispensable at this stage of the fallowing process, not only to increase the depth of active soil, but also to bring to the top the roots of all vivacious weeds. After being ploughed the land is repeatedly harrowed and rolled; the grubber is also employed with effect at this stage, in dragging to the surface root-weeds remaining in the soil.

As the great object is the thorough extirpation of weeds, the utmost attention is bestowed, and considerable expense incurred upon their collection. The quickens, as the roots of the Couch-grass and other weeds are termed, are disposed of in different ways, according to the state of the weather and the inclination of the farmer. When the surface admits of being reduced to a fine tilth, the strong vegetative powers of the root-weeds thereby exposed to the weather, are frequently destroyed by the powerful heat of a July sun; and in this case they are ploughed down again into the land with safety, economy, and advantage. But the long continuance of dry and warm weather, requisite to destroy Couch-grass, seldom occurs here; and hand-picking, tedious and expensive though it be, is therefore the most general way of getting rid of the enemy. After being gathered the weeds are sometimes burned, and the ashes spread upon the surface; but the usual, and perhaps the most judicious practice is, to cart them to some convenient corner of the field, to be afterwards formed into a valuable compost with quick-lime.

In most cases the land is a second time cross-ploughed, reversing the last furrow-slices, well harrowed and rolled, and any weeds which may still appear are hand-picked as before, after which it is, in ordinary cases, perfectly clean; at all events the ridges are now formed in order to provide against wet weather. They are always gathered up, and every attention bestowed in giving them the necessary and uniform degree of curvature. The original ridges are usually followed in marking off the new ones; but if it be desirable to alter their direction or breadth, this is the proper time for doing so.

The application of manure is the next operation. The usual practice is to convey the dung to the field some time before it is required for use, in order to undergo the necessary process of fermentation, and to have it at hand, but when the field lies contiguous to the farm-offices the dung is commonly prepared in the yards. In either case it is carted along the ridges, and pulled out by a man with a dung-drag into equal and equidistant heaps, proportionate to the quantity allowed per acre. To facilitate and insure accuracy in spreading, the middle of each ridge is sometimes lightly rolled. The ploughs follow close upon the spreaders, in order to prevent any loss arising to the dung from evaporation. Lime is also frequently applied to fallow, with or without dung: it is scattered upon the surface and ploughed in with a light furrow, and incorporated with the soil by the action of the harrows. Many farmers consider this to be the most judicious period for the application of lime to the land.

In ploughing in the dung the ridges are gathered up again, by which an increased degree of curvature is imparted to them, or cast by ploughing two ridges together. In either case the furrow-slices are taken broad and shallow in order not to bury the dung too deep. This ploughing generally concludes the fallowing process, nothing more being done with it until seed-time, when it receives the last seed-furrow. Instead of giving the seed-furrow in the ordinary manner, some farmers plough the ridges into small drills about 10 inches apart. This is what is termed ribbing, and its object is to prevent the throwing out the plants in winter, by affording a good cover to the seed. The preceding operations are in most cases completed about the end of July or early in August if the season have proved favourable, but the working of fallows is often continued during harvest.

Land is generally fallowed after a crop of Wheat or Oats, but when a Grass-field happens to be in a very dirty and unthriving condition, it is in many instances ploughed up during the summer, cleaned and otherwise prepared for Wheat to be sown in the succeeding autumn. Wheat usually precedes and succeeds the summer fallow. Many farmers have found, however, that the young plants of that crop are very liable to be thrown out of the soil by the influence of the winter frosts, when sown on fallows; it is not uncommon, therefore, to grow Oats or Barley instead of Wheat on bare fallows, where the soil is of that strong clayey character so much affected by alternate frost and thaw in winter.

I have now briefly detailed the general routine of fallowing pursued in the best-conducted farms in this county; but the nature of the season, the quality and condition of the land, and other circumstances, often render it expedient to vary the mode of procedure. As the leading objects sought to be attained by fallowing are the effectual extirpation of weeds, and the minute

pulverisation of the soil, the course of management must be varied according to circumstances, but the different operations persevered in till the land is rendered perfectly clean, and has acquired a certain degree of mellowness. No rules can therefore prescribe the exact number of ploughings, harrowings, &c. to be given; all these are regulated by the weather, and the nature and condition of the soil. The present season has been peculiarly favourable here for cleaning the land, and executing all the operations connected with fallowing.

Subsoil Ploughing.—Although the utility of subsoil ploughing, in connection with thorough draining, as a means of improving stiff clays, incumbent on retentive subsoils, is beyond a doubt, it is scarcely at all practised by the farmers in this county. With the view of ascertaining to what extent the operation is really beneficial, the East Lothian Agricultural Society offered, in 1837, the liberal premium of 21*l.* for the best Report of Experiments on Subsoil Ploughing, as compared with common ploughing. The prize was competed for, and obtained by Mr. Brodie, of Abbeymains, near Haddington. The land selected by Mr. Brodie for experimenting upon had been previously drained in every furrow, 18½ feet apart. It was fallowed in the early part of summer, and alternate portions of the field subsoil-ploughed along the ridges to the depth of 16 inches, immediately before applying the dung and giving the seed furrow. These experiments extend from crop 1838 to crop 1843, both inclusive; and from Mr. Brodie's valuable Report it appears that, although the produce of the first crop (Wheat) was not greater upon the subsoil-ploughed land than upon that ploughed in the ordinary manner, yet the increased produce of the last three years has more than compensated for the trouble and expense attending the operation, as the following summary of the results of the experiments shows. It may be proper to observe, that after the first crop the field was pastured with sheep for two years, and then ploughed up in 1841 for Oats:—

Increase in Oats of 10 bushels per Scotch acre, at 2*s.* 6*d.*			£1	5	0	
6 cwt. Straw, at 1*s.* 8*d.*			0	10	0	—£1 15 0
On Beans of 3 bushels, at 4*s.*			0	12	0	
Straw, 1½ cwt., at 2*s.*			0	2	6	— 0 14 6
On Wheat, of 2 bushels, at 6*s.* 6*d.*			0	13	0	
Straw, 5 cwt., at 1*s.* 8*d.*			0	8	4	— 1 1 4
						3 10 10
Expense per acre of the operation						2 0 0
Profit per acre on the rotation						£1 10 10

The manner of performing the other tillage operations, such as harrowing, rolling, grubbing, horse-hoeing, being the same in this as in other parts of Scotland, does not require any further notice in this place.—*T. Sullivan.*

ON MINERAL AND INORGANIC MANURES. No. XXVI.

By Professor Charles Sprengel.

c. Peat-Ashes.—If we consider that the ashes of the different sorts of peat are composed of different mineral substances, mixed in very varied proportions, and that there are amongst them substances either most nutritious to plants, or such as decompose the humus, it will be easily seen why their use as manures is at times very beneficial, whilst at others they avail nothing, nay, even are hurtful to the crops. The difference between peat and wood-ashes consists especially in their great amount of silica, oxides of iron and manganese, and gypsum; moreover, they never contain carbonate of potash, which is to be found in all ashes of wood and other plants, because if they contain potash, it is always combined with sulphuric acid. It is gypsum, chiefly, which constitutes their value as a manure, which, however, has been hitherto taken no notice of.

Those sorts of peat which have a small specific weight, and are of a light-gray colour, are considered the best, whilst the red are considered worth little or nothing; still these criterions are very deceptive, as at times the light and gray coloured manure much less than the red and heavy ones. Whether peat-ashes will be a good manure can be decided only by experiments on the fields, or chemical analysis, of which the latter is the surest, because experiments on the field may be accompanied by circumstances which will prevent the perfect action of the ashes. I have examined many sorts of peat-ashes—both such as produced very little or no effect, as well as such as many years' experience has proved to possess great fertilising power, amongst which latter were several famous Dutch peat-ashes. I place here the results of these analyses, as they not only best explain their action, but as they can serve agriculturists as a means of judging the value of such as they have at hand.

1. *Dutch peat-ashes*, of acknowledged best quality (gray) 100,000 parts consisted of

47,140	parts of	silica.
4,446	,,	alumina.
6,592	,,	oxide, and a little protoxide of iron.
1,000	,,	oxide of manganese.
13,634	,,	lime, partly united with silica.
4,940	,,	magnesia ditto.
0,200	,,	potash combined with sulphuric acid.
1,013	,,	soda, mostly combined with chlorine into common salt.
7,200	,,	sulphuric acid, combined partly with lime, partly with potash and soda.
1,092	,,	phosphoric acid, mostly combined with lime, partly also with iron.
1,144	,,	chlorine combined with soda into 1,907 parts of common salt.
4,099	,,	carbonic acid, combined with lime and magnesia.
6,600	,,	carbon and remains of peat.
100,000	parts.	

2. *Dutch peat-ashes*, inferior quality (gray) 100,000 parts consist of

55,920	parts of	silica.
3,448	,,	alumina.
5,376	,,	oxide of iron, and a little protoxide of iron.
4,340	,,	oxide of manganese.
8,648	,,	lime, partly combined with silica.
1,560	,,	magnesia ditto.
0,228	,,	potash.
3,855	,,	soda.
6,446	,,	sulphuric acid, combined with lime, soda, and potash.
0,833	,,	phosphoric acid, combined with lime and iron.
6,354	,,	carbonic acid, combined with lime and magnesia.
2,992	,,	chlorine combined with sodium into common salt, and with potash into chlorate of potash.
100,000	parts.	

As both these sorts of peat occur in the vicinity of the sea-coast, it is more than probable that their great amount of common salt owes its origin to salt water. They are conveyed from Holland to Belgium, where they are very important for the growth of Clover, as it is believed that it could scarcely be well reared without the Dutch peat-ashes, which, however, *would* be the case, without any doubt, if it was manured (instead of the ashes) with gypsum, common salt, bone-dust, and some other mineral substances, which are to be found in the ashes. Great expense would probably be thus saved. Still the Belgians believe that the peat-ashes contain a substance unknown, which greatly improves the growth of plants. Besides Clover, they use this manure in Belgium for Rape, Potatoes, Flax, Peas, &c., but never for *Barley*, which consequently, the great amount of gypsum seems not to benefit.

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

(*Continued from page 628.*)

New Red Sandstone.—This formation, occurring as it does almost exclusively along the sides of the hills and highlands capped by the lias, does not cover any very great portion of our district. The beds of which it is composed are of three kinds, sandstone, red marl, and magnesian conglomerate. The first of these is the least extensive of any. It occurs in a narrow band, overlying the marl along the edge of the coal strata, which it also covers between Stapleton and Winterbourn by Frenchay and Hainbrook. It is a sandstone of a dark-red colour, much more crystalline in its appearance than the indurated marls of the second member of the series. It frequently contains small siliceous pebbles, or rounded masses of flinty matter. It is a soft stone when first quarried, but acquires hardness on exposure to the air, and is then used as building-stone. A yellow sand occurring in this member of the series is dug at Bristol, and sold for the purpose of strewing on the floors of cottages. The red marl of the new red series occurs along the edge of the hills capped by the lias. Thus, from Henbury, where it overlies the magnesian conglomerate, we trace it along the edge of the highland by Over, Almondsbury, Elberton, Lyttleton, and Oldbury, where the tract is of considerable width. A section from this spot towards Thornbury, shows that here also it overlies the strata of the magnesian limestone, on which that town is built. From this its western boundary, which has been all along its junction with the alluvial deposit, it proceeds in a very tortuous course, by Rockhampton and Hill, to Berkeley, where it overlies a sandstone of the old red series. The junction-line of the two runs from Berkeley, south by Stone-common, under the edge of Whitecliffe-park, by Falfield, to Moreton, where it again overlies the dolomitic conglomerate. The junction of the marl with the clay of the old red sandstone from Berkeley to Moreton is very obscure; indeed, in tracing it on the map, one is guided more by the undulations of the surface than by any sectional appearances. The red marl occurs also in the neighbourhood of Newport, where it joins on the old red sandstone and the lias, overlying the one, and being overlaid by the other. I have already described the line of its junction with the lias from Rayuham-fields to Wickwar, where it terminates in a long narrow valley, at the bottom of which a bed of magnesian limestone is exposed. In the marl at Wickwar a bed of strontian occurs; a section of it is seen on the road-side below the church.

From Wickwar a narrow band extends as far as Bury Hill, where the strata of magnesian limestone again appear. From Chipping Sodbury, where it again commences, it extends along the edge of the hills under the lias, by Westerleigh and Liston to Wick, where it surrounds Home-apple-hill, and passing down both sides of the Golden Valley below Wick, leaves an open space in which the rocks of the coal strata occur. This band extends below the edge of the lias, from Keynsham westwards as far as Bristol, the greater part of which is built on it. From Bristol it runs by Stoke Gifford as far as Itchington, bounded on the one side by the lias, and on the other by the band of sandstone we have just described.

At Aust the section of these marls there exposed contains in the lower part of it a great quantity of gypsum, which is arranged in layers corresponding with the planes of stratification, and, being connected together by vertical veins and fissures, a reticulated appearance is presented. No use is made of this gypsum in an agricultural way, though its value as a fertiliser has been fully proved. The clay of this bed is used for brick-making near Winterbourne, for which purpose it answers admirably. The clay in its immediate vicinity on the lias formation, although stiff, and apparently good for the purposes of brick-making, is too calcareous, and would, after burning, speedily crumble, in consequence of the slacking of the lime formed.

The Dolomitic Conglomerate, the third member of the series, is most irregularly distributed over the surface of the district. The chief portions of the county, however, which it covers are near Thornbury, and in the Vales of Henbury and Westbury. Near Thornbury it covers a district two miles long and three quarters of a mile broad. This rock consists in general of fragments of the older rocks, mountain limestone, old red sandstone, and millstone grit, varying in size from that of a nut up to that of the human head, and cemented by a yellowish or a red-coloured mixture of the carbonate of lime and magnesia. It varies considerably in appearance. Thus, in the Thornbury district, while at Rockhampton it is so hard and splintery that it is difficult to form a hand specimen, near Thornbury it consists of large rounded masses, chiefly of mountain limestone, hardly kept together by an earthy cement.

The Agricultural Character of this formation differs considerably on the three members of which it is composed. The soil on the first of these is of a remarkably red colour; it is a light sand. Near Hanbrook it is of a purple-red colour. When taken in the fingers it soils them like a mass of paint. This land is wholly arable; where shallow, as is generally the case, it is wholly dependent on the weather. The season cannot be too wet for it. Even on this land, however, drainage has been attended with benefit. The general rotation followed, when any system at all is adopted, is the four-field course of Wheat, Turnips, Barley, seeds; but here, too, whenever land has by this management become sufficiently in heart, this rotation is left for one more severe. Thus, after Barley, seeds are taken, which are, during the first year, mowed and then seeded; during the second year depastured and broken up for Wheat; after Wheat Barley is taken; then Turnips and then Wheat again, which is followed in the usual way by Turnips, Barley, seeds, and so on. This is the least injurious of the departures from the regular course; for cases occur in this neighbourhood where land in good condition has been cropped during successive years with Wheat, till exhausted. Turnips and Swedes are always sown broadcast. Mangold Wursel, which is far from being generally cultivated in the county, I saw growing on this soil, for which it is admirably suited. The gritty nature of the soil, by admitting the action of the atmosphere, causes the rapid decomposition of the manure in it, and thus fits it for the growth of bulbs and tubers requiring large supplies of nourishment. The lightness of the soil on this rock renders it very easy of cultivation; in this it is greatly superior to the soil on the marl. The surface of the marl being generally exposed on the side of hills, has an undulated appearance; this renders the soil easy of drainage, and the greatest improvement might be effected in this way, over the whole of the district. It is chiefly in pasture—not above one-sixth is under arable culture. The fields are not large, and they are frequently crowded with trees. Both the Oak and Elm flourish here; the finest Elms in the county occur on this formation, near and in Stoke Park.

When so small a portion of the land is arable it is seldom cultivated on any fixed system, and it is only in farms that are almost wholly arable that any regular rotation of crops is adopted. The kind of Wheat sown is the old Red Lammas, or for a spring Wheat, the White Essex. These two, with the Blue Cone for the stiff clays on the lias, are the three standard Wheats in this district, and, indeed, over the whole county. Between the sandy and clayey strata of this formation, I went over several fields of a deep sandy loam, either produced by the mixture of the two, or due to the disintegration of a stratum peculiar to itself. The land here is of a most valuable kind, combining the good qualities of that on either side of it; wet will not sour it—heat will not injure it. It is admirably fitted for the growth of Turnips, of Wheat, and of Oats and Barley. Little of this marl is drained; the pastures during winter are accordingly soaked. The establishment of a tile-work near Winterbourne by Dr. Fox, and the adoption by him of a system of drainage on his own farm, will, it is to be hoped, be productive of good. The soil on the dolomitic conglomerate, the third member, near Thornbury, where the rock has an earthy character, is of a light sandy nature. Near Bristol and Wick, where beds of clay occur in the rock, it is a stronger soil, and more fertile. It is there almost entirely pasture. In the neighbourhood of Thornbury about one-third is arable; the soil is frequently very shallow and easily burnt. Most of the arable land is devoted to the Potato culture, this district, with the surrounding neighbourhood, being the chief supply of the Bristol market in this article of food. Wheat is grown the first year, Barley next, then either seeds or Potatoes; if seeds, they are broken up for Potatoes, if Potatoes they are followed by Wheat. The Thornbury district is much crowded with Elm-trees, and the fields are generally small. Lime is used on this land generally once in a rotation, and is a most profitable outlay.—*M. S.*

Home Correspondence.

Drainage.—The castigation which my remarks in favour of one of our beneficial old practices have received, reminds me of an old sporting phrase—"It is a

dangerous maxim to bet odds against the favourite." Still, had they elicited a word of information in favour of the new systems, a good end might have been answered, and I might have been a winner. As only personal altercation is the result, I will say no more on the subject than may defend me from being misapprehended. I know tiles answer well in many situations, and do not object to their use; indeed I have drained with them myself. My objection extended only to the unscrupulous way of crying down practices which have been found beneficial, and which have the recommendation of experience, and taking up in their place new systems which are more expensive and backed chiefly by the opinions of theorists; tiles being decidedly more expensive than the Suffolk system of draining. My principal reasons given in favour of the draining which is chiefly pursued in my own county, are nearly as conclusive as the answer given by a celebrated breeder of the Southdown sheep, when asked why he preferred them to the Leicester:—"Because they answer my purpose better." I referred Mr. Girdwood to Mr. Pusey's Report on Draining, to show that Suffolk farmers are aware of the existence of the Royal Agricultural Society of England—which, by the bye, does not seem to extend its communications very far north; if it did, it might have spared my ludicrous ideas a little of the lash that has been applied to them. "To place tiles out of the way of any working whatever," they must be put little short of the bottom of an Artesian well, for I have a tile-drain on my farm well covered with stone, into which the worms have worked portions of clay through the apertures which let in the water. Your correspondent forgot, when addressing himself to my remarks, that it was down hill from the surface of the soil to the bottom of a drain on a perfectly level field. "Drains answering well for twenty years" only prove tiles equal to straw or stubble. I shall trouble you with only one more observation in answer to Mr. Girdwood. When I see practical men agree "as to how water gets into drains," and as to the uniform depth and width apart at which they are best made (which from your report of the late Yorkshire meeting does not appear to be the case at present), I will have no opinion of my own upon the subject; and I will give up my preference for transverse drains as soon as it appears practically clear that those parallel with the descent answer better. I can assure the learned Professor who has also, I find, noticed my remarks, and whose zeal for the advancement of science in Agriculture I duly appreciate, that it is only a fear of too much haste with too little speed, which has caused him to class me with the "halt of intellect" men who do not like "new-fangled schemes."—*Farmer and Valuer, Stowmarket.*

Great Produce.—Having seen in Mr. Lowe's account of the appearance of the crops for 1844, at the beginning of which he speaks of the Oxfordshire Wheat-ears of 80 grains in each, I inclose you one from this parish which you will find has 5-set kernels, and contains in all from 115 to 116 grains. This is not, by the bye, a solitary instance in this neighbourhood this season; many persons have 6 and some even 7-set kernels.—*A. Barfield.*

Thick Sowing.—Some years ago I had a very respectable foreman, so bigoted to thick sowing that if I did not watch him he would have his own way. To cure him, I laid him a new hat that I would beat him, planting (with a dibble) only 4 gallons of Wheat per acre, 12 in. × 6, and he should sow 25 gallons (his favourite quantity); at harvest he brought me the account, and I beat him 2 bushels per acre. Mine was hoed only twice: it ought to have been at least thrice, and deeper. This cured him.—*R. W. P.*

Failure of Turnips.—As so many persons are complaining about their Turnips, I think it fair to state what has happened to myself. I took a small farm last year which had been considerably impoverished by the former tenant, and resolved to try what could be done with it. Having worked and dressed the portion for Turnips very well, I drilled the seeds with great care, but after sowing twice I have only got a fair crop by considerable attention to transplanting in the places where they failed. Anxious, however, if possible to secure the white Turnip, I procured some of Lawes' superphosphate of lime, and on the manured ground I drilled the seed with 2 cwt. of the phosphate, mixed with ashes sifted through a fine wire riddle. I sowed two fields, and both have come up well without any failure at all. They were sown on a Saturday and appeared the following Thursday and Friday. They were speedily in the rough leaf, grew strong, bright, and healthy; nothing has touched them yet, and nothing appears to threaten them. I am so satisfied of the efficacy of this stimulant that henceforth I shall never sow Turnips of any kind without it. If the ground is not manured I suppose 2 cwt. would not be sufficient, but in my case it has been ample; and really 14*s.* an acre is a small expense to secure such an object.—*E. C.*

Allotments.—As you express the wish, in your Number of the 7th inst., that the subject of allotting portions of land to the working classes may be kept before the public, I will state, in accordance with that wish, that almost nine years since I apportioned several acres of land amongst a certain number of agricultural labourers, and that off one of those allotments which consisted (the portion which was sown with Wheat) of 63 perches, the occupier has just threshed out 3 qrs. 1 bush., including the gleaned Corn, being nearly at the rate of 8 qrs. (or, as we in this county term it, 16 combs) per acre. This man grows Wheat and Beans alternately, and feeds the pigs with the Beans generally, whilst in a green state. He pays me at the rate of 2*l.* per acre, free of all other charges. I may remark as an inducement to landed proprietors to adopt the allotment system, which I have long considered as tending greatly to add to the comfort, and also to improve the moral condition of the working classes, that I have never, in any instance amongst a considerable number of such occupiers, experienced any difficulty in obtaining the rent. I have omitted to state that the land is always highly manured for both crops, and cultivated solely by the spade.—*A Subscriber, Norfolk.*

Potato Failure.—A great misfortune, of its kind, has befallen me this year: my late Potato crop has completely failed. The tops were magnificent—finer in many parts than I ever saw—yet the crop was absolutely nothing, certainly not nearly enough to replace the seed. The land is light, on gravel, well manured with stable-dung, in many places with Potter's guano, and frequently watered with liquid manure, of human urine and soap-suds. The early Potatoes, called here Church's Seedlings, bore very fairly, but never before have I seen the like failure, with so splendid a promise from the stalks. Now what was the cause? The season? perhaps so; as I fear a like result is found by some of my neighbours who did not treat the growing crop as I did; or is the fault the system of manuring I adopted? I am very anxious to know, as this was my grand experiment in consequence of taking in your *Gazette*. My crop of Onions and Carrots have been excellent. Altogether I am quite baffled, and shall feel greatly obliged by your advice. I got tanks made on purpose for my garden, especially for the Potatoes, which I grow in great quantities.—*R.* [We do not know how to explain this; your fault must have been one of omission, if it be chargeable on you at all. The manures you applied cannot be blamed.]

Wheat.—The productiveness of Wheat has been frequently made a matter of newspaper astonishment, and I am almost ashamed to add my hundred-and-first wonder; but as none of the published "Extraordinary Crops" come up to anything approaching to the produce of the "Mummy Wheat," I may as well be heard in its just praises. The inclosed is a single root, the offspring of a single grain, and bearing 57 stems; there were 59, but 2 were broken off by accidental roughness before I thought the sample worthy of special preservation: one of the ears also accompanies it in this letter—an average one, neither the longest nor the shortest. You will perceive that it contains 48 grains—call it 45; then, 45 × 59 = 2655, or as many fold. The soil was new turfy soil, rather sandy, and entirely unmanured. My little crop was dibbled in grain by grain early in March, and cut early in August; height of straw above 5 feet. Many roots approached near to the one I send in size, but I believe it to be the largest; and the fact, as you perceive (if worth anything), is a matter of ocular demonstration. —*Martin F. Tupper, Brighton.*

Destruction of Turnip Crops.—The Cotswold farmer has moved my sympathy. I ascribe the evil to the effect of the season, on a soft ill-aired soil, impregnated with an excess (?) of azotised manure. I am ignorant of the character of the soil in question, but have seen similar effects in like conditions. I beg to recommend the trial of some of the cheapest disinfecters. One lot might be moderately dressed with newly slaked lime, another with chloride of lime, a third with common salt, a fourth with a mixture of salt and nitre, a fifth with a mixture of sulphur, nitre, and salt. The nitre and salt may be in equal weights, and 1 lb. of sulphur to 50 lbs. of the mixture. I would try these mixtures on small lots at first; give only about one cwt. of each dressing (except the lime) to the acre, and watch their effects. I could mention many others, but their price forbids field use. If anything better occur to any reader, state it, and let us soon hear whether that malady is giving way.—*G.*

Lucerne.—I have grown Lucerne this year for the first time. I have had a capital crop, and have cut it twice. It promises to be high enough and strong enough for another cut. Do you advise it?—*J. M.* [Yes.]

Potter's Guano.—Having seen (page 629) what is represented by your correspondent as an analysis of "Potter's Guano," I think it only right, in justice to myself, and out of consideration to those who may be led to make the manure from the formula given, expecting that it faithfully represents the composition of my guano, to state that this is far from being the case. I do not wish to impugn the accuracy of Mr. Mason, with whose name, however, as an analytical chemist I am unacquainted; but he has, in this instance, either got hold of a spurious article, or an error has arisen from some other cause. As it is not my intention as yet to make the public a present of the secret of my composition, nor to be entrapped by the putting forth of pretended analyses to declare what the correct analysis is, I shall content myself, in reference to Mr. Mason's, by saying, that those who follow it, although they will succeed in forming a very tolerable manure, will be sadly disappointed if they think they can substitute it for my guano. I will conclude by remarking, that although the analysis in question fails to declare truly what Potter's Guano *is*, yet it affords a negative evidence, at least, that it is not composed of chalk, sand, &c., as some have asserted, and that it is free from that cheap commodity WATER, which farmers, it appears, are willing to buy to the tune of some 25 to 35 per cent. in the foreign guano, paying for the same from 8*l.* to 10*l.* per ton, with a trifle more for carriage to their farms.—*W. H. Potter.*

Vetches and Italian Ryegrass.—In reference to a previous article on this subject, I beg to inform you that I sowed per acre, broadcast, 2 bushels of Vetches, ½ ditto of Italian Rye-grass, 14 lbs. of Cow-grass, and 2 bushels of Oats.—*W. Courtis, Swansea.* [Sown, we presume, not as a mixture, but successively on the same land.]

Societies.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the weekly meeting of the Council, on Thursday, September 5th, it was announced that his Royal Highness Prince Albert having been pleased to cause the sum of 500*l.* to be remitted, to be applied to the promotion of agricultural science in Ireland, this sum had been placed by Lord Eliot, at the disposal of the Royal Agricultural Improvement Society. A letter was also read from Lord Stanley, from the Colonial Office, accompanying a specimen of seeds of the Tussac Grass, lately imported from the Falkland Islands. The following are the terms of a premium of 5*l.*, given by Sir Harry Verney, Bart., to be competed for in the county of Galway, and to be decided at the next great national Cattle Show of the Society, to be held at Ballinasloe, for the province of Connaught, in the year 1845, viz.: "To the landholder in the county of Galway, who, being neither owner nor occupier of more than two statute acres of land, and recommended by a member of the Central Society, shall obtain from his holding the largest quantity of produce (not more than one-eighth being in Potatoes) during the year ensuing the meeting of the Royal Agricultural Improvement Society in Dublin." The secretary stated, that nearly all the premiums awarded at the late Cattle Show, amounting to near 700*l.*, had been paid off and discharged, with the exception of those which were subject to the conditions above mentioned; and that all the medals awarded on that occasion were now in preparation, and would be ready to be delivered to the parties, on application, in a few days.

SOCIETY FOR THE PROMOTION OF THE GROWTH OF FLAX IN IRELAND.

On Wednesday, 4th September, the monthly meeting of the Committee of this body was held at Belfast. The secretary read a Report of the quantity of Flax-seed imported into, and sown in Ireland, this season, prepared by a member of Committee, from the most authentic sources:—

FLAX-SEED IMPORTED INTO IRELAND, FOR SOWING, IN THE YEAR 1844.

Ports.	Riga brls.	Dutch hhds.	American hhds.	Total in hhds.
Belfast	20,123	2705	—	12,760
Derry and Portrush	23,083	900	200	12,630
Newry	—	—	—	3800
Dublin	—	—	—	2360
Limerick, Cork, and other ports ..	—	—	—	3500
Total ..	43,183	3605	200	40,196
Supposed quantity of home-saved seed sown				1200
				41,396
Deduct quantity on hands				500
Grand total of hhds. of Flax-seed sown this year ..				40,896
Total quantity sown in 1843				37,400
Increase over 1843				3496

From the above analysis of the importation this year, some interesting facts may be gathered. The quantity of American seed imported this season is only 200 hhds., while last year it was 4080 hhds. The decrease may be principally attributed to the strong manner in which the Society has cautioned the farmers against sowing American seed, which produces a branchy stem and coarse fibre. Home-saved seed has been sown extensively, and with success, many persons having very fine crops of Flax from it. It will be seen that Flax culture continues to increase in a steady progression. On the supposition that each hogshead would sow three statute acres, the quantity of land under the crop, in 1843 was 112,200 acres, and this year, 1844, is 122,688, an increase of 10,488 acres on the previous year. At the lowest average, each acre will produce 6 cwt. of clean scutched Flax; thus, the entire produce of Irish Flax last year was 36,465 tons, and this year, 39,611 tons—an increase of 3146 tons on the season's growth. The value of this 3146 tons, at 40*l.* per ton, which is a very low average, would amount to 125,840*l.* This large sum would otherwise have been paid to the Continental farmers, but is now retained in our own country. The superior elasticity and durability of Irish Flax over the Russian article is becoming daily more apparent, and the English spinners are more inclined to look to this country for their future supply. The committee resolved to allocate the sum of 50*l.*, in prizes for Flax and Flax-seed, at their Annual Show, in November this year, in addition to the 55*l.* already advertised as prizes, to purchasers of Flax on the foot.

FARMERS' CLUBS.

Wiltshire.—At the Annual Meeting of this Society, Mr. W. H. Browne, alluding to the condition of the agricultural labourers in Wiltshire, as compared with that of the labourers of some other counties, stated the average rate of wages in Wilts to be between 7*s.* and 8*s.* a week, and showed that, while there was a great redundancy of labourers, there were about 87,000 acres of uncultivated land in the county. He contended that if this land were, as it might be, brought into cultivation, the wages of the labourer would be raised, and his condition greatly improved; the poor-rates of the county, which now average 8*s.* in the pound—1*s.* above the average of England—would be diminished, and the welfare and happiness of all placed on a firmer basis. Mr. Browne referred, in proof of his assertion that the

waste lands he had alluded to were reclaimable, to the southern part of the county, where Mr. Brown, of Winterborne Stoke, and Mr. S. Mills, of Elston, had made the experiment, and had been amply repaid by the improved condition of their labourers, and the increased value of their property.—Mr. Mills corroborated the statement of Mr. Brown and observed:—As his name had been alluded to, as having converted some unprofitable soil to a good purpose, he would state that it had proved of great advantage to himself, as well as to the labourers throughout the county. He had of late adopted the system of stifle-burning, and this by mere chance. A man in his employ, who had come from a neighbourhood where it had been in operation, strongly recommended it. He consented to try it upon a piece of five acres; but before that was burned, he was so well satisfied of its advantages, that he ordered it to be tried on 80 acres. Those 80 acres had been valued by a highly respected surveyor at the annual rate of 1*s.* 6*d.* an acre. After the piece had been submitted to stifle-burning, crops of Turnips and Oats had been grown, that could not be exceeded on land for which 3*l.* an acre was given. —The process of stifle-burning is commenced by pulverising the land in the usual manner, namely, harrowing and rolling, so that the dead vegetable matter contained in the soil—as stubble, couch, or any kind of weeds—may be cleared of the mould as much as possible. When all this is sufficiently dry, it is collected together by men or boys with iron rakes into heaps at equal distances, the more readily to spread the ashes and burned soil. A small wad of dry straw is then added to each heap, and the earth is raked up over the heaps a few inches in thickness, before they are fired. No blaze or flame is suffered to escape, and not much smoke. The current of air being in some degree checked by the covering of earth, it becomes necessary to use from half a ton to a ton per acre of some sort of dry straw; that generally used is Wheat-straw. The last part of the process is spreading the heaps equally over the land. The whole is executed by men who travel from farm to farm for the purpose, at a cost of from 8*s.* to 14*s.* per acre.—*Bell's Weekly Messenger.*

Miscellaneous.

Sea-Weed as Manure.—The crops on the Isle of Thanet are superior to the crops grown in the inland counties; and, having travelled much by our railroads, I should say superior to any crops in the country. What is this superiority attributable to? There appears to be nothing very peculiar in the soil, and there is nothing peculiar in the rotation of their crops. I may be mistaken, but I attribute the superiority of the crops to the system of forming their dung-heaps, and the use of sea-weed as manure. The farmers on the island form their dung-heaps with alternate layers of sea-weed and farm-yard dung; and, after raising their heaps to the height of eight or ten feet, they cover the whole with a layer of eight or ten inches of sea sand. The sea-weed contains a portion of sea salt and fish, and on heating becomes very putrid and offensive. It may be difficult to analyse the compost of sea-weed and horse-dung, but it may be well to collect the liquor that oozes from the heaps, and have it analysed, when, I suspect, it will be found to correspond with guano in essentials. There is no doubt about its effect on the land, for the Wheat, in point of straw and ear, is so very superior that it cannot be improved in quality and quantity; and it only remains to be ascertained whether guano, or any other substance, in point of economy has any superiority. It is a mistaken notion to suppose that, by any contrivance, Wheat can be increased to any extent in a limited portion of land, or that more than a certain limited quantity of stalks of corn can be raised; every farmer knows that when stalks are too near together, they rot and decay. The great object to be sought is a healthy growth of straw, with a fine large ear, which shall yield a plentiful supply of good sound Corn; this result is attained on the island of Thanet. I was induced to inquire what was the cost of collecting the sea-weed on the island of Thanet, and was informed that the price paid at this season for it to the collectors of the weed was 6*d.* a cart-load in its wet state; this cart-load requires two strong horses to draw it, and may weigh considerably upwards of a ton; but when dry it may probably lose half of its weight, and much of its fertilising qualities. The farmers remove it in its wet state to their compost heaps, and do not lose the fertilising juices. I am induced to trouble you with these few observations, that our agriculturists may furnish employment to a very useful class of our subjects, who, in winter, have little or no employment.—I mean the boatmen of our sea-ports, who would be too happy to collect the sea-weed, and deliver it at the terminus of our railroads at probably 6*d.* per ton; for this is the price paid by the farmers to the agriculturists in the island of Thanet in the summer season, when other employment is obtainable; and, of course, in the winter, when there is little or no work going forward, and when the sea-weed is deposited in the greatest quantity, from the sea being ruffled and stormy, our boatmen would be too happy to obtain the employment on the same scale of wages. I am of opinion that the sea-weed might be pressed, by the aid of machinery, into a convenient compass, to render its transport by our railroads and by our ships not very expensive; and when our merchants are sending their ships to the South Seas for guano, they would enter into the speculation of conveying the sea-weed from our island sand-roads if the cost of the freight from our sea coast to the terminus of our railroads leading into the interior of our island would be realised.—*Correspondent of Mark Lane Express.*

Notices to Correspondents.

RURAL CHEMISTRY.—*By E. Solly, Esq., F.R.S. Experimental Chemist to the Horticultural Society of London, Honorary Member of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution,* may be had of all booksellers, price 4*s.* 6*d.*

ALPACA.—*H. S.*—We see no reason to doubt their success on Chalk Downs. Their usual price hitherto has been from 20*l.* to 30*l.* each. Their price in Peru is from 3 to 4 dollars; so that if they could be imported without loss by death, they might be sold with a fair profit at a comparatively cheap rate. We do not know where any are for sale.—*Subscriber.* —Apply to Messrs. M. & E. Dawson, 15, Islington Terrace, Liverpool.

ASPHALTE ROOFING.—*P.*—It is perfectly suited for roofing farm or any other buildings; no paint or other coating is required; it is laid on a boarded surface; and, except when that can be cheaply obtained, it is therefore expensive. About Alpacas, see above.

BELGIAN CARROTS.—*Yeoman.*—Harvest them just before their leaves get too rotten to enable you to pull the root up by. This will be when some of the lower ones have turned yellow. Keep them between two rows of flaked hurdles about 6 feet apart, and piled up in a ridged form, and thatched.

CHURNING.—*Anon.*—This operation is most successfully effected when the milk or cream is preserved at a temperature of about 75° Fahr.

DIBBLING.—*S. H. H.* had better dibble two seeds in each hole, lest one should fall a prey to birds, &c.

DRILLING MACHINE.—*J. B. Swete.*—Mr. Newberry's address is Hook Norton, Oxfordshire.

ELDER-BERRY WINE.—*Nemo.*—We must refer you to "The British Winemaker and Domestic Brewer," a small octavo volume, by W. H. Roberts: Whittaker & Co., London. With regard to our articles on Agricultural Mechanics, we must beg you to exercise a little patience: we can only say that we differ from you in opinion as to what has already appeared on that subject. Thanks for your suggestion as to the mode on which these papers should appear. We had already resolved in adopting, *in part*, some such plan.

FARM IMPLEMENTS.—*T. Hudson.*—The land alluded to is situated in South Sussex, on the Pevensey level, where rents are very high. The Vernon hoe is a narrow, almost dart-shaped tool with a sort of swan-neck, attached to a handle. It may be had, we presume, of implement-makers, or perhaps seedsmen.

LIQUID MANURE.—*A Farmer.*—Putrid urine requires about 1 lb. of sulphuric acid to fix the ammonia in 5 gallons of it.

LUCERNE.—*G. B. M.*—It will be all the better for the liming. It is best sown in rows, and perhaps dibbled; but it is too expensive work to transplant it.

MANURE.—*Melibœus.*—You had better mix it with double its quantity of vegetable mould; or, if you have it not, with a mixture of ordinary earth and charcoal dust, and you can apply it most beneficially perhaps to a green crop, Turnips, Potatoes, or Mangold Wurzel, under the last furrow which the land receives before the seed, at the rate of three cart-loads of the mixture per acre. It is not probable that the calcareous sand of which you send a specimen would benefit your clay; but as it is impossible to speak with certainty, you might try it on a piece of arable land, at the rate of one cubic yard on four perches of land.

POTATOE-HAULM.—*Three-year-old Subscriber.*—The removal of leaves such as cattle would relish as food would injure any plant that it is proposed to strip. You are mistaken in supposing that the young tubers might be exhausted in the effort to ripen the leaves; it is the agency of the leaf that ripens the tuber; and as long as they are green they are thus useful to the crop.

POTATO FAILURE.—*W. Ewing.*—Your report of the discussion is not sufficiently different from what has already appeared, to justify its publication. Will you favour us with your own views on the subject.

PROPER TIME TO REAP WHEAT.—*J. C. X.*—Thank you. A paper has been sent to the address you name.

SALT.—*Lapis.*—It can only be of use to the plants in solution; but you will find it cheaper to let it dissolve naturally, by sowing it in wet weather, than to apply it by means of the water-cart. Gas-water may be applied on meadow-land by means of the water-cart; apply 300 or 400 gallons per acre.

SEED-WHEAT.—*Improver.*—No charge is made.

SELF-SUPPORTING SCHOOLS.—*Subscriber.*—Mrs. D. Gilbert of Eastbourne, Sussex, has established several. We are not aware if there be any in the neighbourhood of Nottingham.

SPRING TARES.—*A Subscriber.*—It depends on the nature of the season. We think you may risk them.

TANK.—*Joe* has had a tank made with bricks upon arches, and made level with concrete, and about two months after it was quite dry he had one inch of Roman cement mixed with half washed road grit put over the bottom and side, and when that was set and hard he put the water in, and now it is leaking all over the bottom. How is he to *stop it?*

WILD DUCKS.—*Kent* asks if any of our correspondents can inform him whether wild ducks pair off, or what number of drakes are required to 20 ducks? Also whether the swan will destroy trout?

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, Sept. 16.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3*s*	8*d*	to 4*s*	0	Best Downs & Half-breds	3*s*	8*d* to 4*s* 0
Best Short Horns	3	6	3	10	Best Long-wools	3	8 3 10
Second quality Beasts	3	10	3	4	Ewes and second quality	3	0 3 8
Calves	3	4	4	0	Lambs	3	8 4 4
Pigs	3	4	4	0			

Beasts, 3266; Sheep and Lambs, 23,960; Calves, 144; Pigs, 391.

We have to-day a large increase from last week in the supply of Beasts, and a consequent dulness in the trade, with a disposition to lower prices; although we cannot make alteration in our quotations for the best qualities, yet those prices are with difficulty obtained, and in some instances fail to be realised; several inferior Beasts remain unsold. Our supply of Mutton continues nearly the same; there is considerable activity in the trade for Longwools and the best Downs, but a remarkable dulness in the demand for Half-breds; the prices of the two former qualities are a shade better, the best Downs making rather over 4*s.*, and a few best selling Longwools a little more than 4*s.* 1*od.* per 8 lbs., but Half-breds scarcely reach the latter price. Good Lamb is in demand at late prices. Veal is about the same. Pork is rather lower.

FRIDAY, Sept. 20.

The supply of fresh Beasts is not very large to-day, and the prices of Monday are fully maintained—some of the choicest qualities realise a little more money. The trade for Mutton is very dull, but we cannot notice any alteration from Monday's quotations. The demand for Lamb is not quite so good; they make about the same as of late. There is a little more briskness in the Veal-trade, but the choicest make very little over 4*s.* per 8 lbs. Pork-trade is very heavy; it is difficult to make 4*s.* of neat Porkers.

Beasts, 767; Sheep and Lambs, 8160; Calves, 226; Pigs, 220.

4*l.* West Smithfield.

HOPS, FRIDAY, Sept. 20.

We have now a good supply of new Hops at Market, the demand for which is good. At Worcester Fair yesterday, about 2000 pockets were finished; the greater part sold from 4*l.* 4*s.* to 7*l.* 7*s.* The duty for this district is raised to 200*l.*, and for the Kingdom 130,000*l.* New Sussex, 4*l.* 10*s.* to 7*l.*; Weald of Kent, 7*l.* to 8*l.* 8*s.*; Mid. Kent and Farnhams, 8*l.* to 10*l.* 10*s.*

FARRINGDON & HAMPER, Hop-Factors.

WOOL.—BRITISH, FRIDAY, Sept. 20.

Our Wool Market remains unaltered from our last Report.

	per lb.		per lb.
Long-woolled Wethers	1*s* 6*d* to 1*s* 1*s*	Southdown Hoggets	1*s* 1*d* to 1*s* 2*d*
Do. Hoggets	1 1 1 2	Kent Fleeces	1 1 1 2
Southdown Fleeces	1 0 1 1		

JAMES PARKER, Wool Broker.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 19.

Prime Upland Hay	100*s* to 110*s*	Clover	90*s* to 110*s*	Straw	30*s* to 32*s*
Inferior „	70 80	„ New	90 115		

JOHN COOPER, Salesman.

CUMBERLAND MARKET, Sept. 19.

Superior Mead. Hay	100*s* to 110*s*	Superior Clover	110*s* to 120*s*	Straw	30*s* to 32*s*
Inferior „	80 90	Inferior „	100 105		
New Hay „	— —	New Clover „	— —		

JOSHUA BAKER, Hay Salesman.

WHITECHAPEL, Sept. 20.

Fine Old Hay	95*s* to 100*s*	Old Clover	110*s* 120*s*			
New Hay „	90 95	New Clover „	100 110	Straw	30*s* to 32*s*
„	„	Inferior „	— —			

COVENT GARDEN, Sept. 21.—The market has been well supplied with both Fruit and Vegetables during the week, but trade has been far from brisk. Pine-apples are tolerably plentiful, and many handsome fruit are offered at from 3*s.* to 5*s.* per lb. The price of Grapes is rather on the decline; good Black Hamburghs are selling at from 1*s.* to 2*s.* 6*d.* per lb. There is no difference in the price of Melons since our last Report. Peaches and Nectarines still continue good, and are sufficient for the demand. Few Greengages are to be met with, and the supply of Dessert Plums is chiefly confined to Coe's Golden Drop, the price of which is from 6*d.* to 1*s.* per punnet. Damsons are still offered at the prices quoted in our last Report. Figs are becoming very scarce; they are selling at 2*s.* per dozen. Apples and Pears remain at nearly the same prices as last week. Filberts are scarce, and are therefore dearer; Oranges are also becoming very scarce; Lemons are tolerably well supplied, and a considerable quantity of foreign Walnuts are in the market. Vegetables have not altered much since our last report; Cauliflowers are offered at nearly the same prices as stated last week; Broccoli is good, and sufficient for the demand; and Cabbages and Coleworts are abundant; French Beans are rather on the rise; Onions are good and plentiful, and Carrots and Turnips are abundant; Tomatoes are rather cheaper; Lettuces, Endive, and other salading, are sufficient for the demand. Cut flowers chiefly consist of Gladiolus psittacinus, Combretum purpureum, Gardenia radicans, Heaths, Camellias, Amaryllises, China Asters, Pelargoniums, Fuchsias, Verbenas, Carnations, and Roses.

FRUITS.

Pine Apple, per lb., 2*s* to 5*s*		Morello Cherries, per hf.-sv., 1*s* 6*d* to 2*s* 6*d*	
Grapes, Hothouse, p. lb., 1*s* to 2*s*		Currants, per hf.-sieve, 2*s* 6*d* to 3*s* 6*d*	
— Spanish, per lb., 2*d* to 1*s*		Filberts, per 100 lbs., 75*s* to 90*s*	
— Portugal, per lb., 1*s* to 1*s* 6*d*		Walnuts, per bushel, 10*s* to 20*s*	
Melons, each, 1*s* to 3*s*		Oranges, per dozen, 1*s* to 2*s* 6*d*	
Peaches, per dozen, 2*s* to 4*s*		— per 100, 10*s* to 25*s*	
Nectarines, per doz., 2*s* to 4*s*		— bitter, per 100, 3*s* to 6*s*	
Apricots, per doz., 1*s* to 3*s*		Lemons, per dozen, 1*s* to 2*s*	
Plums, per half-sieve, 2*s* 6*d* to 3*s*		— per 100, 6*s* to 14*s*	
— Orleans, per hf.-sv., 1*s* to 2*s*		Almonds, per peck, 6*s*	
— Coe's Gold. Drop, p. punn., 6*d* to 1*s*		Sweet Almonds, per lb., 2*s* 6*d*	
Damsons, per half-sieve, 1*s* 6*d* to 2*s* 6*d*		Cob Nuts, per 100 lbs., 70*s* to 80*s*	
Figs, per doz., 2*s* to —*s*		Nuts, Barcelona, 35*s*	
Apples, Dess., per bush., 2*s* 6*d* to 4*s* 6*d*		— Brazil, 16*s*	
— Kitchen, 1*s* to 3*s*		— Cob, 14*s*	
Pears, Dess., per hf.-sv., 1*s* 6*d* to 2*s* 6*d*			

VEGETABLES.

Cabbages, per dozen, 6*d* to 1*s* 3*d*		Garlic, per lb., 6*d* to 8*d*	
Cauliflowers, per doz., 2*s* to 3*s*		Onions, per bunch, 3*d* to 4*d*	
Broccoli, per bundle, 6*d* to 1*s*		— large, per bushel, 3*s* to 4*s*	
Sorrel, per hf.-sieve, 6*d* to 9*d*		— Spanish, per doz., 2*s* to 3*s*	
Artichokes, per doz., 1*s* to 2*s*		Shallots, per lb., 4*d* to 6*d*	
French Beans, p.hf.-sv., 2*s* to 3*s* 6*d*		Tomatoes, per half-sv., 2*s* 6*d* to 3*s* 6*d*	
Scar. Runners, per hf.-sv., 1*s* to 1*s* 6*d*		Capsicums, Ripe, per 100, 4*s* to 6*s*	
Potatoes, per ton, 80*s* to 70*s*		Green, per 100, 1*s* to 2*s*	
— cwt., 3*s* 6*d* to 4*s*		Radishes, per doz., 2*d* to 3*d*	
— bushel, 1*s* 6*d* to 2*s* 6*d*		Lettuce, per score, 6*d* to 1*s* 6*d*	
— Kidney, per bsh., 2*s* to 3*s*		Celery, White, per bunch, 3*d* to 1*s* 3*d*	
Turnips, per doz. bch., 1*s* 6*d* to 2*s*		— Red, per bunch, 1*s* to 1*s* 3*d*	
Peas, per bushel sieve, 2*s* 6*d* to 4*s*		Endive, per score, 1*s* to 1*s* 6*d*	
Red Beet, per doz., 2*d* to 1*s* 6*d*		Mushrooms, per pottle, 1*s* 6*d* to 2*s* 6*d*	
Carrots, per doz. bchs., 2*s* to 3*s*		Small Salads, per punnet, 3*d* to 3*d*	
Basil, per bunch, 3*d* to 3*d*		Watercresses, p. 12 sm. bun., 3*d* to 6*d*	
Horse Radish, per bundle, 3*s* to 7*s*		Parsley, per doz. bunches, 1*s* to 2*s*	
Savory, per bunch, 3*d* to 3*d*		Tarragon, Green, per bunch, 3*d* to 3*d*	
Cucumbers, Frame, each, 3*d* to 9*d*		Green Mint, per bunch, 3*d* to 3*d*	
— Ridge, dozen, 2*s* to 2*s* 6*d*		Marjoram, per bunch, 3*d* to 3*d*	
Vegetable Marrow, per doz., 4*d* to 1*s*		Chervil, per punnet, 3*d* to 3*d*	
Spinach, per sieve, 1*s* 6*d* to 2*s*		Chilis, per 100, 2*s* 6*d* to 3*s*	
Leeks, per bun., 3*d* to 3*d*			

MARK-LANE, MONDAY, Sept. 16.

THE supply of Wheat from Essex this morning was moderate, that from Kent and Suffolk large; the first was taken off at the prices of last week, but that from the two latter counties barely supported those rates. Having a fair attendance of country buyers, Foreign Wheat met a slightly improved demand, but we are unable to raise our quotations, excepting for the finest qualities of new.—English Malting Barley must be written 1*s.* to 2*s.* per qr. cheaper; Foreign for grinding continues to be taken off at late terms.—New Beans sold 1*s.* below those which have hitherto appeared; old are unaltered in value.—Maple and Grey Peas have declined fully 1*s.* per qr.; White remain the same.—There was a fair show of Oats, including a few new Irish, the quality of which was moderate only, and great difficulty experienced in their disposal; old also sold slowly, but last week's prices were fully supported for Scotch.—Winter Tares are 6*d.* to 1*s.* per qr. lower.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . . White	49	50	Red .	49	49
—— Norfolk, Lincolnshire, and Yorkshire .	—	—	White	—	—
Barley, Malting and distilling 27*s* to 33*s* Chevalier	31	37	Grind.	26	30
Oats, Lincolnshire and Yorkshire . . Potands	19	21	Feed	18	20
—— Northumberland and Scotch . . Feed	18	21	Potato	20	22
— Irish . . . . . Feed	17	20	Potato	19	22
Malt, pale, ship	50	52			
—— Hertford and Essex	54	56			
Rye	30	34			
Beans, Mazagan, old and new 27 to 32	Tick	30	34	Harrow	30	35
—— Pigeon, Heligoland . 30 to 35	Winds.	—	—	Longpod	—	—
Peas, White . . . . 32 to 36	Maple	30	33	Grey	27	30

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English . 4832 sks.	— Brls.	9021	714	2277	320	8	227	1272
Irish . . —	50 — 20	—	—	—	2190	—	—	—
Foreign . —	20 — 20	1230	7242	—	4239	1000	1240	256

FRIDAY, Sept. 20.

The arrivals of English Wheat since Monday have been good, and the few samples fresh up for this morning's market were taken off at that day's prices; business in Foreign was limited, but its value fully supported.—In Barley, Beans, and Peas we observe no alteration.—The Oat-trade is dull, and new Irish are rather cheaper.

ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English . .	6140	3120	3140	3000 Sks
Irish . .	—	—	17270	—
Foreign . .	2240	6120	4130	—

IMPERIAL AVERAGES.

Aug. 9 per Quarter.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	4*s* 10*d*	2*s* 6*d*	2*s* 1*d*	3*s* 9*d*	3*s* 6*d*	3*s* 3*d*
— 16 . . .	49 1	26 4	20 0	35 11	35 7	33 7
— 23 . . .	50 4	28 8	20 4	36 8	35 10	34 0
— 30 . . .	50 11	26 11	20 7	36 2	37 0	33 10
Sept. 6 . . .	49 6	25 9	20 5	34 4	32 1	32 10
— 13 . . .	48 11	25 11	20 1	35 0	37 9	34 6
6 weeks' Aggreg. Aver.	49 11	26 10	20 3	35 5	36 0	33 0
Duties on Foreign Grain	20 6	6 0	6 0	7 6	6 6	6 6

SEEDS, Sept. 16.

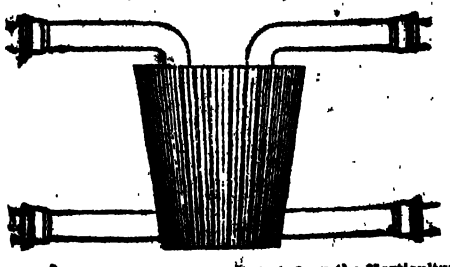
Canary . . per qr	40*s* to 50*s*		Linseed Cakes, Foreign, p. ton	6*l* to 6*l*	
Carraway . . per cwt	44	52	Mustard, White . p. bush.	10*s*	14*s*
Clover, Red, English . .	—	—	— Superfine „ .	12	16
— — Foreign . .	—	—	— Brown „ .	12	16
— White, English . .	—	—	Rapeseed, English, per last	28*l*	28*l*
— — Foreign . .	—	—	Rape Cakes . per ton	—	—
Coriander . . .	18	24	Spinkle . . .	—	—
Hempseed . . per last	36	42	Tares, Eng. winter p. bush.	3	6
Linseed . . . per qr	—	—	— Foreign . .	—	—
— Baltic . . .	—	—	Trefoil . . per cwt.	—	—
— Cakes, Eng. per 1000	12*l*	14*l*	Turnip (too variable for quotation).		

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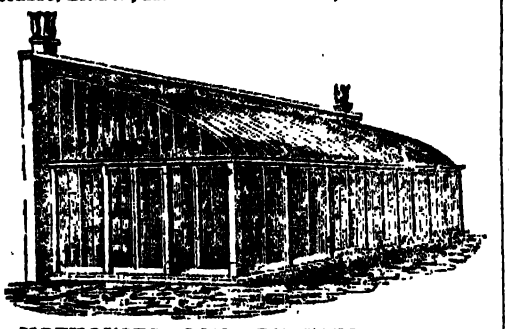
BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.		Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
lb.	£ s.	s.	s. d.	s. d.	s. d.		
10	1 5	20	7 6	6 6	2 6	30 feet.	12 to 20
Ribbed Boiler.							
10	2 2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12	3 15	20	13 6	7 6	3 6	80 to 125 feet.	40 to 65
14	5 10	35	17 6	8 6	4 6	150 to 250 feet.	65 to 100
18	5 5	42	25 0	8 6	5 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24	8 15	50	35 0	8 6	7 6	500 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

COTTAM AND HALLEN, ENGINEERS, IRONFOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

GUANO (GENUINE PERUVIAN & BOLIVIAN.

ON SALE, BY THE ONLY LEGAL IMPORTERS,

ANTONY GIBBS AND SONS, LONDON;

WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,

COTESWORTH, POWELL, AND PRYOR, LONDON;

GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, Sept. 20, 1844.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To secure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, illustrated by Practical Results."

Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the warehouses, 24 and 25, Billiter-street, or delivered within any reasonable distance at a trifling additional cost. Apply to JAMES CLARK, 24, Billiter-street.

WHEAT-SOWING.

GUANO; Genuine Peruvian, Bolivian, and Ichaboe, on Sale; also Potter's Guano, Gypsum, Sulphuric Acid, Sulphates of Iron and Copper, and all other manures. Synopsis of prices, and mode of use, on application, &c.—Apply to MARK FOUNTAINE, 40, Upper Thames-street.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms, Cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Price-current, London, Sept. 19, 1844:—

Bones . .	p. ton	£4 10s.	0d
,, crushed,	£5. 10s. to	6	0 0
,, calcined . .		7	0 0
Carbonate of ammonia . .	p. cwt.	2	16 0
Guano, Peruvian,	p. tn.	10	0 0
,, Ichaboe	,,	6	0 0
Gypsum . .	,,	2	0 0
Nitrate of Soda,	p. cwt.	0	14 9
Nit. of Potash	p. cwt.	£1	4s. 6d
Oil of Vitriol, or Sulph. acid . .	p. lb.	0	0 1
Rape Cakes . .	p. ton	4	15 0
Salts, Epsom	,,	9	0 0
,, Glauber	,,	7	0 0
Sulphate of Ammonia, per cwt., 16s. to		0	17 0

WM. NORTHCOTT, 13, Rood-lane, Fenchurch-street.

SEED-WHEAT. — Any one desirous of obtaining Seed-Wheat for use this autumn, may ascertain, by application to me, the particulars of the crops of two excellent varieties—Shirreff's Hopetoun, and Morton's Red-Straw White, which have been grown on

WHITFIELD FARM, THORNBURY, GLOUCESTERSHIRE, during the last 3 years. This year's crop is on sale at 8s. a bushel —JOHN MORTON, Whitfield.

SEED WHEAT.

J. D. PIPER, of Colne Engaine, Essex, (Member of the Royal Agricultural Society), has been four years raising two new Stocks of Wheat, viz., Piper's "Thick-set," and "Colne Whitechaff Red." At the last Southampton Meeting two sheaves of these Wheats were exhibited outside (notice not having been given in time for their admission inside), where they produced much excitement, and 5*l.* per ear was offered for them. Last year, in the same field, side by side, the Piper's Thick-set grew eight bushels and a half, and the Colne Whitechaff Red five bushels and a half more per acre than the most prolific Wheat grown in the neighbourhood. Last autumn J. D. P. measured a quarter of an acre off his field, and dibbled the Thick-set in rows a foot apart, and one bushel per acre; and though the plant was partially destroyed by the slug in the winter, and a good sprinkling of self-sown Potatoes were left to grow, still the yield was 14 bushels and a half, being equal to 14 sacks and 2 bushels per acre. One person this year grew 15 sacks and 2 bushels, another 14 sacks, and another 13 sacks per acre. One parcel weighed 64½ lbs. per bushel. This is, perhaps, the stiffest-strawed Wheat in England, and is adapted for strong or hollow bottom ground, and is not likely to get laid. J. D. P. will send to London, or to any place within ten miles of Colne, carriage free, and he will be glad to receive a post-office order, or reference to some house in London for the money, with the order for the Wheat. When it is all sold, J. D. P. promises to inform the Public, by an advertisement in this Paper; but if he should get any post-office orders after it is all sold, he will return them. The price is regulated according to the yield. Thick-set, 15*s.* per bushel; Colne Whitechaff Red, 9*s.* per bushel. Samples of the above, both threshed and in the straw, may be seen at our Office. N.B.—J. D. P. advertised in the two principal papers in Essex, where the above Wheat was growing, in order that Agriculturists might see it and judge for themselves of the quality and quantity.

WHEAT SOWING.

FREDERICK BRAIN begs to call the attention of the Agricultural world to his GUANO MANURE, prepared expressly for Wheat crops: it abounds in all the ingredients that are necessary for a good grain crop. He particularly solicits persons who found the Foreign Guano a failure last season to give his a trial, it being much more powerful, and free from adulteration, so justly complained of in the Foreign by Agriculturists, as well as by all the leading Agricultural Journals.

Testimonial to Brain's Guano Manure.—"5 A, Hawley Road, Kentish Town, London, Aug. 15, 1844.—This is to certify that we have subjected Brain's Guano to a most patient and rigorous analysis, and find it contains all the necessary constituents of a good manure, and is well calculated to give fertility to a soil which is either naturally barren, or has been exhausted by over-cropping, by supplying the land with those substances which are absolutely requisite to a healthy vegetation: (it is not adulterated, and can always be depended on, being of uniform composition.)—(Signed) JOHN MITCHELL and FREDERICK FIELD, Analytical Chemists, of the Royal Polytechnic Institution, London."

Also, BRAIN'S highly-concentrated LIQUID GUANO, for Grass Lands, Gardens, Shrubberies, Hothouses, and Conservatories, price 1*s.* 9*d.* per quart bottle, with full directions for use, (enough for 80 gallons of Liquid Manure), to be had of most respectable Florists, Seedsmen, and Chemists in town and country.

Works, Thomas-st., Duke-st., Stamford-st., Blackfriars-road.

TO AGRICULTURISTS.

CAMPBELL'S CORN STEEPS.—The Material for Wheat is on Sale by the undermentioned Agents, at 2*s.* 6*d.* per gallon.

Notwithstanding the extreme drought of the last spring and summer, the results of the experiments, in very many instances, have been surprising, averaging a saving on seed, in the first instance, of 3*s.* per acre, and yielding a produce of 20 per cent. additional in straw, and 40 per cent. in grain. Had the season been more moist the result would have been at least double.

From Report of the Judges, Glasgow Cattle Show, Aug. 7, 1844.

"Among the remaining articles of the Exhibition (of Roots, Seeds, &c.), the Judges would direct attention to a series of specimens exhibited by Mr. James Campbell, of Dundee, consisting of various Grasses (they were Wheat, Barley, Naked Barley, and Oats), raised from Seed steeped in a Fertilising Liquid. These were contrasted with others which had not undergone the process, and were in all cases decidedly superior."

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IMPORTANT TO AGRICULTURISTS, &c.

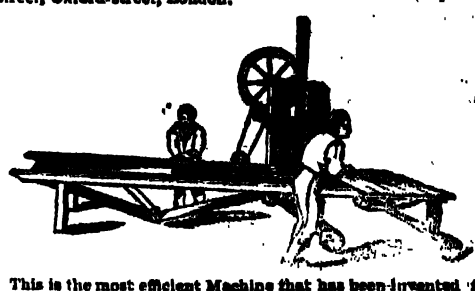
ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. MITCHELL and FIELD (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil, in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 5 A, Hawley-road, Kentish Town.

TO COLONISTS, EMIGRANTS, &c. — Mrs. MARY WEDLAKE, widow of the late THOMAS WEDLAKE, at 118, FENCHURCH STREET, CITY, informs Emigrants and others that she continues to manufacture those Agricultural Implements for which her late husband was so extensively patronised by the Settlers of South Australia, Van Diemen's Land, Swan River, New Zealand, and other British Colonies. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, viz.:—

Patent Hay-making Machines	Flour-Mills—Bean-Mills
Dressing Machines	Patent Essex Ploughs, 20 sorts
Patent Chaff-cutting Machines	Subsoil Ploughs [Colonies
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HATCHER'S BENNENDEN TILE-MACHINE, Manufactured and Sold only by COTTAM and HALLEN, Engineers, Agricultural Implement Makers, &c., 2, Winsley-street, Oxford-street, London.



This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With this amount of labour, the product of a day of 10 hours is as follows, viz.:—

1 inch diameter of Tile,	11,000	12 inches diameter of Tile,	5,000
1½ ,, ,,	8,000	24 ,, ,,	2,200

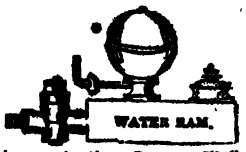
The Machine is movable down the drying-stands, so that it requires no extra boys to carry the Tiles; nor does shelves be required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Craybrook, Kent. No charge made for Patent dues or licence. The purchase of the Machine includes free use of it.

J. R. AND A. RANSOME, Ipswich, have published a Descriptive Catalogue, with Cuts, of their AGRICULTURAL IMPLEMENTS and MACHINES, which may be had by post, the order being accompanied by six penny stamps.

70, STRAND, LONDON.

RAMS FOR RAISING WATER WITHOUT LABOUR, where a fall can be obtained. FOUNTAIN BASINS IN IRON, &c.

F. ROE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in iron, which will stand the Frost and last for ages. A Ram and Fountain Jets fixed on the premises for inspection. Every kind of Garden and other Pumps, Well Engines, Baths, &c. Houses, &c. Heated by Hot Water.



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TERRA COTTA FIGURES, VASES, FOUNTAINS, &c. Manufactured by DOULTON and WATTS, LAMBETH POTTERY, High-street, Lambeth, London.

D. and W., from their experience as Potters, have made considerable improvements in the manufacture of Terra Cotta, the superiority of which over Artificial Stone or Cement is well known. It is subjected to a high degree of fire, which renders it imperishable, and gives it a sharpness and surface which no changes of temperature can impair.

D. and W. are enabled to offer the Terra Cotta at a considerable reduction in price; and Drawings and Designs will be forwarded Gratis, on application.—Architectural work executed.

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N.B. The Eighth Edition of the Almanack for 1844 having been entirely sold off, a Ninth has been printed for the supply of those who, beginning to take it in 1845, may be desirous of having the work from its commencement, but as it cannot again be reprinted, the public are warned that as the number is very limited the application for it should be immediate.

Just published, the Thirteenth Edition, price 2s 6d, free by post, 3s 6d,

THE SILENT FRIEND ON NERVOUS DEBILITY, CONSTITUTIONAL WEAKNESS, &c. By R. and L. PERRY and Co., Surgeons, London. Published by the Authors, and sold at their residence; also by Strange, 21, Paternoster row; Noble, 169, Chancery lane; Lockyer, 1, Milton-lane, Strand; Ward, 166, Strand (opposite Exeter Hall); Gordon 146 Leadenhall-st; Purkiss, Compton-st, Soho; Wilson, 118, Oxford-st (two doors from Argyll-st), London. The Cordial Balm of Syrian is a stimulant and renovator in all Spasmodic complaints Nervous Debility, Indigestion, Asthma, and Consumption, are gradually and imperceptibly removed by its use, and the whole system restored to a healthy state of organisation. Sold in bottles, price 11s and 33s. PERRY'S Purifying Specific Pills have long been used as the most certain remedy for Scorbutic Complaints of every description, Eruptions of the Skin Pimples on the Face, and other disagreeable affections the result of an impure state of the blood. These Pills are perfectly free from mercury and other deleterious drugs, and may be taken with safety without interference with or loss of time from business, and can be relied upon in every instance. Sold in boxes, at 2s 9d, 4s 6d, and 11s, by all Medicine Venders.

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Our Weekly Gossip.—Notices of Motions in the House of Commons for next Session as regards Art and Public Parks, &c.—Sir Robert Peel's Donation to Manchester; the Duke of Norfolk's to Sheffield—Sir Richard Westmacott's Monument to the Duke of Cleveland—Thorwaldsen's Esculapius—Mr. Baily's Graces—Cassini's Statue—Death of M. Benecke—The Scientific Congress of France—The Jubilee at Konigsberg—MM. Bravais and Martin's Ascent of Mont Blanc—Exploration of the river Falémé—Trial as regards a French MS.—Liszt at Toulon, &c.

Societies.—The Horticultural.

Fine Arts.—Third Report of the Commissioners on the Fine Arts—Mr. Hallam and Lord Mahon's Correspondence—On the Principles which may regulate the selection of subjects for Painting in the new Houses of Parliament—Mr. Eastlake on the same subject; "with reference to the nature and various styles of the Formative Arts"—The Durham Memorial Temple.

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*** For the SCALE OF CHARGES, and all other particulars, reference may be made to Mr. Churchill, Princes-street, Soho, London; Messrs. Maclachlan, Stewart, and Co., South bridge, Mr. Jack, Niddry street, Messrs. Harthill and Son, Waterloo-place, and Mr. Seton, Head of the Mound, Edinburgh; Messrs. Fannin and Co., Dublin, most News Agents in Great Britain; and Messrs. Fortin, Masson, et Cie, Paris.

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Price Sixpence, free by post throughout.

The Lancet,

Of Saturday last, SEPTEMBER 14, contains:—

A COURSE of LECTURES on ORGANIC CHEMISTRY, delivered during the WINTER SESSION 1844 in the University of Giessen, by PROFESSOR LIEBIG.—On Amidogen.

Aneurismal Tumour of the Upper Part of the Left Arm, by Alfred Jukes, Esq.

On the supposed "Relation between Insanity and the State of the Blood," by R. H. Whiteman, Esq.

Useful Hints to Hospitals.

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Case of Tic Doloureux and Persistent Ptosis produced by Lightning, by R. H. Allnatt, M.D.

On the Efficacy of Large Doses of Calomel in Typhus, by J. Burgess, Esq.

Alkalies in the Treatment of Diabetes.

Account of an Inquest held upon a Boy, whose Death was supposed to have been occasioned by the Medicinal Administration of Phosphorus, by C. Reedal, Esq.

The Preservation of the Ergot of Rye by Camphor, by F. Bowie, Esq.

The Hydrostatic Bed.

FOREIGN DEPARTMENT:—

Paracentesis Thoracis in Acute Pleurisy. On the Causes of Aneurism. Cases of Rupture of the Tendo Achillis.

REVIEWS AND BIBLIOGRAPHICAL NOTICES:—

Medical History of the Expedition to the Niger during the Years 1841-2, by J. O. M'William, M.D.

A Practical Treatise on Midwifery, by M. Chailly.

Lectures on Chemistry, by Henry M. Noad.

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BRITISH MEDICAL JOURNALS:—

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The University of Edinburgh and the Royal College of Physicians.

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Army Medical Reports.

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Guy's Hospital.—Concussion of the Brain.

Lock Hospital.—Venereal Nodes. Syphilitic Iritis, Tubercular Eruption, &c.

Northampton General Infirmary.—Dislocation of the Humerus. Reduction after several Weeks.

News of the Week.—Mortality Table.—Apothecaries' Hall.—Correspondents.

London: JOHN CHURCHILL, Princes-street, Soho; and may be had of all Booksellers and Newsmen.

AGRICULTURE, COMMERCE, NAVIGATION, the CHURCH.—A. B. SAVORY and SONS, GOLDSMITHS, 11, Cornhill, London, opposite the Bank, have finished a few Splendid Pieces of PLATE, suitable for Presentation to Gentlemen connected with either of the above pursuits or professions, to which they invite the attention of committees who are in search of valuable testimonials for such occasions.

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Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

REAL SHEFFIELD PLATED DISH COVERS, at prices hitherto unattempted. THOMAS WEST, 18, Ludgate-street, London, having received a large supply direct from the manufactory at Sheffield, offers the best Meat Dish Covers as follow:—Cottage Pattern—1 Cover of 20 inches, 3l. 12s; 1 do. of 18 inches, 2l 8s; 2 do of 14 inches, 4l. 8s.; the set of 4, complete, 11l. 12s. ONLY. Double Dome Pattern—1 Cover of 20 in., 3l. 16s, 1 do. of 18 inches, 3l 12s.; 2 do. of 14 inches, 5l. 5s.; the set of 4, complete, 14l ONLY. In noticing the prices of the above goods, T. W. ventures to assert they are superior to many advertised at a much higher price. Best Wrought Silver Spoons and Forks as usual, Fiddle Pattern, 7s. 3d. per oz.; Queen's Pattern, 7s 4d per oz. Superior Watches and Fine Gold Jewellery, cheaper than any house in London. West's Hand book, with 106 engravings, and full of useful information, is just published, and may be had gratis, and post free, on application to T. West, Silversmith, 18, Ludgate-street, London.

Printed by WILLIAM BRADBURY, of No. 6, York place, Scotch Huntingdon, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Globe Huntingdon, both in the county of Middlesex, Printers, at their Office in Lombard-street, in the precinct of Whitefriars, in the City of London; and published by them at the Office, No. 6, Chandos-street, in the parish of St. Paul's, Covent-Garden, in the said county, Saturday, September 14, 1844. Advertisements and Communications are to be addressed to the Editor.—Saturday, September 21, 1844.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 39.—1844. SATURDAY, SEPTEMBER 28. [Price 6d.

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GARDENERS' CHRONICLE.—To be Sold, a bargain, the three First Volumes of the GARDENERS' CHRONICLE, complete and in good order, unbound, for 3l 10s. Apply, if by letter pre-paid, to Mr. JENNINGS, Florist, South Lambeth-road, Vauxhall.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM RAY begs to announce that he is now prepared to send out his collection of the above splendid and showy plants, of all the various shades of colour, from black, or dark, to white. As his stock is large, he is enabled to supply them upon very moderate terms, viz., 42s. per 100.

N.B.—As this plant is becoming popular as a show flower, W. M. has a few very select varieties, by name and colour, at 20s. per dozen, which he has selected for the purpose of exhibiting. Also Seed selected from finest double flowers, in packets at 2s. 6d. and 5s. each, post-free. The above may also be had by order of the principal Seedsmen in London, and of Mr. WILKINSON, Market-place, Manchester. A remittance or reference from unknown correspondents.

Hope Nursery, Bedale, Sept. 25.

MR. HOYLE'S NEW SEEDLING GERANIUMS.

MR. MILLER begs to call attention to the Advertisement of these splendid flowers in last week's *Chronicle*, and also states that printed Lists, giving full descriptions, are now ready, and may be had Gratis.

Providence Nursery, Ramsgate, Sept. 26.

NEW ALONA CÆLESTIS.

J. J. BEST begs to inform the Trade, the Public, and his Friends in general, that, having taken (as successor of Mr. Henry Hamond, who is retiring from business) the Abbey Nursery, Reading, Berkshire, he intends, if possible, sending out (middle of October) established plants, in 60-pots, of that Gem of Greenhouse-plants — ALONA CÆLESTIS. The above is figured in the "Botanical Register" for September, "Paxton's Magazine," "Plant's Florist's Journal," and "Harrison's Cabinet" for October. ALONA CÆLESTIS is a half-hardy evergreen greenhouse-shrub, from Chili; flowers, sky-blue; the size and shape of a Petunia; a good erect habit, and freedom of growth; has proved a perpetual bloomer since May last, and likely to continue much longer. Price One Guinea per plant; the usual discount to the Trade, when two plants are taken at once. Early orders are respectfully requested, as the Stock is very limited; one-third of the value will be taken in Stock from Trade orders.—Direct to J. J. BEST, Abbey Nursery, Reading, Berks, September 25.

SUPERB SHOWY SEEDLING CINERARIAS, for this autumn and winter flowering.

Dwarf, bushy plants, well trussed for bloom, in 32-sized pots, 12s. per dozen.

Do. do. in 48-sized pots, 9s. per dozen.

The above can be confidently recommended as being saved from the very choicest and most superb kinds, comprising every shade of beautiful light and dark-blue tints, and admirably adapted for the furnishing of the greenhouse or drawing-room, throughout the autumn and winter months. Seed selected from the same, 2s. 6d. per packet.

THUNBERGIA CERYSOPS.—Plants of this beautiful Creeper, rich purple flower, with golden eye, 7s. 6d. each.

M. B. has a large stock of the following STRAWBERRIES:—

Myatt's British Queen	6s. per 100.
Do. Eliza	6s. "
Emperor, variety from Keen's Seedling	3s. "
Green-flesh Pine, small fruit, fine flavour	3s. "
Elton Pine	2s. 6d. "
Keen's Seedling	2s. 6d. "

Applications, including post-office orders, will be immediately and carefully executed, addressed to MICHAEL BREWER, Sen., London-road Nursery, Cambridge.

HYACINTHS, &c.

JOHN THATCHER AND SON, SEEDSMEN, &c., 32, High-street, Islington, respectfully inform the Nobility, Gentry, and the Public generally, that they have imported a large and choice collection of Dutch Flower-roots, consisting of Hyacinths, Narcissus, Jonquils, Tulips, Anemones, Ranunculuses, Crocuses, &c., Catalogues of which will be delivered post-free on application. Also that they are manufacturers of all kinds of Flushing and Bowling Nets. Hays for Rabbits, Nets for Nets, &c. &c.

THE NEW SUPERB SEEDLING PICOTEE, "BURROUGHES'S DUKE OF NEWCASTLE."

YOUELL & CO. have much pleasure in announcing they will send out for the first time the above splendid light-edged purple Picotee, raised by the Rev. J. Burroughes. It is guaranteed to surpass any Purple Picotee that has yet been raised. Without commenting further upon its superiority, Y. and Co. beg to refer to a report in a late No. of the *Gardeners' Chronicle*, as follows:—

"The *Duke of Newcastle* is a flower of first-rate properties, it is a light-edged purple; the petals are large, and of good form and substance; even on the edge; the colour unbroken; the pod good, and with less disposition to bar than is common." It obtained the first prize, as the best seedling, at the Norfolk and Norwich Horticultural Exhibition. Price 21s per pair. The stock being limited, to prevent disappointment early orders are respectfully requested. Y. & Co. are also enabled to supply the following superb Picotees, raised by the same gentleman, all possessing first rate properties, and having been exhibited and obtained first class prizes at several of the metropolitan Exhibitions of the present year. They are as follows —

Burroughes's Mrs. Benyon, Red Picotee	7s	6d.
" Lady Alice Peel, Rose Picotee	7	6
" Miss Jane, Purple Picotee	7	6
" Mrs. Bevan, Red Picotee	7	6
" Enchantress, Scarlet Picotee	5	0

CARNATIONS AND PICOTEES.

Y. and Co.'s collection of this beautiful tribe of flowers will be found the most extensive and select in Europe, comprising every known variety of merit. The plants are remarkably strong and healthy, and ready for sending out to any part of the United Kingdom and the Continent at the following prices

12 pairs extra fine and very superior first class Show £ s. d.

Flowers				2	10 0
25	ditto	ditto	ditto	5	0 0
12	ditto	ditto	Show Flowers	1	10 0
25	ditto	ditto	ditto	3	0 0
12 pairs of Extra fine Show Pinks				0	12 0
25	ditto	ditto	ditto	1	1 0

The selection being left to Y. and Co.

*** For Particulars of their importation of the finest HYACINTHS, &c., direct from Haarlem, see Advertisement of last week.

Great Yarmouth Nursery, Sept 27, 1844.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs WARNER & WARNER, Cornhill, London, after the 7th September.

DOUBLE ROMAN and PAPER WHITE NARCISSUS, 4s. per dozen. The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CORBETT'S, late Mr. BARNON'S, Italian and Foreign Warehouse, 19, Pall Mall. Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c. &c. Price Catalogues of which may be had per Post.

WOODLANDS NURSERY, Maresfield, near Uckfield, Sussex.

WM. WOOD AND SON, have an immense stock of the following good and approved kinds of STRAWBERRIES, strong plants of which are now ready for immediate transit —Myatt's British Queen, 5s. per 100, Eliza, 5s, Elton Pine, 8s; Princess Royal, fine, 7s. 6d.; Princess Alice Maud, 30s., Deptford Pine, 21s., Keen's Seedling, 3s. A remittance or reference is respectfully solicited from unknown correspondents.

Catalogues of the general Nursery Stock, and the new Rose List, are now ready, and may be had Gratis on application.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, GERANIUMS, AURICULAS, CARNATIONS, and LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment FLORIST TO HER MAJESTY, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above Flowers, which, from the success he has had in their cultivation, he can offer at very moderate prices. He particularly wishes to call attention to the highly-flattering remarks on his Exhibitions of Tulips and Lilium lancifolium this season, in the various papers. He is also desirous of reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collections or ornament their parterres with these beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Lilium lancifolium are particularly adapted for parterres, as, besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and when flowers are so much wanted. They only require to be known to be universally cultivated. Catalogues can be forwarded by post on application. Foreign orders executed.

SPLENDID NEW PLANTS.

JAMES CUTHILL begs most respectfully to announce that he has now ready to send out strong, healthy plants of the following:—Lisianthus Russellianus, 2s. 6d. to 5s. each; L. nigrescens, 5s. to 10s.; L. longifolius, 5s. to 10s.; L. corymbosus, 10s each; L. glaucifolius seed, at 2s. 6d. per packet. J. C. has a splendid Yellow Lisianthus which will be sent out next year. A Treatise will accompany each order on the best method of growing the Lisianthus. Fine roots of the Prince of Denmark Scarlet Clove-scented Carnation, an excellent forcer, 12s. per doz.; Petunia grandiflora (Van Houtte), a fine pencilled lilac, 1s. each; also Fleming's Trentham Cabul Melon, which gained several prizes at Regent-street—the best-flavoured and most extraordinary bearer; three lights produced 90 lbs. first crop—40 the second; and is now bearing the third; 2s. 6d. per packet. Latter's Victory of England Cucumber, 2s. 6d. to 5s. each; Cuthill's early improved Black Spine, very handsome, 2s. 6d. per packet, or the three for 6s. The trade supplied by the ounce of the above Cucumbers, by sending a money order on the Camberwell Post-office.—Letters directed to J. CUTHILL, Florist, Denmark-hill, Camberwell, London, will be immediately attended to.

N.B. The Lisianthus nigrescens can be seen in bloom 7 feet high, with upwards of 1000 blooms upon it, and will continue in flower till Christmas.

RAY SOCIETY, instituted 2d February, 1844.—This Society has been formed upon the principle of the Parker, Camden, Sydenham, and other Societies, for the purpose of securing to those attached to the study of Natural History, such Works on the various branches of Zoology and Botany as could not be obtained by other means; and will consist of original works, of new editions of works of established merit; of rare tracts and MSS; and of translations and reprints of foreign works. Every subscriber of One Guinea annually will be considered a member of the Society, and will be entitled to a copy of every work published by the Society. The Council have great pleasure in stating that the number of Members already exceeds 300, and beg to call the attention of their friends to the necessity of sending in their names as early as possible, in order that they may be enabled to determine the number of copies of their works which they ought to print. The Council hope to publish two volumes before Christmas, the first of which will consist of translations from the German and Italian, of Reports on the progress of Zoology and Botany during the last few years.

Communications on the business of the Society are requested to be addressed to the Secretaries, Dr. George Johnston, Berwick-upon-Tweed, and Dr. Lankester, Golden-square, London. Subscriptions to be sent, by post-office order or check, to the Treasurer, J. S. Bowerbank, Esq., 45, Park-street, Islington.

GEORGE JOHNSTONE, M.D.
EDWIN LANKESTER, M.D. } Secretaries.

J. T. WILLMER, King's Road, Chelsea, by Appointment Florist to Her Majesty, begs to inform his Friends and the Public that his Carnations and Picotees are now ready for sending out, catalogues of which may be had on prepaid application containing a postage stamp.

SPLENDID NEW HEAVY-EDGED PURPLE PICOTEE, WOOD'S "PRINCESS ALICE"

JOHN WOOD begs to announce that the stock of this superb flower is now ready for sale at 15s. per pair, postage included. It has gained the following prizes:—At Cambridge Florists' Show, 1843, it was the 1st seedling, and the 1st heavy edged purple; at the same Show, in 1844, it took the premium prize, beating all the Picotees exhibited. At Huntingdon, 1843, it was 1st seedling and 1st purple Picotee; at the same place, 1844, it was 1st, 2d, 3d, and 4th, excluding every other flower. At Peterborough, 1843, it was the 1st seedling, took 1st pair of purple, and was in the best stand of six Picotees; in 1844, at the same Show, it took the 1st pair, and was again in the 1st stand of six.

J. W flatters himself that this statement precludes the necessity of farther comment. Plants of the above may also be had of HUNT and M'MULLEN, 6, Leadenhall-street.

J. W. has a few pairs of that splendid Pink, Garratt's "Queen of Roses," for sale, at 7s. 6d. per pair; his Catalogue of Carnations, Picotees, &c., may also be had on prepaid application; and those about to commence growing, he will supply as follows:—M left to his selection.

CARNATIONS AND PICOTEES.

50 pairs good sorts, one pair of each	0	42	0s. 6d.
25 do. do.	0	1	10 0
24 do. fine show flowers	0	2	0 0
12 do. do.	0	1	0 0

PINKS.

50 pairs good kinds, one pair of each	0	1	0 0
25 do do.	0	0	10 0
24 do. fine show flowers	0	0	12 0
12 do. do.	0	0	9 0

N.B.—Remittances must accompany the orders of unknown correspondents.—Nursery, Huntingdon.

DUTCH HYACINTHS.

WARNER AND WARNER, SEEDSMEN, No. 28, Cornhill, London, respectfully inform the Nobility and Gentry their Dutch Flower roots have arrived in superior condition, consisting of the choicest and newest varieties. The Bulbs are unusually handsome and large, at moderate prices. Catalogues forwarded by post on application.

INGA PULCHERRIMA. (Figured in "Paxton's Magazine of Botany" for August, 1844.)—Fine Plants of this extremely elegant and beautiful Exotic, with most of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices:—

Inga pulcherrima, 7s. 6d.	Habrothamnus elegans, 18s.
Achimenes picta, 10s. 6d.	Tremandra Hugelii, 10s. 6d. to 21s.
Æschynanthus Horsefeldii, 7s 6d	Veronica speciosa, 3s. to 18s.
Amycla zygomeris, 7s. 6d.	Erica elegans, fine and healthy, 15s., 24s, and 30s. per doz.
Clerodendron splendens, 10s. 6d	Drymonia punctata, 3s 6d
" squamatum, 5s.	Phlox Van Houttei, (flowering plants), 2s
Hindsia, or Rondeletia longiflora, 15s.	Spirea Reevesiana, 5s.
Epacris campanulata v rosea (the finest selected from 1000 seedlings), 7s. 6d.	Viburnum colonifolium, 3s. 6d.

Also the following, in collections

100 Cape Ericas of 100 distinct sorts, (including many fine sorts) 5l.	(including Campanulata rosea) 21s.
12 Epacrises of 12 distinct sorts,	12 Azalea indica, of 12 distinct sorts, (including fulgens) 21s.

THOMAS JACKSON, Kingston Nursery, Surrey, Sept. 27.

JOHN SLATER, FLORIST, Cheetham Hill, near Manchester, respectfully calls the attention of the Floricultural Public to his large and select collection of the following Florists' Flowers —TULIPS, AURICULAS, POLYANTHUSES, CARNATIONS, and PICOTEES; catalogues of which may be had on prepaid application. 12 plants of named Auriculas, of different varieties, for 20s., package included. 20 pairs of Carnations and Picotees, good named varieties, for 20s., package included.

LILIUM LANCIFOLIUM.—Flowering Bulbs of these most beautiful LILIES to be had at the following low prices: Lancifolium album . . 5s. each.
" punctatum . . 5s. "
" speciosum . . 25s. "
of W. J. NUTTING, Seedsman, 45, Cheapside, London.

Seed from the best varieties of IXIAS and SPARAXIS, at 2s. 6d. per packet.

NEW CARNATIONS, PICOTEES, AND PINKS.

MESSRS. N. and B. NORMAN'S CATALOGUE of SHOW VARIETIES can be had on prepaid application.—Bull Fields, Wenlock.

DUTCH FLOWER-ROOTS, &c.

DICKSONS AND Co., NURSERY, SEEDSMEN, and FLORISTS, Waterloo-place, Edinburgh, in returning thanks for the long-continued patronage of their numerous Friends and the Public, respectfully intimate the arrival of their second importation of BULBOUS FLOWER ROOTS, consisting of a superb collection of double and single Hyacinths, of every variety and shade of colour; Polyanthus and other Narcissus; double and single Due Van Tholl, new Lording and Florists' Tulips; Amaryllis; Crown Imperials and Martagon Lilies, Gladiolus, with many new hybrids; Iris, Ixias Spiraxis Sollias, Oxalis, Tigridias, Jonquils, Fritillarias, Snowdrops, Crocuses, Anemones, Ranunculuses, Tuberoses, Alstrœmerias Gesnerias, Gloxinias, Tropœoloms, &c, all carefully selected of very superior growth, and moderate in price

They are in course of receiving their usual supply of early Garden Seeds, Winter Tares, &c, for autumn sowing

D & Co would, this season, invite particular attention to the following, at their extensive Nurseries Leith Walk, Pilrig street, and Red Brae —Seedling and transplanted Forest trees of every variety; Thorns and Plants for Hedges and Underwood (samples of which will be forwarded when required), trained and standard Fruit trees extra fine as west French, China, and Hybrid Roses; Evergreen and Deciduous Flowering Shrubs; Greenhouse, Stove, and Flower garden Plants

Early orders are invited for D & Co's Prize Seedling CALCEOLARIAS, so much in demand and which will be sent out for the first time during autumn and spring The names are—

Beauty supreme	Duke of Argyll	Nestor
Captivation	Earl of Eglinton	Nymph
Clara	Earl of Seafield	Prince Albert
Comet	Excelsa	Panther
Competitor	Exquisite	Queen of Roses
Constellation	Favourite	Rebecca
Curate	Flash	Sir Robert Peel
Dictator	Jessie	Sir Walter Scott
Duchess of Gordon	Lord Lovat	Splendida
Duke of Roxburghe	Luna	Sultan
Duke of York	Marquis of Bute	Triumph
Duke of Wellington	Mrs Morrison	Village Maid
Duke of Roxburghe	Miss Milne	

MARCHIONESS OF BREADALBANE, white ground, finely marbled with rose pink, and splendid form

ECLIPSE (RICHARDSON'S), very superior to Standishii, with fine habit and very distinct flower

NE PLUS ULTRA (SHANKLIE'S), rose colour, beautifully spotted with crimson, and splendid form

LEITH WALK BEAUTY (SHANKLIE'S), pure yellow ground, beautifully striped and spotted with scarlet, with large and fine form.

GEM (SCOTT'S), white ground, richly spotted and striped with crimson, very superior to similar one called Duchess of Buccleuch

STANDARD OF PERFECTION (FERGUSON'S), cream colour very distinctly marked all over with maroon and rose coloured pole, with peculiarly perfect form

DUKE OF BUCCLEUCH, large white ground, with fine large purple blotch, superior to Lucy

MRS RICHARDSON, beautiful cream coloured ground, richly spotted and striped with rosy crimson splendid habit

QUEEN, light straw-coloured ground, striped and shaded with maroon, curiously marked, and very showy

LADY ANN MURRAY, white ground, belted and spotted with purplish pink, large and fine form

Price of single Plants of those described above, 1s each
Those not described . . . 10s 6d each
If taken in collections, as follows — £
Six of the very best . . . 2 2
Twelve do do . . 3 3
Eighteen do do. . . 4 4

DICKSONS and Co will be glad to communicate with Noblemen or Gentlemen requiring Gardeners, Farm Stewards, Foresters, &c, as they have on their list men of very superior character and ability —1, Waterloo place, Edinburgh, Sept 1844

NEW PLANTS

MESSRS. VEITCH AND SON have now ready for sending out the two undermentioned beautiful New Plants, viz —

HINDSIA VIOLACEA Strong plants at 5s It is figured by Dr LINDLEY in the "Botanical Register" for August last, who there says—"The Hindsia violacea is one of the finest things obtained from South Brazil It has been imported by Messrs Veitch and Son, of Exeter, who received for it the Large Silver Medal at the Horticultural Society's Garden Exhibition in May last It will doubtless prove a very easily cultivated Greenhouse Plant, and is certainly unsurpassed in beauty by blue flowering shrubs"

CATTLEYA PUTUMEA. Strong plants at 42s This plant was exhibited at Chiswick, in May, under the name of Cattleya maxima species, and received the Knightian Medal. See Report in *Gardeners' Chronicle* for May 25. It is figured in "Paxton's Magazine" for July last

Messrs V and Son have also to offer the following fine plants, viz —

Achimenes picta	Gardenia Sherbourneia
Allemanda grandiflora	" tetraptera
Barbacenia aquatica Veitchii	Gesneria polyantha
Clerodendron laxiflorum	Gloxinia Cartlettii
" splendens	Hoya imperialis
Cyrtoceras reflexa	" longipulcherrima
Echites atropurpurea	Luculia gratissima
" hirsuta	Passiflora racemosa
" splendens	Pentas carnea
Gardenia Radicans	Thunbergia chrysops &c &c

N B — Messrs V and Son's General Catalogue can be had on application — Exeter, Sept. 27, 1844

ROSES

A PAUL AND SON respectfully announce that their Annual Descriptive ROSE CATALOGUE will be ready for circulation in a few days, and may be obtained from the Nurseries post free, upon application inclosing two postage stamps Their stock is very large, and having been grown on new ground the plants are more than usually robust and healthy All the really valuable new Roses are in their collection

TO NOBLEMEN and GENTLEMEN PLANTING —A PAUL and SON would also call attention to their Fruit and Forest Trees Ornamental Trees, Shrubs, Evergreens, &c. &c, which are growing on upwards of 25 acres of ground, and are on sale upon the most reasonable terms. The soil is a stiff loam, from which they remove in perfect safety, having abundance of fibrous roots and the earth adhering thereto. The proximity of the Nurseries to the Metropolis, and the advantageous terms of sale, recommend them especially to gentlemen planting.

Nurseries, Cheshunt Herts, 12 miles from London, near the Waltham Cross Station on the Cambridge Line of the Eastern Counties Railway

EARLIEST STRAWBERRY in CULTIVATION. —Strong Plants of the "PRINCESS ALICE MAUDE" STRAWBERRY, which has proved itself to be the earliest grown in this country, are now ready to be sent out at 20s. per 100. As an Early Strawberry, it has taken the First Prize at all the Horticultural Exhibitions in the early part of the season Also Plants of the "British Queen," "Deptford Pine," "Prince Albert," and all the leading kinds To be had of Messrs. WARREN & WARREN, Seedsmen, 28, Cornhill, London.

CAMELLIA JAPONICA.

ROBERT LAWSON, Esq., of Tiverton, intends disposing of his stock of Camellias, which he has collected at much expense, and successfully cultivated for many years. They are in the highest state of health, and most abundantly set with blooming buds Mr L. disposes of them solely in consequence of their having become too large for his conservatory They are as follow —

				£	s.	d.
Reticulata,	from 7 to 8 feet in height, a very fine specimen, quite healthy and green			10	10	0
Imbricata,	from 7 to 8 feet in height,		do.	8	8	0
"	" 3 to 4	"		1	10	0
Eximia	" 7 to 8	"	a magnificent plant	7	7	0
Chandlerii	" 6 to 7	"	a fine plant	5	5	0
"	" 3 to 4	"		1	10	0
Lady Hume's Blush	6 to 7	"	fine	4	4	0
Double White	6	"		5	5	0
"	" 5 to 6	"		3	10	0
"	" 5	"		2	10	0
Invincible (Gray's)	5 to 6	"		3	3	0
Fordii	" 4 to 5	"	very fine	4	4	0
"	" 2 to 3	"		1	1	0
Double Striped	5 to 6	"	fine	2	10	0
Anemoneflora Alba	4 to 5	"		2	10	0
Speciosa	" 4 to 5	"		2	2	0
Woodsii	" 4	"	fine	2	10	0
Warratah	" 4 to 5	"	fine	2	2	0
Florida	" 4 to 5	"		2	10	0
Corralina	" 3	"		1	5	0
Lawsonii	" 2	"	new	1	10	0
Colvillii	" 2	"		0	10	6
Donkelaeri	" 2	"		0	10	6
Insignis	" 6 to 7	"	very fine	2	10	0
Eclipse (Prens's)	6 to 7	"		1	3	0

The Prices affixed are for the separate plants, of which not less than 8 can be taken together If the whole are taken in one lot a considerable reduction will be made Mr Lawson will be happy to show them, or give any further particulars that may be required —Tiverton, Sept 27th, 1844

NEW SEEDLING AZALEAS AND CINERARIAS

WM. IVERY, FLORIST, &c, Peckham, near London, begs to inform his Friends and the Public that he is ready to supply the undernamed Plants, which he can with confidence recommend

AZALEA ATHERITIA FORMOSA, bright red, 21s to 31s 6d each "A Certificate of Merit was awarded to Mr Jas Ivery, of Bethworth, having large flowers, clean and bright in colour, and expanding freely"—DR LINDLEY in *Gard Chron*, *May 25*

AZALEA COCCINEA SUPERBA, bright scarlet, good shape, and free bloomer, 15s each, Azalea delicata, bright pink, good shape, and abundant bloomer, 15s each

CINERARIAS —Beauty of Wonham, very large white beautiful eye and dwarf habit, 5s, tricolor, white and pink, brown eye, compact flower, 5s, Nosegay, purplish blue, good petal, and noble truss, 5s, Washington, very large crimson, good petal 5s, Captivation, white ground, with beautiful maxarine purple tips, gained first Prize at the West Kent Junt Exhibition, 7s, Criterion, mazarine blue, beautiful white centre, gained first Prize at Dorking May Exhibition, 7s 6d, Red Rover, bright crimson, beautiful prolific bloomer, 5s, Fanny Elsler, white crimson tips, prolific bloomer, 5s, Pickwick, bright purple large flower, and fine shape, 1s 6d; Compacta, small, white, and beautiful round flower, 5s

The whole set of Seedling Cinerarias, *21 5s*

The following CINERARIAS can be recommended as good — Ivery's Beauty of Syston, bronzy purplish blue, fine winter flowering var, 2s 6d, Emperor 1s, Pride of Peckham, 2s 6d Regulata, 2s. Delicata, 1s 6d, Regina Victoria, 2s 6d; Triumph, 2s Rival King, 1s, Imperial Blue, 1s, Royal Blue, 1s, Ivryana, 1s 6d, Princess Royal 1s 6d; Queen Victoria, 1s 6d, Exquisite, 2s 6d, Wee Pet, 1s 6d Hendersonii Azurea, 1s 6d Pilot, 1s 6d Unique 1s 6d Magnet, 1s 6d; Prince of Oldenburgh, 1s 6d; Bombre Agreeable, 2s 6d, Eclipse, 1s 6d, No 7, 1s 6d, Enchantress, 1s 6d, Compact Blue, 1s 6d; Bell's Decora 1s 6d Good's Compacta, 1s 6d; Gaines's True Blue, 1s 6d; Prince Albert, 1s 6d, May's Queen of May, 2s 6d Youngii, 1s 6d Good varieties from 9s to 12s per doz Fine Cineraria Seed, 2s 6d to 5s per packet

Fine PETUNIA, noticed in "Calendar of Operations," *Gard Chron*, Sept 14 Ivery's Pet, 1s 6d to 2s 6d Magna Charta, 1s 6d to 2s 6d; Reliance, 1s 6d to 2s 6d, Ovid, 1s 6d Prince Albert, 1s 6d to 2s 6d, Scottish Beauty, 1s 6d, Enchantress, 1s

JOSEPH FRYER begs respectfully to inform his Friends and the Public, that he will have ready in a few days Catalogues containing his choice and extensive Collection of PANSIES VERBENAS, FUCHSIAS PETUNIAS, CARNATIONS, PICOTEES, PINKS, Greenhouse and Herbaceous Plants, &c &c, likewise a separate Catalogue of Dutch Bulbous Roots, which will be forwarded on application J F begs to observe that his plants are in excellent health, true to name and at very low prices —Clarendon Nursery, Camberwell, London, Sept 27

PARKSTONE NURSERY, NEAR POOLE

J. PIPER'S NEW SEEDLING FUCHSIA, PICTA —This flower has been submitted to Professor LINDLEY for inspection, and has been pronounced by him to be a good flower It is large in size, the tube and sepals of a delicate but bright pink, the latter tipped with green, the corolla of a rich rosy crimson, slightly tinged with lilac The flower is well developed, and of admirable form and substance It is altogether a most desirable variety, and ought to be in the collection of every cultivator of this beautiful tribe

LARGE DOUBLE WHITE ROCKETS

S. AND J DILLISTONE have a fine stock of the above, which will be sold reasonable Also some strong SEEDLING CINERARIAS, from the choicest named ones of last season Prices &c upon application —Nurseries, Sturmere, Essex, near Haverhill

CRAIG'S PROLIFIC FORCING CUCUMBER.—This unrivalled variety for Early Forcing in Pots, Boxes, or Frames, is now ready for distribution, and may be had per post at 2s 6d per packet of six seeds. For supplying a family this variety is unequalled, being a cross between the Sion House Frame and Smyrna, and combines the good properties of both its parents Apply to Mr Edwards, Seedsman, Bridge-street, Hull to Mr Geo Charlwood, Seedsman, Covent-garden, to Messrs Flanagan and Son, Mansion-house-square, London, or to J CRAIG (the raiser), Sand Hutton, near York. 2s 6d, or the amount in postage stamps, will be required.

N.B —The most respectable reference as to its superiority given on application.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	Orange Tubs, Flower Boxes, &c
Garden Edging	

EDWARD EDGE will be happy to answer any inquiries, either personally or by post.

SUPERB HYACINTHS, ANEMONES, TULIPS, &c., just received from the most celebrated growers in Holland, and will be delivered free of all expenses at the railways, packet-offices, or in any part of London, at the very moderate prices annexed.

	s.	d.
NEW LARGE DOUBLE ANEMONES		
The collection, 50 sorts.	17	6
The best 12 ditto	5	0
The same, mixed, p 100	12	0
Do do, per doz	1	0
Fine dble scarlet, p. doz	2	6
Single, many colrs., p. 100	7	0
NEW IRISES.		
The best 40, distinct	15	0
The best 12 do	5	0
Fine mixed, per 100	15	0
Persian (sweet), per doz	3	0
SWEET JONQUILS		
Largest double, per doz.	3	6
Large do	2	0
Single do	2	0
EARLY TULIPS		
Due Van Thols, per 100	7	0
Do, per doz	1	0
Clarimond & others, 5s to	1	6
Tournsol (fine)	3	6
CROCUSES		
20 new sorts, per 100	5	0
Do, mixed "	2	6
Largest blue "	2	6
" white "	2	6
" yellow "	2	6
" striped "	2	0
GLADIOLUS		
Florabundus, per dozen	2	6
Cardinalis "	4	0
Ramosus and many others.		

Narcissus, Ranunculuses, Tulips, Snowdrops, Lilies, &c, in extensive collections.

HYACINTHS,
From collection of 270 sorts
Best Double

Panorama, bright red	0	9
Bouquet Tendre (or Waterloo), large dark rose	0	6
Alamode, striped blue	0	9
Anna Maria, large white, with purple eye	1	0
Alamode Pulsc, blush	1	0
Bouquet Pourpre	0	9
Bouquet d'Orange	1	0
Acteur large pink	0	9
Comtesse de la Costa, red	0	9
Comte de Very,—very dark purple	1	0
La Vestale, pure white, bright green tips	1	0
La Deesse, pearl white	1	0
Jeannette, blush	0	6
Kroon Van Indian, dark blue	1	0
Jaune Pyramide, yellow	1	0
La Favorite, fine primrose	0	9
Groot Voorst, large blush	0	6
Hiralita, pink	0	6
Don Gratnik, pure white	0	9
Grand Vedette, light blue	0	9
Desmodesis, rose colour	0	6
Hiranlus, deep red	0	9
Duchesse de Normandie, fine blue	0	9
Endracht, dark rose	1	0
Flos sanguineus, red with green tips	1	0
Penelope, white and pink	0	6
Perrugue Royale, red	1	0
Duchesse de Bedford, large white, with pink eye	1	0
Guide Vlies, fine white	0	6
Rex rubrorum, red	1	0
Nannette, pure white	0	6
Pyrene, white, green tips	1	0
Lord Noel, large blue	1	0
Lord Wellington, do	0	9
Monarque de France, large blue, dark eye	1	0
Passe tout, dark	1	0
Ophir, true yellow	1	0
Best Single		
Grand Vainqueur, paper white, large truss	0	9
Hannah More, do	1	0
Hercules, large pink	1	0
Emicus, dark purple	0	6
Ami du Cœur, do	0	6
Appius, very dark	0	9
Talma, large red	0	9
Le plus noir	1	0
Orondatis, large blue	1	0
Tolson d'Or, yellow	0	9
Henriette Sontag, red	1	0

Messrs SUTTON and SONS, Reading, Berks, respectfully present the above as a select list of the sorts most worthy of cultivation, and recommend early application, while they possess fine roots of every variety

N B —Parcels delivered free to any part of London, and properly packed for conveyance to any distance

Sales by Auction.

TO GENTLEMEN, BUILDERS, NURSERYMEN, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Public Auction (under a bill of sale), on the premises, Sussex Nursery, Loughboro' road, Brixton-road, on Monday 30th September, 1844, at eleven o'clock, the whole of the NURSERY STOCK, consisting in choice Evergreens and Flowering Shrubs, Standard and Dwarf Roses; also, two newly erected Greenhouses, Frames, about 2000 Greenhouse Plants, a quantity of Rock Work, Utensils in Trade, &c, may be viewed prior to the sale Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone

FREEHOLD NURSERY GROUND, ST ALBANS, HERTS

MESSRS PROTHEROE & MORRIS have received instructions from the Executors of the late Mr. Robert Tullwood, the mortgagee, to submit to public competition at the Auction Mart Bartholomew Lane on Thursday, 3d October 1844 at One o'clock, THE KEY FIELD NURSERY AND NURSERY PREMISES, adjoining the town of St Alban's, comprising a comfortable and convenient Dwelling house and Shop, fronting the High Road from St Alban's to London, and about six acres of very productive Nursery and Garden Ground The whole Freehold and Land Tax redeemed and immediate possession may be had The Premises were late in the occupation of Mr. David Watson, who for many years and up to the period of his death carried on the business of a Nursery and Seedsman May be viewed at any time and particulars had at the principal Inns in the neighbourhood, at the Auction Mart of J S Story, Esq, Solicitor St Alban's, of George Drew, Esq, 185, Bermondsey-street Borough and of the Auctioneers, Leytonstone, Essex

BUNNEY'S FINAL SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS

MESSRS PROTHEROE AND MORRIS are instructed by the Proprietor (in consequence of the Lease having expired), to submit to Public Competition by Auction, on the Premises, Kingsland Nursery, Balls Pond road, on MONDAY, Oct 7, 1844, and following days, at Eleven o'Clock each day without reserve, the whole of the valuable NURSERY STOCK, consisting of FRUIT AND FOREST TREES, a considerable quantity of EVERGREENS, AMERICAN PLANTS, STOOLS, &c The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their Grounds; also the Trade, from its excellence, and comprising an excellent collection of Ghent AZALEAS, MAGNOLIAS RHODODENDRONS, &c May be viewed prior to Sale. Catalogues may be had on the Premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone

ISLINGTON NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to submit to Public Competition, on MONDAY, 14th October, 1844, and 2 following days, at 11 o'clock, (in consequence of the ground being required for building,) a portion of the valuable NURSERY STOCK, consisting of about five thousand Belgian Azaleas, in 40 fine varieties; several thousands fine Hybrid Rhododendrons, well furnished with bloom buds, Green and Var Hollies, Chinese and Siberian Arborvitæ, about five thousand Laurels, with a fine assortment of Fruit and Forest Trees, Flowering Shrubs, &c.

May be viewed prior to the Sale. Catalogues may be had on the Premises, of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr FRANKLIN (in consequence of his Lease having expired and the ground let for building) to submit to Public Competition, on the Premises, Cottage-place, City Road, on THURSDAY, October 17th, 1844, at 11 o'clock, the whole of his VALUABLE STOCK, consisting of named Seedling Tulips, Auriculas, Carnations, Picotees, and Pinks, Greenhouse and Herbaceous Plants; a capital Greenhouse, 30 ft. by 11 ft.; and sundry Effects. May be viewed prior to sale. Catalogues may be had on the Premises; of the principal Seedsmen; and of the Auctioneers, Leytonstone.

PELARGONIUM "CELESTIAL."

CHANDLER AND SONS, Nurserymen, Vauxhall, London, have now ready to send out young plants of their New Geranium "CELESTIAL," which has been so much admired. The flowers being very large, and with a beautiful white throat, it is one of the most conspicuous variation that has yet been raised. Plants, 10s. 6d. each.

C. and Sons have also to offer healthy young plants of CAMELLIAS of sorts, with flower-buds, at 36s. per dozen; larger plants 42s. per dozen; and good plants of the newer sorts 60s. per dozen. Also good plants of the best sorts of CHRYSANTHEMUMS, at 12s. per dozen; larger plants, 18s. per dozen. The package included in the above prices. A remittance or reference for payment in London will be expected from unknown correspondents.

WOODLANDS NURSERY, Mayfield, near Uckfield, Sussex.

WM. WOOD AND SON have the pleasure of offering the following choice CAMELLIAS, which are chiefly strong plants abundantly furnished with bloom-buds. They also beg to inform Amateurs who are desirous of purchasing Camellias for flowering this season, that they will now bear the transit better than when the buds are in a more advanced state.

Candidissima per plant—5s. 6d.			Leana superba, p. plant 5s. 6d.		
Conspicua	3	6	Monarch	7	6
Coronata	3	6	Ochroleuca	5	0
Delicatissima	5	0	Palmer's Perfection	7	6
Hetropetala alba	3	6	Tricolor	3	6
Imbricata	3	6	Or one plant of each of		
" alba	3	6	the above for	45	0

W. W. and Son have also an extensive collection of new and popular varieties, priced Catalogues of which may be had gratis on application. Plants will be presented to compensate for carriage. A remittance or reference is respectfully solicited from unknown correspondents.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 28, 1844.

MEETINGS FOR THE FOLLOWING WEEK.

Tuesday,	Oct. 1	Horticultural	3 P.M.
Friday,	Oct. 4	Botanical	3 P.M.

ANY improvement that can be effected in the quality of POTATOES is important. Some observations on the subject, at this season of the year, may possibly therefore have a useful tendency.

It is well known that in some soils, and in most seasons, the produce of Potatoes is abundant and their quality excellent; while in others, the quantity is not deficient, but the quality is inferior; and there are situations so unfavourable, that the crop is always bad in every respect. Occasionally, indeed, cold wet seasons deteriorate this important crop, even in the best soil on which the most skilful cultivation has been bestowed. Supposing, however, that all has been done which could possibly be effected in the way of good cultivation, yet, when the crop is fit for taking up, its proper after-management is a most important consideration.

People think that if they guard their crop from frost, they have done all that can be needed; but this is a mistake of the worst kind. By improper management after taking up, Potatoes of the finest quality are easily spoiled; and, on the contrary, by judicious treatment, even such as are watery may be much improved. It is of the first consequence that light as well as frost should be guarded against, for light renders the tubers unwholesome, and that in proportion to its intensity and the length of time the tubers are exposed to its influence.

The stems, and in fact all the parts of the Potato-plant above ground are more or less poisonous. Tubers are occasionally formed along the stem, but they are, as we all know, green and bad. This is entirely owing to their exposure to light; for had the stems been laid in the earth, so as to have covered such stem-tubers from the commencement of their growth, they would have been just as good as the tubers of the usual underground formation. On the contrary, tubers naturally produced from a part of the stem below the surface, although they may be of various colours outwardly, are blanched internally, unless they grow themselves out of the soil. In that case they acquire a green tinge throughout, and with it a quality bad, like that of the spurious tubers produced in full daylight on the stem above ground.

It is, fortunately, not much the practice now; but formerly in towns, and in London particularly, large heaps of washed Potatoes were to be seen exposed for sale and to the action of light, and in some situations, occasionally to the direct rays of the sun. Potatoes, even in their dirty state, as taken up, will be considerably altered in colour, both externally and internally, and proportionably impaired in quality by a few days' exposure to light in clear weather, although they may not be exposed to the sun's direct rays; but the effect must be much greater when the surface is washed and deprived of the partial shade afforded by the particles of soil.

On the part of the vendors, it may be argued that exposure is necessary for sale; but this argument would soon fall to the ground were purchasers aware that, all other circumstances being the same, Potatoes which have suffered the least possible exposure are the best for food, and *vice versâ*.

The time was when Potatoes were in many instances spread out in the sun, in order to dry them before storing in the earth. No practice could be worse, for the reasons above stated; and, moreover, the object in view, that of rendering them ultimately drier and better in quality, was not attained. On the contrary, although deprived of a portion of their moisture in the first instance, yet this only left room for the absorption of moisture contaminated with gases generated in the cave. Such gases will be generated in greater quantity if straw, or other vegetable substances, apt to decay, are employed as a covering next the Potatoes. Fine white-fleshed Kidney Potatoes have been known to be tinged yellow throughout in consequence of having been covered with straw. The straw was no doubt dry when used, but it soon acquired damp, and the conditions of decay, from the layer of earth resting upon it. Potatoes so tainted are said to taste of straw, or, in other words, to possess that well-known musty flavour which decaying straw communicates. The bad quality imparted being so easily traced to this material, it is surprising that straw should continue to be so much employed in contact with Potatoes.

Some persons may perhaps grant that the least possible exposure to light should take place between taking up and storing, and yet may consider it necessary that Potatoes taken up in a very wet state should be dried previously to being stored, in order to avoid a greater evil than that resulting from exposure, namely, their rotting. It has, however, been found, that although Potatoes were taken up and immediately stored in the earth, in moderate quantities, with the mud so wet as to be dripping through the baskets, yet those Potatoes presented as dry an appearance when uncovered in spring as others that were stored in a dry condition. In the former case it may be presumed that part of the excess of moisture would descend to the bottom of the pit and there drain off; moreover, that when the covering of earth became colder than the Potatoes and the water on their surfaces, the latter would be gradually condensed on the particles of surrounding soil, the process continuing so long as the tubers maintained a higher degree of temperature.

As the season for taking up the crop is approaching, the preceding observations may be turned to account by secluding the tubers from light as expeditiously as possible. To do this will require little or no additional expense; while great superiority in the quality of the crop will be insured.

Having thus pointed out one of the sources of deterioration, it may be as well to name a means of improvement. Always dry the tubers before cooking them—still, however, in the dark. If a Potato is weighed when fresh taken up, then laid in a dry warm place for some time, and again weighed, it will be found to have become lighter in consequence of the evaporation of a portion of its water, and it will then in boiling be more flowery. In Ireland, with this in view, Potatoes, when watery, are often taken out of the caves and kept in a dry place for a few weeks, and a great improvement is the consequence. The French are aware of the same fact. A writer in the *Revue Horticole* says—"In unfavourable seasons, Potatoes are often found to be watery and without flavour, although cooked with the greatest care. In this case the mode of effecting an amelioration is easy; it consists in placing them near a stove or oven for about a week previously to their being used. At the end of that time they will be found mealy and of good flavour." Objects of vast importance are sometimes attained by very simple means; and we regard that to which the foregoing remarks apply as one by no means undeserving consideration.—*R.*

REMARKS ON Mr. HOARE'S NEW BOOK ON THE VINE.

I HAVE just met, for the first time, with this book; and, with all due deference to Mr. Hoare, I would wish to make a few remarks on certain passages. Before venturing, however, on such a liberty I must observe, that so far from denying any of the first principles in the cultivation of this valuable fruit, on which Mr. H. takes his stand, I would wish to add my testimony to their immense importance. No writer has, in my opinion, ever thrown so much light on the habits of the Vine before, and his work will, I make no doubt, silently effect as great a change in the culture of Vines (confined as it has been to mere rules), as Mr. Hamilton's book is likely to do in the culture of the Pine-apple, when his system shall be thoroughly appreciated. New systems, however, frequently push things to inconvenient extremes; and it is this that I wish to notice.

Constant and uniform action of root in the growing season is, no doubt, as Mr. H. justly observes, the great desideratum; the greatest obstacle to this in our climate is undoubtedly those dashing rains which occur in most summers, and by which the ground is saturated and choked for sometimes a week or a fortnight together; in which case those borders must be well drained and constituted indeed, in which the rootlets do not become discoloured and lose part of their lively action. Thorough drainage, shallow borders of not more than a foot, a due attention to the mechanical texture of the soil, with a judicious application of top-dressings of rich rotten manure in times of drought, will be found, I imagine, the surest recipe in our cool and damp climate.

I should recommend those inexperienced in Vine-border making, to compromise Mr. H.'s plan, by using abundance of his materials at the bottom of the compost over the drainage, and uniting the well-known permanency of chopped turf from very old pastures, with the porosity of the other materials, for one foot on the surface. In this case it would be advisable to use Mr. H.'s rough materials in larger lumps.

At page 21 of Mr. Hoare's work he makes some excellent remarks on what takes place in the great majority of cases with early-forced Vines, the roots of which are outside. But here I conceive that in adhering too tenaciously to his own doctrines, he has, with that ardour peculiar to those who make new discoveries, somewhat overcharged the consequences of the old and erroneous method. Erroneous! Yet, strange to say, excellent Grapes have been obtained by it, and that in a host of cases. Not that I would by any means advocate it, but all facts bearing on so important a subject should be freely stated.

Now, Mr. H. seems to consider that it is what he terms "the maturative power" alone that is drawn upon in this case, and that the vegetative power has no part or lot in the affair. Now, the Scotch folk have a saying, I think, that will nearly describe the position such Vines are placed in, viz., "all going out of the meal tub, and none putting in, soon gets to the bottom."

I have seen an old Willow truncheon as thick as any ordinary-sized tree, lie in a humid situation after being felled, and there vegetate for several years. However, had this Willow carried annually many pounds weight of fruit in such a situation, it would, I have no doubt, received its *quietus* betimes.

If, therefore, the following quotations be correct, a Vine truncheon would force as well as an established plant with roots. Thus, Mr. H. on this subject says:—"Unless, therefore, artificial means be used to make the roots move before their natural time, an early-forced Vine will present the very singular anomaly of having produced a vast mass of foliage and a matured crop of Grapes, before the roots can have contributed anything towards their support."

I have been thus prolix merely to exhibit the case fairly, and to say in conclusion, that in my opinion the reciprocal action between root and branches is much greater than Mr. H. supposes; or Vines that have come "within our ken" could never have existed as they have done, and yet carry crops. The vital energies of plants are amazing, or how could they contend with the various difficulties with which they are beset?

Mr. H., at this section of his book, speaks of short-jointed wood, the well known criterion of fruitfulness in most trees. In allusion to a bundle of Vine cuttings received from Spain, he most judiciously describes, and proves the influence of heat (day?), and more especially light, in producing such wood. This is all excellent; and I could only lament one thing, viz., his omission of the injurious effects of overhigh night temperature, about which he has said nothing. Now, the matters of heat and light being entirely relative, are not to be handled in an abstract and cursory way. However, we have been so long hedged about with mere rules, that we dare not boldly descend to the night temperature which Nature herself prescribes; and why? If we should fail, all the world would laugh, while our employers would frown. Now, having less solar light in the day than in tropical climates, there exists a greater occasion for even less night heat than nature points to, in those climes where the Vine in indigenous.

At page 15, Mr. H. says:—"In no part of the world can a Vine be made to produce a single Grape more than it otherwise would do, by the exclusive agency of anything added to the soil, in the shape of a stimulant, except under the circumstances hereafter mentioned." Admitted: but stimulants may, in this case, yea, and do increase the size of the berry, and consequently the ultimate produce; and fine swelled berries are, and perhaps ever will be, highly esteemed.

I have much doubt about the utility of Mr. H.'s cylinders, or columns, of which he treats at page 64. This mode, by its simplicity, may recommend itself in some of the southern counties, but can never spread very far. Absorption of heat during sunshine, and the consequent radiation after, enhancing the value of the atmosphere in the immediate neighbourhood of the absorption, is of such value to tender fruits, that no plan by which the solar heat may be dispersed as fast as it accumulates, can be expected to answer; and this objection I imagine the column would be liable to. Blow from what quarter it choosed, the wind would eddy round the column.

I feel assured that shanking, shrivelling, want of colour, and a host of other evils, are produced by irregular and imperfect action of the root in the growing season; chiefly through glutting rains causing for a while utter stagnation in soils of bad mechanical construction, almost impervious to the atmosphere, and of course averse to the passage of moisture. I care little in comparison about the imagined evils of inside temperature, only do not burn the leaves for want of air, or keep too high a night temperature, and the rest I would regard as secondary considerations.—*Robert Errington, Oulton.* [We are glad to find an experienced gardener like Mr. E. entertain opinions so similar to our own, which were printed before the above observations reached us.]

PRUNING FOREST-TREES, AS PRACTISED BY Dr. THACKERAY IN HIS PLANTATIONS AT NERQUIS, IN FLINTSHIRE.

A GREAT deal having lately been written in praise of these plantations, and about the mode of pruning them

and conceiving from what had been reported of them that Dr. T.'s system of pruning was nearly similar to mine, which I have proved to be good, and have practised when opportunities offered, I was induced lately to go and see them, in order that I might judge for myself. I must say, however, that I was a little disappointed; but I, nevertheless, saw much to admire and praise.

The system of pruning pursued by *Dr. T. is à la Pontey* in the extreme, only in a different guise. The periods, seasons, and manner in which the operation is performed do not alter the nature of the system; and the same notion seems to be entertained as that of Pontey, viz., that the divesting a tree of its side branches increases the weight or bulk of timber in the trunk.

Dr. Thackeray and his panegyrists appear to think that the increase of timber in the trunk arises from the consolidation of what is termed the true sap or cambium in its descent, after it has been elaborated by the leaves; and that the sap is acquired chiefly by the roots from the soil. Now I am of a very different opinion; and have demonstrated by experiments—the results of which I have published in tables in a book entitled "*Facts, Hints, &c.*," about 20 years ago—that the increase of the girth, or circumference of the trunk of trees, depends entirely on the number and healthiness of the branches and leaves. I have there also shown, beyond a doubt, that Larches with numerous healthy branches and leaves increase in girth upwards of two inches annually, and that those having diseased leaves and only a few branches increase very little, if anything, in a season in girth. The same fact holds good with other trees. I could get up a tree in an exposed open situation as tall and slender as in a crowded plantation, merely by divesting it of its side branches as they are produced. As the increase of the timber in the trunk and branches is formed by the descending filaments or woody tissue from the annually-produced leaf-buds and shoots, and as every leaf-bud is a new member, and every branch a family, and the whole together a nation, as it were; therefore, to make it a large and strong tree, increase by all possible means the number and healthiness of the branches and leaves. Lopping off branches as they are produced, or too soon afterwards, makes trees tall, weak, puny things; in fact, you may get trees to grow as tall and slender, and that in a very short period, merely by divesting them prematurely of their side branches, as when they are growing in a crowded plantation without having been timely thinned out.

Dr. Thackeray's system of pruning is tolerably correct, but it is unmercifully overdone. I perceived that some parts of the plantations had been too long neglected before they had been thinned and pruned. Near the rides or roads there are certainly some fine Oak and Ash-trees; and the greater part of the Larches are good, but they are not what they might have been, and undoubtedly would have been, under a better system. With the exception of the specimens already mentioned, the greater part of the Oaks and Ash are not fine trees, and evidently show signs of having been injured by the Larches not having been sooner thinned out from among them, and also from having been pruned to excess; one object is, however, gained, viz. tall, straight, slender trees without side-branches, to a certain height, and which are only fit for ladders, rails, poles, or such like purposes.

Now, let any one who disputes what I have advanced concerning the increase of timber in the trunk, cut down a tree having numerous branches on one side and only a few on the other, and they will then see that the concentric annual rings are much wider on the side having the greater number of branches than on the other. I would also refer those who are sceptical to the indisputable demonstrations of the rapid growth of timber in trees having numerous branches, published last year in a pamphlet, by J. Hamerton, Esq.

The late writers who praise Dr. T.'s mode of pruning, all advocate the same thing, namely, that the increase of timber in the trunk is obtained from the sap derived from the soil, and that branches prevent the increase of timber in the trunk: they say that branches draw the sap from the trunk. This opinion I was accused of entertaining 24 years ago, when I began to foreshorten branches of the Larch where they had made vigorous and numerous shoots; and this was what induced me to make the experiments which I have published. Now I am fully convinced of the fact that the increase of timber in the trunk and branches is made by the descending filaments or woody tissue, from the annual leaf-buds and shoots. From the conflicting opinions about the pruning of forest-trees lately, I have avoided using the term pruning as much as possible, and substituted training of forest-trees in its stead. My system is to increase the number of branches when necessary, and to keep them of proper dimensions, and within a moderate compass, so as to insure a proper thickness and elongation of the stem, according to the kinds of trees and future purposes for which they may be required; but I never, by pruning off the side branches, deprive trees of the very means of increasing the trunk till that object is attained, and other branches produced to supply their places, when some of them might be taken off, or suffered to decay of themselves according to circumstances and the nature of the trees.

Dr. T. and the advocates of his mode of pruning, imagine that because he prunes his trees every year, and at all seasons of the year, and not at certain seasons or stated periods, that his method must be different from Pontey's and his copiers, but the result is the same in both cases; by cutting off the branches he deprives the tree of the means of increasing the timber in the trunk. I would not have noticed this subject again, had I not been convinced that the system is apt to establish a very erroneous mode of pruning, wholly opposed to the true means of increasing useful and valuable timber.

To contrast Dr. T.'s plantations with others very much neglected that are near them, and that were planted at the same time—as Mr. Scott Russell and some others have done—is not the way to form a correct opinion of their merits.

Notwithstanding the reported superiority of the treatment of the trees at Nerquis, compare them with some others I shall mention, on which no particular care or skill has been bestowed, but which have been left to struggle on as they could in crowded plantations, and see what the results are. The trees at Nerquis have been planted about 28 or 30 years. I took the circumference of two trees at four feet from the ground—a Larch and an Oak. They were considered to be among the best specimens; the Larch was 3 feet 2 inches in girth, and the Oak was 1 foot 7 inches in girth. There were some Ash trees about the same dimensions as those of the Oaks. The finest Larches would probably average from 2 feet to 3 feet in girth, and some of the Oaks from 1 foot to 1 foot 6 or 7 inches in girth. Now in a plantation—the property of Sir W. W. Wynne, in this neighbourhood on the side of a hill of a considerable elevation, and exposed to cold boisterous breezes from the Welsh mountains—I have lately measured trees, planted about 30 years ago, which have received no pruning, but have been occasionally thinned, the girth of which, at four feet from the ground, is as follows:—

Larches from . . 3 ft. 3 in. to 4 ft. 7 in.
Oaks „ „ 2 ft. 6 in. to 2 ft. 7 in.
Ash „ „ 2 ft. 3 in. to 2 ft. 11 in.
And Elms were about 2 ft. 7 in. in girth.

These trees are as tall or taller than Dr. Thackeray's; in proportion to the branches on them the girth is invariably increased or diminished.

Larches are on an average from 3 ft. to 4 ft. 6 in. in girth.
Oaks are from . . . 2 ft. to 2 ft. 7 in. „
And Ash are from . . 2 ft. to 2 ft. 10 in. „

In another plantation at Llanforda, belonging to Sir H. Wynne, which is, however, certainly in a more favourable situation, and has a better aspect, there are trees planted about 28 years ago, on which no pruning has been performed, but which have been occasionally moderately thinned; the measurement of which, at 4 feet from the ground, is as follows:—viz.: Larches, 3 ft. 4 in., 4 ft., and 4 ft. 3 in., with numerous branches down nearly to the bottom; an Elm was 3 ft. 1 in. in girth; a Turkey Oak, 2 ft. 9 in.; common Oaks, 2 ft. 6 in., 2 ft. 8 in., and 2 ft. 10 in.; and a Spanish Chesnut, 2 ft. 6 in. At the same place a Silver Fir, planted in a shrubbery about 22 years ago, measures in girth 4 ft. 1 in.; all its branches annually increase in girth about 2 in. and 2-eighths; two Turkey Oaks, planted 22 years ago, are 3 ft. 7 in., and 3 ft. 8 in. in girth; all the branches annually increase in thickness about 2 inches. In a third plantation, the property of W. O. Gore, Esq., M.P. (an extensive planter), there is a noble Larch that was planted about 40 years ago. It measures in girth, at 4 ft. from the ground, 5 ft. 1 in., and contains fully 40 ft. of cubic timber. This shows what might be done under proper management. This tree, by mere chance, had never been over-crowded, and it was never pruned. In the same plantation, and under the same circumstances, is a Spruce Fir, which girths 5 ft. 3 in.; it is furnished with nearly all its branches. The staple and permanent trees here are chiefly Oaks, a very few of which measure from 2 ft. 6 in. to 3 ft. 3 in. in girth. The average girth is from 1 ft. 6 in. to 2 ft. 6 in. The trees are tall, and are drawn up weakly, with but few side-branches and not much top; all this results from the want of timely thinning and training. The slow growth in trunks of the Oak-trees is occasioned solely by neglect and want of skill; they ought to have averaged from 3 ft. to 4 ft. in girth during that time. The same result, to some extent, happens in Dr. T.'s plantations, on account of his mode of pruning.

Only imagine having a plantation of Larch at 40 years' growth, with from 140 to 200 trees on an acre, each containing 40 ft. of cubic timber; and I have no doubt but that an acre would produce and bring to maturity that number of Larches, as the trees would only be from 15 to 18 ft. apart, allowing the branches to extend each way from 2½ to 3 yards from the bole. And look again at another plantation, consisting chiefly of Larches, belonging to the same gentleman, on a high and very exposed situation, that have been planted about 24 years, and that are nearly all greatly injured for want of timely thinning—the very largest trees of which, and of those only a very few, measure 2 ft. 1 in., 2 ft. 7 in., and 2 ft. 9 in. in girth, at 4 feet from the ground. Again, at the Hayes, near Oswestry, in a very favourable situation as to soil, climate, and aspect, there is a plantation of Larches which have been planted 35 years; the ground on which they grow was previously an Oak wood. These Larches have been pruned much more severely than Dr. T.'s; they measure, at 4 feet from the ground, only 1 ft. 10 in., 2 ft. 1 in., and 2 ft. 9 in. in girth: reflect on this fact; Pontey is here exceeded. At the same place, and very near these Larches, is a Cedar of Lebanon; whose age, counting from the time seed was sown in a bed to the present time, is about 32 years; it measures 12 ft. in circumference, at 4 ft. from the ground. This, taking into consideration the slow growth in its infancy, is not much less than 2 inches of increase in girth annually. There are also here a Scotch Fir, 9 ft. in girth; a Larch, 9 ft. 1 in. in girth; and an evergreen Oak, 5 ft. 6 in. in girth. These are supposed to have been planted at the same time as the Cedar. They are growing singly, and have numerous branches. The length of the bole, from the ground to the first branch on each, is between 11 and 12 ft. That which has been spent in forming large branches might by art have been made to form valuable timber in an elongated trunk. I have mentioned these instances to show what a rapid growing tree the Cedar of Lebanon is, under favourable circumstances; and to contrast the difference between the preventive system of pruning, and pruning every year, and at all seasons of the year. This mode of pruning is generally understood to reduce the number of branches, instead of increasing and modifying them, and in that lies the error.

The following is a statement of the girth and height of some of the trees in the Royal Forests. They were planted about the same time as the Nerquis plantations, as will be seen by the dates. The measurement in girth was taken at 4 feet from the ground. Chopwell woods were planted in the years 1813-14-15. The size of trees in them, measured September, 1844, was—

	Girth. ft.	Girth. in.	Height. ft.
Larches	3	0	30
Elm	3	0	30
Oaks	2	4	21
Ash	2	3	18

Chopwell lies east of Carlisle, and is as cold, late, and bleak as North Wales. Nerquis lies west from Cheshire, and is bleak and cold. Dean Forest is situated in the southern part of South Wales; the situation is hilly and bleak. The following is the girth and height of trees in Dean Forest:—

		Girth. ft.	Girth. in.	hgt. ft.
1. Stapledge Hill, planted 1814.				
Oaks	1	2	5	32
	2	2	2	34
	3	2	7	37
2. Haywood Hill, 1810-11.				
Oaks	1	2	6	30
	2	2	3	30
	3	2	1	31
Larch	1	2	9	35
	2	2	8	31
	3	2	9	31
3. Blakeney Hill, 1813.				
Oaks	1	2	5	34
	2	2	6	35
	3	2	4	33
Spanish Chesnut	1	2	11	37
	*2	3	9	36
	*3	4	1	39
Ash	1	1	10	39
	2	1	8	33
	3	2	0	33
3. Barnhill, 1810.				
Oaks	1	2	10	36
	2	3	11	34
	3	3	3	34
Spanish Chesnut	*1	5	2	38?
	2	3	4	36
	*3	4	8	40
Spruce Fir	*1	4	6	41
	2	4	0	42
	*3	4	6	43
4. Bromley Hill, 1812.				
Oaks	1	3	2	39
	2	3	10	40
	3	3	8	37
Spanish Chesnut	*1	3	7	40
	2	3	0	38
	*3	3	11½	39
Spruce Fir	1	3	2	39
	2	3	3	39
	3	2	9	38

Compare these trees with those at Nerquis—with the Larches at the Hayes—or with Oaks of 40 years' growth in Mr. Gore's plantations. Look at Barnhill, where a Chesnut only 34 years old measures in girth 5 feet 2 inches, and is nearly 40 feet in height, making an annual increase in girth of about 2½ inches; a Spruce Fir 4 feet 6 inches in girth, and 41 feet in height; and Oaks 3 feet 3 inches in girth, and 34 feet in height. At Bromley-hill, Oaks of 32 years' growth are 3 feet 2 inches in girth, and measure nearly 40 feet in height; in Chopwell woods, at 30 years old, they are 2 feet 4 inches in girth. It should be mentioned that the Oaks when planted in the Forest of Dean were much injured and destroyed by mice. I have little doubt but that I could have found Oaks, both in Dean Forest and in Chopwell woods, of larger dimensions; but it was my wish that the measurement should be taken from trees growing in the most exposed places, and at about the same altitude as those at Nerquis. Nearly all the Larches in these woods have been cut down, and no doubt the best were selected from among them. The trees in the Nerquis plantations have been divested of their side branches, from 15 feet to 20 feet in height on an average.

In conclusion, I protest against the "non-pruning advocates;" the adhering too closely to that doctrine is productive in most cases of as much injury to the real bulk and value of timber as over-pruning is. It is best to pursue a middle line between the two extremes, which is the preventive system of pruning. It is clear that we may regulate by skill and art the increase of the girth and elongation of the trunks to almost any proportions we please.—*W. Billington, Underhill, Oswestry, Salop.*

WEATHER-WISDOM.

The vicissitudes of the seasons having such a powerful influence on the fortunes of the husbandman and the gardener, and modifying so much all the other employments and amusements of life, we cannot wonder that the universal propensity of human nature to pry into futurity should be exercised in the species of divination which has been rather quaintly, and with an air of sarcasm, called Weather-wisdom. It is curious to study the gradations of this folly, from the lofty delusions of Imlac's mad philosopher, who could "restrain the rage of the Dog-star, and mitigate the fervours of the Crab," and of the "Great Medicine," who brings rain on the prairies, down to the humble speculations of him who "thinks that it will rain because it looks black," or that "it will be fine to-morrow because the sun goes down red." But is it not surprising that notwithstanding the frequent failures of the most observant and best judging of this class of prophets, and the general conviction of well-informed persons of the utter futility of the predictions of meteorology, except as regard the broadest features of the year, from day to day we hear a repetition of the same absurdities?—not such as are silly and hastily broached in the greetings of casual rencontres, but gravely stated and put into print with all the solemnity of truth and

sound philosophy. Here is a specimen which I find in the "Spectator" of Sept. 7, copied from the "Nottingham Review," and which, if a paper of the "Spectator's" character thought worthy of notice at all, ought not to have allowed to go to its readers without denouncing as nonsense, all, at least, but the fact:—

"On Sunday last a large flock of wild geese passed over Chesterfield, on their way, it is supposed, to the fens of Lincolnshire. Such a circumstance at this early period of the season was hardly ever known, and it is considered to forebode an early and severe winter."

Not an autumn passes but we hear of such prognostics of a forthcoming hard winter, in spite of our experience of the fact, that five times out of six such prognostics fail; for it is only about once in as many years that we do have a severe winter. The temptation to this affectation of superior knowledge is so strong, that men even who are apparently engaged in the right road of investigation, and conversant with the means by which the exact results of meteorological observation are obtained, are led astray by it.

Articles appear from time to time in the *Times*, under the head of "London Weather," and are advanced by that useful paper with a show of a faithful record of facts, and reasonable deductions therefrom, on known philosophical principles. The author of these papers often betrays a disposition to foretell the chances of a few days prospectively. About a week ago we were told that certain electrical conditions of the atmosphere existed, and that a gale was probably at hand. Now I would challenge the writer to show what are the express electrical phenomena indicative of an approaching gale, which do not frequently exist without any such result—for no great atmospheric changes take place without manifestations of electric agency. The prediction was a tolerably safe one; for who does not know that the equinox is come, and that the month of September seldom goes out without a little foretaste of the agitations of the declining year!

If we are ever to have anything better than an empirical knowledge of the course of our seasons, it would be better to refrain from such pretensions till they can be warranted by well-grounded deductions from a long series of recorded facts and observations, collected simultaneously (as they must be, to be of any use) at many and widely-extended points. One of the most remarkable instances of the danger of venturing on this species of vaticination I remember to have happened about the years 1814 or 1815. Two or three succeeding summers had been excessively wet and cold, and an article appeared in the "Quarterly Review," in which conjectures were advanced respecting the concomitant existence of a greater than usual extension of the ice of the Northern Atlantic, and with a confident prediction that, as icebergs were still floating in very low latitudes, we must expect to suffer a continuance of the evil for one more season at least. This article had hardly reached the public when there commenced one of the warmest and finest summers ever known, (I think the summer of 1816). It begun in May, of which the first part was wet and warm; it cleared up about the middle of the month, and it continued almost uninterrupted sunshine till after harvest: the Pomegranate was ripened in the south of England, and Melons were raised with no other artificial help than the protection of a handglass. The succeeding autumn was beautiful, and the winter mild.

In concluding these cursory observations on so important a subject in all the relations of rural life as meteorology, permit me to express a hope that you will, ere long, indulge us with a Paper, or series of Papers, on the actual condition of our knowledge of this branch of natural history, and of the best means of advancing it—"how to observe in meteorology." We shall then better know our ignorance, and learn to avoid the gross absurdities of prediction—to assign the simple facts of the flight of birds, when assisted by favouring currents of wind, to their true cause, the everlasting search for food; and the accidental profusion of Hips and Haws, and other comestables, to the immediate and obvious effects of well-ripened wood, and a good blooming time. I will do the gardeners of my acquaintance, and many of the farmers too, the justice to say, that the affectation we are speaking of is not very prevalent amongst them; they act, for the most part, on the spur of the occasion, and are watchful of immediate indications of change: they know that "there shall be seed-time and harvest," and they learn to "trust in God;" and, in a better sense than the maxim was once used in, "keep their powder dry." "Don't talk to me of the moons, and of the signs of the weather," says a shrewd old farmer of my acquaintance; "what you call a sign of rain one day, I will prove to you, by the event, is a sign of fine weather another;" adding, what from its completion I suspect not to be an original joke,—"I am only twelve hours behind the Almanac-maker; he tells you in the morning what I can tell you, perhaps, more accurately at night."—*P. P.*

Home Correspondence.

ERRATUM.—In last week's No., p. 625, col. b, article "Dog Rose," for "*nayyor*" read "*nayyaut*," from *nayyus* (rough).

Horticultural Society of London.—In the *Chronicle* of last week there is a letter from an exhibitor of fruit respecting the prizes offered by this Society for next year. It appears that so long as fruit-growers are quiet, no additional rewards will be offered, while the plant-growers obtain all they ask. Although, at the last June Exhibition, there was only one large collection of stove and greenhouse plants shown, and one in the class of Heaths, which was not thought worthy of the Gold Medal offered, in the class of six there was not a competitor, this leaving in the classes of stove and greenhouse plants eight medals not awarded. In the classes of Heaths, two of the first prizes were withheld. Notwithstanding all this, considerable additional rewards are offered for next year. The Editor of the *Gardeners' Chronicle*, in 1842, told fruit-growers, in order to induce them to exhibit, that the prizes offered for fruit were equal to those offered for plants. There has been a great alteration on the one side since that period; take, for example, Orchidaceæ, the prizes offered for collections of which, at each Show in that year, amounted to 10*l.*; for collections of fruit, 18*l.* 15*s.* The prizes offered for collections of the former in 1845, at each Show, amounts to 70*l.* 15*s.*; while the fruit remains without alteration, although the fruit tent created intense interest—I think I am justified in saying, even more than those of plants. As far as I saw, there was not a plant of any merit, which had been properly entered, unrewarded, while the fruit-table literally groaned under the weight of meritorious productions, which could not obtain a prize at all. It is well known that one house will produce a collection of Orchidaceæ for each of the Exhibitions, while the fruit-grower must at least have three houses from which to obtain one collection, each of which requires as much skill and attention as the one house of the former. I think—and I imagine that most of my brother gardeners will agree with me—that the additional prizes have been placed where they were least wanted; I have no doubt the reason why fruit-growers do not complain is, that comparatively speaking few of them attend personally, and therefore cannot judge of what is going on. Prizes are offered for the best named plants, while the threat of disqualification is held out to fruit-growers in case their productions are not properly named. In conclusion I may add, that as the Society profess to encourage good gardening only, it is absurd to allow fruiterers to exhibit: there can be no merit in showing other people's productions. Here again the plant-shower is to be protected by a new regulation.—*M. Henderson, Colsorton Gardens.*

[Our correspondent forgets the difference between the expense of bringing a box of fruit and half-a-dozen van-loads of plants. If he compares the cost of carriage with the value of medals to be gained, he will find the balance very much in favour of the fruit-growers.]

Polmaise Heating.—I sent two bunches of Black Hamburgh Grapes to the Horticultural Show in Edinburgh, on the 20th instant, grown in the hothouse at Polmaise, which is heated by means of a circulation of hot air, without either pipes or flues; each bunch weighed upwards of five pounds, and obtained the prize against eight competitors. The Grapes were much admired, both for size and flavour; thereby clearly proving that the system I had adopted was completely successful, and will, I have no doubt, be adopted in future in preference to the old system of flues and pipes—being cheaper and easier managed, requiring less fuel, and incurring no risk of injury to the fruit when blossoming, either from cold air or steaming, when flues are watered in too heated a state. Several of the bunches now on the Vines are about the same size as those sent to the Show.—*Wm. Murray.*

The Polmaise Heating.—I have heard of many strange things in my lifetime; such as a person setting up a man of straw that he might have the pleasure of knocking it down, and of Don Quixote attacking a windmill, and of Hudibras comparing himself with Cæsar; but none of these things are equal to the hallucination that appears to exist in the mental region of the craniums of persons of the present day, respecting the Polmaise System of Heating. In the name of wonder, where has Mr. Glendinning got the idea that "dirty smoke-flues," or "any modification of them," are used in the Vinery at Polmaise? Surely not from anything that has appeared in the *Chronicle*; and he may rest satisfied that there are neither hot-water pipes nor any modification of smoke-flues employed in heating that Vinery. If he has any misgivings on the subject, he might step on board one of the London and Leith steamers, and from that to one of the steamers that sail between Granton and Stirling; and when among the beautiful windings of the Forth, he might be landed within a few yards of the Vinery; any remaining wrong notions will then be quickly dispelled. Mr. G. says, "It is no defence of a system to invoke the crest-fallen appearance of some who considered themselves the best Grape-growers in Scotland." Perhaps not; but what would he say of the gardener who thought he did well when he grew Pine-apples with six pips in height, and then, when a method was shown him of increasing them to twelve pips, instead of adopting the plan, condemns it before he understands it, and with a mind case-hardened with prejudice prefers his own, which is only some remains of the olden time? Surely there is more hope of a progressive being, even though he should be crest-fallen for a time, who can appreciate the invention of his neighbour, than the instinctive being who has only one way of doing his work.—*Peter Mackenzie.*

Destroying Wasps' Nests.—In dry seasons, at the place where I was apprenticed, we generally had a great many wasps' nests in the park and immediate neighbourhood. We were paid sixpence by the gardener for the destruction of each nest. At first we followed the old method of taking them with gunpowder; but wishing to make as much money by them as possible, we discarded gunpowder altogether, and pursued the following plan, which never failed:—Our armoury consisted in a pair of old double-actioned fumigating bellows, fitted with the box and tube; a basket containing some old dry hast-mat, or brown paper; and a small bag with a portion of sulphur; together with a spare basket for the combs, and a spade, lantern, and candle. Thus equipped, when darkness approached we besieged the enemy in the camp. We took off the box from the bellows, and put in the bottom of it a little dry hast-mat, or brown paper, on which we dredged a small quantity of sulphur; we then filled and dredged as before, until we thought we had sufficient material for destroying one nest; we then lighted it with the candle, fitted on the box, and proceeded cautiously to work, the person having the light pointing out the hole, to which we applied the tube of the bellows, and puffed away, taking care not to allow the two sentries to escape that were stationed at the entrance. From the exclusion of the air and the effects of the sulphur, in about three minutes the work of destruction was effected; the combs were then dug out, the suffocated wasps swept back into the hole, which was well trod in the bottom, and then filled up again; after which a wasp was rarely seen again near the place. In about ten minutes we could destroy the strongest nest; so that by this cheap and simple method three young men might destroy an incredible number of nests in one evening after it was dark.—*James Roberts, Hampsthwaite, near Harrowgate.*——*Querous* says—"Wherever the nest is in a cavity without any other hole or fissure, but the one of ingress and egress, about a wine-glassful of spirits of turpentine will effectually settle them. Pour so much in and stop the hole. Where the ground is such as to crack with drought, connected with a drain, or by any means having other openings or air-conductors to the nest, the spirits are rendered ineffective, and the equib of powder and brimstone must then be resorted to."——*Mr. Wighton* adds, "I have lately tried, with success, destroying wasps' nests with spirits of turpentine. In the evening I pour about a common wine-glassful of the spirit into the holes from a long-necked bottle, and close them immediately with a 'bit of turf, beating it firm with the heel.' I dig out the nests on the following morning. With regard to the quantity of spirit required, much depends on how the nests are situated; if in loose dry soil, and their entrances ascend, or if they are horizontal, more is required. In such cases a small squirt, as suggested by Professor Henslow, must be of great use. It must, however, be the smell that is the cause of death; for if the entrance is not closed immediately after the turpentine is poured in, many of the inmates will survive, especially if the nest is situated as already noticed. But though the spirit causes death, and at times even in the larvæ, still those in the pupa state, being defended by their cocoons, may dig their way out; consequently the nests ought to be dug out and destroyed, for the brood reared in autumn are drones and queens, males and females, to insure a future race. There need be little fear of an attack from such of the wasps as are shut out, and which remain about the closed entrance, for they soon lose their courage, and are easily smashed with a spade. I once gave some wasps' nests a dose during the day, and left the entrances open for a while; I found all was silent within, and few or none would enter; in short, many of them dropped down when within range of the holes. I turned out the nests and the paralysed wasps, without being attacked; my only defence was having previously rubbed my hands and face with turpentine. I may observe that there seems to be truth in Mr. Knight's remarks, viz.:—'That if a nest of wasps is approached without alarming the inhabitants, and all communication suddenly cut off between those out of the nest and those within it, no provocation will induce the former to defend it and themselves. But if one escapes from within, it comes with a very different temper.'"——I cannot understand how "H. P." has failed in destroying his wasps' nest with the turpentine-bottle; I have destroyed more than seventy nests by it since I read of the method. The way in which it was used was to rince each bottle (at the time of using) with spirits of turpentine, and insert the neck of the bottle into the mouth of the nest, covering round the hole with any kind of earth. In two or three days afterwards I have proved them to be all dead. Last week one of my men brought me a nest, the combs of which, I am sure, would fill a bushel, and not one wasp or young one alive in it.—*J. H.*

The Thrip.—The following is a simple and effectual mode of destroying this troublesome pest:—I fill the house, pit, or frame, that contains the plants infested, with steam and Tobacco smoke. By this means I give the plants, pots, and stands, and every part of the house a regular dressing of Tobacco water, which completely destroys these insects, and does not in the least injure the plants, not even the most delicate of them. My mode of using it is this:—For a house 43 feet long and 11 feet wide, I take 1 lb. of Tobacco, and having an old wire basket, containing a few hot cinders, I put the Tobacco on them and hang the basket up in the house; I then blow it with bellows until it is well lighted, when I turn on the steam from a small apparatus that I have for the purpose of steaming the plants. The Tobacco will keep burning until it is all consumed. The steam is kept on for about an hour, in which time the plants are covered with dew, which is well mixed with Tobacco smoke. This I repeat on the following day, using only half a pound of Tobacco; and since then I have not seen one thrip in the house. Those who have not got the means of steaming the house from a boiler, will find a trough, with small holes pierced in the bottom, fixed over the hot-water pipes or flues, a very good substitute. Enough of steam will be generated in this way in one hour to cause a fine dew on the plants; if the house or frame can be covered during the operation, so much the better, as it will prevent the steam from condensing on the glass, and also keep the Tobacco smoke from escaping through the laps in the roof.—*R. G.*

Onions.—Does not "W. E." make some mistake in the statement, p. 634, respecting the crop of Onions grown by Mr. Everist? It would be most desirable to be informed of the method by which so very unusual a crop, after the rate of 1416 bushels of 80 lbs. each, or 50½ tons per acre was produced; 2 lbs. 9½ ozs. per square foot could only be the result of some very superior management. Perhaps "W. E." will oblige the readers of the *Chronicle* with particulars.—*Luser.*——Another writer, signing himself "C. W.," states that he is an amateur grower of Onions, and has carried the cultivation of them to great success. The largest of his Onions, English sorts, have this year weighed 14 oz. each. After being dried and trimmed, they were sown in the third week in March. He would be obliged if "W. E." would give the size and weight of the 12 largest, and also the ordinary size of the *Onions*, the number which fill a bushel heaped up, and such other particulars as he may be pleased to afford.

Hybridising Fuchsias.—Our hopes of improvement in Fuchsias lie in mingling the species that now exist: one flower has one desirable quality, another has another—we wish both these to meet in one. This can be obtained by hybridising, or fertilising the seed-vessel of one flower with the pollen of another. To do this regularly and systematically I proceed thus:—I get a small box about 2 inches deep and a foot square, and I divide it into 24 compartments; into each of these I cut a small quantity of worsted thread into pieces about 2 inches long each. The worsted of each compartment is of a different colour, and each colour I use to represent a Fuchsia; for instance, white represents Venus Victrix; orange, fulgens; blue, Formosa elegans; black, Exoniensis; and so forth. Having my worsted ready, I take my box into the greenhouse, and proceed thus with my operation:—I choose a Fuchsia for a female to bear the seed. I examine the plant till I find a perfect flower, newly opened, before the anthers have burst and discharged any of their pollen. I carefully cut off the anthers, and I then select the plant by which it is to be fertilised. I find on it a flower which has its anthers covered with pollen; I pull this, and with it I dust the stigma of the prepared flower, around whose flower-stalk I tie a piece of worsted of the colour that designates the male employed. When I gather the seed, I know by the colour of the worsted at once how it has been fertilised, and I place the seed-vessels in paper boxes to dry, carefully marking on each the names of the male and female parents. In spring I sow the seeds in separate pots, with labels stating particulars; and by this means I hope clearly to ascertain the true result of my experiments, which never could be done if I were to sow my hybridised seed at random. In such case I might obtain a beautiful specimen—I might get excellence of foliage or habit, or size of flower, but here I stop: I could learn nothing further from my success; I could obtain no insight into the means by which I had already succeeded, or was likely to succeed hereafter. In my experiments I have certain objects in view: I want, for instance, to unite the colours of Venus Victrix with the size of Exoniensis. I wish to have Eppsii with a deep-blue corolla, and fulgens with a pale pink or white tube. I cross these with varieties having the qualities I desire; for instance, I cross Venus Victrix with Exoniensis, Eppsii, and Toddiana. Each plant is used alternately as male and female. My object is to retain the colour of Venus Victrix, but to increase the size of the flower. I do not expect to succeed in one year. I find, perhaps, in one plant the tendencies I wish; I pursue my advantage, hybridise this again, and have no doubt of ultimate success. All my experiments I carefully note down in a register, for I have no doubt I shall meet with results I by no means expect; and by knowing how they came, I shall be able to use them to advantage.—*Cavanensis.*

Parrots.—With regard to the management of these, allow me to state how one (an Amazon), which I have had for several years is treated. His food is hemp-seed in one tin, water in another, and nothing else. As soon as the cold weather of spring is over his cage-door is set open, and he lives in the garden and plantation attached to my house in perfect liberty, returning to his cage for food whenever he likes; he helps himself to Gooseberries in their season, and sometimes treats himself to some Apples. He is always in perfect health, and thoroughly enjoys his existence; and adds much to the interest of the garden, by the display of his bright plumage when on the wing; and by his chattering from the trees or house-top.—*P.*——*T. O'Reilly* adds—"I have known the plumage of the lemon-crested cockatoo restored by cutting a nick in the lower beak. In this case the bird had so feathered himself, that he looked like a young hawk, being covered with scarcely anything but down. A large orange-crested, cockatoo acquired a habit of biting its breast, making a frightful sore. I consulted various persons, and accordingly tried Epsom salts and Cayenne pepper-pods, but without effect. I then had a breast-plate made for it, which it was continually trying to pull off. I did not like to have the end of its beak cut off; and at last it became so ill that I had it killed. I attributed this disease to the fact of the servants having given it eggs, butter, and meat. I have now an orange-crested cockatoo, a grey parrot, and a parroquet; they all live on scalded bread with hempseed mixed with it, and have latterly been eating fruit occasionally. They do not have water given to them, but the cockatoo is occasionally indulged with some tea. This mode of treatment seems to suit them."

The Deadly Night-shade.—A few days ago two females from Lancaster were observed in the neighbourhood of Heat Bank gathering and eating the fruit of this plant. This induced two men passing at the time to eat also; one of the men by chance took a few along with him to an inn, and showed them to the landlord, who pronounced them to be poisonous, and recommended a dose of medicine to be immediately taken, which had the desired effect of removing the deadly poison from his body. The other man was not seen until the following day; he was in a state of insensibility, with his eyes closed, and his body was swollen to an extraordinary size; every means were used to save him but without effect, and after lingering three days death terminated his sufferings. The two females, on their return on the same day to Lancaster, were taken alarmingly ill, and a surgeon was instantly called in, who being made acquainted with the fact of their having eaten the berries, immediately applied the usual remedies. For some time there appeared no hopes of recovery; they were in great pain and were quite delirious, and continued so for several hours; but, happily, they both recovered. The Deadly Night-shade is one of the most dangerous of vegetable productions; the berry is, from its fine colour, inviting, and the apparent richness of its juicy pulp, resembling wholesome and more grateful fruit, induces those ignorant of its deadly qualities to taste. It cloys not until the fatal principle is imbibed; its deleterious action is not experienced for many hours; afterwards the victim is overwhelmed with dryness in the mouth, burning pain in the throat and stomach, giddiness, stupor, and is soon unable to account for the calamity which has befallen him. It is to be hoped that this will be a caution to persons gathering and eating wild fruit from the hedge-rows.—*M. Saul.*

Fecundity of the Canary.—There is a person living near Cowley Hall, in the parish of Hillingdon, that has a pair of canaries which have had no less than six nests between the 2d of April and the 4th of this month (September), hatching sixteen canaries, two nightingales, and one green-finch, making in all the large number of nineteen. The whole, with the exception of the nightingales, which by some accident got smothered in the nest, have turned out strong, healthy, birds. The total number of eggs laid by this pair during the season was twenty-four.—*W. M., Hillingdon.*

Societies.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

Sept. 20th—This was the Anniversary Dinner, and as it had been arranged to make the first public exhibition of the bust of Dr. Neill on this occasion, previous to its being placed in the Society's Hall, a numerous and most respectable company assembled. The chair was occupied by Professor Dunbar, who, after having opened the meeting in the usual manner, said—"As Dr. Duncan was the parent and founder of the Society, so does it owe much of its success and prosperity to the exertions and talents of our excellent Secretary, Dr. Neill. The duties of the Secretary are not confined to the mere routine business of the Society. Dr. Neill has had external duties to discharge of a most important kind, and these he has performed to the satisfaction of all parties. He has ever been ready to aid with his advice the efforts of industry and merit, while on the other hand he has soothed disappointed expectations by inspiring the hope of better success on a future occasion. As secretary he has had to conduct a most extensive correspondence with the horticulturists of other countries. He has thus made our Society known in every quarter of the globe, and contributed greatly to bring it to its present prosperous condition. Laborious as these duties and exertions have been for a long series of years, Dr. Neill has most ably and zealously discharged them without fee or reward, though trenching on time most valuable to him in his private affairs; he has done his work *con amore*. Practical gardeners and amateurs owe a debt of gratitude to him for his excellent book on horticulture, which is now one of the standard works on the branch of science of which it treats. I need not say how much the respect we owe the Doctor has been enhanced by his amiable character and unobtrusive manners. He is equally valued as a friend, and respected as a man. In consideration of his valuable services to this Society, several members have desired to have a bust of the Doctor, with the view of its being placed in the hall at the gardens, as a permanent memorial of their gratitude to him." The learned gentleman, after making some observations on the bust, then proposed the health of Dr. Neill, who, much affected, rose and said—"Mr. Chairman, I thank you sincerely for the kind and too flattering way in which you have expressed your opinion of me. I say most truly that I would most willingly have escaped from my present position. I feel totally unable to utter what I feel, I am so overpowered with gratitude. It is little more than a year since I had the honour to receive, in presence of a large number of friends, a splendid piece of plate, the gift of 500 gardeners. To see again assembled so numerous a company for the purpose of bringing forward this bust is perfectly overwhelming, and leaves me almost without words. The chairman rightly observed that I had been secretary for many years, but instead of meriting the testimonials I have received, I have been vastly overpaid in the pleasure I derived from holding the situation. I am deeply grateful for this testimony of respect, which was proposed by Lord Murray, Mr. Fairbairn, and other gentlemen." Some further remarks were offered by Dr. Neill, who concluded amid great applause; and after some other business the meeting closed.

COUNTRY SHOWS.

Bristol and Cornwall Horticultural Society, Sept. 12.—This was the Exhibition; the weather was in every respect favourable, but the attendance was not numerous. The flowers were exceedingly good, and attracted much attention. The fruit and vegetables were also very fine, but not so abundant as in former years. *Fruits.*—*Pine Apple*: 1, highest flavoured and best grown Queen, Mr. Robertson, Esq.; 2, &c., Mr. J. Griffin, gr. to Mrs. Wells. *Melons*: 1, highest flavoured, Green-fleshed, Mr. W. Rundell, Esq.; 2, &c., Mr. W. R. H. Carew, Esq.; 3, &c., &c., Mr. J. Taylor. *Cherries*: the best dish of Morello, Mr. J. Taylor. *Pears.*—The best *Specimen Plant in flower*, not having before obtained a prize (Achimenes splendens), Mr. J. Griffin. Amongst *Stove Plants* from Mr. Rendle's nursery, we noticed some well-grown specimens of Achimenes patens, Gesnera zebrina, Franciscea Hopeana, Russelia juncea, Vinca ocellata, Rivina humilis, Amaryllis Brasiliensis, Gardenia radicans, Pentas carnea, Euphorbia splendens, &c. Among *Fuchsias* were Exoniensis, Defiance, Kentish Bride, Kentish Hero, Prince of Wales, Conservative, Gigantea, Neptune, Florence, Nobilissima, Duke of Wellington, Formosa elegans, Venus Victrix, Fowley's Queen, Paragon, Champion, Magnet, Coronet, Eppsii, Robusta, Britannia, Toddiana, Transparens, Tricolor, Fulgens, Princess, Vesta, Invincible, &c. Besides these, Mr. Rendle also exhibited some seedlings. From the same collection were the following *Dahlias*, viz.—Standard of Perfection, Duranta, Emma Nolke, Lady Antrobus, Lady St. Maur, Orange Superb, Sir J. S. Richardson, Royal Sovereign, Grand Monarch, Sir R. Sale, Cook's Confidence, Prince of Wales, Great Western, Antagonist, Hero of Stonehenge, Admiral Stopford, Thompson's Vivid, Queen of Trumps, Beauty of Sussex, Essex Triumph, King of Lilacs, Prince of Waterloo, Swindon Rival, Orange Superb, Oakley Surprise, Mountjoy's Virgil, Princess Royal, Mrs. Shelly, and Rouge et Noir. Of *Verbenas* he exhibited Atro-sanguinea, Beauty, Boule de Feu, Zenxis, Beauty Blaier, Blue Queen, Striata coccinea, Prince of Wales, and some seedlings.—*Devonport Telegraph.*

Edale Horticultural Society, Sept. 21.—This was the fifth Exhibition during this year, for Dahlias, Carnations, Pansies, Kidney Beans, Celery, Savoys, Broccoli, Red Cabbage, Carrots, Onions, and the best dishes of Apples, Pears, and Plums. The specimens shown were very creditable to the exhibitors, especially when we consider the geographical situation of the place. It is not to be expected but that an elevation of 600 feet above the level of the sea will have a deteriorating influence on the successful cultivation both of flowers and vegetables. The following prizes were awarded — *Dahlias*: Mr. G. Taylor. *Carnations & Picotees*, and *Pansies*. Rev. G. H. M'Gill. *Kidney Beans*: 1, Rev. G. H. M'Gill; 2, Mr. Wigley; 3, Mr. Bardsley. *Celery*: 1, Rev. G. H. M'Gill; 2, D. Christie, Esq. *Broccoli*: 1, Mr. T. Carrington; 2, Rev. G. H. M'Gill; 3, D. Christie, Esq. *Red Cabbages*: 1, Mr. Wigley; 2, Mr. Cooper. *Carrots*: 1, D. Christie, Esq.; 2, Mr. Eyre; 3, Mr. Bardsley. *Onions*: 1, Mr. G. Eyre; 2, Mr. Wigley; 3, Mr. Carrington. *Apples*: 1, Mr. Wigley; 2, Mr. Eyre; 3, Mr. T. Carrington. *Pears*: Mr. Taylor. *Plums*: Mr. Taylor; 2, Mr. Carrington. For Nosegays, three prizes were given: 1, Mrs. J. Christie, 2, Miss Bray; and 3, Miss Taylor.

Sandhurst Floral and Horticultural Society, Sept. 6.—This was the Second Meeting for this year. Among plants we noticed some fine specimens of Orchidaceæ, &c., from Crewe Hall; likewise a beautiful specimen of Fuchsia exoniensis, above 7 feet high, and covered with flowers from the top to the graceful branches hanging round the pot, from the garden of Miss Twemlow. The following is a list of the Prizes awarded:—*Stove Plants*: 1, Miss Twemlow, for Achimenes grandiflora, A. longiflora, and Gloxinia maxima; 2, Mr. T. Stringer, for Vinca alba, V. rosea, and Thunbergia aurantiaca. *Greenhouse Plants*: 1, J. Skerrat, Esq., for Pimelea hispida, Crowea saligna, and Myoporum album; 2, Mr. T Stringer, for Petunia Enchantress, and some others. *Roses in Pots*: 1, Miss Twemlow, for Mrs. Bosanquet, Devoniensis, and Bulgens; 2, Mr. W. Allcock, for Napoleon, Miss Glegg, and Bourbon Queen. *Erica*: J. Skerratt, Esq., for Lamberti, cubica, and Cliffortiana. *Pelargoniums*: 1, Mr. C. Taylor, for Joan of Arc, Comte de Paris, Archduke, Nymph, Clarissa, and Princess Royal; 2, Mr. S. Allcock, for Flash, Nymph, Sultan, Selma, Lord Mayor, and Wizard. *Do.* 3: 1, Miss Twemlow, for Lady Sheppard, Queen of Fairies, and Prince Albert; 2, Miss Twemlow, for Gaines's King, Coronation, and Witch. *Calceolarias*: 1, Miss Tremlow, for Coronation, a Seedling, and Specialis; 2, Mr. S. Allcock, for Modesty, and 2 Seedlings. *Fuchsias*: 1, Miss Twemlow, for Exoniensis, Brookmanii, and Majestica; 2, Mr. C. Taylor, for Exoniensis, Defiance, and Lanei. *Miscellaneous*: Mr W Allcock, for Lilium lancifolium album. *Cornmb*: Mr. G. Bayley. Besides the above there were numerous Prizes awarded for Flowers, Fruits, and Vegetables, the growth of cottagers, whose productions are much improved since this Society has existed. The Prize for the best managed cottager's garden was awarded to Mr. T. Steele.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

CALANTHE MASUCA. Lilac Calanthe. (*Stove Epiphyte.*)—Orchidaceæ. Gynandria Monandria.—This charming plant flowered with Messrs. Rollisson, of Tooting, in June 1843. It is a native of Nepal, and may be regarded as the gayest of the terrestrial species of that rich country, being conspicuous both for the large size of their flowers and their rich colour. From the other purple species allied to it, this is readily known by the leaves as well as by the flowers. *C. versicolor* has leaves smooth on both sides; *C. purpurea* downy on both sides, especially beneath, while this has down only on the under side. *C. versicolor* has white sepals and petals; *C. purpurea* and this, purple ones. While, however, *C. purpurea* agrees in the colour of its flowers, its lip is altogether different, being very narrow, with the lateral lobes quite round. *C. masuca* should be potted in turfy heath-mould, mixed with a few pieces of potsherds. In summer it should receive an ample supply of water at its roots; and where it can be avoided, little should be allowed to fall on its leaves, otherwise the young shoots will damp off. It enjoys a humid atmosphere and a high temperature; but as the leaves are very delicate, they will soon become scorched if shading is not carefully attended to. In winter little water will be required; still, it is necessary to keep the soil damp enough to preserve the bulbs from shrivelling. This is one of the most difficult of Orchidaceous plants to grow well.—*Botanical Register.*

GASTROLOBIUM SPINOSUM. Spinous-leaved Gastrolobium. (*Evergreen Shrub.*) Leguminosæ. Decandria Monogynia.—Of all the plants of this tribe that we are acquainted with, few admit of being more easily reduced to handsome proportions, or have a habit and foliage so neat and unique as this. With a degree of strength and robustness unusual amongst the leguminous plants now abounding in such plentiful variety in our greenhouses, it combines broad and conspicuous leaves, so markedly different in their outline to every other of the same class within the sphere of our knowledge, that whilst they attract notice by their novelty, neatness, and amplitude, they at the same time furnish a distinction so prominently perceptible, that the most cursory observer can never be at a loss to distinguish the plant from those that most nearly resemble it. Till the development of flowers in the spring of the present year afforded the chance of referring it with certainty to its proper station, it was cultivated and generally known as Chorozema oppositifolia, a mistake which most probably arose from the analogy displayed in its general features to those of the stronger-growing and larger-foliaged species of that genus. However this may be, there can now no longer be a doubt of its incorrectness, and the consequent necessity of changing its name. Seeds were imported from the Swan River Colony and distributed by Capt. Mangles a few years since; and Mr. Young, of the Epsom Nursery, was fortunate enough to raise a number of specimens which have since been multiplied by cuttings, and distributed amongst the principal metropolitan establishments. The original

plant flowered profusely with Mr. Young for the first time last March. Although flowers have never been disclosed before the present year, the prodigality of their production, in every case we have witnessed, justify us in considering it as a free-flowering and highly ornamental species. At Ealing Park, Mr. Robertson had a number of small plants just raised from cuttings, completely laden with blossoms. These had been kept in a warm house; and we have no doubt that the flowering, and indeed the health and vigorous growth of most New Holland plants, will always be vastly improved by the application of a little additional warmth in the early spring months when the shoots are tender. The name of the genus is a combination of *two* Greek words, *gemini*, the belly, and *lobos*, a pod, alluding to the distension of the legume. The marginal spines of the leaf have suggested the specific term.—*Paxton's Magazine of Botany.*

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The Orchidaceous-house here is undergoing repair, and at the same time considerable alteration. In addition to the hot-water pipes, which run round the house under the front and back shelves, by which it has hitherto been warmed, the bed under the plants in the centre is about to be heated by hot water in open iron tanks, constructed by Burbidge and Healy. This is to be effected by means of a flow and return, inclosed in a hollow chamber covered in with slates, on which the plants are to be placed. These tanks are to be set on brick supports, about two feet from the bottom of the chamber, which is 3½ feet deep, and are to be heated by one of Burbidge and Healy's new boilers. The hot water will be conducted from the boiler to the tanks by means of one-inch pipes passing under the pathway into the bed. In order that the house may be steamed occasionally, small openings will be made in the sides of the chamber and furnished with sliding lids, to be opened or shut as required. All the rain which falls upon the roof will be collected in a large slate cistern, placed at one end of the bed which occupies the centre of the house. It measures 5 feet 9 inches in length, 3½ feet in width, and the same in depth. The curvilinear stove was gay with the several species of Achimenes, among which was the new one, A. picta, which, independently of its beautiful blossoms, is richly clothed with a finely variegated foliage, which the other sorts do not possess. In this house was also in flower the yellow variety of Gloriosa superba, an old and well-known plant, but one which is seldom seen in bloom; Lælia superbiens is growing here on a large block in great luxuriance, and is again throwing up several flower-stems. The specimen of Aristolochia gigas trained along the roof has produced its singularly large concave blossoms in great abundance through the whole summer months, and is still in fine bloom. It does not succeed well when grown in a pot; but, when planted out in the border of a stove, it thrives and flowers profusely with little care, speedily spreading over a large space. In the house, which was formerly a Pine-stove, but which has lately been much altered, the plants are looking well, the Orchidaceæ, on charred blocks, indicating by the healthy green of their foliage that they like the situation. On the front shelf was a plant of Clerodendron fallax, producing a head of flowers of brilliant scarlet. The plants in the large conservatory are looking well; it is in spring, however, that this house presents the gayest appearance, when the Acacias and other leguminous plants are in bloom. The front shelves are at present decorated with several of the new varieties of Fuchsia, which were displaying an abundance of showy blossoms. Trained up the south side of the house was a plant of Centrosema splendens in flower—an exceedingly handsome scarlet climber: it is better known in gardens under the name of Kennedya splendens. The sweet-scented Mandevilla suaveolens was also twining here in "Nature's careless grace," and expanding numerous clusters of snow-white blossoms. Along with these was Bignonia jasminoides, which is one of our prettiest autumn-flowering climbers; and in the same collection, turned out into the bed, was a large specimen of Cestrum aurantiacum, producing fine panicles of showy orange flowers. This valuable addition to the conservatory was contributed by Mr. Skinner, who sent it from Guatemala, a year or two ago; and, finally, a specimen of Hedychium Gardnerianum, planted out in the bed, was also bearing a spike of rich yellow flowers with prominent scarlet stamens. The late warm summer has brought many of the autumn Pears into use earlier than usual, and a large quantity of fine fruit is already in the fruit-room. The samples of Beurré Diel, both from the wall and from dwarfs, are exceedingly handsome. Those from standards are not so large, owing to the late dry summer. Specimens of Beurré Rance from the wall are unusually large and fine. We measured one which was 6 inches in length without the stalk, and fully 10½ inches in circumference. The floor of the fruit-room, which was made of concrete in the first instance, although it perfectly answered the purpose as regards dryness, had become very uneven. It has now been overlaid with Portland cement mixed with three or four parts of sharp sand. This has been done a week; and the cement was becoming exceedingly hard on the surface, and of the colour of Portland stone, although it sets much slower than the other cements.

Royal Botanic Garden, Kew, Sept. 25.—The two Fourcroyas, mentioned previously, p. 540, are now in blossom—at least that part of them which is within the stove. Several feet of the panicle, which have been allowed a passage through the roof, are still only in bud. There is only 13 inches difference in the height of the two (and they have not yet done growing); the tallest is 35 ft. 6 in. from the ground to the top of the panicle.

Miscellaneous.

China.—Advices have reached the Horticultural Society from Mr. Fortune, dated May 10. He was at that time residing in a Chinese temple, called Tsze Tung, in the Ningpo district, in the midst of the Green Tea cultivation. Hundreds of Chinese were busy gathering the leaves of the shrub, which covers the sides of the hills. This part of the country has proved by far the richest place for plants and scenery which Mr. Fortune had yet visited, many of the plants which had been previously only seen in gardens, being there wild in the woods and hedges. He had succeeded in reaching Shanghae, in the Moutan season, and found hundreds of gardens there filled with this beautiful flower. Some capital Azaleas had also fallen in his way.

Destruction of the Gooseberry Caterpillar by Salt.—To destroy the green worm, as also the small orange-coloured aphides, which often injure the bushes and destroy the fruit, we sprinkle the plants with salt and water early in the spring, before the leaves are developed; the mixture may then be made so strong as to whiten the branches, without affecting the future crop. Should the leaves or buds be in part expanded, the brine should be greatly reduced, say one quart of salt to about eight gallons of soft water, applied over the bushes from the rose of a watering-pot.—*Hovey's Magazine of Horticulture.*

Monstrous Grape.—There has been lately produced at Stover, in Devonshire, one of the seats of the Duke of Somerset, a berry of a Black Hamburgh Grape, which measured 5 inches in circumference. It was much flattened, and even depressed, at the stalk and opposite end, and, being furrowed, presented somewhat the appearance of a Tomato. It contained 10 seeds apparently perfect.

New Variety of Grapes.—M. Lenoir, a recent French writer on Vines says, that "a seedling Vine raised by M. Van Mons, at Brussels, produces fruit as large as a Green-gage Plum, which, at the latest, ripens in the first fortnight of August, and never fails. Its qualities are no less remarkable, as it is both solid and sweet."—*Journal of Science and Art*, vol. xxvii. p. 229.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

It may be useful for many to know that one of the finest winter stove plants, Gesnera zebrina, has yielded to a greenhouse treatment all the year round. It was allowed, for want of better convenience, to start of its own accord, which it did early in summer. The cold this time last year put a stop to its growth, and it lived in the greenhouse through last winter along with Pelargoniums, Fuchsias, &c., without any injury to its foliage; it began to grow again in spring, and flowered for a long time last summer. As this plant is a general favourite in drawing-rooms, &c., for which its tubers and succulent foliage make a provision for hard usage, a few of them might be thus treated in every place where such plants are in demand; and not only so, but the experiment opens a field which may extend farther than many of us are aware of. There is no variation in the treatment of the stove worth noticing this week.

Conservatory.—The general treatment of this house also will be uniform for some time to come. There are two varieties of Bignonia jasminoides in cultivation, one of which is a very shy bloomer and ought to be discarded; the other is the finest of our hardy greenhouse climbers—a peerless beauty as Deronian calls it. Cuttings of the latter, struck any time before the end of October—and they root as free as willows—will blossom all through next summer in very small pots. At the risk of being thought tiresome I shall once more notice the lovely Mandevilla suaveolens: it has been in flower here all this autumn against a wall in the open air, and looks more healthy than plants of it in-doors; this climber is one of the best to train as a specimen over a wire trellis; and as it requires to be pruned closely every year, after flowering, it may be kept in a dry shed along with Fuchsias, Myrtles, &c., through the winter, and either forced in spring, or allowed to break of its own accord in May; long shoots of it, two or three years old, will root as freely as a Grape Vine, without tongueing, and thus a large specimen may be got from an old plant in one season. If the shoots will allow put two or three coils in the pot, as Mr. Mearns would do with a Vine shoot, and you will have more roots to sustain the specimen.

Pits, Frames, &c.—It is now time to put young Gardenias, Neriums, and Orange trees into their winter quarters. A cold pit, from which the frost can be excluded, is the best place for them: as they are always kept in the smallest pots into which their roots can be got, and force best when thus under-potted, it often happens that their roots perish during winter; to prevent this, it is a good plan to turn them out of the pots now, and plunge the balls in a thin layer of light earth during their rest; but as Gardenias will flourish in peat only, they should be plunged in it. Besides these, there are scores of half-hardy delicate plants, which will keep better in the same way through the winter than in pots, as their roots are thus in a uniform state; and if damp appears at any time, a little dry compost scattered over the surface will prevent it. A slight hotbed of half-spent dung is a good place to begin to force China and Perpetual Roses about the beginning of October; the lights may be left off all day at first, unless it rains.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

Those who have tender greenhouse shrubs, such as Heaths, Leschenaultias, &c., planted out in beds, must now begin to think of getting them housed for the winter. It is surprising how fast plants grow when planted out, but it requires great care and attention in their management after they are taken up, or they are very liable to damp off during the dark months of winter. Some plants of Leschenaultia planted out in June last, at which time they were very small, are now strong plants which will require number 12 sized pots when they are taken up. In removing them, the ball of earth must be so much reduced in size as to admit of an inch or two of turfy soil being placed all round it when potted. This is essentially necessary, and a secret upon which their future success in a great measure depends; for the plants being provided with fresh and healthy soil to work into, they sustain little or no check after the removal. After they are potted, place them in a close frame on a north aspect; sprinkle the plants lightly every morning, and keep the frame close during the middle of the day, but they may have plenty of air during the night. When they have recovered the check, place them in a sunny situation, to harden the tissue of the plant, but do not permit them to flag, or the foliage will become brown and rusty.

Bulbs.—Many of the early kinds of Tulips and Narcissus are now beginning to grow; and therefore, to keep them out of the ground any longer will injure them. As, however, it is impossible to plant them permanently until the autumn plants are removed from the beds, it will be found a good plan to place them upon an inch or two of finely-sifted leaf-mould and sand, and to cover them several inches deep with old tan or leaf-mould. In this situation they will make root, and may be removed to their proper situations with the soil adhering to their roots as soon as the beds are ready for their reception. The same observations apply to all kinds of bulbs or tuberous-rooted plants that are desired for early spring decoration, as, for instance, Anemones, Crocuses, Snowdrops, Hyacinths, Scilla, Crown Imperials, &c. &c.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Continue, every favourable opportunity, to pot off Carnation layers: let the grass or leaves be dry, for when wet with either rain or dew, the soil, which will sometimes get in the axils of the leaves (however carefully they may be handled) is difficult to be removed, and if not, will prove detrimental to the plant during winter. The layers must be put in a close frame for a few days till they have again struck root. *Tulips.*—Seedling bulbs when very small are best in the ground, and small offsets of choice sorts had also better be planted. *Auriculas.*—Any offsets which may not have been ready earlier in the season must now be removed, planting carefully round the side of a quart pot; water to settle the soil to the roots, and place in a situation free from drip or heavy rain. *Pansies.*—Continue to make the beds for next year's blooming, and propagate by slips all that it is desirable to increase. *Polyanthuses.*—Seedlings may still be pricked out to get established before winter. Compost heaps should be turned, and all insects carefully picked; a small quantity of quick-lime will prove beneficial to the decayed turf intended for Tulips.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pinery.—Ripening fruit should be kept in a dry, warm atmosphere, to give it flavour. The swelling fruit should have a warm, moist atmosphere; when water is required it should be given more sparingly, since evaporation goes on much slower at this season, and the soil, receiving more water than the plant can take up, becomes soured, causing the fruit to ripen without flavour. It is proper after this season to let crowns and suckers, after being trimmed, lay upon the kerb of one of the pits to dry, for a day or two before planting. Endeavour to keep the linings (where in use) dry, as rain causes the heat to decline suddenly, and consequently causes much labour in turning and renewing.

Vinery.—The Grapes for winter use demand constant attention, to prevent their being injured by damp. As early in the morning as convenient, let a slight fire be made; and as soon as it begins to tell upon the thermometer, open the top ventilators, to let the damp pass off. Towards evening the heat in the flues or pipes will have declined, and the house may be closed, to keep out the damp night air. If the Grapes are covered with paper bags, the bags should be removed occasionally, to examine the berries, as, if one berry begins to decay, it will soon infect the whole bunch, if not removed. Where means have not been taken to protect the outside borders from wet, no time should now be lost, particularly with the borders of those houses intended to be forced. Dry Fern is an excellent material for keeping borders dry and warm. It must be laid on thickly, in layers, beginning at the front of the border. The whole should be covered with a thin layer of good straw, and fastened down with ropes and pins, as a thatcher would fasten the thatch of his stacks.

Peach-house.—If the directions already given for the early house have been followed, nothing more will be required than to keep the trees as cool as possible. The second house will soon be ready to be put in the same state of order as the first, and from the time that all preparations are completed in these houses, they may be made exceedingly useful for keeping plants of various kinds in, till the forcing commences. Care should, however, be taken not to bring into them any plant that is not perfectly free from insects.

Figs.—The trees that are still bearing should have slight waterings, to assist them to perfect their fruit; but trees having no fruit likely to come to perfection, and whose leaves are fading, should be kept dry and cool, to induce a state of early rest. Plants in pots should not be kept growing longer, or they will not be in a fit state for forcing early.

Melons.—Give scarcely any water after this. Continue to maintain a warm, dry atmosphere, to give flavour to the fruit.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Cucumbers.—To prolong the season of fine crisp Cucumbers the plants must be kept clean and healthy by giving them plenty of top and bottom heat. This can be easily effected in frames, if the bed has been perforated with pipes; but the disadvantage of frames, when contrasted with good close pits, is, that in the one case great care must be taken to prevent any rank steam from the dung entering from the lining, while in the other there can be no danger in using the fermenting material as fresh as you can get it. The chief difficulty is the securing abundance of it. If that can be obtained, and you have some nice strong plants in pots, a fresh bed might now be made, to produce in the earlier months of winter; but without abundance of fermenting material it would be folly to attempt it. Those who grow them in hot-water pits will now have their winter plants in good order. *Manure.*—Take every opportunity of converting all refuse vegetable substances, clearings of roads, cleanings of sheds, &c., into rich dressing for the garden, by watering with the liquid that distils from Melon-grounds, dung-hills, &c. I have tried a number of the new manures upon a small scale, and though useful as auxiliaries, I find that there is nothing preferable to old hot-bed dung, and the decomposing heap of those substances that can be collected in a garden, for the production of good, medium-sized, high-flavoured vegetables. Weak solutions of guano, superphosphate of lime, &c., frequently repeated, were found very serviceable to strong growing plants in pots, Cucumbers in boxes, &c., but the same apparent benefit was not the consequence of their application to crops in the open garden: though it is right to state that Cauliflower was considerably improved, especially by guano, and that Celery was rendered of a deeper green colour by the application of nitrate of soda; but, in size and flavour was not anything superior to that grown in the usual manner. However concentrated the strength of these new manures, it must be evident that whatever their chemical influence, they can affect the mechanical texture of the soil but little, and hence, so far as rendering loose soils more retentive, and stiff soils more open, the old (now attempted to be discarded) system of manuring must ever maintain a great superiority. It is true, a similar mechanical effect might be produced by a proper application of lime, chalk, marl, or in extreme cases, of clay or sand; but these operations cost both trouble and expense. It is a pleasant thing for a gardener to get rid of all his dung-pits and rubbishy-looking linings, but he will act wisely if he makes the most of an old assistant before he is well supplied with a new one, as, however anxious he may be to follow in the wake of new improvements, he may find that when he has rendered himself deficient in muck, there may be no striking desire manifested for spending good gold on guano, &c., nor yet in furnishing him with the means of producing early vegetables without the assistance of fermenting matter. *Routine.*—Tie up Lettuces and Endive, earth up Celery, and gather fruit in fine weather. Encourage the ripening of the wood of Peach-trees, &c., by exposure and shortening the shoots. Remove everything offensive in the way of decaying Bean-stalks, Pea-haulm, ran Lettuces and Endive, and weeds, wherever they appear. Give everything a fresh and neat appearance, by frequently stirring the soil, and by sweeping and rolling the walks.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Now is the time to fix upon what trees should be taken out, and what sorts should be planted to improve the scenery and enhance the value of Old Woods.

Coppice.—Attend to the directions given in last week's Calendar. *Prepare* ground for planting, and fill up vacant spaces; taking care to select the most profitable kinds of trees, shrubs, &c. for the purpose.

Young Plantations.—Where new ones are about to be made, I would strongly recommend planting a sufficient number and variety of plants for permanent undergrowth, at the first planting, where shelter or blinds are desirable, as they will have a better chance to establish themselves than when planted at a future time; take care, however, to head them off at different heights, in order to keep them low and bushy, and to prevent them from injuring the permanent trees; this method is equal to thinning in their first stages of growth. The beneficial effects of it may be seen in Dr. Thackeray's plantations at Norquis, where some Beeches have been headed off, and Spruce Firs broken off. In addition to the kinds specified in last Calendar as suitable for this purpose, I would plant plenty of Hollies, some Yews, and various other choice evergreen and deciduous shrubs, especially near the sides of rides and walks.

Hedge-rows, &c.—Refer to late Calendars.—*W. B.*

VII.—COTTAGERS' GARDENS.

As we may expect cold weather soon, any plants turned out into the border that are worth preserving, and that are likely to be injured by frost, had better be lifted and potted without delay. As soon as scarlet Pelargoniums become unsightly they may be taken up, the soil shaken from their roots, the stems shortened back a little, and then put into small pots, in which they can remain through the winter. Place them in a dry situation, cool, but secure from frost, and give them little or no water. I have known them to be successfully preserved over winter hung up by the roots in a dry cellar. Plants in pots in the window should be sparingly watered, and after this time it should be given in the morning. This autumn has been very favourable for all gardening operations. Advantage should be taken of fine weather like the present for digging up the Potatoes where they are ready for lifting. After they are raised let all weeds, haulm, &c., be cleared away to the manure heap, for upon its accumulations the crops for next year greatly depend. Lettuces sown in August will now be in good condition for transplanting. This should be done in rows about nine inches apart, and let the plants stand about six inches apart in the row; they like a rich, light, and, for winter, rather dry soil; the situation should be a warm border if possible. When these, and late Cauliflower plants are put in, little more will be needed in the planting way for some time. Keep a few Endive plants blanched, by inverting a flower-pot over them, closing up the hole in the bottom of the pot, in order to prevent wet and light from entering. Continue to gather fruit as it becomes ripe, taking particular care to prevent its being bruised or injured in any way; the slightest bruise upon the fruit, even although not visible on the outside at the time, will ultimately occasion premature decay. Grapes ripening on walls should be protected, if frosty nights are likely to occur.—*J. McH.*

State of the Weather near London for the week ending Sept. 20, 1845, as observed at the Horticultural Garden, Chiswick.

Sept.	Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Fri.	20	7	30.020	29.897	66	49	55.0	E.	.01
Sat.	21	8	30.191	30.043	64	47	55.5	N.E.	.01
Sun.	22	9	30.088	29.971	61	49	54.0	E.	
Mon.	23	10	29.761	29.668	62	49	55.5	N.E.	
Tues.	24	11	30.031	29.889	65	50	55.0	N.E.	
Wed.	25	12	30.254	30.174	65	55	60.0	N E.	
Thurs.	26	○	30.270	30.196	72	56	64.0	S.W.	
Average			30.089	29.990	66.0	49.1	57.6		.02

Sept. 20 Drizzly; hazy; fine; clear above with low fog at night.
— 21 Clear; very fine throughout; clear at night.
— 22 Fine; cloudy with brisk wind; sunshine occasionally; cloudy.
— 23 Cloudy; fine with clouds; overcast.
— 24 Fine; very fine throughout; clear at night.
— 25 Heavy dew, with slight fog; very fine; slightly clouded.
— 26 Approaching frost early A.M.; foggy; clear and fine.
Mean temperature of the week 2½ deg. below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Oct. 5, 1844.

Sept.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 29	65.1	46.1	55.6	10	0.35 in.	—	1	2	2	5	4	2	2
Mon. 30	64.6	45.0	54.7	9	0.36	2	1	3	—	4	3	5	—
Oct.													
Tues. 1	63.8	45.6	54.7	9	0.53	2	1	2	2	6	3	2	—
Wed. 2	64.5	42.5	53.7	9	0.46	1	2	1	—	5	5	2	2
Thur. 3	62.7	45.2	54.0	9	0.14	1	2	—	1	6	5	1	2
Fri. 4	62.2	42.6	52.2	8	0.26	—	0	1	—	5	4	2	1
Sat. 5	62.8	41.7	52.5	7	0.47	4	2	2	1	4	3	2	—

The highest temperature during the above period occurred on the 2nd Oct., 1842—therm. 81°; and the lowest on the 5th, 1836—therm. 29°.

Notices to Correspondents.

To Correspondents.—*Lover of Accuracy.*—We have never received either of the inquiries to which you refer. Rely upon it no question is ever unanswered more than a week, and this only happens when inquiries do not reach us before Friday, or require a great deal of consideration.

Apple-tree.—*A Lady.*—Your trees, 6 yrs. old when transplanted two years ago into poor soil, and which are now weak and moss-grown, will be improved by a good dressing of farm-yard manure dug in before spring. The trees should be moderately pruned back as soon as the leaves have fallen; and if they are occasionally powdered over with lime, or washed with lime-water, it will tend to prevent the growth of Moss.‖

Asparagus.—*E. G. L.*—Potter's Guano may be applied at the rate of half-a-pound per square yard to Asparagus-beds. It should be well diluted in water, and applied in portions weekly during the early part of summer, commencing immediately the cutting is over. Salt, at the rate of 1 lb. per square yard, may be applied at once in spring. Other manures may be employed along with it.‖

Bees.—*A Young Apiarian.*—Your bees might survive the winter by feeding, but for the want of brood-bread, an essential thing seldom thought of, they must be weak as the spring advances; therefore the best way is to unite them to those in the common hive thus:—In the evening fumigate both parties; take the queen from the weakest hive and destroy her; mix the bees, and let them ascend into the straw-hive, impressing them next day to cement their friendship.—*J. Wighton.*

Books.—*H.*—Mackintosh's "Practical Gardener," Roberts "On the Vine," Mills "On the Cucumber," Lindley's "Theory of Horticulture," Knight's "Physiological Papers."‡

Carnations.—*W. O.*—Your scarlet bizarre more resembles Twitchett's Don John than any variety with which we are acquainted.*

Exportations.—*J. C.*—If you pack your cuttings very tightly in a box of sphagnum, and nail them down so that they cannot be opened, they will travel pretty well. The best way, however, is to plant them in Ward's cases, if you do not regard the expense and can find a good conveyance.—*G. L. C. F.*—We presume the best way to take Apples and Pears to India—by the overland route, of course—would be in a box of dry sand. We can hardly anticipate the possibility of sending them round by sea! We have indeed seen such fruits arrive from China in tin cases, and still green; but they were quite spoiled, and worthless.

Flower-Garden.—*A. W. G. B.*—We fear that there is no possibility of making a garden gay in autumn, without pot-culture; for where is a substitute to be found for scarlet and other Pelargoniums, Verbenas, Petunias, &c.? If you rely upon Annuals you will be disappointed; if upon herbaceous plants, few are handsome enough for the purpose. Possibly some of your beds may be filled with the following:—Campanula grandis, Convolvulus lanuginosus, Double Pinks, Delphinium grandiflorum (double), Statice tatarica, S. spatulini, and Pseudo-Armeria, Double Poppy Anemone, Potentilla Russelliana, Œnothera speciosa and macrocarpa, Heartsease, Gladiolus psittacinus, Double Stocksts, Lathyrus grandiflorus, Double Scarlet Lychnis, Radbeckia serotina and hirta, Phlox Drummondii and procumbens, Monarda didyma, Stenactis speciosa, Aquilegia glandulosa, and Gentianas of sorts.¶

Heating.—*A. M.*—A small boiler, troughs, and some 3-inch pipe will enable you to heat your pit better than with dung.—*A. B.*—You may keep frost out of such a house as you describe by means of a good Arnott stove placed in the middle; it should be a third-size above the small ones, and furnished with a hopper. But it would be far better to heat it with hot water. We never give you prices—for that you must consult the dealers.—If you use an Arnott stove you must recollect that it requires *very careful management.*—*A Subscriber.*—Do not employ steam for heating. It is very expensive and inconvenient. If you do, you will be glad to pull your apparatus down again. Why not adapt hot-water pipes to your still; or rather, why not sell your copper still, and lay the money out in heating the house with hot water.—*Amateur.*—You may certainly grow plants in the manner you propose; but you must have some means of shutting off the hot water when you do not want it, or you will have too much in summer. Three inch pipes will do very well. Melons may be grown in such a place, provided you can warm the soil a little without drying it.

Hollyhocks.—*D. O.*—The Hollyhock is little more than a biennial, and frequently dies suddenly, if sown too early in the first season, or if allowed to remain long in the seed-bed before transplanting; therefore the best way to keep them in health is not to sow them before June, and, when large enough, to transplant them singly where they are to remain and flower in the following season; afterwards cut them down as soon as they have done flowering, and remove them to a fresh situation, where the ground has been well manured, before winter. By continuing this treatment you may keep the same variety for years.¶

Insects.—Our correspondents inquiring about insects will oblige us by addressing their letters hereafter to John Curtis, Esq., Olive-cottage, Hayes, near Uxbridge, Middlesex.—*Cotton Blight.*—You will find an article upon the cotton or American blight, at page 116, of the *Chronicle* for this year. *R.*—*A Lady Subscriber.*—The gardener is right; the wasps are females, and will live through the winter. *R.*—*North Esk.*—The insects transmitted with the Melon-leaf are a species of thrips, and we are unable to suggest any remedy at present beyond those already published. *R.*

Larches.—*A. B.*—There are two very dwarf kinds of Larch, one a variety of the common Larch (Larix europea), which seldom grows more than two or three feet in height; the other is Larix leptolepis, a Japan species, of about the same stature.¶

Lawns.—*A Subscriber.*—If your Grass is quite killed, you had better procure some fresh cow-dung and strong loam mixed in equal proportions, and put a good covering of it over the old turf (without moving it), and relay it with fresh turf; it should have been well watered two or three times during the very dry weather; this would have prevented it from being killed, and is much the cheapest way in the end.¶

Manures.—*J. N. C.*—The mud from your water-course must be very strong. We should water it with a solution of sulphate of iron to destroy the smell. It might then be applied advantageously to your borders, which, if they are light and sandy, would be much benefited by it. In order to ascertain whether it is too strong, sow a little Mustard seed on a small quantity of it. If the plants come up quickly, and are of a deep green colour, it is fit for anything, and need not be feared.—*Southdon.*—Sea-kale will be benefited by being dressed with salt like Asparagus. It should be applied just when the plants begin to grow in spring.‡

Names of Fruits.—*Worcester.*—5, Flat Nonpareil; 10, King of the Pippins; 17, Sops of Wine; 26, Ribston Pippin, 27, Minchall Crab; 29, Ribston Pippin. Pears: 11, Seckle; 12, Ambrosia; 18, Gilout Morceau; 19, appears to be Williams's Bon Chrétien; 20, Passe Colmar.‖—*J. P. M.*—The disputed Pear is the Brown Beurré.‖—*H. M. H.*—Your Apples ascertained in their present immature state are,—No. 3, Lamb Abbey Pearmain; 5, Keswick Codlin; 9, Blenheim Pippin; 10, Yorkshire Greening; 13, Court of Wick.‖—*W. R. H.*—No. 1, Blenheim Pippin; 2, Nonesuch; 3, Norfolk Beaufin; 4, Chaumontel; 5, Seckel.‖—*Phœbe.*—Supreme Crab.‖—*J. H. L.*—2, Blenheim Pippin; 3, Kerry Pippin; 4, Hollandbury; 7, Keswick Codlin; 8, Northern Greening; 9, Margil.‖—*Worcester.*—6, Flat Nonpareil; 13, King of the Pippins; 11, Seckle.‖

Names of Plants.—*Hortus Siccus.*—No. 1, Coronopus didyma; 2, Peltaria alliacea; 3, Helosciadum inundatum; 4, Spergula nodosa; 5, Bartsia Odontites; 6, Ranunculus aquatiles; 7, Ranunculus hederaceus.‡—*H. C.*—Tussilago nutans, now called Leria nutans, is neither a Portuguese plant nor a succulent, but a native of Mexico. It has no English name. It is a purple-flowered plant of no beauty—not worth growing for ornament.—*Z. Long.*—Elæagnus hortensis.—*L.*—Your Fern seems to be a seedling of Asplenium rhizophorum.—*A. C.*—A Cuscuta, probably brought in with the soil.—*A Regular Subscriber.*—The productions which you have forwarded on the roots of a species of Zichya are not, as you suppose, Fungi, but of the same nature as the bodies which are so common on the roots of leguminous plants. The nature of these bodies is not at present well understood, but M. Desmazières has prepared a Memoir on the subject, illustrated by beautiful drawings, the publication of which has unfortunately been delayed from an attack of the eyes, which has prevented the completion of his observations. These bodies are produced very shortly after the germination of the seeds; and if the gradual development be traced, as it has been by ourselves, it will be found that they arise from the cellular tissue, though generally having one or more branches from the vascular bundles at their base. The contents of the cells at a certain stage of growth become blue from iodine. At a later stage, the cells are filled with short straight, or forked bodies, first observed by M. Desmazières. In your Zichya, the excrescences are very large; but, as far as can be judged from dry specimens, they are of the same nature. It is not known what the function of these bodies is, but it is probable that, in very dry weather, they may be reservoirs of nutriment. The contents of the bodies soon become pulpy, and the bodies themselves eventually burst. Your plant has perished probably from some other cause; and, if we may judge from the disgusting smell of the specimen, the cause of death has been the application of too strong manure. *M. J. B.*

Peaches.—*B. O. D.*—In this dry season, Peaches have been apt to drop prematurely, especially late sorts. The late Admirable has not attained the perfection it usually does in moist summers. That which you have for the Noblesse is perhaps the late Admirable.‖

Pelargonium.—*Acland.*—A list of the best Pelargoniums for forcing appeared in last year's vol., p. 28.*

Pine-apples.—*A Subscriber.*—All we knew of Mr. Mills's pits has been stated. One plant grew under the middle of each light. Upon looking again at the account of his operations, given at p. 610, we find that the pits are said to be *three* feet wide; this is, of course, a misprint, and should be *four* feet. A common 3-light box measures about 11 feet by 5.

Planting.—*J. M. T.*—Transplant your evergreens in the very beginning of November; they like moderately light loamy soil, and require no manure. If you grow them too fast they will not ripen their wood, and then the winter will kill them back.—*S. N.*—Tall Yews early in the winter. If your Roses are tender, as many of the Bourbons and Tea-scented kinds are, you had better not plant them out before spring. All the varieties of R. sempervirens are tolerably hardy; we are unacquainted with the Triomphe de Rollwyller. Verbascum phœnicœum is quite hardy.

Strawberries.—*Delta.*—Runners do no good to the parents from which they spring, but the contrary, and are better stopped. Never cut off leaves from Strawberry-beds after fruiting; it is a very bad practice. People reason—no, not reason, but say—that as they have good crops in spite of cutting off the leaves, the operation must be a good one. They do not inquire how much better the crop would have been if they had left the leaves alone. We should think that Pears would grow very well against your walls, if they are hardy sorts, such as the Beurré Rance, Passe Colmar, Easter Beurré, Marie Louise, Napoleon, Glout Morceau, Diel, &c. Why not try the experiment with one tree first? If they will grow one year they will do. The great baking Pear called Uvedale's St. Germain, would be almost sure to succeed, and so would Monsieur le Curé. What is a horse-shoe espalier? Cold, damp walls will do no harm to Apples and Pears, but they certainly will injure Plums and such tender trees.

Tobacco.—*W. T. B.*—It is unlawful to plant Tobacco except in any physic garden of either University, or in any other private garden, for physic or chirurgery only; and in those places the quantity so planted must not exceed half a pole. Heavy penalties are also incurred by manufacturing Tobacco without attending to the Excise Regulations on the subject.—*W.*

Transformations.—*A. W.*—We are far from saying that Potentillas will not change into Strawberries. The only difference between them is, that one has a dry and the other a succulent receptacle. In fact, what Linnæus called Fragaria sterilis is now called Potentilla fragaria. What you have sent is P. nepalensis. We hope we are not doing wrong in giving the public the benefit, now and then, of your clever letters.—*A. M. S.*—It is not impossible that a warted Gourd should produce something like a Vegetable Marrow; but it is rather improbable. We should fear there has been some mistake. We could find no Rose-leaves in the letter.

Vines.—*S. S.*—The fruit being cut, it will be proper to give all possible air, with moderate heat, but gradually diminishing the latter till the leaves drop. The Vines may then be pruned and turned out. Provided the wood is sufficiently matured they will not suffer from cold, and may remain out till February, if you only commence forcing in March.‖

Miscellaneous.—*G.'s* note is sent to Mr. Paxton.—*Micklewell.*—Let your Iris chinensis remain as it is. Brachystelma is an ugly plant, allied to Stapelia. Keep it dry and warm in the winter. Gladiolus fragrans is very sweet, and violet-coloured. Ixia maculata has dark spots at the base of the petals. It is evident that your Cape bulbs are wrong named.—*An Old Subscriber.*—We never heard of an objection to a purchaser picking such bulbs as he prefers. If any "old gentleman" refuses to allow it, his customers should go to the next shop.—*William.*—Your house is so very narrow, that slight rafters will do; and we think 5 by 3 inches quite strong enough. By all means hinge your front lights if you wish it. Sliding sashes are, however, most convenient, and least liable to get out of order.—*Z.* is answered in the "Calendar of Operations" for this week.‡—*H.*—Bougainvillea spectabilis is a charming thing, with heads of Lilac flowers resembling Hops. It is now in flower in the great Conservatory at Chatsworth; but we never saw it in that state before, it being apparently difficult to flower. Any nurseryman may procure it of his London correspondents, if he will give himself a little trouble in inquiring. It may be struck from cuttings without difficulty. If you plant it out give it plenty of light and warmth in the summer, and keep it cool in winter.—*C. C.* must give his name and address. We cannot insert statements of facts without their being confidentially authenticated by the writer's name and address.—*T. O. R.*—It is said that Indigo is a cure for wasps' stings.‡—*W. H. F. C.*—The cause of your Mignionette withering in small patches and dying down, probably arises from damp at the root; keeping the plants thin and open will possibly remedy the evil.‡—*H. H.*—The dry season is no doubt the cause of your Raspberries not having made young wood this year. You had better cut out the old wood at the usual time.‡—*W. C.*—Ipomœa ficifolia is not one of the best conservatory climbers, but it is a very handsome species. We do not expect that Stephanotus floribundus will succeed in a house where the temperature is only 50° ‡—*N. T. B.*—You may commence to force your Vines about the end of November, but you must take care that the outside border is kept warm in winter.‡—*Octavia.*—A cellar is a good place to store up Carrots and Beet-root, if it is dry. It is yet rather early to introduce plants into heat for winter flowering. If you watch our Weekly Calendar of Operations you will obtain full information on all such points.‡

SEEDLING FLOWERS.

Dahlias.—*M. J.*—Neither of your seedlings are equal to similar sorts in cultivation. No. 1 is too small and undecided in colour; in No. 2 the centre opens irregularly, and the flower wants depth.*—*Sunbeam.*—Nothing was left but the centre of your flower when it reached us; from the quantity of loose petals in the box, we imagine it to be rather flat, and the centre shows too many flat, pointed, and unbloomed petals.*—*D. D.*—Your seedling is decidedly worth cultivating; the tip is fine, and distinct in colour; the petals in the centre are rather too upright.*

Fuchsias.—*J. L. V.*—Your seedling with a light tube and sepals tinged with green, having a pale rosy-purple corolla, with deep-green foliage, is the largest flower of the light class we have seen; but the colours appear to be rather too faint.*—*C. B.*—There is nothing remarkable in your seedlings; the peculiarity you point out is not a desirable one.*—*W. J. E.*—Your seedling, having a very light tube and sepals, with green terminations, and the crimson corolla having a purple tinge, is a distinct and handsome flower, of a medium size.*—*T. F.*—The lighter seedling of the two sent is not worth keeping; the other variety is large, bright, and rich in colour, and though somewhat like others in cultivation, is equal to any of its class.*—*Y. and Co.*—Your seedling named Alicia is a plant of handsome growth, and the flowers, which are produced in great abundance, agree with the following description:—Tube and sepals delicate flesh-colour, the latter having green points; corolla stout, of a deep blood-colour; flowers of a medium size.*

Petunias.—*T. J.*—It should be stated with regard to this flower, whether the plants have been grown in pots, subjected to greenhouse cultivation, or grown in the open border, from the extreme delicacy of your specimens the former appears to have been their mode of growth; they differ from all others we have seen in their extreme delicacy of texture, and the fineness of the pencilling in and around the throat. No. 4, named Elegans, combines fine form with great neatness; 2 and 5 are very pretty, having Violet pencillings on a white ground; 1 is large and wants flatness; it is also too much indented on the outline; 6 is not uncommon.*—*R.S.S.*—Your pencilled seedling No. 1 is a very pretty flower of good form, and firm in texture. No. 3 is rather small, brilliant in colour, but not improved by being mottled; that quality wants decision.*

Trunbergias.—*Joseph Fryer.*—We do not perceive any difference in your blooms from those of T. aurantiaca and alata. With regard to the plants not being subject to red spider, we doubt the fact, judging from the specimens which we have received.‡

GUANO for SALE, in Bags of 1 cwt. each, just landed; with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To secure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, illustrated by Practical Results."

Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the warehouses, 24 and 25, Billiter-street, or delivered within any reasonable distance at a trifling additional cost. Apply to JAMES CLARK, 24, Billiter-street.

WHEAT-SOWING.

FREDERICK BRAIN begs to call the attention of the Agricultural world to his GUANO MANURE, prepared expressly for Wheat crops: it abounds in all the ingredients that are necessary for a good grain crop. He particularly solicits persons who found the Foreign Guano a failure last season to give his a trial, it being much more powerful, and free from adulteration, so justly complained of in the Foreign by Agriculturists, as well as by all the leading Agricultural Journals.

Testimonial to Brain's Guano Manure.—"5 A, Hawley Road, Kentish Town, London, Aug. 15, 1844.—This is to certify that we have subjected Brain's Guano to a most patient and rigorous analysis, and find it contains all the necessary constituents of a good manure, and is well calculated to give fertility to a soil which is either naturally barren, or has been exhausted by over-cropping, by supplying the land with those substances which are absolutely requisite to a healthy vegetation: (it is not adulterated, and can always be depended on, being of uniform composition.)—(Signed) JOHN MITCHELL and FREDERICK FIELD, Analytical Chemists, of the Royal Polytechnic Institution, London."

Also, BRAIN'S highly-concentrated LIQUID GUANO, for Grass Lands, Gardens, Shrubberies, Hothouses, and Conservatories, price 1*s.* 9*d.* per quart bottle, with full directions for use, (enough for 80 gallons of Liquid Manure), to be had of most respectable Florists, Seedsmen, and Chemists in town and country.

Works, Thomas-st., Duke-st., Stamford-st., Blackfriars-road.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 28, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 3—Agricultural Imp. Soc. of Ireland.

THURSDAY, Oct. 10—Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

Sept. 30—Chepstow. | Oct. 5—Collumpton.
Oct. 2—Harleston. | Oct. 8—Abergavenny.
Oct. 9—Monmouth.

WE have read with an interest, which has doubtless been shared by the great majority of our subscribers, the accounts of the agricultural improvements effected by Mr. Mechi, the spirited proprietor of Tiptree Farm, and we heartily hope they may fully answer the expectations of their liberal and enlightened promoter*. Some THEORETICAL VIEWS ON DRAINAGE are proposed by Mr. Mechi in our Number for August 17, avowedly for the purpose of inviting discussion; and therefore we have no scruple in submitting our doubts as to the correctness of some of them. The point particularly alluded to is the statement at p. 562, in the middle column. Mr. Mechi's proposition is as follows:—"The surface of the drains should nearly equal the surface to be drained; so that if the surface to be drained were nine square feet, the sides and top of the drain should present an area of nine superficial feet."

This proposition appears to be stated in much too general a manner, for we do not perceive that any necessary connection can exist between the area to be drained, and the dimensions of the drain by which such area shall be effectually freed from the stagnation of surface-water; on the contrary, it appears to be very evident that the proper extent of porous surface, as well as of the internal dimensions of a drain, necessary to dry a certain space of ground, must vary according to the climate of the locality for which the drain is intended, and not according to the area to be drained. To render this more evident, we have extracted from the Meteorological Journals, published monthly in the "Annals of Natural History," the following Table, showing the monthly quantities of rain which fell in 1843 at Chiswick and Orkney respectively. The Table is as follows:—

Months.	Rain at Chiswick.	Rain at Orkney.
	Inches.	Inches.
January	4.47	3.89
February	0.76	4.44
March	1.88	6.25
April	2.35	1.32
May	0.47	2.46
June	1.62	4.05
July	5.26	2.21
August	1.62	1.04
September	1.67	2.92
October	3.32	1.84
November	0.90	2.
December	4.19	6.35
Total in the year	28.65	38.89

From this it will be seen that the total quantity of rain last year was one fourth more at Orkney than at Chiswick; and by Dr. Dalton's Tables, compiled from the Transactions of the Royal Society and other sources, we find that the annual mean quantities of rain in different parts of the country vary from 27 inches, amongst the mountains of Cumberland, to 20 inches, in Essex; the mean of all England and Wales being 31 inches. No uniform rule as to the area of porosity or the internal dimensions of drains can therefore be given, without reference to the locality and climate for which the drains are to be calculated.

The next objectionable proposition of Mr. Mechi is the assumption that the superfluous surface-water should run off through the drains within the same space of time in which it fell from the clouds. Now if we attend to the actual state of things, as it occurs in nature, we shall find that though water falls during rain, in equal quantities over the whole surface of a field, yet, as the drains by which it is to be carried off are placed at certain intervals in the field, the water must run into them unequally, some part of it having to filter through a greater distance in order to reach the drains than the rest. Whatever, therefore, be the area of porosity of the drains, the water cannot escape as rapidly as it fell. And further, it appears pretty certain that it is not even desirable that water should escape so rapidly, even if means could be found to enable it to do so. The gentle percolation of rain-water through the soil, accompanied by air and other gases, is probably highly beneficial to vegetation. It therefore appears that the conditions of perfect drainage are sufficiently fulfilled, if the area of the drains be such that all superfluous surface-water is in a constant state of motion towards the drains till it is ultimately carried off by them.

If we now proceed to offer a very rough approximation to the size of drains necessary to secure the condition of perfect drainage above described, we shall probably find that the dimensions of Mr. Mechi's drains, instead of being too small, are unnecessarily large, and that great waste of capital has been hitherto incurred in draining land, from the drains having been made much more capacious than necessary. We do not allude at present to the large deductions for evaporation and for the consumption of the plants growing on the surface of the land, to be made from the amount of rain which falls in any locality before it reaches the drains.

But assuming for a moment all the water which falls upon a given surface of ground in any locality to be carried off by drains, let us inquire what the size of the drains must be in order readily and surely to effect this at all seasons. Referring to the same meteorological journals as before, the following is a Table of the greatest amount of rain which fell in any day, and in any three days in each month of last year at Chiswick and Orkney respectively:—

Months.	Chiswick. Inches and decimals of rain on each of 3 most rainy days.			Total of 3 most rainy days.	Orkney. Inches and decimals of rain on each of 3 most rainy days.			Total of 3 most rainy days.
Jan.	0.87	0.67	0.37	1.91	0.29	0.10	0.81	1.20
Feb.	0.32	0.20	0.09	0.61	0.59	0.57	0.36	1.52
March	0.29	0.12	1.16	0.57	0.92	0.71	0.51	2.14
April	0.26	0.28	0.26	0.80	0.29	0.26	0.35	0.90
May	0.21	0.08	0.06	0.35	0.49	0.27	0.40	1.26
June	0.22	0.23	0.35	0.80	0.41	0.41	0.47	1.29
July	1.26	0.58	0.57	2.36	1.12	0.55	0.27	1.94
August	0.23	0.64	0.20	0.79	0.57	0.13	0.12	0.82
Sept.	0.24	0.50	0.16	0.90	0.95	0.65	0.45	1.95
October	1.02	0.61	0.95	2.59	0.36	0.35	0.25	0.96
Nov.	0.52	0.20	0.24	0.96	0.29	0.36	0.24	0.89
Dec.	0.88	0.34	0.52	1.47	0.60	0.47	0.53	1.60

N.B. In the above Table the three days' rain were never continuous, but the three most rainy days are picked out of each month promiscuously.

From the above Table it appears that though the whole quantity of rain which fell in 1843 was much greater at Orkney than at Chiswick, yet that on particular days more fell at Chiswick than at Orkney. Probably the soil would be less saturated with rain at Chiswick than at Orkney, so that the extra quantity which occasionally fell would be more rapidly evaporated, and therefore the extent of drains requisite to free a given space from water would still be greater at Orkney. We do not, however, at present take into account the amount of evaporation. It appears that on only two occasions in the last year did the rain which fell at Chiswick in one day ever reach one inch, and only once in that year at Orkney; if, therefore, drains are calculated to allow *one inch* of rain to run off in *three days*, they would have been sufficient last year for either Chiswick or Orkney, without reckoning the amount carried off as vapour by evaporation, or for the supply of vegetation. What area of drains, then, is necessary in order that the land shall be freed from one inch of surface-water in three days? Supposing the drains made at intervals of 18 feet, each would receive the water from a distance of 9 feet on each side of it, each foot of the length of the drain would correspond to 18 square feet of ground, and these covered by one inch in depth of water, would carry exactly one cubic foot and a half for each longitudinal foot of drain. Hence at the end of a drain 300 feet long, (which is the length recommended by Mr. Mechi), there would be 450 cubic feet of water to pass off in three days. This comes to 1 cubic foot of water in 10 minutes, or 172 cubic inches of water to be discharged every minute. But as Mr. Mechi says that a drain should not run above half full, let us estimate the quantity of water to be discharged at double its actual amount, or at 344 cubic inches per minute. Assuming a very small velocity in the water running out of the drain, viz., that of only 30 feet or 360 inches per minute, the area of the end of the drain would not require to be quite one square inch. This sectional area corresponds to that of a circular pipe not quite one inch and a quarter in its internal diameter, which would be all that would be necessary to hold double the quantity of water which, according to the above hypothesis, is ever likely to run through it in the climate of Chiswick. It is evident that the upper parts of the drains might safely be composed of tiles of even less than an inch diameter, so far as their capacity for holding the water likely to run into them is concerned. Thus, the quantity of water which would run through the drains made by Mr. Mechi on Tiptree Farm, if only half full, would be above ten times the quantity likely ever to find its way into them at one time.

But another most important element must be taken into account in determining the real size of drains requisite in any given locality, viz., the large portion of the water falling upon the ground which is converted into vapour, or taken up by plants before it can reach the drains. In the varied circumstances of different fields at different seasons and under different management, perhaps nothing but actual experience can inform us what allowance it is safe to make for this mode of carrying off water in estimating the amount which must be carried by drains from a given surface.

It would, therefore, be very important to have registers carefully kept of the actual discharge of surface-water, together with the velocity of the current, from the main drains of a certain number of acres of land, compared with the fall of rain at the same place and during the same period, measured by the rain-gauge. The depth of the drains below the surface, their length, and number should also be stated. If these particulars were carefully noted, we have little doubt that it would be found that draining has hitherto been made a far more expensive operation than it need be. These remarks, we hope, may turn the attention of our agricultural readers to the formation of a true theory of drains on the most economical principles consistent with perfect efficiency.—*T. T.*

ON THE BEST SPRING CROPS FOR FOOD.

[BY THE REV. R. MORRIS.]

Trifolium incarnatum.—All allusion to the Annual Crimson Clover must not be omitted; of late years it has been sown as a new plant, and was at first highly extolled, its growth being peculiarly rapid in April and May. It does not appear, however, to keep its ground in public estimation. It is thus described by Loudon:—An annual and native of Italy has been recommended by an Italian professor to Sir J. Sinclair, but it is not likely that such a plant, which, even as an annual in our garden borders, has not a fourth of the vigour of the common Clover, should ever be worth culture in this country. This may be rating it much lower than it deserves; yet it is undoubtedly the fact, so far as its cultivation in this neighbourhood is concerned. It has been tried by myself and others on the clay, where it has not succeeded, from the great uncertainty of its growth, at all, and from the meagre quantity it has yielded. Still, as it can be sown on a Wheat stubble without the labour of ploughing, and as it will come in in the month of April, for ewes and lambs, if it should not fail, it may perhaps be prudent to plant some of it this season, on a warm dry soil.

Rye-grass is usually sown with Clover; it is a hardy Grass adapted to most descriptions of soils, and though perhaps of much less value than Clover, as a spring crop, it is earlier, producing (at least at first), food of a better quality than the Clover itself does alone. The expense of seed and cultivation being small, and the uncertainty at all times of getting the Clover to stand, causes its almost universal use, as a Grass seed, to mix with it. "It has been cultivated for a great many years, certainly previous to the year 1677, and it is only lately that any other species has been tried as a substitute for it, in forming artificial pastures. One peck of Rye-grass, with 14 pounds of Clover per acre, is generally considered sufficient for sowing artificial pastures." The sorts most generally preferred are Russell's and Pacey's; but the Italian species is considered far superior to any other. "It is described as peculiarly excellent. It has been sown with Barley without injuring the crop, and by sowing a little thinner, it is found not to choke the Clover in the first crop, whilst its quick growth enables it to keep a-head of it in the second, producing hay little inferior to the first." At a Meeting of the Edinburgh Agricultural Society, it was stated by Professor Traill, that it was proved in the experimental garden of

* We by no means wish to be understood as approving in all their details the measures which Mr. Mechi has lately taken at Tiptree; but that does not hinder us from honouring his patriotism, and heartily wishing him success in what, at considerable risk of private loss, it has induced him to undertake.

the Duke of Buccleuch, to arrive at maturity much earlier than any other perennial Rye-grass, and to produce nearly double the quantity. The experiments made upon it indeed show that it is decidedly relished by cattle in pasture, and in hay; having been given to horses, along with that of the common Rye-grass, in separate bundles, it was uniformly preferred. When allowed to ripen, it gives double the produce of common Rye-grass, and "the nutritive substance extracted from the herbage, affords more saccharine matter than that of the celebrated sort known as Pacey's." An intelligent and practical agriculturist in this neighbourhood has kindly favoured me with the result of three years' experience in this kind of Rye-grass. "In the first year," he says, "I sowed ½ bushel per acre with 10 lbs. of Cow-grass, and had an excellent plant of both. In the following spring the Rye-grass was earlier and more luxuriant than the Clover. I early stocked the field with sheep and lambs, both of which did extremely well. So fond were they of the Rye-grass, that they disregarded the Clover, and trod it under foot as unpalatable; nor would they touch it so long as the least portion of Rye-grass could be obtained. I never saw a field of the same size carry more stock during the summer, (which was genial); nor could the sheep be desired to thrive faster or to be more healthy. In consequence of the Clover being refused, I sowed 1 bushel of Italian Rye-grass and 4 lbs. of Dutch Clover the second year, which answered equally with the first year's growth, and was altogether satisfactory. I obtained in this year about 40 bushels of seed after having grazed the first crop, and shut up the field the last week in May. It is very difficult to secure the seed without loss, especially if it be allowed to stand to get ripe. I intended, and fully thought I should have been early enough; but I was obliged to thresh it in the field upon large sheets, or a great portion of the seed would have been lost. I mixed the threshed hay of the Rye-grass with Barley-straw and made it into a rick. The cart-horses ate it with great avidity, preferring it to very good hay. In the spring of 1843 I sowed 2 bushels of Italian Rye-grass and 4 lbs. of Dutch Clover per acre, and did not find too much plant. It has carried a fair number of stock, but allowance must be made for the extreme dryness of the season. I have lately carried a field of Wheat grown on very good land, which had been fed and stocked heavily two years with sheep. The straw is short but the ears good. I am inclined to think that the Italian Rye-grass had considerably exhausted the land, or the Wheat would have been heavier. If the next crop of Wheat grown after Rye-grass be light, I shall then be convinced of it. I sowed 2 bushels last spring with Clover-seed amongst Barley—the former is a good plant, the latter a failure; I have, therefore, little doubt about obtaining a plant in any season." The excellent properties of this kind of Rye-grass I have had confirmed by the testimony of two other very experienced agriculturists of this district, who have quite abandoned the common sort for it. In March the blades were 14 to 16 inches long, with the seed formed. It carried 20 sheep with their lambs to the acre, five weeks; thus affording a healthy and very nutritious food; sheep and lambs thriving well upon it at the most trying season of the year. In respect to the whole of this class of produce, it has been very sagaciously suggested by a near neighbour of mine, that the distinguishing advantage appears to be early maturity; but on the other hand may not the question be asked, Are plants so nearly allied in nature to Wheat equally valuable for ameliorating crops, with those in which a more marked difference appears? When we consider that in no one quality is Red Clover much inferior to any, and in many far more valuable than most others, we need not wonder that it is and has been for a long time grown to a far greater extent than any. It is moderately early in its growth, its produce abundant and nutritious, adapted for soiling, making into hay, or for pasture; and is considered by writers on Agricultural Chemistry, as well as by practical farmers, as the best preparatory crop for Wheat. The species called Cow-grass is rather later in flowering, and appears in most respects (if there be any difference), rather inferior; it is perennial, growing as a natural pasture Grass on some soils, and on that account is sometimes preferred, where land is intended to be left several years for pasture; though in most cases, like the Red Clover, it is lost after the second year. Cattle grazed upon it are not so liable to be blown or hoven as on the other, which may indicate that it is not so succulent, but it renders it safer as a cow-pasture. All things considered, the Clovers are perhaps the most valuable of the green crops that are grown; but alone they are not sufficient to supply the want that is felt in the present system of farming, of green crops frequently alternating with Corn; for if too frequently repeated, their growth is uncertain; the land—to use the common expression—gets sick of it. The produce of Cow-grass is very great, yielding when in flower, per acre, on a rich black loam, 9 or 10 tons, and of nutritive matter, 6 or 7 cwt.; but the long-rooted Clover is greater still, since a rich clayey loam yielded 30 tons, and of nutritive matter upwards of 20 cwt. These Clover-grasses contain the phosphate and sulphate of lime; hence peat, wood-ashes, and gypsum, are said to be excellent dressings for this crop, and have in many cases succeeded in renovating Clover-sick lands. It seems almost superfluous to observe, that the mode of sowing is almost always broadcast, amongst Wheat or Barley, being either harrowed or hoed in. The quantity of seed per acre should be about 14 lbs.; and if sown with Rye-grass, it is perhaps preferable to sow them separately, as the difference in weight of the two seeds is very considerable. On the clays the plant is more certain with a Wheat than a Barley crop.

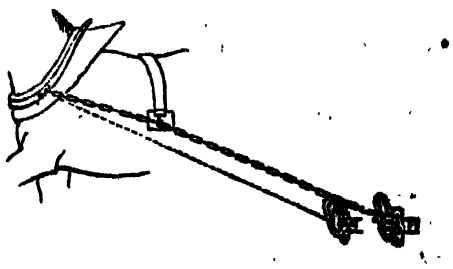
Winter Tares or Vetches form an invaluable production of spring and summer food for cattle. They are very extensively used as a fallow crop; for if got off early, and the months of July and August are favourable for the operation, a good fallow may be made, without the entire loss of a crop. Yet, as this depends so much on the state of the weather, it cannot be concluded that a complete fallow is unnecessary. For quantity of produce at one cutting, Vetches stand unrivalled, and their quality is not less valuable. If cut young, a good second crop may be grown in some instances; but, as a general practice, it does not appear desirable. An early variety has been introduced within the last few years; and although decidely earlier (say two or three weeks), in flowering it is scarcely equal in produce to the other. The winter Vetch, so called in contradistinction to the spring Vetch, though they are scarcely different in appearance from each other, is usually cultivated by one furrow, on the stubble. It is questionable whether two ploughings would not be better, provided the time after harvest permitted. It is usually sown without dung, and on rich kindly clays the crop will be good without its assistance; but land in poor condition, and naturally light soils, should be manured. When there is time to give only one furrow in autumn, the dung should be applied on the stubble. The winter Vetch may be sown alone, where it stands the winter well, at the rate of 2 to 2½ bushels per acre, but a little Rye amongst it—about 1½ bushel—protects it from frost, serves as a support, and augments the forage crop in spring. It may be sown in August if the Wheat crop will allow of it; but there is the risk of its being so forward as to be cut down by frost in January. It would be well, perhaps, to sow some in August, and again in September, and a third sowing in October, both for security and a succession of spring food. It is preferable to drill rather than broadcast, as there is an opportunity of hoeing the land between them. As the great merit of this crop is its quantity, it will produce disappointment if sown on land in bad condition without manure, as I found to my cost the year before last. It is stated that in 3000 grains of the green herbage of the common Vetch, there consists of—

	Grains.
Woody or indigestible substance . .	557
Water	2250
Nutritive matter	193

No crop better repays the addition of any organic fertilisers. The soil preferred by the Tare is clay, and therefore it is of so much value where Turnips cannot be profitably cultivated. The produce of Tares cut green is, according to Middleton, 10 or 12 tons per acre, which is a large crop; and when made into hay, at about three tons per acre. If sown in August and not cut off by frost, they will be fit for use early in May. If cut green, Professor Thaër observes, they draw no nourishment from the soil whatever; while made into hay, they afford a fodder preferred by cattle to Pea-straw, and more nutritive than hay or any other herbage. Horses, cows, sheep, hogs, all feed and flourish upon them; hogs are soiled upon them in Sussex, without any other food. They are liable to few or no diseases. Sometimes, but not often, they are injured by mildew. There is a sort called or known by the name of the "racers," which are highly spoken of. It is stated of them, that being planted on the 26th of August, in the proportion of 1 bushel of Rye to 2½ bushels of Vetches per acre, the Rye sown on the furrow and the Vetches drilled across, which seeds the land all over beautifully, on a quantity of land of moderate description, in a very exposed country, they had attained their full maturity on the 5th of May, but were fit for feed a fortnight before, surpassing all others in that neighbourhood. This variety is undoubtedly more hardy, and at least 10 or 12 days earlier in the growth and fitness for feed—the early sowing thereby covering the whole surface of the land before winter, the mixture of Rye keeping off the frost and supporting the Vetch, by which means a circulation of air at the bottom no doubt promoted their early growth. From these remarks it will be worthy of consideration whether it would not be advisable, in the present peculiar season, when we have, contrary to all past experience, lost both our hay and Turnip crop, and especially that invaluable friend the Swede, to sow a small portion of Rye as quickly as possible; also some winter Vetches—the "racers" if they can be got—with Rye mixed; and it might be well to try on suitable soils the Trefolium incarnatum; these might be followed next month by further sowings of winter Vetches, so that there might be obtained food for cattle from the middle of March through the spring.

ON THE YOKING OF CATTLE TO PLOUGHS.

In a Leading Article of No. 36 of the *Gazette*, there are some remarks by a correspondent on the mode of harnessing cattle to implements, and in particular to the plough, in which it is stated that the attachment of the draught-chain to the back-band affords a mean of altering the line of draught. From this assertion I beg leave humbly to dissent: it appears to me that such attachment should always be as loose and easy as possible, and merely for the purpose of keeping the chains close to the sides of the working animal. I think that far from having the effect ascribed to it, of "bringing the muscles of the back into play, and increasing the capability of the animal," the tightening and compressing of those muscles by the forcible drawing down of the back-band must have the directly contrary one of inconveniencing and hurting him, and therefore of impeding his motion. Ill-fitting and especially tightness of any part of the harness must, I think, always be productive of uneasiness to a greater or less degree, and consequently of loss of power or force to a proportionate extent. Besides, the bridle, or extremity of the plough, to which the draught-chain is attached, always affords the means of altering the draught as the ploughman wishes, both as to depth or shallowness, and width or narrowness of the furrow-slice. It appears to me, therefore, that the draught-chain should form one straight line from the collar to the plough-beam, and that any angle at the back-band must tend to a loss of power.—*A. J., Roxburyhshire.*



[We still think that the use of the back-band in the manner recommended by our correspondent, is a relief to the draught animal. It is true that an incidental advantage of it consists in the means it affords of regulating the depth at which the plough shall work; but this is not the use chiefly insisted on; if it were, "A. J.'s" indication of the arrangement at the bridle of the plough, as being the legitimate means for this purpose, would be conclusive. The use of the back-band in the manner in which it is represented at work in the above figure, which we reprint, obviously tends to divide the strain of the implement between the shoulder and the back. The strain upon the shoulder is not so great when the back-band is thus at work as if the draught-chain were perfectly straight. To be sure, the strain thus imposed upon the back is greater than the differential advantage thus obtained by the shoulder; but not only is the horse, we think, better able to sustain the greater strain thus put on a fresh set of muscles than he would be to sustain the smaller additional strain which would have been sustained by an already overloaded set, but the pressure thus placed on the back makes him, we think, better able to overcome whatever strain may be placed on his shoulder. Does it not give him a firmer footing? One of the chief advantages which the use of the cart possesses over that of the waggon, consists not only in the horse, as it carries part of the load, not having the whole of it to draw, but also in the firmer footing afforded by the weight on the cart-saddle, which would enable him more easily to draw the whole weight, would make him, *à fortiori*, better able to draw that which is thus diminished. As a proof of this we may relate an anecdote, the particulars of which were detailed to us by an eye-witness. A horse in a cart was drawing stones from out of a quarry, the approach to which was a descent. When the cart was loaded, the labour connected with it was found to be beyond his power. In order to remedy the evil, the stones were placed more forward in the cart, thus not only placing more of the load on the back of the horse, and leaving less for him to draw, but firming his footing, and therefore enabling him to put forth greater exertion. But "A. J." may say that the advantage thus afforded the animal lay altogether in the first of these particulars, not in the second. He cannot say so of the next measure that was taken, for it was found that the horse was still unable to extricate the load. The man was ordered to mount him; the advantage which the animal obtained by the additional weight, and consequent firmer footing thus given to him, so much exceeded the disadvantage which we must presume he experienced from having an additional load to carry, that the next effort he put forth was successful. The advantage of any arrangement by back-band or otherwise, by which the strain, whether it be in the draught of cart or plough, may be partly laid upon the back of the draught animal, and only partly on its shoulders, is thus made apparent.]

ON MINERAL AND INORGANIC MANURES.

No. XXVII.

By Professor Charles Sprengel.

(*Continued from page* 644.)

3. *Dutch peat-ashes*, worst quality (yellowish gray) 100,000 parts consist of—

70,000	parts	of silica.
4,134	,,	alumina.
6,131	,,	lime.
3,930	,,	magnesia.
4,096	,,	oxide of iron, and a little protoxide of iron.
0,200	,,	protoxide of manganese.
0,040	,,	potash.
0,420	,,	soda.
3,395	,,	sulphuric acid, combined with lime and potash.
1,246	,,	phosphoric acid, combined with lime and iron.
0,464	,,	chlorine, combined with sodium into common salt.
5,544	,,	carbonic acid, combined with lime and magnesia.
100,000	parts.	

4. *Peat-ashes from Lüneburg*, found to be a good manure (reddish-yellow). 100,000 parts consist of—

51,700	parts of	silica.
5,070	„	alumina.
31,889	„	lime partly combined with silica.
0,960	„	magnesia.
17,728	„	oxide of iron, and a little protoxide of iron.
0,520	„	protoxide of manganese.
0,120	„	potash.
0,072	„	soda.
6,166	„	sulphuric acid, combined with lime into gypsum.
1,183	„	phosphoric acid, combined with lime and iron.
0,084	„	chlorine.
4,486	„	carbonic acid, combined with lime.
100,000	parts.	

Of the peat-ashes No. 1, 3000 lbs. are often used on one Magdeburg acre of land; as thereby about 180 lbs. lime, 300 lbs. gypsum, 48 lbs. common salt, 150 lbs. magnesia, and 120 lbs. phosphate of lime, are conveyed to the soil, it may easily be understood why the industrious Belgians value them so much. Gypsum, common salt, and phosphate of lime are the substances by which they act most powerfully. 3000 lbs. of peat-ashes per acre may appear much, but if only 1000 lbs. should be applied, the gypsum only could be expected to act, as the other substances would not be present in sufficient quantity to benefit the soil. If the above quantity be new it will act for 5 or 6 years. Of the Lüneburg peat-ashes still greater quantities are used, viz. 3 or 4 tons per acre, and by such quantities the texture of a clayey soil will be improved.

We may conclude, from the component parts as well of this as all other peat-ashes, that they can decompose but little the humic parts of the soil; they serve the plants mostly as food; and as, in the main, they do not possess much of the easily soluble salts, even a greater proportion than the above stated might be applied per acre without any chance of injuring the crops. It is the small quantity which has been hitherto used of peat-ashes which has led to the opinion that they are worthless as a manure, whilst occasionally a great quantity has not produced any effect, because they contained a salt not easily soluble in water, for instance sulphate of iron; or because they contained much of phosphate of iron, which, if not soluble in water, is so in liquid humic acid, by which the plants were supplied with more iron than they could bear. Peat-ashes, however, which contain sulphate or sulphuret of iron, are, as we shall hereafter see, amongst the most valuable manures, if used in small quantities, and they entirely supply the place of gypsum.

ON THE REGISTRATION OF FACTS TENDING TO ILLUSTRATE QUESTIONS OF SCIENTIFIC INTEREST.

RUST IN WHEAT.

It was good advice which I once heard given by a dealer in objects of natural history to a friend who had offered to procure specimens for him in some foreign country he was about to visit—"If you really wish to serve me," said he, "do not send me pretty specimens, nor yet anything that you may fancy particularly curious. I am already overstocked with such objects. Just keep a jar at hand, filled with spirits of wine, or gin, and whenever you see some very common-looking reptile or insect, pop it into the jar. The chances are, that everything you may consider least worth preserving will be of most service to me." The fact is, that persons who are not naturalists are no judges of what objects are most likely to be of interest in a strictly scientific point of view. Botanists would rather receive one of our most common weeds from a newly-discovered or newly-explored country than a new species of an already known genus. There are higher departments of botany than mere collectors of specimens are aware of. To ascertain the geographical distribution of a well-known species is a point of vastly superior interest to the mere acquisition of a rare specimen. My friend Darwin well understood this (but then he is an accomplished naturalist), when he so often stepped aside from his geological and zoological pursuits, to preserve specimens of plants for me; though botany formed no portion of his immediate studies. I suppose there are few persons possessing a healthy taste for the details of real adventure, who have not by this time read his most interesting "Journal of the Voyage of the Beagle;" and from what they must there have seen of his appetite for observation, they will not be surprised to hear that I have just received from him two blighted ears of Wheat, which few persons would have thought it worth while to carry with them round the world, but which he brought home upon the chance of their affording some information on the cause of those extraordinary and devastating blights to which the crops are occasionally subject in South America. As the memorandum he has made upon the subject will possess an interest in the eyes of agriculturists, I shall here present it to your readers; and then mention the cause to which these blights must be ascribed:—

MR. DARWIN'S MEMORANDUM.

"*Northern Bank of the Plata, Nov.* 20-30, 1833.

"No. 1593.—Bearded Wheat materially injured by a blight, called the 'Polvillo.' When a field is attacked, it seems, even at a distance, burnt up, and of a red appearance. On walking amongst the Corn, the shoes and trowsers become covered with a fine rust-coloured powder: hence the name. The powder is lodged in minute oblong patches, beneath the epidermis, which may at first be seen partially raised, and forming a scale. It attacks all parts indiscriminately. If the leaves are a little infected, the grains of Corn are light and dry; but if the ear and stalk are attacked, the crop is entirely spoilt. The blight is not observed before the grain is pretty full; and its attacks are very rapid—three or four days being sufficient to spoil a whole field. It is endemic in the whole district, though not equally destructive throughout. From this cause, last year, when the weather was wet, no grain was gathered. Hence an immense importation of flour took place from North America. This year, the weather being fine and dry, the blight will destroy or injure the greater part of all the crops. Fields thrown up in Buts, clear of weeds, on high ground, are equally attacked with those of less favoured aspect. It is here attributed to the sun's action after heavy dews. Crops grown from grain of the country, from the Cape of Good Hope, and from Rio Negro in Patagonia, were all more or less affected. It is remarkable that the Wheat at Rio Negro itself (which is grown on low diluvial lands) produced, even last year, its immense crop uninjured. This blight is a prodigious evil to the country, and most mortifying to the agriculturist, who does not know that all his labour will be lost, till within a week or fortnight of the time when he was expecting to reap the fruits of it."

This account of Mr. Darwin's would alone have inclined me to suppose that he was describing an example of a very virulent attack of rust or redgum, a form of fungus which I have noticed in the Journal of the Royal Agricultural Society, vol. ii. p. 9, and again at p. 220, where I have endeavoured to prove its specific identity with mildew. The two forms of rust with which we are acquainted in England have been termed Uredo rubigo and Uredo linearis; and it should seem that the form which ravages the banks of the Plata is the latter, for I sent one of the two specimens with which Mr. Darwin supplied me to the Rev. M. Berkely, who is far better authority on such a point than myself, or than any one else in this country. His remarks are as follows:—"Your rust appears to me the same with what I have received from Ohio, and agrees with our European species, which is referred to U. linearis, distinguished from U. rubigo vera by its longer spores, and by the more inflated cuticle of the sori. I believe U. rubigo vera to be the young of the common mildew. I have never myself gathered U. linearis. The La Plata specimen exhibits plainly the mycoloid base. I have also U. rubigo vera from Ohio with the European characters."—*J. S. Henslow, Hitcham, Sept. 9.*

ON SEA-WARE.

Some of your correspondents have noticed the properties of the Alga marina, and the modes of using it, but not so fully perhaps as might have been expected. The names of Varech, Wrack, or Wreck, by which it is designated by the farmers on the coasts of Brittany and Ireland, where the Celtic is the vernacular language, explain to the etymologist their true signification—substances thrown up or torn away, as the sea-weed is, by the force of boisterous waves. Strange to say, the authors of the "Cours Complet d'Agriculture" have asserted, without even a modest doubt of the correctness of their judgment, that all marine plants, so called, are animal productions, though resembling the latter in form and organisation: they considered them to be either the remains of animal matter or the receptacles of animals, confounding all the tribes of Algæ marinæ with coral fabrications, &c.

The primitive mode of using sea-ware was, probably, that of spreading it on pasture land; the more artificial system of applying it to the formation of composts, and the blending of it with the soil by the plough or spade, were subsequent steps in the progress of husbandry; yet, though various methods of combining this substance with the earth have been adopted, there is no uniformity of practice observed. The spreading of sea-weed very thinly and as fresh as possible produces a rapid alteration on coarse and unsavoury pasture; the quality of the herbage unequivocally shows the beneficial effects of the saline substances which the weed contains, and the cattle which feed upon the new Grasses improve in health and condition.

The best season for putting out sea-weed in this way is in the early part of the spring, at which time too it yields the most abundant supplies; but unless the fields be adjacent to the coast, and the quantity of weed excessive, I do not consider this so economical a mode as that of mixing it with other substances in compost, or that of spreading it on stubbles, if in the winter season, and ploughing it into the ground, by which means it becomes an active agent in decomposing the short straw, which otherwise would be suffered in many instances to wither away on the surface of the land, instead of being rotted and incorporated with it.

It is a common practice in some parts of Ireland for the peasantry whose fields may be a few miles from the strand, to collect and dry the weed in the latter part of spring, if it should at that period be wafted to the coast, and to convey it when dry from the influences of the sun and wind, in large bulk to their Potato-drills, over which they shake it thinly, but not actually in contact with the germinating sets, which perhaps have been in the ground a fortnight previously. This mode, however, indicates the inability of the person who so uses the weed, to manure his crop at the usual time, and with a better material. Four moderately-sized (one horse) cart-loads saved in the above way is sufficient for a rood of Potatoes, the ultimate success of which is most uncertain, depending on the timely application of the weed (which in a calm season may not be collected), and the subsequent humidity of the atmosphere. As regards the succeeding crop of Corn, this mode of applying the weed is the most defective; but the immediate effect upon the vegetation of the plant from the absorption of the saline matter is very apparent, though I have never seen large tubers raised in this way (nor very farinaceous ones with any modification of the manure in question), comparatively with the other methods. In dry weather the weed lying on the surface shrivels up; but when affected by moisture it expands again. The salt, which does not evaporate like gaseous matter, acts in a humid atmosphere continually as a stimulant; yet common salt, if scattered over the ground, would not serve in the same manner. There must, therefore, be certain combinations formed that favour vegetation, by means of the excessive susceptibility of absorbing moisture from the atmosphere which the Algæ marinæ possess.

On the coasts of Brittany and parts of Normandy, sea-weed is sometimes reduced to ashes in order to obtain the alkalies they yield by this process for manure (I am not alluding to the common operation of kelp-making), which is spread on the surface. This, I think, is a wasteful way of using it. The most generally convenient and profitable manner of converting sea-weed into manure is to remove it from the beach as soon as circumstances admit, and to lay it on a substratum of sand, loose mould, or scourings of ditches, to absorb the oily juices and salts which the weed contains, until he can find leisure for taking it away. The force and rapidity with which the fluid penetrates through the subjacent layer, and rots whatever vegetable substances it may contain, is astonishing. In the course of putrefaction the weed generates maggots and flies in immense quantities—a living testimony to the richness of the matter which produces them. For stiff soil, which this weed of itself has a tendency to render still more cohesive, a mixture of sea-sand is preferable to that of clay, as the latter would answer better for a light sandy soil; but any calcareous sand and a rich loam can never be otherwise than valuable recipients of the sea-weed, which should be fully blended with the substratum, whatever that be, until the whole becomes a black mass of well-pulverised compost, which any one possessing the sense of smelling will perceive to contain a great portion of carbonic gas—the principal food of plants. A compost of this nature is a chief resource of the farmers in the baronies of Forth and Bargie on the Wexford coast; without it many of them would be poor indeed; by means of it they are enabled to raise some of the heaviest crops of Beans and Potatoes that I have ever seen.

In the Sketches of East Lothian Husbandry it is considered a very useful species of manure for the light dry soils adjacent to the coast, but not advantageous on clays—"immediate, but transient in its effects;" "seldom lasting longer than a single crop." It is certainly much better for light than heavy lands, but I have found it very efficacious on stiff soil also, when applied in the compost form; it is "seldom mixed," in Berwickshire, as the Report continues to state, "with other substances." If it were combined with sand, the mechanical effects of which in loosening cohesive soil are so perceptible, it would be found effective. As to its being transient, "only lasting for one year," so is guano, which, on the high authority of Professor Buckland, is so volatile, that it produces but one crop. But this mode of expression is practically incorrect, for these volatile manures cause the earth to yield two crops, sometimes three; Potatoes or Turnips, succeeded by a Corn-crop, may be followed in many cases by Clover. Though the properties of such manures be too evanescent to afford nourishment to a second or third crop, they are the agents through which the farmer is enabled to pursue the course of preparation of the soil, by which he renders his land productive of the succeeding crops. The great degree of tilth which usually accompanies manured green crops insures, on a soil of good quality, which has not been exhausted by over-production, a crop of Barley succeeded by Clover. Supposing a sufficient quantity of lime applied to the Clover-ley, for Wheat, after it has been fed off by sheep or cattle (not mown), the farmer will find his compost of sea-ware, &c., again successful in the second rotation, immediately after the Wheat; but he will act more judiciously in using farmyard dung, the superior value of which is undoubted, if he can. Judiciously managed, sea-ware, though far less permanently beneficial than other manure, is a valuable auxiliary to any sea-coast farmer, because it affords him the facility of pursuing his regular rotations if the farmyard dung be insufficient; and to the poor peasant it is in countless cases the sole means which he possesses of raising his Potato-crop. But except to husbandmen, whose land is close to the shore, the collection of sea-weed ought not to be systematically an object of anxiety, because the gathering and removal of it, if the distance exceed a very short space, greatly interrupts the regular routine labours of a farm, and occasions much fatigue to the horses employed in drawing it from the shore to the bank, during the busy intervals between the tides which bear it to land; and such labour and fatigue are hardly compensated by the acquisition of it, unless the subsequent cartage be inconsiderable: to the farmers who cultivate the sea-coast of Berwickshire, and who are, in every respect, among the magnates of their valuable order, I can well conceive that an influx of sea-ware is unimportant; to those who can accumulate, *ad libitum*, the best farmyard dung by means of cattle, Turnips, oil-cake, and straw, the extraneous manure which the sea affords, with more or less profusion, is not an object of much value.

But to the petty farmer, who is not "rich in cattle," and more particularly to the Irish peasant, whose pig is his only dependence for the accumulation of half a dozen little cart-loads of manure, sea-weed is indeed a boon, for which he thanks Providence; and if such miserable human beings as those are who occupy the coast of Mayo were once in a condition to maintain a few cows, on the alternate system of green and white crop, and could be induced to raise Turnips, Rape, and Cabbages with composts of sea-ware and sand, they would be enabled to apply the manure generated by the cattle to the raising of Potatoes, which being, in such case, far more abundant in quantity and much better in quality than they are under the present uncertain mode of management would deservedly maintain their character of the "vigour-stirring root" and become a wholesome food, instead of being so decidedly the contrary, as they are when deficient in farina—weak, washy, and innutritious, as Potatoes raised by sea-ware in unpropitious seasons always are. With calcareous sand, or a very moderate allowance of lime, a limited quantity of farmyard manure produces the largest crops of Potatoes, and of the best quality; an excess of rank dung indeed would be as pernicious to the quality of the Potato as a dose of sea-weed; but used in moderation, after an application of lime, no other manure can compete with it for producing the main support of the Irish peasant. The amelioration in the physical condition of the poor occupants of land on the sea-coast, which would be consequent on their adoption of such a system as that to which I have referred—the application of sea-weed to green crops for cattle—would be incalculably great.—*Martin Doyle.*

Home Correspondence.

Two Crops per Annum.—A manufacturer replied to a croaking farmer that, if he could not live with one harvest in the year he must have two, as they were obliged to increase their spindles. Now, in Belgium, through which I passed last week, they appear to approach this desideratum. I saw all the land which had borne a crop of Rye covered with Carrots, and that which had yielded Oats covered with Turnips. The latter I can understand, for I noticed that they did not let the stubble remain even till the Oats were carted, but set the shocks closely in a line and ploughed between them; but how they get the Carrots, I am free to confess, puzzles me. It must answer their purpose for the feed of cattle, to which use they are applied, otherwise the system would not be so general; and why not, therefore, introduce it here? Perhaps, Sir, you will be good enough to investigate this matter, and favour me with the result. I may remark that Rye and Oats seem the only grain-produce of the country; there is very little Wheat or Barley. If Carrots could be produced on our light soils, which grow Wheat, it would greatly help our milch cows in winter, and furnish labour for our too dense population in clearing away the stubble and hoeing the land after harvest, an occupation in which King Leopold's subjects seemed mightily busy last week.—*Cantab.* [We will ascertain the Belgian practice in this particular.]

Wash for Bark of Trees.—Your Correspondent in the *Agricultural Gazette* will find that a wash made of two-thirds cow-dung and one of lime, laid on with a brush, is an effectual remedy against cattle injuring the bark of trees; add a little tar if to protect from rabbits and hares. —*W. Shirley.*

Ireland.—During a journey in the south of this country I stopped at Castle Martyr, in the county of Cork, and found a fine residence of Earl Shannon, and some good farming on a light loamy soil. For some years past that nobleman has imported Ayrshire cattle from Scotland, and has bred them at Castle Martyr, where the land steward pointed out to me the very singular deterioration in the breed, very evident in the general appearance of the animal, and most particularly in the increased size of the horn at the base—a sure mark of bad breeding. It was quite easy to distinguish among the herd the animals bred in Ireland from those imported, the skin and hair being much coarser, the head larger, and the whole frame much deteriorated. I have since learned from a friend in Kent that he has experienced the same result, but not so large in degree. My own experience in Leicestershire did not show any deterioration in a herd of 20 cows, which produced very fine calves from a native imported bull, and which bred again from a male also imported; and the progeny seemed rather to improve in quality. Probably some of your readers may have experienced the above results, which seem altogether inverted.—*D.*

Rooks.—They may now be seen in vast numbers visiting Turnip-fields, for the purpose of feeding upon a species of grub, now very prevalent in many places, much to the injury of the crops; instead of destroying them farmers ought to look upon them as their best friends. The grub in question is a larva of a species of moth (Noctua), prevailing only to any amount in droughty summers, which appear to be congenial to the habits of both larvæ and perfect insect. No serious mischief, I believe, has been done by it to vegetation since the years 1826 and 1827. In 1818, which was a very droughty season, I remember its depredations were so great, that there was scarcely a well-matured Turnip to be seen. Teazles also suffered much the same year, and horticultural productions generally shared a similar fate; it likes all sorts of vegetable food—nothing that falls in its way seems to escape its ravages. The grub during the day-time lodges, in dry weather, just within the earth, near to the plant it feeds upon, and burrows deeper in wet weather. It is produced in the months of July and August, and commences feeding by shearing off the young plants close to the surface; when plants are too large it ascends and feeds upon the young leaves, or what is commonly called the heart of the plant. It continues its depredations until the beginning of October, providing the weather be not too wet and cold; about this time it is full-grown, being about an inch and a half long, and of the thickness of a moderate-sized goose-quill; and after descending a few inches into the earth it becomes dormant, in which state it remains until the middle or latter end of April, when it commences its transformation, and in a few weeks assumes the pupa state, and issues forth about the fore end of June a perfect insect—a middle-sized brown moth, which secretes itself during the day in thickets of vegetables or weeds, and there deposits its eggs. The gardener should now be concerned for his latter crops. Rooks are too shy to visit gardens; but much good may be done upon a small scale, by using a knife, or something similar, to search for the grub where he sees drooping or injured plants. I remember in the year 1818, recommending this plan, as well as the protection of his Rooks, to a gentleman agriculturist, who took my advice and employed a number of women and boys, and thereby secured the better half of a crop of Turnips and Teazles, whilst all others about entirely failed, leaving extensive fields little better than fallow land.—*Joshua Major, Knosthorpe.*

Farm Fences.—At page 266 of last year's *Chronicle*, I made some few observations on the ownership of agricultural fences: the following is a note on the tenant's obligation to repair them. It is so notoriously the duty of the actual occupier of land to repair fences, and so little the duty of the landlord, that without any agreement to that effect, the landlord may maintain an action against his tenant for not so doing, upon the ground of the injury done to his inheritance. It is so decided in Cheetham *v.* Hampson, 4th Term Reports, page 319. —*A Quiet Observer.*

New and Old Land.—In a late article under this head, page 580, there are some remarks which confirm my limited experience as to the want of fertility in an old garden, yet I am somewhat puzzled by the opinion of my favourite, William Cobbett, who opposes what seems to have been in his day, as now, the prevailing theory. The annexed extract I have clipped out of paragraph 115 of his "English Gardener:"—"Mr. Missing, a barrister, living in Titchfield, in Hampshire, has a border under a south wall, on which he, and his father before him, have grown early Peas every year, for more than 50 years; and if at any time they had been finer than they were every one of the four or five years that I saw them, they must have been something very extraordinary, for in those years they were as fine and as full-bearing as any that I ever saw in England."—*Paddy.*

Tiptree-hall Farm.—It may be gratifying to you to know that the first field of Wheat we have threshed at Tiptree-hall Farm has produced somewhat over 5 quarters per acre, of a very fine quality, which sold (as much as was ready) at 46*s.* per quarter in the neighbourhood, being 2*s.* above the ordinary market price of the day. I cannot expect the other 44 acres to produce so much; but I hope they will average 4 quarters per acre. You shall know the result. The crop above mentioned was grown after Potatoes, Swedes, &c., drawn off the land. The cost for manuring the two years' crops was 4*l.* 8*s.* per acre. I need not say this is rather more than a usual Tiptree crop.—P.S. This crop was never estimated by visitors higher than 3½ to 4 quarters: so much for estimates.—*J. J. Mechi.*

Steeping Seeds.—Amongst the various steeps for accelerating vegetation, I have not seen chloride of lime mentioned in your Paper. Some time ago I heard from a friend in Germany of its efficacy; French Beans steeped 4 hours in a solution of a quarter of an ounce of chloride in a gallon of water, were up and in rough leaf before others sown at the same time were above ground, and an equal difference was observable with other vegetables.—*Luser.*

Produce of Wheat.—As accounts of fine roots of Wheat have appeared in the newspapers, I venture to say that Dr. Buckland, who came to East Bourn September 14th to see the 455 allotments of which I receive the rents, there saw a root of Wheat raised from one grain this year, with 125 fine ears 3½ inches long, and apparently averaging 60 grains of Fullard's Prize White Wheat in each ear, and the straw 4½ feet high. Dr. Buckland also saw a hand-basin full of Wheat of the same kind raised by me at East Bourn, from one grain put in the 22d July, 1844, the shoots from which were divided and transplanted twice before Christmas and once afterwards, and yielded—

Roots	178
Ears	3,372
Grains	77,025

Which weighed 7 lbs. 15½ oz.—*Benj. King, East Bourn, Sussex.*——*C.* adds, "On March 1, 1844, I planted four grains of autumn Wheat at eight inches distance and two inches deep; one grain I laid on the surface, and covered it about half an inch deep; the grain produced six stems and ears. Of the four that I planted, one produced 29 stems and ears; the other three produced 22, 21, and 20: thus making in all 92 ears, the average number of grains to each stem was 20; in all 1840 grains. I was induced to try the experiment through the farmers telling me that autumn Wheat would not produce a crop if sown in spring; it has occupied the ground six months and two weeks."

Fence for Trees.—I have seen and heard of many ways of fencing single trees against cattle; the fences generally used are wood and iron, varying in price from 3*s.* to 21*s.* each. I have used for many years, (and have recommended the same to others,) and in no instance have I known it fail,) the following plan, viz., make a circle of stones—the rougher in reason the better—around the tree, at such a distance that no cattle can get to the stem nor branches, without treading upon them: that they will not do, and thus the stones answer for a cheap and durable fence; when no more wanted they are not the least injured, which is not the case with wood and iron.—*J. S.*

Weeds.—Your Correspondents will much serve many in this neighbourhood if they can mention any mode of extirpating what we here call Furze from the pastures (properly, the Rest Harrow—Ononis arvensis), now in full flower, and just seeding. It is the most destructive weed in the meadows, increasing prodigiously, and with its sharp thorns injuring cattle in grazing. We are here accustomed to mow it off, just to prevent the seeding, and, where not thick, digging or spudding it up, and occasionally pulling with pincers; but the long woody roots spread a great distance. If any one once troubled with the Pink Furze or Rest Harrow can say how he has got rid of it, his experience will be much valued.—*H. C.* [We know of no other method of destroying this weed than perseverance in cutting it off and pulling it up. Does any one else?]

Cabbages.—I am a grower of large Cabbages this year, and have, considering the season, been rather fortunate in my crop. As I intend to keep them as long as I can for winter food for my stock, and am also desirous of preparing the land on which they grow as early as possible for the next crop, can you, or will any of your readers, favour me with the best ascertained mode of stacking and preserving them, after they are gathered, through the winter? It is of vast importance to ascertain the best possible manner of preserving such a crop, after gathering it, especially during the ensuing winter and spring, when all cattle food is likely to be so valuable. I shall be very much pleased to receive information from you or any of your readers; and whatever plan I may adopt, I shall derive much pleasure in communicating the result of it, through the medium of your publication. —*Querist.* [We must refer this question to some of our readers. We have never seen Cabbages stored together in any quantity, and have always assumed that the only method is to sow them in successive plots, and consume them as they successively ripen. Sailors keep Cabbages by hanging them individually up by the roots. We doubt the possibility of keeping any quantity together for any length of time.]

FARMERS' CLUBS.

Darlington Farmers' Club.—The September monthly meeting of this Club was held on Monday last at the offices of Mr. Thos. Dixon, Land Agent and Agricultural Engineer, their Honorary Secretary. The subject under discussion was—Wheat-sowing, with the preparation of the Land and Seed, and the proper time for Sowing. In opening the meeting, the chairman observed that the subject they were then met to discuss was one of very great importance to the tillage land farmers of this neighbourhood, and one that he thought deserved more attention than was sometimes bestowed upon it, more particularly with regard to sowing Wheat on Clover leys; and his opinion was, that it was better not to sow when the land was in a very wet state, more particularly in a late season, for in such a case he thought it much better to run the risk of a still later season, and have the land in a tolerably dry and firm state, than to sow it very wet, he having himself experienced the ill effects of wet sowing. He then gave in detail an account of a field of Clover ley, part of which was sown while the land was wet, and the remainder some time later, when the land had got into a drier state; the crop being much superior on the dry sown land than on the wet. The unanimous opinion seemed to be, that it was desirable to avoid sowing when the land is in a very wet state; and, whether sown broadcast or drilled, it is better not to sow the land too soon after being ploughed, as Wheat is found to answer much better when the land has been ploughed a while beforehand; the seed then gets a firmer bed, which is now believed to be very essential to its success. With regard to the preparation of the seed, it was believed that, in all ordinary cases, the method at present followed in this neighbourhood as a preventive for smut answers well; which is, wetting the seed thoroughly with stale urine, and afterwards mixing it with quicklime; or where urine cannot be had in sufficient quantity, salt and water is used in lieu of it; the preference, however, is given to urine, where it can be had. It was also believed that where it is unavoidable to sow smutty Wheat, one of the best remedies known is to wash it in vitriol water, instead of wetting it with stale urine. Drilling and ribbing Wheat was considered by the members preferable to sowing broadcast in all cases where practicable, as by that means the land can be hoed whilst under crop, and kept much cleaner, and thereby not exhausted by growing weeds. It was also considered that a less quantity of seed per acre than what has been generally sown would answer equally well, if not better; and where two bushels per acre has been regularly sown, it was believed that six pecks per acre would be sufficient. And in support of this principle Mr. Joseph Johnson mentioned an accidental circumstance which happened in his own practice, which was as follows:—Some years ago, having as usual prepared the seed-Wheat in the morning for the day's sowing, it happened from some cause or other (he believed from the urine being too strong) that such parts of the seed that were sown in the early part of the day sprouted as usual, and grew well, but such parts as were sown in the latter part of the day came up very much thinner, a considerable portion of it not having

vegetated at all; that part of the field which was sown in the latter part of the day looked for some time much too thin, and likely for a failing crop, yet when harvest came it was quite as good if not superior to the other that was sown in the morning. He also further stated that he was now in the habit of sowing less seed than formerly, and he found it to answer better. He also now, in drilling his Wheat, gave it more room betwixt the rows than formerly, and found it to answer better; he formerly drilled his Wheat at 6 inches, but now, and for the future, he would always give it 9 inches betwixt the rows; it thereby tillered better, and was better to hoe and clean. At the conclusion of the discussion it was unanimously resolved,—1st. That it is desirable, in sowing Wheat, to give it a firm bed, and therefore to have the land ploughed a week or two before sowing; 2d. That in preparing the seed, it is important that it be thoroughly mixed with the urine or brine, so that every grain is wet before adding the lime, and then that the whole of it should be well worked together; 3d. That the best time for sowing Wheat is from the middle of October to the middle of November.

Castle Douglas.—We take from the *Dumfries Courier* the following extracts on subsoil-ploughing, from a lecture by Professor Johnston, lately delivered here:—The under soil very often contains what the upper soil requires. Take the example of lime; it has a tendency to sink into the earth, and is retained by the subsoil out of the reach of the common plough; and if thus a sufficient quantity be found in the subsoil, all that is necessary is to use the subsoil plough. There is, however, no little danger in subsoiling * without a proper analysis having first been made. While one farmer near Edinburgh found so much advantage in subsoiling as to make him declare that he had turned up a second time the whole of the city dung, another farmer trench-ploughed a field, and he declared that by such a process he had lost many tons of Turnips per acre, and the reason of this loss was obvious. When the soil was analysed it was found that he had buried the upper soil, which contained 30 per cent. of vegetable matter, under the subsoil, upon which he grew his Turnips, which subsoil contained only 7 per cent. The utility of trench-ploughing is true as a general principle, but it is not universally beneficial. It might be of advantage, before trench-ploughing, to prepare the lands, so that the roots of plants might be allowed to go down to the subsoil and feed thereon as much as possible. Another question regarding the fertility of the soil may be here asked. Must a soil be of necessity fertile if it contains all the ingredients of a soil possessing fertility? Practical experience answers in the negative; and why? Because there may be something in the soil noxious to the plant; and if so, the plant will not grow; and some substances in too large quantities, as, for instance, common salt, oxide of iron, or manganese will prove destructive. If noxious matter is contained in the upper soil, the plant is always sickly; and if this matter be absent in the upper, but present in the subsoil, then the plant has a reluctance to go down; but if it does enter the subsoil it sucks in the noxious matter along with its ailment, becomes poisoned, and cannot thrive; hence the cause why plants for a season, as in braird, &c., appear healthy and fresh, but when they reach a certain stage, their roots having forced into poisonous subsoil, become blighted and die. The subsoil is not easily doctored by surface medicines. Lime to it is only capable of making a partial cure. Another cause of infertility is the excess of water. A great quantity of clay lands are allowed to lie in perpetual Grass, because they are not drained. Though they contain all the richness of soil necessary for abundant crops, the excess of water prevents the development of their riches. The presence of water renders the soil cold. Evaporation draws the heat from the land just as it draws it from a person's hand if dipt in water and exposed to the action of air; and during a smart breeze of wind the air sweeping over an undrained tract of country is much colder than that in another tract similar in every respect, but in being thoroughly drained. A thermometer buried half an inch under the surface of a drained field, on a hot summer day, will rise to 120, but in an undrained field it will not exceed 90 degrees. Bottom-heat is absolutely necessary for vegetation; hence gardeners prefer it to a hot atmosphere. Another fact is, that the colder the ground the more subject it is to be saturated with the dew by night, and the rain by day. We frequently see mist resting and falling on one part of the land, while, without any perceptible cause, it is absent in another spot—and this alternation over a considerable extent of country; and the reason is just because of the dampness and dryness of the soils. The farmer who refuses to drain is punished by an excess of dew and rain; while the farmer who relieves nature by draining is treated with kindness by natural laws, imparting heat and consequently fertility. Excess of water not only prevents the plants from going down, but it also prevents the air so necessary to vegetation from entering the under soil, and little good can be expected unless the air be freely admitted. Draining may be considered the foundation of all other improvements; for, unless the excess of water be carried off, all other improvements will be ineffectual. You cannot allow the air to enter the soil unless the water be carried off, and by admitting air you can change the nature of many noxious substances contained in the soil. In undrained lands the ridges are so much saturated with water, that when rain falls it cannot be received into the soil, but is forced to flow on the surface, carrying with it any soluble substances within its reach, into the ditches, and from thence into the rivers, where portions of it are thrown out or deposited along the banks of the rivers in holms, giving to those alluvial soils their richness, or, what is still worse, carried into the sea and lost; whereas, in drained lands, the rain enters as it falls, and, in the process of filtration, deposits its own riches, while it loses the power to carry off the soluble portions from the soil; but, besides not carrying off valuable matter, it sucks into the earth the upper air with its rich draught of fertilising matter, and as it carries it away by the drains it destroys the noxious matter in the subsoil down to the level at which it escapes. Draining is assuredly a most economical method of farming;—in some localities the whole expense will be covered by the extra crop of the first year, in others in two years, and certainly it will never exceed five years;—so that for a tenant to drain, even at his own individual expense, the returns would be profitable during a lease. Supposing a farm to be fairly rented, in an undrained state, at 30*s.* per acre, and that it would take the maximum term of five years to cover the outlay, and that the draining had improved the land to the extent of only 5*s.* per acre for the remainder of the lease, here would be a clear profit of 3*l.* 10*s.* for every acre, or 700*l.* for a farm of 200 acres so improved. There are different methods of draining land. It should be done so that it would be permanent—not merely to last a lease of 19 years, but to be efficient for 100 years; and hence landlord and tenant should unite in the matter. If the land is rented at a fair price undrained, and the tenant cannot afford to drain it thoroughly, then should the landlord be at the expense, and the tenant pay a fair per centage for the expenditure. If the farmer is averse to this, and can supply labour, then might the landlord furnish tiles, &c., and the tenant the labour. But in whatever way it may be done, it ought to be done thoroughly, so that it may be both a personal and national benefit. Much money has been wasted in draining, by the drains being too shallow. The best practical agriculturists recommend that tile-drains should not be less than 30, and stone drains not less than 36 inches deep. Some persons object to these depths, stating that they won't draw. This objection, however, is long ago exploded, and the necessity of deep draining made apparent by the depth to which subsoiling ought to be carried. The roots of some plants require a great depth of soil. Wheat, for example, will go down 3 feet; and a great number of practical agriculturists subsoil to a depth of 22 inches.

* Professor Johnston probably referred here to *trench*-ploughing, not to subsoil-ploughing, as indeed the next sentence proves. Subsoil-ploughing could never injure the surface soil, provided the land were drained, because whatever deleterious matters might exist below, none of them are brought to the surface by the operation.

Reviews.

Agriculture; its Practice with Profit, elucidated in a Contrast of Oriental and British Usages; in a Correspondence with the Royal Agricultural Society of England. By Henry Newnham. London: Roake and Varty.

The first letter in the series here published is from Mr. Raymond Barker, who, as Chairman of the Finance Committee of the English Agricultural Society, requests from Mr. Newnham, a member of that Society, the payment of the arrears of his subscription for the years 1841, 42, 43, and 44. Mr. Newnham, it appears, had thought that "the Association was, with respect to annual subscriptions, based on the same principles, and governed by the same laws, which obtain in similar bodies, as for instance the Royal Institution, and in associations such as clubs; and he therefore considered that continued absence from its meetings, and the discontinuance of annual payment of subscription, constituted the established mode of seceding from its association." And in his answer, extending over 21 pages, he states the reasons which four years ago induced him to form the resolution of resigning his membership. The reasons he adduces did not satisfy the Council of the Society that any exception from the operation of its ordinary rules in this matter should be made in his favour; and in the remaining letters of this correspondence, the reader is informed that Mr. Newnham, having "no inclination to have aught to do with the lawyer of the Society," paid up his arrears, and received an official acknowledgment of the same from Mr. Hudson, the secretary.

It is to the second letter, the chief feature in this correspondence, that we would direct the attention of our readers. Excepting one point, on which, however, though he classes it amongst his reasons of withdrawal from the Society, Mr. Newnham does not appear to lay so much stress as it deserves, we think it not difficult to justify the Society from the charges here brought against it; their truth may be admitted without rendering its Council blameable for impolicy, injustice, or want of skill in conducting its affairs.

The first objection raised by Mr. Newnham to the proceedings of the Society, is the effect which he insinuates they have had of diverting the views of farmers from the results of ordinary experience, or from what he calls natural chemistry, to the theories and speculations of scientific men, as the proper foundation of practice. He refers especially to the expectations which have been held out, that the progressive advance of chemistry may aid in developing the resources of British agriculture. His motto is "Practice with Profit," in contradistinction to that of the English Agricultural Society, which is "Practice with Science." It appears to us, that he supposes the motto of the Society to be expressive of the end for which they labour, instead of being expressive, as it is, merely of the means by which they propose to obtain a profitable end. It is too late now to rail at science as visionary and baseless. The evidence in support of the facts, the accumulation and classification of which constitute science, is stronger far than that on which most of the crude notions are built of many of our thoroughly practical men. We have now men who can testify from experience to the profitableness of uniting practice with science; and this testimony is unaffected by the lamentations of others, who may be insolvent as farmers, not from having adopted such a union, but from breaking it, and attempting to carry on their business unassisted by one of its essential elements—experience. Natural chemistry—for so Mr. Newnham dignifies the results of agricultural experience—which points out the advantage of chalking clays and marling sands, and of employing as manures farm-yard dung, peat-ashes, rags, lime, &c., so far from having been neglected, has been much enforced and explained by the application of chemical science to agriculture, under the auspices of the Society.

The second reason which Mr. Newnham gives for having seceded from the English Agricultural Society is "the encouragement which," he states, "they have held out to the substitution of mechanical power for human labour." He alludes to their annual award of premiums to further the improvement of our agricultural mechanics. His objection, if reasonable, must apply not only to Agriculture, but also to all industrial employments; and there were, doubtless, many patriotic and well-meaning men who objected half a century ago to the improvement of the machinery of our cotton and woollen factories—to the very means, in fact, as they have since turned out, by which the numbers of those employed in these factories have been a hundred-fold increased. This result has depended on no accident peculiar to the cases in which it has been realised; it is merely a consequence of the natural connection which exists between an improved and cheapened means of production and an increased consumption of produce; and we believe that in Agriculture, also, any means which cheapen the cost of production are thus productive of national benefit; it may be difficult to follow them through all their influences, but we may depend upon it that they will terminate in causing what is termed higher farming, and in the employment of more labour than ever. Mr. Newnham here digresses into an account of the various practices of Indian Agriculture, a chief feature of which appears to lie in the custom of paying for labour according to the produce of the land—the fraction of the produce which falls to the share of the workman being inversely proportional to the abundance of the harvest.

Mr. Newnham's third reason for withdrawing from the Society, viz.—its disregard of the subject of parochial assessment, however accurate his views on the matter may be, is obviously insufficient, if we consider the nature of the tie which holds the Society together. The exclusion from the subjects of the prize-essays of a matter of such vital importance to Agriculture as the present mode of assessing the poor's rate is a consequence of the law which, we believe, lies at the foundation of the Society's existence—the law which forbids the discussion of matters to be brought before Parliament.

The liability which hangs over every farmer who commences the work of agricultural improvement—his liability to an increased charge as respects all parochial rates—involves the apparent injustice and obvious impolicy of assessing that man most for the support of the poor who employs the greatest number of them, and him least on whose non-employment of them the existence of pauperism may chiefly be chargeable. It would be well, we think, if security by legal enactment from this liability were given to agricultural improvers for terms of years, varying according to the permanency of the several descriptions of improvement which they may have effected.

If we have hitherto been exhibiting reasons for withdrawing from the Society, the entertainment of which may appear reasonable to many minds, and may even to some justify the step which Mr. Newnham has taken, we fear that the sympathy which that gentleman has thus experienced will not continue to follow him while he details his fourth reason for seceding. He withdraws from the English Agricultural Society "because they have altogether overlooked and disregarded the science of Astronomy!" Had the word been Astrology, it would have been more in keeping with the singularity of the idea. A capability of prognosticating the weather, which he thinks a skilful application of Astronomy to Agriculture (!!) would confer, would doubtless, in our variable climate, often prove of great service to farmers; but this is to be obtained, not by carefulness in recording astronomical observations, but by wide-spread and lengthened series of observations of the meteorological appearances which precede meteorological changes. And to this subject the Society has devoted a reasonable share of its attention, by offering a prize for the best Essay on Weather Prognostics.

But Mr. Newnham must speak for himself; the following is his illustration, somewhat in Hindoo phraseology, of the advantages of *applying astronomy to Agriculture* (!). It may sound sensibly enough to the ears of those who have lived long in tropical climates, and who look for the annual changes of the weather as regularly as for the months which there they severally characterise; but to English ears it certainly appears to be sufficiently ridiculous.

"Neighbour, let us discuss according to our atmospheric tables the probable season to come. In *Taurus* (April), we had excessive drought. In *Gemini* (May), we have had nipping cold and lofty continuance of dry easterly wind; what sort of season do these anomalies portend in *Cnab* (June) for sowing the Swedes? or what may be their effects on the coming harvest?—

the markets?—the sowing time? Shall we thrash out our Wheat now, or lay by awhile for a better price?"

If these questions had been or could be accurately answered by Mr. Newnham's oriental astronomy, his advocacy of its agricultural applicability (!) would be reasonable enough. But so long as this is impossible, we cannot but see an inconsistency in his setting himself up as the defendant of practical men and the advocate of practical measures, against a Society whose motto is "Practice with Science," and in his at the same time suggesting and enforcing the plausibility of ideas which are amongst the most visionary that ever were broached.

We agree with Mr. Newnham in the fifth reason which he gives for withdrawing from the Society, although we think it altogether insufficient to justify that step. He objects to the expensive encouragement of the pure breeds of cattle and sheep which is given by the Society in their Annual Shows and Premiums. However much good in this respect may hitherto have been done by the patronage of Societies and wealthy individuals, we think that the further improvement of animals for the dairy, feeding-stalls, &c., may now safely be left to individual enterprise, and that the income of the Society might now be more exclusively devoted to the improvement of cultivation-proper, by the diffusion of sound information on the subject, or perhaps by the establishment of example farms in the various districts of its connection.

In taking our leave of this pamphlet, we may safely assert that Mr. Newnham by its publication has failed in justifying the charge of impolicy, which he seeks to bring against the English Agricultural Society.

Miscellaneous.

Potato Failures.—In last week's paper we had the pleasure to copy from a Scottish cotemporary a report, amongst other matters, of the highly interesting discussion which took place at one of the forenoon meetings of the Scottish Agricultural Chemistry Association, in Glasgow, on the subject of Potato failures. This meeting had been announced for some time, some very eminent agriculturists attended it, and nothing can better show the exceeding difficulty of the question mooted—viz., What is the cause of the Potato failures, and is there a remedy for them?—than the discrepancy of opinion advanced on the occasion. The general opinion of scientific agriculturists appears to be, that there is a liability inherent in every plant which has for a long period been cultivated in the same soil to become deteriorated, hence the universal belief in the advantage of changing the seed; and that, in the case of the Potato, the most likely means of avoiding failure would be to procure a new generation of plants from seed (not tubers) of a healthy crop; but in the discussion to which we are referring, Mr. Girdwood's experience gave the death-blow, *in limine*, to this cherished opinion; the seedlings (whether raised from a healthy or tainted crop is not stated, however) were found to be as liable to decay as any others. Plant your Potatoes whole, and in the autumn, use only such seed as have the eyes plump, protect from frost, and, says Theory, you will have no failures; not so fast, says Mr. Burnet, of Gadgirth, I have done all this, and still have experienced failures. Mr. Alexander, of Southbar, had never witnessed a failure in early-planted Potatoes; how many, within a few miles of Dublin, would give a great deal to be able to say the same truly; why early-planted Potatoes are the most liable to failure; and as to this gentleman's other statement, that the failure of Potatoes is traceable to some ill-treatment, especially by stowing them in large masses, did it not occur to him that, up to 1832, no failures were caused by such treatment! Mr. Allison, of Mears, stated that Potatoes taken from those which, for two seasons, had not been cut, would not fail; it is, we fear, mere assertion; whole Potatoes, although not so liable to failure, we believe, as cut ones, still, it is notorious, do fail. Mr. Anderson, from the north of Ireland, as appears from his statement, has been most successful in his efforts to avoid failures; and the means he adopts, viz. liming the ground, planting only in drained land, pulverising the soil well, and not leaving either the manure or seed exposed to the effect of the sun and wind, are based on sound practical knowledge: his experience, however, that Potatoes which have been prevented from blossoming are not less liable to fail (if that were his meaning), does not accord with that of some of our correspondents; nor with that of others, if it be that Potatoes so divested do not yield larger crops. Mr. Andersen's experience, however—if he be, as we suspect he is, the excellent and practical land-agent of Sir Robert Fergusson, Bart.—at least since the commencement of the Potato failures, has been in a mountain district; where, it is well known, Potatoes are not so liable to fail as in lowlands. The successful practice of Mr. Reid, as mentioned by Sir Robert Bateson, Bart., of raising Potatoes intended for seed before they are quite ripe, and leaving them on the ground to be dried in the sun, although Professor Johnston declared that he had never heard of it, is known and practised successfully by almost every gardener with his Ash-leaved kidneys intended for forcing. And as to Mr. Fleming's experience—that the Cup Potato does not fail—we can only say, that such is not the experience of the farmers of this country. This discussion was, in fact, an epitome of the innumerable essays which for the last twelve years have appeared on the subject of Potato failures; and which may be resolved into this, that we are utterly ignorant of the cause of these failures, and that our only chance of avoiding them is to use mountain-grown—which often means unripened—seed which has been preserved from heating in narrow pits—to plant in dry, deep soil, in a moist time, using moist manure, and not permitting the sets to be exposed—even for a few minutes—to the parching effects of sun, or harsh wind.—*Dublin Farmer's Gazette.*

Threshing Machine.—There is now in operation at Twarnhayle experimental farm, belonging to S. and R. Davey, Esqrs., a threshing machine, which, from its simplicity of construction, and its great power, is a vast improvement on the former threshing machines, or those now generally used. It performs the work of three horses, and threshes 125 sheaves of Wheat and 225 sheaves of Barley or Oats in an hour; and this is performed by a poor pony of 13 hands high. The inventor is a miner, named Michael Harris, a poor man residing at Silverwell, in the parish of St. Agnes, who is possessed of surprising natural genius, and therefore deserves support. He carries the whole apparatus about in a small cart, and contracts with the farmers of the neighbourhood at per 100 sheaves. Several gentlemen have seen the machine, and pronounced it to be the greatest improvement yet made.—*West of England Conservative.*

Notices to Correspondents.

CHICORY.—*A Beginner.*—See *Gardeners' Chronicle* of May 11th, where you will find that the land should be cultivated as for Turnips, and 2 lbs. of seed per acre, sown in the end of April on ridge-drills, in rows alternately 16 and 4 inches apart. The plants should be singled out to 4 inches apart, and they may be harvested in November, when an average crop will weigh from 3 to 5 tons per acre.

DAIRY PRODUCE.—*A Constant Reader* will feel greatly obliged by any of our correspondents giving a rough estimate of the number of cows required to produce, per annum, 29 cwt. of butter, 12 cwt. of cheese, 1000 gallons of milk, and 80 gallons of cream; and likewise of the quantity of land necessary to *stall-feed* the said stock. A cow will, in ordinary circumstances, produce 2½ cwt. of butter per annum, or 3½ cwt. of cheese.

MANURE TANKS.—*Omega.*—If your liquid-manure has its volatile parts fixed, you may economically apply it to Grass land in winter; if its ammonia be not fixed, you had better make use of some fixer, or wait till spring before applying it. When once its ammonia is fixed, no fermentation in the materials with which it may be mixed will effect its release.

MOSSY LAND.—*T. D.*—The application of lime is said to be sometimes successful in eradicating Moss.

PARISH RATES.—*Querist.*—By the Parochial Assessments Act, passed in 1836, the rate for the relief of the poor must be made "upon an estimate of the net annual value of the several hereditaments rated thereunto, viz., of the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates and taxes, and tithe commutation rent-charge, if any, and deducting therefrom the probable average annual cost of the repairs, insurance, and other expenses, if any, necessary to maintain them in a state to command such rent." A form of Rate, containing amongst others, columns for the "Gross estimated Rental" and "Annual Value," are given in the Schedule to the Act. It would not be practicable to give an explanation of this ill-worded section in a short space, and we therefore refer you to an Instructional Letter of the Poor Law Commissioners on the subject, published in their third Annual Report, Appendix A, page 92, where the mode in which the net annual value should be estimated, and the distinction between gross and net rent are explained and exemplified. In the instances of assessment given by you there must, from some extraordinary circumstance, have been a great change in the annual value of the property, or the valuer must, at one of the two periods mentioned, have entirely lost sight of the provisions of the above-mentioned Act. Saleable underwoods only are rateable, and not timber.—*W.*

RED CLOVER.—*A Dairy Farmer.*—It is rarely economical to sow Red Clover without a Corn crop. From 6 to 12 lbs. of it are generally sown per acre in April along with the Barley. Two or three cuttings may often be had before the ground be ploughed up in autumn. You may do what you like with these cuttings, but you can rarely get more than one made into hay.

STEEPS.—*A Subscriber.*—We have not forgotten. Sulphate of soda has been found a useful manure for Potatoes. We shall be glad to know the results of your experiments.——*V. V. V.*—Professor Johnston recommends as a steep for Corn and Beans, phosphate of soda, sulphate of magnesia, nitrate of potash, common salt, sal-ammoniac or sulphate of ammonia; a mixture of 1 lb. of each in 10 gallons of water to steep 300 lbs. of seed—we presume for about twenty-four hours: the seed to be taken out and dried with gypsum or quicklime, and immediately sown.

TULL'S SYSTEM OF CULTIVATION.—*Omega* suggests that the effect of a thorough cultivation, such as Tull recommended, is similar to that of what is termed root-pruning; the effort of both being to induce a plant to draw its nourishment from deeper sources; and the benefits derived from the practice of the former system he attributes to the plant thus living upon warmer food. The chief advantages of the system consist, we apprehend, in the plant being enabled by it to lay hold of all the vegetable food which does exist in the soil, in the air being allowed to permeate the soil, and in the destruction of weeds.

*** As usual many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, Sept. 23.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	10	to 4s	0	Best Downs & Half-breds	3s	8 to 4s 0
Best Short Horns	3	8	4	0	Best Long-wools	3	8 8 10
Second quality Beasts	3	0	3	4	Ewes and second quality	3	0 3 6
Calves	3	4	4	0	Lambs	3	8 4 4
Pigs	3	4	4	0			

Beasts, 3462; Sheep and Lambs, 25,010; Calves, 120; Pigs, 220.

Our supply of Beef is rather shorter to-day, and of the best qualities there is a is manifest deficiency, fully two thirds of the quantity being little better than stores; in consequence, we have an advance of quite 2d per 8 lbs. on the first-rate Beasts; second quality are a very heavy trade, and some third rate are hardly to be disposed of. The supply of Mutton keeps steady, but the demand is rather increased to-day; we have a numerous attendance of buyers, at a little more money; some of the best Downs make rather over, and some of the best Longwools rather less than 4s, per 8 lbs; Half-breds are a little more saleable than last week, but not much in demand. Very little is doing in the Lamb trade. Veal and Pork are very heavy.

FRIDAY, Sept. 27.

We have rather too many Beasts to-day for the demand, amongst which we notice about 80 Dutch, in very good condition; the trade has suffered a decline of fully 2d per 8 lbs; the best Scots, &c., cannot be quoted at more than 4s, and the best Short-horns 3s 10d per 8 lbs. The Mutton trade is also very heavy, the dead markets having been very dull since Monday; we cannot, however, make any alteration in our quotation from Monday's exceptions 3s 8d to 4s for the best Downs, and 3s 8d to 4s 10d for the best Longwools. Lamb about the same. Calves are shorter, and the best quality might about 4s 6d. Pork trade is very heavy at late rates.

Beasts, 872; Sheep and Lambs, 8100; Calves, 280; Pigs, 220.

HOPS, FRIDAY, Sept. 27.

The Hop Market continues very active for both new and old Hops; the duty is stationary at 120,000*l.* The supply of fine coloured samples is very short, and they are eagerly sought after at high prices, the present currency is as follows—

Mid & Best Kent Pocks.	6	0	to	8	0	Sussex, Pockets	6	10 to 7	0
Choice Ditto	—			10	10	Choice Ditto	—		7	10
Weald of Kent Pocks.	7	0		7	10	Farnham	9	0	10	10
Choice Ditto	—			8	8					

Farebrother & Ellis, Hop-Factors.

WOOL.—Saturday, Friday, Sept. 27.

	per lb.					per lb.	
Long-woold Washers	1s	6d	to	1s	8d	Southdown Superfine	1s	1d	to	1s	3d
Do. Ranglins	1	1		1	3	Kent Fleeces	1	1		1	3
Southdown Fleeces	1	0		1	1	Joseph Fenwick, Wool Broker.					

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 26.

Prime Upland Hay	100s	to 110s	Clover	110s	to 120s	Straw 30s to 32s
Inferior ,,	—	—	Ditto	115	120	
New Hay ,,	85	95				

JOHN COOPER, Salesman.

CUMBERLAND MARKET, Sept. 26.

Superior Mead. Hay	105s	to 115s	Superior Clover	115s	to 125s	
Inferior ,,	80	90	Inferior ,,	90	105	Straw 30s to 34s
New Hay	—	—	New Clover	—	—	

JOSHUA BAKER, Hay Salesman.

WHITECHAPEL, Sept. 27.

Fine Old Hay	100s	to 108s	Old Clover	—s	120s	
New Hay	80	100	New Clover	105	115	Straw 28s to 30s
			,, Inferior	—	—	

COVENT GARDEN, Sept. 26.—The market continues to be well supplied, particularly with the various kinds of autumnal fruit, but trade is not brisk. Among Pines we observed several handsome specimens of the Queen and Providence. Black Hamburgh Grapes are very fine, and these, as well as other sorts, are sufficient for the demand. Pears are fetching a better price than they did last week. The Marie Louise and Brown Beurré bring from 5s. to 6s. per half-sieve, and good samples of Louise Bonne and Gansel's Bergamot are offered at from 4s. to 10s. per half-sieve. Apples have not varied since our last report. Among Plums, Coe's Golden Drop and the Imperatrice are tolerably abundant. Damsons are somewhat scarcer, and are also a little advanced in price. Peaches still continue good, and are sufficient for the demand; but Nectarines are scarce. Filberts are also very scarce. Of Walnuts there are plenty, they bring about the same prices as last week. Oranges are scarce. Lemons are tolerably abundant. Vegetables are, generally speaking, good in quality. Celery is very fine. Cauliflowers and Broccoli are also good; they have not altered in price since our last report. Some Brussels Sprouts have just made their appearance. Cabbages, Carrots, and Turnips are plentiful; and French Beans still continue to be well supplied. Onions are good and plentiful; and Endive, Lettuces, and other salading are tolerably abundant. Among cut Flowers we noticed Mandevilla suaveolens, Gladiolus psittacinus, Amaryllises, Jasmines, Camellias, Heaths, Pelargoniums, Fuchsias, Carnations, and Roses.

FRUITS.

Pine Apple, per lb., 2s to 5s		Figs, per doz., 2s to —s	
Grapes, Hothouse, p. lb., 1s to 2s		Filberts, per 100 lbs., 90s to 100s	
— Spanish, per lb., 1s to 1s 6d		Walnuts, per bushel, 16s to 20s	
— Portugal, per lb., 1s to 1s 6d		Oranges, per dozen, 1s 6d to 3s	
Melons, each, 1s to 2s		— per 100, 10s to 24s	
Peaches, per dozen, 2s 6d to 5s		— bitter, per 100, 8s to 20s	
Apricots, per doz., 1s to 2s		Lemons, per dozen, 1s to 2s	
Plums, per half-sieve, 2s 6d to 5s		— per 100, 6s to 14s	
— Imperatrice, per punnet, 1s 6d		Almonds, per peck, 6s	
— Coe's Gold. Drop, p. pun., 1s		Sweet Almonds, per lb., 2s 6d	
Damsons, per half-sieve, 1s 6d to 2s 6d		Cob Nuts, per 100 lbs., 60s to 80s	
Apples, Dess., per bush., 2s 6d to 5s		Nuts, Barcelona, 22s	
— Kitchen, 2s to 4s		— Brazil, 16s	
Pears, Dess., per hf.-sv., 2s 6d to 10s		— Cob, 14s	

VEGETABLES.

Cabbages, per dozen, 6d to 1s 2d		Garlic, per lb., 4d to 6d	
Cauliflowers, per doz., 2s to 5s		Onions, per bunch, 3d to 6d	
Broccoli, per bundle, 6d to 1s		— large, per bushel, 2s to 4s	
Sorrel, per hf.-sieve, 6d to 9d		— Spanish, per doz., 2s to 4s	
Artichokes, per doz., 1s to 2s		Shallots, per lb., 6d to 8d	
French Beans, p.hf.-sv., 2s to 3s 6d		Tomatoes, per half-sv., 2s 6d to 3s 6d	
Scar. Runners, per hf.-sv., 1s to 1s 6d		Capsicums, Ripe, per 100, 4s to 6s	
Potatoes, per ton, 50s to 60s		— Green, per 100, 1s to 2s	
— cwt., 2s 6d to 3s		Radishes, per doz., 2d to 1s 6d	
— bushel, 1s 6d to 2s 6d		Lettuces, per score, 6d to 1s 6d	
— Kidney, per bsh., 2s to 4s		Celery, White, per bunch, 3d to 1s 2d	
Turnips, per doz. bch., 1s 6d to 4s		— Red, per bunch, 1s to 1s 6d	
Peas, per bushel sieve, 2s 6d to 4s		Endive, per score, 1s to 1s 6d	
Red Beet, per doz., 3d to 1s 6d		Mushrooms, per pottle, 1s 6d to 2s 6d	
Carrots, per doz. bchs., 2s to 6s		Small Salads, per punnet, 2d to 3d	
Basil, per bunch, 6d to 8d		Watercress, p. 12 sm. bun., 3d to 6d	
Horse Radish, per bundle, 2s to 6s		Parsley, per doz. bunches, 1s to 2s	
Savory, per bunch, 3d to 6d		Tarragon, Green, per bunch, 6d to 8d	
Cucumbers, Frame, each, 2d to 9d		Green Mint, per bunch, 2d to 3d	
— Ridge, doz., 2d to 3s 6d		Marjoram, per bunch, 2d to 3d	
Vegetable Marrow, per doz., 4d to 1s		Chervil, per punnet, 3d to 4d	
Spinach, per sieve, 1s 6d to 2s		Chilis, per 100, 1s 6d to 2s	
Leeks, per bun., 2d to 3d			

MARK-LANE, MONDAY, Sept. 23.

THE supply of Wheat from the home counties this morning was small, particularly from Essex; picked samples met a ready sale at fully last week's prices, damp and inferior descriptions sold slowly at late rates. Foreign was in more general request, and commanded our extreme quotations.—Malting Barley must be written 1s. lower; Grinding qualities are unaltered.—Old Beans maintain their late value.—New and all kinds of Peas are 1s. cheaper.—The Oat-trade is heavy, and barely supports the prices of last Monday.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	40	50	Red .	42	46
—— Norfolk, Lincolnshire, and Yorkshire .	—	—	White	—	—
Barley, Malting and distilling 27s to 34s	Chevalier	31	36	Grind.	25	30
Oats, Lincolnshire and Yorkshire . .	Polands	19	21	Feed	18	20
—— Northumberland and Scotch . .	Feed	19	21	Potato	20	22
— Irish	Feed	17	20	Potato	19	20
Malt, pale, ship		50	56			
Hertford and Essex		54	60			
Rye		32	34			
Beans, Mazagan, old and new	32 to 33	Tick	27	34	Harrow	29	34
—— Pigeon, Heligoland	32 to 33	Winds.	—	—	Longpod	—	—
Peas, White	32 to 35	Maple	29	31	Grey	30	32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English .	4077 Sks.	— Brls.	11023	4045	2166	1085	216	1269	1259
Irish .	— ,,	— ,,	—	—	55	13293	—	—	—
Foreign .	105 ,,	10315 ,,	4478	9035	—	4920	720	2484	132

FRIDAY, Sept. 27.

The arrivals of English Corn since Monday have been moderate; those of Foreign are good. English Wheat meets a free sale at Monday's prices, and Foreign, particularly fine qualities, finds buyers for retail quantities on fully as good terms as on that day. Good Dantzig in bond, and low qualities of Red, are inquired after for exportation to France, but we did not hear of anything being done.—Barley fully maintains its late value, and there appears more disposition to purchase both Malting and Grinding qualities.—In Beans and Peas there is no alteration.—The Oat-trade is firm, and needy buyers are compelled to pay very full prices.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . .	3810	3070	1170	3880 Sks
Irish . .	—	—	—	—
Foreign . .	6280	5710	1800	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug.	13 per Quarter.	49s 1d	34s 6d	20s 6d	36s 7d	34s 7d	35s 7d
—	20 . . .	50 4	33 8	20 4	36 2	35 10	34 0
—	27 . . .	50 11	34 11	20 7	34 2	37 2	35 10
Sept.	3 . . .	49 6	33 9	20 5	34 4	36 0	35 10
—	10 . . .	48 11	33 1	20 1	35 9	37 6	34 6
—	20 . . .	45 3	35 9	20 8	38 7	37 8	36 1
6 weeks' Aggreg. Aver.		48 4	33 0	20 4	35 5	36 4	35 0
Duties on Foreign Grain		20 6	9 0	6 0	7 6	6 8	9 6

SEEDS, Sept. 23.

Canary . . per qr	48s	to 52s	Linseed Calcutta, Mogadore, & Odessa	42s	to 45s
Caraway . . per cwt	36	38	Mustard, White . . Bush.	10s	14s
Clover, Red, English . . —	—		— Superfine . . —	12	16
— Foreign . . —	—		— Brown . . —	12	14
— White, English . . —	—		Rapeseed, English . . last	240	250
— — Foreign . . —	—		Rape Cake . . per ton	—	—
Coriander . . —	18	19	Safflower . . —	—	—
Hempseed . . per bush	38	40	Tares, Essex winter p. bush.	6	6
Linseed . . per qr	—	—	— Foreign . . —	—	—
— Baltic . . —	—	—	Trefoil . . per cwt	—	—
— Cakes, Eng. per 1000	10l	11l	Turnip (see variable descriptions)		

Rapeseed and Linseed.

Sales by Auction.

SIX DAYS' SALE OF VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE & MORRIS will submit to Public Competition, by Auction, at the American Nursery, Leytonstone, Essex (about one mile from the Railway Station, Stratford), on Monday, 21st October, 1844, and five following days, at 11 o'clock, (to close Executors' accounts), the celebrated NURSERY STOCK, consisting of the choicest kinds of Fruit and Forest Trees, fine Evergreens, Ornamental, Deciduous, and American Plants, of every variety, in considerable quantities, and lotted to suit every description of purchasers. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, from its having many rare specimens that are only to be found in first-rate collections (also of the Trade, from its excellence), and comprising several thousands Azaleas, Rhododendrons, Ledums, Andromeda, all in fine condition for potting, being well furnished with bloom buds.

N.B. The ground is proverbial for safety of removal, the mould adhering to the roots. May be viewed prior to the Sale. Catalogues, One Shilling each, returnable to purchasers, may be had of the principal Seedsmen in London, at the Auction Mart, and of the Auctioneers, Leytonstone, Essex.

NURSERY STOCK.

TO BE SOLD BY AUCTION. By MR. J. KING, on the Premises, Acre-lane, Brixton, on the 14th Oct., 1844, and following day at 11 each day, the property of Mr. Dawson; consisting of a collection of Evergreen and Deciduous Shrubs, a large stock of Fruit and Forest-trees, Camellias, and other Greenhouse Plants, &c. &c. To be viewed till the Sale; Catalogues on the Premises; Mr. CLERK, Seedsman, Bishopsgate-street; and of the Auctioneer, Hackney-road.

TO BE DISPOSED OF.—A Very Snug FARM, situate in Surrey, about 13 miles from London, comprising 200 Acres of Arable and Grass Land, in high condition; may be had at a very moderate rental, together with a neat Cottage Residence, and all necessary Farm Buildings.—For particulars apply to MESSRS. BROOKS AND GREEN, Estate Agents and Auctioneers, 28, Old Bond Street.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

WHEAT-SOWING.

GUANO; Genuine Peruvian, Bolivian, and Ichaboe, on Sale; also Potter's Guano, Gypsum, Sulphuric Acid, Sulphates of Iron and Copper, and all other manures. Synopsis of prices, and mode of use, on application, &c.—Apply to MARK FOTHERGILL, 46, Upper Thames-street.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, Sept. 27, 1844.

MANURES.—The Readers of the *Gardeners' Chronicle* must have noticed the complaints constantly made there of the Adulterations of Manures, and which are now carried on to a fearful extent.

The Advertiser, a Broker of the City of London, and in daily communication with several scientific Chemists, calls the attention of the Nobility, Agriculturists, and Farmers to his method of supplying Manures, by which a genuine article is secured. Each article is Analysed, and the Analysis forwarded to the purchaser, who can by this means obtain redress should the article differ from the Analysis.

Terms—cash and one per cent. commission for buying and forwarding.

A register will be kept of the Analysis of every cargo of Guano imported into London that is brought in the market.

Mincing-lane, London, Sept. 27, 1844:—

Bones .	£4 10s. 0d	Nit. of Potash p. cwt.	45. 6d
„ crushed	6 0 0	Oil of Vitriol, or Sulph.	
„ calcined	0 0	acid . p. lb.	0 1
Carbonate of		Rape Cakes . p. ton	6 15 0
nia . p.	0	Salts, Epsom „	0 0 0
Guano, Peruvian, p. ton	0 0	„ Glauber „	7 0 0
„ Ichabon „	0 0	Sulphate of Ammo-	
Gypsum „	3 0 0	nia, per cwt., 12s. to	0 17 0
Nitrate of Soda, p. cwt.	0 14 0		

WM. NORRIDGE, 13, Rood-lane, Fenchurch-street.

POTTER'S GUANO MANURE is the only Guano that can positively be depended upon, and has stood the test of three seasons. The imported article, it is well known, is seldom twice alike, even when genuine, and is subject to a most extensive system of adulteration. Orders addressed early to the Works, 88, Upper Fore-street, Lambeth, will have instant attention. Testimonials will be sent per post, if required.

POTTER'S LIQUID GUANO may be had as usual of most Chemists and Seedsmen.

*** Beware of being imposed upon by inefficacious imitations.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE Attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

IMPORTANT TO AGRICULTURISTS, &c.

ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. MITCHELL and FIELD (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil, in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 54, Hawley-road, Kentish Town.

DRAINING OF LAND.

THE A LEVEL, designed for the Use of Workmen, in preserving a uniform fall in Drains and Water-courses. In consequence of the approval expressed and the demand made for these Levels at the recent Southampton Show, Mr. BAILEY DENTON has arranged with an eminent London Mathematical Instrument Maker to make them in any number required. Price 30s.

This Level is as accurate as a spirit-level, and so simple, that the workman unable to read can use it with facility. When closed it forms a 5-feet staff.

Orders addressed to Mr. DENTON, Land Agent, 9, Gray's Inn-square, London; or to Mr. CHARNOCK, Wakefield, Yorkshire, will insure a perfect instrument.

SEED WHEAT.

J. D. PIPER, of Colne Engaine, Essex, (Member of the Royal Agricultural Society), has been four years raising two new Stocks of Wheat, viz., Piper's "Thick-set," and "Colne Whitechaff Red." At the last Southampton Meeting two sheaves of these Wheats were exhibited outside (notice not having been given in time for their admission inside), where they produced much excitement, and 6d. per ear was offered for them. Last year, in the same field, side by side, the Piper's Thick-set grew eight bushels and a half, and the Colne Whitechaff Red five bushels and a half more per acre than the most prolific Wheat grown in the neighbourhood. Last autumn J. D. P. measured a quarter of an acre off his field, and dibbled the Thick-set in rows a foot apart, and one bushel per acre; and though the plant was partially destroyed by the slug in the winter, and a good sprinkling of self-sown Potatoes were left to grow, still the yield was 14 bushels and a half, being equal to 14 sacks and 2 bushels per acre. One person this year grew 15 sacks and 2 bushels, another 14 sacks, and another 13 sacks per acre. One parcel weighed 64½ lbs. per bushel. This is, perhaps, the stiffest-strawed Wheat in England, and is adapted for strong or hollow bottom ground, and is not likely to get laid. J. D. P. will send to London, or to any place within ten miles of Colne, carriage free, and he will be glad to receive a post-office order, or reference to some house in London for the money, with the order for the Wheat. When it is all sold, J. D. P. promises to inform the Public, by an advertisement in this Paper; but if he should get any post-office orders after it is all sold, he will return them. The price is regulated according to the yield. Thick-set, 15s. per bushel; Colne Whitechaff Red, 9s. per bushel. Samples of the above, both threshed and in the straw, may be seen at our Office. N.B.—J. D. P. advertised in the two principal papers in Essex, where the above Wheat was growing, in order that Agriculturists might see it and judge for themselves of the quality and quantity.

TO AGRICULTURISTS.

CAMPBELL'S CORN STEEPS.—The Material for Wheat is on Sale by the undermentioned Agents, at 2s. 6d. per gallon.

Notwithstanding the extreme drought of the last spring and summer, the results of the experiments, in very many instances, have been surprising, averaging a saving on seed, in the first instance, of 3s. per acre, and yielding a produce of 20 per cent. additional in straw, and 40 per cent. in grain. Had the season been more moist the result would have been at least double.

From Report of the Judges, Glasgow Cattle Show, Aug. 7, 1844.

"Among the remaining articles of the Exhibition (of Roots, Seeds, &c.), the Judges would direct attention to a series of specimens exhibited by Mr. James Campbell, of Dundee, consisting of various Grasses (they were Wheat, Barley, Naked Barley, and Oats), raised from Seed steeped in a Fertilising Liquid. These were contrasted with others which had not undergone the process, and were in all cases decidedly superior."

Agents:—Messrs. G. Gibbs, 26, Down-street, Piccadilly; Thos. Gibbs, corner of Half-moon-street, Piccadilly; and Edw. Purser, 40, New Bridge-street, London. W. E. Rendle, Plymouth Manure Company; J. Campbell, 5, Mersey-street, Liverpool; P. Bruce, Merchant, Hull; Crouch and Co., 60, Close, Newcastle-on-Tyne; W. F. Karkeek, Truro; John Mayer, High Offley, Staffordshire; George Griffith, Bewdley; J. B. Hiden, Warminster; Phillips and Whittem, Coventry; John Towers, Maidenhead; Samuel Waldie, Carlisle; John Rodway, Carmarthen; James Black and Co., Aberdeen; W. Campbell, Merchant, Wick; Wm. Cuthbertson, Printer, Annan; J. and D. Campbell, Thurso; Maxwell Dick, Irvine; Dickson and Turnbull, Perth; Drysdale and Co., Glasgow; Drummond and Sons, Stirling; Wm. Dalrymple, Cupar Angus; John Dykes, Kilmarnock; James Haldane, Lauder; J. Bell, Dundee; Thos. Kennedy, Dumfries; A. Kennedy, Thornhill; P. Lawson and Son, Edinburgh; Wm. Low, Forfar; A. M'Farlane, Kinross; John Ogg, and Shield and Co., Arbroath; Geo. Robertson, jun., Kirkwall; John Rae, Elion; A. Simpson, Macduff; A. B. Telfer, Ayr; Wood and Co., Stonehaven.

EXTIRPATION of the MEALY-BUG, THRIPS, &c.—These pests to Gardens can be readily and effectually extirpated without injury to the most delicate plants, by HERRMAN'S VEGETABLE DILUTUM, sold in bottles at 5s., 10s., and 20s. each, free of carriage to all parts of Great Britain.—Address, with a remittance, either to SAMUEL HERRMANN, Romsey, Hants, or Messrs. MAXWORTHY and MANLY, Nurserymen, &c., Hackney, who are the sole London Agents.

EXTIRPATION of all kinds of VERMIN.—Office, 59, King William-street, City, London.—MR. J. A. CRYER, practical chymist, patronised by Her Majesty the Queen, H.R.H. the Duchess of Kent, the Royal Agricultural Society of England, and the Corporation of the City of London, and by special appointments to the principal Courts of Europe, begs to inform the nobility, gentry, merchants, agriculturists, shipowners, and the public generally, that he continues to CLEANSE, by contract, from one to five years, every description of PROPERTY, of rats, mice, moles, weasels, moths, fleas, bugs, &c., and as a guarantee of the efficacy of his preparation, respectfully refers to the certificates of his great success at Buckingham Palace and Gardens, Windsor Castle, St. James's Palace, Frogmore Lodge, Carlton Club House, Mansion House, Newgate Prison, Tavistock Hotel, Brewers, Chester, and Galley Quays and warehouses in Lower Thames-street, the property of Joseph Barber, Esq., and many others of public and private establishments, which may be seen at the office. The preparations, which are free of poison or deleterious drugs, may be had as above, in pots and bottles at 5s., 10s., 20s., 50s., and 100s. each, with full directions, which must be used in proportion to the extent of premises infested, to successfully eradicate the vermin, and which can be applied without injury to property. Dwelling-houses cleansed from 1l. to 5l. per annum; mansions and estates from 10l. and upwards; ships, docks, warehouses, granaries, breweries, farms, wharfs, &c., in proportion. Caution.—None are genuine unless bearing the signature and seal "Joseph Anton Meyer."

J. R. AND A. RANSOME, Ipswich, have published a Descriptive Catalogue, with Cuts, of their AGRICULTURAL IMPLEMENTS and MACHINES, which may be had by post, the order being accompanied by six penny stamps.

SMITH'S FIELD and GARDEN SEED-DIBBLE, or HAND-MACHINE, for depositing all kinds of Seed on the various Soils, with the greatest accuracy and despatch.—This Machine is so simple in its construction and operation as not to be liable to get out of order, and can be used by men or women. It is easily set, so as to deliver the exact quantity of seed intended to be planted, into each hole made by the Dibble, at one operation, without any further care than supplying it with Seed, by the person using it, and will plant Turnip and Mangold Wurzel Seed, Wheat, Barley, Peas, and all kind of Garden Seeds. In Tin, 1l. 10s. each; or with Copper Box and Tube, 1l. 15s. each. Commission allowed to Agents.

These Dibbles may be obtained of Messrs. COTTAM and HALLEN, 3, Winsley-st., Oxford-st., London, through the agency of the principal Agricultural Implement Sellers in the United Kingdom; or from the Inventor, by letter to his address, inclosing a Post-office order for the amount.—RICHARD SMITH, Upper Hall, near Droitwich, Worcestershire.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade.

THOS. J. CROGGON, 8, Ingram-court, Fenchurch-st., London.

TO LANDOWNERS, AGRICULTURISTS, BUILDERS, &c.

McKIBBIN'S Improved ROOFING FELT is peculiarly applicable as a substitute for Slate, Zinc, Tiles, and other articles used for Roofing, from its ECONOMY, LIGHTNESS, and DURABILITY.

The disadvantages attending other materials used in roofing, preventing, to a great extent many useful houses and sheds being erected or rendered waterproof, it is submitted that the improved Roofing Felt will in a great measure—and in some instances altogether—obviate them, and prove most serviceable from its lightness, durability, and impermeability to water and damp, in covering Houses, Cattle-sheds, Workshops, Ropewalks, &c., and for the sides, as well as roofs, of light structures for plants, being likewise a non-conductor of heat; besides its economy in repairs, the timber where it is used may be so light as to save its whole expense; it requires no other coping, and may be applied by any person of common ingenuity; being flexible and portable also, it is free from breakage, the expense of carriage is inconsiderable in comparison with slates, tiles, &c., and it is not liable to contraction like zinc.

Sold in sheets 32 inches by 20, at 5d. each (being less than 9s. 6d. per square of 100 feet), with printed directions for applying them, same as adopted at the Government Dock-yards and various other public buildings.

Orders will meet with prompt attention if addressed to H. C. BOWDEN, 18, East India Chambers, Leadenhall-street, London, or to the following agents:—Liverpool, Messrs. Grueber & Co., 11, Manesty-lane; Plymouth, Thomas Stevens, Esq.; Birmingham, William R. Loyd, Esq.; Sunderland and Newcastle-on-Tyne, Messrs. John Ritson and Sons; Hull, William Ward, Esq.; Bristol, Messrs. Moor and Hewitts; Ramsgate and Deal, Messrs. Edward Hodges & Co.; Whitehaven, William Todd, Esq.; Glasgow, Malcolm Carmichael, Esq., St. Enoch-square; Cork, Messrs. Richard Wallis & Co.; Belfast, Messrs. Grueber & Co., Dunbar's Dock; who have also on sale McKIBBIN'S improved SHEATHING, BOILER, RAILWAY, and other FELT.

*** The "IMPROVED ROOFING FELT" will be found much more durable than the Common Felt made in lengths, and not subject, like it or continuous sheets of other material, to be stripped by storm; it can also be more easily repaired, and from the simple mode of application recommended, the wet cannot percolate through nail-holes, being only fastened down at the overlaps.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and OBTAINED the PRIZE for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONLY ONE PENNY PER SQUARE FOOT.

Samples, with directions for laying on, and testimonials as to its merits, sent free to any part of the town or country.—Patent Felt Works, Lamb's Buildings, Bunhill-row, London.

[illegible]

POLYTECHNIC INSTITUTION.—The [illegible] MICROSCOPE, an original OPTICAL [illegible] adapted to its application to Nature and Art, is daily [illegible] to LONGBOTTOM'S OPAQUE MICROSCOPE, the LEPTOSCOPE, and the ONY-HYDROGEN MICROSCOPE. The PICTORIAL ILLUSTRATION of the MICROSCOPE, from COLLINS'S ODE, with Vocal and Instrumental Music, to the first subject exhibited by the PROFESSOR, at a Quarter to Five o'clock in the Afternoon, and at a Quarter to Ten in the Evening. Dr. RYAN'S popular Daily Lecture is on POISONS and their ANTIDOTES, delivered at Half-past Three, and on the Evenings of Mondays, Wednesdays, and Fridays, at a Quarter to Nine. Professor BACHHOFFNER Lectures on the alternate Evenings. The Lectures abound in interesting Experiments. The HYDRO-ELECTRIC MACHINE, DIVING BELL and DIVER, &c. The Music is composed and conducted by J. WALLIS, Mus. Doc.—Admission, 1s. Schools Half-price.

REAL SHEFFIELD PLATED DISH COVERS, at prices hitherto unattempted. THOMAS WEST, 18, Ludgate-street, London, having received a large supply direct from the manufactory at Sheffield, offers the best Meat Dish Covers as follow:—Cottage Pattern—1 Cover of 20 inches, 3l 10s.; 1 do of 18 inches, 2l 3s.; 2 do. of 14 inches, 4l. 8s., the set of 4, complete, 11l. 10s. ONLY. Double Dome Pattern—1 Cover of 20 in., 4l. 14s.; 1 do. of 18 inches, 3l. 12s.; 2 do. of 14 inches 5l. 5s.; the set of 4, complete, 14l. ONLY. In noticing the prices of the above goods, T. W. ventures to assert they are superior to many advertised at a much higher price. Best Wrought Silver Spoons and Forks as usual, Fiddle Pattern, 7s. 3d. per oz.; Queen's Pattern, 7s. 4d. per oz. Superior Watches and Fine Gold Jewellery, cheaper than any house in London. West's Hand-book, with 100 engravings and full of useful information, is just published, and may be had gratis, and post free, on application to T. WEST, Silversmith, 18, Ludgate-street, London.

HEALTH, LONG LIFE, AND HAPPINESS.—EXTRAORDINARY CURE OF SCORBUTIC HUMOUR.

I, WILLIAM WOOD, of Rockwell Green, in the parish of Wellington, Somerset, hereby certify, that for almost seven years I was afflicted with SCORBUTIC HUMOUR on my nose, with a continued discharge, rendering me almost unfit for society; I tried several medical men, and various medicines for curing the same, but all proved of no avail, producing no beneficial effect; at last I was persuaded to try PARR'S PILLS, and after taking two small boxes and part of a third, I was completely cured, and I now feel no pain or inconvenience as before. Many parties in the neighbourhood, and your Agent for Wellington, Mr. GARNER, can bear witness that my testimony is correct, and I wish it to be made known, that others similarly afflicted may be encouraged to try the same medicine, which under the blessing of God has proved so serviceable to me.

Witness my hand this 6th day of August, 1844. WM. WOOD.

In the presence of JOHN GARNER, Wellington.

From Dr. C. STRANN, 126, Fulton-street, sole agent for Brooklyn.—An instance of the singular efficacy of PARR'S LIFE PILLS, which merits particular notice, occurred in the person of a lady, residing at Brooklyn, of consumptive make, who had been afflicted for upwards of six years with very great and general debility, headache, flatulence, faintings, and all the effects originating in an impaired constitution. Country air was tried, but to little advantage. She complained of weariness and pain on the least motion: her bowels were sometimes constipated, and at others lax, and never regular. At this period, she was recommended to try PARR'S LIFE PILLS, when no less astonishing than true, before she had finished two boxes, an entire and perfect cure was the result. To such, nothing can equal this antidote, as it imparts tone and strength to the stomach, and operates so mildly, that the most delicate of either sex can take them with the greatest safety.

To T. Roberts and Co., April, 1844. Yours truly, C. STRANN.

These, and hundreds of other cases of DECIDED CURES, attested on the highest authority, and already published, occupy upwards of 180 pages of letterpress. These Testimonials are published periodically, and may be had on application at any respectable medicine vendor's. The cures, in many instances, were effected after all other means had failed, and they thus establish the claims of PARR'S LIFE PILLS, to being considered the best medicine in the world.

CAUTION TO THE PUBLIC.—Beware of Spurious Imitations of the above medicine. None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE Letters on a RED GROUND, engraved in the Government Stamp pasted round each box. Sold by all respectable Medicine Venders.

IMPORTANT to the FASHIONABLE WORLD.—By far the most indispensable of all the graces that contribute to personal adornment is the Hair. Its recovery, preservation, and improvement are peculiarly concern the elegantes of our fashionable circles, and any information which will insure these desirable results will be hailed as an inestimable boon. The following extract from the letter of a respectable chemist in Bridlington will be read with the highest interest —

"A lady, a customer of mine, has found great benefit from the use of your Balm. About six months ago her hair nearly all fell off. I recommended her to try your Balm of Columbia, which she did. In the course of a few applications the hair ceased to fall off. Before she had used one bottle it began to grow very profusely, and she has now a very beautiful head of hair. "I am, gentlemen, yours respectfully,

"——, Chemist and Druggist, Market-place, Bridlington.

"To Messrs. C. and A. Oldridge.—March 18, 1844."

C. and A. OLDRIDGE'S BALM of COLUMBIA, changes the Hair to curl beautifully, frees it from scurf, and stops it from falling off, and a few bottles generally restores it to its; it also prevents baldness. 3s 6d., 6s., and 10s. per bottle. The other prices are genuine.

OLDRIDGE'S BALM, 1, Wellington-street, the corner of Wellington-street, Strand.

THE HORTICULTURAL MAGAZINE. [illegible] Published, price 1s., the introductory Number of this [illegible] periodical. Orders received by all Booksellers, [illegible] Science of Gardening—Advantages of a Garden—[illegible] Horticulture—Manures and its Application—New Plants, [illegible] and Vegetables—Landscape Gardening—Planting—[illegible] Estates—Grading—Acclimatising—Irrigation—Wardian [illegible] Botanic Productions—The Various Classes of Plants—[illegible] ing Plants and Vegetables—Designs for Conservatories—[illegible] dening for Manufacturing Towns—Construction of Flue—[illegible] —Substitutes for Glass—Lawns and Shrubberies—Fruit Gardens and Orchards—Geology—Soils—Horticultural Notes, &c. —W. HOLLOWAY, Publisher, 154, Strand, London.

[illegible] Price SIXPENCE, [illegible] Stamped Edition, free by post SEVENPENCE.

[illegible] Journal of Literature, [illegible] Twenty-[illegible] Correspondence, [illegible]

St. Luke's [illegible] The Right Honourable [illegible] The Bishop of Lincoln [illegible] The Duties of the [illegible] Sentiments to the Emigrant [illegible]

The Settlers in Canada, written for Young People, by Capt. Marryat.

Original Papers.—On Malaria as a Source of Fever in Warm Climates, by [illegible] late senior Medical Officer of the Niger Expedition—Report of the [illegible] Archæological Association, Meeting at Canterbury.

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WM JACKSON and Co. take this opportunity of stating that in consequence of the great success they have had in propagating the above beautiful Cinerarias, they have reduced the price, which will be applicable to all who have already favoured them with their orders, which will be executed next month, and plants given to compensate for long carriage.

Their new Catalogue is now ready (in which is a list of their fine white and scarlet Rhododendrons), and may be had on application. A remittance or reference will be expected from unknown correspondents.

Agents in London Messrs WHITLEY and OSBORN, Isleham Nursery, who have seen the plants.

Cross Lanes Nursery, near Bedale, Yorkshire, Oct 4

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONIES, GERANIUMS, AURICULAS, CARNATIONS, and LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment FLORIST TO HER MAJESTY, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above Flowers, which, from the success he has had in their cultivation, he can offer at very moderate prices. He particularly wishes to call attention to the highly flattering remarks on his Exhibitions of Tulips and Liliums lancifolium this season, in the various papers. He is also desirous of reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collections or ornament their pleasures with the beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Lilium lancifolium are particularly adapted for parterres, &c. besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and when flowers are so much valued. They only require to be known to be universally cultivated. Catalogues can be forwarded by post on application. Foreign orders executed.

CARNATIONS, PICOTEES, PINKS, AURICULAS, ALPINES, AND POLYANTHUS.

JOHN HOLLAND, FLORIST, &c., Market-place, Middleton, near Manchester, Lancashire, respectfully informs his friends and the Florists and Public that his extensive and choice collection of the above Florists' Flowers are now ready for sending out. Catalogues of which are now ready, and may be had on prepaid application.

Market-place, Middleton, Oct. 4.

TULIPS.—To be disposed of for £6, a BED OF TULIPS, of 47 Roots, with their Offsets, in three drawers; an equal quantity of Anemones, Ranunculuses, and Roses, well-arranged and true to name, such as Polyphemus, Cerise belle Amie, Chiffonne, &c. &c. Apply to EDWARD WOODTHORP, Furlong, near Bridgnorth, Salop.

LILIUM LANCIFOLIUM.—Flowering Bulbs of these most beautiful LILIES to be had at the following low prices; Lancifolium album . . 1s. each,
" punctatum . . 2s. "
" roseum . . 3s. "
of W. J. Myatt, Seedsman, 46, Cheapside, London.
Seed from the best varieties of IXIAS and SPARAXIS, at 2s. 6d. per packet.

CAMELLIA JAPONICA.

ROBERT LAWSON, Esq., of Tiverton, intends disposing of his stock of Camellias, which he has collected at much expense, and successfully cultivated for many years. They are in the highest state of health, and most abundantly set with blooming buds. Mr. L. disposes of them solely in consequence of their having become too large for his conservatory. They are as follow:—

			£	s.	d.
Reticulata,	from 7 to 9 feet in height,	a very fine specimen, quite healthy and green	10	10	0
Imbricata,	from 7 to 8 feet in height,	do.	5	5	0
"	" 3 to 4 "		1	10	0
Maxima	" 7 to 8 "	a magnificent plant	7	7	0
Chandlerii	" 6 to 7 "	a fine plant	5	5	0
"	" 3 to 4 "		1	10	0
Lady Hume's Blush	6 to 7 "	fine	4	4	0
Double White	6 "		3	3	0
" "	5 to 6 "		2	10	0
"	5 "		2	10	0
Invincible (Gray's)	5 to 6 "		3	3	0
Fordii	" 4 to 5 "	very fine	4	4	0
" "	2 to 3 "		1	1	0
Double Striped	5 to 6 "	fine	2	10	0
Anemoneflora Alba	4 to 5 "		2	10	0
Speciosa "	4 to 5 "		2	2	0
Woodsii "	4 "	fine	2	10	0
Warratah "	4 to 5 "	fine	2	2	0
Florida "	4 to 5 "		2	10	0
Corrallina "	3 "		1	5	0
Lawsonii "	2 "	new	1	10	0
Colvillii "	2 "		0	10	6
Donkelaarii "	2 "		0	10	6
Insignis "	6 to 7 "	very fine	2	10	0
Eclipse (Press's)	6 to 7 "		2	3	0

The Prices affixed are for the separate plants, of which not less than 3 can be taken together. If the whole are taken in one lot a considerable reduction will be made. Mr. Lawson will be happy to show them, or give any farther particulars that may be required.—Tiverton, Oct. 4th, 1844.

J. KERNAN begs to announce the arrival of his large and carefully selected Dutch, Cape, and other Bulbs of every description.
Finest named Hyacinths, old favourites, from 6s. to 12s. and 18s. per dozen.
Double red mixtures, different shades, 3s. 6d. per dozen.
Double blue, 3s. 6d. per dozen.
Double white, 3s. 6d. dozen.
Single; each colour, as above, 3s. 6d. per dozen.
Early Tulips, Narcissus, Jonquils, Anemones, Ranunculus, Iris, Ixias, Amaryllis, with all the new Lilies and good Herbaceous Plants, hardy and greenhouse, worth cultivating.
J. K. has also to offer, of this season's saving, some very choice seed—
From the finest named Calceolaria, 2s. 6d. per packet.
" " " Cineraria, 2s. 6d. "
" " " Heartsease, 2s. 6d. "
" " " Geranium, 2s. 6d. "
Scarlet Phlox Drummondii, 6d. per packet.
Schizanthus Hookerii, 6d. "
Intermediate Stock, 6d. "
By sowing the above this autumn a season will be saved.
With many other good Biennials and Perennials. Also, Myatt's new Deptford Pine Strawberry; Myatt's British Queen do.; Prince Albert do., Lady's Finger do., Keen's Seedling do. Old Pine do., &c., &c.
Dailey's Scarlet Admirable Rhubarb, the very best for early forcing. Giant Asparagus and Sea-kale Plants. Rivers's new Catalogue and Amateur's Rose Guide.
White Clover, Rape, Winter Tares, Rye, and Italian Rye-grass, for early green food. Catalogues may be had on application. All Mr. Rivers's Dwarf and Standard Roses may be ordered through J. K.
Carthy's and other new Budding and Pruning Knives.
4, Great Russell Street, Covent Garden, Oct., 1844.

SPLENDID NEW PLANTS.

JAMES CUTHILL begs most respectfully to announce that he has now ready to send out strong, healthy plants of the following:—Lisianthus Russellianus, 2s. 6d. to 5s. each; L. nigrescens, 5s. to 10s.; L. longifolius, 5s. to 10s.; L. corymbosus, 10s. each; L. glaucifolius seed, at 2s. 6d. per packet. J. C. has a splendid Yellow Lisianthus which will be sent out next year. A Treatise will accompany each order on the best method of growing the Lisianthus. Fine roots of the Prince of Denmark Scarlet Clove-scented Carnation, an excellent forcer, 18s. per doz.; Petunia ornatissima (Van Houtte), a fine pencilled lilac, 1s. each; also Fleming's Trentham Cabul Melon, which gained several prizes at Regent-street—the best-flavoured and most extraordinary bearer; three lights produced 86 lbs. first crop—40 the second; and is now bearing the third; 2s. 6d. per packet. Latter's Victory of England Cucumber, 2s. 6d. per packet; Cuthill's early improved Black Spine, very handsome, 2s. 6d. per packet, or the three for 6s. The trade supplied by the same of the above Cucumbers, by sending a money order on the Camberwell Post-office.—Letters directed to J. CUTHILL, Florist, Denmark-hill, Camberwell, London, will be immediately attended to.
N.B. The Lisianthus nigrescens can be seen in bloom 7 feet high, with upwards of 1000 blooms upon it, and will continue in flower till Christmas.
Strong Plants of the British Queen, and Keen's Seedling STRAWBERRIES in pots for next year's forcing can be selected out of 4000 pots.

MESSRS. TYSO AND SON, Wallingford, Berks, respectfully invite the attention of the Nobility, Gentry, and Public to their extensive collection of TULIPS, RANUNCULUSES, CARNATIONS, PICOTEES, PINKS, &c.
TULIPS.—In beds, containing an equal number of Roses, Bybloemens, and Bizarres, under names, arranged for planting.
1st Assortment.—A bed of 35 rows, or 210 bulbs, £ s. d.
including many extra fine new sorts . . . 25 0 0
A bed of 40 rows, or 280 bulbs, ditto . . . 35 0 0
2d Assortment.—A bed of 30 rows, including many
very fine sorts . . . 15 0 0
A bed of 40 rows, ditto . . . 20 0 0
Messrs. T. and Son beg to inform the cultivators of the Tulip that they intend letting out six rods of their splendid new Tulip "Polydora," a third row Bizarre, figured in No. 15 of the "Floricultural Cabinet." It was much admired when in bloom in and near London this season, when in bloom, and will be found to possess all the requisites of a fine show flower. Price 5s.
RANUNCULUSES.—Messrs. T. and Son having cultivated this beautiful flower with unparalleled success, are enabled to supply strong roots of their seedlings and other fine varieties, adapted for competition. They obtained first prizes at Chiswick, June 18th; at Surrey Gardens, June 15th; and at several provincial Exhibitions this season.
Messrs. T. and Son's General Descriptive Priced Catalogue may be had, Gratis, on prepaid application, inclosing two postage labels.

GEO. LIGHTBODY, Falkirk, respectfully informs the cultivators of the RANUNCULUS, that his CATALOGUE of SEEDLINGS is now ready, and may be had on application. A few Varieties of Superior New Seedlings will be let out this season.

NEW CARNATIONS, PICOTEES, AND PINKS.

MESSRS. N. and B. NORMAN'S CATALOGUE of SHOW VARIETIES can be had on prepaid application.—Bull Fields, Wrockwich.

SUNBURY NURSERY, MIDDLESEX.

J. T. WILLMER, Sen., begs most respectfully to offer to the Public that beautiful Purple Flake CARNATION "MAYO," which received a Certificate at the Horticultural Show of the Horticultural Society of London. Price 5s. 6d. per pair. Likewise a Carnation with buff ground, pink and maroon stripes; a novel and beautiful flower. 7s. 6d. per pair. The above Flowers are well adapted for bedding, when a sufficient stock is raised. The plants are well rooted and strong, with the rest of J. T. W.'s stock of Carnations, Picotees, Pinks, and Auriculas, Catalogues of which may be had by prepaid application, inclosing a postage stamp.—October 4, 1844.

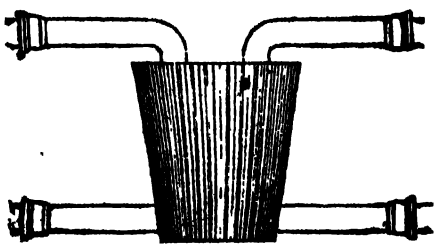
MR. HOYLE'S NEW SEEDLING GERANIUMS.

WILLIAM MILLER respectfully announces to the Nobility, Gentry, Amateurs, and the Trade, that he has purchased the entire stock of the following superb SEEDLING GERANIUMS raised by G. W. HOYLE, Esq., of Guernsey, viz.:

		£	s.	d.
1844—Titus	each—	3	3	0
Pompey		3	3	0
Champion		2	2	0
These three for six guineas.				
1843—Unique		1	1	0
Queen of England		1	1	0
Claude		1	1	0
Sarah Jane		1	1	0
Amelia		0	10	6
Majestica		0	10	6
Rosalia		0	10	6
Flora		0	10	6
General Pollock		0	10	6
These nine for five guineas.				

The entire set 10 guineas, with a discount of 20 per cent. to the Trade. A remittance must accompany the order from unknown correspondents.
Titus received a seedling prize at Chiswick, June 1844; Pompey, Champion, and Unique were pronounced by Professor LINDLEY, in the *Gardeners' Chronicle* of June 29, 1844, to be "three flowers of good substance, size, and variety;" and Mr. Glenny, in *Gardeners' Gazette* June 22, 1844, says, speaking of the Geraniums at the Chiswick Fête—"Mr. Hoyle had by far the best lot there; Pompey was the best of them, and Titus next." Blooms of the others were likewise exhibited at the June Fête, Chiswick, 1844, and attracted very extraordinary attention, and were universally admired. On the whole, the above varieties, for substance, roundness of form, and general excellent qualities, are among the best ever offered to floriculturists. Printed Lists, with full descriptions, can be had on application. The plants are now ready to send out.
Mr M. has been supplied by Mr. Hoyle with some choice GERANIUM SEED, which he saved from his own beautiful Seedlings, and the newest and best varieties sent out by other growers. Sealed packets of 100 seeds, 12s.; do. of 50 seeds, 7s. Also, Hybridised Seed, saved from his own extensive collection of Pelargoniums; packets of 100 seeds, 10s.; of 50 seeds, 6s.
Providence Nursery, Ramsgate.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.		Patent Door and Frames.	Fire-bars & Dead Plate.	Fire Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in.	ft.	s.	s. d.	s. d.	s. d.		
10	1 5	20	7 6	6 6	2 6	30 feet.	12 to 20
Ribbed Boiler.							
10	2 2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	20	12 6	7 6	3 6	80 to 125 feet.	40 to 65
14	3 10	25	17 5	8 6	4 6	150 to 250 feet.	65 to 100
18	5 5	42	25 0	8 6	6 6	300 to 400 feet.	Warm a grapery 25ft. long, and a pit 20ft.
24	8 15	50	35 0	8 6	7 6	600 to 800 feet.	

If 2-inch pipe be used, one-third more. If 3-inch pipe, as much more.
The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

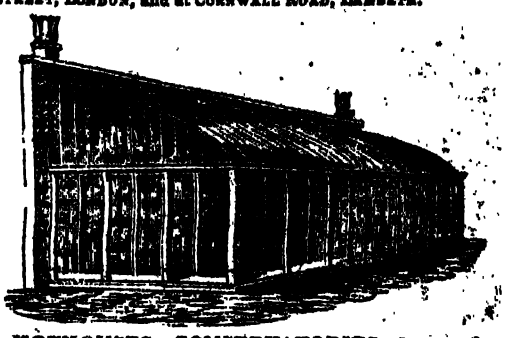
CONICAL BOILERS.—The Boilers invented by JOHN ROGERS, Esq., are made of several sizes, and may be obtained of JOHN SMEWIN, Ironmonger, Stevenage.
They may be seen in operation at Messrs. Chandler's, Vauxhall; Beddiges', Hackney; Henderson's, Pine-apple Place, Edgware-road; Rollisson's, Tooting; Pontey's, Plymouth; the Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's-park.

MR. LAWES' MANURES.—Mixed for Wheat, 7l. per ton; Super-phosphate of Lime, 7l. per ton. To be had of the Factory, Deptford Creek, near Greenwich; Super-phosphate of Lime, in a concentrated form, may also be procured at Messrs. WARNER'S, 24, Cheapside, in 7 lb. packets, price 1s.

HYACINTHS AND GREENHOUSE PLANTS.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains are effective. HALF A BOTTLE dissolved in a quart of water furnishes a superior LIQUID GUANO at half the usual cost. Sold in bottles, price 1s. 6d. each, by FLANAGAN and SON, Mansion-house-street; HURST and MCMULLEN, Leadenhall-street; W. CLARKE, Bishopsgate-within; SMITH, Islington Nursery; GRIMLEY and Co., Covent-Garden; HATT and RODLEY, 418, Strand; WILLIAM and JOHN NOBLE, Fleet-street; THOMAS GIBBS and Co., Piccadilly; SMITH, Covent-Garden; CHANDLER, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 18, Piccadilly; JOHN KERNAN, Great Russell-street, Covent Garden; LOCKHART, 156, Cheapside; SHUTTLEWORTH, Pantheon; MININ, ADAMS, and NASH, 63, Strand; THATCHER and SON, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS ARNELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. S. RENDLE, Plymouth; DICKSONS and Co., Edinburgh; PONTEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THORNE, Shepton Mallet; and other leading Seedsmen in town and country. Wholesale Agents, DAVY, MACKENZIE and Co., 100, Upper Thames-street, London.

COTTAM AND HALLEN, ENGINEERS, IRONFOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.
HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.
Materials may be had for those who wish to fix their own Apparatus.
THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.
IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.
Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

Sales by Auction.

SIX DAYS' SALE OF VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE & MORRIS will submit to Public Competition, by Auction, at the American Nursery, Leytonstone, Essex (about one mile from the Railway Station, Stratford), on Monday, 21st October, 1844, and five following days, at 11 o'clock, (to close Executors' accounts), the celebrated NURSERY STOCK, consisting of the choicest kinds of Fruit and Forest Trees, fine Evergreens, Ornamental, Deciduous, and American Plants, of every variety, in considerable quantities, and lotted to suit every description of purchasers. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, from its having many rare specimens that are only to be found in first-rate collections (also of the Trade, from its excellence), and comprising several thousand Azaleas, Rhododendrons, Leduma, Andromeda, all in fine condition for potting, being well furnished with bloom buds.
N.B. The ground is proverbial for safety of removal, the mould adhering to the roots. May be viewed prior to the Sale. Catalogues, One Shilling each, returnable to purchasers, may be had of the principal Seedsmen in London, at the Auction Mart, and of the Auctioneers, Leytonstone, Essex.

BUNNEY'S FINAL SALE.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor (in consequence of the Lease having expired), to submit to Public Competition by Auction, on the Premises, Kingsland Nursery, Balls Pond-road, on MONDAY, Oct. 7, 1844, and following days, at Eleven o'Clock each day without reserve, the whole of the valuable NURSERY STOCK, consisting of FRUIT and FOREST-TREES, a considerable quantity of EVERGREENS, AMERICAN PLANTS, STOOLS, &c. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their Grounds; also the Trade, from its excellence, and comprising an excellent collection of Ghent AZALEAS, MAGNOLIAS, RHODODENDRONS, &c. May be viewed prior to Sale. Catalogues may be had on the Premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone.

ISLINGTON NURSERY.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to submit to Public Competition, on MONDAY, 14th October, 1844, and 2 following days, at 11 o'clock, (in consequence of the ground being required for building,) a portion of the valuable NURSERY STOCK, consisting of about five thousand Belgian Azaleas, in 40 fine varieties; several thousands fine Hybrid Rhododendrons, well furnished with bloom buds; Green and Var. Nellies, Chinese, and Siberian Arborvitæ, about five thousand Laurels, with a fine assortment of Fruit and Forest Trees, Flowering Shrubs, &c. May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. FRANKLIN (in consequence of his Lease having expired and the ground let for building), to submit to Public Competition, on the Premises, Cottage-place, City Road, on THURSDAY, October 17th, 1844, at 11 o'clock, the whole of his VALUABLE STOCK, consisting of named Seedling Tulips, Auriculas, Carnations, Picotees, and Pinks, Greenhouse and Hothouse Plants; a capital Greenhouse, 24 ft. by 11 ft.; and sundry Effects. May be viewed prior to sale. Catalogues may be had on the Premises; of the principal Seedsmen; and of the Auctioneers, Leytonstone.

SUPERB DOUBLE FULLYHOCKS.

WILLIAM MAY begs to announce that he is now prepared to send out his collection of the above splendid and showy plants, of all the various shades of colour, from black, or dark, to white. As his stock is large, he is enabled to supply them upon very moderate terms, viz., 4s. per 100.

N.B.—As this plant is becoming popular as a show flower, W. M. has a few very select varieties, by name and colour, at 2s. per dozen, which he has selected for the purpose of exhibition. Also Seed selected from finest double flowers, in packets, at 2s. 6d. and 5s. each, post-free. The above may also be had by order of the principal Seedsmen in London, and of Mr. WATKINSON, Market-place, Manchester. A remittance or reference from unknown correspondents.

Rose Nursery, Bedale, Oct. 4.

J. T. WILLMER, King's Road, Chelsea, by Appointment Florist to Her Majesty, begs to inform his Friends and the Public that his Carnations and Picotees are now ready for sending out, catalogues of which may be had on prepaid application containing a postage stamp.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 5, 1844.

MEETING FOR THE FOLLOWING WEEK.

SATURDAY, Oct. 12 Royal Botanic . . . 4 P.M.

In Mr. HOARE, in his recent work on the VINE, has startled some of our friends by recommending them to make borders without earth, we can hardly fancy their amusement when they shall have read of his proposing to grow Vines with their roots upwards. One would as soon have thought of advising gardeners to walk with their heads downwards; yet so it is.

If, says our author, you give Vine-roots moisture, they will shoot upwards, and grow as well in that direction as they would downwards. This being assumed, it is proposed to take advantage of their good nature, in order to overcome the difficulties attending the cultivation of the Vine out of doors in these northern latitudes. It is not so much our short summers, or our moist climate, that hinders the ripening of the Grape, as the coldness of our springs, and the impossibility of warming our soil till late in the season. Our feeble sun acts too slowly on our chilly land. But if that land were fully exposed to the solar rays in small masses, it would become heated much sooner; and then, if the Vine-roots could be confined to those masses, the vegetation of the plant would be accelerated sufficiently to insure the full maturity of many kinds of Grapes.

Such being Mr. Hoare's mode of reasoning, though not his language, he proposes the following device, which has certainly the merit of originality. He recommends that hollow brick columns be constructed, to the height of five feet above the level of the soil; that a Vine be planted at their bottom, in the inside (but with its head through the brickwork), in such a way that its roots cannot go downwards; then, by filling up the column with prepared materials, the latter will be forced to travel upwards in search of food, which, from its receiving the sun's rays in all directions, will be always warm. At the same time the Vine branches will easily train spirally over the outside of such columns.

But how are the proposed materials in those columns to be kept moist? If the sun is always shining on them, will not their contents become dry as well as warm? And if dry, on what are the inverted roots to feed? Mr. Hoare provides against the risk of dryness thus—

"When the column is built up within three courses of its intended height, and the materials filled in exactly even with the brickwork, a course of whole bricks must be laid over *the entire surface*, taking care that those which rest on the materials are not to be laid on mortar, but merely jointed with it. This course being finished, the last two are to be formed with whole bricks laid flush with the outside, and with their inner ends slightly sloping towards the centre of the column, which will cause all the rain that falls on them to run towards it, and fall into the sunken hollow space that will be there formed by this circular ring of brickwork. The circular space, which will be about 18 inches in diameter, and 6 inches deep, is intended as a receptacle for all the rain that falls on the surface of the top of the column, which will filter through the single thickness of the bricks, forming the bottom of the hollow space, and thence be distributed by absorption throughout the whole mass of the inclosed materials, thereby supplying that moderate degree of moisture to the roots of the Vine, which contributes so advantageously to its nourishment and support. The column will now be complete. The sunken space at the top of it may, if desired, be filled with mould; and Mignonette, or any other annual flower of suitable growth, may be grown in it, and which, hanging pendently over the sides of the column, will present a very graceful appearance."

By this means all danger of dryness is effectually avoided. Mr. Hoare assures us that

"[illegible] simple contrivance of chambering the roots in[illegible], and the provision of the sunken water-table [illegible] top of the column outside, prevent the necessity of the slightest trouble being required in the management of the Vine beyond that of the ordinary routine of pruning and training; while, at the same time, the Vine is placed in such superior conditions with reference to its roots, that fine well-ripened Grapes may always be depended upon."

We hope he does not deceive himself. If the Vine will ripen with certainty under this mode of treatment the invention is one of the first importance, and the contriver will have deserved the grateful thanks of the country: but the proof is yet to come.

Knowing as we do the perseverance with which Mr. Hoare has prosecuted his inquiries into the habits of the Vine, how numerous are his experiments, with what care they have been conducted, and how perfectly trustworthy are his statements, we cannot doubt that he has good grounds for expecting success in this novel operation, and we therefore recommend the attempt to be made. A single season will test the value of column-growing; for if the Vine will grow well, it will probably ripen its fruit under such circumstances. There is no question about the roots going upwards if they are prevented going in the opposite direction; there can be no doubt that the Vine will grow freely enough in such a position. The difficulties in our mind are these:—1. Will the columns really furnish moisture enough? The powers of perspiration by the Vine are very great, and the loss of moisture thus occasioned is more considerable than we should have expected chambered columns capable of making good. 2. Will the Vine escape the attacks of the red spider, in this apparent deficiency of moisture? 3. Will it not be stimulated into growth so early in the spring as to be checked and blighted by our cold north-east winds and late spring frosts? 4. Will not the foliage, when it comes to cover over the brickwork, intercept the warm rays of the sun, and thus counteract the effects anticipated from column-growing? These are questions which theory cannot answer; their solution must be sought in experience, and in experience alone.

EVERY TULIP-GROWER is aware of the importance of getting a good strain of any given variety; for twenty breeders may come into colour, yet not more than one of that number shall be what is termed *a decided good break*.

We are often asked, What is the best method of breaking breeder Tulips? or, in other words, what means can be adopted to induce the flower to assume those variegated tints so highly prized by connoisseurs—*a clean feather or perfect flame?*

The general supposition is, that by frequently changing the soil, situation, &c. this desideratum may be attained. We agree that to a certain extent the bulb may be so far affected, that occasional *breaks* may result from adopting this plan. Still we think it may be accomplished in a much more certain and satisfactory manner.

Bulbs in a breeder or self state throw up stronger and bolder flowers than when *in colour*; the stems often decreasing in height several inches, assuming a sort of constitutional weakness (if we may so term it), when they become variegated. In fact, the broken flower is much less robust than its breeder. If, then, a deficiency of vigour will induce a bulb to put forth a feathered or flamed flower, instead of a plain or self-coloured one, by what means can this end be attained?

We imagine that taxing the resources of the bulb, weakening its energies, and reducing its strength, will have the desired effect; and to support our opinion we will adduce a case or two in point. Many years ago, when we thought less of cause and effect than we do now, we were much struck with a singular occurrence, bearing on these ideas. We planted a large bed of breeder Tulips; during their period of bloom they were much frequented by bees, which issued from the cups of the flowers, covered with farina, as black as sweeps. The impregnation of the flowers was completed; they formed perfect heads of seed, which were allowed to remain on till they were thoroughly ripe. The ensuing season the bulbs were planted as usual, and when the flowers expanded we were surprised to find that the whole collection, amounting to some hundreds, were, with very few exceptions, in a broken or variegated state. As it is usual to break off the capsules in order to strengthen the bulb, may we not infer that if the resources of the bulb are drawn upon to ripen a pod of seed, that it is consequently weakened and predisposed to alter its character, and assume those beautiful and varied markings so much desired by the amateur?

On another occasion a friend of ours planted some seedling breeders, the bulbs being in a very diseased and cankered state; the succeeding year he had a general break, and certainly there were some splendid flowers amongst them.

Another old experimentalist informs us, that many of his breeder Tulips break into colour, by allowing the bulbs to be exposed to all weathers, from the time of taking up to the period of replanting.

Now, as variegation in the leaves of plants may often be traced to weakness or disease, may not the same effect arise from the same cause, in the case of the Tulip? Here we have bulbs weakened by ripening seed, others in an unhealthy state when planted; whilst some were constantly acted on by rain, frost, sun, and wind, and in each instance attended with the same results.

We trust our Floricultural friends will act on these hints; as, from repeated successful experiments, we entertain no doubt of their success.—*W.*

ON THE CULTIVATION OF ASPARAGUS.

HAVING seen in the *Chronicle* lately, many inquiries respecting the culture of Asparagus, I beg to give an account of a mode by which I have always produced a very superior article—so much so, that it has almost invariably obtained the premier prize at Exhibitions.

I have hitherto planted the greater portion of my plants in single rows, about a yard apart. I have lately, however, reverted to my old plan of double rows, with a good alley between, as I find some difficulty in getting soil enough in the single-row system, to blanch and load it from the influence of winds, which do Asparagus much injury.

In my general plan for a systematic rotation of crops, my Celery-beds are selected for the new Asparagus plantation. My rule as to quantity to be planted is merely to keep up the stock, by planting an extent equivalent to what I break up to force. Celery-beds prepared in a special way, form a most eligible situation for the new Asparagus plantation, as the person who takes up the Celery leaves the ground ready for the Asparagus without farther trouble.

I grow some also in pigeon-hole pits for forcing; however, I always break up and force a common bed or two for the earliest—say through December and January, and then force the pigeon-holed pits, as those pits become weakened excessively by very early forcing—a whole series of buds in a progressive state being destroyed or paralysed at the removal of the covering after forcing; whereas, if forced later, those buds may by a slight covering of litter be saved.

With regard to preparation of ground, I will commence with Peas, which always precede Celery in my rotation; I appropriate a considerable plot for these, or in other words, I keep them together as much as possible for the sake of system; and having an even number of rows I make it a rule to sow two at a time, at the distance of from four to five feet, and these when picked and the haulm cleared away furnish space for a bed of Celery of about the same width. The Peas being removed, the ground is marked out for the Celery-bed, after what is termed the Scotch method. The bed is now excavated to the depth of a foot, and the soil thrown right and left and made compact; and now six or eight inches of half-decayed leaves and dung, chiefly the former, and which had been used as linings to pits or frames, is trenched in, at least a foot deep in the excavation. The surface is now covered once more with three inches of the best rotten manure, which when spread is forked in and duly mixed. The bed is now planted, and when taken up for use, the operation, with a little care, levels and leaves the bed right for planting the Asparagus when the period arrives.

There is, in my opinion, many wrong notions about the proper period of planting Asparagus. I invariably plant in May, or, in fact, when the Asparagus is what the market-gardeners term "in feather," that is, about six inches high. I have, by many years' experience, found this the best time; and, perhaps, one of the best proofs of it is, that I seldom or never lose a plant. This year I had my ground ready in the end of April, but the drought being very great, I was determined, if possible, not to plant until rain; the rain did not come until the middle of July, however, and tired of waiting, I had planted my Asparagus a fortnight previous. I watered it every morning, and a finer brood of plants were never seen—not even one missed; therefore, there can be no great danger attending spring planting.

In planting, the beds are set out for two rows each, the rows two feet apart, with an alley of four feet between them. The line being stretched precisely where the Asparagus is to be, a slanting cut is made sloping from the line, about nine inches deep, and the soil thrown out as in forming an edge for Box; the same cut is made on the opposite side of the line, leaving a sharp and angular ridge, across which the plants are set astride; the operator taking half of the roots in the one hand and half in the other, divides them across the ridge, at the distance of ten inches between plant and plant.

Previous to planting, however, some fine highly decomposed old vegetable matter is placed up the line, in contact with the roots, and pressed firm; the roots are slightly tipped, and dipped in a puddle of thick dung-water. My plants are usually two years old, for it is a waste of ground to plant earlier, unless in cases of emergency. I need scarcely add that the young plant must be watered every morning for a week, unless rainy.

The only treatment necessary the first year, at least through the growing season, is to keep them perfectly free from weeds. If any crop is planted between them, it should be a row of Coleworts from a June sowing, which would make their growth chiefly after the Asparagus had done its best.

In November, the ground is dressed with good rotten manure, and in spring the alleys are thrown over the manure, just deep enough to cover it. No cropping can now be carried on between the rows, although a good crop of Cauliflowers may be grown in the alleys. The

next point is the mode of dressing pursued in the autumn of the second year.

I hold it of much more importance to feed the Asparagus at the extremities of the roots in the alleys, than over the crown; good cultivators of it in brick-pits, do not allow the alleys, after forcing, to remain empty all the summer; they are filled with good rotten manures, and any one who has witnessed the emptying of these alleys in autumn, preparatory to forcing, must have been struck with the abundance of strong white roots, of which such alleys are full, and which are annually (it may be) cut off. Such roots can scarcely be produced from the crown: and it occurred to me some years ago, that the alley, above all, should be well attended to with manure. I *therefore* in November of each year, as soon as the ground is cleared of dead stalks and weeds, cause all the *loosest* of the soil to be drawn off the beds with a rake; the bed is then well dressed with very rotten *manure*, and left for the winter. In February the alleys are dressed about from six to nine inches thick, with *half-rotten* manure and leaves, from partially decayed linings, which is trenched down very deep, and the bed is then soiled, over the manure, to the depth of four inches, with fresh soil from the alleys. This completes the whole course of my mode of culture. Finding the plants much injured by winds, in the growing season, I have deemed it necessary to run lines of pitchcord up my principal rows, to support the stems, and this I find a great assistance.

My mode of cutting is similar to the market gardeners', excepting that after cutting about twice in the spring, I leave one stout shoot to each stool, with the intention of promoting the fibrous action of the root. As for the rest, I cut all that are of any size until about the end of May, when I cease cutting a bed or beds of my prime, which I now suffer to grow for the earliest cut in the following spring, continuing to cut from the rest until about the end of June.

I have only used salt for one season to any extent. I have much the same opinion of the mode of applying it that I have of liquid manure—little and often is my maxim. I quite agree with Mr. Bree, in a late Number of the *Chronicle*, that it would be very injudicious to apply it when the tender bud is arising. My plan has been to apply it at intervals, when the shoots are a yard high, giving a slight sprinkling in showery weather, three or four times in July and August.

I would particularly direct attention to the alley dressings of rather raw materials; and, whatever may be the merits of salt, of which I have a high opinion, Asparagus will always require abundance of manure in order to grow it fine. Salt and other inorganic matters can do little for the mechanical texture of the soil, which is a most essential thing in the cultivation of all plants.—*Robert Errington.*

THE ANTIQUITIES OF GARDENING.

No. II.—Extracts from Sir Thomas Hanmer's Manuscript on Gardening—1660, 1670. (*Continued.*)

"*Prices of July Flowers* received from George Ricketts, of Hogaden, London, 1667: Crown of Bohemia, Bride of Holland, Duchess of York, King of Assyria, Virgin of Middlesex, House of Commons, Belle Infanta, Tamerlaine, &c; all these are at 18*d.* the root, one with another."

"*Fruite-trees* had from Captaine Leonard Gurle, his nursery neere White Chappell Church, London, 1667. Two Wynter Bon Chrestiens, 3*s.*; two Wynter Bergamots, whereof one was Bergamot de Burgi, 3*s.* Orleans, Matchless, Damascus, and Prunello Plums, 1*s.* apiece. One White Nutmeg Peach, 4*d.* One Syon Peach, 5*s.* One Violet Musko Peach, 5*s.* Three other Peaches, 3*s.* each. One Elrug or Gurle's Nectoran, 10*s.*"

"*Vines*:—D'Arboys, Red Frontiniac, White ditto, Orleans, 2*s.* to 2*s.* 6*d.* the plant. A mat to lap them up in, 1*s.* 6*d.*; total, 3*l.* 6*s.* 6*d.* Many of these were much galled in the carriage down; but hee promised to abate what I thought good, and to make good what died the first year."

"*Gurle.*—I sent up from Bettisfeild to Gurle, by Smyth the carrier, or Johnson, 3*l.* to pay Gurle all due for the trees I had from him in wynter, 1667, which was paid him and I have his receipt. Hee was to send me this next wynter 1669, one tree of Gurle's Nectoran, and one lusty tree of Lord Mordant's Peach instead of these that died, and nothing more."

"*Among the Vines* received from John Rose, the King's gardener at St. James's Park, were the Lombardy, and another called the right Rhenish Grape by the King, and these two were much commended by him." 16 others plants of Vines are enumerated. "These 18 rooted Vines are to cost 12*d.* the root one with the other. I paid after for them. The *Lombardy Vine*, as Rose the King's gardener calls it, bears a fair red Grape, which the King loves. The Rhenish Vine bears a white longish Grape, very good, but must have a warm wall."

Mention is made of a Morillion Cherry; this was most probably a Morello; for the same occurs in the lists of trees planted against walls, together with a distinguishing property of the Morello. "Against the east upper wall in the Great Garden is planted one Orleans Plum from Sir Clus. Wolsley, then one Morillion preserving Cherry."

"*Plums.*—Monsieur is the same as that called in England the Orleans Plum, a faire, red, round Plum, comes clean from the stone, ripe betimes in August, a hardy tree and a good bearer." [Monsieur is syn. to the Orleans according to the Horticultural Society's list of fruits.]

"Cœur de Pigeon, a small reddish round Plum, very like to the Queen Mother Plum, if not the same." [They were proved to be the same after the lapse of 160 years, in the garden of the Horticultural Society.]

"*Vines.*—The true Raisin of the Sun bears a great long red Grape. The Rhenish Vine bears a white longish Grape, very good, but must have a very warm wall."

Home Correspondence.

The Horticultural Society.—I am surprised to hear that some people are complaining about the value of the prizes given by the Horticultural Society to fruit-growers. I have looked at the schedule lately advertised, and I must say a more unreasonable complaint could not be made. It is quite true that the large gold medal is not offered for fruit, although it is for flowers; nor might it to be. To say nothing of the difference in the cost of conveyance, which you have yourself alluded to, and which I understand is entirely defrayed for the fruit-growers by the Society, (that is very true, *Ed.*), does any gardener pretend to say that as much skill is required to produce five kinds of fruit, as forty kinds of stove and greenhouse plants? Why, if each sort of fruit requires a separate amount of knowledge of gardening, in order to be successful with it, so does each sort of flower; and therefore a collection of stove and greenhouse plants, containing forty distinct plants, will require eight times as much skill as five sorts of fruit. In this point of view the medal for the latter should be only 2*l.* 10*s.*, when that for forty plants is 20*l.*; and yet the Society gives 10*l.*, and is abused for it. It is very well for Mr. Henderson to think that nothing is like leather, but the public will not agree with him. In my opinion the fruit-growers showed their good sense in not putting in claims for higher rewards, as we learn from you was the case; the Society is as liberal in medals as it is proper to be, and it is very ungracious in those who profit by it to grumble, because it is not prodigal. Is there no such thing as honour to be gained by successful exhibition? and does Mr. Henderson think it is the cash, and the cash alone, that is worth striving for? I hope he has higher and less sordid motives. — *A-Looker-on.* [There seems no object in continuing this discussion; and therefore we here close it. The Society has made its decision for next season; and if the fruit-growers think they have anything to complain of, they should address themselves to the Vice-Secretary immediately after the Exhibition of next year. They may be quite certain that their suggestions will have full consideration.]—*An Exhibitor* adds, "In answer to Mr. Henderson's letter in the last *Chronicle*, you speak of half-a dozen van-loads of plants being brought to the Society's Exhibition, but you do not inform us that the person who sends them does not live two miles from the gardens, and that they gain as many medals as will bring the value of them at one Exhibition to 40*l.*, which an exhibitor of fruit cannot gain at the three, if he was to win the three first Prizes. Now, with regard to the fruit-growers, many who exhibit have 100 miles to bring their productions, and which they do at their own expense, and which expense often amounts to more than the value of their medals, if they are awarded any. I must beg to inform you that if you do not place the fruit-growers upon an equality with the plant-growers, you will soon lose their support.—[We print this leter *verbatim*, as a sample of the accuracy of persons like "An Exhibitor." It is notorious that the Horticultural Society pays the carriage of all fruit sent for exhibition, and returns it carriage-paid.]

Mode of taking Hives.—The discussion in which several of your correspondents have lately engaged concerning the best mode of destroying wasps' nests has led to a gentleman making inquiry of me, whether spirits of turpentine might not be used with effect in destroying bees when hives are taken. He states his reason for asking the question to have arisen from having remarked in several meetings of late for the encouragement of labourers, that the hives of honey exhibited by them had been much discoloured by their burning the bees. I can have no doubt that spirits of turpentine will kill bees as readily as wasps. If the hive were placed overnight above a small quantity of the spirit, I presume all the bees would be found dead or torpid before morning. The objection which occurs to me is the possibility of the odour of the turpentine flavouring the honey, though I think the effect would speedily disappear, and perhaps not be disagreeable. Entomologists are well aware that a bruised or chopped-up Laurel-leaf, when placed under a wine-glass, emits a sufficient quantity of prussic acid to destroy a wasp or fly in about two minutes. I remember the knowledge of this fact having been once applied to the taking of a hive. A quantity of Laurel-leaves were chopped up and placed in a washing-basin; the hive was then placed upon the basin over-night, and in the morning all the bees were found to have dropped into it, and were dead or stupified. A small quantity of prussic acid would probably be quite as effectual as the turpentine, and would produce no bad flavour. I have no experience as a bee-fancier, but I believe the wholesale slaughtering of this valuable and interesting insect has been shown to be unnecessary by the "Conservative Bee-keeper," and other writers on the subject. I have myself no fancies about not destroying bees for their honey on the score of cruelty. I cannot see how this act is more cruel than killing sheep for their mutton, or crabs for their claws. It is still the appointment of the present order of creation, "that the fear of us and the dread of us shall be upon all that moveth upon the earth, and into our hands they are delivered for food unto us." If, indeed, it can be shown that bees may be quite as economically deprived of their sweets by not destroying them, as they are by the more usual method, then I had much rather see their lives spared. But if the conservative system be not a strictly economical one to the thrifty cottager, its adoption had much better be restricted to the more acute sensibilities of the bee-fancier. —*J. S. Henslow, Hitcham.*

Potatoes.—The observations on the Potato, signed "R." in last week's Paper, are excellent; and it is to be hoped that some of the many Potato-growers who read the *Chronicle* will recollect them in their practice. In securing heaps of Potatoes for winter and spring use in the field or garden, the custom of putting straw next them is almost universal; but it is not the less wrong on that account. I know by experience of some years how much sweeter the tubers are when only coming in contact with the earth. The straw is wasted, and the Potatoes are injured, yet the practice will continue from unthinking habit, as we see daily and hourly in many other things. "R." says nothing on the greening of seed Potatoes. The drying of these that are watery or unripe, recommended in the latter part of "R.'s" paper, will be new to most readers, but is well worth trying. In the British Islands we have so many varieties and subdivisions of soil and climate, that all general rules have to be modified in practice. Thus the conflicting theories of Potato-growers might well puzzle the writer in the *Dublin Farmer's Gazette*, quoted at p. 602 of the *Chronicle* for this year. The facts stated seem to oppose each other; but Nature is always consistent—only man knows her means imperfectly, and must always be a learner. At a meeting of farmers in Scotland, they gave clearly the results of their varied experience, and one fact all the speakers seemed to agree in, which was, that seed Potatoes left in the earth where they grew, always produced a healthy crop. Several correspondents confirm this; and on mentioning it to an industrious neighbour of mine, he said that his father practised the same plan forty years ago, with uniform success. The Potatoes were always fresh and well tasted, and as seed they never failed; here we come to the simplest of all possible plans, for a very little extra earth will secure them from any English frost. Any one may see how certainly, after the most careful digging, many Potatoes show themselves in vigorous growth in the following summer. Regarding this important vegetable much is yet to be known, and much to be done. The immense crops considered possible by that great man, T. A. Knight, have not yet been realised, but there is no reason why they should not. One step towards this is the raising new varieties from seed. The very small produce of most early kinds surely need not be always so. Such difficulties have been overcome in gardening and farming, that this may be overcome also; and premiums ought to be offered by Horticultural Societies for new and valuable seedlings. Seeing some new kinds advertised by Mr. M. Smith, at p. 521, I procured a supply of the two last-mentioned sorts, which are, without exception, the finest early Potatoes I ever saw.—*S. H.*—*Lusor* adds,—In the Leading Article of last week is the following observation:—"It has, however, been found, that although Potatoes were taken up, and immediately stored in the earth in moderate quantities, with the mud so wet as to be dripping through the baskets, yet those Potatoes presented as dry an appearance when uncovered in spring, as others that were stored in a dry condition." This may have been the case, if the quantity was very small; but I would caution any Potato-grower from storing a large, or even a moderate quantity in a wet state. It is true that some of the white-skinned, or earlier sorts, may occasionally be stored in a wet state with impunity; but let no one attempt a trial with the red or later kinds. I write from repeated experience, having more than once had that part of the pit which was put together during a heavy shower, sink down into a deep hollow in the course of a few days, on opening which the whole of the Potatoes stored in that wet state were found rotten. These were Red Potatoes; the white kinds I have often stored in the same condition, and they have been uninjured."

Potato Failure.—If I may be allowed to suggest to the unfortunate who complains under this head (p. 645), I shall tell him, that though the season (too often blamed) may be in fault in some degree, his own treatment of his crop has favoured the failure. Thus, "the land is light, on gravel;" he does not state whether his stable dung was moist and decayed, or decaying, or whether put in, as most persons use it, in a dry undecomposed state. The description of land used being thirsty at all times, would this year be more so; the frequent libations of liquid manure most probably would be insufficient at any one time to reach the roots, while the evaporation from the ammoniacal compost used would yield an increase of nutrition to the stems and leaves. It is a well known fact, that even under common treatment, from an over manuring the stem or top being unusually luxuriant, no crop is expected from the roots which will repay the seed, and what there is, is generally, by forcing, large and bad. As in this season probably 16 weeks elapsed before rain or liquid reached the roots in this light soil on gravel, there would be nothing to induce the tuber-shoots to swell, if the plants had even then enough of nourishment to make them; all this time the tops were receiving unusual support, and making leaves instead of fruit. Frequent waterings in dry seasons nourish those plants effectually whose fruit is on the surface or above ground, but when tuberous ones are to be benefited by watering in a dry season, the earth should be well saturated with water till it reach the root of the plant to be acted upon, and this all gardeners know must be a large quantity to percolate from six to nine inches; the liquid manure may then follow, but to insure this reaching the root bed, another copious supply of water must immediately be poured in. To secure a vigorous

growth] of the Potato, roots should as necessarily be formed before the leaves, as should the roots of a hyacinth in glass or pot; for, if the top take the lead, it creates an eldest son in the Potato family, and the younger members are robbed by his drawing too hard upon their supplies, and, as in "R.'s" case, sometimes ruining the hopes of all to satisfy his useless existence and extravagant parade.—*A. W.*

Large Pines.—Will Mr. Mills be kind enough to answer the following questions, viz.—When were the suckers planted that produced the fine fruit recently cut at Gunnersbury Park? What has been the probable quantity of dung used to bring the fruit to maturity, and the probable expense for labour in applying the linings, &c.? and, finally, Is the flavour of the fruit grown in a moist dung pit equal to that grown in a more airy and dry situation? If Mr. Mills will answer these questions, it will oblige *An Admirer of well-grown Pines.*

The Dog-rose.—For the information of your correspondent relative to the Dog-rose (*Rosa canina*), p. 637, I beg to state that the fruit of this plant is invariably known amongst the vulgar in this part of the country by the name of Cankers, and the plant itself as the Canker-rose. I am unable to say from what cause it originally acquired this name, but I imagine that it might have arisen probably from the well-known Moss-like excrescences which so frequently occur on its branches, and are occasioned by insects. Many other plants are subject to attacks of a similar kind, and the diseases resulting therefrom are amongst our peasantry commonly, and I think not inaptly, known by the name of Canker.—*T. Bentall, Halstead, Essex.*

Wasps' Nests.—A gardener with whom I am well acquainted has had complete success this year in destroying wasps' nests, by simply pouring down the hole about half a pint of gas-tar in such a way as to smear it all round. This he does at any hour of the day when he chances to find a nest, as the wasps that are out are sure to attempt an entrance, and thus get besmeared and die, whilst those that happen to be within meet the same fate in their attempt to leave the nest.—*J. H.*

Polmaise Heating.—I imagine that the advocates of the Polmaise system of heating are wrong in ascribing the luxuriance of the Vines entirely to that mode of heating. May not a good border have something to do with it? Besides, it appears to me that very little fire-heat has been employed, as we have no mention of the Grapes being ripe until the 20th of September. I cut good Black Hamburgh Grapes perfectly ripened on the 30th of August last, to which no fire had been applied except for about a fortnight, when the Vines were in flower. I imagine that the Polmaise system consists in a good border, vigorous young Vines, a fine summer, with a little fire-heat, and good management, which I own are excellent means for producing fine late Grapes. But will it ripen good Grapes by the middle of April, which I have done by the use of hot water? If this has not been tried, I think it is premature to say that that system will supersede hot water and flues, at least for early forcing. I am induced to send the above, lest inexperienced Grape-growers should adopt the plan, thinking it suitable for general Grape-forcing.—*M. Henderson.*

Lisianthus Russellianus.—At the last meeting, in September, of the Cornwall Horticultural Society, held at Truro, there were shown two splendid plants of this exquisite flower. Upon the plant which was exhibited as a single specimen, and which obtained the first prize, there were upwards of 700 flowers in full bloom; and upon the plant which formed one of a collection, there were upwards of 500 blooms in perfection. These plants were raised and grown in a pit heated with hot water, and were generally managed as recommended by Mr. Cuthill, the successful grower of these lovely flowers. When the flowers began to expand, the plants were removed from the pit to a greenhouse, and were well watered every day, and occasionally they had doses of guano-water, which evidently strengthened the plants and acted as a stimulant in the expansion of the buds, until which they appeared to like. These plants were the admiration of every person who beheld them. Let those who wish to grow them in perfection obtain them from Mr. Cuthill, and strictly adhere to the mode he prescribes for cultivating them, and they will be well rewarded for their trouble.—*W. D.*

Ice-houses.—My ice-house is nearly full at this time, being a large one. It lost but little in the late singular season. It is the one devised and arranged by "A. E. W.," and described by him in the *Chronicle*, p. 117, 1844. I attribute the success of it to the efficient drainage by faggots.—*Micklewell.*

Rose Catalogues.—Taking some interest in whatever relates to Roses, I was glad to see a hint bestowed in the *Chronicle* upon the Rose-growers, as to the mode of setting forth their catalogues. Inaccuracy of names seems unavoidable, and no doubt Mr. Wood is often quite as much at a loss as this customer. But the purchaser certainly has cause of complaint when he compares catalogues, and finds the same Rose described as large and small, or light and dark. In Mr. Paul's directions for growing Roses in pots, Nighetos, a tea Rose, is represented as snowy white in one page, and as lemon in another. Madame Despres (China) he calls pale lemon, but Mr. Rivers, pure white. Again, the latter, in his catalogue of last autumn, recommends a selection of the very finest Roses from each class, but I observe in his selection of 20 Noisettes, Lamarque is omitted. Of course such an omission may be an oversight, but it is a strange one; but at all events it must lessen the confidence of the purchaser. I would also add that, in the present day, when good Roses are so numerous, and still on the increase, I deem it quite inexcusable to sell a bad one. I think, too, it would be neither a bad rule nor a harsh one, that when a customer finds he has got a worthless variety, he should be at liberty to demand two good ones for it, as the *amende honorable.*—*Philalethes.* [We hope Rose-growers will take this hint.]

Falkoff Raspberry.—I procured some plants of this Raspberry from Messrs. Youell in March last, and though planted so late, after nearly a fortnight spent in the package, and after the unparalleled drought which succeeded, during which time they were never watered, they more than answer all Messrs. Youell say of them. The fruit was very superior to any I have seen, in size and beauty, and quite equal in flavour to the Antwerp. At the present moment the fine dark large leaf of the plants gives abundant promise for next year, when they will have a much better chance, I hope. I write this as a common act of justice to Messrs. Youell, having observed several attacks on their Raspberry.—*W. D. F.* [Not in our columns; for we know the variety to be excellent.]

Societies.

HORTICULTURAL SOCIETY.

Oct. 1.—R. W. Barchard, Esq., in the chair. From Mr. Robertson, gr. to Mrs. Lawrence, was a collection of plants containing a most beautiful specimen of Aphelandra cristata, nearly six feet high, producing six large heads of brilliant scarlet flowers. This plant, when grown to the same state of perfection as this specimen, has no equal in the stove at this season, its richly coloured showy blossoms presenting a most imposing appearance. In the same group were also Erica Solandri. Sedum Sieboldii, a useful, hardy, succulent herbaceous plant from Japan, and the new Franciscea hydrangeifolia, a Brazilian species of little beauty, and possessing no fragrance, for which the other species are remarkable; likewise good plants of Oncidium Harrisonianum, and microchilum; a fine specimen of Epidendrum ciliare, Rodriguesia recurva, producing numerous pendent racemes of yellow blossoms; together with a variety of Maxillaria picta, Peristeria Barkeri, and Clerodendrum splendens, the fine species from Sierra Leone with bright-red flowers. A Knightian Medal was awarded for this, the Aphelandra cristata, and others.—Mr. Jack, gr. to R. G. Loraine, Esq., received a Knightian Medal for a new species of Echites named Carassa, having on it one fully expanded bloom of a beautiful pink colour. The flowers are smaller than those of E. splendens, but are of a better colour, and the plant has a neater foliage than that of the last-named species.—From Mr. Stanley, gr. to H. Baring, Esq., was a good specimen of Rodriguesia planifolia, producing racemes of yellow flowers, having much the appearance of those of R. recurva. A Certificate was awarded for it.—F. R. Symons, Esq., sent cut flowers of seedling Verbenas, named Negro Boy, Prince Alfred, and Prince of Orange.—From Messrs. Veitch and Son, of Exeter, were seven plants of Brachycome, raised from Swan River seeds. They were of various shades of colour, from white to deep blue. From the same collection were also flowering bulbs of Pentlandia miniata, and Stenomesson aurantiacum.—Mr. Plant, gr. to J. H. Schroder, Esq., sent a variety of Gesnera zebrina, and a good plant of Zygopetalum crinitum.—From Mr. Fowle, of Brixton, was a seedling Fuchsia named Vuurberg.—Mr. Jackson, of Kingston, contributed Chironia floribunda, a pretty species with bright pink flowers, Corethostylis bracteata, a handsome species of Begonia from the Organ mountains, resembling B. sanguinea but different, having the red-coloured stems and leaf-stalks covered with small transparent scales; a Lycium with small tube-shaped violet blossoms; and a plant of Griffinia hyacinthina, producing a fine truss of ultra-marine blue flowers. A Certificate was awarded for the Begonia, and Chironia floribunda.—Of Fruit there was a considerable quantity.—From Mr. Henderson, gr. to Sir G. Beaumont, Bart., was an Enville Pine-apple, weighing 5 lbs. 2 oz., and measuring 17 inches in circumference and 11 inches in length; the number of pips was 15. It was said to have been grown on Mr. Hamilton's system; the sucker was not allowed to come away until last year's fruit, which only weighed 3 lbs., was ripe.—A Banksian Medal was awarded to Mr. Povey, gr. to the Rev. J. Thornycroft, for two handsome specimens of Black Jamaica Pine-apples (miscalled Montserrats), the largest of which weighed 5 lbs., and measured 17 inches in circumference and 9 inches in length; the number of pips was 9.—A Certificate was also awarded to Mr. Gold, gr. to Sir W. W. Dixie, Bart., for two Queen Pines weighing 4 lbs. 8 oz., and 4 lbs. 10 oz., and measuring 15 inches in circumference and 10 inches in length; the number of pips was 9; they were fair specimens of good cultivation.—For Grapes a Knightian Medal was awarded to Mr. Davy, gr. to G. Smith, Esq., for very fine bunches of Black Hamburgh, and of what is called Wilmot's New Black Hamburgh, but which is apparently a different sort. The berries of this variety are much more fleshy than those of the other, and they are also much larger, and are remarkable for having the surface covered with small indentations, as if they had been beaten by a hammer; the bunches were beautifully covered with bloom.—R. Thompson, Esq., sent three good clusters of Muscat of Alexandria Grape, the heaviest of which weighed 2 lbs. 7 oz.—From Mr. Standen, gr. to Mrs. Keats, was a box containing black bunches of Black Hamburgh Grapes, grown on the open wall; and Mr. Beck, of Isleworth, also produced from the open wall good samples of the same; the latter were cut from Vines managed according to Mr. Hoare's plan.—From Mr. Fish, gr. to H. H. Oddie, Esq., were specimens of his hardy green-fleshed Melon, weighing 3 lbs. each; they were stated to have been the produce of a fourth crop from the same plants. The linings of the bed (which is described at p. 296, 1844), have never been renewed, the only alteration since its first formation being the addition of any vegetable rubbish from the kitchen garden that would give out heat in decaying. Along with these Mr. Fish sent a Cassauba, green-fleshed variety, weighing 2 lbs. 3 oz.; and samples of French Crab, of last year's growth, in good preservation.—J. M. Wranch, Esq., sent fruit of the double-blossomed Peach.—From Mr. J. B. Lawrence, was a glass globe containing growing plants; it was similar to those globes in which gold-fishes are kept, with a piece of glass laid over the top of it; thus keeping the plants as if in a Ward's case.—From the garden of the Society were specimens of Sedum Sieboldii, Bouvardia splendens, having fine heads of vermilion blossoms melting off into a fine rose-colour, Erica transparens, Babingtonia camphorosmæ, a handsome New Holland plant, Begonia acuminata, the yellow variety of Gloriosa superba, and Oncidium Suttoni, together with cut flowers of Lupinus semperflorens, L. arvensis, and a branch of Cornus mascula covered with fruit, which is of no value to eat, being very austere, but pretty on account of its fine red colour. This hardy shrub is not uncommon in gardens, but seldom fruits now-a-days in this country. Of fruit from the garden there were among Pears Louise Bonne (of Jersey), an excellent variety; Belle et Bonne, a large and handsome sort, and in some seasons very good; Aston Town, a good standard Pear, although small, and well adapted for exposed situations, as it is not apt to be blown down; Thompson's, an excellent sugary variety which, owing to the dry season, has ripened much earlier than usual; Buffams, singular on account of its colour; and the Flemish Beauty, an excellent variety, which requires to be gathered before the fruit parts readily from the tree, otherwise, instead of being sugary and melting, it is dry and perfumed. Among Apples there were Mère de Menage, a good kitchen sort; Brabant Bellefleur; Hollandbury; Pomme Violette, singular on account of its dark violet colour, with bloom like a Plum; and Bedfordshire Foundling: the latter is a strong-growing tree, which does not usually bear until it attains a large size, but by taking it up and replanting, by root-pruning, or by pinching off the ends of the shoots after midsummer, it is found to produce fruit in abundance at an early age.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

Sept. 20.—This fine display of fruits and flowers took place at the Society's Garden, Inverleith. The subjects for prizes were on this occasion very numerous.—For Peaches, among five competitors, the Silver Medal was awarded to Mr. J. S. Thomson, gr. to Viscount Strathallan, for Red Magdalen, or Royal George, Montauban, and Galande; 2, Mr. P. Crocket, gr. to Col. Ferguson, for Royal Charlotte, Bellegarde or Galande, and Twyford.—For Nectarines, among six competitors, the Medal was assigned to Mr. W. Sharpe, gr. to Sir J. S. Richardson, Bart., for the Vermash and Elruge.—For three sorts of Grapes, the Medal was awarded to Mr. J. Gow, gr. to Count de Flahault, for Black Prince, Chasselas Musqué, and Black Gibraltar.—For Muscats of Alexandria there were five competitors. The Medal was awarded to Mr. T. Clement, gr. to C. Kinnear, Esq.; and a second premium to Mr. Crocket.—In Black Hamburghs there were seven competitors. The Silver Medal was assigned to Mr. M. Carmichael, gr. to W. Murray, Esq., of Polmaise; the clusters weighing about 5 lbs. each, and having been produced in a Vinery heated by the circulation of warm air from a stove or hot air-chamber, the air being kept dry or rendered moist by being made to pass through a dry or a wet curtain (see p. 500, 1844). A second premium was voted to Mr. Crocket.—In Frontignans there were five competitors. The first prize was voted to Mr. J. Addison, gr. to the Earl of Wemyss, for the White and the Black Frontignan. The second premium was again awarded to Mr. Crocket.—The Pine-apples produced were excellent. For an Enville, weighing 4 lbs., the Silver Medal was voted to Mr. Gow, Tullyallan. For a large Queen, the Silver Medal was voted to Mr. R. Gardiner, gr. to the Earl of Stair; and a second premium to Mr. Gow.—The show of Apricots was uncommonly good. The Silver Medal was assigned to Mr. Crocket, for Royal, Moorpark, and Hemskirke; and a second premium to Mr. J. Thomson, gr. to W. Keith, Esq., for Moorpark, Brussels, and Roman.—For the best Plums, exclusive of Green Gage, the premium was found due to Mr. R. Vair, gr. to J. Williamson, Esq., for Coe's Golden Drop, La Royale, and Nectarine Plum; and for fine Green Gages, premiums were voted to Mr. Thomson and Mr. Gardiner.—The competition in Melons was extensive, and two premiums were given; the first to Mr. W. Kerr, gr. to R. Brown, Esq., the kind being the Duke of Bedford, a green-fleshed sort of high flavour; and the next to Mr. C. Macintosh, gr. to J. Tod, Esq., also for the Duke of Bedford Melon.—In Pears the competition was rather limited, yet two premiums were awarded; the first for Jargonelles of very large size, to Mr. G. Taylor, gr. to G. Broad, Esq.; and the next to Mr. Addison.—The show of Cucumbers was very fine. For the best brace, of the Long Smooth Green kind, the Bronze Medal was voted to Mr. W. Martin; and a premium was awarded to Mr. H. Aitken, gr. to P. G. Skene, Esq., for a sort called the Irish Free-bearing.—For Dahlias, the small piece of Plate offered by the Society for the 20 finest Dahlia blooms produced by Nurserymen, was assigned to Messrs. J. Dickson and Sons, the kinds being

Standard of Perfection, Prince of Waterloo, Hero of Stonehenge, Prince Albert, Sure Enough, Beauty of the Plain, Mrs. Shelley, Lee's Bloomsbury, Antagonist, President of the West, Rising Triumph, Lady St. Maur, Admiral Stopford, Beauty of Bucks, Burnham Hero, Perpetual Grand, Nonpareil, Sir Robert Sale, Phenomenon, and Beauty of Sussex. Two other nursery collections were found to be of great merit, and nearly equal to each other; and the Committee therefore voted the Society's Silver Medal for each—to Messrs. Carstairs, Kelly, and Co., and to Messrs. T. and W. Handasyde.—For the Prize of three sovereigns offered by the Society for the finest 18 blooms produced by Practical Gardeners, there were no fewer than 11 competitors. The successful candidate was Mr. W. Thom, gr. to Capt. M. Innes, whose flowers were, Standard of Perfection, Mrs. Shelley, Sphere, Prince of Wales, Essex Triumph, Westbury Rival, Antagonist, Hero of Stonehenge, Lady Borland, Lady St. Maur, Blue Bonnet, Burnham Hero, Coronation, Victor, Prince Albert, Sir Robert Sale, Attila, and Sir John Stewart Richardson. Two other collections sent were each rewarded with the Society's Silver Medal. They were from Mr. Thomson, gr. to W. Vere, Esq., and from Mr. Addison.—The Medal offered for the best 12 blooms produced by Amateurs who cultivate their own plants, was gained by Mr. A. Ambrose, with Phenomenon, Mrs. Shelley, Prince of Wales, Essex Triumph, Sir J. S. Richardson, Duchess of Richmond, Indispensable, Bridesmaid, Bedford Surprise, Antagonist, Maria, and Lady St. Maur; and a premium was voted to Mr. J. Sanderson.—A number of Seedling Dahlias, the produce of 1843 or of the present year, were exhibited; but none of them excelled the finer varieties now in cultivation. No premium was awarded.—Two Collections of Carnations, flakes and bizarres, were much admired. The Silver Medal was awarded to Mr. D. Foulis, gr. to J. Tytler, Esq., the flowers being Simpson's Marquis of Granby, Wood's Commander-in-Chief, Lady Ely, Rainsforth's Game Boy, Elliot's Duke of Sutherland, Ely's Duke of Bedford, Mr. Grainger, Ely's Magnificent, Adinbroke's Lydia, Dalton's Lancashire Lass, Tutchet's Don Juan, and Duchess of Devonshire; and the bronze Medal to Mr. Thomson, for the other collection. A premium for Picotees was likewise awarded to Mr. Foulis.—The display of Hollyhocks was rich, and two awards were made—the first to Mr. Foulis, and the next to Mr. Alexander Foulis, gr. to Admiral Sir Philip Durham.—At this meeting an unusual number of articles were brought forward, for which no premiums had been announced in the programme; and several being very meritorious, received marks of distinction. A stand consisting of above 80 seedling Pansies, some of them of great beauty, was considered deserving of the Silver Medal, which was accordingly voted to the raiser, Mr. J. Finlayson, of Kincardine. — Another medal was awarded to Mrs. Erskine, for a collection of nine distinct kinds of Oranges.—An extra premium was voted to Mr. J. Macnaughton, gr. to J. Wauchope, Esq., for collections of several kind of fine fruits.—From Leith Walk Nurseries were exhibited plants of the golden-ribbed Beet (Poirée à cardes jaunes of the French), of a very elegant appearance; and also specimens of the Chou Nantais, a neat crisp little Cabbage, and Maclellan's new winter Cabbage, apparently a very good variety.—Messrs. Handasyde sent a collection of 80 named Dahlias, along with 17 new fancy striped kinds, of a very striking appearance, although not admissible to the florist's stand.—Messrs. Carstairs, Kelly, and Co., contributed a collection of named Hollyhocks, with guard-petals, some of them of great beauty.—Mr. Oliver sent stands of French and African Marigolds, the latter of uncommon size, and 30 very beautiful varieties of China Aster.—Mr. Anderson produced curious seedling Fuchsias, one being a cross between F. Chandlerii and F. decortiçata, the first time these have been hybridised.—From Professor Dunbar were beautiful Cape Heaths, particularly E. inflata, reflexa, alba, verticillata, Irbyana, and retorta.—Dr. Neill sent Acropera Loddigesii, with 30 flowering spikes, and Grobya Amherstiæ, with five spikes of flowers.—Messrs. J. Dickson and Sons showed two magnificent flowering specimens of Gesnera zebrina, one of them 8 feet in circumference around the branches.—Other contributors were, Mr. Deans, who sent a Seedling Apple of considerable promise, and also Seedling Dahlias; and Mr. Kinnear, who showed remarkably fine clusters of the White Raisin and Southfield Black Grapes, produced on the back wall of his vinery; Mr. Dunchar contributed very late Gooseberries, and excellent specimens of the Borsdorff Apple; and Mr. Goodall sent Astrachan Apples and Retarded Cherries; Mrs. Brown, large Pears; Mr. Bridges, large Swedish Turnips; and Mr. Anderson, very large White Turnips.

Reviews.

Bird-Architecture. By James Rennie. Vol. XI. of Knight's Weekly Volume.

It is so seldom that the subjects of Mr. Knight's admirable weekly work relate to matters of which we can take notice, that we gladly avail ourselves of the opportunity of mentioning them, which is afforded by the republication of the present volume. If there is one part of the creation more calculated than another to excite admiration, it is the wonderful skill with which birds and insects construct their habitations. The wisdom of the contrivances, their perfect adaptation to the wants and means of the little artificers, and the dexterity with which the wonderful power of instinct teaches these creatures to construct them, are among the most striking evidences of the power and wisdom of the Creator.

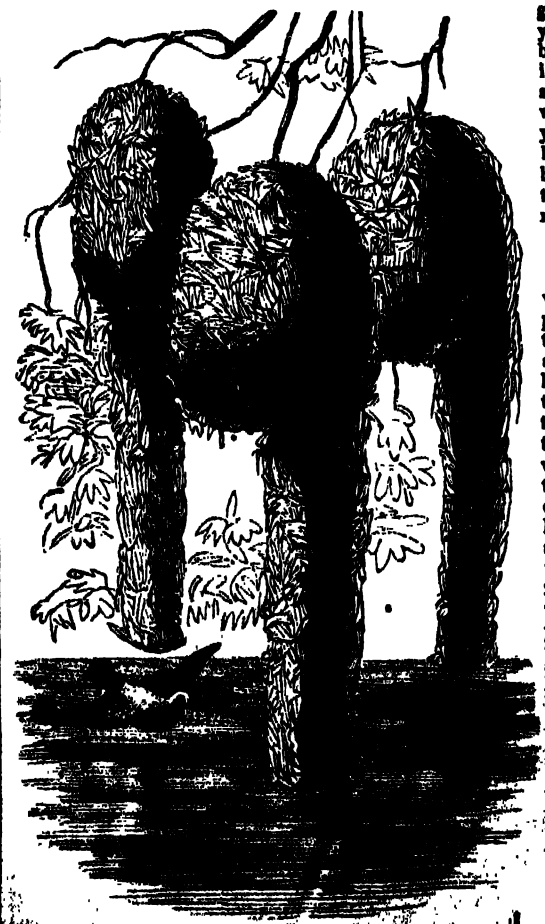
"Birds of the same kind," says Ray, "make their nests of the same materials, laid in the same order, and exactly of the same figure, so that by the sight of the nest one may certainly know what bird it belongs to. And this they do though living in distant countries, and though they never saw, nor could see any nest made, that is, though taken out of the nest and brought up by the hand; neither were any of the same kind ever observed to make a different nest either for matter or fashion. This, together with the curious and artificial contexture of such nests, and their fitness and convenience for the reception, hatching, and cherishing the eggs and young of their respective builders (which we have before taken notice of), is a great argument of a superior Author of their and other natures, who hath endued them with these instincts, whereby they are, as it were, acted and driven to bring about ends which themselves aim not at (so far as we can discern) but are directed to; for (as Aristotle observes) οὔτε τέχνῃ, οὔτε ζητήσαντα, οὔτε βουλευσάμενα ποιεῖ ('They act not by art, neither do they inquire, neither do they deliberate about what they do.') And therefore, as Dr. Cudworth saith well, 'They are not masters of that wisdom according to which they act, but only passive to the instincts and impresses thereof upon them.' And, indeed, to affirm that brute animals do all these things by a knowledge of their own, and which themselves are masters of, and that without deliberation and consultation, were to make them to be endued with a most perfect intellect, far transcending that of human reason; whereas it is plain enough that brutes are not above consultation, but below it; and that these instincts of nature in them, are nothing but a kind of fate upon them."

The purpose of Mr. Rennie's book is to explain the details of these things, by the assistance of previous ornithological writers. The work is perhaps the most successful of the publications of its author; it gives in a popular way a great deal of entertaining information, and Mr. Knight has acted judiciously in reproducing it. It seems exactly the kind of publication which will be acceptable to the million, who, we hope, are purchasers of these weekly volumes.

An anecdote concerning the habits of the pensile grosbeak will, we trust, excite those who are interested about birds to make the acquaintance of the rest of the work.

"Another of these gregarious African birds is the pensile grosbeak, which is about the size of a house-sparrow, and makes a basket-nest of straw and reeds, interwoven into the shape of a bag, with the entrance below, while it is fastened above to the twig of some tree, chiefly such as grow on the borders of streams. On one side of this, within, is the true nest. The bird does not build a distinct nest every year, but fastens a new one to the lower end of the old, and as many as five may thus be seen, one hanging from another. From five to six hundred such nests have been observed crowded upon one tree.

"A living author of reputation thus describes these nests; but we must premise that we do not coincide with



his opinion of the structure being designed for defence: 'Several varieties of the finch tribe, in South Africa, suspend their nests from the branches of trees, especially where they happen to impend over a river or precipice. The object of this precaution is obviously to secure their offspring from the assaults of their numerous enemies, particularly the serpent race. To increase the difficulty of access to these 'tree-rocked cradles,' the entrance is always from below, and frequently through a cylindrical passage of twelve or fifteen inches in length, projecting from the spherical nest, exactly like the tube of a chemist's retort. The whole fabric is most ingeniously and elegantly woven of a species of very tough grass; and the wonderful instinct of foresight (or whatever else we may choose to call it) displayed by the little architect in its construction, is calculated to excite the highest admiration. I have often seen twenty or more of these beautiful nests hanging from a single tree.'"*

Garden Memoranda.

Erratum.—In the report of the Horticultural Society's Garden, last week, p. 655, col. *a*, line 28 from top, instead of "Centrosema splendens," read "Camptosema splendens."

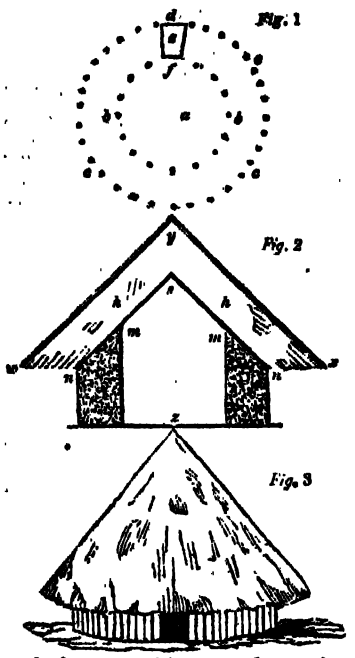
Bury Hill, near Dorking.—Your correspondent, "Q.," in his notice of this place, has omitted one of its principal features, namely, the fine plants of Arbutus and Rhododendron that crest the wooded hill behind the house, and which constitute one of its chief beauties. Along the crown of this hill a broad walk is bordered by large plants of most of the best varieties of Rhododendron, and behind, and among these, the new Pines alluded to by your correspondent are dotted about. A collection of hardy Heaths has also been planted in an inclosed spot in front of a covered seat. Besides these inducements to climb the hill, several beautiful views are obtained from its summit. From one point you look down upon the fine sheet of water below the house, and beyond that upon a tract of cultivated country which gradually rises into hills of nearly an amphitheatrical form, thus closing in a very pleasing prospect. By taking down some trees at one end of this elevated walk, a highly picturesque view of the town of Dorking and of Box-hill is opened, the trees which are retained forming, as it were, a frame to the picture. On a knoll in the park, in a line with the walk, a very neat rustic temple has been constructed, and from this spot the prospects are diversified and extensive. The kitchen-garden is a considerable distance from the mansion. Its hothouses once contained perhaps the largest collection of plants of any private garden in Britain, but these were distributed at the death of the former proprietor, and their places are now filled by kinds more in character with the present ornamental style of gardening. In one house there are about 80 varieties of the Camellia, comprising most of the leading sorts, and all in excellent health; and in another house there are some fine plants of the different varieties of Azalea indica. Mr. Scott has raised several beautiful seedlings from lateritia, most of them having flowers in the style of Gledstanesii, but superior, while some are pure white. He also has some of the ledifolia breed, which are a great improvement upon the original white. The Rhododendron is worked here almost with as great facility as the Apple. Seedlings from the common kinds, growing in nursery rows, are budded standard high with improved varieties, and soon form handsome heads. Smaller plants in pots are grafted near the ground at almost all seasons of the year; in the summer months they merely require to be kept close and moist by means of a hand-glass, but in spring and autumn a little artificial heat is necessary. By using these means the splendid hybrids which have been bred from arboreum may in a few years be made as plentiful as ponticum. It may not be generally known that the Chinese Azalea will take by inarching upon the Rhododendron; but whether this union will produce any practical advantage remains to be proved.—*W.*

Miscellaneous.

Ice-houses.—In England these receptacles of frozen water are, generally, under ground, and always, if possible, under the shade of trees, the opinion being, that the main thing, if not the only thing, is to keep away the heat. The heat is to be kept away certainly; but moisture is the great enemy of ice; and how is this to be kept away, either under ground, or under the shade of trees? Abundant experience has proved, that no thickness of wall, that no cement of any kind, will effectually resist moisture. Drops will, at all times, be seen hanging on the under side of an arch of any thickness, and made of any materials, if it have earth over it, and even when it has the floor of a house over it; and wherever the moisture enters the ice will quickly melt. Ice-houses should therefore be, in all their parts, as dry as possible; and they should be so constructed, and the ice so deposited in them, as to insure the running away of the meltings as quickly as possible, whenever such meltings come. Anything in the way of drains or gutters, is too slow in its effect; and therefore there must be something that will not suffer the water, proceeding from any melting, to remain an instant. In the first place, then, the ice-house should stand in a place quite open to the sun and air; for whoever has travelled even but a few miles (having eyes in his head) need not be told how long that part of a road from which the sun and wind are excluded by trees, or hedges, or by anything else, will remain wet, or at least damp, after the rest of the road is even in a state to send up dust. The next thing is to protect the ice against wet, or damp, from beneath. It should, therefore, stand on some spot from which water would run in every direction; and if the natural ground present no such spot, it is no very great job to make it. Then come the materials of which the house is to consist. These, for the reasons before mentioned, must not be bricks, stones, mortar, or earth; for these

* Pringle's Ephemerides, Notes.

are all affected by the atmosphere; they will become damp at certain times, and dampness is the great destroyer of ice. The materials are wood and straw. Wood will not do; for though not liable to become damp, it imbibes heat fast enough; and, besides, it cannot be so put together as to shut out air sufficiently. Straw is wholly free from the quality of becoming damp, except from water actually put upon it; and it can, at the same time, be placed on a roof, and on sides, to such a degree of thickness as to exclude the air in a manner the most perfect. The ice-house ought, therefore, to be made of posts, plates, rafters, laths, and straw. The best form is the circular; and the house, when made, appears as I have endeavoured to describe it in *Fig* 3 of the plate. *Fig* 1, *a*, is the centre of a circle, the diameter of which is ten feet, and at this centre you put up a post to stand fifteen feet above the level of the ground, which post ought to be about nine inches through at the bottom, and not a great deal smaller at the top. Great care must be taken that this post be perfectly perpendicular; for, if it be not, the whole building will be awry. *b b b* are fifteen posts, nine feet high, and six inches through at the bottom, without much tapering towards the top. These posts stand about two feet apart, reckoning from centre of post to centre of post, which leaves between each two a space of 18 inches. *c c c c* are fifty-four posts, five feet high, and five inches through at the bottom, without much tapering towards the top. These posts stand about two feet apart, from centre of post to centre of post, which leaves between each two a space of nineteen inches. The space between these two rows of posts is four feet in width, and, as will be presently seen, is to contain a wall of straw. *e* is a passage through this wall; *d* is the outside door of the passage; *f* is the inside door; and the inner circle, of which *a* is the centre, is the place in which the ice is to be deposited. Well, then, we have now got the posts up; and, before we talk of the roof of the house, or of the bed for the ice, it will be best to speak about the making of the wall. It is to be made of straw, Wheat-straw, or Rye-straw, with no rubbish in it, and made very smooth by the hand as it is put in. You lay it in very closely and very smoothly, so that if the wall were cut across, as at *g g*, in *Fig*. 2 (which *Fig*. 2 represents the whole building cut down through the middle, omitting the centre post), the ends of the straw would present a compact face as they do after a cut of a chaff-cutter. But there requires something to keep the straw from bulging out between the posts. Little stakes as big as your wrist will answer this purpose. Drive them into the ground, and fasten, at top, to the plates, of which I am now to speak. The plates are pieces of wood which go all round both the circles, and are nailed on upon the tops of the posts. Their main business is to receive and sustain the lower ends of the rafters, as at *m m* and *n n*, in *Fig*. 2. But to the plates also the stakes just mentioned must be fastened at top. Thus, then, there will be this space of four feet wide, having on each side of it a row of posts and stakes, not more than about six inches from each other, to hold up, and to keep in its place, this wall of straw. Next come the rafters, as from *s* to *n*, *Fig*. 2. Carpenters best know what is the number and what the size of the rafters; but from *s* to *m* there need be only about half as many as from *m* to *n*. However, carpenters know all about this. It is their every-day work. The roof is forty-five degrees pitch, as the carpenters call it. If it were even sharper, it would be none the worse. There will be about thirty ends of rafters to lodge on the plate, as at *m*; and these cannot all be fastened to the top of the centre post rising up from *s*; but carpenters know how to manage this matter, so as to make all strong and safe. The plate which goes along on the tops of the row of posts, *b b b*, must, of course, be put on in a somewhat sloping form; otherwise there would be a sort of hip formed by the rafters. However, the thatch is to be so deep, that this may not be of much consequence. Before the thatching begins, there are laths to put up on the rafters. Thatchers know all about this, and all that you have to do is, to take care that the thatcher tie the straw on well. The best way, in a case of such deep thatch, is to have a strong man to tie for the thatcher. The roof is now raftered, and it is to receive a thatch of clean, sound, and well-prepared Wheat or Rye-straw, four feet thick, as at *h h* in *Fig*. 2. The house having now got walls and roof, the next thing is to make the bed to receive the ice. This bed is the area of the circle of which *a* is the centre. You begin by laying on the ground round logs, eight inches through, or thereabouts, and placing them across the area, leaving spaces between them of about a foot. Then, crossways on them, poles about four inches through, placed at six inches apart. Then, crossways on them, other poles about two inches through, placed at three inches apart. Then, crossways on them, rods as thick as your finger, placed at an inch apart. Then upon these, small, clean, dry, last winter-cut twigs, to the thickness of about two inches; or, instead of these twigs, good, clean, strong Heath, free from Grass and Moss, and from rubbish of all sorts. This is the bed for the ice to lie on; and, as you see, the top of the bed will be seventeen inches from the ground. The pressure of the ice may, perhaps, bring it to fourteen, or to thirteen. Upon this bed the ice is put, broken and pummelled, and beaten down together in the usual manner. Having got the bed filled with ice, we have next to shut it safely up. As we have seen, there is a passage (*e*). Two feet wide is enough for this passage, and, being as long as the wall is thick, it is, of course, four feet long. The use of the passage is this: that you may have two doors, so that you may, in hot or damp weather, shut the outer door, while you have the inner door open. This inner door may be of hurdle-work and straw, and covered, on one of the sides, with sheep-skins with the wool on, so as to keep out the external air. The outer door, which must lock, must be of wood made to shut very closely, and, besides, covered with skins like the other. At times of great danger from heat, or from wet, the whole of the passage may be filled with straw. The door (*p*, *Fig*. 3) should face the north, or between north and east. As to the size of the ice-house, that must, of course, depend upon the quantity of ice that you may choose to have. A house on the above scale, is from *w* to *x* (*Fig*. 2) twenty-nine feet; from *y* to *z* (*Fig*. 2) nineteen feet. The area of the circle, of which *a* is the centre, is ten feet in diameter, and as this area contains seventy-five superficial feet, you will, if you put ice on the bed to the height of only five feet (and you may put it on to the height of seven feet from the top of the bed), you will have three hundred and seventy-five cubic feet of ice, and, observe, a cubic foot of ice will, when broken up, fill much more than a Winchester bushel: even Dives himself would hardly call for more than two bushels of ice in a day; for more than two bushels a day it would be, unless it were used in cold as well as in hot weather. As to the expense of such a house, it could, in the country, not be much. None of the posts, except the main or centre-post, need be very straight. The other posts might be easily culled from tree-lops, destined for fire-wood. The straw would make all straight. The plates must of necessity be short pieces of wood; and, as to the stakes, the laths, and the logs, poles, rods, twigs, and Heath, they would not all cost twenty shillings. The straw is the principal article; and, in most places, even that would not cost more than two or three pounds. If it last many years, the price could not be an object; and if but a little while, it would still be nearly as good for litter as it was before it was applied to this purpose. How often the bottom of the straw walls might want renewing I cannot say, but I know that the roof would, with few and small repairs, last well for ten years. I have said that the interior row of posts is to be nine feet high, and the exterior row five feet high. I, in each case, mean, with the plate inclusive. I have only to add, that by way of superabundant precaution against bottom wet, it will be well to make a sort of gutter, to receive the drip from the roof, and to carry it away as soon as it falls. Now, after expressing a hope that I shall have made myself clearly understood by every reader, it is necessary that I remind him, that I do not pretend to pledge myself for the complete success, nor for any success at all, of this mode of making ice-houses. But, at the same time, I express my firm belief, that complete success would attend it; because it not only corresponds with what I have seen of such matters, but I had the details from a gentleman who had ample experience to guide him, and who was a man on whose word and judgment I placed a perfect reliance. He advised me to erect an ice-house; but not caring enough about fresh meat and fish in summer, or, at least, not setting them enough above "prime pork" to induce me to take any trouble to secure the former, I never built an ice-house. Thus, then, I only communicate that in which I believe; there is, however, in all cases, this comfort, that if the thing fail as an ice-house, it will serve all generations to come as a model for a pig-bed.—*Cobbett's Cottage Economy*—[16*th Ed*.]



CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Now that fires will be kept up regularly for this house, it may be as well to remark that a higher night temperature than was recommended in the spring is now necessary, in order to ripen off late growths as soon as possible; 65° should therefore be the minimum for fire heat during this month, even although the weather should be dull at times. In spring the temperature in plant-houses is regulated, in a great measure by the quantity of sunlight we receive—the more sun the harder you may force, and the contrary—but now there is no occasion to be so particular. However, if the ripening process can be finished thoroughly before the end of October, without much strain on the fires, so much the better. When plants are well ripened in time, much less fire will be needed to keep them in proper condition through the winter, and experience has clearly proved that the more thoroughly plants are kept at rest in winter, the better they flower in the following season. This applies to plants in general.

Conservatory.—The standard temperature for our conservatory here in winter is 45°; it never exceeds that by fire-heat, and for six weeks after Christmas it is kept at about 40°, and little or no air is admitted artificially for four months. With this treatment most of the half-stove climbers flourish and bloom as well as could be wished—Stephanotus floribundus, Ephites suberacta, Ipomœa Horsfallia, Combretum purpureum, and many others are thus treated. About this time we remove the soil from round their stems, down to the main roots, and replace it with charcoal, broken small; this guards them against damp. The surfaces of the borders is kept porous by frequent stirring, and no water is given till the leaves begin to droop for want of it, and then as much is given at once as will reach the bottom of the border; in a day or two afterwards a little dry soil is placed over the parts watered, to lessen evaporation. On this principle all plants in a dormant state in winter should be watered whether they are in borders or pots, providing these are well drained. Speaking of conservatory climbers, I must mention an old plant, the Ipomœa bona-nox, which proved a great novelty here this autumn. This plant—the "midnight lily" of travellers—flowers only at night, hence, like the Cereus grandiflorus, great interest is attached to it by the curious. The company here stream out into the conservatory to see the lily-white Ipomœa, or the flowers are gathered and sent in to be admired. Next week I shall say how it may be treated in other places.

Pits, Greenhouse, &c.—If there is anything in gardening which requires reformation more than another, it is the distribution of plants in their winter quarters. The only rule attended to at present, in nine cases out of ten, is to place the tallest plants at the back of the greenhouse stage or pit, then the next in size, and so on, till the lowest fill up the front row. In this way plants the most dissimilar in their nature, and requiring widely different treatment, as Heaths, Pelargoniums, Camellias, Calceolarias, &c. are indiscriminately mixed together, so that one can hardly conceive how, under the best management, one-half of the plants can be kept from destruction through the winter. Nurserymen could never "make both ends meet" if they managed their stock in this way; with them you hear, as bye-words, New Holland-house, Camellia-pit, Heath-house, Pelargonium-house, and I know not how many more houses and pits all devoted to distinct families of plants. In large private establishments also, compartments are allotted to the larger groups of plants, and the miscellaneous stock is divided among the large Families, as the nature of each plant will suggest. Now, the shortest and the best advice that can be given to the amateur of small means, is to place every plant he possesses of the same genus together, keeping the tallest in each group at the back, as at present, then to follow with the next family whose treatment comes nearest to the first, and so on to the end of the stage or pit.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

So extensive and varied is the collection of Verbenas which now adorn with their brilliant colours our lawns and flower-gardens, that it is a difficult task even to select those most worthy of cultivation. In colour we have little to wish for except yellows and bright blue, and these we are in a fair way to produce, as I have a sulphur-coloured variety in my possession, and one approaching sulphur has been raised by Mr. Girling, of Stowmarket, either of which, if crossed with the orange-scarlet varieties next season, will probably produce a yellow; and blues must emanate from such varieties as Amethystina, Emma, and others of that character. There is, however, plenty of room for improvement in the form of the flowers, and these, before they are perfect, must be round, flat, and perfectly smooth on the edge, with the petals overlapping, so as to show no indenture, the florets blooming well up to the centre of the truss, and the latter forming, when fully open, half a hemisphere. Of the scarlet varieties, atrosanguinea still continues the best for form and size; Boule de Feu is brighter in colour, as likewise are Ignea and Mollindres superba; formosa elegans and Kyle's speciosa are two orange-scarlet varieties, and very brilliant, but the latter is very liable to mildew early in the season, and consequently soon becomes shabby. Speciosa is synonymous with Incisa coccinea and Zeuxis. Among whites the Queen must be discarded for Princess Royal and Monarch; and in blue Amethystina, Van Gendti, and Hydeana, are the best; Minstrel Boy is a bluish lilac, but is surpassed by seedlings of this year. Stewartii is still the best of the purple class, and Rubra purpurea, reddish purple; Charlwoodii and longiflora are also good. Emma is a very fine variety, of dull purple colour, changing to blue as the flowers fade; and Iveryana is a rosy purple still worthy of cultivation. Renown has dark-red flowers tinged with purple; and Smith's excelsa makes a good corresponding bed; Defiance and Ruby are two varieties inclining to pale red, or ruby colour. Among those of a blush-colour, more or less tinged with rose, may be mentioned Bridesmaid, Tagliosi, Teucrioides carnea, Fortune-teller, and Wood's Princess Royal. Ingramii, Beauty, and variegata are orange-red varieties; Bishopii is rosy lilac, and Beauty Supreme is a very splendid kind of rosy flesh-colour. The best rose-coloured variety is Teucrioides rosea. Among Mr. Girling's varieties the two greatest novelties are Mulberry and Alba lutescens, the former mulberry-coloured and the latter rich cream-colour. Rose d'Amour is a very splendid rose-coloured variety, and Gladiator puts speciosa and the other orange-scarlet varieties out of cultivation. Alba magna is a very large white, and Blanda is a rosy blush-colour; Messenger is a bright lilac. Lovely Rambler has slightly paler flowers, and the Giant has very large trusses of bluish-lilac flowers; rubescens is a reddish purple. The great advantage of these flowers is their large size, vigorous habit, and improved form.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Tulips.—It has often been mentioned to us as a matter of regret, that in the numerous lists given in various publications of the best six or twelve Tulips, that no specific mention is made whether they are feathered or flamed. In answer to this we may urge the uncertainty of the flower, as many varieties which feather beautifully one season will some finely flamed the next. But to afford some guide to young growers or amateurs commencing the cultivation of these favourite flowers, and as it is time all bulbs were now obtained for planting, we subjoin a list of cheap varieties, and sorts which are tolerably steady to their respective characters:—*Feathered Bizarres*—Royal Sovereign, Surpass Optimus, Magnum Bonum, and Surpass Ca'afalque; *Flamed Bizarres*—Polyphemus, Captain White, and Leonotus Posthumous; *Feathered Bybloemens*—Bienfaite, Lawrence's Friend, and Black Bagot; *Flamed Bybloemens*—David, Queen Charlotte, and Roi de Siam; *Feathered Roses*—Triomphe Royale, Lady Crewe, and Count de Virginnes; *Flamed Roses*—Brulante eclatante, Camuse de Craix, Cerise belle forme, and Ponceau tres blanc. We next week shall give the names of a few scarcer sorts of fine properties. *Carnations.*—Keep the potted layers in a close frame till they strike again, taking great care that the leaves are not wet, as this would infallibly endanger their health by inducing them to become spotted. *Pinks.*—Continue to plant out for blooming, and refer to the few back Numbers of the *Chronicle* for the routine of floricultural work which needs doing. *Dahlias.*—Draw up the soil round the stems in a small hillock, to prevent the crowns of the roots being injured by frosts, which we may soon expect.—*J. F., W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Those who have not the advantage of tanks for supplying bottom-heat to their Pines, generally defer their winter arrangement as long as the heat in the bed continues sufficient. Whenever it declines to about 80° it is time to set about renewing it, by taking away part of the most decayed, turning the remainder, and adding fresh, to make up for what has been taken away. Everything should be in readiness before the job is commenced, in order that the plants may remain out as short a time as possible. Keep those in fruit by themselves, and if wanted to ripen soon, place them at the warmest end of the pit. In replunging, be careful not to put the pots too deep, or to make the tan too firm about them at first, for fear of injury to the roots from over-heating; it is better to incur a little after-trouble than to run any risk. I am of opinion that the plants thrive better when the tan is loose on the surface than when closely patted down; and the risk of injury to the

roots is lessened by allowing a portion of the heat to escape among the foliage of the plants, to which it is beneficial.

Vineries.—Adopt the usual means to keep the vineries containing fruit dry and cool. Grapes not yet ripe will be the better for being kept a little warmer during the day, giving air at the same time that the house is warmed by the pipes or flues. This will also assist to ripen the wood, which is a point of the first importance. In cutting the fruit from spurs, follow the good old practice of pruning back at the same time to the most promising eye; or the more modern one of removing all the eyes except that intended for future bearing, and one at the base of the spur, as recommended in Mr. Robert's Treatise.

Peach houses.—Where the lights have been wholly removed, the inside borders have probably had sufficient rain; and the lights after being repaired and painted, should be put upon the house, to defend the trees and borders from rough weather. ‖

Melons.—If there is still any promising fruit keep them warm and dry, giving air at all favourable opportunities.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Mushrooms.—In the early part of summer I recommended spawning the beds intended for Ridge Cucumbers, vegetable marrow, &c., under the impression that the mulching of the beds, and the shade of the leaves of the plants, would keep the Mushrooms sufficiently cool. The plan answered pretty well, but there is a disadvantage connected with it, from the liability of breaking the leaves and vines of the plants in getting at the Mushrooms, and also from the Mushrooms being rendered thin from the want of sufficient nourishment, on account of such plants as the Vegetable Marrow rooting so near the surface. I would, therefore, recommend for summer produce the forming of small ridges in any cool situation. Two small beds, put up under the shade of large Chesnut-trees, have supplied me plentifully during the summer. All the attention bestowed upon them was protecting them with wattled hurdles, and a slight covering of hay or straw, kept rather moist in dry warm weather, so as to secure a cool and moist atmosphere for the Mushrooms. This is a much better method than attempting to grow them in houses during summer (unless in some underground department), as too often either the Mushrooms are rendered thin and tough from too much heat, or by admitting draughts or currents of air, that cloud humid atmosphere is destroyed in which the Mushroom so much luxuriates. Every opportunity should now be taken for preparing beds for winter produce, as previously adverted to. In earthing beds, I prefer fresh soil of a stiffish nature, though I have had fine crops from covering with light sandy soil. The chief thing in all cases is to render the soil as firm as possible, and leave the surface quite smooth, which will enable you to brush off all extraneous matter without any difficulty. The advantage of having horse and cow-droppings well prepared for forming beds is, that not only will the beds bear longer, but the surface of them will not be so liable to crack into fissures, as when the beds are composed of any comeatable littery matter, merely sufficient to create enough of heat to insure the working of the spawn. Those who have lately made bricks for future supply will find this a favourable time for spawning them if they are sufficiently dry. After filling the holes made on purpose, with spawn of a good quality, proceed to build them on a slight hot bed of dung in an open manner, so that the heat may percolate freely; cover up the heap with long litter; take care that the heat never much exceeds that of new milk; turn the heap occasionally, removing those bricks thoroughly spawned, and when all are done, take them to a dry place, cover them with a little dry litter, and they will keep good for years. *Carrots.*—No time should now be lost in getting the main crops out of the ground, and drying them partially before storing them past for the season. The best remedy I have found for preventing the Carrots being spoiled and disfigured by worms, is taking them early out of the ground. Routine—see former Calendars.—*R. F.*

VII.—COTTAGERS' GARDENS.

As was stated last week, advantage should be taken of favourable weather like the present for digging up Potatoes, Carrots, Parsnips, Beet-root, &c., where these are ready for lifting, which will be indicated, in the case of Potatoes, by the haulm becoming withered, and the tubers parting readily from the root. These crops, when got up during dry weather, and stored away in a dry state, not only keep much better, but the ground is not injured by the operation of lifting, which is the case when they are taken up in wet weather, especially in stiff clayey soils. In various parts of the country it is customary to put Potatoes in some convenient place, and after covering them with straw, a layer of earth is thrown over them sufficiently thick to keep out frost; but the best method, perhaps, for a cottager, is to store them up in a dry dark shed or cellar, where they will be secure from frost, and where they may be turned over occasionally when they begin to sprout. Carrots, Parsnips, and Beet-root keep well packed in sand or ashes in a dry room or cellar. A friend writes, "I choose a sunny day in October for taking up these roots, which I allow to remain in the open air till the evening, when I house them in some dry shed or stable for three or four days, leaving the green heads attached. Previously to packing them, I cut the tops off within half an inch of the crown, and store up the roots in a dry place with alternate layers of sand. In this way they keep sound and good for many months. Care must, however, be taken to separate the bruised roots from those that are perfect, and the sand in which they are packed cannot be too dry."—*J. M'H.*

State of the Weather near London for the week ending Oct 5, 1844, as observed at the Horticultural Garden, Chiswick.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Wed. 27	14	30.179	30.062	70	39	54.5	S.	
Sat. 28	15	30.067	29.894	72	39	57.0	W.	.05
Sun. 29	16	29.910	29.801	69	50	44.5	N.E.	.01
Mon. 30	17	30.230	30.242	67	35	49.0	S.E.	
Oct.								
Tues. 1	18	30.199	30.064	70	48	51.5	S.W.	
Wed. 2	19	30.295	30.261	70	47	50.5	W.	
Thurs. 3	20	30.320	30.288	71	51	56.0	S.W.	
Average		30.068	29.989	69.8	39.8	50.0		.06

Sept. 27 Foggy; fine with sun through slight haze; foggy
— 28 Dense fog with heavy dew; clear and very fine.
— 29 Drizzly; cloudy and fine; very clear; slight frost.
— 30 Frost early; lightly overcast; very fine; clear.
Oct. 1 Slight frost; clear; cloudy; uniformly overcast at night.
— 2 Densely clouded; boisterous; clear and fine at night. [night.
— 3 Densely and uniformly overcast; very boisterous; calm and fine at Mean temperature of the week 1 deg. below the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Oct. 12, 1844.

Oct.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds						
						N.	N.E.	E.	S.E.	S.	S.W.	W.
Sun. 6	60.6	42.1	51.3	6	0.78 in.	3	2	2	2	2	4	1
Mon. 7	61.9	44.6	53.2	6	0.62	1	2	2	2	2	3	2
Tues. 8	60.6	44.4	52.5	8	0.65	1	2	2	2	2	3	2
Wed. 9	60.5	42.7	51.6	8	0.52	1	2	1	2	2	3	1
Thurs. 10	61.1	44.9	53.1	7	0.66	1	2	2	2	2	3	2
Fri. 11	62.9	45.5	54.2	8	0.81	1	2	2	2	2	3	2
Sat. 12	59.8	43.6	51.9	10	1.00	1	2	2	2	2	4	2

The highest temperature during the above period observed on the 9th, 1834—therm. 79°; and the lowest on the 8th, 1838—therm. 29°.

Notices to Correspondents.

Books.—*S. Tapin.*—If we think the book worth buying we will say so when we have sufficiently examined it. You will understand our silence.

Disease.—*H. S.*—We cannot say what ails your Camellia buds; insects are not to blame that we can see. The spot on your Geranium leaves is the commencement of disease, and is supposed to arise from damp in some way.

Manure.—*W. M.*—That this agent exercises a powerful influence on plants is most probable; but such an experiment as that you mention must have either been a trick or been misunderstood.

Glazed Roofs.—*C. Bl.*—We have no personal experience with these contrivances, and cannot say whether they are as warm in winter as glass, but it is said that they are. They afford quite light enough. Your pipes may run horizontally, but one must proceed from the top of the boiler, and the other from near the bottom.

Grapes.—*W. R.*—Mouldiness, and consequent decay of the berries, is occasioned by a close damp atmosphere. The best preventive is obviously a free ventilation, giving fire-heat at the same time.‖

Heating.—*P. G.*—You will not have heat enough for flues in winter. You ought to have two four-inch pipes in front. An open gutter under your bed will be enough. The boiler must be the third size above the smallest. If you can afford it, you will find it very much more convenient to heat the gutters by a separate boiler; and then a No. 2 boiler will do for the pipes, and No. 1, or the smallest that is made, for the gutters.

Horticultural Garden.—*R. P.*—When a young man has been properly recommended for admission, he receives a printed paper, stating what qualifications are expected of him. Men are not required to bring books, but knowledge.

Insects.—*W. C.*—The little parasites from Western Australia belong to the family Diploiepidæ; but we are not able to identify the species. *R.*——*E. H.*—The Caterpillars infesting your Carrot-roots are the larvæ of a Moth named Agrotis exclamationis, and if you will refer to a recent Number of this Journal, you will find their history, and the best means of eradicating them. *R.*——*A. C.*—Your Rose-beetle is Anisoplia horticola; the Pea-beetle is Bruchus granarius: *Vide* the *Gardeners' Chronicle*, vol. iii. p. 188. The Woodlice are Oniscus asellus and Armadillo vulgaris; the characters, and figures of them are given in this Journal, vol. iv. p. 356. The plant, I presume, is a Dodder; the insect feeding upon it is the Hypera nigrirostra. *R.*——*A Wiltshire Clergyman.*—It is the larva of a Sphinx called Smerinthus ocellatus, "the Eyed Hawk-moth," figured and described in "Curtis's Brit. Ent.," pl. and fol. 482. *R.*——*Ullswater.*—The grubs injuring your Grass are the offspring of Anisoplia horticola, called the May-bug, which attacked the Roses last May and June. The rooks and starlings will clear them off in the spring, which is the principal check upon their increase. *R.*——*Jasper Stokes.*—We wish we could impress upon our Correspondents the necessity of transmitting perfect specimens; those you sent were so mutilated by the post, that it was impossible to determine the name of the Bee or of the other fly, which belongs to the Genus Helophilus; they are abundant in the autumn, but in no way detrimental to Bee-hives that we are aware of. *R.*——*Z.*—Pouring boiling water down close to the base of the frames will kill the Woodlice; they will congregate under bricks and tiles laid in the frame, and may be thus easily collected, but the best remedy is to put a toad in with the Melon-plants. *R.*——*Rusticus.*—We have long entertained your opinion as to the evils arising from the cropping of land. No doubt that insects become more firmly established where their peculiar food never fails them. It is also, I believe, ascertained that nitrate of soda, ammonia, &c., will cause certain noxious insects to desert land, and such has often been intimated in our Essays; but to what extent it is for the practical cultivator to determine. *R.*—*M. A.*—No doubt the larvæ of the Fern-fly (Anisoplia horticola), are destroying your Grass-turf at this time, and as we are writing an article upon the subject, we hope next week to give you and *Ullswater* all the information we have collected. *R.*——*Guichenot.*—The spiders' eggs are inclosed in a cottony ball in the autumn, and hatch in the spring. *R.*

Late Dahlia Show.—*G. M.*—We will have nothing to do with the person of whose conduct you complain. If your statement is correct, you were ill treated; but you should not have exposed yourself to it. Why do you come in contact with such people?

Mildew.—*A. M. S.*—Your Rose is attacked by the common white mildew. Washing well with lime-water has been recommended, but we can hardly promise you much success. You had better cut off the worst parts and burn them, and then you will not find your plants much the worse next year. The cause of its appearance has no doubt been the very dry weather, which has stunted the growth of the Rose, and enabled this parasite to take possession of it.

Names of Fruits.—*John Smith.*—Those at present ascertained are—1, 12, Rymer; 6, Christie's Pippin; 7, Norfolk Beaufin; 8, Kirke's Lord Nelson; 9, Kentish Codlin; 10, Bedfordshire Foundling; 14, Keswick Codlin; 15, Hollandbury; 16, Nonsuch; 17, Kerry Pippin; 19, Stagg's Nonpareil; 20, Wormsley Pippin; 21, Dutch Mignonne; 23, Spice; 24, Cornish Gilliflower; 26, Poire Figue; 27, 40, Beurré Diel; 28, Figue de Naples; 29, 43, Autumn Bergamot; 31, Black Achan; 32, 48, Beurré d'Aremberg; 33, Beurré Bosc; 34, Flemish Beauty; 35, Worthless; 36, Spanish Bon Chrétien; 37, Bon Chrétien Fondante; 38, Easter Bergamot; 39, Winter Nelis; 41, Glout Morceau; 42, Beurré de Capiaumont; 45, Beurré Bosc; 46, 47, Easter Beurré.‖——*R. T. C.*—2, Calebasse; 3, Doyenné Blanc; 5, Passe Colmar; 7, St. Germain; 8, Worthless; 9, Brown Beurre; 1, 2, 8, Alexander; 3, Blenheim Pippin; 4, Dumelow's Seedling; 9, Fearn's Pippin; 10, 12, Minchall Crab; 11, Golden Pippin; 14, Autumn Pearmain; 15, 20, Hollandbury; 16, Easter Pippin or French Crab; 17, London Pippin; 18, Bedfordshire Foundling; 19, Sops of Wine; 22, Golden Reinette; 24, Worthless; 25, Norfolk Beaufin; 28, Boston Russet; 29, Gloria Mundi; 30, Downton; 31, Dutch Mignonne, 32, Gravenstein. The fruit of Gansel's Bergamot grown on the coping of the wall is very handsome.‖——*R. D.*—20, Franklin's Golden Pippin; 30, Gansel's Bergamot; 40, Crassane; 50, Old Colmar.‖——*Robert Culbertson.*—Beurré de Capiaumont.¶——*A Constant Reader.*—1, Beurré Rance; 50, 51, 52, Beurré d'Aremberg; 53, Williams's Bon Chrétien; 54, Beurré d'Angleterre; 55, Colmar; 47, Jalousie. Apples—52 appears to be the Golden Reinette; 82, certainly Kerry Pippin.‖——*A Young Beginner.*—1, Dutch Mignonne; 3, Cockle Pippin; 4, Salopian; 5, Kirke's Lord Nelson; 6, Rhode Island Greening; 7, Court of Wick; 8, Golden Reinette; 9, Dutch Mignonne; 16, White Winter Calville; 7, 24, Yorkshire Greening; 19, Wormsley Pippin; 32, Norfolk Beaufin; 33, Blenheim Pippin; 34, Newbold's Duke of York. The others are doubtful in their present state.‖——*S. G.*—1, Flat Nonpareil; 2, Norfolk Beaufin; 4, Gravenstein; 6, 13, Hughe's Golden Pippin; 8, Hawthornden; 10, 16, King of the Pippins; 13, Ord; 14, Alfriston; 15, London Pippin; 18, Wyker Pippin; 21, Blenheim Pippin; 22, Syke House Russet; 23, Old Nonpareil; 24, Court of Wick; 25, Downton; 26, Scarlet Crofton; 28, Easter Pippin or French Crab; 31, Dumelow's Seedling; 32, Cockle Pippin; 34, Malden's Blush; 36, Cockle Pippin; 37, Minchall Crab; 42, Court-pendu Plat. Pears; 43, decayed; 44, Marie Louise.‖——*John Baker.*—The Pear, known in Herefordshire by the name of the Yellow Pear, appears to be the Summer Bon Chrétien. The long cylindrical, probably cider Apple, is not known.‖

Names of Plants.—*Swansea.*—Catasetum Russellianum.——*F. Meares.*—Nicandra physaloides.——*Querque, &c.*—Our specimen for the history of which see our vol. for 1843, p. 55.——*D. Judd.*—Some kind of Marvel of Peru.——*Clerimus.*—Either a variety of Fuchsia thymifolia, or a cross between it and F. microphylla.——*J. P. S. S.*—Diplacus tenuifolia.——*J. and T. Goode.*—Ruheveria secunda. The Passiflora you is not much house-room.——*A. B. C.*—1, Loasa lateritia; 2, some Calyclodon, not determinable for want of leaves.——*J. Crocker.*—Mimulus latifolia, and some Desmodium.——*Peter Macdonald.*—Rhizomorpha medullaris.——*Wood-House.*—Lucombe Oak.¶——*A Subscriber.*—Quercus ægilops; the other perhaps an Aloysia.——*F. W.*—You have alluded to. We cannot waste time in puzzling out the names of fragments of Cryptogamic plants having nothing to do with gardening. It is some Cladonia.——*A Subscriber.*—Some Celsia.

New Holland Cedar.—*Querens.*—The wood called by this name, which looks like soft mahogany, and is become fashionable in pewing of churches and chapels, is produced by Flindersia australis, or some such plant.

Pears.—*Tovey.*—When Pears separate so very readily from the tree, they require to be gathered. The variety, Bacon's Incomparable, will become mature in the course of three months after gathering.‖——*B. S.*—Marie Louise is a good dessert pear to plant as a standard.‖

Pelargoniums.—*William Crow.*—We see nothing the matter with your leaves. They are getting a little yellow towards winter, that is all. Give them in winter as low a temperature as you can, so as to be sure that frost does not touch them, say 38°. A little frost will not hurt Rhododendron arboreum, but it is better without it; house it now; pot it in one part loam, one sliver sand, and three parts peat, mixed with a little cow-dung. We have not tried Potter's guano for such things.——*A. Riall, &c.*—All the treatment which Pelargoniums for planting out in spring require during winter, is to store them up, four or five plants together, in pots or boxes. They may be put into almost any kind of soil in a rather dry state, and placed under a greenhouse stage or in any other place where they may have a little light, and be kept dry and free from frost.‡

Pines.—*Guichenot.*—A few years since, the French knew nothing of Pine-growing; but now they cultivate the fruit abundantly for the Paris market. Versailles Pine-growing is excellent, and has been formerly described in our columns. Their Cayennes have weighed 12lbs.

Plantains.—*Baigus.*—Incessantly annoy them by cutting off their heads, and die they must. But if you are negligent, and give them breathing time, they will spring up again, and laugh at your irregular efforts. Some people put salt on them when wounded, and it is not a bad plan. As to the holes left by cutting them up—why, fill the holes up again. If that little labour alarms you, it is useless to think of opposing such a troublesome, but not formidable enemy.

Potatoes.—*Anon.*—The best mode of storing Potatoes, where quantities are required to be occasionally taken out for use during winter, is to form them into a long ridge, from north to south, covered well with earth, and in proceeding make a few partitions with soil. When the haulm is withered Potatoes may be taken up.‖

Potter's Guano.—*Anon.*—This may be applied to a kitchen garden, at the rate of 3 lbs. or 4 lbs. per rod. If this quantity be diluted in 50 gallons of water, a more extensive diffusion of the manure throughout the soil will be insured.‖

Rock Plants.—*A Lady.*—The following are suitable shrubs for planting on rockwork:—Cotoneaster microphylla and marginata, Arbutus uva ursi, Berberis empetrifolia, Aquifolium and glumacea, Cistus and Hallianthemums, Pyracantha, Juniperus nana and prostrata, Cytisus purpureus, Daphne Cneorum, Hardy Heaths, Genista triquetra and sagittalis, Vinca major and minor. Of *Herbaceous* plants procure the following:—Saxifrages, Pentstemons, Statice tatarica, latifolia, Gmelini, and bellidifolia, Aquilegia fragrans, glandulosa and canadensis, Campanula grandis, pulla, and versicolor, Dianthus superbus, and others, Gentiana acaulis and asclepiadea, Phlox procumbens, nivalis, and setacea, Œnothera speciosa, macrocarpa, and Fraseri, Iberis sempervirens, Geranium ibericum and sanguineum, Anemone vitifolia, Alyssum saxatile; Ferns and Sedums, Crocuses, Scillas, Narcissi, and other bulbs, for flowering in the spring.¶

Seedlings.—*C. R. S.*—Double Eschscholtzias are very uncommon. The first raised in this country was obtained in Mrs. Marryatt's garden at Wimbledon. Yours is much superior. We should save the seed, and try to improve the variety.

Strawberries.—*W. H.*—We should not trust such plants for early forcing. It is doubtful whether they will have time to re-organise flower buds, (after you have destroyed what are now showing), before the early months of spring. They may; but it is hardly probable.

Toads.—*C. N. B.*—The advice to keep toads in your garden is good. They are most useful and harmless though much-calumniated creatures. Just place one in your hand and look at its beautiful eyes. Poor things! they have no poison in them, and will not hurt your dog if he should venture to eat them; but we hope he is better taught than that.

Tobacco.—*G. B.*—You cannot legally grow Tobacco for the purpose mentioned. If, however, only a very trifling quantity is grown, and *bonâ fide* used as stated, it is not probable that any notice would be taken of it. *W.*

Vines.—*Rusticus.*—Your inquiry demands a longer answer than we have room for this week.

Vine-Borderers.—*Appeto.*—We cannot give you further information on this subject. If you consult Mr. Hoare's book you will find his mode of proceeding fully detailed.

Water-plants.—*A Lady.*—The following are suitable for a pond:—*Nymphæa alba*, Nuphar lutea and advena, Butomus umbellatus; Menyanthes trifoliata and nymphoides, the double variety of Sagittaria latifolia, Hydrocharis morsus-ranæ, Aponogeton distachyon, and Alisma plantago.¶

Miscellaneous.—*H. H.*—If you dip your woollen cloth in a weak solution of pyrolignite of iron (the brown liquor of Lancashire), or into drying oil, it will last the longer for the application.——*A Subscriber.*—Your suggestion has been sent to Mr. Paxton and Mr. Hutchinson.——*Orchis.*—Treat your Sobralia exactly like the tender Cypripediums.—*J. Tyre.*—We do not think you can keep Brugmansias in the open border during winter, unless you incur considerable expense. Provided the ground is thoroughly well drained, you might perhaps effect it by thatching them very thickly with straw, brought to the form of a cone. Leycesteria formosa propagates freely by cuttings, layers, or seeds. It is seldom advisable to place dung below the roots of trees; as to stones above them, what are they to do of either good or harm, unless the trees are newly planted? when, no doubt, if heavy enough, they keep trees firmly in their place.——*A. B. C.*—Phaius maculatus is a pretty good plant. We have not often seen it in flower. It is perfectly well known that Kalmia latifolia is poisonous.——*H. T.*—If you watch our Weekly Calendar of Operations you will obtain full information on all such points.‡——*D. S. G.*—Full information respecting the destruction of Woodlice is given at p. 356, 1844.‡——*Philobotanicus.*—Many thanks for the specimens of Xenodochus, which is new to us. No doubt the White Elder will take on the Black; but it would be necessary to graft while the wood is quite soft. An E.N.E. aspect is not the best for fruit-trees; the most likely to succeed will be the Glout Morceau and Marie Louise Pears. Or you might get Peach Apricots on that which is well sheltered.——*J. W. T.*—If your stone is not waterproof you may make it so, by covering it with a thin coating of Portland or even Roman cement. But the porous quality of your stone covers for flues is, perhaps, no great disadvantage, for the water is probably not lost, it is only absorbed by the stone. If, however, it really does run through the stone, and is not merely absorbed, then you must go to cement for assistance.

SEEDLING FLOWERS.

Dahlias.—*W. C. D.*—Your flower is fine in its general form, deep, with the centre well up; the petals also are of good form and substance; but there is an irregularity in the centre of the flower which will prevent its being classed as a first-rate variety.‡

Verbenas.—*H. H. H.*—The best varieties in your batch of seedlings are 1 and 3, the former a bright rosy vermilion, the latter a deep lilac, the colours being very decided; but in these the flowers appear to want fatness. The scarlet is good in colour, but small, and not equal to many in cultivation. The remainder want decision of colour.‡

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and OBTAINED the PRIZE for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONLY ONE PENNY PER SQUARE FOOT.

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The Agricultural Gazette.

SATURDAY, OCTOBER 5, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 10—Agricultural Imp. Soc. of Ireland.
THURSDAY, Oct. 17—Agricultural Imp. Soc. of Ireland.
FARMERS' CLUBS.
Oct. 8—Abergavenny. | Oct. 9—Monmouth.

THE BARLEY CROP OF THE PRESENT YEAR is decidedly a failure in quality throughout the greatest part of the country. In ordinary seasons there is no grain-crop which requires more judicious management. Of all the cereal Grasses its straw is the softest and the most succulent, and its grain the most liable to sprout. Mismanagement of the soil prepared for its growth, or neglect of the season, affects not merely its quantity, but also its marketable value. This is accounted for by the fact that the best samples of Barley are made into malt, and by the necessity which therefore exists that the soil prepared for it should be in such a condition as to allow the seed to germinate immediately, and at one time, so that it may ripen uniformly and together, and that thus, during the process of malting, it may all sprout at one time.

During the past *extraordinary* season, however, many farmers have been unable to secure these advantages; and the consequence is, that in some districts, especially in the north of England, though the other grain-crops have been secured weeks ago, we find large flats of Barley yet uncut. In some fields we have patches in every stage of progression from bloom to ripeness; in others, plants of every age are mingled together—the young shoots of summer overtopping the ears which have attained maturity; and these are unfailing indications of an inferior quality of produce—of a coarse, light, uneven sample.

It is impossible to notice these peculiarities without inquiring into their cause, and attempting to ascertain whether or not it was possible to have prevented them. It may be said that "after-wit is dearly bought," but it is not the less valuable for that: it may even be cheap, if it should induce us on a future occasion to avoid the rock on which we may previously have split. The cause of the late and unevenly ripe crops of Barley, it will at once be said, was the extraordinary droughty weather which we experienced before and after seed-time. For instance, many lands—owing to the crop of Turnips not being fed off until spring—had not the advantage of being ploughed in time to allow the frosts to act upon the soil, and thus the necessary fine tilth could not be obtained; and in waiting for rain to enable the clods to be broken up, the proper season of sowing was lost. Elsewhere, again, the crop of Turnips may have been eaten by sheep in pretty good time, and the land ploughed in February, but in consequence of the sheep having been folded on some portions in wet weather, the whole surface could not be brought to an even tilth—the plots where the Turnips had been consumed in wet weather were full of clods, upon which harrow and roller, without the aid of rain, had no effect, while the rest of it was already fit for the reception of the seed. Under these circumstances the sowing was delayed in expectation of rain, but before patience failed the right season was past. The consequence of this proceeding was an irregular germination of the seed, resulting in an unevenly ripening crop. In other cases, under like circumstances, the period of sowing was delayed still longer—delayed, in fact, until a great portion of the moisture escaped from those parts which were properly pulverised—so that when the seed was sown *no plants* at all appeared on the rough portions for several weeks, while only a *tithe* of the seed on the finest plots germinated in proper course. Where this was the case fresh plants continued to appear week after week even till midsummer, and gradually filled up the ground, the roughest plots being of course latest. In such fields at the present moment, the crop consists of plants of every age and every colour, and must produce a sample made up of various qualities of grain.

Such explanations as these will be generally given of the circumstances to which we call attention, and we do not hesitate in vouching for their truth. Indeed, many cases have come under our own observation, where the loss of a season has arisen from a single patch—say an acre—or a few furrows in one field being full of clods and stubborn in texture: the farmer has waited on account of this patch, till all necessary moisture had evaporated. While thus we acknowledge that the nature of the season was the *primary* and *nominal* cause of these evil effects upon the crop, it must, however, be contended, that as it was by no means impossible to have prevented such effects, this was not the *real* and blameworthy cause. Means exist by which the evil effects of the season might have been counteracted—means which have in many cases been successfully employed, and which may, in future, be still more extensively used. The true cause of the failure is our own imperfect cultivation; and it is a matter of duty to call attention to that in which our ordinary practice has been inadequate to meet the exigencies of the season. It may be premised that many crops of fine Barley have been obtained during the present year, without any particular care or management. For instance, upon deep sandy soils, and in cases where a winter ploughing was given, and the surface rolled and sown early—or when a fine tilth could be had by harrowing and rolling, and sowing immediately after the plough—a proper season was obtained, and vegetation progressed favourably. Upon all strong soils, however, and upon soils which had been trodden in wet weather, or which, owing to the Turnip crop having been taken off in spring, had been thoroughly affected by the drought, the ordinary operations of tillage were ineffectual. In these cases it was that our cultivation was imperfect; extra difficulties were not met by extra means. Instead of waiting for rain to pulverise our soils, proper mechanical means should have been used to accomplish this all-important object. For this purpose, there can be no question the BEVERLEY CLOD-CRUSHER would in all cases have been sufficient. By its aid, indeed, we have seen many hundreds of acres prepared at a time when the implements usually employed were useless; and on all these lands the seed was deposited, and the grain has been secured in proper season.

For this implement we are indebted to the ingenuity of Mr. Crosskill, of Beverley. It consists of 28 serrated wheels or rollers, each 2½ feet in diameter, and placed upon a round axle 6 feet wide. The roller parts or wheels act independently of each other upon the axle, and in turning produce a self-cleaning movement at the same time that they crush the hardest clods, and convert them into a fine mould. Further description is unnecessary, as the implement is already well known, though far from being sufficiently appreciated. The pages of the Journal of the Royal Agricultural Society have borne ample testimony to its many uses and general efficacy in the cultivation of all sorts of soil. Our aim, however, is merely to call attention to its use as a pulveriser, and as a means of enabling us to prepare the most stubborn soils, and to make sure of a seed-time in the driest weather.

By its operation many were enabled last spring to obtain a fine tilth, to preserve the moisture of the seed-bed, and sow their Barley in due course upon soils which otherwise could not have been prepared for the crop till midsummer; we may therefore rely upon it as a most effective means of preventing those disastrous delays to which we have called attention. With an agent like this in our power, a season like the past is not necessarily fatal to the prospects of the crop; with such means at command, it was possible, in a great measure, to have prevented the results which we have now to regret.

Why, indeed, should we wait for a shower?—wait, too, for days or weeks, or, as last year, for months, to effect that which we can, by mechanical means, accomplish in a few hours. To wait for the clods to fall in pieces when we have the means of breaking them at any time ourselves, is calling upon the heavens to assist us without putting our own shoulders to the wheel. We no longer wait for the winds to waft us from shore to shore. When, indeed, they are favourable, we make use of them; but when otherwise, we employ a power which can move in the face of them. And it should be the object of the intelligent farmer also to contrive operations, and to provide means which will enable him to overcome the natural difficulties he may meet with. The fable of the farmer who delayed his harvest for one week, in the expectation that his neighbours would lend him their help; and for another, when his neighbours failed to come, in the hope that his friends and relations would come to his assistance; and who, on these also forgetting him, was at last compelled to do the work himself, has a moral which, enforced as it is by the experience of the present year, will, it is hoped, induce us for the future to depend less upon the "chapter of accidents," and more upon ourselves. The gods help those who help themselves.—*H.*

ON the 11th of April, 1843, a Committee was appointed by the House of Commons, on the motion of the Hon. W. Cowper, "to inquire into the RESULTS OF THE ALLOTMENT SYSTEM, and into the propriety of setting apart a portion of all waste lands which shall be inclosed by Act of Parliament, or of any lands which, under any Inclosure Act, shall have been appropriated to the benefit of the poor, to be let out in small allotments to the labouring poor of the district, and also to inquire into the best mode of effecting the same."

The Committee thus appointed presented a Report to the House, based on the evidence of numerous and competent witnesses. The evidence of Wm. Miles, Esq., M.P., and the Report of the Committee, were published in the "Labourers' Friend Magazine;" and a few extracts from these, in addition to the facts which we have already adduced, will amply sustain our opinion of the benefits which the introduction of the Allotment System is calculated to confer on the labourer.

Mr. Miles says:—"I first of all commenced taking any interest in allotments about the year 1828, when I was resident in Nottinghamshire, on a clayey soil, in the parish of Caunton; there were about eight acres, or eight acres and a half, which had been left for the benefit of the parish; . . . I called the attention of some of the parishioners to it; we called a vestry meeting, and, under the 59th of Geo. III., we offered to let this land in allotments to the poor. We divided it into allotments of about a rood to each individual. I was resident in the county, I think, six years afterwards, and I can state from my own experience that, though the soil was a stiff clay, and certainly the last of all soils that I should have taken for allotment gardens, by the assiduity and labour of those poor people it was brought to bear the very best of vegetables: good crops of Potatoes, and Onions, and other vegetables. And I was informed by those who had the allotments, taking a good deal of interest, and going frequently to the gardens and talking to the people, that it was one of the greatest benefits that ever befel the inhabitants of Caunton that the ground left for parochial purposes was allotted to the poorer inhabitants of the place."

Mr. Miles afterwards states:—About six years after this I went to reside in Gloucestershire, where I am at present resident; I then prevailed upon my father to allow me to give, in three different parishes, allotments to the labouring poor. I invariably chose the very best land I could, and that nearest to their own dwellings. I allotted in that way, in the three parishes, land to about one hundred persons altogether; and I can state that invariably in all those places in which those allotments have been so given, the benefits produced to the poor have been something perfectly extraordinary; you have only to go into one of those gardens, and take the chance of any person who may be working there, however late or early, and you will be exceedingly interested, first of all in his manner of addressing you, and at the same time with the benefits which invariably, he says, have resulted from those allotments of ground to himself and to his family. As I understood it was the wish of the Committee, when last I appeared here, that I should state what was the result of the benefits to the poor man as nearly as I could, I went to the garden of one of the first men I saw; I inquired what benefits had accrued to him as to the sale of vegetables, and, at the same time, as to supplying his family with food from his allotment. He stated to me that he occupied a rood of land; that for that rood he paid 1*l.* a year; that he had sold Onions last year to the value of 24*s.*; Carrots to the value of 8*s.*; and that his wife had sold Gooseberries and Currants to the value of 2*s.* 6*d.*; that he had a wife and five children, and that he had provided them from the allotment with every description of culinary vegetable, with all their Potatoes; and had only purchased for the year one sack of Potatoes for the whole consumption of the family; at the same time I should mention that I never go into those gardens but thanks are given to me for what has been done." The 1*l.* per rood, rent included, tithes and rates.

The first branch of inquiry in which the Committee engaged was, "the effect of the arrangements under which the labouring classes are now enabled to hold and cultivate land on their own account," and the Report states:—"The evidence received upon the first branch of their inquiry has been of uniform tenor, and has led them to conclude that the tenancy of land under the garden allotment system is a powerful means of bettering the condition of those classes who depend for livelihood upon their manual labour, whether in manufacturing or agricultural employment; and it has this peculiar merit, that

its benefits are not obtained at the expense of any other class, nor accompanied by any corresponding disadvantage."

After recommending certain regulations to be observed in carrying out the system—all or some of which we may hereafter comment upon—the Committee proceeds to say—"Under these arrangements the system of garden-allotments has proved an unmixed good. It has increased the produce and enlarged the general stock of labour to be expended on the soil. It has enabled the labouring man to turn his leisure moments to profitable account, in raising wholesome food for his family, a rood of land frequently producing vegetables enough for six months' consumption. It has also supplied sound industrial training for the children, under the parents' eye.

"Many striking instances have been stated to your Committee where the possession of an allotment has been the means of reclaiming the criminal, reforming the dissolute, and of changing the whole moral character and conduct." It appears that the holding of land directly from the landlord raises the position of the working-man in his own estimation, and gives him a feeling of independence and self-respect. It gives him a stake in the country, and places him in the class which has something to lose. It partly supplies that deficiency of innocent amusement and rational recreation which weighs so peculiarly upon the lower classes of this country, and which must be counted among the causes which lead to the prevalence of crime. The field-garden has attractions for the working-man strong enough to relieve the monotony of a life of hired toil, and to dispel the listlessness and discontent which are often its accompaniments. It withdraws him from a dependence for amusement on the society of the alehouse. It gives him something which he may call his own; and as its value depends upon his own exertions, it prompts him to the exercise of self-control, and leads him to look on from the present towards the future. It furnishes him with an interest in life to stimulate his faculties, to occupy his mind, and to inspire him with hope; and it becomes a powerful inducement to abstain from any of those offences which would lead to the forfeiture of this valued possession. Mr. Martin stated, "That of 8000 heads of families holding allotments in Kent, not one was committed for any offence during the years 1841 and 1842; that in the parish of Hadlow there were 35 commitments in 1835. The allotment system was introduced in 1836, and in the following year, 1837, the commitments were reduced to 1." "Since that we have had among the tenants of the Society about 1.5 of those who were in prison in 1835, and there has been no cause of complaint against them since we have had them. Since the year 1837 there has been but one commitment from among the holders of allotments."

"It does not appear to your Committee that these important benefits are purchased at the expense of any other interest. All the witnesses were unanimous as to the punctuality with which the rents of those allotments which are under proper management are paid, and no more trouble seems to have been involved in collecting these than any other rents; frequently, indeed, there is less. Numerous instances have been mentioned where the produce of the allotment has been effectual in keeping men from applying for parochial relief; and it may be safely assumed that a practice which diminishes the poverty of the labouring class, and promotes their good conduct, cannot but be beneficial to the community at large. It has likewise had a peculiarly good effect upon the relations between the landowner and his cottage tenants; increasing his acquaintance and interest in their circumstances, and exciting in them more thankfulness and respect."

To infuse a healthy prosperity into every branch of our industry, and to widen and deepen the channels of remunerative labour, would be at once the universal and effective remedy for the destitution of the labourer. But if this were accomplished, and the labourer left an uneducated and an untrained man, extravagance and dissipation would be likely to appear where the fruits should be comfort and independence. Every improving influence which a sound religious and intellectual education brings to bear on the character of the labourer, and every improving influence which can be laid in his pathway through life, should be sedulously employed. It has been well proved that the allotment system affords such an influence, and the Report from which we have quoted represents that influence in a strong light. In the prosperity of the labourer the allotment system would have a good moral effect, but in his adversity its services become still more important. When we consider the present condition of the labourer, the comforts which an allotment will bring to his cottage and his hearth, the improvement which it will accomplish in his character as a man, and his value as a workman, in the feelings and dispositions of himself and his family; when we look at the increase which his industry will effect in the value of the land, and in the amount of its produce, to the advantage of the landowner and the community, as well as of himself, and to the security afforded against pauperism or criminality—all which benefits the allotment is proved to confer—we hail the allotment system as a powerful palliative of existing evils, and a prolific source of future good: we hail the system as the labourers' friend in prosperity or depression, and its introduction as a measure fraught with substantial advantage to society at large.—*F.*

ON LIME AS A MANURE.

I know of no manure of more importance to the farmer, when properly applied, than lime; but it is as undeniable a fact that the action of no manure is less understood. Its importance has been so much descanted upon, and the proofs of its usefulness so clearly demonstrated, that it is scarcely to be wondered at that the farmer should consider it as a specific for all the wants of his land. Indeed it is considered by many to act as a universal medicine, to be administered whether the field require it or not. I have known cases where it was to supersede draining, farm-yard manure, and bones; and have seen its use so abused, in the neighbourhood of Winfield, as to cause the cessation of growth. I recollect meeting with a farmer, in the spring of this year, who was applying three cartloads of quicklime to an acre of marsh meadow land, in order to kill the reeds, and found it impossible to persuade him that there could be no cure for his land but thorough drainage. We shall endeavour to show when lime is useful to land, and in which cases it would be hurtful.

We only know of one plant, the Salsola soda, which does not contain lime in combination with organic acids. This fact alone is sufficient to account for its presence in all fertile soils, and for the necessity of supplying such lands with lime as may be deficient in it. Schroeder found 33·75 grains of carbonate of lime in the ashes of 32 oz. of the grain of Oats. In soils lime generally exists as sulphate (gypsum), phosphate (bones), carbonate (chalk), and humate, the latter more especially in peaty soils. To lands where lime is deficient it should be applied in its caustic state, as quicklime, and that for the following reasons:—1. Because it would be too expensive to supply the deficiency in the shape of carbonate of lime, where it has to be brought from any distance, inasmuch as chalk contains 45 per cent. of carbonic acid, an amount nearly equal to half the carriage, without contributing any serviceable matter. 2. If the land be rich in organic matter, as in peaty soils, the express purpose of applying lime in a caustic state is to destroy the vegetable matter—an effect produced by lime in the same manner as it is effected by burning it. 3. It destroys coarse Grasses, as Couch-grass, and when mixed with the scourings of ditches, and coals of worthless Grass, makes an excellent top-dressing for Grass lands. 4. It kills seeds and insects, for which reason it is highly important to mix newly-upturned clay, intended for agricultural purposes, with quicklime, in order to destroy the seeds. 5. If the land produces a sour Grass, lime will neutralise the acids, and render the herbage sweet and palatable. 6. Its capability of solution; and lastly, the great chemical effect it produces on the inorganic ingredients of the soil, in rendering potash soluble, and converting poisonous proto-sulphate of iron (green vitriol) into an innocious compound. These are the most important reasons. The addition of quicklime proves of most importance on heavy clays, which it renders more porous and friable. Where lime is wanting in the soil the fertility of the soil is increased, and superior crops produced by its application. The time for applying lime is not immaterial. It should never be placed on land immediately after manuring with a compound containing ammonia, as farm-yard manure, guano, and soot, as it would expel the ammonia. Lime and dung should never be heaped together, nor should land be dunged till about two months after it has been limed. If the chief purpose for which lime is applied be to destroy vegetable matter, the land should be dry. The immediate effects will be slow, but a little rain will produce the effect far more quickly than if the soil be very wet. In reclaiming lands this should be well recollected. If, however, it be our object to prepare land before the sowing of a crop, the liming should take place in autumn, because the effects of lime are not instantaneous. Supposing a piece of arable land be overrun with Couch-grass, which we have not been able to eradicate, and taking for granted such land has not been limed, we should treat it thus:—The land should be covered immediately after harvest with a thin layer of quicklime, spread out as evenly as possible; then it should be ploughed in, laying one furrow each way, on the unploughed land, and let it lie till February; then plough the whole in a contrary direction, leaving the land lying in the heaps, as it will then do till after spring sowing, when the lime and the weather will have taken such effect on it as to make what is left of the Couch easily got out by using a large harrow instead of a scuffler, which cuts the Couch into small pieces. This method is mentioned by Hilly, and although he does not propose the use of lime, which I think will materially quicken and complete the process. It is not well to apply large quantities of lime at a time, intended to last for a number of years, but it should be our endeavour to put the land into such a condition as to be able to afford sufficient lime for plants, and to keep up this quantity either by small yearly additions, or by larger additions every four or five years; otherwise considerable loss takes place. Caustic and slaked lime are soluble in water; a large quantity will therefore be removed from the reach of the roots of plants by falling rains. Much of it will again be brought up by the plough, but much will go beyond its reach. If the land is not drained the loss will be greater than otherwise. It is true that lime does not remain long either in its causticity or as slaked lime, but is speedily converted into chalk. But rain-water always contains carbonic acid, which dissolves the carbonate (as bicarbonate), and removes it from the soil. Supposing the land to be quite wanting in lime, a larger quantity than usual may be supplied; in such a case, 30 bushels of quicklime, well mixed with the upper soil, would be ample, but more than this is generally applied without injury. The waste should be annually supplied; the fertility of the soil will thus be more effectually kept up than by the general methods. The quicklime should be broken as much as possible, evenly spread over the land, and intimately mixed with the upper soil.

The effects produced by an overdose of lime are sometimes irreparable. On wet and undrained clays an overdose of quick lime causes a chemical combination of the lime with sand, clay, and water. A species of mortar is formed, and the land hardens, so that neither the roots of plants nor rain water can penetrate it. Dry and sandy soils are rendered too porous. Supposing, however, that such effects do not take place, it is certain that the action of lime on the inorganic ingredients of a soil is to render soluble many salts well adapted for the nutriment of plants. It may, therefore, call forth increased fertility at first, but unless the land be plentifully manured it will be miserably impoverished. It must be recollected that lime is no substitute for any other manure, and that farmyard manure must be used at proper intervals; for because lime is required by plants, it does not follow that they can thrive without ammonia or potash. An overdose of lime may call forth another class of weeds at the expense of those which it destroys. A fertile soil should contain at least one-fourth per cent. of lime; it may, however, contain more.

As at the present day much fraud is practised on manures, it may be in place to state the different adulterations of lime, and the methods of detecting them. It is often mixed with carbonate of lime or imperfectly burnt material; in which cases strong effervescence will ensue, if a piece be thrown into a wine-glass filled with diluted oil of vitriol. It is better to slake the lime first.

Water is often poured on lime, which, if added in large quantities, slakes it; it would then not retain its shape, but fall to powder. The best method of judging of the amount of water and carbonic acid is to weigh a piece of the article, then heat it to redness, allow it to cool, and re-weigh it; the loss indicates the amount of impurities. The farmer should therefore burn his own lime, if it is to be had on the spot.—*Albert J. Barnays, Derby.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Cultivation of Crops.—The crops commonly cultivated in this county are Wheat, Barley, Oats, Beans, Potatoes, Turnips, Peas, and Vetches. Those occasionally or but partially grown are Carrots, Mangold Wurzel, Rape, and Flax.

Wheat is the staple produce of East Lothian, and to the production of it the soil of the greater part of the county is well adapted. It is difficult to ascertain with precision the extent of land usually occupied with Wheat, or the quantity annually produced, but both are so considerable as to render everything connected with the cultivation of this crop of the greatest importance to the farmers.

The varieties of Wheat now most esteemed and chiefly grown are Hunter's, Hopetoun, Gregorian, and Brodie's—the two former adapted to winter, and the two latter to spring sowing. But besides these, other kinds of Wheat are occasionally cultivated, as Red Lammas, Blood Red, Hickling's, Chidam, &c. Hunter's is the most esteemed variety of white Wheat now grown in the south of Scotland; it is a winter Wheat, and may be cultivated on any kind of soil of moderate fertility. The Hunter's and Hopetoun varieties were propagated in this county, the former by the agriculturist whose name it bears, and the latter by Mr. Patrick Shirreff, late tenant-farmer at Mungoswells. Red Wheat is not much grown, and is confined almost exclusively to the more elevated parts of the county.

Wheat is sown after summer fallow, Beans, Potatoes, Peas, Vetches, Turnips, and occasionally also after Grass. Bare fallow is not considered to be in all cases the best preparation for this crop, as the young plants are very liable to be thrown out of the soil by the influence of the winter's frost, in consequence of the minute pulverisation given to it by the fallowing process. When sown after Beans, the quality of the grain is frequently superior to that grown upon naked fallow, and in consequence of the greater solidity of the land affording a rougher surface or clod after harrowing sufficiently to cover the seeds, the plants are not so liable to be disengaged from the soil by alternate frosts and thaws, as in the case of fallow or Potato land. On this account, Beans, when the land has been thoroughly cleaned by the culture given to the crop during the summer months, is accounted an excellent preparation for Wheat. As soon as the Bean crop has been removed from the field, the land is ploughed into ridges, and the Wheat-seed immediately sown; the ploughing, sowing, and harrowing operations being all performed in close succession. Experience has placed the Potato crop amongst the most suitable preparations for Wheat, both as regards the quantity and the quality of the produce. I may observe that the Clovers are seldom found to succeed well after Potatoes or Beans, at least not upon strong clay land. Wheat is now frequently sown after Turnips. The practice of

taking up and storing Swedish and common Turnips as favourable opportunities occur during the winter and early spring months, is becoming general. The leaves, as being cut from the bulb, are scattered over the surface of the land, and ploughed down immediately after the removal of the Turnips. Wheat is sometimes but not often sown upon Clover leys, as the practice is by no means a favourite one with the East Lothian farmers. There are some cases, however, in which it is expedient to grow Wheat instead of Oats after Grass, and in this case the land usually receives a partial fallowing.

Seed Wheat is invariably prepared for sowing by pickling—a process resorted to for the purpose of preventing smut. The liquid most commonly employed for this purpose is stale urine, and the process of steeping or pickling is generally as follows:—Two tubs, one of which may be larger than the other, are required for the operation. The barn floor, cart-shed, or some other suitable place, being well cleaned, the larger tub in which the seed is to be steeped is placed on an elevated stand, and the other vessel containing the urine laid alongside it on the floor. The pickling tub is then nearly filled with the grain, and the urine poured upon it with a stable pail till the tub is full. The seed is well stirred with a shovel, and after being all thoroughly moistened and allowed to remain five or ten minutes, the liquid is withdrawn through an orifice into the other vessel. The Wheat thus pickled is then laid in layers upon the floor, and a quantity of newly slacked lime, sufficient to absorb the moisture, sifted upon it while being spread on the floor. A fresh allowance of Wheat is now put into the steeping tub, and treated in a similar manner until the entire quantity to be then sown has been pickled. The seed with the lime sifted amongst it, is immediately afterwards turned over and intimately mixed; it is then conveyed in sacks to the field to be sown. No more seed is pickled at one time than what can be sown on that or the following day, as the vegetative powers of the Wheat are often materially injured, or totally destroyed, from remaining any length of time unsown. Besides stale urine, which is universally regarded as the most efficacious pickle, a solution of salt, sufficiently strong to buoy up an egg, is sometimes employed. But the principal recommendation of this steep is the facility with which it may be prepared. A solution of blue vitriol is also occasionally used as a pickle for seed Wheat.

The seed is, in the great majority of cases, sown by the hand, but the broadcast-sowing machine is also employed on many farms for the same purpose. Wheat is frequently sown in the manner styled ribbing, already adverted to. When this mode of sowing is adopted, the seed is scattered by the hand in the usual manner; but as nearly the whole of it necessarily falls into the intervals between the small drills, the plants grow up in parallel rows in the same manner as if sown by the drill-machine. The practice of ribbing in Wheat upon summer fallows is highly approved of, as a means of preventing the ejection of the young plants by the influence of the winter frosts; it is, further, almost a certain way of securing a good crop of Clover the following year.

Wheat is sown from the beginning of September to the end of March. The quantity of seed depends of course upon the time of sowing, and the quality and condition of the land. After summer fallow, two bushels per acre are deemed sufficient; and after Beans, Potatoes, or Turnips, three bushels. Old Wheat is sometimes sown in preference to the new, and in this case a less quantity of seed suffices.

The produce has been, in many instances, so high as six quarters per imperial acre, but this quantity is reckoned a great crop; four quarters per acre are frequently obtained in the low district; and many farms average 3½ quarters during a lease. Taking the average of the whole county, however, for the last few years, the produce is estimated at 2¾ quarters per statute acre. The weight of Wheat varies, according to the seasons and other circumstances, from 60 to 66 lbs. per bushel. —*T. Sullivan.*

Home Correspondence.

Manures and Drainage.—Publications on experimental or practical manurings are of much value, but there is for the most part a very material omission in such reports. I refer to the analysis of the soil, which is necessary in every such case, previously to the applications of manure. Trials of various substances are made and multiplied with great care and precision, and the results are watched and recorded with minutest attention, without any, or with only a slight reference to the constituents of the soil. Is there any one science besides Agriculture, the facts of which are thus carelessly determined? Now, let any one of these reports be read, and let the reader try the most successful experiment on his own soil. Will the result be similar? No. And why are the results dissimilar? That is a question seldom put; and the experimentalist either sits down discontented, or goes indefatigably to work with the next best manure, perhaps with equal ill success. One tries nitrate of soda on a soil within reach of sea-breezes which have for ages borne to it enough of soda, and he fails. Another carries nitrate of potash to a soil containing sufficient potash, and he fails. So it is with gypsum, and many other substances. One remark, however, may be made by the way, and that is, that appearances sometimes deceive. Some well-established facts have shown that a great increase may be made to the weight of a crop of hay, or to other crops, by a manure the effects of which do not make any great show on the ground; and on the contrary, instances of great apparent with little actual effect often occur, as when a deeper green in a plant may be produced with little benefit to the produce. Some allowance must be made for variety of seasons, but soils of great fertility and good tilth are much less exposed to injury from too dry or too wet weather than poor soils. It is true we cannot give to a poor sterile soil all the constituents of one that is fertile, without incurring an expense far beyond the profit. This, however, is unnecessary, for we know that a very small quantity of some substances will often insure a great crop, and in such cases all further applications would have been an unnecessary outlay; and so, by parity of reasoning, the extra fertilising materials in a fertile soil are frequently of no apparent use. The great object then is, that in every case of manuring being reported, an analysis of the soil be given. It is not enough to say the land is a sand, or gravel, or clay, or loam, but it is indispensable that the constituents of the soil should be minutely stated; then, and not till then, will Agriculture take its proper rank as a science. [This is, probably, sufficiently correct; but coupling together, 1st, the imperfection of our means of analysis, and the consequent impossibility of ascertaining the actual composition of the soil of a field; and, 2d, the great expense of the operation—an expense the greater in consequence of the great variability of soil even in its mineral component parts—coupling together these two considerations, we question if it be not the more economical plan for farmers, if they require them, to try the various manures each for himself on a limited scale, and then be guided by personal experience in the matter of their more extended use, rather than rest on reports of published experiments, the imperfections of which are here so accurately indicated.]—A question has been lately asked in your Journal—"What is the action of sea-salt on carbonate of lime?" In dry weather, after a high tide, little hollows may be observed on the limestone and chalk strata of rocks on the sea-coast, where the salt water has been evaporated, leaving crystals of common salt. In all these instances the rock appears more decomposed than it would have probably been if only rain-water had fallen and been dried there; but this requires to be verified.—Many able articles have been published on drainage, but nearly all of them relate to arable land. Now, a little observation will show that the draining of Grass land is of equal importance. The difference between good and bad pasture land is not so apparent as it is on land bearing a crop. Meadow land more resembles arable land, as there is a crop of hay to be made; but the bulk may be considerable in certain seasons, while the quality is of inferior value. Grass land is usually wet land made partially dry by surrounding ditches, and some open drains. It is very seldom properly drained so as to remove the stagnant water within reach of the roots of Grasses. Grass land may be classified as follows:—1st. Constantly wet on an impervious subsoil; bearing the sedges and many sub-aquatic plants which thrive in land full of stagnant water, but are of little value, and that only in the middle or latter part of summer. 2dly. Wet, but on a porous substratum, and consequently experiencing a slight circulation of air through it, by the passing away of some portion of the water with which it is charged. This land supports better Grasses, but it is so chilled by evaporation, and there is still so much stagnant water, that such land is comparatively very inferior. 3dly. Originally wet, but thoroughly drained by open or closed drains two or three feet deep. Land in this state is but seldom seen, but it generally produces the best Grasses, which are growing the greatest part of the year, and the sedges and inferior Grasses which formerly grew upon it are gradually disappearing. It is frequently objected to drainage, that there is not sufficient fall or outlet for the water. This objection is often imaginary only, and if the operator begins his work at his lowest point, and drains upward as long as he can see the water run, he will generally find fall enough. There are, however, cases where there is a fall, though it is not apparent. This is well worth attention. A stream of water runs nearly as fast at the bottom of a full channel as at the surface; it runs faster than either in the middle. Suppose an outlet to be into a full watercourse, a drain full of water leading into this full watercourse will still slowly convey the water in the drain, and the drain will receive a supply from the water in the soil which would otherwise stagnate there. Such full drains should be frequently cleared of obstructions under the surface, and the good effect will infallibly appear, even under such unfavourable circumstances. From the usually flat surface of Grass land, closed drains are not frequently made. Open drains are commonly too shallow; they should be deep enough to draw away the water beneath the surface soil, so as to render it warm and dry very soon after being wet. It will not then be injured by a wet season, nor by a dry one.—*T. P.*

Dibbling Wheat.—We live in an age when the productive powers of the land are more fully developed than they have hitherto been. Any improvements that will increase the quantity and quality of the produce, are deserving of consideration; to follow an established system, merely because our progenitors have so done, savours strongly of prejudice; agriculture, like other sciences, should keep pace with the increasing intelligence of the age. The dibbling of Wheat has recently met with encouragement; whether the practice will fully answer the expectations of its promoters, further experience will demonstrate. The following experiment, upon a small scale, has succeeded beyond the expectations of the parties interested; when first tried it was laughed at by some, and considered a Utopian scheme by many; whether its further extension will be deserving of support, is a matter for consideration. A gentleman of Epworth dibbled, the first week in November, 1843, two quarts and half a pint of golden-drop Wheat on 1 rood, 5 perches of land, the holes being 9 inches apart each way, two grains being put in a hole; and 5 quarts 2 pints and a half on 1 rood, 35 perches of land; half of the latter being in rows 12 inches apart, and 4½ inches in the row, two grains in a hole; the other half of the 1 rood, 35 perches the same distances, but three grains in a hole. The land is a light, black sandy soil, about 4½ inches deep; the subsoil a very light sand, and had been the previous year cropped with Potatoes, manured with very indifferent straw-yard manure, and had likewise been alternately cropped with Wheat and Potatoes for some years previously. The land dibbled suffered from the depredations of the birds, which got part of the seed. The following management was pursued after the seed was put into the ground:—Three sacks of soot were sown upon the land in December, yet the Wheat looked very thin and bad during the whole of the winter. About the middle of May 1 cwt. of Ichaboe guano, mixed with 2 cwt. of gypsum, was sown upon the Wheat, which, in consequence of the dryness of the season, did not appear to afford much benefit. It was twice hoed during the spring, and in May began to tiller and assume a luxuriant appearance, and maintained a dark healthy colour throughout; the straw was remarkably strong and of good length; the ears very large, many of them containing upwards of 70 grains, but averaged about 60 grains; there were 3 rows of corn, and some 4 in the ear; the stems varied from 8 to 21 from each root. The corn is a remarkably bold and fine sample, and weighed 14 stones per load of three bushels; the weight of the straw was not ascertained. The produce from the 1 rood, 5 perches of land, was over 12 bushels; and from the 1 rood 35 perches, 21 bushels, making 4 quarters 1 bushel of corn from less than 1 peck of seed on 3 roods of land. The growing crop suffered more from the drought, in consequence of being so thin upon the ground, than the thicker sown crops. The same gentleman sowed 1 rood of Wheat broadcast, 4 pecks per acre; 1 rood, 8 pecks per acre; and dibbled 1 rood, 3 pecks per acre. Having disposed of the land with the growing crops (which got mixed), the produce could not be known; but that sown with 3 pecks per acre had a decided superiority over the broadcast; if the land had been of a stronger nature, in better condition, and the weather moister, there is no doubt the crop would have been more abundant. The gentleman purposes repeating the experiment, being convinced of the practicability and advantages of the dibbling and thin-sowing system. —*T. B. Pearson, Epworth.*——*S. L. B.* adds—I am anxious that the system of dibbling Wheat should be fairly tried. Be so good as to say at what depth the seed should be sown; whether more than a single grain should be deposited in each hole; and at what distance from each other the holes should be made. The rows should, I understand, be six inches apart. I may here mention that the experiment of sowing some Wheat last January, much thinner than usual, has answered very well: the thin-sown has yielded considerably more. In the spring I had some difficulty in dissuading my steward from ploughing it down as a failure. A small quantity of Oats was dressed in the early stage of its growth with nitrate of soda; the effect is very striking, but I merely mention it to draw your notice to the subject; for though the increased produce of the dressed portion was obvious to every one who saw the field, I am afraid the steward has not kept that parcel by itself, which will prevent me from sending you an accurate return. I will send you soon the result of Campbell's steep applied to Oats. [Thank you: we should be glad to hear soon from others of our readers who may have steeped their grain, on this subject. Dibble Wheat in holes 1½ inches deep, and 6 inches apart every way; 2 seeds in each hole.]

Tanks.—If your correspondent "Joe" can heat the water in his tank, he will stop the leaking by introducing a peck of oatmeal into the tank, when the water is quite hot. I have recently tried the experiment with complete success. The oatmeal renders the water mucilaginous, and in its passage through the cracks it deposits a portion of the glutinous matter held in solution, and by degrees fills up the cracks. In the mountains of Scotland, flaws in the stills used for the manufacture of illicit mountain-dew are effectually closed by means of wetted oatmeal. I am assured that in the same manner defective iron boilers may be made perfectly water-tight. "Joe" has committed a mistake in not using pure cement. If all other measures fail, he may still accomplish his object by lining the bottom with roofing tiles placed close together and covering them with a coat half an inch thick of cement, unmixed with any other material, and applied by a workman who knows how to use it.——*R. G. L.*——Another correspondent says that he has three tanks, and all of them hold perfectly well; the liquid in them being secured by puddle dams of good clay 18 inches wide—the tanks being faced with brick. They are sunk in very open gravel.

Carbonate of Iron.—Is not this salt highly conducive to vegetation? It may frequently be seen in the bottoms of open drains (?) of an orange colour. I suppose it to be produced by a previously existing state of iron in solution, as a protoxide or as a sulphate of iron, both equally pernicious to plants. When exposed to the atmosphere, the iron probably unites with the carbonic acid of the air, and thus it becomes carbonate of iron. It will then be seen that Grasses thrive in it with much luxuriance, and if the contents of the drain be thrown out to its sides, better Grasses soon appear there. The subject deserves inquiry. There is not much encourage-

ment from the mere appearance of the yellow pulpy matter in question; it is commonly believed to be injurious, and so it is, as stopping the proper drainage of land. Ferruginous soils, however, are often very fertile. Arable land containing too much oxide of iron in solution, is improved greatly and immediately by the addition of calcareous substances. The benefit arising from composts of peat and lime may be greater or less in proportion as iron abounds or otherwise in the peat.—*T. P.*

Ononis arvensis.—Your correspondent "H. C.," (p. 660), should ponder well the following trite anecdote:—"An old farmer, on his death-bed, told his sons, who were not very industrious lads, that he had deeply buried his money in a particular field, which was the most barren land on his farm. In consequence of this information, soon after the old man's death the sons began to dig (and they dug deeply too) all over the field, and this they did again and again, for it was long before they quite despaired of finding the money. At length, however, they gave over the search, and sowed the land with Corn; when, from the thorough, deep digging and clearing which it had received, the crop which they reaped was indeed a treasure." Now, if "H. C." will imagine that he has buried a bag of dollars just below the roots he complains of, and will take the pains to look for them with the same assiduity which was exhibited by the aforesaid youngsters in their case, no doubt he will be rewarded as they were. If your correspondent were to cut off the plant close to the ground, just before it begins to blossom, scoop out a hole, and fill it with salt or hot lime, it would probably kill the root.—*Agricola.*

Quack Manures.—Some years since, Dr. Paris analysed and published his analysis of a number of quack medicines, then popular. Could not something of the kind be done with regard to quack manures? The most ignorant of your readers must know by this time that a variety of saline solutions exercise a powerful effect on vegetation in different ways, and that various of them will exist in solution together, without, at any rate, detrimental reaction. What a facility this affords to the manure doctor! Perhaps you will say that the increasing knowledge of Agricultural Chemistry will be the silent and certain remedy; but does not the enormous sale of patent medicines in this enlightened age prove that the mind of man is as fond of quackery as it is of novelty? Surely the old practical farmer's affection for and firm confidence in his muck-midden is now his safeguard and not his prejudice. Would that some sure analyst and uncompromising man would imitate Dr. Paris!—*Micklewell.*

Societies.

SOUTH DERBYSHIRE AGRICULTURAL SOCIETY.

At the Annual Meeting of this Society, held at Ashbourn on Saturday week, Mr. Colville, who occupied the chair, said that many of his brother cheese-makers were alarmed at the great importation of American cheese, and on this subject complaints were loud and frequent, many of the farmers anticipating ruin. It was by way of reply to these communications, and with the view also of relieving the minds of farmers in the cheese districts, that he was desirous of communicating some facts of which he had obtained possession. In order to obtain correct information on the subject, he had searched, with great care and labour, through the parliamentary returns for the last 12 years. The returns spread over many volumes; but he had reduced the main facts upon a sheet of paper, so that they might see at once how the case really stood. What he intended to show was this, that although the importation of American cheese was greatly increased, it had driven the Dutch cheese out of the market, and the aggregate importation is less now than it was several years ago. Though the American cheese had come in in shoals, the Dutch cheese, instead of being brought here as formerly, was taken elsewhere (to France he was told). He would now show them how the case stood:—

Year.	Imported from America.	From Holland or Belgium.		From other countries of Europe.	Aggregate of Importation.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
1831	0	133,397	..	1049	134,450
1832	50	126,112	..	1282	128,440
1833	None	131,286	..	1712	134,073
1834	1	145,004	..	1364	146,504
1835	0	139,694	..	2162	140,852
1836	1	210,026	..	1148	211,160
1837	1	235,679	..	1726	237,732
1838	2	235,691	..	2179	237,877
1839	None	209,847	..	1589	210,436
1840	41	224,887	..	1694	226,482
1841	15,154	..	260,998	..	276,149
1842	14,098	..	165,614	..	179,712
1843	48,313	..	150,000	..	198,313

By subtracting they would find that the importation of cheese during the last 10 years had actually decreased by nearly 32,000 cwts., while the population of the United Kingdom had increased by 2,300,000 mouths.

FARMERS' CLUBS.

Castle Douglas.—The following is an abridged report of Professor Johnston's second lecture here, taken from the *Dumfries Courier*:—The different substances of which plants are composed must exist in the soil on which they grow; according to the nature of the plant to be reared, so ought the land to be manured. Thus, while Wheat grain contained only two per cent. of ashes, hay contained 10 per cent. Hence the Wheat required a much larger amount of combustible ailment than hay. It was true that the whole of the combustible matter was not obtained directly from the soil, as a large portion of it was derived from the air; but from five to ten per cent. of the straw of Wheat was obtained from the soil, hence the provision made in some leases that no straw should be carried off the land. Different kinds of hay carry off different quantities of inorganic matter from the soil, and consequently have different effects upon the land. The following table shows the quantity of inorganic matter in 100 lbs. of hay:—

	In Rye Grass Hay.	Red Clover.	White Clover.	Lucerne.
Potash	6.8	19.9	31.0	19.4
Soda	3.9	5.3	5.8	6.2
Lime	7.3	27.8	23.5	44.3
Magnesia	0.9	3.3	3.0	2.5
Alumina	0.3	0.2	1.0	0.3
Oxide of Iron	0.0	0.0	0.6	0.3
Oxide of Manganese	0 0	0.0	0.0	0.0
Silica	27.7	3.6	14.7	3.3
Sulphuric acid	3.5	4.5	3.5	4.0
Phosphoric acid	0.3	6.6	5.0	13.1
Carbonic acid	0.1	3.0	2.1	3.2

The soil must contain all of the above, otherwise it cannot build up the plant which contains them; and just in proportion to the supply of the necessary ingredients, in their proper proportions, will be the luxuriance or stuntedness of the crop. Every plant that grows requires, in accordance with the nature and composition of soil, the proportion of the ingredients in its ashes. If no alteration of crops is made, Nature will become exhausted in some of her resources, and the plant, for want of nourishment, must die. We have facts to prove that Nature will not for ever grow the same plant on the same soil. The Black Forest consisted first of Oak, then of Pine, and now it is again covered with broad-leaved trees; and as with trees so with crops, and as on a large so on a small scale. Different modes of husbandry have been adopted. Instead of Oats being grown 15 or 20 years on the same soil, the rotation of three white crops and six years' Grass was adopted; this also has become antiquated, and now the preferable alternation of white and green crop is adopted. Alternating crops, and adding such manures as have been carried off by preceding crops, is the only profitable mode of cultivation, while Nature will also assist by the going on of certain circumstances, such as the decomposition of minerals, &c. &c. A soil containing just sufficient lime for a luxuriant crop of Rye-grass would be far deficient for either Clover or Lucerne. The soil must contain in abundance what your crop specially requires, and consequently the necessity of selecting the manure to suit the crop wanted; and skilful farmers will put this principle into practice, and also select crops suitable for the purposes to which they are to be applied; thus, if you wish to feed for milk you must select a plant containing an abundant supply of phosphoric acid; and this plant will not grow on land which has been exhausted of this acid, though it contained all other necessary ingredients in abundance. The ground becomes exhausted in many ways. By cropping too long with either one kind or different kinds of grain, and carrying off both grain and straw, it becomes exhausted very speedily. It becomes exhausted of some of its soluble matter by the action of rains, just in proportion to the wetness of the soil. By the application of proper manures the waste may be replaced. Feeding will replace a portion of the waste of solid matter; but a great portion of the soluble is lost, both by being, to a small extent, irrecoverable, and because of the direct waste by carelessness or ignorance. These soluble or saline substances are principally contained in the urine of cattle, and just in proportion as it is lost so is the direct waste. The urine of one single cow is valued in Flanders at 2*l.* per annum. What, then, must be the loss on the whole of the cows in Great Britain? Guano is not a more valuable manure than the urine of cattle, and yet farmers carry off this from their yards by large ditches, as if it were only, what it has too long been considered, a nuisance; while they will give 10*l.* a ton for an article of no greater value. By building suitable tanks the whole of the farm-yard saline matter might be preserved, and 900 lbs. of good solid matter, equal to the best Peruvian guano, would be the annual produce of one cow. Tanks ought to be made capable of containing all the urine voided in four months; they should be divided in the middle, and one end, when filled, should be allowed to ferment. This fermentation would be completed in about six weeks, when it should be carried to the land and applied as we now apply guano and water. In the process of fermentation, the ammonia is apt to escape; but by mixing the urine with three times its bulk of water, this will be prevented to a very considerable extent, as shown in the following table:—

Saline matter and ammonia in the urine voided by a cow in 12 months.

Recent urine contains—solid matter	lbs. 960	Yields of ammonia	lbs. 296
Kept 6 weeks—Mixed with water	850	,, ,,	290
,, ,, Unmixed	850	,, ,,	90

We have frequently been astonished at the results of certain saline substances when scattered over unhealthy plants, by the first shower washed into the soil, and immediately consumed by the plant as its proper and necessary food; and, just in proportion to the ease with which it gets the substances upon which it is supported, and of which it is composed, will it vegetate. Suppose any of the substances of which a plant is supposed to be already in the ground in sufficient proportion, then any addition cannot do good. Suppose soda to be in sufficient quantity for hay, any addition would be unprofitable for a Rye-grass crop, while it would be of immense benefit to double the quantity for Clover or Lucerne. And again, some soils contain it in sufficient quantity for every variety of crop, consequently any addition would be unprofitable. Hence the reason of so many conflicting opinions respecting the utility of manures. A. B. has a field deficient in the due proportion of gypsum; and by applying it to his crop he finds the most beneficial effects. C. D. hears of these results and applies it to his fields, which have already an abundant quantity of it, but require something else; and the consequence is, it does no good, and he pronounces it worthless as a manure; and his next neighbour, E. F., who would have been benefited by its application, has been dissuaded from applying it. Milk contains so much bony earth that in 75 years a cow pastured on an acre of land will carry off a ton of bones; hence some lands used for dairy purposes in Cheshire had, in the course of years, deteriorated to such a degree that they were not worth more than from 5*s.* to 10*s.* per acre, just because the cows pastured on them had carried away all the bone out of the soil. Bone-dust was at length applied as a top-dressing, and the results were so astonishing that the land increased 700 per cent. in value, and the rector's tithes were increased five-fold. Any or all other manures, had they wanted bone, would have proved ineffectual. The bones added just what had gradually been taken off in the lapse of years, in consequence of the peculiar husbandry of the district.

St. Quivox.—Having fixed the 14th ult. to commence their annual inspection of the farms occupied by the different members, the Club assembled at the residence of their president, and proceeded to examine the home farm of Craigie, where the different experiments with various kinds of manures attracted attention, and afforded information. The great interest taken in the proceedings drew together an unusual number of enterprising farmers. The different farms visited in the course of the day were—Mr. Young's, Dalmilling; Mr. Smith's, Braehead; Mr. Reid's, East Sanquhar; Mr. Hendrie's, Highfield; Mr. Reid's, Clune; Mr. Tennant's, Shields; Mr. Bruce's, Shaw; Mr. G. Hendrie's, Orangefield; Mr. Thomas Reid's, Fairfield Mains; Mr. Gairdner's, Monkton Mill; and Mr. Paterson's, Aikenbrae. The very high state of excellence which these farms displayed in every department, in the rearing and management of stock, in the extent and cleanness of the green crops, the luxuriance of the grain crops, and the richness of the pastures, drew forth the admiration of every one; while the different modes of management and manuring were keenly inquired into, and as freely communicated, tending to diffuse a vast amount of scientific and useful knowledge. Although the party, on leaving home in the morning, might have individually thought their own practice perfect, they must have returned in the evening better farmers, or at least with the determination of endeavouring to become so. On the following day the Club met at Gadgirth, and having inspected Mr. Gairdner's farm of Brocklehill on their way thither, proceeded to inspect the home farm of Gadgirth, which, from the varied experiments with special and other manures, so distinctly arranged, occupied a considerable time. The improvements effected by Mr. Burnett to those who may have seen his lands a few years ago, ere he began his operations, must be striking indeed, showing how, under a judicious and well-regulated system, a comparatively sterile and shallow soil may be converted into a deep and fruitful loam. The Club then proceeded to Mr. Inglis's farm of Stair, where a field of splendid Beans upon very poor soil attracted general attention, proving to what an extent this crop may be benefited by a moderate dressing of guano. The next farm visited was that of Mr. Bell of Enterkine, who displayed excellent crops of Turnips, Beans, Potatoes, and Oats. After another day spent in examining several other farms, these proceedings terminated. It is right to state, that although each farm did not show the same perfection in every respect, there was much judgment and scientific skill displayed in all, according to the locality, diversity of soil, and mode of farming pursued. We insert the above short account, in order to give publicity to a system worthy the adoption of all Farmers' Clubs; a system of annual visitation of the farms of members, which cannot fail to result in rapid agricultural improvement.

East Cornwall.—At the late meeting of this Society, the president, Goldsworthy Gurney, Esq., opened the discussion by calling attention to the management of Wheat stubbles. He was of opinion that they might be more profitably turned to account than by sowing Turnips, Rape, or lying fallow; he had transplanted Swede Turnips in several of his stubbles experimentally. It was of importance to know how late in the season the planting might be deferred with success, as the harvest this year was unusually early. He had manured some of the transplanted Turnips with guano, some with nitrate of soda, some with bone-dust, some with wood-ashes, and some with farm-yard manure. Those which he had transplanted in his stubbles were looking better than those transplanted in some parts of his fields where Turnips had failed. After some conversation on this subject, a discussion took place on the pickling of Wheat for seed. Mr. Pethick said he had used blue-stone (sulphate of copper) mixed with lime, successfully, for this purpose, about an ounce of blue-stone to the bushel. Mr. Thompson had used arsenic, but it was not effectual; he thought pickling very useful, and approved of the sulphate of copper. Mr. Badcock, St. Stephen's, observed that old Wheat-seed was not subject to smut, but that a greater quantity was necessary; the germinating power of old seed was well known not to be equal to that of new. The chairman remarked that the superior germinating power of new seed was a fact of some importance, particularly in connexion with Swede Turnip cul-

ture. The same year's seed was found so much better in practice that it would be well to get it raised in the south of France, or in some early climate, in time for Turnip sowing in this part of the country; he thought it possible that at Penzance, a place remarkable for its early crops, by a little management, Swede seed might be raised in time—a question worthy the notice of our western neighbours.

Mr. Kingdon begged Mr. Archer to favour the club with some further particulars, referred to last meeting, in connection with his mode of more economically keeping farm-horses. Mr. Archer said his stables were filled with ground-racks, but he did not generally use them; he had his hay and straw cut into chaff, in a loft above; the chaff was then mixed with the usual allowance of corn and let down through a tube to the manger below. The mouth of the tube and the manger were arranged on the principle of the bird-cage fountain, so that the horse could not breathe on, or otherwise injure his food, no more being drawn out than was eaten; by this means he had found 14 lbs. of chaff and two gallons of corn per day sufficient. Mr. Rodd then detailed the result of experiments made at Trebartha, on the field he had placed at the disposal of the committee. He had brought with him specimens of Turnips grown with the different manures recommended. Those from the ground manured with guano alone were far superior to any of the rest; those with bones, next in size; those with guano and sulphuric acid, and those with bone-dust and sulphuric acid, had both been comparative failures, as might be seen by the specimens he had brought with him. He would now detail the result of experiments on a subject introduced by their president, and which he perceived by the public prints had received his name, "Gurneism." He had brought with him specimens of the effects produced by its action, from different kinds of covering, all of which were labelled. The Grass under its influence would be observed to be a foot long, whilst that on the piece of turf, cut from an adjoining portion of the field, uncovered, would be seen to be but two inches in length. The greatest effect, however, had been produced by a basket-work netting. He had not been able to obtain any statistical data of the increase produced by straw, as the piece of ground hurdled off for this purpose had been broken into by his cattle, and the Grass had been eaten; the increase, however, had been great. Mr. Gurney observed that since their last meeting he had made several experiments; some showed the operation of light and shade. He had covered a piece of ground by day, removing the covering every night; vegetation under it was soon much increased, and of a similar appearance to that where the covering was constantly down. The increase was at the rate of 4000 lbs. per acre, in three weeks. On another piece of ground, covered by night, and uncovered by day, vegetation was evidently impaired, and looked unhealthy; there was no increase of Grass whatever. The fibrous covering in both these cases was long oaten straw, laid on at the rate of 20 lbs. to the land-yard.

Westfirle.—On Monday last the meeting of this Club took place. The subject for the evening discussion was, How far, or to what extent, can poor pasture or meadow lands be converted into arable, without raising the price of meat to the consumer?—A member said that he ploughed up four acres of turf which would not keep a sheep. He ploughed with four bullocks, let it lay till spring, raked up and burned the Grass, then ploughed again, and sowed red Globe Turnips, and the produce would keep 200 ewes for two months.—Another member said he thought when land was laid down, it ought to remain so six or seven years, as the accumulation of vegetable matter would be of advantage to the following crops. In Norfolk, where labour was cheap, it was laid down for four or five years.—A member stated that in some parts they laid the land down for two or three years, and then ploughed it again. This was the system on the Cotswold, which is a sheep-country. He was of opinion that it was of considerable advantage, and in breaking up he should not take the best or the poorest, as he doubted whether the latter would pay, as the produce would not perhaps be good enough to fatten cattle; in his opinion the old pasture land of England contained the raw material of more grain than the inhabitants could consume. Perhaps one reason why landlords objected to the breaking up of land was, that the tenant found when he entered a farm that the land contained a given quantity of vegetable matter, which was the landlord's property, and it was the tenant's duty to leave the land in the same condition; but if broken up, the landlords feared that the soil would be exhausted and impoverished; but he thought that when land was broken up a higher rent might fairly be expected by the landlord, as the farmer's profits would be considerably increased; he was also of opinion that by laying down other land the produce would likewise be greater; he had broken up land which was not worth above 7*s.* per acre, and it still retained the good quality which pasture land always bears to following crops—it worked better, and yielded better corn than the old arable; he broke up 30 acres and laid down 30 acres, and he found that that which he broke up yielded three times as much as that which he had laid down, but the produce would be larger for a considerable time. There was no question but that the laying down of arable land would do good, as by that means we conveyed to the soil a renewed supply of vegetable matter of which it had been deprived. He was in favour of the alternate system, as he believed the produce would be much greater on both arable and pasture land. The following resolution was adopted:—"It is the opinion of this meeting that many lands at present under pasture, might be broken up with much advantage, inasmuch as their value would be increased to the farmer, and the public would be benefited by the increase of stock and corn. At the same time, this meeting is further of opinion that, as a general practice, the alternate system would be preferable to any method of breaking up without restriction."

Barnet.—A meeting of landowners and farmers residing in this neighbourhood was held on Wednesday last, for the purpose of taking into consideration the injurious character of the existing system of hay selling, and to discuss the plan proposed to be substituted in lieu thereof, through the instrumentality of an Association, projected by some influential hay farmers in this locality. Several startling facts were stated to the meeting, proving the necessity of some exertion being made to lighten the burthen laid upon the hay farmer. From the year 1840 to 1843, the price of hay had been gradually falling, the average price of those years having exhibited a decrease of from 20*s.* to 30*s.* per load; while, on the other hand, the general crops of the last three years did not produce an average quantity. The scarcity of the present year's crop must, of course, cause higher prices, but that was an exception to the general prospect. There was a necessity, then, to see whether any relief could be obtained in the way of diminution in the charges or expenses incurred in the sale of hay. When any complaint on this subject was addressed to salesmen, it was invariably met by the cry of "Oh! look for a reduction of rent;" but, on the contrary, let the farmers see what the salesmen took from their pockets! The salesmen's charges amounted to no less than one-third of the rent of meadow land, or ten per cent. upon an average of the whole crop. This view of the case showed that it not only concerned the tenants, but the landlords also. The extent of the burthen imposed on the hay farmer under the present system, was truly surprising. A year or two ago an attempt was made to reduce the amount of the charges, but this was resisted by the salesmen, and the same per centage which was paid when hay sold from 5*l.* to 10*l.* per load, was still continued when the price of the article had fallen to 70*s.* per load. Believing that an absolute necessity existed that every endeavour should be made to reduce the charges which press so injuriously upon the farmer, several influential persons had attended meetings lately held to devise a remedy which was proposed to be effected through an Association of hay farmers, who would appoint their own salesman, taking upon themselves the responsibility of all sales on credit, abolishing the mischievous practice of throwing the risk of bad debts upon the agent, and providing a fund for prompt payment to those members who might be desirous of immediately receiving the proceeds of the hay sent by them for sale. A general outline of the rules proposed to carry out the intended new system of hay selling was then given, from which it appeared that a considerable reduction of the present charges would be at once effected; while in the event of the Association receiving the extended support of those for whose benefit it was especially designed, the charges would ultimately be reduced to a mere nominal amount. The object was a legitimate one, in which both landlord and tenant were equally concerned; and it was urged strongly upon the attention of the farmers and gentlemen of the neighbourhood.

Reviews.

Practical Instructions for using Guano as a Manure; illustrated by Practical Results. James Clark, 24 and 25, Billiter-street, London.

With the exception of eight or ten pages of original correspondence at the end of it, the contents of this pamphlet are compiled from works already before the public; and amongst these the columns of this Paper have been the fruitful though unacknowledged source of much useful matter. The directions given by Mr. Clark as to the use of guano are sufficiently trustworthy, and the evidence which he has gathered together of its value as a fertiliser is perfectly conclusive. We extract the following as one of his most interesting proofs of this. It is extracted from a letter by Mr. Grieve, of Archerfield, near Haddington:—"I have given you, in the following table, the result of a trial made by me last year, with four different kinds of manure, in growing Swedish Turnips: the manure was applied in the drills, without any moisture, and the Turnips sown on the 20th May, 1843. Where the guano was used they brairded more rapidly, were sooner ready for the hoe, and kept ahead of the others to the 27th November, when they were lifted and carefully weighed. The soil of the field on which they were grown is a dry, friable loam, and had been from time immemorial in Grass, until 1838.

Kinds and quantities of manures used per Scotch acre.	Price of manure per acre.	Weight of Turnips without roots or tops.	Weight of roots and tops.	Weight of rotten Turnips	Weight of total produce per acre.
—	£ s.	tons. cwt. qrs. lbs.	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.
Guano, 5 cwts....	2 15	9 17 13 0	12 11 1 0	1 15 17 20	22 13 2 0
Farm-dung 12 carts	3 12	8 7 3 0	8 15 3 0	2 19 12 24	14 17 2 0
Bones, 26½ bushels	3 9	7 12 3 0	8 5 12 14	2 14 21 24	14 14 2 0
Rape-dust, 12 cwts	3 0	3 19 1 20	5 0 0 0	2 5 6 20	17 2 1 0

On the same field where the Turnips grew, we sowed Wheat on the 17th February, 1844, without manure of any kind: no difference was observed in the Wheat till it came out in the ear. Where the dung was used, it appeared a little taller and stronger in the straw than that with guano; but the guano is decidedly better than either rape-dust or bones."

Miscellaneous.

On the Comparative Advantages of Employing Horses and Oxen in Farm-work.—This is a subject which has excited some controversy among agriculturists. Lord Kames wrote elaborately on it, and was at great pains in showing the superior advantages of employing oxen. His observations and calculations are not suited, in many respects, to the advanced state of husbandry in our day, however valuable they may have been three-quarters of a century ago. The writer of the following essay is situated in a district of Scotland where oxen are not much used in farm-work; but he has for several years past been in the practice of employing them himself; and in the hope that his observations may not be unacceptable to his southern brethren, he has presumed to send them across the Border. Previously to the discovery of shoeing in the ninth century, horses' feet having no protection against the stones and hard ground, and their hoofs not being so durable as those of oxen, the latter almost superseded them in field labour. Even up to the middle of last century, when there were few made roads, and when, consequently, all thoroughfares were nearly impassable for wheel carriages, agricultural produce was carried on the backs of the animals, oxen as well as horses. It may not be altogether out of place or uninteresting here to allude to the plough-team of former days. The manner of yoking oxen in early times seems to have been to fasten the draught gear to the horns. This barbarous practice extended even to a modern date. Lord Kames says—"People differ in the manner of yoking oxen; in some places they are yoked to the tip of the horn, and in some by the root; these modes are visibly inconvenient. When an ox draws by the shoulder like a horse, his head is free, and his motion natural; when yoked by the horns, he lowers his head to the line of the draught, his posture is constrained, and his step short; his neck indeed is strong, but his shoulder is a better fulcrum for the draught." This is very cool reasoning certainly. It was well for the poor brutes that the policy and interest of the master chanced to be accordant with humanity. Until about the end of last century, the ordinary collars were not used; a sort of stuffed bow was fastened round the neck, and the single tree lay on the shoulder, to which were fastened the chains for drawing by. The array of numbers and apparent strength employed in a plough-team would astonish our modern agriculturists. From the earliest times, I presume, up to about the year 1760, as many as from 12 to 20 oxen, and 6 or 8 horses would have been engaged in drawing one plough; this can be partly accounted for otherwise than by the rude and awkward manner of yoking. Before 1770 very little breadth indeed of artificial Grasses was sown. The ground was cropped for a succession of years, until the natural Grasses (what we now term weeds) got thickly and firmly rooted, the growth of which afforded food during the day in summer for the animals, and at mid-day the ploughmen pulled thistles from among the corn for night provender. In winter the horses were allowed about a feed of Oats daily, with Oat-straw; the oxen got the latter only. While thus poorly fed, the animals had not strength in the draught; hence the numbers requisite. The farm which I occupy has been tenanted by my ancestors for many generations. At the time of the Revolution, my great-grandfather, and his son for many years after that, employed 12 working horses and 28 working oxen, one half of each set being yoked to one plough; I now work the same land to better purpose, I presume, with 6 horses and 2 oxen. In further discussing this subject, I shall endeavour to treat it in the order pointed out in the conditions:—1. *The Age and Breed of the Horses and Oxen, and the time at which they are first put to Work.*—Horses in this country are put to work at three years old; they are often from the commencement worked steadily, although it is considered prejudicial to their future development. I am not aware of the breed of the farm-horse in the middle and northern districts of Scotland being recognised by any particular name. The most perfect figure of a draught-horse is that of the Clydesdale breed; he is distinguished by a short compact body and strong broad bone, these properties being characteristic of strength and durability. Oxen are put to work somewhat older than horses, and they are not at the outset so able for steady work; they cannot be depended on before they are four years old. Our work oxen are bred principally in the shires of Angus and Aberdeen. The peculiarities in their figure are, a small head, deep chest, round body, and short legs. The largest sizes, although frequently selected for work, are, I conceive, not the most proper. They have naturally small bones in comparison with the size of the body; hence the strength of the limbs and the weight of the carcass do not always correspond in reckoning them as "beasts of burthen." The weight of my oxen averages about 800 lbs. without the offal, when fed. When much heavier, I find they want activity and endurance, and their feet, from the additional weight, are more apt to give way. 2. *The Condition of Horses and Oxen, the Work performed by each, and its relative Value; Nature of the Soil where worked.*—In all well and economically managed farming establishments, due regard is had to the keeping the horses in good condition. Efficient work can never be performed by ill-fed, ill-groomed animals. The ordinary allowance of food to each horse daily is 16 lbs. of Oats, and as much Oat-straw as he chooses to eat. My oxen get as many Turnips as they can eat. They are fed four times a day, at 5 A.M., 11 A.M., 6 P.M., and half-past 8 P.M., and at each time they eat betwixt them 125 lbs., being in all 500 lbs. daily. I often slice the Turnips for them, especially at mid-day,

when they have little time to eat. They never drink any water even in the hottest days of summer. Both horses and oxen graze in summer; I have not ascertained which of them require the most Grass. In regard to the work performed relatively by horses and oxen, I should say that, except in frost, when the land cannot be ploughed, the amount and value of the work performed by each are equal. Many people who work oxen keep 4, and work each pair only one half of the day. This is a most expensive system; and, were a good selection of the oxen to be made, is quite unnecessary. I never keep more than 2 at one time, and they work 10 hours a-day as steadily all the year over, except in frost, as the horses, and keep in perfectly good condition. We often see oxen going very slow and sluggardly at work; when well trained, and of a proper breed and size, they will step out as well and as fast as horses: mine do so. At a late ploughing-match in the district, where upwards of 70 ploughs started, my ox-team was second off the field. The average period when frost prevents ploughing may be stated at six weeks. During this time, except in the threshing-mill, oxen are unemployed. The horses are then engaged in carting dung, earth, &c. By calculating the work of the pair of horses, without the man's wages, as worth 6*s.* a day, and allowing 1*l.* 16*s.* as the value of the threshing-mill work performed by the oxen during frost, we have the sum of 9*l.* standing against the latter. It will not do to listen to statements partly speculative and hypothetical, about the capabilities of oxen for drawing wheel-carriages; it is enough for our purpose at present to know that they are not so employed; they are, in the time of frost at all events, unsuited for such a purpose. The soil best fitted for oxen to tread on is that which is dry and most free from stones. My farm is composed of both clay and black soil, some of the former of which is rather wet, but there are very few stones anywhere. My oxen, although un shod, and working as I have said steadily, never get the least lame, or suffer in the slightest in their feet. On another farm, however, which I occupy, where the soil is more of a clayey nature, and somewhat wet and stony, the hoofs of the oxen were, and became tender, and rendered them unfit for steady work. Attempts have been made to shoe them in such circumstances, but the experiment seldom proved satisfactory. The conclusion to which I have come is, that oxen cannot by any management or precaution be profitably employed on wet or stony soil. 3. *The Cost of Maintenance and Farriery of each Pair of Horses and Oxen, including the separate Charge of Management.*—A horse getting 16 lbs. of Oats daily will eat in seven months (the period he requires grain) about 10½ quarters, which in value amounts to nine guineas. A horse wears 5 or 6 sets of shoes annually, which cost 18*s.*; other 5*s.* will be allowance enough for medicine. In regard to the cost of maintaining working oxen on green food, such as Turnips, I have to remark, that the price of that article varies according to the locality where it is grown. I shall reckon the price or value of the ton of Turnips at 10*s.*, being the average in an inland district. I have repeatedly ascertained, both now and formerly, the exact quantity of Turnips which oxen eat, and find that two daily consume about 500 lbs., being at the rate of a ton in four and a half days, or 47 tons in seven months (the time they require Turnips), which in value amounts to 23*l.* 10*s.* I make no calculation on the cost of straw. I believe the quantity eaten by a horse and ox to be about equal. The charge of management of horses and oxen is the same. One man has the charge of a pair, and all must be groomed and otherwise attended to alike. 4. *The Cost or presumed Value of each Pair of Horses and Oxen with their Gear, when put to work, and their Value at the end of the Comparison.*—A pair of farm-horses, four years old, suitable for all kinds of work, can be bought for 56*l.* Their gear or harness, including the cost of keeping it in repair, amounts to 25*s.* yearly. Should no accident occur a horse will last twelve years, at the end of which time he is worth about 6*l.* Including the difference between the original purchase and ultimate selling price, together with interest, the sum of 3*l.* 10*s.* is thus lost annually on each horse. There should be added to this at least 30*s.* to cover accidents and deaths. A pair of oxen, four years old, costs 26*l.* The last pair which I bought cost 24*l.* They have worked regularly for four years, and I am now feeding them for slaughter. I expect to get about 30*l.* for them. They work one day a week at the threshing-mill, which does not seem to retard their feeding. I would therefore calculate that no actual loss will be sustained on oxen from the time of their being bought and sold. The cost of gear, including keeping in repair, costs 10*s.* annually. The account of the different items stands thus:—

Expenditure, &c., on a working horse yearly.

	£	s.	d.
To 10½ quarters of Oats, at 18*s.*	9	9	0
To deterioration in value, interest on outlay, losses by accidents and death	5	0	0
To shoeing and medical attendance	1	0	0
To furnishing and repairing gear	1	5	0
	£16	19	0

Expenditure, &c., on a working ox yearly.

	£	s.	d.
To 23½ tons of Turnips at 10*s.* per ton	11	15	0
To furnishing and repairing gear	0	10	0
To loss on his work during frost	4	10	0
To interest on purchase price	0	15	0
	£17	10	0

In the above table, I have calculated the Oats given to the horses at the market price; but the cleanings and inferior grain, which cannot be otherwise disposed of, constitute a considerable portion of their food, and thus the cost on this item can be reduced; otherwise the figures above so nearly correspond, that it rests with the partiality of parties whether they shall employ horses or oxen, or partly both. For my own part, after duly considering the matter, and after the experience of a number of years, I should give the preference to employing horses exclusively. They are ready at all times for all kinds of work; in wet or frosty weather they can be employed in carting, and in leading the crop in harvest they are invaluable and indispensable, while at all these times the oxen are "eating the bread of idleness."—*Prize Essay in the English Agricultural Society's Journal, by J. Cowie, Laurencekirk, N. B.*

Notices to Correspondents.

Books.—*J. K.*—Reid's "Chemistry of Nature," Glasgow.

Chaff-cutters.—*Toby* and *A Subscriber.*—The price of these implements, of the small size, for one man, may vary from 6*l.* to 10*l.* They will cut, perhaps, three different heights. We cannot select and name the firm from which you should buy. You must ascertain this elsewhere.

Failure in Seeds.—*J. Robinson.*—We are afraid it is too late now to sow Italian Rye-grass, which would probably have been your best remedy, could you have applied it in August. If your seeds are a failure, you had better plough up and sow winter Vetches.

Failure on the Cotswolds.—*G.*—You have mistaken the character of the soil on the Cotswold hills. It is a poor, thin, brashy, calcareous soil; certainly not overburdened with nitrogenous manures. No cheese is made there—that is all manufactured on the pasture lands in the vale. Turnips are sown broadcast; but the farmers rarely use artificial manures: they depend chiefly on what is made at home in their farm-yards. Your argument as to the cause of failure, you will thus see does not avail you. The Turnips have failed more likely from want than excess of manure.

Gorse.—*Melksham.*—See Nos. 5, 6, 9, and 10, of the *Agricultural Gazette.*

Indian Corn.—*An Inquirer.*—Your idea of the want of gluten in this grain, as compared with Wheat, we have always considered correct. We do not know on what authority Mr. Lyde states it to contain so much. Payen, as quoted by Professor Johnston, found nearly 5 per cent. of gluten in Maize; but his analysis, from its obvious inaccuracy in other matters, Mr. Johnston says is not to be depended upon.

Operation on the Snouts of Pigs.—*W. D. F.*—There are two tendons, which, with their parent muscles, elevate the snout, and endow it with the power of rooting up the earth. These tendons may be divided about 1¼ inch from the nose. A piece of each should be cut out, and the wound kept open a while by means of tow: a simple division of them would answer no end, as they would soon unite again; but by cutting out a portion, their power would be diminished.——*W. C. S.*—See No. 5 *Agricultural Gazette.* It is evidently a more cruel operation than that of ringing.

Sea-sand.—*J. White.*—Large quantities are used; you will find it expensive to apply per acre an equal quantity of lime in bone-dust; it will answer as well, but the expense will render it unadvisable. If you apply lime along with guano, you will expel much of the ammonia which the latter contains. Lime is useful on soils which do not contain it. Guano or some other source of phosphorus, ammonia, &c., is also necessary on such as well as on others; but the two must be applied at separate times; apply lime in autumn, and guano in spring. Salt would be useful on your soil, if you are far inland, and you may apply it with your bones and acid or otherwise, at the rate of 1½ or 2 cwt. per acre. The mode of its application does not signify, provided it be evenly spread in wet weather.

Sulphate of Iron.—*Original Subscriber.*—It will decompose carbonate of ammonia, as soon as it is formed in urine. We shall be better able next week to say what effect it would have on the feet of animals in a house.

Weeds.—*A. Langdon.*—We have to apologise for delay. Your Weed can be extirpated only by perseverance in pulling it, and destroying it in all possible ways. It is very rarely indeed that the farmer knows of any easy way to destroy weeds, or indeed of any other way than sheer industry and perseverance in pulling them up.

*** As usual many communications have been received too late.

Markets.

SMITHFIELD, Monday, Sept. 30.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 0 to 4s 0	Best Downs & Half-breds	3s 8 to 3s 10
Best Short Horns	3 8 3 10	Best Long-wools	3 6 3 8
Second quality Beasts	3 2 3 4	Ewes and second quality	3 0 3 6
Calves	3 4 4 0	Lambs	3 8 4 4
Pigs	3 4 4 0		

Beasts, 2956; Sheep and Lambs, 20,690; Calves, 117; Pigs, 370.

Our supply of Beasts to-day is unusually large, still the best qualities are not over-abundant, and maintain Friday's prices; trade for all other qualities is excessively bad—this being Michaelmas Market, very little is wanted; several middling Beasts remain unsold. There is also a considerable increase in the supply of and decrease in the demand for Sheep; trade is very heavy at a reduction of about 2d per 8 lbs. on the general trade, although in some few instances the best Downs make 4*s.* and Longwools 3*s.* 10*d.* There are fewer Lambs; they are a little more in demand, but make no more money. Veal-trade is heavy; middling Calves are very low. Pork is about the same.

Friday, Oct. 4.

The supply of Beasts is large, and demand very small: the best qualities barely maintain Monday's quotations, and it is difficult at all to dispose of the inferior; a large number must remain unsold. Although the number of Sheep is considerably less, there is more than sufficient for the demand, and the prices are a trifle lower than on Monday; the trade at the dead markets having been so excessively bad since Monday causes a very slack attendance of buyers here to-day. Veal-trade is also rather worse; the very best Calves barely make 4*s.*, and a great many inferior quality make no more than from 3*s.* to 3*s.* 6*d.* Pork-trade is steady at late quotations.

Beasts, 631; Sheep and Lambs, 6110; Calves, 248; Pigs, 280.

41, West Smithfield.

POTATOES.—Southwark Waterside, Sept. 30.

There have been three or four small lots of Jersey Whites sold at 5*l.* per ton, and if sales had been pressed, lower prices would have been the consequence; there has also been some small lots of Whites from Lincolnshire, and a few barges from Kent, yet the number of arrivals has been inconsiderable, and the demand inactive—but at present there has been nothing to draw the Trade to the Waterside.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 3.

Prime Upland Hay	100s to 108s	Clover	105s to 115s	Straw	36s to 38s
Inferior	„ 90 95	„ New	105 115		
New Hay	„ 80 100				

John Coorse, Salesman.

Cumberland Market, Oct. 3.

Superior Mead. Hay	100s to 110s	Superior Clover	105s to 115s		
Inferior	„ 80 85	Inferior	„ 95 100	Straw	30s to 34s
New Hay	„ — —	New Clover	— —		

Joshua Banks, Hay Salesman.

Whitechapel, Oct. 4.

Fine Old Hay	100s to 108s	Old Clover	—s 108s		
New Hay	„ 85 95	New Clover	105 115	Straw	32s to 34s
		„ Inferior	— —		

WOOL.—British, Friday, Oct. 4.

There has been but little doing during the past week. Combing Wools continue of dull sale, and we have heard of a slight reduction in prices. Few lots have been submitted to in some cases. The market for Short Wools has partially been good, but prices have not varied.

	per lb.			per lb.	
Southdown Wethers	1s 0d	to 1s 1d	Southdown Hoggits	1s 1d	to 1s 2d
„ Hoggits	1 1	1 2	Kent Fleeces	1 1	1 2
Southdown Fleeces	1 0	1 1			

James Pearson, Wool Broker.

ENGLISH TIMBER AND BARK.—Oct. 5, 1854.

Round Timber, per load.			Plank, per foot cubic.		Deals, per piece.	
Oak	3*l* 10*s* to 5*l* 10*s*		3*s* 0*d* to 3*s* 3*d*		12*l* 0*s* to 13*l* 0*s*	
Ash	2 0	2 10	2 0	2 0	0	0
Elm	2 0	2 10	1 9	1 9	0	0
Beech	2 10	3 10	1 6	1 6	0	0
Lime	3 10	4 10	0 0	0 0	0	0

Oak Bark (per load of 40 cwt.), 10*l.* to 12*l.* 10*s.*

HOPS, Friday, Oct. 4.

The Market is very active, and prices have advanced 4*s* to 6*s* per cwt. since last week. The duty is still estimated at 13 ,000*l.*

Farrer, Ames & Farrer, Hop-Factors.

MARK-LANE, Monday, Sept. 30.

There was a fair supply of Wheat from Essex and Suffolk this morning; that from Kent was large; the condition of all is much better than it has been since harvest, and met a tolerably free sale at 1*s.* per qr. above the prices of this day se'nnight. Foreign was also in improved demand at a similar advance. Canadian and American Flour is rather more inquired after at our quotations.—Malting Barley is readily taken off at the prices of last week; secondary and grinding qualities are neglected.—The value of Beans and Peas remain unaltered from last week.—The Oat-trade is firm, and rather more money is obtained for retail quantities, but the dealers are holding off for larger arrivals.

British, per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	White	40	50	Red	42 48
—— Norfolk, Lincolnshire, and Yorkshire	—	—		White	— —
Barley, Malting and distilling 37s to 34s	Chevalier	31	36	Grind.	28 30
Oats, Lincolnshire and Yorkshire	Polanda	19	21	Feed	18 20
—— Northumberland and Scotch	Feed	19	21	Potato	20 22
—— Irish	Feed	17	20	Potato	19 22
Malt, pale, chip		70	76		
—— Hereford and Essex		64	60		
Rye		30	32		
Beans, Mazagan, old and new	26 to 29	Tick	27	Harrow	29 34
—— Pigeon, Heligoland	26 to 28	Winds.	—	Longpod	— —
Peas, White	32 to 36	Maple	32	Grey	32 36

Arrivals in the River last week.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	4640 Sks. — Brls.	3855	2714	2982	225	168	977	1026
Irish	„ — „ —	—	—	50	1060	—	—	—
Foreign	„ — „ —	6496	2784	—	2822	—	817	—

Friday, Oct. 4.

Having but a small attendance at Market this morning, the amount of business transacted has been limited; prices of Wheat, both English and Foreign, are firmly maintained.—Malting Barley sells freely at our quotations, but grinding qualities are neglected.—In Beans and Peas there is no alteration.—A few Irish vessels with Oats have got up this morning, but having few country buyers, and the dealers holding off for further arrivals, a moderate business only was done in this article at late rates.

Arrivals this week.

	Wheat	Barley	Oats	Flour
English	7680	5670	2040	3600 Sks
Irish	—	—	18700	—
Foreign	—	—	—	—

Imperial Averages.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug.	26 per Quarter.	50s 4d	32s 3d	20s 4d	36s 10d	35s 10d	34s 0d
—	30 „	50 11	34 11	20 7	34 2	37 0	33 10
Sept.	6 „	48 6	35 9	20 5	34 4	36 1	33 10
—	13 „	46 11	34 11	20 1	35 9	37 2	34 6
—	20 „	45 3	33 6	20 3	35 7	37 4	33 1
—	27 „	45 9	34 5	20 3	37 3	36 8	33 0
6 weeks' Aggreg. Aver.		47 9	33 0	20 3	35 7	37 1	33 8
Duties on Foreign Grain		20 0	5 0	6 0	7 6	5 6	9 6

SEEDS, Sept. 30.

Canary	per qr	58s to 58s	Linseed Cakes, Foreign, p. ton		6*l* to 8*l*	
Carraway	per cwt	44	50	Mustard, White	p. bush.	10s	14s
Clover, Red, English	—	—	—	— Superfine	„	12	16
— — Foreign	—	—	—	— Brown	„	12	16
— White, English	—	—	—	Rapeseed, English, per last		22*l*	23*l*
— — Foreign	—	—	—	Rape Cakes	per ton	—	—
Coriander	—	12	18	Saffoin	—	—	—
Hempseed	per last	35	40	Tares, Eng. winter	p. bush.	5	6
Linseed	per qr	—	—	— Foreign	—	—	—
— Baltic	—	—	—	Trefoil	per cwt	—	—
— Cakes, Eng. per 1000	10*l*	11*l*		Turnip (too variable for quotation).			

Rimmington and Lay.

COVENT GARDEN, Oct. 5.—There has been little variation in the prices of most articles during the past week; the market has been well supplied, but trade continues dull. Pine-Apples are sufficient for the demand; among them there are many handsome fruit. Melons continue to be supplied in tolerable abundance; and Grapes are very plentiful. Peaches and Nectarines are becoming scarce; a few good samples, however, still remain, and they appear to be pretty good. The chief dessert Plums are Coe's Golden Drop, and the Imperatrice, which fetch about 1*s.* 6*d.* per punnet. Of Apples and Pears of good quality there is abundance offered at last weeks' prices; they consist exactly of the same kinds as are mentioned in our last weekly report. Hothouse Grapes are nearly the same as last week; Spanish varieties are a little cheaper. Very few Oranges are in the Market, and Filberts still continue scarce. Of Vegetables, generally speaking, there are plenty; Broccoli, of which a considerable quantity is in the Market, is becoming more plentiful. It is very good and cheap. Cauliflowers are scarce, as are also Cabbages. Brussels Sprouts are getting more plentiful, and Carrots and Turnips are supplied in considerable quantity. French Beans are scarce, and are in consequence getting dearer. A few samples of Peas may still be met with, which are tolerably good in quality. Onions are large and fine, as is also Celery. Lettuces and other Salading are sufficient for the demand. Cut Flowers chiefly consist of Ceanothus azureus, Gladiolus psittacinus, Pelargoniums, Phloxes, Heaths, Verbenas, Fuchsias, Amaryllises, Camellias, Carnations and Roses.

Fruits.

Pine Apple, per lb.	2s to 6s
Grapes, Hothouse, p. lb.	1s to 3s
— Spanish, per lb.	1s to 1s 6d
— Portugal, per lb.	1s to 1s 6d
Melons, each	1s to 3s
Peaches, per dozen	2s 6d to 4s
Apricots, per doz.	1s to 2s
Plums, per half-sieve	2s 6d to 3s
— Imperatrice, per punnet	1s 6d
— Coe's Gold. Drop, p. punn.	1s
Damsons, per half-sieve	1s 6d to 2s 6d
Apples, Dess., per bush.	3s 6d to 5s
— Kitchen	2s to 4s
Pears, Dess., per half-sv.	2s 6d to 10s
Filberts, per 100 lbs.	30s to 35s
Walnuts, per bushel	6s to 8s
— — shelled	12s to 22s
Barberries, per half-sv.	2s 6d to 3s 6d
Oranges, per dozen	1s 6d to 3s
— per 100	10s to 30s
— bitter, per 100	10s to 20s
Lemons, per dozen	1s to 2s
— per 100	7s to 16s
Almonds, per peck	5s
Sweet Almonds, per lb.	2s 6d
Cob Nuts, per 100 lbs.	30s to 50s
Nuts, Barcelona	24s
— Brazil	16s
— Cob	14s

Vegetables.

Cabbages, per dozen	6d to 1s 6d
Cauliflowers, per doz.	3s to 6s
Broccoli, per bundle	6d to 1s
Brussels Sprouts, half-sv.	1s 6d to 2s 6d
Kernel, per half-sieve	6d to 9d
Artichokes, per doz.	1s to 2s
French Beans, half-sv.	2s 6d to 3s 6d
Scar. Runners, per half-sv.	1s to 1s 6d
Potatoes, per ton	80s to 90s
— cwt.	3s 6d to 4s
— bushel	1s 6d to 2s 6d
— Kidney, per bush.	2s 6d to 4s
Turnips, per doz. bush.	1s 6d to 4s
Peas, per bushel sieve	3s 6d to 4s
Red Beet, per doz.	1s to 1s 6d
Carrots, per doz. bchs.	2s to 3s
Basil, per bunch	2d to 3d
Horse Radish, per bundle	2s to 4s
Savory, per bunch	2d to 3d
Cucumbers, Frame, each	2d to 6d
— Ridge, doz.	1s to 2s 6d
Vegetable Marrow, per doz.	4d to 1s
Spinach, per sieve	1s 6d to 2s
Leeks, per bun.	2d to 3d
Garlic, per lb.	6d to 8d
Onions, per bunch	6d to 9d
— large, per bushel	1s to 4s
— Spanish, per doz.	1s 6d to 4s
Shallots, per lb.	4d to 6d
Tomatoes, per half-sv.	2s 6d to 3s 6d
Capsicums, Ripe, per 100	4s to 8s
— Green, per 100	1s to 2s
Radishes, per doz.	6d to 1s 6d
Lettuces, per score	6d to 1s 6d
Celery, White, per bunch	6d to 1s 6d
— Red, per bunch	1s to 1s 6d
Endive, per score	1s to 1s 6d
Mushrooms, per pottle	1s 6d to 2s 6d
Small Salads, per punnet	6d to 9d
Watercresses, p. 18 un. bun.	3d to 6d
Parsley, per doz. bunches	1s to 2s
Tarragon, Green, per bunch	4d to 6d
Green Mint, per bunch	3d to 6d
Mushrooms, per bunch	3d to 6d
Chervil, per punnet	6d to 9d
Chillis, per 100	1s 6d to 2s

WHOLESALE PRICES OF MANURES.

Alum	per ton	12*l* 0*s*	0*d*
Ammonia, Carbonate	lb.	0	2
— Sulphate	cwt.	16s	0d
— Muriate	cwt.	12	0
— Sal Ammoniac	cwt.	42	0
— Phosphate	lb.	1	0
Bones	ton	6*l*	0*s*
Bonedust	qr.	12s	14s
Guano, Peruvian	ton	20*l*	0
— Lobahos	ton	6*l*	0
— African	ton	—	—
— Potter's	ton	11*l*	0
Gypsum	ton	2	0
Muriate of Lime	ton	0	0
Muriate of Potash	ton	12*l*	0*d*
Nitrate of Soda	cwt.	1	0
— Potash (Salts)	cwt.	2	0
Phosph. of Lime (Gela. Bones)	cwt.	—	—
Rape Cake	ton	6	0
Salt (Common)	—	0	0
Soda (Dry, Carbonate)	cwt.	0	0
— (Crystallised)	cwt.	1	0
Sulph. of Mag. (pure)	cwt.	0	0
— Potash	cwt.	1	0
— Soda	cwt.	0	0
Sulphuric Acid (sp. g. 1.85)	lb.	0	1
— (sp. g. 1.70)	lb.	0	1
Superph. of Lime	cwt.	1	0

TO NOBLEMEN, GENTLEMEN, TRUSTEES OF LANDED PROPERTY, and OTHERS.

MESSRS. BROOKS and GREEN have an opportunity of introducing a Gentleman who has been accustomed for many years to superintend the Farming Department of an extensive Estate, and thoroughly understands the most approved principles of Agriculture, Breeding, and Management of Stock, and who now wishes to devote a great portion of his time for the same purpose in any of the Midland Counties. Satisfactory references will be given, both as regards capability and integrity, by addressing to Messrs. BROOKS and GREEN, Estate Agents, Surveyors, and Auctioneers, 52, Old Bond street.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery: they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

WHEAT-SOWING.

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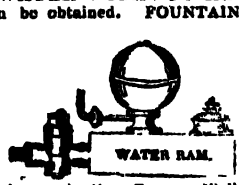
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Regulations of Examining Boards —University of London. —Royal College of Physicians —Royal College of Surgeons. —Apothecaries' Hall

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The Government Medical Reform Bill.—Public Meetings of the Medical Profession at Chelsea, Hereford, Hastings, Kidderminster, Norwich, and Surrey.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41.—1844. SATURDAY, OCTOBER 12. Price 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—NOTICE IS HEREBY GIVEN that an Election for FOUR PENSIONERS on the Funds of this Institution will take place on Wednesday, 3d Jan next All persons desirous of becoming Candidates are requested to send in their Lists on or before FRIDAY 1st Nov next, after which time they will not be received

Printed Forms may be had on application to E R CATTLEY Secretary 97 Parrington street

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" punctatum . 1s "
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JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, enabling them to make choice of their qualities, with the prices annexed, which may be had at the Nursery and of Messrs WARNER & WARNER, Cornhill, London after the 7th September

BAGSHOT NURSERY (late HAMMOND'S)

GEORGE BAKER, late of Knap-hill, has to inform his Friends and the Public, that, under an agreement entered into in July last, he has become the tenant of the Bagshot Nursery Grounds, formerly for many years occupied by Mr HENRY HAMMOND. Mr BAKER is adding considerably to the stock, rendering it superior in quality and of greater variety than has hitherto been kept at this Nursery All letters addressed to Mr BAKER, Bagshot Nursery, Surrey, will be punctually attended to.

CARNATIONS, PICOTEES, PINKS, AURICULAS, ALPINES, AND POLYANTHUS.

JOHN HOLLAND, Florist, &c, Market-place, Middleton, near Manchester, Lancashire, respectfully informs his Friends and the Florist-ulture Public that his extensive and choice collection of the above Flowers Flowers are now ready for bunding out, Catalogues of which are now ready, and may be had on prepaid application

Market place, Middleton, October 11

THE GREATEST NOVELTY EVER OFFERED TO THE PUBLIC

RHODODENDRON JACKSONII.—This splendid new hardy Rhododendron is confidently recommended as unquestionably extant surpasses in the colours of its flowers the richest Geranium, and is quite a new feature in this noble family. It forces well, is a free bloomer, and of dwarf habit. A truss of flowers was transmitted to Dr Lindley, who pronounced it "a very compact and handsome variety," with "great richness" in its general appearance, See *Gardeners' Chronicle* of the 6th April last, page 216. "*Rhododendron.—C L N.*" To be sent out in March at 10s 6d each

WM JACKSON and Co. beg leave to call the attention of the Nobility, Gentry, and the Trade, to the following rare and valuable Rhododendrons, all warranted true, at the very low prices attached. The plants are from seed, fine and stout, twice transplanted.

Rhododendron campanulatum, seedlings 1 inch, 2l per 100.

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Between R campanulatum and the most splendid arboreum, 2 in, 7l per 100
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" " " " " 4 " 3l "
" " " " " strongest, 1 inch to 2 ins 7l per 100
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Usual Discount to the Trade on the above.

Cineraria Celestial, No. 1, 2s 6d each, No. 2, 2s 6d each; fine plants well established. [illegible] opinion in the *Gardeners' Chronicle* of April 6th, page 216, under the letters "*C L N.*" and Advertisement of [illegible]

Wm. J. and Co. take this opportunity of [illegible] in consequence of the great success they have had in [illegible] above beautiful Cineraria, they have reduced the [illegible] will be applicable to all who have already [illegible] their orders, which will be executed next month, and [illegible] given to compensate for long carriage.

These new Calceolarias have resulted from [illegible] fine white and canary Rhododendrons, and [illegible] application, A remittance or reference [illegible] unknown correspondents.

Agents in London: Messrs. Groom, Grosvenor and Covent[illegible] Nurseries, who have seen the plants.

Cross Lanes Nursery, near Guisley, Yorkshire, Sept. 28.

THE NEW SUPERB SEEDLING PICOTEE,
"BURROUGHES'S DUKE OF NEWCASTLE."

YOUELL & CO have much pleasure in announcing they will send out for the first time the above splendid light edged purple Picotee raised by the Rev J Burroughes It is guaranteed to surpass many Purple Picotee that has yet been raised Without commenting further upon its superiority, Y and Co. beg to refer to a report in a late No of the *Gardeners' Chronicle* as follows —

"The *Duke of Newcastle* is a flower of first rate properties, it is a light edged purple the petals are large, and of good form and substance, even on the edge; the colour unbroken; the pod good, and with less disposition to burst than is common" It obtained the first prize, as the best seedling, at the Norfolk and Norwich Horticultural Exhibition Price 21s per pair The stock being limited, to prevent disappointment early orders are respectfully requested Y & Co are also enabled to supply the following superb Picotees, raised by the same gentleman, all possessing first rate properties and have been exhibited and obtained first class prizes at several of the metropolitan Exhibitions of the present year They are as follow —

Burroughes's Mrs Benyon, Red Picotee	7s	6d
" Lady Alice Peel, Rose Picotee	7	6
" Miss Jane, Purple Picotee	7	6
" Mrs Bevan Red Picotee	7	6
" Enchantress, Scarlet Picotee	5	0

CARNATIONS AND PICOTEES.

Y and Co's collection of this beautiful tribe of flowers will be found the most extensive and select in Europe, comprising every known variety of merit The plants are remarkably strong and healthy and ready for sending out to any part of the United Kingdom and the Continent at the following prices

				£	s	d
12 pairs extra fine and very superior first class Show Flowers				2	10	0
25	ditto	ditto	ditto	5	0	0
12	ditto	ditto	Show Flowers	1	10	0
25	ditto	ditto	ditto	3	0	0
1 pairs of Extra fine Show Pinks				0	12	0
25	ditto	ditto	ditto	1	1	0

The selecting being left to Y and Co

Great Yarmouth Nursery Oct 10, 1844

JKERNAN begs to announce the arrival of his large and carefully selected Dutch, Cape and other Bulbs of every description

Finest named Hyacinths, old favourite from 6s to 12s and 18s per dozen

Double red mixtures different shades, 4s 6d per dozen

Double blue, 3s 6d per dozen

Double white, 4s 6d dozen

Single each colour, as above, 3s 6d per dozen

Early Tulips Narcissus Jonquils, Anemones, Ranunculus Iris, Ixias Amaryllis, with all the new Lilies and good Herbaceous Plants hardy and greenhouse, worth cultivating

J K has also to offer this season a saving, some very choice seed—

From the finest named Calceolaria 2s 6d per packet
" " Cineraria 2s 6d "
" " Heartsease, 2s 6d "
" " Geranium, 2s 6d "
Scarlet Phlox Drummondii, 6d per packet
Schizanthus Hookeri, 6d "
Intermediate Stock, 6d "

(By sowing the above this autumn a season will be saved)

With many other good Biennials and Perennials Also, Myatt's new Deptford Pine Strawberry; Myatt's British Queen do; Prince Albert do, Lady Finger do, Keen's seedling do, Old Pine do, &c, &c

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4, Great Russell Street, Covent Garden Oct, 1844

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ROBERT LAWSON, Esq, of Tiverton, intends disposing of his stock of Camellias, which he has collected at much expense, and successfully cultivated for many years. They are in the highest state of health, and most abundantly set with blooming buds Mr L disposes of them solely in consequence of their having become too large for his conservatory They are as follow?—

	£	s	d
Reticulata, from 7 to 8 feet in height, a very fine specimen, quite healthy and green	10	10	0
Imbricata, from 7 to 8 feet in height, do.	2	2	0
" " 3 to 4 "	1	10	0
Eximia " 7 to 8 " a magnificent plant	7	7	0
Chandleri " 6 to 7 " a fine plant	5	5	0
" " 3 to 4 "	1	10	0
Lady Hume's Blush 6 to 7 " fine	4	4	0
Double White 6 " "	3	3	0
" " 5 to 6 "	2	10	0
" " 5 "	2	10	0
Invincible (Gray's) 5 to 6 "	3	3	0
Fordii " 4 to 5 " very fine	2	2	0
" " 3 to 3 "	1	1	0
Double Striped 5 to 6 " fine	2	10	0
Anemoneflora Alba 4 to 5 "	2	10	0
Speciosa " 4 to 5 "	2	2	0
Woodsii " 4 " fine	2	10	0
Waratah " 4 to 5 " fine	2	2	0
Florida " 4 to 5 " fine	2	10	0
Corallina " 3 "	1	5	0
Lawsonii " 3 " fine	1	10	0
Colvillii " 3 "	2	10	0
[illegible] " 3 "	2	10	0
[illegible] " 6 to 7 " very fine	3	10	0
[illegible] " 6 to 7 "	2	2	0

[illegible] of which not [illegible] are taken in [illegible] Mr. Lawson [illegible] particulars [illegible]—Tiverton, Oct. 10th, 1844.

NEW AND RARE PLANTS.

R GLENDINNING respectfully begs to offer the following very desirable Plants—

CLERODENDRON INFORTUNATUM, the finest species of this genus yet introduced, a plant of which was exhibited by R G at the late Show, in June last, and awarded the Large Silver Medal of the Royal Society, it flowers freely in a dwarf state, and will succeed in the greenhouse all months. It is figured by Dr. Lindley in the "Botanical Register" for April, and in "Paxton's Magazine of Botany" for August last.

Achimenes picta, 7s 6d
Buddleya Lindleyana, 7s, 6d
Curraudenia splendens, 10s, 6d
Correa Cunninghamii, 7s 6d
Clerodendron splendens, 5s
" infortunatum, 5s
Corylocalyx rotatus, 10s, 6d.
Echites a londens 12s
" hirsuta 5s
" atropurpurea 7s 6d
Gardenia Rothmanii, 5s
" She bourne 42s,
Gesnera macrochaira, 10s 6d.
*Gloxinia Cartonii 5s
" magnifica, 5s
" bicolor 5s
Gomphrena hirsuta, 4s
Hindsia longiflora 21s
Jasminum Wallichianum, 5s.
Lasiandra floribunda, 10s 6d.
Pentas carnea, 5s 6d
Rhynchotecum variegatum, 10s 6d
Tibouchina splendens, 10s 6d
the flowers of this constant are the purest and brightest shade of a orange-white colour, and sweet-scented.
Portlandia grandiflora, 10s. 6d.
Ropaleeta, 42s, a most beautiful new species, with long yellow flowers, from Mexico
Sphærikpsylus lantanifolius, 7s 6d
Do glabrescens, 7s 6d
Tecoma mikanioides, 5s.

Jasminum Wallichianum, 5s.
Lasiandra floribunda, 10s 6d.
Pentas carnea, 5s 6d
Rhynchotecum variegatum, 10s 6d
Tibouchina splendens, 10s 6d
the flowers of this constant are the purest and brightest shade of a orange-white colour, and sweet-scented.
Portlandia grandiflora, 10s. 6d.
Ropaleeta, 42s, a most beautiful new species, with long yellow flowers, from Mexico
Sphærikpsylus lantanifolius, 7s 6d
Do glabrescens, 7s 6d
Tecoma mikanioides, 5s.

** See the "Botanical Register" for August last, in which these are figured

Chiswick Nursery, near London Oct ber 11, 1844

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YOUELL AND CO. beg to inform their Friends and the Public they have just received their first importation of the above in the finest possible condition, Catalogues of which can be had on application They are enabled to offer the finest Double or Single Blue, Red, White, and Yellow Hyacinths at 10s per dozen

Very fine ditto 12s per doz.
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And other Roots at equally moderate prices

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P S—Bulbs will be added as compensation for long carriage.

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12 ditto " 10s the selection left to the nurseryman.

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12 Extra fine ditto, do. 10s "

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Extra fine Varieties 12s per dozen (including Miller's Pulverata. BANKS "LADY ALICE PEEL" (late published Advertisement of June 1, 1844), 3s. 6d. per plant.

12 Fine Spring Flowering Bulbous
Arum arisarum imbricatum, fine plants in pots, 3 years old, 10s per 100, or 2s per dozen
Ditto, 2 years old, 7s 6d. per 100.
Ditto, 1 years old, 5s per 100,
Prunus Geraudiana, 6d per dozen,
Cedrus Deodora, 3 feet to 4 feet, 10s. 6d. each.

N.B. All Orders above £3 are delivered carriage free to London or Hull, or 5 per cent added to compensate for the same.

Great Yarmouth Nursery, Oct 10, 1844

INGA PULCHERRIMA (Figured in "Paxton's Magazine of Botany" for August, 1844)—Fine Plants of this extremely elegant and beautiful Exotic, with most of the other new and rare Plants of the season, may be obtained of the undersigned, at the following low prices —

Inga pulcherrima 7s 6d
Achimenes picta, 10s 6d
Eschynanthus Hornsfieldii, 7s 6d
Amycia zygomeris 7 6d
Clerodendron splendens 10s 6d
" squamatum, 5s,
Hindsia, or Rondeletia longiflora, 15s,
Kaempferia campanulata, roses (the finest selected from 1000 seedlings), 7s 6d

Also the following, in collections:

100 Cape Ericas of 100 distinct sorts, including many fine sorts) 5l.
12 Epacrises of 12 distinct sorts, (including talgesa) 21s.
Clabrothamnus elegans, 15s
Tremandra Hügelii, 10s 6d. to 21s
Verbenas specious, 6s to 15s.
Erica elegans, fine and healthy, 24s, 36s, and 60s. per doz.
Dryomonia punctata, 2s 6d
Phlox Van Houttei, (flowering plants), 2s
Spiræa Reevesiana, 2s
Viburnum opulifolium, 2s. 6d.

TRAINED PEACHES AND NECTARINES

WM. E. RENDLE respectfully informs the Nursery Trade that he has this season a large stock of TRAINED PEACHES AND NECTARINES, strong, healthy, and in excellent condition.—Union road Nursery, Plymouth, Oct. 7, 1844.

NEW CARNATIONS, PICOTEES, AND PINKS.

MESSRS. N. and T. NORMAN'S CATALOGUE of these FLOWERS can be had on prepaid application.—Bull Stake, Wrotham.

KINGHORN'S SEEDLING CALCEOLARIAS.—In answer to numerous inquiries, T. KINGHORN begs to inform the Public that Mr. Oakley purchased the entire stock of the following varieties, viz., Duchess of Sutherland, Lady Ann Chetwode, Rosamond Wilson, and Kinghornii, exhibited by T. K. at the Horticultural Gardens in May, and the first two at the Royal Botanic Gardens in June. See *Gardeners' Chronicle*, May 25th, page 324, and Mr. GLENNY's opinion of them in the *Gazette*, page 413; also in answer to a correspondent in the *Gazette* of last Saturday. F. R. K. had the sole management of Mr. GLENNY in selecting the above from his numerous seedlings previous to the Exhibitions. Nevertheless, the flowers in possession of Messrs. MAY and GAINES are very fine desirable varieties.—Twickenham, Oct. 11, 1844.

DOUBLE ROMAN and PAPER-WHITE NARCISSUS, 4s. per dozen. The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received from CORBETT'S, late MR HARRISON'S, Italian and Foreign Warehouse, 18, Pall Mall. Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c. &c. Price Catalogues of which may be had *per* Post.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, GERANIUMS, AURICULAS, CARNATIONS, and LILIUM LANCIFOLIUM.

HENROOM, Clapham Rise, near London (removed from Walworth), by Appointment Florist to HER MAJESTY, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above Flowers, which, from the success he has had in their cultivation, he can offer at very moderate prices. He particularly wishes to call attention to the highly-flattering remarks on his Exhibitions of Tulips and Lilium lancifolium this season, in the various papers. He is also desirous of reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collections or ornament their gardens with these beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Lilium lancifolium are particularly adapted for parterres, &c., besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and when flowers are so much wanted. They only require to be known to be universally cultivated. Catalogues can be forwarded by post on application. Foreign orders executed.

GERANIUMS AT VERY LOW PRICES.

WM. E. RENDLE, having a large stock of the following sorts of GERANIUMS, is enabled to offer them at very low rates:

*** A dozen will be forwarded on receipt of a Post-office order, including hamper, package, and carriage free to the Exeter terminus of the Great Western Railway.

CLASS 1.—6*s.* per dozen, including package, carriage, &c.—Ohe Regnarlier, Pulchellum, Jersey Maid, *Lady Villiers*, Fascination, Diamond of Kendle, Symmetry, Tomaseer, Dido, Cordelia, Oberon, Fuvourite, Prince of Waterloo, Jessie, Count D'Orsay, Lord Eldonian, Gastellation, Lavinia, Coreish Gem, Attila, Rival of Dispersal, and Symmetry.

CLASS 2.—9*s.* per dozen, including package, carriage, &c.—Eraline, Gipsey, Wish, Hamlet, Cynthia, Aurora, Creole, Lady Cotton Sheppard, Countess of Mount Edgcumbe, Fair Maid of Devon, Wonder of the West, Portia, Jupiter, Life-guardsman, King John, Sultan, and Princess Royal (Lyne).

CLASS 3.—15*s.* per dozen, including package, carriage, &c.—Camilla, Consort, Van Amburgh, Enchantress, Glory of the West, Ivanhoe, Flash, Queen of the Fairies, Grand Monarch, Sanchyar, Wildfire, Mabel, Prince Albert, Nymph, Bridegroom, and Spital.

All the plants are strong, healthy, and well established, and will be forwarded immediately on receipt of invoice.

Union Road Nursery, Plymouth, Oct. 7, 1844.

SUPERB SHOWY SEEDLING CINERARIAS, for this autumn and winter flowering.

Dwarf, bushy plants, well trussed for bloom, in 24-sized pots, 18*s.* per dozen.

Do. do. in 48-sized pots, 9*s.* per dozen.

The above can be confidently recommended as being saved from the very choicest and most superb kinds, comprising every shade of beautiful light and dark-blue tints, and admirably adapted for the furnishing of the greenhouse or drawing room, throughout the autumn and winter months. Seed selected from the same, 2*s.* 6*d.* per packet.

THUNBERGIA CHRYSOPS.—Plants of this beautiful Creeper, rich purple flower, with golden eye, 7*s.* 6*d.* each.

M. S. has a large stock of the following STRAWBERRIES:—

Myatt's British Queen	6*s.* per 100.
Do. Elisa	6*s.* ,,
Emperor, variety from Keen's Seedling	3*s.* ,,
Grape-flesh Pine, small fruit, fine flavour	3*s.* ,,
Elton Pine	20. 6*d.* ,,
Keen's Seedling	2*s.* 6*d.* ,,

Applications, including post-office orders, will be immediately and carefully executed, addressed to MICHAEL SAWERS, Sen., London-road Nursery, Cambridge.

HERTFORD NURSERIES.

E. P. FRANCIS begs respectfully to inform the Nobility, Ladies, and Gentry, that his descriptive CATALOGUE OF ROSES will be ready for delivery on and after the 10th of October, and will be forwarded gratis upon application, and which comprises upwards of a thousand varieties.

E. P. F. takes this opportunity of stating that he has made an addition of several acres of land, and that his Nurseries now extend over 25 acres of ground, containing a large stock of Fruit and Forest Trees, which are in fine and healthy condition; a fine assortment of Trained Trees, Evergreens, and Flowering Shrubs, all of which may be had upon the most reasonable terms. Catalogues may be obtained with Prices attached. Carriage of all goods paid to London.

NEW PLANTS.

MESSRS. VEITCH AND SON have now ready for sending out the two undermentioned beautiful New Plants, viz.:—

MANDEVILLA VIOLACEA. Flowers of a rich violet colour. It is figured by Dr. LINDLEY, in the "Botanical Register" for August last, who there says—"The Mandevilla violacea is one of the finest things obtained from South Brazil. It has been introduced by Messrs. Veitch and Son, of Exeter, who received for it their large Silver Medal at the Horticultural Society's Garden exhibition in May last. It will doubtless prove a very valuable addition to the Greenhouse Plants; and is certainly unsurpassed by any of the climbing flowering shrubs."

CLITORIA PULCHRA. Strong plants of this fine plant were exhibited at Chiswick, in May, under the name of *Clitoria* species, and received the Knightian Medal. See *Gardeners' Chronicle* for May 25. It is figured in "Edwards's Magazine" for July last.

Messrs. V. and Son have also to offer the following New Plants, viz.:—

Anthurium picta	Gardenia [illegible]
Allamanda grandiflora	,, Lucyniana
Barbacenia squamata Veitchia	Gesneria [illegible]
Clerodendron infortunatum	Gloxinia Barkerii
,, splendidum	Hedisia longifolia
Cyrtoceras reflexa	Impatiens [illegible]
Echites atropurpurea	Lasiandra [illegible]
,, insignis	Pleurothera [illegible]
,, splendens	Tecoma [illegible]
Franciscea Hopeana	Thunbergia chrysops, &c. &c.

N.B.—Messrs. V. and Son's General Catalogue can be had on application.—Exeter, Oct. 11, 1844.

JOHN SLATER, Florist, Chatham Hill, near Manchester, respectfully solicits the attention of the Horticultural Public to his extensive collection of the following Florists' Flowers, viz.:—PANSIES, POLYANTHUSES, CARNATIONS, and PICOTEES; catalogues of which may be had on prepaid application. His stock of named Auriculas, of different varieties, for pots, pictures included, 36 pairs of Carnations and Picotees, good named varieties, for 36*s.*, package included.

NEW SEEDLING AURICULAS AND CINERARIAS.

WM. IVERY, Florist, &c., Kensington, near London, begs to inform the Nobility and Gentry that he is ready to supply the undermentioned Plants, which he can with confidence recommend:—

AZALEA LATERITIA ROSEOLA, bright rose, 21*s.* to 31*s.* 6*d.* each. "A Certificate of Merit was awarded to Mr. Ivery, at Kensington, having large flowers, sleps and bright in colour, and expanding freely."—DR. LINDLEY in *Gard. Chron.*, April 20.

AZALEA COCCINEA SPLENDENS, bright scarlet, good shape, and free bloomer, 15*s.* each; Azalea delicata, bright pink, good shape, and abundant bloomer, 15*s.* each.

CINERARIAS.—Beauty of Wobburn, very large white beautiful eye and dwarf habit, 5*s.*; tricolor, white and pink, brown eye, compact flower, 5*s.*; Nosegay, purplish blue, good petal, and noble truss, 5*s.*; Washington, very large crimson, good petal, 5*s.*; Captivation, white ground, with beautiful mazarine purple tips, gained first Prize at the West Kent June Exhibition, 5*s.*; Criterion, mazarine blue, beautiful white centre, gained first Prize at Dorking May Exhibition, 7*s.* 6*d.*; Red Rover, bright crimson, beautiful prolific bloomer, 5*s.*; Fanny Eisler, white crimson tips, prolific bloomer, 5*s.*; Pickwick, bright purple large flower, and fine shape, 3*s.* 6*d.*; Compacta, small, white, and beautiful round flower, 5*s.*

The whole set of Seedling Cinerarias, 21*s.*

The following CINERARIAS can be recommended as good:—Ivery's Beauty of Syston, bronzy purplish blue, fine winter flowering var., 3*s.* 6*d.*; Emperor, 2*s.*; Pride of Peckham, 2*s.* 6*d.*; Regulata, 2*s.*; Delicata, 1*s.* 6*d.*; Regina Victoria, 2*s.* 6*d.*; Triumph, 2*s.*; Rival King, 1*s.*; Imperial Blue, 1*s.*; Royal Blue, 1*s.*; Iveryana, 1*s.* 6*d.*; Princess Royal, 1*s.* 6*d.*; Queen Victoria, 1*s.* 6*d.*; Exquisite, 3*s.* 6*d.*; Wee Pet, 3*s.* 6*d.*; Henderon's Azurea, 1*s.* 6*d.*; Pilot, 1*s.* 6*d.*; Unique, 1*s.* 6*d.*; Magnet, 1*s.* 6*d.*; Prince of Oldenburgh, 3*s.* 6*d.*; Sombre Agreeable, 2*s.* 6*d.*; Eclipse, 1*s.* 6*d.*; No. 7, 1*s.* 6*d.*; Enchantress, 1*s* 6*d.*; Compact Blue, 1*s.* 6*d.*; Bell's Decora, 1*s.* 6*d.*; Good's Compacta, 2*s.* 6*d.*; Gaines's True Blue, 1*s.* 6*d.*; Prince Albert, 1*s.* 6*d* ; May's Queen of May, 2*s.* 6*d.*; Youngii, 1*s.* 6*d.* Good varieties from 9*s.* to 18*s.* per doz. Fine Cineraria Seed, 2*s* 6*d.* to 5*s.* per packet.

Fine PETUNIA, noticed in "Calendar of Operations," *Gard. Chron*, Sept. 14. Ivery's Pet, 1*s.* 6*d.* to 2*s.* 6*d.*; Magna Charta, 1*s.* 6*d.* to 2*s.* 6*d.*; Reliance, 1*s.* 6*d* to 2*s.* 6*d.*; Ovid, 1*s.* 6*d.*; Prince Albert, 1*s.* 6*d.* to 2*s.* 6*d.*; Kentish Beauty, 1*s.* 6*d.*; Enchantress, 1*s.*

WARREN'S GARDEN and NURSERY, Nonantum Vale, Brighton, Floral Saloon and Seed Store, No. 1, Tremont Temple (late Tremont Theatre), Boston.

The Proprietor of this Establishment is now ready to receive and execute orders for Fruit, Ornamental Trees, Grape Vines, Shrubbery, Roses, Strawberry Plants, &c., in any quantity, and of the most valuable kinds, at short notice, properly packed and secured for transportation to any part of the United States, Provinces, or Europe.

The Catalogue for 1844, which has been prepared with scrupulous care, contains a list of the choicest sorts of Pears, Apples, Plums, Cherries, Peaches, Apricots, and Nectarines, Grape Vines, Raspberries, Gooseberries, Strawberries, Currants, Evergreen Trees and Shrubs, Ornamental Trees, Herbaceous Plants, Roses, Greenhouse Plants, Dahlias, &c.

A new feature has been added in the Catalogue, which renders it particularly valuable for purchasers who are desirous of improving their orchards and grounds, by planting only the most approved, superior, and productive varieties. It is by columns and abbreviations, the meaning of which is explained under every different kind of fruit, so that a large number of the most important characters by which the different varieties are distinguished may be seen at a glance.

While the List of Fruits may not be found so extensive as in some other Catalogues, it contains every kind of value, and all new and improved varieties are added as soon as their qualities are tested. Nevertheless, any variety that may be ordered can always be supplied, on as reasonable terms as are afforded at other Nurseries.

The List of DAHLIAS comprises upwards of 300 of the choicest varieties of this gorgeous and splendid flower, most of them prize varieties. Dry Roots ready for delivery early in the Spring, and in Pots from the middle of April to the 1st of June.

STRAWBERRIES, of the most productive and best varieties, for sale, in any quantity. None but healthy and strong Plants will be suffered to leave the Nursery.

GRAFTS and SCIONS of most of the kinds named in the Catalogue, can be obtained in their season.

GREENHOUSE PLANTS of all the rare and splendid kinds always on hand at the Saloon, where visitors are respectfully invited to call.

GRAPE VINES, ASPARAGUS, and other roots constantly for sale.

Also, a great variety of choice GARDEN and FLOWER SEEDS, all of this year's growth, and warranted fresh, genuine, and true to their names.

Agricultural, Horticultural, and Botanical Books.

Gardening Implements, Flower Vases, &c. &c. The whole enumerated in a new descriptive Catalogue, which will be given Gratis on application. All orders for trees will be delivered at one day's notice. Every tree and plant will be warranted by the subscriber as to its distinctive character and goodness,

JAMES L. L. F. WARREN.

NEW HARDY TRIBES.

SUTTON AND SONS respectfully recommend attention to this beautiful tribe, and especially to the elegant and distinct varieties which they have of late years imported.

Burrow and Sons' Collection of Irises are equal to any in Europe, and they now offer as under:—

The Collection of 36 varieties	1*l.* 10*s.*
The most distinct 40 do.	2 2
The best 12 do.	1 0

The readers of the *Gardeners' Chronicle* are earnestly recommended to observe Messrs. SUTTON'S Priced List in the 32 Page of the *Chronicle* of 28th September.

N.B.—Parcels delivered free to any of the railway and packet offices in London, or any station on the Great Western Railway within 60 miles of London.—Reading Nursery, October.

GEO. MILLS offers Five Seeds of his best Frame CUCUMBER for 2*s.* 6*d.* His Treatise on the [illegible] with Plan of Pit, is published, 4*s.* 6*d.*, Price [illegible] publish price 2*s.*, his Experimental [illegible] Also, his Opinion of the Dahlia [illegible] Shrubbery Park, Acton.

ROSES.

[illegible] begs to inform his [illegible] published his Price Cur[illegible] [illegible] nent containing [illegible] and Climbers [illegible] [illegible] [illegible]

SPALDING'S EKOLIPTIC RED WHEAT, DUTCH ROOTS, &c.

JAMES C. WHALLEY begs to inform their Friends and the Public that they have a large supply of the above very valuable Wheat, and having received the most flattering reports in its favour from several eminent Agriculturists who have grown it, they feel great confidence in recommending it as the best Red Wheat now grown, having during the last two seasons in a great many instances produced above 60 bushels per statute acre; this season many fields have yielded the enormous quantity of 7 quarters per acre, and where grown in competition with other sorts of Wheat, it has produced 6 to 12 bushels more per acre. Price 9*s.* 6*d.* per bushel.

J. and C. W. have also ITALIAN RYE-GRASS, imported direct by themselves, and which has given such great satisfaction the last year to their friends. New Winter Tares, Seed Rye, &c. &c.

A fine collection of Imported DUTCH ROOTS, priced Catalogues of which may be had on application.

A general assortment of AGRICULTURAL IMPLEMENTS, embracing every article of acknowledged merit as it appears.

St. George's Crescent, Liverpool.

DANECROFT NURSERY, STOWMARKET, SUFFOLK.—PETUNIAS, SEEDLING VERBENAS, DAHLIAS, &c.

C. GIRLING has much pleasure in announcing to his Friends and the Public generally, that he has been successful in adding to his already extensive collection of Verbenas some splendid Seedlings of the present year, which for colour, form, and size far surpass any Verbenas yet produced; in confirmation of which C. G. begs to refer the public to the following awards they have received, and reports that have been made of them, viz., an Extra Prize at the Ipswich Show in June, Stowmarket in July, Ipswich in September, Bury St. Edmunds, &c., Newmarket, &c., and Chelmsford open Show; and favourably noticed by the Conductor in the *Gardeners' Chronicle*, August 31, and in the *Gardeners' Gazette* by Mr. Glenny, August 31. Mr. Ayres also speaks of them in flattering terms in the *Gardeners' Chronicle*, Oct. 5, page 613; and in addition to the above testimonials they have been seen growing by many eminent Horticulturists and Amateurs, all of whom have considered them as very superior.

S. G. therefore offers them with full confidence of their giving general satisfaction.

	s.	*d.*
Alba Lutescens, sulphur-yellow, large, and sweet-scented	3	6
Alba Magna, the largest and best white out	3	6
*Blanda, rosy-blush of excellent form	3	6
*Gladiator, orange-scarlet, with deep yellow eye, fine	3	6
Lovely Rambler, grey-lilac, very large	3	6
Messenger, bright-purple, of fine shape	3	6
*Mulberry, bright-mulberry, quite new in colour and fine	3	6
Rose de Amour, bright-pink, with beautiful yellow eye, quite distinct, and the most attractive Verbena ever raised	5	0
*Rubescens, bright-ruby, large and well-formed	3	6
The Giant, silvery-lilac, the largest trussing Verbena known, some of the trusses measuring from 10 to 12 inches in circumference—the heads of this Verbena resemble in appearance a blue Hydrangea	5	0

N.B.—Those marked with an * will not be sent out till early in May; the others can be had after the 25th of October, and can be forwarded in tin boxes by post. The usual allowance to the Trade.

PETUNIAS.—S. GIRLING has likewise been successful in raising some Petunias of superior excellence. Twelve varieties, selected from about fifteen hundred seedlings, will be sent out as early as possible in the spring, far surpassing anything in that fine and beautiful class of plants. Nurserymen wishing to be appointed agents are requested to forward their names, which will be published in the *Chronicle* and *Gazette* before sending out. The usual allowance to the Trade. Advertisements with names and prices will shortly appear.

DAHLIAS.—S. GIRLING having purchased the entire stock of that beautiful Dahlia, Bourne's Marchioness of Ormond, the best light-tipped Dahlia of the season, similar but far superior to Bridesmaid in every respect, plants will be sent out early in May next, at 10*s.* 6*d.* each. A few roots would be parted with, on the warranty of the party purchasing, *for* exportation only, and the party to whom sent giving a pledge not to send plants to England for sale. Nurserymen and dealers wishing to place this Dahlia in catalogue next season, will have their names published in good time before sending out, and the usual Trade allowance, where 12 Plants are ordered, and extra Plants to compensate for long carriage.

DAHLIA NONPAREIL.—S. G. has a few large and small ground roots of that beautiful and popular Dahlia to dispose of; the former at 20*s.*, the latter at 10*s.* each. From the limited number sent out in England last season of this Dahlia, it will be more in demand than any other Dahlia sent out last May. Parties wishing for roots had better send their orders early, as the stock, which is limited, will be sent out in rotation, as the orders are received; almost every other kind of Dahlia in cultivation, embracing nearly all the favourite varieties of this and former years, can be had in dry roots at moderate prices, warranted correct to name.

N.B. A respectable reference or ready money will be required from unknown correspondents.

Foreign Orders faithfully executed.

Danecroft Nursery, Stowmarket, Suffolk, October 10, 1844.

LARGE IRISH YEW.—If any person has a large Irish YEW, not less than seven feet high, to dispose of, a purchaser may be found by addressing Mr. MARNOCK, Exotic Nursery Garden, Canterbury.

PRINCESS ALICE MAUDE, AND [illegible] STRAWBERRIES.

HURST AND M'MULLEN, 3, Leadenhall-street, London, beg to inform their friends that they have a few fine plants of the above celebrated kinds of Strawberries still remaining, at 30*s.* per 100: also fine plants of Myatt's British Queen, &c. at 6*s.* per 100; Alpinella imbricata, strong plants, 6 inches high, 2*l.* per 100. Their Catalogue of Dutch and Cape Bulbs can be had on application; it contains splendid collections of Ixias, Gladiolus, Sollias, &c. &c.

CINERARIA "SILVER QUEEN."

A. PAUL AND SON, Nurserymen, &c., Cheshunt, Herts, beg to offer the above novel and beautiful Cineraria, which was exhibited at the Horticultural Society's Garden, Regent-street, May 21, 1844, and received a certificate there.

It is a tricolor and handsome trussing Cineraria, showing a [illegible] to quill, by the petals [illegible] of the flower being [illegible] for some distance from their bases, and thus [illegible] a silvery appearance.—*Gardeners'* [illegible]

Messrs. [illegible] Paul and Son [illegible] a Cineraria, [illegible] of a [illegible] and singular silvery [illegible]—*Gardeners' Gazette*.

Plants now [illegible] for [illegible] packings, or post [illegible] An order [illegible] from [illegible] expected from [illegible] correspondents. [illegible] discount to the Trade on all plants.

SUPERB [illegible] CINERIAS, 24*s.* to 30*s.* per [illegible] [illegible] 12*s.* to 18*s.* ditto. [illegible] PAUL and [illegible]

[illegible] [illegible] [illegible] [

THE TRUE FASTOLFF RASPBERRY.

YOUELL AND CO. beg to announce they will again be able to supply fine canes of the above truly excellent variety, unequalled for the size of its Fruit, and richness of flavour; prices as follow:—

Packages containing	100 Canes	.	£3	0 0
Ditto	50 "	.	1	1 0
Ditto	25 "	.	0	12 0

Further particulars will appear in future Advertisements.

YOUELL and Co. feel it due to themselves to state that a spurious kind was offered for sale by other parties last season, under the title of "Fastolff Raspberry," the same having no pretensions to the genuine variety.

Great Yarmouth Nursery, Oct. 10, 1844.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 12, 1844.

MEETING FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Oct. 16	Microscopical	8 P.M.
SATURDAY, Oct. 26	Royal Botanic	4 P.M.

Is there half a dozen persons who ever looked into that most curious book, "A Philosophical Treatise of Husbandry and Gardening; being a New Method of Cultivating and Increasing all sorts of Trees, Shrubs, and Flowers. By G. A. Agricola, M.D., and Doctor in Philosophy at Ratisbon," of which an English translation appeared in 1721? We doubt it. And we presume that the few who have ever looked at it have closed it again with the conviction that it is an imposition from beginning to end. There are, however, things in that book which laid the foundation of the most recondite processes employed in the MULTIPLICATION OF PLANTS. Agricola may indeed be regarded, notwithstanding his lies and exaggerations, as the father of the art and mystery of propagation. He maintained that all plants may be multiplied by portions of every part of the stems, leaves, and roots.

"A query," he says, "was once proposed in an assembly, viz., *An detur modus artificialis universalis multiplicandi arbores et frutices distributivè sumptos?*—Whether there be such a thing as a universal way of multiplying trees and shrubs in a distributive sense? There was one who presently answered that such a thing might be reckoned among the *Non entia*, and was such another fiction as that of Bellerophon; but I hope I shall, through care and diligence, bring the matter so far as to convince those incredulous persons, not by words only, but by real experiments." And then he goes on to explain how such ends are to be attained.

His great panacea was what he called Vegetable Mummy, a mixture of gum copal, and Venice turpentine, into which the fragments to be operated on were to be plunged. And a hasty reader would suppose that this was all that Dr. Agricola relied upon. But the true principles of multiplication were well understood by him, and distinctly explained; his mummy was only an accessory in the operation. Take, for example, the following passages:—

"'Tis certain, from a great many experiments, that a yearly joint or shoot has in itself at the same time both root and branches; and, according as things are managed, it quickly produces either a twig or a root. To demonstrate this, I shall pitch upon an instance known to all country people and Vine-dressers; they take a long stalk or branch of Vine that has a great many joints, which they bend under ground, and it shoots a great number of roots on every side; now had they not bent that branch thus under ground, other new branches would have come out of its joints, which is not at all to be questioned; but if roots may grow from one shoot or branch, they may likewise grow from all, when skilfully prepared, as experience has shown, and new discoveries will confirm. Therefore what has been said of one shoot will be found true of all.

"It has been already demonstrated, that every tree is furnished with abundance of joints, in which lies the spring of life. You may take a branch with two or three joints, and cut off the wood at the bottom of each, according to art, which being done, you may dress and lay them under ground. But as there are on every branch above fifty or threescore joints, which may all be treated after this manner, it follows that the same method may be used with respect to all trees and shrubs, although they have a hundred thousand or a million of joints."

Here we have the main principles of propagating plants as plainly described as they could be at the present day. A more learned phraseology might be employed, but the meaning would be the same. In the course of a century we have not advanced a step, except that we can do without mummy what Agricola says he did with it.

It is certainly true that every joint of every plant will form a new plant, if placed in circumstances favourable to maintaining its vitality long enough to enable it to take root. The difficulty consists in knowing what those circumstances are, and how to insure their presence. An experienced propagator knows this—one without experience is ignorant of it. Both have the same rules and facts to guide them, but one cannot apply them and the other can. In one man's hands every cutting strikes; in another's they all die. What one pronounces it impossible to propagate at all, another never fails with. Give Schykoffsky a willow *leaf* and he produces you a couple of plants; give Grumble a willow *branch*, and he contrives to kill it.

The English, with all their skill as gardeners, are certainly not the most celebrated as propagators; for although we here and there find a first-rate hand among them, yet he forms the exception, and not the rule. We once knew a man who flattered himself that he was a capital gardener because he grew Grapes pretty well; and yet, when the cone of a Pine-tree was given him, the only notion he had of obtaining any live thing from it was to sow it whole as he received it. This honest man might be a Grape-grower, but he was no gardener. It is true that he wore a blue apron, and talked much *about himself* at village meetings, but the unlucky Pine-cone showed him up. When the ass put on the lion's skin, he would have passed as the very monarch of the forest if his braying had not betrayed him.

Now the science of propagation is one of the finest parts of gardening. It is the most pregnant with useful consequences, and it is the surest test of real knowledge of the profession. The man who can propagate well cannot cultivate ill. If he knows enough to do the one well, he knows too much to do the other ill. We should therefore set down dexterous propagation as one of the best practical evidences of what a gardener is good for. It is for this reason that it seems worth while to point out, as far as we have the means of doing so on paper, the views of the best modern gardeners upon this important subject; for which purpose we shall next week offer some remarks upon the recent pamphlet by Mr. Neumann, "Upon the Art of making Cuttings."

ON THE GROWTH OF FOREIGN PINES IN MORAYSHIRE.

Of the various species of Coniferæ which have been introduced into this district during the last twenty years there are none that advance so satisfactorily, or promise to become such valuable timber-trees, as those indigenous to the mountains of India—namely, Abies deodara, Pinus excelsa, and Abies Smithiana or Khutrow. These are not only of rapid growth, but they ripen their shoots so as to withstand our severest winters, and as yet, appear less liable to disease than many other Pines recently brought under our notice. The Abies Douglasii and the Pinus ponderosa, from the banks of the Columbia, are both of luxuriant growth, but are not adapted to our climate. The former has a propensity to produce autumnal growths, which, from their succulent state, are not fitted to resist severe frost, and appears to partake considerably of the nature of the Picea balsamea, a tree less tenacious of life than any other Fir. All our finest specimens of Pinus ponderosa have become victims of the small but destructive beetle, Hylurgus piniperda, and the tree is neither likely to become valuable nor ornamental. Many of the other species of Foreign Pines are either too tender or of too slow growth in this climate, and in exposed situations are not expected ever to exceed the size of tall shrubs. It is true that the more rare and expensive sorts are not unfrequently disfigured and retarded in growth, by being long confined in garden-pots before being placed permanently in the open ground—treatment which, at first, is apt to conceal the merits of the plants. It is, however, necessary to keep some kinds in pots, to insure their being removed of a certain size with safety; for instance, the Pinus maritima, and all of the same habit of growth, do not transplant and succeed well if allowed to remain more than one year in the seed-bed; that their roots may therefore be preserved in a fit state for removal they must be transplanted frequently, or kept in pots until they be placed in their final destination. This mode of treatment, however, is not necessary for the kinds we recommend from the Himalayas—their roots being very fibrous, or bushy, adapt them for being removed at almost any age when planted; and they may be successfully grown from seed by the nursery treatment suitable for the Larch and Scotch Fir. Those that we have seen kept long in pots become stinted, but the vigour which the plants assume when their roots are set at freedom in the open ground after being cramped and restrained in garden-pots is very remarkable. My remarks on the native Pines of India are not founded merely on the success of a few nursed specimens, grown under circumstances unusually favourable. Plants have been raised here in great numbers, and many have been transplanted among the brown Heath on the acclivities of some of the hills in the highest parts of the county. Perhaps the landowners of no district in Britain are better furnished with the Pines of India than are those of Morayshire—thanks to our townsman, Dr. Falconer, who collected and forwarded the seeds of the plants, which advanced so hopefully. Seeds of the Deodara presented by him are being grown to decorate the promenades on the County Hill in the vicinity of Forres, and the property of the town. The introduction and extensive propagation of trees that are natives of climates, possesses an interest and advantage to the district which is local. These form a foundation of individual wealth and independence, and become sources of national prosperity and riches. The Deodar is already the most celebrated coniferous tree of the Himalayas; it attains the height of 180 feet, with a corresponding size in circumference, or even more, and in its native country rarely falls short of these dimensions. Its wood is very compact, resinous, and fragrant, capable of receiving so very high a polish that it has been compared to brown agate, and it has been found perfectly sound in the roofs of temples in India which could not have stood less than 200 years. The average yearly growth of the plant four or five years old in Morayshire, is from 10 to 12 inches; the feathery lightness of its spreading branches, and the beautiful silvery hue of its leaves, render it even when young extremely ornamental; and all travellers who have seen the tree full-grown in its native country, agree that it unites an extraordinary degree of majesty and grandeur with its beauty.—*J. Grigor, Forres Nurseries.*

THE NEAPOLITAN VIOLET.

THIS is one of our loveliest winter flowers, if rightly managed, but this I fear is seldom the case; and the failures which take place are, I apprehend, chiefly through acts of overkindness. *Forcing*, in the strict sense of the word, will by no means agree with them, more especially by bottom-heat in the dead of winter: and this, for two important reasons: 1st, they are impatient of any given temperature above 50°, in the comparative absence of light which we experience through November and December; and 2d, because they are equally impatient of dampness of atmosphere, and this must of course occur if there be any matter beneath them in a state of fermentation unconfined.

I planted a four-light pit with them in the first week of September; this pit had been a receptacle for Pines through the summer, and was of course nearly exhausted: having trod it firm and filled it as high as would cause the Violet leaves to come within an inch of the glass, I placed thereon an inch of the richest old rotten manure in the yard; on this the violets were placed, with all the ball of earth that could be made to adhere to them, and then filled up with a compost of one half sandy heath soil in a mellow state, and the other half the top of an old Cucumber bed, which had been soiled with stiff yellow loam. The bottom-heat of this bed has descended gradually from 75° to 68° up to this time, and in another fortnight will be down to 60°; in the meantime I have kept the atmospheric heat as low as possible, by giving abundance of air all night; so that I will venture to say that the bottom-heat has averaged at least 12° more than the atmospheric heat. My plants now look splendidly, and I make no doubt will fully answer my expectations, as I am always successful with this flower. I put heath soil about them for the same reason that early Cucumber growers use it, viz., as being dryer and mellower on the surface, and somewhat antiseptic. These plants are peculiarly liable to a rottenness in the leaf, which is, no doubt, contagious, for if not picked off it spreads like wildfire, and after picking I invariably dredge a mixture composed of very coarse river sand over them, with which a little charcoal dust and quick lime has been blended. This dressing also prevents the slugs from committing their ravages, for if permitted they will constantly deface the blossoms.

Another precautionary measure is, to take care that the soil, at planting, is of an equal moisture throughout, as but little water can be used after planting, without producing too moist an atmosphere. I have up to this time used nothing but the syringe, except at planting-time, when I watered them freely to settle the soil. They must have all the air that can possibly be given with safety, both night and day; taking care at all times to exclude even the slightest degree of frost; double matting in winter, with plenty of dry Wheat straw thrown over the mats in weather of great severity, will be found sufficient for this purpose, provided the sides of the pit be completely cased with dead lining up to the lights.

The main principle to bear in mind is, the endeavour to lengthen as it were our summer, by the bottom-heat, at planting; the very discrepancy between the bottom-heat at this time, and the atmosphere, combined with the temporary check on removal, induces the blooming habit very shortly; after which the mere exclusion of frost will insure a continual production of blossoms until May of the following year.—*Robert Errington.*

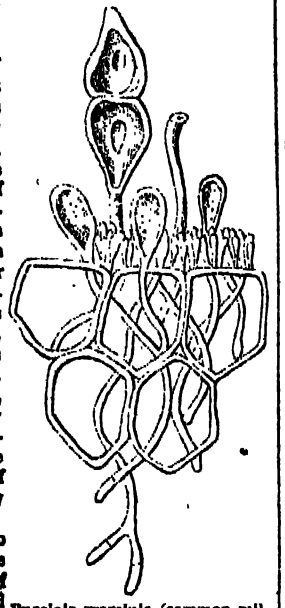
DISEASES OF PLANTS.—No. IV.

[FUNGI.]

WE now come to the second great class of Fungi, viz., that in which the reproductive bodies are contained in sacs, whether they be solitary, or arranged according to some definite plan. To this belong the tribe of Helvellas and Pezizas, amongst which the common morel, or the large dunghill Peziza will at once occur to every cultivator who has taken pains to examine the structure of such species, which do not indeed require a very high magnifying power. With these are associated many subterranean forms, such as the edible Truffles, a portion of the hypogæous Fungi being more nearly allied to the puffballs. The curious Fungus, too, which grows on the hoofs and horns of animals, or upon feathers, though so closely resembling one of the small Lycoperdons, must take its place in this division. Then comes the enormous genus Sphæria, more numerous, perhaps, even than the Agarics, a familiar example of which is afforded by the Sphæria hypoxylon, which grows at the bottom of old stakes, &c., resembling the snuff of a candle. And of these also there is a small but highly interesting subterranean group, of which one or two species have been detected in this country. To this division also belong the Fungi which produce the white mildews on Peas and Roses, and that which is sometimes so destructive in Hop-grounds; and lastly, that portion of the moulds which produce their reproductive bodies within distinct sacs, or as they are called, sporangia. As stated above, the true affinities of several genera are not at present

ascertained, and precautions and notions and habits, in spite of better information, will still keep others in very improper situations. Into these questions, however, it will not be necessary to enter, at any rate for the present.

We must now say a few words on a very important constituent part of Fungi, to which attention has not always been paid—I mean that part known under the name of Spawn, or Mycelium, which produces the fruit. In general, the portion of the Fungus which appears externally, and to the casual eye, the whole Fungus, is the fruit—a fact which has given rise to the notion that Fungi consist entirely of fructification, and has caused them to be compared with such phænogamous plants, which indeed are perfectly analogous, as Hydnora and Rafflesia. But this portion often exists, even for years, without producing fruit, and either in its normal state, or one of excessive luxuriance, gives rise to various supposed genera, which, as they are destitute of fruit, and are mere states of *transition*, or what have been called anamorphoses (that *is*, over-luxuriant but incomplete conditions) of higher species, will be studiously excluded from systematic arrangements by every philosophic botanist, though they are far from being devoid of interest in other points of view. And even where the fruit has been fully formed and passed through its several stages from the first bud to ultimate decay, the mycelium itself remains to produce again, so soon as circumstances favour the peculiar combination of atmospheric phenomena necessary for their development, a fresh crop of fruit. It is thus that the largest trees are infested for years with incipient Fungi, without any outward sign of their existence, till unexpectedly the pileus or fruit bursts forth, and the work of destruction is certain and speedy. It is the mycelium which constitutes what is called Mushroom spawn; and the fungous stones of Italy which, when watered, produce at pleasure a crop of edible Fungi. It is this again which in the entophyllous* Fungi traverses the cells (as represented in the accompanying sketch), waiting only fit proportions of heat and moisture to make their appearance, to the detriment of our harvest. I am not aware that the subject has at present been properly investigated, but there can be little doubt that the dark-coloured plants of corn, which may be pronounced beforehand as certain to be attacked in due time by their peculiar parasites, would, if examined as soon as this appearance is manifested, show evident indications of the lurking mycelium. At a later stage of growth, when the enemy is merely waiting for a happy moment in which to declare himself, the observation of the mycelium is easy enough.



Puccinia graminis (common mildew), with its mycelium penetrating the subjacent cells; from Corda.

I have not attempted to give any definition of the term Fungi. In bodies of such various forms and habits, it is almost impossible to give a faultless definition; and however easy it is to criticise, it is very difficult to improve. Indeed some Fungi and Lichens approach so near to each other, not only in outward appearance but in structure, that it is merely the practised eye which can determine accurately to which tribe certain individuals ought justly to be referred. In following up the subject I shall first dispose of those productions which, though classed with Fungi, have really no title to be so, but are mere diseases of the cellular tissue of the plants on which they are produced.—*M. J. B.*

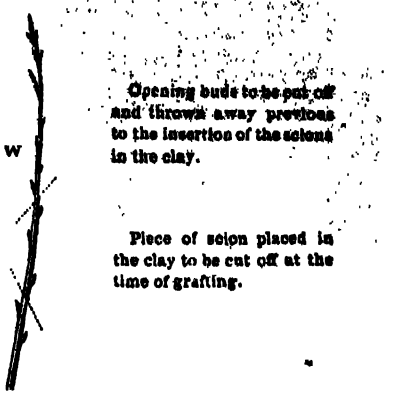
* Growing inside of leaves.

THE ROSE-GARDEN.—No. XIX.

(*Continued from page* 620.)

Grafting.—Where buds have failed, or a good choice of scions be attainable in February, from plants which require pruning, let the produce of each tree be examined after cutting it in, which must in this instance be commenced two or three weeks before the usual time; a selection may then be made of those which are the finest, and their thickest ends (care being taken that the produce of each tree be tied in a separate bundle and ticketed) placed in a lump of moist clay an inch deep; the clay must then be pinched tight round them, and the whole placed in a potful of earth (above two-thirds of the shoot being left free) until ready for use. It must be remembered that at the end of each shoot there will probably be one or more buds open; these must be carefully cut off from the shoot, or they will infallibly exhaust the others.

The exact time for removing the scions from the parent tree, must depend upon the season. Some time during the first three weeks in February is the usual period. There does not exist an actual necessity for cutting the scions until they are required for use, but then it will be more difficult to select the number required in a state fit for use, and there is a greater chance of their going off, if the weather remain cold, or the buds not immediately supplied. Scions cut when the sap is quite down, carry better and are in every way more hardy; and such failures as may take place occur before they are used, the useless ones shrivelling whilst laid by, leaving those which are desirable to use fresh and vigorous.



Let the shoots remain for three weeks in an outhouse, or any other place, neither very dry nor very damp, where neither wind nor sun can come in contact with them; the clay being damped with a sparing hand, if the generality of the scions appear to shrink. During the first week in March the head of the stock (in which the sap should be beginning to rise), is to be cut off horizontally; a slit made in it, straight downwards, of a couple of inches, or an inch and a half long, without injuring the sides of the bark. The scion is to be taken in the left hand, three buds, or two if the stock be not large, being left upon it; the lower extremity must then be cut in the shape of a wedge, the back being rather the thinnest, and the lowest bud about half an inch above the thick end of the wedge. In doing which, care must be taken that the bark be undisturbed; and each scion so placed that when entered in the stock all the buds may point outwards, or, at any rate, be in such position that the shoots from them may not interfere with each other. The end of a budding-knife, or a little wooden or ivory wedge, may be used to open the slit in the stock on one side, and the scion, with the thickest part, or front outwards, must be placed in the other, care being taken that the edge of the inner bark or liber of the scion touches the edges of the inner bark of the stock, all the way down; the wedge may then be removed, another scion entered in its place, the slit being kept open by the first; if the size of the scion be only half the size of the stock, a shoulder may be left to the former, and the chances of success thereby increased. Any number of scions may be inserted in the same stock, but from one to four at most are all that are desirable in the present case, to cover completely the head of the stock, which is apt to receive much injury from the weather, if not carefully attended to. The object of laying by the scions, is that the stock may be the forwardest, and be enabled to supply the sap, and force them forward at once, instead of lingering while they perish from exposure and want of nourishment. But there is this advantage in claying and laying by scions; viz. the separation of the vigorous from those which are weakly, which latter will sometimes shrivel and go off long before they are wanted, leaving their neighbours sound and healthy; this declension, however, may frequently be ascribed to a deficiency of moisture, from the clay having been permitted to get too dry. When the shoots are on, the whole must be tied up with a bast ligature, to prevent the scions from shifting, which from their wedge-like shape they will have a tendency to do, when the rise of the sap swells the stock, thereby diminishing the juxtaposition of their respective libers, and the whole beneath the lowest bud covered with grafting clay, totally excluding air, sun, and rain. If the clay crack it must be renewed, not by shifting, but by filling up the crack. In about six months the clay may be removed, and the wound covered with mixture; this latter on no account must be omitted.







Home Correspondence.

Planting Pines in Tan.—One of the greatest misfortunes of almost all horticultural discussions is the want of the disputants being just to each other, as we are too frequently more desirous of obtaining a personal triumph, than of yielding to the triumph of truth. From Mr. Hamilton's reply to my remarks on the above subject, a stranger would suppose that I had passed unmitigated censure upon his whole work, whereas I have merely expressed my doubts, and doubts warranted by circumstances, as to the propriety of adopting one part of the practice which he inculcates. For venturing to do this, Mr. H. has thought proper to commiserate my [illegible] and to [illegible] he has used a small [illegible] with the tan. [illegible] making me say this which I never said or thought in it. Thus I am represented to have said "there parts of decomposed leaves" (I wish I had done so), "to one of tan," whereas I never mentioned the proportion in which they were used at all; and I may now state that not more than one-eighth of the mass consisted of leaves, and this indeed was only used for the fruiting plants, while the succession ones were planted in what Mr. H. is pleased to designate "pine tan." In truth, admitting the use of tan at all, so suitable did the material appear that I have not the least doubt if Mr. H. had passed by at the time we were using it, he would have said, "You could not make use of a finer article." However, in both cases the experiment is a failure; the fruiting plants were irreclaimable, and have been thrown away some time ago; the succession plants began to improve as the tan decayed, but they rooted so reluctantly into it that I determined to remove them, and they have been growing in soil for some weeks past. In taking them up, it was very evident that tan, at least such as I get near the Metropolis, is not suited for the growth of Pine plants. Very few of the roots had extended beyond a few inches from the ball of earth which adhered to the roots at the time of turning out the plants, and these roots had a stinted and very unhealthy appearance; but, strange to say, the ball of earth was a mass of fibres as fine as the roots of Heaths, and on examination I find these are now progressing freely into the fresh compost which surrounds them. Nothing could more satisfactorily demonstrate the inutility of tan as a medium for Pine plants to grow in than the great difference that was observable between the plants above adverted to and those growing in compost in the same pit. In the tan they were disgraceful, and I should have been ashamed to have shown them; only, being planted in a great measure for experiment, I was desirous of showing my friends that the experiment was a failure. Those planted in soil grew as luxuriantly as could be desired, the roots ramifying through the soil in every direction, and many of them were as thick as the pen with which I am writing. Now, judging from this experiment, Mr. Hamilton is surely mistaken in supposing that a small quantity of leaves mixed with tan would injure it. If Pines will grow in tan, which possesses no fertilising properties, as is proved by the analyses of Sprengel and other chemists, they will grow much better by an admixture of leaf-mould with the tan, which is known to contain most of the essential elements of vegetable organism; indeed, one of the most successful Pine-growers in the country, viz., Mr. Malleson, of Claremont, fruits all his plants in half-decomposed leaves, and few persons grow Queen Pines, as a general crop, in better style. We have also the evidence of Mr. Fleming, of Trentham, to the same effect. Mr. Rushton is surely mistaken in his notions regarding the fertility of tan: the very fact of his Fig having produced so great a mass of roots in it, proves that it was not rich in nutriment, or why did Nature provide so many mouths (roots), with which to feed the plant? All experience proves that when plants are growing in poor soil, they make a greater quantity of roots than when growing upon a dunghill; and hence the propriety of using sand in propagating, and of picking out plants intended for transplanting on light sandy soil. This is a law of nature, and therefore immutable. I doubt not but Mr. H. has been successful with the tan of his neighbourhood, but he must recollect that the curing of hides differs so much in different tan-yards, that what may be suitable for plant culture in one place, in another may be poisonous to them; and therefore, as we have no means of ascertaining the purity of tan, it will be better to abandon its use altogether, and use a proper compost, than run the risk of injuring plants by using an improper material. From Mr. H.'s letter, and also from the concluding sentence on Pine culture in his Treatise, we have strong presumptive evidence of his having some misgivings himself as to the propriety of using tan; for in the former he says, "The most of my fruiting plants are growing in a mixture chiefly composed of soil similar to that recommended in my Treatise, and such as I will always recommend where the tank system is used." At page 103 of his Treatise he says, "When a congenial bottom-heat can be communicated independently of fermenting materials, why not use a proper compost? And for this purpose I would recommend nothing but broken bricks and fresh sods, roughly chopped, of equal quantities, which will keep the bed in a porous state, and allow the atmosphere to have free access to every part of the compost. Although this plant will grow quicker in fresh tan than in compost, yet when the deficiency of bottom-heat is obviated by the improved system of communicating that agency, such as tanks, hot-water flues, &c., we may naturally expect the fruit to be larger than when grown in the latter compost." This quotation affords pretty conclusive evidence of Mr. H.'s misgivings as to the excellence of his favourite compost.—*Judex.*

Cabul Melons.—As many people may be led to suppose, from an advertisement by Mr. Cuthill, which has appeared in the *Chronicle* lately, that I lay claim to the merit of introducing or first growing the Cabul Melon, I beg to say, that the Cabul Melon grown here was raised from seeds that were given to me; that it is the same sort which is grown in many other places; that I have not distributed any seed; and that I never heard of such a Melon as "Fleming's Trentham Cabul Melon," until, in my [illegible] p. 649, I saw it advertised.—*C. Fleming, Trentham Gardens.*

Rare Orchids.—[illegible] the remarks of "Philologus" [illegible] Philologus, p. 642, led me to [illegible] that I still [illegible] that apparent irreconcilable. But if [illegible] of names is admitted to be

unavoidable, surely inaccuracy of colours—if inaccuracy it be—there is far greater excuse for. In relation to Mr. Paul's "Observations on the Cultivation of Roses in Pots," where, at p. 28, Niphetos is described as snowy white, and at p. 31 lemon; I find in the first instance it is described as a forced Rose, and as such it is actually white. If "Philalethes" looks to the work in question, p. 28, a few lines lower down, he will find this sentence: "The colours of Roses are much altered by forcing, coming much paler, especially if a great degree of heat be maintained." This to me accounts for the seeming incongruity; for Niphetos has a lemon appearance when blooming naturally. The omission of Lamarque in Mr. Rivers's list of 20 Noisettes, was more probably owing to its tenderness than an oversight. I consider that every allowance ought to be made in favour of Rose Catalogues, which are circulated gratis, and which, it must be admitted, are of great service to all lovers of Roses.—*Philo Justitia.*

Toads.—About four years ago I brought from Jersey a large toad, which I keep in a small frame. It is very fond of insects, and one day this summer one of my servants gave it about 50 of the small brown beetles which are to be found on the Yellow Briar. It rarely, if ever, strikes at an object with its tongue, unless it be moving, and seems to project its tongue about an inch or inch and a half. A few days since, seeing some wasps eating some fruit lying on the ground, I fetched the toad and placed him near them. He soon caught sight of them, and ate several, and they seemed not to have the power of stinging him. The largest insect I ever saw him eat was a cockchaffer. Toads seem particularly fond of woodlice, and I have induced a small English toad to eat a white butterfly: in this case it had to make use of its claws to push the wings into its mouth. I have noticed this small toad keep its mouth open for some time after having eaten some wasps, and almost thought that they had contrived to sting him, but he soon was able to eat another wasp, and afterwards appeared none the worse.—*T. O'Reilly.*

Strawberries, &c.—Mr. Bree says, (p. 621) "that a three-year-old Strawberry-bed will produce more fruit than a two-year-old bed. I have tried the experiment upon two beds: from the three-year-old bed I cut off all the leaves; but be it understood I did not destroy any of that year's runners, for I consider that they are of more value than the old stools, many of which, when raking off the leaves, I destroy, in order to give the runners a better chance. When the leaves were cleared away the bed was well manured; and from this bed I obtained as many Strawberries as I gathered from the one-year-old bed, from which I only cut off the runners, and which was, at the same time, also well manured. The reason I assign for having as much fruit from the four-year-old bed as from that which was only two years old, is my letting that year's runners remain. The beds were dressed late in the autumn. From experience I can say that the Strawberry cannot be cultivated with advantage more than three years on the same piece of ground; I have always found that the one and two-year-old beds produce by far the best Strawberries. This is not my opinion only, but it is also that of some of the best cultivators of this valuable fruit. With regard to the application of salt to Asparagus, the Editor says "to put it on after the haulm is cut, is to pickle, and not to manure." Surely Mr. Bree does not imagine that I remove the soil down to the crown of the roots in spring before I apply the salt. If so, he is mistaken; it is put on the surface of the beds, and without injury to the young shoot.—*Villegius.* [In order to put an end to the discussion about the age at which Strawberry-beds cease to be productive, it is as well to say at once that that depends entirely on the soil. We could point to beds of the Old Pine Strawberry in Hertfordshire, which, when 20 years old, bore as well as when 2 years old.]——*H. A. Wood, Statfold Hall,* says, "I quite agree with the statement made by Mr. Bree (page 621), viz., 'that cutting off the leaves of Strawberries is an unscientific system.' It deprives the plants of their respiratory organs. If science is correct, in the economy of Nature leaves have a peculiar function to perform, viz., elaboration of the sap. It is admitted that the embryo fruit-buds are formed at the expense of the elaborated sap; if so, should we not encourage as much as possible this beautiful process of Nature, and reasonably consider that the more elaborated sap there is, the better: the question then is, How is this to be obtained? Theory would answer, by retaining the foliage entire. If the leaves are mowed off after the fruit is gathered, a considerable portion of time elapses before the plants will have renewed their foliage; during this period I consider that the plants are losing time, which is most important, as many bright suns will have passed away before elaboration is again in active operation. The time lost may perchance sometimes be regained in the case of a dry and cloudless autumn; but in a wet and cloudy season, a very different result must be expected. On the other hand, by retaining the foliage entire, we embrace all the advantages that summer and autumn offer. Unless leaves were of important service, Nature would not have bestowed them; it is inconsistent to take them away, and at the same time presume to be assisting Nature in perfecting her works. Plants are composed of several distinct parts, each part having its own office to perform; these parts co-operate with each other, and form a compact whole. If we take away one of them the whole is broken, and disorganisation is the consequence; in fact, mowing off the leaves of Strawberries is against the general practice of gardening; for in the cultivation of either fruits or vegetables, we certainly find disconcerted if the foliage is in an unhealthy state. Witness the attack of insects if they are permitted to reign. What is the result? Death, or a severe injury ensues; and why? because the lungs are diseased, and this checks the system. How much greater, then, must the check be if we remove the lungs of the plants entirely! "J. H." very lately (page 638), after stating that he mowed the leaves off every other bed, says—'During this season there was no difference between the crop on the beds that had not been touched, and that on those which had had the leaves mowed off.' This plainly shows that with a favourable season such as last autumn was, there was no advantage gained by mowing off the leaves; and, I attribute their being equal to those beds that were not touched, entirely to the favourableness of the season. Having thus a chance to make up for lost time, I may add that there are great odds against mowing off leaves: my practice is not to cut them off."

Strawberries.—From having followed the plan of never cutting the leaves from the Strawberry plants, and only slightly forking the beds, without injury to the roots of the plants, and giving a good coating of compost manure to the beds, before the winter sets in with its severity, my beds at this moment exhibit luxuriant blossoms, and supply my table with three or four different kinds of Strawberries, and may do so for another fortnight, provided this fine warm autumnal weather should last so long.—*B. D. Greys.*

Packing Seeds for India.—As inquiries are occasionally made respecting the best mode of packing and sending seeds to India, perhaps the following statement may be of use in showing with how little care seeds may be transported from one country to the other, without injury to their vegetative powers, provided they be previously in a fit condition, *i. e.* in a ripened and well dried state before despatching them:—Leaving India unexpectedly in the spring of 1840, I happened to have some seeds, which had been gathered chiefly in the month of November of the preceding year, without the remotest thought or intention of sending them to England, and they were put up in paper packets inclosed in a paper wrapper, and kept in a common travelling box with other articles of personal use. As I came home by the overland route, some things not convenient for carriage were left to be forwarded by a sailing vessel, and amongst them the box with the seeds in it. The boxes, I suppose, were placed in the hold of the vessel with the rest of the cargo. The ship arrived in England in November, but I did not get them till February 1841. Most of the seeds were given away; but having a small portion of some of them left, I sowed three kinds in pots both last year and this, giving them no further artificial aid than the protection of glass, with a southern exposure. Those of last year vegetated and grew freely; this year one sort germinated and just came to the surface and died off; the other two have grown freely. Thus notwithstanding it is now approaching five years since these seeds were gathered, and no particular care has been taken of them at any time, being kept in the paper packets they were originally put into, and the box that contained them must have been six months in the close hold of a ship, they have hitherto retained their vegetative powers little impaired. I attribute this partly to their being perfectly ripened, which indeed they could scarcely have failed of being, in the driest season of the Indian climate; but also and more particularly to their being well dried by the slow and sustained action of a very dry atmosphere during the six months they were in India, *i. e.* from November to May, the driest portion of the year. Hence I deduce as a practical corollary, that if seeds intended for India were kept for some time after ripening in a stove-heated room, the atmosphere of which must necessarily be in an arid state, it would be of little consequence how they are packed and sent to India.—*J. H. H.*

Salt for Fruit-trees.—I have, on a lawn, a large handsome Bigarreau Cherry-tree, which blossomed and fruited, and then dropped. I cut from the turf a triangular six-inch trench round it, 6 feet from its trunk, half filled it with salt, and put the turf on again. I have had noble crops ever since (seven years), but it makes little or no wood.—*Anon.*

Destruction of Small Birds.—I have observed from time to time in the *Chronicle*, remarks on the relative merits and demerits of those generally-despised birds—house-sparrows. I would mention that in some parts of the country it is still usual to set a price upon their heads; which, of course, has the effect of diminishing their numbers very considerably. This, it is said, is politic; and in the winter season it may be so; though to me it appears unnecessarily cruel. When, however, this onslaught is carried on in the spring, and still later in the season, I can tell Messieurs the farmers, and market-gardeners, that they are doing themselves a serious injury, for the quantity of insects and small vermin that these birds consume is positively incalculable. They are to the farmer in the fields, and to the gardener in the orchards, precisely what the scavangers are to the streets of London in sloppy weather. It becomes, therefore, a consideration of £ *s. d.* as to their preservation or destruction. My own observation, though I am no farmer, is in favour of the farmer; for I confess myself a debtor to the numerous sparrows domesticated in my neighbourhood for many essential services rendered. During the spring they cleared my Gooseberry and Currant-trees most effectively from caterpillars and the green-fly, and I also watched narrowly their active operations on the Rose and other trees of the garden, whose insects they swallowed in multitudes. Some will doubtless smile, when I tell them further, that sparrows are, when properly taught, admirable song-birds! Taken when callow (this is indispensable), from the nest, and brought up under a canary in fine voice, they have been known not only to equal, but even to surpass their masters in brilliancy of execution. I am well versed in these matters, having made them the subject of deep study for many years. In conclusion I would add, that I number the sparrows among my good friends.—*William Kidd, New Road, Hammersmith.*——It is not difficult for individuals to decide upon which species of bird or animal they may wish to be extirpated; this, however, cannot be taken as a rule to guide others, either in the protection or destruction of the feathered tribe. As an amateur gardener, I must confess I am rather inclined to the Waterton doctrine of allowing all birds to exist undisturbed; but I have no doubt my neighbour, the market-gardener, differs in opinion with me, and justly so, he having to gain his livelihood by his exertions. I have to preserve my health and gratify my senses by the same occupation. I would willingly give the best half of the fruit of my garden to our songsters, in return for their cheerful notes, and I would not even deny a small share to the impudent sparrow, considering the number of insects and grubs he exterminates during the year. Yet I can scarcely expect the poor man to do the same, when the produce of his patch of ground has to be converted into bread. The result of my labour is luxury—his necessary food. The mischief occasioned by hard-billed birds, viz. sparrows, finches, &c. &c., is great where they are permitted to increase without interference; and, on the other hand, their extinction would be attended with serious consequences. We kill every description of hawk which comes within our reach; we must therefore take upon ourselves their natural occupation, and endeavour to keep the smaller fry in order, by limiting their numbers without sweeping them from the face of the earth. The middle course is recommended—so difficult to practise, prejudice rising up on one side, and enthusiasm on the other. When the Wheat is ripe, a foray made by a large flock of sparrows is a serious matter to the farmer, and a person who has not witnessed their voracity would not credit the quantity they can in a short time swallow, leaving many hundreds of stalks without a grain in their heads. Although it is an incontrovertible fact that, in masses, sparrows, &c. are decided enemies, yet, in smaller bands they are useful allies. The soft-billed birds, those living principally on insects (sometimes plundering a little fruit), and visiting our gardens in spring and autumn, are birds of passage, coming to this country for the breeding season, and leaving us again as the winter approaches. These little strangers should be left to the chances of travel, which will sufficiently thin their ranks without the assistance of powder and shot; and even were they more numerous than they are, I look upon them as indefatigable labourers in the vineyard, well earning fifty-fold more than they eat. I believe the fruit is often knocked off when in search of the maggot, and not for the purpose of being devoured. Under the above class come fly-catchers, warblers, &c. &c. I have left the rook till the last. He is in the field what the sparrow, &c., are in the garden—an admirable aid in agriculture, but a sly rascal, and requiring to be well looked after, and not permitted to have exactly his own opinion on the subject of the increase of his family, manner of feeding, &c. Do not exclude him from a moderate share of the good things, in lieu of work done; but, as in the case of the sparrow, he must be under control. The rook's appetite is most accommodating, and not easily satisfied as to quantity; nothing comes amiss to him when hungry, and he cannot be said to be exempt from the charge of wanton mischief. However, under all circumstances, *Corvus Frugilegus* is a good fellow when under discipline, but leave him to his own inventions, and he is a sad scamp, having no sort of regard for private property.—*Falcon.*——*An Old Subscriber* writes, "I do not think that those who object to shooting birds can have been so much annoyed as I have been. My Strawberries, Peas, Cherries, Currants, Gooseberries, Peaches, and now Grapes, have been this year most voraciously attacked by them, and nets have no terrors for them. They are now, by some means I cannot account for, devouring a late crop of Peas most carefully netted. I was once a friend to birds, but now I do not know what to say."

Canaries.—I have some valuable Canary birds, 30 or 40 in number, but I am so troubled with mice, that I fear I must resort to that old-fashioned remedy for such pests—a cat. I fear puss might catch birds as well as mice, and should be obliged if any of your correspondents could devise any other means for ridding my house of such rapacious vermin.—*Nemo.*

Salt for Asparagus.—I have found the greatest advantage from using this for Asparagus, applied in November. My beds, which were worn out, are rapidly improving. I adopted the old-fashioned custom last year of sowing seeds in the old bed, when I sowed on the salt: the plants came up vigorously. I have dressed once with salt this summer, and I propose using no more this year; but I intend to apply good rotten vegetable manure instead.—*An Old Subscriber.*

Morphology.—It may not have occurred either to those who have propagated Gloxinias, Achimenes, or indeed any Gesneraceous plant, by means of its leaves, or to those who may have witnessed this mode of propagation, that it is a powerful argument in support of Morphology; and not being limited to Gesneraceæ, but admitting of very extensive application, its force as an argument becomes proportionably increased, in consequence of its being the farther removed from what might seem to be an exception to the general rule. It may be remarked, too, that several of the Achimenes, and A.

pedunculata especially, should be regarded as plants of very suspicious character by the opponents of this doctrine; for in several cases during the past season it has been observed that this A. pedunculata has produced scarcely any flowers, but in their usual position abundance of little scaly bulbils have been protruded; here, what should have been flowers, have been developed as bulbs. As far as I have observed, this has been the case to a much greater extent with plants which have been exposed to a considerable degree of cold—such as being placed in an open airy greenhouse—than with such as have been kept in a stove, where the air has been duly warmed; and also has been more apparent in the case of plants that have been grown in considerable and compact masses of soil, than with such as have been supplied with a more open medium, according better with the natural habit of the plant. The conclusion which may be drawn from this circumstance seems to be, that in consequence of the roots being placed in soil of an unsuitable kind, and in circumstances unfavourable to the proper and regular development of the several parts of the plants, the latter become induced to make a strong effort for their perpetuation, which might seem to be endangered; and, under these circumstances, myriads of latent germs are put forth instead of the more fully organised particles, which would have been formed had the flowers been produced, and enabled to perform their natural functions; and we may further conclude, that this result is favoured by the want of proper temperature as the plants approach maturity. To return to the question involved in the propagation of plants by means of their leaves: if we take a Gloxinia as an example, when in its perfect state of development, we shall find it furnished with root, stem, leaves, and the floral apparatus, each bearing their respective characters, and performing their allotted functions of nutrition and reproduction. Now, it cannot be denied that if these parts are maintained in their reciprocal relation to each other, the leaves would provide, or rather prepare, the proper nourishment for the flowers, and these in their turn would assist in bringing forward the seeds imbued with the principle of life, and capable by its exercise of perpetuating their race; when this process was completed, the leaves would naturally decay, but if this course of nature is interrupted—if the leaves are removed without having expended their powers in the discharge of their natural functions, and are then placed under suitable and congenial circumstances, each of them may be converted into several separate and distinct seats of life; that is to say, several young plants can be produced from each leaf, and these young plants will, in due time, become furnished with all the parts necessary to render them perfect (root, stem, leaves, and floral apparatus), and thus will be enabled to perpetuate, by seeds, the race from which they sprung. If it could reasonably be assumed, and were even admitted, that in the Acorn an Oak tree may be detected, with all its parts present, though in miniature!! (which, by the way, is not the case,) would it be possible, even with a proportionately increased magnifying power, to detect the various organs which this leaf-propagation brings into existence? These must be present within the tissue of the leaf in their ultimate character, if Morphology be not true. And if it be not possible to detect them (and most certainly it is not), then we are forced to the conclusion that the living organisable tissue of the plant is acted on by the circumstances and conditions in which the plant is placed, and consequently, that all the appendages of the vegetable axis being developed from this tissue, under the influence of these circumstances and conditions, are of one common origin; therefore, I repeat that in the vegetable kingdom the nature of the development becomes changed, according to the circumstances under which the parts are developed.—*T. Moore.*

Pine-apples.—In reply to an "Admirer of well-grown Pines," I beg to state that the plants which produced the large fruit at Gunnersbury Park were planted in the fruiting pit in July, 1842; they were then about six months old. With respect to manure, two good one-horse cart-loads of fresh horse-dung is sufficient to make a lining all round the pit. The manure of two horses regularly applied would, I have no doubt, keep up sufficient heat in the pit to bring the fruit to perfection: the lining was all turned over once in 14 days, one half being turned every seven days. From the appearance of the fruit I should suppose it was good in quality.—*G. Mills.*

COUNTRY SHOWS.

Bedhampton Cottage Gardeners' Show, Sept. 26.—This was the third and last Exhibition for the season. The prize flowers—the Dahlia and China Asters—together with the bouquets of various flowers, did great credit to the parties, one in particular, had been but twelve months in possession of his allotment, and succeeded in producing, both in variety and quality, a display that showed most favourably his exertion and good taste. The vegetables were admirable; some of the Onions exceeded 14 inches in circumference. The winner for the best basket of Vegetables had Cabbages, Carrots, Parsnips, Onions, Potatoes, Lettuces, Radishes, two sorts of Beans, Cucumbers, Pumpkins, Spinach, Turnips, Peas, Brussels Sprouts, Celery, and Endive, all from a few rods of ground, in such condition that they might have been envied by the owner of many a large garden, with all his appliances and means to boot. There was an excellent feeling evinced among all parties—many a good-humoured challenge, one against the other, as to their mutual position the next time they meet in opposition; and all that came in his second were fully resolved that it should not be for want of exertion if they did not carry off the prize next season. From circumstances that transpired, it might have been seen that the allotment system might be considered the poor man's landowner—by which, with sobriety and pains-taking, he might fairly hope to win a solid, manly, independent position, which is of an interest to the land around him; a self-respect and a calm patience that cannot be bought by him through any other channels; indeed, many a wasted hour might thus be made to add thousands to the family stock. The same philanthropic feeling, managing this institution, would, no doubt, lend that kind assistance to arrange [illegible] character, which might, by the means of [illegible] to the produce from the allotments; the advantage [illegible] would be but small; the emulation being so [illegible], would be the more enjoyed and the more stimulating, and [illegible] in producing in the end results of the most satisfactory character.

Royal Horticultural Society of Cornwall.—This was the 41st Exhibition, and the last for the present year. The display of flowers, plants, and fruit was good, and there were also many choice and well-grown specimens. The fruit was remarkably fine, and particularly the Pines, Grapes, and Melons. The following prizes were awarded:—Grapes: Best single: 1, J. Vivian, Esq.; 2, Queen, Earl of Falmouth. Heaviest do.: Black Jamaica, 3 lbs. 5 ozs., J. Vivian, Esq. Melon: King's Own Greenfleah, 1, W. Daubuz, Esq.; 2, King's Own Greenfleah, Mrs. Bull. Grapes: White Muscat of Alexandria, 1, Earl of Falmouth; 2, Red Hamburgh, Sir C. Lemon, Bart., M.P. Best dish of do., of named sorts: Black Frontignan, White Frontignan, Muscat of Alexandria, Black Hamburgh, Victoria, Black Prince, 1, J. P. Magor, Esq.; 2, White Muscat of Alexandria, Black Constantia, White Frontignan, Black Prince, Grizly Frontiguan, Black Hamburgh, Earl of Falmouth. Peaches: Noblesse, 1, J. Vivian, Esq; 2, Red Magdalen, A. Fox, Esq.. Best dish of do., of sorts: Chancellor, Red Magdalen, Grimwood's Royal George, Violet Hâtive, Admirable, Noblesse, Royal Kensington, Old Royal George, 1, J. P. Magor, Esq.; 2, Admirable, Royal Kensington, Violet Hâtive, Smith's Newington, Ford's Seedling, Noblesse, Royal George, J. Vivian, Esq. Nectarines: Elruge, 1, Rev. C. Rogers; 2, Elruge, Sir J. C. Rashleigh, Bart. Best dish of do., of sorts: Veitch's Seedling, Bowden's Seedling, Elruge, Peterborough White, Scarlet, J. P. Magor, Esq. Pears: Duchesse d'Angoulême, 1, Capt. Reynolds, C.B.; 2, Summer Bon Chrétien, A. Fox, Esq. Apples: Kerry Pippin, 1, Rev. C. Rogers; 2, Ribstone Pippin, Rev. T. Philpotts. Cherries: Morello, W. Daubuz, Esq. Plums: Coe's Golden Drop, 1, Sir C. Lemon, Bart., M.P.; 2, Coe's Golden Drop, G. C. Fox, Esq. Extra.—Cherries: Morello, Sir C. Lemon, Bt., M.P. Currants: White Dutch, J. S. Enys, Esq. Flowers.—Collection of Ornamental Plants: Æschynanthus grandiflora, Achimenes longiflora, A. grandiflora, Passiflora kermesina, Clerodendron paniculatum, Stephanotus floribundus, Vinca rosea, V. alba, Manettia glabra, and two Balsams, Rev. T. Philpotts. Ornamental Plant, in flower: Veronica astenoides, G. N. Simmons, Esq. Best named collection of Stove Plants, in flower: 1, Achimenes longiflora, Rondeletia speciosa, Gesnera zebrina, Ardisia crenulata, Ixora crocata, I. bandhuca, J. P. Magor, Esq.; 2, Gloxinia maxima, G. rubra, Achimenes rosea, A. longiflora, A. grandiflora, Browallia alata, B. alba, Thunbergia alata, T. aurantiaca, Lantana mutabilis, L. crocea, Ipomœa quamoclit, Mammillaria pulchra, G. N. Simmons, Esq. Single specimen of ditto: Lisianthus Russellianus, F. Passingham, Esq. Collection of Orchidaceous Plants: 1, Stanhopea oculata, Acropera Loddigesii, Oncidium Papilio, Epidendrum cuspidatum, Oncidium flexuosum, Epidendrum cochleatum, Cattleya Loddigesii, C. Forbesii, Gongora maculata, J. P. Magor, Esq.; 2, Cattleya Harrisoniæ, Epidendrum ciliatum, Zygopetalum Mackai, Catasetum luridum, C. tridentatum, Epidendrum cochleatum, Oncidium leucochilum, G. C. Fox, Esq. Specimen of ditto: 1, Stanhopea oculata, J. P. Magor, Esq.; 2, Cymbidium aloefolium, Sir C. Lemon, Bart., M.P. Fuchsias: Silver Medal, 1, Harrison's Goldfinch, Grovehill, Epps's Duke of Wellington, Harrison's Pearl, Defiance, Curmeckii, G. N. Simmons, Esq.; 2, Eppsii, Rogersiana, Grovebilli, Smith's Alata, Frostii, Smith's Majestica, F. Passingham, Esq.; 3, Robusta, Majestica, Champion, Venus Victrix, Magnifica, W. Hockin, Esq. Dahlias, dissimilar blooms: 1, Mrs. Shelley, Paul Pry, Admiral Stopford, Great Mogul, Mrs. J. Richardson, Swindon Rival, Lee's Bloomsbury, Antagonist, Prince of Wales, Standard of Perfection, Essex Triumph, Aurantia, Twyford Perfection, Beauty of Surprise, [illegible] Princess Royal, President of the West, Hero of Stonehenge, Mr. R. Dunn; 2, Essex Triumph, Bridesmaid, Indispensable, Rouge et Noir, Perpetual Grand, Westbury Rival, Sir Robert Sale, [illegible] Perfection, Egyptian Prince, Marquess of Lansdowne, Lady Cooper, Twyford's Perfection, Bedford Surprise, Prince Albert, Wheeler's Maria, Antagonist, Competitor, Princess Royal, G. C. Fox, Esq. Best 12 ditto: 1, Phenomenon, Swindon Rival, Essex Triumph, Dodd's Prince of Wales, Admiral Stopford, Mrs. Shelley, Great Mogul, Satirist, Antagonist, Standard of Perfection, Lady Antrobus, Dodd's Orange Superb, Mr. R. Dunn; 2, Prince Albert, Bedford Surprise, Sir Robert Sale, Yellow Perfection. Competitor, Princess Royal, Twyford's Perfection, Westbury Rival, Perpetual Grand, Essex Triumph, G. C. Fox, Esq.; 3, Beauty of the Plain, Pickwick, Lady Cooper, Bridesmaid, Standard of Perfection, Beauty of Sussex, Highgate Rival, Princess Royal, Widnall's Eclipse, Rouge et Noir, Virgin Queen, Andrew Hofer, Rev. C. Rogers; 4, Dodd's Prince of Wales, Essex Triumph, Princess Royal, Mrs. Shelley, Rouge et Noir, Lady Cooper, Prince Albert, Northern Beauty, Lee's Bloomsbury, Antagonist, J. S. Enys, Esq. Best 6 striped or tipped ditto: 1, Princess Royal, Queen of the Isles, Oakley's Surprise, Rainbow, Bridesmaid, Lady St. Maur, W. Daubuz, Esq.; 2, Princess Royal, Painted Lady, Glory of Plymouth, Purpurea alba, Northern Beauty, Charles 12th, J. S. Enys, Esq. Roses, Cut Flowers: Anna Maria, Yellow China, Indica, Carnescens, Jeanne Desprez, Devoniensis, R. W. Fox, Esq.; 2, Phœnix, Clara Sylvain, Aubernon, Smith's Yellow, Fulgoric, N. C. Stephens, Esq. Verbenas: Prince of Wales, Duke of Cornwall, the Bride, Tweediana grandiflora, Hendersonii, Hisloponna, Ponteyi, Ingramii, Odoratissima, and three Seedlings, G. N. Simmons, Esq. Florists', Nurserymen, and Market Gardeners' Prizes.—Dahlias: dissimilar blooms, 1, Hero of Stonehenge, Claudine, Twickenham Rival, Beauty of Sussex, Perpetual Grand, Indispensable White, Sir J. Richardson, King of Sarum, Thompson's Vivid, Mrs. Shelley, Queen, Aurantia, Dodd's Favourite, Rainbow, Proctor's Nonpareil, Mrs. Shelley, Rembrandt, Emma Noke, Madalene, Essex Triumph, Standard of Perfection, Lady Antrobus, Orange Superb, Bedford Surprise, Silver Medal, Messrs. Veitch and Son; 2, Egyptian Prince, Princess Royal, Perpetual Grand, Sir J. H. Richardson's Union, Admiral Stopford, Antagonist, Euclid, Orange Superb, President of the West, Rouge et Noir, Indispensable, Standard of Perfection, Queen of Trumps, Bedford Surprise, Argo, Hero of Stonehenge, Pickwick, Lady Cooper, Virgil, Essex Triumph, Burnbank's Emma Noke, Nonpareil, Mr. Pontey. Best collection of Plants: Veronica speciosa, Brugmansia parviflora, Boronia viminea, Cyrtoceras reflexa, Hydrangea japonica, Pentas carnea, Babingtonia camphorosma, Columnea grandiflora, Mr. Pontey.—*From the West Briton.*

Morningside Practical Gardeners' Society, Sept. 10.—This was the Autumn Meeting, at which the following prizes were awarded:—Dahlias: Mr. J. Dowrie, gr. to General Robertson, for Prince of Wales, Marquis of Lansdowne, Rouge et Noir, Prince Albert, Sir R. Sale, Essex Triumph, Perpetual Grand, Mrs. Shelley, Highgate Rival, Beauty of Sussex, Bishop of Winchester, and Princess Royal. Bellphenia: Mr. Downie, for fourteen blooms. Petunia: Mr. Downie, for purples, crimsons, Richardsonii, striatiflora, and Brown's No. 40. Marigolds: Prince and Albion, Mr. J. Young, gr. to T. Oliver, Esq. Dwarf Antirrhi: Mr. R. Scott, gr., Salisbury Green, for Pilot, Dreadnought, Pluto, Victor, Carnegie's Dreadnought, Victoria variegata, Rose-spotted Shrimpton, and Gladiola elegans. Pansies: [illegible] Mr. Downie, for [illegible] Gentleman's and Gentlemanly [illegible] Mr. Downie, for Rose Superior and Rival. [illegible] Mr. Downie, for Gladiolus, and Mr. A. Addie, gr. to Dr. Balfour, for Gladiolus communis. Asters: Mr. A. Addie, for Victoria, Victoria Superba, Victoria Rosea, Victoria Alba, Victoria Striata, Victoria Purpurea, Victoria Lilacina, Victoria Coccinea, Victoria Carnea, and Victoria Variegata. Stocks: Mr. Downie, for Brompton, Ten-week, and Intermediate. Balsams: Mr. Downie, for Camellia, Rose, and Double White. Cockscombs: Mr. Downie, for Crimson and Yellow. Globe Amaranths: Mr. Downie, for Purple and White. Zinnias: Mr. Downie, for Elegans and Pumila. Collection of Annuals: Mr. Downie, for Rose Queen, Lady Crewe, Mr. Hardy, Princess Royal, Mr. Hardy, Princess Dowager, Mr. Hardy, Mr. Nunneley, Dahlonian Beauty, Rose Queen, Duchess of Newcastle, Mr. Gaddy, White Rose, White Flag, Mr. Hardy, Yellow Ball: Miss d'Urban, Mr. Nunneley. Rose Plants: 1, Queen Adelaide, Mr. J. Dowrie, gr. to Basilius Sexegenus, Mr. Dobson, gr. to J. W. Patten, Esq., M.P.; 2, Paphiopedilum spherosum, W. Hall, Esq.; 3, Cuvelia Mr. Dobson. Greenhouse Plants: 1, Epacris grandiflora, Miss P. Sharpe; 2, Calceolaria, Regent Standard, Mr. R. Gaddy; 3, Fuchsia Venus Victrix, Mr. J. Kendrick; 4, Tropæolum pentaphyllum, Mr. J. Dowrie, gr. to J. W. Patten, Esq., M.P.; 5, Tropæolum speciosum, W. Hall, Esq.; 6

Chancellor, Lady Constable, Mr. R. Sweet; Mont Blanc, Mr. J Clare.—*Autumn Medley, September 19.*—DAHLIAS—Fancies, Standard of Perfection, Mr. Hardy. *Dark or Maroon*: 1, Essex Triumph, Mr. J. Wright; 2, Admiral Stopford, Mr. Hardy; 3, Rouge et Noir, Mr. J. Wright. *Purple*: 1, Standard of Perfection, Mr. Hardy; 2, Pickwick, Mr. J. Wright; 3, Metella, Rev. T. Hinde. *Crimson*: 1, President of the West, Mr. Hardy; 2, Coronation, Mr. Hardy; 3, Indispensable, W. Hall, Esq. *Scarlet*:—1, Bloomsbury, Mr. J. Wright; 2, Dancroft Rival, Rev. T. Hinde; 3, Vivid, Mr. J. Wright. *Rose*: 1, Maria, Mr. Hardy; 2, Hope, Mr. J. Eaton. *Lilac*: 1, Mrs. Shelley; 2, Lady Harland; and 3, Widnall's Queen, Mr. J Wright. *White*: 1, Lewisham Rival, W. Hall, Esq.; 2, The Bride, Mr. Hardy. *Yellow*: 1, Parkmount Rival; and 2, Prince of Wales, Mr. J. Wright; 3, Cox's Defiance, Rev. T. Hinde. *Orange, Buff, or Bronze*: 1, Prince Albert, Mr. J. Wright; 2, Duchess of Richmond, Mr. Hardy; 3, Nicholas Nickleby, Mr. J. Wright. *White tipped, &c.*: 1, Lady Antrobus; 2, Phenomenon, Mr. Hardy. *Yellow or Buff tipped, &c.*: 1, Princess Royal; and 2, Unique, Mr. Hardy. *Seedlings*: 1, White tipped purple; 2, Red; and 3, Maroon, Mr. Hardy. *Pansies*: 1, Dr. J. Kendrick for Wilhelmina, Dowager Queen, Mulberry, General Reta, Peter Dick, Adelaide, Maria, Lady Douglas, and two seedlings. *Stove Plants*: 1, Cactus Ackermanni, Dr. J. Kendrick; 2, Achimenes coccinea, Mr. Bloore; 3, Lantana mutabilis, Mr. Bloore; 4, Gongora atropurpurea, Mr. Dobson. *Greenhouse Plants*: 1, Petunia triumphans, Dr. J. Kendrick; 2, Tmesipteris alata, Mr. J Clare; 3, Fuchsia exoniensis, Mr. Bloore. *Herbaceous Plants*: 1, Gladiolus psittacinus, W. Hall, Esq.; 2, Pentstemon coccineum, Mr. Dobson; 3, Lupinus Cruickshanksii, Mr. Penketh; 4, Cyclamen europæum, Mr. J. Clare. FRUIT AND VEGETABLES.—*Best Vine in a Pot*: Black Hamburgh, Mr. Dobson. *Pine Apple*: Montserrat, W. Hall, Esq. *Grapes*: Black Hamburgh, Mr. Hall. *Melons*: Peach, Mr. Dobson. *Plums*: Magnum Bonum, W. Hall, Esq. *Cherries*: Morello, Mr. Bloore. *Celery*: Seymour's White, W. Hall, Esq. AMATEURS.—*Apples*: Alexander, Mrs. Clare, *Pears*: Scimitar, Mr. P. Davies. *Onions*: White Port, Mr. Hardy. *Red Cabbage*: Mr. J. Eaton. *Celery*: Lancashire solid Red, Mr. J. Eaton. *French Beans*: Mr. Davies. COTTAGERS' PRIZES.—Fuchsia multiflora and Senecio elegans, Mr. R. Brett. EXTRA PRIZES.—*Grapes*: Black Hamburgh, Mr. Dobson. *Red Cabbage*: Mrs. Wagstaffe. *Pine Apple*: Enville, Mr. Hunt. *Plums*: Magnum Bonum, Mr. Clare, jun. *Apples*: Hawthornden, Miss Burdett.

Wingham Horticultural and Floral Society, Sept. 19.—This was the autumnal Exhibition. There was, as usual, a good display of fruits and flowers. The following is the award of Prizes:—PLANTS IN POTS.—*Fuchsias*: Exoniensis, Conspicua, Aurantia, Mr. Sankey. *Pelargoniums*: Punctata, Lady Peel, Seedling, Mr. Sankey. *Climbing Plant*: Passiflora quadrangularis, D. Denne, Esq. *Best Rose*: Madame Sevigné, J. Godfrey, Esq. *Greenhouse Plants*: 1, Pentas carnea, Lantana acuminata, Angelonia salicariæfolia, Marchioness Conyngham; 2, Cotyledon ovata, Rochea falcata, Echeveria coccinea, Mr. Sankey. *Best one*: Cassia corymbosa, Mr. Sankey. *Stove Plant*: Achimenes coccinea, Marchioness Conyngham. *Dahlias*: 1, Eclipse, Northern Beauty, Admiral Stopford, Mrs. Shelley, Prince of Wales, Essex Triumph, Lady Cooper, Sir R. Chester, Pickwick, Queen, Vivid, Antagonist, the Rev. J. G. Hodgson; 2, Defiance, Andrew Hofer, Lee's Bloomsbury, Queen, Pickwick, Argo, Suffolk Hero, Grace Darling, Exquisite, Springfield Rival, Bridesmaid, Seedling, Mr. G. Denne; 3, Mrs Shelley, Phenomenon, Lee's Bloomsbury, Hope, Prince of Wales, Le Grand Baudin, Princess Royal, Antagonist, Andrew Hofer, Virgin Queen, Essex Triumph, Springfield Rival, Mr. Sankey. *Best six*: 1, Asmodeus, Queen, Blue Bonnet, Eclipse, Admiral Stopford, Northern Beauty, the Rev. J. G. Hodgson; 2, Vivid, Mrs. Shelley, King of Lilacs, Essex Triumph, Bedford Surprise, Competitor, the Rev. C. Bayley; 3, Andrew Hofer, Bridesmaid, Queen, Pickwick, Maria, Exquisite, Mr. G. Denne. *Verbenas*: 1, Tweediana, Princess Royal, Rosea alba, Bridesmaid, Prince of Wales, Ruby, Hendersonii, Queen, Stewartii, Mr. Bladden; 2, Rosea alba, Tweediana, Stewartii, Princess Royal, Duke of Cornwall, Tweediana picta, Queen, Eximia, Melindres, Mr. Bladden. *Annuals*: Lupinus mutabilis, L. elegans, Erysimum angustifolium, Collinsia bicolor, Malva zebrina, Phlox Drummondii, Zinnia elegans coccinea, French Marigold, Spanish pink, the Rev. C. Bayley. *Hardy Perennials*: Lobelia fulgens, Pentstemon gentianoides, P. coccineum, P. pulchellum, Phyteuma campanuloides, Aster puniceus, Rudbeckia fulgida, Antirrhinum grandiflorum, Dracocephalum speciosum, Linaria dalmatica, Phlox omniflora, Coreopsis lanceolata, Lupinus rivularis, the Rev. C. Bayley. *Roses*: Eliza Sauvage, Nerine, Louis Bonaparte, Yellow China, Crimson China, Aglaiæ, J. Godfrey, Esq. FRUIT.—*Melon*: 1, Fletcher's Greenflesh, D. Denne, Esq.; 2, Egyptian Greenflesh, Lady Montresor. *Grapes*: Black Hamburgh, J. M. Hilton, Esq.; Muscat of Alexandria, Sir B. W. Bridges, Bart.; Black Hamburgh, J. Godfrey, Esq.; Frontignan, D. Denne, Esq. *Best collection*: Black Hamburgh, White Frontignan, Sweetwater, Claret, Muscadine, Black Frontignan, White Nice, J. Godfrey, Esq. *Figs*: Purple Ischia, the Rev. C. R. Hallet. *Peaches*: 1, Red Chancellor, Mr. Cozens; 2, Early Admirable, Mr. J. Elgar. *Nectarines*: Elruge, Mr. Cozens. *Plums*, grown against a wall: 1, Golden Drop, Mr. Cozens; 2, ditto, Sir B. W. Bridges, Bart. *Plums*, not grown against a wall: 1, Golden Drop, Marchioness Conyngham; 2, White Imperatrice, D. Denne, Esq. *Cherries*: Morello, Marchioness Conyngham. *Pears*, grown against a wall: 1, Jargonelle, S. M. Hilton, Esq.; 2, ditto, Sir B. W. Bridges, Bart. *Pears*, not grown against a wall: 1, William's Bon Chrétien, Mr. Bladden; 2, ditto, Mr. Dadds. *Apples*: 1, Kerry Pippin, Mr. Elgar; 2, ditto, Mr. Sankey. *Kitchen Apples*: Fair Maid of Wishford, Mr. J. Elgar. VEGETABLES.—*Peas*: Knight's Marrow, Mr. Cart. *Celery*: Solid Red, Mr. D. Deverson. *Carrots*: Altringham, Marchioness Conyngham. *Broccoli*: Cape, Mr. Elgar. *Kidney Potatoes*: 1, White Holland, D. Denne, Esq.; 2, Ramshorn, Mr. D. Deverson. *Cucumbers* Roman Emperor, Mr. G. Denne.

Reviews.

Suggestions towards an Inquiry into the present Condition of the Labouring Population of Suffolk. By the Rev. J. S. Henslow, M.A., Rector of Hitcham.

We beg—nay, we entreat the attention of all who are interested in the welfare of the poor—to this pamphlet, written by one of the most zealous and sober-minded men among the English clergy, and who is thoroughly acquainted with the *facts* relating to the rural population. It is more especially to Londoners that its contents are important, so that they may not be misled by a part of the London newspaper press, of great authority with them—and justly so when the subjects treated of are understood. Cockney reporters are not the persons to come to a correct judgment relating to country matters; and still less are they likely to do so when they quit the metropolis with only one eye open, and that with a twist in it. The cause of the incendiary fires, and soulless condition of the Suffolk peasantry, are traced by Prof. Henslow to their true source—want of employment at the wages, and to that only! In which we wholly agree with him. Many that must submit to competition unless the Suffolk farmers, without capital or energy, can succeed better than anybody. In the meanwhile, till they strike their statements, which may be expected about the Greek Calends, Mr. Henslow's excellent pamphlet may be taken as a true exposition of the case.

NOTICES of NEW PLANTS WHICH are EITHER USEFUL OR ORNAMENTAL.

LAGENIA* BICOLOR. Two-coloured Lagenia. (*Stove Epiphyte*) Orchidaceæ. Gynandria Monandria.—This fine plant was sent to the Horticultural Society from Guatemala by Mr. Hartweg, who found it in the mountains of Salama, in the province of Vera Paz, also near the village of Sunil, near Quezaltenango, in Guatemala, growing on rocks, at an elevation of about 7000 feet above the sea. In May, 1843, it produced its flowers, and ever since has been in such bad health that it is doubtful if it will survive. In habit the species is so like some of the Peristerias with pendulous racemes, that it would certainly be mistaken for them; and in structure it approaches them no doubt very closely. It is, however, essentially distinguished by the labellum and pollen apparatus. In Peristerias the labellum, although having a moveable joint in the middle, is continuous with the column by a thick fleshy base; here the articulation at that part is very conspicuous. The Peristerias have four pollen-masses; here we have but two. And, finally, the strap by which the pollen-masses cohere is long and slender, like that of a Lycaste, not deficient, so as to render the pollen-masses sessile upon a crescent-shaped gland as in Peristeria. The flowers of this plant are formed in a pendulous raceme, as much as 18 inches long; the lower part being clothed with distant short blunt scales, which extend into bracts about half the length of the pedicels. Each raceme consists of nine or ten flowers of a dull greenish-yellow, covered externally with short hairs; their petals have three streaks of violet; their lip is downy all over the upper surface, dark purple in the middle, with two or three spots of the same colour near the point. In the centre of the lower half is a large shaggy hump. It may be grown in a wire basket like a Stanhopea, or tied to a block of wood and suspended to a rafter, in a moist stove. If potted in the usual way, the flower-spike will be apt to go down into the soil and perish. Like many other Orchidaceous plants it requires an ample supply of water during the growing season, and shade in sunny weather, at a temperature between 80° and 90° by day, but not above 70° at night. Towards the end of October water should almost be withheld for a few weeks, no more being given than will prevent the pseudo-bulbs from shrivelling.—*Botanical Register.*

Garden Memoranda.

Mr. Scambler's, West Green, Tottenham.—There is now in full bloom at this place two fine standard trees of the Tamarix gallica, or French Tamarisk. They are about 11 feet 9 inches in height, and each head measures about 5 feet in circumference. This elegantly-drooping slender-branched shrub is well known in gardens, but is seldom that it favours us with so rich a display of its pretty clusters of reddish-coloured blossoms. It is exceedingly handsome as a standard, and is well suited for ornamenting shrubberies, being perfectly hardy, and thriving well in almost any soil or situation. It may be increased freely from cuttings planted in the open ground in spring or autumn.

Miscellaneous.

Cultivation and Planting of the Ranunculus.—The soil should be trenched 18 or 20 inches, and composed of good rich loam, to which add ⅓ part of very old, well rotted cow manure, and the same quantity of clay broken into small pieces; add to this a little sand, and thoroughly mix the whole; if the soil binds, add some sandy peat; make the bed on a level with the path or walks; the plants would do better if the bed was *below* rather than *above* the level. Having prepared the soil, as above, sometime during the summer or autumn, take the *earliest* opportunity in the succeeding spring to stir up the bed one spit deep, and take off 1½ inch of the soil; then place the plants in an upright position on the surface, 6 inches apart each way, and replace the soil carefully, which will cover the crown of the Ranunculus about 1½ inch; deeper planting would be injurious. After the plants appear, keep them free from weeds, and press the soil firmly around the plants after they get two inches high. If the weather prove dry, water them freely early in the morning, and shade them from the sun from 9 o'clock, A. M. to 3 o'clock, P. M. As soon as the foliage becomes yellow, take the roots up and dry them thoroughly in the shade, and keep them in a dry place. The Ranunculus loves a cool and moist situation, but no stagnant water should be permitted, nor should they be placed under the shade or dripping of trees. The morning sun, free circulation of air, and shade as directed, will insure success.—*Hovey's Magazine of Horticulture*

New Echites.—At the last meeting of the Horticultural Society, Mr. Lorraine exhibited a very fine twiner, under the name of E. carassa. Upon an examination of the writers on the genus Echites, it turns out that no such plant is recorded by them; it, however, proves to be the Echites crassinoda of Mr. Gardner, which the younger De Candolle has separated, with some others, under the name of Dipladenia, to which genus Echites splendens and atropurpurea also belong. The name of Mr. Loraine's plant will therefore be Dipladenia crassinoda.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

FROM October to May the principal watering in the stove should be done before noon; and to the middle or end of January the house should be kept as dry as possible; a slight syringing, however, will be useful to keep the foliage clear from dust, &c. A sunny morning is the best time to water over head, and once in ten days will be often enough. All plants that require pruning or thinning out before the next growing season should be dressed at once, to give more room for the rest. Clerodendrons, Vincas, and other fast-growing plants which require large pots in summer, should never be watered in these large pots; turn them out, and shake all the soil from the roots, and replace them in as small pots as possible, their roots into, but do not prune the roots much at this season.

[illegible] may be applied to advantage [illegible] may be derived from [illegible], a week, in addition to the cultivation of its lip.

Conservatory.—From this time till late in the spring none Climbers in this house will require pruning, and thinning out, the whole of them will require a little dressing now and soon, especially where they obstruct the light. Where only the climber is grown, it must be pruned according to the time you want it to be in flower next summer—the earlier they are wanted to flower, the sooner they must be pruned. One great advantage in Climbers of this nature is, that most of them flower on the current year's growth, like the Grape Vine; all such ought to be very closely pruned at the final dressing. Some people are afraid to cut off much wood, and their plants soon get disordered; the Ipomœa Learii is the first to suffer in this way; when this plant has filled the space intended for it, the side shoots should be cut to the last joint next the old wood, and as the plant gets older many of these side shoots must be cut out altogether. The Ipomœa bona nox, although an annual, is well worth growing for a warm conservatory, on account of its fine large white flowers, which open at night; it should be treated as a biennial; sow it early in July, and keep it in 48 pots in the stove through the winter, harden it at the end of spring, and plant it out in a rich border in the conservatory about the end of May; it roots as freely from cuttings as the I. Learii.

Pits and Frames.—A very great disadvantage in storing plants for the winter is to have them in dirty pots, often covered with green and black slime, which creates damp enough to kill one half of the plants in them. Everything in and about plant frames ought to be kept as close and as dry as possible, until March at least. The lights should be taken off half hardy plants every fine day, and no rains or dews should be allowed to fall on the plants from this time until the turn of the season early in the spring; all that time the plants ought to have the benefit of all the sun-heat our climate affords, and no more fire-heat than will just secure them from frost.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

Now that the frosts have rendered the flower-gardens shabby for the season, the principal thing to attend to will be the storing of such plants as it is desirable to preserve for another season. I am not an advocate for preserving many old plants, but there are certain tribes which bloom all the better for being a year or two old. Among these I class more particularly Scarlet Pelargoniums and Shrubby Calceolarias, and therefore make it a rule to keep all the plants I can possibly find room for. Calceolarias I generally pot in the smallest-sized pots I can get them into, and if convenient, I place them for a week or two in a close pit, but if not, they are placed at once under the greenhouse stage, where they remain until they are turned into cold pits in spring. For Scarlet Pelargoniums I have a range of span roofed pits filled with tan, which at this season receives sufficient fresh material to excite a gentle fermentation in the whole mass. In this tan the Pelargoniums are planted, after being cut down, stowing them as thickly as possible, and the pits are kept pretty close until the plants have made some young leaves, after which they are inured to the air, and receive the same treatment as other plants, taking care, of course, to secure them against frost throughout the winter. In spring, about March, they are potted and placed in heat until they are well established, after which they are hardened off preparatory to being planted out in May. These plants are excellent for dwarf beds, as they do not grow so vigorously as young ones. Scarlet Pelargoniums may also be preserved in boxes securely packed in dry peat earth, but as I have no experience in the matter I had better refer the reader to an article on the subject in the *Chronicle* for last year, from the pen of Mr. Gordon. I also take up carefully such plants as Nierembergias and Mesembryanthemums, but Verbenas, Petunias, and the like, I do not consider worth the trouble.

Pits and Frames.—All plants in this department should be got in order for the winter as quickly as possible; those that are well established may be placed in their winter quarters at once, giving the most valuable ones the best places, but those that are not well rooted may be kept in heat a few weeks longer, for though theory may say, keep them as quiet as possible, practice, which is a much better guide, says, keep them growing until they are thoroughly established, unless you wish to consign them prematurely to the rubbish heap.

Reserve Garden.—Plants of Wallflowers, Double Rockets, Polyanthuses, Double Primulas, Hepaticas, and other spring-flowering plants that have been growing in nursery beds through the summer, may now be removed to their blooming quarters in the flower-borders. If you can surround them with fresh compost they will gratefully repay your kindness in the spring.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas.—It will soon be necessary that they should be put in their quarters for the winter. Nine tenths of the collections grown in the country are wintered in glazed frames, or sheltered by boards hinged to a wall; the great point, however, is to keep them from drenching rain when the plant is in a dormant state. *Polyanthuses.*—May still be planted—the sooner the better. *Tulips.*—All offsets, seedlings, or unhealthy bulbs should now be in the ground, and as the main bed ought to be planted between the second week in October and the first week in November, everything must now be in readiness, and the first favourable opportunity taken of putting them in the ground. In consequence of the late fine weather the beds ought to be in a good state for planting, and it would be a wise precaution to cover them with mats during the night, or on the appearance of rain; as it is advisable not to plant when the bed is too much saturated with moisture. We promised last week to name a few first-rate and splendid Tulips, the price of most being high:—*Feathered Bizarre*, Dickson's Duke of Devonshire; *Flamed Bizarre*, Strong's King; *Feathered Bybloemen*, Louis XVI.; *Flamed Bybloemen*, Salvator Rosa; *Feathered Rose*, Lady Middleton; *Flamed Rose*, Beteral's Brutante éclatante. These are, comparatively speaking, but in few hands; but they are gems which no good bed should be without. *Dahlias.*—We have now had several sharp frosts; if the precautionary measures advised last week have not been adopted, it must be done forthwith. *Beds for Ranunculuses* should now be prepared, and all compost heaps turned and sweetened; vegetable refuse should be collected and put in heaps to decay.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Those plants which are now in fruit, and those for fruiting next, should have a bottom-heat of about 85°, and a top-heat of from 65° to 68° at night; the day temperature varying according to the brightness of the weather. Supply the plants with water where necessary, letting the water be about the temperature of the bed. Strong plants swelling fruit may still have a little liquid manure with advantage. The night temperature should not exceed 60°, and should be allowed gradually to fall, so as to be about 57° at the end of this month.

Vineries.—To preserve Grapes to a late period is a matter of much importance to every gardener, and to keep them plump as well as free from mould and damp, requires close attention to the state of the atmosphere. In endeavouring to prevent damp, care must be taken not to overheat the house, as this will cause the fruit to shrivel. Where a stock of Vines in pots or boxes have been grown for early forcing, some of them should now be ready for bringing into the house; they should be well washed, and top-dressed if it was done last month. The pots may be placed in any part of the house till the buds begin to break. Fresh, hot dung is the best thing to start them into growth with; it may be laid along the centre of the house in the form of a ridge. Vines will not start at this season at a lower temperature than 60° at night.

Peach-house.—In most cases the trees in the house that was second last season will be in the best condition for starting first for next season's crop. When this is the case let no time be

out in putting the house and trees in order. Let the lights, rafters, trellis, and walls be well washed, and when dry give them a thin coat of paint or colouring. Dress the trees with a mixture of soft soap and sulphur in hot water: let this be well rubbed in with a sponge. See also to the flues or pipes being in good working order.

Melons.—The best way to obtain Melons of good quality at this season is to grow them in a late vinery, training them up a trellis under the Vines. We have the Cabul treated in this way, now ripening fruit of as good flavour as at any time of the year; as also the Hovenines has done in former years.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Gathering and Preserving Fruit.—It is better to gather the later Apples and Pears, though not quite ripe enough, than to expose them to much frost, which, though it may render them sooner fit for the table, will prevent them keeping so long, and injure their flavour. All kinds may be gathered as soon as the stalks separate easily from the branches, but as some kinds adhere very firmly, the best criterion of fitness for gathering is to slice a fruit up the middle, and see if its seeds are approaching maturity. Care should be taken to keep all late fruit from light and from air, if it is desirable to keep them long. This should be particularly attended to in the case of those fruits gathered before sufficiently matured, or otherwise they will be disfigured by shrivelling, &c. The season of any favourite Apple or Pear may be prolonged by gathering at different times, and by subjecting the first gathering to a higher temperature, so as to promote the saccharine fermentation. Care should be taken that the increased temperature is not attended with too arid an atmosphere, or the juices of the fruit will be unnecessarily exhausted. Procure a quantity of clean sand, to be thoroughly dried, for packing the best fruit in pots and jars afterwards. Charcoal-dust may be used for the same purpose, after wrapping each fruit in tissue paper. I once knew of a quantity of Apples, and Carrots, &c., being rotted by packing in dry sawdust—the moisture escaping from the fruit, &c., causing the sawdust to heat violently. The fruit cannot be better dealt with at present than by placing them thinly on open shelves. Look after Filberts and Walnuts, and see that they neither become too moist, nor get too much dried, as in either case the kernel will be injured. Few things require more attention than fruit-rooms, as generally they have to be made the general storehouse for everything, such as nets, cloths, seeds, &c. It is to be hoped that the able observations of Mr. Forsyth will be promotive of a beneficial change.

Celery.—Proceed with earthing-up every favourable opportunity. Much good Celery is spoiled at an early season from want of proper attention. To secure very large fine heads of Celery for the first shooting parties in September, I generally earth-up at once (after being previously tied up), from a fortnight to three weeks before it is wanted for use. If such Celery is earthed-up gradually, many of the best heads will run to seed; if allowed to stand long after receiving one final earthing-up, the centre of the plant will rot. For succession crops, where there is little danger of the plants running to seed-stalk, soak the beds first with water, and then earth-up gradually, giving a little at a time, so as not to cover the centre of the plant. Moderate-sized heads answer best for general purposes, but gardeners, at times, must humour visitors by giving them something to look at. Where worms are very plentiful, strew the ground with ashes before earthing-up; or, if you can, put a little around each stalk as you proceed. Quicklime must not be used for this purpose, as, if it lodges in the heart of the plant, it will disfigure it as much as the worms would do. *Routine.*—See former Calendars.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Attend to the directions given in late Calendars.

Coppice.—The above remark will equally apply to this department for the present; it is too early to commence planting.

Young Plantations.—The clearing of ground, taking up dead trees where it is intended to plant fresh ones, inclosing ground for new ones, trenching and holing, should now be forwarded with all possible dispatch, preparatory to planting.

Hedge-rows.—Take up dead trees, make holes for fresh ones, and consider what kinds to plant, so as to be the least detrimental to arable and pasture land; but at the same time select the kinds that will be most valuable as well as ornamental; planting should not be performed without due consideration.

Nursery Work.—As soon as the leaves begin to fall off deciduous trees, they may be taken up and laid in by the heels in well pulverised soil, until they can be replanted where they are intended to stand.—*W. B.*

VII.—COTTAGERS' GARDENS.

The taking up and storing away the various winter crops is now the principal thing to be attended to. When that is accomplished let the cleared grounds be ridged, or roughly dug, in order to expose as large a surface as possible to the mellowing influence of the winter frosts. All weeds and vegetable refuse should be cleared away to the manure heap. By this means the ground is rendered much neater, weeds are thus prevented from seeding, and consequently much labour is saved next year. Advantage should also be taken of fine days, of which many can scarcely be expected after this time, to clean every corner of the garden against winter. Let the flower border be stirred up and neatly raked over; remove decaying blooms from Dahlias. If fruit is not already all got in, look sharply after it: little will be gained after this time, but much lost, by allowing it to remain longer upon the trees. The best season for planting fruit trees is as soon as their leaves have fallen, provided the soil is sufficiently moistened to admit of the trees being taken up. By autumn planting, trees, &c., get pretty well established in their new situation before winter; they are thus better able to stand the cold easterly winds in spring, and are ready to commence growing upon the first approach of fine weather.—*J. M'H*

State of the Weather near London for the week ending Oct. 10, 1844, as observed at the Horticultural Garden, Chiswick.

Oct.	Moon's Age.	Barometer. 9 morning. Max.	Min.	Max	Min	Mean.	Wind	Rain
Frid. 4	0	29.939	29.871	69	46	57.5	S.W.	
Sat. 5	20	29.886	29.685	67	39	53.0	S.W.	.22
Sun. 6	24	29.902	29.295	63	40	51.5	S.W.	
Mon. 7	26	29.467	29.372	62	36	48.5	N.W.	
Tues. 8	28	29.908	29.468	61	41	51.0	N.	
Wed. 9	0	29.391	29.035	62	37	49.5	E.	.01
Thurs. 10	27	29.440	29.161	62	38	49.0	S.W.	.07
Average	0	29.774	29.432	64.0	40.6	52.3		.30

Oct. 4 Clear; very fine and dry, slightly clouded and fine.
— 5 Very fine till 7 p.m., when rain commenced.
— 6 Lightly but uniformly overcast; clear and fine; slightly overcast at night.
— 7 Fine, very fine; clear at night; frosty.
— 8 Foggy; very fine throughout; clear.
— 9 Lightly overcast; cloudy; uniformly overcast at night.
— 10 Overcast with dusky clouds; showers; cloudy and mild; very fine, clear at night.

Mean temperature of the week 3 deg. below the average.

State of the Weather at Chiswick during the last 10 years, for the ensuing Week ending Oct. 19, 1844.

Oct.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.											
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	Var.	Rain	Snow
Sun. 13	60.6	43.8	51.4	6	0.12 in.	1	2	1	—	1	3	2	—	—	—	5	—
Mon. 14	59.7	41.3	50.5	7	0.59	1	2	1	—	1	3	2	—	—	—	5	—
Tues. 15	58.8	40.9	49.8	5	0.80	1	1	2	—	1	3	2	—	—	—	5	—
Wed. 16	58.9	42.0	50.4	6	0.44	1	1	2	—	1	3	2	—	—	—	5	—
Thur. 17	58.9	42.2	50.5	4	0.17	1	1	2	—	1	3	2	—	—	—	5	—
Fri. 18	58.5	42.1	50.3	6	0.62	1	1	2	—	1	3	2	—	—	—	5	—
Sat. 19	58.9	37.8	48.4	6	0.14	1	1	2	—	1	3	2	—	—	—	5	—

The highest temperature during the above period occurred on the 14th, 1841—therm. 71°; and the lowest on the 19th, 1843—therm. 29°.

Notices to Correspondents.

ASPHALTE COVERING.—*S.*—This was found to exclude completely the rain from a Vine-border; and, with a little straw under it, there is no danger to be apprehended from frost. In excluding cold rain and melting snow, borders must not, however, be allowed to get too dry. As affording protection from wet, Asphalte is preferable to a double mat for covering plants; but it requires to be fixed on frame-work.‡

BOOKS.—*G. W. G.*—Mr. Hoare's work does not treat of Vines under glass. Take that by Mr. Roberts. Glendinning on the Pine-apple will suit you best.

CLIANTHUS PUNICEUS.—*The Cid.*—If your plant is attacked by green-fly, fumigating with Tobacco will certainly destroy them; but in such a season as this has been, it is more likely to be red-spider (which causes the leaves to drop off), on which Tobacco smoke has no effect. It is a plant which will not bear much cutting in autumn, especially in cold weather, therefore you had better defer cutting it down until spring.‡

CHRYSANTHEMUMS.—*The Cid.*—Cut down any plants of these that are too small to flower this season, and keep them in a cold frame until spring. Much better plants will be obtained from spring cuttings than by dividing the roots. See p. 676, vol. 1843.‡

FORESTING.—*J. M. F.*—Never give manure to Fir-trees, or indeed any kind of Coniferous plants. The non-resinous trees will bear it, and Oaks or Spanish Chesnuts will do the better for small quantities; but the best preparation for all forest-trees is a thorough loosening and pulverisation of the soil; to which may be added the ashes of all refuse, such as weeds, burnt upon the ground. A little super-phosphate of lime, sprinkled over the roots when planted, has been found to quicken the formation of new fibres.

FRUIT-TREES.—*Farmer.*—You may apply the strongest liquid manure from the farmyard, or elsewhere, with great advantage to Pear and Apple-trees if you mix it with plenty of water.‡

GUANO.—*M. W. K.*—The rod, imperial measure, of 30¼ square yards is that understood, and for which 4 or 5 lbs. was recommended. Well diluted, it may be applied either before the ground is cropped, or when the plants are a little above ground.‡

HEATING.—*Albert.*—Certainly. You will have ample top-heat with such pipes. Do not even run your flue inside your house. It is to be feared that your bottom heat may be insufficient, and you had better let the pipes employed for that purpose double back, so as to increase the heating surface. You must have moisture, and you may make shift with lead or zinc troughs, but both those metals are objectionable, because of their softness, especially when heated. Your boiler will do very well.

HYACINTHS.—*L.*—Hyacinths which have been grown in pots in the usual way, may be removed into glasses when the flowers begin to show colour. The bulbs should then be gently shaken from the soil, the roots washed in luke-warm water, and placed in the glasses, which should be filled with water of the same temperature.‡

INSECTS.—We must beg our correspondents to send us specimens with their queries, and living ones of larvæ if possible, in order that we may rear them to study their economy. It is impossible to tell the owner of the *Beurré Diel Pear* tree what his larvæ are without seeing specimens. *R.*——*Siler.*—The best means of getting rid of house crickets is to take some bread, sweeten it with sugar, and add to it some oxide of arsenic, then place portions of it wherever the crickets congregate; but as it will poison any animal it must be carefully used. *R.*——*J. H.*—Your live caterpillar arrived safe. It is the larva of the Death's head Hawk-moth, Acherontia Atropos, whose history with figures you will see in Curtis's Brit. Ent., fol. and pl. 147. *R.*——*F. H. S.*—Cynips lenticularis, or an allied species, causes the Oak-spangles, and you will find an account of them in the 3d vol. of the *Gardeners' Chronicle*, p. 52. *R.*——*R. W.*—We beg you will transmit Mr. Curtis specimens of the flies in a quill. The fever could not produce them; and if you burn sulphur matches, or brown paper previously washed with sulphur, upon a piece of old wire sieve, laid over a flower-pot, it will suffocate the flies; but the doors and windows must be made as air-tight as possible, and if the pot be placed in a large dish or tin, no danger need be apprehended. All picture-frames, &c. must be removed to avoid being tarnished. As Hayes is not within the limits of the two-penny post, it is necessary that communications should be sent to Mr. Curtis *before* Wednesday, where an immediate answer is desirable. *R.*——*P. R.*—Your Datura is infested with Aphides: the application of Tobacco smoke will extirpate them. *R.*——*C. McGregor.*—Your quill contained no beetle nor anything that we could find, excepting a minute portion of dried vegetable. If you will oblige us with sufficient materials we will with pleasure investigate the subject. *R.*——*J. C. M.*—I should like much to receive living specimens of your Palmer-worm, as it is very desirable to breed all the noxious insects. The maggots attacking your Cabbages you will find figured and described in the 4th vol. of the Royal Agricultural Journal, p. 128, and pl. H. fols. 32 and 33. *R.*——*Anon's* female Ichneumon is named Pimpla instigator, *vide* Curtis's Brit. Ent., fol. and pl. 214. It is useful in keeping under the larger hairy caterpillars in gardens, by depositing its eggs in their bodies. *R.*——*Rufo.*—We will consider your plaintive notes, and endeavour to sing in praise of your ill used race.

MELONS.—In a frame only 3½ feet wide, with three plants under each light, you could not have had much fruit.‡

MORPHOLOGY.—*A Constant Reader.*—Your plant is no illustration of this subject, but a specimen of common purslain, the seed of which has been mixed with Port. Thellusonii, &c.

NAMES OF FRUITS.—None of our correspondents are unreasonable. We are willing to name doubtful specimens of fruit; to a moderate extent; but we cannot sit down to give the names of scores of things which everybody ought to know.——*J. C.*—Has just sent a box of 33 kinds to be named, and we must put a stop to such merciless demands upon our time.——*Veritas.*—1, 2, Brown Beurré; 3, 7, Old Colmar; 4, Buchanan's Spiing Beurré; 5, Spanish Bon Chrétien; 6, Beurré de Capiaumont; 8, 12, Marie Louise; 9, 10, Flemish Beauty; 11, Glout Morceau.‡

NAMES OF PLANTS.—*T. C.*—Stanhopea Lindleyi, a variety of S. oculata.——*J. D.*—Oncidium concolor.——*W. K. P.*—1, Rhipsalis grandiflorus (?); 2, Mammillaria subcrocea: 3, Epiphyllum alatum; 4, Rhipsalis salicornioides; 6, some Opuntia; 8, Euphorbia polygona; 9, Mammillaria pusilla; 5 and 7 are indeterminable.‡——*C. C.*—Quercus Phellos.¶

PEAR-TREES.—*Farmer.*—The following varieties are most likely to succeed on a high situation:—Aston Town, Knight's Monarch, Althorp Crassane, Passe Colmar, Hacon's Incomparable, and Ne plus Meurs. On such a situation they will succeed best trained in the dwarf form. As your ground is rather heavy, it should be well trenched and manured with farmyard manure, mixing it well with the soil. To plant a tree properly you have only to spread its roots a little sloping, and so as not to be much below the surface when covered with soil, made sufficiently fine for closing about the roots on immediate watering.‡

PLANTS.—*F. H. S.*—The following are good greenhouse plants, viz.:—Veronica speciosa, Choroszema varium nanum, Pimelea spectabilis, Hovea pungens, Leschenaultia grandiflora, Mirbelia dilatata, Statice Dickensoni, Tropæolum azureum, Tetratheca hexandra, Habrothamnus fasciculatus, *H. cyanocalyx*, Boronia crenulata, Eriostemon buxifolium, Correa alba, *C. rubicunda*, *C. reticulata*, Tecoma jasminoides rosea, Ruellia ovata, Cuphea strigillosa, and Manettia bicolor, *M. macrophylla*. The following are suitable for a stove:—Achimenes picta, Achimenes longiflora and Achimenes grandiflora, Clerodendron infortunatum, Aphelandra cristata, Ixora coccinea, Eranthemum pulchellum, Euphorbia splendens and E. jacquiniflora, Franciscea unifiora, Gloriosa superba, Gloxinias, Ipomœa Horsfallia, Justicia picta and *J. speciosa*, Kendelsia speciosa, Ruellia juncea, with the different kinds of Tuberous-rooted. The best soil for potting Hyacinths in is good sandy loam and leaf-mould in about equal portions. ¶——*A Subscriber.*—The time when the following plants flower, if treated in the ordinary way, and not forced or excited by any artificial means, is as follows:—Jasminum revolutum, June and July: it lasts in bloom about a month; Rhododendron caucasicum album, August, 2 weeks; R. c. roseum, April, do.; R. chamæcistus, April, do.; R. Nobleanum, April, do.; and R. pulcherrimum, April, do.; Rhodora canadensis, May, do.; Sternbergia lutea, October, 1 month; Berberis empetrifolia, May, 2 weeks; B. (nervosa) glumacea, March, 2 weeks; B. Aquifolium, March and April, do.; B. dealbata, May, do.; Andromeda Catesbæi, June and July, 1 month; Camellia, single and double (open air), April, 2 weeks; Thea viridis, August, 1 month; Althæa frutex, September, 2 weeks; Daphne mezereum autumnalis, October, 1 month; D. neapolitana (various), June, do.; and Fritillaria pracox, March, 2 weeks. The duration of blooming depends greatly on what kind of weather there is at the time; if moist they will last much longer and later, but if dry or cold much shorter. ¶

POTATOES.—*A.*—Chapman's Potato, planted early in spring, is a good Kidney for a supply between the earliest varieties and the American Natives.‡

PRIMULA SINENSIS.—*The Cid.*—It is very probable that your plant has been attacked by some insect. It will succeed best in a cold pit in summer, where it can be shaded and sheltered from heavy rains. Young plants will be apt to damp off in a cold frame in winter. ‡

WALNUTS.—*Nutworth.*—To preserve these effectually, requires some care. They should be allowed to hang upon the tree until the outer covering begins to crack; in this state, when the tree is beaten, many of the Walnuts as they fall will roll out of the husk. These should be gathered into a basket separate from those that retain their covering; the latter should be laid aside for a few days until the husks burst, and they can be taken out with care. The great object is to prevent them from becoming mouldy; they should, therefore, be wiped clean and dry, and laid on a shelf in a dry place where they can have a free current of air until all tendency to mouldiness is overcome. Great care must, however, be taken that they are not over-dryed, for that will cause shrivelling. When sufficiently dry, they should be put into boxes in layers alternately with bran, fine dry sand, or shreds of cloth, and kept for use in a cool dry situation. By this means they will retain their moisture and flavour, and the film will with ease peel off.‡

MISCELLANEOUS.—*G.*—The fruit of Pyrus japonica is unfit to eat, because of its austerity, but not for any other reason. It is, in fact, a sort of Quince——*Z. Y. X.*—The cheapest preparation of copper which you can obtain is the sulphate. If used in sufficient quantity it will prevent the growth of weeds, but it will be an expensive remedy. Labour, constantly and skilfully applied, is by far the best and cheapest remedy for weeds.——*N. A.*—Gesnera zebrina naturally dies down when it has done flowering, after which it should be kept dry until the month of March. Cereus speciosissimus will flower in a conservatory border, providing it can be kept dry during winter.‡——*Delta.*—Directions for preserving Pelargoniums over winter are given in last week's Paper, p. 672 ‡——*M. W. K.*—No. 1 is considered a first-rate flower; the best of the purples. 2, crimson, a good show flower; 3, rose, free bloomer, with large trusses; 4, singular in colour, but not good in form.*——*G. H.*—You will find much information respecting the management of Fuchsias given by Mr. Wood, in former numbers of the present year. Pelargoniums like a rich light soil. Respecting their winter treatment, see our Calendar of Operations in to-day's paper.‡——*O. P. Q.*—Mr. Paxton is of opinion that the manner in which the conservatory at Chatsworth is glazed is a great improvement on the old method of glazing ‡——*A. B.*—We do not understand your question.‡——*W. S.*—We cannot decipher such Chinese names; seeds are not worth cultivating.‡——*Revertens*—A Pear can be grafted on a Crab or Apple-tree, but it will not stand long. The time for introducing Strawberries into heat varies according to the month in which the fruit is wanted; if wanted early, they should be put under glass before December. Allow the crowns of your Pine-apples to lie on the surface of a bark-bed for a few days, then pot them in a mixture of one-third loam and two-thirds of half-decayed leaf-mould, in which they will root very freely; afterwards plunge them in a frame, but not in too much bottom-heat, for that will injure the roots. Pelargonium-seed of this year's saving, as well as that of Roses, will probably grow if sown next spring. Plant your Vines inside the house. The long-rod system of training looks neatest in a greenhouse.‡——*J. H.*—It is not at all unusual for Orchidaceous Epiphytes to form fruit; if you set their flowers they generally do so.——*X. Y. Z.*—If you have no agent or correspondent at New York to whose knowledge of such business you could trust, you had better consult your solicitor, who, if he lives at your port, probably may have. *W.*

SEEDLING FLOWERS.

FUCHSIAS.—*R. S. J.*—The larger variety is the better of your two seedlings, and though large and showy, the tube and sepals are coarse, and possess too much colour.*——*B. B.*—None of your seedlings are equal to the sorts in cultivation; 3 is the best, but the tubes and sepals possess too much colour.*——*G. C.*—Your seedling is a very pretty variety, but it depends upon the habit of the plant whether it is a variety worth cultivating.*——*G. S.*—The darker seedling of the two wants novelty of colour to recommend it as a variety for general cultivation; it is pretty in form, but in its general appearance too much like many already out. The light variety is a very stout flower, wanting a deeper corolla; tube and sepals delicate vermillion, the latter tipped with green; corolla vermillion also, rather deeper than the tube.*——*W. J. C.*—Your seedling is a pretty little flower, singular in form, and appears to be a most prolific bloomer.*——*W. J. B.*—Your seedling is a very pretty and striking variety, and deserves a place in every collection; there is a slight tinge of pink in the tube, which changes to white in the sepals, and these, which are long and expanding, terminate with green points; rosy purple corolla; flowers of moderate size.*——*E. S.*—The light variety wants more colour in the corolla; this part of the flower has too faded an appearance. No. 3 is a fine pink-coloured variety, very much like but inferior to *T. Eximia*.*——*Anon.*—2 blooms in a letter. The sepals are too long, and there is rather too much colour in the tube. It resembles many we have seen this season.*——*O. P.*—The seedling Fuchsias you have sent are merely repetitions of sorts that have been some time in cultivation; the best among them is No. 4, being large, clean, and brilliant in colour; but they all resemble sorts in cultivation*.

DAHLIAS.—*Amateur.*—Your seedling is a very pretty variety, beautiful in colour, but a similar flower of greater substance, and with a stronger marked eye, is already in cultivation, named *Welsh's Blue Perfection*.*

VERBENAS.—*J. H.*—The lighter variety, a delicate rose, is very large, and from its appearance is of greenhouse cultivation; it is a good variety, but we prefer the smaller flower, which is very brilliant in colour, and appears less liable to fade; it is also less common in private than the larger one.*——*W. H.*—Your seedling has fine variety, the growth is large, and form a fine close set of pale, rosy-red colour.*——*A. A.*—Your seedling is not equal to many of the same colour at present cultivated.*

EDINBURGH VETERINARY COLLEGE.—The COMMITTEE of the HIGHLAND and AGRICULTURAL SOCIETY of SCOTLAND, appointed to superintend the Veterinary College, hereby intimate that PROFESSOR DICK will commence the COURSE of LECTURES on VETERINARY SURGERY and MEDICINE, for the 22d Session, on MONDAY, the 11th of NOVEMBER next. The Course will comprehend, as usual, instruction in the Anatomy, Physiology, and Pathology of the Horse, Neat Cattle, the Sheep, the Pig, and the Dog, including, also, Stable Management and the Forge; and, in order to the arrangement of the several departments of study at hours convenient for the Students, the Professor will have the assistance of Messrs. BARLOW and WORTHINGTON, Veterinary Surgeons, who, under his superintendence, will take charge of the Anatomical Demonstrations, Materia Medica, and Pharmacy. The necessary instructions in Chemistry, in connexion with the course, will be given by Dr. WILSON, instead of, as formerly intimated, by Dr. FYFE, who has been appointed Professor of Chemistry in King's College, Aberdeen.

By order of the Committee,
CHARLES GORDON, Secretary.

Highland and Agricultural Society's Hall,
Edinburgh, 4th October, 1844.

The Agricultural Gazette.

SATURDAY, OCTOBER 12, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 17—Agricultural Imp. Soc. of Ireland.

THURSDAY, Oct. 24—Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

Oct. 21—Wenlock, Salford.
Oct. 22—Framlingham, Rayleigh.
Oct. 24—Richmondshire, Grove Ferry, Binfield and Waltham.
Oct. 25—Debenham, Stoke Ferry, Hadleigh.
Oct. 26—Gloucester.

WE are not aware that the advocates of the ALLOTMENT SYSTEM have had to contend with much active public opposition in the arena of argument. In endeavouring, however, to carry out their plans they have occasionally encountered an adverse feeling, more especially among farmers, which appears to be based on a misconception of the nature of the allotment system, and of the effects which it is calculated to produce on the labouring class. Farmers have been found to oppose its introduction on grounds such as these:—If a labourer works for his master during the usual hours of the day, and does his duty towards him, he will have neither time nor strength to expend in the cultivation of an allotment. To give him such an allotment is to place that in his way which will tempt him to deprive his employer of a portion of the time and strength he is entitled to expect from him; besides this, it will make him independent of his employer, and he will become a saucy and a bad servant.

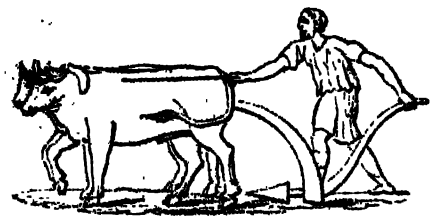
Whether the labourer is in a position to cultivate an allotment should be considered in each individual case before the allotment is granted—the labour which his wife and family can give being taken into account. There are classes of labourers—waggoners, for instance—who have to devote all their spare time to the service of their employer; but if a man even in this position has a family capable, with occasional hired assistance, of cultivating an allotment, we see no objection to his possessing one. The general class, however, of day-labourers working 12 hours per day are able, where they have families to assist them, to cultivate an allotment of land, without any neglect of their duty to their employer. In proof of this, we refer to the evidence which we have already adduced. And will the possession of an allotment make the labourer independent of his employer, so as to become a saucy and bad servant? Read the evidence contained in our two previous Articles. In the first case quoted, 30 families were provided with 29 acres of allotment land—nearly an acre to a family. What is the result? "The tenants and their families have been rendered all honest and respectable; *they have been kept entirely free from parish relief, and become the farmer's most steady and industrious labourers.*" Look at the case of Long Newnton, Wilts. The rates paid in six months, from October, 1820, amounted to 208*l.* 6*s.*; while those for six months, from October, 1823, after the introduction of the allotment system, amounted to only 4*l.* 12*s.* 6*d.* "The labourers were reclaimed from idle and bad habits, and became most valuable servants."

The labourer possessed of an allotment would be more independent than at present, it is true, and of many of the benefits which the allotment system can confer, this independence is the source. The man ceases to live from hand to mouth. If thrown out of work for a short time, he is not reduced to the brink of starvation, nor driven to the parish for relief. Such independence as this it is desirable and right, whether in a moral or a physical point of view, that the labourer should possess; but if the labourer still depends on wages for his main support, he cannot be independent of his employer. Indeed, every class and every individual in the community are reciprocally dependent; and this is a wise and beneficent arrangement.

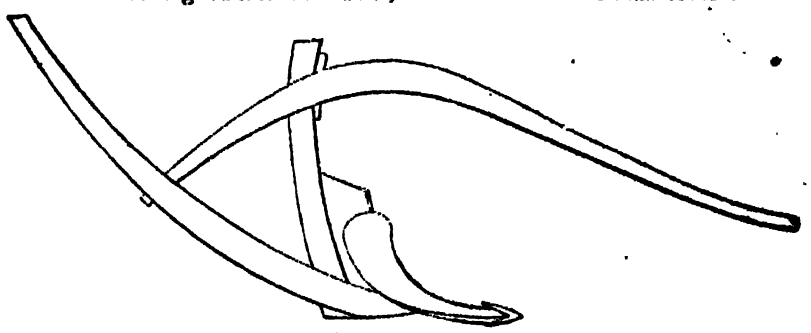
We may safely believe, and act upon the belief, that the allotment system, where properly regulated, is beneficial to masters as well as labourers. The best method of effecting its general introduction, and of promoting its beneficial operation, will be considered next week.—*F.*

IN the course of our REMARKS ON THE PLOUGH, we do not at present intend to enter into any detailed statement of the considerations which should determine the merits of its various forms; this branch of the subject will be more suitably taken up hereafter in another section of our Paper: our present object is merely to impart a general idea of the character of the implement as now used in various parts of the kingdom.

It would serve no useful purpose to enter here into any antiquarian detail. The form of the plough in ancient times, much resembling that in the less civilised parts of the world at the present time, is described with sufficient minuteness by Mr. Ransome in his excellent work on Agricultural Mechanics, to which we have already alluded. We are indebted to the kindness of that gentleman for the following figures from his volume, which, without further remark, are sufficiently indicative of the inefficient form of the implement with which the unskilful agriculturist was then satisfied.

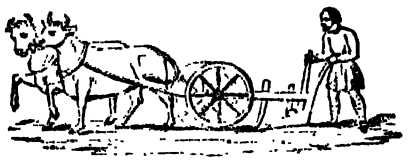


ROMAN PLOUGH.



CHINESE PLOUGH.

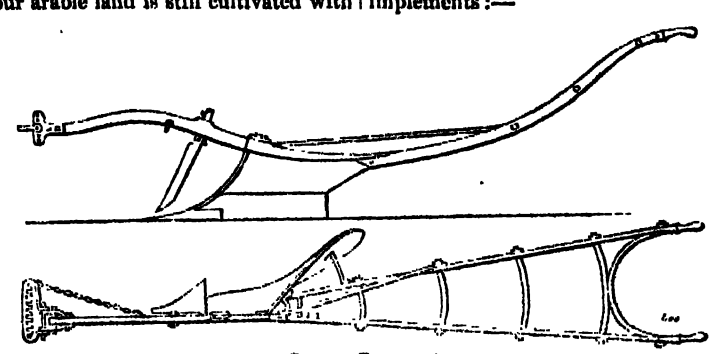
The following figure of a plough, taken from a Saxon Calendar, exhibits an improved construction. The mould-board, coulter, and wheels are much the same as those which are still used in many districts.



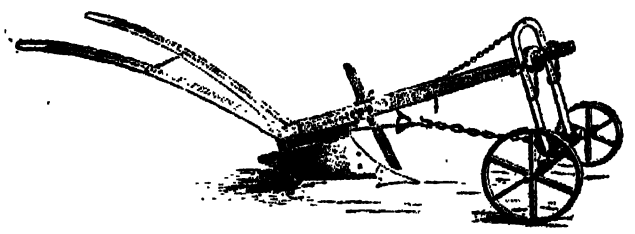
SAXON PLOUGH.

Ploughs may now be divided into those with fixed mould-boards, and turnwrest ploughs; and into those with wheels, and swing-ploughs. By much the greater part of our arable land is still cultivated with implements having fixed mould-boards. Turnwrest ploughs, by which, as a slight consideration of their construction will show, the furrow-slices are all thrown one way, are not suited for naturally wet and undrained lands. Such lands as are not thorough-drained require to be ploughed into ridges, so as to insure a surface drainage. Of the fixed mould-board class accordingly we have the greatest variety, suited—we do not say to our various kinds of arable soil, for variety in this, however great, would not justify the extreme variety which exists in the form of the plough—but suited to the custom and perhaps the prejudices of the several districts of the country.

The following figures exhibit some of these implements:—



SCOTCH PLOUGH.*



BARRETT AND EXALL'S, A. 5, TWO-WHEEL PLOUGH.†



BARRETT AND EXALL'S, D. F. ONE-WHEEL PLOUGH ‡

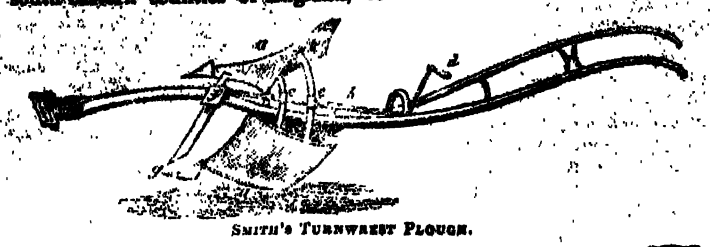


BARRETT AND EXALL'S TWO-WHEEL OR SWING PLOUGH.§

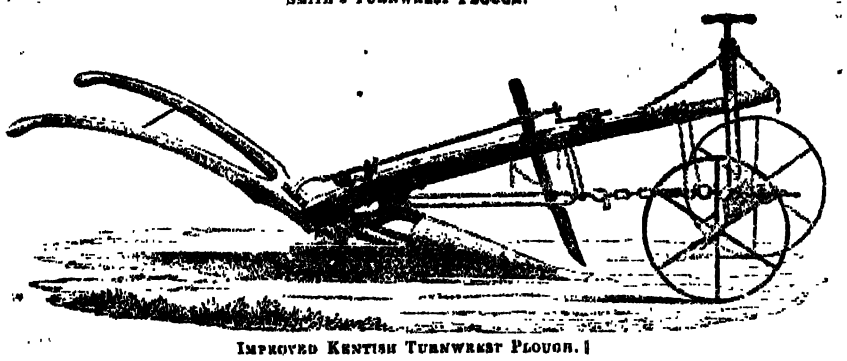
We hope on a future occasion to be able to state the comparative draught of some of these implements in executing a given quantity of work on various soils. The following are figures of two of

* Price 3*l.* 10*s.* to 5*l.* † Price 4*l.* 10*s.* ‡ Price 3*l.* 3*s.* § Price 4*l.*

two varieties of turnwrest plough in use; the one, common in the south-eastern counties of England, and the other, such as Mr. Smith, of Deanston, recommends on well-drained land.



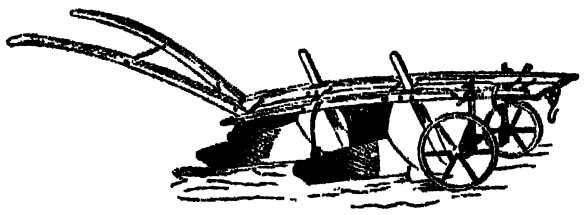
Smith's Turnwrest Plough.



Improved Kentish Turnwrest Plough. †

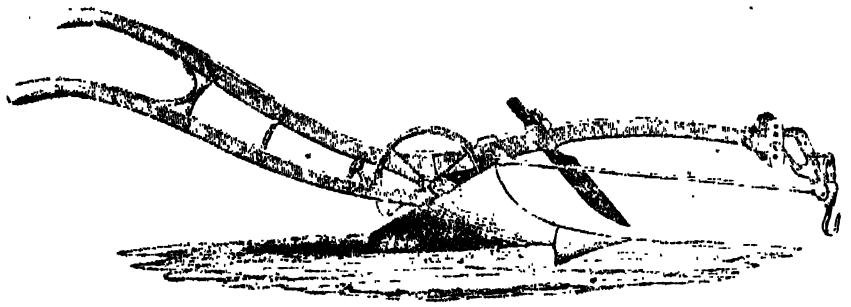
Besides these, two other forms of the turnwrest plough were mentioned in our report of the Implement Yard at Southampton:—Lowcock's, a very ingenious and easily-managed implement, exhibited by Messrs. Ransome; and an exceedingly simply constructed plough exhibited by Mr. Comins, of South Moulton, Devon, descriptions of both of which will be found at page 513.

We have still two contrivances to mention connected with this implement; the one here figured, which is suitable on light soils where less than the power of two horses would be sufficient to draw an ordinary plough through the land, consists in uniting two implements together, so that a team of three horses, or perhaps of two strong ones, may turn two furrows at once.



Double Plough. ¶

The other matter to be mentioned is a mode of construction adopted by some makers, which, it would appear from the experiments on the draught of ploughs, by Mr. Pusey, as reported in the English Agricultural Society's Journal, is well calculated to diminish the power required to work the implement. This consists in the substitution of a wheel for the sole-plate of the plough; the friction on which—owing to the weight of the implement, which it appears is the cause of a considerable portion of the draught—is thus to a large extent diminished. The following figure exhibits the simplest and also the oldest of the modes of construction on this principle.



Wilkie's Friction-Wheel Swing Plough.

It will be seen that our object in the above very general remarks is simply to place on record a description of the plough as it is at present constructed and used in this country. The merits of the various forms of it, and the considerations on which these must respectively be determined, will afford materials for several future Articles in another section of our Paper.

† Price, as manufactured by Messrs. Ransome, Ipswich, 8*l.* 8*s.*
¶ Price, as manufactured by Messrs. Barrett and Exall, 6*l.* 6*s.*

THE ANOMALIES OF AGRICULTURE.

If there be upon this earth a pursuit—a practice, an art—call it what you will, of which one may at once with courtesy and truth say it is "as old as Adam," that art is the cultivation of the soil; or, to speak more like an honest Saxon—farming. It dates from the fall; it was the first fruit of the taste of the forbidden fruit. It is the proper biography of man, for it is coeval with the existence—nearly co-extensive with the spread of the human family upon earth. Born the child of sin and sorrow, it grew up the parent of good and of happiness; pronounced as a curse, it has turned a blessing. It is, as it were, the natural condition and obligation of man, in all ages and in all parts of the earth; and, could we indeed trace and follow out its history, it would probably be the most pregnant, the most real history of the human race. Adam and his children, Noah and his sons, the Jewish patriarchs, were all farmers. The heroes of Homer and of Hesiod, equally at home in the field of swords and ploughshares, settled all accounts in stock—not Government but agricultural—stock proper. Their *modus estimandi* of a warrior was by his flocks and herds; and their grandest religious ceremonial—the Hecatomb—must have been a perfect Smithfield Show. Cincinnatus, and the pastoral poets after him, were as much stock-masters. Cincinnatus among the ancients, Virgil, Horace, Cicero, and Pliny, among the more modern Romans, were all farmers. In a word, from the days of Adam to those of John Robinson*, and from him to the noble reigning triumvirate, Richmond, Spencer, and Pusey, farming has held up its head in the world as high as the most devoted agriculturist could wish to ambition.

* [illegible] Farm's farming colleagues.

Is it not, then, a something to wonder at, even in these latter days, when wonder itself is grown threadbare and out of fashion, that agriculture, being such, of human arts the elder brother, the most universal, the most necessary, should in this ignorant present time, to wit in the fifth decade of the 19th century, be of sciences the youngest and the last-born, not yet out of its swaddling clothes—and what swaddling-clothes! Prejudice wrapped over Ignorance, and a veil of thick and stupid mystery over all; as if the closer gaze of that which to know fully must be the most valuable and precious of all physical knowledge were a boon too rich and rare for thankless man. And yet, in plain and sober seriousness, can this be denied? Take the ordinary English farmer of 100, 200, or 300 acres; ask him the simplest question that can be put to a child, about any one branch of any one of the sciences upon which his whole practice is founded, and upon which his livelihood depends; take him to his dunghill, and ask him the meaning of decomposition; take him to his fresh-sown field, and ask him about germination; show him a field in broad leaf, and ask him the history of vegetable nutrition; ask him any one of these questions, or, if you can think of [illegible], something more simple and elementary than either. He is a professed dealer with Nature; he ploughs, manures, and limes; he sows and reaps; he is the autocratic director of every operation on his farm, mechanical and chemical. Surely if science be not all a lie, and the analogy between the laws of one material pursuit with another a delusion, he should be approaching beyond a mere empiric; he should have some conception of the great laws and principles which govern [illegible] the business; some [illegible] for the [illegible] that does he [illegible] of them as a soldier in the ranks, of the plan of a campaign; about as much as the foretopman of an Indiaman, of the position of his vessel from the occultation of a satellite of Jupiter; probably less than either of these. But I am told, in answer to this, that of late years there has been much improvement; that this state of things is passing away; that already the farmer (such a one, at least, as you would accept for your tenant) is an improved existence; that example farms, agricultural colleges, and schools of chemistry, are multiplying over the land; that the very technical terms of chemical lore are beginning to be heard at farmers' ordinaries; till the most fastidiously scientific appetite is beginning to pall, even with the food that pleased it best. This is indeed true enough; and away with the miserable conceit that, standing on the vantage-ground of a luckier education, would throw one jeer or permit one ill-placed smile to creep out at the infant efforts of however adult a mind, if the tendency be in the right direction. What if Farmer Dobson did think last year that ammonia was "the name of a gentleman's daughter?" He knows better this year, and next year we shall hear of his putting sulphuric acid to his dunghill, to seize this fair lady as she flies. Why should he be expected to be a ready-made chemist? When he was a boy, chemistry was scarcely born. He had no education in chemistry. How should he know anything about it, or that it had any more to do with farming than the Egyptian hieroglyph? He is not the person to be blamed. The blame, if anywhere, lies with those who advance it—namely, with the scientific world, who have allowed the physical world to grow nearly six thousand years old, and have only just made the notable discovery that the science of all nature—chemistry—is eminently and necessarily applicable to the art of all existence—farming! I say it is the backwardness and infancy of science, not the ignorance of farmers, that deserves reflection. Which of these three propositions is the more wonderful, that Jethro Tull should have made the discovery that pulverisation was the great secret of mechanical cultivation; or that Humphrey Davy should have first thought and lectured upon chemical cultivation; or that both these great secrets were not put into words till the surface of the earth had been tilled for upwards of 5700 years! It is true, Wheat has been sown, as well as "blood spilt ere now in the olden time;" and sooth to say, God's earth has been well enough manured by the one, to account for some extra luxuriance of the other. Lean stock has been made fresh, and fresh stock fat; yet around these simple-seeming operations, a veil of ignorance, of blindfold and gregarious empiricism has hung, to be torn aside by the magic touch of Davy first, in England, and after a pregnant interim, by Thaer and Liebig in Germany, Boussingault in France, Johnstone in Scotland, Buckland and Daubeny at Oxford, Henslow at Cambridge, and Playfair in London. And at the heels of these champions of agricultural Christendom, a host has gathered that promises to scare Prejudice herself from her favourite and oldest haunt; and strange to tell, the occupation that has hitherto been deemed "of the earth, earthy," dull, heavy, and changeless, stupidly laborious and mechanical, fitted only for the hard hands of peasants, and the unlettered scull of the hind and serf, receives at one blaze its brilliant illumination, and is all at once found to be associated with the profoundest discoveries, and dependent upon the most delicate and recondite investigations of physical science.—*C. W. H.*

(To be continued.)

GEO-AGRICULTURAL NOTES OF SOUTH GLOUCESTERSHIRE.

(Continued from page 544.)

Coal.—The coal strata, which next engage attention, do not follow the same law of conformity which those hitherto described have exhibited. The strata of the new red sandstone overlie them in a manner different from that in which the former are overlaid by the lias. In the latter case, an entire bed of the one rests on an entire bed of the other; but in the former, the new red strata rests on the edges of the coal strata; these must, therefore, have been raised up and worn away during the interval elapsing between their deposition and that of the strata covering them. The boundary of the coal district is easily traceable by Itchington, Cromhall, Wickwar, Sodbury, Waterleigh, Homeapple and Stonehill, Hanham, Keynsham, Brislington, Stapleton, and Winterbourn, inclosing a space of about 40 square miles. The greater portion of this boundary is the junction of the coal strata with those of the new red sandstone, which overlie them all round the southern edge of the basin. In the north of the coal district, its boundary is its junction with the millstone grit, which dips on all sides below it. Very few beds of coal occur in the northern part of the district, and these are of very inferior quality. Over almost the whole of the district, the prevalent rock is a siliceous sandstone, which, where coal abounds, alternates in thin layers with it, and with beds of clay and shale; but where coal does not occur, it forms extensive strata of most excellent building material. It is of a blue colour, but varies much in its texture. It is much quarried as a building stone, being the best, though not the handsomest material for that purpose in the county. It is also much used as a flag and paving-stone.

Agricultural Character of the Coal.—The poorest land in the county occurs on the clays of the coal formation near Cromhall and Rangeworthy. A great proportion of this land was lately in commons and wastes, and perfectly worthless. They were enclosed by Hayle, Wilkie, and [illegible] in general [illegible] the [illegible] no valuable [illegible] of [illegible] [illegible] [illegible]

extreme wetness, is not good. The fields are not large and the hedge-rows are crowded with the Oak and the Elm. Neither the arable nor the pasture-land are drained. There is no general rotation adopted; the land is cropped as it will bear it. The average crop of Wheat does not exceed two-and-a-half quarters; that of Oats cannot be put at more than 28 bushels. Very few Turnips are grown. The soil on the sandstone of the coal measures is a sandy clay—light when dry, but clinging together when wet. In some places, when near to the rock, it is brashy. It forms a good Barley soil, and good crops of Wheat are raised from it. There are few commons on it, and these are greatly more valuable as commons than those on the clay. About three-fourths of this district are in pasture, which is of good quality. Very little of it is drained. There is rarely any regular system of cultivation followed on the arable land. The centre of this district is crowded by a large population of colliers and others engaged in the coal trade, and the land is divided and subdivided among a great number of holders. The farms are very small. Wheat and Potatoes are the chief crops. Barley and seeds are grown occasionally. The average Wheat-crop per acre is below three quarters; that of Barley is about four quarters. The crop of seeds, after being mowed and depastured during one year, is broken up for Wheat or Potatoes in the next. The system of breaking up seeds for Potatoes is very common.

Millstone Grit.—This is the name given to the rock on which the coal strata lie. It is a siliceous sandstone, varying considerably in its texture: it incloses and forms the coal basin, dipping under the coal strata on every side. It extends from Itchington, where it is overlaid by the red marl, by Tytherington, Cromhall, and Wickwar, to Chipping Sodbury. This band is nowhere above half a mile in width: it is about 10 miles in length. Beside this, which is the greatest extent of the millstone grit, it occurs in the midst of the coal strata, dipping to the north and south, and forming a ridge against which those strata lie on either side. At Bristol it again makes its appearance: Brandon-hill consists of this rock. It occurs again at Almondsbury, in junction with the mountain limestone. A very small extent of it, however, is here exposed, being almost immediately covered up again by the lias clay. It occurs also at Doynton, where its junction with the mountain limestone is again exposed, the coal strata being, however, obscured by the red marl and blue clay. The country has been here curiously broken up by a fault, so that on crossing from Wick towards Doynton, up the ravine between the two places, we pass first over a tract of the millstone-grit, then over one of mountain limestone, again over a tract of a siliceous rock precisely similar to that first passed over; and in the bed of the river by Doynton, and in a small quarry near it, the mountain limestone again occurs dipping at an angle of at least 60°. All these rocks dip one way—slightly to the south-west. The only mode in which their appearance in this manner can be explained is, by supposing a fault to have taken place across the strata in the line of their strike. The millstone-grit varies very much in its texture. It is, at Kingsweston, a very soft sandstone; at Bristol it is very hard; at Wick it is a coarse conglomerate; at Cromhall, again, it is a hard siliceous sandstone, resembling that at Bristol; while, at Sodbury, it is a splintery rock in which the granular structure is entirely effaced.

Near Sodbury, Yate, and Wickwar, beds of strontian occur, overlying the millstone grit. I obtained some specimens in which fragments of the rock were imbedded in the material of the mineral, and which, on being taken out, left their impression, as if they had been enveloped when in a soft state. This mineral is not made use of, except in some instances, when pounded down as a finish to gravel-walks, over which it is strewed.

Agricultural Character of Millstone Grit.—The surface of the millstone grit is generally level and uniform. About three-fourths of it are in pasture. The fields are frequently much overshadowed by hedgerow-trees. The Elm is the tree which is natural to the soil. The pasture-land, beside being soured by the shade of trees, is very easily injured by dry weather. It is frequently very shallow, and is then easily burnt. Perhaps an average crop of 18 cwt. of hay per acre is mowed from it. The soil is generally a keen sand, and, where it is shallow, is full of the angular fragments of the rock. Near Sodbury it is a clayey soil, owing, probably, less to the disintegration of the rock, which is here extremely hard, than to that of the seams of clay by which it is separated.

The general rotation followed on the arable land is a four-years' course; 1st, Wheat, 2d, Barley, 3d, Seeds, 4th, Potatoes. It is a very general practice to leave the crop of seeds out of the rotation, and thus reduce the course to one of three years' duration. This makes it, on a sandy land, a very severe rotation, and under this system it is accordingly found necessary to fallow land occasionally. The average of the Wheat crop is less than three quarters, that of the Barley crop about three and a half quarters. Turnips are sometimes grown instead of seeds, and the average crop is probably less than 10 tons per acre. Lime is much used on this land. It is spread over the soil once in three years, at the rate of 80 or 90 bushels to the acre. It is said to do it good each application. Nothing but the farm-yard manure is applied to the crops, and the dung dropped on the pasture land is generally gathered together and placed on the arable land. No bone-dust is used for the Turnip crop. Indeed, it is nowhere generally used in South Gloucestershire.—*R. E.*

[ILLEGIBLE]-POTATO RAISED [ILLEGIBLE]

[ILLEGIBLE] have had completely without number of the failure of Potato crops, owing to the rain producing the rot, wet rot, &c., but the sort of failure which your correspondent "R." laments, in a late Number of the *Gazette*, and on which he asks your advice, we have not heard so much about, though I believe it is not uncommon, especially in small gardens.

I shall never forget one of these luxuriant failures coming under my notice when a lad. I had observed, when the early Potatoes were dug up, that wherever there was a plant with two or three good strong stems it was sure to afford Potatoes of a larger size than usual; and when I afterwards saw a crop where all the stems were large, I naturally concluded that the produce of Potatoes must be large also. I accordingly ventured to congratulate my grandfather on the abundant crop he was likely to have, the tops being nearly as high as myself; when he puzzled me much by saying that I was sadly mistaken, for they were all running to tops. How the Potatoes could run to tops I could not imagine; but in after years I fancied I had found a satisfactory explanation of the mystery, and I send it in the hope that it may be of use to "R." The sort of Potato of which I speak was a very valuable intermediate variety, known in North Lancashire as Lord Morris, or Murray's. It was a vigorous grower, and the deficiency in the produce I believe was owing to the ground being too highly manured (for a very powerful manure was used), and to the rows being much too near each other. "R." does not mention the distance at which his Potatoes were planted, but he does say the tops were magnificent—finer in many parts than he ever saw; that the ground was well manured with stable-dung, in many places with Potter's guano, and frequently watered with liquid manure, of human urine and soap-suds. The season cannot be to blame, as he suggests, for upon the whole it has not been unfavourable for late varieties; besides, we should have heard much more of it if the evil had been general. There can hardly be any doubt, in my opinion, that the frequent application of liquid manure was the cause of the mischief. Plants, as well as animals, may have too much of a good thing—they may be overfed; and it is an every-day observation that excessive luxuriance is opposed to fruitfulness. Facts in abundance might be mentioned in proof: I will state one. Col. Le Couteur, in his experiments with manures on Wheat, found that one application of liquid manure was injurious, but some Wheat to which liquid manure was a second time applied, grew so rank and full of leaves, that only a few plants produced ears, and the grain was worthless.

One of the most visibly bad effects of an excess of manure, especially of liquid manure, on Potatoes, is, that owing to their luxuriance, the stems are more brittle, and are much more liable to be laid by winds and rain, than if their growth had not been so rapid.

If your correspondent is aware of the functions of leaves, he will readily see the evils of this. Leaves are most important organs, and their use can hardly be too often explained and illustrated. All the matter which constitutes the Potato is prepared or elaborated in the leaves by the action of light, and consequently the produce of a plant must in a great measure depend on the quantity of leaves which it can expose to the light. If, then, by a too luxuriant growth, many Potato stems are laid, a considerable number of leaves must be shaded, and the crop of tubers must be so much less in consequence.

But if, in addition to this over-manuring, the rows are too near each other, the evil is much greater, the Potatoes now run to tops with a vengeance; the stems are drawn up, they are taller and weaker than if grown farther apart; the sap, as was observed by Mr. Knight, will have farther to travel, and more time will be required for its ascent and descent; and even if the stems should continue upright to the end—and it is hardly likely they could—there would even then be a less breadth of efficient foliage than if the rows had been at proper distances apart. In the latter case, almost every leaf might have been able to perform its functions, while in the former case the lower leaves would be shaded and useless. The plants would have presented a comparatively level surface—the uppermost leaves only would have been efficient.

Look at our woods. A wood where thinning has been wisely attended to, will yield a much greater weight of timber in a given time, than another wood where the trees have been left to themselves after planting. In a few years the branches meet, then intermingle, and the trees become engaged in a life or death struggle, fighting as it were for the precious light.

The cause of the difference in the weight of timber produced is obvious, for there must be a much greater breadth of foliage exposed to light by an acre of more or less cone-shaped trees, standing at proper distances apart, than by an acre of trees which are crowded.

There is another case which I may as well mention now, by which it is possible there may be a vigorous growth of stems, without a corresponding crop of tubers; and that is, where in a poor soil manure has been placed, as is the common practice, in the rows only. Some may be inclined to doubt this; but it was the opinion of the late Mr. Knight. In such a case he observed, the young plants grow very freely at first, because their first emitted roots find abundant nutriment, and these roots consequently extend rapidly; but they extend into the unmanured soil, and if there be not much, it cannot afford food. Abundant nourishment and consequently rapid growth of stem, with a scarcity of that nourishment, and the produce of tubers will naturally be small, comparatively with the growth of the plants.

If Liebig's theory of the summer nutrition of vegetables was true, this should be the best and most economical mode of applying manure, because we should then have the greatest amount of foliage at the least expense of manure. But as has hitherto been the faith of this country, plants depend upon the soil as well as upon the air for their food during the summer, as well as at any other period of their growth. We should, therefore, be careful to provide for their summer wants.

If "R." then, has any faith in the above remarks, he will withhold his liquid manure from his Potato crops next year, and so apply the other manure that his plants may live frugally, and not expend that in the production of superfluous stems and leaves which should have been reserved for the more important production of tubers. He will be careful also that his plants have sufficient breathing room, and that the rows of his late varieties be at least two feet apart. The object to be aimed at is to have the whole of the ground covered with foliage during summer, without the leaves of one plant interfering with those of another; this is a point of great importance in the culture of all plants producing grain, fruit, timber, or roots, and I am afraid is not yet sufficiently understood by the majority of those whom it more particularly concerns.—*J. Townley.*

ON THE ACTION OF GYPSUM, WITH REMARKS ON MISSTATEMENTS OF THE WRITER'S VIEWS.—By J. S. Henslow.

I am not intending in this communication to enter into any discussion respecting the fixation of ammonia by gypsum. I propose doing this on some future occasion, whenever I shall have been favoured with the returns I am still expecting to receive of my Schedule A. Can I hasten those returns a little, by requesting the several experimenters to forward them as soon as they conveniently can, or else to inform me of the reasons why they have not been able to fill them up? My present object is a word of advice to practical men, on a subject which is of quite as much consequence to them as the determination of a disputed point in agricultural chemistry. I would seek to impress upon them the propriety of extreme caution in attending to the advertisements of merchants who are recommending the novel manures which are now being applied to various agricultural purposes. I am not alluding to the adulterations of these manures, but to the applications of them. The public has already received due caution respecting the iniquitous extent to which such adulterations are carried on; as in the example noticed in page 259 of the *Gardeners' Chronicle* for 1844, where a substance was proved by analysis to have been adulterated to the amount of 97 per cent.; so that a farmer might be obliged to pay at the rate of 66*l.* per acre, instead of 40*s.* to produce a proposed effect. I pass by the dishonest dealer, and wish to speak of the advertisements of dealers whom I shall presume to be perfectly honest, but mistaken in the advice they give to the farmer. I find my name has been set forth as a guarantee for the efficacy of gypsum in its application to agricultural purposes, and therefore I have a right to caution the public against supposing that I have directly sanctioned what I certainly have not advised to the unqualified extent which might be supposed from the terms of an advertisement lately sent to me. I have not the slightest intention of impugning the motives of the advertiser, of whose firm I know nothing, any more than I know of any other firm dealing in this description of merchandise. But I must declare that he has gone far beyond anything I have ever stated in recommendation of gypsum as a fixer of ammonia. He may be quite right in his recommendation of gypsum for such purposes, and I shall be much surprised if it does not prove to be efficacious under peculiar circumstances; but his declaration of my views is much too unqualified when he says—"Sir John Herschel, Liebig, Professors Henslow and Johnstone, strongly advocate the addition of gypsum to liquid manure-tanks, and dunghills, for the purpose of fixing the ammonia." Surely any one who has seen and thought about what I have said in my "Letters to the Farmers of Suffolk," must have understood that I have hitherto been inviting practical men to make trial of the advice which chemists have given them concerning gypsum as a fixer of ammonia. In my Address to the Hadleigh Farmers' Club, which precedes those letters, I have stated at p. 15, that the subject had not yet been fully elucidated; and again at page 20; I have said "I will even venture to recommend (till good reason shall be shown against such a practice), that a little powdered gypsum be scattered from time to time over the materials (of the dunghill) as they accumulate; it can do no harm, and I believe may do much good. Let a sufficient quantity of water be sprinkled over it to wet the gypsum thoroughly." This exposition of the applicability of the views of chemists concerning the use of gypsum, is very far short of proving me to be a "strong advocate" for the use of it under all the circumstances named; and the letters which follow greatly qualify even the opinion given above; because I afterwards found that some chemists of reputation were doubtful of the gypsum proving effectual in dunghills. I wrote those letters with a view to provoke practical men to decide the question for themselves. I am not yet in a position to state the result of their co-operation for this purpose. I felt surprised also at finding the name of Sir John Herschel quoted as a "strong advocate" for the use of gypsum, and therefore wrote to the advertiser to point out to me any passage in Sir John's writings which might relate to the subject. He obligingly referred me to the 'Farmer's Magazine' for 1843, p. 143, where he states

there is some allusion made to Sir John Herschel's discourse on "Natural Philosophy." As I have not any opportunity of consulting the "Farmers' Magazine," I wrote to Sir John Herschel himself, and have this morning received the following reply:—"I never gave any opinion of the kind you mention, about guano, gypsum, or dunghills. I have said in the *Gardeners' Chronicle* that gypsum does fix ammonia; but I never tried the experiment, and have even some small doubt of the fact that carbonate of ammonia, in a liquid or vapourous state, will decompose solid crystallised sulphate of lime, though I do not deny that it may." Those persons who like myself are anxious to see practical men concentrating their efforts for ascertaining the modes of applying science to practice, in that only way which can be very certain of saving them much time, trouble, and expense, have quite enough of prejudice, ignorance, and apathy to contend against without having their opinions misstated, and their proposals *perverted in a way* which may induce practical men to fancy that science is in error whenever the results promised them by manure merchants fall upon their making trials of their merchandise. I lately noticed a communication from one of your anonymous correspondents, complaining of his having been misled in some way or other by "march-of-intellect men." I see he has since asserted that his remark was not intended as a sneer, but as a caution. I readily offer him the right hand of fellowship in maintaining that sentiment. I am a humble admirer of all "march-of-intellect men," though I belong myself to no other than the awkward squad of their army. Whilst it has been my endeavour to point out to agriculturists the advantages which must follow from their listening to the suggestions of our scientific leaders, I have constantly insisted, in language as plain as I can command words to express myself, on the absolute necessity of caution, on the exceeding absurdity of costly experiments, and on the great facilities they have in their power for working a correct, secure, and rapid method of arriving at legitimate conclusions.

Possessing a hearty desire to see the most important interest in the kingdom improving and flourishing, I feel very unwilling that any little exertions I may have considered myself sufficiently qualified to make in favour of that interest, nullified by misapprehensions and misstatements of my own recommendations. This desire inclines me further to allude to a statement which possibly some of your agricultural readers may have lately noticed either in the *Times* or its adjunct the *St. James's Chronicle*. I may possibly be influenced by other motives as well as the one which I have assigned, but I shall crave your indulgence in introducing the subject here, because I think the effort which has been made to characterise me as a fool, may have some influence in preventing practical men from attending to any future suggestions I may offer them for the application of science to agriculture. A reporter of the *Times* has chosen to say that I have recommended "fireworks as a mode of suppressing incendiarism in Suffolk!" Certainly if I had done anything so foolish, I should not deserve the slightest attention from practical men to any suggestions I may in future make to them. The facts are as follow:—There is in London a Society, called the Labourers' Friend Society, which has effected much good in some counties, by the introduction of allotments, and by various suggestions for benefiting the labourer. A few months ago it was publicly announced in our local papers that it was in contemplation to establish a similar Society in the west division of Suffolk. By way of inviting attention to a variety of topics connected with methods already adopted in different places for assisting the poor, I determined to write a letter weekly in the papers until the meeting preliminary to the formation of the Society should take place. The subjects treated in these letters have been successively—Village Ploughing-matches; Loan Libraries; Coal Clubs; Allotments; Medical Clubs; Official Charities; Benefit Clubs; Recreations for the people. In alluding to the last of these subjects I noticed a plan which has been pursued in my own village for the last seven years, of having a little annual exhibition, for the amusement of the parish, chiefly with fireworks. In recommending something of this sort as a means of restoring periodic returns of amusement to the people, of which there are now very few or none of a creditable character in this part of Suffolk, I proceeded to explain the great facility with which any country family, taking delight in offering recreation and amusement to their neighbours, might prepare such an exhibition in a way that was comparatively inexpensive, and little troublesome. Why this reporter has chosen to say my object was to propose fireworks as an antidote to incendiarism, I shall leave to the suggestions of his own conscience. Any one is welcome to consider me a fool for recommending fireworks or any other works, as a means of amusing our country folks. Such kind of folly is not incompatible with a power of giving advice on the subject of the application of science to practice; but the supposing it possible that I could give such advice as this reporter has strangely ascribed to me, would necessarily be accompanied with a degree of incredulity concerning my capability of giving good advice on any subject whatever, beyond that of squibs and crackers. As for incendiarism in Suffolk, I have publicly stated my opinion on that subject, in a pamphlet I published last August. I believe the crime originated more immediately from the want of employment among a large number of the poor; and I have not yet heard anything to shake that conviction. Why the people are less employed now than they were three or four years ago, is a question which I am not called upon to discuss; but whether they may happen to be sufficiently employed or not, those particular methods to which I have referred are equally adapted to assisting, comforting, or amusing them. I have never proposed either one or all of them together, as substitutes for a want of sufficient employment, or as panacea against any of the evil consequences likely to result from a want of sufficient employment.—*J. S. Henslow, Hitcham.*

Home Correspondence.

Dressing Wheat.—I think, perhaps, the inclosed receipt for dressing Wheat will be acceptable to many of your readers at the present season; its simplicity must recommend it, and I assure you it is a certain remedy against smut:—Shoot a sack of Wheat upon a good brick floor, and place upon it a pailful of boiling water; put a double handful of new lime into the water, and let it remain a few seconds till the water is well impregnated, and then quench it with a quart of urine, or salt water that will carry a new laid egg; pour it over the Wheat, and let two persons stir it well, taking care that every grain is made wet; it will be ready to drill in two hours. The water should boil and the lime be new in lumps.—*A Norfolk Farmer, Fordham, Downham Market.*

Way to Store Cabbages.—Your correspondent "Querist" wants to know the best way of preserving Cabbages in winter. I have little to communicate on the subject; but to what I have, if of any use to him, he is welcome. I have been informed that Drumhead Cabbages are preserved in some parts of Oxfordshire in a way somewhat similar to that of storing Potatoes out of doors. The Cabbages are taken up on a dry day and the stem and loose leaves taken off; they are then put in heaps in a manner like cast-iron bullets in an arsenal, broad at the bottom and narrow at the top; afterwards they are covered with earth. Some years ago I tried to preserve a few barrowfuls of early York Cabbages in winter; I stored them in an outhouse in two lots; one lot was covered with sand, and the other with sawdust; it was done in October. I examined them about the beginning of January, and found that the rats had nearly destroyed them all; the few that remained had the outside leaves rotten, but the heart was good.—*Peter Mackenzie.*——[To this we add the following from a correspondent]—Dig a pit in a dry place, say ten feet long and five or six deep; put in a little dry straw at the bottom; then place your Cabbages (first depriving them of any decayed leaves) on it; put a little dry earth over them, another row of the Cabbages, more earth, and so on till the pit is full; then cover them with dry reeds or Ferns, and put the earth that has been dug out of the pit over them in the shape of a roof, beating it down well, so as to exclude the air and heat: in this way I have found Cabbages to last me till new ones came in, and much longer.—*J. B. Warren, Crookston.*——In addition to this, *R. G.* says:—About two years ago I was staying with a friend, whose gardener was then about storing his Cabbages, of the large drum-head kind. He cut them off, turned them down, and let them drain for a day or two; then marked out a spot, on which he placed a few Pea-sticks. On these he placed the Cabbages, with their heads down; then a few more sticks, or Pea-haulm, for the next tier, and so on, just as you may have seen cannon-balls piled. Outside he put a little straw or slight thatch, just sufficient to throw off the wet, and to allow a good circulation of air. In this way, he assured me, he would keep them till March or April for the family use.

Hedgerows, &c.—Having read with much interest in your Paper, "Notes of a Journey through Southern and Western England," by a Strathern Farmer, I beg to submit a few remarks. Every agriculturist of the present day cannot but deplore the very low ebb of farming in those parts of England which your correspondent has alluded to. Look at Sussex, where a considerable portion of the soil is good, and under a favourable climate, and contrast it with the high lands of Scotland, where the bounties of nature are scarce. But there, in respect to the system of cultivation, they are far in advance of what they are in the south of England, where the country is cumbered with slovenly hedgerows, large brakes and covers, and useless trees, with which the land is surrounded in small patches; their system of ploughing is generally with three horses in a line, with a plough as rude as in the days of Pharaoh, walking in the furrows, while it is well known that if two are yoked properly abreast they will have more power than three in a direct line, besides the injury they do to the subsoil by constantly treading it down. From my early experience in farming under disadvantageous circumstances, so far as regards soil and climate, I do not hesitate to say that if England was cultivated the same as Scotland, the land is capable of yielding double the increase. To obtain this desirable end a new system must be adopted—one that would not only give employment to the labouring class, but provide an abundant supply of food for an increasing population; which certainly must be preferable to sending the surplus population to a distant land, or having a dependence on a foreign country for a supply of food, whilst our own land is uncultivated.—*Alex. Russell, TurnhamGreen.*—I agree with Mr. Grant of Exeter, and a correspondent in your *Chronicle*, regarding the waste of lands by hedgerows; the impoverishing the ground by trees and thorns planted in them; their being a harbour for weeds (with slovenly and bad farmers); the cost of keeping them in repair; and, as in some of the provinces, their being allowed to run so high round small fields, that, owing to the scarcity of light and air, by them a great deal of the crop is robbed of its light, and natural food. Yet, on the other hand, in cold and bleak districts the warm hedge has its advantages; the horse, cow, and sheep are sensible of the protection it affords them from storm as well as sunshine. Moreover, I am old enough to have a lively remembrance of Napoleon's intended invasion of this country, and how many writers then looked to the hedges of England as formidable bulwarks against an enemy. But, apart from hedges in a warlike point of view, how *triste* the land would picture to the eye of such men as a Goldsmith or a Wilson with immeasurable plains without a break! What would become of the merry singing warblers from hedgerows? Their destruction, perhaps, many a farmer thinks would be reason enough to have the hedges down. But whether are birds friends or enemies to the farmer?—there is wide opinion conderning the general harm or good they do.—*Lt.*

Failure of Potatoes.—As the cause of the failure of the sets, when planted, is still involved in much obscurity, I mention the following circumstance:—One of my neighbours planted a ridge this year, with the kind called here Prolifics; the sets were all cut at the same time, and from the same sample; part was planted in the afternoon of one day, and the remainder next morning. The first all grew, and of those planted the next day, nearly all failed. The state of the land in each case was perfectly similar; the weather had been dry, and no rain had fallen in the interval. The circumstance is curious, and to me perfectly inexplicable. Can any of your correspondents account for it?—*Lusor.*

New and Old Land.—In answer to "Paddy," in your last Number, I see no conflict between the prevailing theory of the day and the practice stated in an extract from Cobbett's "English Gardener," because Peas in a garden are invariably set at considerable intervals; and if care be taken, they may be planted on the same border annually on a fallow of three years' standing. Had the Peas been sown broadcast for 15 years, Cobbett would have had to tell a very different tale.—*W. C.*

Flax-seed.—Having perused with interest the Articles by Mr. Sproule upon the cultivation of Flax, and also the details given as to the uses of Flax-seed as a food for cattle, as practised by Mr. Warnes, I venture to ask that gentleman to favour us with a little further information as to his mode of preparing Flax-seed before making it into jelly. Mr. Sproule seems to speak as if a common corn-crushing machine was sufficient for grinding it before it is boiled into jelly; now, I have myself tried this method, and made good thick jelly, but could not satisfy myself that its effect in fattening cattle was at all equal to that of the common oil-cake. The failure in my own case may have arisen from the seed having been insufficiently crushed, and a portion of it passing through the animals without being digested. Is it possible to grind Flax-seed in a common grist-mill, so as to make linseed meal; or would the oil be thereby expressed? The supply of good nutritious winter food at the cheapest price, is at the present moment a subject of such paramount interest to most farmers, that I make no apology for intruding it upon your columns.—*A Gloucestershire Subscriber.*

Fire-clay as a Manure.—While on a visit at the residence of Thomas Sprot Esq., Garnkirk, near Glasgow along with two or three other gentlemen whose names will be furnished, if desired, I had the gratification of testing the result of an experiment made between the fertilising properties of stable-dung and fire-clay, which I have no doubt will prove of interest to your horticultural as well as agricultural readers. In the month of April last, Mr. Sprot selected four Potatoes, of the kind called in that quarter Red Droppers, of medium and all of an equal size, which he planted whole. Two of these he planted with a large spadeful of well rotted hotbed stable dung well incorporated with the soil. The two other he planted alongside of the above, and about 18 inches apart from them, incorporating with the soil about an English plut of the Garnkirk fire-clay, ground to powder. The chemical constituents of this clay, which is dug from a depth of about 20 fathoms, as tested by Professor Thomson of Glasgow, are given below. The whole four Potatoes came away, and those grown with the dung at first took the lead; but in a short time those grown in the fire-clay gained upon and got in advance of the others, exhibiting broader and more luxuriant foliage. On 30th September, when the produce was taken up, the stalks of the dunged Potatoes were quite dry and decayed, while those in the fire-clay were green and but slightly faded in the leaf, and might thus have grown for some little time longer. These are the results:—

Those in hotbed dung:—

No. I.	.	25	Potatoes	. 2 lbs. weight.
No. II.	.	21	"	. 4 "

Those in fire-clay—

No. I.	.	28	"	. 6½ "
No. II.	.	23	"	. 8½ "

Thus the fire-clay produced in both shaws not only about double the weight produced by the dung, but the Potatoes were larger and finer in appearance. Four of the fire-clay ones were boiled and found to be of excellent quality, mealy, and finely flavoured.

Analysis by Dr. THOMSON, Professor of Chemistry, in the University of Glasgow.

Silica	53·4
Alumina	42·6
Lime	0·6
Peroxide of Iron	1·8
Protoxide of Manganese	0·6
Phosphate of Lime	0·0
	100·0

—*Isaac Anderson, Maryfield, Edinburgh.*

Transmutation of Species—Curiosity in Corn.—What we may call a natural curiosity was brought to our office by Thomas J. Biggs, Esq., of Garryhinch, Kedmore on Saturday. It was an ear of Wheat, with

grain of Oats regularly formed and full, growing out of each side. The ear was picked up at Shippool, the residence of Captain Herrick.—*Cork Can.* As a proof of the correctness of Lord Bristol's experiment on Barley, mentioned in one of your late Papers, I send you the above paragraph, taken from a Cork paper, which most probably you may not have seen.—*E. F. L.*

FARMERS' CLUBS.

Inverness.—The following are extracts from a communication by R. Grant, Esq., of Kincorth, on the interesting subject of Reclaiming Sand-hillocks and Beaches by Plantations of Scotch Fir and Larch. We are indebted for them to the *Inverness Agriculturist*, in the columns of which the letter was placed by Mr. Anderson, Secretary to the local Farmers' Club of that district, to whom it was addressed:—"Were my accounts to be exhibited, I do not believe they would entitle me to the praise of an economical planter; but my object is rather to describe what I consider I may now deem a successful attempt to clothe pure sand hills with thriving plantations of Scotch and Larch Firs. The ground planted is situated in the outskirts of the well-known tract of the Sand Hills of Coubin, which are so conspicuous along the seacoast, to the northward of Forres. My residence being in the immediate vicinity of that dreary waste, I long felt an anxious but hopeless desire to adopt any probable means by which the barren appearance of the neighbourhood might be improved; but for years I could not bring my mind to cherish a hope, notwithstanding the repeated recommendations of friends to plant, that trees would grow on so sterile a soil; and it was not until 1836 that I at length resolved to make the experiment. The whole plantation covers an extent of about 70 acres, in the form of a belt, extending about a mile in length, and varying from 100 to 400 yards in breadth. Some portions of the ground consist of a flat sandy moor, intermixed with small quantities of Moss, which, when planted, was covered with some coarse Grass and stinted Heather. In other places the soil is of a black gravelly nature. And, with respect to these two divisions of the plantation, there is nothing of peculiar interest to detail, or remarkable in the growth of the plants; and I shall only allude to them as exhibiting the comparative growth of plants under ordinary circumstances, with that of the trees planted in the sand hills, which extend over the remainder of the plantation. Of these sand hills, or more properly hillocks, I may state that they are of that description the appearance of which must be familiar to every one who is acquainted with the sandy coasts of the country: they vary in shape in every possible way, and in height from 10 to 30 or 40 feet. With respect to the herbage upon them at the time when they were planted, they may be divided into three classes: 1st, Those most recently formed from sand-drift, on which Bent alone, and that but partially, grew—quite clean and open about the roots, as Corn in a well-cleaned fallow field; 2d, Those where the Bent, having been protected for years, had rotted, and the ground being afterwards pastured by sheep and cattle, a thick sward of Grass had grown up in its stead; 3d, Those which were in a still more advanced state from their original formation—the grassy sward or crust upon them being supplanted with Whins and Broom. The planting was commenced in the spring of 1837, and was continued annually, in portions of from 15 to 20 acres, until the whole was finished. The plants were of the common description of Larch and Scotch Fir—the latter grown from seed procured from the forests of Strathspey. They were raised by Mr. Grigor, nurseryman at Forres, in his nursery there; and before being planted they were not removed from their native nursery ground to any intermediate description of soil, to prepare them for transplantation to the sand-hills. The plants first used were very small, being one-year-old transplanted seedlings; and these throve remarkably well in the moorish ground, and also in the Bent hills, where the moisture easily got access to the roots of the plants. In the grassy parts, however, most of the small plants withered, from want of sufficient moisture, or from being choked by the Grass; and I afterwards found that larger-sized plants succeeded better in such ground, which I conceive arose from their having more sap within themselves, which enabled them to resist the drought longer, and until vegetation commenced. With respect, indeed, to these arid grassy parts of the plantation, I cannot report that I have been as yet, notwithstanding repeated planting of the ground, very successful in establishing a sufficient quantity of healthy plants in the soil; and I must confess the waste of plants and labour in these parts has been very great. In the moor ground and soft open sand, the planting was executed by women, with small iron dibbles, which mode I found perfectly successful. In the second planting in the grassy places, I employed men to plant with spades, who pared the surface before putting in the plant; and this plan I have found attended with more success, although considerably more expensive. I have already stated that Whins and Broom covered certain portions of the ground; these before planting were cut, and allowed to remain on the ground, and have sheltered the young plants, which have generally thriven pretty well in such places. Before concluding this short statement, I may mention that some parts of the ground were planted in November and December, and others in the spring months. I have little hesitation in saying, from my experience, that winter planting should always be adopted in preference in such dry sandy ground, as the winter rain invigorates the plant, and enables it to outlive the summer drought. I must repeat that the expenses of the work exceeded the ordinary outlay upon such improvements—partly occasioned by the great destruction of plants during the first two years by rabbits, which infested the ground in great numbers, and which I had not taken the precaution to have destroyed; and an extra expense was also incurred by the cleaning of those parts of the ground which were covered with Whins. But this is the first experiment, so far as I know, which has hitherto been made in Scotland of planting sand-hills, and my success has been such as I think warrants me in holding out encouragement to proprietors who may possess similar ground along the flat, bleak, wild, and profitless coasts of our country, and who may be anxious to change their barren aspect. The most advanced part of my plantation is now seven years old, and I gladly invite any who may feel an interest in the subject to visit the place, and witness the healthy and vigorous condition of the plants at their present age. It is impossible, indeed, to predict what height or size trees may ultimately attain in such soil. I am far from expecting that timber of any great size will ever be procured, although I am sanguine that trees which may be useful for many country purposes will grow on it; but I think I may safely assert that, in the great object I had in view, I have every prospect in due time of perfectly succeeding, viz., in rendering what was an unsightly desert in some measure ornamental."

Stow-on-the-Wold.—The meeting of this Society was held on Friday week. Mr. Newberry's dibbling-machine was the subject of not a little conversation during the day. It was related that Mr. Harris, of Upper Swell, had threshed out an acre of drilled Wheat, and an acre dibbled by Newberry's machine; on the drilled acre was sown six pecks of seed, and on the dibbled five pecks; the drilled produced 26 bushels, and the dibbled 33 bushels and a half; the dibbled Wheat was heavier by a pound a bushel than the drilled—making altogether a produce of upwards of 30 per cent. available for the market, in favour of the dibbling-machine.

Reviews.

The Report on the Agriculture of Norfolk, to which the Prize was awarded by the Royal Agricultural Society of England. By Richard Noverre Bacon. London: Ridgway, Piccadilly.

THE diffusion among farmers generally of what is already known and practised by the few of them in our best cultivated districts, is in all probability the most efficient method of improving British Agriculture. More good will probably be done thus, and with greater economy too, than by increasing the number or encouraging the industry of the numerous labourers now working on the junction lines of agriculture with the sciences by which it is surrounded. Do not let us be thought to undervalue the labours of the chemist or geologist; the farmer has of late become deeply indebted to scientific men for important suggestions and explanations of practice. There is still, no doubt, room for great improvements in our best systems of farming—improvements which have been, and probably will continue to be indicated by scientific men; but there is such a great difference between the practice of those who farm well, and that of the many below them on the scale of excellence, that great national good would undoubtedly arise from an improvement in the management of the latter class, though that of the former should for a long time remain stationary.

If we could find as superintendents, men uniting a perfect knowledge of the system to be promulgated, with a capability of duly estimating the influence of the peculiarities, as regards soil, climate, &c., of the districts in which they would be stationed, then the establishment of example farms would undoubtedly be the best method of effecting this improvement. But few, if any, such farms are now in existence, and in their absence we must therefore look to the assistance of the press, and hope for success in the efforts now making to set before the agricultural world the modes and results of the practice of good farming.

The late Board of Agriculture appear to have been fully impressed with the importance of this kind of publication, and they accordingly addressed themselves to the task of collecting agricultural reports of all the counties in Great Britain; and a series of volumes was the result, which contain a vast mass of useful information. The English Agricultural Society, after the lapse of 30 or 40 years, are adopting a similar plan, and several county reports have lately been published in their journal. The volume before us is the report of Norfolk, to which their prize was awarded. It was too voluminous a production to appear in their Journal; but, comparing it with those which have already appeared in that periodical, as it enters into greater detail than any of them, and as it describes a district which has been long celebrated for its agriculture, we hope it will not on that account be the less extensively read and known.

We shall take another opportunity of directing the attention of our readers to it, more closely and at greater length, simply stating at present that its contents are very interesting and instructive; and that the authorities given for its accuracy are both numerous and unexceptionable.

The Police and Constabulary List. Parker, Furnival, and Parker, Military Library, Whitehall, London.

THIS is one of a quarterly periodical (for the quarter ending September, 1844), intended to present in tabular forms the arrangement and nature of the police force employed in the metropolis, the counties, and provincial towns of Great Britain, together with details of the nature and amount of crime in the several districts in which they are stationed. The aggregate of all these subordinate statements for the quarter is represented in a well-arranged Table at the commencement of the volume; the number and character of the various instances of offence, within the period, being given for each of the several main districts, such as agricultural, manufacturing, and maritime, into which the author has divided the country. Besides the technical and professional usefulness of such a publication, so well-arranged a statement of the condition of a country in one of its most important aspects, must be of great value in the eyes of all those interested in the statistics of crime.

Miscellaneous.

Cure for the Distemper in Cattle.—I cannot resist giving a receipt for the treatment of beasts that may take the prevalent distemper. It showed itself last winter in one of my yard stock, by its discharging abundant saliva from the mouth, with sore and inflamed tongue and gums, very dull, no appetite, confined bowels, and very hot horns. I desired the bailiff to give him one half-pint of the spirit of turpentine, with one pint linseed oil, repeating the oil in twenty-four hours, and again repeating it according to the state of the evacuations. At the end of twenty-four hours more, the bowels not having been well moved, I repeated both turpentine and oil. In two days the beast showed symptoms of amendment, and in three or four took to his food again, and did perfectly well. All the yard beasts and two of the fattening beasts have had it (five others I had sent to London before the disease appeared), and all have been treated in the same manner with perfect success. Half-a-pint of turpentine is the smallest, and one pint the largest dose during three or four days. Little food beside Oatmeal gruel was given.—*Quarterly Journal of Agriculture.* [The remedy above prescribed has been found effectual in this neighbourhood in several cases, even where the disease had attained a considerable height. It was tried with success by a farmer near Donnemana, and many of his neighbours whose cattle had taken the distemper.—*Londonderry Sentinel.*]

Report of the Thorough-Draining executed on the Estate of Edward Lucas, Esq., Castle Shane, Monaghan, by Fitzherbert Filgate, Esq.—The small drains are dug 32 inches deep, 5 inches wide at bottom, 7 at top of stones, and 16 at top of drain; 14 inches in depth of stones, which are covered with a Grass sod, about an inch in thickness, the Grassy side downwards; the remaining 17 inches filled with the earth cast out in cutting the drains. The width at bottom, 5 inches, is greater than is generally to be recommended; but I was prevented cutting them as narrow as I could wish, from the slaty nature of the stones of the neighbourhood, which does not admit of their being broken small; as, if reduced below a certain size, they fly into a hundred pieces. The stones being large, the drains were made wider on that account; and, although I would never recommend the practice where stones which would break cubically could be procured, one advantage is derived, namely, the possibility of cutting your drains with the spade in common use in the North of Ireland. In that case the only implement required exclusively for draining purposes, is the scoop or shovel for cleaning out the bottom of the drain. After the scoop is used, I have the bottom of the drain swept down with a broom; and the stones having been first carefully riddled, are immediately put into the drain: thus, as far as possible, guarding against mud and dirt, either lying in the bottom of the drain, or being introduced into it along with the stones. I consider that the sooner the drain is filled after being opened the better, particularly in frosty weather succeeded by rain, such as we frequently have in the early part of winter. If this be not attended to, much waste of labour and stones arises, and each cleaning out the drain, of course, enlarges it. Should delay in filling be unavoidable, it is prudent to stop up the mouth of the drain with straw, when communicating with other drains, and so prevent a run of sand or sediment into them. I never run the parallel drains into an open main drain; because, the mouths of these drains are sure to be stopped by grass growing at them, by frogs or rats running up them, by cattle tramping, and by the stones slipping, if the drains are on a steep inclination. The expense of main drains is, no doubt, considerable; but Mr. Smith, of Deanston, having mentioned that main drains, filled with broken stones, were equally effectual with those flagged or arched, I was induced to try the experiment, and have every reason to be perfectly satisfied with the result. The difference in expense is very considerable, amounting in my case to 2*d.* per perch for cutting and breaking stones; and the difference in the quantity of stones used is immense; 6½ cwt. of broken stones suffice, when 14½ cwt. is required for flagging. The small drains are all made 18 feet apart. The main drains were, for the most part, flagged—made 38 inches deep, that is, 6 inches deeper than the small drains; the open or swallow being 6 inches wide and 8 deep. Some of the later main drains were filled with broken stones, about 4 inches in diameter; these drains were also 38 inches deep, 9 inches wide at bottom, with 21 inches deep of stones. None of the main drains are of less dimensions than those given above, and some are considerably greater. It is, of course, understood that the depth to which it may be necessary to sink a main drain, for the purpose of procuring a proper fall, will depend upon the nature of the ground; the dimensions given are those supposed to be necessary in the most favourable cases. Iron gratings, like guidirons, are placed at the mouths of the main drains, to prevent the ingress of rats or frogs; and such a precaution is most necessary, as myriads of the latter especially will ascend and choke the drains, as may be easily ascertained by opening one

some time made. I may add that the stones are laid alongside the intended drain before the cutting has been commenced. Early in 1842 I commenced upon the field containing 13a. 1r. 5p. It is a field of strong clay, generally 16 inches deep, upon an almost impervious subsoil of white till mixed with small stones, so hard, that the pick was required in every inch. The main drain crossing a part of the field, runs in a hollow, and was necessary from the nature of the ground. The prices paid for executing the different works in this field were higher considerably than those since paid; as it was only the second field that had been attempted here, the people in the neighbourhood were unaccustomed to the work, and could not calculate the value of their labour by the perch; nor from want of experience in the former works, could they earn as much, perhaps, as they since have done at lower rates. The field lies on the side of a very steep hill, which made the drawing of stones difficult. In this case two contracts were made: one for cutting the drains, breaking the stones, sodding and filling the drains, at 3½d. per perch of small, and 7½d. for main drains; another for quarrying in an adjoining field on the demesne, drawing and laying down stones alongside of drains, at 4½d. per perch of small, and 8½d. per perch of main drains. The account of this field therefore stands thus—

No. of acres in field.	No. of perches of small drains	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		s. d.		s. d.	£. s. d.	£. s. d.
13 1 5	2347	0 8½	1972	1 4½	92 16 ½	6 1 0

This field was broken up after being drained, and sown with Oats, which turned out a very heavy crop, averaging 150 stones per acre. It was then deep ploughed, and is this year (1843) part in Potatoes, part in Turnips; the former are an excellent crop, producing 14 tons 7½ cwt. per acre; the latter middling, having run very much to top, which I attribute partly to the season, and in a great measure to the sheltered situation of the field, being nearly surrounded by planting.—*From the Irish Agricultural Society's Report.*—[*To be continued.*]

Lucerne.—Mr. W. Pepper, of Sutton Coldfield, has raised a crop of it for several years. It may be harrowed in with Barley on land that has carried Turnips. It should be covered in October or November with light stable manure; harrowed in the spring to get out the weeds; and deeply harrowed, almost like a fallow, in the autumn. The broadcast he considers better than the drilled. In some seasons he has got twelve tons to the acre: he has seen it run to the height of five feet five inches; its ordinary height is four feet. An acre will keep three strong cart-horses for six months, from 1st of May to October. — *Royal Agricultural Journal*, vol. iii. Parts 2 and 3.

Thick and Thin Sowing.—You think thin Wheat is not more liable to mildew than thick. Now all I have ever seen or experienced proves the contrary; namely, the thin late Wheat is sure to take it if any does, while the thick is frequently not injured at all. I have occupied between 500 and 600 acres of land for upwards of 30 years, and never suffered through having Wheat too thick by sowing but once, and that was last year; but many times through being too thin. Owing to some of my Wheat being so very thick and down last year, and hearing so much of throwing seed away last Wheat seed-time, I thought I would try the thin system on a six-acre piece. I dibbled two acres in the middle at the rate of four pecks per acre, the two acres at each end with eight pecks per acre, the land and all being done just the same; but the result was, I believe I had double the quantity of Wheat where I sowed eight pecks, to what I had where I only sowed four; and where I drilled 12 pecks per acre on other land, I had a much better crop than either of the others. Mine is poor land, and I believe thin sowing will never do for such sort of land; at any rate, I am quite satisfied, and will not again try four pecks per acre if I can help. I confess this is not a good year for thin-sown corn.—*Correspondent of Bell's Weekly Messenger.*

Stifle-burning.—Residing in a district in which stifle-burning is a good deal practised, and having been in the habit of doing a little on my own farm, I will simply state what I consider to be its advantages and its disadvantages. On heavy and tenacious soils its effects are decidedly good, in pulverising the land, making it work more kindly for the succeeding crops. Stifle-burning is usually a preparation for a Turnip crop; in moist seasons they are very good on this plan of management. On thin stone brash land, which is already too light, it must be injurious, as it certainly makes all soils porous; and as this kind is improved by being made firmer, I think it would be better not to burn the earth at all, but only the vegetable matter which works to the surface. This can only be proceeded with in very dry weather; therefore it cannot always be depended on regularly for procuring a crop of Turnips, which the summer of 1843 fully proved: other manures were then resorted to as a substitute. The expense attending it is also a disadvantage; on an average not less than one ton of straw per acre is used, which, added to 10s. per acre for manual labour, makes it more expensive than a moderate dressing of bones, which I consider to be superior. The old system of paring and burning is undoubtedly excellent, as an active manure is produced by burning the turf, couch, &c., without weakening the soil. Although it has been much spoken against, and altogether prohibited by some landed proprietors, farmers on light soils would feel a great loss if denied this privilege of paring and burning. —*A Farmer near Bradford.*—*Bell's Weekly Messenger.*

Notices to Correspondents.

Arrangement of Forest or Trees.—*W. C.*—The highest horse should be foremost, and the next next the implement, the others being ranged forward according to their height. It is much more ornamental to adopt a plan in which, every horse pulling directly on the implement, their arrangement with regard to one another becomes of no consequence. We shall very shortly consider the best way to harvest roots. Your arrangement for draining Potato-pits is good.

Books.—*A. Z.*—We know of no work expressly to afford instruction in the art of fattening prize beasts. See Hillyard's "Practical Farmer and Grazier."

Death of Ewe and Lamb.—*A. B. C.*—Like the Chaldeans of old, we are required not only to state the interpretation of the disease, but to name the disease itself. Not being a second Daniel, we are unable to expound the matter. If it had been mentioned what leaves the ewe and lamb ate, we might have afforded some explanation. A small portion of the leaves of the Yew-tree, particularly if in a withered state, would produce the effect stated.—*W. C. S.*

Food for Young Pigs.—*Cockney.*—Steamed Potatoes and Barley meal, with water, or whey, or skim-milk.

Gardeners' Chronicle.—*B., Scarborough*, can have the volume for 1843 of the *Gardeners' Chronicle*; order it through your bookseller; as, being bound, it cannot pass by the post.

Harvesting Roots.—*W. C.* and *A Young Beginner.*—Please wait till next week and we shall give full information then.

Index.—*A Constant Subscriber, Barnstaple*, will have, at the end of the year, a complete Index. The weekly ones surely very much simplify the task of finding any article.

Lime and Manure.—*H. C. S.*—If you manured this spring, you may, with probably greater advantage (comparing it with the expense), apply 100 bushels of lime *now*, for next year's crop, than apply manure which you say would cost 8*l.* per acre. If it was last year that you manured, you had better apply another coating of manure next spring, and in that case reserve your liming till the year after, or at any rate till the autumn. Generally speaking it is considered better policy to apply lime before a Corn than before a green crop.

Poor-rate Appeal.—*Mailcid.*—The Court of Quarter Sessions or the Justices in Special Sessions, before whom an appeal against a poor-rate is determined, have the power to award, and generally do award costs to be paid by the *unsuccessful* party.—*W.*

Potatoes.—*J. B.*—R. recommends that the Potatoes should be covered with dry earth. They may be laid in pits, or pies, as they are sometimes called, as usual, perhaps a yard wide and a yard high in the middle, then covered with dry earth a spade-blade thick, and then thatched or covered with the Potato leaves or straw. Ground may be rendered dry enough for it by digging a ditch round the pit a foot below the bottom of it.——*R. W.*—By all means try the experiment: plant a few rows of them early in November, fully six inches deep. Plant them whole; whether frost will hurt them or not will be determined by the result you obtain: the object of your experiment will be to ascertain that. From what little evidence exists on the subject, it seems probable that in many districts Potatoes may be planted in autumn with advantage.

Rot in Sheep.—*W. C.*—Salt is unquestionably the best preventive of the rot in sheep; but I believe that the idea that either Alder bushes or the web of the gossamer has any influence in the matter is altogether fallacious. It is not cold land, merely retentive of moisture, that is most apt to rot, but rather rich wet pastures, most susceptible of the influence of the sun, and on which vegetable decomposition readily takes place. Coincidences are very frequently supposed to stand to one another in the relation of cause and effect, and in the case in question they must have led to the supposition that Alder bushes and gossamer webs were preventives of the rot.—*W. C. S.*

Rye.—*R. Hinde.*—Your specimen appears to be that of true Rye. It is impossible, we think, that any such influence as you suggest could have been exerted by the last year's Wheat.

Sulphate of Iron.—*An Original Subscriber.*—Sulphate of iron will not injure the feet of horses nor their clothing, otherwise than staining them of a black colour, if the iron be in solution. —*W. C. S.*

Thistle.—*O. P. Q.*—We have perfect confidence in saying that unremitting perseverance in cutting off these weeds whenever they appear will ultimately kill them. It may take two years to do this—perhaps three; but you have only to choose between this and ploughing up your land, fallowing for a couple of years, and laying it down again.

To Architects.—*A Subscriber of some years' standing*, will be obliged for any effectual method of preparing a new wall so as to receive colouring. At present the fresh lime eats it away as soon as it is put on. If patience alone is wanted, how long will it be, in ordinary circumstances, before the walls are dry without a fire? We apprehend at least twelve months.

Top dressing for Pasture.—*G. M.*—In all probability the application of 20 bushels of fine bone-dust per acre, now, would be highly beneficial.

Variety of Wheat.—*J. D. Piper.*—Your specimen is that of a variety of large-berried Wheat, in very thickly compressed and well filled ears.

*** As usual many communications have been received too late.

Markets.

SMITHFIELD, Monday, Oct. 7.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 8 to 4s 0	Best Downs & Half-breds	3s 8 to 4s 0
Best Short Horns	3 6 3 10	Best Long-wools	3 6 3 10
Second quality Beasts	3 2 3 4	Ewes and second quality	3 0 3 6
Calves	3 0 4 0	Lambs	3 8 4 4
Pigs	3 4 4 0		

Beasts, 4170; Sheep and Lambs, 26,940; Calves, 100; Pigs, 263.

We have a larger supply of Beasts than any day this season, and a great majority of very middling quality; the best descriptions for the most part maintain their prices, although several very good Beasts only make 3s 10d, and Short-horns 3s 6d per 8 lbs; inferior Beef is sold very low—indeed a great deal cannot be sold at all; very many remain unsold. The supply of Sheep continues about the same; the demand is rather increased; on the most selling qualities there is an advance of 2d per 8 lbs since last Monday. Veal trade is excessively heavy, very few indeed make 4s; second quality are very low. Pork-trade is hardly so good.

FRIDAY, Oct. 11.

We have a large supply of middling Beef, which is very unselling, making from 3s 8d to 4s 2d, the best Beasts, &c., about 4s 10d, and Short-horns 3s 6d per 8 lbs. Trade is very heavy indeed, owing to the extreme dullness at the dead markets during the week. There is a fair supply of Sheep for the time of year, the demand being very small; about the same prices as on Monday are obtained, except for Ewes, which are fully 2d per 8 lbs lower. Lamb is now nearly out of the Market, and we shall cease to quote it; it now makes no more than Mutton. Veal trade is very bad; the best Calves scarcely make 4s, and many of second quality are sold at from 3s to 3s 6d. Pork is a little better.

Beasts, 771; Sheep, 8880; Calves, 841; Pigs, 870.

dl, West Smithfield.

POTATOES.—Southwark Waterside, Oct. 7.

Several cargoes of Cornish Reds arrived during the past week, which were opened at 70s. but at the close 65s was submitted to. There being only one cargo of Scotch Reds in the Market they realised 70s. The York Reds have not yet made their appearance.

York Reds	— to —	Kent and Essex Whites	90s to 100
Perth	70 —	Kidneys	— —
Yorkshire	— —	Wisbeach Kidneys	— —
Kerry Devons	— —	Blues	— —
Lost Devons	— —	Whites	— —
Cornwall	60 70	Guernsey Blues	55 —
Jersey Blues	55 —	Whites	50 —
Whites	60 —	Prince Regents	70 —

WOOL.—Bermuda, Friday, Oct. 11.

[illegible] sales [illegible] as on last [illegible] demand [illegible] but we do not [illegible] for [illegible]

Long-woolled Wethers	1s 6d to 1s 8d	Combing Wethers	1s 10d to 2s 2d
Ewes	1 1 1 5	Combing Ewes	1 6 1 8
Southdown Wethers	1 3 1 5	Combing Wethers	1 8 1 10

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 10.

Prime Old	105s to 120s	Clover	90s to 140s	Straw	30s to 38s
Inferior	80 100	,,	New 90 120		
New Hay	80 95			Joan Cooper, Salesman.	

Cumberland Market, Oct. 10.

Superior Mead. Hay	105s to 120s	Superior Clover	110s to 115s		
Inferior ,,	90 100	Inferior ,,	90 100	Straw	30s to 34s
New Hay ,,	— —	New Clover	— —		

Joshua Bacon, Hay Salesman.

Whitechapel, Oct. 12.

Fine Old Hay	100 to 105	Old Clover	110	120	
New Hay	80 100	New Clover	100	110	Straw 30s to 32s
		,, Inferior	—	—	

COVENT GARDEN, October 12.—The continuance of fine weather has caused very large supplies of everything in season to be brought into the market; but trade is far from being brisk. The remarks on Pine-apples made last week apply equally to the present. Hothouse Grapes, both Black and White, are abundant; Portugals are a little dearer. Peaches are becoming very scarce and are considerably advanced in price. Plums are also getting scarce and dear. Damsons are, however, tolerably well supplied, and have not altered in price since last week. Apples and Pears are offered at the same prices as quoted in our last report; they are good in quality and are very abundantly supplied. A considerable quantity of bitter Oranges are yet in the market—the best are offered at about 20s. per 100. Large supplies of Walnuts have been brought during the week—they bring from 4s. to 5s. per bushel. Shelled Walnuts are also plentiful. We noticed a good dish of Keen's Seedling Strawberry. Among vegetables Cauliflower continues to be pretty well supplied; and Broccoli of good quality is sufficient for the demand. Brussels Sprouts have not altered in price during the week. A few Peas are still offered, but they are now nearly over for a season. French Beans, although scarce, are good in quality—they bring from 2s. 6d. to 3s. 6d. per half sieve. Artichokes are very scarce. Of Carrots and Turnips there are plenty; and Cabbages are quite sufficient for the demand. Some good samples of Savoys have just made their appearance in the market. Of Celery the red sort is plentiful, but the white is rather scarce—both kinds are excellent in quality. Lettuces, Endive, and most other kinds of salading, are abundant. Cut flowers chiefly consist of Achimenes coccinea, Phlox Drummondii, Erythina crista-galli, Gladiolus psittacinus, scarlet Pelargoniums, Verbenas, Heathe, Camellias, Fuchsias, Amaryllises, Carnations, and Roses.

FRUITS.

Pine Apple, per lb., 2s to 5s	Walnuts, per bushel, 4s to 5s
Grapes, Hothouse, p. lb., 1s to 2s	— — — shelled, 18s to 24s
— Spanish, per lb., 1s to 1s 2d	Berberries, per hf.-sv., 2s 6d to 3s 6d
— Portugal, per lb., 1s to 1s 6d	Oranges, per dozen, 1s 6d to 3s
Melons, each, 1s to 2s	— per 100, 10s to 20s
Figs, per dozen, 2s 6d to 4s	— bitter, per 100, 10s to 20s
Peaches, per doz., 4s to 6s	Lemons, per dozen, 1s to 2s
Plums, per half-sieve, 2s 6d to 3s	— per 100, 7s to 14s
— Imperatrice, per pannet, 1s 6d	Almonds, per peck, 6s
— Coe's Gyld. Drop, pan., 2s to 2s 6d	Sweet Almonds, per lb., 2s 6d
Damsons, per half sieve, 1s 6d to 2s 6d	Cob Nuts, per 100 lbs., 90s to 95s
Apples, Dess., per bush., 2s 6d to 3s	Nuts, Barcelona, 24s
— Kitchen, 2s to 4s	— Brazil, 14s
Pears, Dess., per hf.-sv., 2s 6d to 10s	— Cob, 16s
Filberts, per 100 lbs., 80s to 95s	

VEGETABLES.

Cabbages, per dozen, 6d to 1s 3d	Leeks, per bun., 2d to 3d
Cauliflowers, per doz., 2s to 3s	Garlic, per lb., 4d to 6d
Broccoli, per bundle, 6d to 1s	Onions, per bunch, 2d to 4d
Brussels Sprouts, hf sv., 1s 6d to 2s 6d	— large, per bushel, 2s to 4s
Sorrel, per hf.-sieve, 6d to 9d	— Spanish, per doz., 1s 6d to 4s
Artichokes, per doz., 1s to 2s	Shallots, per lb., 4d to 6d
French Beans, hf -sv., 2s 6d to 3s 6d	Tomatoes, per half-sv., 2s 6d to 4s 6d
Scar. Runners, per hf.-sv., 1s to 1s 6d	Capsicums, Ripe, per 100, 4s to 8s
Potatoes, per ton, 60s to 90s	— Green, per 100, 1s to 2s
— cwt., 2s 6d to 3s	Radishes, per doz., 6d to 1s 6d
— bushel, 1s 6d to 2s 6d	Lettuce, per score, 6d to 1s 6d
— Kidney, per bsh., 2s 6d to 4s	Celery, White, per bunch, 6d to 1s 3d
Turnips, per doz. bch., 1s 6d to 2s	— Red, per bunch, 1s to 1s 3d
Peas, per bushel sieve, 2s 6d to 4s	Endive, per score, 1s to 1s 6d
Red Beet, per doz., 6d to 1s 6d	Mushrooms, per pottle, 1s 6d to 2s 6d
Carrots, per doz. bchs., 2s to 6s	Small Salads, per pannet, 2d to 3d
Basil, per bunch, 2d to 3d	Watercress, p. 12 sm. bun., 3d to 6d
Horse Radish, per bundle, 2s to 3s	Parsley, per doz. bunches, 1s to 2s
Savory, per bunch, 2d to 3d	Tarragon, Green, per bunch, 3d to 6d
Cucumbers, Frame, each, 3d to 9d	Green Mint, per bunch, 2d to 3d
— Ridge, doz., 2d to 2s 6d	Marjoram, per bunch, 2d to 3d
Vegetable Marrow, p. doz., 1s to 1s 6d	Chervil, per pannet, 2d to 3d
Spinach, per sieve, 1s 6d to 2s	Chilis, per 100, 1s 6d to 2s

HOPS, Friday, Oct. 11.

The Market continues to advance for all good Hops. Duty, 130,000*l.*

Fairbairns & Harris, Hop-Factors.

MARK-LANE, Monday, Oct. 7.

The supply of English Wheat from the adjacent counties was again moderate this morning; fine samples, being scarce, sold readily at the terms of this day week, but secondary qualities are difficult to quit at a reduction of 1s. to 2s. per qr. The demand for Foreign was limited, but its value is fully supported, particularly of fine descriptions.—Barley is firm at our quotations.—Beans and White Peas are unaltered in value, but Maple in some instances command a trifling advance.—The supply of Irish Oats is large, and consists principally of New, for which the late terms are unwillingly complied with; Old and Foreign are firm at last week's prices.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . White	30	30	Red .	28	28
—— Norfolk, Lincolnshire, and Yorkshire .	—	—	White	—	—
Barley, Malting and distilling Ws to 30s Chevalier	21	26	Grind.	18	20
Oats, Lincolnshire and Yorkshire . . Potatoe	19	21	Feed	13	20
—— Northumberland and Scotch . . Feed	19	21	Potatoe	20	22
—— Irish . . . . . Feed	17	20	Potato	19	22
Malt, pale, ship	50	56			
—— Hertford and Essex	54	60			
Rye	28	28			
Beans, Masagan, old and new 30 to 32	Tick	27	34	Harrow	30	34
—— Pigeon, Heligoland . 26 to 28	Winds	—	—	Longpod	—	—
Peas, White . . . . . 27 to 32	Maple	30	32	Grey	30	32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye	Bns.	Peas
English . 4633 Sks. — Bris.	4804	3410	9704	1915	87	1433	1020
Irish . . — — —	15	—	—	20252	—	—	—
Foreign . — — 280 —	740	1344	—	2402	—	—	—

FRIDAY, Oct. 11.

The arrivals of all Corn during the week have been moderate, and the Market since Monday was thinly attended; Wheat, either English or Foreign, has met a very limited inquiry; the former may be purchased on rather lower terms, but the value of the latter is maintained.—Canada Flour sells slowly at 28s. to 28s. per barrel.—In Barley, Beans, and Peas we observe no alteration, but the prices of the two first articles have rather a tendency to advance.—In Oats a fair business has been done, and they are held firmly for Monday's quotations.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . .	3810	3820	120	3170 Sks
Irish . . .	—	—	2100	—
Foreign . .	—	1320	320	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		Sh. d.	Sh. d.	Sh. d.	Sh. d.	Sh. d.	Sh. d.
Aug.	31 per Quarter	46 8	26 6	18 6	28 1	28 1	28 10
Sept.	7 . .	46 8	26 6	18 6	28 1	28 1	28 10
—	14 . .	46 11	26 6	18 6	28 1	28 1	28 9
—	21 . .	46 5	26 6	18 6	28 1	28 1	28 1
—	28 . .	46 5	26 5	18 6	28 1	28 1	28 9
Oct.	5 . .	46 1	26 5	18 6	28 1	28 1	28 5
8 Weeks' Aggreg. Aver.		46 3	26 5	18 6	28 1	28 1	28 7
Duties on Foreign [illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] Oct. 7.

Canary . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Carraway . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Clover, Red, English	—	—	—	—	[illegible]	[illegible]	12	16
—— Foreign	—	—	—	—	[illegible]	[illegible]	12	16
—— White, English	—	—	—	—	[illegible]	[illegible]	[illegible]	[illegible]
—— Foreign	—	—	—	—	[illegible]	[illegible]	[illegible]	[illegible]
Coriander . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	per ton	—
Rapeseed . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Linseed . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
— Calcutta, per last	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NEW PHLOXGONIUMS, to be sent out by N. GAINES, the first week in November. Queen's Daughter 3l. 3s.; Leinster 3l. 3s.; King of the Belgians 2l. 2s.; Trafalgar 2l. 2s.; Miss Hawthorn 2l. 2s.; King of Saxony 2l. 2s.; Sir W. Massey Stanley 2l. 2s.; Marchioness of Lorn 2l. 2s.; King of the French 2l. 2s. With many first-rate Seedlings raised by their Originators; of which a printed Catalogue may be had the latter end of the month.—Surrey Lane, Battersea, 9th October.

CHAPMAN'S KIDNEY POTATOES.—CHARLES and THOMAS CHAPMAN, of Brentford End, Isleworth, having been obliged to disappoint numerous applicants for their Potato, beg to say that they will execute orders at the taking up at 10s. per bushel; and that persons may see the quality and the yield by attending at the time; they will also give instructions how to keep them, and plant them at the proper season.—Brentford End, October 11, 1844.

FOR FRAMES, GREENHOUSES, &c.

JOHN HAYES, respectfully offers his Composition for rendering Brown Holland, Calico, and Irish Linen Transparent and Waterproof. His own Greenhouse is covered with cloth prepared with this Composition, and answers admirably; the cloth requiring only a coat of boiled oil once a year to render it as lasting as the wood frames; and the plants, which require only half the usual quantity of water, are more vigorous and healthy than under glass.

Specimens of the prepared Cloth may be seen at Messrs. BATT and BUNLEY'S, 412, Strand; of whom, or at his Nursery, West street, Fareham, Surrey, the Composition may be had, at 2s. 2d. the quart bottle, sufficient for 100 feet of cloth.

WANTED, a GREENHOUSE, immediately, for a Private Garden; a substantially-built, second-hand House, in a good state of repair, from 16 to 20 feet long, by 12 to 14 feet wide.—Apply, by letter only, to Mr. SAYMAN, Builder, Wandsworth, with particulars of size and price.

BOG EARTH and LOAM for PLANTS.—Good rotten Bog Earth and Mellow Sandy Loam, in excellent condition for potting, &c. (having been dug four years since), may be had by applying to B. BURT, Wimbledon, Surrey. Cartage according to distance.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	
Garden Edging	Orange Tubs, Flower Boxes, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

Sales by Auction.

SIX DAYS' SALE OF VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE & MORRIS will submit to Public Competition, by Auction, at the American Nursery, Leytonstone, Essex (about one mile from the Railway Station, Stratford), on Monday, 21st October, 1844, and five following days, at 11 o'clock, (to close Executors' accounts), the celebrated NURSERY STOCK, consisting of the choicest kinds of Fruit and Forest Trees, fine Evergreens, Ornamental, Deciduous, and American Plants, of every variety, in considerable quantities, and lotted to suit every description of purchasers. The Stock is particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, from its having many rare specimens that are only to be found in first-rate collections (also of the Trade, from its excellence), and comprising several thousands Azaleas, Rhododendrons, Ledums, Andromeda, all in fine condition for potting, being well furnished with bloom buds.

N.B. The ground is proverbial for safety of removal, the mould adhering to the roots. May be viewed prior to the Sale. Catalogues, One Shilling each, returnable to purchasers, may be had of the principal Seedsmen in London, at the Auction Mart, and of the Auctioneers, Leytonstone, Essex.

ISLINGTON NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to submit to Public Competition, on MONDAY, 14th October, 1844, and 2 following days, at 11 o'clock, (in consequence of the ground being required for building,) a portion of the valuable NURSERY STOCK, consisting of about five thousand Belgian Azaleas, in 40 fine varieties; several thousands fine Hybrid Rhododendrons, well furnished with bloom buds; Green and Var. Hollies, Chinese and Siberian Arborvitæ, about five thousand Laurels, with a fine assortment of Fruit and Forest Trees, Flowering Shrubs, &c.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. FRANKLIN (in consequence of his Lease having expired and the ground let for building) to submit to Public Competition, on the Premises, Cottage-place, City Road, on THURSDAY, October 17th, 1844, at 11 o'clock, the whole of his VALUABLE STOCK, consisting of named Seedling Tulips, Auriculas, Carnations, Picotees, and Phlox, Greenhouse and Herbaceous Plants; a capital Greenhouse, 28 ft. by 11 ft.; and sundry Effects. May be viewed prior to sale. Catalogues may be had on the Premises; of the principal Seedsmen; and of the Auctioneers, Leytonstone.

EXTENSIVE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS beg to announce they have received instructions to sell by Auction, on the Premises, Windmill-lane, Camberwell, on Monday, 28th of October, 1844, and following days, at Eleven o'clock, a most valuable and varied collection of Hardy Trees, Shrubs, American Plants, Evergreens, blooming Camellias, Ericas, &c. Amongst the stock will be found some fine bearing Mulberries, and several hundred of fine straight young plants of ditto. There are also fine Magnolias of sorts, strong Vines in pots, Climbing and other Roses, a first-rate collection of choice American Plants, and other valuable Shrubs, affording a most eligible opportunity for Nurserymen providing themselves with healthy stock. A portion of the American Plants, Shrubs, &c., will be lotted in various quantities to suit all customers. Catalogues may be had of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

NURSERY STOCK.

TO BE SOLD BY AUCTION, by MR. J. KING, on the Premises, Ashe-lane, Bristol, on MONDAY, Oct. 14, 1844, and following days, precisely at 12 each day, the property Mr. Dawson; consisting of a collection of EVERGREEN and DECIDUOUS SHRUBS, a large stock of Fruit and Forest Trees, Camellias, and other Greenhouse Plants, &c. &c. To be viewed till the Sale; Catalogues of the Premises; of the Auctioneer, Bristol; and Messrs. Lee and Kennedy, Nurserymen, Hammersmith.

TO MARKET GARDENERS.

TO GET A SMALL COTTAGE, with Land, Rent Free, for a good Market-Gatter or Gardener, and Cow to be kept, with Gardening Utensils. Rent very low.—Direct, post paid, to G. BELL, Hornsey Road.

STEPHENSON AND CO., 61, Great Russell-street, Bloomsbury, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and UPRIGHT CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. [illegible] their Manufactory in New [illegible] the construction of Horticultural buildings [illegible] them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences. Wire Work, &c. &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

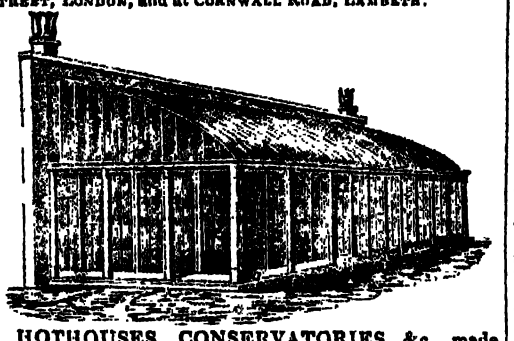
D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford street, where a large assortment of the above can be seen.

WHEAT-SOWING.

GUANO; Genuine Peruvian, Bolivian, and Ichaboe, on Sale; also Potter's Guano, Gypsum, Sulphuric Acid, Sulphates of Iron and Copper, and all other manures. Synopsis of prices, and mode of use, on application, &c.—Apply to MARK FOTHERGILL, 40, Upper Thames-street.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL; And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL. 47, Lime-street, Oct. 11, 1844.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To assure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, Illustrated by Practical Results."

Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the Warehouses, No. 2 and 4, Billiter-street, or delivered within any reasonable distance of a cartful additional cost. Apply to JAMES CLARK, 2a, Billiter-street.

[illegible] MANURE, Nitrate for Wheat, [illegible] Rape-cake, 7l. per ton. To be [illegible] Factory, Deptford, near London.

[illegible] of Lime, in a concentrated form, may also be obtained at 40s. WARREN'S 33, Cornhill, in 7 lb. packets, price 1s.

POTTER'S GUANO MANURE is the only Guano that can positively be depended upon, and has stood the test of three seasons. The imported article, it is well known, is seldom twice alike, even when genuine, and is subject to an extensive system of adulteration. Orders addressed, post paid, to the Works, 32, Upper Fore-street, Lambeth, will have instant attention. Testimonials will be sent per post, if required.

POTTER'S LIQUID GUANO may be had as usual of most Chemists and Seedsmen.

*** Beware of being imposed upon by ineffectacious imitations.

INVESTMENT TO AGRICULTURISTS, &c.

ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Professor, Mr. and Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; and to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 5A, [illegible], Kentish Town.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE Attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, chiefly adapted for the purpose, either portable or fixed; Garden, Chain, and Barrel Pumps; also those for Distillers, Brewers, [illegible], and Tanners, for hot and cold liquor. Pumps for Mines, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by HENRY ADDY FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



PATENT ASPHALTE ROOFING.

THE above Material has been used and approved by the Nobility, Gentry, and Agriculturists generally, as a Roofing and Covering to sides of Farm Buildings; its advantages are—Lightness, Durability, and Economy. Being a non-conductor, it has been proved an efficient Protective Material to Plants, and is now in use at the Royal Horticultural Society's Gardens, Chiswick. It can be had of any length, 32 inches wide, at 1d. per foot, super. A discount to the trade. THOS. J. CRODDON, 8, Ingram-court, Fenchurch-st., London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and OBTAINED the PRIZE for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONLY ONE PENNY PER SQUARE FOOT.

Samples, with directions for laying on, and testimonials as to its merits, sent free to any part of the town or country.—Patent Felt Works, Lamb's Buildings, Bunhill-row, London.

TO LANDOWNERS, AGRICULTURISTS, BUILDERS, &c.

McKIBBIN'S Improved ROOFING FELT is peculiarly applicable as a substitute for Slate, Zinc, Tiles, and other articles used for Roofing, from its ECONOMY, LIGHTNESS, and DURABILITY.

The disadvantages attending other materials used in roofing, preventing, to a great extent, many useful houses and sheds being erected or rendered waterproof, it is submitted that the improved Roofing Felt will in a great measure—and in some instances altogether—obviate them, and prove most serviceable from its lightness, durability, and impermeability to water and damp, in covering Houses, Cattle-sheds, Workshops, Ropewalks, &c., and for the sides, as well as roofs, of light structures for plants, being likewise a non-conductor of heat; besides its economy in repairs, the timber where it is used may be so light as to save its whole expense; it requires no other coping, and may be applied by any person of common ingenuity; being flexible and portable also, it is free from breakage, the expense of carriage is inconsiderable in comparison with slates, tiles, &c., and it is not liable to contraction like zinc.

Sold in sheets 32 inches by 30, at 4d. each (being less than 9s. 6d. per square of 100 feet), with printed directions for applying them, same as adopted at the Government Dock-yards and various other public buildings.

Orders will meet with prompt attention if addressed to H. C. BOWDEN, 16, East India Chambers, Leadenhall-street, London, or to the following agents:—Liverpool, Messrs. Grueber & Co., 11, Manesty-lane; Plymouth, Thomas Stevens, Esq.; Birmingham, William R. Lloyd, Esq.; Sunderland and Newcastle-on-Tyne, Messrs. John Ritson and Sons; Hull, William Ward, Esq.; Bristol, Messrs. Moor and Hewitts; Ramsgate and Deal, Messrs. Edward Hodges & Co.; Whitehaven, William Todd, Esq.; Glasgow, Malcolm Carmichael, Esq., 61, Enoch-square; Cork, Messrs. Richard Wallis & Co.; Belfast, Messrs. Grueber & Co., Dunbar's Dock; who have also on sale McKibbin's improved SHEATHING, BOILER, RAILWAY, and SHIP FELT.

*** The "IMPROVED ROOFING FELT" will be found much more durable than the Common Felt made in lengths, and not subject, like it or continuous sheets of other material, to be stripped by storm; it can also be more easily repaired; and from the simple mode of application recommended, the wet cannot percolate through nail-holes, being only fastened down at the overlaps.

PORTER'S GALVANIZED CORRUGATED AND PLAIN IRON ROOFING, and IRON HURDLE and FENCE WORKS, Grove, Southwark. The Patent Galvanized Iron Co.'s (Sorel's) Process has been highly approved for the Roofing of the New Houses of Parliament, by Woolwich Dockyard, by the Trinity Board, &c. &c., and is particularly suited for the Colonies, and is shipped to all parts, to the East and West Indies, Cayenne, &c.; also [illegible] to several Englishmen and to the Australian Government. Movable Feeding Sheds and Pens, Fencing, Gates, Buildings of all kinds, a new description of Galvanized Iron Gutter combined with tile for the roof, which is much cheaper than any other kind. The Trade supplied with Corrugated Plates, Galvanized or not, and with Iron Fences of all kinds.

DRAINING OF LAND.

THE A LEVEL, designed for the Use of Workmen, in preserving a uniform fall in Drains and Water courses In consequence of the approval expressed and the demand made for these Levels at the recent Southampton Show, Mr. BARNEY Derwent has prepared with an eminent London Mathematical Instrument Maker to make them in any number required Price 30s

This Level is as accurate as a spirit-level, and so simple that the workman unable to read can use it with facility When closed it forms a 5-feet staff

Orders addressed to Mr DERWENT Land Agent 9, Gray's Inn square, London; or to Mr CHARNOCK, Wakefield, Yorkshire, will [illegible] instrument

AGRICULTURAL DRAINING — THE DERBY [illegible] attention of persons draining their land [illegible] efficient but simple Instrument, presumed to be all that can be required for the purpose and its price such as to place it within the reach of all To be had of the Maker, J DAVIS Optician, Derby

SEED WHEAT.—Donnington, near Stow, Gloucestershire.—From the number of testimonials received of the extraordinary crops produced both this year and last, ROBERT LEMAN is induced to offer to the public his Red Cluster Wheat, which both seasons has produced 60 bushels per acre in several instances, and, having been grown upon old turf, and hand picked before it was planted, it is beautiful seed, and perfectly clean Price 7s 6d per bushel

R L has likewise a small quantity of the celebrated Whitfield Red Straw White Wheat to dispose of Price 8s. per bushel

Orders, accompanied by a remittance or good reference, punctually attended to Sacks marked 1s 6d each

SEED WHEAT.

J. D. PIPER, of Colne Engaine, Essex, (Member of the Royal Agricultural Society), has been four years raising two new Stocks of Wheat, viz, Piper's "Think set," and "Colne Whitechaff Red" At the last Southampton Meeting two samples of these Wheats were exhibited outside (notice not having been given in time for their admission inside), where they produced much excitement, and 6d per ear was offered for them Last year, in the same field, side by side, the Piper's Think set grew eight bushels and a half, and the Colne White chaff Red five bushels and a half more per acre than the most prolific Wheat grown in the neighborhood Last autumn J D P measured a quarter of an acre off his field, and dibbled the Think-set in rows a foot apart, and one bushel per acre; and though the plant was partially destroyed by the slug in the winter, and a good sprinkling of self sown Potatoes were left to grow, still the yield was 14 bushels and a half, being equal to 14 sacks and 3 bushels per acre One person this year grew 15 sacks and 2 bushels, another 14 sacks, and another 13 sacks per acre One parcel weighed 64lbs per bushel This is, perhaps, the stiffest-strawed Wheat in England, and is adapted for strong or hollow bottom ground, and is not likely to get laid J D P will send to London, or to any place within ten miles of Colne carriage free, and he will be glad to receive a post office order, or reference to some house in London for the money, with the order for the Wheat. When it is all sold, J D P promises to inform the Public, by an advertisement in this Paper; but if he should get any post office orders after it is all sold, he will return them The price is regulated according to the yield Think-set, 15s per bushel; Colne Whitechaff Red, 5s per bushel Samples of the above, both threshed and in the straw, may be seen at our Office N B—J D P advertised in the two principal papers in Essex, where the above Wheat was growing, to order that Agriculturists might see it and judge for themselves of the quality and quantity

WHEAT SOWING

FREDERICK BRAIN begs to call the attention of the Agricultural world to his GUANO MANURE, prepared expressly for Wheat crops It abounds in all the ingredients that are necessary for a good grain crop He particularly solicits persons who found the Foreign Guano a failure last season to give his a trial it being much more powerful and free from adulteration, as justly complained of in the Foreign by Agriculturists, as well as by all the leading Agricultural Journals

Testimonial to Brain's Guano Manure.—"I, A, Hawley Road Kentish Town, London, Aug 18, 1844—This is to certify that we have subjected Brain's Guano to a most patient and rigorous analysis, and find it contains all the necessary constituents of a good manure, and is well calculated to give fertility to a soil which is either naturally barren, or has been exhausted by over cropping by supplying the land with those substances which are absolutely requisite to a healthy vegetation (it is not adulterated) and can always be depended on, being of uniform composition —(Signed) JOHN MITCHELL and FREDERICK KIRBY, Analytical Chemists late of the Royal Polytechnic Institution, London"

Also, BRAIN's highly concentrated LIQUID GUANO, for Grass Lands, Gardens, Shrubberies, Hothouses and Conservatories, price 9s per quart bottle, with full directions for use, (enough for 250 gallons of Liquid Manure), to be had of most respectable Florists, Seedsmen, and Chemists in town and country

Works, Thomas st, Duke st Stamford st Blackfriars road

J. R. AND A. RANSOME, Ipswich have published a Descriptive Catalogue with Cuts of their AGRICULTURAL IMPLEMENTS and MACHINE which may be had by post, the order being accompanied by six penny stamps

Price Sixpence, free by post

The Railway Chronicle

Of Saturday last, October 5, contains

THE SOUTH-EASTERN DIRECTION—CHISLEHURST and HOLYHEAD LINE—SHREWSBURY, BIRMINGHAM and GRAND JUNCTION DIFFERENCE—IRELAND—POLICY of NEW RAILWAYS—The ATMOSPHERIC SYSTEM

REPORTS OF MEETINGS—Manchester, Bolton, and Bury—Durham and Sunderland, with the Report and Accounts—Great Southern and Western, with the Report—The Clarence Accounts

PROJECTED LINES—Central Cornwall—West Cornwall—Dun and Attleborough—Halifax, Leeds, Bradford, and Huddersfield—Wymondham and East Dereham—Ribblesdale, Darwen and Bolton Direct Portsmouth, Atmospheric—West Yorkshire—Great Western, Irish—Cork and Bandon—Dundalk, Enniskillen and Derry—Goole and Doncaster—Railways in Portugal

CORRESPONDENCE—Mr Bridges on the Systems of Joseph and Prosser (*with an Engraving*)—Air Locomotives—Experiments at Paris—Inclined Railway in Liege

RAILWAY LITERATURE—Cost of Transport on Railroads, by C Ellis, C E

VALUE OF SHARES—Returns from London, Liverpool, Manchester, York Hull, and Paris with comments on the respective Markets, and latest Prices

CALLS, CONTRACTS, DIVIDENDS, SCRIP, TENDERS, TRAFFIC TABLES, TRANSFERS &c &c.

Office The Railway Chronicle of this Newsvendor.

GARDENERS' CHRONICLE, WANTED, to be forwarded the day after publication —Direct, stating terms, to Mr. F. Lean, Perpoint, Cornwall.

Just published, price 1s., or post free, 1s. 4d.,

A COMPLETE READY RECKONER, for Measuring and Valuing Hay Ricks, with very plain Instructions for taking the Dimensions, and for judging the Density of the Hay by EDWARD RYDE, Land Surveyor, Banbury, Oxfordshire.

Published by GILBERT, London; and will be forwarded by the Author, post-free, to any part of the kingdom, on the receipt of 1s 4d, or an equivalent number of postage stamps, in a prepaid letter

GARDENING.—The FRUIT, FLOWER, & KITCHEN GARDEN, by PATRICK NEILL, LL D., F R S E., Secretary to the Caledonian Horticultural Society. In post 8vo, illustrated with upwards of 60 Woodcuts. Price 9s.

"One of the best modern books on Gardening extant."—*London's Gardener's Mag*

"Practical gardening [illegible] tude for his excellent [illegible] of the standard work [illegible] science of which it treats"—*Prof Dunbar's Speech to the Caledonian Hort Soc.*

ADAM & CHARLES BLACK, Edinburgh. LONGMAN & Co, LONDON.

In 4to, with large Chart, and Steel-plate Coloured Maps of England, Wales, and Scotland, price 4s; or without Maps, 2s.

GILBERT'S SUMMARY of the OCCUPATIONS of the PEOPLE of ENGLAND, WALES, and SCOTLAND, from the Abstract of the Population Commissioners, by Command of Her Majesty

"The extraordinary interest and value of the information now for the first time brought to light in this Work, must necessarily command extensive and permanent attention Great weight must needs be attached to the evidence they contain, on account of the care with which they have evidently been prepared, and the enormous number of answers from which they have been digested and classified"—*Times*, September 10

London JAMES GILBERT, 40, Paternoster row, and by order of all Booksellers

Just completed, in 3 vols, imperial 8vo, price 3l 3s, rich ornamental cloth, THE

ILLUSTRATED SHAKSPERE (formerly published by Tyas), containing the Plays and Poems of the Immortal Bard, embellished with nearly 1000 Beautiful Engravings on Wood, from Designs by Kenny Meadows The Text carefully revised from the best authorities, and Introductory Remarks on the Plays by many distinguished Writers: also a Memoir and Essay on the Genius of Shakspere, by BARRY CORNWALL

*** Back Parts to complete Sets may be obtained of all Booksellers in Town and Country

WM S ORR & Co, Amen Corner, Paternoster Row,

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Thomas Jackson, Kingston Nursery, Surrey, Oct. 19.

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Great Yarmouth Nursery, Oct. 17, 1844.

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GEORGE BAKER, late of Knap-hill, has to inform his Friends and the Public, that, under an agreement entered into in July last, he has become the tenant of the Bagshot Nursery Grounds, formerly for many years occupied by Mr. HERBERT HAMMOND. Mr. BAKER is adding considerably to the stock, rendering it superior in quality and of greater variety than has hitherto been kept at this Nursery. All letters addressed to Mr. BAKER, Bagshot Nursery, Surrey, will be punctually attended to.

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Invincible (Gray's)	5 to 6 ,,		3	3	0
Fordii ,,	4 to 5 ,,	very fine	4	4	0
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Double Striped	5 to 6 ,,	fine	2	10	0
Anemoniflora Alba	4 to 5 ,,		2	10	0
Speciosa ,,	4 to 5 ,,		2	2	0
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DOUBLE ROMAN and PAPER-WHITE NARCISSUS, 4s. per dozen. The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CONSTE'S, late Mr. BARRON'S, Italian and Foreign Warehouse, 18, Pall Mall. Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c. &c. Price Catalogues of which may be had per Post.

THE GREATEST NOVELTY EVER OFFERED TO THE PUBLIC.

RHODODENDRON JACKSONII.—This splendid new hardy Rhododendron is confidently recommended as the most beautiful variety extant; it surpasses in the colours of its flowers the richest Nassarium, and is quite a new feature in this noble family. It forms well, is a free bloomer, and of dwarf habit. A truss of flowers was transmitted to Dr. Lindley, who pronounced it "a very distinct and handsome variety," with "great richness in its flowers appearance, &c. See *Chronicle* of the 6th April last, page 211, "*Rhododendron*.—*C. L. N.*" To be sent out in March at 21s. each.

WM. JACKSON and Co. beg leave to call the attention of the Nobility, Gentry, and the Trade, to their following rare and valuable Rhododendrons, all warranted [illegible] at the very low prices attached. The Plants are [illegible] and stout, twice transplanted, and ready to send out.

Rhododendron campanulatum, averaging [illegible] per doz.

Between R. campanulatum and the [illegible] ,, ,,

,, ,, ,, [illegible] ,, ,,

,, ,, ,, [illegible] ,, ,,

,, ,, ,, [illegible] ,, ,,

Usual Discount to the Trade.

Clementia Celestial, No. 1, 2s. 6d. each; [illegible] ,, ,,

Their plants well established, [illegible] ,, ,,

in the *Gardeners' Chronicle* of April 6th, price [illegible] ,, ,,

letters "*C. L. N.*" and Advertisement of [illegible] ,, ,,

Their new Descriptive [illegible] now ready to [illegible] ,, ,,

fine white and [illegible] Rhododendrons, and many [illegible] ,, ,,

implements. A [illegible] of reference will be [illegible] ,, ,,

unknown correspondents.

Agents in [illegible], Messrs. Waterer and Cleworth, [illegible] Nurserymen, who have [illegible] plants.

Crown Lands Nursery, [illegible], Yorkshire, Oct. 16, [illegible].

CARNATIONS AND PICOTEES.

JOHN DICKSON, Springfield, Upham, Surrey, has prepared for the [illegible] of his splendid stands a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs. WARNER & WARNER, Cornhill, London, after the 7th September.

DANECROFT NURSERY, STOWMARKET, SUFFOLK.—PETUNIAS, BEDDING VERBENAS, DAHLIAS, &c.

S. GIRLING has much pleasure in announcing to his Friends and the Public generally, that he has been successful in adding to his already extensive collection of Verbenas some splendid Seedlings of the present year, which for colour, form, and size far surpass any Verbenas yet produced; in confirmation of which S. G. begs to refer the public to the following awards they have received, and reports that have been made of them, viz., an Extra Prize at the Ipswich Show in June, Stowmarket in July, Ipswich in September, Bury St. Edmunds, do., Stowmarket, do., and Chelmsford, open Show; and favourably noticed by Dr. LINDLEY in the *Gardeners' Chronicle*, August 31, and in the *Gardeners' Gazette* by Mr. GLENNY, August 31. Mr. AYRES also speaks of them in flattering terms in the *Gardeners' Chronicle*, Oct. 5, page 671; and in addition to the above testimonials they have been seen growing by many eminent Horticulturists and Amateurs, all of whom have considered them as very superior.

S. G. therefore offers them with full confidence of their giving general satisfaction.

	s.	d.
Alba Lutescens, sulphur-yellow, large, and sweet-scented	3	6
Alba Magna, the largest and best white out	3	6
*Blanda, rosy-blush of excellent form	3	6
*Gladiator, orange-scarlet, with deep yellow eye, fine	3	6
Lovely Rambler, grey-lilac, very large	3	6
Messenger, bright-purple, of fine shape	3	6
*Mulberry, bright-mulberry, quite new in colour and fine	3	6
Rose de Amour, bright-pink, with beautiful yellow eye, quite distinct, and the most attractive Verbena ever raised	5	0
*Rubescens, bright-ruby, large and well-formed	3	6
The Giant, silvery-lilac, the largest trussing Verbena known, some of the trusses measuring from 10 to 12 inches in circumference—the heads of this Verbena resemble in appearance a blue Hydrangea	5	0

N.B.—Those marked with an * will not be sent out till early in May; the others can be had after the 25th of October, and can be forwarded in tin boxes by post. The usual allowance to the Trade.

PETUNIAS.—S. GIRLING has likewise been successful in raising some Petunias of superior excellence. Twelve varieties, selected from about fifteen hundred seedlings, will be sent out as early as possible in the spring, far surpassing anything in that fine and beautiful class of plants. Nurserymen wishing to be appointed agents are requested to forward their names, which will be published in the *Chronicle* and *Gazette* before sending out. The usual allowance to the Trade. Advertisements with names and prices will shortly appear.

DAHLIAS.—S. GIRLING having purchased the entire stock of that beautiful Dahlia, Bourne's Marchioness of Ormond, the best light-tipped Dahlia of the season, similar but far superior to Bridesmaid in every respect, plants will be sent out early in May next, at 10s. 6d. each. A few roots would be parted with, on the warranty of the party purchasing, for exportation only, and the party to whom sent giving a pledge not to send plants to England for sale. Nurserymen and dealers wishing to place this Dahlia in catalogue next season, will have their names published in good time before sending out, and the usual Trade allowance, where 12 Plants are ordered, and extra Plants to compensate for long carriage.

DAHLIA NONPAREIL.—S. G. has a few large and small ground roots of that beautiful and popular Dahlia to dispose of; the former at 20s., the latter at 10s. each. From the limited number sent out in England last season of this Dahlia, it will be more in demand than any other Dahlia sent out last May. Parties wishing for roots had better send their orders early, as the stock, which is limited, will be sent out in rotation, as the orders are received; almost every other kind of Dahlia in cultivation, embracing nearly all the favourite varieties of this and former years, can be had in dry roots at moderate prices, warranted correct to name.

N.B. A respectable reference or ready money will be required from unknown correspondents.

Foreign Orders faithfully executed.

Dancroft Nursery, Stowmarket, Suffolk, October 17, 1844.

"GENERAL TOM THUMB" SCARLET PELARGONIUM.

PHILIP CONWAY, NURSERYMAN & FLORIST, &c., Old Brompton, through the kindness of Mr. AYRES, is enabled to let out a few plants of the above, which is thus described in the *Gardeners' Chronicle*, page 550:—

"Unquestionably the finest dwarf Pelargonium out is that which has this season been exhibited under the name of 'General Tom Thumb.' It grows almost prostrate, is exceedingly rich and dense in foliage, and produces with the greatest profusion large trusses of the most dazzling scarlet flowers imaginable. I have a plant at this moment nine inches high and six [illegible] in circumference, studded with 27 trusses of expanded [illegible], and some of the trusses six inches in diameter; and on five plants there are upwards of 120 trusses of flowers."

For both pot cultivation and bedding out this plant is unequalled. Plants 2s. 6d. each, or 30s. per dozen, with the usual discount to the trade if six are taken at one time. N.B.—At the June Exhibition of the Regent's-park Society a prize was awarded to the above.

Frost's Superb, a splendid pot plant	2s. 6d.
Mrs. Mayler, a very superior variety	2 6
Cooperii dwarf, for bedding	1 6
Hunteman, do.	1 6
Shrubland	1 to 2½.
Compactum	1 6
King	1 6
Queen	1 6
Conway's Giant Cactus, strong plants	2 6 to 10s. 6d.
Veronica speciosa	3 6
Pelargonium Lunati, for forcing	1 0 to 3 6

Cash, with an order, is respectfully requested from unknown correspondents.

NEW ALONA CÆLESTIS.

J. J. BEST begs to return his best thanks to those numerous friends who have ordered the above plant, and begs to say he commenced sending out on the 16th inst. Plants of the above beautiful production, at 1 guinea per plant, may be obtained as under:—Messrs. Hollinson, Tooting; Mr. Jackson, Kingston; Mr. Ivery, Peckham; Nurserymen. Mr. Carter, Seedsman, 238, High Holborn. Usual discount allowed to the trade.—J. J. BEST, Abbey Nursery, Reading, Berks.

J. THOMSON begs to inform the Cultivators of the PANSY he is now sending out strong Plants of his New Seedlings, including Pizarro and all the principal existing varieties in cultivation, at moderate prices.—Ivy, Oct. 17, 1844.

HOTHOUSES, CONSERVATORIES, [illegible], &c., made [illegible] and fixed Complete in all parts of the Kingdom. Glass, [illegible] Sash-light Ventilator and Metal Bars and Lights of all [illegible] Roofing for Immediate use, [illegible] to all parts of the [illegible]; Illustrated Lists may be [illegible]. Two Sets Bars and [illegible] Ironwork, from 14 to Garden Frames and Lights, [illegible] Hot-bed Sash, or Mr. Warth's [illegible] Ventilating Plates, Old Kent-road. ⁂ Estimates given.

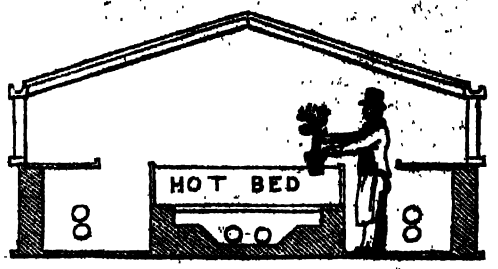
HYACINTHS AND GREENHOUSE PLANTS.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains are effective. Half a bottle dissolved in a quart of water furnishes a superior LIQUID GUANO at half the usual cost. Sold in bottles, price 1s. 6d. each, by FRAMADAN and Son, Munsion-house-street; HUMPHREYS and McMURRAY, Leadenhall-street; W. CLARKE, Bishopsgate-within; SMITH, Islington Nursery; GAINSLEY and Co., Covent-Garden; BATT and BUTLEY, 312, Strand; WILLIAM and JOHN NOBLE, Fleet-street; THOMAS GLADE and Co., Piccadilly; SMITH, Covent-Garden; CHANDLER, Tavistock-row; W. J. NUTTING, 46, Cheapside; G. LAWRENCE, 19, Piccadilly; JOHN KERNAN, Great Russell-street, Covent Garden; LOCKHART, 166, Cheapside; SHUTTLEWORTH, Pantheon; MINTER, ADAMS, and NASH, 63, Strand; THATCHER and Son, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS ARNELL, Camden Town; THOMAS WATKINSON, Market-place, Manchester; T. S. KING, Rochester; W. E. RENDLE, Plymouth; DICKSONS and Co., Edinburgh; POWLEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and Son, Edinburgh; J. THORNS, Shepton Mallet; and other leading SEEDSMEN in town and country. Wholesale Agents, DAVY, Mashewabe and Co., 90, Upper Thames-street, London.

TO AMATEURS OF PLANTS, &c.

F. SEIBOLD is just arrived with a fine Collection of COLEOPTERA from Mexico, and some choice FERNS, to be had per 100; also some rare ZOOPHYTES, from the West Indies. A young German Naturalist is now going to the West Indies, Mexico, and Yucatan, on F. Seibold's account. He will take orders for Cacti, Orchidaceous, and other Plants, as also for Dry Specimens, Seeds, &c. &c. All orders must be given by the 25th inst.—270, High Holborn, Oct. 16, 1844.

HOT WATER FOR BOTTOM-HEAT.



J. WEEKS AND DAY, ARCHITECTS, &c., Gloucester Place, King's Road, Chelsea, HORTICULTURAL BUILDERS, and Hot-water Apparatus Manufacturers, invite the attention of Horticulturists to their Improved Plan of Bottom-Heat, now becoming so universally adopted.

From the extensive Practice they have been honoured with for 20 years in designing and building CONSERVATORIES, GREENHOUSES, HOTHOUSES, PITS, &c. &c., and erecting their HOT-WATER APPARATUS to every description of Buildings to which heat is applicable, J. WEEKS AND DAY have the greatest confidence in recommending their BOILERS as the most efficient of any yet invented, their largest being capable of heating a range of Forcing Houses 200 feet in length, with a comparatively small quantity of fuel, and only requiring attention once in 12 hours. To be seen in use at most of the London Nurseries, also at their Manufactory; and a variety of Horticultural Erections, Models, Plans, &c. &c.

Sales by Auction.

SIX DAYS' SALE.—VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS beg to announce that the Sale of the celebrated NURSERY STOCK, at the American Nursery, Leytonstone (about one mile from the railway station, Stratford), will commence on MONDAY, 21st October, at 11 o'clock, and terminate on Saturday, Oct. 26.

EXTENSIVE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS beg to announce they have received instructions to sell by Auction, on the Premises, Windmill-lane, Camberwell, on Monday, 28th of October, 1844, and following days, at Eleven o'clock, a most valuable and varied collection of Hardy Trees, Shrubs, American Plants, Evergreens, blooming Camellias, Ericas, &c. Amongst the stock will be found some fine bearing Mulberries, and several hundred of fine straight young plants of ditto. There are also fine Magnolias of sorts, strong Vines in pots, Climbing and other Roses, a first-rate collection of choice American Plants, and other valuable Shrubs, affording a most eligible opportunity for Nurserymen providing themselves with healthy stock. A portion of the American Plants, Shrubs, &c., will be lotted in varied collection to suit all customers. Catalogues may be had of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

ST. ALBAN'S, HERTS.

UNRESERVED SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the Mortgagee (in consequence of the Estate having been disposed of), to submit to public competition, on the premises, the Key Field Nursery, St. Alban's, on Monday, Nov. 18th, 1844, and following days, at 11 o'clock, the whole of the varied NURSERY STOCK, comprising Fruit and Forest-trees, Evergreens, Ornamental, Deciduous, and American Plants of every variety, and about 3000 Standard and Dwarf Roses, consisting of the choicest varieties; 1,000,000 Quick and Oaks, of different ages; Seedling Beech, Ash, &c., Sea Kale, Asparagus, and Rhubarb, Dahlias, and Herbaceous Plants. The lots will be arranged to suit large and small purchasers. May be viewed one week prior to the Sale. Catalogues 6d. each, returnable to purchasers, may be had on the premises, of A. A. DEBARY, Auctioneer and Land Surveyor, St. Alban's; of the principal Seedsmen in London, and of the Auctioneers, Leytonstone, Essex.

AMERICAN NURSERY, KING'S ROAD, CHELSEA.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, and Others.

MR. KIRKE will sell by Auction, on the Premises (late the American Nursery), King's Road, Chelsea, on WEDNESDAY, October 30, 1844, and following day, at Eleven for Twelve o'clock punctually, by order of the Proprietor, the ground being required for building purposes, the VALUABLE COLLECTION, consisting of [illegible] Rhododendrons, Kalmias, Azaleas, Laurels, Laurustinus, [illegible], Box (variegated and plain), Lilacs, Roses, [illegible], Evergreens, Weeping Trees, a quantity of large [illegible], Flowering Shrubs and Evergreens, Yuccas, Orange and [illegible], Standard Roses, &c. &c. (arranged in lots, and could [illegible] to suit the requirements of purchasers), [illegible] Greenhouse Plants, Bedding Plants, Cucumber and Melon Frames, Garden Rollers, Mats, Garden Engines, [illegible], Garden Chairs, Tables, Flower Pots, and other Effects of the Auctioneer, 20, Brompton-row, Brompton.

SPLENDID NEW GERANIUM—THURTELL'S OTHELLO.—The High very distinct and superb variety was raised by R. Cole, Esq., Devonport, R.N., Devonport, and is allowed by all who have seen it to be the greatest novelty that has been produced in Geraniums, possessing a new character, altogether unlike any other sort, which at once arrests the eye, and fixes attention upon it in the midst of all the finest modern varieties; it cannot fail to give satisfaction to all who buy it. Both shape is perfect, and the habit excellent.

A full description of this and other first-rate Seedlings raised by that celebrated cultivator, which have been exhibited at the principal Horticultural Shows this summer, and cut blooms of which obtained an extra prize at the Exhibition of the Royal Botanic Society, Regent's Park, on the 24 July, 1844, will be found in their Catalogue of New Geraniums, just published by LUCOMBE, PINCE, and Co., who possess the entire stock of all Capt. THURTELL'S flowers, and are now ready to execute orders with fine strong plants at very moderate prices.—Exeter Nursery.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 19, 1844.

MEETINGS FOR THE ENSUING WEEKS.

Saturday, Oct. 26 Royal Botanic . . . . 4 P.M.
Friday, Nov. 1 Botanical . . . . 8 P.M.

WHAT is required WHEN CUTTINGS OF PLANTS ARE TO BE STRUCK, is a due adjustment of heat, light, and moisture. The first stimulates the vital process, the second causes the formation of matter out of which roots and leaves are to be organised, the third is at once a vehicle for the food required by the cutting, and a part of it. The great difficulty is to know how to adjust these agents.

If the heat is too high, organs are formed faster than they can be solidified; if too low, decay comes on before the reproductive forces can be put in action. When light is too powerful, the fluid contents of the cutting are lost faster than they can be supplied; when too feeble, there is not a sufficiently quick formation of organisable matter to construct the new roots and leaves with. If water is deficient, the cutting is starved; if over-abundant, it rots.

It is, then, the adjustment of these varying forces to the peculiar nature of the cutting to be acted upon that constitutes the art of propagation. It is this which theory cannot supply, but which depends upon skill and experience. If any part of the operations of cultivation can be called empirical, it is this. And yet the operator is not without rules to guide him in this adjustment; the misfortune is, that they are too general.

The softer a cutting, the quicker must be the excitement and application of the formative process, the more the light, the smaller the quantity of water. The more hard and woody a cutting, the slower will be the operation, the more feeble the light, the greater the quantity of water. If these conditions of new growth can but be preserved, all cuttings of all plants may be converted into new individuals.

The great enemies of the propagator, says Mr. Neumann, are rotting and drying; for this reason cuttings are preserved in the midst of a temperature and humidity always equal, the evaporation of the soil is hindered, and the perspiration of the cuttings is prevented.

Heat, light, and moisture being thus shown to be the agents to whose assistance we must look for success, and by whose mismanagement the hopes of the gardener are ruined, it is of the first importance to determine how each can be best and most efficiently controlled.

And first of heat.

We know that plants are distributed over all parts of the habitable globe; that in neighbouring countries the species are nearly alike, that distant countries are clothed with vegetation of entirely different kinds, and that the distinction in the vegetation is in proportion to the distance of the countries from each other. There is not, perhaps, a dozen species in Normandy that do not grow wild on this side the Channel; there is not a dozen species common to England and Bengal. Species, in fact, are in general limited by similarity of temperature, and cannot exist beyond such limits. One of the first considerations for the propagator, therefore, is what amount of heat is natural to a species during its season of growth. With less than that it is hopeless to make cuttings grow. It is only when plants strike freely that the natural amount of heat is sufficient; in general they require more. The amount of heat found in their natural climate may be enough for them to grow in; but a greater degree of excitement, by means of a higher temperature, will be demanded by them to strike root in, when cut up into the fragments called cuttings. A Willow-cutting stuck into the open ground will strike root, but it does so much faster and more vigorously if placed in a hotbed. A Whitethorn cutting in the open ground will not root at all; in a warm propagating house, it will do so readily; and, to reverse the illustration, cuttings of tropical plants, which naturally enjoy a very high temperature, will perish if it is reduced, and will only put forth roots when it is raised considerably above their natural standard. Thus Mr. Neumann maintains that Nutmegs, Cinnamon, Mangoes, &c., will not succeed unless in a temperature of about 100° Fah. That degree of heat again, would be fatal to greenhouse plants.

But it is not the temperature of the atmosphere that requires to be maintained above that to which plants are naturally subject; it is the soil that must be warmed. The first object is to obtain roots; those organs once formed, leaves will follow. The vital action which causes the production of roots is, in the first instance, local; roots are produced by the development of the cellular matter of the underground part; that cellular matter requires to be stimulated by unusual warmth; but the necessary stimulus cannot be communicated by a heated atmosphere: it is the warmth of the soil in which the cellular matter lies buried that must be secured. Unusual warmth of the air would have the effect of stimulating the buds, and would cause a premature appearance of leaves, which would be anything rather than conducive to the success of a cutting. If soil were to be kept at 33°, and the air at 84°, leaves would form, but no roots would be emitted under ground, however skilful the operator; and then, unless roots were thrown out above ground, the cuttings would speedily exhaust themselves. On the other hand, if the soil were kept at 84°, and the air at 33°, leaves would certainly be formed as soon as the roots had struck out, although in a pinched and shivering condition.

A proper degree of *bottom-heat*, then, is the first point for consideration, for all other processes are subservient to that fundamental requisite; and the rule is, that it should always be higher by several degrees than that to which plants are naturally subject. Unfortunately we have very little evidence to show what that is; but a rough estimate of it may be formed by regarding it to equal the mean temperature of the summer: hence the great value of good meteorological observations to gardeners. Suppose, for example, that it is required to strike a cutting of some plant from Algiers, and that the mean temperature of the summer there were 70°—which is, we believe, about the truth—the safe course for the gardener to take would be, to plunge his cutting in soil warmed up to 75°.

It is very much to be regretted that no one should have as yet compiled a set of meteorological tables for the use of gardeners. They would be invaluable; and we live in hope that some public body will, ere long, take up the subject. Scattered through books, there is a vast quantity of evidence which, although imperfect, is of great value, but nobody knows where to look for it when it is wanted. If such a work were once compiled, evidence would quickly accumulate, for inquirers would learn what to observe. With that evidence, gardening would assume more and more the condition of a science; for there is no doubt that a correct knowledge of the heat, light, and moisture of different climates is, next after the laws of vegetable physiology, the surest guide to successful cultivation.

The action of light and heat we shall consider on the next occasion.

Now that Providence has blessed us with an ACORN HARVEST of unexampled abundance, do not let us throw away the advantage. The value of these nuts for pig-feeding, and for deer or poultry, is well known; but we doubt whether, in their natural state, they are anything like so nutritious as they would be with a little preparation. We know that Barley is greatly improved by being malted; because the starch which it contains is by that process converted into sugar. Why should we not treat Acorns in the same way? They, too, are full of starch, and if malted would exchange it for sugar.

All that it would be necessary to do is to moisten the Acorns, gather them into a large heap in an outhouse, and throw mats or sacks over them. In a short time they would heat, and begin to grow. As soon as the young root is an inch long the malting would be effected, and might be stopped by simply spreading the Acorns out to dry again.

We believe this has been done already to some profit; and at any rate it is quite worth the experiment, especially for cottagers, for whose pigs Acorns are always in such request. It costs nothing, and cannot do harm.

As the season for PLANTING TULIPS is rapidly approaching, we hasten to lay before our readers the translation of a work published by a first-rate Parisian cultivator. Our Tulip-growing friends will thus have an opportunity of seeing how far our neighbours on the Continent agree with us in the cultivation of this beautiful flower, and at the same time they possibly may meet with some information which may be of service in the future management of their beds, &c. We have made a close translation of that part of the work which describes the formation of the beds, planting, &c., and where the Continental practice differs from ours, we shall give our own opinions as we proceed.

For the bed, "an open situation," says the writer, "is chosen, facing, if possible, the south-east or south-west, and at least 15 or 20 feet from any walls. The soil is then excavated, forming a cavity about 17 yards long, 18 inches deep on one side and 14 on the other, and 3½ feet in breadth.

"It may then be filled in September or October with a friable substantial maiden loam, which has been previously passed through a coarse sieve. The bed must be raised two inches above the surface on the side where the bed is 18 inches deep, and 6 inches on the opposite side, where it is 14, thus forming an inclined plane.

"By this means the florist can see at a glance his whole collection, and without confusion inspect them individually. There is also another advantage gained by giving the bed a gentle slope: drenching heavy rain can easily flow off, which otherwise might stagnate, and by soddening the ground cause serious damage to the bulbs."

Here we may observe that the usual method in England is to form the bed highest in the centre, so that in a bed of seven rows of flowers, which is the number generally adopted, the fourth or middle row is the tallest, and the others decrease in height on both sides, the first, or the row next the path, being shortest. By this arrangement, we obtain an equally good view of each side of the bed.

We do not, however, admire the plan of sifting or screening the soil composing the bed, as we are confident that bulbs do better in maiden loam, well beaten with a spade, in which the decayed turf is retained, than in earth or compost which has been passed through a sieve.

"If a second bed is formed," says our author, "care must be taken to make it parallel with the first, and exactly of the same dimensions. It should be separated from it by a path four feet wide, and its slope ought to be in the opposite direction, that is, the two beds ought to incline one towards the other to produce a more beautiful effect. In order to supply the requisite nutriment for the support of the bulbs, which when grown for a length of time in the same soil become foul and degenerate, the person who during fifteen years has had the whole management of my Tulips, changes the soil composing the beds every two years; and to obtain as fine a bloom the second season as the first, he spreads in July or August a quantity of night-soil, in a semi-liquid state, so as to completely saturate the beds; after a month has elapsed, he mixes it well together, either by passing it through a sieve or screen, or by turning it over with a spade, even to the bottom of the bed, so that the whole may be equally enriched with this most excellent manure. If night-soil is not easily procured, well-rotten cow-manure, in the proportion of one-eighth, may be added to the soil composing the bed."

Thus far, then, we have situation, the earth most proper for, and the form of the beds, with the manure usually employed on the Continent.

We consider cow-manure, in a thoroughly decomposed state, to be highly beneficial in the composition of a Tulip bed, and from experience we can say, that some of the finest blooms we ever had were when a thick layer of cow-dung formed the sub-stratum.

As for night-soil, we do not imagine that it is often used in the manner above alluded to, although we have seen its good effects on Ranunculuses, by being spread over the [illegible] when it was dug, in autumn, and washed in by the heavy rains usual at that period. Where fresh maiden loam cannot be procured, this might be tried, as we are sure that confidence may be placed in our author's experience. —*W.*

PRUNING FOREST-TREES.

Inutilesque falce ramos amputans.—HORACE.
With pruning-knife the useless branch he cuts.

I HAVE lately seen a long Article in the *Gardeners' Chronicle*, signed "W. Billington," containing some strictures on the management of my woods in the neighbourhood of Nerquis; and in support of those opinions the writer refers to a work entitled "*Facts and Hints*," published by him some twenty years ago. I think he estimates too highly the interest created by that work, in supposing not only that every one read it at the time, but that it made such an impression on the readers as to be still remembered. In his present letter, however, the hints may have been repeated—facts seem to have been forgotten. Mr. Billington's principles, reduced to few words, seem to be that the tree is supported from the atmosphere, through the leaves and branches, rather than from the soil, through the agency of the roots—a theory certainly very acceptable to the owners of barren mountain soil, but is anything to support it but the assertion of the writer. I do not feel disposed to deny that a tree with numerous healthy branches and leaves will increase in girth, more than one that has but few leaves, and those diseased. Here has been a confusion of cause and effect, and leaves the question entombed. Whether a wholesome discipline in removing a redundancy of branches may not tend to the improvement of the tree? I do not deny that leaves are necessary to the

well-being of a tree, and probably are to them what the lungs are to the human system; and every farmer is aware that plants with large and full leaves do not exhaust the soil in the same proportion as roots which have smaller leaves; but I cannot conceive that any one will deny that the various branches which Mr. Billington would so carefully preserve, must appropriate to themselves a certain portion of sap which would otherwise go to the nourishment of the parent stem. Why is it recommended to head down a tree that has been transplanted, but to keep down the sap within narrower limits? for the roots, from their recent removal, do not at once so fully perform their functions, and thus furnish but a feeble supply; and if the process of heading has not been adopted, for the first few years the topmost boughs seem dead; but as the roots begin to feed upon the earth, the vegetation becomes more vigorous, and at length the sap has been *driven into the extremities*, exhibiting in this process a convincing proof of the fallacy of Mr. Billington's theory—that it is by the descending sap that the tree is nourished. Mr. Billington likens the leaves to members, and the branches to families, and therefore the more they are multiplied, the more the nation, which he supposes to be represented by the trunk, will be enriched. I accept his premises to overthrow his conclusion; for, who ever thought a nation's welfare was increased by the merely multiplying the population, without providing means for their support? There seems something analogous in the human frame; by amputating a limb, we generally find that the patient becomes stouter. Mr. Billington then asserts that removing branches on their first appearance is calculated to make the tree puny, and he would wait till they are of larger growth. I should conceive the very reverse. As well might the practitioner delay the removal of an excrescence from the human body, until all its parts had become perfect through which it had drawn its nourishment. I had reserved a specimen, where the knife had never been applied, where all its natural tendencies had been uncorrected, for the edification of Billingtonian visitors, but I regret that it had died before Mr. Billington's inspection—I suppose with shame at its own uncouth structure; for when contrasted with its neighbours it exhibited the appearance of a deformed dwarf, beside a company of well set up grenadiers. Another point in which I differ from Mr. Billington in his mode of pruning:—He would foreshorten the branch which he intends to remove, instead of cutting it off close to the trunk, and thus making a second attack two or three years after; by this I apprehend he causes a greater wound, in consequence of the enlargement of the member to be removed, and creates a knot in the timber when eventually cut down. I do not think Mr. Billington is very certain as to his own mode of operation, or the extent to which it should be carried; for he speaks of encouraging branches, or removing them when necessary; it would have been more in character with one professing to teach, to have told us when that necessity existed. Mr. Billington then takes Mr. J. Scott Russell, an eminent engineer, to task, and questions the fairness of his comparing the trees at Nerquis with those growing in the neighbourhood, but under different treatment; but, with singular inconsistency, proceeds to compare them with the woods of other proprietors, planted in totally different localities, and, it may be, in totally different soils. The public, however, will judge which offered the fairest test. The concluding paragraph of Mr. Billington's letter leaves me in some doubt as to what *his* real views are; for, having throughout declaimed against pruning, he adds, "I protest against the non-pruning advocates;" and winds up by saying, "It is clear that we may regulate by skill and art the increase of the girth and elongation of the trunk to almost any proportion we please." This *is* precisely the object I have in view; and, to meet the crude and unsupported opinions of Mr. Billington, I would invite any unprejudiced person capable of judging, to visit the plantations in question; and in the mean time, having received some very flattering testimonies to their management, from scientific and practical men, I can, with perfect good humour, submit to the condemnatory remarks of Mr. Billington.—*W. M. Thackeray, M.D., Chester.*

ENTOMOLOGY.

ANISOPLIA HORTICOLA.—(*called the May-bug and Bracken-clock.*)—This insect is so great a plague in two of its stages, and has been so very troublesome this year, that its history will be well worthy the attention of the cultivator. When the Roses are in full bloom in May, these beetles sometimes do very extensive mischief to the flowers, by eating out the anthers and consuming the petals. I have also observed them feeding upon the leaves of the Bramble and Eglantine, and remember that some years since a host of them passed over a friend's garden at Thetford, and completely destroyed all the Roses, "leaving only the fibres of the leaves and on the flowers of those varieties that were in bloom. They flew like small swarms of bees; the produce [illegible] of Apples and Nectarines were destroyed by them in the same neighbourhood,"* and the young shoots were also occasionally defoliated by them. At another time they were so abundant on the Acacias near Twickenham, as to consume the foliage, and when the trees were shaken, they fell down like a shower of hail. In the middle of June they frequent Corn-fields and the surrounding hedges, about which they fly during the day, and enjoy the sunshine; they are also to be seen in Grass-fields, by hundreds, [illegible] flat, &c. and

ardes; and the sea-shore, where they often lie dead at high-water mark in considerable numbers.

Having deposited about a hundred eggs in the earth, the female dies, and the larvæ hatch and commence their attacks upon the roots of the Grass. Bouché says they live also on the roots of different flowers in pots, as Fragaria, Trollius, &c., which they gnaw off to the stem. It is, however, on lawns and pastures, that these larvæ commit the greatest ravages; by consuming the roots the Grass dies, the dead turf becomes rotten, and sinks irregularly under the feet, owing to the burrows which the maggots had made in the earth; and the rooks and starlings add to the disorder by pulling up the turf to feed upon them. These maggots were in vast bodies in Sept. 1839 and 1840 in Hants and Gloucestershire; and I received many letters with specimens this autumn, complaining of their devastations. It is stated that they are feeding three years, and they reside about an inch beneath the turf; but as winter approaches, they retire deeper into the earth; and even in November, when frost has set in, they have buried themselves a spade deep. From their large and uniform size at this season, I expect they are generally full grown and prepared to enter the pupa state, for which purpose they form cells in the earth, and in all probability remain in that quiescent state until the following spring, when the beetles emerge about the time the Roses flower.



Linnæus named this beetle Scarabæus horticola; Fabricius included it in his genus Melolontha, and it now forms, with some others, a group called Anisoplia.† In Norfolk it bears the name of May-bug amongst the farmers, and with the trout-fishers in the Lakes of Cumberland it is designated the Bracken-clock. A. horticola (fig. 2), is a pretty shining beetle clothed with longish hairs, dark on the upper, and yellowish on the under side; the head, thorax, and scutel, are of a bright green, often with a violet tint; the head is thickly and roughly, and the thorax finely and more sparingly punctured; the 9-jointed antennæ (fig. 3), are ferruginous; the club and palpi are piceous; the elytra are bright fulvous, with seven distinct and several obscure irregularly punctured striæ; wings ample; the underside and legs are black, with a green shade, the anterior being the stoutest, the hinder the longest. The first pair of tibiæ are notched externally, forming two distinct teeth in the male; the others are spurred at the apex; the tarsi are 5-jointed; the claws are unequal, the internal one being broad and bifid in the two anterior pair. Fig. 4, a fore leg of the male; the line shows the natural length of the beetle.

The larvæ are rather active, and can walk tolerably well, dragging their bodies after them; they lie, however, generally curved up in the shape of a horse-shoe; the head is deep ochreous and destitute of eyes; the antennæ are very distinct, slender, and 5-jointed; the mandibles are somewhat rust-coloured, black at their tips; the body is ochreous-white, with a few brown hairs, the apex of a lead colour when the larva is feeding, but like the rest when the stomach is empty. It has 6 longish legs on the breast, clothed with bristly hairs; they are triarticulate, the third joint short; the claws are small and acuminated, with one or two bristles on the sides. (fig. 1).

To kill these larvæ, water the Grass in the autumn with 1-10th gas liquor to 2-10ths water; it will do no mischief to the Grass, but will extirpate these miners. Where the gas-liquor cannot be obtained employ strong salt water. We should take advantage of mild weather in the spring to break up affected land, as at that time the larvæ are near the surface, and become an acceptable treat to the rooks, starlings, thrushes, blackbirds, robins, &c.; and even sparrows have been known to gorge themselves with these larvæ so that they were unable to fly. In the absence of such useful birds, pigs will be of service in reducing the brood of maggots; and where the Grass is only partially spotted, it is very beneficial to strew potash, unslaked lime, or other alkalies over the infested land before or after the winter season, which will restore the Grass to vigour, and, it is presumed, will destroy the grubs. Heavy rolling has also been successfully resorted to with a view of settling the undermined turf. If it be necessary to destroy the beetles, a cloth should be spread under the clustered branches previously to shaking them; and as this species flies in the day, this operation must be performed early in the morning, or in the evening.—*Rusticola.*

TRIP TO PARIS IN SEARCH OF AUTUMNAL ROSES.

Of the various floral improvements of modern times, nothing has probably produced such a beautiful change in the appearance of our gardens in autumn, or has been introduced with more striking effects, than the perpetual-blooming Roses. What can be more charming at this season of the year than to behold the rich colours of many of the Bourbon and Hybrid Perpetual Roses, contrasted with the more delicate tints of the Tea-scented sorts

* Gard. Mag. Bot., vol. xiii. p. 338.

off by their dark-green foliage, now that autumn has set its veil on many of Nature's earlier productions! I am an ardent admirer of the Rose, and my enthusiasm has, ere now, carried me to the Continent in the autumn month of June, in search of new varieties. Having this year caught the autumnal mania, I resolved to delay my visit till September, in expectation of finding the perpetual-flowering Roses blooming in greater perfection. In this I was not disappointed, and would here advise connoisseurs of Roses, who are accustomed to visit the grounds of the large growers in England, to do so twice in the year—in June for summer varieties, and in September for the autumnal sorts. I feel assured they would be well recompensed by, and highly delighted with a September visit. The Rose gardens then assume altogether a new feature; the summer Roses are gone, and the autumnal kinds appear in all their richness and beauty. True, the autumnal Roses bloom in June, but they seem to require the long dewy nights to bring out their flowers in trueness of character, and the difference is oftentimes so great, that the well-known Rose of June would scarcely be recognised when blooming in September. Thinking, however, that many lovers of Roses might not have leisure or inclination to travel so far in search of one object, which, among a multiplicity of affairs, becomes of small importance, I will endeavour to give an account of what struck me as most remarkable during my late trip. After having visited the grounds of the Hertfordshire growers, and collected the choicest of Rose's train there, I departed well pleased with what I had seen, and resolving to make further additions from foreign cultivators. Having reached the French capital, the first cultivator to whom I paid a visit was M. Laffay, the raiser of Madame Laffay, William Jesse, La Reine, and many other of our most beautiful Roses. I there saw Hybrid Perpetual La Reine in great beauty, and should pronounce it one of the gems of the season: the colour is pink, with a lilac hue, very glossy; the flowers are globular in shape, large, and very sweet. Another of his seedlings, Comtesse Duchâtel, is a Hybrid Perpetual of a superior kind. The flowers are of a rose-colour, with thick petals, closely set; Perpétuelle Indigo is a distinct variety, of a peculiar colour, to which its name relates; Hybrid Perpetual, Mrs. Crippe, a pale Rose, appears likely to become a profuse autumnal bloomer; Perpétuelle ponctuée, a bright Rose with white spots, is a very pretty variety. Of the four last mentioned, M. Laffay has, I believe, the entire stock at present, but intends selling plants of them this autumn. He has also a Moss Rose, Princesse Adelaide, of a pale rose-colour, blooming in corymbs, and said to be very handsome. The habits of the plants were certainly remarkable, having a degree of vigour quite foreign to the Moss tribe. Their season of flowering was past, but he said that the flowers were like those of Ornament de Parade, a well-known Gallica Rose; and other growers spoke well of it. Among others noticed here were Lady Alice Peel, Duchess of Sutherland, De Mars, Coquette de Bellevue, and Coquette de Montmorency—all Hybrid Perpetuals of recent introduction: the last-mentioned is in every respect a beautiful flower. M. Laffay is an enthusiastic cultivator of Roses, but a lover of fruits also.

To enumerate the various grounds visited would, I find, become tedious, and occupy too much space, having often looked through several in the course of a day. I must, therefore, arrange the varieties noted down as most remarkable, in their respective families.

Among the Perpetuals and Hybrid Perpetuals, were—Laurence de Montmorency, a free-flowering variety of a purplish rose-colour; Lady Elphinstone, rosy crimson, also a good autumn bloomer; Baronne Prevost, pale rose, sweet, and of an immense size; Comte d'Eu, a most beautiful carmine, but scarcely double enough, though apparently superior to Gloire de Rousmenes; La Bedoyère, a variety, of the character of Comte d'Eu, more double, and quite equal in colour; Marquise Boccella, delicate flesh, a decided acquisition among a class of Roses the prevailing colours of which are purple, and crimson; Prince de Galles, purplish crimson, a free grower, and seemingly well adapted for a pillar Rose.

Among the Bourbons were—Charles Souchet, purplish crimson, of a very pretty shape; Comte de Rambuteau, of the same sort; Delille, a dark rose, finely cupped; Duc de Chartres, pale red, and a most superb Rose; Dumont du Courset, bright carmine, sometimes curiously marbled; Edward Defosse, a bright pink, shaped like Madame Nerard, first rate; George Cuvier, pale rose; Glory of Paris, another crimson variety, marbled with violet, and a fine rose; Impératrice Joséphine, pale pink, of a very elegant shape, blooming in corymbs; La Générale, reddish crimson, a seedling from Emile Courtier, and an estimable variety; Le Grenadier, vivid crimson, frequently tinged with violet; Madame Souchet, rose and blush marbled, a delicate and beautiful variety; Princesse Clémentine, violet crimson, good; Princesse de Modène, flesh; Sunset, bright purplish crimson, very fine; Souvenir d'Anselme, a lively cherry colour; Souvenir de Dumont d'Urville, crimson, changing to violet after expanding, and Souvenir de la Malmaison, a magnificent flesh-coloured rose.

Among the Noisettes were—Mrs. Siddons, in the way of La Pactole, but in its then state of superiority; Similar, a yellowish buff, but in appearance a weak grower; and Chrocatella, or Cloth of Gold, a Rose of yellow Noisette cast, of a paler yellow than I expected, and which does not appear to open too freely. It has, however, been an unfavourable season there for its flowering, and not being very plentiful it may not prove better than is anticipated.

Among the Tea-scented, I noticed Adam, rose; the flowers were full and large, but not very abundantly pro-

dazed; Barbot, yellow, tinted with rose, a very pleasing kind; Boutrand, rose; Comte de Paris, flesh, one of the finest; Tea-scented Roses; Délices de Flandre, coppery red, very rich-looking; Josephine Malton, buffish yellow, of a beautiful form; Julie Mansais, sulphury white, the buds large and handsome; La Renommée, a whitish yellow, not new, but apparently little known; Madame Rousset, white; Marie de Medicis, rose, with fine outline, good and distinct; Moire, large full pale yellow, a superb Rose; and Safranot, a distinct and striking variety, of a beautiful saffron colour when first expanding, gradually melting off into buff. Some of these varieties I had previously seen in England, and in equal beauty of bloom; but others I there obtained acquaintanceship with for the first time.

Roses in Pots were numerous, but there were none remarkable as specimens of superior cultivation; certainly none that I saw were equal to those exhibited at the Horticultural Exhibitions about London, by Messrs. Rivers, Lane, Paul, and others; nor is it, perhaps, right to judge them by such a standard, as they were not grown to show what could be done with Roses in pots under good management, but merely as market plants. As such, the only objection to them by Englishmen would be the tall stems to which they were worked, and the little attention paid to their beauty. The head of the plant seemed to be considered the only part worthy of notice.—*W. Paul, Cheshunt.*

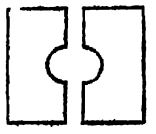
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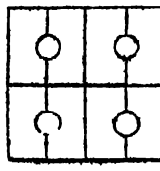
The Plantation at Nerquis.—In reply to Mr Billington's statement, (p. 651), I beg to say that there were four persons—one an artillery officer—present, besides myself, when Mr. Billington went through the plantations at Nerquis. Mr. B. was very anxious that we should adopt his theory of the growth of trees, and because we could not agree with him in his views, he was evidently displeased, and everything was wrong afterwards. I have lived with Dr. Thackeray for a period of more than 40 years. I have at all seasons of the year during that time employed many hands to assist me in fencing, planting, draining, thinning, and pruning, without any interruption, and yet Mr. B. says, "I perceived that some parts of the plantation had been long neglected before they had been thinned and pruned;" "and the greater part of the Larches are good, but they are not what they might have been under a better system." This I beg to contradict, as I as well as the persons whom I have had under me know that it is not the fact. Mr. B. further remarks that, "the Oak and Ash are not fine trees, and evidently show signs of having been injured by the Larches not having been sooner thinned out from among them, and also from having been pruned to excess: one object is however gained, viz., tall, straight, slender trees, without side branches to a certain height, and which are fit only for ladders, rails, poles, or such like purposes." Now I appeal to my neighbours, and to all who have examined these plantations, whether this is not an unfair statement of facts. Mr. B. brings before us a few well-grown Ashes, planted probably in good soils, and in a better climate, but I put in a claim for a large plantation thinned and pruned with the utmost care for 30 years, as well as for plantations which I planted 10 years before that time for Dr. Thackeray's stepson; and I must repeat that they are the admiration of all (with the exception of Mr. B.) who have examined them. When Mr. Billington was leaving the woods, Dr. T. begged he would take a knife and show us in what manner he would prune an Oak about 10 or 15 feet high, pointing out a tree of that size. This Oak had a leader and four competing branches. Mr. B. then foreshortened four of them within two inches of the stem, and said that in two or three years he should cut them off close in to the trunk. We immediately said, "Why not do the same thing at once, and throw the sap into the leader, instead of doing so when the branches are thicker?" Upon this he began to theorise, and whilst he was doing so I was desired to cut the same branches off quite close to the stem. I at the same time said that all the trees had been managed in the same way, and that, had they suffered from this plan, the plantations must have been a failure, and that he would have seen a wretched collection of trees instead of the beautiful ones that were to be found all around him. I was then desired to take off not less than three, nor more than five of the largest and most luxuriant branches we could see descending the tree. Probably, in the course of this manner, one or more of the side branches will either be removed or foreshortened, and, from 40 years' experience, I am confident with the best success—experience being the best instructor in the matter of pruning. About a fortnight ago there were in the woods at the time a gentleman from Essex, one from Cambridge, one from Dundee, one from Huntingdonshire, one from Norfolk, and two from Chester, who evidently inspected the woods, and expressed themselves highly gratified with all they saw; having, as they repeatedly said, never seen such flourishing trees in all their lives. Below is an extract from Mr. Ponton respecting pruning; the mark is done now, in three or five years only, which is very different from the mode which I have been instructed to follow, as may be seen by referring to Mr. R. Scott Russell's letter, and others which have appeared from time to time in the *Gardeners' Chronicle*.—Ponton says, (page 566), "Pruning not only improves the form but increases the size of general weight of the tree." Page 566,—"If the first pruning took place when the plants were about 8 feet high, it might be necessary to displace two or, at most, three whorls of the lower branches; and two years further, two side more of the same description; after which intervals of three years might elapse between the prunings; never displacing more than two tiers at once, except more should prove dead." Further—"It will be observed that this method of pruning is calculated to grow the trees with a long conic head; and hence they would have every possible benefit from the atmosphere which the space allotted them can admit."—*Thomas Roberts, Nerquis.*

Pruning Forest-trees.—Mr. Billington deserves the thanks of all who feel any interest in this subject, for the manner in which he has (I may say) set at rest the question of pruning, as relates to the far-famed Nerquis plantations. The results of his inspection are precisely what I had conceived, from reading the various descriptive notices that have from time to time appeared in your columns. Dr. Thackeray is to be highly commended for his attention to his plantations, but if that attention proceeds upon a mistaken principle, it is detrimental where it might be highly beneficial. It is really marvellous how, at this advanced period of experience and observation, any one can proceed and act on the principle, that depriving a tree of its branches adds to or accelerates the growth of its stem; and yet it turns out that this is the principle carried out, according to Mr. Billington, in the Nerquis plantations, which several of your correspondents invited me to visit, in order that I might, from actual inspection, be induced to recall the opinions I had advanced in your columns. I desire no better authority than that of Mr. Billington; and, according to his descriptive statement, Dr. Thackeray's practice is merely Pontey out-done. Mr. B., in conclusion, protests against the "non-pruning advocates."—Who are they?—So do I. yet I will venture to say, that proper thinning, with no pruning at all, is preferable to the system followed at Nerquis. I have all along avoided the physiological question, which I think quite unnecessary in arguing the utility or non-utility of pruning. The term "reciprocity," which I have used, between root and branches, comprehends the whole, and the greater the degree of it, the more solid wood will be laid annually on the stem whether that wood be formed from ascending or descending sap, is practically of little consequence in the matter: the great point is to get it, and get it quickly, without saying anything about the *modus operandi*, which the authorities do not appear to have yet satisfactorily settled. The term "judicious pruning" is often used by your correspondents. Will any of them define it? How long is "judicious pruning" to continue? At what age of the trees is it to cease? Will Mr. Billington answer this, in reference to any of the plantations noticed in his last paper? It has occurred to me, that those who follow the severe pruning system(?) might save themselves some labour, by docking the roots a little. It would tend to preserve the equilibrium, and prevent the growth of useless wood, which only robs the stem.—*Quercus.*

Receipt for refreshing Raspberry and other Jams, long made.—Boil Blackberry juice till greatly reduced, add white sugar in the proportion of 1 lb to a pint of juice; mix the old jam with this syrup, and boil until sufficiently done. By this means the colour as well as the flavour is restored.—*P. T. C.*

Strawberries.—Most parties are, I believe, agreed as to the good result of placing stones under the fruit-bearing branches of Strawberries. In dry seasons they keep the ground around the roots moist, and in wet seasons they preserve the fruit clean. Now, I would suggest that a simple tile might be made of the annexed form, which I think would answer well, look neat, and cost but little. Let them be made about 12 inches square, preserving room for the average size of the stems. After a season in preparing new beds, the runners might be placed at equal distances, so that the bed would be entirely covered when required by these tiles, which would lay thus. A bed of 40 feet by 6 would require but 500, and their cost ought to be but little, as they could be made by any brickmaker, being merely flat tiles and scooped out. Is the idea a good one, and had the tiles better be glazed? A little additional cost is of no moment.—*M. A. S.* [On no account glaze them. If you have round pebbles at command, why not pave the ground with them?]





Monstrous Grapes.—The reading in a late Paper an account of a monstrous berry of a Black Hamburgh Grape, lately produced at Stover, in Devonshire, has induced me to mention that in a vinery at Dorfold Hall, in Cheshire, there is on the same variety a bunch in which there are three of these monsters; the largest of them measures in circumference 5 inches, the second 4¾ inches, and the third 4½ inches. The bunch itself probably weighs about 3 lbs.; there are several berries nearly as large in other bunches on the same Vine; they have very much the appearance of a Tomato.—*A Constant Reader.*

Culture of Vines.—I imagine that it is not out of place my bringing light from another science to bear on gardening, to say that the method of pruning Vines proposed by Mr. Hoare is, in my opinion, somewhat objectionable, as they must of course have a very limited range in their search for food. It may be said, Make the column large and all bud frequently with measure; but if the column be broad, the sap will not be given as desired, and however plump supplied with food, I should doubt the long life and vigorous health of a plant condemned to prison and solitary confinement; the roots will make constant efforts to gain liberty, and be repulsed; they will make search for food, and be driven back to the one spot: in that spot they will become thick, and the third dense; the soil around will be soon exhausted; and the new supply troublesome. If it be otherwise I shall be glad to know.—*A Reader.*—[This is assuming just that which nothing but experiment can show.]

Cucumber Melocoton.—In reply to Mr. Fleming, (p. 681), I beg to say that, although I made a mistake respecting the name of the Melon which I advertised, it is the true one sent out by Mr. Fleming's permission, as the advertisement of Mr. White below will prove. In the *Chronicle* for Oct. 7, 1843, it is stated, "By the kindness of Mr. Fleming we are again able to supply a few more packets of the Hoveslope Persian Melon at 5*s.* per packet." Mr. Fleming is the only person who had cultivated the Melon to perfection up to the time that he sent it out, and I cannot see how it can disgrace his name.—*J. Cuthill, Camberwell.*

Raspberries.—I strongly recommend the Beehive Raspberry as a prolific bearer of large fruit, and most excellent. I have a second crop of the B. Raspberry at this moment, on the new wood, as fine as those of the abundant summer crop.—*D. B. Greys.* [What *is* the Beehive Raspberry?]

Large Yew-tree.—There is in the churchyard at the village of Gresford, Denbighshire, a Yew-tree, which measures 30 feet in girth at the height of 4 feet from the base. The branches are in themselves large trees, and shade the ground to a great extent. It must be of incalculable antiquity, and it is not yet in a state of much decay, though it has for centuries perhaps attained its maturity. Other Yew-trees, in the same place, which were planted (as the parish-register records) in the year 1727, are, on average, in girth somewhat more than 4 feet.—*E. C., Pantyfocher, Gresford.*

Rose Catalogues.—The criticisms in the *Chronicle* lately, in reference to the dissimilar representations of the colours of Roses, are not wholly without cause, but perhaps, upon consideration, they may not seem so well merited as would appear at first sight. Rather than confine myself to the apparent error alluded to in my pamphlet on the Culture of Roses in Pots, I would take a general view of the subject; and in relation to the differential descriptions given by various growers, would hazard an opinion that the colours and appearance of Roses vary beyond degree. We believe that colours are deepened by the action of light, and numerous other circumstances also contribute in causing variations; for instance, the seasons—the different times of the seasons—the stage in which the flower is submitted for examination—the soil in which it has been grown—the health of the plant—and, above all, the different ideas of colours (without entering into the correctness or incorrectness of such ideas) maintained by different individuals. Now, with regard to the variation in the colours of Roses, see Indica Le Caméléon when just expanding—it is almost white. View the same flower a day or two afterwards—it is changed, and become a crimson! In fact, we may apply to Roses what the poet has written about a very different part of the creation:—

"'How slow its pace' and then its hue—
Whoever saw so fine a blue''
'Hold there,' the other quick replies,
''Tis green—I saw it with these eyes'
* * * * *
'Sirs,' cries the umpire, 'cease your pother,
The creature's neither one nor t other.
I caught the animal last night,
And viewed it o'er by candle light
I marked it well—'twas black as jet—
You stare but, Sirs, I've got it yet,
And can produce it'
* * * * *
"Replies the man, 'I'll turn him out
And, when before your eyes I've set him,
If you don't find him black I'll eat him'
He said, and full before their sight
Produced the beast, and lo! 'twas white!"

Prince Albert (Hybrid Perpetual) occasionally blooms of a vivid crimson, and often of a cloudy purple. T. Safranot appears almost saffron-coloured, but dies off a poor buff. The first flowers I saw of Lady Alice Peel (Hybrid Perpetual), now two years ago, were pink, and as such I retain a vivid recollection of them, although I have never seen them of that colour since. I have just gathered a flower of Bourbon Augustine Lelieur, which measures fully four inches across; but the colour is so different, that, had I not gathered it myself, I should have had some difficulty in naming it. Without multiplying solitary instances, if we view the whole body of Roses that bloom twice in the year, and compare the colours noted down in summer with their real appearance at this season, we shall find a difference. But supposing Roses to bloom alike at all times and in all situations, some indulgence may be claimed from the public, where 800 or 1000 varieties are catalogued and described. Perhaps the first step towards attaining accuracy of description is, to take down the colours on the spot during the season of bloom. This, doubtless, is done, although requiring a sacrifice of time and labour from the principals, which an extensive Nursery business will scarcely admit of. But, again, the whole varieties cannot be found in bloom at any one time, and the collection would require a second, third, or even a fourth looking through, which would be incompatible with other duties. The probable consequence is, some few are described from memory. Now, although such descriptions may not be perfectly correct, may they not be considered sufficiently so to guide purchasers in selecting? which is the only purpose for which Nurserymen's Catalogues are published.—*W. Paul, Cheshunt, Herts.*

Cows Tentaculata.—This Cabbage seems a wild and

straggling grower, and occupies a great deal of room. It is recommended in the *Chronicle* as a delicious winter vegetable. At present it shows no heart. A little more information about the nature, culture, and growth of the Tronchuda would oblige—*B. D. Greys.* [Its leafstalks and heart are used like Seakale. It is tender, and is *not* a winter Cabbage.]

Bees' Eggs.—At p. 638, Mr. Pettigrew finds fault with my reply to "A Lover of Truth's" queries respecting bees' eggs. I expect, however, that some apiarian readers think otherwise, and see more reason to complain of his statement that "queen bees lay only one sort of eggs." I may state that I possess some working bees' cells containing the brood of small drones, or males, which clearly show there is a difference in bees' eggs, and also that no alteration takes place after the eggs are in the cells. Indeed, how could the latter be? Some say by royal jelly; but that cannot change the sex of bees.—*J. Wighton.*

Large Pine-apples.—In reply to an "Admirer of well-grown Pines," who asks Mr. Mills the following simple questions, viz.—What has been the probable quantity of dung used to bring the fruit to maturity? and the probable expense for labour in applying linings? I would state that every good gardener can tell the quantity of dung required to work a small five-light pit—and rotten dung is always valuable in a garden; and the labour for working such a pit is not worth noticing. I will venture to say, if an "Admirer of well-grown Pines" could produce at his employer's table a Pine of the enormous weight of 15 lbs. avoirdupoise, his employer would, in all probability, make no inquiry respecting the expense of dung or labour employed, but would be glad to know that his gardener had the merit of producing, for the first time in England, a Pine-apple weighing 15 lbs. I should have been proud to have been the grower of so noble a specimen, which could only have been obtained under the most skilful management, without which all the expense that could have been bestowed upon its growth would have been of no avail.—*W. Taylor, Streatham.*

Public Parks.—It must be gratifying to all who desire to see the comforts of the middle and working classes attended to, to know that a public park is about to be laid out in the neighbourhood of Manchester. It is unnecessary to dwell on the health-creating effect and moral influence that such a place of public resort will have upon the immense population of that town, as it is well known that where public places of this description have been opened to the community at large, the beneficial influences have been beyond all calculation. Public parks not only improve the moral character of individuals, but also lead to habits of industry, regularity, and taste. By the public prints it appears that 21,000*l.* have already been subscribed for this park; but in the expenditure of this sum, much will depend upon the judgment exercised in laying out the grounds, to secure the advantages which we ought to expect from a place of public resort in the neighbourhood of that large manufacturing district. I am aware that few places of this kind are properly upheld, unless they are arranged in a manner that will enable the directors to pay at least some part of the outlay. We may have liberal subscriptions for the original purchase of the ground, but unless some method is adopted by which the ground may be disposed of, so as to supply a fund for upholding the park in a proper condition, it will, like many other places of the kind, except those in the hands of Government, fall to the ground. Public parks have recently been laid out near *Liverpool*, and in the improving neighbourhood of Birkenhead. Both these parks have been judiciously arranged; the confines or outside borders are laid out in villa grounds, which it is supposed will be sold for more than the original purchase of the ground, while the interior of the park is devoted to the healthy exercise and recreation of the public. It would be well to impress upon the attention of the managers of the proposed Manchester park, that some such arrangement as that just adverted to should be adopted. If it were laid out in such a way that one-third of the ground was disposed of for villa residences, I have no doubt but that, under proper arrangement and management, the ground so disposed of would not only pay ultimately for the original purchase, but would uphold the park in proper condition. It is not only a serious matter, but one that requires the greatest judgment on the part of the managers of this affair, to secure the services of those who are well qualified to advise and arrange a matter intended to benefit succeeding generations. I hope, therefore, that the directors will not lose sight of an arrangement which may enable them to have funds to uphold in strict order and regularity a park worthy of their justly celebrated town.—*A Friend to Public Parks.*

Bokhara Clover.—Noticed in a former Number of the *Chronicle*, I find a failure; the great drought of the summer may have caused this. It can hardly be said to have blossomed here. I purchased the seed as recommended, in order that my bees might feed on its flowers. It is a coarse large sort of Clover, and grows 3 or 4 feet in height.—*B. D. Greys.*

Irish Yew, &c.—It may be useful to state that I have raised many seedlings from the Irish Yew; some are three years old, but all evidently are the common Yew; and this may save others the trouble and time necessary for their development. The fine season has been the means of the double-flowering Peach and Pyrus spectabilis producing fruit—the latter in unusual abundance, which, when frosted, is nearly equal to the Medlar in flavour; and the birds—good epicures certainly—prefer them to all the other fruits in the nursery.—*W. G.*

Destruction of Mice.—Your correspondent "Nemo," who inquires how best he may destroy the mice with which he is annoyed, is recommended by one who is an old practitioner to proceed as follows:—In the first place, let him arrange his canaries (which at present must be greatly disturbed by the mice getting into their dwellings at night) on the walls of his room, so that they may hang in even rows; under each row of cages, and nailed close to the wall, let a well-planed and neatly-painted half-inch deal shelf be erected, sufficiently wide to project several inches beyond the line of cages, and let it extend the whole length of the room. It will be all the better if a beading or ledge run along the front of each shelf. By this provision, the greater part of the seed, so unsparingly scattered about by the birds, will be prevented falling on the ground, and so, the temptation offered to the mice, who are greedily fond of canary and rape-seed, will be infinitely lessened. The next step will be to reduce the number of mice, for where there is bird-seed there are sure to be mice: this is easy. Procure a few pennyworths of nux vomica in powder, and, with a small portion of it, mix thoroughly some bruised canary-seed and crushed Wheat; place this in a saucer in a corner of the room, and close to it a second saucer filled with cold water; then, just before retiring to bed, sweep the floor carefully, and remove the seeds, husks, &c., that may have fallen from the cages. This will prove a night of terror, for death will make sad havoc among the birds' enemies. Next morning let "Nemo," after collecting the dead and the dying, and burying them, nail flat pieces of zinc or tin over every mouse-hole he can find. This will prevent any effluvium that might arise a few days afterwards from the decomposed bodies under ground. The remaining mice, their suspicions being awakened, will now troop off. Should they at a future period return, let the former dose be repeated at bedtime, and the result will prove equally satisfactory as before. If a cat's services be required, let her be domesticated when quite a kitten: then, by the aid of a slight switch as a corrector, a positive familiarity may be created between Grimalkin and the birds—the latter exhibiting pleasure rather than fear when the former is present. Where cats are inmates, poison must not be used; for if a mouse be poisoned, and a cat afterwards eats it, her death too frequently follows. Some of my neighbours, have, I understand, been recently placing poison in their grounds for the destruction of rats; the consequence has been the ascertained death of eleven fine (and several of them very favourite) cats. This is to be regretted, and no person will suffer more from it than myself. Though I have a large collection of birds, the only weapon I bring to bear upon their sworn enemies, the cats, is a legitimate one, viz., a long whip, which is artistically laid on, *in terrorem*, as occasion serves. As "Nemo" has between 30 and 40 canaries, I would suggest to him whether, in such a case, it would not be advisable to appropriate one room, with a door at either end, to their entire use. All vermin would be thereby excluded.—*W. Kidd, New-road, Hammersmith.*

Societies.

BOTANICAL SOCIETY OF LONDON.

Oct. 4.—J. Reynolds, Esq., Treasurer, in the chair. Various donations were announced. Read—A General Description of the Botany, Climate, and Physical Geography of the Neighbourhood of Embleton, in Northumberland; drawn up by Robert Embleton, Esq., in illustration of a Local Herbarium of the District, collected for the Society by the same gentleman. The Description and Herbarium will remain at the Society as a valuable record of the present condition of the district.

ENTOMOLOGICAL SOCIETY.

Oct. 7, 1844.—Geo. Newport, Esq., President, in the Chair. A specimen of Tortrix rutilana was exhibited by Mr. Bedell—an insect new to the British Fauna.—Mr. Westwood exhibited a specimen of Lenopalpus striatus, taken in Leicestershire by Mr. Plant. Several new Coleoptera, taken in Chili, were exhibited by Mr. Canning.—Mr. Raddon sent for exhibition living larvæ from Potatoes and Turnips, which had this year been very destructive in his neighbourhood. Mr. Westwood stated that they were the larvæ of some species of Noctuidæ, probably an Agrotis. There was no other way of getting rid of these animals but by hand-picking.—The President laid upon the table a number of specimens of Lepidoptera, in which the legs had been reproduced after having been broken off. The reproduced legs were none of them of the size of the old legs. The legs were broken off during the larva state of the animal.—Several specimens of insects were exhibited from Captain Boys, sent from India; they were prepared in a peculiar way by placing the whole insect between very thin plates of talc.—A new Pausus-like insect was sent by Dr. Cantor—the Trochoideus amphora. It attacks the leaves of the Cocoa-nut trees, of which it is very destructive. Dr. Cantor also forwarded some notes on the habits of Arachnida.—Some notes upon an orthopterous insect, a grasshopper, which had the power of swimming on the water, were read, from Captain Boys. The Secretary observed that he believed this was the first instance on record of an orthopterous insect with aquatic habits. The President referred to the butterflies whose legs had been reproduced. At a recent meeting of the Society this subject had been discussed, and it had been supposed that reproduction would not take place in insects in which true metamorphosis took place, but this was set at rest by the result of his experiments. Although the legs and claws were always reproduced, the armature of the insect never was. The reproductive power of the insect depended much on the weather, as in moist, damp weather he found the wounds would not heal.—Mr. Harry Goodsir exhibited drawings of the condition of the parts in the reproduced legs of a species of Crustacea—the Cancer pagurus. The reproduction in these animals was effected by means of a gland. This gland was surrounded by a series of vessels which also accompanied the reproductive germ in the ovaries of the animal.—Dr. Lankester pointed out the importance of studying this subject in a morphological point of view. The reproductive cell of all organisation possessed common characters, which once obtained, we should find an easy expression for the countless variety of secondary forms which it exhibited.

REGENT'S-PARK GARDENERS' SOCIETY.

The adjourned meeting for the discussion of Morphology (see page 639) took place on Tuesday evening, Oct. 8. Mr. Reith, the chairman, directed the attention of the meeting to specimens of Rhododendron and Camellia, which, after having formed and set their blossom-buds, had produced leafy shoots from the same buds, in consequence of being improperly excited. He considered these as illustrations of the necessity of setting such plants out of doors in summer, to mature their annual growth.—Mr. C. Moore read some paragraphs from an article in the "Magazine of Botany," opposed to Morphology, which he characterised as being evasive of the true question. He then referred to specimens of Cryptogramma crispum, in which the fertile fronds are evidently a changed state of the barren ones, thus proving that the production of seeds on the leaves, as in Ferns generally, was in no way opposed to the doctrine. Allium scorodoprasum was next referred to, in a specimen of which the flower-stem at its summit bore perfect seeds, in the ordinary seed-vessels, seated on little pedicels, and bulbs springing into leaf at the base of these pedicels, and there attached to the stem.—Mr. O'Neill asked what was really meant to be established by Morphology, as apparently opposed to the established order of vegetation?—Mr. Maher said that Morphology, which strictly meant a "discourse on form," taught us to believe that all the parts of plants are originally alike, being produced by the vital action from the same original tissue, and, consequently, that any part of a plant, before it was developed, would have admitted of a different kind of development under the influence of exterior circumstances. He said that buds, and bulbs, and seeds, the several offspring of the stem, the root, and the flower, were identical both in nature and office, as containing the vital embryo, and capable, when detached, of reproducing their kind. In the case of the Allium, the bulbs, being directly attached to the top of the stem, could not be confounded with the seed, which was produced at the extremity of a pedicel; and, that they were occasioned by some invisible impregnation before the development of the flowers took place, as had been assumed by some of the speakers, he designated as an idea wild in the extreme. He then took a summary glance of the progress of a plant. The root, when in its ordinary position beneath the surface, did not produce leaves, but little naked points of tissue, whose office was to absorb fluids; if the root were brought above ground, it would frequently produce leaves, and assume the character of the stem. In illustration of this, he mentioned a specimen of a seedling Potato plant in his possession, in which from the same point, near the surface, several runners were produced; some of these had been buried, and had produced both fibres and tubers; others had been exposed, and were leafy stems. The stem assumed many forms, and was different from the root, in being furnished with stomata, or breathing-pores; for, being exposed to the air, it had to perform the function of respiration, as well as of absorption. The leaves are composed of the same tissue as the stem, but developed in a peculiar manner for the elaboration of the sap; and they are furnished with stomata. Bracts are similar to leaves. In a specimen of Rhododendron, then before him, he said the true bracts, which should have been situated at the base of the bud, on a flat axis, were scattered along a leafy stem, exhibiting a gradual transition to a leaf, and in the axil of these bractescent leaves the flowers were produced, instead of assuming their natural character as a terminal cluster; the axis, too, was lengthened out, and would have formed a perfect leaf branch. The flowers that were produced were much altered from their usual character, but that they were flowers was plain, from their being coloured purple; and he could detect the filaments and stigma present.—Mr. Reid opposed the doctrine. In the case of roots, he mentioned that Bignonia radicans would produce shoots from the roots when covered. The case of a cone of the Larch producing a shoot from its apex, which had been laid before him, proved nothing; for the cone was filled with perfect seeds, in the usual manner, and these must have been the produce of flowers; therefore the shoot could not be a transformed flower. Viviparous Grasses, again, were simply illustrations of another means ordained in nature for the perpetuation of plants.—Mr. C. Moore said that he had observed the case of the Potato producing tubers and leafy stems from the same kind of runners, under different circumstances of exposure, and he thought this to be sufficient demonstration of the relation between roots and stems. The viviparous shoots produced on the Grasses were the result of a change in what should be the seed-bearing organs, the ovule having converted into leaves, instead of opening as a flower, and young plants being produced instead of seeds. In a subject comparatively new, and but little understood, it was most essential to do away with prejudice, or no satisfactory conclusion could be arrived at.—Mr. Fitzpatrick was not convinced by the series of articles in the *Gardeners' Chronicle.* The shoot of a Peach-tree,

produced from a leaf-bud, would, he said, produce flowers and fruit; but if there is no leaf at the extremity beyond the flower, both it and the shoot will perish; in this case, since flowers are said to be nothing but changed leaves, how is it that they do not elaborate the sap, and support the shoot? He had never seen proof that leaves performed the office of flowers, or the reverse. In viviparous Grasses, young plants are produced, but not flowers; and therefore the flowers not being present, can not become changed into leaves. In the case of the Allium, as seed was present, there must have been flowers, but probably the young plants were originated from seed, which had ripened prematurely, and had fallen to the position the plants now occupied.—Mr. Townsend denied that fruit would not come to maturity without a leaf beyond it. He knew of a fine crop of Grapes, where the shoots had been stopped at the bunch: in this case there was no leaf beyond, but the progress of the fruit was satisfactory. He wished to know, however, at what time the leaves of such plants as Peach-trees and the autumn Crocus and Colchicum, were transformed, as in these plants the flowers seem to precede the leaves.—Mr. Ayres forwarded several interesting specimens in illustration of the subject.—*M.*

Reviews.

A Descriptive Catalogue of Selected Roses, cultivated for Sale. By Thomas Rivers, Sawbridgeworth, Herts. Supplement to the same for the Autumn of 1844, together 22 pages.—*A Descriptive Catalogue of a Selection of Roses cultivated for Sale.* By A. Paul and Son, Nurseries, Cheshunt. 19 pages.—*A Descriptive Catalogue of Roses grown for Sale.* By H. Lane and Son, Great Berkhampstead. 16 pages.

These Catalogues are indispensable to the Rose-grower, and contain among them all the information people in general can want, except habit or manner of growth, which is only mentioned occasionally. Mr. Rivers divides his Roses into summer and autumnal kinds, and then subdivides each of these bands according to their real or supposed races. Mr. Paul's classification is by races only, but he separates the Climbing Roses from the others. Mr. Lane carries the classification by seasons further than Mr. Rivers, for he has Roses blooming—1, in May, June, and July; 2, in June, July, and August; and 3, from June till November; and each of them he subdivides according to their races.

We will not repeat here our criticisms upon the spelling of the names in these Catalogues, but content ourselves with recommending growers to adopt the nomenclature in Mr. Rivers's list, which, although not perfect (for example, p. 4, Schoenbrun for Schönbrunn, or Schoenbrunn), is much the best.

We extract Mr. Rivers's account of the Cloth of Gold, which has not yet come out in its beauty, except at the Bath Dahlia Show in September, where it was much admired; and the Prairie Roses, a new race of climbers, bred from R. rubifolia, an American trailing Briar, well suited for crossing, in order to obtain late-flowering kinds.

"*Cloth of Gold*, owing to an accident to the plant left for blooming, has not flowered here this season: I saw it, however, in the commencement of last June, at Angers, in great perfection: a strong plant against a wall had produced from four to five dozen of its splendid flowers; it had made vigorous shoots the preceding season, and every bud had produced its spike of flowers, the extreme outer petals of which were of a creamy sulphur, the inner a bright and beautiful yellow; its flowers were nearly or quite as large as our common Cabbage Rose. This variety will require a south wall in this country, and, like Noisette Lamarque, it must be established one year so as to produce some vigorous shoots; these the following season will give flowers from nearly every bud: these shoots must not, however, be shortened to any extent; four or six inches taken from the end of each will be quite sufficient. If it grows with extra vigour, so as to make shoots from twelve to fourteen feet in length, they must be trained in a serpentine form, or in any other mode, so as to avoid the necessity of shortening them. Like Lamarque, it will form a fine Standard, but like that it must either be removed to a north wall, as recommended for Standard Tea Roses in winter, or have its stem wound round with hay-bands, and its head protected with a prepared calico or other cap. Having introduced this Rose, I feel it my duty to give directions for its culture."

"*Prairie Roses.*—This is a new group of Climbing Roses, which promises to be of much interest. Mr. Samuel Feast, of Baltimore, U. S., has had the pleasure of raising the above-named varieties, from the seed of the single Michigan Rose, Rosa rubifolia; they are all of most robust and vigorous habits, making shoots in one season more than twelve feet in length. No. 3 is the most perfect and beautiful of the whole, giving clusters of flowers containing from twelve to twenty each; at first they are finely cupped; in a day or two they become imbricated, like those of the Duke of Devonshire. It seems to resist the hottest sunshine, and the flowers remain on the plant for a longer period than those with any other Rose: in wet weather, however, they are not at all bright in colour, as was the case with some that bloomed the past summer: this has been named the Beauty of the Prairies. My name is that given to it by Mr. Feast. No. 2 only occasionally gives autumnal flowers. No. 1, owing to most of the imported plants dying, is more scarce than the other varieties. All these Roses are perfectly hardy; they will form fine Pillars and pendulous Standards."

NOTICES of NEW PLANTS WHICH are EITHER USEFUL OR ORNAMENTAL.

Bellium bellidioides. Autumnal Bellium. (*Botanical Magazine*.) Compositæ. Pentandria Monogynia.—This plant is inferior in interest to few of the charming species and varieties of Asteris with which we are acquainted. Its habit is that of a shrubby-growing shrub, combining with strength of stem all the elegance peculiar to the tribe, and producing richly-coloured flowers about an inch long. Unlike most of its kindred, it commences blooming towards the end of October or beginning of November, and continues to flower through the winter till April. This feature, which is not the least interesting or useful, has suggested the specific name. It flowered in the Nursery of Mr. Low, of Clapton, in November last. Mr. Low obtained it from Mr. Cunningham, of Edinburgh. It is evidently of hybrid extraction. Although we are unable to state the exact source of the plant, yet we have seen others so similar in character at the Nursery of Messrs. Rollisson, Tooting, raised by Mr. Storey, of Isleworth, between E. impressa and E. grandiflora, that we can have little doubt of their common origin. In the management of this and all the stronger and more rapid-growing Epacrises there is one point to which we desire to direct attention. It is the common practice to employ nothing but moor-soil and sand in potting, and it is to this, perhaps, more than to any other individual error, that the lack of success is attributable. If a portion of loam and well-decomposed leaves be incorporated with the heath-soil and sand, much more luxuriant shoots will be formed, and the quantity of flowers increased; for the soil, being of a more open and porous nature, will prevent the lodgment of stagnant water around the delicate roots, which so often, by destroying these organs, perils the very existence of the plant. Flowering in the winter season, at a time when solar light is at its minimum, it becomes more especially requisite to place them in an open part, where other shrubs may not shade them; if this be neglected, the flowers will be inferior in richness and intensity of colour. A liberal supply of water and a slight degree of shade will be needed whilst they are making their growth; and a perfect circulation of air must be maintained at all times.—*Paxton's Magazine of Botany.*

Miscellaneous.

Fastolff Raspberry.—We have just received from Messrs. Youell & Co. cut branches of this Raspberry loaded with fruit in its different stages of growth. The fruit was not quite so large as some of the same kind which was sent us in summer, but it was well-flavoured, and very fine for the period of the season.

The Blackbird.—It is grievous to think that this bird, whose melodious voice gives such pleasure to the ear, and lends a charm to the ramble through the grove, must, for the sake of a little fruit, meet with the usual persecution. Its food, in spring and early summer, consists of the larvæ of insects, with worms and snails. The enormous number of slugs and snails, so injurious to vegetation, which are eaten by blackbirds, should at least save him, on the score of gratitude, from the general destruction. Well may the poet say—

> "Scare, if ye will, his timid wing away;
> But, oh! let not the leaden, viewless shower,
> Volied from flashing tube, arrest his flight,
> And fill his tuneful gaping bill with blood."

It were useless to prolong this list. In the utter ignorance that prevails of the benefits conferred by these beautiful creatures, with an equal ignorance of the food on which they subsist, it is hardly to be wondered at that many who venture into the gardens in search of insects, and other animals injurious to vegetation, alike fall victims to the indiscriminate slaughter vowed against every bird that approaches these precincts. In the little abode occupied by the writer, every encouragement is given to their presence. A neighbour once inquired how his lawn was so disfigured with worm-casts, whilst that of the writer's was so free? The answer was ready—"Leave off popping at the worm-feeders from morning to night, and your lawn will present an equally pleasant appearance." It is an agreeable sight in early morning to view the activity of the blackbird, thrush, starling, and others, vigorously tugging the struggling worm from his retreat, more especially if it should happen that the Grass is covered with dew. It is very true that some little fruit does fall to their share; but so grateful is their cheerful voice, and their interesting evolutions in search of food, deeply would the exchange be deplored that should deprive us of their presence for the sake of a little fruit, which in the hot season is, in all probability, as grateful to them as to the self-styled lords of the creation. And, last of all, let us remember that, as not "one sparrow is forgotten before God," it may well become us all to reflect whether, in the grand scheme of an All-wise Creator, these little creatures, sent undoubtedly for a beneficent purpose, although our imperfect knowledge may be unable to descry their immediate use, were not destined by Him to partake of some small portion of the abundance poured forth for the benefit of man.—*J. M.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

The old Blotia Tankervillia, as it was once called, is an excellent plant to force in winter, and should now be removed to the forcing-pit, where a brisk bottom-heat of from 80° to 90° can be kept up. Euphorbia jacquiniflora is unwilling to submit to much forcing at this time, but if it is checked now by being kept rather dry for a month or six weeks, it will flower a month earlier than its usual time. Old plants of Justicia speciosa and Eranthemum pulchellum always flower earlier than young ones—they should be ready for the conservatory at the same time with the early Chrysanthemums. The Hibiscus manihot makes a gaudy display through the autumn in the conservatory, and is best from seeds treated as an annual, like the Balsam; pieces of its roots potted now and placed on a shelf in the stove will make plants nearly as good as seedlings, and will flower two months sooner than seedlings, but older plants of it are more or less unsightly. Nematanthus longipes is a curious winter-flowering stove plant of the easiest culture, and well suited for the drawing-room or conservatory when in flower, as is also Centradenia rosea, which is from us in its way; this also flowers in winter and early in the spring. Achimenes pleta seeds freely, and no doubt will produce crosses; it is well worth saving on that account, as well as for the beauty of its flowers and the singularity of its foliage.

Conservatory.—In answer to an inquiry, I beg to say that I have already in the Calendar stated all I know respecting the most conservatory climbers, with their names, treatment, &c. I imagine that the Mandevilla is as hardy as the Calampelis or Bignonia scabra, if not as hardy as the common Passion-flower; 5° of frost has not affected its beautiful flowers in the least. The best way to insure the procuring of the true flower, for Bignonia jasminoides, is to ask a nurseryman to send a plant that has the remains of the flowering truss on it: as they always flower in the smallest pots, there can be no difficulty in supplying plants in this state, and they are very cheap. Every effort should now be made to keep up the gaiety of this house, especially if it is attached to a sitting-room, as all good conservatories ought to be. The Chrysanthemums will soon be in; we cannot profitably force them; we can retard some of the late ones by placing them under a north wall: strong plants only should thus be treated, and rough sticks should be placed against the wall over them, to support mats, which should be put over them in cold frosty nights. The best Pelargoniums to flower in October are the Jewess, King Rufus, Modelice, Isidorianum, and Sidonia: each of these will stand hard forcing without injury; after these the Alba multiflora comes in. Pelargoniums with sweet-scented leaves are very useful for mixing in bouquets in winter, and some of them should now be forced: every place has its rose-scented variety, but the true rose-scented one is very scarce—it is the best of them all; next to it is Coronarium, an old one with a stiff erect habit and small curly leaves; and then, perhaps, Prince of Orange and Lady Flora Hastings are the next best. A large leaf of Fair Helen does well at the back of a bouquet, but it is too powerful and terebinthine for some people. Jasminum grandiflorum makes an excellent climber in the conservatory, but is seldom to be met with as such. J. stellatum, ligustrifolium, biflorum, with the varieties of Sambac and some others, make good forcing plants for rooms, &c.; for this purpose their climbing habits should be checked by under potting, and by pinching off the points of the shoots when the parts are young; they will then form bushy heads and flower more freely.

Pits, &c.—The forcing-pits should now be in full operation to keep up a stock of flowering plants for the rooms and conservatory through the winter. All hardy and half hardy plants brought in for forcing should have a temperature at first of from 50° to 60°, to be increased up to 75° when more advanced; but as many plants will not bear such heat, and others will not do much good without a high temperature, there should be two distinct pits or divisions at least for this purpose. In large establishments many plants are forced in the stoves and early vinery; but to allow the management of these houses to be altered in any degree to suit forced flowers is no economy. However, there are many things that may easily be forced in this way. With a large stock of Chinese Azaleas some of them may be had in flower from Christmas till the end of May; the first lot should now be brought to a heat of 50°, or even 60°, if they were well forced last April, and if their flower-buds are prominent. The double Roman Narcissus is the first of the forced bulbs, and where they have been potted early in August they will now stand 60° of heat, and will be in flower by the end of this month. Hyacinths, that have also been potted before the middle of August, will now endure a good heat, and bloom early, without at all injuring the bulbs; whereas late potted bulbs are ruined if forced early; not but that they will flower well enough, but the bulbs are of no use afterwards.—*D. B.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Department.

If there is one thing more than another which contributes to the high keeping of this department of a gentleman's establishment, it is finely-kept and perfectly smooth *turf*. So fastidious am I in this particular, that the gayest flowers, let them be ever so well managed, would not please me, if the turf which surrounded them was in any way defective—in truth, it is impossible to produce a harmonious whole if the turf which surrounds the groups of flowers is not in every respect perfect; and for this reason, at this season I make it a rule to reinstate every foot of bad turf that can be found in any part of the grounds. This is unquestionably the best season to lay turf, except under large trees, and in such situations it is better to delay it until spring, or the constant dripping from the rains of winter would materially injure it. However, fine turf will not please if it is not level: smoothness, according to Burke, is a concomitant of beauty; and therefore, for a lawn to be beautiful, it must be level, smooth, and perfectly clean. And there is yet another essential element of high keeping which should be attended to, where necessary, at this season; and that is, the levelling and adjusting to one regular height the edgings which surround the walks and borders. These two things, combined with good walks, will give a garden a highly-finished appearance, even though there be not a flower in it; and in a neglected or badly managed one, will do more to improve it than any other thing that I am aware of. Let, therefore, those who wish to improve the appearance of their grounds attend to these suggestions; and if they are obliged to employ a few extra hands to execute the work, they will have the gratification of giving employment and improving their grounds at the same time.

Herbaceous borders may be now regulated, reducing the large plants considerably, and preferring rather to leave the outside than the centre of the plants. Where the plants have not been regulated for some years it will be best to take them all up, manure and trench the border, and replant them properly.—*W. P. A.*

IV.—PINERIES, VINERIES, &c.

Pineries.—In the management of the Pines intended for fruiting next season, it should be a principal aim to keep the roots in as equable a state of temperature and dryness as possible. Variations in either of these points are most injurious during the dull months of winter, when we are deprived of so much of the heat of the sun. Means should be taken to do away with the necessity of watering the roots of Pines in the winter season, and for this end nothing more is necessary than to cover the surface of the soil in the pots about two inches thick with leaves or tan, taken out of the body of a pit where they have heated and been partially decomposed. It will be found in the spring that the roots of plants so treated have suffered less (if, indeed, they have suffered at all) than those which, owing to the surface being exposed to the air, have required water several times in the course of the winter.

Vineries.—Whenever a house is cleared of its crop it should be immediately put into working order again. The washing of the glass, making all necessary repairs, painting, and remedying defects, or making alterations in the heating apparatus, should all be done as soon as possible, not only that the house may look more creditable, and be in readiness for the next season, but also that decay may be prevented from spreading. All these matters should be conducted on the principle of the old proverb, "A stitch in time saves nine."

Peach-houses.—Wherever, owing to an over-luxuriant state of growth, the trees in the late houses are not ripening their wood well, they should be assisted by making slight fires during the day, when the weather is clear. When the leaves are all fallen, let the trees be pruned, washed, and trained, as recommended in former Calendars.

Strawberries.—It is now time to think of protecting Strawberries in pots and boxes from rain, and where there are many pots to be kept through the winter the following is a good way of storing them. Choosing a sheltered place, which, however, must be open to the south, drive in a line of stakes of convenient height and length, according to the number of plants to be stowed away, and in the direction of east and west. Nail some old boarding to these stakes, and then spread a layer of dry ashes, about three inches thick and 2½ feet in width, on the south side of the boards. On this lay a row of pots on their sides, with their bottoms towards the boards, and their rims

parallel with the outside of the layer of soiled. Fill in well between the pots, and also between the bottoms of the pots and the boards, with soil. Then proceed with another layer of ashes, and then another row of pots, and so fill you come to the top of your boards, placing every row of pots a little nearer to the boards than the row below it, so that when finished the whole may present a sloping surface to the sun. The whole must then be covered with mats, in the form of a coping, of sufficient breadth to protect the lowest row of plants from shining rains, and with a slight inclination to the back, so as to throw the rain off to the north side. If care is taken that the ashes be quite dry when put in, frost will have very little effect on the pots. This is a plan very similar to what is in use in many places, and one which we find to answer very well.‖

Rectify.—In last week's Calendar, under "*Pinetum*," line 7, for "The night temperature should not *exceed* 60°," read "The night temperature *for the young stock* should not exceed 60°;" and under "*Exeter*," line 9, for "If it was done last month," read, "If it was *not* done last month."—*G. F.*

V.—HARDY FRUIT AND KITCHEN GARDEN.

Trees.—Pay every attention to getting the wood of Peaches and Apricots well-ripened, by exposure, shortening, &c. Prepare for planting all kinds of fruit trees, by getting the ground in good order and suitably prepared for the different kinds. The sooner the trees are planted the better, as they will then make fresh roots before winter. In all cases, but more especially on cold stiff soils, it is advisable to plant on hillocks, a foot or eighteen inches higher than the surrounding surface. The trees will not grow so fast in consequence, and will require more attention in summer for mulching, but they will form short-jointed, well ripened, fruitful wood, which is the best preventive of canker, gum, &c., and will save the labour of resorting much to root-pruning.

Roots.—No opportunity should now be lost for getting Potatoes, Parsnips, Carrots, Beet, &c. out of the ground, and stored up in a dry condition. Potatoes may either be kept in narrow pits, with a little dry earth sprinkled among them, or in airy dark sheds, according as it is desired, either to have them with the flavour and consistence of fresh lifted Potatoes, or in as dry and mealy a condition as possible.

Routine.—We have seldom had a better season for late Vegetables. Full Cauliflower before it gets too large, and prepare a shed or pit to plant a quantity on the first approach of frost. French Beans are still doing well with a slight protection at night. Remove those growing in pots, where they can have the protection of glass; lay down strong growing Brocoli, so that the stems may be covered with earth; plant out Lettuces and Endive for spring use. If planted on the sloping sides of wide ridges they will stand better, damp being quite as destructive as frost. Take the precaution of securing a quantity either in pits or frames, or have the means of protection in readiness. Remove the leaves from Rhubarb and Seakale, that you intend forcing very early, and keep a look-out for slugs and weeds, both of which will be troublesome after these rains.—*R. F.*

VII.—COTTAGERS' GARDENS.

The beauty of most of the plants which enlivened the flower-border with gay blossoms in summer is now nearly over; all that remain to cheer us at this season are some late flowering Phloxes and the varieties of Chinese Chrysanthemum, which, in fine autumns like the present, are very ornamental, when tied up so as to show their flowers to advantage. Cut down the stems of all plants that have done blooming. The roots of Dahlias will survive moderately severe winters in the open ground, if protected by a covering of dry litter or Fern; but they do not flower so well, and on that account it is better to take them up as soon as their leaves and flowers have become blackened by frost. Leave about 6 or 8 inches of the stem attached to the tuber. They may be preserved over winter in any dry cool place where they will be free from frost. When the flower-border is dug and put in order for the winter, which should be done about this time, or as soon as the leaves have fallen from the trees, any plants that have become too large should be reduced, and such as are not wanted may be removed altogether. Let decaying leaves and other refuse be taken to the manure heap, which should be turned over occasionally, and covered in with soil: any drainings from it should not be allowed to be lost; they should either be thrown back over the heap or they should be made available for some useful purpose. As was recommended last week, as soon as the leaves are off fruit trees, and the ground sufficiently moistened, transplanting, where it is wanted, may be proceeded with. Advantage should be taken of dry weather for earthing up Celery. Late Pears and Apples should now all be got in without delay.—*J. M'H.*

State of the Weather near London for the week ending Oct. 12, 1844, as observed at the Horticultural Garden, Chiswick.

Oct.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Frid.	11	29.741	29.623	58	52	55.5	S.W.	—
Sat.	12	29.781	29.580	64	56	60.5	S.	.08
Sun.	13	29.469	29.217	65	48	56.5	S.W.	.37
Mon.	14	29.322	29.087	63	44	53.5	W.	.42
Tues.	15	29.648	29.040	62	42	52.0	S.W.	1.64
Wed.	16	29.686	29.480	60	45	51.5	W.	.60
Thurs.	17	29.630	29.235	58	37	48.0	W.	—
Average		29.591	29.311	58.1	44.1	52.2		2.84

Oct. 11 Heavy dewy sultry; appendagly fine; clear.
— 12 Foggy; very fine; becoming cloudy at noon; showery.
— 13 Cloudy; clear and fine at intervals; densely clouded; lightning and rainy night.
— 14 Dusky clouds and showers; heavy rain; cloudy at night.
— 15 Heavy showers throughout the day; constant and very heavy rain at night.
— 16 Rain; showery; fine afternoon; clear.
— 17 Fine with clouds very fine throughout; very clear at night.
Mean temperature of the week 0.6 deg. above the average.

State of the Weather at Chiswick during the last 11 years, for the ensuing Week ending Oct. 26, 1844.

Oct.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds:						
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sat. 20	59.5	40.0	49.7	5	0.23 inch.	1	2	—	2	1	3	1
Mon. 21	59.0	40.2	49.6	6	0.22	1	2	—	2	1	3	1
Tues. 22	58.9	40.4	49.6	10	0.20	—	1	—	2	2	4	2
Wed. 23	57.9	38.1	48.0	5	0.18	—	1	—	2	4	4	1
Thur. 24	58.3	40.6	49.4	7	0.20	1	1	—	2	3	3	2
Fri. 25	58.8	39.2	47.5	4	0.12	1	2	—	2	2	3	2
Sat. 26	54.7	36.0	45.3	6	0.32	1	2	—	2	2	3	2

The highest temperature during the above period occurred on the 21st, 1852—therm. 72°; and the lowest on the 26th, 1841—therm. 26°.

Notices to Correspondents.

Bees.—*K. B.*—We have given as much information about Bees in the early part of this year that we must refer you to former Numbers for the information you search for. If that is not sufficient for the purpose, you had better study some treatise on bee management, such as Bevan "On the Honey-Bee."

Books.—*A. S.*—We are unacquainted with Wahlenberg's "Climates of England."——*F. T.*—Read De Candolle's "Physiologie Végétale," and either Endlicher or Schleiden's "Grundzüge der Botanik," or Adrien de Jussieu's "Cours de Botanique."——*H., A Young Gardener.*—Ingram's edition of Malcolm, Lindley's "School Botany" to begin with, and then his "Elements of Botany."

Fruit-trees.—*J. P. W.*—In the present season a considerable number of both Apples and Pears have rotted on the trees before the period of maturity for gathering. The decay has ensued from the puncture of insects.

Gardenias.—*Sigma.*—These will live in a greenhouse, or even out of doors in summer; but to have them in good health and beauty you must give them a temperature of about 60° in winter and spring, until the flowers are forming; remove them then into the greenhouse, and they will remain in beauty during the greater part of the summer.‖

Heating.—*W. H.*—Our experience is not favourable to earthen pipes for hot water: the joints break and let out the water. Neither do we advise you to use any kind of porous hot-water apparatus for pits in which plants are merely to be wintered; they are all too damp. The cheapest mode of keeping out frost from such places is either to make the walls of earthen banks and to cover them with hurdles and straw, or to build a common smoke flue, which might be constructed with 6-inch circular chimney-pots. We have already given some hints about very cheap boilers, to which we must beg to refer you. Of earthen boilers we have no knowledge. Good mortar answers perfectly for jointing common smoke flues. You will see that several of your questions are unanswered, because we do not recommend hot-water gutters or porous pipes for your purpose.——*Vapor.*—If you are inconvenienced by the escape of offensive gas from your Arnott stove, the fault lies either in the construction of the stove, or your management of it. Coke is the best of all materials for such a contrivance, unless you can get Anthracite free from slates, which we can never do. Perhaps your draught is bad; perhaps the joints of your stove are open; perhaps twenty things, which nothing but experience and actual inspection can remedy. We have used an Arnott heated by coke, for some years, without any difficulty when we manage it ourselves.

Insects.—It is particularly requested that specimens of the insects, with the affected leaves, &c., as well as queries, may be sent to Mr. Curtis, without which he cannot undertake to return answers.——*D. L.*—If you will send us the insects attacking your Silver Firs, and, if possible, one or two small portions of the parts inhabited by them, we will answer your questions. *R.*——*A. Alves.*—Thanks for your data regarding the Cherry-sing caterpillar. The minute flies are a species of Barbarus (vide Curtis's "Brit. Ent.," fol. and pl. 459). Did you breed them from the Onion roots? The large caterpillar will change to the pale tussock moth, called Laria pudibunda. *R.*——*L. R.*—Your Pears appear to be affected by insects, but we could find none in either of them. Should you be able to detect any maggots in the fruit, and will forward them to us in a quill, we may be able to advise you regarding a remedy. *R.*——The scale insects infesting the Rafflesia are allied to the Coccus Hesperidum. If you will turn to an article upon those affecting the Orange-trees, at p. 427 of this Journal, you will gain the best information we can give you upon this tribe of pests. The other specimens are also female Cocci, and those which you took for ants' eggs are the ova of these scales, which are nearly related to the Coccus Vitis. If they appear in any numbers the twigs should be cut off and burnt. *R.*

Names of Fruits.—*J. P.*—1, Court of Wick; 2, Easter Pippin; 4, Beachamwell; 5, Braddick's Nonpareil; 6, Fearn's Pippin; 7, Kirke's Lord Nelson; 9, Hollandbury; 10, Minchal Crab; 11, Gansel's Bergamot; 13, Crassane; 15, Napoleon.‖——*A Devonian.*—1, Belle of Bonne; 2, Uvedale's St. Germain; 3, Beurré de Capiaumont; 4, Glout Morceau; 5, Easter Beurré; 6, Catillac; 7, Chaumontel; 8, Ghogil.‖——*J. F.*—1, Vicar of Winkfield; 2, Beurré Diel; 3, Glout Morceau; 4, Passe Colmar.‖——*Sarah S.*—1, Court-pendu Plat; 2, Pearson's Plate; 3, Dumelow's Seedling; 4, Court of Wick; 5, Golden Reinette; 7, Beauty of Kent; 6, Court-pendu Plat.‖——*D. J.*—1, Yorkshire Greening; 4, Bedfordshire Foundling. Pears: 1, Comte de Lamy, a very fine specimen; 2, Bacon's Incomparable.‖——*C. C.*—3, Duchesse d'Angoulême; 4, Brown Beurré; 5, Passe Colmar; 6, 17, Easter Beurré; 8, 16, Bezi de la Motte; 9, 10, 13, 14, Glout Morceau; 19, Henri the Fourth; 10, Beurré Diel; 20, St. Germain.‖——*J. G.*—1, Ferro's Pippin; 2, Golden Pippin; 1, Brown Beurré; 2, Winter Nelis; 3, Beurré d'Aremberg; 4, Chaumontel.‖——*W. H. H.*—A wild purple Plum‖——*S.*—1, Brown Beurré; 2, Urbaniste.‖——*C. B.*—1, Kirke's Lord Nelson; 2, Parry's Pearmain.‖

Names of Plants.—*Anon.*—Gesnera discolor.——*F. W. W.*—A withered flower of some Hedychium.——*A. C.*—Trifoliacum dactyloides.——*A. M.*—1. A Gonolobus, apparently hirsutus; 2. Dracæna australis.——*H. W.*—1. Mahernia incisa; 2. Gompholcarpus frutiosus. They have no English names worth giving.——*R. G.*—Cattleya granulosa.——*E. C.*—You now see that we are right; for you cannot doubt that the leaf you have had from India is that of the same tree as your false Banyan.——*H. C.*—Oncidium Forbesii.——*J. P.*—Diplotaxis tenuifolia was once called Sisymbrium tenuifolium; Nicandra physaloides, once called Atropa.——*E. T. O.*—Probably Podocarpus excelsa.¶

Orchidaceæ.—*Orchis.*—An Epiphyte house should not be kept wet in winter. At that period the air should be comparatively dry; otherwise when are your plants to rest? There is no work on their special management except Mr. Lyons's, which, we believe, is not sold. As to woodlice, a score toads will soon rid you of them. We will take your concluding suggestion into consideration.

Pears.—*S.*—We have no record of the Beurré Diel having been grown to a larger size than the specimen you sent, which was 14½ inches round, and weighed 18½ oz.‖——*A. B. C.*—Of the Pears you enumerate, the Glout Morceau is the most proper for a south wall, if you wish fine fruit about Christmas; if you prefer a later supply plant the Beurré Rance.‖

Pelargoniums.—*Amateur.*—Take up your seedling Pelargonium and cut it back in the ordinary way; pot it in a mixture of sandy loam and peat in equal proportions; then place it in the greenhouse for the winter, and keep it rather dry. Make the tops into cuttings, and put them into small pots filled with a mixture of peat and silver sand, putting three or four cuttings round the side of each pot; afterwards place them in rather a dry airy part of the greenhouse, where they will be secure from frost. They will be fit for potting off singly in spring.¶

Pine-apples.—*A Constant Reader.*—To prefer eating the fruit in a green state is not common.‖

Roses.—*A Subscriber.*—The following will answer your purpose, viz.:—Aimé Vibert, Noisette, Corymbiflora, Jaque Desprez, Triomphe de Plantier, Madame Desprez, Bourbon, and Phœnix.‡

Seeds.—*A Constant Reader.*—Pack your seeds in canvas bags, and take care that they are kept in a cabin during the passage.

Seedlings.—*W. G.*—Your violets, having been packed loosely in a tin case, along with a piece of ripe Pear, have been pounded to pieces by the shaking of the post-bags. As far as we can judge from the fragments, the variety does not appear to be striking.

Transplanting.—*X. Y. Z.*—Move your Evergreen Oaks in the course of November. Dig a large hole; take care that its roots are saved as much as possible; throw well pulverized soil about its roots; do not tread it much down, but manage the hole with water so as to puddle it; secure it firmly to its place, so that it may not be rocked by the wind; and you will have done all that prudence would suggest. The quality of the soil does not much matter, if it is neither wet nor chalk.

Weeds.—*A Constant Reader.*—Poisoning weeds on a lawn is a task, if there is much of it, without doubt; but it is the best way with which to plough it up, sow the ground, and so renew it with the following grass-seeds, viz.:—Cynosurus cristatus, 4 lbs.; F. tenuifolia, 4 lbs.; Agrostis stolonifera, 2 lbs.; F. duriuscula, 4 lbs.; Festuca ovina, 4 lbs.; Lolium perenne, 4 lbs.; Poa nemoralis, 4 lbs.; Trifolium repens, 1 lbs., and T. minus, 2 lbs. These mixed together will be sufficient quantity to cover 1 acre of lawn closely in a short time.‡

Yellow Noisette Rose.—*Amateur.*—To flower this attend to the growing and perfecting the young wood during the previous season. Want of attention to this no doubt has been the cause of your blooms not expanding. The best way to proceed with your plants is, after they have done blooming, to shift them if in small pots into larger ones, but if otherwise, only remove a portion of the top soil and replace it with some very rich compost, then put them into a close pit, and keep them rather warm and moist, in order to cause them to grow vigorously; take great care, however, that they do not become drawn or get infested with insects. When they have made their growth harden them off (by degrees) by exposing them to the open air, and give them less water; afterwards place them in a northern aspect, and allow them to become rather dry, in order that they may ripen their wood; then rest the plants, and afterwards put them into a cold pit for the winter; give them but little water for the first month; but afterwards increase it by degrees; and when you take them into the greenhouse let them have but little heat or moisture, for a week or two. Six good Roses for Pots are Bougère, Fabvier, Napoleon, Devoniensis, Blair Sauvage, Bertiana.¶

Miscellaneous.—*J. Abell.*—The last week in this month, or the first in next, is the best time for moving Deciduous Trees. Those which lose their leaves earliest should be moved first.——*H. C.*—A Carnation is not a Picotee, but a distinct variety.——*F. T. O.*—You will find some rustic cottages at Ravenscourt, near Hammersmith; but if you wish to see them in perfection, you should visit those erected by the Duke of Devonshire, at Edensor, one of the entrances to the Park, at Chatsworth.——*A Constant Reader.*—We are unacquainted with the Patent Portable Suspension Stove. Any stove will do what you want, if it is not too small.——*Pinus.* Oak-bark decays very slowly, and is a very long time before it is fit to be mixed with soil. It is more apt to poison land than to improve it.——*W. Wood.*—If you wish to know how Botany can be rendered poetical, you should read Darwin's "Botanic Garden," and the "Loves of the Plants." We cannot compliment you on your success in attempting to do what is not worth doing.——*Q.*—We cannot recommend nurserymen.‡——*H. G.* will find information respecting the management of Gladioli given at p. 115, 1842. The cultivation of the different varieties of Lilium lancifolium is also mentioned at p. 591 of the same year.‡——*T. P.*—Keep your Fuchsias as quiet as you can in winter, by withholding water and keeping them cool. They must not, however, become absolutely dry. Do not cut them down until spring.‡——*S. S.*—Yes.——*Medicinals.*—No. I——*H.*—We will inquire about Burckhardt's "Quince," if you will give us the page of his work in which it is mentioned.——*Umbra.*—You must be joking. If in earnest, we can only say that we have no art to infuse life into dead things. The only means you can employ for covering your trees in winter with green leaves, is to induce fresh Ivy to run over them. That may, with care and skill, be accomplished in a few years. Ivy-leaf of another kind we cannot offer you.——*A Tourist* must give his name and address. We cannot insert statements about crops from persons we know nothing of.——*G. H.*—If you will send your address, we will answer you privately.——*R. F. B.*—We do *not* recommend you to emigrate to the United States, unless you are without an alternative. It is of no use to acquire property if it is not secure; and who can tell what will happen in the United States? If you do go, you had better pack your trees in bog-moss in a wooden chest. It is of no use going to the expense of Ward's case. We are unacquainted with the prospects of Adam's County.——*M. U.*—We will examine your communication with pleasure, and try what we can do—duly mulled it *shall*. We are obliged by your suggestions, which are sent to the Agricultural Editor.——*Arrow.*—Nonea roses is not much worth growing. Morlandia arvensis is a violet-flowered herbaceous plant, something like Honesty. The three handsomest Godetias are Lindleyana, viminea and quadrivulnera, provided the latter is grown in very poor soil. The Pea you mention is most probably the purple-podded, fancy.——*Dubious.*—Coral is not a plant, nor the production of insects, but the calcareous crust of marine animals called Zoophytes, whose nature you will find described in the "Penny Cyclopædia," or any such work.——*W. P., P.*—You will find a plan of a frame that will possibly suit you, given at p. 428, vol. 1843. If you build a span-roofed pit for winter work, it should face north and south.‡——*Agrestis.*—We believe the real wax and hardest of all woods to be Lignum-vitæ, the timber of Guaiacum officinale.——*A Subscriber.*—It will not harm your plant of Aloysia citriodora to divest it of its leaves now, for the purpose of drying it.——*J. M.*—In order to make your young plant of Goldsmithia glomerata bloom, you must give it plenty of light and heat.‡——*Katharine.*—Solidago pulcherrima is one of the latest plants in bloom; it is very pretty, but it is generally rendered unsightly by frost and wind; Aciis (Leucojum) trichophylla is tender; it is not a bee bleacher: most of the early flowering kinds of Allium are very ornamental. Bulbine bisulcata is a greenhouse bulb of little beauty. Tangier Pumitory is unknown to us. Hyacinthus pumilus, probably Scilla bruinlii of Haworth, is a very doubtful species. Cornelian Cherry (Cornus mascula) is a shrub, or small tree, producing numerous small yellow star-like flowers, in February, before the leaves. Ornithogalum fimbriatum is not very ornamental; it flowers in March, if planted in a dry situation. Corydalis bracteata is very pretty and dwarf. Leucojum hiemale is also very pretty. Ophrys vernus is handsome. Erica herbacea and carnea are very pretty in winter. Colchicum chionense is unknown to us. Roman Narcissus requires a dry, warm situation, and protection from wet in winter; it flowers in March. The best Roses for purging down are the less rampant growing kinds; much, however, depends on the time when the kinds are wanted to bloom; for a long continuance, China Roses are the best; for summer, Mosses are best; and for autumn, the Noisettes. In pegging them down nothing more is required than to make the soil rich with rotten dung, and to fasten the shoots down with strong pegs, about one or two inches long.¶——*Reverians.*—All the back Numbers for this year may be had.

SEEDLING FLOWERS.

Fuchsias.—*A. B.*—The seedling No. 1 has not surpassed the sepals; their simple clinging round the corolla, if this be the permanent character of the flower it is valuable. But the larger variety shows is nothing to distinguish it from many others.——3 seedlings, 39, 40, 49. None of these flowers possess sufficient merit to send out; they are pretty, but not equal to many light varieties exhibited this season.¶

Pansies.—*J. C.*—Your flower *Beauty* was totally destroyed by coming crushed in the box: it is a large flower of good form and substance, but the colour in the eye is not sufficiently uniform, and runs too much into the eye.——*Amateur.*—The bloom sent is a young and imperfect one. It is crumpled in some way, and will no doubt come larger and better; it is a promising flower, round, and of considerable substance.¶——*C. N.*—Your seedling is a large and fine flower, having a small white centre, with a well-marked eye, the rest of the flower uniform light mulberry colour; it appears to want a little more substance for so large a flower.¶

Reseedas.—*A. B.*—Your seedlings, though pretty, are not equal in size or marking to many varieties now becoming this season. Those which approach a yellow colour, as No. 2, we recommend you to save seed from, as it is probable some striking varieties may be obtained.¶

*** As usual many communications have been received too late.

SEED WHEAT.—Donnington, near Stow, Gloucestershire.—From the number of testimonials received of the extraordinary crops produced both this year and last, ROBERT BEMAN is induced to offer to the public his Red Cluster Wheat, which both seasons has produced 60 bushels per acre in several instances; and, having been grown upon old turf, and hand-picked before it was planted, it is beautiful seed, and perfectly clean. Price 7s. 6d. per bushel.

R. B. has likewise a small quantity of the celebrated Whitfield Red Straw White Wheat to dispose of. Price 8s. per bushel.

Orders, accompanied by a remittance or good reference, punctually attended to. Sacks marked 1s. 6d. each.

The Agricultural Gazette.

SATURDAY, OCTOBER 19, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Tuesday, Oct. 22.—Agricultural Imp. Soc. of Ireland.

Thursday, Oct. 24.—Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

Oct. 21.—Woolpit, Fairford.
Oct. 22.—Framlingham, Rayleigh.
Oct. 23.—Richhill-Castle, Down Ferry, Binfield and Walsham.
Oct. 24.—Debenham, Stoke Ferry, Hadleigh.
Oct. 25.—Gloucester.
Oct. 26.—Chesterton, Wickham Market, Yoxford.

WITH regard to the best practical method of effecting the general introduction and promoting the beneficial operation of the ALLOTMENT SYSTEM, we deem it desirable that the inhabitants of every rural parish should carry it out among themselves. The acquaintance which they may be supposed to possess with their own circumstances and affairs constitutes them the proper agents in the matter. Wherever it is proposed to introduce the system, a meeting of the inhabitants should be called, and a small committee appointed for the purpose.* This committee should obtain a list of such cottagers resident in the parish as are desirous of renting land, together with a detail of the circumstances of each applicant, stating his age, residence, the number and capabilities of his family, the name of his employer, the name of the owner of his cottage, the size of his present garden, the quantity of any land he may elsewhere occupy, the names of owner and occupier of land adjoining; with any other information that may be needed.

These particulars having been ascertained, it will generally, perhaps, be found best to appoint a sub-committee of about three individuals to superintend the carrying out of the system, subject to the supervision of the general committee. This sub-committee in forming their plans should lay it down as a general rule, to be deviated from as little as possible, that every allotment should be near to the cottage of its occupier. This is of great importance; for if it be far off much time will be lost in going to and from it, the manure cannot be so easily made available for it, and it is not, as it should be, under the tenant's eye. The disadvantages of such an arrangement are obvious.

The land should of course be obtained of as good a quality, and at as moderate a rent as possible. It should, however, be borne in mind that the system is not likely to be established on a wide and permanent basis, unless it is made the interest of *all parties* connected with it to diffuse and uphold it. The landlord, therefore, should have such a rent as will remunerate him for subdividing his land, and fencing off the allotments; and such a rent the labourer can very well afford to pay.

In some cases farmers might be induced to sub-let small portions of their fields which might adjoin the cottage of the labourer; and all parish land which can be rendered available for the purpose ought decidedly to be let in allotments.

It will be important for the committee to consider well the position which they shall take between the landlord and the allotment tenant. We think the cottager should hold his land directly from the landlord, and not from the committee. Under such an arrangement every cottager in a parish might become, through the instrumentality of the committee, a permanent occupier of a small plot of ground; the committee might then be dissolved, and the system would work by itself. The committee, therefore, should merely use its influence in procuring suitable land. In some cases, where a number of houses are congregated together, it may be desirable to subdivide a field, the owner of which might object to the trouble of receiving rents from a numerous tenantry. In such a case let a respectable man from among the tenants become answerable for the rent of the whole, collect and pay it in, a small sum per acre being added to the rent of the whole, and allowed him for the purpose of covering his risk and remunerating him. We see no objection to the adoption of such a plan.

The size of each allotment will of course vary with the circumstances of the case. Regard should be had to the age, strength, and leisure of the man, the number and age of the children, &c., and the size of his allotment should be proportioned to the capability of cultivating it which he is thus found to possess. We believe that an error is frequently committed in making these allotments too small. An able-bodied man, with a wife and four or five children, can easily manage half an acre of land, and in some of the cases which we have quoted much more was successfully and beneficially occupied.

We now come to the consideration of a point on which we believe erroneous views are frequently entertained—we allude to the regulations under which the allotment tenant should be placed. We think that the sole object which we should attempt to attain directly by means of these regulations should be the proper cultivation of the land and the punctual payment of the rent. We would not enforce any particular rotation of crops, but would merely stipulate, that a certain portion of the produce should be consumed on the land, and that the manure produced should be returned to it. Every tenant ought to be sure of receiving the value of any improvements he might effect in the land by deep digging or manuring, in the event of his being obliged to leave his allotment before reaping the fruits of them. A time for the payment of the rent should be fixed, and any minor regulations adopted which the special state of the case might require; but beyond this we should not be disposed to go. We would not attempt (as is frequently done) to enforce regulations as to general moral conduct. If a man were a good *tenant*, he should hold his allotment, if a bad one, he should lose it; and having provided for this, we would leave the improved circumstances of the individual to accomplish the change in his moral character which they are proved to be capable of doing. But we cannot believe that it is desirable to impose regulations on him *as a tenant* which it does not fall within the province of *the landlord* to enforce. Whatever may be the character of the labourer, he is entitled to the means of supporting himself and his family. To provide him with those means is to favour his moral improvement—to withold them, is to plunge him into the abyss of pauperism or of crime.

Since the allotment system has been so abundantly proved to be the fertile parent of such great advantages to every portion of the community, and since it is a system so easy of introduction everywhere, may we not call on every individual connected with the land of this country, as owner or as occupier, to promote its general introduction? Humanity on the one hand, and necessity on the other, combine to urge attention to the condition of depressed labourers, and the call of each will become louder and louder till their demands are fairly considered and met.—*F.*

* The introduction of the allotment system wherever it is desirable, is now provided for by the law of the land. An Act introduced by Mr. Cowper and Mr. Miles, and passed in the last session of Parliament, enacts that in any parish where it may appear desirable that the provisions of the Act should be adopted, it shall be lawful for any three inhabitant householders to deliver a requisition signed by them to the officiating Minister of the said parish, requiring him to call a meeting of the owners and occupiers of land, and of the inhabitant householders of the parish, to decide upon the adoption or non-adoption of the Act. This Act afterwards provides for the election of Field Garden Wardens, to whom the future proper conduction of the matter is confided.

WITHOUT entering, at present, into any detail on the most economical method of removing and consuming the various green crops now cultivated by the farmer, we have to submit to our readers the following figures, descriptive of a good plan of harvesting them.

Fig. 1.

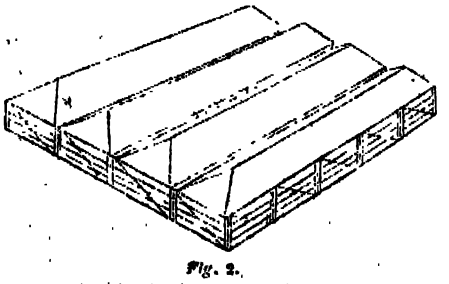


Fig. 2.

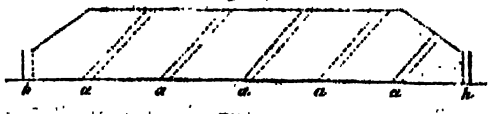


Fig. 3.



The first of these is a drawing in perspective of a series of heaps, of which Fig. 2 is the longitudinal, and Fig. 3 the transverse vertical section. They are made in the following manner:—Two rows of hurdles are placed upon a firm piece of ground, parallel to one another, and 9 feet apart. The interval between these is filled with roots, the carts bringing them from the field being backed between them, and tilted up at the proper place. The roots are piled up above the hurdles in a ridged or roof-like form, and are afterwards covered with straw, roughly drawn out as thatch, which is kept in its place by the weight of long poles resting upon it. At intervals of two or three yards faggots are placed in the centre of the heap, inclining backwards, and reaching from the ground to the roof (see *a, a, a,* Fig. 2). These act somewhat as chimneys, and facilitate a due ventilation of the heaps, thus hindering any tendency to heating or putrefaction in the roots.

When one heap is completed, another is built within a foot of it, the passage left being intended as a channel both for the egress of the water which drops from the thatch, and for the circulation of air. No security against frost, at the sides of contiguous heaps, is required, further than that which is afforded by the interlocking of the bushy eaves of their respective roofs. When, however, a series of heaps has thus accumulated, as in *Fig.* 1, a rough dead-wood hedge should be constructed around them (see section in *Fig.* 2), and the space between it and the hurdles, which may be 12 or 18 inches, should be loosely filled with straw.

Last winter, the weather during which, however, was not very adverse to the successful preservation of roots, we kept upwards of 1200 tons of Swedes, Carrots, and Mangold-Wurzel in this way, without losing any considerable portion by putrefaction. We shall take an early opportunity of returning to this subject.

THE ANOMALIES OF AGRICULTURE.

(*Continued from page* 690.)

LET those to whom this seems "a marvel and a mystery," and to whom the contemplation of the subject, from this point of view, is comparatively new, read a few pages of Evelyn's "Terra," and see the sort of stuff that passed for science with the literati of the Royal Society of his day; take this passage as a specimen.

"Those who have written 'de arte combinatoriâ' reckon up no fewer than one hundred and seventy-nine millions one thousand and sixty (1) different sorts of earth; but of all this enormous number, as of all other good things, they do not acquaint us with above eight or nine eminently useful to our purpose," &c.; and a little further on, in informing his "acute and noble" audience, where to find the best soil on their estates, he continues: "My lord Bacon directs to the observation of the rainbow, where its extremity seems to rest, as pointing to a more roscid (?) and fertile mould; but this I conceive may be very fallacious, it having two horns or bases which are ever opposite"——!

Such is the direction of the immortal author of the "Novum Organon"!—Such the reply and criticism of the most talented and admired biographer, physiologist, scholar, and naturalist of his day—John Evelyn! Come we now to the next epoch—still amid the annals of the Royal Society—the reading of Sir Humphrey Davy's lectures on Agricultural Chemistry, and from thence to the appearance of Liebig's works. Let it be borne in mind, that from the publication of the "Terra" papers to the reading of Davy's lectures, not more than 135 years had passed; from thence to the translation of Liebig's "Organic Chemistry of Agriculture and Physiology" (or, as the work might indeed with emphatic simplicity be called, *Quantitative Physiology*), there had elapsed but 15 years. Compare this period with that which has elapsed since "Adam delved and Eve span;" or take out the last five years alone, since the quantitative method of Liebig and the "practice with science" of the Royal Agricultural Society have shed their joint and kindred influence upon the art of tilling the earth; and then let us compare, if it be possible to compare, the growth of practice with the growth of science; and judge, if it be possible to judge, what the investigation of the physical sciences has done, how long it has been about it, and what, at an equal ratio of progress, it yet may do for that art which its empirical professors believed to be subject to no rules but those of their own ignorance, and, as ever was the case, disclaimed the infant science until in a few short years it grew to be a giant, and disclaims them. It is indeed a matter of almost startling curiosity, even to those who feel—what perhaps no one ought to feel—only a remote interest in such a subject as Agriculture, to mark its present existence on the face of—I will not say the earth, but I will say a single county—nay, a single parish or estate, of a country even the first in arts and civilisation, and knowledge and wealth, upon the globe. Look on this side of the hedge, you see every new appliance and discovery put into practice; the soil dry, deep, well-veriised, and rich, the produce nearly doubled, the very climate improved, and each element made a friend of, as its Maker intended, instead of being an enemy, through the sloth and negligence of man. Look now upon the other side of the same hedge, but on another farm,

"Like a mildew'd ear
Blasting his wholesome brother!"

The soil cold, dank, and unwholesome, with stagnant moisture, coarse in texture, shallow, foul, and poor; the produce scanty, starved, and blighted, the victim of every change, instead of the grateful recipient of each in their genial turn. Without moving a step the observer may

—— "look now upon this picture, now on this,
The counterfeit presentment of two brothers!"

Agriculture as it was, on the one hand; agriculture as it is in some places, and should be everywhere, on the other. It is a view which, whether regarded physically or morally, no one perhaps ever saw, or ever will see in such powerful contrast and relief, as that in which it is

presented to us. We enjoy a peculiar privilege—that of living in what geologists would call a Transition Period. We have, on the one hand, the self-satisfied and perfectly unsuspicious ignorance of the old-fashioned practical farmer, as he is now taught to style himself, in our fields: and on the other, the new-born and equally self-satisfied "closet conceit" of the theoretical writer, in our libraries. The man of science upbraids the farmer, because he is not a ready-made chemist, familiarly and practically applying the results of discoveries which the theorist has only just made, and is yet hardly sure of; and the old farmer laughs at the book-gentleman, and asks what he can know about farming? The strife has indeed begun—the strife that never yet was absent from the birth of infant science: for nothing great was ever born without the warning throes of parturition. Let Astronomy, Geology, Geography, Medicine, nay, let the purity of our Christain faith attest that! Can those who read now of conflicts whose very echo has passed away, between the struggling discoveries of master-minds with the prejudices of the age of which they were the pioneers, and usually the martyrs, doubt or wonder that science should be doomed still to encounter every opposition at the hands of those whom it most concerns and will most surely benefit? No! Man is still the same that he ever was: and the very individual who reads, with a glow of triumphant sympathy, of the personal or moral persecutions of a Socrates or a Luther, a Galileo or a Newton, a Columbus or a Park, a Hervey or an Arkwright, little thinks that he is perhaps himself helping to swell the war-cry of human prejudice against some martyr-science of his own day. It would seem as if truth, like refined gold, must go through the furnace seven times heated, before it is duly consecrated for the use and subservience of man. Opposition and prejudice it must encounter: if that opposition be weaker, and that prejudice more transient in our own age, let the praise be given to those whose earlier advance in the great warfare against them has cleared the way for an easier victory and a less hostile reception. It cannot be denied, however, that in respect of the sciences relating to agriculture, discovery has rather suffered from ridicule, neglect, and tardy adoption, than from any very formidable array of actual opposition. Tull and Bakewell were jeered and laughed at, but they survived to turn the tables upon the scoffers; indeed, a recent writer of great ability draws water from the rock, by a somewhat singular congratulation of his cotemporaries that so much should still remain to be done in the appliances of science to the art in question. "Formidable, indeed," says this writer, "would have been our position had the resources of art and science already forced our lands to their utmost capability of productiveness, leaving no alternative but dependence on other nations for the bread of even a small section of our people; but however strange the fact may be, it is no less historically true, that while the manufacturing and commercial portions of our people, by the application of the discoveries in modern science (especially in chemistry and mechanics) to their respective arts, have multiplied their wealth to a degree which it almost exceeds the power of numbers to calculate, the agriculturists alone have, till within a very short period, remained unconscious of the similar advantages that they also might derive from the application of science to the most ancient of all arts. * *

"Happily, the same concentrated force of scientific discoveries and mechanical inventions which had so marvellously augmented the productive powers of so many mechanical arts and manufactures, has also begun to accelerate the wheels of agriculture, clearly and obviously increasing the productive powers of the soil, in a ratio proportionate to the degree of scientific knowledge, and the amount of aid from improved mechanical implements of husbandry, that have been applied to co-operate with human labour; and no theory or prejudice can hope to withstand the influence of this salutary movement.* * *

"Had these improved systems (even as they now exist) been fully carried out over the whole length and breadth of the land, the capabilities of further increase might have been talked of as questionable; but it is notorious that to this hour there has been hardly any adoption of the greater number of these elements of amelioration—especially the fundamental element of thorough-draining—throughout the larger portion of the midland and western regions of our island; and to this very evil of retarded improvement we may now point for ground of hope, and confident assurance, that the supply of food may be increased in a degree fully adequate to any demand that may arise from our so formidably increasing population. The means of amendment are at hand; they are understood and practised by the more intelligent cultivators of districts which are now the most productive, and little more than half a century ago were the most unproductive portions of our island; and the education of the middling and lower grades of farmers in a knowledge of the systems adopted by their more enlightened brethren, seems to be the chief desideratum, in order to effect the general adoption of these systems throughout the empire."—*C. W. H.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

[We beg our readers to correct an error in the last Paper of this series. The average produce of Wheat in East Lothian was there stated to be 2½ quarters per Imperial acre; for this, read 26 bushels per acre.]

Barley.—This grain is not much cultivated in East Lothian, owing to the suitableness of the greater part of the soil for the production of Wheat. Barley, however, is found to pay well when a good crop can be obtained. It is cultivated to a greater or less extent on all kinds of land, and in every part of the county, but it is on the light Turnip soil, and in the upland district, where it is chiefly grown.

The principal varieties of this grain cultivated here are the Scotch or common two-rowed Barley and the Chevalier. The former has been grown in this county from time immemorial, and is considered to be better adapted than any other kind for light inferior soils and elevated situations. It also ripens at least a week earlier than the Chevalier, but the latter yields a much larger produce when grown on good land. The Chevalier is better suited for malting, and is therefore preferred in the low parts of the county, whilst the common Barley is that generally grown in the more elevated districts. The following are the results of an experiment made some time ago by Mr. Hope, of Fentonbarns, with the view of ascertaining the character and value of Chevalier Barley as compared with the Scotch variety. The soil was a dry loam of good quality. The seed allowed per Scotch acre was as nearly as possible fourteen pecks. The field was sown on the 25th March, the common Barley being all cut by the 8th, and the Chevalier by the 12th of August.

PRODUCE PER SCOTCH ACRE.

	Weight per bushel.	qrs. bus. pks.	Total per Acre. qrs. bus. pks.	Straw, per Acre, 16lbs. in the stone.
Chevalier Barley, best	53 lbs.	7 6 1	8 0 1	241
Do. Do. inferior	51	0 2 0		
Common Barley, best	51	6 2 3	7 0 1	208
Do. Do. inferior	48	0 5 2		
Difference in favour of the Chevalier			1 qr.	33

The above experiment, with many others instituted for the same purpose, are given in detail in the nineteenth Report of the United East Lothian Agricultural Society.

Barley is generally sown after a Turnip crop, and also occasionally after a summer fallow. When the Turnips are consumed on the ground by folded sheep, which is a very common practice here, the land is ploughed immediately after the Turnips have been eaten off. This is generally about seed-time, and the Barley is sown as soon as the land is ploughed. But when the Turnips are removed from the ground during the winter and early spring months, the land is ridged up as soon after as it is convenient to do so, in which state it remains until the period for sowing the Barley arrives, when a seed-furrow is given to it preparatory to sowing. The grubber is now employed by many farmers with economy and advantage for the same purpose, instead of the plough.

According to the usual rotation of crops observed throughout the county, Barley is succeeded by Grass, either for hay or soiling as might be found necessary. The seeds of the Clover and Rye-grass are sown at the same time with the Barley, the general practice being, after the seeds of the latter crop have been sufficiently covered, and the surface reduced to a fine tilth by the process of harrowing, to roll the land with a heavy roller, and then to sow the smaller seeds either by the hand or with the broadcast sowing-machine, generally the latter. A single or double turn with the Grass-seed harrows usually completes the process, but a second rolling is frequently found to be necessary on strong clay land, for the double purpose of excluding drought and further reducing the surface if cloddy, as the Clovers are not found to succeed well on strong adhesive soils unless the land has been previously well pulverised and prepared for their reception.

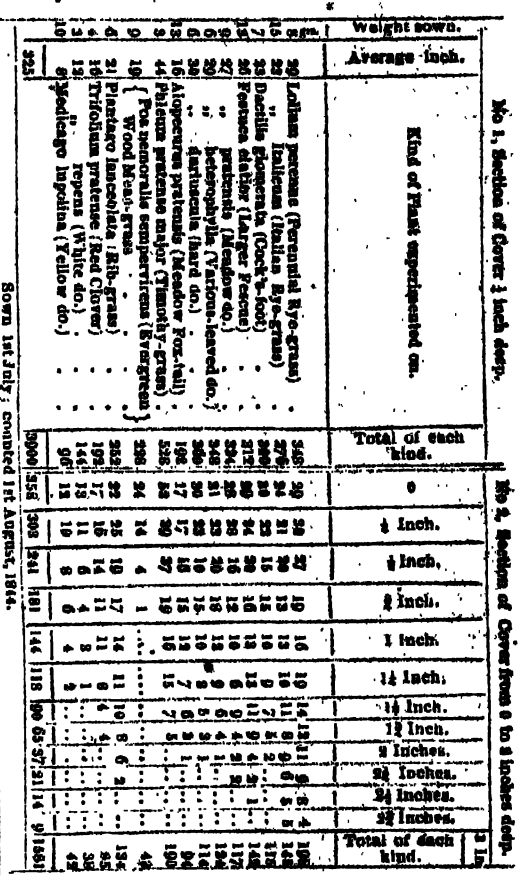
Barley is sown from the last week in March to the middle of May. The quantity of seed varies, according to the quality of the soil and other circumstances, from seven to ten pecks to the acre. Five quarters per acre are regarded as a good crop, although five and a-half and six quarters are often obtained; 35 bushels, however, are reckoned a fair average crop per acre.

The medium weight of the common or Scotch Barley is about 52½ lbs., and of the Chevalier 54 lbs. per bushel; but there are many instances of well hummelled Barley weighing 58 lbs. to 60 lbs. a bushel. Barley is used to some extent on every farm. The hinds receive a certain quantity as part of their gains or wages. In many farms the horses get a boiled mixture of inferior Barley and Beans, two or more nights a week, throughout the greater part of the year. Almost the only kind of bread used by the hinds, and other farm servants, consists of a mixture of two parts of Barley with one part of Beans ground together; this bread, though sufficiently wholesome and nutritious, has a black and unpalatable appearance.—*T. Sullivan.*

WHAT IS THE BEST DEPTH OF COVER FOR GRASSES AND CLOVERS?

BY S. D. STIRLING, ESQ., of Glenbervie, near Falkirk.

The experiment shown in the following Table was made to ascertain the exact depth at which each kind of seed sown would grow most abundantly. In 1842, Messrs. Drummond and Sons, of Stirling, made a similar experiment at my suggestion, the results of which were exhibited at the show in Edinburgh; but, as garden experiments are laughed at by some, and as the difficulty still remained as to the treatment in the field necessary to obtain the best depth, I, in 1843, sowed 15 acres all over with red and yellow Clover, and a third part with each of the following Grasses in addition, viz.:—Italian Rye-grass, Pacey's Rye-grass, and Timothy. Two-thirds of the land intended for each of the Grasses was rolled after the Barley was finished. The Grasses and Clovers were then sown, and half of the rolled portion was bush-harrowed; the other half as well as the part not rolled, was covered in with Grass-seed harrows. I was surprised at the small apparent difference of the crop, but, on closer inspection, the shallower sown seemed thicker planted, and the deeper to have stocked more, from being thinner. It was with a view to settle this point that it seemed necessary to count the plants which would grow at each depth. The seeds were treated in the following manner:—Two boxes, 5 feet 10 inches by 1 foot, were filled with soil; No. 1 to within a quarter of an inch of the top; No. 2 to the top on the one side, regularly sloping to within 3 inches of the top of the other. They were then divided across by slips of wood 2 inches broad, so as to leave fourteen spaces of 2 inches by 1 foot in each box. The same weight of seed was sown in each box, the slips were removed, and the boxes filled to the top with soil. They were placed in a greenhouse for the first ten days, to prevent the risk of heavy rains, which would have crusted the surface. This may have caused the seeds to spring from a greater depth than would have happened under ordinary circumstances. The quantities sown as marked in the first column of grains of sixteen to the drop, were such as each ought to have produced nearly the same number of plants, had the seed continued as good to when sown and counted in spring, with the exception of the Timothy, of which nearly a double portion was sown from the difficulty of distributing so small a quantity equally. A quarter of an inch is too deep for the Poa nemoralis, as the Timothy grew more freely when scarcely covered.



The other information to be obtained from the experiment shown in this Table, beyond that for which it was made is, that it requires double the weight of Italian Rye-grass seed to produce the same number of *plants* that it does of common—that in this case at least, the Clovers and Fox-tail seeds, kept over a summer, would have been dear at half price—and that the total of the second column of No. 1 is less than the first column of No 2. I may also mention that, in a similar experiment tried this spring, 1844, and now growing here, the number of plants appear to diminish in the same proportion as shown in No. 2. They are generally most vigorous at three-quarters of an inch of depth, with the exception of Cock's-foot, Rib-grass, and red Clover, which do well to an inch and a half. Whether this difference arises from these depths being most suitable, or from the smaller number of plants, must be ascertained in a future experiment, by thinning them out to a single row. I would recommend all who wish to avoid disappointment, to prove all their Grass, Clover, and Turnip seeds before sowing, by sowing a small weight in a pot, and placing it in a warm situation, and counting the plants which come up, and they will find that 28 lbs. or 30 lbs. of Rye-grass seed may be cheaper than 18 lbs. or 20 lbs., though the price per bushel may be considerably more.

In 1842, when the Grass seeds were bad, and not to be procured of average quality, I sowed of some kinds three times the weight per acre which I had found sufficient in ordinary years, and with similar results. As I was much disappointed by following Sinclair's Tables of the number of seeds per lb., I subjoin a Table of the weight in grains of 16 to the drop, omitting fractions, which will give 100 plants of each, when the seed of

* See Col. Greenwood's Pamphlet, "The Tree-System."

commence is of the best quality which I have met with during the last four years.

6. Meadow Fox-tail.	4. Perennial Rye-grass.
5. Cock's-foot.	9. Italian ditto.
7. Meadow Fescue.	3. Red Clover.
9. Hard Fescue.	4. Yellow Clover.
1. Timothy-grass.	2. White Clover.

If the seed should prove of this quality I would recommend the following mixture to be sown for permanent sheep pasture :—

9 lb. of Fox-tail, which will give	1	plant to each	6	square inches
2½ Cock's-foot,	1	,,	16	of ground.
3½ Meadow Fescue,	1	,,	16	,, ,,
4½ Hard Fescue,	1	,,	16	,, ,,
4½ Italian Rye-grass,	1	,,	16	,, ,,
2 Red Clover,	1	,,	6	,, ,,
4 Yellow Clover,	1	,,	9	,, ,,
4 White Clover,	1	,,	4	,, ,,
6 Timothy,	1	,,	1	,, ,,
2 Rib-grass,				
1 Yarrow.				

Which will altogether give about two plants to the square inch. If the trial of any seed falls short of the number of 190, by any quantity, say an eighth, then 1 lb. must be added to the Timothy, ½ lb. to the yellow and white Clover, and so on in proportion. It may be asked why I recommend this mixture in this proportion? I answer that, after repeated trials, I have found it to succeed better than in any other. Why do I sow red Clover and Italian Rye-grass for permanent pasture? Because it is too expensive to seed the land sufficiently for the first year with the Grasses which sheep prefer, and because, in consequence, it carries more stock, and I have better pasture the following year. I cannot tell whether this is owing to the quantity of manure which the stock leaves, or to the food for plants conveyed to the soil by the Clover, from the atmosphere, or to the fact which I, as well as others, have noted (Mr. Kay, of Shiphaugh, Stirling), viz., that Grasses grow best when Clover is sown along with them. The Italian Rye-grass gives the earliest bite, and helps to occupy the space which would otherwise be filled with Daisies and other weeds. Why I sow yellow Clover? Because I sowed down a field with Grass, one half mixed with yellow Clover, and the other with white, and the sheep preferred that which was sown with yellow. Why do I not sow Rye-grass, Dog's-tail, Vernal, Poa trivialis, pratensis, and perennial red Clover? Because I sowed these and the others, which I recommend, separately, and put on a light stock of sheep early, so that they should not be compelled to eat that which they disliked. The Rye-grass will not carry through the stock necessary to keep it down in spring, and both it and the Dog's-tail were so much neglected, that I cut a full crop of hay off them. The Poa trivialis, Vernal, and pratensis, in a year or two became very unproductive, the two former suffering from drought, and the last forming a mat of which the greater proportion is uneatable, and which chokes everything else. The perennial red Clover, which I procured from a most respectable seedsman in Edinburgh, proved the common biennial. I therefore do not choose to pay an additional price, and run the same risk again. Besides, I see it neglected in my old pastures, where it grows naturally. For neat cattle I would recommend Rye-grass in addition, and for milch cows that the Yarrow be omitted, as I have found it, when in excess, to impart a disagreeable flavour to the butter.

I have the greatest pleasure in expressing my obligations to Messrs. Drummond and Sons, of Stirling, for their ready assistance in this and all other matters relating to agriculture.

Table of the greatest number of plants I have succeeded in raising, from 1 oz. and 1 lb. of the following seeds during the last four years :—

	No. of Plants per oz.	lb.		No. of Plants per oz.	lb.
Timothy	49,056	784,080	Perennial Rye-grass	12,251	196,020
Fox-tail	5,445	87,120	Italian ditto	5,445	87,120
Cock's-foot	9,801	156,816	Red Clover	16,433	261,360
Mead. Fesc.	5,801	112,011	Yellow ditto	12,251	196,020
Hard Fescue	5,445	87,120	White ditto	24,502	392,040

[*Communicated by Mr. Stirling, from the Highland Society's Transactions.*]

ON DRAINING HEAVY LAND.

I PERFECTLY agree with you that there is frequently too much width in drains, and too little depth; the mass of earth to be removed adding greatly to the cost. I will also admit that the small pipes alone (as mentioned by you, and as described by Mr. Parkes in his valuable communications to the Royal Agricultural Society), will after a time (a year or two) carry off one day's rain in three days. But this is only an imperfect mode of drainage, for several reasons. 1st. Because it is two or three years before it will act perfectly, instead of at once drying the soil, and rendering it friable. 2d. Because in dense soils (and to those my theories applied), the retention of water 48 hours longer than is necessary must be very injurious, by depriving it for so considerable a period of the atmospheric action. It acts like drowning, or soaking earth in water for two days, and must unduly expand its particles, absorb heat, and retain in degree that sodden characteristic which drainage is intended to remedy. I consider it an axiom that the friability of the soil will be in proportion to the rapidity of percolation; filtration may be too sudden, as is well enough shown by our hot sands and gravels; but I apprehend no one will ever fear rendering strong clays too porous and manageable. The object of drainage is to impart to such soils the mellowness and dark colour of well-drained rich and friable soil. That perfect drainage and cultivation will ultimately do this is a well-known fact. I know it in the case of my own garden. How it does so I am not chemist enough to explain in detail, but it is evident this effect is produced by the fibres of the growing crops intersecting every particle of the soil, which they never could do before draining; these with their excretions decompose on the removal of the crop, and are acted on by the alternating air and water, which also decomposes and changes in degree the inorganic substances of the soil. Thereby drained land, which was before impervious to air and water, and consequently unavailable to roots, to worms, or to vegetable or animal life, becomes by drainage populated by both, and is as great a chemical laboratory as our own atmosphere, subject to all the changes produced by animated nature. I apprehend that two days' stagnation of water would endanger either worms or roots. Mr. Parkes justly observed to me that worms act as assistant drainers, occupying the soil which before never contained any living thing; and it is through the innumerable conduits they make that water finds its way so readily to a small pipe at a considerable depth; but I consider, and must maintain my theory, that he who carries the falling water through heavy land in the shortest period is the best drainer, and will the soonest render such land equal to the best. To do this there must be in the drain a large area of porosity. The means of effecting it may vary as opinion varies; but the drain, to be economic, must have the largest porous area in the smallest possible space that will convey the water. I consider that the falling water descending uniformly through the whole surface, and mixing intimately with each grain or particle of earth, is far preferable, chemically and mechanically, to its forcing its way in streams towards the joints of the pipes, whilst the remainder is delayed, waiting a day or two, to take its turn in the same worn channel. For this reason I object to waiting for gaping cracks to make drains act, because it is quite possible the water may rush down such cracks from the surface, and leave considerable masses of intermediate earth unmoistened. The principal utility in drains is, in my opinion, to enable the earth to derive the full benefit of the various and all-important manures with which the falling water and renewed air are so amply charged. Another very considerable objection to the "wait-a-day-or-two" plan is, that the greater quantity of rain falls in the autumnal or winter months, when every day's ploughing lost is of consequence, economically and as regards the welfare of the ensuing crops. This alone should stimulate us to get rid of the obstructive water in a trice, for our autumns are never deficient in moisture, but the reverse. A small pipe will readily carry water when it gets in, but the question as to how and when it enters are subjects worthy the attention and experiment of your numerous and valuable agricultural correspondents. A comparative trial in various parts of one field would convince those who doubt. For my own part I am practically satisfied that my drainage is not too sudden, but that if it errs at all it is in not being quick enough, in such dense yellow soil. It may appear a startling proposition, but I think we are justified in inferring that drains in the summer season occasionally lay dry the soil below them. It is quite clear that if the porous portion of soil above the drain is deficient in moisture, earth below the drain must give up its moisture by capillary attraction, there being no impervious intervening substance between the upper and lower soil to prevent it.—*J. J. Mechi, 4, Leadenhall-street.*

Home Correspondence.

Allotments.—The subject of allotments of land, to be let at reasonable rents to persons of the labouring class, well deserves a prominent place in the *Agricultural Gazette*. It seems that the general adoption of the practice will much depend upon landlords; for, besides the usual restrictions in leases against underletting, the time is scarcely yet arrived when a majority of tenant-farmers would freely concur in the proceeding. When we read of 7*s.* or 8*s.* a week being the usual rate of wages for agricultural labour in Wiltshire, and when it is known that in districts of wealthy England, not 50 miles from the metropolis, a similar rate of wages prevails, surely something is wanted to remove a just cause of alarming dissatisfaction among an important class of persons, the value of whose labour—their only commodity for obtaining the means of supporting life—is thus depreciated. And while 7*s.* or 8*s.* a week is paid in some places, and 9*s.* or 10*s.* a week is paid for the same kind of labour in other places of a similar agricultural description, intelligent and impartial observers are not satisfied with the reason probably assigned for the difference—that, in the former case, there is an excess of labour, and not in the latter. But though allotments of land appear so desirable, and their advantage has in so many instances been so undeniably proved, strange cases have occurred—at least to the knowledge of the writer one case has occurred—where this advantage has been refused by labourers. In a parish chiefly agricultural, where the supply of labour has been fully equal to the demand, but not much in excess, and the rate of wages usually fair in comparison with some other districts, an owner of land, whose kind disposition is known, lately appropriated a field of good land for letting in allotments on fair terms to labouring persons, and only a small portion of the land was taken. Such cases are perplexing, and demand inquiry into their causes; and it might be inquired whether there was reason to fear that the farmers would regard the practice with jealousy, as apprehending (unfairly) that it might lead to neglect of their business by workmen. The diffusion of sound knowledge, and of good feeling and principles, will, in time, correct these evils in a country to which Providence has been abundantly favourable.—*E. Lister.*—There are many thousand acres in this neighbourhood, formerly reclaimed from the sea, which afford the richest pastures for cattle, but which require large and deep dykes to prevent them from being flooded in the winter, and in wet seasons. In keeping these large-water courses clear, a considerable depth of heavy soil is excavated. There being in this neighbourhood an inexhaustible supply of sea-sand, it has occurred to me that for cattle-yards, and for sheds in which cattle are fed, this sand, which is quite dry, and carried by the wind around the country, can be substituted for straw as litter for the cattle. It has several good qualities: a soft and dry bed for the animals, very clean, so porous as to prevent the urine and liquid matter of the manure from running off, which would prevent the expensive process of making tanks. It would check the escape of ammonia by constantly covering the wet bedding with dry sand, and it would immediately lick up any solution for fixing the ammonia; and when saturated with the excrements of the animals, would not only be highly fertilising on this account, but would be very beneficial in acting mechanically upon a clay and heavy soil, such as there is always being dug up from the dykes. Thus acting as a substitute for straw, the farmer can use his straw in the form of chaff, mixed with nourishing food, and thus passing through the animals, it will have lost none of its inorganic principles, but the same quantity of silex, &c., will be returned to the soil, as if it had been employed in bedding down cattle, and employing it afterwards as manure; and a much larger quantity of manure would be thus produced.—*Inquirer.* [We have known instances where sand has been used as litter for sheep; and in a year like the present, when straw is by no means plentiful, necessity will, we doubt not, induce many to try the plan, connected with which our correspondent points out so many advantages.]

How to Harvest Cabbages.—Allow me to remark that I have heard that, in Germany, some farmers, when they have a superabundance of Mangold-Wurzel leaves, half steam them, then pack them close in casks, slightly sprinkling the steamed leaves with salt by layers, which keep very well, and are eaten with much zest by cattle in that state. This might answer equally well with Cabbage leaves. Should it succeed, it would benefit the public generally if "Querist" will mention its success in the *Chronicle* at a future time.—*Elyséa.*

Two Crops per Annum.—I quite agree with your correspondent, "Cantab," that it is necessary for the English farmer to have two harvests in one year if possible, and I have often thought the Belgian system of growing a green crop upon the same land, and in the same season, that had previously grown Corn, a most excellent one, and worth our attention. I fear, though, it is impossible to introduce it here, the English climate being neither sufficiently early or certain to bring any kind of grain to maturity in time to grow the green food after it. Lord Lovelace's crop of Beans and Cabbages upon the same land approaches nearer than any other, but they neither of them grow well upon shallow soil. I have thought of trying Rye and Cabbages, but I have never seen the former harvested in this county at a period when I thought the latter would have succeeded had the attempt been made, which I confess it never yet has by me.—*A Norfolk Farmer, Fordham, Downham Market.*

[*Professor Johnstone's Catechism of Agricultural Chemistry and Geology.*—This Catechism is a clear and succinct arrangement of the rudiments of these sciences as far as they refer to agriculture; but I have some objections to the manner in which this manual is arranged. The first and most serious of these is—its catechetical form. I think that if the Professor had drawn it up in short and comprehensive sentences, without the form of question and answer, it would have been a far preferable book for the use of our schools. In this form it could have been made use of as a class-book for reading, and at the same time for instilling into the young mind the principles of those sciences of which it treats. Should questions be thought necessary, they could be placed at the end of each section, or at the end of the manual; but I would prefer the questions without answers, so that the pupil would be under the necessity of finding the answer for himself, and thereby giving him additional mental exercise. My next objection is the insertion of the instructions for the teacher in the body of the book. These should have been placed at the end, or on a separate sheet, so that they might only be in the hands of the teacher; but should the narrative form be adopted, they could be continued in the present plan without great objections. It would be a great improvement upon this manual if there were affixed an alphabetical list of technical terms, with explanations for the reference of the scholars, such as acid—how formed, and its component parts (that is, of any particular acid); carbonate, phosphate, nitrate, sulphate, &c.; and even very common terms, as calcareous, solution, dissolve, manure, &c., &c. In short, I would have this Manual of Agricultural Chemistry and Geology arranged as those of Natural Philosophy, published by the Scottish School-Book Association, which I consider superior models of a school-book.—*K., Denny.*

On Bones.—Of all the auxiliary and artificial manures yet found, bones hold the first place, both in effect and in certainty of result. They are applicable to most soils on which Turnips can be grown, and a failure is very rare. My own experience extends to twenty years, and only one failure occurred. My first trial of them happened in Northumberland, on a light sandy loam lying in patches on the outcrust of a friable sandstone, in the vast bed of clay on the coal formation. A grinding mill was attached to a flour mill driven by water; the bones

were ground in the forenoon and often sown in the afternoon; and if at any time laid in a heap, strict injunctions were given to spread them thin, in order to prevent heating. Very different is the treatment now, when means are used to produce that state. They were sown by a machine in a continuous stream, at the rate of 3 quarters to an acre; and in every application the crop of Turnips raised by them was superior to the usual quantity of the best prepared farm-yard dung: the following crops, however, were inferior, and a dressing of short dung was applied in the spring to bring them equal on the tested land. On cloddy soils the rutting coulter throws the soil wide, and it does not fall back again to cover the bones; a double mould board plough was made to pass quickly behind the sower, which threw fresh earth over the bones, and a roll followed. For seven years the crops were beautiful. On the stronger loams in Leicestershire the success was equal in every respect, the bones being sown in a cool state, and containing the portion of dust made in grinding them. On the ferruginous sands in Surrey, bones in the same state and quantity succeeded well; but in one year a partial failure took place on a loamy sand, fallowed and wrought after a crop of winter Vetches. The tilth was rather cloddy, but not too unfavourable. The Turnips brairded well: the plants rose after hoeing, and about half covered the drill, but never grew more. During the season the plants never showed the vigour usually produced by bones; the season may have checked their action; a cold, drizzling rain from the east prevailed at the time of sowing, and for some time after. The preparation of bones by mixing and fermentation has now become fashionable, and the sowing by drop-drill machines. My next experience was in South Wales, on soils of loose peachy loams. The bones were mixed with ashes and earths, and heated with hot lime, repeatedly turned and slaked with urine, suds, and water, and sown with a drop-drill machine at the rate of 16 to 20 bushels to an acre. In every case the crops were beautiful, but not superior to those produced by cool bones; which leaves undetermined the use or advantage of heating the materials. Some farmers mix the ground bones with earths, and produce, by their lying for a length of time in this state, a putrefactive preparation instead of fermentation, and it is found to answer well. No farmer who can command a sufficient quantity of vegetable manure, or farm-yard dung, will ever think of using any auxiliary; but many hilly and inland situations will hardly ever supply the quantity required, and consequently substances will be sought to produce the vegetables, which in their turn will yield the manure required. One very great recommendation of bones is the lightness of carriage; for if a farmer had large masses of vegetable manure at a distance presented to him, the cost of carriage would forbid their acceptance. The prime cost of bones is also less. In dry seasons rolling is essential, in order to compress the drills and the manure, to exclude drought, and retain moisture.—*D.*

Salt.—Several communications on the article "Salt," mentioned in pages 337 and 605, leads me to state that a more valuable substance cannot be purchased, and I would recommend all farmers not to be stingy in its use. How, I will ask, are those large crops of Potatoes produced both in Guernsey and Jersey, but from its general use there? having little to depend upon beyond the sea-weed found upon its shores. With regard to the quality of their produce, that is another question. Col. Le Couteur prides himself in quality—not quantity. He objects to the old jog-trot system pursued by all Jersey farmers; of course he pursues the English fashion, as practised in the Isle of Thanet, his heap of manure being composed of sea-weed, sand, and refuse from the farm-yard. Although I have but a small quantity of land, nothing do I prize so much as salt; I applied it during the dry weather to my Raspberries with complete success, filling in the crack and dispersing it everywhere. My garden and land has had 12 months' fallow, the land being in a desperate state of neglect, full of coarse Grass and as hard as a brick. Potter's guano (liquid) had no effect, but where I applied my pond-water with salt, I found wonderful effects; my Strawberries, though neglected, were fine through its use, although I regret to say that it was the cause of death to many poor frogs; the least quantity seemed fatal. When in the state of New York and also in Canada, I was surprised to find that it was their custom to give horses and cattle a handful or two of salt in their water to drink; nothing is such a treat to them, or so anxiously sought after. In several spots (for I have a variety of soil in a small compass) of a clayey nature, I am troubled with the Canadian Thistle, (I call it,) which roots very deeply. I have, after pulling it, tried salt, and I think it will be found to be the only remedy, as upon digging I perceived its effects.—*Verax.*

On Flax Seed as Food.—Conceiving this to be a truly important subject for the consideration of the farmers of the United Kingdom, I have much pleasure in referring to the subjoined account of the results obtained by the use of Flax-seed Compound, as communicated by Sir Charles Burrell at the recent meeting of the Arundel and Bramber Agricultural Association. I extract the following report from the *Sussex Express*:—"At the late meeting of the Agricultural Association here, Mr. Warnes advocated his system of box-feeding. He said that in Sussex, Turnips could not be grown as in Norfolk, but Nature had done much in giving them a fine pasture; in addition to that, they should use boxes for their cattle, such as many of them had seen that day on the Show-ground. With regard to summer grazing, he had found six stones of linseed, which would fatten cattle, was only equal to one of bar-which would not. By this means, and the use of boxes, three bullocks ought to be fattened instead of one; and this was no longer an experiment, for hundreds and thousands were now fattened in that way. The Chairman then read the following interesting statement:—'Account of six heifers, which were put into Sir C. Burrell's boxes on the 15th May last, to be fattened according to Mr. Warnes's system of summer grazing, but which had no compound till the 16th of June. Cost price of each—No. 1, 10*l.*; No. 2, 10*l.*; No. 3, 9*l.*; No. 4, 8*l.*; No. 5, 7*l.*; No. 6, 6*l.* Nos. 5 and 6 have been sold; No. 5 only has been killed; No. 6 is to be slaughtered in a day or two. No. 5 was sold to Mr. Page, at 3*s.* 10*d.* per stone. She weighed 75 stones, and therefore realised 14*l.* 12*s.* 6*d.*, or 7*l.* 12*s.* 6*d.* clear of the cost price. From this sum we deduct the cost of keeping. 1st. The Grass from the 15th May to the 9th September, when the butcher took the heifer away, or 17 weeks at 1*s.* 6*d.* per week. 2dly. The compound, from the 16th June to the 1st August, at 5lbs. per day, and from the 1st August to the 9th September at 14lbs. per day, amounting in the whole to 56 stones, which, at 7*d.* per stone, gives 1*l.* 12*s.* 8*d.*, or for Grass and compound, 4*s.* 10*d.* per week, or for the whole time, 3*l.* 4*s.* 10*d.*, which, with the 7*l.* paid for the animal, leaves a clear profit of 4*l.* 7*s.* 8*d.*, independent of manure — an important consideration. The cattle numbered 1, 2, 3 and 4 consumed 50lbs. of Grass each per day; Nos. 5 and 6, 35lbs. each per day. Two weeks they had Vetches. It ought also to be remembered that the Grass was obtained principally from waste ground, such as sides of roads, corners of fields, fences and gardens.'" The foregoing statement is confirmatory of those in my papers on this subject which recently appeared in the *Agricultural Gazette*, as exhibiting the results obtained by the use of the Compound at Hurkesley Hall. There is not indeed a more important article of food for the various domestic animals of the farm than Flax-seed. No expensive apparatus is necessary for testing its value, and it is with a view of inducing such farmers as have not hitherto used it to give it a trial, that I venture to direct their attention to the foregoing important statement of the results obtained by Sir Charles Burrell.—*J. Sproule.* [In the following extract from a letter of Sir C. Burrell's, which has lately appeared in the *Brighton Gazette*, another proof is seen of the excellence of Mr. Warnes's system of feeding:—"I have this week a second instance of the soundness of Mr. Warnes's system, in the sale and slaughtering of the second and least of the two Sussex 2-yearling steers, which weighed 72 stones 3 lbs. of very prime beef, being 4 stones 3 lbs. above the weight expected from her measure, and also above the butcher's expectation, who preferred buying by weight to purchasing according to the measured weight. The original cost was 6*l.*, and being sold at 3*s.* 10*d.* per stone, it fetched 13*l.* 18*s.*, a profit worthy consideration as derivable from Mr. Warnes's box-feeding system, with an expense of only about 30*s.* to 35*s.* for each box, if (as I conclude) a range of boxes be built. I am myself so entirely satisfied of the goodness and soundness of the system, that I have ordered a hovel to be converted into five more cattle-boxes, making 13 in all—a proof of my conviction of the correctness of all Mr. Warnes has advanced."—*C. M. Burrell, Knepp Castle.*]

Ichaboe Guano.—I have lately purchased 10 tons of Ichaboe guano; but in order to have it genuine I sent a sample to a chemist to be analysed. The analysis is as under:—

Water	148.31	Soda	50.00
Ammonia	105.41	Sulphuric acid	50.00
Organic Matter	146.36	Oxalic acid	85 41
Silica	59.84	Uric acid	68.09
Chlorine	26.10	Phosporic acid	99.12
Lime	95.20	Carbonic acid	16.04
Magnesia	46.10		1000.00
Potash	23.20		

Another chemist to whom I showed it pronounced it to be excellent; but told me that I ought to mix gypsum with it, otherwise a large portion of the ammonia would escape into the air. I shall be much obliged if you will inform me in what manner I can best apply the guano to Wheat, as I intend to commence drilling immediately. My farm consists of various soils, from a light soil on a subsoil, varying from a quicksand to a very stiff clay. I should also be glad to be informed whether a good dressing with clay would not improve the light soil, as it appears to require consistency and depth.—*A Constant Reader.* [All light soils will benefit by such an application. Guano is better applied to Wheat in April than in autumn. You can sow 2 or 3 cwt. broadcast, and harrow it in over the young plants; do not fear that you will injure your crop by so rough an operation. The guano should be sown in wet weather. Gypsum may be beneficially added if your soil does not contain a sufficiency of it, but it is questionable if it would tend to fix the ammonia in guano unless both were dissolved in water.]

Dibbling Wheat.—I am much pleased to see that some attention is paid to the poor and labouring classes; for in proportion as they are benefited, the community is benefited. I now allude to an article in the *Gardeners' Chronicle* of the 7th inst., in which it is stated that, by the allotment of lands in one parish, the poor-rates have been reduced from 5*s.* 3*d.* to 2*s.* 6*d.* in the pound, and parties who were living upon the rates are now contributors towards them. With such abundant evidence of the advantages of dibbling seed in preference to any other method of putting seed into the ground, it would be rendering a very great service to the public if some person of ingenuity would invent an instrument to facilitate this tedious mode of putting seed into the ground. I am of opinion that a very simple instrument, and at a very small cost, could be made which would enable two boys to do as much as four can do with the dibble now in use. I beg, therefore, to suggest my plan, and leave it with some of your mechanical readers to act upon it. A dibble, with a handle about 18 inches long, made like a shovel-handle, at the lower end of which should be fixed a plate and four dibbles, with flanges 1½ inch from the point of each (that being considered a sufficient depth to put the seed into the ground), the dibbles, by means of a spring-handle, being made to turn half-way round, would be an instrument of a kind which I conceive would be of very great advantage. If you think well to give it a place in your *Chronicle*, I hope it will meet with attention.—*A Constant Reader.*

Dairy.—Can you explain the cause of the strong bitter flavour which is perceptible in the cream of some dairies at the present time, and is said in the north of England to occur occasionally in different places? The bitterness is not to be perceived in the milk, nor in the cream till it has stood for one or two meals; the butter is not affected; the cows are pastured and eat no other food; and it has been ascertained, that the evil is not confined to the produce of any one cow in particular, of the five milked in the dairy alluded to especially; and the milk is immediately poured from the pail into white Staffordshire milk-pans.—*Lactens.*

Early Harvesting.—Having cut a field of Wheat about ten days before being perfectly ripe, according to the views recorded in some of your late publications, I am desirous of acquainting you of the difficulty I had in making sale of it, although it was on all hands acknowledged to be a good grain of steel Wheat. When I sent it to the mills it was rejected, as having been cut green. My horses returned with their loads, and I was forced to send the grain to Limerick market, a distance of 28 Irish miles, where I with difficulty got only 15*d.* per stone. Now, Sir, if it be true that the farmers and millers of England find it advantageous to cut green, how came such ignorance on the part of those in a quarter of the country where so much Wheat is grown, and where there are so many extensive buyers? I lost the expense of my horses and men for one day, and the carriage of 8*d.* per cwt. to Limerick. Any information you can give me on this head will be thankfully received; and should you be able by advice or reproval to effect a change in the views of the millers, next year may not be so unfortunate to those who cut green.—*J. V. Bruden, M.D.*

Thin Sowing.—Having read Mr. Davis's little "Treatise on Thin Sowing," I was induced last spring to try it on a small scale with Scotch Potato Oats without dressing. The following is the result:—On two lands, containing 1 rood 6 perches, seed at the rate of 2 bushels per acre, drilled 12 inches between the rows, produced 2 qrs. 3½ bush.; weight of Oats, 41 lbs. per bushel; straw, 23 trusses, 4 lbs. The adjoining two lands, with the remainder of the field, sown at the rate of 3 bushels per acre, 9 inches between the rows, produced 2 qrs. 1 bush. 1 pint; weight 41½ lbs. per bushel, and 20 trusses 2 lbs. straw; which shows an advantage of the thin sowing at the rate of 1 qr. 1 bush. of Oats, and 10 trusses 22 lbs. straw per acre, besides the difference of seed. The thin sown Oats were not so ripe when cut as the others, which I think will account for their being rather lighter. The increase of Oats, straw, and saving of seed, will amount to about 1*l.* 15*s.* per acre.—*Sam. Relf, Reigate.*

Curiosity.—I send you a Potato into which a young shoot of a reed has grown so as to split the Potato. This occurred in some boggy land which has been made dry; the reeds are not quite killed yet, because the subsoil is blue clay. I suppose that the reed has been driving into the Potato for moisture, being at the last gasp from extreme thirst. Are such instances common?—*J. S.* [We have known the roots of Couch-grass pierce the bulb of the Wild Hyacinth.]

Weeds.—A correspondent of yours wrote some time ago upon the destructiveness of Weeds on the headlands of fields and under hedges; pray let me add railroad-banks and waste land. Surely it would pay for the poor to be employed cutting down Thistles and other Weeds, which are now on all the roadsides, and are elsewhere allowed to flower and seed, and to be spread all over the adjoining country, increasing the trouble of the poor farmers a thousand fold for the year following.—*Cockney.*

Dipping Sheep.—I believe I once before alluded to this in your Paper. I, however, do it again in consequence of having just had my flock dipped for this year (now the 4th or 5th year I have had it done), and in 51 long-wooled sheep there was not (as my man assured me) one single tick to be seen. If those who keep sheep would reflect upon the comfort to the animals, of being divested of the swarms of vermin which generally crowd them, humanity alone would surely lead them to undergo the trifling expense and trouble. But when you add to this the great difference in the quantity of food consumed—between a sheep that, as soon as it has satisfied its appetite, adjourns to the nearest gate or post, and there rubs might and main till his empty stomach drives him to his pasture, and another sheep, who, having filled itself quietly, lies down and takes its nap—it becomes a question, and, with large flock-masters, a serious question of profit and loss. And the only thing, but at the end of a few weeks the undipped sheep will, as well as having destroyed much food, be infinitely in worse condition than the dipped one. When I first heard of Bligh's Composition, I had a valuable hook devoured by scab, which I could not cure, though I tried all means, and went to much expense. One dipping cured

them at once. My sheep are now all I could wish; they are always easy, never rub, lose no wool, and attend at all times to their business—eating and sleeping. I have induced many of my neighbours, during the last few years, to try the composition, lending them my apparatus, and all I can say is, that all who used it last year have borrowed it this; all say it cured the scab, and one that it also destroyed the foot disease, which has been so prevalent. This last, however, I do not vouch for, but for the immense comfort to the sheep, and benefit to the owner of the flock in the other respects, I have great pleasure in giving my humble testimony; and, as a lover of sheep, from a wish that so very valuable, simple, and inexpensive a process should be resorted to by all who keep them, and from a conviction that great benefit would arise to the farmers and the community at large, for the increase and value of mutton and wool, I should be very glad if you could find room for this communication. I would gladly afford information to any one on the subject, but they would get it better, perhaps, from the seller of the composition, Mr. Bigg, with whom I beg to say I have no communication but as a purchaser. —*W. D. F.* [A known correspondent.]

Potatoes.—Several of your correspondents appear to have sought in vain for a remedy for the grub and wireworm; my plan is this, and I think it the best remedy where there are no rooks in the neighbourhood:—On taking up Potatoes, I coax two or three favourite old hens beside me, and when I turn up an infected Potato I disperse the earth about, although in most cases shaking the stem is sufficient, and should they stray I reserve them in a basket for them. If farmers would but take a little trouble in light soils, they would discover hundreds of new sorts of Potatoes among their old stock, without being obliged to change their seed and waste their time in descanting upon their seed being degenerate and infected.—*Verax.*

Roots of Wheat.—In your Number of the 31st of August last, you express a wish to be informed as to the extent of the roots of the Wheat plant. About 30 years ago, a series of experiments were made by Mr. Badcock, of Pyston, near Watlington, in Oxfordshire, with a view to ascertain this fact. I am told that by digging pits by the side of the plants, he extracted the roots entire. He embodied the result of his experiments in the form of a letter to the late Earl of Macclesfield, then President of the Board of Agriculture in London: This letter was published by the Board, and a medal awarded to the writer. The late Sir Jos. Banks, to whom the subject was new, provided glass cases for the specimens, which were kept at the office of the Board, and on its being broken up, it is believed that the specimens were removed to the Society of Arts. In addition to this, a plate was engraved from drawings made by Mr. Badcock's son, now resident in Oxford, by which it is shown that the roots descended into the earth six feet. There are six figures in the plate, drawn to scale, showing that at progressive stages of the growth of the plant, the root descends rather deeper into the earth than the plant rises above it. This plate may be found in a book published by Mr. Badcock on the comparative price of Wheat and other grain for a long series of years.—*J. C. C.*

FARMERS' CLUBS.

Leyland, Lancashire.—At the Annual Meeting and Show of the Agricultural Association here, a Report on the farms competing for prizes was made by Messrs. Logan and Lauder, the inspectors, from which we make the following extracts:—The inspectors urge on those who have the management of the different farms that have been inspected, with reference to the thorough drainage of the land, that drains be cut in a parallel direction, so as to carry off the water that falls on the surface, and also the under water, in the shortest and straightest course that can be found, and also that they be cut to the depth of from 28 to 30 inches, instead of from 18 to 20 inches, which would be more permanent, and the stones would be out of the reach of the plough. The inspectors draw attention to the want of green crops, such as Turnips and Beans, in proportion to the size of the farm; those crops should be sown in drills, instead of the broadcast system. The inspectors advocate the above principles, and they practically put them in execution upon land inferior to any of the farms which they have inspected; and they consider that the system can with profit be generally adopted. Nothing, they presume, is so likely to effect good cultivation, as having the land dry, keeping it perfectly clean, and under the green-crop system, with a proper rotation of white crops. And they wish to draw the attention of the farmer to the great essentials of Turnip growing, viz., a soil thoroughly dry, and well cleansed and pulverised when the seed is sown, care in keeping it clean, and attention to the thinning of the plants, at once, and at proper time, and at proper distances from each other; care in removing the soil from the roots of the young plants, and in the earthing up at the latter end of the season, not to lay the soil to the Turnip, but to allow the plant to have room to grow on the top of the drill, as the inspectors have found several crops heaped up in the same way as Potatoes, which is against the swelling of the root. The inspectors recommend a more extensive breadth to be cultivated, as they have found, generally, a short breadth to the size of the farm. Many allege, and no doubt with truth, that additional labour and additional manure are wanting in the cultivation of green crops, Turnips especially; but the inspectors submit that, unless labour and manure be expended, there cannot be any remunerating return to the farmer. The abundant supply of food for cattle by the green crops, particularly in a season such as this, when short of hay, will amply compensate for any additional outlay. The farmer who has cultivated his green crop can always see his cattle looking well, and is at the same time continually laying up a plentiful supply of rich manure for his future use. The inspectors have also to state that Mr. Scotson's Turnips are the largest in growth that have come under their notice this season; but are sorry to observe many entirely eaten off for the surface of the land by rabbits or hares, which is very discouraging to the tenant, after all the expense and trouble of cultivation. The entries for the cultivation of drilled Beans have been few, but the inspectors would suggest a more extensive cultivation of these crops over those broadcast. The land, in the first place, must be clean. Wheat or Oat stubble early ploughed in the autumn, dry; and in the spring, to forward the sowing in due season, the grubber is the only implement that should be used before drilling up; a fair supply of manure should be used, and the after-culture properly attended to with the hand-hoe and drill-harrow. For draining, the entries have been few, and it appears to have been very much neglected over the Society's district. To this subject the inspectors wish to call the attention of the proprietors, as this permanent improvement is the foundation of all good husbandry. Unless the land be laid thoroughly dry it is useless for any one to attempt to improve it with profit. The inspectors would call the attention of the Society, and proprietors in the district generally, to the drainage on the farm of Mr. Hood, New Inn Farm,—he having drained 5209 rods, of five and a half yards per rod, this spring and summer, the work being in operation when they were on the inspection, on the 3d of September last. The drains run parallel to each other, and at regular distances, from 5 to 6 yards apart, and carried through the whole field, without reference to the wet or dry appearance of the land: the small drains are cut 30 inches deep, filled 15 inches with clean gravel, and covered with a sod, and the soil filled in. The main drains are cut 32 inches deep, and built with stone, and filled with gravel above the covers. The landlord opens and fills the drains, and the tenant carts the material. The work is well executed in all the departments, and gives great credit to the landlord, agent, and workmen. (Signed) JOHN LOGAN, GEORGE LAUDER. — The following remarks were shortly afterwards made by Mr. Neilson: He said he had himself begun to drain, and drained 45 acres with broken stone, and Lord Derby, his landlord, had afterwards drained 50. Now, the entire charge of draining was paid by Lord Derby, and interest charged. Drainage is the province of the landlord. It is a permanent improvement, and should be effected at the cost of the owner. It was better that the landlord should do this and charge an additional rent, than that the tenant should so invest his capital, which might be otherwise employed in making improvements more within his province. It was the tenant's interest to pay a higher rent for a drained farm than an undrained one. When he proposed to pay 10 per cent. on the outlay, his landlord had said that it would be a high charge, as they were draining extensively. He said he would rather pay 20 per cent. than it should be undone. It was better for the tenant to pay 3*l.* per acre for drained land than 2*l.* per acre for land undrained. If the landlord was unable or unwilling to pay the expense, let the tenant get a long lease and undertake it himself. Draining was the first step; it must be taken. He had said what was the landlord's work; now he would tell them what was the tenant's. Deep ploughing, manuring, and weeding clean. How often did they hear tenants complain of the expensiveness of manures, at the same time that they were allowing the most valuable portion—liquid manure—to run waste into the nearest ditch! How could they expect to farm successfully thus? A hole made in the ground, or a tub sunk, would collect the liquid manure of two or three pigs and two or three cows, and the wash of the house, and this would suffice for 30 tons of Turnips and 70 bushels of Wheat. The tenant farmer is the centre of the social system of Agriculture; he supports, on the one hand, landlords by rents, and on the other, labourers by wages.

Harleston, Norfolk.—I herewith furnish you the resolution arrived at by the members of the Harleston Club, on the 2d inst., on the subject of Farm-labour:—"That it is the opinion of this Meeting that 30*s.* per acre is the amount generally expended in labour on the well-cultivated heavy land farms in this district, although the average is considerably less; but that, if security be given to the tenant, on the principle advocated by this Club, viz., length of tenure or Corn-rents with liberal covenants, a sum varying from 30*s.* to 40*s.* per acre, according to soil and situation, might be advantageously expended." It cannot but be exceedingly regretted that the landlord and tenant's views should be so disunited; and until a great change is effected, agriculture will slowly progress.—*J. G.*

Reviews.

The Book of the Farm. By Henry Stephens, Editor of the "Quarterly Journal of Agriculture." William Blackwood and Sons, Edinburgh and London.

THE last part of this voluminous work is now published. The unnecessary prolixity with which its author is often justly chargeable, is certainly too small a fault in any degree to balance the many and high merits which belong to it. In the last part there are useful chapters on Agricultural Experiments, on Farm Accounts, and on the Rent, Lease, Stock and Capital of a Farm.

The Author concludes his work with the following passage, addressed to his readers, descriptive of good farming:—

"If you will but follow the prescriptions I have given, for conducting the larger operations of the field, and for treating the various animals of the farm; and—not to mention the proper ploughing and manuring of the soil—as the practice of every farmer demonstrates the necessity of affording due attention to those most important, because fundamental operations;—if you finish off your fields in a manner indicating care and neatness, ploughing round their margins, and turning over the corners—if you keep your fences clean and in a state of repair—your fields free of weeds—if you give your stock abundance of fresh food at regular intervals in winter, and supply them with plenty of clean water on fresh pastures in summer—if you have the farm-roads always in a serviceable state, and everything about the steading neat and orderly;—if you exhibit skill and taste in all these matters, and put what is called *a fine skin* on your farm, you will not fail to earn for yourself the appellation of a good and exemplary farmer."

We may safely assert that the "Book of the Farm" is the completest work on Agriculture which has yet appeared in this or indeed in any other language.

The Farmers' Ready Reckoner, or Glasnevin Agricultural Tables, by Thomas Skilling, Agriculturist to the Board of Education, National Model Farm, Dublin. Curry and Co., Dublin.

A LITTLE volume filled with Tables, illustrated by examples, for showing by inspection the agreable quantity of any growing green or grain crop, in drill or broadcast, and also for regulating the correct distribution of farm-yard and other manures. It also contains a Table giving the quantity of labour of various kinds that ought to be performed in a given time at a given rate of working. It gives the results in measures of various kinds; according, for instance, to the imperial, Irish, or Cunninghame acre. The greater part of the book is taken up with Tables for enabling the calculation of such problems as the following:—

"Having a field sowed one-half with Rape and the other half with Vetches for spring food; and being anxious to know the comparative value of these crops for the purpose, it is desired to know how this may be accomplished. Having taken a square yard, that is, 36 by 36 inches, in different parts of each crop, and obtained an average, I find the Rape weighs 7 lbs. and the Vetches 5½ lbs. I go to Table No. 10, 36 by 36 inches, and opposite

	Tons.	cwt.	qrs.	lbs.	
7 lbs. in left hand column I get	15	2	2	0	for Rape.
5½ " " "	11	17	2	20	for Vetches.
In favour of Rape	3	4	3	8	"

Miscellaneous.

Agricultural Implement Clubs.—You expressed a desire to hear from some member of the Richmondshire Agricultural Association, how the plan adopted by that Society of purchasing improved agricultural implements, using them through the year, and then selling them, had answered. When this Society about three years ago began to attract attention, a resolution was carried at the general meeting, by which the President, R. M. Jaques, Esq., was empowered to purchase for the Society agricultural implements to the value of 100 guineas. Among the implements selected were Crosskill's Clod-crusher, Grant's Hay-rake, the Uley Cultivator, Ducie's Chaff-cutter, Wedlake's Cake-crusher, Biddel's Scarifier, Cottam and Hallam's Dynamometer, &c.; most of which were previously unknown to the majority of the farmers in the district. Some of these articles were taken out and tried by various members of the Society during the following year; but we find it stated in the Transactions of the Society for 1843, that, "In the Report last year it was proposed: first, that the implements purchased by the Society should be tried during the present year, by any members wishing to do so; this, however, has been found almost impracticable to any extent, from their being constantly out of order; and, secondly, it was proposed that they should be sold by auction at the ensuing meeting. Your Committee have, however, thought it a more desirable plan, especially as securing the funds of the Society, to award them as premiums, which will enable them to purchase again during the present year." Several of these useful articles were consequently disposed of in this way to parties who were likely to appreciate their worth; and the Society again resolved "that the President should be empowered to spend, during the ensuing year, for agricultural implements, a sum of money not exceeding 100 guineas." In accordance with this resolution, additional articles of great utility were carefully selected from the works of Ransome, Ducie, Dean, Crosskill, Barrett Exall and Co., and other first-rate makers. This encouragement to the implement manufacturers, joined to an avowed intention of giving a full and fair trial to each article exhibited, induced many of the most eminent manufacturers in the kingdom to attend the Richmondshire Agricultural Society's meeting in 1843. A whole week was spent in examining and carefully trying the various implements brought forward, and knowledge of lasting importance to the farmer was disseminated. The members of this Society, and the agriculturists of the district generally, have thus had an opportunity of seeing implements of high pretensions and great cost put to their various uses, and their merits fairly tested, without any risk to themselves. The result has been shown by many of our best agriculturists getting chaff-cutters, drags, clod-crushers, &c. &c., for their own farms; and by our local implement makers showing a desire to produce useful articles of superior work-

manship. It seems likely, however, that the Society will at present cease purchasing implements in this manner. The principal object has been achieved, namely, that of rousing a spirit of inquiry in the breast of the farmer, and showing him that better implements for farm purposes than those he had been accustomed to had been invented; implements calculated to lessen the expense of producing his various crops, and thus enabling him to meet with greater ability the many claims upon the fruits of his hard-won industry.—*Correspondent of Mark-lane Express.*

Report of the Thorough-Draining executed on the Estate of Edward Lucas, Esq., Castle Shane, Monaghan, by Fitzherbert Filgate, Esq.—We next proceed to the field containing 7A. 0R. 22P. This field is likewise stiff clay, upon a subsoil much resembling that already described. The draining of this and the adjoining field was extremely simple, from the slope of the ground being uniform and all in one direction. The prices paid in this case were as follows:—for breaking stones, sodding, and filling 3½*d.* per perch for small, and 5*d.* per perch for main drains; the stones in this case were carted a mile, and provided by the contractor. The cost was as follows:—

No. of acres in field.	No. of perches of small drains	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		s. d.		s. d.	£ s. d.	£ s. d.
7 0 22	1131¼	0 5½	{ 57 3 5th. / 24	1 0 / 0 5½	29 4 7	4 1 11

There are 24 perches of main drains charged at 5*d.*; that is the cost of cutting, as we had stones that had been in old houses, and drew them with the farm-horses. If the same price be charged for these 24 perches as for the rest, 15*s.* must be added to the cost, making it amount to 29*l.* 19*s.* 7*d.* This field was broken up for Oats, and produced a very fair crop, not yet threshed. The next field, which is only separated from the preceding by a fence, was then commenced. It nearly resembles that last described, as to inclination of surface. The soil is heavier, being for the most part stiff yellow clay; a part of this field was first done, but the person who had contracted to lay down the stones, not being able to fulfil his contract within the time specified, and seed-time being at hand, I was obliged to defer doing anything more until after harvest, which, however, gave me an opportunity of testing the difference in produce of the drained, compared with the undrained land, and the result is the more satisfactory, as the ground was not selected to make the experiment on. The part of this field first done consisted of 4 A. 2 R. 1 P., and was paid for at the following rates:—

SMALL DRAINS.

Cutting drains, breaking stones, filling, and sodding	3½*d.* per perch.
Laying down stones	2 3-16ths ,,
	5 5-16ths

MAIN DRAINS:—

Cutting, &c.	5*d.* per perch.
Laying down stones	6 7-8ths ,,
	11 7-8ths

The total cost of this part of the field would therefore be as follows, viz.:—

Number of Acres in field.	No. of Perches of small Drains.	Price per Perch.	No. of Perches main Drains.	Price per Perch	Total cost of field.	Cost per Acre.
A. R. P.	{ 728 / 76 4-5ths	s. d. / 0 3 5-16th. / 0 2 5-16ths.	} 49½	s. d. / 0 11½	£ s. d. / 10 11 4	£ s. d. / 1 6 9
4 2 1						

There were 76 4-5ths perches to which stones were drawn by the farm-horses, the stones having been thrown in a heap at a former period. The main drain was carried farther than the parallel drains extended, leaving 11 1-5th perches to be made. The remainder of this field, containing 4 acres 1 rood, was proceeded with immediately after harvest. The prices for cutting drains, breaking stones, sodding, and filling them, were the same as that before given in same field—namely, 3½*d.* per perch. The stones were bought at 3*d.* per ton, and the drawing was paid for at the rate of 3*s.* per day for cart, man, and horse. The expense of the stones was in this way very considerable; I conceive too high, but circumstances occasioned the trial. The former prices, in consequence of the great competition, were certainly too low; the expense in the present case was nearly 5½*d.* per perch. The outlay of this part of the field stands as follows:—

No. of acres in field.	No. of perches of small drains	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		s. d.		s. d.	£ s. d.	£ s. d.
4 1 0	645 1-5th.	0 6½	11 1-5th.	0 9	22 16 0	5 7 9

The produce of the different parts of the field was kept separate, and was found to have been as follows:—Part drained, containing 4A. 2R. 1P., produced 583 stones of Oats, being 118 stones per acre, while that part undrained, containing 4 A. 1 R., produced only 336½ stones, or at the rate of 79 stones per acre. The difference in value of crops, taking Oats at 6*d.* per stone, would amount to 26*s.* per acre, exclusive of the value arising from increased quantity of straw, which was at least one-third more on the part drained.

We next proceed to the field containing 6 A. 0 R. 17 P. The cutting the small drains, breaking stones, sodding, and filling, was done for 3½*d.* as before. The stones were quarried in a field in the demesne, at 1 1/16*d.* per perch, for large and small drains. The carting was done with the farm horses, the stones having been laid down as occasion offered. In this way the money actually paid amounted to—

No. of acres in field.	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		s. d.		s. d.	£ s. d.	£ s. d.
5 0 17	774 3-5ths.	0 4 17-32	280	0 6 16-32	22 1 11	3 12 4

We next proceed to the field containing 1 rood, 5 acres, 20 poles. The soil of this field and the one next to it is greatly inferior to any of those hitherto described, as it chiefly consists of thin clays upon a subsoil of impenetrable hardness, abounding in many parts of the field, with moorband pan. It was drained last autumn, and it is intended to have it ploughed for Oats this season, and after that crop is removed, then subsoil-ploughed. The prices as before, cutting sodding, breaking stones, 3½*d.* per perch for small, and 5*d.* per perch for main drains. The stones were quarried in a field in the demesne, and carted by the farm horses; the quarrying was done for 1 1/16*d.* per perch, and the main drains were filled with stones that had been previously gathered on the surface. As in a former case, the account given is that of the money actually expended, which, therefore, makes no charge for the cartage. The price named for cutting the main drains, 5*d.* per perch, is more than that usually given, when they are filled with broken stones; but as it was necessary to cut a part of it through a knoll, to a very considerable depth, an extra price was allowed.

No. of acres in field.	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch	Total cost of field.	Cost per acre.
A. R. P.		s. d.		s. d.	£ s. d.	£ s. d.
5 1 20	894	0 4 1/16	532	0 5	18 11 6	3 7 2

—*From the Irish Agricultural Society's Report.* [*To be continued.*]

Notices to Correspondents.

BURNET.—*Elyste.*—It is not a sufficiently large or luxuriant plant to supersede Lucerne, Sainfoin, or Clovers. It is a hardy plant, and keeps green all the winter. It is not particularly relished by cattle.

"CRITTAM," or "CRIDHAM" WHEAT.—*Kirklinton.*—Can any one give us the history of this variety?

DISEASES OF WHEAT.—*Brenchley.*—Your curious specimen will, if possible, be noticed next week. You have got rain enough now, have you not?

DRAINAGE.—*E. B.*—We do not know of any test of tenacity or wetness of soil. 16 to 20 feet is ordinarily an efficient interval between drains. See where land of similar quality to your own has been successfully drained, and imitate the plan there adopted, in its essential features.

GRASSES.—*Eskdale.*—No. 1, Festuca pratense, Meadow Fescue; No. 2, Cynosurus cristatus, Crested Dog's-tail Grass; No. 3, not known, specimen imperfect; No. 4, a Festuca. Your ram should be fed on nourishing food of any kind. Are your Swedes ready yet? Give him some of them, and 12 to 16 ounces of oil-cake daily. We do not know the composition of the material sold by Biggs for dipping sheep.

GRASS-LAND.—*A Subscriber.*—Your proposed application of gypsum and farm-yard manure is good.

MODE OF CROPPING.—*C. J.*—Grow 1 acre of Lucerne, and of the other 12: you can have 4 acres of Carrots, 2 of Parsnips, 3 of Mangold Wurzel, 2 of Clover, and 4 of Wheat, of which 2 should be sown with Clover-seeds. The green crops will give you sufficient food, and the grain crop sufficient litter for your stock. You had better plough now in ridges, and sow 4 acres with spring Wheat, with 2 of which sow Clover, and, manuring sufficiently, you can cultivate the necessary green crops in spring.

NOTICES TO CORRESPONDENTS.—*J. Clark.*—We shall in part adopt your suggestion, and when the answer asked for is of general interest, state the question as well as answer.

SHEEP FEEDING.—*A Subscriber.*—The practice of house feeding is extending, and we should be glad if our subscribers could give us their experience of it; we know of no work exclusively on this subject.

SHEEP-SALVE.—*A Subscriber.*—We know of no other evidence on the subject than that in the Highland Society's Transactions, which you appear to have seen. It appears to us sufficiently satisfactory.

TRANS. OF SOC. FOR ENCOURAGING ARTS, &c.—*J. S.*—We should be much obliged by extracts.

VALUE OF FOOD.—*Melibœus.*—You may safely consider the prices respectively of Foreign and British oilcake as accurately representative of their relative values as food. The experiments of foreign agriculturists indicate 100 lbs. of hay as being equal in value to 60 of oilcake. This appears to us incorrect; 1 lb. of oilcake is equal to two or three of hay.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, Oct. 14.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s 10	to	4s 0	Best Downs & Half-breds	3s 8	to	4s 0
Best Short Horns	3 8		3 10	Best Long-wools	3 6		3 10
Second quality Beasts	3 8		3 8	Ewes and second quality	3 0		3 6
Calves	3 0		4 0	Pigs	3 4		4 0

Beasts, 2060; Sheep, 21,600; Calves, 118; Pigs, 270.

Our supply of Beasts is smaller, yet it is quite adequate to the demand; the best qualities, however, more readily realise our top quotations; the second class Beasts still form a large portion of the quantity in market, and meet with a very dull sale at about late rates. Sheep are less in number to-day; still, trade is heavy, owing to a general depression, although somewhat brisker than last week; we cannot notice any quotable advance, only that prices are more firmly supported, and in some few instances the best qualities make a trifle more money. Veal trade is exceedingly heavy, except for the very best Calves, which are not very plentiful; the middling qualities make very low prices. Pork trade is steady.

FRIDAY, Oct. 18.

We have a large supply of Beasts, amongst which we notice several from Holland, in very good condition, and which meet a ready sale; good Beef being still a scarce article, prices remain about the same as on Monday for the best qualities; the middling, of which there is a large proportion, cannot be all sold. The supply of Sheep is small; we have a brisker trade, the best Downs, &c. making a little more than 4s, and Long-wools 4s 10d per 8 lbs. Veal trade continues very heavy; the best Calves make about 4s, but there is a large quantity of second rate from 3s to 3s 6d per 8 lbs. Pork trade is rather brisker, at from 3s 4d to 4s 4d.

Beasts, 321; Sheep, 480; Calves, 248; Pigs, 220.

E. West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, Oct. 14.

The arrivals during the past week have been limited—yet there are some arrivals from most of the usual districts that supply this Market, but owing to the mildness of the weather, the demand is small, and our trade extremely dull at the following prices. One small cargo of Paynton Potatoes are selling at 90s. Rhone, 40s; Whites, 40s.

York Reds	80s	to	90s
Perth	80		—
Yorkshire	—		—
Early Devons	—		—
Late Devons	—		—
Cornwall	80		—
Jersey Blues	80		—
— Whites	40		50
Kent and Essex Whites	80s	to	—
— Rhinops	—		—
Wisbeach Kidneys	—		—
— Whites	80		85
Gourlays Blues	80		—
— Whites	40		50
Prince Regents	—		—

R. HARRIS.

COVENT GARDEN, OCTOBER 18.—The supply of fruits and vegetables during the week has been tolerably good, but trade has been somewhat dull. Pine-apples are rather scarcer than they were last week; they are also slightly advanced in price. Hothouse-grapes remain nearly the same as mentioned in our last Report. A few Spanish Melons are in the Market, and some of English growth are also to be met with; but they are getting very scarce. Of good dessert Pears there are plenty, and Apples are also pretty abundant. Impératrice and Golden Drop Plums are to get to be seen; but they are becoming scarce. Damsons are also scarce. Walnuts are plentiful, and a few Chesnuts are also supplied. Bitter Oranges are yet in the Market. Some good Specimens of Cucumbers are offered at about the same prices as quoted last week. Vegetables are, generally speaking, good in quality. There is an abundant supply of all kinds of Greens. A few French Beans may be met with, but they are getting very scarce. Turnips and Carrots are excellent in quality, as is also Celery; the red sort is a little dearer. Endive and Lettuces are well supplied. Jerusalem Artichokes are becoming more plentiful. Vegetable Marrow and Tomatoes have suffered from the cold nights, and are consequently scarce. Cut flowers chiefly consist of Sedum Sieboldi, Combretum purpureum, Camellias, Roses, Fuchsias, Pelargoniums, Neapolitan Violets, Picotees, and Heaths.

FRUITS.

Pine Apple, per lb., 2s to 6s	Filberts, per 100 lbs., 35s to 36s
Grapes, Hothouse, p. lb., 1s to 3s	Chesnuts, per peck, 2s to 3s
— Spanish, per lb., 1s to 1s 2d	Walnuts, per bushel, 3s to 4s
— Portugal, per lb., 1s to 1s 6d	— shelled, 12s to 24s
Melons, each, 1s to 2s	Barberries, per hf.-sv., 2s 6d to 3s 6d
Figs, per dozen, 2s 6d to 4s	Oranges, bitter, per 100, 6s to 12s
Peaches, per doz., 4s to 6s	Lemons, per dozen, 1s to 2s
Plums, per half-sieve, 2s 6d to 3s	— per 100, 6s to 14s
— Imperatrice, per punnet, 1s 6d	Almonds, per peck, 6s
— Coe's Gold. Drop, pun., 1s to 1s 6d	Sweet Almonds, per lb., 2s 6d
Damsons, per half-sieve, 1s 6d to 2s 6d	Cob Nuts, per 100 lbs., 30s to 35s
Apples, Dess., per bush., 2s 6d to 3s	Nuts, Barcelona, 24s
— Ribstons, 2s to 4s	— Brasil, 16s
Pears, Dess., per hf.-sv., 2s to 3s	— Cob, 16s
Quinces, per half-sieve, 2s to 4s	

VEGETABLES.

Cabbages, per dozen, 6d to 1s 6d	Leeks, per doz., 1s 6d to 2s 6d
Cauliflowers, per doz., 1s 6d to 4s	Garlic, per lb., 6d to 6d
Broccoli, per bundle, 6d to 1s	Onions, per bunch, 2d to 6d
Brussels Sprouts, hf.-sv., 1s 6d to 2s	— large, per bushel, 2s to 4s
Sorrel, per hf.-sieve, 6d to 9d	— Spanish, per doz., 1s to 4s
Artichokes, per doz., 2s to 4s	Shallots, per lb., 6d to 9d
— Jerusal., p. hf.-sv., 1s 6d to 1s 6d	Tomatoes, per half-sv., 2s 6d to 4s 6d
French Beans, hf.-sv., 2s to 3s	Capsicums, Ripe, per 100, 4s to 6s
Scar. Runners, per hf.-sv., 1s to 2s	— Green, per 100, 1s to 2s
Potatoes, per ton, 80s to 70s	Radishes, per doz., 6d to 1s 6d
— cwt, 2s 6d to 4s	Lettuce, per score, 6d to 1s 6d
— bushel, 1s 6d to 2s 6d	Celery, White, per bunch, 6d to 1s 6d
— Kidney, per bsh., 2s to 3s	— Red, per bunch, 1s to 1s 6d
Turnips, per doz. bch., 1s 6d to 2s 6d	Endive, per score, 1s to 1s 6d
Red Beet, per doz., 2d to 3d	Mushrooms, per pottle, 10d to 1s 6d
Carrots, per doz. bchs., 2s to 3s	Small Salads, per punnet, 2d to 3d
Parsnips, per doz., 2d to 3d	Watercress, p. 12 sm. bun., 2d to 3d
Horse Radish, per bundle, 2s to 3s	Parsley, per doz. bunches, 1s to 2s
Savory, per bunch, 2d to 3d	— Roots, per bundle, 2d to 3s
Cucumbers, Frame, each, 3d to 6d	Tarragon, Green, per bunch, 2d to 3d
— Ridge, doz., 2d to 3s 6d	Green Mint, per bunch, 2d to 3d
Spinach, per sieve, 1s 6d to 2s	Marjoram, per bunch, 2d to 3d
Scorzonera, per bunch, 1s to 1s 6d	Chervil, per punnet, 2d to 3d
Salsafy, per bunch, 1s to 1s 3d	Chilis, per 100, 1s to 2s

WOOL.—BRITISH, FRIDAY, Oct. 18.

	per lb.		per lb.
Long-wooled Wethers	1s 0d to 1s 1d	Southdown Hoggets	1s 1d to 1s 2d
Do. Hoggets	1 1 1 2½	Kent Fleeces	1 1 1 2½
Southdown Fleeces	1 0 1 1		

JAMES PEARCE, Wool Broker.

MARK-LANE, MONDAY, Oct. 14.

THERE was a fair supply of Wheat this morning from the home counties, a large proportion of which was of inferior quality; the trade opened heavily, and must be written 1*s.* per qr. lower for all descriptions, some quantity remaining unsold at the close. The transactions in Free Foreign were exceedingly limited, Millers evincing great unwillingness to comply with the present rates, which are firmly insisted upon. There is some demand for Bonded, for export to Holland and Belgium.—The finest samples of Malting Barley command an advance of 1*s.* per qr.; inferior and grinding are unaltered in value.—Peas of all sorts are 1*s.* dearer.—Beans rather a better sale.—The Oat-trade is firm at last week's prices.

BRITISH, PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, and Suffolk . . White	40	50	Red .	42	45
—— Norfolk, Lincolnshire, and Yorkshire	—	—	White	—	—
Barley, Malting and distilling 27s to 33s Chevalier	31	37	Grind.	25	30
Oats, Lincolnshire and Yorkshire . . Polands	19	21	Feed	18	20
—— Northumberland and Scotch . . Feed	19	21	Potato	20	22
—— Irish . . . . Feed	17	20	Potato	19	22
Malt, pale, ship	52	56			
—— Hertford and Essex	54	60			
Rye	29	32			
Beans, Masagan, old and new 27 to 30	Tick	28	34	Harrow	29	35
—— Pigeon, Heligoland 28 to 32	Winds.	—	—	Longpod	—	—
Peas, White . . . 32 to 36	Maple	29	32	Grey	29	30

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye	Bns.	Peas
English	4468 Sks.	— Brls.	9697	3242	4992	105	111	1210	905
Irish	—	,, ,,	20	—	—	1412	—	—	—
Foreign	100	,, 850 ,,	100	1098	—	371	—	401	—

FRIDAY, Oct. 18.

The arrivals of all descriptions of Corn since Monday have been small. The Wheat-trade continues dull, but prices are unaltered.—Canadian and American Flour meets a ready sale at our quotations.—26,853 qrs. Barley paid duty in this Port on Wednesday; this morning it met an improved inquiry, and a slight advance in the value is general, amounting on fine Malting qualities to 1*s.* per qr.—Beans and Peas are in good demand, and the turn dearer.—Oats are held for more money, but sales are difficult at an advance.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	3070	1160	120	2220 Sks
Irish	—	—	6260	—
Foreign	—	430	—	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		40s 6d	28s 2d	20s 1d	34s 4d	32s 1d	33s 10d
Sept.	7 per Quarter.	45 11	28 11	20 1	35 9	32 9	34 6
—	14 . . .	46 2	28 6	20 3	36 7	32 3	33 1
—	21 . . .	45 9	26 5	20 5	37 3	32 5	33 0
—	28 . . .	45 1	26 2	20 6	37 5	32 3	32 5
Oct.	5 . . .	45 3	25 6	20 5	37 10	32 11	34 0
—	12 . . .						
6 weeks' Aggreg. Aver.		45 4	24 10	20 5	36 6	32 3	33 7
Duties on Foreign Grain		20 0	4 0	0 0	5 6	5 6	9 6

SEEDS, Oct. 14.

Canary . .	per qr	42s	to	50s	Linseed Calcutta, Foreign, p. bsh.	61s	to 62s
Carraway . .	per cwt	64		66	Mustard, White - p. bush.	10s	14s
Clover, Red, English	—	—		—	— Superfine ,,	12	16
— — Foreign	—	—		—	— Brown ,,	12	16
— White, English	—	—		—	Rapeseed, English, per last	230	240
— — Foreign	—	—		—	Rape Cakes . . per ton	—	—
Coriander . .	—	12		13	Safflower . . .	—	—
Hempseed . .	per last	30		40	Tares, Essex, winter p. bush.	5	6
Linseed . .	per qr	—		—	— Foreign - . .	—	—
— Baltic . .	—	—		—	Tradill . . per cwt	—	—
— Cakes, Eng. per 1000	10l			11l	Turnip (see variable for quotations).		

KINGSFORD AND LAY.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct. 17.

Prime Upland Hay	105s	to	107s	Clover .	90s	to 110s
Inferior ,,	75		85	,, New	—	
New Hay ,,	80		100			

Straw . 30s to 36s

JOHN GOODEN, Salesman.

CUMBERLAND MARKET, Oct. 17.

Superior Meadow Hay	100s	to	110s	Superior Clover	110s	to 115s
Inferior ,,	80		95	Inferior ,,	100	105
New Hay ,,	—		—	New Clover ,,	—	—

Straw 30s to 34s

JAMES BAKER, Hay Salesman.

WHITECHAPEL, Oct. 18.

Fine Old Hay	105s	to	110s	Old Clover	120s	to 125s
New Hay ,,	80		95	New Clover ,,	100	115
				Inferior ,,	—	—

Straw 30s to 34s

BROMPTON-PARK NURSERY AND SEED ESTABLISHMENT.—Established 1681.

MESSRS. GRAY, ADAMS, AND HOGG have much pleasure in directing the attention of their numerous customers to their extensive NURSERY STOCK, consisting of Dwarf and Standard Maiden and Trained Fruit-trees, Figs, Vines, &c. &c., all of which are this season of a very superior description, and will fully maintain the reputation this establishment has for such a long period of years enjoyed for producing these articles. The peculiar nature of the soil renders the removal of all ornamental trees and shrubs almost certain, of which there is a select and extensive collection; together with everything that is desirable in the class of Greenhouse and Herbaceous Plants.

MARKET GARDENERS are invited to inspect a fine stock of Half Standard Apples, Pears, and Plums, which they will find well worthy their attention.

The SEEDS of this season that have come to hand are generally of a very fine quality, and of which Catalogues will be issued in due course.—Kensington-road, October, 1844.

TENTH ANNUAL SALE OF DUTCH ROOTS.

MR. JAMES IZOD begs most respectfully to announce, that he will SELL BY AUCTION, at the Auction Mart, on TUESDAY NEXT, October 22, at Twelve for One, one CASE of very fine assorted DUTCH BULBS, comprising very fine named double and single Hyacinths, Narcissuses, Gladioluses, Ranunculuses, Anemones, Crocuses, Crown Imperials, Lilies, very fine Duc Van Tholl and other Tulips, Snowdrops, and other choice roots.

May be viewed the morning of sale, and Catalogues had at the Auction Mart, and of Mr. Izod, 2, Warnford-court, Throgmorton-street, City.

TO TULIP-GROWERS.

TO BE DISPOSED OF, 31 Rows, 7 in each, of fine TULIPS, the property of a gentleman deceased. They cost originally 12*l.* Selections of rows, or separate bulbs, may be had at half-price, or the whole Collection for 40*l.*—Apply for Catalogues, by letter, to A. B., Mr. Button's Library, Clapham Common, where further particulars also may be learned personally.

CONICAL BOILERS.—The Boilers invented by John Rogers, Esq., are made of several sizes, and may be obtained of John Sherwin, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware-road; Rollisson's, Tooting; Pontey's, Plymouth; The Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's-park.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

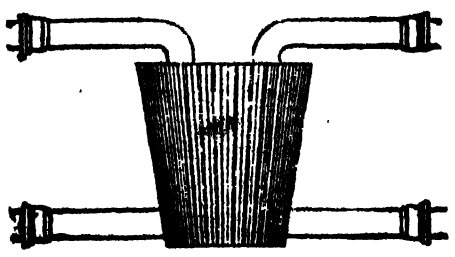
D. and E. Bailey having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. Bailey also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. Bailey were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. Bailey have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



Burbidge and Healy respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, Burbidge and Healy refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. Gandellini, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in.	*l.* *s.*	*s.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	
10	1 5	20	7 6	6 6	6	30 feet.	12 to 20
Ribbed Boiler.							
10	2 2	20	10 6	7 6	6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	25	12 6	7 6	6	60 to 125 feet.	40 to 65
14	3 10	25	17 5	8 6	6	150 to 250 feet.	65 to 100
18	5 5	35	25 0	8 6	6	300 to 400 feet.	Warm a grapery 25ft. long, hade pit 35ft.
24	8 15	50	35 0	8 6	6	600 to 900 feet.	

If 8-inch pipe be used, one-third more. If 6-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the flue door. It is possible to heat a much larger quantity of pipe with the boiler; but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

STEPHENSON AND CO., 61, Grasechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost [illegible]ers, which are now so well known, scarcely [illegible], but to those who have not seen them in operation [illegible]ses will be forwarded as well as reference of the [illegible] authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

COTTAM AND HALLEN, Engineers, Iron-founders, &c., &c., No. 2, Winsley-street, Oxford-street, London, and at Cornwall Road, Lambeth.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with Cottam's Patent or Rogers's Boilers. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for Agricultural and Horticultural Purposes.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON;
GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, Oct. 18, 1844.

WHEAT-SOWING.

GUANO; Genuine Peruvian, Bolivian, and Ichaboe, on Sale; also Potter's Guano, Gypsum, Sulphuric Acid, Sulphates of Iron and Copper, and all other manures. Synopsis of prices, and mode of use, on application, &c.—Apply to Mark Fothergill, 40, Upper Thames-street.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To secure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, illustrated by Practical Results."

Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the warehouses, 21 and 25, Billiter-street, or delivered within any reasonable distance at a trifling additional cost. Apply to James Clare, 24, Billiter-street.

TO COLONISTS, EMIGRANTS, &c. — Mrs. MARY WEDLAKE, widow of the late THOMAS WEDLAKE, at 118, Fenchurch-street, City, informs Emigrants and others that she continues to manufacture those Agricultural Implements for which her late husband was so extensively patronised by the Settlers of South Australia, Van Diemen's Land, Swan River, New Zealand, and other British Colonies. The following articles, made in a very superior manner, are kept on sale at the London Warehouse, viz.:—

Patent Hay-making Machines	Flour-Mills—Bean-Mills
Dressing Machines	Patent Essex Ploughs, 30 sorts
Patent Chaff-cutting Machines	Subsoil Ploughs [Colonies
Oil-cake Crushers	Threshing Machines for the
Double action Turnip-cutters	Drills of all kinds—Scarifiers
Railway Wheels	Vacuum Pumps.

Please to be particular in the address, Mary Wedlake, 118, Fenchurch-street, London.

POTTER'S GUANO MANURE is the only Guano that can positively be depended upon, and has stood the test of three seasons. The imported article, it is well known, is seldom twice alike, even when genuine, and is subject to a most extensive system of adulteration. Orders addressed early to the Works, 29, Upper Fore-street, Lambeth, will have instant attention. Testimonials will be sent per post, if required.

POTTER'S LIQUID GUANO may be had as usual of most Chemists and Seedsmen.

*** Beware of being imposed upon by ineffacacious imitations.

MR. LAWES' MANURES.—Mixture for Wheat, 4*l.* 7*l.* per ton; Super-phosphate of Lime, 7*l.* per ton. To be had at the Factory, Deptford Creek, near London.

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Implements, agricultural, to preserve	722 b	Vine-border, to make	720 c
Land, utility of stones on	724 a	— Mr. Hoare's remarks on	717 c
— to lime	722 a	Whitney's Composition, caution rendered brittle by	717 a
		Wistaria sinensis, to prune	720 c

SGIRLING begs to refer the Readers of the *Gardeners' Chronicle* to his Advertisement of PETUNIAS, SEEDLING VERBENAS, DAHLIAS, &c., of the 12th October. Dancecroft Nursery, Stowmarket, Suffolk.

T. THOMSON begs to inform the Cultivators of the PANSY he is now sending out strong Plants of his New Seedlings, including Pizarro and all the principal leading varieties in cultivation, at moderate prices.—Iver, Oct. 25, 1844.

NEW AND SUPERIOR SEEDLING PELARGONIUMS, RAISED by E. FOSTER, Esq., the Rev. R. GARTH, and Mr. COCK.

W. CATLEUGH begs respectfully to call the attention of Cultivators to the following Seedlings, of which W. C. has the Stock to let out, viz.:—

(2) Robustum		42*s.* 0*d.*	(2) Nabob		42*s.* 0*d.*
Magician		21 0	Vixen		21 0
* Miss Peel		42 0	Shield of Achilles		21 0
Lady Hewick		42 0	* Duke of Devonshire		42 0
* Dr. Lindley		42 0	The Cid		21 0
* Phœon		42 0	Oddity		21 0
Rosetta		42 0	Sultana, or Perpetual		10 6

The above splendid Seedlings were raised by E. Foster, Esq.; those marked (2) have gained two prizes, those marked * one prize at the London Horticultural Society or the Royal Botanic Society, and were universally admired, as being new in character, firm in texture, brilliant and distinct colours.

The following were raised by the Rev. R. Garth, but have never been exhibited.

Adela		42*s.* 0*d.*	Lightning		10*s.* 6*d.*
Anna Boleyn		21 0	Mary		21 0
Apollo		10 6	Magog		42 0
Blood Royal		10 6	Nabob		10 6
Cinderella		21 0	Nameless		42 0
Diadem		42 0	South Western		42 0
Gipsey Queen		21 0	Seduisante		21 0

The following splendid Seedling was raised by Mr. Cock; it is a fine bold flower, and obtained one prize at the Royal Botanic Society:—Hector, 21*s.*

NEW AND SPLENDID CARNATIONS.

W. C. has the entire Stock of the following splendid Scarlet Flake, raised by Mr. Low, to let out:—

Catleugh's Lady Broughton, 21*s.* per pair.

The following fine Seedlings were raised by J. L. Puxley, Esq:

Prince of Wales (purple flake), 21*s.*
Princess Alice ditto 21*s.*
Princess Royal, the finest rose flake yet out, 21*s.*

And other good Seedlings raised by the above gentleman.

C. D. Jersey, Esq.'s fine Seedling Yellow PICOTEES—Beauty, Favourite, La Superbe, Queen.

W. C. has the entire stock raised by the above gentleman to let out.

W. C.'s Catalogue is now ready of first-rate Geraniums, Azaleas, Fuchsias, Roses, Carnations, Picotees, Pinks, Auriculas, Verbenas, &c. &c.

Hans-street, Sloane-street, Chelsea.

TO CUCUMBER AND MELON GROWERS.

ROBERT COOPER, Slon Nursery, Croydon, will forward the under-mentioned varieties of Cucumber and Melon Seeds, post-free, on the receipt of a post-office order payable at Croydon, or postage stamps to the amount.

VICTORIA CUCUMBER, 1*l.* 1*s.* per packet of three seeds, white spine, dark-green colour, short stick neck, very strong bloom, robust grower and prolific bearer; grows from 28 to 34 inches long. N.B.—A seed fruit can be seen at the above Nursery.

MILLS'S JEWESS CUCUMBER, 2*s.* 6*d.* per packet of five seeds; STEWART'S RINGLEADER DO., 2*s.* 6*d.* *dd.*; NEWSUM DO., 1*s.* 6*d.* do.; a handsome black spine fruit, about 18 inches long; an abundant bearer.

HOGSARTH MELON, 2*s.* per packet of five seeds; IMPROVED GREENFLESH DO., 1*s.* do.

JOHN SLATER, FLORIST, Cheetham Hill, near Manchester, respectfully calls the attention of the Horticultural Public to his large and select collection of the following Florists' Flowers:—TULIPS, AURICULAS, POLYANTHUSES, CARNATIONS, and PICOTEES; catalogues of which may be had on prepaid application. 12 plants of named Auriculas, all different varieties, for 20*s.*, package included. 12 plants of Carnations and Picotees, good named varieties, for 20*s.*, package included.

THE TRUE FASTOLFF RASPBERRY.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL & CO. have much pleasure in announcing they are enabled to supply fine Canes of the above highly valuable and much esteemed Raspberry, unequalled for the extraordinary size of its fruit, and richness of flavour.

Those to whom Y. and Co. sent it last season have expressed their high admiration of its superiority over all other varieties, and have been awarded several prizes at various Horticultural Exhibitions during the season. As a proof they have not exaggerated its excellent qualities, Fruit was submitted to Dr. LINDLEY (see *Gardeners' Chronicle* of the 27d July, 1843, p. 503), whose opinion of it is as follows:—

"FASTOLFF RASPBERRY.—We have received from Messrs. YOUELL, of Great Yarmouth, fruit of the Fastolff Raspberry, and we find it merits all that has been stated in favour of its excellence. The fruit that we have received is very large, obtusely conical, and of rich flavour, far exceeding in this respect some other new and large varieties. The plants bear abundantly, and in long succession."

They also exhibited it on the 1st of August, 1843, before the London Horticultural Society, 21, Regent-street, to which a prize was awarded; and again at the Horticultural Society's Exhibition at Chiswick, July 13, 1844, and maintained its high character, by having a Certificate of Merit awarded it. It would therefore be unnecessary for YOUELL and Co. to recommend it more fully, or with greater confidence to the notice of the public, merely observing that it continues in high perfection throughout the autumnal months (vide *Gardeners' Chronicle*, 19th inst., page 703), and has maintained its superiority in the most unfavourable soils and situations, and requires no other than the ordinary treatment of the old varieties.

Fine Canes are ready for delivery, and can be sent with safety to any part of the United Kingdom upon the following terms:—

Packages containing 100 Canes		£2	0	0
Ditto	50	1	1	0
Ditto	25	0	12	0

Package included.

YOUELL and Co. feel it due to themselves to state that a spurious kind was offered for sale by other parties last season, under the title of "Fastolff Raspberry," the same having no pretensions to the genuine variety; and to obviate a repetition of the like they have appointed the following Nurserymen and Seedsmen as their Agents for the sale of it, at whose establishments may be seen engravings of the Fruit:—Bury St. Edmunds—Mr. R. Pettit; Canterbury—Mr. W. Masters; Carlisle—Messrs. Little and Ballantyne; Chichester—Messrs. Newman and Co.; Cliff Vale, near Leek, Staffordshire—Mr. F. Fox; Cork—Messrs. Hayeroft; Doncaster—Mrs. Milan, Seed-shop; Dundee—Messrs. Urquhart and Son; Durham—Messrs. Hancock and Sons; Edinburgh—Messrs. Peter Lawson and Son; Fulham—Messrs. Whitley and Orchorn; Glasgow—Messrs. Drysdale and Co.; Haddington—Mr. T. Dods; Halifax—Mr. W. Throp; Jersey—Mr. B. Saunders; Leeds—Messrs. Ely and Son, Rothwell Haigh; London—Messrs. Flanagan and Son, No. 9, Mansion House-street, and Messrs. Noble, No. 152, Fleet-street; Liverpool—Mr. James Cuthbert, 12, Clayton-square; Manchester—Mr. H. D. Cormack; Nottingham—Mr. J. P. Wood, The Coppice; Peterborough—Mr. John White; Penzance—Mr. J. Fox; Plymouth—Mr. W. E. Randle; Sheffield—Messrs. Fisher, Holmes, and Co.; Southampton—Mr. James Ingram; Stafford—Mr. J. Sandy; Torquay—Mr. J. Morgan; Wakefield, Mr. W. Barratt; Waterford—Messrs. Fennessey and Son; Wexford—Mr. James Harpur; York—Messrs. T. and I. Backhouse.

YOUELL'S CELEBRATED TOBOLSK RHUBARB, the earliest sort known; fine roots, fit for forcing, 12*s.* per dozen.—Great Yarmouth Nursery, Oct. 24, 1844.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX; and at PARIS.

WILLIAM WOOD AND SON beg leave to offer their extensive Stock of CAMELLIAS, fine Stocky Plants, well furnished with Flower buds, at the following prices, the selection of Sorts being left to themselves.

Good and Esteemed Varieties	.	30*s.* per dozen.
Superior Selected do.	.	45*s.* ,,
Superb New do.	.	60*s.* ,,

Also a Superb Collection of all the best and newest CINERARIAS, fine Bushy Plants, well adapted for flowering during the winter months.

Very fine Varieties	.	6*s.* per dozen.
Superior Selected do.	.	12*s.* ,,
Superb New do.	.	18*s.* ,,

Plants will be presented to compensate for carriage. Catalogues of the above; also Lists of W. W. and Son's Collection of FUCHSIAS, VERBENAS, Greenhouse and Herbaceous Plants, may be had *gratis* on application.

Woodlands Nursery, Oct. 25.

SPLENDID NEW SCARLET FLAKE, "STEPHENSON'S HARRIOT."

JOHN STEPHENSON begs to announce to the cultivators of the Carnation, that he has now ready for sending out good healthy plants of the above Seedling, which he does with the utmost confidence recommend for brilliancy of colour, purity of white, and regularity of flake, to be decidedly superior to any flowers of that class.

A Bloom was exhibited at the open Show held at the Coppice, Nottingham, and placed for the *first prize*, (which prize was withheld because it was not entered in due time.)

The following notice appeared in the *Chronicle*, Sept. 14, in allusion to this Seedling:—"The Scarlet Flake was also a *fine* white good high colour, the petals of good texture, and well rebonded."—10*s.* per pair.—A remittance or reference required.

Palmer-lane, York, Oct. 22.

GERANIUM "CELESTIAL."

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, have now ready to send out young plants of their New Geranium "CELESTIAL," which has been so much admired. The flowers being very large, and with a beautiful white throat, it is one of the most conspicuous varieties that has yet been raised. Plants, 10*s.* 6*d.* each.

C. and Sons have also to offer healthy young plants of CAMELLIAS of sorts with flower-buds, at 36*s.* per doz.; larger plants, 42*s.* per doz.; and good plants of the newer sorts, 60*s.* per doz. Also good plants of the best sorts of CHRYSANTHEMUMS, at 12*s.* per doz; larger plants, 18*s.* per doz. The package included in the above prices. A remittance or reference for payment in London will be expected from unknown correspondents.

AGRICULTURAL CHEMISTRY.

RICHARD GRIFFIN & CO., CHEMICAL MUSEUM, Buchanan-street, Glasgow, respectfully call the attention of Agriculturists to the following publications:

1. SIR HUMPHREY DAVY'S COURSE OF LECTURES ON AGRICULTURAL CHEMISTRY. A New Edition, with full Instructions for the Analysis of Soils, and Copious Notes embracing the recent discoveries in this Science. By JOHN SHIER, A.M., Fordyce, Lecturer on Agriculture in the University of Aberdeen. One Vol., 8vo., many figures, 9*s.* cloth.

2. DESCRIPTIVE CATALOGUE of all the Chemical Apparatus and Tests requisite for the Analysis of Soils and Manures, with 62 Engravings. Gratis.

3. DESCRIPTIVE CATALOGUE of a Cheap Set of Chemical Apparatus. Price 21*s.* 6*d.* Adapted for use in Schools where Agricultural Chemistry is taught. Gratis.

The Advertisers undertake to supply all kinds of Chemical Apparatus and pure Tests for Analytical purposes, of the most effective kind, and at moderate prices.

JESSOP'S NURSERY, Cheltenham, Established in 1815, from its extensive connection offers peculiar advantages to Noblemen and Gentlemen requiring Gardeners, Foresters, or Farm Bailiffs, of established skill and reputation. All communications promptly attended to.

ROSES.

H. LANE AND SON'S CATALOGUE OF ROSES for 1844 42 may be had on application to the NURSERIES, GREAT BERKHAMPSTED, HERTS., inclosing a 2*d.* Stamp. The Catalogue is considerably condensed this season by the omission of many old but well-known and valuable varieties, in order to bring it within the limit of the 2*d.* post charge.

Messrs. LANE and SON beg with confidence to solicit the attention of their friends to their immense collection of ROSES IN POTS; at the same time to observe, that upon reference to the Awards of Prizes by the Horticultural and Royal Botanic Societies of London during the last season, it will fully appear that they are the most successful cultivators of Pot-Roses in the kingdom. They also beg to add, that in consequence of the late favourable autumn their Standards and Dwarfs of the Hardy sorts of Roses were never stronger or better grown than they are this season.—Oct. 25.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which may be had at the Nursery, and of Messrs. WARNER & WARNER, Cornhill, London, after the 7th September.

JOHN CATTELL has now ready to send out two SEEDLING CINERARIAS, viz., Hero of Westerham, 5*s.*, —the richest coloured yet sent out. The following is an extract from the *Gardeners' Chronicle* of April 27th:—"J. C.—Your seedling Cineraria is very attractive; the crimson centre with mazarine-purple termination to the petals is of the richest colours, the petals are rather narrow, but the flower is a good size, and most brilliant and beautiful in colour." And Prince of Wales, 5*s.*; centre blue, petals round the centre white, terminating with a beautiful bright deep blue, and excellent shape. These Cinerarias are strong growers, and of shrubby habit. No collection ought to be without them.

Also two SEEDLING ACHIMENES, viz., Rosea coccinea, 5*s.*—the colour as fine scarlet as the old Coccinea, in growth as strong and more bushy than Rosea, and blooms as early—and Atro-Rosea, 3*s.* 6*d.*, an improvement on Rosea. These two varieties will be found very useful for the June and July Shows; also for growing in small pots. Plants in 48 size pots have been loaded with flowers all the summer; while Coccinea, under the same treatment, only began to flower late in September.

The above can be sent by post. A remittance is expected from unknown correspondents.

J. C. begs to call the attention of the public to his fine stock of superior-grown Standard and Dwarf Roses, which are not surpassed, if equalled, by any other grower; a Catalogue of which may be had on application by inclosing a penny stamp. Also his usual extensive stock of Fruit and Forest Trees, Shrubs, Quick, &c., most particularly of transplanted large and small Laurels, Spruce Fir of all sizes, Hollies, Privet, Yews, Lilacs, and Laburnums; also Ash, Chesnut, &c., for underwood; Larch for Hop-poles, &c.—Westerham, Oct. 24th.

J. D. PARKS begs to announce that he has now ready for Sale a fine variety of LABURNUM INTERMEDIUM. Branches and racemes very long; habit very robust, and vigorous; flowers deeper yellow than the common, something later, and very sweet-scented. Dr. Lindley highly recommends it. Fine Seedling Plants at 4*s.* 6*d.*; Dwarf Plants, at 3*s.* 6*d.*

Fine LAURELS, 5 feet high; do HORNBEAM, 9 feet or upward; do. YEWS, at 9*d.* per foot in height; do. WEEPING ASH, at 2*s.* 6*d.*, tall stems. Best varieties of Apples at 1*s.*; Trees very strong. Laurustinus and Portugal Laurels, large Plants.—Dartford Nursery, Dartford, Kent, October 24.

NEW PROVIDENCE PINE PLANTS.

ON SALE.—100 good Succession of the above valuable sort, warranted free from White Scale and Mealy Bug. For particulars apply, prepaid, to JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

TO THE LOVERS OF ROSES.
WOODLANDS NURSERY, MAIDSTONE, NEAR UCKFIELD, SUSSEX, AND AT PARIS.

WILLIAM WOOD AND SON have the honour of submitting to the notice of their Friends and Amateurs, the much-admired truly magnificent Gallica Rose; it has flowered here this season in great perfection, and blooms were forwarded to Dr. LINDLEY, whose opinion appeared in the *Gardeners' Chronicle*, page 564.

MARGARET MARY (Wood's).—"Your seedling, Gallica, is a handsome variety, fine in form, being compact and very double, outside petals finely cupped; its colour is of a purple rose, of a peculiar and beautiful tinge; it is fragrant, and at its best when fully expanded."

Plants of the above are now ready for immediate delivery. Standard and Dwarf at 5s. each. The usual discount to the trade when not less than six plants are ordered at once.

W. W. and Son further beg leave to state that they have on hand a very extensive stock of Roses, at the following prices, when the selection is left entirely to them:—

	Per doz.	Per 100.
Superior selected standard Roses	21s.	£ s. d.
Superb do. do.	30 or 10	0 0
Select dwarf budded do.	12 —	3 15 0
Superb do. do.	18 —	5 0 0
Superior dwarf Roses (on own roots)	9 —	2 10 0
Superb do. do. fine show varieties	12 —	3 15 0
Rose Creeping do.	9s and 12 —	2 10 0

Cottage Roses and Nursery Stock will be sent gratis on application.

N.B. Plants will be presented GRATIS, in order to compensate the expense of carriage. A remittance, or reference, will be required from unknown correspondents.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, GERANIUMS, AURICULAS, CARNATIONS, and LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment FLORIST TO HER MAJESTY, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above Flowers which, from the success he has had in their cultivation, he can offer at very moderate prices. He particularly wishes to call attention to the highly-flattering remarks on his Exhibitions of Tulips and Lilium lancifolium this season, in the various papers. He is also desirous of reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collections or ornament their parterres with these beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Lilium lancifolium are particularly adapted for parterres, as, besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and when flowers are so much wanted. They only require to be known to be universally cultivated. Catalogues can be forwarded by post on application. Foreign orders executed.

THE GREATEST NOVELTY EVER OFFERED TO THE PUBLIC.

RHODODENDRON JACKSONII.—This splendid new hardy Rhododendron is confidently recommended as the most beautiful variety extant; it surpasses in the colours of its flowers the richest Geranium, and is quite a new feature in this noble family. It forces well, is a free bloomer, and of a dwarf habit. A truss of flowers was transmitted to Dr. Lindley, who pronounced it "a very compact and handsome variety," with "great richness" in its general appearance, &c. See *Gardeners' Chronicle* of the 6th April last, page 216, "*Rhododendron*.—*C. L. N.*" To be sent out in March at 10s. 6d. each.

Wm. Jackson and Co. beg also to call the attention of the Nobility, Gentry, and the Trade to the following rare and valuable Rhododendrons, all warranted true, at the very low prices attached. The plants are from seed, fine and stout, before transplanted, and ready to send out.

Rhododendron campanulatum, averaging 1 inch 3*l*. per 100.

HYBRIDS

Between R. campanulatum and the scarlet arborea, 2 in., 3′, p.	100	
" " " maximum	3*l*.	"
" " " nivalcum, 1 inch	7*l*. 10*s*.	"
" " " Catawbiense, 1 inch	7*l*. 10*s*.	"

Usual Discount to the Trade on the above.

Primula Celestial, No. 1, 2*s*. 6*d*. each; do. Fairy, No. 2, 2*s*. 6*d*. each; fine plants well established. See Dr. Lindley's opinion in the *Gardeners' Chronicle* of April 6th, page 216, under the letters "C. L. N.," and Advertisement of Aug. 24th.

Their new Catalogue is now ready (in which is a list of their fine white and scarlet Rhododendrons), and may be had on application. A remittance or reference will be expected from unknown correspondents.

Agents in London: Messrs. WHITLEY and OSBORN, Upham Nursery, who have seen the plants.

Cross Lanes Nursery, near Bedale, Yorkshire, Oct. 25.

HERTFORD NURSERIES.

E. P. FRANCIS begs respectfully to inform the Nobility, Ladies, and Gentry, that his descriptive CATALOGUE OF ROSES is now ready for delivery, and will be forwarded gratis upon application, and which comprises upwards of a thousand varieties.

E. P. F. takes this opportunity of stating that he has made an addition of several acres of land, and that his Nurseries now extend over 25 acres of ground, containing a large stock of Fruit and Forest Trees, which are in fine and healthy condition; a fine assortment of Trained Trees, Evergreens, and Flowering Shrubs, all of which may be had upon the most reasonable terms. Catalogues may be obtained with Prices attached. Carriage of all goods paid to London.

TRAINED PEACHES AND NECTARINES.

WM. E. RENDLE respectfully informs the Nursery Trade that he has this season a large stock of TRAINED PEACHES AND NECTARINES, strong, healthy, and in excellent condition.—Union Road Nursery, Plymouth, Oct. 25, 1844.

GERANIUMS AT VERY LOW PRICES.

WM. E. RENDLE, having a large stock of the following sorts of GERANIUMS, is enabled to offer them at very low rates.

*** A dozen will be forwarded on receipt of a Post-office order, including hamper, package, and carriage free to the London Terminus of the Great Western Railway.

CLASS 1.—3*s*. per dozen, including package, carriage, &c.—Conflagration, Pulchellum, Jersey Maid, Lady Villiers, Fascinator, Lucrece (double), Symmetry, Thunderer, Dido, Cordelia, Gloire, Favourite, Prince of Waterloo, Jessie, Count D'Orsay, Lord Rancliffe, Castellati n, Lavinia, Cornish Gem, Attila, Duchess of Cornwall, and Senator.

CLASS 2.—2*s*. per dozen, including package, carriage, &c.—Regina, Gipsey, Witch, Hamlet, Cynthia, Aurora, Creole, Lady Golden Sheppard, Countess of Mount Edgcumbe, Fair Maid of Devon, Wonder of the West, Portia, Jupiter, Life-guardsman, King John, Rullan, and Princess Royal (Lyne).

CLASS 3.—18*s*. per dozen, including package, carriage, &c.—Camilla, Coronet, Van Amburgh, Enchantress, Glory of the West, Hendon, Flash, Queen of the Fairies, Grand Monarch, Amethyst, Wildfire, Isabel, Prince Albert, Nymph, Bridegroom, and Sybil.

All the plants are strong, healthy, and well established, and will be forwarded immediately on receipt of order.

Union Road Nursery, Plymouth, Oct. 25, 1844.

A SPLENDID NEW LATE PEACH.

MORTON'S "WALBERTON ADMIRABLE."—This splendid variety was raised at Walberton House, in Sussex, the seat of R. Prime, Esq. It is a Seedling from the Noblesse, which it much resembles, both in size and colour. It possesses all the fine qualities of its parent, but its great merit arises from its ripening full five weeks later. A specimen of its fruit was sent to Dr. LINDLEY in 1841, from whom were received the highest testimonials of approbation. The tree is a fine, free, and hardy grower; the fruit is full-sized, melting, and excellent-flavoured, rendering it a truly desirable variety, and one which no good garden ought to be without. Good one year's trained plants can be obtained of ALEXANDER WEBB, Nurseryman, Westergate, near Arundel, Sussex; at Messrs. HAY, ANDERSON, and SANGSTER'S, Newington Butts; and also at Messrs. HOGGE and M'MULLEN'S, 6, Leadenhall-street, London, at 10*s*. 6*d*. each; a few strong plants at 15*s*. each. The usual allowance to the Trade when three or more are taken, and carriage paid to London. Remittance from unknown correspondents is required.

TO THE PLANTERS OF ENGLAND.—TRUE HIGHLAND PINE.

JAMES GRIGOR, NURSERYMAN, Norwich, begs to remind such of the Planters of England as are anxious to enhance the beauty and value of their estates, that he is now sending out plants of this recently introduced and very desirable timber-tree, at the undermentioned prices:—

Single plants, strong and well rooted	6*d*. each.
Strong plants, 20 inches high	5*s*. per 100.
Do. 18 "	30*s*. per 1000.
Smaller-sized plants from 10*s*. to 20*s*.	"

For introducing this tree Messrs. GRIGOR, of Elgin and Forres, were awarded several premiums by the Highland and Agricultural Society of Scotland, where it is rapidly superseding the common Pine. In its old age it assumes in a great measure the darksome grandeur of the Cedar of Lebanon, and is therefore invaluable for planting in masses throughout the more prominent parts of distant landscapes. Sir Walter Scott describes it as presenting much of "the bold and contorted figure of the Oak;" and the *Quarterly Review* recommends it as an acquisition to churchyards and cemeteries. It is highly esteemed for all economical purposes, on account of the hardiness and durability of its wood.

N.B.—J. G. has for the present disposed of all his potted plants; but as the others have excellent roots, there is no risk in removing them. A supply in pots will be ready in the course of next month.

CEDRUS DEODARA, raised from seeds in the open ground, 10*s*. each. Araucaria imbricata, Pinus excelsa, &c. &c. on reasonable terms.

DOUBLE ROMAN and PAPER-WHITE NARCISSUS, 4*s*. per dozen. The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CORBETT'S, late Mr. BARRON'S, Italian and Foreign Warehouse, 18, Pall Mall. Also Dutch Hyacinths, Crocus, Tulips, Anemones, &c. &c. Price Catalogues of which may be had per Post.

TO TULIP GROWERS.—About 1500 TULIPS of first-rate quality, and all named flowers, are now offered at full 50 per cent. lower than they could be purchased in the ordinary way of trade. Owing to the numerous avocations of the Advertiser, they are at present mixed, but the purchaser would have no difficulty in assigning their names when in bloom.—Apply to E. CATLING, Florist, &c., Cambridge.

THE NEW AND SUPERB SEEDLING PICOTEE, "BURROUGHES'S DUKE OF NEWCASTLE."

For particulars of the above, see YOUELL & Co.'s Advertisement of October 12th.

YOUELL AND CO. are also enabled to supply the following superb Picotees, raised by the same gentleman, all possessing first-rate properties, and have been exhibited and obtained first-class prizes at several of the metropolitan Exhibitions of the present year. They are as follow:—

Burroughes's Mrs. Benyon, Red Picotee	7*s*. 6*d*.
" Lady Alice Peel, Rose Picotee	7 6
" Miss Jane, Purple Picotee	7 6
" Mrs. Bevan, Red Picotee	7 6
" Enchantress, Scarlet Picotee	5 0

CARNATIONS AND PICOTEES.

Y. and Co.'s collection of this beautiful tribe of flowers will be found the most extensive and select in Europe, comprising every known variety of merit. The plants are remarkably strong and healthy, and ready for sending out to any part of the United Kingdom and the Continent at the following prices:

		£ s. d.
12 pairs extra fine and very superior first class Show Flowers		2 10 0
25 ditto ditto ditto		5 0 0
12 ditto ditto Show Flowers		1 10 0
25 ditto ditto ditto		3 0 0
12 pairs of Extra fine Show Pinks		0 12 0
25 ditto ditto ditto		1 1 0

The selection being left to Y. and Co.

*** For Particulars of their finest imported DUTCH HYACINTHS, &c., see their Advertisement of Oct. 12.

Great Yarmouth Nursery, Oct. 21.

TO CULTIVATORS OF VINES.

ALEXANDER RUSSELL, GARDENER, Turnham Green, begs to inform his Friends and the Public generally that he has for Sale a few dozens of Black Hamburgh VINES in Pots, grown from eyes last spring; wood strong, well ripened, and eyes fully developed, and cannot fail to insure a good crop next season, if forced in the pots. To prevent disappointment, early applications will be necessary. Price 5*s*. each.

FUCHSIA "EDINA."

JAMES DICKSON AND SONS beg to inform their Floricultural friends that they will send out early in spring strong plants of the above hand-some and showy Fuchsia, which was so much admired during the past season at all the Horticultural Shows at which it was exhibited. Dr. Neill then described it as "remarkable for the size of its flowers;" and its form and colour, as well as habit of plant, are also of a very superior description. Plants, 7*s*. 6*d*. each, postage included.—Inverleith Nurseries, Edinburgh, Oct. 1844.

PLANTS WANTED.

EVERGREEN OAKS in Pots 3 to 5 feet; Common YEWS, 2 to 3 feet; Canadian HOLLIES, 2 to 3 feet; Common Firs in Pots, 2 to 3 feet; Euphenrum fruticosum, and Variegated HOLLIES; they must be good plants, with prices and every particular.—Address immediately to WILLIAM MILLER, Providence Nursery, Ramsgate, Kent.

CHOICE HYACINTHS AND OTHER DUTCH BULBS.

CLARKE AND CO., SEEDSMEN AND FLORISTS, beg to inform the Nobility, Gentry, and the Public, that their Collection of the above ROOTS have come to hand in very excellent condition this season. Early orders will insure good roots, and to which every attention will be paid. Catalogues will be forwarded Post-free on application.

100 Choice selected Hyacinths, (either for pots or glasses,) in 50 beautiful named sorts . . 2 10 0.

N.B.—Any Roots purchased or ordered, if not approved of, or found to be unsound, will be exchanged.—The Trade supplied.

56, High-street (opposite the Town-hall), Borough, London.

RICH LEAF-MOULD and PEAT-EARTH.—Several acres of valuable Peat-earth and Leaf-mould of a rich quality, to be disposed of. Gentlemen and Nurserymen engaged in the Cultivation of Heaths and American Plants will find the above articles of a very superior kind. They will also be found of great value as dressings upon strong lands.—For full particulars apply to Mr. LAWRENCE, Corn Chandler and Seedsman, No. 15, Piccadilly.

HOTHOUSES, CONSERVATORIES, &c., made and fixed Complete in all parts of the Kingdom. One, two, and three-light Cucumber and Melon-Boxes and Lights of all sizes kept ready for immediate use, packed and sent to all parts of the Kingdom; warranted best material. Two-light Boxes and Lights complete, from 1*l*. 6*s*. Garden-Lights made and glazed from 1*s*. per foot, at JAS. WATTS'S Sash Manufactory, Claremont-place, Old Kent-road. *** References given.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Bottoms for Frames
Cisterns	Boxes for Balconies and Verandahs
Shelves	
Garden Edging	Orange Tubs; Flower Boxes, &c.

EDWARD BECK will be happy to answer any inquiries, either personally or by post.

Sales by Auction.

EXTENSIVE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS beg to announce they have received instructions to sell by Auction, on the Premises, Windmill-lane, Camberwell, on Monday, 28th of October, 1844, and following days, at Eleven o'clock, a most valuable and varied collection of Hardy Trees, Shrubs, American Plants, Evergreens, blooming Camellias, Ericas, &c. Amongst the stock will be found some fine bearing Mulberries, and several hundred of fine straight young plants of ditto. There are also fine Magnolias of sorts, strong Vines in pots, Climbing and other Roses, a first-rate collection of choice American Plants, and other valuable Shrubs, affording a most eligible opportunity for Nurserymen providing themselves with healthy stock. A portion of the American Plants, Shrubs, &c., will be lotted in varied collection to suit all customers. Catalogues may be had of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

ST. ALBAN'S, HERTS.

UNRESERVED SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the Mortgagee (in consequence of the Estate having been disposed of), to submit to public competition, on the premises, the Key Field Nursery, St. Alban's, on Monday, Nov. 18th, 1844, and following days, at 11 o'clock, the whole of the varied NURSERY STOCK, comprising Fruit and Forest-trees, Evergreens, Ornamental, Deciduous, and American Plants of every variety, and about 3000 Standard and Dwarf Roses, consisting of the choicest varieties; 1,000,000 Quick and Oaks, of different ages; Seedling Beech, Ash, &c., Sea Kale, Asparagus, and Rhubarb, Dahlias, and Herbaceous Plants. The lots will be arranged to suit large and small purchasers. May be viewed one week prior to the Sale. Catalogues 6d. each, returnable to purchasers, may be had on the premises, of A. A. DORANT, Auctioneer and Land Surveyor, St. Alban's; of the principal Seedsmen in London, and of the Auctioneers, Leytonstone, Essex.

EXTENSIVE SALE OF A CHOICE COLLECTION OF EVERGREENS, AMERICAN PLANTS AND SHRUBS.

MR. MATTHEWS (of Spital Square) is instructed to Sell by Auction, on the Premises, Boddicot House, Homerton, on WEDNESDAY next, OCTOBER 30th, 1844, at 11, for 12 o'clock, on account of the number of Lots, A LARGE AND VALUABLE COLLECTION OF EVERGREENS, CHOICE AMERICAN PLANTS AND SHRUBS, in great variety; two very superior Greenhouses, 29 feet by 16, and 21 feet by 10, with Flower Stages. A great quantity of Iron Fencing, Forcing, and Melon Frames, several Summer Houses, Iron Garden Seats, and numerous out-door Articles. The complete erection of a most expensive BATH-HOUSE, fitted in an unusually convenient way, with Marble Plunging Bath (Cold or Tepid), Hip and Shower ditto, Dressing Rooms, &c.; the whole of which, with its numerous Pipes and Fittings, will form one valuable Lot (unless in the meantime disposed of by Private Contract), and being detached is capable of removal at a small expense. Also a small Stack of Meadow Hay.

May be viewed until the Sale, and Catalogues had of the Gardener, on the Premises, and (by post or otherwise) at Mr. MATTHEWS'S, Auction and Estate Offices, 2, Spital Square, Bishopsgate-street.

AMERICAN NURSERY, KING'S ROAD, CHELSEA.

To Noblemen, Gentlemen, Nurserymen, Florists, and Others.

MR. KIRKE will sell by Auction, on the Premises (late the American Nursery), King's-road, Chelsea, on WEDNESDAY, OCTOBER 30, 1844, and following day, at Eleven for Twelve o'clock (each day), by order of the Proprietor, the ground being required for other purposes, the VALUABLE COLLECTION, comprising several thousand Ansuba japonicas, Laurels, Laurestinus, Hollies, Box (common and Siberian), Lilacs, Roses, Portugal, fine standard Mulberries, Yews, a quantity of large ornamental Flowering Shrubs and Evergreens, Yuccas, Orange and Lemon-trees, Greenhouse Plants, &c. &c. (arranged in large and small lots, to suit the convenience of purchasers), and Greenhouses. May be viewed two days prior to the sale. Catalogues had on the premises; of Messrs. GAINES, Seedsmen, Covent Garden; Messrs. T. and C. LOCKHART, Seedsmen, Cheapside, City; and at the Offices of the Auctioneer, 29, Brompton-row, Brompton.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

LAVENDER-HILL NURSERY, WANDSWORTH-ROAD, NEAR LONDON.

During the month of November, will be sold by Auction, unless previously disposed of by private Contract, the valuable and healthy NURSERY STOCK of the late Mr. W. PAMPLIN, by order of the Executors, consisting of about Nine Acres of general NURSERY STOCK, particularly abounding in the Finest HARDY EVERGREENS, of all sizes; FRUIT-TREES, SHRUBS, and PLANTS; Large and Small CAMELLIAS, an extensive Collection of FERNS (some of extreme rarity); Erection of Greenhouse, Garden Frames, and Lights; Garden Implements, Shop Fixtures; quantity of Vegetable and Flower Seeds of the present Harvest, including a half-cwt. of best White Spanish Onion, Early Cauliflower, &c. &c.

Due notice of particulars will be given in a future advertisement. Meanwhile, parties contemplating purchasing the Leases of the Premises will be treated with at once, and may learn full particulars, and may inspect the Leases, on applying to Mr. W. J. LOAN, Clapham Common; or to Mr. W. PAMPLIN, Bookseller, 45, Frith-street, Soho.

HANTS.

TO BE LET, with immediate possession, a most desirable TITHE FREE FARM, containing about 62 Hundred statute Acres of Arable and Pasture Land, surrounded with good Markets. Also, a good WATER CORN MILL, adjoining the above Farm.

For particulars apply to WILLIAM FAWCUS, Esq., Manor House, Hayling, Havant, Hants.

NEW CATALOGUE OF FLORISTS' FLOWERS.

MESSRS. TYSO AND SON'S DESCRIPTIVE PRICED CATALOGUE of their extensive Collection of Tulips, Ranunculuses, Geraniums, Carnations, Picotees, Pinks, &c. &c., for 1844, is just printed, and will be sent, post free, to applicants inclosing two postage Labels.

Wallingford, Oct. 26, 1844.

BROMPTON-PARK NURSERY AND SEED ESTABLISHMENT.—ESTABLISHED 1681.

MESSRS. GRAY, ADAMS, AND HOGG have much pleasure in directing the attention of their numerous customers to their extensive NURSERY STOCK, consisting of Dwarf and Standard Maiden and Trained Fruit-trees, Figs, Vines, &c. &c., all of which are this season of a very superior description, and will fully maintain the reputation this establishment has for such a long period of years enjoyed for producing these articles. The peculiar nature of the soil renders the removal of all ornamental trees and shrubs almost certain, of which there is a select and extensive collection; together with everything that is desirable in the class of Greenhouse and Herbaceous Plants.

MARKET GARDENERS are invited to inspect a fine stock of Half Standard Apples, Pears, and Plums, which they will find well worthy their attention.

The SEEDS of this season that have come to hand are generally of a very fine quality, and of which Catalogues will be issued in due course.—Kensington-road, October, 1844.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 26, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

FRIDAY,	Nov. 1	Botanical	0 P.M.
TUESDAY,	Nov. 5	Horticultural	2 P.M.
		Linnean	8 P.M.
SATURDAY,	Nov. 9	Royal Botanic	4 P.M.

THE ACTION OF LIGHT AND MOISTURE UPON CUTTINGS is hardly inferior to that of heat. Let us glance at their action separately.

The moment light strikes a green plant it excites perspiration. Let us imagine that a cutting weighed 20 at daybreak; the uninterrupted action of light upon it during the day would perhaps reduce its weight to 5, unless it is supplied with water to replace that which the sunlight drives off: the effect of this would, of course, be to kill it. But such a result does not often happen to rooted plants, because they are able to suck fluid out of the earth as fast as the sun drives it off from their leaves, and the circulation of the plant is active enough to prevent any part from being exhausted of fluid. If it is not sufficiently active, then we have leaves withered at the end, or branches struck with dryness. But a cutting, having no roots, is unable to contend against the sun's influence, and therefore it must be shaded; for, as we cannot make it feed, we must prevent its wanting food. Thus in tropical countries we learn from Mr. Neumann that cuttings are struck in sheds shaded by straw and watered occasionally; with us the same point is also gained by cutting off the leaves, or a part of them, for they are the chief perspiring organs.

But there is this disadvantage in cutting off the access of light, that roots are formed more rapidly when cuttings are exposed to light than when they are shaded, provided they can be kept alive. It is therefore a great problem to determine how much light a cutting will endure with impunity. The power of bearing light varies from species to species, and is only to be determined by experience. One plant fades presently, because its powers of perspiration are very great, as is the case with the young shoots of most species of herbaceous and shrubby plants; but as they grow older the loss by perspiration diminishes, because their thickened skin opposes a mechanical obstacle, and they can bear more light. It would therefore seem, at first sight, that ripened cuttings must in all cases be preferable to those which are young and tender. Certainly, they are less liable to die quickly; but they are also much more unwilling to root quickly. In fact, notwithstanding the difficulty of keeping very young cuttings alive, they present the only means of striking very difficult species, such, according to Mr. Neumann, as the Cashew, the Mahogany, and the Litchi. We may lay it down as a certain rule that the power of rooting is always greatest in all cuttings when they are first pushing, provided they have light. The misfortune is, that they are so extremely perishable at that time.

Water is our aid in this case. It is true that the sun's influence can have no injurious tendency so long as the roots can drink and the system digest as fast as the surface perspires; and that the reverse is fatal. But the whole surface of a plant absorbs as well as evaporates, and the younger it is the more it absorbs. It is therefore possible to give plants drink by their leaves; and if this is done with skill, the bad influence of the sun is prevented. In that case the cutting has time enough to make roots, by which its grosser food may be conveyed to it. Hence has arisen the practice of striking plants under bell-glasses, fitting tight to the soil on which they rest. Ignorant people believe that the use of a bell-glass is to keep out air, which is impracticable and useless. Bell-glasses act by keeping in moisture. From the surface of warm damp soil water is perpetually escaping in the form of invisible vapour; if the soil is freely exposed, that vapour is dispersed as fast as it is formed; but when it is confined beneath a bell-glass the air is unchanged, and the vapour remains in a state of suspension, bathing and invigorating the whole surface of the cuttings. If this is well managed the whole of the injurious effects of sunlight are prevented, and all the advantages of it secured.

But it is not sufficient to place cuttings under a bell-glass with a moist soil and a due supply of bottom-heat. Two other things must be considered: the one is, to preserve the external air in a uniform state; the other is, to take care that the soil is not too wet.

If the air on the outside of the bell-glasses is not as warm as that beneath them, or warmer, the moisture floating in their interior will condense on the sides of the glass and run down, by which means the air that surrounds the cuttings will fluctuate as to the quantity of water it holds suspended; and if the external air is much colder than the internal, will, in fact, be dry, instead of damp. In their delicate state tender cuttings will not bear this; it is of the utmost consequence to them that all the conditions to which they are exposed, except light, should be perfectly steady.

The condition of the soil as to water, is also of infinite importance. If it is wet, cuttings are apt to rot. If dry, they are sure to fade. When a cutting is placed in a wet medium, it may attract more water than it can digest; in that case its fluids will become putrid, and its solid fabric must decay. It is therefore indispensable, in all delicate operations, that the soil should be of such a nature as to be incapable of holding much water between its particles; and hence the value of silver sand, the most favourable of all the materials within a gardener's reach. Nevertheless, there are some hard-wooded plants which will not only bear an excess of water but are the better for it. We have seen the common Ghent Azaleas struck by placing a cutting of the young wood, with a heel to it, in a bottle of water, inclosed within a large Ward's Case, none of the leaves having been removed. In such plants as the Azalea, however, it is to be observed, that the dense texture of the wood prevents the introduction of much water at a time, that the cuttings are very slender, and the leaves very large. Plants that are differently constituted can bear no such treatment. Let it be tried with a succulent plant, and the cutting would be rotten in a week. Succulent plants, indeed, will generally do best where there is no more moisture in contact with them than what the air holds suspended. When they are gummy, or milky, or resinous, it is necessary to let the end which is to be plunged in the ground become dry, so that the mouths of the veins may contract, and thus hinder the too rapid introduction of water. Mr. Neumann's mode of doing this is ingenious. When he takes off cuttings of Araucarias, Euphorbias, Vahea gummifera, and such plants, he plunges them in a pot, in damp earth, not pressed down, with their lower end upwards, so that the latter only is exposed to the air, the whole head being buried. By this means he dries the wound, without allowing any of the water of such cuttings to escape. After leaving them for 24 or 36 hours, or even more, he wipes the end, so as to remove the gummy matter that has exuded, and then puts them in again in the usual way, when they take, and the more freely according as the wound is neatly made.

One observation more and we have done for to-day. It is known that plants possess some quality analogous to animal irritability, to which, for want of a better, the name of excitability has been given. In proportion to the amount of excitability in a given plant is the power which its cuttings possess of striking. The great promoter of vegetable excitability is heat. Therefore the more heat a given plant has been exposed to, within certain limits, the more readily its cuttings will strike root. This explains what seems to have puzzled Mr. Neumann. "The young wood," he says, "of trees growing in the open air will not do for cuttings; and yet, if those same trees are forced in a hothouse, their cuttings are almost sure to succeed. Physiologists have not discovered the cause of this singular phenomenon. Many attempts have been made to strike cuttings from trees growing in the open air, but without success. If, for instance, we take an old branch of Pawlownia Imperialis, in the month of March, and put it into earth, or tan, or even water, in a stove with a good temperature, its buds will soon appear, and as soon as they are long enough to make herbaceous cuttings, will strike freely. But if you take them as they form upon a tree exposed to the open air, they will not grow at all." Vegetable excitability, a most important attribute, but little thought of, is the obvious explanation of this fact; with which, however, we were not previously acquainted.

MILTONIA SPECTABILIS.

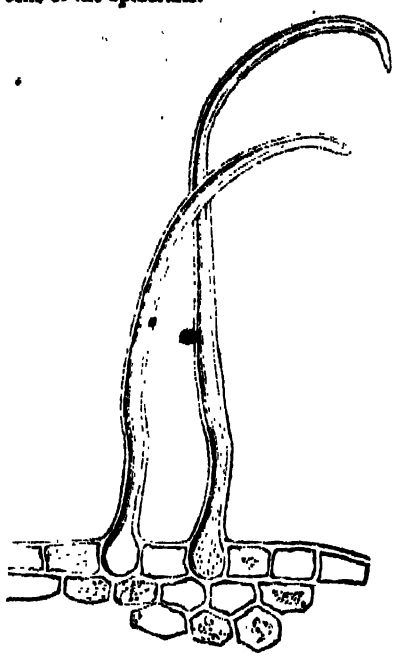
THE following is the way in which I cultivate this plant; and, in the first place, lest some people may imagine that the accommodation here for stove plants is large, and the mode of heating, &c., conducted on the newest and most approved principles, I may mention that all the convenience I have for growing specimen stove plants consists of a shelf which goes round the ends and front of a Pine stove; the whole length of this, including the ends, is 38 feet, and 2 feet in width. I have not, therefore, room for growing even Miltonia spectabilis to half the size that, with increased accommodation, I conceive might be very easily accomplished. This house is heated by common brick flues, with covers of the same material, each cover having a cavity an inch in depth, for holding water, with which they are generally filled three times a day, excepting in winter when the weather is foggy, or the frost severe, when I consider that a very humid atmosphere is injurious, especially to Orchidaceæ that are making young growths. In winter, when the weather is cold, the thermometer is allowed to fall to 55°, and in very mild weather it is allowed to rise as high as 70°; but from 60° to 65° may be stated as the general winter temperature. In summer the thermometer is allowed to vary from 65° to 80°, but from 70° to 75° is our ordinary summer temperature. In warm weather air is admitted freely by the top sashes; in cold weather it is very sparingly admitted, and when we have severe frosts, accompanied by high winds, I give no air unless the sun-heat is strong. In the selection of soil for Orchidaceous plants, as many of them are in their native localities found in shady forests, where decomposed leaves, incorporated with vegetable fibre, are likely to form the principal ingredients in which the terrestrial species naturally grow, I made choice of material from a wood where decomposed leaves are in some places to be found from 1 inch to 4 inches in depth, thickly covered with Luzula maxima, and completely matted with its roots. This material I use in a fresh and rough state, merely divesting it of the green stems of the Luzula, and pulling it into pieces suitable for filling up between the ball of the plant and the sides of the pot into which it is shifted. I always mix this material with a small quantity of coarse river sand, and sometimes a few pieces of rotten wood, to keep the whole as loose and open as possible, which I consider of great importance. In this compost there are few Orchidaceous plants which have come my way that do not thrive. I received a single pseudo-bulb of Miltonia spectabilis having two buds beginning to push, in the autumn of 1838. I potted it into a No. 60 pot, in the material above described, which I have uniformly used; in the spring of 1839 it perfected its young pseudo-bulbs, which, in their turn, immediately began to push, when I again shifted the plant into a larger pot; as the young shoots lengthened they showed a tendency to grow to one side of the pot. I pegged them round in the opposite direction, as far as I could venture, without straining them too much, in order that the plant might regularly cover the pot. This I have always punctually attended to, once, and sometimes twice a-year, as it was required; in that year (1839) it produced three flower-stems, which I valued more highly than I did the 46 it this year produced, 36 of which being the exact number in bloom when I exhibited it at Glasgow in August last (see p. 573). I cannot state accurately the different sizes of pots into which it has been progressively shifted, as in that respect I have been entirely guided by circumstances; but I am perfectly certain that I got it at the time, and in the state above described, that it was first put into a No. 60 pot, and that it has since been regularly shifted once a-year, sometimes in spring, and sometimes in autumn, according as the plant required it; for I consider it a matter of little moment at which of these seasons it is shifted; I am certain that in either case it grew equally luxuriantly; it has here always made fresh growth in spring, at which time I shifted it, and it has just as regularly made fresh growth in autumn after it has ceased flowering, at which time I shifted it when I adopted that season; but in both cases I allowed the young shoots to grow from 2 to 4 inches in length before I shifted, which enabled me to peg them down in the place I wished them to occupy. The pot in which the plant is at present growing is 16 inches in diameter. The plant is densely covered with healthy foliage and young growths; many of the latter are now protruding from 2 to 4 inches beyond the rim of the pot. I have not said anything respecting the drainage of the pots, as every one who knows anything of pot-culture must be aware that that is absolutely necessary for all plants, and more especially for Orchidaceæ. In summer I have always supplied Miltonia spectabilis freely with water when the soil appeared dry, and in winter I give no more than I consider necessary to keep the plant in a growing state, which ought to be always maintained. I consider shading from the direct rays of the sun to be of the utmost importance in the culture of this plant, so much so that for some years past, on the approach of hot weather in spring, I tack a piece of thin canvas or cheese-cloth over the place where it stands. I do not remove this until about the end of September, when the sun loses its scorching influence. From the want of proper attention to shading, I strongly suspect the majority of complaints regarding the yellow appearance of Miltonia is attributable to that. In conclusion, I think it but justice to say, that I could have had the plant considerably larger, having in the course of the time above stated taken eight young plants off it, the first of which was detached not more than 18 months after I received it.—*A. Turnbull, Bothwell Castle.*

DISEASES OF PLANTS.—No. V.

[FUNGI.]

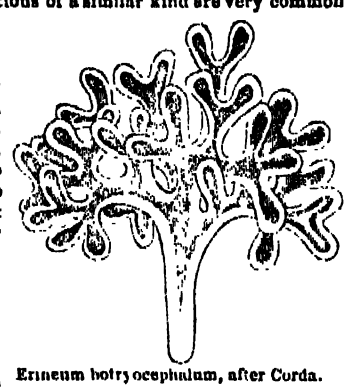
WE have, before entering on the true Fungi, to dispose of a group of productions which have been arranged

by botanists under various genera as distinct species, but which are in reality nothing more than a diseased state of the cells of the epidermis.



Erineum Juglandis, to show how the threads arise from the cells of the leaf.

Every one must have remarked the swollen spots which occur so frequently on the leaves of Vines and Walnuts, and if they have had the curiosity to examine the under side of the leaf, they will have found in the one case a woolly mass, at first white and sparkling, but soon becoming brown; and in the other a short white velvety stratum. Productions of a similar kind are very common upon trees, especially of those belonging to the Natural Order Amentaceæ, such as the Birch, Beech, Oak, &c., though by no means confined to them. It is not uncommon for more than one form to be produced upon the same tree—a circumstance which has confirmed many in the notion that they are parasitical Fungi. They are found in all parts of the world, and exhibit in tropical climates many very curious forms far more highly developed and complicated than in our northern regions, where indeed they appear to be most abundant. In Northern America, a few kinds only are found, and those, with a single exception, European forms, and of rare occurrence. The Lime, which in Europe produces them so abundantly, in America has at present not been found to produce a single specimen.



Erineum botryocephalum, after Corda.

In form they vary from that of a simple or jointed thread, through every grade to a beautiful cluster, as in Erineum alneum and E. botryocephalum; or a complicated cellular mass, as in Septotrichum lamellosum.

In infancy they are usually white, though sometimes red or yellow; but they acquire as they grow old rich tints of red or brown—rarely of golden yellow. They occur in all soils and in all situations; and, as in so many other diseases of plants, the causes which favour their development are utterly unknown. If carefully examined, they are found to be continuous with the cells of the cuticle, and they contain a grumous mass of the same nature as that contained by the cells, but acquiring by degrees the tint peculiar to the particular form; on the copper-coloured Beech, the colour of the grumous mass partakes of the rich tint which distinguishes the matrix. That they arise from the cuticle in the same manner as the hairs, is now matter of doubt to few, though new species are still proposed; and within a short time magnificent illustrations have been given of these bodies by Corda, who, however, speaks doubtfully of their nature. A special work is also devoted to the subject, by Fée. They are not accompanied, except accidentally, by any insect, but appear to arise from an excess of nourishment, causing the cells in certain portions of the leaf to swell, and possibly the hairs themselves; and it is probable that they are in many cases beneficial to the plant, exactly in the same way as certain eruptions in the animal kingdom. It is, indeed, possible that when the disease exists to a very great extent, a portion of the sustenance intended for the young fruit is diverted; and I have observed that, in such cases, the leaves sometimes wither prematurely, which must be injurious to the next year's crop.



Septotrichum lamellosum, after Corda.

It has been a question whether the same situations which are favourable to the development of hairs on leaves are so to that of these eruptions. Such, however, does not appear to be the case; nor, supposing them to be mere anamorphoses of the hairs, does it appear to me to follow, as a matter of course, that it should be so. Nor, indeed, does it seem quite certain that they are always over-developed hairs, however analogous they may be to them, or however similar their origin. Some of the productions, indeed, which are referred by authors to Erineum are nothing more than patches of hairs in the axils of the nerves in their normal condition. Where one tree is affected by the disease, it is common for every tree in the neighbourhood to be similarly affected. They depend, therefore, upon certain conditions of soil and climate; and even were these known, it would perhaps be difficult to suggest a remedy; nor, indeed, if the effects be no more prejudicial than stated above, would it be of much importance to do so.

One or two productions of a somewhat different nature are also, without good grounds, referred to Fungi. The little pustular spots which occur upon the smooth bark of trees, as the Alder, and which contain a brown pulverulent mass of a mealy or branny appearance, are clearly nothing but a diseased state of the bark (Hypophlæa), which from some unknown cause is more or less perfectly resolved at these points into its constituent cells. I have seen something similar on a species of Bassia, from Burma, kindly communicated to me by Dr. Lindley, in which a portion of the cuticle and the subjacent cells split off in the form of a lid, leaving a cup behind; but, in this case, an insect may have been at work. A production not very dissimilar occurs on the common Laurel.

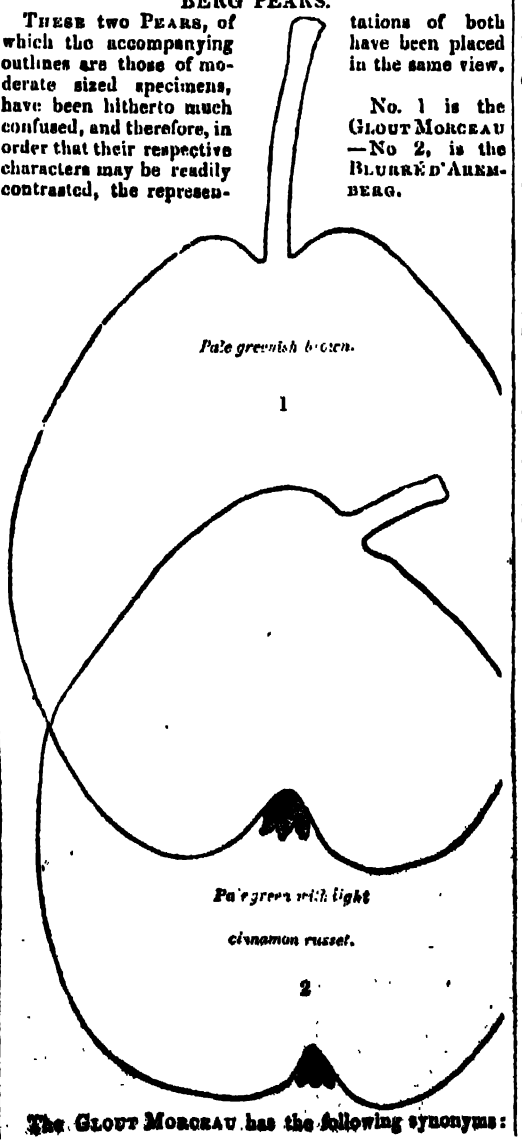
Perhaps, with as little reason, some of the bodies occasionally developed in the cells of plants, known, but at present imperfectly, under the name of Protomyces, are referred to the vegetable kingdom. I have not, however, had an opportunity of examining specimens; but in the genus Physoderma, illustrated by Corda, I am distinctly of opinion that the supposed reproductive bodies are mere diseases of the cells; as I believe the bodies in Protomyces to be a diseased state of the contained granules. Turpin was of opinion that such was the case in the important family of Mildew, Rust, &c. But that, in this case, he was wrong, has been amply proved by the researches of Léveillé and Corda.

In the ensuing Paper I shall say a few words on Galls, because, though caused by insects, they are often referred to Fungi; and there is a curious analogy in the forms which they assume, so that they occasionally deceive even practised eyes.—*M. J. Berkeley.*

GLOUT MORCEAU AND BEURRÉ D'AREMBERG PEARS.

These two Pears, of which the accompanying outlines are those of moderate sized specimens, have been hitherto much confused, and therefore, in order that their respective characters may be readily contrasted, the representations of both have been placed in the same view.

No. 1 is the Glout Morceau—No 2, is the Beurré d'Aremberg.



The Glout Morceau has the following synonyms: Gloux Morceaux, Goulu Morceau, Beurré d'Hardenpont, Hardenpont d'Hiver, Beurré d'Hiver Nouvelle, Beurré d'Aremberg (of some), Beurré de Cambron, Colmar d'Hiver, Linden d'Automne, Roi de Würtemberg, Got Luc de Cambron, Hardenpont's Winterbutterbirne, Kronprinz Ferdinand von Oestreich, Stück.

Frequent inquiries have been made respecting the meaning of the word *glout*, now generally adopted as part of the name of this Pear. Van Mons, "Arbres Fruitiers," p. 373, not then aware of the identity, describes the Beurré d'Hardenpont as scarcely distinguishable from the Glout Morceau. In quoting this, Dr. Diel incidentally remarks:—"This Frassbissen" (Glout Morceau) "is, however, unknown to me." Instead of this and similar meanings having reference to *gourmand*, the most appropriate explanation may probably be found in the sense in which the synonym, Goulu Morceau is occasionally employed: thus—*Pois goulu*, according to Chambaud, signifies sugar-peas, honey-peas; the Pear in question may be accordingly termed a sugared or honied morsel. This epithet corresponds with the quality of the fruit. Should a different meaning, however, attach to the word in Belgium, where the Pear in question and its name originated, information respecting such will probably be supplied through the kindness of some correspondent. The syn. Goulu Morceau was recently observed in the catalogue of M. Henrard, of Liege.

The Glout Morceau was raised by Councillor Hardenpont, at Mons. It varies much in its form; sometimes it is, on standards, roundish; but fairly grown on such, the accompanying outline affords a good representation. Occasionally, on walls, instead of obovate, it elongates considerably towards the eye, with an obtusely angular, or somewhat square appearance, and altogether not unlike the form of a Portugal Quince. The flesh is white, exceedingly smooth and buttery, rich and sugary, not the least acidity being detected in its flavour. The seeds appear more perfect than in most fine varieties, and this being the case, they deserve the attention of those engaged in raising seedlings. In some seasons and situations it becomes fit for use in November, in others not till January; but December is its most usual period. The fruit hangs late on the tree; and, in the southern counties at least, is best flavoured from standards. The tree is an abundant bearer, hardy, not disposed to canker. The shoots are dark olive, with prominent, diverging buds. Leaves ovate-oblong, crenated, or, near the extremity of the shoots, serrated, bright green; they may be distinguished by the wavy appearance of the margins. It ought to be in every collection; in various situations, in the open ground; on an espalier it succeeds well; and it highly deserves a south wall.

Beurré d'Aremberg.—*Synonyms:* Duc d'Aremberg, Deschamps, Colmar Deschamps, L'Orpheline, Beurré des Orphelines, D'Aremberg Parfait. It was raised by the Abbé Deschamps, in the garden of the Hospice des Orphelines, at Enghein. M. Noisette, of Paris, introduced to the French nurseries a variety of Pear from the garden of the Duc d'Aremberg, and which was in consequence extensively cultivated under the name of Beurré d'Aremberg; but this proved to be the Glout Morceau, and hence arose much of the confusion which prevailed with regard to these varieties. The fruit of the Beurré d'Aremberg may be distinguished from that of the Glout Morceau by its shorter stalk, generally bent almost at a right angle to the axis of the fruit; the eye is frequently destitute of any remains of the sepals or calyx. The flesh is melting and more juicy than that of Glout Morceau, but not so fine and buttery; and, except in very favourable seasons and situations, there is an acidity of which few approve, but some do prefer it as being refreshing. On this account it is not so well adapted for general cultivation as is the Glout Morceau. In a warm season and good situation its acidity becomes changed, and in that case it is, at maturity, a rich melting fruit. Its general period of ripening corresponds with that of the Glout Morceau. The tree bears very abundantly, so much so, that the fruit is often very small from standards. The wood is not entirely free from symptoms of canker. Shoots clear yellowish brown, sprinkled with small oblong pale brown specks. Leaves oblong, tapering to the apex, somewhat folded, and towards autumn the middle rib is much recurved in many instances. It must be allowed to rank as a first-rate Pear under favourable circumstances; but its merits, on the whole, are inferior to those of the Glout Morceau.—*R. T.*

Home Correspondence.

Pruning Forest Trees.—In last week's Paper, I saw an answer from Dr. Thackeray to some critical remarks of Mr. Billington's on the management of the Nerquis Plantations. Admitting that the trees in the Nerquis Plantations are fine specimens of growth, does it follow that their vigour is solely attributable to the pruning they have had? Certainly not. And in this I entirely agree with "Quercus." Dr. Thackeray's theory may be stated as follows:—1st. That timber is formed by the ascending sap. 2dly. That by pruning off side branches, the quantity of sap supplying those branches is forced into the stem, thereby increasing its bulk. He endeavours to support this assertion by referring to amputations of the human frame as a means of producing corpulency! But the comparison is erroneous, and utterly fails in showing an analogy between the vegetable and animal kingdoms. I can only repeat what has been previously stated in your columns, viz., that, other circumstances being alike, the vigour of a tree is in exact proportion to the amount of foliage exposed to

solar light, and consequently trees growing singly generally contain the greatest amount of timber; but, from the branches having the power of spreading in each direction unobstructed, the bole or trunk, which may be called the marketable part, is often out of proportion to the branches; and this can only be managed to advantage, by tolerably thick planting and judicious thinning afterwards. The branches being thus prevented from taking a strong lateral direction, the plants get slightly drawn, and a proper bole or trunk is formed. Take care to thin whenever their branches interfere with each other, keep a single leader, and prevent strong lateral shoots from forming, by pinching out their extreme points when growing, and whilst the trees are young, and there will be little occasion for using either the knife or saw. Trees will thus be formed with finer timber and of more value than those managed by the most refined dogmas of cutting and pruning that were ever laid before the public.—*John Spencer, Bowood.*——*Quercus* says—"The Articles in last Number, relating to Forest-tree Pruning—and the Nerquis Plantations, by Dr. Thackeray and Mr. Roberts—are both amusing and instructive; both attack Mr. Billington, and I fear with little advantage either to the respective combatants, or to the Nerquis or other plantations. If Mr. Billington conducted his inspection under the influence of prejudice, and an overweening partiality to what he calls his own system, and gave the public, through your columns, a warped and distorted description of Dr. T.'s plantations and the management of them, he is very much to blame; at the same time, Dr. Thackeray, in "accepting Mr. B.'s premises to overthrow his conclusions," is, according to my opinion, greatly beside the mark. He may be professionally correct in stating that the amputation of a limb from a patient increases the tendency to grow stouter—why? because the nourishing powers remain the same, while, minus a limb, there is less to nourish. The analogy will not hold; for, according to Mr. B., the plant is nourished by that of which Dr. T. deprives it. I agree with neither, yet partly with both; nor do I think Dr. T. happy in the instance he gives of a transplanted tree, to elucidate what I imagine is an erroneous notion, which he "conceives no one can deny—that the various branches Mr. B. would preserve, must appropriate to themselves a certain portion of sap which would otherwise go to the nourishment of the parent stem." In this quotation lies the radical mistake of the pruners—something of a piece with accelerated stoutness of a patient, otherwise healthy, when deprived of his leg. Mr. Roberts's letter goes to show that the ultra-Pontey system is that followed at Nerquis: it shows up Mr. Billington's prejudices, and says that his "system" is wrong; but these gentlemen may each in his turn show up the errors and mistakes of the other, without either being right. I would only beg each of them to study Nature and assist her operations when practicable, but not to violate her in accordance with their "systems," however fondly cherished."

Culture of Tulips.—The best aspect is south-east or south-west; the beds should be upon an open space, 8 yards at least from any wall, to avoid the reflection of the sun. The soil should be free from manure, rich, and rendered light by well-working it. It should be taken from the surface of a field where Corn or Colza has been grown. In August or September this earth should be carefully passed through a sieve. Dig out the beds 3 or 4 feet in depth, and in breadth about 3 feet 4 inches; the length will be determined by the number of plants. Take out all the earth from your beds, and replace it by that mentioned above. Where great attention is paid to the cultivation of Tulips, the beds are inclosed by a frame of wood 4 inches high in front, and 8 inches high behind, which serves to keep up the beds, and to form a plane slightly inclined to the sun. A good effect is obtained by two parallel beds, separated by a path a yard in width, having their surfaces inclined towards each other. Animal manure injures the Tulip; the remedy which has constantly succeeded with me is the "marc of Colza" * reduced to powder. I take out the earth from the surface of the beds about 7 inches in depth, and spread upon the remaining earth 35 lbs. or 40 lbs. of this marc, which I thoroughly mix, and then replace the earth which was taken out. When the bulbs come in contact with the marc, its fermentation favours vegetation, and contributes to the nourishment of the plant. 40 lbs. of marc suffice for a bed 12 yards long.—The above was sent to me by a French gentleman who has been very successful in Tulips. The mode he adopts with regard to the Colza, I imagine might suggest some useful hints. Perhaps some of your readers would be so good as to notice what might serve as a substitute. Would oilcake do?—*H. B. Mason, Brewood, Wolverhampton.* [No doubt.]

Whitney's Composition.—In spring I procured a bottle of this, and applied two coats of it to moderately-thick calico, strained over hoops, to use in place of a hand-glass: it has rendered the calico, after six months' use, so exceedingly brittle, that the least touch tears it; so that it is in effect useless.—*Philobotanicus.*

Planting Pines in Tan.—The following is a reply to "Judex," who seems disappointed at my not complying with certain statements in his communication at p. 524, and who again, in a still longer article, p. 684, insists that he has tried my system of planting in tan, and that it has proved a complete failure. I appeal to the readers of the *Chronicle* whether this is not injustice, as his compost is of his own invention, and quite in opposition to that recommended in my Treatise, pages 59 and 60, where I recommend nothing but pure British tan, on account of its undergoing a slower putrid fermentation than foreign tan; I state that as it decays it is rendered less fit for supplying plants with food, and that those which I had planted in old tan made very little progress. I have discovered this season, however, that old tan well watered with liquid manure is rendered sufficiently fertile for the culture of the Pine. "Judex," in the commencement of his first article, writes as follows:—"Acting under the advice given in Mr. Hamilton's 'Treatise on the Pine-apple,' I planted out, a few days after his work appeared, 24 fruiting plants in tan, or rather tan and decomposed leaves, just what Mr. H. would have selected himself, being tan and leaves that had been at work about six weeks, and just in a decomposing state, mixed with about one-fourth new tan, just to give life to the mass." Now in my Treatise I recommend tan that will be long in decomposing. "Judex" puts his materials in a heap in order to hasten decomposition, and then adds one-fourth new tan to give it life, and states that such a material was just such as Mr. H. would have recommended; he thus misquotes my Treatise, in order to detract from its merits. Had "Judex" said that he had used pure British tan, as my Treatise recommends, and that it proved a failure, I would have attributed the failure to bad management, and not to the merely mixing fresh tan with decomposing matter, although this sours the whole mass. My book nowhere recommends such a compost, and all I want in favour of my system is an open field and fair play; and if I am to discuss its merits, let it be with one who is neither ashamed of his name nor of his residence. I am sure that I have recommended nothing in my Treatise but what has been well tested by long practice. Before I speak of tan, however, first let it be observed that all the results of my threefold advantage system of Pine culture are from plants which had been grown in soil, &c.; and that I merely, in the beginning of my system, recommended tan for trial. I have since tried it, and the result has more than surpassed my expectations. When "Judex's" first article appeared, I invited him to pay a visit to Thornfield, in order to see the largest fruit he ever saw, according to the size of the plant, growing in tan; but possibly he may have been one of the 109 gardeners that have visited Thornfield this summer, as nearly all of them were personal strangers to me, but all of whom signified their approbation of my system, and also bore witness to the fact that equal results were accomplished by plants growing in various composts. The same results may yet be seen; some of the plants are in pots, others are turned out in tan, &c. I, nevertheless, again invite "Judex" to visit Thornfield, and I imagine that he will see the largest Montserrat and Sierra Leone he ever saw; one is ripening, the other is swelling; both were planted in such tan as this locality affords, and let it be remembered that both plants are suckers; the Montserrat is maturing the fifth fruit in four years, from the same plant. I have also now ripening a fruit of the Black Jamaica of tolerable size, notwithstanding that it is the fourth fruit in three years. It is grown in a pot; its predecessor was cut in last December, and weighed 6 lbs. I have stated in my book that I had grown the Montserrat upwards of 7 lbs.; the Black Jamaica generally rather larger, and Enville 8 lbs. 14 oz., all in pots. Now, with these facts before me, and surely "facts are stubborn things," I may state that my system does not at all depend on what kind of material the plants are grown in, provided it is sweet when applied, and kept porous and uniform in regard to warmth and moisture. If the roots are sufficiently supplied with these, I have no doubt but that the Pine would grow suspended from the roof of a Pine-stove. Thus, it will be understood that my system of Pine culture comprehends something more than a mere course of routine management. Perhaps I was the first who completely exposed the absurd practice of disrooting the Pine. I have explained in my Treatise the real habits of the plant, the longevity and multiplying tendency of its roots, which forms the basis of my mode of culture, the results of which prove its superiority over the old system. I contend that the roots are co-existent with the plant; that the first roots formed at the base of the trunk are capable of being preserved so long as the trunk is ensured from the baneful effects of over-heats and sudden changes in the sub-temperature; and the equally bad effects of sub-acids, generally occasioned by using rich soils of not sufficient porosity to admit the influence of the atmosphere, they become soured. I therefore recommend the use of such composts as are capable of maintaining the greatest uniformity of heat, air, and moisture, as being best adapted for preserving the bottom of the trunk and roots in an active, healthy state, which is of the greatest importance to my present system of culture, as the roots are intended to remain for years undisturbed, that the plants may perfect a succession of fruit. Now, as I have stated in my Treatise, that sometimes tan is impregnated with something pernicious to the roots of the Pine, I would advise a trial of the compost given at p. 59 of my book, which I have used with the very best success. In order to further show the fertilising properties of tan, I may state a few particulars, namely, when Vines are planted in a corner of a bark-bed, partitioned off by bricks, to cause the roots to descend along the bottom of the tan in the bed, they grow most vigorously, and produce the most luxuriant shoots imaginable, in nothing but tan; and the number of bunches, and size of berries, are not surpassed by those grown in the richest composts; indeed, I have never tried any plant in tan but I have always found it to luxuriate more than in any other material. I planted a Musa Cavendishii, only about two feet in height, last March, in a corner of the tan-bed; it is now ripening about 70 fine fruit; its growth has been so rapid that all who have seen it are aware that it could not have been surpassed by planting in any other compost. I may state the same of an Ipomœa in the other corner of the tan-bed, which was planted out about six years ago. Again, so much has planting Pines in tan been a favourite in this locality, that the late Mr. Fallows, of Cotten Gate, near Didbury, succeeded so well with it, that he sold his receipt for 5*l.*, about 25 years ago, to several gardeners: one of them has fruited all his plants in tan ever since, and this season I am informed the plants are very fine. "Judex" will find that J. Justice, who published a work on Pines in 1740, (see p. 15 of my Treatise,) practised planting them in tan: he states, "the fruit were larger than those in pots, but not better flavoured." I have sent a specimen of Black Jamaica for the Editor's opinion of its flavour.—*J. Hamilton.* [It was of the best quality, and a most beautiful specimen of Pine-growing.]

Beehive Raspberry.—This has been cultivated in this neighbourhood for some years. I consider it identical with the one advertised by Messrs. Youell and Co., called the Fastolff. In good rich soils it continues bearing until it is destroyed by frost.—*John Spencer.*

Polmaise Heating.—I stated, at page 525 of the *Chronicle*, respecting this mode of heating, that the flue containing the heated air is situated at the back of the house, and that cold air is admitted from without, to keep up a healthy atmosphere; I also, at the same time, pointed out my reasons why such an arrangement would be fatal to any system. No answer has been attempted in explanation of these objections, unless it be the marvellous fact that Grapes were positively cut from this vinery, and exhibited in Edinburgh on the 20th of September! Why, anybody can do that without any heating apparatus at all. Nothing could have been more apposite than to place this system under the protection of him whose researches in Don Quixote had led him to believe that he had discovered the whole art of gardening. It is really quite terrible when he brings his small wit, and his smaller erudition, to bear on any subject relating to gardening. I repeat that, unless something like an explanation is advanced respecting my objections to this system of heating, I shall consider it useless to revert to it again. My only object has been to elicit the merits of the system, if it has any, of which I then was and still am doubtful.—*R. Glendinning.*——*H.* says—"The great results which have attended the system of heating at Polmaise appear to suggest an important consideration, to which, as far as I am aware, no one has yet alluded: it is this—Whether the method now so generally in use of employing hot-water pipes laid within the house, is really that perfect system it has hitherto been considered to be. The advantages of the Polmaise plan appear to consist chiefly in the introduction of fresh air previously warmed; and there can be little doubt that this method, affording, as it does, a free supply of oxygen for the healthful growth of the plants, approaches most nearly to the natural condition of the Vine in those countries where it attains the greatest perfection. There is a strong prepossession, however, in favour of hot water, and every one who has been accustomed to its use will be slow to adopt any other mode of heating; indeed, any return to the now almost obsolete hot air plans appears a step in a retrograde direction. But then, the nature of the pipe plan almost precludes the possibility of combining with it a supply of fresh warm air; to obtain this *desideratum*, therefore, and at the same time not to forego the advantages of hot water, recourse must be had to some of those modifications of the pipe system in which the air is heated before it enters the place where the temperature is to be raised. If any one has tried this plan, will they state with what result?"

Mr. Hoare's Vine Border.—Mr. Hoare, in his recent Treatise on Vine Borders, has especially drawn our attention to this important point more than any other writer on the same subject, and on that account deserves our thanks. Perfect drainage, and the exclusion of long continued rains, has been well understood by our best practical gardeners; but I think the exclusion of soil entirely from forming any part of the material necessary in the formation of a compost for the roots is a new doctrine, and an assumption opposed to our knowledge of horticulture, both practically and theoretically. The Vine may like to ramble amongst stones, lime rubbish, and such like, but our experience of the nature and habits of this plant is, that it delights in rich pasture, especially when subjected to the artificial treatment and temperature it usually undergoes, to produce such magnificent fruit as we annually see exhibited at the *fêtes* in the garden of the Horticultural Society. Soil intermixed with a portion of manure, will be more likely to attain the result just stated, than the absence of both. This may be considered mere prejudice; theory is all very well, but good practice with me has the preference. It is a question of some importance, and worth ascertaining, whether Mr. Hoare ever has produced by his system of prepared borders, Grapes superior, or even equal to those we witness every year at Chiswick, and which we know are the result of the old repudiated manured borders: for, after all, this is the question. Mr. Hoare is surely aware that the Grapes produced in this country in our vineries are not only equal, but, in the great proportion of instances, superior to those grown in the latitudes where the Vine is extensively cultivated, to which Mr. H. so often refers. I shall say nothing respecting Mr. H.'s recommendation of paving the border with brick or tile; we old-fashioned gardeners like to keep stirring the soil.—*R. G.*——In the Editorial remarks on Mr.

* Colza is a kind of Rape grown near Caen, in Normandy, from which oil is made. What is meant by the marc, is the residue after the oil has been expressed.

Hoare's Calumnar Vine Border, you have not expressed any opinion on the effect 32 of 14 degrees of frost, which in of common occurrence, would kill on the roots exposed on every side to its chilling effects. I should imagine this would at once prove a settler. — *John Spencer.*

Extensive Robbery of Auriculas.—The premises of Mr. Middleton, of Prestwich, near Manchester, were entered on the evening of Tuesday, the 15th inst or early the following morning, and the whole of his valuable collection of blooming plants were stolen therefrom. From inquiries which were subsequently made, suspicion fell upon a person of the name of John Scholes, who is a dealer in Auriculas, Carnations, Pinks, Polyanthuses, &c., and who resides at a place called Tongue-lane, near Middleton. Under these circumstances, a party was deputed to call upon him for the purpose of inspecting his plants, and, from what he observed, no doubt was entertained that the guilty party had been discovered. Information was forthwith given to the police, and, accompanied by Mr. Middleton, Scholes's garden was searched, and a number of plants were identified. He was immediately taken into custody, and on Friday, the 17th inst, was charged before the magistrates with the robbery. He expressed his surprise and indignation at the charge, and he alleged that many of the plants had been in his possession five or six years. The prisoner was remanded, and afterwards liberated on bail. On the same day his dwelling-house was searched, when the whole of the plants (with the exception of about a score, amongst which was a Freedom, a Ne plus Ultra, and a Colonel, remarkable in consequence of a leaf being cut across, which could not be removed without injury) were discovered under his bed, and the missing plants were admitted by him to have been sent away the Wednesday previous. The prisoner was again brought before the magistrates on the 22d, when, being asked what he had to say, replied, "I am Guilty." The magistrates consulted, and the prisoner was ordered to pay 5*l* 11*s* 6*d*, with a penalty of 5*l*, and in default thereof to be imprisoned 3 months. The accuracy of the above account is vouched for by Mr Watkinson, Seedsman, Manchester; Mr. Lodge, Nurseryman, Broughton; Mr. Slater, Florist, Cheetham-hill —— I think it right to call your attention to this case for these reasons:—First, that the delinquent should be exposed to the fullest extent; and secondly, that the attention of the public should be drawn to the state of the law with reference to such cases. If a poor person, to satisfy the cravings of nature, steal so much as a piece of bread, he is at once seized, and presently imprisoned for a considerable period; but should a party, as in the present case, steal property to a considerable amount, in plants, the law says such a party is not guilty of a felony, and is only liable to pay the value of the stolen plants, with a penalty not exceeding 20*l*., or, in default, to be imprisoned for a period not exceeding six months. It certainly appears to me extraordinary that such a state of things should be permitted to exist; and I, with other floricultural friends in this town and neighbourhood, deem it our duty to lay these facts before you, trusting that they will elicit such remarks as the justice of the case requires.—*Manamencis.*

Miscellaneous.—*Nemo* asks, in last week's *Chronicle* how to rid his aviary of mice. The only plan I find to answer here is, when I find them troublesome, to take up all the food of a night, and set traps; those set with thread, and baited with toasted cheese, or such as canaries are fed with, are the most suitable. The trap consists of holes, with a spring wire, which catches the mouse by the neck when he has gnawed the thread through. A cat would declare war against the birds.—*P. Frost* —— *Calceolarias* —I have observed that my friends mention the difficulty of striking Calceolaria viscosissima If they would put in their cuttings now, in cutting pots of sand, plunged in a very gentle bottom-heat, kept well shaded in sunny weather, and close during the day, but give a little air every morning to dry off damp, they would find there is no plant more easily propagated Indeed, I never put in cuttings of Calceolarias of any kind till October, and never fail.—*P. Frost.*

Cabul Melon-seed.—In your Paper of the 19th October we have noticed a note from Mr. Blomin, in which we understood him to assert that he has never parted with any of his Indian Melon-seed to nurserymen On reference to advertisement of ours you may perceive that we have effected a sale of the Mountain Melon warranted true from the fruits exhibited by Mr B As his letter will appear to our friends to give the lie to our assertion that the seed was true from his fruit, we must beg you to allow us to contradict him, and to remind him that very shortly after he had shown his fruits, we wrote to him, offering to purchase any seed he might have no use for, to which he replied, that he would not sell any, but that we might have it in exchange for some valuable plants which we had in our possession, we immediately sent the plants, and shortly after received the seeds which we afterwards advertised.—*R. White and Co.*

Societies.

MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THIS Meeting, which was held this year at York, with more than usually numerous, and its proceedings in many of the Sections, were of a highly interesting character. For all that was generally important, we refer to other parts of our columns, and confine ourselves here to the botanical department. However much it may be lamented, the interest and value of the Botanical Papers in the Association have been gradually falling off, and there were, we believe, fewer botanists, and a smaller number of botanical Papers, than on the previous occasion. The causes of this is very obvious—botanists are not geologists, nor zoologists, nor chemists—and the mixing up zoology and botany in one Section has at last ended in the almost entire exclusion of botany from the consideration of the Association. A day was, however, set aside for the discussion of Botanical Papers alone, and we have been enabled to obtain simple abstracts of the most interesting of them. The following Papers were read by the Secretary, Dr. LANKESTER, from Chevalier SCHOMBURGK:—

"*Alexandra Imperatrices.*—This tree, one of the most gorgeous and beautiful of the extensive tribe of Papilionaceæ, was discovered by the author of this Paper at the foot of the southern ridge of sandstone mountains, in the fluvial basin of the river Cayuni, in Guiana, and reaches a height of from 140 to 320 feet. The flowers appear directly from the woody branches in large clusters; the racemes, pedicels, and calyxes, are of a rich crimson, the petals bright orange, striped with crimson; the vexillum of a deep purple, and ascending; the pod, which is from 18 to 20 inches long, is of a velvety brown outside, and contains several seeds of a chestnut colour.

"*A New Barbacenia* —Few regions in Guiana offer to the botanist such a rich harvest as the table land from which Mount Roraima rises to a height of more than 7000 feet above the sea, the last 1500 feet presenting perpendicular walls, formed of sandstone In these regions, under the 5th parallel of north latitude, and about 4000 feet above the level of the sea I discovered the plant which is the subject of this Paper, and which surpasses any other of that interesting group—the Velloziæ—hitherto described in size and beauty It reaches frequently a height of 10 to 12 feet, branching out in a dichotomous manner, and bears a number of flowers which in their appearance are liliaceous, and 5 to 6 inches long, the slender tube, covered with callosities, has a purplish tint; the perigon is inside snow white, on the outside, however, a delicate purplish tint spreads from the middle towards the margin The fragrance of these flowers is delightful, and the plants which produce them extend in groups for several hundred yards

'*Barbacenia Alexandrinæ* —This plant, with precisely the habit of some of the frutescent Velloziæ, has the perigonial leaves united into a tube above the ovary, as in Barbacenia It differs from the species of that genus hitherto described in the number of stamens, which are 18, all fertile; whilst, in the Brazilian Barbacenias the two lateral stamens of each bunch are sterile, and usually described as branches of the filament These differences in the number of stamens are not, however, admitted to be generic in the closely allied genus Vellosia and are therefore insufficient to distinguish generically a solitary species of Barbacenia and should be considered, therefore, merely a good sectional character. I have dedicated this new species to the Empress of Russia, the sister of my Sovereign

'*Calycophyllum Stanleyanum* —How splendid our Rose bushes under the temperate zone! That favourite plant alike cultivated by the rich and the poor, how they ornament the garden and adorn the hedges surrounding our fields, when in full blossom! Let, then, imagination convey you to the great garden of Nature in Guiana, clothed in tropical exuberance, and among those productions of a congenial sun and fertile soil, imagine trees from 40 to 50 feet high presenting a mass of leaves of the colour of our favourite flower, from a deep pink to the lightest rose, and imagination may assist to give a picture of the Calycophyllum Stanleyanum There are several genera of the natural family of Rubiaceæ, as Calycophyllum, Mussænda, Pinckneya, &c where one of the teeth of the calyx expands in a petioled coloured leaf of a membranaceous texture In the tree under description, this is the case in such a remarkable way that these bract like organs of different shades of rose colour are so numerous as to cover entirely the green leaves, and give the whole landscape a peculiar aspect, which appears *coelum de rare* It [illegible] only forms itself after the flower has dropped off, and grows with astonishing rapidity I discovered this beautiful tree on the banks of the rivers Rupununi and Pakatu, in the 2d parallel of north latitude, and I have dedicated it to Lord Stanley Secretary of State for the Colonies

"*The Snake Nut* —In a Paper communicated to the Linnean Society, and read the 6th June, 1837, and since printed in the "Annals of Natural History" vol v p 201 I attracted the attention of Naturalists to a curious fruit, a Drupe, the kernel of which, when opened, and the membrane which covered it being removed, displayed the striking resemblance of a snake coiled up I was not able to procure the blossoms of the tree which produces this strange fruit in such an advanced state as to permit me to describe it with accuracy and considered it at that time as belonging to the order Terebinthaceæ Shortly before my departure from Guiana, some perfect flowers were sent to me, which rendered it evident that the tree belonged to the natural order of Sapindaceæ, and with the assistance of Mr Bentham, I have described this curious tree as Ophiocaryon paradoxum The specific name relates more to the remarkable resemblance of the embryo to a snake, than to its deviation from the general structure of the tribe, which, in the section Dodonæeæ, presents us already with a spiral and twisted embryo

"*Lophira Lanceolata* —Bytteriaceæ are very abundant in Guiana and during our late expeditions in the interior, we met whole forests of one representative of that family, which no doubt belongs to the most useful and interesting, namely, the Cocoa or Chocolate tree Among the Bytteriaceæ which have been added as new discoveries to the list of genera and species of that family during my exploring tours in Guiana, is a plant of high interest, which I have named, after the Governor of British Guiana, Henry Light, Esq., 'Lightia" His Excellency took the liveliest interest in our exploring expeditions, and it is but a poor token of the gratitude I feel for his interest, if I name one of the new genera, discovered during that period, after him The specific name I have derived from *lanuscus*, a coloured ribbon hanging down on garlands or crowns, to which the cluster of flowers with its ribbon like appendages may be compared As the regulations of the British Association do not permit a full description of this interesting plant, I shall merely allude here to some peculiarities which this new genus possesses. It is true that the essential character of the order Bytteriaceæ as described by Lindley, and Endlicher, mentions already, that the petals are variously lengthened at the apex However, no other instance is known, as far as I am acquainted with it, in Flora's kingdom, where the elongation of all the petals is so considerable as in Lightia lanuscata, suspending like ribbons from the cluster of flowers. The tree, about 20 to 24 feet in height, has much the appearance of a Cecropia, and possesses, like Theobroma and some other genera, the peculiarity of producing its flowers immediately from the stem, below the axils of fallen off leaves. I have only found three specimens of this interesting plant; namely, the first, while traversing the mountains of the Upper Essequibo, in latitude 2° north; the second, near the river Barima, in latitude 8° north; the third, at the foot of the sandstone mountain of Roraima, in the valley of the basin of the river Cayuni

"*Two New Lauraceæ* —This Paper makes us acquainted with two interesting trees, of which, however, only the trivial name has been known. The first is a tree which the Macushies name of the most valuable timber which has been imported into England under the name of [illegible] Rodie discovered that the bark and the fruit of [illegible] tained astringent virtues, and though [illegible] mentioned by Wydenaar, in his "Natural [illegible] in Guiana, it is not now that its botanical [illegible] ascertained. It appears to be [illegible] genus [illegible] author has given to [illegible] Bentham, [illegible] under the European [illegible] of the Antilles

[illegible] Dr. Hancock published a highly interesting account of the Sloanea, a vegetable alkaline body, which he extracted from this tree, in the "Transactions of the Royal Society of Edinburgh," vol, xv. p. 213, (to which the author refers those interested in such matters); but he begs to observe, that if it be true that the Republic of Paris has laid restrictions on the importation of the true Cinchonas, this true deserves every attention—the more since it is to be found in such abundance at the coast region of Guiana. The second tree is of equal interest and, like the former, already described by Bancroft and Hartstonk The fruit was considered by the late Dr. Hancock as one of the most efficacious remedies in diarrhœa, dysentery, colic, and spasmodic pains. It has long been known under the name of the Arawaal Nhutang in the colony, and extensively used as a family remedy in the above diseases, but it is only now that the author has succeeded in procuring specimens of flowers and seeds, which pronounce the tree to be a new species of Aeroidichdium, to which he has given the specific name Camara, by which it is known to the aborigines where it grows It appears to be restricted to the sandstone mountains of Roraima, between the 5th and 6th parallel of north latitude"

On the Papers being finished, Professor BALFOUR, of Glasgow, stated that the wood of the Greenheart was used for building vessels on the Clyde. He had heard of the chemical preparation bibirine, obtained by Dr. D. Maclagan, but feared it was not so eligible a preparation as quinine. — Professor FILLEY, recounted the steps of the chemical process by which Dr. Maclagan obtained bibirine, as well as another alkaloid, from the wood and bark of the Greenheart. Dr. Maclagan had, however, since ascertained that there was but one alkaloid, although he had originally described two, the one being merely a form of the other. The bibirine was not in combination with an organic acid; it had an atomic composition, very closely allied to quinine. Dr. Lankester pointed out the necessity of the alkaloids for animal existence. Large quantities of theine and caffeine were daily consumed by man, and these alkaloids very closely resembled quinine and this new salt bibirine, in their composition.

Mr. BABINGTON exhibited to the Section specimens of three plants, which had been added to the list of British Plants during the summer of 1844.

1 *Alsine stricta* discovered on Widdy bank Fell, in Teesdale, Durham, by Mr James Backhouse, of York, and a small party of botanists It occurred in small quantity, but from the nature of the locality, and the plant inhabiting the northern parts of Europe, it must be considered as an aboriginal native of England.

2 *Carduus setosus*, growing near the shore of the Frith of Forth, in the neighbourhood of Culross. As it is a native of the countries to the north-west of the Black Sea, there is every reason to believe that it has been introduced from that region to Scotland by accident It has now taken firm hold in that place, where it was detected by Dr Dewar, of Dunfermline

3 *Galium ballantii* —This plant has often, and, perhaps, justly, been considered as a variety of the common *G Aparine* It has occurred to Mr G. S. Gibson, of Saffron Walden, Essex, in cultivated fields near to that town

After the reading of Mr. Babington's notice, Mr. O. A. MOORE read a report on the Flora of Yorkshire, written at the request of the Council of the Yorkshire Philosophical Society, and the drawing up of which was intrusted to himself and Mr. Baines, the well known author of the "Flora of Yorkshire."

He commenced by expressing his regret that owing to the shortness of the time allowed for its completion, it might appear not quite so perfect, in some respects, as it otherwise might have been, especially as regards species peculiar to the sea-coasts All plants, too, were excluded from the list not strictly found on the Yorkshire side of the Tees in Teesdale In this list were included 1117 species, and 138 varieties (many of which latter are considered species by some botanists), exclusive of a few whose claims to be regarded as Yorkshire plants rest on insufficient grounds The list might be regarded as an appendix to the work of Mr Baines, which appeared four years previously, and which contains an accurate and extensive list of habitats for all the principal flowering plants and Ferns of Yorkshire, as well as the Mosses and Characeæ In the present report the subsequent labours of botanists had been noticed, and about 87 species and 81 varieties were mentioned, which had not previously appeared in any general list. Additional localities were given for some of the rarer species, when only two or three had been previously recorded, and those botanists were mentioned through whose assistance much valuable information on the flowering plants and Ferns of Yorkshire was obtained, to which two families the list was confined. They were distributed into the following classes —*Exogens* species 806, varieties 103; *Endogens* species 262, varieties 35; *Acrogens* species 49, varieties 21. To this was appended an analysis of the species and varieties in natural orders. The list, which was of considerable length, was then gone through in a cursory manner, the time only permitting the leading points to be alluded to, and remarks were made on such species as were either very rare or had some peculiarity in their habit or mode of growth. The following were a few of the principal additions mentioned in the list —*Anemone apennina*, *Barbarea stricta*; this species was shown to be common in many parts of the county, especially on the banks of the Don, at Doncaster, at York, Sneaton, &c. Its claims to be regarded a distinct species were also pointed out. *Campilea dentata*, *Alyssum calycinum*, *Lepidium Smithii*, *Dianthus plumarius*, *Dianthus deltoides* var. *glaucus*, *Silene anglica*, *Hypericum perforatum* β. *Hypericum maculatum*, *Viola Orubus*, *Alchemilla alpina*, *Rosa involuta*, *Epilobium virgatum*, *Callitriche platycarpa*, *C. pedunculata* β, *Sedum reposatre*, *Saxifraga geum*, *Asperula arvensis*, *Valerianella auricula*, *Solidago virgaurea* β, *Artemisia campestris*, *Crepis succisæfolia*, *Hieracium diaphanum* α, *H Leyeyrouti*, *H. prenanthoides*, *H. rigidum* α, β, *H bifidum*, *Cuscuta trifolii*, *Orobanche rubra*. This plant was found at Leyburn Shaw, by Mr. Fullelove, and is another instance of the species not being confined to the basalt. *Scrophularia Ehrharti*, *Melampyrum pratense* β, *Veronica triphyllos*, γ, *Buxbaumii*, *Mimulus luteus*, *Mentha aquatica* β *silvestris*, *M. pulegium*, *Stachys palustris* var. β *ambigua*, *Primula farinosa* var. *pumila*. A curious dwarf variety of this plant, from Hawkswell Moor, was exhibited. *Chenopodium olidum*, *C. hybridum*, *C. murale*, *Atriplex littoralis*, *A. patula*, *A. deltoidea*, *Rumex maritimus* var. *paludosus*, *R. palustris*, *R. pratensis*, *R. acutus*; this plant was shown to be the common roadside sheet, at Masons Wensleydale, and grew on dry stony ground, &c. *Polygonum mite*, *Salix rubra*, *S. [illegible]*, *Potamogeton [illegible]*, *P. [illegible]*, *P. [illegible]*, *P. [illegible]*, *Alisma [illegible]*, *Triglochin palustre*, *Orchis [illegible]*, *O. [illegible]*, *Habenaria [illegible]*, *Iris [illegible]*, *Juncus [illegible]*, *J. [illegible]*, *J. [illegible]*, *Luzula [illegible]*, *Eriophorum [illegible]*, *Carex [illegible]*, *C. [illegible]*, *C. [illegible]*, *C.

[illegible] great number of copies of the "Flora Metropolitana" on hand. Such works ought to be known [illegible] as they are of great importance to the botany of a district. He then made some remarks on the rare plants referred to by Mr. Moore, and agreed with him in condemning many of the alterations made in the names of plants published in the Catalogue of a Botanical Society in London.—Professor BABINGTON also pointed out several errors in the list referred to. He stated, with regard to the Orobanches rubra, that he knew that it grew upon the grey wacke, and it could not now be regarded as a plant peculiar to basaltic formations. It was parasitic on the roots of Thymus serpyllum.

(*To be continued next week.*)

REGENT'S PARK GARDENERS' SOCIETY.

THE further discussion of Morphology at the open meetings in the rooms of this Society took place on the evening of the 23d inst. The meeting was very fully attended. Mr. T. Moore moved, as an amendment to the original resolution (which was in opposition to Morphology, as propounded in Dr. Lindley's "Outlines of Botany"),—"That the objections urged against the doctrines of Morphology are neither scientific nor satisfactory, and consequently the principles it maintains are entitled to the further and candid investigation of all those who are desirous of increasing their knowledge of the structure and functions of plants." Mr. Cale seconded the amendment. The meeting was also addressed at some length by Messrs. Sherwood, Maher, Ayres, and C. Moore, in favour of the amendment; and by Messrs. Reid, Fitzpatrick, &c. in support of the resolution. On a division, the amendment was negatived by 18 to 15, about the same number remaining neutral. The resolution was afterwards carried by a small majority.—*M.*

[We are not surprised at this result: the ignorance of the opponents of Morphology has been all along so enormous, that it is impossible to reason with them. They are incapable of comprehending an argument; besides, wiseacres always outnumber men of sense.]

COUNTRY SHOWS.

North Devon Horticultural Society, Sept. 18.—This was the Autumnal Meeting. From the garden of C. Roberts, Esq., was a great variety of plants; among which were—Crinum amabile, Achimenes pedunculata, A. grandiflora, Hibiscus Cameronii, Epacris variabilis, Fuchsia exoniensis, Rondeletia speciosa, Begonia floribunda, Cattleya Forbesii, and Russelia juncea. A fine Ixora bandhuca was exhibited, from Castle-hill. Mrs. Col. Mason sent Brugmansia sanguinea. A specimen of Renanthera coccinea was shown, from the garden of E. Roberts, Esq. Several Prizes were awarded, but we have only been furnished with a list of awards without the names of the flowers for which they were given.

Rebiews.

Lectures to Farmers on Agricultural Chemistry. By Alexander Petzholdt. 8vo. Taylor & Walton. pp. 300.

AMONG the crowd of books which the present demand for information upon the Chemistry of Farming has brought forth this may be recommended as one entitled to attention. The author does not overload his subject with needless details, which is the vice of some such books, but he confines the reader to those points only which he ought to be well acquainted with, and these he explains in a clear and simple way. He has also selected his experiments judiciously, so that a person who desires to master the elements of the subject may do so without assistance, if he can command a small supply of common agents and unexpensive apparatus.

The author's clear way of treating chemistry may be collected from the following extract:—

"With respect to the opinion that the phosphates of the soil owe their origin to manure, and especially to bones, I may first inquire whence do you suppose the phosphoric acid of manure, or rather of animal bodies, to come? In answer to this, some may say that it is derived from the aliments of which animals partake; others may suppose it is actually created in the animal body. If the phosphoric acid of the animal body be derived from the aliments, how does it become a constituent of those aliments? You see we must go back to that contained in plants, or rather in the soil, and this is merely proceeding in a circle. What really happens is this: carnivorous animals (the lion for example) derive phosphoric acid from the bones and flesh of other animals of the herbivorous class which they devour, these from plants upon which they feed, and plants draw it from the soil; and the presence of phosphoric acid in the soil is owing to the disintegration of rocks. Thus you perceive that phosphoric acid, as well as sulphuric acid—essential constituents of organized beings—are derived originally from the mineral kingdom. But that in bone manure you bring phosphoric acid into your fields, does not at all invalidate this conclusion, since all the phosphoric acid of bones once belonged to vegetables, and was by them derived from the soil, and from it into the soil by its separation from mineral masses. If, however, it were granted that the phosphoric acid of the animal kingdom could have had some other origin, this would not explain the circumstance that plants which have never received manure, as are those growing wild upon soil never cultivated, contain phosphoric acid; this must be referred ultimately to the disintegration of rocks.

"Finally, those of your gentlemen should have embraced the notion that phosphoric acid could be formed by the [illegible] that such an assumption is altogether unnecessary. [illegible] phosphoric acid, [illegible] of such a supposition [illegible] of matter, [illegible] soil, [illegible] soil, [illegible] soil

been a great demand for these favourite flowers this autumn, and in the north of England, where Rose-edged Piccotees have not been exhibited, great quantities have been required; as, at most of the principal exhibitions, prizes will now be awarded for them. Refer to the past few weeks for the necessary directions as to potting layers, &c. &c., taking care that when the layers are again struck, or have emitted fresh roots, that they have all the air and sun possible; watering occasionally, but not over the foliage; and at all times keeping a vigilant eye over the stock, removing every spotted or decayed leaf as soon as discovered.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Much caution is necessary from this time, to prevent the atmosphere of the pits containing the succession plants from becoming too humid. Syringing should be discontinued, except on fine days, when the sun has power to raise the temperature several degrees. Whenever it is necessary to use the syringe during the winter, it should be done in the early part of the day. Pits heated by means of dung will require covering with mats at night. When covered, let every other light be slightly raised, to allow the steam to pass off. When the covering is off, it will escape through the laps of the glass. Take all opportunities of giving a little air. If it can be done every day, so much the better for the health of the plants.

Vineries.—If the Vines in pots are plunged in warm leaves or dung at about 80°, and the atmosphere kept at a temperature of 50° or 55°, the roots will be kept in advance of the tops, and the buds will break stronger in consequence. Let them be syringed frequently. Pay attention to the late Grapes, and let all decaying berries be immediately cut out. The slight fires made during the day to dry the atmosphere will leave sufficient warmth to prevent injury from frost at night.

Peach-house.—The Peaches in pots intended for the first crop should be either put into the house where they are to be forced, and kept cool for a time, or else placed in an open shed, as it is not good to commence forcing when the soil is drenched with moisture. If worms are in the pots they may be ejected by means of lime-water. No time should be lost in attending to this, if ripe fruit is required by the middle of April.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Planting.—At the risk of being charged with repetition, I cannot avoid urging the importance of early autumn planting. If put off till December, scarcely any advantage is gained over planting in March or April; but a great disadvantage will be experienced, if severe weather should set in immediately afterwards. If the leaves are still somewhat greenish, the check given by raising the plants will have a tendency to accelerate the ripening of the wood, and if after watering, the bark of the young shoots should present any appearance of shrivelling, the stem of the trees may be twisted round, with hay or straw bands, and a slight shading given to the top for a few days with fronds of Fern, &c. The straw bands should be twisted hard, so as not to retain much moisture; and for tender trees, they will be as serviceable in moderating the rays of the sun in summer, as in checking the severity of frost in winter. If, in addition, the roots are well mulched with dry litter, they will continue to grow all the winter, and thus be well fitted to supply the expanding buds in spring. In many gardens, an extinction of many of the old trees should be gradually effected. I say gradually, because frequently gardeners ardent after novelty, get themselves into scrapes, by clearing away too much at a time, and thus rendering the supply deficient until their young trees come into bearing. In planting, care should be taken to select the most approved varieties. It would take too much space to particularise these in this place. The improved varieties of Pears should be introduced into every garden, either by planting, or by grafting on established trees. In addition to their other good qualities, most of them are great bearers, and produce fruit when the trees are comparatively young. Such sorts as Marie Louise, Dunmore, Louise Bonne (of Jersey), Duchesse d'Angoulême, Althorp Crassane, Glout Morceau, Knight's Monarch, Passe Colmar, and Ne plus Meuris, &c., will supply the table with delicious fruit from September to the end of February, and in places at all favourable, will succeed admirably as standards, the fruit in general being as well flavoured, though not so large as that grown against walls. The Easter Beurré, and Beurré Rance, will furnish a supply until May, and even later if the fruit is well preserved in jars. Both sorts will thrive in most places as standards, but well deserve an east or west wall. No Pears need be grown in favourable places on a south wall, with the exception, perhaps, of a Jargonelle, to supply early fruit. This, along with the Citron des Carmes, and one or two more varieties, will be quite sufficient for an early supply.

Radishes.—A last sowing may be made on a south warm border, and they will be useful if the weather continue mild. A sowing may also be made on a slight hot-bed, to be defended with a frame, hooped mats, or straw-covers; the same thing may be done with Carrots and Onions, where very young ones are constantly in demand. *Cauliflower.*—The glasses should now be put over the plants intended for the first crop next season, but the tops of the glasses should remain off in all favourable weather. There is more danger of having them coming too forward, and producing mere buttons, than in having them too late. It is better to forward them in spring, than to encourage them to grow much now.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—Continue to improve these in appearance as well as in value as much as possible, by removing all unsightly trees, and replacing them with others of more value. Lay open to view any particularly handsome trees, as recommended in late Calendars.

Coppice.—Proceed with all necessary works in this department; extirpate all valueless stuff, and replant the spaces with more profitable kinds of trees.

Young Plantations.—Embrace every fine day for forwarding all planting intended to be done before spring. This is much the best time for the general planting of evergreen trees, as in spring they are subjected to cutting, dry, frosty winds, alternately with a powerful sun. In sheltered, warm situations, and with great care, spring planting will, however, succeed.

Hedge-rows.—Continue to plant young trees, and make good any failures.

Nursery Work.—Take up and sort the young trees for planting out where required. Dig and trench vacant ground for replanting and sowing of seeds; put in some kinds now, and others in spring. Let the ground be got ready for them as soon as it is cleared of other crops.—*W. B.*

VII.—COTTAGERS' GARDENS.

As it is frequently the case that a very slight protection will save Dahlias and other favourite flowers until the middle, or even the end of November, each of the cottagers as have time and means might use some light canvas, or other slight covering, to throw over any plant particularly gay; with this several degrees of frost will be harmless. Where frost has taken effect, Lobelias, Salvia patens, and such plants, had better be got up, especially if the flower stems are killed as well as the leaves. The Salvias, in particular, ought to be left in the ground until the stems die down, as the tubers will be thereby much benefited. The best way of keeping these plants is to pot them in pots merely sufficient to hold the roots, using rather dry soil, and set them where they will be dry and cool. A few degrees of frost will be less hurtful than heat; they must get no water until they commence growing. Scarlet and other Pelargoniums for turning out in spring, ought to receive the same treatment; only they cannot be too soon taken up after their beauty is once destroyed by frost. In some cases, where the scarlet or other Pelargoniums planted out in beds are yet fresh, and have formed flower buds, the cottager might, by careful removal, obtain a few good plants for flowering in the window. Rather large pots should be used, and the plants got up with as little disturbance to the roots as possible; if they can be placed in a little close heat for a fortnight they will recover with the loss of only a few leaves. Asparagus beds, where the leaves and stems are brown, had better be cleared, and covered with an inch or two of dung. The refuse will be useful for putting round frames to keep out frost. If it can be applied dry so much the better, as it will be less liable to heat and rot. Next week I shall name a few varieties of Apples, Pears, &c., suitable for a cottage garden.—*J. McH.*

State of the Weather near London for the week ending Oct. 26, 1844, as observed at the Horticultural Garden, Chiswick.

Oct.		Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean.	Wind.	Rain.
Frid.	18	)	29.779	29.618	56	38	44.5	W.	
Sat.	19	7	29.788	29.577	58	29	43.0	S.W.	.08
Sun.	20	8	29.460	29.415	59	34	46.5	S.W.	.32
Mon.	21	9	29.601	29.510	60	47	51.0	E.	.04
Tues.	22	10	29.807	29.766	59	30	44.5	W.	.04
Wed.	23	11	29.912	29.771	58	39	48.5	N.	.04
Thurs.	24	12	29.706	29 671	52	42	49 0	N.	.56
Average of			29.744	29.618	57.3	36.1	47.7		1.08

Oct. 18 Clear; finer shower, 8 P.M.; clear at night.
— 19 Slight haze; cloudy; rain in the evening.
— 20 Fine; cloudy; clear and fine at night.
— 21 Overcast; hazy; constant heavy rain at night.
— 22 Rain; cloudy; clear; foggy in the evening; slight frost.
— 23 Exceedingly dense fog till half past 12; somewhat lighter, becoming densely clouded, with showers at night.
— 24 Cloudy; rain almost constant throughout; heavy rain at night.
Mean temperature of the week 1 deg. above the average.

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Nov. 2, 1844.

Oct.	Aver. High'st Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it is Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 27	51.7	40.2	47.5	13	0.80 in.	1	4	2	—	2	6	5	2
Mon. 28	51.4	37.0	45.2	9	1.06	—	4	2	—	3	4	3	4
Tues. 29	48.0	44.4	46.2	7	0.42	2	3	2	—	4	5	1	1
Wed. 30	54 3	39 7	47.0	8	0.58	1	3	—	2	1	7	3	1
Thur. 31	53.3	38.7	46.0	11	0.88	—	1	1	3	—	7	6	3
Nov.													
Frid. 1	54.9	39.6	46.9	10	0.80	2	1	1	—	2	8	7	2
Sat. 2	55.7	40.0	46.8	7	0.30	—	2	2	1	1	7	3	2

The highest temperature during the above period occurred on the 29th and 30th, 1834—therm. 67°, and the lowest on the 31st, 30th, 1836, and 29th, 1843—therm. 22°.

Notices to Correspondents.

APPLE-TREES.—*A Young Orchardist.*—Perhaps you have planted varieties very subject to canker.‖

BEES.—*J. Argo.*—We have given so much information about Bees in the early part of this year, that we must refer you to former Numbers for the information you search for. If that is not sufficient for the purpose, you had better study some treatise on Bee management, such as Bevan "On the Honey Bee."‡

BIGNONIA GRANDIFLORA.—*H. L.*—Cut this back early in spring to within two or three eyes of the previous year's wood; and as it seldom flowers before the end of October or November, and then the flowers generally get injured by early autumn frosts, and fall off before they expand, and as the plant is also very late before it commences growing in spring, you had better encourage its early growth at that season, by placing some frame-lights over it, and mat the ends up close so as to form a kind of house over the plant; the covering may be removed about midsummer, but must again be put on before the cold nights, or first autumn frosts occur.¶

BOOKS.—*Leyton.*—We have no book on the Botany of the Himalayas, except Royle's Illustrations, in 4to. with many plates. That work is indispensable to botanists in the north of India.——*Z.*—The small edition of "English Botany" contains figures of all our wild flowering plants. There are no plates to Sir W. Hooker's Works, except those which are published with them.——*J. Steel.*—Mackintosh's "Practical Gardener."——*S.*—Petzholdt's "Lectures to Farmers on Agricultural Chemistry."

CHARCOAL.—*A. Z.*—Soft-wooded plants make the best charcoal. Pile the branches neatly in a large heap; cover it over with sods, leaving a hole at the top, and another at the bottom; light it at the latter, and when fairly in a blaze stop the two holes, and watch the heap to see that no flames burst through the sides.

HYACINTHS.—*A Cockney.*—Read what we wrote a few weeks ago about Hyacinths in glasses: keep them in the dark in a warm place till roots appear; a few grains of salt or guano sprinkled in the water can do no harm.

INJURY BY GOATS TRESPASSING.—*A Subscriber.*—You may distrain the goats doing damage on your premises, and impound them. It is very doubtful whether, under the Malicious Injuries Act (7 & 8 George IV., c. 30, s. 24), magistrates can convict a person who, even after notice, merely *suffers* his cattle to wander into the grounds of another and do injury there. Magistrates, however, constantly assume jurisdiction, and convict where a person actually *turns or drives* his cattle into his neighbour's land, and they do damage there. You had better, at all events, apply to the magistrates who sit for your district, and request them to act in the matter.—*W.*

INSECTS.—*J. B. W.*—The active insects on the Ixora are the pupæ and image of a Psocus, and not the males of the Coccus, which you will see represented in Curtis's Brit. Ent., pl. 717.*R*——*J. C. M.*—Your Palmer-worm is the larva of Agrotis exclamationis.*R.*——*R. W.*—Thanks for the flies. As I expected, a vast number of them are a species of Chlorops, and may be one of those whose larvæ have done considerable injury to the Corn crops this summer.*R.*

MELONS.—*A Young Reader.*—The Melons to which you refer, (p. 688) are suspended from the wires to which the Vines are tied. The house is of the common form, with a lean-to roof, having a pit 2½ feet wide running along the centre; this is heated below by means of a hot-water tank, over which the Melons are planted. There is no crop in the house, as the Vines were only planted this season; the foliage, however, extends over as much space as if the Vines were in bearing. If a "Young Reader" wishes to try the plan, let him in the beginning of next July plant out some Melons in a vinery containing a late crop of Grapes. He will find that they will go on well together, as by the time the Grapes are beginning to ripen, the Melons will have done swelling; and then the dry warm atmosphere which must be kept up to ripen the Grapes, is just what is required for the Melons. *G. F.*

MORPHOLOGY.—*A Constant Reader.*—You should use your eyes, and then you would find that the Purslane had flowers, although very small ones; no perfect plants can seed without flowering first. The seed had, no doubt, been mixed in the seed-shop where you bought it—a common trick.

NAMES OF FRUIT.—Our correspondents are entreated to observe that much space and time would be saved if those who send fruit for names would forward along with them a list containing the numbers and such names as they may have for their varieties. In many instances these would probably only require a little correction.——*S. W. G.*—1, Aston Town; 2, White Doyenné; 3, Moorfowl Egg; 4, Golden Rennette.‖——*R. Tatham.*—No. 1, which you had for the Beurré Spence, is the Brown Beurré; and for the Winter Rousselet, No. 2, you have got the Bishop's Thumb. The small ovate pale-yellow sweet Apple, called the Small Stalk, is not known to any other name.‖——*W. S. J.*—1, Norfolk Beaufin; 2, Herefordshire Foundling; 3, Kirke's Golden Pippin; 4, Winter Nelis; 5, Beurré de Capiaumont.‖——*W. E.*—Blenheim Pippin.‖——*F. Darby.*—Not the Colmar, but St. Germain; the other is the White Doyenné. Specimens of both varieties unusually large, doubtless, as you observe, in consequence of having your fruits excessively thinned.‖——*St. M. B.*—1, 4, Lamb Abbey Pearmain; 3, Keswick Codlin; 7, Kirke's Golden Pippin; 8, probably Black Annett; 9, Blenheim Pippin; 10, Yorkshire Greening; 11, Large Hunthouse; 12, Hollandbury; 13, Court of Wick.‖——*A Constant Reader.*—1, Winter Bon Chrétien; 2, Brown Beurré; 3, Passe Colmar; 4, Bishop's Thumb; 6, Uvedale's St. Germain; 7, Marie Louise; 8, Winter Nelis.‖——*H. Y.*—1, Beauty of Kent; 2, Hollandbury; 3, Northern Greening; 4, Gansel's Bergamot.‖——*Thomas Oread.*—Flemish Beauty.‖——*A Subscriber.*—Blenheim Pippin.‖——*T. Barnes.*—Uvedale's St. Germain.‖——*Rhoden.*—Beurré Diel.‖——*Russet.*—Your Apple appears to be Logan's Pearmain, in good perfection.‖——*A Constant Reader.*—1, Minchall Crab; 3, Nonsuch.‖——*S. H.*—Nailing the tickets upon your fruit with iron tacks, is not so secure as might be supposed. The acid juice partially dissolves the iron, exudes and obliterates the numbers, or the nail loosens as the surrounding tissue wastes, and drops out. Of those you sent there were found attached—2, Winter Pearmain; 5, Blenheim Pippin; 8, Downton; 11, Posse Colmar. Some well-coloured Pearn's Pippin and Golden Reinettes were observed.‖——*Miss. W.*—The Seedling Apple is handsome and sugary; but although good it will not bear comparison with the Golden Reinette, which becomes fit for use at the same time.‖——*J. D.*—1, an exceedingly handsome, large, finely-coloured Apple, not known; it deserves particular notice; 3, Hughes's Golden Pippin; 4, Cockle Pippin; 6, Bedfordshire Foundling; 9, Verte Longue; 10, Coe's Fine late red Plum.‖

NAMES OF PLANTS.—*C. D.*—As far as we can judge from flowers jammed to pieces among cotton wool, your plant is Oncidium trulliferum; but it *may* be now. We never saw the fruit of Stephanotus; no doubt it is poisonous.

PEACH-TREES.—*Querist.*—These may be partially pruned as early as October. At Montreuil, such bearing shoots as are not required for the extension of the tree are cut out as soon as the fruit is gathered.‖

PEARS.—*Querist.*—There can be no advantage in raising Pear-trees from cuttings; on the contrary, the wood of cultivated varieties is not so perfect as that of the wild species; consequently, it is not so well adapted for enduring vicissitudes. The varieties of Pears you name, Marie Louise, Napoleon, Beurré Diel, and Glout Morceau, Bergamot, should not be gathered until they readily part from the spur.‖——*H. W. B.*—The Pear you sent possesses all the excellence you ascribe to it, and will be specially noticed as soon as possible.‖

PEAR-TREES.—*W. S. I.*—The spots on the leaves are occasioned by the Pear-tree Blister Moth, on which you will find an excellent article, with a figure and description, by Mr. Curtis, vol. i. p. 260. Sweep up and burn every leaf, carefully remove the surface soil from around the tree, and substitute fresh. With regard to your list of Pears, you will probably find the Beurré Spence to be the same as some of the other varieties you enumerate, all of which are good.‖

SPRUCE BEER.—Will any of our correspondents have the goodness to inform *J. C.* how this wholesome beverage is best made? Is Dantzic Spruce the same?

STOVE PLANTS.—*Aliquis.*—Musa Cavendishii, Mangoes, and Guavas offer you the best chance of ripening tropical fruits. You may procure them of, or through, any of the great London Nurserymen. Among gay stove plants, take Euphorbia jacquiniflora, all the Achimenes, Poinsettia pulcherrima, Bignonia venusta, Passiflora Loudoni and quadrangularis (a fruit), Ixoras, Thunbergias, and Oncidium Lanceanum.

STRAWBERRIES.—*M. A.*—Small round stones will not keep air from the roots; it will find its way freely through their interstices. We recommend them in preference to tiles, when they can be had—1st, because they cost nothing; and 2d, because they look very neatly.

VINE-BORDERS.—*Rusticus.*—The main bulk of the compost for a Vine-border should consist of rich turf; to which may be added bone-dust and cow-dung. You may plant a Vine for each sash, and allow three cubic yards of compost for each plant; this will admit of the border being ten feet wide; or, with 48 cubic feet, you may form it only 6 feet wide in the first instance, and add 6 feet more as the Vine-roots extend, which will prove advantageous. Paving, or any other covering which would prevent the access of rain to the roots in summer, is objectionable. If you have strong and weak growing sorts, and can afford separate beds for each, so much the better. The rod system of pruning is best for large bunches, and for some varieties; close spurring for producing on the Black Hamburgh, and some others, a heavier crop consisting of a greater number of smaller bunches.‖

WISTARIA SINENSIS.—*A Subscriber.*—Prune this about the beginning of March; cut the leading shoots about half way back, and spur the others in rather short.¶

MISCELLANEOUS.—*S. B.* 369.—We regret to say that there is no sort of demand for your talents; the field is a very small one, and is already fully occupied. Teaching is the only mode of turning such talent to profitable account.——*A. M.*—The best season to plant Belladonna Lilies is the beginning of August.——*Querist.*—Cut the strong shoots of your China Roses about half way down. Stop and cut back the long shoots of Climbing Roses, if not wanted to cover a large space quickly. Spruce Firs make an excellent hedge for shelter.¶——*A Lady.*—Your dark cellar is too cold for the Hyacinth roots to show themselves quickly. Can you not wrap the glasses in some old baize, or place them where they get a little artificial warmth; that is essential. Water your turf with lime-water, prepared by steeping fresh lime in water for 24 hours, and draining off the clear fluid. A peck of lime is enough for a hogshead of water.——*A. M. S.*—Your plant of Oleander has probably been allowed to get dirty, which is the cause of white scale forming on it.¶——*A. Z.*—The leaves of Pinus Pseudo-strobus sent are by no means uncommon; most of the strong-growing kinds, if they happen to lose the leading point of the young shoot during the growing season (which is frequently caused by the Pine-beetle), will lose the power of elongating, and consequently to form those monstrous leaves, especially if the plants are young and vigorous.¶——*A Young Beginner.*—Bupbane ciliaris, Trichonema speciosum, and Cyrtanthus odorus are greenhouse bulbs; Griffinia hyacinthina is a stove bulb. You had better not start them till February.‖——*H. D.*—Ipomœa Learii is a perennial. Your plant on the back of your conservatory is perhaps too far from the glass, or shaded by other plants. Train it to a rafter where it will be within a foot of the glass, and it will flower freely.‖——*R. J. W.*—We do not know to whom the Pansy belongs noticed under the initials *Z. A.**——*W. B.*—You can hardly hope to save your Cape plants without better means than you possess. Nevertheless it may be worth trying whether they will not survive where they are by having six inches of sand (sea sand will do) placed well over the roots, and some Spruce branches tucked in among their shoots.

SEEDLING FLOWERS.

FUCHSIAS.—*G. S.*—Your seedling *Junius* appears to much greater advantage on the plant, the foliage of which is handsome, and the habit of the plant good; the flower is stout and handsome, but we are still of opinion it carries too much colour in the tube and sepals for the vermilion corolla.*

PANSIES.—*W. M.*—The Pansy sent is a good specimen of form, but it wants substance, and is common in colour.*

VERBENAS.—*A Constant Reader.*—Your specimen is a good variety; it is not novel in colour, but the size of the light centre makes it attractive.*——*W. W. W.*—Your seedling is a large and handsome variety of a bright rose colour.*——*G. S.*—Your specimen is large, and carries a fine head of bloom, but it appears to want novelty of colour.*

DR. HALLETT'S DRY SOLUBLE FERTILIZER'S are, considering their power, the cheapest Manures in use, for they are entirely composed of the Phosphates and other Salts of Ammonia, and other acknowledged powerful fertilizers. They are fairly before the Public as tried things (see No. 23 of the *Gardeners' Chronicle*, &c.). 1 cwt. of either has been found equal to nearly 30 tons of ordinary horse-manure. They are applicable to all sorts of field and garden crops. No. 1 for heavy top growth, as Corn, Hops, &c. No. 2 is for all roots, and a sure preventive of the Fly in Turnips. Price of each, 16*d.* per ton, or 12*s.* per cwt.

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Agents for the above. London—Mr. Fothergill, Thames-street; Mr. G. Hallett, the Factory, Broadwall, Blackfriars; Messrs. Warner & Warner, 26, Cornhill; Hurst & M'Mullen, 6, Leadenhall-street; Wrigtanly, Poultry; Pace & Co., St. Peter's Alley. Norfolk—Bullard and Watts, Norwich. Suffolk—Mr. W. Revans, Yoxford. Leicester—Mott and Co. Gloucestershire—Mr. Betterton, Fairford. Devonshire—Mr. Seward, Plymouth. Wilts—Mr. G. King, Devizes. Glasgow—Mr. D. T. Jackson, Hartlepool. Sunderland, Stockton, and Newcastle—Pace & Co. Dundee—Green and Co. Further respectable Agents wanted.

The Agricultural Gazette.

SATURDAY, OCTOBER 26, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 31—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, Nov. 6—Agricultural Society of England.
THURSDAY, Nov. 7—Agricultural Imp. Soc. of Ireland.
FARMERS' CLUBS.
Oct. 28 - Chepstow, Wickham Market, Yoxford.

In a former Number we called attention to the numerous crops of Barley which are yet in the field, and endeavoured to point out how such a circumstance might have been prevented. Whatever effect our advice and the experience of the season may have on our management for the future, our present duty is unquestionably to make the best we can of a bad bargain, and to contend to the utmost of our means with the disadvantages which are before us, from whatever cause they may have resulted.

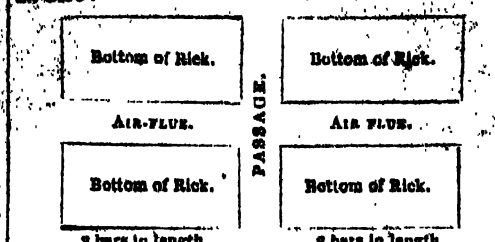
One of these disadvantages—THE DIFFICULTY OF SECURING THE CROP—is now felt pretty generally. The state of the crop, owing to its mixture of ripe and half-ripe straw, is such that it requires much more than ordinary fine weather; and, in the second place, the season is so far advanced that instead of a continuation of the fine warm weather necessary to enable us to secure the crop quickly, we have frequent showers, heavy fogs, and short days. To expose our crop for so long a period with a certainty of fickle, and a *probability* of stormy weather before us, is a matter of such imminent risk that it becomes a question of duty with all who are thus situated to ask, Is there no method of avoiding it?

In our opinion, the following method, which has been often successfully employed, in securing grain in difficult and adverse seasons, will be found capable of diminishing in a very great degree the risk alluded to, and will enable us to harvest our backward crops without the delay and danger of more than a day or two's *fielding*.

Take the first opportunity after the grain is cut, when the straw is dry—*i. e.* free from rain or extraneous moisture—to secure the crop in the following manner:—Place four sheep bars or hurdles in two parallel lines, leaving a space of about 24 inches wide between the rows. This will form a double fence about 6 yards in length. Upon each side of the double fence spread a bottom of thorns, and upon this, place a course of sheaves *with the heads towards* the sheep bars. After a few courses of sheaves have been laid in this manner put an occasional one with the sheaves longitudinally. Continue to build up the wall of sheaves on each side of the bars until you have got 2 feet above the bars; after which lay a course over the passage between the bars, and roof up both sides to the centre. Cover the roof with old thatch or loose straw, and bind it well down. This may be done without treading on the rick, as the more lightly the sheaves lie, the better the work is.

This being done, we have a rick, through the middle of which there is a passage or flue 5 feet deep by 2 feet wide, and as the heads of the sheaves are generally towards the passage, the air has free access to the grain—in fact, there is a continual current of air passing through every part of the rick; for as the sides of the rick are only one course of sheaves in thickness, there is a multitude of flues leading into the main passage, through the whole of which there is a continual draught; by which arrangement the grain gets all the benefit of exposure to the atmosphere, without any of its risks.

The rick which we have now described—two bars in length—will hold the produce of half an acre of land, and when properly built will harden and weather it nearly as soon as if it were in shock. By prolonging the double row of bars a rick of any size may be formed. We should advise, however, that every half acre should be put in separate lengths, *i. e.*, that communication with the other ricks should be broken off by a passage 2 or 3 feet wide, at the end of every alternate bar; this passage, running at right angles with the longitudinal one, would materially increase the circulation of air. The following is a ground sketch of the rick containing the produce of an acre:—



Any number of these ricks, it will be seen, may easily be made, and the air will have equal access to every part; so that in the course of a month or five weeks the grain which has been so secured, *however raw it may have been*, will come out fit for the stack-yard or the barn.

If we claim any merit for this method of securing grain in an adverse season, it is on the score of utility, not of originality. On the contrary, one of its chief recommendations is, that it has in several cases been employed with perfect success, and that there are several modifications of the same principle in common use. Among these we may name the frame-work chimney, which is so generally used in all stacks in Scotland, and that which is used in hay-stacks in England. Perhaps, however, the most original and simple illustration of the principle by which we now propose to secure grain in difficult times, is that of setting *the stack astride of a Quick-thorn hedge;* a practice which has long been honoured by the approbation of our grandsires, and which derives its utility from its admitting a current of air into the stack.—*H.*

PARHELIA, &c.,

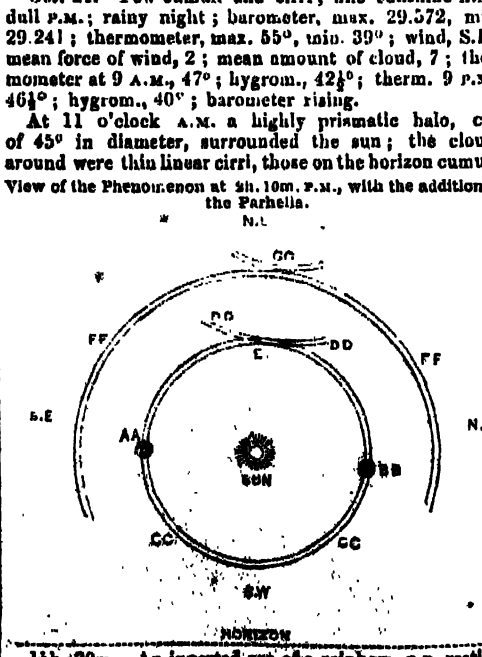
Seen by E. J. Lowe, on 20th and 21st October, 1844.

On the days above stated I noticed very rare and interesting atmospheric phenomena, on which the following are my remarks. For two or three days prior to the 20th the weather had been showery with slight frosts at night. 20th—barometer, max. 29.351, min. 29.248; thermometer, max. 53°, min 40°; wind, S.W.; mean amount of cloud, C^{S}_{Cm}; few cumuli; fine sunshine A.M.; nimbus and cirrostrati, dull, with few drops of rain at 5 P.M. At 8h. 30m. P.M. a brilliant halo of 45° encircled the moon; at 8h. 40m. a mock moon, of a pale silvery hue, shone out of the halo on the E. side, and on the horizontal level of the moon; this continued visible till 8h. 50m. P.M.; the lunar halo remained all night. 8h. 30m., noticed a very brilliant and beautiful display of Aurora Borealis: a broad stream of flame extended from the N.E. horizon, through the constellations Auriga, Capella, Perseus, Cassiopeia, Cyghus, Lyra, and disappeared in the horizon in W., near Serpentarius; this band flickered brightly for 15 minutes, when it vanished. 8h. 40m.—a flame crossed (through the broad flame) from the Polar star through Perseus. 8h. 45m.—another stream of light extended through Ursa major, Ursa minor, to Draco: at this time the flame from the Polar star to Perseus was very vivid. During the whole of this display the horizon from N.E. round by N. to N.W. appeared as one continual flame, not glaring upwards, but along the horizon; therefore the chief portion of the light was reflected from below. At 9 o'clock the Aurora Borealis vanished, excepting a slight glimmering now and then, which would scarcely have been perceived had not the phenomenon been noticed before. At 11 P.M. the stars shone through a haze, which gave them the appearance of being surrounded by burrs.

Oct. 21.—Few cumuli and cirri; fine sunshine A.M., dull P.M.; rainy night; barometer, max. 29.572, min. 29.241; thermometer, max. 55°, min. 39°; wind, S.E.; mean force of wind, 2; mean amount of cloud, 7; thermometer at 9 A.M., 47°; hygrom., 42½°; therm. 9 P.M., 46½°; hygrom., 40°; barometer rising.

At 11 o'clock A.M. a highly prismatic halo, C C, of 45° in diameter, surrounded the sun; the clouds around were thin linear cirri, those on the horizon cumuli.

View of the Phenomenon at 2h. 10m. P.M., with the addition of the Parhelia.



11h. 30m.—An inverted arc of a rainbow, D D, resting on the summit of the halo C C appeared. At the point E, where this rainbow cut the halo, it was almost as brilliant as the sun itself. This lasted till 0h. 15m. P.M., when it vanished, together with the halo.

1h. 15m.—The halo C C and inverted arc of rainbow D D again appeared; the latter was very distinctly prismatic, having the red colour next the sun. From this time until a little after 2 o'clock no change worthy of mention, excepting that the inverted rainbow kept increasing and decreasing in brightness, and every now and then so brilliant that you could scarcely look at it.

2h. 1m.—A Parhelion, A A, of a silvery colour, appeared in the S.E. side of the halo C C, and on the horizontal level of the sun.

2h. 5m.—Mock-sun vanished; the portion E of inverted rainbow D D was extremely bright.

2h. 9m.—A halo, or, more properly speaking, a rainbow, F F, became visible, surrounding the upper or N.E. half of the halo C C, at a distance of 15° from it; this was of a silvery hue.

2h. 10m.—Another inverted arc of a rainbow, G G, appeared at the vertex of the rainbow F F. The inverted rainbow D D was brilliant in the highest degree. Both the inverted rainbows, D D and G G, were situated and opened in a direction to the N.E.

2h. 15m.—Atmosphere very dense. Inverted arc of rainbow G G, and rainbow F F, and S.E. side of the halo C C, disappeared. Inverted rainbow D D very brilliant. Few cirrostrati below the sun, and cumuli round the horizon.

2h. 18m.—Halo C C very indistinct. Inverted rainbow D D still very bright.

2h. 26m.—Inverted rainbow D D vanished. A faint parhelion B B was visible in halo C C, on the N.W. side, and on the horizontal level of the sun; this lasted till 2h. 30m., when all vanished. Scud and cirrostrati covered the whole visible surface of the sky, and became more dense every minute. The clouds were evidently formed on the spot, and plainly by the vapours reaching the cold current. Overcast, close evening; rainy night.

Excepting the halo C C and inverted rainbow D D, which were prismatic, the colour was pale silver throughout.

A very similar phenomenon to the one seen to-day was noticed by Hevelius at Dantzic on 30th March, 1660, only this was parhelia, and that described by the Polish astronomer parselenæ.—*E. J. Lowe, Highfield House, Lenton, Nottinghamshire.*

GEO-AGRICULTURAL NOTES ON SOUTH GLOUCESTERSHIRE.

(*Continued from page* 691.)

Mountain Limestone.—This rock occupies a considerable portion of our district. It occurs in a tract of a horse-shoe form, and of considerable breadth, underlying the millstone grit, and overlying the strata of the old red series from Sodbury by Wickwar, Cromhall, and Alveston, as far as Almondsbury. On going southwards from Almondsbury we pass over a district of lias clay, which here appears to overlie the limestone, for, immediately beyond Henbury, we again come upon that rock, forming the range of hills which extend towards the Avon beyond Kingsweston. From this spot it widens out between Westbury and Filton, in a southerly direction. A considerable tract of this rock is exposed south of Bristol, comprising Clifton and Durdam Downs, &c. The rock here is much intersected by wide veins of calcareous spar, which is quarried and broken down to a fine gravel and used for rough-casting buildings. The mountain limestone, more than any other rock in the district, seems to have suffered violence. The fault on Alveston Down, that at Doynton, the extensive ravine at Clifton through which the Avon flows, a similar one between Wick and Doynton, through which the Boyd runs, another at Tortworth Park, and a fourth in the grounds of Blaize Castle, Henbury, all occur in this rock. They are productive of the finest and most picturesque views in the county. The mountain limestone does not form a good building stone, being too splintery for the mason's chisel. It forms an excellent road material, however. The only rock, indeed, which can compete with it in the district for that purpose, is the trap rock of Damory, near Tortworth, but this, though perhaps a tougher and more durable material, does not form nearly so smooth or so excellent a road. This rock is also the best source of lime for building and other purposes in the county; it burns, when pure, as at Cromhall, of a perfectly white colour.

Agricultural Character of the Mountain Limestone.—The surface of this district, with the exception of instances just alluded to, is uniform and regular. It has frequently a bare and bleak aspect, because of the want of hedgerow trees, and because of the frequent occurrence of downs and commons. The general level of the district, too, is higher than that of the surrounding country, and it is thus more exposed to the weather. The Beech and the Ash are the trees of most frequent occurrence on it; the Elm is also occasionally seen. The commons are dry, the pasture on them close but sweet. This district is about one-half under arable culture. The pasture-land is easily burnt; there cannot be too wet a season for the soil where it is shallow. An average crop of about 18 cwts. of hay per acre is cut. The soil on the arable land is full of angular fragments of the rock, and is generally very thin. It is, however, a good calcareous loam when of any depth, and its natural lightness, increased by the numberless fragments of stone occurring in it, renders it an excellent Barley soil. The rotation adopted is one of four years' duration, the same as that adopted on the millstone grit in the neighbourhood; 1st year Wheat, 2d Barley, 3d Seeds, 4th Potatoes. Turnips are sometimes grown instead of seeds, and frequently that crop is omitted altogether. In that case it would be difficult to find a more exhausting succession of crops. Everything is carried off the land, and very little return is made to it. The grain is taken to

Bristol, the straw, sold as litter, or thatch, is taken there too, and the Potatoes also supply the Bristol market. The loads of dung which are brought back in the waggons on their return from Bristol can form no equal return for the crops thus carried away. The average crop of Wheat per acre is about 20 bushels; of Barley 32, and of Potatoes 60 sacks. Eight tons of the latter crop is considered an excellent crop; it is equal to about 80 sacks.

The soil on this rock is sometimes limed by some: this is said to do good; and by others it is said to be of no use at all. It is a general practice on those farms which lie over the clay and slate alternating with this rock near Tythington and Tytherington; the soil is there of a cold clayey nature. The district of this rock between Elberton and Lyttleton differs from that on the hill in being more sheltered; it is covered with the Elm and the Ash in the hedgerow; the soil is also generally deeper, and the land more generally in pasture. With these exceptions it is similar to the rest of the formation.—*M. S.*

ON LIMING LAND.

[The following analyses, for the Monmouth Farmers' Club, by Mr. Phillips, of the Ordnance Geological Survey, show what great variety exists in the composition of limestones within but few miles of one another.]

No. 1.—Limestone, Great Doward, Herefordshire.

Carbonate of lime	56.8
,, ,, magnesia	39.2
Earthy matter and oxide of iron	4.
	100

No. 2.—Limestone, Stanton, Gloucestershire.

Carbonate of lime, with a trace of oxide of iron	54.6
,, ,, magnesia	44.
Earthy matter and oxide of iron	1.4
	100

No. 3.—Limestone, Whitecliff, Gloucestershire.

Carbonate of lime	56.8
,, ,, magnesia	41.9
Earthy matter and oxide of iron	1.3
	100

No 4.—Limestone, Stow Green, Gloucestershire.

Carbonate of lime	98.6
Earthy matter and oxide of iron	1.4
	100

No. 5.—Limestone, Ifton, Monmouthshire.

Carbonate of lime	99.3
Earthy matter and oxide of iron	.7
	100

Result of the use of the Stow Green Lime put on in a caustic state in September and October upon the dry sandy meadows along the bank of the Wye (except No. 5) extending about two miles from Whitebrook to the village of Landogo, Monmouthshire, No. 1 being near Whitebrook, and No. 6 adjoining the churchyard at Landogo. Nos. 1, 2, and 3 were covered with rotten dung at the rate of 20 yards per acre between the years 1830 and 1834; the other meadows have not had any manure in the memory of man. The average produce of hay from these meadows when cut in season (without manure) for the last 20 years has been only from 10 cwt. to 14 cwt. per acre. A part of each meadow was left without lime, that a fair trial might be made, and the whole of the trials (except No. 6) were taken within three yards of each other; indeed many of the trials were within a foot; the line where the lime was put being so strongly marked that a perfect stranger might tell which part was limed and which part not. The best plan is to put the lime in heaps of one or two waggon-loads, covering the heaps with a thick coat of earth till it is slaked, and then to haul or wheel it out in a caustic state, spreading it out of the cart or barrow. If the place where the loads are put down is shovelled out clean, there will in those places be the strongest crop of Grass the following summer. Stow Green is within three miles of these meadows, and the price of the lime being 4*s.* 6*d.* per dozen, or 1½*d.* per bushel, the cost of manuring at the rate of 108 bushels amounts to 27*s.* per acre.

No. of Meadow.	The Autumn when Limed.	Imperial bshls. of Lime put on per Impl. acre.	What year mown after being Limed.	Quantity of hay on the limed part per acre more than on the part not limed.	REMARKS.
				Cwt.	
1	1832	108	1st	42	From this trial it appears the more lime used the more Grass.
		144	do.	102	
		216	do.	196	
2	1833	136	2d	20	The limed part of this meadow may now be traced by a stranger.
			4th	142	
			7th	64	
3	1833	108	2d	106	
			3d	20½	
			5th	11	
4	1833	108	1st	44	
5	1833	136	3d	22	This piece has a turn in it, and adjoins the turnpike-road, near the village of Landogo; although the part limed had the manure drawn from eight small tenements many fold more for the space of years than the part not limed, the limed part being very superior in herbage and produce. By turn, in this piece is a block of Grass between the limed part the length will not touch the other.
6	1833	108	2d	20½	

The lower part of No. 3 was this autumn (for the first time) dressed with lime from Stow Green, varying from 108 bushels up to 360 bushels per acre, and with lime from Whitecliff at the rate of 72 bushels per acre, the quarters of an acre adjoining, with a strip in the centre without anything put on. From a trial made this autumn it appears that lime in these meadows sinks at the rate of about one inch per annum. It is a singular fact that the same quantity of lime per acre, mixed with 30 yards of ditch-earth and road-scrapings, put upon some of these meadows, has not produced as great a crop of hay as the same quantity of lime put on in a caustic state. A trial was made in one of these meadows with 20 cart-loads of unfermented, or raw horse-dung per acre against 20 yards of rotten dung. The result was decidedly in favour of the raw dung the first year; but the rotten dung had the advantage the second year, when the trace of both was nearly lost. A trial has been made in one meadow with scavengers' manure from Bristol, at the rate of 20 tons per acre, and although it was delivered upon the bank at 3*s.* per ton, the increase of hay did not pay half the cost.—*Communicated from the Report of the Monmouth Farmers' Club, by R. W. Purchas, Esq.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Oats.—The varieties of this grain commonly cultivated in East Lothian, are the Potato, Hopetoun, Early and Late Angus, Sandy Dun, and several others. The first-named kind, which was, it appears, introduced into this county in 1801, possesses the greatest reputation; and although it is not so well suited to inferior soils and elevated situations as some of the others, its grain is more plump, weighs heavier, obtains a better price in the market, and yields a greater weight of meal than any other variety grown in this quarter. Another very extensively cultivated kind is the Hopetoun Oat, selected and propagated by Mr. P. Shirreff, late tenant at Mungoswells, in this county. It affords a greater quantity of straw than the Potato Oat, but is later in ripening. The Early Angus is also much esteemed, and produces a large proportion of straw, which is an important consideration here. The preceding four varieties are those held in the greatest estimation, and most extensively cultivated in the low and fertile parts of the county. The Sandy Oat is also grown to a considerable extent. The Dun Oat was introduced from Fifeshire; it thrives better than most other kinds upon poor soils, ripens early, and yields a good proportion of meal. It is, as the name implies, of a dun and dirty gray colour, resembling in appearance the white kinds that have been injured by heating. Besides those enumerated above there are several other varieties of the Oat partially grown in different parts of the county, such as the Poland, Blainslie, Flemish, Zealand, &c. The following Table exhibits a comparative view of the result of an experiment made with four different kinds of Oats by Mr. Brodie, Abbeymains, as detailed in the nineteenth Report of the East Lothian Farming Society. The quantity per acre sometimes obtained in East Lothian will also be perceived from the annexed Tabular view of the result of Mr. Brodie's experiment. It will be observed that the Potato Oat produced 90½ bushels per Scotch acre; the Hopetoun, 88 bushels; the Flemish, 86 bushels; and the Zealand, 85½ bushels.

Names.	Acres.	Grain Bushels.	Weight, Imperial lbs.	Straw, lbs.	Per Scotch Acre. Bushels.	lbs.	Per Bushel, lbs.	Straw, lbs.
Hopetoun . .	1.07700	174	7344	11,008	88	3713	42 2	5566
Potato . . .	1.88850	180	7927	9795	90½	3996.14		4927
Flemish . .	1.91300	165	7166	9900	86	3756	43.5	5122
Zealand . .	1.79980	154	6780	7824	85½	3764	44	4350

Oats are most generally sown after Grass, which has lain for one or two years, the land being ploughed the previous winter, or as early in spring as the state of the weather and the labour of the farm will admit, in order that it may receive some of the winter's frost, which materially facilitates the process of harrowing. This is especially the practice on strong clay lands. On the lighter and more friable class of soils, where the furrow-slices are liable to be too much levelled down by the influence of the weather, many farmers defer ploughing a part of the lea until about seed-time; the seed is then sown as soon as practicable after the land has been ploughed. Oats are sometimes, but not frequently, sown after summer fallow, but often succeed Turnips. Oats are also, under particular circumstances, taken after Oats; this, however, but rarely occurs, and may be considered a deviation from the general practice.

Oats are for the most part sown broadcast, either by the hand, or with the broadcast sowing-machine; but where there is a great prevalence of annual weeds, particularly of the Wild Mustard or Charlock (*Sinapis arvensis*), it is not uncommon to sow in rows with the drill-machine, which admits of the land being afterwards hand or horse-hoed, and the weeds destroyed. In this case, the surface is first well reduced by the action of the harrows, after which the seed is deposited in parallel rows across the ridges. A single turn with the harrows is then given, and the land water-furrowed.

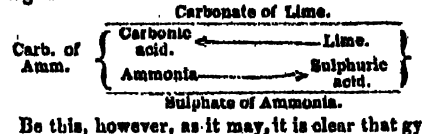
The period of sowing Oats is usually from the beginning of March to the middle of April; but this, of course, is mainly regulated by the weather. In some seasons the sowing of the Oat crop is concluded by the end of March, whilst in others comparatively little is done till the month of April. The quantity of seed varies according to the quality of the land, variety of seed, and other circumstances, from 3½ to 4½ bushels of the Angus kind, and from 3 to 3½ bushels of Potato Oats per acre. The latter variety tillers better than the former, or indeed any other kind, which renders a small allowance of seed sufficient.

The produce obtained per acre varies very much with the season. In 1832, which was a very productive year in this county, many farms averaged upwards of 7 qrs. per acre. A field in one farm which was summer-fallowed and sown with late Angus Oats at the rate of 2½ bushels to the acre, yielded, as I have been told by the tenant, 13 qrs. per imperial acre. These are, however, altogether extraordinary crops; 5 qrs. are regarded as a good crop, but 4½ bushels are reckoned to be a fair average produce per acre throughout the county. In the low and fertile parts, the average is generally greater, but in the upland districts it is considerably less. Angus Oats weigh generally about 43 lbs. a bushel, and Potato Oats from 44 to 46 lbs. A bushel of Potato Oats usually yields 3 pecks of meal of 6½ lbs. each.—*T. Sullivan.*

ON THE ACTION OF GYPSUM.

The Number of the *Agricultural Gazette*, for Oct. 13, contains a communication from Prof. Henslow, qualifying the statement which it was asserted he had made respecting the fixation of ammonia by gypsum. No very strong recommendation of gypsum appears to have been given, and, in the absence of some expected returns, Prof. Henslow contents himself with directing the attention of practical men to this important agricultural experiment. The theory—for such at present, perhaps, it must be termed—will scarcely be looked upon as very plausible, since Sir J. Herschell says of it, "I never tried the experiment, and have even some small doubt of the fact that carbonate of ammonia in a liquid or vaporous state will decompose solid crystallised sulphate of lime, though I do not deny that it may."

In order to arrive at some practical conclusion on the subject, I placed about a tenth of a grain of gypsum and an equal quantity of carbonate of ammonia, with two or three drops of distilled water, on the stage of my microscope, and the result leads me to think that we may safely go even beyond any measure of praise which gypsum has hitherto received. A double decomposition of the two bodies was immediately effected. The sulphuric acid of the gypsum took up the ammonia, and after a few minutes prismatic crystals of sulphate of ammonia were abundantly formed, while the carbonic acid, liberated from the ammonia, formed minute crystals of carbonate of lime, which thickly clustered round the dissolving portion of carbonate of ammonia. Is it right to infer from this position of the crystals, which the microscope discovers, that ammonia has a greater affinity for sulphuric acid than carbonic acid has for lime? or, if the reverse were the case, should we not find the newly-formed crystals of carbonate of lime congregating round those of the sulphate? This state of things may be illustrated by the following diagram:—



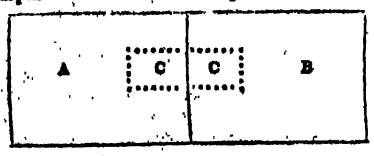
Be this, however, as it may, it is clear that gypsum may be most successfully used for the fixation of ammonia. I have tried the experiment on a larger scale, by placing 100 grains of each of these compounds in 3 oz. of distilled water for about 30 hours, and on evaporating the filtered supernatent water to dryness, I obtained 67 grains of sulphate of ammonia. I find, also, that sheep-dung, incinerated, and then similarly treated with sulphate of lime, yields a soluble sulphate at the expense of the gypsum; and I therefore only add, that the result of these experiments has induced me to order three tons of gypsum for my glebe farm, though but a few days ago I refused to make a purchase, under the impression that the advertisements of dealers are, like American stories—remarkable if true.—*J. B. Reade, Stone, Aylesbury.*

Home Correspondence.

Scotch and English Farming.—I have seen several attacks on English Farming in the *Chronicle*. Will you permit a Scotchman who has been over the greater part of Scotland, and lived many years in the south of England, to make a few remarks relating to the subject? Your correspondent, Mr. Russell, says, if England were to be cultivated the "same as Scotland, the land is capable of yielding double the increase;" and he contrasts Sussex with the "high lands of Scotland." Now, to any one who has studied the soil and climate, with the art of cultivating the high lands of Scotland and south of England, the comparison is absurd; and I will venture to say, that if Sussex were cultivated the same as the "high lands of Scotland," instead of returning double the increase, its produce would be greatly diminished. The "Strathern Farmer" very fairly says that he does not pretend to know English farming thoroughly, or enter into its minute details; and we also learn from him that it was at railway speed he saw the defects for which he points out the remedy. He complains that "there is only one-third of the land in crop, if so much," meaning a Corn crop, as if a crop of Hay or Grass for beasts was of little value. True, there are few good meadows in Scotland, and their pasture is generally the most inferior kind, but in the south of England it is the contrary;—meat is more in demand, and we can have Corn transported from Scotland or Ireland more economically than we can have meat or hay for the great metropolis. Good marsh lands in Kent and Essex can be let at 3*l.* per acre, besides paying rates, tithe, and taxes, which may amount to 20*s.* more; and I would ask, Could such land be more profitably employed in growing Corn? There is, no doubt, a great deal in every district that might be improved, but there is nothing in the "Strathern Farmer's" route system particularly new; and if he goes South he will learn more of the best farmers in their own neighbourhood,

they would improve their own farms more than by adopting the customs of a distant county. [This is unquestionably true.] for a very great deal, I find by experience, depends on locality. Scotland in most seasons will grow the heaviest root crops, while England will grow the best Wheat and Barley; Oats will generally, also, be found best in Scotland, because the climate is cooler and more moist; they are too thirsty for the dry lands in Surrey, and it is found better to buy Oats and grow Barley. As to Turnips, if we were to sow them as early as they do in Strathern, on our warm land, they would get rotten before winter; but then we have the advantage of growing a good crop of Turnips after Peas. As to broad hedge-rows and waste land much might be said, but I will only remark at present, that if there were more hedges on the "high lands" of Scotland, they would be found very useful for shelter; but the fact is, it is a hard matter to contend against a high climate, and because hedges grow but very slowly they build there stone dikes (walls) when they can afford it! I may also add that the probability is, while England retains her wealth and game laws, we shall have warrens near the metropolis paying better than Corn fields. I thought Scotchmen knew as well as anybody that the nearer court the more play! As, to ploughs, I doubt whether the Scotch swing-ploughs be fit for all soils and situations; I once thought so, and had one direct from one of the best Perthshire makers, but found it not altogether unexceptionable on Weald clay. The implement described by your correspondent as a "large, clumsy, wooden article," certainly did its work better in certain states of the land. I might here remark that I do not think there is any land in Scotland so difficult to move as the district called the Weald of Kent and Sussex. Mr. Morton says, in his book on Soils, that "the peculiarity of this soil is the minuteness of its parts; the silicious matter being so very fine, and the clayey particles being equally minute, they form a close firm paste, which dries into a substance almost as hard as bricks." Small inclosures and deep ditches are almost essential to get the surface-water off this soil, and old meadows and high hedges are found in practice almost necessary in the cultivation of good Hops. However, these is no doubt as tiles get cheaper, and thorough-draining can be done at less cost, we shall have fewer open ditches; but 6*l.* or 8*l.* for draining an acre of land that is not worth more than 15*s.* to let, is a serious affair even to the landowners, who are sometimes as poor in their way as tenant-farmers. —*J. A. F.*

Game.—We have, in works on Agriculture, a great many useful statements respecting the cost per annum of horses, oxen, sheep, &c. There is, however, one kind of stock reared by us in great quantities, on the annual cost of which per head I can gain no information from any work that I have read. Now, correct knowledge on this point is of the greatest importance; it could be easily obtained at a moderate expense, and is in every way deserving the attention of the Royal Agricultural Society, and of every one feeling an interest in farming pursuits; and I hope and trust that the Society, or some patriotic gentleman, will bring the matter to the test of experiment. This might be done as follows:—Let two adjoining fields, A and B, be selected, and carefully protected from being trespassed upon by any of this stock. Let A be a Wheat-field, autumn-sown; B, a field of Grass or Clover. From each field let half an acre, C C, making together one acre, be fenced with wire lattice; then, immediately after the Wheat is sown, let *one hare* be turned into C C; at harvest, let the crops on C C be accurately weighed, and measured and compared with the other portions of the fields.



If, in consequence of your allowing this letter to appear in your valuable Paper, the above-mentioned or any other experiment is tried, and the cost per head ascertained, you will have conferred incalculable benefit on the farmer.—*A Constant Reader.*

Potato Crop Failure.—It is the generally received opinion among Potato-growers, that a Potato plant should be hoed very deep. Do you not think this has been in a great degree the cause of the failure this season, it being such a dry one? Around this neighbourhood many persons stop till the plant has arrived to a certain height before they hoe them; after this it is general to stay from three to six weeks before they mould them; this, in my opinion, is very much against the growth of Potatoes, for in the first place hoeing them deep (and in many cases when they ought to be moulding them), in dry weather the fibres will get stinted, or will lose most of their youthful vigour; in moulding, I think, great mischief must be done, in a dry season like our last. My plan is, whether it be a dry or wet season, for my Potatoes to be hoed one inch deep, when half of them are above the surface, and moulded when half of them will fairly stand against the moulding, which is a short time after hoeing. I have six different plants this year, at six different places, and not one failure. My moulding ground I dig up in winter, and for common second Potatoes, I dig and plant in the beginning of March, and end about the latter part of April. I have experienced, to my sorrow, the effects of hoeing deep in a dry season; my plants have gone off—and what have remained, the fibres have got stunted in their growth. I have both, like some of your correspondents, plenty of birds, scarcely any Potatoes; by my present plan my Potatoes are not the least injured in their growth; I get abundance of blade, and very fair crops of Potatoes, quite proportionate to their blade.—*Frederic.*

Preservation of Implements.—Amongst the useful information contained in your Paper, I have not, during the six months I have been a reader of it, met with a word on a subject of great importance to the agriculturist: I mean the means which he should adopt to preserve his implements from the decay which is speedily induced by their constant or frequent exposure to sun and rain. I have found paint a poor protection—indeed I am inclined to think that to wood it affords none; for however well my carts, &c., have been painted, exposure to the sun cracks the wood in a thousand places, and opens so many doors for the wet to get in and rot it. My hurdles, when not in use, are carefully stowed away, but I find that before their second winter's work is done, the feet of the larger portion of them are rotten, and the hurdles, in consequence thereof, are comparatively useless. Kyan's solution of corrosive sublimate, Burnett's, of chloride of zinc, and Margary's of sulphate of copper, and other anti-corrosive preparations, have been mentioned to me by their respective advocates as a sure means of preventing rot, and preserving timber; but, having little knowledge of chemistry, I am unable to determine their respective merits, or which of them—taking all things into consideration, especially expense*—I should try. Perhaps, Sir, you will favour me with your opinion on the subject, or request some one of your scientific correspondents to do so, which will greatly oblige—*A Bucks Farmer.*

Stall-feeding.—I find it impossible to read the accounts in the agricultural publications of the day, of the malady which is now proving so destructive to horned cattle, without feeling a desire to contribute towards its abatement. I take the liberty of suggesting whether the immediate adoption of housing and stall-feeding of cattle may not prove a preventive, particularly if steamed food be used. The apparatus necessary for steaming, and its advantages and use, are now well enough understood to be easily set in operation. In 1812, and from thence to 1818, that extensive and excellent agriculturist, the late John Christian Curwen Esq., M.P. of Workington Hall, Cumberland, in communications to the Society for the Encouragement of Arts, Manufacturers and Commerce, demonstrated, and corroborated by the testimony of other agriculturists and dairymen who followed his plans, from having witnessed their success with him, the advantages of stall-feeding and steam-feeding both for cows for dairy purposes and cattle for fattening; with respect to cows, those advantages were, a great improvement in their condition, health, and milking; and their state after becoming dry, when a few weeks' feeding makes them fit for the shambles with very little loss from the first cost; with respect to stock, there were early maturity, diminished risk in rearing, a saving in the cost of feeding, besides the creation of an additional quantity of manure. In 1814 seventeen calves were reared—11 short-horned or Durham, and 6 Ayrshire; not one was lost, nor were they subject to any complaint; in size they were little inferior to those of double their age; so good was their condition that one of the Ayrshire heifers of 18 months old was butchered. The live weight was 55 stone, of 14 lbs. to the stone. The carcass was 31 stone 9 lbs., and the loose fat 2 stone 9 lbs.; it was killed at the meeting of the Workington Society, the carcass esteemed particularly beautiful, and the meat highly approved by the members who saw it. The Durhams were in much better condition, and would have killed 46 stone at least; all costly food was rejected; the produce of two acres, divided between Turnip and Clover, abundantly sufficient to support a beast till 2 years old; the manure created was considerable. Believing the facts here mentioned to be correct, as I find them printed and well authenticated in the volumes of the Society's Transactions, if the suggestion I have ventured to make should prove useful, I shall be much gratified, and only ask the result and details of any trial to be made known through your paper.—*J. S.*

Inorganic Constituents of Plants.—At page 676, you gave an abridged report, from the *Dumfries Courier*, of a lecture delivered by a Professor Johnston, at Castle Douglas; and in a table given in col. *b*, showing the quantity of inorganic matter in 100lbs. of hay, the Professor is represented as stating the amount in Rye-grass hay at 52.8 lbs.; Red Clover, 74.8 lbs; White Clover, 91.1 lb.; and Lucerne, 95.6 lbs. Here, I presume, there is an error in placing the mark denoting the decimals, and that the table really given by the Professor would be for Rye-grass hay, 5.28 lbs.; Red Clover, 7.48 lbs.; White Clover, 9.11 lbs; and Lucerne, 9.56 lbs. Correct tables of this nature are valuable to the intelligent farmer, for he is enabled, by them, to calculate the amount of each inorganic constituent removed from the soil by his crop, and by a corresponding analysis of manures, knows what is most proper to apply to restore his field to its previous fertility. In this lecture the Professor draws the attention of his audience to the disappointment which must follow the trial of any manure which is expected to prove a general specific; and from his remarks on this head, several of your contributors may also profit; as, in many articles I have read, a manure is lauded or condemned, according to the result of a given experiment, without at all taking into account the previously-existing composition of the soil. The difficulty of obtaining a correct analysis of the soil of the different fields of a farm, and the consequent expense, likewise, will effectually deter the majority of farmers from the attempt; and although this knowledge would be valuable, particularly in the improvement of naturally sterile soils, yet, with all fertile soils, the farmer may secure their fertility by restoring annually to the soil, in the form of manure, the same inorganic constituents which he has removed by his crop. It would be a useful plan, as has been suggested by Liebig in his "Chemistry of Agriculture," for the farmer to keep a farm-book, in which, devoting a certain portion to each field, he might systematically note the inorganic ingredients annually removed and restored. Land is honest, and will amply repay any judicious outlay; if a previously fertile soil has become unfruitful, such a book would clearly show it had been unfairly treated.—*G. B.—C.*

Expenses of Horse Labour.—In your last Number a comparison between the value of horses and oxen for farm work is made; but the calculation is based on a stock of horses declining in value. Perhaps many of your readers may not have read the work from which I offer the following extract: It is entitled "A Review of the Corrected Agricultural Survey of Lincolnshire," by Thomas Stone, London, 1800:—

Calculation upon a Stock of Horses declining in value, for a term of 21 years.

Dr.	£	s.	d.	*Cr.*	£	s.	d.
Ten horses, purchased at 15*l.* per horse, at 3, 4, and 5 years old	130	0	0	Value of ten horses at the end of the term of 21 years	150	0	0
Decrease of the value of each horse after 3 years of the term, at 1*l.* per head, for 8 succeeding years, with simple and compound interest on each sum	100	1	10½				
Purchase of one horse every year, for the last 10 years of the term, on account of losses through age and decay, at 15*l.*, with interest, simple and compound, thereon	197	16	0½				
Admitting that, for the last 10 years of the term, a horse is every year purchased, at 4 years old, to supply the place of one dead through age and decay, there will be 10 horses losing 1*l.* per head each, in the 12th year; 9 losing 1*l.* per head each, in the 13th year; 8 losing 1*l.* per head each, in the 14th year; 7 losing 1*l.* per head each, in the 15th year; 6 losing 1*l.* per head each, in the 16th year; 5 losing 1*l.* per head each, in the 17th year; 4 losing 1*l.* per head each, in the 18th year; and 3 losing 1*l.* per head each, for the remaining 3 years; with interest, simple and compound, thereon	79	11	5½	Balance against the farmer	377	9	4½
	£527	9	4½		£527	9	4½

Calculation upon a Stock of Horses increasing in value upon a farm of the same size, for a term of 21 years.

Dr.	£	s.	d.	*Cr.*	£	s.	d.
Twelve horses at 15*l.* per horse, upon an average of 4 years old; as it is intended to keep an improving stock, it will be necessary to have two supernumerary horses, always having two colts rising 3 years old, purchased every year, and two 7 years old horses making up for sale; but no allowance for the maintenance of the two supernumerary horses ought to be made, because a team of young horses do not eat so much, or require so much nourishing food as old horses, besides that their labour will amply compensate for their maintenance, by their utility in seed time and other strait times	180	0	0	30*l.* per ann. for 18 years, gained with interest simple and compound thereon, being the difference between the purchase of two colts rising 3 years old, and selling out two horses rising 7 years old	387	19	10½
The interest of 30*l.* per ann. simple and compound, for the whole term, being the cost of two supernumerary horses	52	15	5½	Value of twelve horses at the end of the term, at the improved age	200	0	0
Balance in favour of the farmer	355	4	5				
	£587	19	10½		£587	19	10½

—*Lusor.*

Agricultural Facts.—A farmer in this neighbourhood put a large Potato, at the proper season of the year, into a heap of mould and ashes left the preceding autumn when the weeds and leaves of the garden had been burnt. It grew with great vigour, and at my request the plant was moulded up and was allowed ample room. In the autumn I took up the plant in the presence of several friends. The diameter of the branches was 8 feet; the number of Potatoes, without counting the very small ones, was 320; they more than filled a bushel basket, and weighed 63 lbs. The largest of the bulbs, 80 in number, were on the south side of the plant.—Some years since

* I observe that the expense per pound of the three articles recommended above, differs very considerably, as does the expense of the brushes to use them; but, perhaps, the expense is according to the efficacy of the article as a preventive of rot and decay.

my servant emptied the brine from a pickled pork tub, undiluted, upon the Grass lawn in my garden in the autumn. The lawn was originally laid with turf, taken from a wet unproductive heath adjoining Mr. Mechi's farm, just now of great celebrity. The consequence was the entire destruction of all appearance of vegetable life for the following summer, the patches looking like brown paper. The second summer a scanty show of feeble blades of Grass came up. The third year the patches were covered with a crowded plant of white Clover! and nothing else; and so vigorous was the growth, that I had them mown four or five times. Fifteen years have elapsed, the lawn has been regularly mown, and the Grasses have now overcome the Clover, but not entirely. The heath or waste from which the turf was taken, never shows a Clover plant, and probably has not for ages. I wish the lord of the manor would let this waste to Mr. Mechi; I think that gentleman would try to develope its productive and hidden mysteries.—*Henry Dixon, Witham.*

Stones on Land.—Pray, sir, may I be allowed to ask, in contradiction to the opinion of some of our would-be-thought farmers here, what utility stones are to the land? A farmer adjoining me will not allow one to be touched, whereas I have sufficient, which I rake off annually and cart away to supply the roads with. My crops are as good as ever—my friend's mostly weeds; in fact, his farm seems, to a casual observer, cropped with both weeds and stones.—*Verax.* [In shallow soils they preserve the moisture which in dry weather would otherwise soon evaporate.]

The Proper Direction of the Traces in Harness.—It is universally admitted that the best way of applying the power of horses is by means of shafts or traces, to carriages. The best position of the traces, or shafts, when a horse is made to exert himself to draw in a carriage, is so well known and understood by those who are daily in the habit of "hanging to," that it needs scarcely be noticed. The trace, when a horse leans forward to draw, should become perpendicular to the collar, and parallel to the plane of the road on which he is moving. In moving up a hill, the trace should become parallel to the plane of ascent. When he is standing at ease, the direction of the trace should be a little upwards; because, when urged to draw, he leans forward, and in doing so, he lowers the forepart of his body, which will tend to bring the trace parallel to the plane when his power is fully applied. If any deviation from the parallel be admitted, it is desirable such deviation should incline upwards rather than downwards. If the direction were downwards below the parallel, the power of the animal would have a tendency to increase the friction, by pulling the wheels into the cavities of the road. After contemplating on these remarks, the following suggestions present themselves:—The radius of the fore-wheels should be less than the height from the road to the point of draught on the shoulder of the animal. The shaft or pole should be hung on a level with the centre of the wheel. The least horse, or rather the horse of lowest stature in a team, ought to be selected for the shafts, and he ought not to be so low as to cause them to incline downwards towards the road. In selecting a team, the tallest horse should be placed first, and the others ought to be so placed as to descend regularly down to the stature of the shaft-horse, in order to preserve a continued ascent in the line of traction. If a regular line of ascent be not preserved, as it will not, by placing a low horse between two tall ones, it is not difficult to show that a portion of their power will be lost in acting against one another, and thus render their united effect not so powerful as it might be by a different and proper arrangement. To individuals acquainted with the elementary principles of Mechanics, these suggestions will appear natural and obvious; but, in practice, it is known that the temper, age, and steadiness of the animal mostly regulate the situation in which we find him placed in the team; and therefore deviations from the rule laid down respecting stature will often be necessary, and perhaps desirable. In teams of perfectly well-trained horses, the rule may be adopted with advantage. [From "Elements of Road Engineering, by a Practical Surveyor."]—*J. B.*

Cheese.—May I ask of you why is Dutch cheese always inferior in flavour, &c., to our English—has a bad sale always, and is at last driven out of the market by the American, the flavour and richness of which is so superior! I fancy the reason to be that their method of soiling their cows in house always, is the main cause of their ill-flavoured cheese and butter. Cut food given to cows never answers so well as the natural pasturing of the animal—so I have found, after several years keeping cows. Soiling cattle for the butcher is one thing, and the soiling of cows for their milk is another; although the animal lives and does well, and is quite healthy—for I have had them 5 years constantly in house.—*Delta.*

Manures.—I perceive in the wholesale prices of manures inserted in the *Agricultural Gazette*, the first article is alum 12*l.* per ton. Pray in what manner is this used as a manure, and to which crop? I have on my farm several lodes or veins of fullers-earth, particularly one in a coppice wood, which is very rich and good in appearance; but on dissolving it, it has too great a proportion of sand or silex I suppose in it, and therefore does not suit the fullers of cloth. Now, if alum be adapted for manure, there being so great a proportion of it in fullers-earth, could not the application of this I have so much of, be of service in agriculture? If so, pray do me the favour to say how it should be applied, and to which crop.—*Delta.* [Fuller's earth does not generally contain alum; see the notice of it in "Jameson's Mineralogy."]

Plantation on Sand-hills.—In an article dated Inverness, and apparently contributed by Mr. Anderson, Secretary to the Farmers' Club in that district, an interesting account is given of the attempt of R. Grant, Esq., of Kilcorth, to clothe his sand-hills with wood, and it seems in a great measure to have succeeded in spite of many obstacles. One great difficulty is fixing the sand, another is the ravages of rabbits, both common to all lands so situated. The best plant to grow is Sea Buckthorn—the botanical name I do not at this moment recollect. It is a native of the North East coast of Britain, and grows plentifully on the sea shore in East Lothian, where many acres of fine Wheat land in that rich district have been saved from being covered with sand, as may be seen near Lord Wemyss's, at Gosford, from whose liberality no doubt plants can be procured. It may also be propagated by seed, which in some seasons is very plentiful, but being once planted the difficulty is keeping it within bounds, as it spreads itself by runners and off-sets—rabbits will not touch it. The Sea-Buckthorn grows quite high enough to shelter young trees, as may be also seen at Gosford.—*M. D. P.*

Magnesia.—In the "Oxford Encyclopædia," article "Agriculture," I read—"By the application of magnesian earth to ground producing Sorrel, both the acid (oxalic) will be neutralised, and the oxalate of potash decomposed, by which means the alkali will be disengaged, and put into a situation to act upon and dissolve the inert vegetable matter in the soil. The salt formed by the combination of the magnesian earth with the oxalic acid will, as well as the vegetable matter dissolved by the alkali, be found to promote vegetation in a very high degree. By the application of alkaline salts to Sorrel, there results a salt fully neutralised, which also highly promotes the growth of more valuable plants and grain." Will you kindly assist me to apply these principles? 1st, What is this magnesian earth, and how am I to obtain and apply it? 2d, I hold a field overrun with Sorrel, which I have just ploughed; am I to harrow out and take off the Sorrel, or leave it to the operation of the magnesian earth? It is a Barley stubble, having previously had Wheat. 3d, The land is a sharp gravel, which has been exhausted by overcropping without manure, and is therefore very poor. I had thought of chalking the field about 4 acres, but I wish to try magnesia, which is said by the above authority to have a better effect, if you will inform me how to proceed.—*Tyro.* [Most limestones contain magnesia; some of those occurring in central England contain it in large quantities. You can use 50 or 60 bushels per acre of such limestone, burnt, and in a caustic state; let it slake under a thickish cover of your soil, and then spread it abroad and plough it under. We do not know how far the views of the writer you quote are correct: he means apparently that the plants should be allowed to live, but this is incompatible with good husbandry. You had better plough it all down together, and any potash salts which it contains, if they come in contact with the magnesia, will be decomposed. Manure well in spring, and grow some root-crop. About guano, see "Notices to Correspondents."]

Tile-draining.—The following observations were made at the Lytham Agricultural Association, by Wilson France, Esq., of Rawcliffe-hall. He said that, so far had he succeeded in making the pipe-tiles by Clayton's machine, that he could sell at 15*s.* per thousand, and might be able afterwards to sell them at 12*s.* Two men and three boys were able to turn out 5490 in one day. He now had at work at Rawcliffe one of Mr. Clayton's machines, and had made a few thousands with it. The length of the tile was 14 inches when burnt, and dried about a foot. Mr. Hammond had formerly used 1¼ inch bore, but now used only an inch bore in all parallel drains; and he says that it is the opinion of all the farmers who have used them in the Weald of Kent, that a bore of an inch is abundantly large. Mr. Langston, of Sarsden, near Chipping Norton, in a Report on the number of pipe-tiles made in ten hours by a 7-inch cylindrical machine, says, that of 2½ inches there were 4686, of 1¾ inch bore 5490, of 1½ inch 7570, of 1 inch bore there were 15,240. The work was done by two men and three boys. Taking into account the expense of labour and coals, if they would be satisfied with tiles of an inch bore, he would make them at 12*s.* per thousand. The weight of 1000 1-inch tiles was 1313 lbs.; that of those 1¼-inch in the bore, 1500 lb. He burnt 22,000 of them in a kiln 12 feet long by 9 feet broad. He had taken 1500 in a one-horse cart; being of so small a bore, no vermin could injure it; neither mole nor water-rat could get into it. This was of great importance.—*Facile.*

Societies.

AGRICULTURAL CHEMISTRY ASSOCIATION.

The Highland Agricultural Society's Seed Wheat Competition taking place on Wednesday last week in Glasgow, a number of gentlemen, members of the Agricultural Chemistry Association, met at a public breakfast, when the following topics were arranged for discussion.—1st, the Smut in Oats; 2d, Why Seed-corn must be changed; 3d, Of the Steeping of Seed-corn. Professor Johnston said, by examination through the microscope, the smut was found to be a species of Fungus, and had obtained the name of Urido segetum. When nearly ripe, if they took a single grain of smut, they found it full of little round puff-balls or sporules, so minute that it required 2800 of them to cover an inch. These minute balls ascended through the plant, and if they looked at a section of a stalk of Barley, they could easily distinguish where they had come up—the tubes of the stalk were filled with black matter that came up through the vessels, affecting, of course, first the straw, and then getting into the ear, where it spread itself all over. After passing through the stalk, the smut fixed itself under the root of the flower, which it rendered barren, and as the grain approached perfection, the puff-balls became ripe and burst, showing black dust of very minute particles, so minute as to require about 1,100,000 of them to lie across a single inch. Such was the smut; it ascended through the circulation of the plant, fixed itself on the flower before it came forth, and finally took the place of the whole ear, and destroyed completely the grain. Now, how was the smut propagated? In the first place it was sown along with the seed. Very often it was so minute that thousands of the particles might attach to a grain of Corn, and yet not be visible to the naked eye; and it would at once be seen how easily these minute particles could be sucked in by the moisture and grow up with the plant. But another way of propagating smut was by the soil itself, so that in many cases where no smut was attached to the seed itself, it might yet be produced from being in the soil. Rye was never attacked by it, and Wheat seldom; Barley was frequently injured; and Oats most frequently of all. The Grasses in the hay-fields, and in the Corn-fields were also attacked and destroyed. Now, this being the case, they would easily understand how sound seed might be sown and yet smut produced. It was considered by some farmers who studied this question, that it would be impossible to extirpate the smut from this cause; but he considered that if all other sources of smut were removed, that cause of it which lay in the soil would not be a very formidable one. Some kinds of Oats were said to be more affected than others. It had been observed in every part of the country where he had been, that new seed was most liable to be attacked, but that the seed sowed the second year was not so much affected. He had seen a field sown with seed purchased in the Dalkeith market, and another field beside it sown with seed of the second year; and the first field was attacked with smut, while the second was free from it. A variety of important questions then came before them, on which information was exceedingly desirable. Had it, for example, been proved that the home seed exhibited less smut than imported seed? How was it that the evil affected so much so important a crop as Oats? Had the soil anything to do with it? Had the seasons any influence in producing it? Some people held that it prevailed only in dry seasons. Then, had the altitude of a place any effect? or was the evil influenced by drainage? Had the severity of the winter anything to do with the matter? Again, did the smut affect the quality of the crops? It was said in England that the wheaten flour was not injured in quality by it; were Oats affected in quality or were they not? Cattle did not like the straw affected with smut; were they from this to draw the inference that it was obnoxious? The great evil to the practical farmer arising from smut was, that it destroyed his crop. In some cases this season one stalk in every ten was affected. This was, of course, a matter of great importance to the farmer; but in addition to that, there arose the question, Was the quality of the grain affected? It was to be observed that before the grain was cut, almost the whole of the smut was blown away; but still there must be a good deal that inevitably adhered, though not visible. Rye and Wheat were naked grains, and therefore the smut was easily carried away; but in Oats and Barley, which were covered with a sheath, it was not so easily blown off, and some of it necessarily adhered. These were all matters on which it was hoped gentlemen present would supply every information in their power. He now came to the question how smut was to be prevented? They were aware that the ordinary method pursued was to make a good selection of seed—to take such seed as from experience was found least likely to be affected. The seed, too, was often washed, and by that means certain portions of the smut were got quit of. The third mode of prevention was by steeping, in which there were two objects in view, only one of which it was necessary to consider at the present moment. One object of steeping was to kill the black dust, so that it would not germinate; but another object was to make the grain grow better. Now, to kill the black dust, or smut, steeping in sulphate of copper, or blue vitriol, was widely adopted; also arsenic, old urine, common salt, lime-water, &c. An important question here arose. For instance, if Wheat was steeped in certain substances, it was found that the smut was prevented, and that the grain grew better and more rapidly; but the question was, Did the extinction of the smut arise from the fact that these solutions killed it, or was the plant made so healthy that the smut could not affect it? Some people believed that insects would not attack trees till they grew weak. Was this the case, and did the same thing occur with regard to crops? With regard to steeps, he might mention as a result of his own observation, that he was in Wigtonshire some time ago, and that at Ballindalloch there was a large field of Oats divided into several parts, and the seed doctored in different ways, some not being doctored at all, other portions being dressed with guano, &c., and others steeped in a composition which he had made up.* On looking at that field it was found that the grain to which nothing had been done was smutted, that which was dressed with

* The following Table is the composition referred to by Professor Johnston:—

Phosphate of soda, Sulphate of magnesia, Nitrate of potash, Common salt, Sal ammoniac, or a Sulphate of ammonia.	One pound of each in 10 gallons of water, to steep 200 lbs. of seed; the moist seed to be dried with gypsum or quick lime.

guano was also omitted, as was likewise a portion where Campbell's steep had been used; but there were only two or three stalks affected with smut in the grain steeped in the composition which he had employed. This was certainly not conclusive, but it was a matter worthy of consideration by farmers.—Mr. Rigby Wason said, when he first began the improvement of Moss-land he found the crops nearly destroyed by smut; by improving the soil, by collecting good seed, and by steeping, he got quit of the smut, and he had no smut for six years until the last, the cause of which he would explain. He submitted the seed to a strong steep of salt, strong enough to float an egg, and never permitted it to remain there less than twelve hours; sometimes he retained it in the steep from 16 to 17 hours, and never found any injury to arise therefrom to the seed. This year he was induced to try Campbell's mixture, wishing to ascertain the benefits derivable from it; he also used common salt, and a portion not steeped at all; when he found that which was not steeped had a few ears of smut, while the other two portions had no smut at all. He did not think Campbell's mixture any better than common salt.—Mr. Alexander, of Southbar, had never experienced so much smut as this year. All his seed Oats were affected; the sandy Oats were, however, worse than the Potato Oats, these being affected one in seven, eight, and ten, up to twenty.—Mr. M'Lintock, farmer, Lochinch, near Pollock, had steeped Oats in guano and water, and had no smut. He used 2½ gallons of water, and 5 lbs. 10 ounces of guano, to 1½ bushel of Oats. He steeped it 72 hours, and dried with ground charcoal. All his Oats were smutty, with the exception of the two lots steeped with guano. They were the sandy Oats.—Prof. Johnston in conclusion said, it appeared that it had not been the custom generally to steep Oats; again, where steeping had been tried by Mr. Wason and Mr. M'Lintock, it had prevented smut; it therefore just came to this, that the practical man in future must steep his Oats, just as he steeped his Wheat, in guano or in salt, or in that steep which he had himself brought before them, and which had proved successful in Wigtonshire. The learned Professor then referred to other important questions relative to the steeping of seeds, &c., but observed that they could not enter upon them on the present occasion, though he trusted other opportunities for doing so would arise.—Mr. M'Lintock said he fully intended to follow out the guano steep. He had tried five or six other steeps, but all had smut but the guano.

FARMERS' CLUBS.

Cardiff.—At the last meeting of this Club, Mr. David, the chairman, made the following remarks on the Deanston, or Frequent Drain System, as compared with Mr. Elkington's system. Mr. Smith, who had devoted so much attention to this system of draining, resided at Deanston, from whence it has taken its name, and, having brought it to such perfection, he may be considered the author of it. He was the manager of a cotton manufactory, which is driven by a stream of water running through this farm, and to secure which he was obliged to take the farm attached to it for a term of years; the extent is from 150 to 200 acres. After completing his cotton mill, his attention was directed to the improvement of the land attached to it, which proved to be a poor tenacious clay of very little value. Mr. Smith, therefore, became a farmer from necessity. He ascertained that his soil was wet from rain-water and not from springs, and he determined upon adopting a system of draining adapted for the occasion, which answered. The chairman's son had visited Mr. Smith, and examined his farm, which he found was now dry, and produced good crops, and he had ascertained that the land had been increased in value from about 15*s.* per acre to from 30*s.* to 40*s.* per acre. Draining was not new even in this part of the country, for he had seen a short time ago some draining tiles at some depth from the surface, in land cut up for a railway, which must have been there many years. In England draining had for some time been extensively practised, and had produced beneficial effects; but it appears their ancestors thought land was only wet from springs, and their attention was directed entirely to that object, cutting the drains in such a manner as would "catch the springs," as it was termed. They did not appear to have considered that the rain which fell had much to do with it, for all their operations were directed to the water from below and not from above. Almost the only authority on draining, which they had about 40 years ago, was Mr. Elkington, who published a work on the subject. He recommended, as the most effectual method of drying low-lands, to sink deep wells upon the system now termed the Artesian system, which was stated to dry up the adjoining springs. He also advised deep drains to be made into the adjoining high land, wherein it was considered that large reservoirs of water had accumulated. These were the principles of draining advocated by Mr. Elkington. Mr. Smith, on the contrary, considered that most of their land was wet from the rain which fell, and not from springs. The quantity of water which falls annually is far greater than is generally imagined. This has been recently proved in the clearest manner by experiments carried on, he believed, in Hertfordshire. It was ascertained by an ingenious contrivance what portion of the rain which fell was required to promote vegetation, and what was the extent of the surplus. The total quantity of rain which fell in the same situation averaged during the last eight years 26¼ inches annually; a body of earth 5 feet deep was so placed as to admit the surplus rain-water which fell on it to run into another rain-gauge, and the result was that out of the 26¼ inches which fell, the average amount which filtered through this body of earth was 11½ inches, and was not required by the vegetation on the surface, which consisted of a thick covering of Grass, the remaining 15¼ inches having proved sufficient for this vegetation and for evaporation. This surplus of 11½ inches must therefore be conveyed off, unless the subsoil is open and sufficiently friable to allow it to pass through it. One inch in depth of water was, he believed, equal to 100 tons per acre. If there is a surplus of 11½ inches to be taken away when the fall is only 26½ inches, the surplus in this country must be far greater with an annual fall exceeding 40 inches. He, the chairman, had kept a register for about 25 years, and he had found that the average depth exceeded 40 inches; it had often exceeded 50 inches in some years, and in assuming 40 inches it would be below the mark. If, therefore, 15¼ is sufficient for vegetation and for evaporation, their surplus would be 34¾ inches to be drained off, but as it is probable that evaporation is greater when the earth is more saturated, perhaps 20 inches would be a fair average, which leaves 20 inches to be drained off from all their clayey soils or those the subsoil of which is impervious to water, otherwise it must stagnate in the land, and prove highly injurious to vegetation. Every inch of water being equal to 100 tons per acre, 20 inches would be 2000 tons. He believed a gallon weighed 10 lbs., consequently this would exceed 7600 hogsheads as the amount of surplus water which fell in this country upon every acre in the course of the year. He therefore thought that they would agree with him that the evil was from above and not from below, and consequently their attention should be directed to the best and most effectual mode of taking off this surplus, in preference to making deep drains at very wide intervals for the purpose of catching the springs. As the rain falls evenly over all the field one large deep drain was not so likely to remove the evil as numerous smaller ones. There are no doubt various situations where land is wet from springs, but his opinion was that by far the largest portion was otherwise, and that nine-tenths of the wet land in this country is so from the subsoil being impervious to water, and will not admit this surplus to pass through it. Again with regard to the last mode of removing this surplus, let them copy nature as closely as they can. In dry friable soils, the apertures below are small and innumerable, and so ought to be their artificial apertures, and placed at some depth from the surface. If they took a section of the land after it is drained with drains 20 feet apart and 27 inches deep, and allowing 7 inches for cultivated land, the drain would be 21 inches below the surface of the subsoil; this would give a fall of only 1 in 6 from the centre of the space between the drains, but if the drains were 31 inches below the subsoil, the fall would be 1 in 4. Again, if the distance between the drains was extended to 30 feet apart, a cross section will show the fall to be only 1 in 9, which is not sufficient to draw off the water through the soil as quickly as it should be; it has also been found that drains at 40 inches deep will drain off more water from the same land than shallow drains at 27 inches, which must arise from the greater fall, but at all events they must not be too far apart. With regard to the expense, he was sorry to say, that it has formed a serious obstacle, for if done properly with tiles and soles the expense has not been much less than 8*l.* per acre; this would be for drains at 18 to 20 feet apart, which is near enough for the wettest land. He had paid more himself in some instances, where he had added about 6 inches of broken stones on the tiles. The tiles were procured from Bridgewater, and the carriage formed a serious item. The invention of pipe-tiles he considered to be a mode of reducing the expense very considerably, which renders soles unnecessary, but they ought to be made on every farm, or very near, to save haulage, and he hoped soon to find that the wettest land might be well drained for about 4*l.* or 5*l.* per acre. Draining should be up and down the land, as it would drain much quicker. If cut, according to the old system, in a slanting direction, the water must travel from the edge of one drain across the whole space into the other; but up and down the slope the water would be divided, and get into the drain in half the distance.—The Rev. James Evans said that he did not think the two systems of draining—viz., the Deanston and Elkington—had been sufficiently contrasted. Elkington had recorded in his work astonishing effects of some drains he had made, and of springs which were tapped. They probably had heard of a coal-pit sunk in Gellygare, which had dried all the springs in the neighbourhood. The effect of frequent drains is very trifling in comparison to these. But he contended that there was no one system of draining applicable to this county. There was in the neighbourhood wherein he resided, and through the vale of this county in general, a large extent of the lias formation, which consisted of alternate beds of clay and rock. He found from some surface and deep drains which he had cut, that the water did not penetrate the first layer of rock; he was, therefore, satisfied that it was quite useless on such soils to make any but surface drains. He had a deep gutter passing through his garden, on the side of which he had holes made for fixing posts; these holes became filled with water, and continued so until absorbed by the atmosphere, although within 4 feet of the drain alluded to. The soil in dry weather cracked extensively.—Mr. Goddard thought that the two systems in question were for totally different objects. He had seen that morning in a field which was kept wet by a spring at its upper side. In that case one drain on Elkington's principle would most effectually dry the field than any number of frequent drains; and in draining it on the Deanston system, the whole field would be intersected by drains, although with the exception of the part where the spring showed itself, the soil was naturally dry. Now he was convinced that dry land would be injured by being drained, as the manure applied to the surface would be washed into the drains.—Mr. Booker observed that no one system of draining could be with success universally adopted, especially in this county, on account of the variety of causes which contributed to the wetness of their soils. The chairman had stated that the quantity of rain which fell in Hertfordshire, on an average of 8 years, was 26½ inches, and that it amounted in this county to 40 inches. Now, this quantity—it appeared from the experiments that had been referred to—was so much greater than was required by cultivated plants, that it became requisite to adopt some means for conveying off the superabundance which fell in every case where the soil and subsoil were not sufficiently porous to admit it to pass freely beyond the roots of plants. The consequence of not attending to this was fatal to a proper system of cultivation, and ruinous to the soil. It was eminently necessary, in determining what system of draining to pursue, to discover the origin of wetness.—Mr. Williams considered the Deanston system applicable to all descriptions of soils. He could not agree that injury would arise from drains being continued even through the driest soils, as in such cases no water would reach them, till the soil was well moistened, if made 30 inches deep. Frequent drains he thought more certain of drying lands affected by springs, at a depth from the surface sufficient for agricultural purposes, than a deep drain on Elkington's system. Part of the Deanston system was to subsoil the land after draining to the depth of 16 or 18 inches at right angles with the drains; this operation materially assisted the draining, as the water at once sunk that depth from the surface, and was gradually admitted into the drains through cracks or worm-bores.—After a desultory conversation among other members, it was determined to resume the subject at a future meeting.

Miscellaneous.

Report of the Thorough-Draining executed on the Estate of Edward Lucas, Esq., Castle Shane, Monaghan, by Fitzherbert Filgate, Esq.—The next field drained was done at the same rates, exactly as the preceding; and the observations made with respect to the one apply to the other, excepting that in this case the main drain was cut for 3½*d.* per perch.

No. of acres in field.	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		*s. d.*		*s. d.*	£ *s. d.*	£ *s. d.*
5 1 2	949⅔	0 4½	6⅔	6 3½	19 9 8	3 14 0

The water from these fields is carried away by the flagged sewer already mentioned. The next field, containing 2A. 2R. 13P., is part of a field adjoining one of the approaches to the house, which was exceedingly wet, and covered with rushes. It was necessary to make a great length of main drains to carry off the water to the stream at the bottom of the field, which makes the expense much more considerable than it would otherwise have been; but if the remainder of the field should be at any future time taken in hand, this length of main drain would become available for it. The prices paid were, cutting, filling, breaking stones, &c., 3½*d.* per perch for small, and 7½*d.* for main drains. The stones were quarried in the demesne for 1½½*d.* per perch, and drawn to the field by the farm-horses. The money paid was:—

No. of acres in field.	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		*s. d.*		*s. d.*	£ *s. d.*	£ *s. d.*
2 2 13	448⅘	0 4½	110⅘	0 7½	11 18 5	4 12 4

Parts of two fields, lying near a stream, containing 1A. 3R. 11P., were drained: the stones laid down by the farm-horses. As the ground was very soft, the main drains were cut at the same rate of small ones, 3½*d.* per perch. The outlay was as follows:—

No. of acres in field	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		*s. d.*			£ *s. d.*	£ *s. d.*
1 3 11	393	0 3½	—	—	3 16 11	2 2 6

We finish with the field containing 5A. 1R. 2P. The soil is a rich heavy *loam*, of great depth; so deep, that in many places at the bottom of the drains we had not come to the subsoil. The price paid for cutting and filling drains and breaking stones was the same as before, 3½*d.* per perch; the stones were bought at 3*d.* per ton, 210 tons being used. They were carted more than one Irish mile, in carts hired at 2*s.* 6*d.* per day for cart, man, and horse. The cost of the stones when laid down in the field was 4½*d.* per perch. This and a preceding field were the only cases in which, under peculiar circumstances, the stones were attempted to be provided otherwise than by contract, and, as appears from the table, with an increased expense of from 25*s.* to 30*s.* per acre. The main drains cost for cutting, &c., at the rate of 3½*d.* and 5*d.* per perch, according as they required to be cut unusually deep or not.

No. of acres in field.	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
A. R. P.		*s. d.*		*s. d.*	£ *s. d.*	£ *s. d.*
5 1 2	966	0 7½	{ 82 / 36	0 9½ / 0 6 }	29 1 9	5 10 6

It may be observed, generally, that the circumstances attending the execution of the several works have been more unfavourable than might be calculated on, if compared with other localities, all the stones used having been quarried, with the slight exceptions mentioned. The nature of the country being hilly, has in many cases made it necessary to provide for the discharge of water, unconnected with that to be voided from the field drains; for which reason the main drains have been of larger dimensions than would otherwise be required, while the smallness of the inclosures has also occasioned additional outlay. The great expense being the drawing and procuring of stones, the cost will depend chiefly on the difficulty or facility with which they may be provided. In some cases when the drawing of the stones was performed by the farm-horses, the value of their labour and that of the men employed must be added to the amount stated. It would not be possible to name the exact sum, charging the man and horse at 3*s.* per day, or any other sum, as the stones were laid down at intervals as suited our convenience. There is in all farms where there is not much summer fallow, a period at that season, during which all the horses are not employed at the ordinary routine work of the farm; if this opportunity be taken, being the best season for laying down stones in the fields to be drained, no expense is entailed by their employment. A calculation may, however, be made by adopting the prices of any one, or taking the average of those fields, where the stones were provided by contract, deducting the amount paid for quarrying for those fields to which the stones were drawn by the farm-horses. I have thought it better, however, to state all the cases as they actually occurred, rather than make any speculative return. I subjoin a tabular statement of the whole—

No.	No. of Acres in field.	No. of perches of small drains.	Price per perch.	No. of perches of main drains.	Price per perch.	Total cost of field.	Cost per acre.
	a. r. p.		s. d.		s. d.	£ s. d.	£ s. d.
1	18 1 0	2347	0 5½	197¾	1 4½	92 16 5	5 1 6
2	7 0 22	1131½	0 5½	67⅜	1 0	20 4 7	1 1 11
				24	0 5		
3	4 3 1	728	0 5½	49½	0 11½	19 11 4	1 0 8
		76½	0 2½				
4	4 1 0	645	0 5½	11½	0 9	22 18 5	5 7 9
5	6 0 17	774½	0 4½	280	0 5½	22 1 11	3 12 4
6	5 1 20	894	0 4½	88	0 5	18 11 8	3 7 2
7	5 1 2	940½	0 4½	60	0 3½	19 9 8	3 14 0
8	3 2 13	448½	0 4½	110½	0 7½	11 18 5	3 12 4
9	1 3 11	295	0 3½	—	—	3 16 11	2 2 6
10	5 1 2	[illegible]3	0 7½	82	0 9½	29 1 9	5 10 6
				36	0 8		
	57 3 13	9895½	—	969½	—	269 11 4	—

In addition to the above, there have been 3528 perches of small drains, and 302 perches of main drains made on Mr. Lucas's estate, in the years 1842 and 1843, for which the tenants were allowed 1-½*d.* per perch for the former, and 2½*d.* per perch for the latter. The drains were all finished as before described, and made eighteen feet apart. There being 186 perches to the acre, exclusive of main drains, when the drains are eighteen feet apart, it will appear there have been nineteen acres drained by tenants. —*Signed, F. Filgate, for E. Lucas, Esq.* [*From the Report of Agricultural Imp. Society of Ireland.*]

Notices to Correspondents.

Agricultural Gazette.—*Ed. M.*—Thank you for your suggestion; it would moreover be difficult to classify such mingled matter as we receive. We must depend on our Index at the end of the year for a classification of the contents of our volume.

Allotment System.—*L. C.*—We have received your papers, and are much obliged.

Alum.—*Delta.*—We are not aware that it is an ingredient, to any extent, of fuller's earth. The properties of this substance as a cleanser of oily cloths depends on the peculiar condition of the alumina it contains. We never saw alum used as a manure, and cannot believe that it can be economically applied; for any of its ingredients may be had more cheaply in other substances. Thanks for your offer about Potato-culture, which we gladly accept.

Books.—*A Watchman.*—Hillyard's "Practical Farmer and Grazier."

Campbell's Breeds.—*W. C. S.*—Upon the whole, the experience of farmers and others this year, so far as has been reported to us, has *not* been favourable to their use. How far this is a consequence of the season we are unable to say. We shall have a few remarks to make on this subject shortly.

Chalkings, &c.—*Landlord.*—Chalk may be most beneficially applied to clay soils; and, even in the small quantities to which its use on the dunghills, in the manner you propose, will amount, it will probably do good. It is a good plan to have farm-yards with slightly basin-shaped and impervious bottoms; a tank considerably larger than what you name, should be dug in the centre, and by means of a pump you can spread its contents over manure heaps when fermenting, and just before carrying to the field. See Hannam on "Waste Manures." One of the most practical works on Drainage is a tract by Mr. Smith, of Deanston, on "Thorough Draining." We give our farm horses Carrots, Oats, and Hay. Will Carrots do for carriage horses? If so, they will help to clear out your stock of hay.

Coal-ashes and Sea-sand.—*J. B. T.*—Asks for the results of experience in the use of these two substances.

Cows.—*M. D.*—The best root to give them, so as to make them yield rich milk, is the Parsnip. Oil cake is the best food you can give them in addition to this and hay; and in small quantity, say 2 or 3 lbs. per day, it might be profitably used: him with 25 or 30 lbs. of Parsnips and hay *ad. lib.* would be as good feeding as a dairyman could desire.—*Sidcup.*—The case is uncommon, but now and then occurs. We believe that it arises from the wants of nature not having been satisfied, through the usual signs of this want not having been observed.—*W. C. S.*

Disease in Pigs.—*A. E.*—The loss of the tail in pigs is generally confined to those of the pure Chinese variety, or pigs in which this breed strongly prevails. It arises from imperfect development and want of vigour in these appendages, which is in keeping with the thinness of the skin and fine hair peculiar to this breed. With regard to the case of palsy, try as an experiment, quarter of a grain of strychnia, in addition to the medicine previously given, once a day. *W. C. S.*

Diseased Wheat.—*W. Jones.*—The disease of which your ear exhibits a specimen, is called Bunt, Smut-balls, or Pepper-brand. Its cause is a parasitic fungus, the seeds of whose action is similar to that of the fungus which produces smut. See report of Ag. Chem. Assoc., and Professor Henslow's report on the Diseases of Wheat, second vol. of the "Agricultural Society's Journal." Your remedy is theoretically to cleanse the seed; and this is done by soaking it in a strong solution of salt, and afterwards drying with lime.—*Breadsley.*—Your specimen contains what are called Pepper-corn grains. See Professor Henslow's Paper on Diseases of Wheat, in the second vol. of the "Agricultural Society's Journal." If you moisten a grain for half a minute in your mouth, and cut it in halves on a strip of glass in a drop of water, a very low power of the microscope will suffice to show the white substance it contains to be a mass of the *vibrio tritici*—a curious eel-shaped animalcule, which will gradually revive and twist about.

Farmers' Clubs.—*A Subscriber* asks What are the nearest Farmers' Clubs to Fulham and Putney?

Fibrilay as Manure.—*A. H.*—The results of this experiment were certainly (looking at its composition) not the consequence of the manure employed. The experiment was too small in extent to inspire confidence. In such limited trials co-existent circumstances are frequently erroneously understood as standing to one another in the relation of cause and effect. Perhaps it might have been as well not to have published this experiment; but it is impossible that one ignorant of the circumstances in which the various experiments which are reported to him were tried, can be qualified to select or reject; he must hope, in the number of facts he publishes, that opposite errors will neutralise one another.

Guano.—*Tyro.*—You had better plough and sow Wheat now, and sow 3 cwt. mixed with its weight of earth, broadcast, over the young plants in April, and harrow it in.

Harvesting Carrots.—*H. S.*—See Leaders of next and last week.

Inundation.—*M. D. P.*—Your Grass-land that has been inundated from the sea, might, perhaps, be benefited by a coating of lime. In this we do not speak from experience; perhaps some of our readers can help you.

Plough, &c.—*Q. Q.*—Your safest plan is to employ the best constructed implement already used in your neighbourhood. The Scotch swing-plough, in the hands of a man accustomed to swing-ploughs, is a most efficient implement, but it will not do to put it into the hands of any wheel plough man. Etheridge's tile machines are excellent, but there are now so many copyists from him, that we cannot presume to select from them. It is probably your interest to use foreign oil cake; it may be crushed by the common cake-crusher, and so mixed with Barley-meal. How would it answer your purpose to feed your cattle on Mr. Warner's pudding? See former papers on the subject by Mr. Sproule.

Potatoes.—*Woodstock.*—When these have been left in the ground for seed, it has been done simply by not disturbing the drills in which they were grown. Harvest the tubers in February or March, instead of in October, and use them as seed in the usual manner, at the usual time.

Samples of Oats.—*G. M.*—Your samples are so nearly alike in appearance that we cannot judge between such small quantities. Weigh *a bushel* of each, and let that be considered best which weighs heaviest.

Scab in Sheep.—*R. L.*—Amongst a variety of applications which have been employed for this disease (see Spooner's "Treatise on Sheep"), the following will be found as efficacious as most of them, and extremely safe:—Take sulphur powdered 1 lb., oil of tar ½ lb, palm oil 2 lbs.; the two former ingredients to be gradually mixed, and the latter then rubbed down with them. To be well rubbed in to every affected and suspected part, and repeated every three or four days till the disease disappears. With regard to *prevention*, all we can say is—avoid contagion and poverty; watch narrowly, and separate the diseased from the sound sheep as soon as the least itching is exhibited.—*W. C. S.*

Sea Mud.—*M. D. P.* asks How he is to bring land, newly inclosed from the sea, into cultivation? We think he had better give it a summer fallow, ploughing it deeply into narrowish ridges, manuring it well with half-rotten dung; he may sow Wheat in the autumn. We should be glad of the experience of our readers on this subject.

The Barbadran.—*Subscriber.*—Your articles are skilfully compiled, and seem calculated to do good. We think they deserve publication.

To Readers.—*A Constant Reader* asks where the following quotation originated?—"The man who makes two blades of Grass to grow where one only grew is a benefactor to his country."

Wheat.—*T. S.*—Guano is the best substitute for farm manure; you had better apply 3 cwt. in April, mixed with an equal quantity of dry earth. Sow it broadcast over the young plants, and harrow in. Do this in showery weather if you can.—*Broadchalk.*—We prefer sowing our Wheat when the soil is wet, i. e. when it is so damp that a horse will leave a good deep footstep in it. Our soil is sandy; on clay soils it may not be advisable to sow so wet as this. When we have not so much matter on hand as at present, we may perhaps give information on the analysis of soils; meanwhile we may direct you to a chapter in "Johnston's Lectures on Agricultural Chemistry," on the Analysis of Soils, and to a work by Mr. Parnell on the general subject of Chemical Analysis.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Oct. 21.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3	6	to	3	8	Best Downs & Half-breds	3 6 to 3 8
Best Short Horns	3	6		3	10	Best Long-woods	3 6 4 0
Second quality Beasts	3	8		3	4	Ewes and second quality	3 4 3 8
Calves	3	4		4	4	Pigs	3 4 4 4

Beasts, 3313; sheep, 20,310; Calves, 297; Pigs, 348.

Although we have an increased supply of Beasts, the demand is fully adequate; indeed the best qualities in many instances are making more money; several of the first-rate Beasts, &c., realised to 3*d*, and Shorthorns as per 8 lbs, yet these are quite the extreme prices and cannot be quoted as averages; inferior Beasts are more readily disposed of, but they still make very little money; very few remain unsold. The quantity of Sheep being not quite so large to-day, there is a brisk trade at an advance of about 2*d* per 8 lbs on the best qualities. Calves are less in number, yet the trade is not much improved—it must be very superior quality to make 4*s* 4*d* per 8 lbs. Pork trade is steady.

Friday, Oct. 25.

Our supply of Beef to day is rather larger; there is not much business doing, and it is difficult to maintain Monday's quotations, although it is 2*s* per 8 lbs for the best qualities, which make about 4*s* per 8 lbs; middling Beasts at 3*s* 8*d* to 3*s* 10*d*. The late brisk sale in the Scotch trade has caused rather a larger supply to day; the prices are a little lower than on Monday; best Downs, Half-bloods, Wethers and Long-woods rather more than 3*s* 6*d*; Ewes are not very saleable they make from 3*s* to 3*s* 6*d*. Veal trade is very heavy, the best Calves cannot be quoted at more than 4*s*, and middling quality as low as 3*s* 6*d*. Pork trade is worse; it has been sold at very low prices in the dead market this week.

Beasts, 200; Sheep, 4600; Calves, 209; Pigs, 270.

E. Weir, Smithfield.

POTATOES.—Southwark Waterside, Oct. 21.

Trade is reviving in this Market at present that requires attention; every description of goods is going off briskly at the following quotations. The supplies at the close of the week were considerable, and it is to be feared that they will occasion a further depression in our prices.

York Reds	75	80	Kidneys	90	95	
Do. Whites	85	90	Wisbeach Giants	80	85	
Early Purples	70	—	Do. Reds	90	95	
Early Dwarfs	75	—	Do. Whites	90	95	
Cornwalls	85	90	Gosbeary Reds	75	80	
Fluke	85	90	Do. Whites	75	80	
Do. White	85	90	Private Regents	90	95	

COVENT GARDEN, Oct. 23.—There has been little variation in the prices of most articles during the past week: the market has been well supplied, but trade continues dull. Pine-apples are rather on the rise; among them there are many handsome fruit. Grapes are also slightly advanced in price. Melons are becoming very scarce. The supply of Pears and Apples is quite sufficient for the demand; of the former the best sorts at present in the market are—Louise Bonne (of Jersey), Marie Louise, Beurré Diel, and Gansel's Bergamot; among Apples we noticed some fine specimens of Blenheim Orange. Walnuts, Filberts, and Nuts, are tolerably plentiful, and are good in quality; Cob-nuts are selling at from 90*s.* to 100*s.* per 100 lbs. A few Plums are yet to be met with, but they are becoming scarce. Oranges of every kind are now nearly, if not quite over, and Cucumbers are also getting scarce. Among vegetables the supply of Cauliflowers is decreasing; but Brussels sprouts, Savoys, and other winter greens are becoming more plentiful. French Beans are nearly over. Onions are good, and fetch nearly the same prices as last week. Some fine specimens of Celery, clean and well blanched, are in the market. Turnips and Carrots are excellent in quality, and are quite sufficient for the demand. Endive and Lettuces are well supplied. Sallads and Scorzonera are selling at nearly the same prices as mentioned in our last Report. Radishes bring, also, nearly the same prices as last week. Cut Flowers chiefly consist of Rondeletia speciosa, Cupressus purpureum, Pentas carnea, Cactus Jenkinsonii, Gloxinias, Heaths, Chrysanthemums, Lupines, Scarlet Pelargoniums, Mignonette, Fuchsias, Camellias, and Roses.

FRUITS.

Pine Apple, per lb., 4*s* to 6*s* 6*d*	Chestnuts, per peck, 3*s* to 4*s*
Grapes, Hothouse, p. lb., 1*s* 6*d* to 3*s*	Walnuts, per bushel, 8*s* to 9*s*
— Spanish, per lb., 1*s* to 2*s* 6*d*	— — shelled, 12*s* to 16*s*
— Portugal, per lb., 1*s* to 2*s*	Barberries, per half-sv., 2*s* 6*d* to 3*s* 6*d*
Melons, each, 1*s* to 2*s*	Oranges, bitter, per 100, 6*s* to 12*s*
Plums, per half-sieve, 2*s* 6*d* to 3*s*	Lemons, per dozen, 1*s* to 2*s*
— Imperatrice, per punnet, 1*s* 6*d*	— per 100, 6*s* to 16*s*
— Coe's Gold. Drop, pun., 1*s* to 1*s* 6*d*	Almonds, per peck, 6*s*
Damsons, per half sieve, 1*s* 6*d* to 2*s* 6*d*	Sweet Almonds, per lb., 2*s* 6*d*
Apples, Dess., per bush., 2*s* 6*d* to 3*s*	Cob Nuts, per 100 lbs., 80*s* to 100*s*
— Kitchen, 2*s* to 4*s*	Nuts, Barcelona, 24*s*
Pears, Dess., per hf.-sv., 3*s* to 3*s*	— Brazil, 16*s*
Quinces, per half-sieve, 1*s* 6*d* to 2*s*	— Cob, 12*s*
Filberts, per 100 lbs., 70*s* to 80*s*	

VEGETABLES.

Cabbages, per dozen, 6*d* to 1*s* 3*d*	Leeks, per doz., 1*s* 6*d* to 2*s* 6*d*
Cauliflowers, per doz., 1*s* 6*d* to 4*s*	Garlic, per lb., 4*d* to 6*d*
Broccoli, per bundle, 6*d* to 1*s*	Onions, per bunch, 3*d* to 6*d*
Brussels Sprouts, hf.-sv., 1*s* 6*d* to 2*s*	— large, per bushel, 3*s* to 4*s*
Sorrel, per hf.-sieve, 6*d* to 9*d*	— Spanish, per doz., 3*s* to 4*s*
Artichokes, per doz., 2*s* to 4*s*	Shallots, per lb., 4*d* to 6*d*
— Jerusal., p. hf.-sv., 1*s* 6*d* to 1*s* 6*d*	Tomatoes, per half-sv., 2*s* 6*d* to 4*s* 6*d*
French Beans, hf.-sv., 3*s* to 3*s*	Capsicums, Ripe, per 100, 4*s* to 6*s*
Scar. Runners, per hf.-sv., 1*s* to 2*s*	— Green, per 100, 1*s* to 2*s*
Potatoes, per ton, 80*s* to 90*s*	Radishes, per doz., 6*d* to 1*s*
— new, 2*s* 6*d* to 4*s*	Lettuce, per score, 6*d* to 1*s* 6*d*
— bushel, 1*s* 6*d* to 2*s* 6*d*	Celery, White, per bunch, 3*d* to 1*s* 3*d*
— Kidney, per bush., 3*s* to 4*s*	— Red, per bunch, 1*s* to 1*s* 6*d*
Turnips, per doz. bch., 1*s* 6*d* to 2*s* 6*d*	Endive, per score, 1*s* to 1*s* 6*d*
Red Beet, per doz., 3*d* to 1*s* 6*d*	Mushrooms, per pottle, 10*d* to 1*s* 6*d*
Carrots, per doz. bchs., 2*s* to 3*s*	Small Salads, per punnet, 3*d* to 6*d*
Basil, per bunch, 3*d* to 6*d*	Watercress, p. 12 sm. bun., 3*d* to 6*d*
Horse-Radish, per bundle, 3*s* to 6*s*	Parsley, per doz. bunches, 1*s* to 2*s*
Savory, per bunch, 3*d* to 6*d*	— Roots, per bundle, 3*d* to 1*s*
Cucumbers, Frame, each, 3*d* to 6*d*	Tarragon, Green, per bunch, 3*d* to 6*d*
— Ridge, dou., 3*d* to 3*s* 6*d*	Green Mint, per bunch, 3*d* to 6*d*
Spinach, per sieve, 1*s* 6*d* to 2*s*	Marjoram, per bunch, 3*d* to 6*d*
Scorzonera, per bunch, 1*s* to 1*s* 6*d*	Chervil, per punnet, 3*d* to 6*d*
Salsafy, per bunch, 1*s* to 1*s* 6*d*	Chilis, per 100, 1*s* to 2*s*

WOOL.—British, Friday, Oct. 25.

	per lb.			per lb.
Long-wooled Wethers	1*s* 0*d*	to 1*s* 1*d*	Southdown Hoggits	1*s* 1*d* to 1*s* 3*d*
Do. Hoggits	1 1	1 3	Kent Fleeces	1 1 1 3
South-down Fleeces	1 0	1 1	James Fenner, Wool Broker.	

MARK-LANE, Monday, Oct. 21.

The supply of Wheat from the adjoining counties was small this morning, which enabled Factors to realise the same prices as last week. The demand for Foreign continues limited, and its value unaltered.—Malting Barley finds ready buyers at an advance of 1*s.* per qr. above the quotations of this day se'nnight; Grinding remains without alteration.—Beans sell freely, and are 1*s.* to 2*s.* higher.—Peas are also 1*s.* dearer.—In Oats there has been a good business doing, at fully 5*d.* per qr. over the rates of last week.

British, per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk White	40	50	Red	42	46
—— Norfolk, Lincolnshire, and Yorkshire	—	—	White	—	—
Barley, Malting and distilling 27*s* to 30*s*	Chevalier	32	36	Grind.	22	30
Oats, Lincolnshire and Yorkshire	Potato	21	23	Feed	19	22
—— Northumberland and Scotch	Feed	19	21	Potato	20	22
—— Irish	Feed	17	20	Potato	19	22
Malt, pale, ship		50	52			
—— Hertford and Essex		54	60			
Rye		30	32			
Beans, Mazagan, old and new 32 to 34	Tick	30	35	Harrow	30	36
—— Pigeon, Heligeland 36 to 40	Winds	—	—	Longpod	—	—
Peas, White 34 to 37	Maple	30	34	Grey	30	32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	1962 sks.	6870	2368	620	—	1315	288	
Irish	—	—	—	10	2924	—	—	—
Foreign	10 sks.	2230	—	—	2130	—	—	727

Friday, Oct. 25.

We are without any fresh arrivals of Wheat for this morning's market, and its value consequently remains unaltered. In Foreign, business is limited, but Monday's prices are fully maintained.—Fine Barley fully supports our quotations, but grinding qualities sell slowly; there is a good arrival from abroad, a large proportion of which continues to come out of condition.—Beans and Peas are scarce, and inquired after.—We have a good supply of Oats, including several cargoes from abroad; holders are firm at Monday's prices, but the extent of business doing is small.

ARRIVALS THIS WEEK.

	Wheat.	Barley	Oats.	Flour
English	6100	4780	2070	3600 Sks
Irish	—	—	12870	—
Foreign	5300	12800	6280	—

IMPERIAL AVERAGES.

		Wheat.	Barley	Oats.	Rye.	Beans.	Peas.
Sept.	16. per Quarter.	43s 1d	29s 1d	20s 1d	33s 9d	37s 9d	34s 6d
—	23. "	43 8	34 4	20 5	33 7	37 8	33 1
—	30. "	43 5	34 4	20 5	37 8	38 0	33 4
Oct.	7. "	43 1	33 6	20 6	37 5	38 6	33 8
—	12. "	43 8	33 6	20 6	37 10	38 11	34 0
—	19. "	43 3	34 0	20 8	38 0	38 9	33 10
6 weeks' Aggreg. Aver.		43 11	33 6	20 5	37 6	37 9	33 7
Duties on Foreign Grain		20 8	6 0	6 0	5 6	5 6	5 6

SEEDS, Oct. 21.

Canary	per qr	50*s* to 60*s*	Linseed Calcutta, Feeding, p. ton		6*l* to 6*l*
Carraway	per cwt	42 52	Mogadad, White, p. bush.	1*s*	1*s*
Clover, Red, Meadow	— —	— —	Rapeseed	12	14
— Dutch	— —	— —	Brown	12	12
— Suffolk, English	— —	— —	Rapeseed, English, per last	22*l*	23*l*
— — Foreign	— —	— —	Hemp Choice	per ton	—
Coriander	— —	12 13	Inferior	—	—
Hempseed	per last	20*l* 21*l*	Linseed, Baltic, winter, p. bush.	7	8
Linseed	per qr	— —	— Foreign	—	—
— Baltic	— —	— —	Turkish	per cwt	— —
— Calcutta, Sup.	per 1000	32*l* 34*l*	Rapeseed Cake	per ton	— —

Linseed and Lay.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 21.

Prime Upland Hay	70*s*	to 80*s*	Clover	90*s*	to 110*s*	Straw 30*s* to 34*s*
Inferior	60	67	New	100		Prime Meadow, Coleorton
New Hay	—	—				

Whitechapel Market, Oct. 21.

Superior Meadow	80*s*	to 85*s*	Clover	100*s*	to 110*s*
Inferior	70	75	New	100	Straw 28*s* to 34*s*
New Hay	—	—			

Farnham Market, Oct. 23.

Fine Old Hay	80*s*	to 85*s*	Old Clover	90*s*	to 95*s*
New Hay	60	70	New Clover	80	Straw 30*s* to 36*s*
			Inferior	—	

LAVENDER-HILL NURSERY, WANDSWORTH-ROAD.—IMPORTANT LEASEHOLD PROPERTY to be Disposed of, by order of the Executors of the late Mr. W. FAMPLIN, Nurseryman. These valuable Premises, with extensive Frontage, must beautifully laid, highly cultivated, and capable of much improvement, consist of the commodious DWELLING-HOUSE, in capital repair;—dining, drawing, and large sitting-rooms, five good bed-rooms, and large cellarage; ground and other domestic offices; Stabling, Sheds, and other buildings; about NINE ACRES of LAND, principally as Nursery Ground. The whole (well adapted for the occupation of a family, for a Nursery and Seedsman, or for extensive and experimental Agricultural purposes) will be sold by Public Auction during the month of November, unless previously disposed of by private Contract.

For particulars apply to Mr. W. J. LEAN, Clapham-Common, or to Mr. W. FAMPLIN, Bookseller, &c. Fifth-street, Soho.

TO FARMERS.

TO BE LET on LEASE, and entered upon immediately, Two good Farm Houses, with FARMS, containing about 200 acres—in a most highly productive Hop Plantation, 61 acres Meadow, and the remainder Arable. A convenient Farm-house stands on the Premises, as well as Oast-house and other Farm buildings. The Farm is situated near a Terminus, and the journey to London is accomplished by Railway in 1 hour and 47 minutes; it is also near a good market-town.—For further particulars apply to Mr. ARTHUR SMITH, 6, John-street, Bedford-row.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, BIA, HOLBORN.

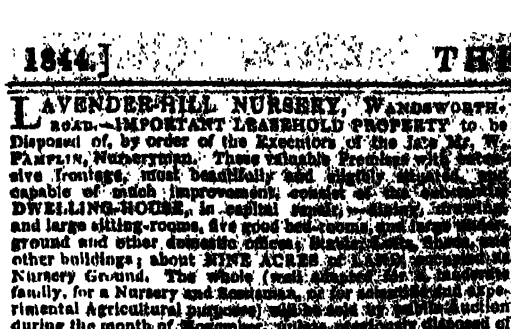
D. and E. BAILEY having devoted much time to the consideration of this subject, and their much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of *Horticultural* Building and Garden, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 378, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient Kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of tin oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear-houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., Nos. 2 & 3, WINSLEY-STREET, OXFORD-STREET, LONDON, and 21, CORNWALL-ROAD, LAMBETH.



HOTHOUSES & CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT or ROGERS'S BOILERS. After 18 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Stoves, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Rollers of Iron as well as Copper, by which the cost is reduced. These Rollers, which are now so well known, require no further description, but to those who have not seen them in operation, circulars will be forwarded as well as references to the highest authority; or they may be seen at most of the principal Seedsmen's and principal Nurseries throughout the Kingdom.

S. & Co. beg to inform the Trade that their Manufactory in New Park-st., every article required in the construction of Horticultural buildings, as well as the Apparatus, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron of the most approved and elegant ornamental designs, Balconies, Verandahs, Rustic Garden Fences, Wire Work, &c. &c.

GUANO (GENUINE PERUVIAN) ON SALE, BY THE ONLY LICENSED CONSIGNEES, ANTONY GIBBS AND SONS, LIMITED.

WM. J. MYERS sole Agent.

And by their Agents,

COTESWORTH, POWELL, AND MANNING, LONDON.

GIBBS, BRIGHT, & CO., LIVERPOOL AND MANCHESTER.

47, Lime-street, Oct. 26, 1844.

WIRE-WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS-BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of PATENT WIRE-FENCE, to resist Cattle, Poultry, Game, Rabbit-proof. WIRE-WORK in Trellis, Screens for Vineries, Fruit-trees, Flower Stands, Fire-screens, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive. Twenty years' experience has unquestionably proved that genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To secure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, illustrated by Practical Results."

Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the warehouse, 20 and 21, Billiter-street, or delivered within any reasonable distance in a trifling additional cost. Apply to JAMES CLARK, 20, Billiter-street.

WHEAT-SOWING.

GUANO; Genuine Peruvian, Bolivian, and Ichaboe, on Sale; also Potter's Guano, Gypsum, Sulphuric Acid, Sulphates of Iron and Copper, and all other manures. Synopsis of prices, and mode of use, on application, &c.—Apply to MARK FURGUSELL, 40, Upper Thames-street.

GUANO, IMPORTED BY WILSON AND VAUSE, HULL,

Who have now on Sale a selected Cargo of superior quality, per "Britannia," direct from Ichaboe, with a succession of Cargoes to arrive. Samples, with instructions for use may be had at 19, Bowl Alley Lane.

MR. LAWES' MANURES.—Mixture for Wheat, 7l. per ton; Super-phosphate of Lime, 7l. per ton. To be had at the Factory, Deptford Creek, near London.

Super-phosphate of Lime, in a concentrated form, may also be procured at Messrs. WARNER'S, 26, Cornhill, in 7lb. packets, price 1s.

WHEAT-SOWING.

FREDERICK BRAIN begs to call the attention of the Agricultural world to his GUANO MANURE, prepared expressly for Wheat crops: it abounds in all the ingredients that are necessary for a good grain crop. He particularly solicits persons who found the Foreign Guano a failure last season to give his a trial, it being much more powerful, and free from adulteration, so justly complained of in the Foreign by Agriculturists, as well as by all the leading Agricultural Journals.

Testimonial to Brain's Guano Manure.—"5 A, Hawley Road, Kentish Town, London, Aug. 15, 1844.—This is to certify that we have subjected Brain's Guano to a most patient and rigorous analysis, and find it contains all the necessary constituents of a good manure, and is well calculated to give fertility to a soil which is either naturally barren, or has been exhausted by over-cropping, by supplying the land with those substances which are absolutely requisite to a healthy vegetation; (it is not adulterated, and can always be depended on being of uniform composition.)—(Signed) JOHN MITCHELL and FREDERICK FIELD, Analytical Chemists, late of the Royal Polytechnic Institution, London."

Also, BRAIN'S highly concentrated LIQUID GUANO, for Grass Lands, Gardens, Shrubberies, Hothouses, and Conservatories, price 1s. 6d. per quart bottle, with full directions for use, (enough for 60 gallons of Liquid Manure), to be had of most respectable Florists, Seedsmen, and Chemists in town and country.

Works, Thomas-st., Duke-st., Stamford-st., Blackfriars-road.

IMPORTANT TO AGRICULTURISTS, &c.

ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. MITCHELL and FIELD (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil, in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 5 A, Hawley-road, Kentish Town.

LIQUID MANURE.

ENGLAND INDEPENDENT OF THE WORLD FOR CORN.

THE Attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Trade supplied on advantageous terms, by BENJAMIN FOWLER, Engineer, &c., 63, Dorset-street, Fleet-street, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and OBTAINED the PRIZE for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to many of whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price Only 2½d. per Patent 100 Square Foot. Samples, with directions for fixing, and testimonials as to its having kept free from leakage for a number of years.—Patent Felt Works, Lamb's Buildings, Bunhill-row, London.

AGRICULTURAL [illegible] the DERBY LEVEL.—The Proprietors of Lands desirous of draining their land [illegible] to this Level, are requested to [illegible] forthwith, addressed to the Clerk of the Commissioners, [illegible] Derby, stating the number of Acres they intend to be drained, and its price such Lands [illegible] within the Level, per Acre, at the end of the Maker; J. DAVIS, Engineer, Derby.

TANNER'S VITREOUS CLOTH, a SUBSTITUTE for GLASS for HORTICULTURAL PURPOSES.—The above recommends itself to the notice of Florists and Horticulturists, as producing effects superior to Glass, at a less expense. The support the Proprietor has received from very many highly respectable Florists encourages him to consider that his labours have not been misapplied in bringing before the public an article so generally required. Price of cloth, 9 yards of a yard wide, thin, 2s. 6d. per yard., stout, 3s. 1 yard wide, 3s. 6d. Price of Fluid (for renewing the cloth after lengthened service), 1s. 6d. and 2s. 6d. per bottle. Manufactured only by W. TANNER, Chemist, Exeter: and Sold by Messrs. Sutton and Mackley, Covent-garden, London; Mr. Cunningham, Paradise-street, Liverpool; Messrs. Lucombe and Pince, Exeter Nursery.

TO LANDOWNERS, AGRICULTURISTS, BUILDERS, &c.

MCKERROW'S PATENT ROOFING FELT is peculiarly applicable, as a substitute for Slate, Zinc, Tiles, and other preparations for Roofing, from its ECONOMY, LIGHTNESS, and DURABILITY.

The disadvantages attending other materials used in roofing, preventing, to a great extent, many useful houses and sheds being erected or rendered habitable, it is submitted that the improved Roofing Felt will in a great measure—and in some instances altogether—obviate them, and appears most serviceable from its lightness, durability, and impermeability to water and damp, in covering Houses, Cattle-sheds, Granaries, Ropewalks, &c., and for the slopes as well as roofs of glass structures for plants, being likewise a non-conductor of heat; besides its economy in repairs, the timber where it is used may be so light as to save its whole expense; it requires no other coping, and may be applied by any person of common ingenuity; being flexible and portable also, it is free from breakage, the expense of carriage is inconsiderable in comparison with slates, tiles, &c., and it is not liable to contraction like zinc.

Sold in sheets 32 inches by 20, at 5d. each (being less than 9d. per square of 100 feet), with printed directions for applying them, same as adopted at the Government Dock-yards and various other public buildings.

Orders will meet with prompt attention if addressed to H. C. BOWMAN, 16, East India Chambers, Leadenhall-street, London, or to the following Agents:—Liverpool, Messrs. Gruebar & Co., 11, Mapperly-lane; Plymouth, Thomas Stevens, Esq.; Birmingham, William R. Loyd, Esq.; Sunderland and Newcastle-on-Tyne, Messrs. John Rhson and Sons; Hull, William Ward, Esq.; Bristol, Messrs. Moor and Hewitt; Ramsgate and Deal, Messrs. Edward Hodges & Co.; Whitehaven, William Todd, Esq.; Glasgow, Malcolm Carmichael, Esq., St. Enoch-square; Cork, Messrs. Richard Wallis & Co.; Belfast, Messrs. Gruebar & Co., Donbar's Dock; who have also on sale McKERROW'S improved SHEATHING, BOILER, RAILWAY, and other FELT.

*** The "IMPROVED ROOFING FELT" will be found much more durable than the Common Felt made in lengths, and not subject, like it or continuous sheets of other material, to be stripped by storm; *it does not require to be either painted or coated*, can also be more easily repaired, and from the simple mode of application recommended, the wet cannot percolate through nail-holes, being only fastened down at the overlaps.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the Public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the Apparatus; and B. & H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices, to 139, Fleet-street.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE. Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-ship, June 6, 1844.*—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks; to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers, for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HOSKEN."

"One of the most piquant inventions of this luxurious and epicurean age is Lea and Perrins's Worcestershire Sauce, adapted to fish, flesh, fowl, and soup; giving a zest far superior to the long-established favourites; more wholesome and of less cost —*Naval and Military Gazette*, April 8, 1843.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

HEALTH, LONG LIFE, AND HAPPINESS.—EXTRAORDINARY CURE OF SCORBUTIC HUMOUR.

I, WILLIAM WOOD, of Rockwell Green, in the parish of Wellington, Somerset, hereby certify, that for about seven years I was afflicted with SCORBUTIC HUMOUR on my nose, with a continued discharge, rendering me almost unfit for society; I tried several medical men, and various medicines for curing the same, but all proved of no avail, producing no beneficial effect; at last I was persuaded to try PARR'S PILLS, and after taking two small boxes and part of a third, I was completely cured, and I now feel no pain or inconvenience as before. Many parties in the neighbourhood, and your Agent for Wellington, Mr. GREENWAY, can bear witness that my testimony is correct, and I wish it to be made known, that others similarly afflicted may be encouraged to try the same medicine, which under the blessing of God has proved so serviceable to me.

Witness my hand this 6th day of August, 1844. WM. WOOD.

In the presence of JOHN GREENWAY, Wellington.

From DR. C. STEARNS, 181, Fulton-street, sole agent for Brooklyn.—An instance of the singular efficacy of PARR'S LIFE PILLS, which merits particular notice, occurred in the person of a lady residing at Brooklyn, of consumptive make, who had been afflicted for upwards of six years with very great and general debility, headache, dizziness, faintings, and all the effects originating in an impaired constitution. Country air was tried, but to little advantage. She complained of weariness and pain on the least motion: her bowels were sometimes constipated, and at others lax, and never regular. At this period, she was recommended to try PARR'S LIFE PILLS, when no less astonishing than true, before she had finished two boxes, an entire and perfect cure was the result. To such nothing can equal this antidote, as it imparts tone and strength to the stomach, and operates so mildly, that the most delicate of either sex can take them with the greatest safety.

To T. Roberts and Co., April, 1844. Yours truly, C. STEARNS.

These, and hundreds of other cases of DECIDED CURES, attested on the highest authority, and already published, occupy upwards of 150 pages of letterpress. These Testimonials are published periodically, and may be had on application at any respectable medicine warehouse. The cures, in many instances, were effected after the most eminent had failed, and they thus establish the claims of PARR'S LIFE PILLS, in being considered the best medicine in the world.

CAUTION!! TO THE PUBLIC.—Beware of Spurious Imitations of the above medicine. None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE Letters on a RED GROUND, engraved in the Government Stamp pasted round each box. Sold by all respectable Medicine Venders.

SUBSCRIPTIONS

NATIONAL TESTIMONIAL

TO MR. ROWLAND HILL,

UPWARDS OF FIVE THOUSAND PERSONS,

WILL CLOSE ON THE 15TH NOVEMBER NEXT.

On all the heritage of income stated in the recently published Quarterly Returns of the Public Revenue, some [illegible] a proportionate increase; the *Post Office*, on the contrary, the Revenue the Customs have increased 4½ per cent., the Excise 3½ per cent., the Property Tax 4 per cent., while the *Post Office* revenue, under its almost nominal rate of a penny, has increased eleven per cent., and the increase on the quarter has been even somewhat in excess of that.

These cheering results have been effected through the plan of *Penny Postage* in fact but *imperfectly tried*; the complete *celebration* of the Post Office Revenue to its amount before the Penny Postage was adopted is not an event, for distant, if it be fully and honestly carried out, and the *City of London Mercantile Committee on Postage* have it in their power to impress these satisfactory results most emphatically upon the Public, in announcing the approaching close of the National Testimonial to Mr. Rowland Hill. All parties, for unanimous upon this great commercial and economical triumph of the Post Office, the efficiency, as a *Financial* step, that even the most sanguine question have since acted, with the most decided success, to [illegible] it, or relinquish that the Old Postage Revenue had been absolutely stationary for twenty years,—retrogressive, in fact, if we consider the increase of population, education, and commerce during the period. The change which Penny Postage has effected, is to make the Post Office [illegible] the most frequent source of National income, bidding fair to become more profitable than it has ever been. The Committee, therefore, call upon the Public to respond, with [illegible] gratitude the Author of this great [illegible] benefit.

The Committee have no hesitation in announcing that the [illegible] Public, including the [illegible] political parties and of [illegible] [illegible] £10,000 [illegible] [illegible] every single [illegible] only a single [illegible] [illegible] [illegible]

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Horticulture, Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 44.—1843. SATURDAY, NOVEMBER 2. [Price 6d.

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KENNINGTON NURSERY
UNDER THE SPECIAL PATRONAGE OF HER MAJESTY THE QUEEN

RICHARD FORSTER AND Co., Successors to William Marsden, have much pleasure in offering the public an entire and correctly named Collection of FRUIT TREES of every desirable kind introduced to the country. These grounds, so highly favoured for the growth of every description of Nursery stock, and so long and so justly celebrated for its superiority, will well repay the visit of those who intend making a selection, for either autumn or spring planting, and their esteemed favours shall meet with prompt and correct attention.

GAINES'S SPLENDID FIRST-RATE SEEDLING PELARGONIUM, "Princess of Lapstone," was considered by all who saw it [illegible] one of the finest [illegible] which it obtained the Prize. Also the following Seedlings raised by Mr Gaines: "Alice Hawthorn" 1st, "Trafalgar" 1st, "Gaines's Alice Hawthorn" 1st, "Gaines's King of Bavaria" 1st, Gaines's Sir Wm. Manry Stanley" 1st; Gaines's "Marchioness of Lorne" 1st, Gaines's "King of the Frenchmen" 1st, with many first rate Seedlings raised by other cultivators. A good Collection of Pelargoniums, Pansies, Calceolarias, Camellias, Cinerarias, Fuchsias, Verbenas, Chrysanthemums, Carnation Picotees, Auriculas, &c., may be obtained of Mr Gaines, Surrey Lane, Battersea.

P S The collection of Seedling Cotees raised by Mr Milner are now in blossom, and may be seen at the above Nursery

LYNE'S NEW GERANIUMS.

WILLIAM L. RENDLE can execute a few more orders for the following

Lyne's Prince of Alice	each	21s
" Redworth		21s
" White Perfection		21s
" Confidence		21s
" Imogene		21s

Plants will be delivered after 15th November "Jaffino" cannot be sent out this season; no more orders can be received for "King of Saxony"

LYNE'S "PRINCES" 10s 6d each.

*** The stock of the above is limited to about 2 plants of each; early orders are therefore necessary to insure a supply.

Union road Nursery, Plymouth, Nov 2 1843

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, RANUNCULUS, AURICULAS, CARNATIONS, and LILIUM LANCIFOLIUM.

HENRY CROOM, Clapham Rise, near London (removed from Walworth), by Appointment Florist to Her Majesty, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above flowers which, from the exceeding skill he has in their cultivation he can offer at very moderate prices. He particularly wishes to call attention to the highly-flattering remarks on his Exhibition of Tulips and Lilium lancifolium in the various papers. He is also desirous of reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collections or ornament their parterres with these beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Lilium lancifolium are particularly adapted for pots, as, besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and which flowers are so much wanted. They only require to be known to be universally cultivated. Catalogues may be forwarded by post on application. Foreign orders executed.

DOUBLE ROMAN and PAPER-WHITE NARCISSUS, 4d. per dozen. The above Bulbs, the flowers of which is so justly esteemed for its early blooming and delightful fragrance, and the latter for its purity and elegance, have just received at A. Constable's, late Mr. Barnard's, Old Foreign Warehouse, 18, Pall Mall. Also Dutch Hyacinths, Crocuses, Tulips, Anemones, &c. &c.; Prize Catalogues which may be had per Post.

GREAT YARMOUTH NURSERY NORFOLK, 1844

UNDER THE ESPECIAL PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN DOWAGER, H.R.H. THE DUCHESS OF KENT, THE RIGHT HON. LORD COLTENHAM, THE EARL OF ORFORD, THE EARL OF RADNOR, AND THE HORTICULTURAL SOCIETY OF LONDON, &c. &c.

A Letter, of which the following is a copy, has been received from the Hon. Wm. Ashley, Treasurer, to the Queen.

SIR, PAVILION, February 22, 1837

I am commanded by the Queen to acknowledge the receipt of a basket of Tobolsk Rhubarb sent by you for Her Majesty's acceptance, and to say that its excellent qualities fully justify the high character you had previously given it.

I remain, Sir, your obedient humble servant,

To Mr WILLIAM YOUELL (Signed) WILLIAM ASHLEY

Horticultural Establishment, Yarmouth

YOUELL'S TOBOLSK RHUBARB.—This highly-esteemed variety will be found to be the earliest of all early sorts as well as the most hardy. As a proof of its extraordinary precocity it has been ready for tarts as far the 20th of February on the open garden in a very exposed situation, and continued to produce its fine large stalks till September.

How could we be useless to eulogise its merits further than the great demand for it, together with the many high testimonials of approbation received, claim for it a decided superiority.

The TOBOLSK RHUBARB may be grown in boxes or pots in any common garden mould or even exposed in damp Moss and placed in a cool dark cellar, the back fire recommended, where early in October, under the same treatment as Sea Kale and will be ready, when it will produce its tasks of a beautiful transparent delicate pink containing a rich vinous juicy pulp entirely free from the disagreeable acid flavour objectionable in all cases with and when cooked retains its beautiful colour, which renders it an elegant addition as well as delicious dish to the table of a season when vegetables are unattainable. It splendid for the early part of the month will read for cutting in January. A few boxes will be sufficient for every three weeks will afford a regular supply and the plants, when done with, may be planted out in the garden in the summer, and replaced in the cellar, as in Sea Kale.

It will be observed that the prominent features in this variety is the tender manner in which it may be cultivated with certainty from seed by the aid of a hot-bed, a little attention to the early stage of its growth, and will be a desideratum to the cultivator of the kitchen garden.

Also, Myatt's Queen Victoria Rhubarb 12s per dozen

Youell & Co., Great Yarmouth Nursery, October 31st

THE NEW SUPERB SEEDLING PICOTEE "DURROUGHES'S DUKE OF NEWCASTLE"

WOUELL & CO. have much pleasure in announcing that they will send out for the present season this splendid light edged purple Picotee raised by the Rev. Burrough Durrough and named in honour of the Duke of Newcastle. With just claims to surpassing Purple Picotee that has yet been raised. Without comment we further upon its superiority, but beg to refer to a report in a late No. of the *Gardeners' Chronicle* as follows —

"The *Duke of Newcastle* is a flower of first rate properties; the bright edged purple the petals are large, and of good form and substance, even on the edge the colour running the whole round will be a desideratum to the exhibitor." It gained the first prize as the best seedling at the Norfolk and Norwich Horticultural Exhibition. Price 21s per pair. The stock being limited to prevent disappointment early orders are respectfully requested. Y and Co are also enabled to supply the following superb Picotees, raised by the same gentleman all of which are first rate properties and have been exhibited and obtained first class prizes at several of the metropolitan exhibitions this present year. The names will

Duke of Wellington		5s 0d
" Lady Alice Peel		5 0
" Miss Revell		5 0
" Mrs Revell		5 0
" Lucy		2 6

CARNATIONS AND PICOTEES

Youell & Co's collection of these beautiful flowers is known to be one of the finest extant containing every known variety of merit. The plants are remarkable strong, and healthy, and will be found to answer to the title Bizarres, Flakes, Rectes, &c. &c. as described in their Catalogue, which will be sent on application.

12	best	mixed very superior	10	0
12	flowers		10	0
25	ditto	ditto	5	0
12	ditto	ditto Show flowers	1	10
12	ditto	ditto	3	0
12 pairs of Extra fine Show Picotees			0	0
25	ditto	ditto	1	1

The selection being left to Youell & Co

Great Yarmouth Nursery, Oct. 31

SPERLING begs to refer the Readers of the *Gardeners' Chronicle* to his Advertisement of PETUNIAS, DOUBLE VERBENAS DAHLIAS, &c., of the 14th October Dancroft Nursery, Stowmarket, Suffolk.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the flowers of these splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed, which they may be had as the Nursery, and on and after Wednesday next, October 4, [illegible]

J. DOIG begs respectfully to inform the Nobility, Ladies, and Gentlemen that his CATALOGUE of Hardy Herbaceous Plants, Alpines, Trees, Shrubs, Greenhouse Plants, &c. is now ready for delivery, and will be forwarded Gratis on application. [illegible] Catalogues when they are thus applied for.

Langley Nursery, Nottingham, Oct. 26, 1843.

TO THE LOVERS OF ROSES.

WOODLANDS NURSERY, WORTHING, UCKFIELD, SUSSEX, AND AT PARIS.

WILLIAM WOOD and SON have the honour of submitting to the notice of their Nobility and Amateurs, the undermentioned truly magnificent Collection; it has flowered here this season in great perfection, and Plants were forwarded to Dr LINDLEY, whose opinion appeared in the *Gardeners' Chronicle* page 684:

MARGARET MARY (Wood's).—"Your seedling, Gillian, is a handsome variety, fine in form, being compact and well double, outside petals finely cupped; in colour it is of a purple rose, of a peculiar and beautiful tinge; it is fragrant, and it its best when fully expanded."

Plants of the above are now ready for immediate delivery at Standard and Dwarf at 5s each. The usual discount to the trade when not less than six plants are ordered at once.

W. W. and Son further beg leave to state that they have on hand a very extensive stock of Roses at the following prices, when the selection is entirely to them —

	Per doz	Per 100
Superior selected Standard Roses	18s	£ 5 0
Superb do do	9 or 12	10 0
Select Dwarf budded do	12	15 0
Superb do do	18	5 0
Superior dwarf Roses (on own roots)	9	7 10
Superb do do fine show varieties	12	2 15
Fine Climbing do	9 and 12	2 10

Catalogues of Roses and Nursery Stock will be sent gratis on application.

A List of this will be presented GRATIS, in order to compensate the expense of carriage. A remittance, or reference will be required from unknown correspondents.

TO THE PLANTERS OF ENGLAND—TRUE HIGHLAND PINE.

JAMES GRIGOR, NURSERYMAN, Norwich, begs to remind such of the Planters of England and Scotland as wish to enhance the beauty and value of their estates, that he is now sending out plants of this recently introduced and very valuable timber tree at the undermentioned prices —

Single plants, strong and well rooted	6d. each.
8 strong plants, 10 inches high	2s per doz.
Do 12 do do	3s. per doz.
Smaller sized plants	from 10s. to 20s. per 1000.

For introducing this tree Messrs Grigor, of Moray and Forres, were awarded several premiums by the Highland and Agricultural Society of Scotland, where it is rapidly superseding the Scotch Pine. In its old age it assumes in a great measure the appearance and grandeur of the Cedar of Lebanon, and therefore is valuable for planting in masses throughout the Park or pleasure ground, or for distant landscapes. The young trees might be confounded at a little distance with the Silver Fir, but it is at once distinguished from it by the leaves growing in pairs, instead of singly as in the Silver Fir. It is also distinguished from the Scotch Pine by the leaves growing in pairs, instead of three together as in the Scotch Pine.

TO PEAR GROWERS

RENÉ LANGLIER, NURSERYMAN and FLORIST, CLARENDON NURSERY, ST HELIER, JERSEY, begs leave to draw the attention of Pear growers to his new PEAR named LANGLIER'S HEURIEL, of first rate merit, perfectly melting ripe in January; shape of Napoleon, but larger in size; standard tree very vigorous; one of the best flavoured Pears known, otherwise it would not be recommended by R. L., as he gives for advertising is not for the sake of publishing, but for the good of the public in general, to whom he is happy to have the opportunity of rendering himself useful; of which, "A Man I am in Glass," will be a sufficient guarantee, having proved itself as it was represented, and given universal satisfaction. The stock of this superb New Pear is small and limited in number, and the price will be 21s; if 6 trees are ordered, 7 will be sent; no discount will be allowed to the trade. As the trade only will 6 plants be sent for 10, the number is very limited. R. L. also takes this opportunity to state that to those numbers of "A Man I am in Glass" remain unpaid for on account of some will be sent to unknown correspondents, except for ready cash, or post office [illegible]

As this is unexpected for plants, R. L. wishes to draw the attention of the public to his well-selected and unrivalled Collection of which a list may be had by pre-paid letter, and begs to state, that nothing is sent from his Establishment except proved fruit and [illegible] R. L. also wishes to obtain a few thousands of small plants of EVERGREEN OAKS, among which will be [illegible] rear varieties, they are fine and healthy, 2 years old and [illegible] inches to 24 feet high, fit for planting or potting, price 2 per 100. Also the KIDNEY POTATOES, superior in [illegible] equal to the Ash leaf, the sample, extra fine, as [illegible] sold weight, as not [illegible] that quantity will be sent.

HARDY SHRUBS AND HERBACEOUS PLANTS, &c.

WILLIAM MAY, Hall, cultivating the above in large quantities is enabled to offer them on the very most reasonable terms, a few of which are respectfully begs to call the attention of [illegible] about to make new or add to old plantations. He can recommend them as being all very fine varieties, well adapted for display, and not for mere botanical curiosity. The plants are strong and healthy and will be correctly named. Hardy Shrubs, two each, 4s per 100, if 100 taken at once; 100 or more sorts will be sent, the 500 for 10l. Hardy Herbaceous Plants, 100 sorts for 4s or 200 sorts for 8s; the selection left to W. M. Victoria late Red Currant, 10s. a dozen; Hollyhocks, fine double sorts at 4s per 100. (See Advertisement, *Gardeners' Chronicle* Oct 5.) Remittance or reference from unknown correspondents.

Hope Nursery, Thorne, Yorkshire, Nov 1

HYACINTHS, ANEMONES, &c. delivered free to any Railway or Packet Office in London.

ANEMONES.

40 distinct varieties, new large double, by name	11s.
12 ditto ditto	5s.
Fine mixed single, per 100	7s.

HYACINTHS.

20 superb varieties, by name	17s. 6d.
The best 12 ditto	9s.
Extra fine mixed ditto, per dozen	5s.
Very fine ditto, per 100	25s.

RANUNCULUSES.

24 sorts, by name—excellent	12s.
50 sorts, a pair of each	25s.
The same in mixture, per 100	5s.

N.B.—The best sorts of Early Peas and other Garden Seeds, of home growth, are just harvested.

The above superlative bulbs may be depended on as of first-rate quality, and may be had at the low prices annexed, delivered free in London from Messrs. SUTTON and SONS, Reading Nursery, Reading, Berks.

A SPLENDID NEW LATE PEACH.

MORTON'S "WALBERTON ADMIRABLE."—This splendid variety was raised at Walberton House, in Sussex, the seat of R. Prime, Esq. It is a Seedling from the Noblesse, which it much resembles, both in size and flavour. It possesses all the fine qualities of its parent, but its great merit arises from its ripening full five weeks later. A specimen of the fruit was sent to Dr. LINDLEY, in 1841, from whom were received the highest testimonials of approbation. The tree is a fine, free, and hardy grower; the fruit is full-sized, melting, and excellent-flavoured, rendering it a truly desirable variety, and one which no good garden ought to be without.

Good one year's trained plants can be obtained of ALEXANDER WEBB, Nurseryman, Westergate, near Arundel, Sussex; at Messrs. HAY, ANDERSON, and SANGSTER'S, Newington Butts; and also at Messrs. HURST and M'MULLEN'S, 6, Leadenhall-street, London, at 18s. 6d. each; a few strong plants at 21s. each. The usual allowance to the Trade when three or more are taken, and carriage paid to London. Remittance from unknown correspondents is required.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX; and at PARIS.

WILLIAM WOOD AND SON beg leave to offer their extensive Stock of CAMELLIAS, fine Stocky Plants, well furnished with Flower-buds, at the following prices, the selection of sorts being left to themselves.

Good and Esteemed Varieties	30s. per dozen.
Superior Selected do.	45s. "
Superb New do.	60s. "

Also a Superb Collection of all the best and newest CINERARIAS, fine Stocky Plants, well adapted for flowering during the winter months.

Very fine Varieties	8s. per dozen.
Superior Selected do.	12s. "
Superb New do.	18s. "

Plants will be presented to compensate for carriage. Catalogues of the above; also Lists of W. W. and Son's Collection of FUCHSIAS, VERBENAS, Greenhouse and Herbaceous Plants, may be had gratis on application.

Woodlands Nursery, Nov. 2.

THE TRUE FASTOLFF RASPBERRY.

YOUELL AND CO. beg to announce they are again able to supply the canes of the above truly excellent variety, celebrated for the size of its Fruit and richness of flavour; prices as follows:—

Purchases containing	100 Canes	£2	0 0
Ditto,	50 "	1	1 0
Ditto	25 "	0	12 0

For further particulars, see YOUELL & Co.'s Advertisement of October 26th.

Youell and Co. feel it due to themselves to state that a spurious kind was offered for sale by other parties last season, under the title of "Fastolff Raspberry," the same having no pretensions to the genuine variety.

THE FINEST DUTCH HYACINTHS and OTHER BULBS DIRECT FROM HAARLEM.

YOUELL AND CO. beg to inform their Friends and the Public that they have just received their first Importation of the above in the finest possible condition, Catalogues of which can be had on application. They are enabled to offer "the finest Double or Single Blue, Red, White, and Yellow Hyacinths at 12s. per dozen."

Very fine ditto	12s. per doz.
Fine ditto	6s. "

And other Roots at equally moderate prices.

The Finest Norwich Black Baguet Tulips, 2s. each.

P.S.—Bulbs will be added as compensation for long carriage.

YOUELL AND CO. are now sending to any part of the United Kingdom the undermentioned highly-desirable Plants; full particulars of which will be found in their former Advertisements.

FUCHSIAS—per post free.

12 Extra Fine varieties, 12s.,	the Selection left to Youell & Co.
12 ditto ditto 21s.,	the Selection left to the Purchaser, comprising most of the new varieties sent out this season.
50 Fine varieties, 40s.,	the Selection left to Youell & Co.
50 Extra Fine ditto 60s.,	the Selection left to the Purchaser

VERBENAS—per post free.

12 Extra fine Varieties, 6s.,	the selection left to Youell & Co.
12 Ditto 10s.,	the selection left to the purchaser.

PANSIES. [Sent postage free.]

12 Fine Show Varieties, by name	10s. per dozen
12 Extra Fine ditto, &c.	18s. "

Catalogues of which may be had on application.

CHRYSANTHEMUMS. (Sent postage free.)

Fifty of the newest best varieties by name, 12s. per dozen, for names and colours of which, see Advertisement of June 15th.

PETUNIAS—per post free.

Extra Fine Varieties, 12s. per doz., including Miller's Punctata.

PANSY "LADY ALICE PEEL" (for particulars of which see Advertisement of June 1, 1844), 2s. 6d. per plant.

12 Fine Spring Flowering Ericas, &c.

Araucaria imbricata, fine plants in pots, 6 years old, 1of. per 100, or 20s. per dozen.

Ditto, 3 years old, 7f. 10s. per 100.

Ditto, 2 years old, 5f. per 100.

Pinus Gerardiana, 60s. per dozen.

Cedrus Deodora, 2 feet to 2½ feet, 10s. 6d. each.

N.B. All Orders above £2 are delivered in carriage free to London or Hull, or plants added to compensate for the same.

Great Yarmouth Nursery, Oct. 21, 1844.

RICH LEAF-MOULD and PEAT-EARTH.—Several acres of valuable Peat-earth and Leaf-mould of a rich quality, to be disposed of. Gentlemen and Nurserymen engaged in the Cultivation of Heaths and American Plants will find the above articles of a very superior kind. They will also be found of great value as dressings upon strong lands.—The Estate is within one mile of the Thames, convenient for water carriage. For full particulars apply to Mr. LAWRENCE, Corn Chandler and Seedsman, No. 16, Piccadilly.

HYACINTHS AND GREENHOUSE PLANTS.

HUMPHREYS'S SOLUBLE COMPOUND.—A few grains are effective. HALF A BOTTLE dissolved in a quart of water furnishes a superior LIQUID GUANO at half the usual cost. Sold in bottles, price 1s. 6d. each, by FLANAGAN and Son, Mansion-House-street; HURST and MCMULLEN, Leadenhall-street; W. CLARKE, Bishopsgate-within; SMITH, Islington Nursery; CHANTREY and Co., Covent-Garden; RATT and RAFFERTY, 81, Strand; WHEELER and JOHN NOBLE, Fleet-street; THOMAS GRAVES and Co., Piccadilly; SMITH, Covent-Garden; CHANLWOOD, Tavistock-row, Covent-Garden; W. J. WUTTING, 30, Cheapside; W. and CHAS. LARNER, 129, St. Johnstreet, Smithfield; S. LAWRENCE, 16, Piccadilly; JOHN KEENAN, Great Russell-st., Covent Garden; LOCKHART, 180, Cheapside; BRUTTLEWORTH, Pentheon; MILLER, Arundel, and MASH, 63, Strand; THATCHER and SON, Islington; J. FRYER, Clarendon-terrace, Camberwell; THOMAS [illegible], Camden Town; THOMAS WATTINSON, Market-place, Manchester; T. S. KING, Rochester; W. R. REYNOLD, Plymouth; DICKSONS and Co., Edinburgh; PONTEY, Leeds; FISHER, HOLMES, and Co., Sheffield; P. LAWSON and SON, Edinburgh; J. THOMAS, Shepton Mallet; and other leading BOOKSELLERS in Town and country. Wholesale Agents, DAVY, MACKINNON and Co., 100, Upper Thames-street, London.

MYATT'S BRITISH QUEEN STRAWBERRY.—A few Thousand of these are for Sale, at 2s. per hundred. Inquire of MR. W. RAINS, either at Covent Garden or Hungerford Market.

HCORSTEN, FLORIST to HER MAJESTY and to HIS ROYAL HIGHNESS PRINCE ALBERT, 10A, Davies-street, Berkeley-square—has for sale Boxes containing 24 of the best Hyacinths, for water or pots, named sorts; 24 Tulips, in 4 sorts; 12 Narcissus, in 3 sorts; 25 Double Anemones; 25 Double Ranunculus; 12 new Iris Angelica; 12 Double Jonquils, true; 12 Gladiolus; 50 Crocus, in all colours; 50 Double Snowdrop.—3l. each box; half for 1l. Remittance required. H. C. warrants the roots to bloom most beautifully.

NEW SEEDLING PANSY—"FRYER'S STANDARD."

JOSEPH FRYER begs to inform the growers of PANSIES that he is again able to supply strong healthy Plants of the above, free by Post at 5s. each, with trade allowance when 3 are taken. For description, see Advertisement in the *Chronicle* of 10th of August. J. F. likewise begs to inform his friends that his extensive collection of PANSIES are at this time particularly fine and healthy. Catalogues of which, including Florists' Flowers, Greenhouse and Herbaceous Plants, &c, &c., are now ready, and will be forwarded on application.—Clarendon Nursery, Camberwell, Nov. 1.

"GENERAL TOM THUMB" SCARLET PELARGONIUM.

PHILIP CONWAY, NURSERYMAN & FLORIST, &c., Old Brompton, through the kindness of Mr. Ayres, is enabled to let out a few plants of the above, which is thus described in the *Gardeners' Chronicle*, page 580:—

"Unquestionably the finest Dwarf Pelargonium out is that which has this season been exhibited under the name of 'General Tom Thumb.' It grows almost prostrate, is exceedingly rich and dense in foliage, and produces with the greatest profusion large trusses of the most dazzling scarlet flowers imaginable. I have a plant at this moment nine inches high and six feet in circumference, studded with 27 trusses of expanded bloom, and some of the trusses six inches in diameter; and on five plants there are upwards of 120 trusses of flowers."

For both pot cultivation and bedding out this plant is unequalled. Plants 3s. 6d. each, or 36s. per dozen, with the usual discount to the trade if six are taken at one time. N.B.—At the June Exhibition of the Regent's-park Society a prize was awarded to the above; also to the following desirable variety of scarlets, viz.:—

Frost's Superb, a splendid pot plant	2s. 6d.
Mrs. Mayler, a very superior variety	2 6
Cooperii dwarf, for bedding	1 6
Huntsman, do.	1 6
Shrubland	1 to 21s.
Compactum	1 6
King	1 6
Queen	1 6
Conway's Giant Cactus, strong plants.	3 6 to 10s. 6d.
Veronica speciosa	3 6
Pelargonium Lancii, for forcing	1 0 to 3s. 6d.

Cash, with an order, is respectfully requested from unknown correspondents.

GENUINE DUTCH FLOWER BULBS.

J. CARTER, SEEDSMAN and FLORIST, 23B, High Holborn, London, begs leave to remind his customers that the present is the best season for planting bulbs in the open borders, as also for placing Hyacinths, &c. on glasses, or in pots. The following is an extract from his Catalogue:—

25 fine Hyacinths for water or pots, in 25 varieties	15s. 0d.
12 ditto ditto in 12 "	7 6
12 very fine ditto, 12s.; 12 extra fine, 15s. to	20 0
Fine Polyanthus Narcissus, 25 vars., 10s.; 12 do.	5 0
Van Thol Tulips, double or single, per 100, 6s.; p. doz.	0 9
New White Van Thols, per dozen, 12s.; new yellow	5 0
36 Early Tulips, in 6 very fine vars., 8s.; 18 do.	4 0
36 Double Tulips, in 6 very fine vars., 8s.; 18 do.	4 0
Fine mixed Early or Double Tulips, per 100, 7s.; p. doz.	1 0
50 fine late Byblœmen, Bizarres, and Rose Late Tulips	40 0
Very fine mixed do. do. do. each, p. doz.	2 0
Ex. fine mixed Late, p. 100, 12s.; mixed Parrot, p. doz.	1 0
100 Crocus, in 10 fine sorts, 2s. 6d.; 100, in 50 finest new sorts	5 0
60 Narcissi, in 15 vars., 4 of each	7 6
40 English Iris, in 40 splendid vars.	40 0
40 do. do. in 40 fine vars.	15 0
50 Spanish Iris, in 50 finest sorts, 10s.; 25 do. do.	5 0
Extra fine mixed Spanish Iris, in 20 vars., per 100	5 0
Very fine mixed new Double Anemones, in 30 vars. p. lb.	2 0
Very fine do. Single do. do. do.	4 0
100 Finest new double Anemones, 50s.; 100 fine do.	20 0
100 do. do. Ranunculus, 25s; 100 fine do.	15 0
Mixed Ranunculus, fine 2s. 6d.; very fine 7s.; finest per 100	10 0
25 extra fine new Scotch Ranunculus, named	20 0
104 very fine Turban Ranunculus, in eight varieties.	7 0
Large scarlet do. 3s.; yellow, 4s.; and dark crimson per 100	5 0
36 Ixias, in 12 fine sorts, 12s.; 20, in 20 fine sorts	7 6
36 Sparaxis, in 12 do. 12s.; 12, in 12 do.	4 0
25 Newest Sparaxis, in 25 vars., including scarlet	15 0
Beautiful mixed Sparaxis, per 100, 20s.; fine do. 12s.	20 0
Gladiolus opizintillorus, Narbert, or dorbundus, p. doz.	1 0
Gladiolus psittacinus, extra large	2 0
Ixia Pavonia, extra fine Dutch Bulbs	2 0
Fine mixed Tritonias, p. doz. 2s. 6d.; mixed Ixias	2 6

JOHN CARTER, Seedsman and Florist, 23B, High Holborn, London.

CHAPMAN'S KIDNEY POTATO.—Messrs. C. and T. CHAPMAN, of Brentford End, are desirous to supply others with their POTATO at 12s. per bushel; any parcels desirous of seeing the quality and the yield can do so by applying to Mr. T. CHAPMAN, Sion Hill, Brentford End, when instructions for their preservation and culture will be given.—Nov. 2,

ELIGIBLE ESTABLISHMENT IN BUSINESS, IN KELSO, ROXBURGHSHIRE.

MR. LOCKIE, SEEDSMAN, finding it expedient, from his other occupations, to relinquish the Wholesale and Retail Seed Trade, &c., conducted by his late father and himself for upwards of 57 years, is ready to dispose of the BUSINESS and STOCK in TRADE; as also to let the Shop and House in the Market-place, and Granary in the Horse Market, to any party wishing to obtain so eligible an opening.

Mr. Lockie will continue the business as usual until an arrangement is made; but the party intending to succeed to it may have immediate entry to the whole premises.—Apply to Mr. GEORGE MAIN, Writer, Kelso.—Oct. 26.

EDWARD BECK informs the Public that in consequence of the greatly increased demand for his SLATE TUBS, he is enabled to reduce the price of the following sizes about 10 per cent. He regrets the too frequent delay which has occurred in the execution of orders. This he hopes to avoid in future by keeping a supply on hand. Their suitability to the growth of every description of plant is fully established, and their imperishability and consequent economy is beyond dispute.

The following plants have been exhibited by E. Beck in slate:—Orchideæ, Heaths, Pelargoniums, Calceolarias, Stove-plants, Specie, Fuchsias, and Roses. The prices obtained by him last season at the Horticultural and Botanical Society's Exhibitions, were, 7 Gold medals; 3 Silver-gilt; 9 Silver; 4 Certificates of Merit. Prices for Cash or Post-office order:—14 in., 11s. each; 18 in., 12s. 6d.; 18 in., 15s.; 18 in., 19s.; 20 in., 22s. 6d.; 22 in., 25s.; 24 in., 35s.—Slate Works, Isleworth; Middlesex.

WHITNEY'S PATENT CLOTH for COVERING GREEN-HOUSES, CUCUMBER or MELON PITS, &c. This Cloth is made expressly for the purpose of applying Whitney's Composition upon, and is much more durable than any other material; when coated it is beautifully white and transparent. The perfect success of Whitney's Composition for all Horticultural purposes cannot be more fully established than by stating, that, on the 1st of April last, a Black Hamburgh Vine was set in a border, the stem introduced into a house covered with Calico, and coated with Composition. On the 1st of Sept. a bunch of Grapes was cut weighing 16½ ounces, the fruit was finely coloured, and the flavour pronounced to be excellent. A sample was sent up to the Editor of the *Gardeners' Chronicle* for his inspection. The tree grew very luxuriantly, the foliage very fine, and the wood ripened exceedingly well. As a winter protection it is infinitely warmer than glass.

The PATENT CLOTH and COMPOSITION can be obtained of Messrs. Bother & Muckley, Covent Garden Market; Hurst & M'Mullen, Leadenhall Street; Warner & Warner, Cornhill; Barclay & Sons, Farringdon Street; and Hannay & Co., Oxford Street.—Wholesale and Shipping Agent, Mr. Bailey, Wolverhampton.

ST. ALBAN'S, HERTS.

UNRESERVED SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the Mortgagee (in consequence of the Estate having been disposed of), to submit to public competition, on the premises, the Key Field Nursery, St. Alban's, on Monday, Nov. 18th, 1844, and following days, at 11 o'clock, the whole of the valued NURSERY STOCK, comprising Fruit and Forest-trees, Evergreens, Ornamental, Deciduous, and American Plants of every variety, and about 3000 Standard and Dwarf Roses, consisting of the choicest varieties; 1,000,000 Quick and Oaks, of different ages; Seedling Beech, Ash, &c., 8cb Kale, Asparagus, and Rhubarb, Dahlias, and Herbaceous Plants. The lots will be arranged to suit large and small purchasers. May be viewed one week prior to the Sale. Catalogues 6d. each, returnable to purchasers, may be had on the premises, of A. A. DOSSETT, Auctioneer and Land Surveyor, St. Alban's; of the principal Seedsmen in London, and of the Auctioneers, Leytonstone, Essex.

BROMPTON-PARK NURSERY AND SEED ESTABLISHMENT.—ESTABLISHED 1681.

MESSRS. GRAY, ADAMS, AND HOGG have much pleasure in directing the attention of their numerous customers to their extensive NURSERY STOCK, consisting of Dwarf and Standard Maidan and Trained Fruit-trees, Figs, Vines, &c. &c., all of which are this season of a very superior description, and will fully maintain the reputation this establishment has for such a long period of years enjoyed for producing these articles. The peculiar nature of the soil renders the removal of all ornamental trees and shrubs almost certain, of which there is a select and extensive collection; together with everything that is desirable in the class of Greenhouse and Herbaceous Plants.

MARKET GARDENERS are invited to inspect a fine stock of Half Standard Apples, Pears, and Plums, which they will find well worthy their attention.

The SEEDS of this season that have come to hand are generally of a very fine quality, and of which Catalogues will be issued in due course.—Kensington-road, Nov., 1844.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

LAVENDER-HILL NURSERY, WANDSWORTH-ROAD, NEAR LONDON.

During the present month, will be sold, by Auction, unless previously disposed of by private contract, the valuable and healthy NURSERY STOCK of the late Mr. W. PAMPLIN, by order of the Executors, consisting of about Nine Acres of general NURSERY STOCK, particularly abounding in the Finest HARDY EVERGREENS, of all sizes; FRUIT-TREES, SHRUBS, and PLANTS; Large and Small CAMELLIAS, an extensive Collection of FERNS (some of extreme rarity); Erection of Greenhouse, Garden Frames, and Lights; Garden Implements, Shop Fixtures, quantity of Vegetable and Flower Seeds of the present Harvest, including a half-cwt. of best White Spanish Onion, Early Cauliflower, &c. &c.

Due notice of particulars will be given in a future advertisement. Meanwhile, parties contemplating purchasing the Leases of the Premises will be treated with at once, and may learn full particulars, and may inspect the Leases, on applying to Mr. W. J. LOAT, Clapham Common; or to Mr. W. PAMPLIN, Bookseller, 45, Frith-street, Soho.

LAVENDER-HILL NURSERY, WANDSWORTH-ROAD.—IMPORTANT LEASEHOLD PROPERTY to be Disposed of, by order of the Executors of the late Mr. W. PAMPLIN, Nurseryman. These valuable Premises with extensive frontage, most beautifully and eligibly situated, and capable of much improvement, consist of the substantial DWELLING-HOUSE, in capital repair,—dining, drawing, and large sitting-rooms, five good bed-rooms, and large underground and other domestic offices; Stable, Lofts, Sheds, and other Buildings; about NINE ACRES of LAND, occupied as Nursery Ground. The whole (well adapted for a moderate family, or a Nursery and Seedsman, or for scientific and experimental Agricultural purposes) will be sold by public Auction during the present month, unless previously disposed of by private Contract.

For particulars apply to Mr. W. J. LOAT, Clapham Common, or to Mr. W. PAMPLIN, Bookseller, 45, Frith-street, Soho.

HANTS.

TO BE LET, with immediate possession, a most desirable TENEMENT FARM, containing about Six Hundred statute Acres of Arable and Pasture Land, surrounded with good Markets. Also, a good WATER CORN MILL, adjoining the above Farm.

For particulars apply to WILLIAM PADWICK, Esq., Manor House, Hayling, Havant, Hants.

CATALOGUE of ROSES, FRUITS, TREES and SHRUBS.

T. RIVERS, of the Nurseries, Sawbridgeworth, Herts, has the following Catalogues now ready for delivery on receipt of postage stamps as follows:—

Catalogue of Roses, No. 1, Edition for 1844	2d.
Supplement to ditto, containing the new varieties of Roses, with lists of Roses in extra-sized pots, for Exhibition, Forcing, and Greenhouse Culture	2d.
Catalogue of Roses, No. 2, containing the old and esteemed varieties, and Climbing Roses	2d.
Descriptive Catalogue of Fruits	2d.
Descriptive Catalogue of Trees and Shrubs	2d.
Descriptive Catalogue of Pears, with directions for root pruning, three engravings of Pear-trees, trained conically and en quenouille; with supplement to Catalogue of Fruits	1s.

The latter is sold also by Messrs. LONGMAN and Co., and Mr. KERNAN, 4, Great Russell-street, Covent-garden.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 2, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	Nov. 5	Horticultural	2 P.M.
		Linnean	8 P.M.
SATURDAY,	Nov. 9	Royal Botanic	4 P.M.
WEDNESDAY,	Nov. 13	Microscopical	8 P.M.

Now that the POTATO-CROP is gathered in, and the result known of any experiments that have been made upon its growth, we shall be obliged to our friends for such data upon the subject as their experience may furnish. The subject is too important to be consigned silently to the ordinary columns of correspondence, and we are anxious to have the opportunity of making some editorial observations introductory to the experiments. As soon as time has been given for the communication of the returns we solicit, the matter shall be taken up and disposed of.

A FORTNIGHT since we described the French method of forming TULIP-BEDS: we now continue the translation by giving their system of planting them, their diseases, &c.

"From the 10th to the 25th of November, (supposing the beds to be properly prepared,) is the best time to put the bulbs in the earth. This is accomplished by stretching strings from one end of the bed to the other, causing them to make slight depressions, thus forming five longitudinal lines at equal distances on the surface. The most expeditious way of crossing these with transverse lines is to take a piece of wood, the exact width of the bed, pressing it down lightly on the soil as often as required at the distance of 6 inches apart.

"The section of these lines indicates the exact point where the bulb ought to be planted. At each of these points a hole is made with a trowel, about an inch and a half in depth, into which is poured about a wine-glassful of very fine sand, on which the bulb is placed. It is then covered with a similar quantity; this permits the wet to filter through it, and is a preventive against too much moisture. Each bulb is then gently pressed down, and covered with a little hillock of earth. It has been clearly demonstrated by various experiments, that the plan of many people, who make the holes for the bulbs with their fingers or with a planting-stick, is altogether preposterous and absurd: by the pressure, the soil is rendered much more compact, and less suitable for the proper development of fibres, as well as preventing a proper drainage."

The above coincides very much with our own practice; and to the latter assertion of the impropriety as well as impolicy of using a blunt setting-stick, we can, from experience, add our own testimony, as we well recollect a bed of Tulips being nearly ruined by planting the roots in stiff loam when rather wet; the holes were made with a blunt dibber, and the bulbs placed carelessly in them. We saw the bulbs removed, and discovered that the bottom of the holes, as well as the sides, had been so compressed, that they actually retained the rain-water which fell on the bed, and in most instances, the roots, unable to penetrate, had turned upward by the side of the bulb in search of nutriment.

Our Author then proceeds with the necessary directions for covering the bulbs, "which ought to be with fine loam, of an equal thickness, of about four inches; the earth round the bed is then gently sloped off, and beaten hard, so as to render it as solid as possible, and afterwards covered with a thin layer of a sort of mortar made of peat-soil, Grass seeds, and water, well beat up together. Peat-earth is preferable for this purpose, as it is not so liable to crack as loamy soil in drying, and the Grass seeds are enabled to vegetate more quickly in it, giving consistency to the edges of the bed, speedily forming a beautiful turf, and contributing to the beauty of the whole. A stone curb or border has certainly many advantages, affording no protection to snails or noxious insects, as well as economising time in the formation of the beds, but the cost is great."

We agree with the writer that the first outlay is considerable in having beds edged with stone or with slate, which latter description of curbing we should prefer; still we think the expense would soon be saved in the labour, &c., which Grass borders must necessarily require to keep them neat and trim, independently of the cleanliness and durability of slate, &c. We find, however, that the system adopted by the most extensive Tulip-growers, of surrounding the bed with Oak or red deal planks, about 12 inches in depth, appears to give satisfaction; and when these are surmounted with a slight rail about 18 inches high, and the whole painted white (contrasting with the foliage, &c.), it has a very good effect. And as a preservative, and at the same time contributing to the *finish* of the Tulip bed, we would always recommend a neat lattice-work, about 4 feet high, fastened to the upright pillars of the shed, and completely surrounding it. The protection afforded by it is invaluable at that trying of all seasons, March, in breaking those fearful blasts which sweep over undefended beds with untiring energy, and often with serious consequences to the ensuing bloom.

"Exposed to sudden changes of weather, Tulips are liable to injuries which it is necessary to prevent. From the 15th of February to the 15th of April they are generally exposed to snow, frost, and heavy rain, at which time the leaves, just rising from the ground, form a kind of funnel, at the bottom of which is the flower-bud; these retain the water, which filters down, either destroying the root, or so far affecting it as to seriously injure the advancing bloom; the extent of the injury depending on the time more or less that the bud has been enveloped in water. Hailstones often cause great damage, wounding the petals, and defacing their beauty. Many other accidents to which Tulips are exposed might be enumerated, but the limits of this article would be too far extended, were I to enter into further details in this respect."

We are sorry that our Author does not enter more largely into the diseases, &c., with the precautions necessary to be observed, as great attention ought to be directed towards the Tulip. As soon as it makes its appearance above ground; those who would successfully exhibit will hoop their beds, and defend them from frost with mats; but a most excellent precaution, and one which we would strongly recommend, is to put fine sand on them, as soon as the plants appear above ground, and before the leaves have advanced so far as to separate, enveloping the rising plant in a complete cone; this is preferable to covering with soil, as it excludes frost better, does not retain wet so long, and is a preventive against canker.

Should the latter disease, however, attack the foliage, we immediately remove the soil below the affected part, and with a sharp knife cut it away altogether. Exposure to the air soon heals the wound, and the bulb is saved. We imagine that the most serious injury which the bloom sustains is when the hollow formed by the rising leaves gets filled with water (as noticed above), which, when it becomes frozen, imbeds the bud in a solid mass of ice, proving highly detrimental. To prevent this, the water must be removed, either by blowing it out, or drawing it up with a syringe. Should the buds escape injury in this manner, they must be carefully defended from hailstorms, which come on so suddenly as sometimes to preclude the chance of protecting them; small-meshed net, or damaged lace, spread over the hoops, will prove an efficient preventive.—*W.*

WE doubt not that a LETTER, in another column, from NEW ZEALAND, written by a gardener there to the late Mr. LOUDON, and received since that gentleman's death, will prove highly interesting to our readers, who have to thank Mrs. LOUDON for the kindness she has shown in allowing it to be made public. It is so difficult to judge correctly of the condition of a distant colony from the representations made by interested parties, that documents of this sort are invaluable. To us, the letter in question is the more acceptable, because it completely confirms all that we have constantly asserted regarding the climate and capabilities of that colony, which has nothing to dread except the mismanagement of the British Government.

ENTOMOLOGY.

AMMOPHILA SABULOSA (*the Grave-digging Sand-wasp*).—The economy of insects is so marvellous and interesting, that the introduction of the histories of those which may not be directly concerned in the destruction of our crops, needs, we hope, no apology; and as it is absolutely necessary that the gardener and farmer should be as well acquainted with their friends as with their enemies, we shall from time to time treat of the parasitic insects—most extraordinary agents which are employed by the Ruler of the Universe to subdue those plagues which without His interposition would despoil this fair earth of its beautiful vegetation, in spite of the best efforts of man.

I have therefore much pleasure in recording the history of a Sand-wasp, which labours incessantly and with incredible perseverance in the destruction of caterpillars and spiders, which it buries underground to support its offspring; and as one egg only is laid in each victim, and the Sand-wasps are very numerous, the amount destroyed by them must be very great.* About the 10th of June my friend Dr. Macleun pointed out to me a female Ammophila busily engaged in removing the earth from a hole in a south border, in order to bury a caterpillar, previous to laying an egg upon it. She kept entering the hole, vibrating her wings with apparent delight, which caused a distinct buzzing, like a large blue-bottle fly in a spider's web; every second she brought out a morsel of earth or a little pebble, which she threw down several inches from the hole, whilst on the wing; having at last excavated so far that we lost sight of her, we left the place, and found it so admirably closed the following day, that it would have been utterly impossible to discover the spot, if previous observations had not been made; two or three pebbles had been laid near the aperture, one of which, being flat and white, my friend very happily designated the gravestone, for upon digging we found a cell about two inches from the entrance, where a fat green larva, probably of some Noctua, was entombed; and on one side, close to a spiracle, upon the segment preceding the first pair of abdominal legs, was attached by one end a long elliptical egg, looking like a little fish's bladder, without any appearance of segments. In all probability it is not long before the trophi are developed, and the larva perforating the blackened end of the egg, the organs of manducation are inserted, like the seta of Scolia flavifrons, into the caterpillar, after which it rapidly increases in size, the extremity first dilating, the segments becoming visible in a few days, and in a week the spiracles, at which period it was about ¾ of an inch long, cylindrical, shining, and of a whitish colour (fig. 2); the viscera were constantly in motion, undulating like yellow waves; the head was small, round, and armed with jaws and minute palpi; at this time scarcely anything but the skin of the caterpillar was left, with the exception of the anal legs, which remained of a green tint; but the animal was alive a few days before, and evacuated several pellets of dung after it was buried. The extremity of the maggot is conical, and I could not detect the slightest deposit from it. On the 19th every vestige of the caterpillar, not excepting the horny head, had disappeared; the head and thoracic segments of the maggot became attenuated, the sides exhibited a thickened margin, and a limpid drop exuded from the tail; it now began to spin an oval cocoon of the finest texture, shining, and resembling oil-case or gold-beater's skin, of an ochreous colour, and having a few loose woolly hairs on the outside, adhering to the surrounding particles of earth; within this was a narrower detached case forming the pupa, of a substance resembling the inner bark of a fir-tree, and not unlike it in colour; it was wrinkled longitudinally, but very smooth inside, appearing varnished, and of a rust colour, the exuvia lying at the lower extremity, which was pitchy externally.



On the 30th of July, a *female* Sand-wasp issued from the case, and it proved to be the Ammophila sabulosa of Linnæus (fig. 1). It is dull black, clothed with soft brownish hairs; head and thorax covered with shallow punctures; the former is large and furnished with long, powerful jaws, the maxillæ and labium forming a beak, with four slender palpi;† the eyes are large and lateral, the ocelli placed in triangle on the crown; the antennæ are rather short, curved at the apex, and 12-jointed; the trunk is oval; the scutel and metathorax are finely striated; the extremity of the latter and a spot on each side of the medipectus are of a yellowish satiny hue; abdomen long and clavate, forming a very long, slender pedicel at the base, and a stout oval mass at the extremity; the second joint of the petiole is red, except at the base; the following segment and the basal margin of the fourth are of the same colour; the four wings have a smoky tinge, forming a border at their extremities, and the third submarginal cell is not pedunculed; the legs are powerful, the four hinder elongated; the tarsi are spiny, especially the anterior. It is 10 lines long and 12 in expanse. The *male* is much smaller, has 13-jointed antennæ; the face is silvery; the third abdominal segment has an elongated black spot on the disc, and the tarsi are much less spiny than in the female.

I wished to have entered upon a comparison of our larva with that of Scolia flavifrons, of similar habits, and so ably illustrated by Professor Passerini; but I can only observe that the Scolia egg is laid upon the larva of Oryctes nasicornis, and that the head of the maggot is furnished with a long seta. The curiosity of the reader may be gratified by a reference to the two Memoirs lately published at Florence.—*Ruricola.*

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* Vide Curtis's Brit. Ent. fol. 604, for a similar account.

† Vide Curtis's Brit. Ent., pl. 604.

THE ROSE-GARDEN.—No. XX.

(Continued from p. 684.)

The choice of scions is regulated by the same rules as the choice of buds, only that in choosing scions some reference must also be had to the size of the wood, which should have a sufficient thickness to keep it from getting dry easily, and to facilitate the operation of cleaving the stock. The best buds are generally near the base of the shoot than the summit, but two or three scions may sometimes be obtained from a single shoot. No scion should be used when the buds upon it appear to have shrunk and lost their fullness from having been laid by, although care should be taken, on making their selection, that the wood of the stock for the scion bears a sound bud. The chief purpose of using the scions, that a piece of the bark be brought between them and the stock in such a manner as serves to protect the cleft in the centre of the scion from the air, and to leave the vacuum to be filled up with cells of living [illegible] stock from the [illegible] and to leave the [illegible] vacuum to be filled up with cells of living [illegible] stock.

Should any grafts fail, which will be seen in a longer or shorter space of time according to the weather, in moist, dull, growing weather it will soon show, as that which is dry, wind, or heat during will be dried, the resource is still left of looking for the buds and observing for any the fresh buds which may spring from the stock in which case the stock should be cut immediately above them, and budded in the following month as usual. Grafting the stock, however, is never to be used to heal over the wounds, in which the scion should be nearly the same size as the stock, as two or three scions of free-growing sorts be entered in the same graft; there are also these disadvantages, that the portion of the scion which is entered in the stock is useless, and consequently does not form that to time further new wood (whereas in budded stocks shoots occasionally spring from the buds of the scion, and after the first year it has taken, thus vesting the tree in perfect form, and handsome appearance), and also that grafted Roses, without great care, are liable to have their heads destroyed in very exposed situations, because it is generally below the long tongue of the graft, where it has a long hold of the stock, and where the wounds are well covered, it is liable to split itself in the cleft, and thus expose the end of the ligature, and [illegible] the [illegible] stock. After the first year, [illegible] we should be quite safe from [illegible] grafts once cannot be considered [illegible] satisfactory [illegible] to clean the garden [illegible] grafts, provided the [illegible] success, [illegible] [illegible] [illegible]

would draw far more heat from the bed (that is, ultimately from the hot lining) than none at all would: that is, it would facilitate its escape into the cold soil around the pit; and small gardeners will leave three cool linings, even when they put one fresh one. I must add a few words about the position of a pit:—Muck must be thrown together twice for most garden purposes, and must be wheeled into the garden. Muck once thrown together is fit for the pit, so that the mere supplying the hot muck to the pit entails no expense, where it is all required for the garden, and has not to be wheeled out again; but where there is a farm-yard, I would build the pit about 4 or 5 feet from the wall on the south side of it; and for the brickwork by the wall have a pair of large doors folding inwards, opposite the middle of the pit or pits. The common farm-labourer would through the gateway throw the muck at once to heat against the pit, and when it cooled, would give it its regular turning to heat again. On again cooling, the muck-carts would, through the opening, cart away the old muck, or part of it, for Grass, Turnips, Wheat, as the case might be, and fresh be thrown up as before. If thought necessary, two pits could be placed side by side, with an additional trench between them; there would be no expense at all here, and only the slight inconvenience of carting a few loads for Turnips from a distance instead of from a heap on the field, at a time when horse labour is in demand. Even this would not be the case when mucking Grass or for Wheat; also, it is clear that any gentleman having a couple of horses, or even one, might work a pit close to his stable in the same way, although not quite so free from trouble—that is, expense.—*G. U.*

Cabul Melons.—If Messrs. White and Co. had read attentively my remarks at p. 684, on Mr. Cuthill's advertisement, they would have seen that it was the Cabul Melon which I denied having distributed seeds of. I certainly had no intention of saying I had not supplied Messrs. White and Co. with the seeds of the Hoosainee in 1843. As many people seem to confound the above two Melons, perhaps a short explanation here may be of use. The Hoosainee Melon, of which Messrs. White and Co. had seeds (or, as Mr. Cuthill would call it, the Trentham Hoosainee), was raised here from the striped Hoosainee impregnated with the Ispahan. It is a large Melon, a free bearer, exquisite in flavour, and I believe inferior to scarcely any Melon in cultivation; and I feel not a little proud of its having been raised here. The Cabul Melon is one of recent introduction. The seeds were brought to England by the officers engaged in the Affghan war. It was first grown in this country, I believe, in 1843. With regard to its properties, it attains about the same size as the Hoosainee, is a very free grower, and bears abundantly. It is a handsome thickly netted Melon, with a very sweet melting flesh.—*G. Fleming, Trentham Hall.*

Strawberry-plants.—In the Calendar, p. 703, under the head Pineries and Vineries, directions are given for protecting from rain during the winter Strawberry-plants in pots or boxes, intended for forcing. "G. F." seems to think that rain is detrimental to the plants in pots. Under some circumstances I do not doubt its evil effects; but plants that have been properly prepared, and grown as they ought to have been previous to the arrival of the rains of autumn, require no such injurious treatment as boarding them in, which dries both leaves and roots. The best system that ever came under my observation, and which is adopted in many places where large quantities are forced, and that to the greatest perfection, is to keep them, from the time of being finally potted, plunged down to the rims of the pots in beds of sand—a south aspect is preferable; and where the ground will allow, the beds should have a fall of eighteen inches or two feet, but this must be regulated according to the length of the beds. By this method I have seen thousands of plants kept through the winter in fine health, and not half a dozen pots or plants damaged, either by rain or frost. If fine Strawberries are wanted, the potting off the plants should be completed early in August, so that the pots may be filled with roots before winter, as on that the success of forcing solely depends.—*Memet.*

Strawberries.—I herewith send you a sketch (full size), of a Keen's Seedling Strawberry, that was picked this morning with some others in an open bed in my father's garden in this town. Its being of an unusual size, viz. 7¼ inches in circumference, and 1¼ oz. in weight, of a handsome heart-shape, full coloured and flavoured, has induced me to thus notice it. I also beg to remark, that myself and a younger brother have had the entire management of the garden for some 10 or 12 years past, and we have succeeded in obtaining finer crops of Strawberries than most of our neighbours, which I attribute principally to not cutting off the leaves in the winter.—*J. W., Ashbridge, near Wells, Somerset.* [The drawing represented a very fine specimen.]

Gardening in Italy.—A friend who is on a tour in the north of Italy writes to me that since his last visit, twelve years since, he has found considerable improvement in the care taken by Italians of their gardens, in the construction of plant-houses, and especially in the beauty of the specimens cultivated. The great gardens of the Borromean Islands, of Monza, and of Padua, are much better kept and richer in species. The gardener of the Borromean Islands has succeeded in ripening the seeds of the Hydrangea hortensis by artificial impregnation, and by carefully cutting away all the large sterile flowers. The 9th vol. of De Candolle's "Prodromus" is almost ready, and the printing the 10th is to commence in January.—*

Pelargoniums.—The nurserymen's catalogues are now out, with abundance of flowers at a guinea and guinea a-piece. The descriptions abound as usual with splendid, matchless, indispensable, novel, magnificent, and words of dazzling import without end. Amateurs believed it all once, and with reason, for every season's advance was a stride. But now we wait a bit to see them in their true colours, and if we neither find them in letter A at Chiswick, nor in the seedling tent among the two-years-old, we shall put them down as good for nothing—unfit to exhibit—in fact, all that our note-books remind us too many of them are. Let nurserymen, therefore, do what they ought; respond to the liberality of the Society offering such liberal prizes, and serve the public and themselves by exhibiting the objects of their advertising praises at the Shows of the ensuing season. There is abundance of time, and nothing but want of merit can excuse their absence.—*A Purchaser.*

Morphology.—It is not a little amusing to notice the very awkward predicament in which a person places himself, by speaking in disparagement of a theory merely for the purpose of insulting those who have propounded it; but when we find that such an individual knows nothing about the theory itself, and is determined to learn nothing respecting it, then his remarks are too ridiculous to be either amusing or insulting to any excepting those who are as ignorant as himself. A striking exemplification of this came under my observation at the last meeting of the Regent's Park Gardeners' Society, in a discussion on Morphology. After much had been said, and several specimens exhibited in support of the claims of that science to the regard of horticulturists, and nothing intelligible proved against it, the last speaker, whose speech applied about as much to Morphology as it did to the planet Mercury, held up a well-formed Dahlia bloom, and asked if Morphology could produce that! It being understood that no one else was to speak on the subject, of course Morphologists had no opportunity of answering the question, which to me was cause of regret, because the same speaker on another occasion remarked that "The Dahlia was, in the recollection of many persons, a single flower; a row of five or six petals was all that could be seen. A large yellow eye, which delighted botanists, and the five, six, or seven single flat petals, possessing no other novelty than colour, were all that there was to admire." Now that the Dahlia has at least ten times as many petals as formerly, quilled instead of flat, and the "large yellow eye" has disappeared, a proof is given that a change of organs has taken place in it; to what cause, then, may we attribute the production of a double Dahlia? The same authority remarked that "The Dutch florists outran us in the production of double Dahlias; and while we were trying hard in this country to improve the flower, or, as botanists call it, spoil it, our Dutch brethren produced them fairly double." No doubt they did. But did our Dutch brethren set themselves to work in the first place to create a principle in the plant, that would admit of being wrought upon by artificial appliances, so as to change the structural formation and habit of its progeny to a wondrous, but as yet unknown extent? Or did they find that such a principle was inherent to the plant, ready to yield obedience to the skilful operations of man, for the gratification of his wishes, as in a thousand other instances? To assert the former is to make man a creator, to admit the latter is to admit the truth of that which harmonises with every known process through which matter passes from the simple elements to the highest compounds in organic nature, namely, the doctrine of Morphology. Whose opinion, then, savours the most of atheism—that of the Morphologist, who believes that the various organs of plants are convertible from one to another, and that they were made by nature susceptible of receiving modifications from external influences; or the anti-Morphologist, who ascribes every transformation in the vegetable kingdom to either chance or the art of man? Common sense will answer the question. I should not have made these remarks had I not been informed that four or five out of the 18 persons who voted against Mr. T. Moore's excellent motion for farther inquiry into the principles of Morphology were respectable gardeners. I trust that those persons will, for the sake of their own credit, and that of their Society, look a little more closely into the subject before they allow a blind scepticism again to associate them with parties whose object has always been to degrade the character of gardeners.—*W. Sherwood.* [If we had any influence with those persons in the Regent's Park Society who have shown themselves on this occasion men of intelligence, as many of them have, and very much to their credit, we should recommend them to separate from the blockheads with whom they are now associated. It is a pity that gardeners should waste their time in discussions with gardenasses; for thus we translate the terms *Eucepurus* and *Asinocepurus*, which distinguish the two great divisions admitted by Dr. James Bradley, in his amusing and instructive *Cepurologia*; a monograph which we may possibly republish some of these days, when we have collected a sufficient number of portraits to illustrate the numerous species distinguished by Bradley under each head. In the meanwhile, the following extract from one of the admirable articles in "Chambers's New Edinburgh Journal," should be committed to memory by all the parties concerned. "There is, on the other hand, a scepticism which does not strictly follow reason, but depends in a great measure upon ignorance, prejudice, self-conceit, and other unworthy feelings. We are apt to pronounce an unfavourable opinion of a new hypothesis without any examination, merely because it does not agree with ideas already established in our minds, when, if these ideas were rigidly tested, they might be found either erroneous, or far short of the full measure of the truth. It has been remarked by Adam Smith, as the cause of the feeling of wonder, that we lack something to connect our ordinary ideas with the new one presented to us: not seeing the whole chain of natural causes, we marvel. Now, marvelling is so agreeable to some minds as to form an inducement to their believing in novelties; while with others, of a more rigorous or cautious character, it presents only a ground of suspicion. Thus to great novel doctrines may be well so far; but if it be allowed to operate beyond the extent of a salutary caution, if we invariably shut our ears against new hypotheses, and persist in refusing them all opportunity of showing evidence in their own favour, merely because some weaker, wonder-loving persons receive them too readily, we obviously incur the risk of repressing the advance of truth. And it cannot be doubted that if those who receive all without discrimination are reprehensible, so also are those who reject all without discrimination. When their doing so is partly, as often happens, a result of mean personal feelings, it is certainly worthy of the strongest reprobation. It is impossible to imagine a sincere lover of truth acting in such a manner."

Seedling Cereus.—I herewith send a bloom of a seedling Cereus, raised in all probability from longissimus crossed by truncatus; the habit is decidedly pendulous, and it makes shoots of about a yard in length or more in one season, presenting a very handsome appearance. It is edged round the petals, and has a faint stripe down the middle of each petal. I may add that this flower was produced by severe ringing, by which mode I am inducing a number of seedlings to flower.—*Robert Errington.* [The bloom sent was very double, and measured fully 3 inches across. The colour was a delicate pink, with a slight tinge of purple, and having a darker stripe of pink up the centre of each petal. It is a very pretty and desirable variety.]

Foreign Correspondence.

Wellington, Port Nicholson, New Zealand, May 18th, 1844.—After a very fine passage I am happy to inform you that I and my family are all quite safe and well in New Zealand. You know that we originally intended to go to Nelson, to Captain Wakefield; but owing to his death, of which you will have heard by the time that this reaches you, we stopped at Wellington, where we all got good employment. I have been all day moving fruit-trees in Mr. Stokes's garden, which, although they were very badly arranged, and had only been planted eighteen months, had thrown out such roots, shoots, and fruit-buds, fully equal to those that had been planted five years in England. The climate beats all I ever heard of, and I have no doubt that it will in a short time be one of the finest countries in the whole world. The Wheat, even on the tops of the mountains, of which there are plenty round Port Nicholson, yields from 45 to 50 bushels per acre. The flour for the consumption of the settlers has been mostly supplied from Sydney and Valparaiso; but from the continual motion of a windmill which has lately been put up very close to some gardens which I have been working in, I consider in a very short time we shall be obliged to send some of our own New Zealand flour to the above-mentioned places to get rid of it. I was up at the valley of the Hutt, which is eight miles from Wellington, last week, to prune some fruit trees for Mr. Molesworth, one of the principal settlers here, and I slept at Burcham's, who has a very fine public house up there, and is doing extremely well: both he and his wife send their best respects to you. I am happy to inform you that they are both good friends to me and mine. My eldest daughter is stopping with them at the present time. I have taken a few acres in the valley of the Hutt, a short way above Burcham's, where I intend to establish a fruit garden and nursery; it is one of the sweetest spots that ever was beheld by the eyes of man. The beautiful River Hutt encloses one part of it, and the other is belted by a range of mountains, which are crowned with the most splendid trees from 50 to 150 feet high; and out of respect to you, my dear sir, I have called it "Loudon's Vale." I am afraid the Wellington gentlemen won't much fancy me leaving them; but I shall be obliged now and then to come and prune their trees for them. I have had capital success with Snow's Cucumber and Green-fleshed Melon. They seem to beat anything of the sort that was ever in this part of the world. We have had two Horticultural Shows since I have been here, at which I was one of the judges both times, and it would surprise you to see what the place produces, although as it were only four years old. I am glad to say that your friend Mr. Stokes, who desires to be kindly remembered to you, has carried away all the head prizes. I am collecting seeds of all the best New Zealand plants to send you, and by the next ship that sails from this port you may expect a small box of them. I have got on the table now before me a parcel of berries of the New Zealand Yew, which I am drying for you. You will please to write to Mr. Brooks, and remember me kindly to him, and tell him that I will send him a few things for his Arboretum, and also in course of time some New Zealand curiosities for his Museum. My family are all well satisfied with the country, and never express the least wish to return to England again. My eldest son is employed in a large store, and my youngest is in the Medical Hall with Dr. Dorset, the gentleman off whom I have taken the land, and who has been very kind to all my family, and indeed, I have met with nothing but kindness since our arrival here. My two daughters have been working at plaiting straws for bonnets, the first that has been done in the colony; it was exhibited at the Horticultural Show, and is greatly in demand by every one as

much superior to the most delicate imported kind. There is a beautiful native Ribes here which grows 6 or 8 feet high, on which I have budded both the Gooseberry and the Currant, both of which have taken well and are growing amazingly. I have budded also the Plum upon the White Thorn, which is also doing well. In fact, budding and grafting may be carried on here all the year round. All kinds of vegetables are cheaper here than in England, and bread, beef, &c. &c. I am sorry to inform you that high wages have caused a great deal of drunkenness and idleness in the colony. I am keeping a journal of the weather, which I will send to you by-and-by. We have had several earthquakes lately; one of them was a tremendous shock. There is a great deal of rain here in the winter season; but often we have as fine days as in the middle of summer. Our winter is just beginning now; but vegetables grow better in some instances in the winter than in summer. I shall embrace every opportunity of writing to you, and if a regular correspondence will be agreeable to you, I shall be most happy to keep it up. Owing to the unsettled state of first coming into a strange place I have not been able to gather much information worth putting in your Magazine; but I hope that when fully established on a piece of my own, I shall be able to send you some good botanical subjects worthy of insertion. I have sent upwards of 100 native plants to a gentleman in Van Diemen's Land, who has promised to send me fruit trees in return. Give my best respects to Mrs. London and Mr. Wakefield, to whom I shall write soon. I hope you will write me soon, and if you can inclose a little of the best Calceolaria seed from Mr. Snow in it I should feel greatly obliged to you, as there is not one single plant of it in the colony. I also a few Rose seeds, or in fact anything that you think is worth sending. Wishing you all health and happiness, I am, Sir, your obedient servant, *Wm. Tyrie.* [*Portion only of a letter addressed to the late J. C. Loudon, Esq., and kindly communicated by Mrs. Loudon.*]

Societies.

MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from page 715.)

The Phosphorescence of Organic Bodies.—Although, at the previous meeting, this notice had been given of a Paper by Mr. Jos. Stevenson, on the Phosphorescence of Mosses, but the Paper had been lost, and he would merely refer to it as a subject of discussion.—Mr. Bowerbank stated that in company with Mr. Borrer, he had witnessed the peculiar luminosity of the Moss Bryum hornum.—Dr. Hankinson then gave a short account of the present state of our knowledge with regard to the various kinds of luminosity in plants, being the substance of some communications he had made to the *Gardeners' Chronicle* shortly after the meeting of the British Association at Cork. He remarked that he had often observed a luminosity to precede the aforesaid phenomenon, more particularly in the Fungi. He had also seen phosphorescence given out from the fermenting roots of Cassava.—Professor Henslow did not think that Meyen's theory of a slow combustion being the cause of the light could be admitted, because if it were, the light would be greatest where combustion was most active; and this was known to be contrary in the Museum, where there had been observed no light.—Professor Ansted repeated the statement he had made last year, that the light observed on highly-coloured flowers was an optical illusion. If it were a real light from combustion or phosphorescence, it would be seen best in the dark. But the luminosity referred to was best seen by daylight.

Mr. Bonnat Platteau, having observed that all the churchyards which he had seen in York were profusely covered with Marigolds, inquired if there was any superstition connected with this practice.—Mr. Schomburgk observed, that it was much more customary in Germany to deck the tombs of the dead with flowers than in this country, and there they planted the Marigold because it bloomed later than most plants.

A Paper was then read by Mr. T. Allis, on some of the rarer forms of Ferns in his own collection, and on their mode of cultivation, &c. The collection of Ferns which had been brought from Mr. Allis's house, and placed in a tent in the Museum grounds, contained several rare species of Ferns, and amongst others, Davies thrysophilla, Pteris serrulatella, Cibotium Billardiasi, Gymnosophaea chaerophylla, and a species of Didymochlæna.

"In the cultivation of ferns, I find [they] that are of constant character, they may be raised from sporules, but the characters remain unaltered, and the eye at once recognises them. Others, again, are subject to great alteration, as in some of the Adiants, which has hitherto only three sights, but I have plants of it with fronds of the same with the number of eights increased, and quite [illegible] from the allied species proximate [illegible] Polypodium Dryopteris and Phegopteris are [illegible] me; with me they retain their distinct characters [illegible] circumstances of growth. I have grown [illegible] a few feet of earth other; there [illegible] ter has from the first appearance of [illegible] greener and more chaffy stem, and [illegible] and I always find that it sends up [illegible] which are almost always barren. Those [illegible] retained growing in a peat bed in a cool garden, in the house, and when raised from seed, are in general [illegible] though liable to exceptions, I find that plants raised [illegible] other means of propagation them from seed, frequently [illegible] that those which grow by an extension of the [illegible] which propagate themselves by sending out young plants [illegible] extremity of the frond, as in the case with Asplenium bulbiferum, Davies, and Asplenium rhizophyllum, which produces a young plant near the under extremity of the frond, as Woodwardia radicans, or which have young plants springing from the upper surface of the frond, as in the case with Asplenium viviparum. On the other hand, Asplenium bulbiferum is an exception to this rule; this plant bears an ample crop of little bulbs, which fall off and germinate freely. Also the little black tubers from the Tigua Lilac, which, at the same time, the frond is covered on the back of [illegible] with innumerable [illegible] and Woodwardia radicans [illegible] in her conclusion: "Another [illegible] we have [illegible] grows under wood, in [illegible] and it wandered over a [illegible] and it produced [illegible] round. [illegible] the [illegible] almost every [illegible] yards of almost every [illegible] botanists to name [illegible] offering a prize in this [illegible] which have no recognisable [illegible] as its proper one. I planted a specimen of Gymnogramma [illegible] Botanical Garden by Mr. Henderson, gardener to Earl Fitzwilliam, at Milton; it is different from any previously cultivated species. I also have a plant of my own, which appears to be, and I have no doubt it is, a Pteris, unlike any Pteris I have possessed, of that I recollect to have seen. From its appearance, I should take it to be a cross between Pteris hirta and flexuosa, but unfortunately the latter beautiful plant has never fructified with me. I find a great difference in the frequency with which the Ferns propagate themselves spontaneously from seed; the genus Pteris is among the most frequent, and springs up in various species in all directions. Blechnum, Doodia, and Gymnogramma also spring up freely, and some species of Diplazium, Chellanthes, and Dicksonia frequently occur. Of Polypodiums I have had very fine seedlings; the same may be said of exotic Aspidiums; and only a few Asplenium. I have this year adopted what I believe to be a new method in raising Ferns from seed, and, as far as I can at present judge, with complete success. The plan I have adopted is to obtain a block of peat turf, such as is sold in York for the purpose of lighting fires; that I thoroughly soak in water, and then place in a Cucumber-frame. On these turfs I sow the seed, and, keeping them shaded from the sun, I have a good crop of plants; but I am yet unable to determine whether they will prove to be the species sown, three of which have not before been, as I believe, cultivated in England; the species are Polypodium membranæfolium, Asplenium variæfolium, and Alsophila excelsa, all from Norfolk Island. The seed of Ferns is so volatile, and so fills the air, that though I have used a good deal of care to prevent seed from my pinery finding its way to my seed-beds, I am as yet unable to assure myself of possessing the new species. In the work on Australia, from the pen of my friend and relative, James Backhouse, there is notice of the occurrence of many species of Ferns; and from his observations on the native habits and habitats of several species, I have derived great advantage, especially so by planting a considerable number on decayed trunks of trees, where they grow with a vigour such as I never before experienced: a particular instance is the beautiful Asplenium nidus, a plant I have had for years, but which was always in so feeble and rickety a state, that it was scarcely able to maintain existence, and I had sent it out to nurse, under the care of our experienced curator, in the Orchidaceous stove in these premises; still it never put on a healthy appearance till I planted it in part of the stump of an old Willow, where it now flourishes in the greatest vigour, and is putting forth its fertile fronds."

After the reading of this Paper, the President and members of the Section repaired to the tent in which Mr. Allis's collection was placed, where he gave a further account of some of the more remarkable species.—*L. E.*

(*To be continued.*)

COUNTRY SHOW.

Staines Celery Show, Oct. 22.—At this Exhibition some excellent samples of Celery were produced, and several prizes were awarded; but we have only been furnished with a list of awards, without the sorts of Celery being specified for which these awards were given.

Reviews.

Elements of Agricultural Chemistry. By Sir H. Davy, Bart. A New Edition, with Instructions for the Analysis of Soils, and Copious Notes. By John Shier. 8vo. Glasgow. 1844.

This book is a reprint of Davy's well-known Lectures, delivered before the Board of Agriculture, with a commentary of notes by Mr. Shier. The Editor has evidently taken great pains to collect as much useful information as he could, and the notes are for the most part clear and intelligible. It is, however, not very evident for what class of readers the book is intended. For chemical students, the details are frequently very meagre and incomplete; if, on the other hand, it is intended for farmers, we fear that a great deal of it will be quite unintelligible. All use of chemical symbols must be avoided in books intended for farmers, if it is desired that they should understand what they read.

Garden Memoranda.

Chatsworth.—The works at this seat of magnificence are proceeding with unabated activity. During the summer two new fountains have been set in action, of which one, called the Emperor, from a single jet throws a column of water nearly 300 feet high. The force of this fountain may be imagined when we state, that in an hour it lowers an acre of water to the depth of a foot. The other, quite unique in design, consists of several jets, whose copious streams rise and fall alternately, producing the appearance of dancing water, and an effect perfectly enchanting. In addition to these, huge masses of rock are collecting and forming into a rockwork, the like of which has never before been seen. Some of these masses weigh upwards of 370 tons. In one place they are put together in exact imitation of the Strid—a rocky stream at Bolton Abbey—and when completed will form a wild mountain scenery, [illegible] 800 feet long, with banks full 30 feet high. [illegible] works are necessary at Chatsworth, where another [illegible] would be lost amidst the grandeur of the place. [illegible] Conservatory now contains some more beautiful specimens of Camine, which had themselves to [illegible] than if they were [illegible] [illegible] of rock work, [illegible] Eucalyptus speciosa was in [illegible] here for the first time we believe that in [illegible] fronds of [illegible] have been [illegible] in England. [illegible] will [illegible] know what [illegible] may be, should visit the gardens near Eaton's residence. They will there find it with a [illegible] stem, 10 feet high, from the top of which spreads an umbrella of graceful fronds, each of which is terminated by long clusters of its beautiful crimson flowers. In the same part of the grounds will be found an Orchidaceous house, crowded with plants in rude health, and tastefully arranged with trunks of trees, &c., so as to form a grove; and near them a most singular specimen, somewhat coral-like leafless plant, covered with beautiful blossoms of a golden Lichen, which appears to be Usnea barbata. This curious specimen, which has not been recognised as yet by any botanist, was sent to his Grace the Duke of Devonshire, from one of the most N.W. portion the west of Tropical [illegible].

Tolpis virgata, Gaudich.—The splendid Grass, Gynerium argenteum, which, if it all known, is extremely rare in British collections, is now in full flower in these gardens, where it has stood, without any protection, during the last three winters. Mr. Tweedie, who sent the seeds from Buenos Ayres, after stating the dimensions to which it attains on the extensive pampas of that country, further adds, that "it is the most showy plant of any class." This is no doubt saying rather much for it, though it is certainly a splendid object as it occurs here at present, with the culm rising to a height of nearly 10 feet. The flowering panicles are 18 inches long, compact, and well-formed, both in shape and apparent texture resembling the white feathers worn in military caps.—*D. M.*

Miscellaneous.

Transplanting Trees.—When all was clear and the tree ready for transplanting, it was raised out of the hole in which it grew, by bringing the head down on one side by means of ropes and shovelling earth under the bottom of the ball and roots, then doing the same on the opposite side, again filling in with earth and repeating this on alternate sides until the bottom of the ball was level with the surface of the ground. In the next place care was taken to choose the flat or hollow side of the tree to rest upon the bolster when lowered; for if the tree shifts or turns during its carriage, the bark will be injured and the head and roots broken. The wheels were then put in such a position that the top of the bolster was close to the ball of earth at the foot of the tree, the pole or beam raised, and the ring and top fastened with flat rope to the body of the tree, the latter having been previously wrapped with matting to keep the ring from bruising the bark. The bottom of the tree was well secured to the bolster by ropes and chains passing under the butt, the bark being again protected by means of matting, and the tree then forced down upon the machine with ropes and pulleys, and so made ready for removal. The horses were now yoked by chains to the axle of the machine, and the tree drawn out ready for [illegible]; but as the fresh earth was of course too soft to bear the pressure of the wheels, cordwood was placed under them until they came on firm ground. It is absolutely necessary that the roots of the tree should be a little heavier than the head, and this will always be the case if the above plan is carried out, except in very light sandy soils. Equilibrium was maintained by one or more men who acted as balancers in the top of the tree, so that by shifting their situation as occasion required, the whole weight was thrown upon the wheels, and the roots and branches both preserved from injury. The tree was guided by the directory who had two lines fastened to the bole of the tree, a few feet above the top of the pole of the machine, and carried between and to the extremity of the branches where he took his station, and thus was enabled to guide the machine with the greatest accuracy. On arriving at the side of the pit, which had been previously prepared for the reception of the tree (the best side of the tree being placed to front the coach road), the wheels of the machine were gradually lowered down the inclined plane, cut for the purpose from the surface of the ground to the level of the pit; the tree was then placed in the centre of the pit, set upright, the machine removed, and the roots carefully adjusted while the soil was thrown in, watered and rammed around them until the tree was well fixed, the long roots being so placed and worked up and down that they acted as a stay in keeping the tree upright. To the roots of each large tree two cubic yards of good earth and lime compost, and one of sifted cow-house were added, and the same mixture for the smaller trees in proportion. In every case care was taken not to plant the tree deeper than it grew before. The situation allowing water from a brook to be turned over the ground around the trees, it was well soaked once a week during the first spring and summer, every nine days the second year, and every fortnight the third year; it was also covered with moss, straw, &c., for the same period to protect the young roots from frost in winter and drought in summer. Not a sprig was intentionally taken off the heads of any of the trees, nor was any one of them propped or secured with ropes when first transplanted, although the situation is much exposed to the south-west. Every tree removed from Mr. H. Stewart's park has lived, and this, no doubt, principally owing to the manner and regular watering given them, the method has succeeded so well that it will be seen by a comparison made with two Oaks trees now growing in the field from which the first four were removed in 1832. One No. 1 removed has exceeded No. 1 moved in 1833, and No. 2 moved was 70 years old at the time of its removal, has increased in girth within a quarter of an inch of No. 4 not removed; these trees are very similar in appearance. This result is the more extraordinary, as no large tree increases in size for the first two years after its removal; therefore these trees have increased as much in nine years as these not removed in eleven years. It is generally supposed that the cost of removing large trees must be great, but this is shown

not to be the case by the fact that the first four Oaks were removed in 1832 (my first attempt), at an expense of 8*l.*; the remaining 16 Oak and Elm, with six sorts of wood and large Apple trees, for 23*l.* 2*s.*, being about 21*s.* per tree. The best and cheapest plan is to prepare the trees during the winter, three or at least two years before transplanting, by cutting off all the roots (except two or three of the largest on the south-west side, to be left to stays when the tree is removed) at 4 to 5 feet from the bole of the tree, making a trench 2½ feet wide and as deep as the depth of the roots, at that distance from the stem, all round the tree. The trench is then to be filled with the best obtainable mould, mixed with a little lime, and covered over with moss, straw, &c. If the tree be healthy, in two or three years the whole of the trench will be filled with fine fibrous roots; and care being taken not to injure these, the tree may then be removed with the certainty of growing if carefully pitched with the roots extended as above described.

The following are the particulars of the great Sycamore, mentioned by Thomas Newport, Montgomeryshire, published by Thomas Martyn, in 1814. "The girth, measured and sold for more than 400*l.* — The body or bole of the tree was only 10 feet long, and measured 490 feet; there were in the limbs twelve saw pipes, one of which made a rudder for a Dutch ship, and the whole of the young timber in the tree was 48 loads and 33 feet, of 50 feet to the load. The bark was only about 4 tons.—*R. W. Purghes, Plaston, near Chipsion, March, 1844.*

TREES TRANSPLANTED, MARCH, 1832.

No.	Sort of Tree.	REMARKS WHEN TRANSPLANTED.	Age.	Girth at 4 ft. from ground. 1832.	1843.	Increase in 9 years.	Height to tip of Spray. 1832.	1843.	
				Inches	Inches	Inches	feet.	feet.	ft.
1	Oak	Good head, well rooted, handsome tree	48	33½	45½	12	29	34	5
2	Ditto	Rather small head and roots. The top shoots were so much injured by frost in May, 1833, that 2 feet were cut away	60	44	54	10	40	45	5
3	Ditto	Large spreading head, no roots on this side. This tree grew close upon the side of a deep hollow lane	70	47	62½	15½	38	44	6
4	Ditto	Good head, well rooted, handsome tree	50	35½	44½	9	26	34	8
		N.B.—It is singular that Nos 1 and 4 bore acorns in 1834, which were planted but did not vegetate.							
		TRANSPLANTED, MARCH, 1834.				Increase in 7 years.			
5	Ditto	Kind, large head, very difficult to get out; nearly all the roots broken off	55	42½	46½	3	35	39	4
6	Ditto	Middling sized head, well rooted	50	32½	39½	6	32	37	5
7	Ditto	Kind, large upright head, very difficult to get out; loaded thrice; nearly all the roots broken off, and scarcely any soil left on the ball	65	50½	55½	5	42	45	3
8	Ditto	Prepared 1833; middling head, good bark, very good roots, from 1 to 2 feet long, since prepared	45	36	42½	6½	28	35	7
9	Ditto	Prepared 1833; middling head, good bark, very good roots, from 1 to 2 feet long, since prepared	30	29	36	7	21	28	7
10	Ditto	Fast growing, bark white, slender head, roots small and few, grew in a very obstinate situation with No. 15. The bark would have stripped when removed	40	31	37½	6½	26	32	6
11	Ditto	Bark very rough, kind head, all the roots cut round at 4½ feet from the stem when transplanted	35	25	34	9	24	32	8
12	Ditto	Rough bark, good head and roots, but a slow-growing tree	50	36½	44½	7½	24	31	7
13	Ditto	Bark thin, handsome sugar-loaf head, very badly rooted	55	38	43	5	38	40	2
14	Ditto	Bark middling, very kind head, well rooted on one side	52	36½	46½	9½	43	46	3
15	Ditto	White bark, middling head, middling rooted, fellow to No. 10	30	22½	29½	6	25	32	7
16	Ditto	Rough bark, well rooted, middling head	45	26	31½	5½	26	37	9
17	Ditto	Bark good, very good roots, large, kind, round head	20	20½	20	8½	15	19	4
18	Ditto	White bark, middling roots, kind head	30	18½	28½	9½	19	27	8
19	Ditto	Bark good, ranking ivy tree (grew under 7), roots cut round as 11 (died the second year)	40	22	—	—	—	—	—
20	Elm	Kind tree, very badly rooted, nearly in leaf when moved	25	26	40	14	25	33	8
21	Wytch Elm	Kind, large head, very good roots, not forward in leaf	25	34	43½	9½	24	31	7
		The greater part of the Oaks transplanted in 1834 were growing in Coppice Woods and Plantations, upon very sidelong ground, which made it difficult to load them, and would not have been transplanted if better subjects could have been found.							

TREES GROWING UPON BIGSWEAR ESTATE NOT TRANSPLANTED. (HEIGHTS NOT TAKEN.)

No.	Sort of Tree.	REMARKS.	Age.	Girth at 4 feet from ground. 1832	1843	Increase in 11 years.
				Inches	Inches	Inches
1	Oak	Good bark, small head	60	44½	55	10½
2	Ditto	Good bark, very large handsome head	65	55½	71	15½
		These Trees are growing in the same field from whence the first four transplanted Trees were taken.				
3	Ditto	This tree grew from a stake put in the hedge, large handsome head	40	54½	65½	10½
4	Ditto	Grows upon the high bank of a brook, handsome head; some roots were cut off in 1832	70	56½	62	5½
5	Ditto	Tall, upright, fast-growing tree	50	40	52	12
6	Ditto	Tall, fast-growing, kind tree	40	26	38	12
7	Ditto	Ballard, cropped about 20 years	100	70½	75	4½
8	Ditto	Fine, handsome, large headed tree	90	100	105	5
9	Ditto	Remarkably handsome, large headed tree	90	107½	116	8½
10	Ditto	Considered about twenty years ago, was then ten years old	20	5½	17½	12½
		The first five Trees are growing in the same meadow as the transplanted trees, and the others in the meadow adjoining.				
1	Poplar	Black Italian. These Trees were transplanted in 1839, then five years old, by the	15	70	87½	27½
2	Ditto		—	28	54½	26½
3	Ditto	side of a brook in the meadow adjoining to the transplanted Trees.	—	21½	43	21½
4	Ditto		—	23½	47½	24
				1826	1843	Increase in 7 yrs.
1	Oak		50	91½	97½	6
2	Ditto		50	36	44	8
3	Ditto		21	15½	23	7½
4	Ditto	These Trees are growing in the Coppice Wood along the side of the carriage road leading from Bigswear House to Saint Briavels, and are generally healthy and kind.	—	16½	23½	7
5	Ditto		13	9½	15	5½
6	Ditto		21	18	25½	7½
7	Ditto		—	18½	26½	8½
8	Ditto		55	29	35½	6½
9	Ditto		38	28½	34½	5½
10	Ditto		55	42½	46½	32

MEASURE OF ELM-TREES GROWING UPON BIGSWEAR ESTATE, AT PILSTONE, NOT REMOVED.

No.	Sort of Tree.	REMARKS.	Age.	Girth at 5 ft. from ground. 1835.	1843.	Increase in 8 years.
				inches	inches	inches
1	Wytch		70	113	118	5
2	Ditto		—	101	107	6
3	English	In the Meadow above Bigswear Bridge.	—	160	169	9
4	Ditto		—	94	103	9
5	Ditto	Near to Pilstone.	—	94	103	9
6	Ditto	30 yards from the road. This tree was prepared for removal Feb., 1843, but unseen. Decided protection in Bigswear. Could not remove for following two years, and now [illegible]	—	74	83	9

—*From "Transactions of the Monmouth Farmers' Club."*

Large Potatoes.—There is at present to be seen in the shop of Mr. J. Ramsay, High-street, Forfar, a Red Potatoes of the Blucher red kind, weighing full 3 lbs. (one of them weighs 2 lbs. 3 oz.), all grown on this stem, in the garden of A. Donald, Muir of Lowrie, parish of Dunnichen.—*Montrose, Arbroath, and Brechin Review.*

CALENDAR OF OPERATIONS.

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

By the end of October stove plants, not winter growers, should be thoroughly ripe, and therefore require less heat than they had for the last two months. A rather high degree of heat, say 70° by night, and three or four degrees more by day, will be necessary for the next six weeks; after that will be sufficient to carry on the process of fine weather early in spring. If this can in this house could be kept at pure all the winter, the conservatory although the winter, the plants would require very little fire-heat, but with strong sun heat this cannot be done, and the air must be changed as much as the weather will permit. Currents of cold air, however, are injurious to stove plants, and it is better to open all the ventilators, doors, &c. for half an hour on a fine day, than to give three or four inches of air on a small scale. One of the most powerful winter-flowering stove plants is Aeschynanthus pulcherrima. It is a plant of the easiest culture, and flowers on the top of the shoots, and, like all plants with this habit, it should be often stopped when young, to induce a quantity of the shoots, as the more shoots the more flowers. Grown standard high on Acacia stocks, its near relative, it would form a splendid object in a short time.

Conservatory.—Ipomœa tyrianthina and Tacsonia pinnatistipula are two beautiful climbers for this house, requiring exactly the same treatment, but rather difficult to manage in modern conservatories as they are impatient of confinement and do not like much sunshine. The best way to treat them is to plant them in the front border, and to have the tops taken out to the roof and through the rafters; but this style is inadmissible in most modern conservatories. Some part of an architectural assemblage in fact, such things should be planted near the doors, or flowers of corridors, or against the back wall, in either case where they can be kept partially shaded, and never allowed to get out of the house. They are good subjects for elevated shrubberies, where they may ramble at ease. However, they are thirsty plants, and apt to draw in spiders, &c. where they are growing, some people advise their being kept rather dry, but a free circulation of water and a free circulation of air are the two things they delight in. Try them, however, in a slope, and where hoses can be used, and you will find that half the usual quantity of water necessary for them if they will keep in bloom longer, and do not suffer from dryness. The reason for this is well explained in the opening article of last week.

Pelargoniums and Fuchsias would strongly remonstrate if we were to name a third of the plants that are all the winter forcing, so much having been already said about them. I always look at the report of Chiswick Gardens, which is for the last fortnight that are on sale in winter, which is a good index to what is done in this way round London. I am curious about how they manage the Bignonia velutina, so as to have it in succession as long and so much out of its season. Will any kind reader supply the information?—*D. B. S.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

The business of this department is now in a great measure confined to the clearing up of leaves, weeds, and other extraneous matters, and making the lawns, &c., look as tidy as the season will admit of. If the bulbs are planted—and if they are not, no time should be lost in getting them into the ground—those beds which are unoccupied may receive their winter digging, or trench necessary; winter trenching, taking care, if there is a lawn, to throw it as much as possible to the action of the atmosphere. While, however, you dig the beds, avoid touching the shrubbery borders, for though custom, which too frequently makes us commit sad blunders, may say they look much better after being dug, depend upon it plants do not grow any faster for being annually root pruned, and such is the effect of annual digging. Worms are now very troublesome, especially in wet weather, when it is difficult to clear their casts away, but they might easily be materially thinned by watering the ground with fresh lime-water, or with water containing corrosive sublimate, though in the latter case they are merely driven out of the ground, and require to be gathered up by hand, and afterwards destroyed. Corrosive sublimate is very quickly brought into a liquid state by mixing it with spirits of salts.—*W. F. A.*

III.—FLOWER-GARDEN AND PLEASURE GROUNDS.

Auriculas.—If in their frame (unprotected) should be protected from damp, and especially prevent fogs finding its way through the glass of the frame, and attacking the tender hearts. In order to prevent this, the tops of the glass ought to be pitched. If pots get sodden with rain, and continue wet for a few days, the destruction of the plant is almost inevitable.—*Polyanthuses.*—We have them in full flower, it is not, however, advisable to permit this, or to allow the plant to weaken itself by blooming at unseasonable periods. Newly-planted cuttings, when small, are apt to be dragged out of the ground by the earth-worms; the borders should therefore be looked over and the plants taken fresh root. *Dahlias.*—In many parts of the country have been cut off by the late frosts; where that is the case they should be taken up while they still start quite at this season, and after being tolerably well dried in the sun have been numbered and attached to the roots with strong packing wax, they may be hung up for a few days in a dry airy shed, preparatory to cutting off the stems and storing the roots. Where they have escaped, which in the early parts of the kingdom, every precaution should be taken (by propping the stems and roots) to prevent injury in the event of a sudden change of weather. *Tulips.*—We have taken advantage of the late fine dry weather, and planted our Tulips, and fortunately the bother they are in now the better. Bulbs and tubers mentioned in Articles, in late Nos. of the *Chronicle*, on the Formation of Beds, Planting, &c.; the information in there given may be safely acted on. *Carnations.*—Get in your stock as quickly as possible. We must enter our protest against propagating these varieties from a distance, after the first week in November, unless the layers are extremely healthy and well rooted.—*W. F. A.*

IV.—PINERIES, VINERIES, &c.

Pineries.—Where plants are swelling their fruit the temperature need not now exceed 60° at night. It should not, however, be allowed to fall below 55°. Such structures may be raised to 70° by fire-heat, by shutting up the air early, on fine clear days, and whenever a small portion of air can be given, it will be advantageous to open the top ventilators a little, but for 30 minutes or so, about mid-day. Now that oak and other tree leaves can be had, in quantity, between the autumnal leaves and half dung for lining the pits planted, is preferable to what is done in this way round London. I am curious about how they manage the Bignonia velutina, so as to have it in succession as long and so much out of its season. Will any kind reader supply the information?—*D. B. S.*

Vineries.—Remove all fading leaves from the Vines on which fruit is hanging, and keep the house free from everything likely to create mould or damp. When there is any appearance of frost in the evenings, a sufficient fire be made to keep the temperature up to about 40° during the night.

Peach Houses.—If the fruit is not still in the Peach houses it is time to put them on again giving them all the air possible. If the trees in the late house have not yet ripened the wood sufficiently, continue to assist them by making slight fires during the day, giving at the same time plenty of air.

Fig House.—The pruning of Fig trees, like that of Peaches, is performed in the summer and autumn. Let whatever winter pruning required be done as soon as the leaves fade. Wash the whole of the trees over afterwards with soap and water till they are perfectly clean, and then mix soft soap and sulphur with warm water, in the proportions of half an ounce of soft soap and half an ounce of sulphur to a pint of water, and let the whole of the trees be well rubbed with the mixture. Put the house into a state of thorough repair and cleanliness, and then fill up the trees.

Strawberries.—If these have not been put into their winter quarters no time should be lost in getting them in, as the roots will suffer from too much wet.—*G. B.*

V.—KITCHEN AND FRUIT GARDEN.

Peaches and Apricots.—Remove all green laterals, that the growth of the trees may be checked, and with a new birch broom gently switch off the matured leaves, taking care not to injure the buds, repeating the operation at short intervals, so that the young wood may be ripened by exposure. To effect this still further, cut away small twigs that will not be wanted, and loosen from the wall wood shoots intended for bearing next season as soon as convenient. Where unfortunately the leaves are still green and abundant, no time should be lost in going over the trees, and shutting all the stronger leaves in two. As no great nicety is required, a man will soon go over a wall, by catching the leaves between his knife and thumb. This will tend to check luxuriance, and hasten the maturation of the wood, without rendering the shoots either shrivelled, or the

receptacles of unelaborated sap, which, to break into [illegible] rankes, which is most conducive to the health, must necessarily be had either by indiscriminate pruning, cutting, or [illegible] deprivation of leaves.

Cucumbers.—There is no difficulty in growing these at this season, or during the winter, provided heated atmosphere, even a good fire, that will not allow the escape of smoke or deleterious gases, be at hand to change the air, to a small extent, at pleasure, "I say they cannot grow in a dwelling-house, or pigeon-holed and fired, having only room for growing plants alone; but without having abundance of dung, &c., it would be folly to attempt it. [illegible] would be [illegible] common frames; but such should be constructed in the manner as to prevent the ingress of steam, and to keep the atmosphere in a healthy state. Those who still have their fancy fixed on frames, and their minds blessed by surveying the hot-water tough chopped dung, and their [illegible] with lime, which may be painted over with sulphur [illegible] spider. Those who are particularly [illegible] will obtain them most economically [illegible] narrow house, or pasture, as all the work of attendance can then be done from the inside. The simplest system of heating by hot water will be the best, provided it is [illegible] of bottom and atmospheric heat. *Asparagus, Sea-kale, and Rhubarb.*—Preparations must now be made for forcing those where they are wanted for use early. Those in the open ground, if better than a late Melon-bed [illegible] and [illegible] heat, or a slight hot-bed may be made use of to [illegible] at pleasure, if it should prove too strong. Place the plants as thickly as possible, and so keep the [illegible] to allow the shoots to grow the requisite length, and then [illegible] green or blanched as pleasure, unless the weather should be very severe. The best method to adopt in the latter is to form a small hotbed in any convenient place; take up a number of roots, place them on it, with a little soil or any sort amongst them, and defend from the weather and light, by any old boards that can be obtained. Where a [illegible] is at work, a better place could not be found. *Strawberries.*—Forced fruits and roots, plant [illegible] and Fastus in frames, young ones out of doors to afford the winter. *Seleral Large Cauliflower* from hand, and young plants from [illegible] Match and dig about Globe Artichokes, [illegible] and [illegible] Asparagus for the winter, through supposing [illegible] to be attended to, remove all decaying vegetables, but take nothing to the [illegible] that may do for food, and so far as the [illegible] leaves will [illegible] give every plant a [illegible]

KAIL-YARD, OR COTTAGER'S GARDEN.

The leaves bring now for the most part on fruit trees, and the ground admonishes [illegible] the late hands, the Cottager, with every prospect of success, may [illegible] may soon be busy with his [illegible] implements. [illegible] the best season for planting all kinds of fruit trees, if the weather is open and tolerably dry, and, moreover, if any new kinds are wanted from the nurseries, there is [illegible] better chance of having them good than [illegible] have been [illegible] planted many [illegible] The following list may be useful to those who are about to form a new garden, or add to their present collection. Of Apples, I would recommend as decided favourites, [illegible] viz. Early Harvest, ripe in August; Keswick Codlin, ripe in September; Court of Wick, from October to March; Old Nonpareil, from October to May; Golden Pippin, November to January; and Dredge Kingston, from December to April. Sorts for [illegible] Early Harvest, Apple Jersey, Bedfordshire Foundling, from September to March; Royal Russet, from November to May; Lemon Pippin, from November to February; and Wormsley Pippin, from September to January. Of Plums, I would recommend as [illegible] Orleans, Coe's Golden Drop, Early Red, Vine, Sour, and Shropshire Damson. Of the [illegible] excellent for preserving. The [illegible] should be planted [illegible] trees should be well [illegible] manure [illegible] are then [illegible] thoroughly mixed with the soil. Look over Cauliflower and Lettuce plants for slugs. If they are [illegible] sprinkle some hot lime [illegible] the plants [illegible] and destroy the [illegible] Stop [illegible] when wet, [illegible] not [illegible] plants in pots. They should be kept rather on the dry side during winter, never water them except when they absolutely require it, and then give them a good soaking. [illegible]

State of the Weather as observed at the [illegible] Oct. 21, 1854, as [illegible]

Oct.	Mean Temperature of the Air				Mean Temperature of Evaporation				Wind.	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Frid.	20	49	49.0	49.0	46	46	46.0	46.0	N.	N.
Sat.	21	50	50.0	49.5	46	46	46.0	46.0	N.	N.
Sun.	22	51	50.0	49.7	47	46	46.5	46.2	N.	N.
Mon.	23	51	50.0	49.8	47	46	46.5	46.3	N.	N.
Tues.	24	51	50.0	49.8	47	46	46.5	46.3	N.	N.
Wed.	25	51	50.0	49.8	47	46	46.5	46.3	N.	N.
Thurs.	26	51	50.0	49.8	47	46	46.5	46.3	N.	N.
Average of the Week										
Oct. 20	Rain, [illegible]									
— 21	[illegible]									
— 22	Overcast and [illegible]									
— 23	Foggy; [illegible]									
— 24	[illegible]									
— 25	Foggy; very [illegible]									
— 26	[illegible]									

State of the Weather at Chiswick during the last 10 years, for the morning [illegible]

Nov.	Average Highest Temperature	Average Lowest Temperature	Mean Temperature	Prevailing Winds	Quantity of Rain in Inches
Sun. 5	49.0	39.0	44.0	[illegible]	[illegible]
Mon. 6	49.2	39.2	44.2	[illegible]	[illegible]
Tues. 7	49.2	39.2	44.2	[illegible]	[illegible]
Wed. 8	49.2	39.2	44.2	[illegible]	[illegible]
Thurs. 9	49.2	39.2	44.2	[illegible]	[illegible]
Fri. 10	49.2	39.2	44.2	[illegible]	[illegible]
Sat. 11	49.2	39.2	44.2	[illegible]	[illegible]

The highest temperature during the period was [illegible] and 6th, 1851; the [illegible] and 7th, 1844.

Notices to Correspondents.

BIGNONIA JASMINOIDES.—[illegible] plant under the name, [illegible] beauty referred to; the other flowers [illegible] a small pot. But why grow this poor [illegible] other is all that can be wished for? [illegible]

CUCUMBERS.—*A Beginner.*—Soil composed [illegible] light rich mould from an old pasture, one-eighth vegetable mould, and one-eighth rotten dung, will produce [illegible] in abundance. Keep the temperature [illegible] at night, allowing [illegible] air in [illegible] night with mats, but they should never be removed by [illegible] in order to admit all the light possible to the plants, [illegible] is very essential to their welfare.

GRAPES.—*Didi.*—The [illegible] Tokay is the [illegible] Lombardy; bunches very large. The [illegible] the bunches being small.

HEATING.—*F. R.*—An Arnott stove, well [illegible], will heat [illegible] [illegible] [illegible]

FARM.—Wanted to Purchase, A FARM, of 200*l.* to 400*l.* a-year rental; to abut on a county town.—Address, by letter, stating price, distance from railway, and place, to E., *Gardeners' Chronicle* Office, 5, Upper Wellington-street, Covent-garden, London.

TO COLONISTS.—EMIGRANTS.—MARY WEDLAKE, widow of the late THOMAS WEDLAKE, at 114, Fenchurch-street, London, manufacturer and others that she continues to manufacture those agricultural implements for which her late husband was extensively patronised by the Settlers in South Australia, Van Diemen's Land, Swan River, New Zealand, and other British Colonies. The following articles made in a first-rate manner, are kept on sale at the London Warehouse:—
Patent Hay-making Machines,
Dressing Machines,
Patent Chaff-cutting Machines,
Oil-cake Crushers
Double action Bundle cutters,
Railway Waggons.
Please to be particular in the address, MARY WEDLAKE, 114, Fenchurch-street, London.

The Agricultural Gazette.

SATURDAY, NOVEMBER 2, 1844.

MEETINGS FOR THE EVEN FOLLOWING WEEK.
Wednesday, North Lancashire Agricultural Society.
Thursday, Newry Agricultural Inst. for Ireland.
Friday, Wakefield Agricultural Society of England.
Saturday, Newry Agricultural Inst. for Ireland.

Much as England owes of her prosperity to her mineral wealth, the value of her SUBTERRANEAN AGRICULTURE is scarcely less. The means which these afford of increasing the fertility of the surface, and of furnishing profitable employment for the agricultural labourer, have hitherto been too much neglected. Widely as the geologist knows these to be distributed, and highly as he appreciates them, he sees agricultural practice availing itself of them only here and there. Wherever this is done, the result is such as to confirm his conviction of the advantages to be derived from their more extensive development; but in these operations the same want of system and of guidance by general principles is observable, which pervades everything connected with agricultural practice.

Perhaps few parts of the geological series furnish a better illustration of their value than the rocks of the cretaceous system. Our geological maps afford a very inadequate notion of the extent to which these rocks are applicable to the improvement of the surface. They exhibit only the stratified or unstratified rock which in each locality is nearest to the surface, disregarding, and supposing to be wholly removed, that loose covering (also the usual deposits of the northern drift) which is of the greatest importance to the agriculturist, and often of great thickness. We see laid down on these maps a main ridge of chalk hills extending in a north-east direction from the southern part of Dorsetshire to the coast of Yorkshire, and sending off two branches, which, under the name of the North and South Downs, stretch eastward to the Isle of Thanet and Beachy Head. But the agricultural influence of the chalk, or the influence which it is capable of exercising, extends far beyond these limits. Through all that triangular space bounded on the west by the curved line extending from Beaminster to Flamborough Head, and on the east and south by the German Ocean and the English Channel, the chalk, where it does not rise to the surface, constitutes (with an exception which will be noticed presently) the subjacent stratum, and is covered by sands, gravels, and clays of later formation. From the rise of the strata towards the west, the beds of the gault and greensand, which constitute the lower members of the cretaceous series, emerge from beneath the chalk on the western side of the main line of chalk hills, and form a narrow parallel band of argillaceous and arenaceous strata at their base. The excepted area within which the chalk does not form the substratum is the district of the Weald of Kent, Sussex, and Surrey. There, a movement of elevation, having an east and west direction, has broken up the cretaceous rocks, and brought to the surface the beds of clay and sand below them. The latter occupy the centre of the Weald of Kent (the portion, the former thinks this central ridge in two parallel bands, between which and the North and South Downs the gault and the greensand occupy the same relative position at the base of those hills which they occupy at the base of the western line of chalk hills. These ranges of chalk hills are anything but fertile. Large portions of them are in the state of sheep-walk—the calcareous rock being covered only by a few inches of light vegetable mould, which supports a short though sweet herbage; and the crops produced on the arable portions are raised at the expense of large dressings, by means of the sheep fed on them in the day and folded on the fallows at night. The purer sand and clay strata of the lower greensand, the firestone, marl, and Weald clay, afford likewise unproductive soils, to be prized by the farmer. The gault consists of a mixture of clay and calcareous matter, highly productive, but, from its tenacity, difficult to work; while in portions of the upper greensand the addition of a large admixture of siliceous matter to these two combs produces a deep rich friable loam, capable of growing every description of crop. Thus we see that nought by Nature here is lavished in vain, but by the admixture of earths which in their separate state are barren and worthless, we have in the introduction of portions of the gault, clay, and gravel from the great triangular area before-mentioned the means of improvement by the application of chalk and clay as hitherto also the chalk is much used and with advantage as a manure in the county of Sussex. In its unburned state it has long been employed with great success in a few districts of limited extent. To the sands, gravels, and chalk of Norfolk, under the name of marl, and in a state of intimate tenacity and calcareous matter.

The marl is the solid chalk, the clay is the transported fragmentary chalk mixed with a variable proportion of clay or loam. Both are generally found at moderate depths beneath the surface of the land to which they are applied. To those parts of the district where the covering is too deep to enable the farmer to avail himself of them, they are conveyed by water from pits on the banks of the navigable rivers. A cubic yard of *rincallon*, as the overlying sand and gravel is called, is frequently removed in order to obtain a cubic yard of chalk or chalk rubble. In the "marl" pit of a farmer we have seen the chalk covered by sand and gravel 13 feet deep, and worked to no greater depth, though it was stated by him that the quality improved with the depth. In the lime-works near Norwich, the covering is 40 to 60 feet deep, the depth to which the chalk is worked not more than 60 feet. From the numerous pipes which penetrate the chalk, a very large proportion of it is too much weathered, and too much mixed with the sand and clay which fill these pipes, to be burned for lime, and is put into barges for the use of farmers at a distance. The chalk of Kent is applied to the London clay of the Isle of Sheppy, which it improves mechanically, by rendering the soil more friable, and chemically, by imparting calcareous matter with probably a small portion of phosphoric acid, and by neutralising, with formation of sulphate of lime, the injurious salts of iron which that clay contains, and which results from the decomposition of the iron pyrites so abundant in it. On other portions of the London clay, constituting the surface of parts of Essex and Suffolk, the farmers have long and extensively used for the same purpose the chalk of Kent, conveyed to them by water. All this shows over how extensive a tract of country chalk is usefully employed in improving clay soils.

We shall next week inquire into the practical details of the process.—*E. W.*

DURING the past week we have been busily engaged in HARVESTING OUR CARROT AND MANGOLD-WURZEL CROPS. The plan we have adopted is that which was shortly described in a late Number of this Paper. It fulfils the three conditions of success in the preservation of root crops through the winter—it furnishes security from the frost and the wet, and at the same time provides for a sufficient ventilation of the heaps.

The harvesting of root-crops is best done by piece-work. The harvesting of a good crop of Carrots has hitherto cost us from 17*s.* to 25*s.* per acre—that of Swedes and Mangold-Wurzel, from 6*s.* to 10*s.* For this sum the contractor pulls the roots, cuts off the leaves, fills the roots into carts, and gathers and loads the leaves also.

In the operation of harvesting Carrots the spade is required—it is pressed into the ground, and used as a lever by the right hand, while, by the left, the root is pulled up. Each man lifts two rows as he proceeds, and four men forming a company, eight rows are thus pulled and laid regularly on the ground in two lines. Two women can top the roots—*i. e.* cut the leaves off them—as fast as this number of men can pull them; and, leaving the roots in a central row, they throw the leaves into two lateral ones as they proceed. The carts, the number of which, varying according to the distance from the heaps, must be such as will convey the roots off the land as fast as they are ready, follow close upon the cutters; a man and a boy will be able, under ordinary circumstances, to fill both roots and leaves into them as fast as the already-mentioned gang prepare them; and another man and boy will be employed with the roots in the heaps, and the leaves on the land, to pull the roots from the heaps, and the leaves from the carts, as they proceed. We touch upon these details, because it is all-important to the success and economy of the operation that the forces employed in the different parts of it should be rightly proportioned to each other.

The leaves, as we previously observed, will now be the only food for sheep. Whether they may either be hurdled on the ground and pulled to them, or on land already rich enough for a green crop, they may be carried every day to the fold-yard and trod down by the cattle. When, as in the present late season, they are still green, they may be used as fodder. As long as leaves are green they remain useful to the growth of the plant. The only reason why we are now harvesting our Carrot crop, before the roots have stopped growing, is their extreme sensitiveness to frost. This is so great, that it is of the greatest importance to secure them before night all the roots pulled during the day—if they get frozen, though it be ever so slightly, it will be almost impossible to preserve them through the winter.

[illegible] one more remark to make, and that is on the advantage of [illegible] when it is owing to [illegible] always commences at any cut or [illegible] It thus becomes of importance that the surface of the roots should be [illegible] The root fibres should not be cut off, and the leaves should be cut [illegible] from the crown of the root, as that they may fall separately from one another. So far as our experience has hitherto gone, of these points be carefully attended to, and if such a mode of harvesting be adopted as fulfils the three requisites of success before alluded to, there is but little risk of the farmer losing much of his crop by keeping it until satisfaction before the spring.

THE ANOMALIES OF AGRICULTURE.

CHAPTER II.

Could [illegible] of [illegible] retaining [illegible] all powers of perception and reflection, be extended very considerably beyond its ordinary span, so that he might have an opportunity of beholding the phases and revolutions of nations at intervals apart from those periods of interest and connection with the world around us, which make its [illegible] growth and progress too co-ordinate with our own, to strike the optic nerve of the mind with their full evidence, it may yet be conceived, judging only from the history of the last century, that one of the most striking observations would be this strange paradox—that most of the [illegible] and [illegible] improvements in the various arts of life are suggested, proposed, protected, *from without*; resisted, depressed, obstructed, *from within*. It is [illegible] contradictory to the human mind; but it is not the less true for that. Whether it be that in such professions there can never be sufficient interest [illegible] that will resist even the most demonstration, [illegible] is [illegible] bound up with the perpetuation of existing practices, or warped from the true obedience of such facts, the mind shrinks from the contemplation of a change, and retires the proposition of it more readily from both of these, and perhaps other motives combined, yet certain it is that the inventors and improvers in each art have in almost every instance, [illegible] the most virulent opposition to their theories, at the hands of its existing professors. An almost ludicrous instance of this occurred only a few years ago, when the [illegible] railway was first it was proposed in defiance of the thunder of the army of coach proprietors and [illegible] stock-holders, to carry on the [illegible] divine, and pedestrian [illegible] roads instead of stage coaches and [illegible] with singular simplicity, [illegible] the alarmed proprietors [illegible] by the assurance that [illegible] and that the same outcry had been heard and [illegible] upon before in that [illegible] when their speed eclipsed the previous rate of locomotion. Upon the same principle the ingenious Lord Stanhope [illegible] the smiles and jeers of his cotemporaries in general—but the then naval officers and [illegible] of the Admiralty in particular—by the insane proposition that a steam-boiler and apparatus might be stowed on board a ship to propel it by means of paddles, even against wind and tide! And the remarkable feature in the case of the [illegible] in the modern "army of martyrs" was, that in the general derision, the most solemn and deliberate [illegible] with [illegible] him was that of those "experienced naval officers"—men of advanced practice and professional education—men who, in delivering their opinion, [illegible] with a deprecation that [illegible] to habit and usage should be thought to weigh or influence *their* decision—but that really his [illegible] idea and proposition was one of that class that they were bound, after the most patient professional investigation, to pronounce impracticable and preposterous! But Science, like all Truth, is Eternal; and eventually, in that slow but certain defeat which Prejudice, with "sentence of death written upon its brow," * suffers at the hand of Time, is forced—by a sort of popular clamour siding at last with reformations obvious to all but the self-interested; yes, forced upon the profession whose real interest it is, and whose subject-matter it mainly concerns. Yet not in one generation is the Victory often accomplished; for Prejudice will sooner die than yield; and it does die: and thus the [illegible] who hurled on the queer exclamation, "Thank God, old men must die," was not far off the enunciation of a great truth, namely, that it is by the mortality rather than the [illegible] or conviction of generations, that [illegible] and revolutions in practice are accomplished.

It is difficult to resist this train of reflection, when one reads, and often hears, the contemptuous language of some of those who call themselves Farmers of the "good old fashioned school," in reference to those whom they are pleased to class as "march-of-intellect gentlemen," "advocates of Guano and Gypsum, fixers of Ammonia, constructors of Liquid-Manure Tanks, who want to turn a jolly *Farmer* into a "Chemist and Druggist!" This latter imputation, in particular, which wound up a

* T. Carlyle's Hist. of the French Revolution.

perfect *tour-de-force* of after-dinner oratory at a recent farmers' meeting, is worth preserving as a relic, indicating the sort of idea entertained by speakers and thinkers of that calibre, of the use of Chemistry to Agriculture. That they have been applying, and do apply its powers and results, in some of their most miraculous and complicated forms, almost every day of their lives, upon their fields and upon their stock, would probably be as startling a piece of information to them as the announcement that he had been "talking prose" all his life was to the Squire of Barton, or the news of the Marlow Victory to the Warwickshire man who, when the bells rang the merry tidings that peace was proclaimed, asked "What! have we been a-warring then?"

Nothing indeed, to speak but too generally, can be conceived more absurd than the ordinary estimation in which, respectively with its actual rank and importance, Chemistry has been held among the sciences. To this hour a vast and respectable portion of the community are only aware of its existence, so to speak, as a sort of Apothecary's lore—the "Doctor's Assistant"—a kind of subservient pestle-and-mortar affair, over which the magi of the sick-room and hospital wield a cabalistic power, by the aid of certain hieroglyphic signs and symbols scratched with the stump of an execrable pen upon a magic quarter-sheet of paper; a thing of bottles and pill-boxes, hiding their conscious hideousness behind pharisaic rows of enormous glass globes of many-coloured liquids glistening in the blaze of shop gas-lamps! There is a story told of a tribe of American Indians in days long past, who had treated with incredulity and contempt the representations of some English wanderers who had settled amongst them, of the national importance and naval skill of their countrymen. All assurance and explanation were vain, until by chance a British seventy-four happened to anchor off the coast. The natives came from far and near to see it, and some of the chiefs were permitted to go on deck: the stupendous mass of masts and riggings, deck upon deck bristling with guns, mountains of cordage, hundreds of men—through all that there is to see of that

"Sight to dream of, not to tell!"

they were led, speechless with awe. They returned in silence, overwhelmed and downcast, to their homes, and never were heard again to speak upon the subject.

Now, if by some miraculous process of intuition, the great body of those who call themselves Farmers could be gifted with an instantaneous and complete perception of the whole powers of Nature comprehended under that word Chemistry—the natural history of all created substances—of everything cognisable by the physical senses of man, and the laws which govern their infinite unions and variety, co-extensive with matter, *perhaps with space itself*—could they be shown at one comprehensive glance, what it has done for the other arts of life, and its too long neglected importance and specific applicability to theirs—good Heavens! what would they think of their former—their now-existing pretensions and aptitude, as Professors of the art of Cultivation! Would they wonder much at the startling paradox which has lately been quoted from mouth to mouth—That of all members of the community the Farmers, taken as a class, are the least acquainted with the true meaning of the word *Agriculture*? And why? Because, of all pursuits, Agriculture is the one which calls into use the most extensive acquaintance with Nature, and consequently the widest range of physical Science: and of all members of the community, Farmers have hitherto had, generally speaking, the least advantage of an education comprising such studies and therefore adapted to the true exigencies of their future occupation. It is said that a person applying to the late Lord Leicester for a vacant Farm, and in answer to a question put to him, that he had "followed the Plough ever since he was a boy, so he ought to know something about farming."

"Aboo *ploughing* you mean," replied the veteran Agriculturist; "the best Farmer I ever knew was a retired Tallow Chandler." The philosophy of this answer seems borne out by Middleton in his "View of the Agriculture of Middlesex," where he says, alluding to the renegades from other professions to that of the Farmer: "This class forms the most intelligent and accurate of husbandmen. Like converts in religion, they have more zeal, give more application, in short, have fewer prejudices to surmount, and more enthusiasm for their new profession, than those who have been brought up in it from their infancy. They are at the first outset liable to error and mistake from want of practice, but their indefatigable attention makes more than amends for their ignorance of minutiæ; and as they have been at some pains to acquire a knowledge in the Theory of Agriculture, and hence established their ideas on rational principles, they most commonly in the end make a distinguished appearance, as their labours, if unassisted by experience, though often in a new and experimental channel, seldom fail of being crowned with success." As a remarkable instance of the truth of this position, it is not a little gratifying to remember of a few of our readers, the case of a London gentleman whose early life had been devoted to a very general flirtation with the sciences (not excluding Farming), an inquiry being made, about a year and a half, of a neighbouring land-steward (himself a well known judge of stock), how this gentleman got on with his farm, the answer was—"Oh! dear—all the Farmers round laugh at him: he *goes into a field, and digging up a bit of the under soil, pours something upon it, out of a phial he carries in his pocket*—if it pleases he says to his Bailiff, 'You need not put any lime to it this turn' and if it doesn't, he gives some other order about it." Four years had passed away before another opportunity occurred to the same party of asking after him. "By the way, how does Mr. —— get on with his farm?" "Why, bless you, Sir, what the shrew," the best Farmer in the whole county! the crops beat anything that ever was seed of heard of upon that land before. Now here was a man, the better half of whose life had been spent in mere theoretical study and amusement, a good scholar, to be sure, and an excellent gentleman, that turned his mind as actively to Agriculture as it was possible to conceive, and what was perhaps better than all, of a singularly observing temperament, and takes the plough in hand between the age of 30 and 40, and in four or five years is the best farmer in the county. Can anything speak more strongly than this—not that a man is necessarily the better farmer for beginning late in life, as the want of education is at least as essential for attaining anything like perfection in Agriculture, as in any other of the laboriously pre-studied pursuits of human industry?—and that the mind must be early directed to the investigation of the great truths of Nature, and to a course of experimental acquaintance with them when practically applied, "equally at home," in fact, "in the closet and the field" (as they say of another sort of generalship), if ever it would attain to that rapid and almost innate-seeming perception of effects, and adaptation of causes, without which, every operation of mind upon matter must be mere empirical drudgery and chance-work.—*C. W. H.*

(To be continued.)

THE PLOUGH.

THERE are, I conceive, but two questions of any moment connected with the construction of the plough. One of them is, What form of the plough will insure the attainment of those effects which are or should be the object of ploughing? and the other is, What form of the plough will insure the accomplishment of these effects with least exertion of force? These questions about the plough refer, one of them, to the nature and the other to the expense of its operation.

There is no difficulty in determining which of these comes first to be considered. We must, in considering a machine, evidently first ascertain whether it answers the purpose for which it was intended, and then as a subordinate consideration, inquire into the expense of its working; and this view of the subject has, I think, been too much neglected with regard to the plough. True economy most certainly advises the farmer to have his work well done though it be attended by additional expense.

Before attempting to answer the question which thus comes first for our consideration, we must ascertain what those effects are which it should be the object of ploughing to accomplish. The farmer ploughs his land before winter, in order that the frost may exert its influence to advantage in mellowing the soil, and in leaving it when spring arrives in a loose and friable state. He ploughs it also repeatedly before seed-time, either in sprng or autumn, in order to loosen and pulverise it, and thus form a good seed-bed. He also ploughs it repeatedly during a lengthened fallow—his object being in all these cases the same, viz. to expose a fresh surface, and leave the land loose in order to be acted on by the weather. Land is also sometimes ploughed to assist the extirpation of weeds, either by burying them or by loosening the soil, and so letting them be more easily dragged to the surface; and it is also sometimes ploughed in order to cover manure or other matters spread upon its surface.

I need not state here the condition in which land ought to be left by the plough, either when it is intended for a seed-bed, or that it may be most rapidly prepared for one. Both the farmer and the philosopher agree on this point; the latter having the advantage only of knowing *why* such a condition is a good one.

Whether the question be looked at by the eye of the practical, or that of the scientific man, the answer given by each is the same in fact, however different the phraseology may be in which it is expressed. The one says that land should be in sound heart and healthy condition, and the other means the very same when he says that it should be in such a state that free access be given to air and moisture, by which the manure in the soil may be rapidly decomposed, or the germination of the seed rapidly effected.—*M. S.*

ON MINERAL AND INORGANIC MANURES.
No. XXVIII.

BY PROFESSOR CHARLES SPRENGEL.

If peat-ashes contain very little gypsum, common salt, phosphate of lime, and, generally speaking, little of those substances which are amongst the chief nutriments of plants, they have (as a matter of course) little value as manures, which is still less the case the more phosphate of iron they contain. I have analysed several sorts of peat-ashes, which were almost useless, and will state a few of the results, for the sake of proving my assertion.

1. *Peat-ashes from Lüneburg* (reddish). 100,000 parts consisted of—

43,300	parts of	silica.
9,700	,,	alumina.
19,300	,,	oxide of iron, and manganese of iron, partly combined with phosphoric acid.
3,500	,,	oxide of manganese.
2,100	,,	lime.
1,400	,,	magnesia.
0,100	,,	phosphate of lime.
0,100	,,	common salt.
0,300	,,	gypsum.
17,000	,,	carbonic acid, combined with lime and magnesia.
100,000	parts.	

If even 3000 lbs. of these ashes are brought on one acre, the soil will only receive 3 lbs. of gypsum, 3 lbs. of common salt, and 4½ lbs. phosphate of lime, so that only the lime and magnesia (350 lbs.) may expect to produce some effect. The great amount of phosphate of iron (580 lbs.) will, on the contrary, prove hurtful to the plants.

2. *Peat-ashes from Brunswick* (blood-red). 100,000 parts consist of—

48,300	parts of	silica.
4,160	,,	alumina.
29,090	,,	oxide of iron, partly combined with phosphoric acid.
0,480	,,	oxide of manganese.
16,100	,,	gypsum.
1,810	,,	sulphate of magnesia.
0,060	,,	common salt.
100,000	parts.	

Although these ashes contain much gypsum, and might thus be expected to be useful, this is by no means the case, because what is effected in one way by the gypsum, is applied on the other hand by the phosphate of iron, and perhaps also the sulphate of magnesia. Large quantities can never be used, and if 500 lbs. were to be put on the Magdeburg acre, the soil would receive thereby as much gypsum as is ever used of this substance by itself.

Very often peat-ashes are mixed with burnt lime previous to being used, the effects of which have always been beneficial. With 1000 lbs. of ashes, an equal amount of lime is mixed, and conveyed on one acre of land. There is no doubt that the lime decomposes (in lying in a wet state with the ashes in a heap) the phosphate of iron, and thereby essentially improves the ashes. It might therefore be possible that even the worst ashes, viz., such as possess much phosphate of iron, could be improved by being mixed with lime; which deserves to be experimented upon. Even if it were to contain much sulphate of iron, it would be improved by the adding of lime, as this substance, although it is a good manure, still easily injures the plants.

In Belgium, peat-ashes, previous to being used, are often mixed with guano, whereby the latter are always improved. There it is also asserted that peat-ashes will improve by lying some time in the air, protected from rain. Such ashes most probably contain much sulphuret of calcium, which, as it is more easily soluble in water than gypsum, might supply the plants with too much sulphur; but exposed to air, it changes gradually into gypsum, which is less soluble. In small quantities, however, this substance is not hurtful; on the contrary, it is then a useful vegetable food.

In some places (for instance, the county of Diepholz, in Hanover), sandy loams are improved by peat ashes in the following way:—The coal of peat, but especially the black soil, which lies above the peat of the high moors, and which has been generated by the decomposition of the peats there growing, is strewed 1½ inch thick over the fields, and then worked in dry weather with harrows, till it is dry, when it is burnt with straw, proceeding against the wind. The fire will soon extend over the whole surface, and the peat be converted into ashes; these are now ploughed under shallow as soon as possible, the field is harrowed and sown (after being once more ploughed somewhat deeper) with Rye, which will grow exceedingly well after this operation. This is easily to be explained, by considering that the ashes will not only manure the soil, but the heat also kills all seeds of weeds, and the insects and worms; acting, moreover, beneficially upon the humus, and the protoxide of iron of the soil decomposing the former, and disposing the latter to be converted into an oxide. If, on the other hand, the peat-ashes contain protoxide of iron, ammonia will be generated by the decomposition of water, and the result will be still greater. It has been just stated, that for this operation the black soil lying above the mossy peats of the high moor is used, as we have seen that it will greatly improve the growth of crops. This again proves what important parts certain mineral substances perform in the nourishing of plants, as the chemical analysis of the black soil has shown to me, that it is rich in phosphate of lime, gypsum, common salt, magnesia, carbonate of lime, and potash, whilst the ashes of the Moss-peat lying under the former, contains but very little of these substances, and no potash at all. It is also to be observed that the substances of peat must be entirely converted into ashes; because if they are ploughed under in a state of imperfect combustion the field will be impaired. For the sake of making sure that the whole has been converted into ashes, the burning must not be resorted to until a dry day, which will be best done in the hot season (July, August). It is also good, for the sake of the surer communication of the fire, to mix the earth with a little Moss-peat, as the latter is very inflammable. The best result of this operation will be found on calcareous soils, in fact it is followed by results so extraordinary, that it ought to be resorted to wherever practicable.

The most general use of manuring with peat-ashes is made in the cultivation of high moors; nay, it is here indispensable to burn a great part of the peaty substance, in order that the soil may be planted, as by the burning not only the superfluous amount of humus is destroyed, which (as we have seen before), injures vegetation by depriving it of the necessary oxygen, but the plants are supplied with the required mineral substances. At present not only arable fields but also meadows are manured most advantageously with peat ashes. It is in Holland where they are most employed for that purpose,

and many meadows not subjected to inundations, are strewed over twice a year with a good quantity of peat ashes; the first time in March or April, the second time after the first cutting of the Grass. Every time 3000 or 4000 lbs. per acre are used, which is continued for three years, and the harvest of Grass is afterwards twice as great as it has been before. Afterwards the meadows are at times broken up, and planted the first year with Flax, which is followed by Oats, amongst which Clovers and Grasses are sown; and the field then rests as a pasture.

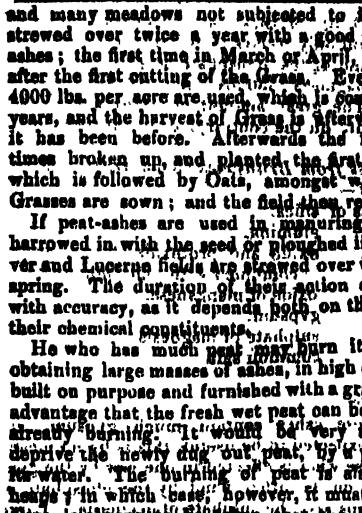
If peat-ashes are used in manuring fields, they are harrowed in with the seed or ploughed in shallow. Clover and Lucerne fields are strewed over with them in the spring. The duration of their action cannot be stated with accuracy, as it depends both on their quantity and their chemical constituents.

He who has much peat may burn it, for the sake of obtaining large masses of ashes, in high cylindrical ovens built on purpose and furnished with a grate. This has the advantage that the fresh wet peat can be thrown on that already burning. It would be very advantageous to deprive the newly dug out peat, by a press, of most of its water. The burning of peat is also done in large heaps; in which case, however, it must be already dry. Care is always to be taken that the heat be not too great, else the ashes will lose much of their value; silicates will be formed, which (as we know already) are of no use to the plants. It is obvious that only such peat is to be burnt as experience or chemical analysis has proved to yield a useful sort of ashes.

ON DIBBLING WHEAT.

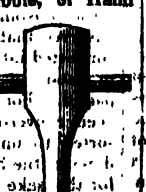
I have read with much pleasure the remarks of your correspondents, "T. B. Pearson," "A Constant Reader," and the Report from Stow-in-the-Wold, of the superiority of *dibbling* over *drilling* Wheat.

In the autumn of 1836 I dibbled 3½ lbs. of chevalier ten-rowed white Wheat, one corn in each hole only, in rows 6 inches by 12, which covered 64 perches of land; the produce was 16 bushels. I lost a great many ears, in consequence of the field being bordered by the public road: persons passing took the liberty of gathering them, out of curiosity, such sort of Wheat not having been cultivated in the neighbourhood; but still every ounce of seed produced 1*l*. lbs. 3 oz.* This was made public through the pages of the *Reading Mercury*, and recently by Mr. J. Brown, in his Address to Wheat-growers and Agricultural Societies. In February, 1842, I sent the inclosed letter to the editor of the *Mark Lane Express*, the republication of which might be productive of good. I have had much better crops since I have dibbled 4 inches by 9. As your "Constant Reader" calls upon some of your mechanical readers to invent a dibble, I send you an outline of one which I have used for the last six years: it is a very simple instrument, and the dibbles being of cast iron screwed into the cross-piece, after a little use they clean themselves well, unless the land is wet and adhesive. I think it would be complicated, if the dibbles were made to turn half round.



Handle, 1 foot long; stem, 2 feet 6 inches, mortised through the cross-piece, as well as the handle; cross piece, 20 in. long, 3 in. wide, and 1¼ in thick; dibbles, 1¼ in. diam. at the shoulder of the screw, and 3¾ in long from the shoulder. The hole made is hardly ever more than 2 in. deep, on account of the soil tumbling in when the dibble is removed.

However, I beg to call the attention of your "Constant Reader" to the advertisement in your columns, of "Smith's Field and Garden Seed Dibble, or Hand Machine," made by and to be had of Messrs. Cottam and Hallen, No. 2, Winsley-street, Oxford-street. I have not yet seen the machine, but have read a book describing it. I have such an opinion of its usefulness and simplicity of arrangement, that I have no doubt but it will be in general use when known. It is a tube of copper or tin, somewhat of this shape; the hole for the seed is made by pressing down the cross handle, and the seed is deposited at the same time; the quantity of number the operator wishes; it can be adapted to Turnip and Mangold Wurzel seeds, Wheat, Barley, Peas, and also all kinds of garden seeds. It is now in great request.—*W. Bartlett, Surgeon, Marlborough.*



The following is Mr. Bartlett's letter, alluded to above:—"Having seen in a number of the 'Farmers' Magazine' for June, 1841, some remarks on the subject of dibbling Wheat, by Mr. W. Lucas, wherein it is stated that the greater the number of Corns dropped into each hole, the less was the produce; that one grain invariably produced more than two, two more than three, three more than four, up to eight, which number seldom produced more than one stalk or ear, and that of an inferior quality; and having had some experience in dibbling one Corn in a hole, I can vouch for the truth of this statement; the average from one grain is from 12 to 18 ears. I have specimens by me of 81 stalks of Barley, and 42 of Wheat, each from one grain—each stalk producing a perfect ear. As I occupy but a small quantity of land, I am anxious to make the most of it; and the system I have hitherto pursued is spade husbandry and artificial manures. In 1840 I dibbled 108 poles of land with 7 gallons of Beans, making the holes 4 inches apart and the rows 18 inches asunder, dropping one Bean in each hole; immediately the Beans were planted and covered in, the land was manured with one sack of good salt; the produce when threshed was ten sacks, one and half a bushel of Berkshire Ticks, of a superior quality, not having any refuse whatever; each Bean produced three stalks nearly 7 feet high; whilst growing they were declared to be the finest sample ever seen in the neighbourhood.

"After a good crop of Potatoes in 1840, which were manured with gypsum when the stalks were about 6 inches high—a manure not beneficial to cereal crops, consequently not likely to influence the quantity produced by the process adopted for the next crop—early in March 1841, 2 roods, 21 poles of this Potato land were dibbled with 14½ lbs. of Barley, (to which my neighbours have given the name of 'Bartlett's American' from its superior quality) at 4 inches by 9, and deposited at least 3 inches deep and covered in with the feet after the manner adopted with Beans, and the land sown with ashes (made by burning the weeds dug out in cleaning the land, and others growing round the borders of my little field, with fresh lime from the kiln; by placing the weeds and lime in alternate layers and suffering them to remain till combustion was complete) in the proportion of 200 bushels to the acre. The crop was particularly fine, more than 4 feet high, and the number of corns in the ear varying from 27 to 37—some had 39; the whole produce was 31 bushels besides 1½ bushel of Tail-corn; the weight per sack 212 lbs., giving an increase of 117 lbs. for every pound dibbled without the tailing. I employ men to make the holes with the dibble, which makes five holes at once, and children to drop the corn; they work by a line and change their places every time, filling up the holes with their feet as they pass each other; the expense varies from 9 to 10 shillings per acre, according to the fitness of the land for the work.

"Besides the great saving of seed, the greater produce per acre, and its superior quality, considerable advantage would arise to the public at large, by giving employment to a greater number of persons, (who are, through want of work, in absolute want of food,) if dibbling was more generally adopted, as well as spade husbandry. —*W. B., Feb. 7, 1842.*"

* With one error, *quarter* for *quart*.

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Beans.—Since the extension of thorough draining, and the consequent melioration of the soil, and its better adaptation to Turnip-culture, the extent of land devoted to this crop has been annually decreasing. Beans are, however, regarded as peculiarly well suited for the preparation of clay lands for Wheat; and it is owing chiefly to this circumstance that they are cultivated to so considerable an extent in East Lothian.

Beans are always sown after Oats or Wheat. The land intended for this crop is ploughed with a deep furrow in autumn, or early in winter, in order that any new soil which may be brought to the surface may receive the full benefit of the winter's frost. The manure to be applied to the crop is, in many instances, spread upon the stubble, and ploughed in with the winter-furrow; and this practice is much approved of where the land is sufficiently dry to admit of it, as it greatly expedites the work when the period of sowing arrives. The mode of preparing the soil for Beans varies very much in different localities, and under different circumstances, the preparatory tillage being regulated, in a great measure, by the nature and condition of the land and the state of the weather. In the case of dry and light soils, it is usual to give one or more ploughings, and a sufficient number of harrowings, to pulverise the soil, and disengage all root-weeds, which are carefully gathered off before forming the drills; but at the early period of the spring, in which Beans are sown, these operations are but seldom perfectly executed, even upon dry friable soils; whilst upon those of a strong, tenacious character, such a course of preparatory tillage would, except in very favourable weather, be altogether impracticable. On the latter class of soils, therefore, the general practice is to form the drills on the winter furrow, without any previous tillage; but whatever preparation the land may undergo, the drills in which the seeds are deposited are formed precisely in the same manner by the common plough. They are commonly 27 inches apart.

When the dung has not been ploughed in with the first furrow, it is spread on in the field during the winter, and turned over to accelerate the fermentative process a short time before being required for use. The manner of applying it is as follows:—A sufficient number of drills being formed the dung is carried from the heap in single-horse carts, the horse walking in the interval of every third drill, and it is dragged out into small heaps, proportionate to the quantity to be applied per acre. Three or four women follow each cart to distribute the dung equally along the intervals of the drills, and the seeds are then sown by a machine which sows three drills together. According to the method pursued here of drilling with the common plough, a drill is formed by a single furrow, and the dung and seed are covered in by the plough in returning, so that the opening or formation of the drills, the carting and spreading of the dung, the sowing of the seed, and the final covering of the dung and seed by reversing the first-made drills, are carried on in close succession and with much regularity.

The after-culture bestowed upon the crop after sowing is a single harrowing, but before the young plants reach the surface, for the purpose of destroying the annual and other weeds that may be springing up. The subsequent culture given during the growth of the plants consists in horse-hoeing, hand-hoeing, and hand-weeding; the implements employed at horse-hoes are a common plough of small dimensions, drawn by one horse, and a drill-harrow or grubber, with coulters for cutting and tearing up weeds and pulverising the soil in the intervals between the rows. The small plough is used for paring away a portion of the earth from each side of the drills as close to the plants as the plough can go without injuring them, and the drill-harrow both follows to pulverise and level the soil turned up by the plough, and to cut and drag up all kinds of weeds to the furrows. The hand-hoers, women and boys, are then set to work, each taking a drill and cuts up any weeds which may have escaped or had been out of the reach of the previous instruments: weeds growing up among the plants in the rows are pulled by the hand. The horse-hoeing and hand-hoeing are repeated until the weeds are completely cleared off or destroyed, or until the crop has arrived at such a stage that further tillage would be injurious rather than beneficial. Where the soil is very wet, the plants are generally earthed up in the same manner as is done in the culture of Potatoes, but as the drills by being thus raised up occasion some inconvenience in ploughing the land for Wheat after the Beans are removed, this last operation is usually dispensed with, except the land is very flat and liable to injury from the retention of surface water.

When cutting this crop, which is always done by the sickle, two rows are taken together by each reaper, and the Beans are laid down in handfuls across the drills, in which state they remain a week or thereabouts, in order to allow the stems to dry and wither, when they are tied up in sheaves with short straw ropes, previously manufactured for the purpose, and distributed over the field. The sheaves, on being tied, are made up in stooks, in which they remain till ready for stacking. Bean-stacks are made of a small size, with a funnel or wind-kiln, as it is called, through the centre of each, to which there is a free access of air from without, by means of a low tress placed at the bottom.

The period of sowing Beans is usually from the latter end of February to the middle of March. The quantity of seed depends in some measure upon the quality of the land, and the size of the Bean; four bushels per acre is the general allowance. It is a common practice to mix a small quantity of Peas or Vetches with the Beans before sowing. The best quality of Vetch-seed is obtained by this means.

The produce per acre varies from 25 to 40 bushels per acre, but 30 bushels are reckoned a full average crop. The usual weight of Beans is 62 to 63 lbs. a bushel.

Beans are used to a considerable extent in feeding horses and cattle; for the former they are generally boiled with Barley or mixed with Oats, and for the latter they are always made into a kind of coarse meal. It has been already stated that the bread of the farm-servants here consists of a mixture of Beans and Barley ground together. The straw is much valued as fodder for farm-horses.—*T. Sullivan.*

Home Correspondence.

Seaware.—About mid-winter last, some seaware having come on the shore attached to my farm, I had it carted and spread, in the proportion of about 45 one-horse carts per Scotch acre, on poor sandy land, in Oat stubble, intended for green crop this season, and ploughed in without loss of time. In spring the land was again ploughed, harrowed, and otherwise prepared for a crop of Potatoes. When the drills were drawn, African guano—about 5 cwt. to the Scotch acre—was spread in a part of them, and a very little loose earth drawn over it, after which the Potato-seed was planted and the drills covered up in the usual manner, both where there was no manure but the seaware, and where there were both seaware and guano, as above described. The Potatoes were planted on the same day. Those where the guano had been put were much earlier, and abundant in foliage, than those planted on the seaware by itself; indeed, the drills were covered long before any other Potatoes in the field—for I may observe that there was also a considerable quantity of that root planted on good stable manure there. That which attracted my particular attention was the very marked superiority of the crop where the seaware and guano were applied, over that where seaware only had been used. I now regret that a comparative trial of the weight or bulk of the Potatoes thus planted was not made. The fact is, those planted on seaware and guano being earlier at maturity than where seaware only, or stable manure had been applied, they were dug and used in the house and by the pigs immediately after the early Potatoes were done. The man who lifted them, however, states that he believes there was nearly a half—at all events a third—more Potatoes on the land manured with seaware and guano than on that with seaware alone, and they were a very large crop, and of excellent quality. Covering the seaware by the plough, as soon as it is laid on the land, is

a good way of using that manure—perhaps about the best—as its substance is preserved in the soil, which it helps to meliorate, during the process of decomposition. I have been induced to send you the above simple statement in regard to planting Potatoes on seaware and guano, not because I suppose there is any new discovery involved, but from a wish to draw the attention of those agriculturists who have the benefit of seaware for manure, to a mode by which they may raise excellent crops of Potatoes at a moderate expense. I am well aware that abundant crops of Potatoes are often grown, especially on mossy or soft land, manured with a large quantity of seaware alone; but the quality is rarely good, and the crop is generally late in ripening—in fact, scarcely fit for anything but seed. On good dry land there is no doubt that fair crops of Potatoes are raised with seaware for manure, but even here large quantities of this manure must be used. I propose next season to try Turnips manured in the same manner, viz., with seaware ploughed down in winter, and guano applied at sowing time, and have sanguine hopes that the experiment will be a successful one.—*J. Paterson, Whitehouse, Arran, Oct.* 17.

Allotments.—There appears to be a project on foot to regulate allotments by legislative interference—a scheme pregnant with many evils, and contrary to the principles on which this plan for the relief of the poor man should be based. There are objections to any measure compelling a parish to provide garden plots for labourers:—An extra expense is entailed upon rate-payers, a considerable part of which must necessarily fall upon a numerous class of men, who are hardly able to bear their present burthens; the number of parish officers, already more than sufficient for the management of parochial affairs, would be increased. It may be said, an Act of Parliament to compel parishes to provide land for the cultivation of the labourers and artisans, will improve their condition, and decrease the pauper lists. But a difficulty will naturally arise, as to who are the proper objects to benefit by the proposed law. Now, keeping in mind that the small rate-payers are part tenants in renting the land, and will have to pay their proportion in the event of there being any defaulters, they will expect, and with some justice, a portion of it as gardens for themselves. These applications will lead to constant bickerings and confusion. Again, the vardens to be elected as managers will be placed in no enviable position, and will find obstacles thrown in the way of an equitable adjustment of claims, which will prevent competent men from undertaking such harassing duties as they will have to perform. Let us suppose Parliament to have passed the Allotment Bill, and a half-rural parish is desirous to act upon it. Officers are appointed, and instructed to hire 20 acres of land, and apportion them into equal parts, amongst 60 heads of houses, according to the number of persons capable of working in their respective families. This is all very good, provided you have only the above number; but if there are 300, instead of 60, who assert their right to the indulgence, being themselves charged with a share of the expenses, in the event of a failure in the receipts for rent, what is now to be done? How are you to discriminate between the various parties? You cannot say to the hard-working man, who has never yet troubled the parish, and who has been struggling through all times to preserve his independence, "You can live without an increased income—we must pass you over, to relieve the parish rates and get rid of an idle man." Take your idle man, and what is the result?—no rent, and an additional charge to the industrious individual who was refused the land. The Allotment System can only be applied with success, either by individuals or a society, apart from parish officers or Acts of Parliament. The subdivision of land into small holdings is a dangerous precedent, and can never answer any good purpose. No man who is dependent upon his daily labour should have more ground than himself and his family can look after during their leisure hours—and in few instances more than half an acre. Spade husbandry having been proved to be so much superior to ploughing, how comes it that farmers do not more generally use the surplus strength of their parish in this lucrative manner? Dibbling is done by contract; and why should not digging a field be executed in the same manner as navigating—by gangs? Here is at once a fruitful source of occupation, which would obviate the necessity of parliamentary allotments, and render sufficiently effective the common practice of letting garden plots. Prejudice exists against the spade as a chief agricultural implement, on account of the expense. However, an increased produce and lowering the rates will amply repay the experiment, which I have no doubt practical men will acknowledge; and I hope soon to see it more commonly in vogue. I am fully convinced that a number of individuals may almost always be found, resident in a parish, who will be ready to superintend any plan which may be brought forward as a means of alleviating the distress of their poorer neighbours, without the assistance of legislative enactments. Persons anxious to promote the welfare of working men, should, before they advocate any plan which may increase the rates, attend regularly all parish vestries in their neighbourhood, which would convince them of the impossibility of squeezing more out of the small rate-payers than is at present annually obtained from them.—*Falcon.*

Roots of Wheat.—I gratefully acknowledge the reply of "J. C. C." to my query on this subject. I was not aware that attention had ever been publicly directed to the subject, and having this summer traced the roots of Wheat to a depth of upwards of five feet, I was anxious to know whether agriculturists were aware of the fact. In forming a kitchen garden I had occasion to trench a Wheat-field, and found that the soil was matted with fibres to the depth of about 4 feet 6, but stronger roots extended below that depth and were traced from 5 feet to 5 feet 6. The Wheat was a dwarfish variety. Red: so that the roots were, as "J. C. C." remarks, considerably longer than the stems. In the last few months I have asked many not unscientific farmers how deep Wheat roots? I have not found one who could answer the question, and I suspect if the Council of the Agricultural Society were catechised, few, if any, would know anything about it. Such being the case, might not it would confer a benefit on farmers generally, if you would embody the contents of "J. C. C.'s" information in your Leading Article and make it known that the average depth to which Wheat roots is 5 feet; which would, I suspect, be a stronger argument in favour of draining and subsoil-ploughing, and other novel operations of agriculture, than any other which can be urged; and will, in all probability, astonish, even to incredulity, 19 out of 20 of your readers; not to say 99 out of a 100.—*J. R.*

Salt as Manure.—My neighbours are crying out lustily against the depredations of the slugs amongst their Potato crops, scarcely one being free from severe marks. I have escaped this visitation; I attribute it entirely to having used salt last year. After my ground was cleared of the produce, I had it turned up rough and sowed salt broadcast over it; I also used a considerable quantity on my refuse heap, which accumulates during seven or eight months, and is composed of anything and everything I can collect on the premises, which there is a chance of converting into manure. —*Falcon.*

Chidham Wheat.—In answer to your Correspondent "Kirklington," I beg to inform you that Chidham Wheat is derived from a single stem of Wheat found in a hedge at Chidham in Sussex, on the farm now held by Mr. E. Wyatt, and is called so after the place. In Hants some call it Hedge Wheat.—*R. Gibbs, Guildford.*

On Harnessing Draught Animals.—On seeing the print of a portion of a horse and draught-chains in your columns, I was induced to read the paragraph relating to it, and not approving of the plan of harnessing there recommended, I was glad to see "A. J.'s" objections to it in No. 39. I agree with him to a considerable extent, and yet am willing to give due weight to your argument in favour of the plan to which he objects, even if it would do so, to strengthen it by relating a nearly similar anecdote. A fellow pupil called to me, "Try if you are stronger than I am, and pull out this roller." I attempted and failed. Our tutor looking on said, "I can tell you what will enable either of you to accomplish the task. Let one get on the other's back." We severally did so, and could perform it with ease. I am confident no means of adjusting the rope to our bodies would have enabled either of us to have pulled the roller from whence it was, without some additional weight to have given us firmer footing. Now, in the plan of harnessing recommended, the object being to relieve the shoulder at the expense of the back, there can be no additional weight.(!) My principal objection to your plan appears to have been hitherto overlooked. I think it must be apparent that in this method of harnessing, the greater the tension, the more the back-band is drawn down, the more will the neck-collar be raised against the animal's windpipe, thereby tending to choke him. As a proof of such tendency I may perhaps be allowed another anecdote. Three or four years ago, whilst riding, I met my carter half way up a Devonshire-hill, with a load of coal. I stopped him to give some directions for the morrow, and remarked that the back-chain was too tight—the horse would choke. He replied, "Oh no, sir, I was obliged to load forward to get from the vessel's side." The drag-staff was down, but the shaft-horse, a remarkably staunch yet nervous animal, refusing to yield, within two minutes fell on his side. I consider the usual method adopted in this country of attaching the trace to the collar, cramps and confines the shoulders more than necessary, and that it would do so much less if attached higher up the collar, and thus render the carriage-horse less unfit for riding. It is the tension or draught on the lower part of the shoulder I consider that makes the harness-horse so stilty in his action. This I have in great measure prevented in my carriage-horses, by using the swing instead of the fixed splinter-bar, and believe I shall entirely do so, by using Bencraft's patent hames. This invention is a boon to the coach-horse. I would recommend a somewhat similar contrivance for the use of the cart-horse also.—*B. Child.*

Scotch Farming.—It may be interesting to some English brother farmers who read this *Gazette*, to hear from one who has just crossed the border for the first time, an account of a few variations which meet the eye in Scotland, from the farming practised in our "ain dear land," as most of us consider Scotland the mother of improved agriculture. It was chiefly a bird's-eye view I could take of the country as travelling by coach, with the exception of having a talk with one or two farmers. The first thing which must attract attention on entering Scotland is the intelligent physiognomies of the children. This remark may appear rather inappropriate, but I believe that education is the foundation of all good farming. Another thing which struck me was the curious appearance of perhaps from twenty to forty stacks, and sometimes more than eighty, near the farm steadings, about half the size of our round ones, but most of them not thatched nearly so well as those in England. The part I first went through was East Lothian from Berwick, and then nearly through the heart of Mid-Lothian to Edinburgh, from there across the Firth of Forth to St. Andrews, through the fertile county of Fife; and in that distance I am glad to be able to say I only saw two slovenly fields (which were between Cupar and St. Andrews), out of which the Potatoes had not been taken. The reason of the excessive quantity of weeds in these was, I suppose, because the land had been allowed to get foul with previous crops. I noticed also that they ploughed the farmyard manure into the ground in a very green state, which no doubt, where the land is stiff, has the beneficial tendency of keeping it open. Another novelty was that every plough I saw was made of iron, and in some few fields they were working one-horse ploughs, I suppose to open a seed furrow for Wheat. The land I saw varied nearly as much as in England, although none of it required more than a pair of horses to work the plough, which cannot be said of many parts of England. By inquiry I found the Scotch do nearly all their weeding at the summer fallow, and at that time employ large numbers of women. What surprised me exceedingly was not to see one Corn-drill, but quantities of Wheat being sown broadcast. If I had seen pressing in vogue, or any other mode more adapted for light land, I should not have been surprised at the absence of the drill. I may as well add, that at a large farm where I was, they only had the old kind of Turnip cutter, and not any chaff-cutting machine for the horses. You will agree with me that this looks something like the son going a-head of his mother—comparing the best farming of England with that of Scotland. The Turnip crops are much better here than in most parts of England; and I believe they have an average crop of Potatoes, which they pit in the fields, where you may sometimes see heaps a hundred yards long. I was disappointed in not seeing many of our improved implements introduced into this far-famed country. The land certainly does immense credit to the farmers, taking into consideration the climate they have to contend with.—*Titus Oats.*

Societies.

EAST CUMBERLAND AGRICULTURAL SOCIETY.

At the late Annual Meeting and Show of this Society, Mr. Ellison, one of the Judges of Stock, gave the result of his experience in using bones and guano with respect to the Turnip crop. He had used four tons of guano this year, African and Peruvian, and from the appearances of the Turnip crop the African had answered as well as the Peruvian, although there was a wonderful difference in their price. He also had some Turnips sown with bones, which were likely to yield about 23 per cent. less than those which had been sown with the guano. Now this was singular, after what he had heard a very respectable farmer state, that on his farm the only effect on Grass was to make it a greener colour, and that though it made Corn greener for a while at first, it had no material effect upon the quantity produced. This soil was on a thin limestone bed, but he had tried it upon peat moss, and it acted equally well. With respect to the permanency of its effects, he could not yet ascertain it so well, and it was a known fact that bones were permanent in their effect. Corn from land which had been bone-manured would be stronger than from that produced by farmyard manure. But if they might believe a gentleman who had spoken at a meeting of the Royal Agricultural Society, the effect of guano was permanent, and therefore great benefit might be expected from its introduction. He would now say a few words with respect to Potatoes. He held an agency in Lancashire in 14 townships, and had therefore had ample opportunities of observation, and he might say that Potatoes there were a very failing crop indeed; and in his opinion it could be attributed to nothing but cutting the Potatoes before planting them as seed. It was a common saying with many people whose Potato crops had failed, that they had been carried off by the dry rot. But it was no such thing.(?) He was satisfied that it was an insect which penetrated through the Potato when it was cut, and ate up all its juice, so that it was impossible the stem could flourish. He had examined Potatoes in this way, and on taking them up, after being a fortnight or three weeks in the ground, the inside of the Potato was found like a sponge, and perforated with small holes. He had this year six acres of Potatoes, and they were all planted whole. He had also an acre in which the seed was cut, by way of satisfying his neighbours, and enabling them to judge of the difference of produce between the two modes. The six acres were as good as heart could wish for, while the acre in which the seed was cut was not half a crop. There was a tenant whom three years ago he threatened to turn off his farm if he continued to cut his Potato seed. He had seen him the other day, and he told him that it would have been 90*l.* in his pocket, if he had followed his advice, as he had lost 30*l.* a year by the old practice. A very effectual mode to prevent the worm amongst Potatoes was to wash them. Experiments of this kind had been made, and those Potatoes which had been washed when laid up for seed were found to be entirely exempt from this disease, which arose from the egg of an insect being deposited in the eye of the Potato. By washing the Potatoes in the autumn, the ova were of course washed out, and all danger obviated.

FARMERS' CLUBS.

Monmouth.—At the late Annual Meeting of this Club, Mr. Crawford made the following remarks:—The first consideration in Agriculture is climate; this is more of a grazing than a corn country; our green fields are unequalled, but our corn-growing is surpassed in many countries. An English meadow will fat a large ox, while many other countries have not pasture to feed a rabbit. That shows our prodigious advantage over other countries as a grazing country. Our country

is capable of producing green crops, while in the South of Europe they are unable to grow a Turnip or Mangold Wurzel. South America is not capable of growing a third of the turnips we are able to produce. The subject of draining is in this country most important; in other countries there is a lack of water, while in some there is a superfluity. Arthur Young, when he was in Spain, said he saw at a glance what that land there was nothing—water, everything. The subject of irrigation deserves every attention; for himself, he proposed to make 15 or 16 acres of water meadow, and he would tell them the result of what he had already done. On a piece of 7 acres he had mown an average of 2 tons per acre for his first crop, and 2½ tons for the second, which under ordinary circumstances would not have produced half as much. But there was another kind of irrigation. He had constructed a tank for the reception of the liquid from the dung heap, by the use of which a piece of land not an acre in extent, but worth five acres of common pasture. It had been fed by sheep for a month, after which he cut away 2 tons, and afterwards 2½ tons, being at the rate of more than 4 tons of hay from two crops, and there was another crop on the ground which he (Mr. Hall) now had in sight of the house. Suppose any to be disposed, that would be the case of all acres, and would entirely alter the produce of the whole country.

Otley, Mr. Mayo's.—Ripley.—Tells you a letter of a resolution unanimously agreed to at the last meeting of this Club.—The members present.

The first meeting was the usual setting down for discussion for the evening was the usual setting down for discussion on Devonshire Farms, and the best Mode of keeping the Land in the highest state of fertility. That of a Farm, containing 100 acres of arable land, with an average proportion of pasture, the tillage land may be best cultivated by being divided into inclosures of not less than 10 acres each, and the majority of the meeting were prepared to say not less than 15 acres, but the number 10 was inserted for the sake of unanimity. With regard to the Lease it was agreed that they ought to be prepared down to the most advantageous practice, consistent with the keeping of the Land in the highest state of fertility. Of course all annually shorn. As the above are opinions of practical men, they may be interesting to some of your readers.—*Western Times.*

North Cheshire.—At the last meeting of this Club, the subject of breaking up Grass-land was introduced by Mr. Wilson, who moved and Mr. Greenhalgh seconded the following resolution:—"That the practice of breaking up Grass-land in this district, when judiciously conducted, is worthy of encouragement." Mr. Wilson said he had not only drained a large quantity of land, but had also broken up a considerable portion of Grass-land, and he was happy to say that it had answered his expectations. He had applied the same treatment to different soils, and in every instance the crops were improved in quality; while the pasture which had been ploughed up had the same quantity of grass, and much better quality. He had also applied the manure, consisting of the sweepings of the streets of Manchester, to the land which had been under the operation of the plough, and the seven acres (exactly which time he had fixed it could be sent to) gave 6 tons, and 96 lb. of green Grass per acre. Mr. Mitchell's men only exactly a ton. But from the position in which the land would not exhibit success. He admitted that it was, and he did not think the state of the land would continue in quality. Several members objected to the resolution, as it had been decided at the Club previously that the question should be left open, in preference to that no subject should be discussed. The Chairman then called on Mr. Wm. Bray for the paper on the Economy of Labour. Mr. Bray, in introducing the subject, spoke of the difficulty of understanding any guidance without the view of creating an equitable remuneration in the mind of the labourer, as the only object in the improvement of the dwelling. It had been the belief, and under that impression he had formed it, that would engage good and skilful servants to the advantage of the employer and employed alike. In order to economy, regularity and time should be done with regularity and that each hour would be fixed, and every labourer should be expected to commence his work accordingly, and the master engage the labourer that would allow the least time for meals, and that would their labour regularly and quickly, and be better paid and rewarded than the man with more frequent meals, who by say an hour, would thus waste, and a certain time the winter months. Mr. Bray then read the following defined and regulated, and shall be considered to describe at some length the irregularities now existing in the district, and their injurious effects. After strongly urging the propriety of removing such irregularities on the ground that such a change would lead to a better understanding between master and man, by removing many causes of needless discontent, Mr. Bray proceeded to say that he thought it very desirable that what constitutes a fair day's work in the various branches of agricultural labour should be determined and generally understood. From inquiries, he found that at present there existed not only various but also contradictory opinions on the question, the difference in the statements made to him by different farmers, amounted to 15 to 20, and even to 30 per cent. He thought that there should be some fixed rule, that some of the practical men of the neighbourhood should give the subject a careful consideration, and state in a pamphlet form their opinion as to what was considered a day's work, according to the custom or usage of the neighbourhood. Should the general opinion—supposing the difference of opinion to exist—be generally known, he thought that this would have a much greater quantity of labour being done by piece-work, a mode of labouring every way more desirable for the employer, and tending to put a premium to industry and ingenuity. The objection—especially the idleness and neglect among them—a mode, too, which would effectually tend very much to the advantage of their employers. It might, perhaps, be objected that the great difference found to exist on the same species of work would prevent its general adoption, but he would remark to them that it was the same with manufactures, and yet most of that work was done by the piece. Others might say the men will slight their work; but they had the same resource as they have in manufactories; such men should be discharged, and others taken that will do better.—An interesting discussion followed, concluded by Mr. James moving for a committee to ascertain the quantity of labour of the various kinds usually performed, and to settle the hours of labour, in order that a uniform system might obtain in the district.

Morpeth.—The Annual Meeting of this Society was held at Morpeth, on the 3d instant. The following remarks were made by Mr. Left, of Trusthorpe:—"The landlords have not done all they might do, in promoting the employment and welfare of the industrious classes. There is one thing in which they can materially assist them,—by breaking up of Grass-land. There is a great deal of Grass-land (I should call it waste land) that might be broken up with the greatest advantage. I know very well that it would be utterly profitless to break up the worst descriptions of Grass-land. But the land that I mean should be broken up is not of the worst quality, but of a middle description—land full of water, and generally producing nothing but Rushes. You are all practical men, and I know will bear me out in what I am saying. You must break up Grass-land if you would increase the value of your farms, the amount of your produce, and the demand for labour. Which farm is it that does most good to the community? I suppose, as you will all answer, that which affords the greatest amount of labour, and yields the greatest quantity of food, and I say by this means you will give employment to more labourers, and greatly increase the produce. I know that great improvements have taken place in this part of the county of late years, by breaking up what is called Grass-land. I can recollect, and my life is not a long one, when you might travel from every town of Horncastle to Caistor, and see wold land covered with Gorse and Bracken, and now they produce plentiful crops of Wheat, of seeds, and of Turnips. I know that landlords generally entertained a great prejudice against ploughing up Grass-land, but where they have permitted it, it has been attended with the best result. I occupy a farm at Market Stainton, where I have had liberty to break up upwards of 100 acres. It is now only twelve years since I entered upon it, and I will venture to say that I grow three times more corn, and keep more stock by half; and I am sure I have no hesitation in saying that if the property were brought to the hammer, it would make from 15*l.* to 20*l.* per acre more than in its original state. I know there is a great abundance of land in this county which is now almost profitless, which might be made to produce a great deal of corn, employ a large amount of labour, and be greatly improved in value by this process."—Mr. Brothwell stated that he went to visit a large farm, but looked in vain for a piece of Grass-land. He said, "Where is your Grass-land?" "I have none," said his friend, "and I want none; it's only the old-fashioned folks on the other side of the Witham that want Grass-land." Mr. B. stared at him, and began to think the fellow would only be badly off for pro-vender, for he feared he would have to feed his horse as well as cattle with cut-and-come-again, and his friend, who is a most successful and intelligent farmer, bid no more Grass-land than he had.—Mr. Stanhope said, "I have thought the matter over a good deal, and have talked with several gentlemen on the subject, and I think nobody would plough up good land, and at the same time nobody would keep bad. I do not wish to go in a hurry where I should afterwards be sorry for. It is easy to say plough up Grass-land. There is so much easier to plough up Grass-land than it is to [illegible] in its present condition, [illegible] now consistent [illegible] Only the other day I [illegible] and I was told [illegible] and [illegible] what I should [illegible] It might have been [illegible] something [illegible] and I was told [illegible] that great improvements have taken place in this part of the county of late years, by breaking up what is called Grass-land. I can recollect, and my life is not a long one, when you might travel from every town of Horncastle to Caistor, and see wold land covered with Gorse and Bracken, and now they produce plentiful crops of Wheat, of seeds, and of Turnips. I know that landlords generally entertained a great prejudice against ploughing up Grass-land, but where they have permitted it, it has been attended with the best result. I occupy a farm at Market Stainton, where I have had liberty to break up upwards of 100 acres. 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ground, if you can do it conveniently; this will prevent the south-west wind from breaking into the garden. Having made choice of a plot of the ground containing eleven hills square, place the bin upon the hill which is in the centre, having five hills on each side; and when these hills are picked, remove the bin into another piece of ground of the same extent, and so proceed till the whole Hop-ground is finished. When the poles are drawn up to be picked, take care not to cut the bines too near the hills, especially when the hops are green, because it will make the sap to flow excessively. The Hops must be picked very clean, i. e., free from leaves and stalks; and, as there shall be occasion, two or three times in a day, the bin must be emptied into a Hop-bag made of coarse linen cloth, and carried immediately to the oast or kiln to be dried; for if they should be long in the bin or bag, they will be apt to heat and be discoloured. If the weather be hot, there should be no more poles drawn than can be picked in an hour, and they should be gathered in fair weather, if possible, and when the Hops are dry; this will save some expense in firing, and preserve their colour better when they are dried. The crop being thus bestowed, take care of the poles for another year, which are best to be laid up in a shed, having first stripped off the haulm from them; but if you have not that conveniency, set up three poles in the form of a triangle, or six poles (as you please), wide at bottom; and having set them into the ground, with an iron picker, and bound them together at the top, set the rest of your poles about them; and being thus disposed, none but those on the outside will be subject to the injuries of the weather, for all the inner poles will be kept dry, unless at the top, whereas, if they were on the ground, they would receive more damage in a fortnight than by standing all the rest of the year. The best method of drying Hops is with charcoal, on an oast or kiln, covered with hair-cloth, of the same form and fashion that is used for drying malt. There is no need of particular directions for making these, as every carpenter and bricklayer in those countries where Hops grow, or malt is made, knows how to build them. The kiln ought to be square, and may be of 10, 12, 14, or 16 feet at the top, where the Hops are laid, as the plantation requires and room will allow. There ought to be a due proportion between the height and breadth of the kiln and the begnals of the middle where the fire is kept; viz, if the kiln be 16 feet square on the top, it ought to be 9 feet high from the fire, and the middle ought to be 6½ feet square, and so proportionable in other dimensions. The Hops must be spread even upon the oast, a foot thick or more, if the depth of the curb will allow it; but care must be taken not to overload the oast if the Hops be green or wet. The oast ought to be first warmed with a fire before the Hops are laid on, and then an even steady fire must be kept under them; it must not be too fierce at first, lest it scorch the Hops, nor must it be suffered to sink or slacken, but rather be increased, till the Hops be nearly dried, lest the moisture or sweat which the fire has raised fall back and discolour them. When they have lain about nine hours they must be turned, and in two or three hours more they may be taken off the oast. It may be known when they are well dried by the brittleness of the stalks and the easy falling off of the Hop-leaves. It is found by experience that the turning of Hops, though it be after the most easy and best manner, is not only an injury to them, but also a waste of fuel and time, because they require as much fuel and as long a time to dry a small quantity, by turning them, as a large one. Now this may be prevented by having a cover (to be let down and raised at pleasure) to the upper bed whereon the Hops lie. This cover may be also tinned, by nailing single tin plates over the face of it; so that when the hops begin to dry and are ready to burn, i. e., when the greatest part of their moisture is evaporated, then the cover may be let down within a foot or less of the Hops (like a reverberatory), which will reflect the heat upon them, so that the top will soon be as dry as the lowermost, and every Hop be equally dried. As soon as the Hops are taken off the kiln, lay them in a room for three or four weeks to cool, and toughen; for if they are bagged immediately they will powder, but if they lie a while (and the longer they lie the better, provided they be covered close with blankets to secure them from the air), they may be bagged with more safety, not being liable to be broken to powder in treading; and the harder they are trodden the better they will keep. The common method of bagging is as follows:—Have a hole made in an upper floor, either round or square, large enough to receive a Hop-bag, which consists of four and a half ells of all-wide cloth, and also contains ordinarily two hundred and a half of Hops; then tie a handful of Hops in each lower corner of the bag to serve as handles to it; and then fasten the mouth of the bag so placed that the hoop may rest up on the edges of the hole. Then the that is to tread the Hops down into the bag, treads the Hops on every side, another person continually putting them in as he treads them, till the bag is full; when being well filled and trodden, they unrip the fastening of the bag to the hoops, let it down, and close up the mouth of the bag, tying up a handful of Hops in each corner, as was done in the lower part. Hops being thus packed, if they have been well dried, and laid up in a dry place, will keep good several years; but care must be taken that they be not spoiled by the mice making their nests in them.—*E. P., in the Scientific and Practical Agriculturist.*

Gypsum, a fixer of Ammonia.—Gypsum is frequently also applied in a state of powder, as a top-dressing to land, and is said not only to afford food to such plants as require sulphuric acid and lime, but that it also operates as a means of fixing and retaining the ammonia, with which the rain is impregnated, which would otherwise evaporate before the plant could seize upon it. In our *concern*,* where we have a great number of horses, we use gypsum in our stables, strewing it on the floor, which *arrests* the ammonia as it is formed, and [illegible] not only helps to preserve a very [illegible] also renders the stables much more wholesome for the horses. I have also, as an experiment, [illegible] in the stables a plate containing diluted [illegible] acid, and have observed small crystals of sulphate of ammonia forming on the edges of the plate, from the acid combining with the ammonia floating in the stable gaseous state. In the dung stables that are [illegible] but without lime, which are so charged with ammoniacal vapours, that when you enter your eyes are affected, a little gypsum were strewed on the floor every day, or trays containing sulphuric or muriatic acid were suspended, all that offensive smell would be done away, and the stable be much more healthy for its inhabitants.—*On the Use of Gypsum, &c., by M. Briggs, Wakefield.*

Notices to Correspondents.

AGRICULTURAL REPORT OF NORFOLK.—*S. D. E.*—It is certainly a useful book; and would probably be beneficially employed as you propose.

BONES.—*H. A. S.*—The present is the best time to apply bone-dust to Grass land. Apply 16 to 20 bushels per acre.—We never knew a horse refuse Lucerne.

COWS.—*Chepstow Subscriber.*—In our experience of oil-cake as food *for sheep*, the addition of 1 lb. diminished the consumption of Swedes from 6 to 5 lbs; it is probable that 4 to 6 lbs. given daily to a cow would diminish the quantity of the other food given to it to three-quarters its former amount; at the same time enriching the milk afforded. The amount of cake may be given broken in small pieces by the ordinary cake crusher, to the cows confined in sheds. There does not exist, in the case of the cow or sheep, the same necessity for finely reducing their food, that there is in the case of the horse and of others which do not chew the cud.

FLAX SEED.—*An Old Grazier.*—Several articles on Flax-seed as food, by Mr. Sproule, which have lately appeared in our columns, will give you a good deal of information. The compound is prepared on the farm.

FOOD FOR SHEEP.—*Subscriber.*—Oil-cake broken in small pieces should be given to them in a trough to the amount of from 12 to 16 ozs. a-piece each day. Oil cake and hay will fatten sheep; they will need water.

GUANO.—*Dublin*—This and all other manures, whose value depends partly on soluble ingredients, is best applied in spring—say early in April

HOPS.—*Humulus, Bradford.*—The male plants are useless. In the hope of eliciting an account of the Hop-cultivation of Kent and Sussex we shall insert your letter next week.

MR. WARNES' BOXES.—*Subscriber*—Perhaps next week.

PIGS.—*Subscriber.*—The water in which Swedes, &c., have been boiled is not injurious.

POTATO CULTURE.—*J. L.*—You may as well dig in the manure *now*; you may safely take your second crop of Potatoes.

POULTRY.—*Original Subscriber.*—We never noticed the fact to which you allude, and know not how to explain it.

STALL-FEEDING.—*H. S. T.*—The heat and itching of the skin is an almost constant attendant on high feeding, particularly if Bean meal (in which nitrogenised elements abound) forms a large portion of the diet. It may be moderated very much by giving occasionally the following powder in the food:—Super-tartrate of potash, 1 oz.; Nitrate of potash, 6 drs.; Flowers of sulphur, 4 drs. If the itching is excessive, change and moderate the food.—For destroying the vermin of store cattle employ the following:—Sulphur vivum, 4 oz.; Oil of tar, 4 oz.; Whale oil, 1 pint; to be gradually mixed together. Sometimes the two latter ingredients alone will prove effectual.—*W. C. S.*

WHEAT.—*H. Dowling.*—Wheat often, indeed generally, sends out roots from the first joint in the straw, but seldom in so early a stage of its growth as in your specimen.——*T. Paul.*—Sow guano at the rate of 2 cwt. per acre, and nitrate of soda at the rate of 1 cwt. per acre, mixed together, broadcast; sow on a wet day in April over your young Wheat: see above—Guano. Use the *fine* bone dust, not the half-inch kind.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, MONDAY, Oct. 28.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	3s	10	to 4s	0	Best Downs & Half-breds	3s	10 to 4s 0
Best Short Horns	3	6	3	10	Best Long-wools	3	6 3 10
Second quality Beasts	3	0	3	2	Ewes and second quality	3	0 3 6
Calves	3	4	4	2	Pigs	3	4 4 0

Beasts, 4070; Sheep and Lambs, 29,860; Calves, 114; Pigs, 481.

Our supply of Beasts to day is very large, and much of it of inferior quality. It is difficult to make 4s of anything, yet, the best beef not being very plentiful, that price is obtained in several places. Many middling ones are left unsold. There are a few more Sheep, but the best qualities are still readily sold at about 4s per 8 lbs. Veal trade is heavy; the best Calves are, with difficulty, disposed of at about 4s 2d per 8 lbs. Pork-trade is steady.

FRIDAY, Nov. 1.

We have more Beasts to day than are required for the trade; the demand being very limited. A few of the best Beasts made 4s per 8 lbs., but 3s 10d is the more general price. Short Horns about 3s 8d, with some at 3s 10d; second quality 3s 6d to 3s 8d. Sheep trade is very heavy; the demand on Friday, this time of the year, being generally small, we are overdone in quantity. The dead-trade has also been very bad all the week. The best Downs, &c. realise nearly 4s, and Lear wools 3s 10d per 8 lbs. Ewes, &c. 3s to 3s 6d. It is with difficulty the best Calves make 4s per 8 lbs. Pork-trade remains about the same.

Beasts, 627; Sheep, 4630; Calves, 213; Pigs, 200.

41, West Smithfield.

POTATOES.—SOUTHWARK WATERSIDE, Oct. 28

In consequence of the arrivals being large at the time you received our last report, and the supply being also liberal during the past week, these together have been more than equal to the demand, which has caused a great depression in our Markets, and a considerable reduction in the prices. The best samples of York, Scotch, and Devon, moved off at the annexed quotations; but the inferior samples of Reds, and the different samples of Whites, were a complete drug.

York Reds	-	-	45s	to 70s	Kent and Essex Whites	-	- to 65s
Perth	-	-	—	60	— Kidneys	-	- 60 65
Yorkshire	-	-	—	—	Wisbeach Kidneys	-	- — —
Early Devons	-	-	—	55	— Whites	-	- — —
Late Devons & -	-	-	—	—	— Wiches	-	- — —
Cornwall -	-	-	—	55	Guernsey Blues	-	- 60 —
Jersey Blues	-	-	45	50	— Whites	-	- — —
— Whites	-	-	—	—	Prince Regents	-	- 60 65

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct. 31.

Prime old Meadow				New Hay	100s to 105	Clover	110s to 115s
Mid.	-	-	95s to 100s	Inferior Mid. do.	-	Inferior do.	95

Inferior Upland Grass, 85s per load.

CUMBERLAND MARKET, Oct. 31.

Superior Meadow Hay			100s to 110s	Superior Clover			110s
Inferior	-	-	80 100	Inferior	-	-	100 Inferior 70s to 95s
New Hay	-	-	— —	New Clover	-	-	— —

JOSHUA HAMMOND, Hay Salesman.

WHITECHAPEL, Nov. 1.

Fine Old Hay	-	-	100s to 105s	Old Clover	-	-	120s 130s
New Hay	-	-	60 100	New Clover	-	-	110 Straw 30s to 34s
				Inferior	-	-	— —

* Flockton Colliery, near Wakefield.

COVENT GARDEN, Nov. 2.—The market has been well supplied during the past week, but the demand has been comparatively trifling; trade in general is dull. Amongst Pine-apples there are some good fruit which are offered at last week's prices. Little variation has taken place in the prices of Grapes; good samples of Black Hamburgh bring about 4s. per lb., and the best foreign Grapes are selling at about 1s. 6d. per lb. The principal dessert Pears are the Marie Louise and Louise Bonne; these, as well as other varieties have not varied in prices since our last Report. Apples are also offered at nearly the same prices as quoted last week. A few specimens of Coe's Fine Late Red and other Plums are still in the market, but they are very scarce. Damsons are almost over. Nuts of all kinds are sufficient for the demand; good Walnuts bring about 5s. per bushel. Quinces are plentiful. The prices of most kinds of vegetables remain nearly the same as last week. Brocoli is not quite so plentiful. Cauliflowers are good and sufficient for the demand; as are also Cabbages, Savoys, Brussels Sprouts, and other winter greens. We noticed some fine samples of French Beans, which are selling at nearly the same prices as last week. Abundance of Turnips and Carrots are offered; and celery of good quality continues to be well supplied. A few Tomatoes may still be obtained; they are a little cheaper. Endive, Lettuces, and other salading are offered at nearly the same prices as last week. Among Cut Flowers we noticed Bignonia venusta, Combretum purpureum, Allamanda cathartica, Mandevillia speciosa, Thibaudia, Chinese Primrose, Leschenaultia formosa, Polyphyllum tenuifolium, Gloxinias, Heaths, Amaryllises, Hollotrope, Neapolitan Violets, Camellias, Pelargoniums, Verbenas, Camellias, Picotees, and Roses.

FRUITS.

Pine Apple, per lb., 8s to 9s 6d					Filberts, per 100 lbs., 75s to 80s		
Grapes, Hothouse, p. lb., 1s 6d to 3s					Chestnuts, per peck, 1s to 2s		
— Spanish, per lb., 1s to 1s 6d					Walnuts, per bushel, 3s to 5s		
— Portugal, per lb., 1s to 2s					— — shelled, 12s to 24s		
Melons, each, 1s to 3s					Cocoa-nuts, per hf.-sv., 2s		
Plums, per half sieve, 2s 6d to 3s					Lemons, per dozen, 1s to 2s		
— Imperatrice, per pannet, 2s 6d					— per 100, 6s to 16s		
— Coe's Gold. Drop, pun., 2s to 3s 6d					Almonds, per peck, 6s		
Damsons, per half sieve, 1s 6d to 2s 6d					Cocoa-nuts, per lb., 2s 6d		
Apples, Dess., per bush., 2s 6d to 4s					Brazil Nuts, per 100 lbs., 90s to 100s		
— Kitchen, 2s to 3s					— per bushel, 16s		
Pears, Dess., per hf-sv., 2s to 3s					— per cwt., 70s		
Quinces, per half-sieve, 1s 6d to 2s							

VEGETABLES.

Cabbages, per dozen, 6d to 9d					Potatoes, per hf.-sv., 1s 6d to 2s 6d		
Cauliflowers, per doz., 1s 6d to 3s					Garlic, per lb., 4d to 6d		
Broccoli, per bundle, 6d to 1s 6d					Chilies, per bunch, 2d to 6d		
Brussels Sprouts, hf.-sv., 1s 6d to 2s					— large, per bushel, 2s to 4s		
Sorrel, per hf.-sieve, 6d to 9d					— Spanish, per doz., 1s to 4s		
Artichokes, per doz., 2s to 4s					Shallots, per lb., 4d to 6d		
— Jarusal., p. hf.-sv., 1s 6d to 2s					Cabbages, per half-sv., 1s to 2s 6d		
French Beans, hf.-sv., 3s to 4s					Capsicums, per half-sv., 1s to 2s 6d		
Scar.-Runners, per hf.-sv., 2s to 3s					Cucumbers, each, per doz., 4s to 6s		
Potatoes, per ton, 80s to 90s					— Gherkins, per 100, 1s to 2s		
— cwt., 1s 6d to 2s					Radishes, per doz., 6d to 9d		
— bushel, 1s 6d to 2s 6d					Lettuces, per score, 6d to 1s 6d		
— Kidneys, per bush., 2s to 3s					Celery, White, per bunch, 1s 6d to 2s 6d		
Turnips, per doz. bun., 1s 6d to 2s 6d					— Red, per bunch, 1s to 1s 6d		
Red Beet, per doz., 2d to 3d					Beetroot, per dozen, 2s to 3s 6d		
Carrots, per doz. bch., 2s to 3s					Mushrooms, per pottle, 10d to 1s 6d		
Basil, per bunch, 2d to 3d					Small Salads, per punnet, 6d to 9d		
Horse Radish, per bundle, 2s to 3s					Watercress, per doz. bun., 2d to 3d		
Savory, per bunch, 2d to 3d					Parsley, per sieve, 2s to 3s		
Cucumbers, Frame, each, 3d to 6d					Tomatoes, per pound, 6d to 1s		
— Ridge, doz., 2d to 3d					Grape Leaves, per bundle, 6d to 1s		
Spinach, per sieve, 1s 6d to 2s					Tarragon, Green, per bunch, 1d to 2d		
Scorzonera, per bunch, 1s to 1s 6d					Grape Mint, per bunch, 3d to 6d		
Salsafy, per bunch, 1d to 1s 3d					Marjoram, per bunch, 2d to 3d		
					Chervil, per punnet, 2s to 3s		
					Chilies, per 100, 1s to 2s		

HOPS, FRIDAY, NOV. 1.

Since our last statement the Hop-Market has gradually improved, and today our quotations are as follow:

Choice Mid and East					Choice Old of Kent	7l 15s to 8l 8s	
Kents -	-	10l 10s to 12l 12s			Ditto Yearling	7 7	7l 15s

The Duty is still estimated at 130,000l.

FARNHAM & BARRS, Hop-Factors.

MARK-LANE, MONDAY, Oct. 28.

The supply of Wheat from Essex, Kent, and Suffolk was moderate this morning, and sold readily at the prices of last week; in Foreign there was little doing, and its value remains unaltered. Having a small attendance of the Barley buyers, in consequence of the Queen's visit to the City, this article sold slowly at our late quotations. Beans and Peas of all descriptions are fully as dear. Notwithstanding the large arrival of Oats, they met a tolerably active sale, and we observe no alteration in their value.

BRITISH, PER IMPERIAL QUARTER.						s.	s.
Wheat, Essex, Kent, and Suffolk					White	40 46	Red - 42 46
—— Norfolk, Lincolnshire, and Yorkshire						40 —	White — —
Barley, Malting and distilling						31 36	Grind. 25 30
Oats, Lincolnshire and Yorkshire					Polands	19 21	Feed 18 20
— Northumberland and Scotch					Feed	19 21	Potato 20 23
— Irish					Feed	17 20	Potato 19 22
Malt, pale, ship						54 56	
—— Hertford and Essex						52 53	
Rye						32 33	
Beans, Mazagan, old and new					Tick	30 35	Harrow 30 36
—— Pigeon, Heligoland						36 40	Longpod — —
Peas, White					Maple	37 38	Grey 30 32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour	Wheat	Barley	Malt	Oats	Rye	Beans	Peas
English	8440 Sks.	— Qrs.	12615 Qrs.	6419 Qrs.	20070 Qrs.	— Qrs.	1630 Qrs.	1284 Qrs.
Irish	—	—	—	—	20561	—	—	—
Foreign	2786	—	7310	1200	14000	—	609	855

FRIDAY, Nov. 1.

The attendance at Market this morning was small, the extent of business limited. In Wheat, either English or Foreign we observe no alteration. The best qualities of English Malting Barley support their late value, but, having a large arrival of Foreign it met a slow sale, and must, with secondary sorts of home growth be quoted in favour. Beans and Peas maintain Monday's prices. New Irish Oats are a very dull sale, but, notwithstanding a good supply of Foreign, they and all descriptions of old are fully as dear.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	5179	6399	1490	5092 Sks
Irish	—	—	1980	—
Foreign	7660	7560	26630	—

IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
Sept. 25 per Quarter	42s 2d	28s 2d	16s 7d	27s 8d	32s 1d	32s 6d
— 23	42 2	28 2	17 4	27 8	32 3	32 0
Oct. 4	42 1	28 3	17 4	27 5	32 5	32 0
— 11	42 3	28 6	17 6	27 10	32 11	32 0
— 18	42 2	28 7	17 8	28 0	32 9	32 10
— 25	42 0	28 9	17 11	28 3	32 8	32 6
8 weeks' Aggreg. Aver.	42 11	28 4	17 7	27 7	32 10	32 7
Duties on Foreign Grain	22s.	4 0	6 0	0 0	0 0	0 0

SEEDS, Oct. 28.

Canary	-	-	per qr	40s to 50s	Linseed Cakes, Foreign, p. ton	6l to 6l	
Carraway	-	-	per cwt	44 48	Mustard, White - p. bush.	10s	14s
Clover, Red, English	-	-	—	— Superfine " -	12	16	
— Dutch	-	-	—	— Brown " -	12	16	
— White, English	-	-	—	— Rapeseed, English, per last	22l	23l	
— — Foreign	-	-	—	— Rape Cakes - per ton	—	—	
Coriander	-	-	12	13 Safflower - -	—	—	
Hempseed	-	-	per last	35 36 Tares, Essex, winter p. bush.	5	6	
Linseed	-	-	per qr	— — Foreign - -	—	—	
— Baltic	-	-	—	— Trefoil - - per cwt	—	—	
— Cakes, Eng. per 1000			10l	11l Turnip (too variable for quotation).			

KINGSTON AND LAY.

WOOL.—BRITISH, FRIDAY, NOV. 1.

Our Market has been very quiet for some time past, but few sales have been effected. In fact, as usual, lower prices have been submitted to, but we do not think this has been generally the case. Notwithstanding the accounts from the manufacturing districts of the lessening production, an opinion pretty generally obtains that prices will rally. The light stock in the hands of the growers, together with moderate rate of provisions, seems to favour such opinion.

	per lb.			per lb.	
Long-wooled Wethers	1s 0d	to 1s 1d	Southdown Hoggets	1s 1d	to 1s 2½
Do. Hoggitts	1 0½	1 3	Kent Fleeces	1 1	1 3
Southdown Fleeces	1 0	1 0½			

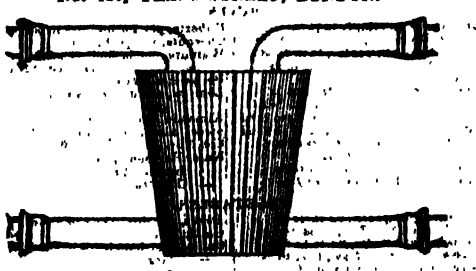
JAMES PEMAN, Wool Broker.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree without the aid of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

BURRIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict. Cap. 65.
No. 130, FLEET STREET, LONDON.



BURRIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURRIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GIBSON, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Double and Range.	Fire-box Deep Flue.	Flue Boiler.	Dairy.	Will heat of Pipe.	Forcing Pit, Length by feet.
ft. in.	£ s.	£ s.	£ s.	£ s.	Feet.	
10 1 5	20	7 6	6 6	6 6	30 feet.	12 to 20
Ribbed Boiler.						
10 2 2	20	10 6	7 6	6 6	50 to 70 ft. 4 in.	Under 25 to 40
12 2 15	30	12 6	7 6	6 6	90 to 120 feet.	40 to 60
14 3 10	35	17 6	8 6	6 6	150 to 200 feet.	65 to 100
18 5 5	45	25 0	8 6	6 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24 8 15	80	35 0	8 6	7 6	600 to 800 feet.	

If 8-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be gratefully relied on as a near approximation to what is correct.

WIRE-WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE-FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK for Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work roofed in the country.

Ward's Cases, or Domestic Greenhouses.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus for range, adapted for the continued supply of hot water, and an arrangement of the oldest more complete than has hitherto been brought before the public.

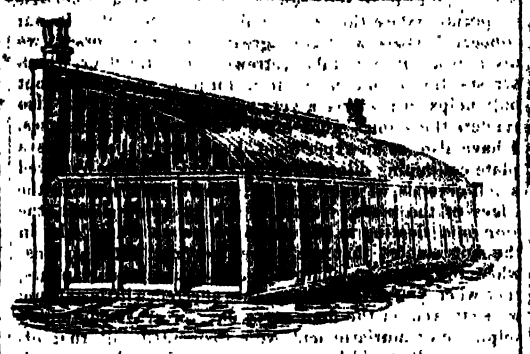
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Headstone Farm, near Pinner, Middlesex, Oct. 24, 1844.

To Frederick Brain, Esq.

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SUBSCRIPTIONS

TO THE

NATIONAL TESTIMONIAL

TO

MR. ROWLAND HILL,

AUTHOR OF THE PENNY POSTAGE,

WILL CLOSE ON THE 30TH OF NOVEMBER.

On all the sources of income stated in the recently published Quarterly Returns of the Public Revenue, none exhibit so large a proportionate increase as the *Post Office*. During the year's net Revenue, the Customs have increased at the rate of about 10 per cent., the Excise 4½ per cent., the Property Tax 2 per cent., while the *Post Office Revenue*, under its almost nominal rate of a penny, has increased above 13½ per cent., and the increase on the quarter alone been even as much as 23 per cent.

These startling results show that (though the *plan of Penny Postage* is yet but *imperfectly tried*) the *complete restoration* of the Post Office Revenue to its amount before the Penny Postage was adopted is not an event far distant, if it be fully and honestly carried out; and the *City of London Mercantile Committee on Postage* desire to impress these satisfactory results most emphatically upon the Public, in announcing the *approaching close* of the National Testimonial to Mr. Rowland Hill. *All* parties are unanimous upon the great *moral* and *commercial* advantages of the *Penny Postage*. Its expediency as a *financial* step has been the *sole* ground of question; but now, even this *can scarcely be doubted*: for, let it be remembered, that the Old Postage Revenue had been absolutely *stationary* for twenty years,—retrogressive, in fact, if we consider the increase of population, education, and commerce during the period. The change which Penny Postage has effected, is to make the *Post Office Revenue* the *most buoyant* source of National Income, bidding fair to become more profitable than it has ever been. The Committee, therefore, call upon the Public to *reward*, with suitable gratitude, the Author of this great and triumphant measure.

The Committee have the satisfaction to announce that the Subscriptions, headed by the chiefs of political parties and of commercial wealth, already reach 10,000*l.*; but 10,000*l.* cannot be held to be a sufficient *national* reward for such *national* services. The Committee therefore urge upon the *nation at least to double* the sum. If every letter-writer, for only a single week, would pay a twopence instead of a penny rate for his letters, the amount, and more, would be raised. In proportion as the public show their gratitude to Mr. Hill, so they strengthen the chances for the complete adoption of his plan, *now but partially carried out*, its perfection with Prize, greatly increased convenience to themselves, and increased advantage to the Post Office Revenue.

Never have the services of any *Public Benefactor* been requited as Mr. Hill's have been. Quitting a *permanent* situation for a *temporary* public engagement to carry out his plan, Mr. Hill's services, whilst his plan was yet not carried out, were dispensed with, and he received the following acknowledgments of his merits, and—*nothing more*:—

"I gladly avail myself," writes the present Chancellor of the Exchequer, "of the opportunity of expressing my sense of the satisfactory manner in which, during my tenure of office, you have discharged the several duties which have been from time to time committed to you." "I entertain," writes Sir Robert Peel (who has also subscribed 10*l.* to the Testimonial), "a due sense of the manner by which your conduct, in respect to Post-Office arrangements, has been actuated, and of the zeal and fidelity with which you have discharged the duties committed to you."—Mr. Trevelyan, on behalf of the Lords of the Treasury, writes thus:—"I am also commanded by their Lordships to take this opportunity of stating, that they consider it due to you, on the termination of your connexion with the Government, to express to you the approbation with which they have regarded your zealous exertions in the execution of the duties which have been intrusted to you; and how essentially the efficiency of the Post Office arrangements has been promoted by the care and intelligence evinced by you in the consideration of the various important questions which have been referred to you."

Under these circumstances the Committee call upon the *Public* to come forward with due generosity, and reward Mr. Hill themselves, as his *unrequited Inventor* of the *great measure of Penny Postage*—a measure which has opened the blessings of free correspondence to the Teacher of Religion, the Man of Science and Literature, the Merchant and Banker, to the *whole British Family*, especially the *poorest* and most *destitute* portion of it,—a measure which is the *greatest boon* conferred in modern times on *all the social interests of the civilized world*, for Penny Postage is spreading its influences throughout Europe, and reaching even Russia. The Committee rely on the *generosity* of their countrymen, and feel sure that this, their last appeal, will not be made in vain.

(Signed) GEO. LARPENT, *Chairman.*

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Of Saturday last, October 26, contains

The MISUNDERSTANDING of the LONDON and BIRMINGHAM and GRAND JUNCTION RAILWAYS. ISSUE of the SHEFFIELD and MANCHESTER by the [illegible] PANIES—FRENCH FORCE and the LOCOMOTIVES.

REPORTS of MEETINGS—Norfolk and Manchester—Whitby and Pickering—Chatham and Lincoln—Canterbury and Whitstable—Official Report of the Provisional Committee of the Kilkenny Junction—Lord Howick's Circular on the Northumberland Railway.

PROJECTED LINES—Canterbury and Lincoln—Lynn and Dereham—Potteries—Eastern Union—Wilts and Berks—Oxford, Worcester, and Wolverhampton—London and Norwich—London and Portsmouth—Richmond and West End Junction—Windsor [illegible]—North Devon—Newton and Torquay—Cornwall Central—Dublin and Drogheda Extension—Dublin, Cashel, and Kilkenny—Ulster Extension—Wicklow and Wexford—Waterford and Limerick—Kilkenny and Waterford.

VALUE OF SHARES—Returns from London, Liverpool, Manchester, Leeds, York, Hull, with comments on the respective Markets and latest Prices.

PARIS WEEKLY LETTER, with Prices of the Share Market there.

FOREIGN RAILWAYS—Ostend to Ghent (*with an Index Map of the Railways of Belgium*), and Statistics of the Belgian Lines.

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Grecian Antiquities, by A. R. Rangabé.
The Dark Falcon, a Tale of the Attrack, by J. B. Fraser.

Foreign Correspondence.—Letter from Munich (changes there in the last three years).

Our Weekly Gossip.—Dr. Wolf—Hatherington's Blind Charity—History and the Newspapers of the Day—Death of Mrs. Siddons—Earthquake in the West India Islands—Milan Scientific Meeting—German Booksellers c. Leipsic—Dresden Congress of Orientalists—Stockholm Exhibition of National Manufactures—Musical Talk in Paris and Italy, &c. &c.

Societies.—Completion of the British Association Report: Section A, Wednesday; Section C, Tuesday and Wednesday; Section D, Tuesday and Wednesday; Sub-Section D (Ethnology), Friday, Saturday, Monday, and Tuesday; Section E, Tuesday; Section F (Statistics), Tuesday and Wednesday; and Section G, Wednesday.

Miscellanea.—Paris Academy of Sciences—Pneumatic Parlour Preserver—An Iron Life Boat.

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The Lancet,

Of Saturday last, October 26, contains:—

A COURSE of LECTURES on the OPERATIONS of SURGERY, and on Diseases and Accidents requiring Operations, delivered at University College, London, in the Session of 1844, by Robert Liston, Esq. (Lecture X.)—Tumours of the upper and lower Jaw.

A COURSE of LECTURES on ORGANIC CHEMISTRY, delivered during the Winter Session, 1844, in the University of Giessen, by Justus Liebig:—Certain Compounds of Carbon—Carbon and Oxygen—Carbonic Oxide, or Oxyd Gas.

ORIGINAL PAPERS:—On Diseases of the Heart, with Cases, by John W. Tripe, Esq.—Fracture of the Costal Cartilages, and Fracture of the Vena Cava. By Richard Pyper, Esq.—On the Spontaneous Evolution of Gases in the Cranial Cavities. By F. B. Garvin, Esq.—The Presence of Uric Oxide in Gummy Matter of the Scalp. By [illegible] Gall from Human Urine. By L. M., Midwives' Midwifery. By T. Litchfield, Esq.—On Albuminuria, its existence during Puerperal Convulsions: its Pathology. By G. Ross, Esq.

The Government Medical Bill—Birmingham General Hospital.—College of Surgeons of England—By-laws relating to the Professional Education and Examination of Candidates for the Fellowship.

REVIEWS:—Treatise on Inflammation as a Process of Anormal Nutrition. By John Hughes Bennett, M.D.

THE GOVERNMENT MEDICAL BILL:—Meetings of the Medical Profession: Brentford Medical Association; Medical Protection Assembly; Wrexham; Chester; Tower Hamlets; Sheffield.

Medical Society of London: Effects of Medicines.—Causes of Abortion.

Westminster Medical Society: Opening of the Session.—President's Address.—Fatal Case of Poisoning with Carbonate of Lead.—Effect of Lead on the Gums.—Doses of the Acetate of Lead.

MISCELLANEOUS LETTERS:—The Operation at the Jervis-street Hospital, Dublin.—Birmingham General Hospital.—Education of the Sons of the Faculty.—Royal Free Hospital.—News of the Week.—Books received for Review.—Mortality Table.—Apothecaries' Hall.—Correspondents.

London: John Churchill, Prince's-street, Soho; and may be had of all Booksellers and Newsmen.

NOW READY FOR DELIVERY,

JOHNSON AND SHAW'S FARMERS' ALMANAC AND CALENDAR, for 1845, 220 pp., and 100 Engravings of the best Agricultural Implements, with their prices and Makers' names, &c. &c. Price only 1*s.*; also,

1. JOHNSON'S TRACTS for Agricultural Schools, Cottage Farmers' Assistant, Farmers' Calendar, and Agricultural Chemistry, 1*s.* each.

2. A New and enlarged edition of JOHNSON ON MANURES, price 1*l.*

3. VON THAN'S PRINCIPLES OF AGRICULTURE. Translated by C. W. Johnson, Esq., F.R.S., and W. Shaw, Esq., in 2 vols., price 21*s.* cloth.

4. MORTON ON SOILS. A New edition, enlarged, price 10*s.*

5. SQUARREY'S AGRICULTURAL CHEMISTRY for the Practical Farmer, 5*s.*

6. SINCLAIR ON GRASSES AND WEEDS OF AGRICULTURE, 48 coloured plates, 30*s.*

James Ridgway, Piccadilly, and every Country Bookseller.

OBTAINABLE FOR NOTHING.—The Nervous are respectfully invited to send to Rev. Dr. Willis Moseley, 9, Charlotte-street, Lansbury, London, for the small Pamphlet just published, on the most successful treatment of Nervous or Mental Complaints, by which he cures these Diseases he certainly no water quenches thirst, which Pamphlet he will return, if a stamp is enclosed, free of charge.

Printed by William Rangeley, of No. 4, York-place, Stoke Newington, and Frederick Mullett Green, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their Office in Lombard-street, in the parish of St. Clement Danes, in the City of London; and published by them at the Office, No. 4, Clarke-street, in the parish of St. Paul, Camden-town, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, November 2, 1844.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 45.—1844.] SATURDAY, NOVEMBER 9. [Price 6d.

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SPURLING begs to refer the Readers of the *Gardeners' Chronicle* to his Advertisement of PETUNIAS, SEEDLING VERBENAS, DAHLIAS, &c., of the 12th October. Dance's Nursery, Stowmarket, Suffolk

LYNE'S NEW GERANIUMS.

WILLIAM E. RENDLE can execute a few more orders for the following

Lyne's Princess Alice . . . each—21s.
" Redworth . . . 21s
" White Perfection . . . 21s.
" Confidence . . . 21s.
" Imogene . . . 21s

Plants will be delivered after 12th November. "RAFFINO" cannot be sent out this season, no more orders can be received for "KING OF SALOON."

LYNE'S "PRINCEPS," 10s 6d each

*** The stock of the above is limited to about six plants of each, early orders are therefore necessary to insure a supply.

Lyne's Royal Nursery, Plymouth, Nov 9, 1844

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acclimatise, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, enabling them to judge of their qualities, with the prices annexed which may now be had at the Nursery, and of Messrs WARNER & WARNER, Cornhill, London.

EXHIBITION OF CHRYSANTHEMUMS

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, beg to state that their Collection of this beautiful autumnal Flower is now in bloom, and will continue for the next two or three weeks

C and Sons have now on hand healthy young plants of Double CAMELLIAS of sorts, with flower buds, at 30s per dozen, larger plants, 42s per dozen, and young plants of the newer sorts, at 60s per dozen Package included in the above prices

"GENERAL TOM THUMB" SCARLET PELARGONIUM.

PHILIP CONWAY, NURSERYMAN & FLORIST, &c, Old Brompton, through the kindness of Mr. Ayres is enabled to let out a few plants of the above, which is thus described in the *Gardeners' Chronicle*, page 550 —

"Unquestionably the finest Dwarf Pelargonium out is that which has this season been exhibited under the name of 'General Tom Thumb' It grows almost prostrate, is exceedingly rich and dense in foliage, and produces with the greatest profusion large trusses of the most dazzling scarlet flowers imaginable I have a plant at this moment nine inches high and six feet in circumference, studded with 27 trusses of expanded bloom, and some of the trusses six inches in diameter; and on five plants there are upwards of 130 trusses of flowers"

For both pot cultivation and bedding out this plant is unequalled Plants 2s. 6d. each, or 25s per dozen, with the usual discount to the trade if six are taken at one time N B —At the June Exhibition of the Regent's park society a prize was awarded to the above, also to the following desirable variety of scarlets, viz. —

Frost's Superb, a splendid pot plant . 2s 6d
Mrs Meyler, a very fine new variety . 2 6
Cooperii, dwarf, for bedding . . 1 6
Huntsman, ditto . . . 1 6
Shrubland . . . 1 to 21s.
Compactum . . . 1 6
King . . . 1 6
Queen . . . 1 6
Conway's Giant Cactus, strong plants 2 6 to 10s. 6d.
Veronica speciosa . . . 2 6
Pelargonium Lanell, for forcing . . 1 0 to 2s. 6d.

Cash, with an order, is respectfully requested from unknown correspondents.

RICH LEAF-MOULD and PEAT-EARTH.—Several acres of valuable Peat-earth and Leaf-mould of a rich quality, to be disposed of. Gentlemen and Nurserymen, engaged in the Cultivation of Heaths and American Plants, will find the above articles of a very superior kind. Turf may also be found of great value, containing many Heath plants. The Estate is within one mile of the Thames, and has every water carriage. For full particulars apply to Mr. [illegible], Corn Chandler and Seedsman, No. 14, Fleet-street.

THE NEW AND SUPERB SEEDLING PICOTEE, "BURROUGHES'S DUKE OF NEWCASTLE."

For particulars of the above, see YOUELL & Co.'s Advertisement of October 12th.

YOUELL AND CO. are also enabled to supply the following superb Picotees, raised by the same gentleman, all possessing first-rate properties, which have been exhibited and obtained first class prizes at several of the metropolitan Exhibitions of the present year. They are as follow —

Burroughes's Mrs Benyon, Red Picotee . 7s 6d
" Lady Alice Peel, Rose Picotee 7 6
" Miss Jane, Purple Picotee . 7 6
" Mrs. Bevan, Red Picotee 7 6
" Enchantress, Scarlet Picotee . 5 0

CARNATIONS AND PICOTEES.

Y. and Co's collection of this beautiful tribe of flowers will be found the most extensive and select in Europe, comprising every known variety of merit. The plants are remarkably strong and healthy, and ready for sending out to any part of the United Kingdom and the Continent at the following prices

				£	s.	d.
12 pairs extra fine and very superior first class Show Flowers				2	10	0
25	ditto	ditto	ditto	5	0	0
12	ditto	ditto	Show Flowers	1	10	0
25	ditto	ditto	ditto	3	0	0
12 pairs of Extra fine Show Pinks				0	12	0
25	ditto	ditto	ditto	1	1	0

The selection being left to Y and Co.

*** For Particulars of their finest Imported DUTCH HYACINTHS, &c, see their Advertisement of Nov. 2.

Great Yarmouth Nursery, Nov 7.

GENUINE DUTCH FLOWER BULBS.

J. CARTER, SEEDSMAN and FLORIST, 238, High Holborn, London begs leave to remind his customers that the present is the best season for planting bulbs in the open borders, as also for placing Hyacinths, &c in glasses, or in pots. The following is an extract from his Catalogue —

25 fine Hyacinths for water or pots, in 25 varieties . 15s 0d
12 ditto ditto in 12 " . 7 6
12 very fine ditto, 12s; 12 extra fine, 15s to " . 20 0
Fine Polyanthus Narcissus, 25 vars, 10s, 12 do. . 5 0
Van Thol Tulips, double or single, per 100, 6s; p doz 0 9
New White Van Thols, per dozen, 12s, new yellow 1 0
36 Early Tulips, in 6 very fine vars, 4s; 12 do. 4 0
36 Double Tulips, in 6 very fine vars, 4s, 12 do 4 0
Fine mixed Early or Double Tulips, per 100, 7s; p doz 1 0
40 fine late Byblomen, Bizarres, and Rose Late Tulips 40 0
Very fine mixed do. do do each, p doz 2 0
Ex fine mixed Late, p 100, 12s, mixed Parrot, p doz 1 0
100 Crocus, in 10 fine sorts, 2s 6d; 100, in 50 finest new sorts . . 5 0
60 Narcissi, in 15 vars, 4 of each . . 7 6
40 English Iris, in 40 splendid vars 40 0
40 do do in 40 fine vars. . 15 0
50 Spanish Iris, in 10 finest sorts, 10s, 25 do do. . 5 0
Extra fine mixed Spanish Iris, in 20 vars, per 100 . 5 0
Very fine mixed new Double Anemones, in 20 vars p lb 2 0
Very fine do Single do do do. 4 0
100 Finest new double Anemones, 5os; 100 fine do 30 0
100 do. do. Ranunculus, 25s, 100 fine do 15 0
Mixed Ranunculus, fine 3s 6d., very fine 7s, finest per 100 . . 10 0
25 extra fine new Scotch Ranunculus, named . 20 0
100 very fine Turban Ranunculus, in eight varieties. 7 0
Large Scarlet do. 2s, yellow, 4s; and dark crimson per 100 . . 5 0
36 Ixias, in 12 fine sorts, 12s; 20, in 36 fine sorts . 7 0
36 Sparaxis, in 12 do. 12s, 12, in 12 do . 4 0
25 Newest Sparaxis in 25 vars, including scarlet . 12 0
Beautiful mixed Sparaxis, per 100, 20s fine do p 100 10 0
Gradiolus opposiflorus, Herbert, or floribundus, p doz 3 0
Gladiolus psittacinus extra large " 2 0
Tigridia Pavonia, extra fine Dutch Bulbs " 2 6
Fine mixed Tritonias, p doz 2s 6d, mixed Ixias " 2 0

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London

A SPLENDID NEW LATE PEACH.

MORTON'S "WALBERTON ADMIRABLE."—This splendid variety was raised at Walberton House, in Sussex, the seat of S. Prime, Esq It is a Seedling from the Noblesse, which it much resembles, both in size and colour It possesses all the fine qualities of its parent, but its great merit arises from its ripening full five weeks later. A specimen of its fruit was sent to Dr LINDLEY in 1841, from whom were received the highest testimonials of approbation. The tree is a fine, free, and hardy grower; the fruit is full-sized, melting, and excellent-flavoured, rendering it a truly desirable variety, and one which no good garden ought to be without Good one year's trained plants can be obtained of ALEXANDER WEBB, Nurseryman, Westergate, near Arundel, Sussex; at Messrs HAY, ANDERSON, and SAUNDERS's, Newington Butts; and also at Messrs. HUNDT and M'MULLEN's, 5, Londenhall-street, London, at 10s. 6d. each; a few strong plants at 15s. each. The usual allowance to the Trade when three or more are taken, and carriage paid to London. Remittance from unknown correspondents is required.

NORTHWARNBOROUGH & BARTLEYBOW NURSERIES ODIHAM, HANTS. EXTENDED OF FORTY ACRES, ESTABLISHED MORE THAN ONE HUNDRED AND FIFTY YEARS.

THIS BEING THE SEASON for Planting, J. and J. GRIFFITHS beg to call the attention of the public generally to their Nurseries, which are well stocked with every description of Forest-trees, Conifers, Flowering shrubs, and fruit trees. And more especially do they invite attention to their Fruit-trees, which are three years standard, well-rooted, and fine trees. Every tree, for which and espaliers alone, more than Ten Thousand grow.

TO THE CULTIVATORS OF ROSES.

R. B. BIRCHAM, Hadenham Rectory, Bungay, Suffolk, begs to offer the following choice PERPETUAL ROSES Good dwarf plants, own budding, suitable for pot culture or transplanting into the open borders.

Aric e . . .	2s 6d.		Anémone . . .	1s. 6d.	
Auburnon . . .	2 6		Alfred . . .	2 6	
Augustin Mouchelet .	2 6		Aude Reine . .	2 6	
Clementine Beringe .	2 6		Armena . . .	1 6	
Duval .	1 6		Celsee . . .	1 6	
Dr Marx . . .	2 6		Crimson Globe . .	1 6	
Duc d'Aumale . .	2 6		Dumont de Courset .	1 6	
Duchesse de Nemours	2 0		Duboury . . .	1 6	
Duchess of Sutherland	2 6		Gloire de Rosamene .	1 6	
Karl Talbot . .	2 6		" Paris . .	2 6	
Fulgorie . . .	1 0		" Guillotiere .	2 6	
Jules Dupont . .	2 6		Lilacea grandiflora .	1 6	
La Reine (strong plants)	2 6		Madame Nérard . .	1 6	
Lady Alice Peel . .	2 6		Madame Aubin . .	2 6	
Lady Fordwich . .	1 6		Manteau de Jeanne d'Arc . . .	2 6	
Lane . . .	2 6		Paul Joseph . .	2 6	
Madame Laffay . .	2 0		Phœnix . . .	2 6	
Melanie Cornu . .	2 6		Prosetpine . . .	2 6	
Mrs. Elliot . . .	2 6		Queen of Bourbon .	1 6	
Prince de Galles . .	2 6		Souvenir de la Malmaison (strong plants) .	2 6	
Prudence Rosea . .	2 0		Splendens . . .	2 6	
Reine de la Guillotiere	2 6		Thalhit . . .	2 6	
Rivers (Laffay's) .	2 6				
William Jesse . .	2 6				

Cloth of Gold (Noisette) strong plants, 7s. 6d.

Choice Roses selected from various classes —Dwarf Standards, 12s per dozen, do, superior kinds, 18s.; Standards, 18s. per dozen, do, most superior, 30s.

A descriptive Catalogue sent on application Plants gratis, to compensate for distant carriage.—Hadenham, Nov. 8, 1844.

PLANTING SEASON.

W. ROGERS AND SON, NURSERYMEN, CONTRACTORS PLANTERS, & LANDSCAPE GARDENERS, Southampton, beg respectfully to notify that their Nursery Stock is this season unusually fine, and from the extent of their grounds they are enabled to execute orders to any amount, and at the lowest price, delivered free of carriage (if ordered in quantity) per railway to London, or by steam vessels coastwise.

SEEDLING.

Ash, 1 yr, 1s 6d, 2 yrs, 2s 6d	Spanish Chesnut, 1 yr., 10s.		
Beech, 1 yr., 2s.	Pinaster, 1 yr., 2s. 2d., 2 yrs., 3s. 6d.		
Birch, 1 yr 2s			
Sea Pine (Pinus maritima), excellent for nurses or exposure to the sandy sea shores of Scotland or Ireland, 1 yr., 5s., 2 yrs., 7s 6d per 1000			
Oak, the true "Durmast" of the New Forest (Quercus sessiliflora), producing timber of the largest dimensions, and decidedly the most valuable species of the English Oak; 1 yr., 7s 6d, 2 yrs 10s., 3 yrs 13s. per 1000.			

TRANSPLANTED.

Prices and samples of the various sizes may be had on application.

Alder . . .	1	2	3 ft	Oak, Durmast, English .	1	2	3 ft.
Beech . . .	1	2	4 ft.	Turkey . .	1	2	3 ft.
Birch . . .	1	2	4 ft	Spruce . . .	1	2	4 ft.
Ash . . .	1	2	3 ft.	Larch . . .	1	2	3 ft.
Spanish Chesnut	1	2	6 ft	Scotch . . .	1	2	4 ft.
Elm . . .	1	2	3 ft	Pinaster . .		1	2 ft.
Poplar, Blk Canada	2	4	6 ft	Sea Pine . . .		1	2 ft.

If 100,000 of any one sort is ordered, a deduction from these prices will be made.

PLANTS FOR COVER OR UNDERWOOD.

Rhododendron ponticum, 1 to 2 inches, transplanted, 20s. to 30s per 1000 Not subject to the depredations of game.

Ditto, 2 to 4 inches, 40s. to 50s., 4 to 6 inches, 60s. to 80s; 1 foot, 25s. to 100 Not subject to the depredations of game.

Mahonia aquifolia, 40s per 1000. Game are remarkably fond of the fruit of this plant, which is also a handsome flowering Evergreen

Common Laurel, 20s. to 40s. per 1000.

Come-well Willow, 40s per 1000. Best for Underwood.

Furze, 10s. per 1000. Broom, 10s. per 1000.

Alder, common black, 8s. per 100. Excellent for sea-embankments. Tamarisk, 8s. per 100

MISCELLANEOUS.

Single Camellias, from pots, well rooted, 30s to 72s. per 100

Rose stocks, 8s per 100, from cuttings of the Bourbon De Lisle, on which all kinds take freely by buds and grafts, and may be grown in the smallest sized pots.

Double Furze, 25s per 100 Forms a beautiful flowering hedge.

Double Red Thorn, Double White do., Single new crimson, 50s. per 100. Sea Pine, from pots, 40s per 100.

Ribes sanguineum 12s 6d per 100

Printed Catalogues of Prices of their general stock may be had. Gardeners of experience and ability recommended.

FASTOLFF RASPBERRY.

JOHN BELL begs to inform his Friends and the Public that he has grown the above Raspberry extensively the last three years, and has now a fine stock of strong Canes, which he intends offering at the following prices, carriage paid to London and Hull, when 100 Canes are taken.

100 Canes .	1l. 15s. 0d.—package included.			
50 " .	0	17	6	"
25 " .	0	9	0	"

J. B. living in the neighbourhood where the above Raspberry has been cultivated for many years, can warrant it true. It may also be had of Mr. CATLEUGH, Nurseryman, Hans place, Chelsea; and Mr. NUTTING, Seedsman, 44, Cheapside

Nursery, Bracondale; Seed Warehouse, 3, Exchange street, Norwich.

WM. STIDOLPH, NURSERYMAN, near the Plough Inn, Bromley Common, Kent, begs to offer for Sale 4000 Spanish Chesnuts, 2 to 6 ft., 5000 Ash, 4 to 7 ft., 1000 Laurels, 4 to 5 ft, Spruce Firs and Weymouth Pines, 5 to 8 ft., Yews, 6 ft. and upwards, Rhododendron ponticum, 2 to 5 ft., flowering plants; Portugal Laurels, 3 to 5 ft., Purple Beech, 5 to 6 ft., Oaks, Elms, and Horse-Chesnuts, 12 to 16 ft., Privets, Laurustinus, &c. &c.

SHILLING'S EARLY POTATO PEA.

THE above PEA is a Grosvenor over every other for autumn sowing, being quite as early, very prolific, and much larger than any other early Pea. See *Gardeners' Chronicle*, 25th of last May. "Mr. Shilling has sent us specimens of his New Early Green Pea, which were gathered on the 26th inst. He states that these were produced from seed sown in the open ground on the 15th of last November. Judging from the specimens sent, this is a fine, large, good-looking Pea, and will, no doubt, be found to be a very useful early variety."

To the Market Gardener they will be found invaluable. Price 1s. 6d. per pint, 10s. per peck.

SHILLING'S DWARF TADPOLE, which gave such general satisfaction last year, is the best early variety grown. Having saved a considerable quantity of seed this season, it is offered on the same terms—1s. 6d. per pint, 10s. per peck.

Seedsman to the Royal Horticultural Society, Field and Onion Ground, 19, Lower Thames-street, London Bridge. Retail Shop, 150, Fleet-street; 1, Nobie-street, Milton-street; and 2, Nobie-place, Cowgate, Edinburgh. Agents—Messrs. Rollo and Ramsay, Edinburgh; Messrs. Hurst and M'Intosh, 6, Haddenhall-street, Covent Garden

THE TRUE FARTOLFF RASPBERRY.

YOUELL AND CO. take the present opportunity to state that the above unequalled Raspberry is now ready for delivery at their Nursery or of their Agents. A list of Agents will be given in the Advertising Sheet of this Paper next month, at which time they recommend their friends to send their orders early, that they may be executed in rotation, as another Fruiting season has passed since the Fartolff was first introduced, and has been substantiated by hundreds of the first cultivators.

Great Tarbuton Nursery, Nov. 7, 1844.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, GERANIUMS, AURICULAS, CARNATIONS, and CALCEOLARIA RANCHOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment Florist to Her Majesty the QUEEN, and to His Majesty the KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above flowers, which, from the unusual care he has had in their cultivation, he can offer at very moderate prices. He particularly wishes to call attention to the many interesting varieties in his collection of Tulips and Hyacinths, which this season, in the various papers, he so much admired—reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collection or ornament their parterres with these beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Liliums candidum are particularly adapted for parterres, as, besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and when flowers are so much wanted. They only require to be known to be universally cultivated. Catalogues can be forwarded by post on application. Foreign orders executed.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 9, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Nov. 13 - Meteorological . . . 8 P.M.

SATURDAY, Nov. 16 - Royal Botanic . . . 4 P.M.

We have been surprised of late to perceive that an influential part of the daily press has thought fit to urge objections against the systematic continuance of AGRICULTURAL AND HORTICULTURAL SOCIETIES, on the plea that they do not effect any substantial advantages among the practical classes of farmers and gardeners; that competitions between mere *amateurs* produce no beneficial results to those who live by husbandry, or cultivate market-gardens. If an enormous prize ox be fattened by the nobleman's bailiff, it is said that the cost of bringing him to the high condition in which he is exhibited to public admiration is more than the value of the meat in the market; that wealthy proprietors only can afford to amuse themselves thus, because they have means and facilities beyond the reach of those humbler individuals for whose benefit the Societies to which we are referring are professedly embodied. Nothing can show a more entire ignorance of the true bearing of such associations than such crotchets as these.

Every intelligent farmer and gardener knows that the range of experimental investigation in his department is almost boundless; and he finds that each revolving year adds to his practical, if not to his theoretical knowledge. He knows, too, that the prize ox has not been brought to his high condition without great attention to the most improved routine of husbandry in all its bearings. The culture of green crops in a corresponding degree of excellence with that of large cattle reared and fattened for the shambles is to be attained; and in order to have abundant and superior green crops, white crops must be proportionably raised. Manure cannot be abundantly accumulated without cattle, nor cattle littered without straw: one branch of farming thus necessarily involves the necessity of another, and within a very extended and comprehensive range of perfect or very superior husbandry, as pursued on the demesne of the wealthy proprietor, or the great farm of a rich and intelligent tenant, who follows the profession by which he lives with energy and enthusiasm, a vast variety of improved details is involved, among which the common farmers and peasantry may assuredly find something worthy and easy of adoption. It is also of great importance to have experiments conducted by those who can afford to make them without regard of the loss in case of failure; and unquestionably the desire of obtaining distinction for skill and perseverance, the ready promotion of useful knowledge stimulates to competition, while the honorary prize, which is the testimonial of merit, costs the Society which awards it little or nothing.

The presentation of a single medal has often led to movements in husbandry which have afterwards advanced to points of great importance. If recent instances be of any value in illustration of this remark, we would adduce the great extent—great in comparison with previous efforts—of thorough-draining executed last year, in Ireland, by four spirited proprietors, who, however patriotic and enterprising they may be systematically, as improvers of land, would not, in all probability, have completed so great an extent of draining without the agency of the Royal Agricultural Society of Ireland, which stimulated their energies by proposing a prize to the successful competitor in that important branch of improvement, to which attention has been much turned of late years, and in the advancement of which Mr. Smith has acted so conspicuous a part.

It surprises us to hear any persons attempting to throw discredit upon Societies which are formed on sound principles, and for philanthropic objects; and deliberately effecting it on grounds which are not always perfectly understood, either in object or detail, by those who think fit to denounce them.

It is a very desirable matter that the aristocracy of any locality should take a deep and practical interest in agricultural and horticultural occupations. The sports of the field, though possibly necessary for the health and recreation of idle country gentlemen, and certainly great inducements to their residence on their rural estates, are often interrupted by unpropitious weather; and the extravagant amusements of the *turf*, or of the silly and cruel steeple-chase, are at best but brief periodical excitements, which are often seriously depressing in their consequences to the overworked mind, and exhausting to the purse, while they tend to render the human heart as callous as the whip or spurs in which the jockey glories. The individual whose horse is to run for the high stakes of a celebrated race, has nervous sensations unfelt by him whose cattle quietly contend in the ploughing-match; and surely, in point of utility, there is no room for disputation as to the comparative advantages of the different pursuits.

Then as to gardening—Where can there be found more innocent or interesting employment of the active kind, or which tends more, when scientifically conducted, to elevate and expand the mind? What relaxation for the saddened or fatigued spirit can be named, that is more calculated to soothe and relieve it than occupation in the greenhouse or the open garden? And if idleness oppress—if the miserable sensation of a want of something to do renders the fine lady or fine gentleman listless, where can a more pleasing excitement to thought and gentle exercise be found, than in the garden and shrubbery? Nor is this pleasure occasional and evanescent—it may be enjoyed at all times; and the most delicate female can never be without inducement to inhale the free air of heaven—so essential to the preservation of her health and beauty—while she has her flower garden and conservatory to visit and arrange. In short, the possession and management of a well-ordered farm and garden is a point of attraction to our gentry, and if they can support the expense of maintaining first rate bailiffs and gardeners, who can win prizes in their respective departments, they not only encourage a class of men whose occupations are pre-eminently useful and pleasing, but they become the means of imparting to the inferior grades of rural occupiers, that desire for acquiring good skill and taste in the management of their humble allotments, which so decidedly tends to advance their condition. Although there may be occasional ground for dissatisfaction at the supposed ignorance or partiality of Judges in the distribution of prizes (we are now alluding more particularly to the Horticultural Shows), and that feeling of jealous rivalry which mean minds so frequently entertain, with or without reason, still the principle of competition is useful. People of sense not only bear disappointments with a good grace, but feel a generous pleasure in seeing displays of finer plants than they themselves possess, and instead of grumbling at everything which has not been exactly in accordance with their own views and caprices, determine to persevere steadily in their efforts, being quite content to witness the progress of the art which they admire, without experiencing any mortification at their own failures, and very happy to see rich and poor assembled together for the enjoyment of a pure and rational pleasure. Then, when an ardent florist exposes to the scrutinising examination of experienced judges some splendid flower which he has raised himself, how happy is he! How he contemplates his admired specimen! with what satisfaction he criticises its form and colours! He pets it as if it were his child; guards it "lest the winds of heaven should visit it too roughly;" gives it air, and warmth, and nourishment suited to its condition and necessities; watches over its growth, with the certainty of receiving no ungrateful return for his care. All this is at least harmless enjoyment, gentle and soothing, and such as never costs a tear of mortification or regret.

And who that has a heart will not experience more genuine delight in looking at the collection of choice flowers than in viewing an extravagant display of expensive dishes and of labelled decanters upon his table, for the entertainment of people who do not care one farthing for their entertainer?

And who that sees the beautiful specimens of new varieties, which the tasteful gardener perpetually raises, as much from the influence of professional spirit as from the love of his art will say that the Horticultural Show is useless, or that the art of gardening can go no further? Let us just first reflect on the advancement which has been effected in the culture of the Pelargonium, for no plant has been more varied within 20 years; intelligent cultivation has wrought the most surprising changes, and produced a most wonderful number of varieties in this beautiful flower. The flower, has been enlarged, the colours, infinitely diversified, have passed through successive gradations from the purest white to the deepest shade of black. The beautiful plant which, during half the year, ornaments the drawing-room or the conservatory, owes its pre-eminence to honourable emulation. Again, in the tribe of Roses—of which more than 2000 varieties exist—there were, not five kinds known 160 years ago in France and England; and when a sixth was imported into the former country from Italy, for the first time, all the world of florists went mad to obtain it. When Linnæus published his "Species Plantarum," in 1753, there were only 14 kinds of Roses known, and now there are more than 2000. What but the spirit of competition has effected this enormous increase? What but emulation produces, every season, some new sorts by budding and grafting, which bring forth the innumerable hybrids of the Rose tribe? And though some old-fashioned florists may complain that caprice and fickleness, which operate more or less in all human affairs, have caused results not altogether legitimate in the royal family of Roses, both red and white, by substituting the younger scions for the older branches, bringing into popular favour the hybrids of yesterday, we cannot but think it is no small advantage to have obtained plants that, unlike the old parent stock—which, no doubt, was very respectable in its day—will exhibit animation throughout the year, though their flowers be deficient in the odour and excellence of the ancient family.

We know that some humbug is occasionally the result of a successful hit at a Prize Show of Flowers, but it is not of any serious consequence, nor can it in these days, when there are so many professional rivals in the floral department, affect the pocket of the amateur to any sensible degree, as might have been the case in the days of the Tulip mania, when Hollanders made fortunes by a few of the rich plants of their country. For example, a specimen of the Pansy is honoured with a prize at Chiswick, or some other great National Exhibition, and the happy owner advertises his spare plants of the favourite kind at a very high price compared with their real value, but low in itself, and a mere trifle for a *fancy* article, and such as no amateur will consider a drain from his purse, while the payment of it tends to encourage the gardener who lives by his occupation. In fine, whether the vegetable productions encouraged at our Horticultural Shows be Pines or Potatoes, Cauliflowers or Carnations, Parsnips or Pansies, we wish success to those who deserve it in their respective classes, whether the claimants be Peers or Peasants, or of the more really intercated grades—those in middle life.—*Martin Doyle.*

REMARKS ON FORCING PEACHES.

[See page 707].

In answer to "A Subscriber," regarding the temperature, &c. at which I force my Peaches, I may mention that, as I am obliged to force them in the Pine-stove, having no intermediate house for that purpose, I am, therefore, under the necessity of keeping a higher temperature at the commencement than I otherwise would do if I had a Peach-house to begin with.

The house in which I force my Peaches in pots is a large one, constructed of Iron. I grow Grapes up the rafters, and Pines in the pit. The house is heated by common flues, with two 4 inch hot-water pipes going round one end, and along the side of the front flue. The fire, after passing round the boiler, enters the bottom of the back flue, which is a double one, and returns by the top flue, escaping in a chimney over the boiler. On the top of the back flue I place as many trees as I can conveniently, and on the back curb and end curbs of the Pine-pit I put the remainder. By this means it will be seen that the Peaches are not in the way of the Pines, as you can walk along the back passage between them. The Vines are confined to the rafters, and no useless wood is allowed to remain on them that would tend to shade the leaves.

When I commence forcing, I endeavour, if possible, to bring the trees into the house in mild weather, there being much less difference then between the temperature of the internal and external air; I generally put them in during November, a little earlier or later according to the state of the weather; I do not start them all, however, at once, the last lot are not put in until the 1st of January. Any later than this would not answer, as the weather, if clear, is then hot through the day. I commence forcing them at 55° at night, allowing the thermometer to fall to 50° in the morning, if cold, but, if the weather is mild, it is never allowed to fall below 55°, and from that to 60° is the usual temperature kept up throughout the period of forcing during the night. It is during the day that I make up for low night temperature, that is, when I have the chance by sun heat. On the second day after I had brought my trees in-doors last year, the temperature of the house was 80° for two

hours during the middle of the day. Now, those who are accustomed to plod on from November to the latter end of June will think this a strange way of forcing Peaches: but the fact is, if I can get sun heat, I am not at all fastidious about a few degrees; to get it high enough is the main point—say from 70° to 85° and 90°, until the fruit is stoned; I then keep them very hot during the day—viz., from 90° to 105°, and sometimes even as high as 110°. Of course a great deal of moisture is required with this high temperature; a moist atmosphere is congenial to both Vines and Peaches. I syringe over head twice a day, and sometimes oftener, when the air is dry; and the consequence of this treatment is, I am scarcely ever troubled with either green-fly or red-spider.

Watering at the root must be carefully attended to; very little is wanted until the trees get covered with leaves; but after the fruit is stoned, they should be watered plentifully, if you wish to have good fruit. Of course the watering must be gradually withdrawn as the fruit approaches maturity, in order to increase their flavour.

The following objection has been offered against early forcing of Peaches, viz. that they can have no flavour at that early season; but the fact is, to grow the trees in pots is the only way to have the fruit well flavoured, as the roots are then completely under control. Some say that I will soon lose all my Vines by the high temperature at which I keep the Peaches; but these persons do not consider that I am taking the very best plan to make my Vines grow, by treating my Peaches in the manner above stated; and I invite any one to come and see my Vines and Peaches growing together, when they can form their own opinion of the matter.

Now, with regard to the trees, unless they are prepared for forcing, you have no right to expect fruit in April; but if you think otherwise, try. Maiden plants are the only ones to begin with. Pot in as small pots at first as you can, and cut down to four or five eyes; shift every year, shaking off a little of the old soil. In May last, I saw some as fine maiden Peach trees in pots, in one of the London nurseries, as I could wish to see; and any one buying a few trees in the same condition would save a year's labour. They were making fine shoots in May last.—*W. Hopkinson, Bulmpton Park.*

THE TANK SYSTEM OF HEATING.

THIS, for furnishing Vine houses, Melon and Cucumber pits, and all structures for plant-growing, with bottom heat, instead of underneath and unsightly fermenting materials, is one of the greatest boons for simplicity, utility, and economy in horticultural purposes ever yet acquired, and undoubtedly claims the praise and due consideration of every individual who wishes to see the truly interesting science of Horticulture improve and keep pace with the spirit of the improving times in which we live.

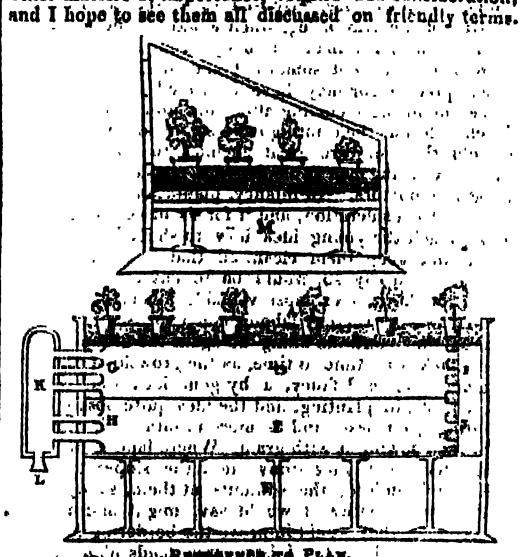
I would recommend all scientific and practical men to give the subject due and serious consideration: they should well discuss it in their own minds as well as publicly with others: in time much information would thus be gained; for amongst "a multitude of counsellors there is wisdom." There are several very essential points requiring serious discussion and due consideration, before the great advantages that are to be derived from this system are to be gained, such as, What are the best materials with which to construct those tanks, in order that they may answer all purposes in the most economical manner? What is the depth of water that should flow, so as to command the most kindly and uniform heat? What is the best mode or proper system for the water to flow from and return to the boiler? Which is the best-constructed boiler from which to obtain the greatest advantage in regard to regularity and economy? These, with some other items, require due consideration before introducing the tank system. They are most important questions. Some tanks are constructed of wood, cased or lined with zinc or lead; others are made of stone, bricks, tiles, and slates, cemented together, and in not a few instances they are formed with such solid walls and foundations of masonry, that it only requires a second thought to perceive the great loss of heat that must take place on account of the absorption of such materials. Again, all the above-mentioned materials are in some degree liable to get soon out of repair, and this may happen at the most critical season. Bad materials, or imperfect workmanship, &c., are apt to cause leakages, and in many cases these tanks are so constructed that it is no easy matter to discover where the imperfections are, so as to get them put again in repair. I shall not attempt to condemn those structures or their materials, but I must acknowledge I cannot highly recommend them without considerable alteration. Under all circumstances, even with my limited practice, I can see no material at the present time so likely to answer all purposes with the greatest advantage as cast-iron tanks, constructed on a good principle. The sides of the pit for holding the plunging materials over the tank might be of the same material, which could be cast plain or ornamental, according to taste, and if it were kept nicely painted it would have a very light and neat appearance; the whole might be carried on cast-iron supports, and placed upon a good base, with flag-stone under the iron support, which should be cast with a good broad base, similar to those in use for supporting corn-stacks, &c. The advantage of having tanks constructed in this way will be at once obvious. 1st. They will be neat and durable. 2d. There will be great advantages gained by the tank being thus made to assist in heating the atmosphere of the house, pit, or other building. This heat is in too many instances entirely lost to all useful purposes. 3d. There will be considerable heat given off from the bottoms and sides of tanks on the above principle, that will warm the atmosphere of the house. Another considerable advantage gained by setting a tank open and free on iron supports is, that there will be nothing to prevent water or air from circulating freely in all parts of the house. The most present structures admit of but a very unequal circulation of heat and air, as is very obvious to most practical men. Underneath this tank there would be both light and air, and the space would be found useful for growing early Cauliflowers, stock-plants, starting various kinds of bulbs, Dahlias, or early Potatoes for growing in pots, or for turning out into pits for forwarding; and many other things could in such a situation be forwarded. The iron supports could be cast square, as a sliding shutter could be fitted closely and neatly to them, to be taken in and out; they should be provided with ventilators at the top, or one opening a few inches in depth might be continued the whole way round, by which means the free circulation of heat and air would not be impeded. A famous situation might also here be formed for growing Mushrooms during the dark winter months, as well as for forcing the first crop of Sealkale is river, sea, or other sand, or in old tan, at the season when it is not an easy matter to get it out of doors, on account of bad weather. I have found no difficulty in producing it in good perfection in a similar situation during the last three winters. This would likewise be found an excellent situation, when left quite open, for producing the first crops of Asparagus in November, December, and January. Thus, by foresight and persevering attention, the space underneath the tank could be made to produce various useful articles, that would go far towards defraying the expenses of fuel, where the tank is introduced on a good principle.

In pits and frames where there is no walk inside, but where what is required to be done is performed from the outside, as is generally the case with such structures, I should recommend that the tanks be borne on supports in the same way as above described, leaving a cavity of a few inches at the outside of the pit that contains, or should contain, the plants, fruits, &c., and the outside wall, which should be provided with ventilators, placed at intervals, for the purpose of admitting air both below the tank and above the pit. This would keep up a free circulation, and the air could be admitted either from one side or from the other, according to the state of the weather, or other circumstances: it could also be admitted at bottom or underneath the tank, and at top. By this means damping or fogging off, as it is termed, blenching of plants, or any difficulty with regard to starting into fruit Pine plants when grown to maturity would never be heard of: cleanliness, health, and vigour would be obtained.

Some have formed this idea, and have actually put it in practice, viz., that when they obtained the tank, they had no further need for flues and pipes for heating the atmosphere of their houses and pits, thinking that the tank would furnish all that was requisite. In some degree the system I am now pointing out would effect that object; more particularly in the case of pits, which can be covered in bad weather. At the same time, even for pits, however, I would recommend that a flow and return pipe be always at the front; it need not be made use of except when it is requisite; no waste whatever would occur, the expense of pipe not being great. The command of pipes will be found useful in any structure when damp and foggy weather prevails, to dry up the moisture by turning on a little heat and giving air. How practical men can depend entirely on tanks, under the present mode of making them of solid walls and masonry, when so large a portion of heat is lost by being buried and absorbed, I am at a loss to guess. Surely this has not been duly considered. It is true that they may have gone on tolerably smooth and comfortable, and may have been able to obtain a sufficiency of heat during the last twelve months of fine weather: such a season we may never again see. But even under these favourable circumstances, I am doubtful if the required atmospheric warmth could at all times be fully maintained, without imposing a very unnatural bottom-heat for the plants, at the very time they required the most uniform temperature. Why should we dispense with the means at command for warming the atmosphere, because a great improvement is discovered for furnishing the required bottom-heat? While such things are kept in practice, I shall not be surprised to hear of much prejudice against the tank system. Does it not look very much like imposing on a good object, to rob it of its greatest merits? Allow nothing to be wasted—act in all things with some little foresight and judgment—and with the greatest possible economy under all circumstances; but do not draw your beverage from the spile-hole, and allow the greatest quantity to waste by the bung-hole. I have been a practical gardener for years before boilers and hot-water pipes were much used for gardening purposes; and have seen the great opposition and prejudice they met with in many localities, when they were first introduced for heating garden structures; they are, however, now happily sought after as much as they were then opposed, and a gardener now would be thought as far wrong in choosing a fire-flue for a hothouse or pit, in preference to boiler and pipes, as a courier would be in selecting an old hackney coach for travelling with expedition, in preference to the Great Western Rail.

Boilers have been made of almost numberless shapes and sizes, from the size of a man's hat to that of a large brewing-copper. Those constructed some time since were so unwieldy that they took an immense quantity of fuel and patience to heat them, and after all they did not maintain the good qualities they were said to possess, viz., superiority to others in keeping a more regular and uniform heat, when once made hot. It was forgotten that there was the same body for the cold to act on, as there was for the heat. These persons of my acquaintance lost their lives by falling into those dangerous boilers, while adjusting and regulating the unnecessary apparatus then in use. In these times the more mysterious the construction of a hot-water apparatus, the more clever and more scientific the inventor was generally considered. Those ideas, I think, however, seem in a great measure to have blown over; but still there are some such ideas yet put into practice, or why should men recommend a large body and depth of water to flow through a tank, in preference to a quick and uniform shallow flow and return? This is a point that requires discussion. Let us consider this subject rationally and not falling back to the olden times, but commencing with the practically known and most proved system now to us, recollecting that we have but a short journey to travel, and that it is our duty to go through with it in the nearest way on the most friendly and neighbourly terms. Boilers of many shapes I have practised with; but I must acknowledge that three in use here at this time, constructed and used by Messrs. Garton and Jarvis of Exeter, possess great and superior advantages over all that have hitherto come under my notice; the last constructed one is still an improvement on the others. Tanks, I conceive, in order to obtain an advantage over those at present in use, should be double; that is, they should have two floors, one above and another below—the top floor, of course, taking the flow from the top of the boiler through the whole width and length of tank, passing over the opposite end, and returning by the bottom floor again to the boiler. The number of flow-pipes from the boiler may be regulated according to the extent and width of tank floors. I imagine that it would be of advantage to provide two flows to every tank above 4 feet in width; when three or four could be just as easily provided for tanks from 6 to 10 feet in width.

In the next age practical men will laugh and wonder how we expected anything like a kind and uniform heat from fermenting materials; and will then know how to turn those materials to better account, which are now to such an extent wasted. All tanks should of course be provided with ventilators, not for allowing the escape of evaporation, which should not be allowed by any means, but for the purpose of occasionally cleansing them out. And all pits, &c., provided with tanks that have no walk inside, should be provided with ventilators and trap doors large enough to admit a man to go underneath to paint, examine, and repair any imperfection, &c., that in time might happen. The best constructed pits—the best plunging materials—the best and most natural provision for turning plants out of their pots—and several other matters of importance, require due consideration, and I hope to see them all discussed on friendly terms.



REFERENCES TO PLAN.

A The Plants, standing in the plunging materials over the upper, or flow-floor.
B The Pit and plunging materials on the upper, or flow-floor.
C Coarse rubble underneath the plunging material, for the due circulation of air, heat, and water—one of the most essential provisions in the whole structure.
D Upper flow-floor.
E Under, or return-floor.
F Iron standards for carrying the whole structure to any requisite or answerable height.
G Flow-pipes from boiler.
H Return ditto.
I Openings at opposite end of flow-floor, for water to pass down through, falling into bottom floor, or return-pipes at J.
K The Boiler.
L The furnace-door, &c.
M End view of the structure.

The above is a plan of a pit-tank, &c., conceived according to my ideas above described; but instead of having a bottom-tank or floor for the return of water to the boiler, it may be found in some cases advisable to conduct it in its return, in pipes—either immediately underneath the flow-floor, or at the front of the house, pit, or whatever kind of structure it may be, erected upon the above principle; under all circumstances, I should recommend the upper flow-floor to be constructed the whole width of pit, taking care to provide a sufficiency of flow-pipes to equalize the flow in a continual and regular manner.—*James Barnes, Bicton Gardens.*

Home Correspondence.

Pruning of Forest-trees.—By the *Chronicle* of the 19th ult., I perceive that the dispute between the pruners and the non-pruners has been recommenced, and does not seem to promise a speedy conclusion. Dr. Thackeray and his men are strong in the flourishing condition of their plantations, while Mr. Billington and "Quercus" are by no means disposed to admit the success of Dr. T.'s system. The parties even differ as to the principles of the food and growth of trees, as well as to the best mode of depriving them of their branches. Now it appears to me that, as far at least as theory goes, these matters may very easily be decided. The principles of vegetable physiology, relating to the growth of trees, are now sufficiently ascertained, and are shortly as follow:—The roots absorb sap from the earth; the sap ascends the stem, pervades the branches, is elaborated in the leaves, and descends towards the ground, depositing a layer of new wood along with the peculiar products of the tree. There is no doubt also but that a considerable portion of the carbon required to form the woody fibre is derived from the atmosphere. Reasoning from these principles, we must arrive at the conclusion that the more leaves a tree possesses (and consequently the more branches), the greater will be the quantity of sap elaborated, and the larger the fresh layer of wood. Therefore, to prune to any extent, is just to impede in a corresponding proportion the growth of the tree. As to the method in which pruning should be performed, if we amputate at once a branch of any size, we diminish in a certain degree the increase of the tree during the next two or three years; but if we cautiously foreshorten the same branch one season, and two or three after, cut out the remainder, we give the tree time to recover the loss, by the formation of new branches, and so render its growth more equal. If we adopt the theory (which I am disposed to believe), of the expansion of the leaves in spring being the cause and not the effect of the ascent of the sap, these inferences will be more evident. Theory, then, is in favour of the non-pruning system, and nature corroborates the advantages of it, by the immense stems which single trees often display, compared with their brethren of the plantations. But nature must sometimes be assisted by art, and in order to produce length of stem, and freedom from knots and inequalities (properties that are in daily requisition), we are forced to prune to a certain extent. "Quercus" asks, "What is judicious pruning?" And I think with him that this expression requires to be more correctly defined than hitherto. It were much to be wished that some practical man, who has pruned on scientific principles, would make known his experience on the subject. It certainly appears to me that neither Dr. Thackeray's principles nor his practice are the true ones.—*Dendrophilus.*——"L. L." says:—"I have planted largely for many years, and latterly, from practice and experience, with good success. 'As doctors differ,' I hardly think I shall ever feel disposed to try the experiment of cutting off an arm or leg, when weakness and infirmities come upon me, to make my body stronger. The theory is new to me, and somewhat startling. In pruning, one's predecessor may have neglected his woods, and forced upon those coming after him to use the saw and hatchet, to put them into goodly shape and order; but I uphold that they are great enemies to foresters generally, even in men's hands who consider themselves great tree doctors. In infancy, plantations should have your best consideration, and if for six or seven years you will 'teach the young idea how to shoot,' by pruning them, and keep them clean, all that is required afterwards, or nearly so, would be to cut down and give room for those trees most valuable in shape, kind, and quality (saving thereby labour and expense), to remain, and as they continue filling up again the ground, renew the attack from time to time, as the growth of the trees demand. It is, I fancy, a by-gone idea that there is great profit in planting, and the idea quite obsolete that planting your best land is more profitable, in the long-run, than sowing it with grain. Where land is not easily cultivated, poor lime-stony land, the slopes of mountains, and, indeed, the summits of them, sandy plains, and steep declivities, I would say, might and do pay; at any rate, they would improve the bordering property, warm, and adorn it. I have seen lands planted on a large scale, too poor for culture and too bleak for turning into tillage, where trees have sprung up, and been cut down after 30 to 35 years' growth, except broad belts round twenty-acre fields; and those fields, from so many years' fall of the leaf, have borne the sweetest Grasses, and become very valuable sheep-paddocks. In such districts there is a strong incentive to plant, where you have an heir to reap the benefit of your outlay. Oaks will grow almost in any soil, by planting with them those good nurses, the Scotch Fir, Larch, and Alder. Give these air, sun, shelter, and attention when they are quite young, and clip their tender shoots with your fingers, rather than hack and hatchet them when the branches become strong, is the advice of one who Pontey'd in early life, but did not find it to answer."

Judicious Pruning of Forest-Trees.—"Quercus" asks, "What is judicious pruning, and how long is it to be continued?" Judicious pruning is every body's system who prunes at all—at least in their own opinion. Hence it is not easy to define it. The preventive system of pruning is that which I practise, and which comes near to "Quercus's" notion of "no pruning;" but the practice requires to be followed up occasionally on some kinds of trees, from a very young state until they are from 15 to upwards of 20 feet in height. The fine Larch in Mr. Gore's plantation, and the finest of others mentioned in a former communication, have had no scientific or judicious pruning by man. Mr. Gore's Larch had been surrounded by other trees, but not too near, which kept its branches within a moderate compass, and of a moderate size—just what the preventive system would effect. The same principle holds good with all other trees, when length, quality, and bulk of stem is required; consequently, very little pruning (lopping) will be required, if trees are properly trained on that system from a young state.—*W. Billington.*

Wilmot's Black Hamburgh Grape.—In looking over the report of the articles exhibited at a late meeting of the Horticultural Society, I observe that particular notice is taken of a Grape named "Wilmot's New Black Hamburgh." The berries are described as being "more fleshy, much larger than those of the old Black Hamburgh, and remarkable for having the surface covered with small indentations, as if they had been beaten with a hammer; the bunches beautifully covered with bloom." On referring to "Speechley's Treatise on the Vine," I find a Grape named simply, a Black Grape from Tripoli. Now, as this had been then only recently received direct from that part when Speechley was writing his Treatise, he had only fruited it very imperfectly in a pot; but Mr. Thompson afterwards had it planted into the diffused borders of the vineries, and the plants are now, as they were then, labelled "Black Tripoli," as is likewise the case at Worksop Manor. Now, the description of Wilmot's New Black Hamburgh so exactly agrees with the Welbeck Tripoli Grape, that I am much inclined to imagine it is one and the same Grape, which, from the indented surface of the berries, is usually distinguished by the name of dimpling. When the sun shines upon them they are readily seen to be very different from the Old Black Hamburgh, to which in general appearance the bunches have considerable resemblance, and in most places pass as such. This is a misfortune, as it is a much superior Grape, and often at Exhibitions takes the Hamburgh prizes, under the mistaken name of the Old Black Hamburgh. The Black Tripoli is a very different Grape from the Welbeck one, which may be said to be the very first on the list of black Grapes; and if judiciously treated has always fine black berries. It is as free a bearer as the the Old Black Hamburgh, and continues much longer in perfection than that variety, on account of its being less tender in the skin, more fleshy and solid, and also more saccharine. The berries grow as close together on the bunches as do those of the Old Black Hamburgh, and the bunches therefore require to be timely and well thinned.—*J. Mearns.*

The Golden Pippin Apple.—In the *Chronicle* (p. 622) it is said, "That celebrated physiologist (Mr. Knight) considered the Golden Pippin Apple to be in the last stage of decay. This doctrine of the deterioration and degeneracy of some of our best old Apples is unquestionably opposed to analogy in trees generally." The late Mr. Loudon was also of this opinion. About a century back, a large portion of the Herefordshire and Shropshire orchards consisted of the Golden Pippin and other celebrated old fruits, most of which have long perished by age and disease. We are now as fond of good fruits and fine cider as our forefathers, and repeated attempts have not been wanting by planters to substitute these old fruits as orchard trees again, but all have hitherto proved unsuccessful. Upon a border of rich dry sand, against a low wall, I have now dwarf plants of these sorts in a good bearing state; and as yet they are perfectly free from canker. But this will not last. It is only the old man whose life is a little lengthened by being set at ease from toil and exposure in the chimney-corner. Rather than lose time and excite vain expectations in mooting so settled a point, it is much better to follow the track of the celebrated physiologist, in proving, as he has done, that the best old fruits, if not to be exactly re-organised, may be substituted by a milar, or better, for ages to come. —*Quatfordensis.*

Rhododendron campanulatum.—Among the many ornamental shrubs that now decorate our pleasure-grounds, none are more deserving a place than this beautiful species, whose compact habit, fine dark sea-green, and curious rusty foliage, contrasting with the magnificent white blossoms, never fail to attract the eye, and stamp it as one of the best hardy evergreens we have. Seeds were first sent to this country by Dr. Wallich, from Gosaingathan, a mountainous region to the north of the valley of Nepal. Many plants have been got by grafting, but they are found not to answer so well as from seed or layers.—*Horacum.*

Shanking of Grapes.—Much has been said at different times in the *Chronicle*, on the shanking of Grapes, which the highest authorities have pronounced to be occasioned by the improper formation of the border in which the Vines are planted. Now, in the absence of facts, such authority, even when founded in theory, would be considered almost conclusive. I have it in my power, however, to relate a fact, which proves beyond all doubt that it does at least proceed from other causes also. About 20 years ago I prepared a border with the greatest care, the plan of which was submitted to and approved of by the late venerable President of the Horticultural Society. The Vines grew the first year with extraordinary vigour; and in the second produced a considerable quantity of fruit, much of which "shanked off," as gardeners oddly term it, and this has been the case more or less ever since, although the mode of treatment has undergone various changes. About 12 years after planting, being desirous of introducing bones and other materials into the border (which averages about two feet in depth, upon a close pavement of brick, placed upon a stratum of lime-rubbish, over one of gravel, upon a perfectly dry natural bottom of blue schistus), I had it turned over, and was much surprised to find almost all the roots near the surface. Most of them were replaced in a similar situation, and the remainder a little lower. Now, if we consider that in the first instance it was highly improbable (if indeed possible), that the roots could have penetrated into anything ungenial, and that subsequently, nearly all the roots were found near the surface, it appears almost certain that the cause usually assigned could not operate here, and must be sought for elsewhere. From long and tolerably close observation I am inclined to suppose that it might be occasioned by moisture collecting on the stalks of the Grapes during night, and the rays of the sun falling suddenly upon them, in a heated and confined atmosphere, before such moisture was sufficiently dissipated. If so, the present system of hot-water gutters may prove very prejudicial, which I have some reason to fear is the case, from the more than ordinary quantity of shanked Grapes in two divisions of my vinery this year, heated by tank gutters; whereas, in an adjoining division warmed by other means, there was no perceptible difference. Where the gutters were used, I also observed that many of the largest Vine-leaves damped off and fell, having rotted near the base of the foot-stalks. I hope that the attention of practical readers will be drawn to these points, as it may assist in clearing up the mystery that hangs over this subject.—*An Amateur.*

Thrips, &c.—The following paper, On a Simple and Effective Mode of Killing the Red Spider, Green Fly, Thrip, and Scale, without injury to Plants, was read at a meeting of the Horticultural Society of London, 2d August, 1837:—"Put the pots or plants into a frame well closed, and then Laurel-leaves bruised between them, when in the course of an hour the whole of the spiders and flies will be destroyed by the odour, which is that of Prussic acid; the thrip and scale will be destroyed in about eight hours—the night time being the most favourable for the experiment. For a house of 20 feet by 12, two bushels of leaves would be amply sufficient." I have not tried this mode of destroying these insects, but should like much to know if it has been proved to be successful in every case, it being a very superior method of extirpating such pests.—*Delta.*

Destruction of Green-fly.—I wish some of our chemists who are fond of floriculture would give their attention to the destruction of these pests of our greenhouses and frames. What we want is something as effectual as tobacco-smoke, cheaper, and of more easy application. I would suggest they should endeavour to supply us with some preparation in the form of pastiles, combining the above essentials. The demand would be very great. If nothing can be found to take the place of tobacco, a preparation of it in the above form would be very useful, enabling amateurs and ladies to keep this troublesome insect under. It should be remembered by such as may incline to give attention to the subject, that in filling a house with tobacco-smoke, it is necessary to keep some damp hay upon the top of the tobacco, to prevent the heat of the smoke scorching the plants, and to be most effective, it should be produced very rapidly. An ample reward would attend success, but nothing should be offered to the public that has not the recommendations above named, viz., destruction of the insect, simplicity of application, and both combined with economy.—*E. N. Beck.*

Marc de Colza.—I observe in a late Paper, speaking of manure for Tulips, that Colza is explained to be a kind of Rape grown about Caen; and it is asked whether oil-cake will do as well as Marc de Colza. The fact is, that Marc de Colza is oil-cake; Colza being the common name for the Rape-seed so much cultivated for oil in the north of France and Belgium.—*G. O.*

Peas.—As the time for planting Peas is fast approaching, it may be of service to know that the first plants may be preserved from mice by simply saturating them in a strong solution of Bitter Aloes.—*Early Charlton.*

Societies.

HORTICULTURAL SOCIETY.

Nov. 5.—The Rev. J. Antrobus in the chair.—In consequence of the darkness of the day, this meeting was held by gas-light. Among plants, perhaps the most remarkable object exhibited to the meeting, on this occasion, was a beautiful cut specimen of Renanthera coccinea, from Mr. Webster, gr. to Mrs. Huskisson. This Chinese plant, which is one of the oldest of its class imported by the Horticultural Society, is common near Canton, where it delights to scramble over old walls, on which its large spikes of rich scarlet flowers have a very imposing effect. Although Mr. Webster stated that this was the sixth season in which this plant had bloomed successively with him, yet it does not flower in this country with any certainty: and it seems by accident that the desired effect is produced. This is the more to be regretted, for the flowers continuing open for a considerable length of time, are very useful for drawing-room decoration. A Banksian Medal was awarded for it.—Of other Orchidaceous plants F. G. Cox, Esq., sent Lælia Perrinii, a beautiful species, and the rare Cattleya pumila, which is the least handsome of that genus.—From Mr. Robertson, gr. to Mrs. Lawrence, were good plants of Galeandra Baueri, Mormodes citrina, a finely-grown specimen of Epidendrum nutans, covered with large clusters of green-coloured blossoms; the old Cypripedium venustum, Lælia Perrinii, Saccolabium denticulatum, and Stanhopea venusta, the latter producing a fine spike of yellow blossoms.—From the same collection were also Erica Banksiana purpurea, and Lamberti roses, the latter covered with small flesh-coloured

blossoms; and a cut specimen of Aloe (? Aloe purpurascens, Haworth), a fine autumn-flowering species from the north of India, with showy purple flowers. A Knightian Medal was awarded for this Aloe, named plants.—From Mr. Parkinson, E. Barnes, Esq., was Pleroma [illegible] plant, with beautiful deep purple flowers; and a specimen of Gompholobium Lambertianum, which was awarded the Flora Medal.—From Mr. Dickson, gr. to Colonel Challis, of Gamlingay, came Leptospermum [illegible] which nearly related to Leptospermum lanigerum, was about 12 feet high, and clothed with a multitude of small white flowers.—From Mr. Bland, gr. to Mrs. Lee, of Hornsey, came a Certificate was awarded to a specimen of Erica [illegible] with a profusion of small pale flowers.—From Mr. Bland, gr. to H. Johnstone, Esq., was a Certificate was awarded to a specimen of Erica [illegible] which was very large, and covered with flowers.—From Mr. Bland, gr. to H. H. Oddie

...chaired by S. Jackson, Esq., J. E. Mills, Esq., J. Foster, Esq., E. Johnston, Esq., and the Messrs. Bryson, Lovell, Smith, and Jackson, members of the committee of management, and a large number of the nobility and gentry of the neighbourhood. The object of the meeting was to take measures for the establishment of a Society, whose chief aim should be to encourage the cultivation of the garden and the orchard, and to assist the industrious in obtaining the use of the necessary ground. The chairman, in opening the business of the meeting, stated that the committee had been induced to call it together, from the conviction that the establishment of a Society, such as that proposed, would be productive of much good to the neighbourhood. He was sure that the cultivation of the garden and the orchard would be productive of much benefit to the labouring classes, and would tend to wean them from the alehouse, and to make them more comfortable and happy at their own homes. He was sure that the cultivation of the garden

than by plunging them in a moist border, it is impossible to keep them in such a manner as to support some kind of a mat or canvas covering that will keep off the heavy rains. For if they are exposed to it, will wash the greater part of the nourishment out of the soil; and if they are kept quite dry amidst rain, I always find a great many broken by the time the Strawberry plants do best when treated in the manner described at page 703, the fruit obviously being that the soil is neither washed by rains, injured by worms, nor to some constant and heavy nourishment, the excess of the pre to the great injury of the roots, may be, in top fruit, as it is, after having been exposed to the rains of the early part of the winter.—*G.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Fruit-room.—The present changeable weather will furnish an opportunity of examining and removing all decaying fruit. Those slightly affected should be taken out of the fruit-room and reserved for present kitchen use, as otherwise the atmosphere of the room would become vitiated, and to thicken the decomposition of all the stock. Most gardeners are fearful growers of the importance of a close atmosphere and an equable, rather low temperature for the long preservation of Apples and Pears. Warm, therefore, the fruit-room must not be used as a general receptacle, and whatever means will be will frequently be admitted, the fruit may be covered with clean Wheat-straw, which will help a little to keep it in a uniform temperature, and prevent its shrivelling by too much This is more necessary in the case not to this season as many of our best fruit are for table much earlier than usual. The best keeping Apples and Pears may be packed in jars or new garden-pots, covering each layer with dry sand; fine sand, such as is used for propagating, is much the better. Charcoal is scarcely ever be used for such a purpose, as however well dried, the moisture from the fruit is apt to make it ferment so as to vitiate the flavour. *Chestnuts, Walnuts,* and *Filberts,* are cleaner in the shells, and fresher and mealier in the kernels, when packed in sand than by any other method I have tried. Chestnuts, if previously well dried in the sun, may be kept in a room covered with straw, provided they be turned frequently; but the kernel is more shrivelled, and the inner pellicle is more adherent to it that when the fruit is packed in sand. The boxes or pipes in which it is packed, in sand should not be over large. If kept on shelves, or in heaps, unless in a very dry place, the outside shell, upon contracting a mouldiness, which will soon find its way to the inside if not removed. A quick method of effecting this, is to put a quantity in a clean sack, and move them backwards and forwards quickly by two men, each holding the two corners of the ends of the bag.

Root-house.—Remove all decaying and damaged Carrots, &c. Prepare suitable places for a supply of Parsnips, Celery, &c. being stored up on the dry approach of severe weather. Potatoes if kept in a house, and especially if raised in rather a wet state, should have dried Turnips, &c. placing through the heaps. When sufficiently dried, the draught of air may be stopped or regulated at will. When the flavour of newly-raised Potatoes is preferred to having them like a ball of flour, a quantity of earth neither dry nor wet may be sprinkled amongst them. With a little attention to ventilation, these roots may be kept as well in a house as by any other method, and any labour they require in spring and summer, can be performed in unfavourable weather. When one sees the large heaps of Potatoes piled in the fields together, and thinks of the heating and fermentation to which it is most surprising that their flavour should be deteriorated, and that when such tubers are planted, after an exhausting kind of vital energies, they either shrink into growth as if on a sickly vegetation.—*Ed.*

VI.—BROOMSTHORPE.

Old Woods.—Attend to directions given in late Calendars.

Conifers.—No time for delay in planting in dry, or in planting new ones, if possible. Remove the common Bird-cherry, or Hackberry, as grand objects, and thrown on account of its quick growth above Yours, it is useful for the same purposes as the Hazel, and thrives luxuriantly in moist ground.

Young plantations.—Go over with a view to the addition any planting that has been omitted in the former spring. As hares and rabbits begin their depredations upon young plants and trees, long before severe weather sets in, the sooner they are protected from them the better. A few days may cause much injury. I know of nothing of more easy application, or less unsightly, than a quantity of fresh night soil, (cleaning), now dung, soot, or ashes, this applied to the stems, in the form of thick plaster, will keep them perfectly secure from injury.

Hedge-row.—Should the work recommended to be done in previous Calendars, The Warentree and English Elms, with the Poplar and the Walnut, are trees suitable for hedge-rows in some localities.

Nursery Work.—Same as in late Calendars.

VII.—COTTAGE GARDENING.

Such of the cottagers as have a favourable situation against the wall of the cottage, or elsewhere—a south aspect, or one inclining to south, being preferred—have the choice of having a Peach, Nectarine, or Apricot tree, such as the Royal George, or the Noblesse (or Systonian), the Elruge, or the Violette Hative; and of Apricots, the Moorpark for dessert, and the Breda for preserving. Apricots bear well in some situations planted against the cottage wall, and in favourable seasons some cottagers make a handsome show of Peaches and Nectarines, where the trees have a good border, and are well attended to. In forming a border, clear out the soil to the depth of about 18 inches in the wall, giving the bottom a gentle slope towards the front, which there should be a drain, for the purpose of speedily carrying off all superfluous water. Cover the bottom of the border with concrete, or anything that will prevent the roots from getting down into bad soil, and then fill up with fresh turfy loam from the surface of an old pasture, if that can be procured. Where it cannot be avoided, as frequently the case, the border may be all paved over, with the exception of a small space round the neck of the tree, and used as a walk. In some of the best gardens, Apricots may be seen growing in borders made in this manner; and I have seen them on cottage walls, with the roots going under the pavement, bearing abundance of good fruit, even in spite of bad management as regards pruning, &c. Let all rubbish round the trees be cleared away to the manure heap, which should be occasionally turned, and covered in with soil. Everything that can be used as manure for manure should be collected for, as I have before stated, upon its accumulation the crops for next year greatly depend. Rough-dig any vacant ground, exposing it in large ridges to the action of the weather, as possible. Close your cottage, and put everything in order for the winter's blast.

State of the Weather near London for the week ending Nov. 4, 1843, observed at the Horticultural Gardens, Chiswick.

Nov.	Mean Temp.	Mean Temp.	Mean Temp.	Mean Temp.	Mean Temp.	Mean Temp.	Mean Temp.	Wind	Rain
	Aver.	Max.	Min.	Diff.	Diff.	Diff.	Diff.		
Frid. 1	49	59.38	39.625	19.75	3	3	3	W.	0.05
Sat. 2	51	59.84	39.719	20.125	4	4	4	W.	0.00
Sun. 3	52	57.406	46.313	11.093	3	3	3	W.	0.00
Mon. 4	52	59.47	46.156	13.313	4	4	4	W.	0.00
Tues. 5	50	58.125	39.875	18.25	3	3	3	W.	0.00
Wed. 6	48	59.594	37.594	22	4	4	4	W.	0.00
Thurs. 7	50	59.875	39.594	20.281	4	4	4	W.	0.00
Average		58.91	41.11	17.80					0.05

Nov. 1 Hazy; uniformly overcast; densely clouded and gloomy; mild.
— 2 Constant rain throughout; densely overcast; boisterous.
— 3 Densely clouded; dim; gloomy.
— 4 Partially overcast; cloudy; low fog for some hours.
— 5 Uniformly overcast; densely clouded; hazy; hazy at night.
— 6 Slightly overcast, cloudy and dull throughout.
— 7 Rain; showery, cloudy; densely overcast at night.

Mean temperature of the week 49° below the average.

Range of the Weather near London during the last fourteen years, for the week ending Nov. 10, 1843.

Nov.	Aver. Highest	Aver. Lowest	Mean Temp.	Years in Mean	Greatest quantity	Least quantity	Days of
4	52	39	45.5	14	1.50	0.00	4
5	52	39	45.5	14	1.50	0.00	4
6	52	39	45.5	14	1.50	0.00	4
7	52	39	45.5	14	1.50	0.00	4
8	52	39	45.5	14	1.50	0.00	4
9	52	39	45.5	14	1.50	0.00	4
10	52	39	45.5	14	1.50	0.00	4

Notices to Correspondents.

Books.—*J.*—The Cacti are described in Pfeiffer's "Monographia Cactearum;" the Aloes, in the 4th volume of Haworth's "Enumeratio Plantarum."—*A Constant Reader.*—Apply to Mrs. Loudon, from whom the Numbers you want may be had.

CHINESE QUINCE.—*Dodman.*—This has been fruited in this country, but it requires a wall. The fruit is very different from that of either the Common or Portugal Quinces; it is cylindrical, about 6 inches in length, and exceedingly gritty. We are not aware of any attempts having been made to hybridise the Quince and Pear.

CHATSWORTH.—*J. M.*—There is no doubt about the weight of the masses of rockwork used at Chatsworth; they are of sandstone, and were removed in a very simple way, viz. by lamination.

CHRYSANTHEMUMS.—*C. P.* says, that all his Chrysanthemums in the *second* year always come pink. He had new varieties again last year, some of which were yellow, some white, and some pink, and they are all this year come pink, as they did before; the soil, which was made new this last spring for them, is composed of leaf mould two years old, rotten stable manure, and some rather clayish soil. We can offer no explanation of this supposed fact; but should fear that a change has been made among the plants themselves, rather than their blossoms.

ENDIVE.—*Dodman.*—The variety you have seen in Belgium is most probably the Corne de Cerf.

FRUIT-TREES FOR ESPALIERS.—*C. B.*—Apples: Golden Reinette, Blenheim Pippin, Claygate Pearmain, Ribston Pippin, Old Nonpareil, Herefordshire Pearmain, Court of Wick, Dutch Mignonne, Court Pendu-plat, Scarlet Nonpareil. Pears: Beurré Rose, Marie Louise, Glout Morceau, Bacon's Incomparable, Passe Colmar, Easter Beurré, Beurré Rance, Thompson's, Winter Nelis, Suffolk Thorn, Knight's Monarch.

FUCHSIAS.—*A. X.*—Cutting down the Fuchsia Corymbiflora will make it as bushy as its nature will permit, and not prevent its flowering next year; but it should never be grown as a bush. It ought always to be trained with a stem 7 or 8 feet high, and an umbrella head.

GESNERA ZEBRINA.—*A Subscriber.*—It is probable that some insects have eaten the round holes in the leaves of your plant, although you cannot detect them. It should be potted in rough heath-mould, mixed with about one fourth of silver sand. The pot in which it is grown should be well drained. It is a stove plant, and requires a humid atmosphere.—*A Constant Reader.*—Your (Gloxinia) Gesneria zebrina evidently requires more heat. The temperature should never be below 60° at night when the plant is coming into bloom. This plant will succeed best where bottom heat can be applied.

GRAPES.—*J. B.*—The Black Lombardy is the same as West's St. Peter's (not Oldaker's); bunches rather large, but not long; berries, large, roundish, black, thin-skinned, rich and moderate bearer.

HEATING.—*X. Y. Z.*—We quite agree with you as to the trouble, dirt, and inconvenience of growing Melons and Cucumbers with dung. Your plan of heating a series of pits with hot water seems so good that we will publish it as soon as a cut can be made. A paper on Tank-heating appears in another column, which you will do well to consult.

INSECTS.—*X. X.*—Should you have any opportunity of detecting the insect which bores into your standard Roses, and will forward specimens to Mr. Curtis, he will give you the information required. *R.*—*S. T.*—Your Oak-leaves are covered with the Oak spangle, which is produced by a minute Cynips. You will find their history in the *Gardeners' Chronicle*, vol. iii. p. 805. *R.*—*J. S—h.*—Your Vine-leaf insects are the larvæ of a Thrips. *R.*—*Nux.*—We must refer you to vol. ii. p. 108, for the history of the Filbert Beetle, which will enable you to judge what is best to be done. Burning the leaves and rubbish under the trees, and forking in lime, would perhaps be useful. *R.*—*P.*—We can only recommend you to persevere with the washing, for one infested plant may inoculate all the others in time. We think the gummy exudation cannot arise from the insects, as you say the Lemon-plant is now free from the Coccus. *R.*

IPOMŒA HORSFALLIÆ.—*Devoniensis.*—Cut your plant well back, and wash it with soap-suds and sulphur. It would be advisable to let it remain dormant until spring, then by syringing it morning and evening, when it begins to grow, the red-spider may be kept in check.

LASCHENAULTIA FORMOSA.—*A Subscriber.*—This plant should be grown in a warm greenhouse. Such soil as Heaths are generally grown in is suitable for it.

MILDEW.—*Dendron.*—Doubtless it is cold and damp together that have mildewed your Hendrobium nobile. At this Dendrobium like warmth, and 54° is too low for them. The total obstruction of sunlight has increased the mischief.

NAMES OF PLANTS.—*R. T.*—1, Hawthorn-leaved; 2, Golden-blotched; 3, *Veronica Buxifolia*; 4, Berry-bearing Sedum; 5, Adam's Fennel; 7, New Golden Pippin; 8, Dutch Mignonne; 9, Scarlet Crofton; 10, Cornish Gillyflower; 11, Prince's Russet; 1, Colmar; 2, False Colmar; 3, Glout Morceau; 4, Winter Nelis; 5, Beurré Rance; 6, Soulding Pippin; 7, Downton Gem; 8, Colmar; 9, Glout Morceau; 10, Beurré Rance; 11, Beurré Bosc; 12, Beurré Diel; 13, Passe Colmar; 14, Beurré Bosc; 15, Beurré Diel; 16, Passe Colmar; 17, Beurré Rance; 18, Beurré Bosc; 19, Beurré Diel; 20, Passe Colmar; 21, Beurré Rance; 22, Beurré Bosc; 23, Beurré Diel; 24, Passe Colmar; 25, Beurré Rance;

AGRICULTURAL COLLEGE.—At a Meeting of the Committee of Management, held this day, it was resolved:—That the Head Master be invited to apply for admission to Mr. Pusey's Agricultural Lectures, and that he must have a knowledge of Agriculture sufficient to be connected therewith.—The salary to be Fifty Pounds per annum additional, for every pupil above the number of 40. The master to be allowed the board in College for himself and wife, and a furnished dwelling in the College. A married man will be preferred.—Applications to be addressed to the Committee, at whose office copies of the Rules and Regulations may be had. Candidates will be required to attend the Committee, if desired, on the 20th of November, when the appointment will be made.—The Committee propose to give the superintendence and control of the whole establishment, subject to the Committee alone, to the person they may select to take part in the Farming, Teaching, or other duties, as circumstances may require.—Applications and Testimonials to be sent to Mr. Pusey, Pusey, Faringdon, Berks, on or before the 1st of Nov. 1844.

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The Agricultural Gazette.

SATURDAY, NOVEMBER 9, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Nov. 13—Agricultural Society of England.
Thursday, Nov. 14—Agricultural Society of Ireland.

Wednesday, Nov. 20—Agricultural Society of England.
Thursday, Nov. 21—Agricultural Soc. Board of Ireland.

SUNDAYS OF CHURCH.

Nov. 10—Falstaff. Nov. 24—Dobcroft, Ridleigh.
Nov. 17—Fir Grove, Bishop's Ferry.
Nov. 24—Richfield. Nov. 31—Wentham.
Dec. 1—Sandhills. Dec. 8—Gibside.
Dec. 15—Green Ferry.

We continue our remarks on the practice of CHALKING LAND. In parts of Hertfordshire a heavy dressing of chalk raised upon the spot by means of shafts sunk through the soil, is spread at intervals of 14 or 20 years over the argillaceous portions of the London clay, and over the sandy and gravelly soils, occasionally overlying the lower beds of that formation. The drift constitutes the surface soil over a considerable tract, which skirts the base of the chalk hills, and is laid down in some of our geological maps as chalk, in others, as a member of the London clay. Its depth varies greatly and rapidly, being seen in the same field less than 3 feet and more than 10. In brickfields near St. Alban's its depth varies between 6 feet and more than 20; and it is less than a quarter of a mile from these pits has cut through the drift to the depth of 30 or 40 feet, without exposing either chalk or any beds of the London clay.

Analyses of the chalk of different localities, and of the same locality at different depths, are among the data wanted to place the improvement of land by means of chalk upon a rational and scientific basis. The geologist recognises in the white chalk upper, middle, and lower beds, differing in the abundance in which flints and organic remains are present, differing in their mineralogical aspect, and, of course, in their chemical composition. The chalk of one locality Mr. Lonsdale found to be composed almost entirely of organic bodies—microscopic shells and fragments of corals. In that of Brighton nearly 1 per cent. phosphoric acid has been detected. Do any portions of the chalk of other districts contain more of that valuable substance? Do all contain as much? Different beds of chalk contain different proportions of alumina mixed with the calcareous matter which constitutes the greater part of their bulk. For the improvement of sand or gravel we should expect that chalk to be the most efficacious which contained the greatest proportion of argillaceous earth; while for the improvement of clayey soils, chalk possessing the opposite qualities would appear to be preferable. The farmers of Suffolk prefer the chalk brought from Kent to that which lies under their own fields. Does this arise from difference of composition, or from the cheaper rate at which the Kentish chalk can be procured, by reason of the large scale on which the pits are worked there, and the depth of soil lying over the chalk in that part of Suffolk where it is used? These are important questions, which can only be solved by a rigorous chemical analysis of the chalk of different localities. But who is to undertake this important though expensive work? It is a work in which, in our opinion, a portion of the funds of the Agricultural Associations might be profitably spent.

We have made arrangements for laying before our readers details of the practice of chalking land in those districts where it is most prevalent; and Mr. Gyde, of Painswick, has undertaken the chalking of a series of specimens of chalk from different portions of that formation, with which Mr. Trimmer will supply us. The results of these analyses will appear in our columns.

We shall conclude this week's article with a few practical details of the Hertfordshire mode of chalking obtained from some workmen whom we found engaged in the process. The field on which they were employed was a Wheat stubble, in course for a Turnip fallow; the adjoining field, a Clover ley, had just been chalked for Wheat. They were situated in the parish of Ridge, at the foot of the hill of the same name; the soil was a gravel, with a light loamy base, belonging to the drift formation. Its depth, as exhibited in one of the two pits which were open, was about three feet; in the other nearly ten.

The chalk was raised by means of a common windlass, in a bucket holding a bushel. Twenty-two of these are called a "yard," or a load. How many loads they were spreading to an acre the workmen did not know; some farmers, they said, laid on 100 loads; some less. From the thickness of the covering, we should consider full 100 loads to have been used in this case. After the work is finished, the excavation is filled up by throwing in the soil and chalk from round the mouth of the pit, thus producing a slight hollow in the field. There was in this case a contractor for the whole job, between the farmer and the workmen. The men stated the price received by them from the contractor to be 6d. per load of 22 bushels for raising the chalk, carrying it over the land, and spreading it. The cost of the operation, at this rate, supposing the largest quantity above-named to be used, would not exceed 50s. per acre, and the benefit of it would be felt more than 14 years. It was stated by one of the workmen that his grandfather had been accustomed to receive 1s. per load where they had 6d. At the latter price they said they could earn, by a hard day's work 10s. or 11s. a week. It is usual to sink pits at such distances that the chalk can be wheeled from them over the field; but in this case, the covering being deep on one side of the field, and the farmer being unwilling to disfigure the surface by more of the hollows which remain after filling in the pits than were absolutely necessary, allowed the use of a horse to draw the chalk to those parts which were beyond wheeling distance.

We have no doubt this account will draw forth further particulars from some of our readers resident in the district. The amount of alumina and phosphate of lime applied to this field in a dressing of 2200 bushels of chalk we hope to be able to announce before long.—*E. W.*

CULTIVATION OF WHEAT ON THE SAME LAND IN SUCCESSIVE YEARS.

In Oct., 1843, you published an account of an attempt of mine to grow Wheat on the same land year after year. As the subject appears to me to be an important one, and as many persons who may read this letter may either not have seen the former, or may have forgotten it, a short summary of the former experiments may not be out of place.

These experiments were commenced in the autumn of 1841, after the field had been cleared of a crop of Oats, which was a very bad one; the land being not only naturally poor, but foul, and exhausted by long cropping. As the season was very wet, it was indifferently cleaned, and *one-fourth* of it manured with a compost of night soil and ashes, and then the field was sowed with Wheat. Two of the remaining three-fourths were manured on the 6th of May, 1842 (the spring being a very dry one, no rain came until that day), one with guano, the other with nitrate of soda, each at the rate of 2 cwt. to the statute acre; and the remaining fourth was left unmanured. The following were the results at harvest:—

	Bushels (of 60 lbs.) per acre.
That manured with night soil and ashes produced	32
" " guano	27
" " nitrate of soda	27
Unmanured	19½

When the field had been cleared of the crop, it was immediately ploughed up; and, as the season was favourable, the land was well cleaned, and sowed with Wheat in October, 1842, without any manure, except Lawes's guano, which was scattered over it when the Wheat was coming up. The field was divided into three portions; and on April, 1843, was manured as follows:—No. 1, with 60 lbs. of sulphate of magnesia, and 2 cwt. nitrate of soda to the statute acre; No. 2, with a compound from a manufacturer of chemical manures, and No. 3, with 60 lbs. of silicate of soda, and 2 cwt. nitrate of soda to the acre; with the view of still further varying the experiments, by the addition of silica, combined with guano, for sight after the application of the chemical manures. The crop promised to be a very good one, but it was much plundered by the birds; and at this summer was taken a sufficient number of feet. Allowing for the deterioration occasioned by the birds, the crop per acre was estimated at [illegible] bushels (statute) [illegible] and in that part of No. 3 which was also covered with guano, it reached by actual weight (not by estimate) 38½ bushels of grain to the acre. These patches in Nos. 2 and 3, which had given out of them, suffered so much from the depredations of the birds, that no account was taken of them separately.

The crop was cleared off the land, which was cleaned, sowed, and ploughed in, last year, on the 3d October, 1843. It was drilled in rows, seven inches apart, and at the rate of 2½ bushels to the acre. It is to the results of this last year's cultivation that I now call your attention.

Before sowing, the land was sub-soiled to the depth of from 14 to 16 inches, except a strip of about 10 feet in width down the middle of the field, which was left unsubsoiled, for the purpose of ascertaining what were the advantages derived from subsoiling. The advantage was merely that of thorough draining (for the field had been previously drained previous to the subsoiling). It was thought possible, that this strip of 10 feet wide would be drained by the subsoiling on each side of it; but in addition to this, the Wheat plant derived more nourishment from the manure put into the soil, where that was loosened by the subsoil plough, the crop ought to be better in the subsoiled than in the unsubsoiled part. The field was over the ridges of a hill, and upon that account the soil is in good condition. It was deemed expedient to give it a slight dressing of coal ashes and night soil, from an idea that the plant would scarcely survive the winter unless some stimulus were applied there; but the ashes contained little manure, and were only applied so the worst part of the field, covering about one-third of its surface. The Wheat was Spalding's Prolific; it came up evenly and well all over the field. It was hand-sowed with lime early in February, to the extent of about 24 cwt. of dry lime on the acre.

In order to ascertain the value of lime, and the proper quantity, I had the field uniformly covered with it, except one land, which was left entirely without, and the headlands, which had one three, the other six times as much lime put upon them as any other part. The field was also dressed with chemical manure of the following ingredients, on the 26th March, viz.:—

[illegible] cwt. nitrate of soda
[illegible] cwt. impure silicate of magnesia
[illegible] cwt. silicate of soda
[illegible] cwt. common salt
[illegible] cwt. guano

Speculating on the probability of a dry summer, I gave it an extra quantity of manure and chalk: that where guano is used afterwards, it will by me the nitrate of soda might be dispensed with, which would bring the cost to 22s. 6d. per acre. I should prefer guano to nitrate of soda, because of the other matters contained in the former. At the distance we are from the sea (about 30 miles), it would seldom be necessary to apply common salt, as the gales of winter generally bring as much as is needed; but last winter we had no such visitor, I think though, that where salt was applied, along with the other chemical manures, the Wheat was more luxuriant than where there was none; but the point is not understanding of the [illegible] was not kept separate.

When the chemical manure was applied, one land was left without it, for the purpose of comparison. Guano was sowed on the land on the 29th March, at the rate of something less than 2 cwt. to the statute acre; one side of the field being covered with Peruvian, the other with African; and the land on which no chemical manure had been sowed was, half of it covered with guano, and the other half left without anything except lime; but as it was thought desirable to ascertain the value of the chemical manure without lime, each half of this patch was sowed with the chemical manure in April, after the long drought of the last spring had thoroughly set in. A small patch was left unmanured, in order to show the natural condition of the land, and to serve as a comparison both with the manured parts alongside of it, and also with the condition of the field when the experiment commenced, in 1841-2, when the [illegible] portion yielded only 19½ bushels per acre. This part of the experiment, however, was frustrated by the carelessness of the men who threshed out the crop.

The crop was a very good one throughout the field, but was evidently shorter and thinner where there was no lime, and also where guano was applied alone. It was best on the headlands, where more lime had been applied.

The weather was exceedingly favourable until the wheat was going out of bloom; but it then changed, and the crop was beaten down by the rain, in some places so thoroughly that it never rose again; and from that time to this day it was ripened (the 21st August) there were not more than six fine warm days. This cold and ungenial weather would, no doubt, materially affect both the quantity and the quality of the crop, the sample being only just fair.

On threshing out the crop, I find the result to be as follows:—Where the guano and chemical manure were applied, but no lime, the yield was 19½ bushels (of 60 lbs.) per statute acre; where the land was left unsubsoiled, it was 32½ bushels; where guano alone was applied, it was 32½ bushels; where the chemical manure alone was applied, it was 43½ bushels; where the African guano was applied, it was 45 bushels; where the Peruvian was applied, it was 52½ bushels; on the headlands, where three times the quantity of lime (or 3½ tons per acre) was applied, it was nearly 62 bushels; and where six times the quantity of lime (or 7 tons to the acre) it was 49½ bushels. I give this last result as it was ascertained, but do not consider it conclusive, for the

Wheat-plant on this manured looked quite as well as the other, until it went out of bloom, when from some unknown cause, it was entirely blighted, in irregular patch, from a foot to 2 yards in width, and extending almost from end to end of the manured row, becoming brown and parched, as if affected by lightning, or some atmospheric visitation. When the rest of the crop ripened, the results were clearly to the eye. I subjoin the following tabular statement of the produce per acre, in the different parts of the field:—

Guano alone	32 bushels.
Chemical manure alone	24
Guano and chemical manure, with views of [illegible] on the wheat-seed and middlings	[illegible]
Do. do. do. and [illegible]	[illegible]
African do. do. do.	43
Peruvian do. do. do.	[illegible]
Do. do. do. [illegible]	[illegible]
Do. do. do. [illegible]	[illegible]
Average crop thereupon the field	[illegible]

It may be as well to observe, that the total expense of the manure, and of its application, to that portion of the field which produced 32 bushels per acre (including the guano and the additional quantity of lime used), came to the rate of 31s. per statute acre. Deducting the cost of the nitrate of soda, the utility of which, under the circumstances, I am inclined to doubt, it would have been 23s. 6d.

I consider these to be very favourable results, and as offering strong inducements to continue the experiments. I have accordingly had the land ploughed up and cleaned, and it was again sown with wheat on the 9th instant.—*Farmer's Magazine.*

ON FLAX-SEED AS FOOD.

To many of the readers of the *Agricultural Gazette* an apology may be necessary for bringing this subject so frequently under their notice; this may not be impressed with a clear idea of its importance to the farmer. In a recent paper in one of the numerous agricultural publications of the day, while advocating the advantages of another addition to the list of cultivated plants in Britain, the writer appears to entertain such very extraordinary notions respecting the culture and the application of the seed to food for live stock, that the hopes he has aroused of the one and the fears he has awakened of the other are now so sensible of their folly, that they will little help either cause, and not unlikely the ultimate condemnation of their countryman, on whose behalf they have so shamefully imposed upon the credulity of the public. I refer to Mr. [illegible] paper, which, although [illegible] language is strong indeed, that [illegible] proceeds more from gross ignorance and [illegible] of the subject than from any wilful misrepresentation. It is, in fact, language [illegible] whose sole efforts are devoted to the [illegible] of their own class of their fellow-creatures, should be attached to [illegible].

[illegible] Flax culture in this [illegible] particularly anxious to [illegible] sanguine expectations [illegible] realized thereby to be obtained. I [illegible] was favourable or profitable [illegible] be adopted, and that such [illegible] requires a greater degree of [illegible] in the performance of the several processes connected with it than is necessary in the case of almost any of the other cultivated crops. On these grounds, then, it will [illegible] that such farmers as had not previously had opportunity of acquiring a practical knowledge of the mode of proceeding adopted in the Flax-growing districts, should be cautious in their first attempts to grow the article, and that their operations should, in the first instance, be conducted only on a small scale, until they were satisfied that they were likely to be successful. In regard to the use of Flax-seed as food, such precautions were scarcely necessary, as the quality of the substance used in a particular form by British farmers from a very early period has been very great. Oil-cake has always been in high and deserved repute as food for the domestic animals of the farm, and perhaps it was no great innovation of established practice to recommend the use of the genuine seed itself. Many farmers are aware of the extent to which adulteration has been practiced in the case of the portable manufactured cake, they are abundant grounds for stating that a similar system has prevailed in the case of oil-cake, which, being a valuable substance, held out greater inducements for the adoption of such a course. This imposition, however, can be guarded against by using the seed itself instead of the cake prepared from it, and in the former case it is quite [illegible] that no adulteration can take place which the most simple examination will not [illegible] In the [illegible] of the nutritious ingredients respectively contained in the Flax-seed itself and in the cake [illegible] usually existing [illegible] former is concerned with the [illegible] much in its favour. [illegible] difference in money between [illegible] important reasons also exist for a preference [illegible] to the seed, which need not here be [illegible] have been so recently [illegible] in former [illegible] on the subject.

The numerous inquiries [illegible] on the subject are, indeed, the best evidence of the system of feeding here recommended becoming more popular. That most misrepresentations [illegible] regarding it is evident from the nature [illegible] of the questions asked as to the manner [illegible] into effect. A Gloucestershire farmer [illegible] that he had made good thick jelly from Flax-seed [illegible] boiled into meal, but cannot [illegible] that its effects in fattening cattle are [illegible] to that of the common oil-cake, and assumes as a reason for the supposed inferiority of the former, that the seed may not have been sufficiently reduced before boiling, and that therefore a portion of the oil may have passed through the animals without its having been digested. The reduction [illegible] to a state of meal, and [illegible] the [illegible] of the oil, [illegible] the [illegible] of the [illegible] is no good reason assigned for the inferiority of the latter to the former, as it is [illegible] sufficient for ascertaining the [illegible] of the [illegible] of food. In the third [illegible] the [illegible] Flax-seed [illegible] with [illegible] of the [illegible] of the [illegible] with both theory and practice, as far as already applied, it is [illegible], it certainly requires little [illegible] to [illegible] that it [illegible] to [illegible] the subject of Flax-seed as food [illegible] those considered apart from the cultivation of Flax as a [illegible] crop. The chief supply, both of seed and cake, is at present obtained from the Continent, from which, no doubt, an increased quantity may be obtained, if required, so that it is altogether a matter of after-consideration how far it may be advisable to raise Flax-seed in Britain in preference to importing it from other countries. When the seed is consumed on the farm, it is certain that Flax is a highly *restorative*, and not an *exhausting* crop, as many have supposed; and from this circumstance, a gradual increase of the cultivation of that crop need not sensibly diminish the production of Wheat.

Experience having proved the great value of house-feeding in almost every case in which it is practicable, both as economising food and adding greatly to the stock of manure, advantage has been taken of the unexampled nutritious properties of Flax-seed to carry that system of feeding into effect, where it could not without this auxiliary be introduced; and instead of the usual method of confinement by stakes and chains, Mr. Warnes introduced the plan of feeding the cattle in boxes, somewhat similar to those in which sick horses, or brood mares with their foals are confined, as a medium between confinement by tying to the stake and more confinement in open yards, with shelter-sheds attached, as is usual in the practice of Scottish farming. This system, while it affords ample opportunity for moving about in the inclosure, secured a more uniform degree of warmth to the animals—a consideration of which modern science has abundantly shown the importance—and guarded the manure made by the animals from loss by exposure to the weather. This plan of box-feeding is, of course, applicable in the case of other articles of food as well as Flax-seed, and cannot therefore be regarded as a peculiarity consequent on the adoption of that article of food. Many inquiries have been made relative to the construction of these boxes by persons anxious to make a trial of Flax-seed, but it will be seen, that though a highly desirable arrangement for feeding cattle at all times, it is not necessary that the slightest change should be made in the arrangements of the farm-yard for that purpose. For the satisfaction of such inquirers, a description of Mr. Warnes's boxes is given; but it is hoped that these observations will tend to remove much misapprehension which at present exists on the subject, and remove one of the chief obstacles to the more general introduction of the system of feeding so strenuously and justly recommended by that gentleman. The description which follows is that of his own boxes, and given in his own words:—

"The description of these buildings is difficult, because however clear and explicit, it must convey ideas of magnitude and intricacy, while neither exist. To make ten boxes, a space will be required of 90 feet long and 12½ feet wide; then let a line be drawn from one end to the other 3½ feet wide, from the side most convenient to the passage. Next let the mould, to the depth of one foot, be excavated from the other part, and thrown on the side intended for the front, and spread to the thickness of a foot deep; this will give two feet from the bottom of the boxes to the surface. A wall of brick-work, 4 inches wide and 2 feet high, is next to be built round the inside of the part excavated, and intersected at distances of 8½ feet. At each angle, the brick-work should be about 12 inches square, which will both support the posts, and afford strength and durability; upon the wall a sill of wood is to be placed, for which purpose large poles, split or square, are adapted. The foundation being now complete, posts 6 feet long, and the necessary rails and ties, may be placed upon it, across the less the most ordinary poles may be laid to support a roof composed of the trimmings from hedges [illegible] inches, and completed with a thatch of straw or rushes. Two gates must be added to each box, one in front and [illegible] to open on hinges, and the other to be [illegible] to the [illegible] [illegible] of the [illegible] [illegible] [illegible] plan is pleasure. Presuming that [illegible] [illegible] [illegible]

The land of this track is generally too narrow, that those portions of the farmer's experience which would induce him to alter in any case the general practice of the district around him.

The general rotation in the fourfield course which I have already quitted is—1st, Fallow; 2d, Wheat; 3d, Barley; 4th, Seeds; 5th, Potatoes. The two latter crops is here sometimes substituted by Turnips, but almost omitted altogether. Lime is universally applied on the fallow once in three years. This frequently done before the Wheat crop. Lime is sold on the land at the rate of 60 or 80 bushels per acre. The average of the crops per acre are—Wheat 20 bushels; Barley, 30 bushels; and Potatoes less than 7 tons. This soil is not really fitted for the growth of Turnips, but few Turnips are grown. The soil on the old red conglomerate and its associate beds is rather of a light nature, but is certainly capable of producing, owing to its disintegration, a fine loam and to all appearance

The land on the lower members of the old red is much covered with extensive timber, chiefly Oak. It is generally a healthy dry soil, partaking more of the nature of the clayey than of the sandstone strata of which its subsoil is composed. The best of it are in pasture. The crops are many and of every description—both of the yellow Dawwheat and the white Moon flower. Over the whole district the crop of hay will not average 1½ tun per acre; about two-thirds of it are mown each year, and on many farms this portion is not shifted about among the several fields, but certain fields are grown, and the rest of the farm depastured during a succession of years.

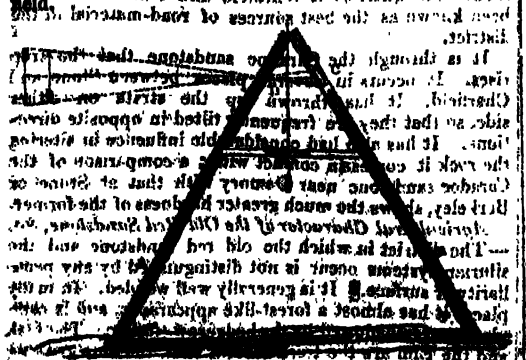
Between Berkeley and Parcell the land is much overrun by Elm and Oak in the hedgerows. A three-field course is here followed—Wheat, Beans, and Potatoes being the crops cultivated. The soil here is sometimes a stiff clay, and at others it is brashy and sandy. If it were drained, the greatest improvement would be effected. Nowhere else in the county would such marked effects follow the use of this invaluable means of agricultural improvement. Drainage not only improves the capabilities of the soil, but it greatly diminishes the expense of cultivation, which is not an insignificant item in the sum total of the advantages attendant upon it. The answer to the question—"Would you, if you were allowed, break up a larger portion of your pasture-land?" which I frequently put, was uniformly answered in the negative on the undrained clay soils of the district, and in the affirmative on all the sandy and comparatively dry soils—and few wholly on account of the great expense of cultivation wherever the soil is wet.

The average per acre, near Berkeley, of the Wheat crop is above 20 bushels. The Potato crop generally does not belong to the farmer. The land for the purpose is let to the labourers, and others the farmer first cultivating and manuring it. It is in this way let as high as 8l. per acre. The kind of Wheat sown is the old Red Lammas. On some of the pasture land, clay-draining has been followed to a considerable extent, and the mole-plough has also been used. The soil is at all enough to admit of these drains, and at the same time sufficiently free to drain easily, so that great success has followed them. They are, however, entirely confined for the arable land, each drain is being stopped by the treading of horses in wet weather.

Over the whole of the silurian formation the land is pasture, which is similar in quality to that on the old red sandstone. It is superior, however, to that on the poorer sands of that formation, but with it requires drainage, which is but rarely done. The crop-rock being of very small extent is not of much agricultural importance. It is covered by a red, apparently barren, soil, generally close upon the rock. It is shrubby, as pasture, and affords a Grass superior in quality to that on the formation surrounding it, and in wet seasons superior in quantity also. It is a deep soil, and would pay better to be cultivated as arable land than as pasture, being fertile, deep, and easy of cultivation. It possesses the three great requisites of good arable land.

MR. DENTON'S LEVEL.

Being daily in receipt of communications on the matter of my A Level, you will, I may judge from the number of these communications, interest many of your readers by affording me the opportunity of explaining the geometrical problem upon which this simple instrument is based, and the mode of using it in the field.



It is through the [illegible] that the observer will comprehend the science, the portability and the facility with which it may be used, of simple the surface or in the trench. The legs turn upon a hinge and fold into grooves cut in the [illegible] legs may be closed in a pair of seconds, folds and the whole may be tied into a small bundle for measurement. The legs are sufficiently narrow to stand in the narrowest trenches, while the cross-bar will afford the means of testing the instrument on the surface [illegible]

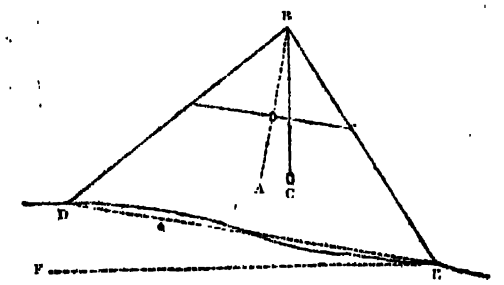
The object of the instrument is to assist foremen and workmen in setting and preserving a uniform fall in all works requiring such regularity. In spirit-level, although understood by workmen, is a thing easily put out of order, and to all but [illegible] liable to be broken into use, therefore is dreaded by workmen, as a process involving much [illegible] time, care, and precision, for which fingers are performed.

In draining and sewering, if the first object of the operator is to direct his drains according to the best fall of the ground, the next point of importance is that the flow of the trench, and the course of the tiles, soles, or bricks, should be even and regular from the top to the bottom of the drain. Any hollow in the drain intercepts the sedimentary matter which the flow of the drain water would otherwise carry out with it; the sectional area of the water-way is thereby lessened, and the sediment, gradually accumulating, after a time causes a stoppage, the drain bursts, and the work has to be re-done.

The level placed in the trench, as it is dug preparatory to laying in the tiles, indicates by the plumb-line any irregularity bad workmanship may occasion. Such use of the instrument is merely analogous to the mode by which the carpenter applies his square and plummet. It is my wish to prove that the extended principle upon which the A Level is based is so sound, that if accurately constructed, the instrument cannot work otherwise than with perfect efficiency, *in determining the average fall of surface between any two spots within sight of each other*.

It should be observed, that the legs of the instrument being equal in length, form, with the base upon which they are placed, an isosceles triangle, and that, when that base is perfectly level the plumb-bob pendent from the apex must necessarily divide the triangle directly in half. This admitted, it is equally clear that by means of a bar connecting the two legs at any given distance, and exhibiting on its face the centre or half of the angle at the apex, any person is competent, guided by the plumb-line, to raise or depress one leg until it stands on a level with the other: the plumb line will then hit the centre.

Now, as the plummet will always hang vertically, by reason of its weight, any rise or depression of either leg is immediately indicated on the connecting bar by the equivalent deviation of the plumb-line from the centre.



The angle A B C is equal to the angle D E F, *i. e.*, the angle made by the hypothenuse or surface with the horizontal line, is equal to the angle of the line dividing the triangle in half, with the vertical line.

Thus, the difference of height between D and E may be calculated by multiplying the natural sine of the angle D E F (read off on the bar as A B C, *if the index represents degrees*), by the length of the ground spanned between E and D. In the A Level, this is already done; and instead of degrees and minutes, inches and quarters are divided on the bar, so that the operator may at once read from it the difference of height between the two spots upon which the instrument stands, and *vice versâ*. If it is required to sink one leg an inch below the other, the ground is lowered until the plumb-line strikes the 1-inch division of the index on the bar.

It will be seen, that at a certain distance from the apex, on each leg a line of sight is shown. On the one leg there is a sliding sight-hole answering to a fixed index, agreeing with that on the bar B; on the other leg, there are cross hairs fixed, the centre of which are exactly the same distance from the apex as the centre of the index on the opposite leg. The line of sight therefore from these two points is ever parallel with the base of the instrument.

To arrive at the [illegible] fall or surface from the top to the bottom of a field, the instrument must be placed on a level by means of the plumb-line. The operator must then [illegible] to and fro drain, with a rod marked at which he levels to and fro drain, with a rod marked [illegible] a point where the line of sight cuts the ground, [illegible] between the [illegible] point. [illegible] reading with the height of the cross hairs B, above the base of the instrument. He then slides up or down the sight-hole until he fixes the cross hairs upon the paper in the stick.

This line of sight C B C, is parallel with the general line of surface E D, (regardless of its singularities), and therefore forms with horizontal line of sight A B A, an angle C B A, equal to the angle D E F, formed by the plumb-line central and the surface.

Now, as the opposite angles of lines crossing each other are equal, the angle A B C is equal to the angle C B A; and we have shown that the angle C B A is equal to the angle D E F; therefore A B C is equal to D E F, and consequently you are enabled to read from the index at C, the angle *converted into inches and quarters*, which is common to the whole distance from E to D. The height thus settled is transferred to the bar B, and retained by the sliding stud G (see the woodcut), to the edge of which the [illegible] is afterwards worked. This limb is used only to save memory, and assist the man who cannot read.

From the explanation I have given I have shown that, without any measurement of distance whatever, the average fall of surface is arrived at without any chance of error, if the span of the instrument is always the same, and the indices are accurately made agreeable with that space in the first instance.—*Dudley Beacon.*

THE ALLOTMENT SYSTEM IN IRELAND.

I am well pleased to find this system making its way in England, and am not surprised it should encounter some opposition. But that the objections of the farmers, as mentioned in the *Agricultural Gazette*, of the 12th October, are ill-founded, I think no better proof can be offered than the beneficial effects produced by the allotment system in Ireland, where with its modifications it has long been in operation. That it is highly advantageous to the labourer cannot admit of question; without it he could not exist in the dearth of employment, and with the low price of labour, in few places exceeding 8*d.* a day, that it is of much, indeed of essential service to the farmer is evident, for without it he could not pay his labourers; in his want of capital it is, in more than nine cases in ten, his only means of working his farm; it constitutes for him a species of credit, while it gives the labourer a security for his wages. The Irish labourer, whose day clothes are often his only night covering, whose bed is straw, and whose dwelling a hovel, is, by this allotment system, independent of the workhouse and of parish relief, and is virtually a capitalist, for he very generally has, through it, his year's provision in advance.

In many parts of Ireland, the main allotment system obtains, the labourer having more or less land which he holds with his house, and which, from his employer, the rent is paid by his labour, at a stipulated price—an arrangement of which he is very fond to avail himself, and in consideration of which he will give a higher rent for his allotment than he otherwise would. I have a gentleman farmer, in the neighbourhood of Portumna, where labourers' wages were only 5*d.* a day without meals; but they each held from him a house with an acre of land at 30*s.* a year, the grazing of a cow at 30*s.* more for the winter feeding of the cow at from 20*s.* to 30*s.*, a ton; so that these labourers lived in comfort, as the most people of their class, and at the end of the year their accounts were pretty equally balanced. In Tipperary, I found some holding a house and an acre of land for two guineas a year, the summer grazing of the cow at two guineas, and the wages at 7*d.* a day.

What I would call a modification of the allotment system is the potatoe conacre plan which appears to prevail in Connaught, and in the central districts of Ireland. Old Grass-land is let in small lots to the poor people for two or three crops of Potatoes in succession, followed by a couple of crops of Oats, at an annual rent of from 3*l.* to 6*l.* the [illegible] acre—that is, from 3*l.* 2*s.* 6*d.* to 5*l.* the statute acre, according to the goodness of the ground, and its capability of giving crops with or without manure, for the two or three years it is under Potatoes; and from 2*l.* to 3*l.* annual rent of the statute acre for the two years it is under Oats. Another plan more general in the south is the occupation of a hovel and a perch or two of land, at from 40*s.* to 40*s.* a year, and a portion of land ploughed and the manure placed on the ridges ready for trenching in of Potatoes, at from 5*l.* to 8*l.*, the statute acre according to the goodness of the land and manure, the labourer feeding the land and doing all the labour of it, and working out the rent at from 6*d.* to 8*d.* a day. In these cases the land is only let to them for the crop-season.

Now, as a good statute acre of Potatoes will be from 8 to 12 tons, and as they are worth from 1*l.* to 2*l.* a ton, and sometimes more, and very seldom so low as 1*l.*, we may take the average and it is rather a low one—at 1*l.* 10*s.* a ton, and taking the average of produce at 10 tons to the acre, we have 15*l.* for the value of each acre of Potatoes, and as the average rent may be taken at 5*l.* an acre, we find that the allotment system virtually doubles the wages of the labourer, without laying any additional charge on the farmer.

But the allotments of the poorer classes of Ireland are under the worst possible treatment, and as we may expect more and superior management in the allotments in England, so we may expect far more beneficial results. I have no hesitation in saying that an acre of ground, under proper treatment (and I will, at some future period, submit courses for an acre and smaller lots), will give an English peasant as much Potatoes and vegetables as he chooses to eat, a pig at Christmas, and the support of a small cow, such as our Kerry, with the exception of her keep for the year. Half an acre may give him his Potatoes, vegetables, and pig or pigs.

I assure the farmers of England that I never yet knew an Irishman rendered so independent of his employer as to become a saucy and bad servant from his possessing his bit of land; it is attended with a contrary effect, for his dread of losing it is such that he is made much more subservient, and more to be depended on, than the casual day labourer. He becomes, indeed, an interested person, and I have known him even submit to a blow from his employer, rather than leave his service and lose his land. I have resided in Ireland nearly 27 years, and may, therefore, speak with some confidence on this subject.—*J. M. Goodiffe, Granard.*

Home Correspondence.

Mildew on Barley.—It may, perhaps, interest some of your readers to learn that the little black specks, which are so common on the straw of the late Barley crops, are a form of the true mildew which is so destructive to Wheat. I have never observed Puccinia graminis on Barley before, and the heaps of spores are so small, and completely concealed beneath the cuticle, that their real nature would scarcely be suspected. The parasite is too imperfectly developed to be at all injurious. The grains, especially in shady parts of the field, are much infested with Cladosporium herbarum, which makes them nearly black, and there is scattered over the leaves and sheaths a minute club-shaped, jointed parasite, which gives them a speckled appearance. The crops themselves are very heavy, and have been for the most part secured, notwithstanding the unpropitious weather, in tolerable order, and it is thought will yield a fair sample: the heaviest crop was not sown till the 17th of June. Those portions only which were reaped have suffered from the wet, in consequence of the sheaves being more tightly bound, and therefore not admitting so free a current of air. The mould which your Buckinghamshire correspondent found on Wheat, and which proved to be a form of Erysiphe communis, has been, I believe, almost universal, but it does not appear, in any case that I have witnessed, to have been injurious to the produce, though so very abundant. With us, those portions of the leaves and sheaths were most affected that were covered with the red rust, a parasite which, though so much dreaded on the Continent, even more than mildew, as it should seem from Philippar's account, does not appear in Great Britain to do much harm, at least to the red Wheats.—*M. J. B.*

Gypsum and Guano.—In the *Agricultural Gazette* for Oct. 16, a correspondent is informed, that it is questionable if gypsum would tend to fix the ammonia in guano unless both were dissolved in water. From some experiments which I have recently made, it appears that gypsum acts upon the insoluble part of guano, and produces a soluble sulphate; nothing more than perfect contact of the two compounds being effected by the water in which they are placed. After washing a portion of guano very frequently for several days, until every trace of its soluble salts was removed, I added 50 grains of gypsum to 100 grains of the insoluble residuum of the guano. In the course of two or three hours a decided action had commenced. The evaporation of a few drops of the water in which the gypsum and guano were placed, gave a large supply of microscopic crystals, and about 10 grains of soluble sulphates, the sulphate of ammonia being one, were ultimately obtained. My former short notice on this subject showed that the sulphuric acid of the gypsum fixes ammonia, if its salts be dissolved in water; and by the present experiment it appears that, under the action of gypsum, even insoluble portions of guano may be made immediately available for the food of plants. This effect, resulting from the perfect contact of two insoluble bodies, will seem to be the less surprising, if we bear in mind that even two elements, two of the metals, when placed in contact, not in water, but in atmospheric air, immediately liquefy each other.—*J. B. Reade, Stone, Aylesbury.*

Railroads.—Has it occurred to you what may be the effect of these railroad works that are everywhere interesting our properties, and absorbing our land? It is worthy of the consideration of those who are engaged in agriculture, what the results of this all-absorbing mania may be in regard to rents and rent-charge, and as affecting the aggregate produce? Farmers should be looking out; and the sooner they get leases of their landlords the better, I am inclined to think, for them and their families. The venerable Laurent, as in your newspaper of last week, may well protest, though, alas, in vain! And another in vain supplicates for the favourite and cherished Elm or Oak of his early care. Should the Colossus of *Roads* penetrate the park of Blair Athol and others, where the Queen and Prince Albert planted their pairs of Oaks, would they be spared? But the pocket, of course, before the refined pretensions of sentiment, and the M.P. will be the arbiter after all; and if he be a proprietor, we can see (without the aid of Lord Rosse's telescope), which way his vote will go. But consider what thousands of acres of land the rail has already taken out of all possibility of cultivation, and draw your own conclusions.—*An Early Contributor, and an Original Subscriber.*

Chidham Wheat.—I transcribe for you, from "Young's Survey of Sussex," published by the Agricultural Board in 1813, the account of the origin of this variety of Wheat:—"The farming world is certainly indebted to Mr. Woods (of Chidham), for a valuable acquisition, in bringing into cultivation, what with justice has been called, and is a new sort of Wheat, the Chidham White, or Hedge-wheat. The origin of it was this:—As Mr. Woods was occasionally walking over his fields, he met with a single plant of Wheat growing in a hedge. This plant contained 30 fair ears, in which were found 1400 corns. These Mr. Woods planted the ensuing year, with the greatest attention, in a Wheat field: the crop from these 1400 corns produced 8½ lbs. of seed, which he planted the same year, and the produce amounted to 43 gallons; this he drilled, and it yielded 25½ quarters, 9-gallon measure. Having now raised a large quantity of seed, he partly drilled, and in part sowed, the last produce broadcast, over rather more than 50 acres of land, and he gained 384 loads—26 loads of this quantity was sold for seed at 14*l.* 15*s.* per load. The Wheat, upon trial, was found to be so fine, that Mr. Woods had an immediate demand for a far greater quantity than he could spare for sale: 1792 turned out a bad yielding year, otherwise the last produce would have fully equalled 40 loads. With respect to the sample of Chidham Wheat, it is white, of a very fine berry, and remarkably long in the straw, so as to stand in a wet summer full 6 feet in height. The seed is now (1813), dispersed over Hampshire, Surrey, and other counties, and much cultivated about Guildford.—*J. S.*

The Cotswolds.—In your *Gazette* for Oct. 5, I find among your "Notices to Correspondents," in reply to "G.", you describe the soil of the Cotswold hills to be "poor, thin, and brashy." I have resided the greatest part of my life upon the Cotswolds, at Salperton, which is situated between Northleach and Andoversford, and though much of our soil is as you describe, I do not believe it varies more in any part of England. To that answer for it that in my parish we have not one ground without a variety of soils. Some of our stone brash is quite deep in soil (I am not speaking of the valleys), as you will suppose when I mention that I have grown many of the large Belgian Carrots, five pounds weight, without manure, upon a farm which was so wretchedly cultivated that I was obliged to take it in hand four years ago. We have, also, a good deal of very stiff clay, and still more of a very deep soil, called in the country a dead earthy soil, on which, as elsewhere, great benefit is derived from paring and burning, though I am sorry to say, some few landlords are, to the injury of their land and the ruin of their tenants, discontinuing it. You then say, "No cheese is made there." Of course not in the same quantities as in the vale; but I will answer for it that, upon at least one-third of our farms, cheese is made. Cheese has been made from time immemorial in my parish, and it is very highly spoken of by those who taste it. You then say, "Turnips are sown broadcast; but the farmers rarely use artificial manure." Now I should much like to know where you obtained your information, for it would almost puzzle you to find one farm where the Turnips are all sown broadcast, certainly in our neighbourhood; and I understand at the Cirencester Cattle Show, nearly all the competitors for the best field of Turnips, raised them with artificial manure, and if not upon the ridge system, by drilling upon the plain surface. I cannot call to my recollection one farmer who does not use some sort of artificial manure. There was one of my father's tenants who never had, and last year I persuaded him to let me have a few loads of straw, and pay him with bones, which bones I stipulated to put on with my drop-drill. I did this in a great measure to remove prejudice, and though we only put 4 bushels per acre with, I believe, about 16 of turf ashes, he has got better Turnips there than any part of the field with farm-yard manure; indeed, had it not been for the large grub, which has destroyed thousands of acres of Turnips upon the Cotswolds this year, he would have had a very fine crop. I was in great hopes somebody else would have taken notice of your paragraph, but this not being the case, I could not refrain from answering it myself. I will, if you wish it, give you some slight account of the Cotswold system of farming from time to time. [Thank you].—*T. B. Browne.* [You needed to have read "G.'s" communication, to have become qualified as judge of the accuracy of our answer to it. The statements as to cheese-making, and the use of artificial manures are, comparatively speaking, correct, *i. e.* but very little cheese is made, and but very little artificial manure—in the sense in which "G." employed the term—is used. We know that the drill cultivation of Turnips is rapidly acquiring general adoption on the Cotswolds, but that does not hinder us from admitting the truth of "G.'s" supposition, that broadcast culture still to a great extent exists.]

Allotments.—I have read with interest all that your columns have contained on this subject, and am myself endeavouring to pursue some such system in the village where I reside, convinced that it presents a very important means by which to improve the condition of an invaluable class of the community. The suggestion I have to offer, is therefore, made in no unfriendly spirit; yet I confess I am not without very strong misgivings that sooner or later, according as the system of providing the labourer with a patch of ground for his own cultivation may become established, advantage will be taken of his dependent state to turn this present well-intentioned scheme of good against him, and convert it into a medium by which still further to lower his condition. I fear that it will be made a handle to lower still further the wages of the agricultural labourer; that the farmer, taking into calculation the advantages which a labourer and his family may derive from the cultivation of his little allotment, will convert them into an element by which to measure the minimum, daily or weekly stipend on which a labouring man may subsist. The allotment system, by this perversion of its humane intent, may thus, in its ultimate effects, promote the very evil it is meant to correct, its first tendency being to increase population by improving the condition of the present generation, while, if my anticipations should unhappily be realised, its remote consequences will be a return of the privations and poverty consequent on insufficient wages, and operating upon a wider spread surface of society. The probability of the evil seems obvious than the preventive. It becomes, however, the duty of every friend to humanity to be alive to the possible consequences of a measure which now lives in the support of the most philanthropic spirits of the age.—*Basilicus.*

Professor Johnston's Lectures on Peat.—The following is an explanation of the great variety of opinion regarding the use of common salt as a manure. Here Farmer *A* in Dalston on the side of the hill facing the sea, applies salt to a considerable extent in various ways, but never found that it did him any good. *B* and *C*, in the inland valley, had also used it, and to very beneficial results. Farmers *A* and *B* meeting in the market-room, and amongst other subjects of discussion arises upon the use of common salt as a manure. *B* tells *A* that he has tried it often, and in different ways, and never could discover any difference in favour of the crops that had been salted beyond the lump that had not. *A* had, therefore, satisfied himself of its worthlessness, whatever another farmer made of it, and so made up his mind to use no more of it as only so much time and money thrown away. *B*, more than that, it has prevented wetting such manures as might have been of some benefit, and has thus lessened the purchase-money and carriage, damaged his pulling it on, and spiritual failure of my crops; that might have been much better had I used something else, and not depended upon it, I am a considerable loser, and have, therefore, learned a lesson I am likely to remember." Another which farmer *B* says, "I am rather surprised at your statements regarding common salt, as I have been using it for many years, and have always observed a very decided difference in favour of the crops where I applied it, and on that account I am likely to continue to use it while I am satisfied of its beneficial results." Another farmer from the sea aspect says, "I have used salt a good deal, and can confirm the statement of my friend from the same district, that it is useless as a manure, and have also made up my mind to give it up; experience and the evidence of my own senses, telling me it is good for nothing." In this way the discussion goes on, those from their side of the hill being against it, and those from *B*'s side, viz., in the valley beyond, as invariably for it, until the question whether salt is of any use as a manure is really put to the vote. The Professor declined upon the spot to enter into such an argument upon different opinions not within his knowledge of the causes. He called attention to the following, the quantity of common salt, contained in different soils, and explained the maximum amount that any land was likely to require of it; and the Con. the sea decomposing spirited by the winds the salt which comes in the spray and was carried on to the land was of considerable quantity, when it was found that houses as much as 20 miles inland had their windows incrusted with it, so that tracts lying within the influence of the sea-breeze could not be in want of it. The management of draughills then came to be considered, and the generally bad system pursued. He said they were generally placed upon the driest part of the steading, and if that was not dry enough, drains or gutters were carefully cut from them to some lower place, and from what he saw in the market, Brook, where the best and richest part of the manure found its way to the nearest river, and washed onwards to the sea. The Professor then said, "What would you think if, on your going home to-night, you found that the water had all drained away, and that nothing was left but the leaves? You could hardly complain; but under such circumstances you would have no more reason to do so than your farms have to complain; you waste your farmyard tea, and you carry to your land the leaves."—*A Subscriber.*

Two Crops per Annum.—In the counties of Berks and Oxford, Turnips or Rape is very often sown with Beans or Peas; the seed is sown sometimes between the rows with a small hand-drill, and sometimes broadcast just before the last hoeing; I have Tankard Turnips sown with Beans this season, now ready to be fed off with sheep, some of the roots weighing from 3lb. to 4lb. The crop of Beans was very good.—*J. C. C.*

Prevention of the Fly in Sheep.—I have heard that an excellent way of preventing sheep being struck with the fly, is to mix train oil and tobacco to a moderately thick substance, and then occasionally draw a brush down the back of each animal during the season that the fly is about. Once a month is said to be sufficient. Can you say if it is effectual, or will some practical farmer give his opinion on the subject?—*A. A.* [Your plan will very frequently succeed in preventing the attack of the fly, but a more simple and effectual method is the occasional application of coarse whale oil.—*W. C. S.*]

Fire-clay as a Manure.—Mr. James Anderson says, (p. 692, *Agricultural Gazette* 1840), Mr. Sprot planted two Potatoes with a large spadeful of well rotted, hatbed stable-dung, well incorporated with the soil; two others he planted about 18 inches from the above, incorporating with the soil an English pint of Garnkirk fire-clay. I do not think the experiment conclusive as to the extent of the fertilising quality of the Garnkirk fire-clay, for though this clay might make the soil more retentive or attractive of moisture, and so far of service to these two Potatoes, yet from their close proximity to the dunged ground, they probably received as much benefit from the effluvia that permeated from it to the dunged Potatoes did, while this proximity would, if the clay is attractive of moisture, which is probably its case, tended to deprive the dunged Potatoes of moisture, to which the stable-dung also assisted. And the dung been of the byre instead of the stable, and the distance greater, I think the result would have been different.—*J. M. Goodiffe.*

Hop Gardens.—I am about to commence a Hop-yard, but being myself inexperienced in the system, I have had recourse to my neighbours for information, all of whom invariably recommend the removal of all the sickly (or barren) plants, under the idea that as they never bear they are useless. I know practical men are to a degree right when they seem to be wrong, but I should have suspected that the perfection, if not the quantity of the weight of the Hop, would have been best secured by impregnation. I should, therefore, be much obliged if any one would favour me with your opinion on the point; I feel anxiously anxious what is the practice among the best growers in Kent, Sussex, &c., and particularly how many barren plants it would be desirable to have in every hundred. I presume it will be necessary to plant them singly, and not two or three plants together, as is the general custom. I am myself inclined to plan ten per cent. I should further be obliged by the names of the best kinds, Kent Hops especially; of the hardiest and best bearing, and in imitation of the name and address of the party from whom proper cuttings might be obtained. I understand Hop-growers themselves, and not hirelings, may provide them.—*Humulus, Bradford.*

How to stack Cabbages.—Peter Mackenzie tells us "the Cabbages are put in heaps in a manner like cast-iron bullets in an arsenal;" but as few English farmers have had the advantage of an education at Woolwich, and as many of those of the interior have not even seen an iron bullet, let alone an arsenal, they may not understand how a pile of balls is made. As it may also give Cabbage-growers more confidence in storing, to be informed that over a large tract of country it is generally done with success, I will state the practice throughout the province of Connaught and neighbouring parts. About a month before Christmas the Cabbages (the roots being cut off), are ranged as close as possible in parallel rows of any length—say six rows; on the tops of these, five parallel rows are ranged from these again four rows; on these three, then two, and one row finishes the heap; a little straw is placed over them to keep the earth from them, and they are covered about a foot thick with earth beaten down so as to exclude air and rain; they are thus finished off like the roof of a house; no straw or anything is mixed with them. Of course advantage is taken of a dry day; and it is better to lay the tops downwards, that any moisture may drain from them. The first rows may either be placed on the surface, or a pit may be excavated to the depth.—*F., Mr. Cobbaliffe.*

Sea Buckthorn.—Will your correspondent "M. D. P.," who, in your *Gazette* of the 26th of last month, alludes to the plant called Sea Buckthorn, favour us with some further particulars respecting it? From the properties he describes it to possess—of growing freely on sand-hills, and especially of not being liable to be attacked by rabbits—it would be most valuable in some localities. Will it grow and be useful as underwood, and in inland districts? Perhaps Mr. D. P., or some of your correspondents, will oblige us by describing it more particularly, and state if it is to be met with in any other parts than those referred to. Upon inquiry, I cannot find that it is known under the name in question.—*An Old Subscriber.*

A Correspondent, in the Number of the *Gazette* for Oct. 26, asks who is the author of the saying that, "whoever could make two ears of Corn, or two blades of Grass to grow upon a spot of ground where one only grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together." I beg to inform him that the King of Brobdingnag made the observation to Mr. Lemuel Gulliver.—*Ed. G.*

Societies.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

The Council resumed their sittings for the Session, at the Society's House in Hanover-square, on Wednesday last, the 6th of November. Present—William Miles, Esq., M.P., in the chair; Viscount Hill, Colonel Austen, Thomas Raymond Barker, Esq.; Samuel Bennett, Esq.; French Burke, Esq.; Humphrey Gibbs, Esq.; T. B. Brandreth Gibbs, Esq.; Stephen Grantham, Esq.; Henry Handley, Esq.; W. Fisher Hobbs, Esq.; W. H. Hyett, Esq.; John Kinder, Esq.; Francis Pym, Esq.; James Allen Ransome, Esq.; Professor Sewell, William Shaw, Esq.; and Professor Solly.

Henry Drummond, Esq., of Albury Park, near Guildford, Surrey, was elected a Governor, and the following gentlemen Members of the Society.

Talbot, Hon. and Rev. W. Chetwynd, Ommersley, Worcester.
Jones, W. Tilley, Gwynllyn, Aberystwith, S. W.
Gibaut, Moses, Mainland, St. Lawrence, Jersey.
Southampton, Lord, Whittlebury Lodge, Towcester, Northamptonshire.
Tiomson, Henry, Trinity, Colchester, Lancashire.
Roper, John Abbott, Buckingham.
Grant, John, Portsmouth, Devonshire.
Grant, Rev. Thomas, Vicar of Dolby, Daventry, Northamptonshire.
Smith, Benjamin, Coldham's Farm, Tonbridge, Kent.
Cunard, Samuel, Halifax, Nova Scotia.
Monmouthshire.
Galpine, Richard, Lymington, Hants.
Sanders, Samuel, Lockerd, Herts, Hampshire, Herts.
Williams, Leigh, Farnham, Surrey.

FINANCE.—Mr. R. Barclay, Chairman of the Finance Committee, laid before the Council the Report of the Society's funds on the last day of the previous month, from which it appeared that the amount of invested capital was 7209*l.* and the current cash balance in the hands of the bankers, 988*l.* This Report was then confirmed, and cheques ordered for the various payments recommended by the Committee.

COLONEL AUSTEN called the attention of the Council to the large amount of arrears of subscription still remaining unpaid, notwithstanding the constant reference of the Finance Committee to the subject, and the reduction of no less than 1223*l.* of arrears during the last six months; and he thought that some still more vigorous and decisive step would be taken by the Council to insure the payment of the subscriptions as they became due from year to year, and thus remove the inconvenient position under which the accounts of the Society were placed by the accumulation of unpaid payments, and the consequent accumulation of arrears.

Mr. Pym, Mr. French Burke, and Mr. Kinder, having stated the success which had attended the efforts they had made in their respective counties of Bedfordshire, Essex and Hertfordshire, as Honorary Collectors of the Society's subscriptions from the members residing within those districts, expressed their willingness to continue their exertions to the sure of such collection, and to aid the Council in extending the system of such friendly co-operation, through members of the Council, to other counties. Mr. Pym then gave notice, that at the Monthly Council to be held on the 4th of December next, he should move, "That county or district collectors should be appointed for the purpose of getting in the subscriptions of the Society."

ELECTIONS OF COUNCIL.—On the motion of Mr. RAYMOND BARKER, seconded by Mr. Shaw, the Council resolved unanimously, that Philip Pusey, Esq., M.P., Chairman of the Journal Committee, should be requested to accept the office of a Trustee of the Society, vacant by the decease of His Grace the Duke of Grafton. Mr. Thomas Lockley Meire, of Cound Harbour, near Shrewsbury, was elected a Member of Council, in the place of the late Mr. Edward Gough, of Gravel Hill, near Shrewsbury.

IMPLEMENTS AT SOUTHAMPTON.—Mr. PARKES, Consulting-Engineer to the Society, communicated to the Council the doubt and difficulty under which he this year laboured in drawing up his report on the trial and exhibition of Implements at the Annual Country Meeting of the Society, from the circumstance of his acting at Southampton simply as the mechanical referee of the Judges, and not as formerly as an actual judge himself—an arrangement which, to a considerable extent, placed him under the condition of an ordinary inspector of the implements, and excluded him from the more immediate communication with the judges at the trials which determined their awards, and which was essential to his being enabled to make a complete and satisfactory Report. The following resolution was then passed:—"That it is the opinion of the Council, after considering the letter addressed to them by Mr. Parkes, that Mr. Parkes should draw up the Report from the reports of the Judges, for which they are solely responsible; but that upon all trials which he himself viewed, it will be competent for him to make any remarks he may think necessary, as well as upon the whole mechanical appearance of the Show."

Mr. SHAW gave notice that at the next Monthly Council in December he should move:—"That the trials of implements be in future made at such time and place as the Society may find best adapted to the circumstances, and not confined to the Annual Country Meetings of the Society.

SHREWSBURY MEETING.—Earl SPENCER, Chairman of the General Shrewsbury Committee, addressed a communication to the Council in reference to the arrangements of the Annual Country Meeting, to be held at that place next year; and Mr. BRANDRETH GIBBS reported the result of his personal visit to Shrewsbury, and his interview with the owner of the fields intended for the trial of implements, and which had been now placed, agreeably with the instructions of Mr. Shelley and Mr. Miles, the stewards of that department, under proper cultivation for that purpose. Mr. Gibbs also reported that Earl Spencer and Mr. Taylor had undertaken the trial of the Wheat, selected at Southampton for cultivation in reference to the Society's prize.

PRIZE ESSAYS.—Mr. J. A. GORDON, of Naish, near Bristol, addressed a communication to the Council, in which he proposed to place the sum of 30*l.* at their disposal, as a prize for the best Essay on the Influence of Electricity on Vegetation. The Council ordered their thanks to be given to Mr. Gordon for this liberal offer, and referred the consideration of the subject to the next monthly Council. Mr. SHAW expressed his regret to find that all the Essays to which the prizes of the Society had been awarded, had not been published in the Journal; for, although the one in which he was himself much interested—"On the Mechanical Properties of the Plough"—had been placed, he was informed, in the hands of its lamented author, the late Rev. W. L. Rham, for revision and extension, and remained incomplete at the time of his decease, there were other Essays to which prizes had been awarded, but which had not yet been published.—The Chairman explained to Mr. Shaw, that, independently of the Essays, which it was thought not desirable to publish under their present form in the Journal, there were several others whose appearance was delayed in consequence of the extent to which the pages of the Journal had been occupied by the Prize Reports on the farming of the various counties already selected for consideration; that on the county of Norfolk having proved so voluminous that its author had preferred its entire publication on its own account, to the requisite abridgement of its details for the Journal.

ASHES OF PLANTS.—The MARQUIS OF NORTHAMPTON and Sir JOHN JOHNSTONE, Bart., M.P., communicated to the Council a proposal, on the part of the British Association, that the Society should join with that body, in contributing a sum of money from its funds for the purpose of obtaining a complete series of analyses on the ashes of plants, from various localities, to be made under the immediate superintendence of Professor Gregory, who had liberally placed his services on this occasion gratuitously at the disposal of the two Institutions. The consideration of this question was postponed until the January Council in December.

The communication of Mr. Hudson on his sowing machine having been referred to the Journal Committee, and the offer of a model accepted, thanks were ordered for the numerous donations made to the Society, and the Council adjourned for a fortnight, until Wednesday, the 20th of November.

FARMERS' CLUBS.

Cirencester.—At the last annual meeting of this Association, the following remarks were made:—Mr. Hammonds of Tunsheet, said that last year he sowed a field of Swede Turnips in rows. One part of the field he manured with good rotten dung from the fatting stalls, at the rate of 30 loads per acre. Close beside it he drilled in guano, at the rate of 2½ cwt. per acre. The Turnips where the guano was placed were the best up till the middle of the summer, which he fed them off, and the crop in that field this summer was quite as good where the guano was put as where he manured it with dung.—Mr. G. Wickens had used guano on meadow land, and one could tell to an inch where it was laid, the Grass was so greatly improved.—Capt. Aitchison spoke from experience of the effect of manuring with soot on his land. The eight-acre field, where the ploughing-match was held last year, he sowed with Wheat, and top-dressed it with soot, in the autumn, at the rate of 50 bushels to the acre, and he had a most excellent crop of Wheat, and a finer piece of young seeds he scarcely ever saw.—The chairman believed, in this part of the country, mould taken from hedges and mixed with dung or lime was a very favourite manure with the farmers. Now, it occurred to him that by spreading this mould over their land they sowed a great many weeds, else where did the great quantity of weeds found in the farmers' fields come from? He saw go where he would, a great many weeds, and he was inclined to think that the mould, taken from the ditches, although it might be valuable to the land, contained a great many weeds. He thought that artificial manures were preferable in this respect: they did no harm.—Capt. Aitchison was of opinion that the farmers were too apt to spare the labour of turning the mould heaps sufficiently often to destroy the weeds. His mode was to turn the mix hills three times at least, and he was satisfied it paid the farmer. Thus the whole of the seeds were brought into life and destroyed before being carried into the fields.

Saffron Walden.—The following are portions of a speech by Ph. Pusey Esq., M.P., at a late Meeting of this Society:—He said there was one subject that occupied the attention of the country—the improvement of the condition of the agricultural labourer; and on that point he would beg to throw out some considerations for them to pass their opinion upon. He would say that he thought credit was due to Lord John Russell for his endeavours to revive the old amusements of the peasantry of this country. He might quote a practical authority on the subject—the Speaker of the House of Commons—who told him in 1830, when outrages took place, that they would all remember that there were about 30 parishes in Hampshire, known as the cricket parishes, and in these parishes no disturbances occurred. Emigration was talked of as a remedy for the evil; but he thought those who talked of this were not aware that the population had flowed to Canada, the United States, and other parts, to the amount of 100,000 a year. He did not think this could be looked on as a national remedy for what was called the "surplus population." Then they had the allotment system proposed, and on that subject he would speak confidently. He was aware that there were objections to it on the part of the farmers; he found that was so when he carried it into effect 14 years ago; but that was passed away, and the farmers, he believed, no longer feared allotments. For the last 14 years he had had 400 or 500 allotment tenants, and it certainly had answered extremely well. But still, this must be regarded as a palliation; it was not a sufficient remedy for the present want of employment; that remedy was to be found in the employment by the landlord of the surplus population of the villages during the season, in permanent improvements of the soil. He learned this from his relative Lord Kinnaird, who, 30 years ago, used to employ a number of labourers in improvements on his estates; Mr. Pusey had done the same himself; and he believed, if he could get this principle established in every parish, we should hear no more for some years of a surplus population. He did not think gentlemen were aware of how far money would go in improvements. If they had men for 10*s.* a week for the winter months, for 300*l.* they might employ 50 labourers, and they would not only benefit them, but all the other labourers, because as a little corn thrown in would sometimes spoil the whole market, so if they withdrew these labourers they rendered employment better for all the others. Then the question came, Where were the landlords to find funds for this purpose? He knew this country well, and he knew there was not a place from Plymouth to Berwick in which landlords might not make improvements; but when the tenant was short of money, the landlord generally would be short of money too. But he would tell them how to find funds. There were many districts where there was a great superfluity, not only of useless but of mischievous timber, and if they would cut that

down, which excluded the sun and air and fed on the soil, and sell it, they would benefit the farmer and the labourer too by laying out the proceeds in under-draining the soil. There was another mode in which they might find money. He knew that on some properties a large sum was spent in the preservation of game. It was not at all unusual for the game to cost 500*l.* or 600*l.* a year; and if this were given up, the money would employ 100 able-bodied labourers in improving the property. This was another fund for the landlords of England to benefit the labourers, and the farmers at the same time. Still, if the landlord did his utmost he might not be able to find money sufficient for the purpose; but let him give security to the tenant, that if he will lay out his money in permanent improvement, he shall reap the reward of the outlay. This might be done by a lease, and it might be done without a lease, for they ought not to lay down an absolute rule, as leases were not universally applicable, and it was not desirable that the landlord should give up the land for 10 to 14 years to a man that was not able to do justice to it. But without leases there was a plan adopted in Leicestershire, by which they might give security for money expended in improvements. If a farmer boned his land, it was supposed that would not be exhausted in less than three years; and if the tenant left the first year, he received back two-thirds of the expense. Then if he clothed the land, that was not exhausted under ten years; and if he left it in five years, he received back one-half. Therefore, if the landlord objected to granting a lease, he said let him give security in this way for the outlay in permanent improvements on the land. There was another source of employment for the population—that was the breaking up of Grass land. He had broken up a great deal of Grass land himself, and he never repented of it. It appeared to him, that since the system of fatting cattle on artificial food Grass land had sunk in value. Now they would see at once the great increase of employment that would arise from breaking up these lands: they might reckon one labourer for 100 acres of Grass land, but it would take four to 100 of arable; and thus if they had 500 acres of Grass land, and broke it up, instead of five families they would employ 25 on it, which would considerably relieve the distress.—Mr. Edward Solly then entered deeply into the mutual benefits conferred by chemistry on agriculture, and *vice versâ*; and gave a short sketch of the progress of agricultural chemistry during the last few years, pointing out the value of science in all practical matters, and more especially drawing attention to those parts of Agriculture which were likely to be benefited by chemical science. He stated that phosphate of lime existed in large quantities in Wheat flour, and that it was necessary that a proper quantity should be afforded the plant, in order to bring it to perfection, as well as those materials necessary to the formation of starch and gluten. A gentleman named Lawes, had endeavoured to produce superphosphate of lime in large quantities by burning bones, and adding thereto sulphuric acid. This was an excellent manure. He could not, however, procure enough bones for his purpose. Professor Daubeny had visited Spain, at the request of the Royal Agricultural Society of England, and found phosphate of lime to exist there in large quantities, but the heavy expense of land carriage prevented its transmission to this country. It was, however, very probable that large quantities existed below the surface of the soil in this country, which had only to be brought up and spread upon their lands to excite fertility. He had, at the suggestion of Professor Henslow, visited a part of the east coast, where he had seen hundreds of tons of the required material in the shape of coprolites, one of which he held in his hand, though from its appearance no one would suppose that it contained the most essential manure for the production of both plants and animals. The value of phosphate of lime being known, chemists and others would seek everywhere for cheap and abundant supplies of it, and he had no doubt the search would be successful.

Reviews.

Practical Treatise on the Use of Peruvian and Ichaboe African Guano, &c. By J. H. Sheppard.

Another of the many pamphlets on this subject, to some of which we have already directed the attention of our readers. It is full of convincing testimonies to the value of guano as a manure, and it contains many useful directions how to apply it.

Miscellaneous.

On Ploughing Old Pasture Lands.—With the consent of the proprietor, two pieces of old turf of the second class were ploughed this spring, after proper drainage, in the parish in which I reside, and sown with Oats in the usual way. The produce of the first piece is estimated at 70 bushels per statute acre; the second piece, only a part of a field, produced 64 bushels per acre; and I have no doubt of the successful cropping of this land for a series of years, in the hands of the present good managing tenant. A part of this field, containing about fourteen acres, remained unploughed, and was not stocked in the spring, but mown for hay in July. The produce was gathered in, the whole amounting to about five tons, and but little herbage has grown since. It is easy to see the relative position of the occupier with regard to these two pieces of land, without going to figures. I am aware that it will be said the excessive drought that has lasted so long this summer is the cause of the failure of the Grass-land, and this is fully conceded, and this fact strengthens the evidence in favour of ploughing; inasmuch as it gives the farmer a greater control over the elements, in order that they may be made subservient to his interest. The master may pass over the Grass-land and make his silent remarks, but has no power or control over it. But not so in the other case: he can plough deep; he can hoe and harrow; thus pulverising the soil, rendering it capable both to attract and retain moisture; applying various [illegible] to the young plant [illegible] to what degree the [illegible] of the season, whether too excessive wet or drought, but little [illegible] with agriculture can [illegible] upon this head; the farmer will [illegible] it will [illegible] control [illegible] to [illegible] per [illegible] this description of land was put into Grass at a period when the population of this country was limited and small, and that there has been a vast accumulation of vegetable matter going on for generations, laid up in store by Providence for the supplies of the future, all of which might easily be converted into food for man, and a return given back which would produce food hereafter.—*Thomas Underwood, in the Northampton Mercury.*

Guano.—I could give the names of scientific farmers who applied guano three years back, that, without any better treatment than the ordinary mode, in the same field can be discerned on Clovers this year at a very considerable distance, where it was applied against the richest farmyard decomposed dung, in the same field; this I account for by having used genuine Peruvian guano—for African Ichaboe guano was not known at that time. The failure in so many instances where guano has been lately applied is from its spurious quality, the improper mode of application, the mixture of lime, &c.—*J. H. Sheppard, Chester, in the Farmers' Journal.*

Notices to Correspondents.

Advertisement.—*R. A.*—The Advertisement will cost 5*s.* Shall we insert it?

Books.—*I. G. T.*—We cannot mention prices. Apply to any bookseller.

Book-keeping.—*E.*—We do not see that you need charge upon your returns for the year any per centage whatever on your invested capital—i. e. if it be all your own—before balancing your accounts. In *anticipating* the result of your proceedings for the coming year the case is different; for then, to insure accuracy, you must deduct from your estimated returns various per centages on different portions of your invested capital, according to what experience tells you will preserve its value from depreciation. Thus, 5 per cent. on the present value of your sheep must be deducted, for this will be required to replace the losses of the year by death or accident; 10 per cent. on that of your horses must also be deducted to cover the losses and injuries which *they* may sustain—and so on. At the end of the year, however, you have to collate facts, not to estimate probabilities, and if your valuations of stock be just, the simple difference between that at the beginning of the year + the amount of purchases and expenses during it, and that at the end of the year − the produce of sales during it will obviously represent the financial result of the year's proceedings.

Carcase.—*S. H.*—Chop it up, and cover the pieces with thick layers of your vegetable matter and pounded chalk; you had better not put clay or salt in the compost, unless you wish to retard the process of decomposition.

Dipping Sheep.—*H. F. Campbell.*—4 lbs. of Mr. Bigg's Composition suffices for 20 sheep. Mr. B.'s address is 15, Crawford-street, Portman square, London.

Fullers' Earth.—*Delta.*—Your remarks go to prove, not that fullers' earth contains alum, but that it contains alumina, which is only one of the three constituents of which alum is composed, the other two being sulphuric acid and potash. The effect of alum as a manure would more probably be owing to these than to the alumina which it contains.

Lucerne.—*D. H. L.*—One can hardly judge without seeing it. What has destroyed it? You may as well leave it till spring. You will be able to foresee the fate of your plant before it be too late for Swedish Turnips, especially if you can use Crosskill's clod-crusher, and so obtain a tilth in spite of weather.

Mr. Warne's Boxes.—*T. M. and a Subscriber.*—See to-day's Article, by Mr. Sproule.

Sea Mud.—*M. D. P.*—Certainly: have it ploughed before winter; the summer's fallow recommended was additional to this. Frost cannot be expected to deprive mud of excess of salt, except by increasing its porosity, and thus facilitating the action of future rains, in washing out its soluble ingredients. Lime decomposes salt, and may thus deprive it of some of its noxious properties; perhaps, however, muriate of lime and carbonate of soda, which are the resultant compounds from this process, may be as injurious in excess as common salt. We have no facts to determine the quantity of the latter substance, which may be beneficially applied per acre.

Spade Husbandry.—*Malum.*—Where can Dr. Yelloly's fork be obtained? The Vernon hoe has a dart-shaped blade, attached to a handle, with a swan-neck shaped termination. It is useful for opening drills for seed or sets, &c.

Trifolium incarnatum.—*R. G.*—Autumn is the proper season for sowing Trifolium incarnatum. Can any one give us his experience of it? Spring is the best season for manuring meadow land with guano. Apply a cwt. per acre.

Vetches.—*Paddy.*—In a luxuriant crop the lower parts of the plant will be certain to wither and rot. We know of no efficient remedy. Oats and Rye, sown with the seed, have but a slight tendency to support the plants.

Warm or Fences.—*A Quiet Observer.*—Will you be kind enough to explain your meaning. What, in reference to quickets, is "preserving the spring."

*** As usual, many communications have been received too late.

Markets.

POTATOES.—Southwark Wednesday, Nov. 4.

In consequence of the coming goods the arrivals during the past week have been limited, which has caused a considerable clearance; several parts of cargoes of inferior sorts have been disposed of, and towards the end there was more money asked for the best Kents, but there were not sufficient sales made to justify an advance in the quotations, yet the demand was much better, and really sales were effected of the best samples at the following prices.

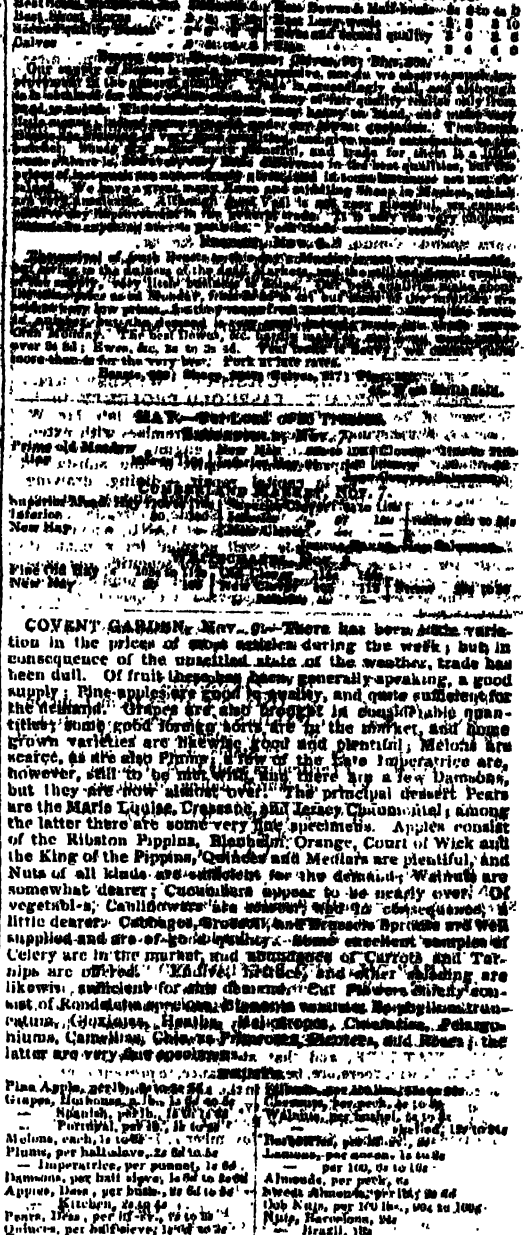
Perfection	60	to 70	Rose and Snow Flakes	—	—
Perth	50	—	Shaws	—	—
Fluckes	—	—	Whitneys	—	—
Early Devons	55	60	White	55	60
Late Devons	—	—	Blues	55	60
Cornwall	55	60	Chelmsford	50	—
Jersey Blues	50	—	White	55	60
— Whites	—	—	Prince Regents	50	60

HOPS, Friday, Nov. 6.

The Markets for fine Weald of Kent Hops keep advancing, and is full 5*s.* per cwt. dearer than last week.

The Duty is still estimated at 140,000.

Farlamond & Smith, Hop-Factors.



COVENT GARDEN, Nov. 6.—There has been little variation in the prices of fruit seldom during the week; but in consequence of the unsettled state of the weather, trade has been dull. Of fruit there has been generally speaking, a good supply; Pine-apples are good in quality, and quite sufficient for the demand. Grapes are also brought in considerable quantities; some good looking sorts are in the market, and home grown varieties are likewise good and plentiful; Melons are scarce, as are also Plums; a few of the late Imperatrice are, however, still to be met with, and there are a few Damsons, but they are now almost over. The principal dessert Pears are the Marie Louise, Crassane, and Jersey Gratioli; among the latter there are some very fine specimens. Apples consist of the Ribston Pippins, Blenheim Orange, Court of Wick and the King of the Pippins, Codlins and Medlars are plentiful, and Nuts of all kinds are sufficient for the demand. Walnuts are somewhat dearer; Cucumbers appear to be nearly over. Of vegetables, Cauliflowers are scarce, and consequently a little dearer. Cabbages, Greens, and Brussels Sprouts are well supplied and are of good quality. Some excellent samples of Celery are in the market, and abundance of Carrots and Turnips are offered. Kidney Beans, and other kinds are likewise sufficient for the demand. Cut Flowers chiefly consist of Dendrobiums, Cinerarias, Cinerea Primroses, Daisies, and Roses; the latter are very fine specimens.

Pine Apple, per lb.	2*s.*	to 4*s.*	Filberts, per 100 lbs.	—	—
Grapes, Hothouse, per lb.	1*s.*	to 6*s.*	Cocoanuts, per score	1*s.*	to 2*s.*
— Spanish, per lb.	1*s.*	to 2*s.*	Walnuts, per bushel	1*s.*	to 2*s.*
— Portugal, per lb.	1*s.*	to 2*s.*	— Spanish, per bushel	—	—
Melons, each,	1*s.*	to 3*s.*	— Filberts, per bushel	12*s.*	to 16*s.*
Plums, per half-sieve,	2*s.*	to 3*s.*	Lemons, per dozen	1*s.*	to 3*s.*
— Imperatrice, per punnet,	1*s.*	to 6*s.*	— per 100,	6*s.*	to 16*s.*
Damsons, per half sieve,	1*s.*	to 2*s.*	Almonds, per cwt.	—	—
Apples, Dess., per bushel,	2*s.*	to 3*s.*	Sweet Almonds, per lb.	2*s.*	to 4*s.*
— Kitchen,	2*s.*	to 4*s.*	Dub Nuts, per 100 lbs.,	90*s.*	to 100*s.*
Pears, Dess., per half-sieve,	2*s.*	to 3*s.*	Nuts, Barcelona,	16*s.*	
Quinces, per half-sieve,	1*s.*	to 2*s.*	— Brazil,	12*s.*	
Medlars, per bushel,	3*s.*		— Cob,	16*s.*	

VEGETABLES.

Cabbages, per dozen,	2*s.*	to 3*s.*	Onions, per bushel,	2*s.*	to 3*s.*
Cauliflowers, per dozen heads,	2*s.*	to 3*s.*	— per bunch,	2*s.*	to 3*s.*
Brocooli, per bundle,	2*s.*	to 4*s.*	— Spring, per bunch,	2*s.*	to 3*s.*
Brussels Sprouts, per sieve,	1*s.*	to 2*s.*	— Garlic, per bunch,	2*s.*	to 3*s.*
Sprouts, per half-sieve,	1*s.*	to 2*s.*	— Leeks, per bunch,	2*s.*	to 3*s.*
Artichokes, per dozen,	2*s.*	to 3*s.*	Turnips, per bunch,	2*s.*	to 3*s.*
— Jerusal. p. bushel,	2*s.*	to 3*s.*	Tomatoes, per half-sieve,	1*s.*	to 2*s.*
French Beans, per sieve,	2*s.*	to 3*s.*	Vegetable Marrows, per dozen,	1*s.*	to 2*s.*
Scar. Runners, per sieve,	2*s.*	to 3*s.*	Cucumbers, per dozen,	1*s.*	to 2*s.*
Potatoes, per ton,	80*s.*	to 90*s.*	Mushrooms, per pottle,	1*s.*	to 2*s.*
— new, per cwt.	5*s.*	to 6*s.*	— per punnet,	1*s.*	to 2*s.*
— bushel,	1*s.*	to 2*s.*	Celery, per bundle,	2*s.*	to 3*s.*
— Kidney, per bushel,	2*s.*	to 3*s.*	— per bunch,	2*s.*	to 3*s.*
Turnips, per doz.	2*s.*	to 3*s.*	Horseradish, per bundle,	2*s.*	to 3*s.*
Red Beet, per doz.	2*s.*	to 3*s.*	Rhubarb, per bundle,	2*s.*	to 3*s.*
Carrots, per doz. bchs.	2*s.*	to 3*s.*	Mint, per bunch,	2*s.*	to 3*s.*
Basil, per bunch,	2*s.*	to 3*s.*	Tarragon, p. 12 sm. bun.	2*s.*	to 3*s.*
Sorrel, per bundle,	2*s.*	to 3*s.*	Parsley, per doz. bunches,	2*s.*	to 3*s.*
Savory, per bunch,	2*s.*	to 3*s.*	— per hamper bundle,	2*s.*	to 3*s.*
Cucumbers, French, each,	2*s.*	to 3*s.*	Tarragon, French, per bunch,	2*s.*	to 3*s.*
— Ridge,	2*s.*	to 3*s.*	Chervil, per bunch,	2*s.*	to 3*s.*
Spinach, per sieve,	2*s.*	to 3*s.*	Marjoram, per bunch,	2*s.*	to 3*s.*
Scorzonera, per bundle,	2*s.*	to 3*s.*	Garlic, per pound,	2*s.*	to 3*s.*
Salsafy, per bunch,	2*s.*	to 3*s.*	Chives, per bunch,	2*s.*	to 3*s.*

MARK-LANE, Monday, Nov. 7.

BRITISH, PER IMPERIAL QUARTER.				s.	s.
Wheat, Essex, Kent, and Suffolk			White	40	46	Red	42	48
—— Norfolk, Lincolnshire, and Yorkshire				—	—	White	—	—
Barley, Middlesex and Hertfordshire				28	30	Grind.	25	30
Oats, Lincolnshire and Yorkshire				19	21	Feed	18	20
—— Northumberland and Scotch				19	21	Potato	20	23
—— Irish				18	20	Potato	19	22
Malt, pale, ship				50	52			
—— Hertford and Essex				54	56			
Rye				32	33			
Beans, Mazagan, old and new				30	35	Harrow	30	36
—— Pigeon, Maldon				—	—	Lisbon	—	—
Peas, White,				34	36	Grey	30	32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Beans.	Peas
English	6450 Sks.	1811	4810	6800	1400	—	1320	1231
Irish	—	4713	—	—	20001	—	—	—
Foreign	1400	1200	—	—	11000	—	649	335

CORN, Nov. 6.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	6420	6300	1400	5890 Sks
Irish	—	—	18000	—
Foreign	1400	1000	10000	—

IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
Sept. 26	37 11	28 5	18 11	28 6	32 6	32 0
Oct. 3	37 5	28 4	18 9	28 3	32 5	32 0
— 10	37 4	28 3	18 8	28 2	32 3	32 0
— 17	37 3	28 2	18 8	28 1	32 2	32 0
— 24	37 2	28 1	18 7	28 0	32 1	32 0
— 31	37 1	28 0	18 6	27 11	32 0	32 0
Nov. 7	37 0	27 11	18 5	27 10	31 11	32 0

Aggregate Average of the Kingdom, Duties Paid, 37 7 | 28 10 | 18 7 | 28 0 | 32 0 | 32 0

Duties on Foreign Grain, 20 3 | 5 6 | 3 6 | 5 6 | 9 6

CORN EXCHANGE, Nov. 4.

Canary	per qr.	—	—	Linseed, Foreign, p. ton	6l	to 6l
Carraway	per cwt.	—	—	Rapeseed, White, p. bush.	10s	14s
Clover, Red, English	—	—	—	— Superfine	12	16
— Foreign	—	—	—	— Brown	12	16
— White, English	—	—	—	Rapeseed, English, per last	28l	30l
— Foreign	—	—	—	Rape Cakes, per ton	—	—
Coriander	—	12s	20s	Rapeseed	—	—
Hempseed, per last	28l	30l		Tares, New, per bush.	6	6
Linseed, per qr.	—	—	—	— Foreign	—	—
— Baltic	—	—	—	Trefoil, per cwt.	—	—
— Cakes, Eng. per 1000	10l	11l		Turnip (see variable for quotation).		

Rainwater and Lay.

TO GENTLEMEN, NURSERYMEN, AND GARDENERS.

LAVENDER-HILL NURSERY, WANDSWORTH-ROAD, Surrey County.

During the present month, sold by auction, unless previously disposed of by private contract, the Entire Stock of the extensive NURSERY GROUNDS, by order of the Executors, consisting of upwards of Two Hundred Thousand Forest and Fruit Trees, Evergreens, Flowering Shrubs, Roses, Herbaceous Plants, Bulbous Roots, Greenhouse Plants, Heaths, Geraniums, Cinerarias, Stock Plants, Seedlings, Cuttings, &c. &c. &c.

White Spanish Onion, Early Cauliflower, &c. &c.

The Nursery Grounds will be found in full bearing, and contain an extensive Collection of HERBS, Stock of Manure, and Implements of Cultivation, Garden Frames, Lights, Mats, Hand Glasses, Pots, Tubs, Boards, Labels, &c. &c.

The Stock of the present Tenant, consisting of about Two Hundred Loads of Manure, Hurdles, Fencing Stakes, Rails, Poles, &c. &c.

The Nursery Grounds will be found in full bearing, and contain an extensive Collection of HERBS, Stock of Manure, and Implements of Cultivation, Garden Frames, Lights, Mats, Hand Glasses, Pots, Tubs, Boards, Labels, &c. &c.

The Stock of the present Tenant, consisting of about Two Hundred Loads of Manure, Hurdles, Fencing Stakes, Rails, Poles, &c. &c.

White Spanish Onion, Early Cauliflower, &c. &c.

Descriptions of particulars will be duly given in future advertisements. Those wishing to view the Premises previous to the Sale, will be admitted by Tickets, which may be had of the Auctioneer, Lavender-hill, Wandsworth-road, Surrey County.

LAVENDER-HILL NURSERY, WANDSWORTH-ROAD.—IMPORTANT LEASEHOLD PROPERTY to be Disposed of, by order of the Executors of the late Mr. W. Pamplin, Nurserymen, those valuable Premises with extensive frontage, most beautifully and eligibly situated, and capable of much improvement, consist of the substantial DWELLING-HOUSE, in capital repair, containing drawing, and large sitting-rooms, Kitchen, Scullery, and Dairy, and large underground and other domestic offices; Stable, Coach-house, Sheds, and other buildings; about NINE ACRES of LAND, occupied as Nursery Grounds. The whole (well adapted for a moderate family, for a Nursery and Seedsman, or for scientific and experimental Agricultural purposes) will be Sold by public Auction during the present month, unless previously disposed of by private Contract.

For particulars apply to Mr. W. J. Lee, Clapham Common, or letter. Mr. Pamplin, 29, Bow-street, Soho.

TO MARKET GARDENERS.

TO BE LET AT EALING, SIX MILES from London, a Capital MARKET GARDEN of 11 Acres, well stocked with Fruit-trees, &c. Ready to the occupation of Mr. Samuel Everett. There is a House, with Stable and other conveniences on the premises. For particulars apply to Mr. Groves, Builder and House Agent, near the Church, Ealing, Middlesex.

TO FARMERS, BUILDERS, HAULIERS, HAY-MAKERS, and Others.

TO BE SOLD, by PRIVATE CONTRACT, about 200 Chaldron of CINDER ASHES, and About 2000 Loads MANURE, mixture of Night-soil and Sweepings of the Paved Streets, &c., Lying on the Premises, Albion-street, Rotherhithe, Surrey. Apply to Mr. Page, Jun., on the Premises.

N.B.—The Manure, &c. may be delivered into craft if required.

WEST BYFLEET, SURREY, AND BAGSHOT NURSERIES.

NOTICE.—The Business and these Nurseries, since the death of the late Mr. Samuel Waterer, carried on in the name of S. and C. WATERER by mutual agreement divided. That part of the Business at Bagshot, Surrey, is carried on by HOSEA WATERER, and that at Knaphill by JOHN WATERER. It will, therefore, be of importance, to prevent confusion, that correspondents be particular in the address and direct letters intended for the Knaphill Nursery, to Knaphill, near Woking Hill, near Bagshot, and those for the Bagshot Nursery, John Waterer, Nurseryman, Bagshot, Surrey.—November 7, 1844.

GRASS FARM.—WANTED, to RENT, upon very Moderate Terms, within nine miles of London and two of a Market-town, a GOOD DEVICE, in perfect repair; containing three or four Meadow Fields or nine Arable, and good Dwelling-house, with the usual Domestic Offices, &c. There must be from 30 to 50 Acres of good sound Meadow land adjoining, and the rent asked for them must accommodate itself to the altered state of the times.—Apply by letter, post paid, with full particulars, to F.R.C., Post-office, Farnham, Essex, Herts.

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This Cloth is made expressly for the purpose of applying Whitney's Composition upon; and is much more durable than any other material. When coated it is beautifully white and transparent. The perfect success of Whitney's Composition for all Horticultural purposes cannot be more fully established than by stating that on the 10th of last March Hamburgh Vine was first introduced into a House covered with Cloth and coated with the Composition, and the last of Sept. a bunch of Grapes was cut weighing 16½ ounces, the fruit was finely coloured, and the flavour throughout very excellent. A sample was sent to the Editor of the "Gardeners' Chronicle" for his inspection. The Vine grew very luxuriantly, the foliage very fine, and the wood ripened exceedingly well. As a winter protection it is infinitely warmer than glass.

The PATENT CLOTH and COMPOSITION can be obtained of Messrs. Butler & Muckley, Covent-Garden Market; Hurst & M'Murtry, Leadenhall Street; Wright & Webber, Cornhill; Barclay & Sons, Farringdon Street, and Hennay & Co., Oxford Street.—Wholesale and Shipping Agent, Mr. Bailey, Wolverhampton.

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THE following Articles, manufactured in Slate for Horticultural purposes, may be seen in use at Worton Cottage, upon application to the gardener (Sundays excepted).

Tank Covers	Shelving for Frames
Cisterns	Boards for Balconies and Verandas
Shelves	Ridging
Garden-Edging	Orange Tubs, Flower Boxes, &c.

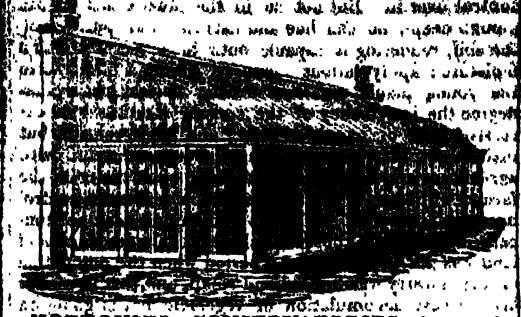
EDWARD BEAN will be happy to answer any inquiries, either personally or by post.

STEPHENSON AND CO., 61, Gracechurch-street, London; and 77, New Park-street, Southwark, Inventors and Manufacturers of the improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their simple, approved method of applying the Tank System to Pinehouses, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the use of pipes or flues. S. & C. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, especially require description, but to those who have not seen them, prospectuses will be forwarded as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to intimate to the Trade that at their Manufactory in New Park-st., every description required for the construction of Horticultural buildings, Stoves, &c. for heating them, may be obtained upon the most reasonable terms agreed.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

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HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of Iron or of Iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

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THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

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Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

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ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. Mitchell and Frain (late Mr. Mitchell's), Analytical Chemists, with the view of ascertaining whether the Soil, in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No 84, Hawley-road, Kentish Town.

MR. LAWES' MANURES,—Mixture for Wheat, 7l. per ton; Super-phosphate of Lime, 7l. per ton. To be had at the Factory, Deptford Creek, near London.

Super-phosphate of Lime, in a concentrated form, may also be procured at Messrs. Warner's, 28, Cornhill, in 7lb. packets, price 1s.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; Wm. J. MYERS AND CO., LIVERPOOL;

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Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the warehouses, 21 and 26, Billiter-street, or delivered within any reasonable distance at a trifling additional cost. Apply to James Clare, 24, Billiter-street.

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THE Attention of the Agricultural Interest, at this important crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appreciated by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Slulp, and Barge Pumps also fitted for Distillers, Brewers, Soap-boilers, and Manufacturers for hot and cold liquors. Pumps kept for hire, for Gentlemen's Gardens and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

The Pumps supplied on advantageous terms, by Benjamin Fowler, Engineer, &c. 62, Dorset-street, Fleet-street, London.

DR. HALLETT'S DRY SOLUBLE FERTILIZER is, especially in this year, the cheapest Manure to use, for there is a great deficiency of the Phosphates and other Salts of Ammonia, which all knowledge powerful stimulants. They are fairly entitled to the Subject of Fig. 1 in Turnips. (see No. 33 of the "Gardeners' Chronicle," &c.). 5 cwt. of either has been found equal to nearly 20 tons of ordinary horse-manure. They are applicable to all sorts of field and garden crops. No. 1 for heavy top growth, as Corn; Hops, &c. No. 2 is for all roots, and a sure preventive of the Fly in Turnips. Price of each, 10l. per ton, or 1s. per cwt.

DR. HALLETT'S CONCENTRATED LIQUID FERTILIZER is extensively used by Gardeners for improving the size and flavour of fruits and vegetables, and the luxuriance and perfecting the seed of flowers. Sold in quarts at 1s. 6d., and in bottles, six times the size, at 7s. 6d. Each quart requires 32 gallons of water, to reduce it for use.

Agents for the above—London—Mr. Fothergill, Wardour-street; Mr. R. Hallett, the Factory, Bermondsey Street, Tooley-street; Messrs. Warner & Warner, 28, Cornhill; Hurst & M'Murtry, 6, Leadenhall-street; Winstanley, Pooley, Pace & Co., St. Peter's Alley, Norfolk—Buffard and Ward, Norwich. Suffolk—Mr. W. Bevans, Oxford. Leicester—Matthews & Co. Gloucestershire—Mr. Betterton, Fairford. Devonshire—Mr. Seward, Plymouth. Wilts—Mr. G. King, Devizes. Glasgow—Mr. D. T. Jackson, Hartlepool, Sunderland, Stockton, and Newcastle—Pace & Co, Dundee—Green and Co. Further respectable Agents wanted.

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BY HER MAJESTY'S



ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

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Samples, with directions for laying on, and testimonials of its merits, sent free to any part of the town or country.—Patent Felt Works, Lamb's Buildings, Bunhill-row, London.

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McKIBBIN'S PATENT ROOFING FELT is particularly applicable as a substitute for Slate, Tarpaulin, Thatch, and other Articles used for Roofing, from its Economy, Durability, and Lightness. It is quite impervious to wet and damp, resists the heat of the sun, and is a non-conductor of heat or cold. Besides the economy in repairs, the timber where it is used may be so light as to save the whole expense. It requires no other coating, and by attention to printed directions may be applied by a common labourer. It is free from smell, age and contraction, like zinc, and requires neither painting nor coating. It is now in very general use for Roofing Houses, Verandahs, Sheds, Workshops, Pigeon-cotes, Railway Stations, Icehouses, &c. &c., and for protecting Plants, covering Garden Frames, Corn, and Hay Ricks, the top and sides of Stump-fences; and to Emigrants it provides a cheap, warm, durable, and portable Roof.

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AGRICULTURE, COMMERCE, NAVIGATION, the CHURCH.—E. SAVORY and SONS, Goldsmiths, 14, Cornhill, London, opposite the Bank, have finished a few Splendid Pieces of PLATE, suitable for Presentation to Gentlemen connected with either of the above pursuits or professions, to which they invite the attention of committees who are in search of valuable testimonials for such occasions.

THIS DAY IS PUBLISHED,

THE BOOK OF THE FARM; detailing the Labours of the Farmer, Farm Steward, Ploughman, Shepherd, Hedger, Cattle-man, Field-worker, and Dairymaid. By HENRY STEPHENS, F.R.S.E. In three large volumes royal octavo, price 2l. 10s., illustrated by 23 Engravings on Steel, and upwards of 600 on Wood.

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SUBJECTS TREATED OF IN "THE BOOK OF THE FARM."

INTRODUCTORY.—The Difficulties which the young Farmer has to encounter at the outset in learning practical Husbandry—The Means of overcoming those Difficulties—The kind of Information to be found in existent Works on Agriculture—The Construction of the "Book of the Farm"—The existing methods of learning practical Husbandry—The establishment of Schools for Instruction in practical Agriculture—The Evils attendant on Landowners neglecting to learn practical Agriculture—Commercial Farms as places for Instruction in Farming—Advice to Young Farmers who intend Emigrating as Agricultural Settlers to the Colonies—The kind of Education best suited to Young Farmers—The different kinds of Farming—Choosing the kind of Farming—Selecting a Tutor Farmer for Teaching Farming—The Pupilage—Dealing with the Details of Farming—The Steading or Farmstead—The Farm-house—The Persons who Labour the Farm.

WINTER.—The Weather in Winter—Climate—Observing and recording Facts—Soils and Subsoils—Enclosures and Shelter—The Planting of Thorn Hedges—The Plough—The various Modes of Ploughing Ridges—Draining—Yoking and Harnessing the Plough, and of Swing trees—Ploughing Stubble and Lea-ground—Trench and Subsoil Ploughing, and Moorband Pan—Drawing and Stowing Turnip, Mangold Wurzel, Cabbage, Carrots, and Parsnips—The Feeding of Sheep on Turnips in Winter—Driving and Slaughtering Sheep—Rearing and Feeding Cattle on Turnips in Winter—Driving and Slaughtering Cattle—The Treatment of Farm horses in Winter—Fattening, Driving, and Slaughtering Swine—The Treatment of Fowls in Winter—Threshing and Winnowing Grain, and of the Thrashing-machine—The Wages of Farm-servants—Corn Markets—The Farm Smith, Joiner, and Saddler—The Forming of Dunghills, and of Liquid Manure Tanks—Winter Irrigation.

SPRING.—Ewes Calving, and Calves—The Advantages of having Field-work in a forward state—Cross-ploughing, Drilling, and Rubbing Land—Sowing Spring Wheat and Grass Seeds—Sowing Beans, Peas, Tares, Lucerne, Saintfoin, Flax, and Hemp—Switching, Pruning, and Water-Tabling Thorn Hedges—Hiring Farm Servants—Sowing Oat-seed—The Lambing of Ewes—The Training and Working the Shepherd's Dog—Sowing Barley Seed—Turning Dunghills and Composts—Planting Potatoes—Breaking in young Draught-horses—Sows Farrowing or Littering—The Hatching of Fowls.

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AUTUMN.—Pulling Flax and Hemp, and the Hop—Reaping Rye, Wheat, Barley, Oats, Beans, and Peas—Carrying in and Stacking Wheat, Barley, Oats, Beans, and Peas, and of the Construction of Carts—Drafting Ewes and Gimmers, Tupping Ewes, and Bathing and Smearing Sheep—Lifting and Pitting Potatoes—Sowing Autumn Wheat, and the Construction and Principles of Agricultural Wheel Carriages.—Eggs—Rotation of Crops—Fertilising the Soil by means of Manures—The Points possessed by the Domesticated Animals most desirable for the Farmer to cultivate—Making Experiments on Farms—Destroying and Scaring Vermin on Farms—Looking at a Farm; its Rent; its Lease; its Stocking; the Capital required for it—Improving Waste Land—Farm Book-keeping—The Conveniences of the Cottages of Farm Servants—The Care to be bestowed on the Preservation of Implements—Index.

WILLIAM BLACKWOOD and SONS, Edinburgh and London; and Sold by all Booksellers.

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The Medical Times,

Of Saturday next, contains the following articles:—

CLINICAL LECTURE on CATARACT, delivered at the Royal Westminster Ophthalmic Hospital, by C. G. GUTHRIE, Esq., Jun.

LECTURES on the Theory and Practice of Medicine, by Dr. C. J. B. Williams, M.D., F.R.S.:—Intestinal Worms—Trichocephalus Dispar—Tænia Solium—Tænia Lata—Their Treatment—Diseases of the Peritoneum—Symptoms of Peritonitis.

The Structure and Functions of the Brain, with New Views of the Nature, Causes, and Treatment of Mental Diseases. By Pinel, Physician to the two National Mad Asylums of France, &c. Translated, with Illustrative Notes, by Dr. Costello.

Lithotrity, Lithotomy, and the Diseases of the Urinary Organs, by W. B. Costello, M.D.

On the Duration of that part of Human Life connected with Menstruation, with General Remarks on that important Function, by Charles Clay, M.D., Manchester.

Case of Natural Somnambulism and Catalepsy treated by Hypnotism, with Remarks on the Phenomena presented during the spontaneous Somnambulism, as well as that induced by various Artificial Processes, by James Braid, Esq., of R.I.A.S.E.

Dr. J. B. Johnston on the Canadian Leprosy.

On the Proximate Cause of Tubercle, and the Treatment of Pulmonary Phthisis, by J. H. Toswill, Esq.

Description and Analysis of the Compound resulting from the Union of Dry Chloride of Cyanogen and Ammonia acid Gases, by Dr. S. Murphy, Giessen.

On the Advantages and Disadvantages of Hospital Reports.

Progress of French Medical Science:—Researches on Valerianate of Quinine—Curious Cases of Neuralgia—Fracture of the Skull, complicated with Rupture of the Pericardium—Case of Leprosis—On the Chemical Composition of the Parenchyma Tuberculosis and Tubercles, by Dr. F. Boudet—Cancer of the Stomach—Academy of Sciences, Sitting of the 21st Oct.—Process for Staining Bones on the Coloration of Bones in Animals, Fed on the Coloring Principle—M. L. Fremy on the Maturation of Fruit—Experiments on Acetic Acid and its Compounds—Academy of Medicine; Sitting of the 22d Oct.—Dr. Brame on the Action of Cantharidin and Acetum Cantharidis on the System.

LEADING ARTICLES.—The Marylebone Association, the Project of a College of General Practitioners—The Edinburgh Hospital, its self-appointed Surgeon.

Peculiarities of Eminent Medical Men:—Dr. Goldsmith.

Charge of wholesale Plagiarism in the Provincial Medical Journal.

The College Fellowships.

State of Professional Feeling—Meetings at Newcastle-upon-Tyne and Sheffield.

On Medical Reform, by Thomas Harker, Esq.

Gossip of the Week—A Select Practical Formulary—Metropolitan Mortality Table.

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SUGGESTIONS TOWARDS AN INQUIRY into the PRESENT CONDITION of the LABOURING POPULATION of SUFFOLK. By the Rev. J. S. HENSLOW, M.A., Rector of Hitcham, and Professor of Botany in the University of Cambridge.

"Much food is in the tillage of the poor: but there is that is destroyed for want of judgment."—PROV. xiii. 23.

Also, by the same Author,

LETTERS to the FARMERS of SUFFOLK. Price 2s. And SERMONS on IMPROVED ATTENTION to the SACRAMENTS. Price 1s.

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THE HORTICULTURAL MAGAZINE.—Just published, price 1s., the INTRODUCTORY NUMBER of this new Magazine, containing Original Papers on every Branch of Practical Gardening, Horticulture, and Floriculture. Sold by all booksellers. Communications for the Editor to be sent to the Publisher, THOMAS HOULSTON, 154, Strand, London.

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SUBSCRIPTIONS

FOR THE

NATIONAL TESTIMONIAL

TO

MR. ROWLAND HILL,

AUTHOR OF THE PENNY POSTAGE,

WILL CLOSE ON THE 30TH OF NOVEMBER.

Of all the sources of income stated in the recently published Quarterly Returns of the Public Revenue, none exhibit *so large* a proportionate increase as the *Post Office*. On the year's net Revenue, the Customs have increased at the rate of about 10 per cent., the Excise 1½ per cent., the Property Tax 2 per cent., while the *Post Office Revenue*, under its almost nominal rate of a penny, has increased above 15½ per cent., and the increase on the quarter has been even as much as 25 per cent.

These cheering results show that (though the *plan of Penny Postage* is yet but *imperfectly tried*) the *complete restoration* of the Post Office Revenue to its amount before the Penny Postage was adopted is not an event far distant, if it be fully and honestly carried out; and the *City of London Mercantile Committee on Postage* desire to impress these satisfactory results most emphatically upon the Public, in announcing the *approaching close* of the National Testimonial to Mr. Rowland Hill. *All* parties are unanimous upon the great *moral* and *commercial* advantages of the *Penny Postage*. Its expediency as a *financial* step has been the *sole* ground of question; but now, even this *can scarcely be doubted*; for, let it be remembered, that the Old Postage Revenue had been absolutely *stationary* for twenty years,—retrogressive, in fact, if we consider the increase of population, education, and commerce during the period. The change which Penny Postage has effected, is to make the *Post Office Revenue* the *most buoyant* source of National Income, bidding fair to become more profitable than it has ever been. The Committee, therefore, call upon the Public to reward, with suitable gratitude, the Author of this great and triumphant measure.

The Committee have the satisfaction to announce that the Subscriptions, headed by the chiefs of political parties and of commercial wealth, already reach 10,000*l.*; but 10,000*l.* cannot be held to be a sufficient *national* reward for such *national* services. The Committee therefore urge upon the *nation at least to double* this sum. If every letter-writer, for only a single week, would pay a twopenny instead of a penny rate for his letters, the amount, and more, would be raised. In proportion as the public show their gratitude to Mr. Hill, so they strengthen the chances for the complete adoption of his plan, *now but partially carried out*. Its perfection will bring greatly-increased convenience to themselves, and increased advantage to the Post Office Revenue.

Never have the services of any *Public Benefactor* been *requited* as Mr. Hill's have been. Quitting a permanent situation for a *temporary* public engagement, to carry out his plan, Mr. Hill's services, whilst his plan was yet not carried out, were dispensed with, and he received the following acknowledgments of his merits, and—*nothing more*.—

"I gladly avail myself," writes the present Chancellor of the Exchequer, "of the opportunity of expressing my sense of the satisfactory manner in which, during my tenure of office, you have discharged the several duties which have been from time to time committed to you." "I entertain," writes Sir Robert Peel (who has also subscribed 10*l.* to the Testimonial), "a due sense of the motives by which your conduct, in respect to Post-Office arrangements, has been actuated, and of the zeal and fidelity with which you have discharged the duties committed to you."—Mr. Trevelyan, on behalf of the Lords of the Treasury, writes thus:—"I am also commanded by their Lordships to take this opportunity of stating, that they consider it due to you, on the termination of your engagement with the Government, to express to you the approbation with which they have regarded your zealous exertions in the execution of the duties which have been intrusted to you; and how materially the efficiency of the Post Office arrangements has been promoted by the care and intelligence evinced by you in the consideration of the various important questions which have been referred to you."

Under these circumstances the Committee call upon the *Public* to come forward with due generosity, and reward Mr. Hill themselves, as the *unrequited Inventor* of the *great measure of Penny Postage*—a measure which has opened the blessings of free correspondence to the Teacher of Religion, the Man of Science and Literature, the Merchant and Trader, and the *whole British Family*, especially the *poorest* and most *defenceless* portion of it;—a measure which is the *greatest boon* conferred in modern times on *all the social interests* of the *civilized world*; for Penny Postage is spreading its influence throughout Europe and reaching even Russia. The Committee rely on the gratitude of their countrymen, and feel sure that this, their last appeal, will not be made in vain.

(Signed) GEO. LARPENT, Chairman.

Subscription Cards, and every information, &c., may be obtained on application to the Secretary, Mr. GEORGE WANSEY, Solicitor, 3, Moorgate-street, London.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46.—1844.] SATURDAY, NOVEMBER 16. [Price 6*d*.

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LARGE STOCK OF SEEDLINGS.

W. AND T. SAMSON, Kilmarnock, Ayrshire, have a large stock of the following plants, which they will dispose of at low prices:—

American Arbor-vitæ, 2 years old	50,000	Larch, 1 year old	1,000,000
Ash, 1 year old	200,000	Quercus macrocarpa, 1 year old	15,000
Beech, 1 year old	1,500,000	,, palustre, 1 yr. old	25,000
Bullace, wild, 1 yr. old	5000	,, rubra, 1 yr. old	5000
Elm, 1 year old	200,000	,, tinctoria, 1 yr. old	6000
Holly, 1 year old	150,000	Scots Fir, 2 years old	1,000,000
Hornbeam, 1 year old	150,000	Sloe, or Blackthorn, 1 year old	150,000
Juniper, common, 1 year old	30,000	Spruce, 2 years old	1,000,000
Quercus coccinea, 1 year old	100,000	Thorn quicks, 1 year old	1,500,000

They have also a large quantity of transplanted Azalea pontica, American Arbor-vitæ Evergreen Privet, Irish Yew, 1½ foot, Double Nedthorn, fine Plants, &c. &c., which they are inclined to sell cheap.

SHILLING'S EARLY GROTTO PEA.

THE above PEA possesses advantages over every other for autumn sowing, being quite hardy, very prolific, and much larger than any other early Pea. See *Gardeners' Chronicle*, 25th of last May. "Mr. Shilling has sent us specimens of his New Early Grotto Pea, which were gathered on the 20th inst. He states that these were produced from seed sown in the open ground on the 28th of last November. Judging from the specimens sent, this is a fine, large, good-looking Pea, and will, no doubt, be found to be a very useful early variety."

To the Market Gardener they will be found invaluable. Price 1*s*. 6*d*. per quart, 10*s*. per peck.

SHILLING'S QUEEN CABBAGE, which gave such general satisfaction last year, as the best early variety grown. Having saved a considerable quantity of seed this summer, it is offered on the following advantageous terms:—1*s*. 6*d*. per oz., 10*s*. per lb.

Agents—Messrs. Field and Child, 149, Lower Thames-street; Messrs. J. and W. Noble, 152, Fleet street; Mr. J. Keenan, 4, Great Russell-street, Covent Garden; Messrs. Hurst and M'Mullen, 6, Leadenhall street, London.

Northwarborough Nursery, Odiham, Hants.

KNAP HILL AND BAGSHOT NURSERIES.

NOTICE.—The Business of these Nurseries, since the death of the late Michael Waterer, carried on, in the name of H. and J. WATERER, is by mutual agreement divided. The KNAP HILL NURSERY will in future be carried on by HOSEA WATERER, and that at BAGSHOT by JOHN WATERER. It will, therefore, be of importance, to prevent confusion, that correspondents be particular in the address and direct letters intended for the Knap Hill Nursery, to Hosea Waterer, Knap Hill, near Bagshot; and those for the Bagshot Nursery, John Waterer, Nurseryman, Bagshot, Surrey.—November 16.

J. T. WILLMER, Sen., having purchased the Stock of those beautiful Fuchsias noticed in the *Gardeners' Chronicle* of May 18 and June 1, under the initials of "T. L. H." Nos. 1, 2, 3, 4, 6, 10, 11, 13, and described as being a fine set of flowers, large, the upper petals in fine proportion, the side petals generally meeting above the eye, J. T. W. has a few sets of the eight sorts, with their names, to dispose of; the price for each set is 30*s*. Early application is requisite, to insure them. This Advertisement will not be repeated.

Sunbury, Middlesex, Nov. 13, 1844.

NURSERY LARCH.

COWAN AND CO., Nurserymen, Glasgow, have on hand a large quantity of well grown transplanted LARCH, 2 and 3 feet high, which they will sell at a low price, as they must be removed this season. All sorts of Forest-trees, seedling and transplanted, grown extensively, and offered at very moderate prices.

S. GIRLING begs to refer the Readers of the *Gardeners' Chronicle* to his Advertisement of PETUNIAS, SEEDLING VERBENAS, DAHLIAS, &c., of the 12th October.

Dancecroft Nursery, Stowmarket, Suffolk.

FASTOLFF RASPBERRY.

J. T. WILLMER, Sen., respectfully informs his Friends and the Public that he has a few hundreds of the above Superb RASPBERRY, warranted to be the genuine kind. 100 Canes, 40*s*.; 50 Canes, 20*s*.; and 25 Canes, 12*s*., including mat and packing.

J. T. W. has likewise a superb collection of CARNATIONS, PICOTEES, PINKS, and AURICULAS on sale, Catalogues of which may be had by post-paid application.

12 pairs first-rate Carnations	£2	0	0
12 ,, ,, Picotees	2	0	0
12 ,, ,, Pinks	0	12	0
12 plants of fine named Auriculas, including boat and packing	1	0	0

Sunbury, Middlesex, Nov. 13.

FASTOLFF RASPBERRY.

JOHN BELL begs to refer the readers of the *Gardeners' Chronicle* to his Advertisement last week of the above Raspberry, which may also be had true of the following Nurserymen:—Mr. W. Catleugh, Hans-place, Chelsea; Mr. W. Moore, Dereham; Mr. Bishop, Wacton; and Mr. J. W. Nutting, Seedsman, 46, Cheapside, London.

Messrs. Youell and Co., of the Yarmouth Nursery, having stated in their Advertisement of last week that the Raspberry they call the Fastolff can only be had true of them or their Agents, J. Bell feels bound, in justice to himself and other Nurserymen whom he serves with the above, to state that he has had his Canes the last three seasons from the same persons Youell and Co. have had theirs from; and that the above Raspberry is not so exclusive as Messrs. Y. and Co. wish the public to believe, as it is grown in almost every cottage and gentleman's garden at Burlingham, Lingwood, Acle, Rollesby, Ormesby, Hemsby, Filby, and all the adjoining parishes in that part of Norfolk; Ormesby and Filby being the two parishes from which Youell and Co., and myself, have had nearly all the stock. J. B. believes the Raspberry first originated in the garden of W. Jary, Esq., Burlingham, from which gentleman's garden J. Bell's first canes were procured. The Raspberry is generally known about these parts as the Filby Seedling.

Bracondale Horticultural Establishment, Norwich.

THE FILBY, or FASTOLFF RASPBERRY.—At the request of some gentlemen living in the neighbourhood of Yarmouth, T. RIVERS begs to submit the history of this really excellent Raspberry to the public. In the year 1814 Colonel Lucas, of Filby, a place lying between Norwich and Yarmouth, discovered a Raspberry plant growing under an old Laurel hedge in his garden. His attention was drawn to it, and he soon found it to be a superior and delicious variety, so that in a short time every other sort was ejected from his garden, and this alone cultivated. It was not, however, till 1824 that he allowed his gardener to part with it, who then gave canes to his neighbours, and by this means it got to be cultivated in Caistor, Ormsby, and, in fact, in all the neighbourhood, under the name of the Filby Raspberry, to the exclusion of all other sorts. It has latterly often been called the Caistor Raspberry, from the Market Gardeners growing it in that parish. In Caistor is an old castle in ruins, that formerly belonged to the Fastolff family: the latter name was given to the variety by Youell and Co., when they first began to sell the canes. The fruit upon which Dr. Lindley pronounced his opinion was gathered in the Filby garden, now the property of the Rev. G. Lucas, who authorises and permits the publication of the above facts; and has also permitted his Gardener to supply the Canes after this date to T. RIVERS only.

Canes are sold at 30*s*. per 100, or 6*s*. per score, carriage paid to London. Charge for package, for small parcels, 6*d*., for large do., 1*s*. to 1*s*. 6*d*. Orders to any amount can be executed. The Trade price will be given on application.

Sawbridgeworth, Herts, Nov. 12, 1844.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, GERANIUMS, AURICULAS, CARNATIONS, and LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London (removed from Walworth), by Appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, begs to recommend to the attention of the Nobility, Gentry, and Public his extensive assortment of the above Flowers, which, from the success he has had in their cultivation, he can offer at very moderate prices. He particularly wishes to call attention to the highly-flattering remarks on his Exhibitions of Tulips and Lilium lancifolium this season, in the various papers. He is also desirous of reminding the Nobility, Gentry, and Amateurs, who may wish to add to their collections or ornament their parterres with these beautiful flowers, that this is the best season to make a selection. The varieties of the splendid Lilium lancifolium are particularly adapted for parterres, as, besides being quite hardy, they flower at a time when the Nobility and Gentry are at their country seats, and when flowers are so much wanted. They only require to be known to be universally cultivated. Catalogues can be forwarded by post on application. Foreign orders executed.

BAGSHOT NURSERY, SURREY.

JOHN WATERER begs to call the attention of the Nobility, Gentry, and Public, to his unlimited collection of AMERICAN PLANTS, which are this season unusually well set with bloom buds, particularly those for forcing, comprising,—Rhododendrons, Kalmias, Azaleas, Andromedas, Ledums, Daphne cneorum, &c. Also those of larger sizes, among which may be had Rhododendron Catawbiense, and many other fine varieties; Kalmia latifolia, Magnolias, of sorts; Azalea coccinea major, and aurantia, &c., &c., from 3 to 6 feet, which are fine objects for single specimens or borders, being bushy to the ground. J. W. begs to recommend his unrivalled Stock of Cedars of Lebanon, 18 inches to 4 feet; also about 200, 4 to 9 feet, bushy to the ground, very handsome for Lawns; the whole of them warranted to move safely. Also about 6000 Spanish Chestnuts, 1 to 6 feet; 50,000 Birch, 3 to 4 feet; the whole of which may be had at moderate prices. N.B.—Planting done by contract.

Nursery, Bagshot, Surrey, 34 miles from Farnborough Station, South Western Railway.

TO THE PLANTERS OF ENGLAND.—TRUE HIGHLAND PINE.

JAMES GRIGOR, Nurseryman, Norwich, begs to remind such of the Planters of England as are anxious to enhance the beauty and value of their estates, that he is now sending out plants of this recently introduced and very desirable timber-tree, at the undermentioned prices:—

Single plants, strong and well rooted	6*d*. each.
Strong plants, 20 inches high	5*s*. per 100.
Do. 18 ,,	30*s*. per 1000.
Smaller-sized plants	from 10*s*. to 20*s*. ,,

For introducing this tree Messrs. Gregor, of Elgin and Forres, were awarded several premiums by the Highland and Agricultural Society of Scotland, where it is rapidly superseding the common Pine. In its old age it assumes in a great measure the darksome grandeur of the Cedar of Lebanon, and is therefore invaluable for planting in masses throughout the more prominent parts of distant landscapes. Sir Walter Scott describes it as presenting much of "the bold and contorted figure of the Oak;" and the *Quarterly Review* recommends it as an acquisition to churchyards and cemeteries. It is highly esteemed for all economical purposes, on account of the hardness and durability of its wood.

N.B.—J. G. has for the present disposed of all his potted plants; but as the others have excellent roots, there is no risk in removing them. A supply in pots will be ready in the course of next month.

CEDRUS DEODARA, raised from seeds in the open ground, 10*s*. each. Araucaria imbricata, Pinus excelsa, &c. &c. on reasonable terms.

TO PEAR-GROWERS.

RENÉ LANGELIER, Nurseryman and Florist, CLARENDON NURSERY, ST. HELIER, JERSEY,

Begs leave to draw the attention of Pear-growers to his new PEAR, named "LANGELIER'S BEURRÉ" of first-rate merit; perfectly melting ripe in January; shape of Napoleon, but larger in size; standard, tree very vigorous; one of the best flavoured Pears known, otherwise it would not be recommended by R. L., as his motive for advertising it is not for the sake of publishing, but for the good of the public in general, to whom he is happy to have the opportunity of rendering himself useful; of which "Von Mon Leon Le Clerc" will be a sufficient guarantee, having proved itself as it was represented, and given universal satisfaction. The trees of this Superb New Beurré are small and limited in number, and the price will be 21*s*.; if 6 trees are ordered, 7 will be sent; no discount will be allowed to the trade, and to the trade only will 8 plants be sent for 6; the number is very limited. R. L. also takes this opportunity to state that to this day numbers of "Von Mon Leon Le Clerc" remain unpaid for, consequently none will be sent to unknown correspondents, except for ready cash, or post office order.

As this is the season for planting, R. L. wishes to draw the attention of the public to his acknowledged unrivalled Collection, of which a List may be had by pre-paid letter, and begs to state that nothing is sent from his Establishment except proved fruit, unless requested. R. L. also wishes to obtain attention to a small quantity of EVERGREEN OAKS, among which will be found a great variety; they are fine and healthy, 2 years old, about 12 inches to 2½ feet high, fit for planting or potting, price 20*s*. per 100. Also, fine KIDNEY POTATOES, superior in flavour and produce to the Ash-leaf; the sample, extra fine, 5*s*. 6*d*. for 24lbs. weight, as not less than that quantity will be sent.

RICH LEAF-MOULD and PEAT-EARTH.—Several acres of valuable Peat-earth and Leaf mould of a rich quality, to be disposed of. Gentlemen and Nurserymen engaged in the Cultivation of Heaths and American Plants will find the above articles of a very superior kind. They will also be found of great value as dressings upon strong lands.—The Estate is within one mile of the Thames, convenient for water carriage. For full particulars apply to Mr. Lawrence, Corn Chandler and Seedsman, No. 18, Piccadilly.

NURSERY STOCK.

RICHARD MITTON, Nurseryman, Pontefract, being about to clear off five Acres of Nursery Stock, consisting of Forest and Fruit-trees, Evergreen and Flowering Shrubs, &c., begs to offer the same at unusually low prices. Particulars may be had on application.—Pontefract, Nov. 16.

A SPLENDID NEW AZALEA AND FUCHSIA.

WM. PAWLEY, White Hart Hotel, Bromley, Kent, has now ready for delivery a beautiful and distinct variety of Azalea, named "Carminator," that gained first prize at the Regent's Park Exhibition, April 30th, 1841; a fine large flower, very dark, good habit, and a free bloomer: established plants, 21*s*. each.

Fuchsia Cassandra.—This beautiful and distinct variety is now ready, at 10*s*. 6*d*. per plant; for particulars, see Professor Lindley's opinion in *Gardeners' Chronicle* under the initials "M. C.," Sept. 7, p. 608.

N.B.—The usual discount to the Trade, and a remittance from unknown correspondents.

EXHIBITION OF CHRYSANTHEMUMS.

CHANDLER AND SONS, Nurserymen, Vauxhall, London, beg to state that their Collection of this beautiful autumnal Flower is now in bloom, and will continue for the next two or three weeks.

C. and Sons are now sending out healthy young plants of Double CAMELLIAS of sorts, with flower-buds, at 30*s*. per dozen, larger plants, 42*s*. per dozen; and young plants of the newer sorts, at 60*s*. per dozen. Package included in the above prices.

EDWARD BECK informs the Public that in consequence of the greatly increased demand for his SLATE TUBS, he is enabled to reduce the price of the following sizes about 10 per cent. He regrets the too frequent delay which has occurred in the execution of orders. This he hopes to avoid in future by keeping a supply on hand.

Present Prices for Cash or Post-office order:—

14 inches	11*s*.	0*d*.	20 inches	22*s*	6*d*.
15 inches	12	6	22 inches	25	0
16 inches	16	0	24 inches	34	0
18 inches	19	0			

Slate Works, Isleworth, Middlesex.

CARNATIONS AND PICOTEES.

JOHN DICKSON, Acre-lane, Brixton, Surrey, has prepared for the growers of these splendid flowers a Catalogue, containing them to choice of their qualities, with the prices annexed, which may now be had at the Nursery, and of Messrs. Warner & Warner, Cornhill, London.

THE TRUE PASTOLFF RASPBERRY.

GREAT YARMOUTH NURSERY. NORFOLK. 1844.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, HIS GRACE THE DUKE OF MARLBOROUGH, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL AND CO. beg to announce they are again able to supply fine canes of the above truly excellent variety, unequalled for the size of its Fruit and richness of flavour; prices as follow:—

Packages containing 100 Canes	.	£2	0 0
Ditto " 50 "	.	1	1 0
Ditto " 25 "	.	0	12 0

For particulars of the above, see YOUELL & Co.'s Advertisement of Nov. 9th.

YOUELL and Co. feel it due to themselves to state that a spurious kind was offered for sale by other parties last season, under the title of "Pastoff Raspberry," the same having no pretensions to the genuine variety; and to obviate a repetition of the like they have appointed the following Nurserymen and Seedsmen as their Agents for the sale of it, at whose establishments may be seen growings of the Fruit:—Bury St. Edmunds—Mr. R. Pettit; Canterbury—Mr. W. Masters; Carlisle—Messrs. Little and Ballantyne; Chichester—Messrs. Newman and Co.; Cheadle, near Leek, Staffordshire—Mr. F. Fox; Cork—Messrs. Hayecraft; Doncaster—Mrs. Milan, Seed-shop; Dundee—Messrs. Urquhart and Son; Durham—Messrs. Hancock and Sons; Edinburgh—Messrs. Peter Lawson and Son; Feltham—Messrs. Whitley and Orsborn; Glasgow—Messrs. Reynolds and Co.; Hadlington—Mr. T. Dods; Halifax—Mr. W. Throp; Jersey—Mr. B. Saunders; Leeds—Messrs. Ely and Son, Rothwell Haigh; London—Messrs. Flanagan and Son, No. 9, Mansion House-street, and Messrs. Noble, No. 152, Fleet-street; Liverpool—Mr. James Cuthbert, 12, Clayton-square; Manchester—Mr. H. D. Cormack; Nottingham—Mr. J. F. Wood, the Coppice; Peterborough—Mr. John White; Penzance—Mr. J. Fox; Plymouth—Mr. W. E. Rendle; Shef field—Messrs. Fisher, Holmes, and Co.; Southampton—Mr. James Jupiter; Stafford—Mr. J. Sandy; Torquay—Mr. J. Morgan; Wakefield—Mr. W. Barratt; Waterford—Messrs. Fennessy and Son; Wellingham, Kent—Mr. J. Cattell; Wexford—Mr. James Harper; York—Messrs. T. and J. Backhouse.

YOUELL'S CELEBRATED TOBOLSK RHUBARB, the earliest sort known, fine roots, fit for forcing, 12s. per dozen. For Particulars, see their Advertisement of Nov. 2.

Finest Imported DUTCH HYACINTHS, 6s., 12s., and 18s. per doz.; for Particulars of which, together with the Extensive and Select Collection of CARNATIONS, PICOTEES, and PINKS, see their Advertisement of Nov. 9.

Great Yarmouth Nursery, Nov. 13.

NEW AND SPLENDID RHODODENDRONS.

RHODODENDRON WILLIAMSONII. — This magnificent variety was forwarded for the opinion of Dr. Lindley and also of Mr. Glenny. Dr. Lindley (see *Gardeners' Chronicle* for May, 1844)—"*G. B. S.*—Your seedling makes a handsome and showy variety for the garden; the heads of the flowers are large, compact, rich in colour, and the foliage is very handsome." Mr. Glenny (see *Gardeners' Gazette* for May, 1844—"*G. B. S.*—If hardy, a very great acquisition; size very large, bright rose, well spotted, and if bloomed in the open ground, a valuable addition to our hardy plants, for the foliage is as perfect as the flower."

RHODODENDRON INVICTUM.—A very dazzling deep rosy crimson, very dark spots, a most distinct and superb variety, and blooms later than most of the Hybrids, and quite hardy. The above two splendid hardy Rhododendrons now offered to the public were raised by Mr. Williamson, the Curator of the Sheffield Botanic Garden, where Invictum has bloomed for several years, and has been the admiration of all who have seen it. Price for the two, 21s.

Apply to F. Godwin, Nursery and Seedsman, Sheffield; W. and A. Godwin, Market Drayton; or Messrs. Warner and Warner, 28, Cornhill, London, where paintings of the above may be seen.

SUPERB DWARF ROSES.

F. GODWIN, having a very large stock of Dwarf Roses, including the most approved varieties of the Hybrid China, Gallica, Provence, Damask, &c., is offering them at the following reduced scale of prices:—

100 selected sorts, in 50 named varieties	.	.	.	25s.
50 " do. 25 "	.	.	.	15s.
24 " do. 12 "	.	.	.	8s.

The above are strong, healthy plants.

Sheffield, Nov. 12, 1844.

HOT WATER FOR BOTTOM-HEAT



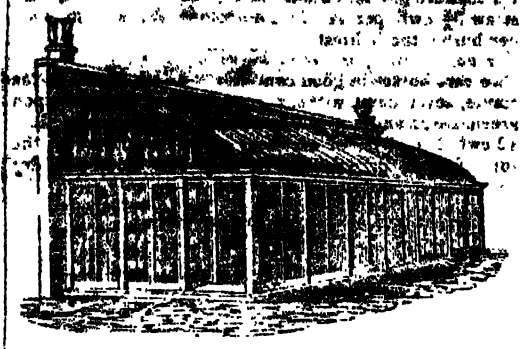
J. WEEKS AND DAY, Architects, &c., Gloucester Place, King's Road, Chelsea, HORTICULTURAL BUILDERS, and Hot-water Apparatus Manufacturers, invite the attention of Horticulturists to their Improved Plan of Bottom Heat, now becoming so universally adopted.

From the extensive Practice they have been honoured with for so many years in designing and building CONSERVATORIES, GREENHOUSES, HOTHOUSES, PITS, &c. &c., and erecting their HOT-WATER APPARATUS to every description of Buildings to which heat is applicable, J. Weeks and Day have the greatest confidence in recommending their BOILERS as the most efficient of any yet invented, their largest being capable of heating a range of forcing Houses 200 feet in length, with a comparatively small quantity of fuel, and only requiring attention once in 10 hours. To be seen in use at most of the London Nurseries, also at their Manufactory; and a variety of Horticultural Erections, Models, Plans, &c. &c.

DUTCH HYACINTHS for forcing, Single and Double at 4s. per dozen; also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, Ranunculuses; priced Catalogues of which will be forwarded per post, from Arthur Corbett's Italian and Foreign Warehouse, 18, Pall Mall.

Double Italian Tuberoses should be potted in the first week of next month.

COTTAM AND HALLEN, Engineers, &c., Nos. 2, Wellington-street, Blackfriars-road, London, and at Cornwall-road, Lambeth.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with Cottam's Patent or Rogers's Boilers. After 15 years' experience, and having fixed upwards of 3000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

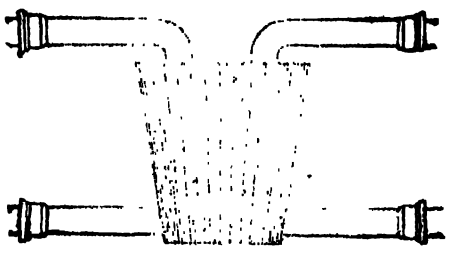
Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for Agricultural and Horticultural Purposes.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



Burbidge and Healy respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, Burbidge and Healy refer them to the Horticultural Society's Gardens, Chiswick, also to Mr. Glendinning, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
In.	£ s.	s.	s. d.	s. d.	s. d.	
10	1 5	20	7 6	6 2	6	30 feet.	12 to 20
Ribbed Boiler.						
10	2 2	20	10 6	7 6 2	6	50 to 70 ft. 4 in.	Under 25 to 40
12	2 15	30	12 0	7 6 3	6	80 to 125 feet.	40 to 65
14	3 10	35	17 5	9 6 4	6	150 to 250 feet.	65 to 100
18	5 5	42	25 0	8 6 5	6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24	8 15	50	35 0	8 6 7	6	600 to 800 feet.	

If 3 inch pipe be used, one third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

WIRE WORK, HOT-WATER APPARATUS, GREEN-HOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE-FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS, on improved and economical principles.

Parties waited on in Town or Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

CONICAL BOILERS.—The Boilers invented by Mr. James Weeks, and made only by Messrs. Green, of Lambeth, and many of the Nobility and Gentry in the Country, have given the greatest satisfaction, and may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pineapple-place, Edgware-road; Rollinson's, Tooting; Penny's, Plymouth; The Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's-park.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. Bailey having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the principal portions in its charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick. D. and E. Bailey have also constructed, under the inspection of Horticultural Buildings and Stoves, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting amongst other metal works, an extremely complete and convenient kitchen apparatus, on range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. Bailey were the first to introduce metallic curvilinear houses to horticulturists, and have built in the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. Bailey have prepared a quantity of the Galvanic Plant Protectors, with the new safety valve and medicine delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

IMPORTANT TO AGRICULTURISTS, &c.

ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS are conducted by Messrs. Mitchell and Field (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil in which it is proposed to grow any particular crops contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Instructions contracted in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 5, Hawley-road, Kentish Town.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the Manure as shall fully develop its productive powers. To secure to buyers these indispensable requisites, with each purchase will be given a warranted chemical analysis of quality, and also a copy of the recently-published Pamphlet, "Practical Instructions for using Guano as a Manure, illustrated by Practical Results."

Large parcels will be delivered direct from the ship or waterside premises, smaller quantities may be had at the warehouses, 24 and 25, Billiter-street, and delivered within any reasonable distance at a trifling additional cost. Apply to James Clark, 24, Billiter-street, Fenchurch-street, London.

UNRESERVED SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS beg to announce that the Sale of the VALUABLE NURSERY STOCK, at the Key Field Nursery, St. Albans, Herts, will commence on Monday, November, 18th, 1844, and two following days, at 11 o'clock each day.—American Nursery, Leytonstone.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.
LAVENDER HILL NURSERY, WANDSWORTH ROAD.
UNRESERVED SALE OF EXTENSIVE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. Pamplin, to sell by Public Auction on the premises, Lavender Hill Nursery, Wandsworth-road, near London, on Monday, Dec. 2d, and following days, at 11 o'clock on each day, the whole of the EXTENSIVE and VALUABLE NURSERY STOCK, comprising a large quantity of the finest Hardy Evergreens of all sizes (which remove particularly well out of this ground); Fruit and Forest Trees, Shrubs and American Plants; Hardy Herbaceous Plants; large and small Camellias; a very capital collection of Ferns, some of which are of extreme rarity; Garden Frames and Lights; Shop Fixtures and general Fittings of a Seedshop and Counting-house; Stock of Seeds of the present Harvest; Garden Implements, including useful Carts, Barrows, &c.; several thousand yards of Box Edging; about 200 Pollard Willows with their tops and tops; Evergreen and other Hedges; also some growing Crops, as Mangold Wurzel and Turnips; together with many useful articles.

The whole will be sold without the least reserve, the premises having been disposed of for other purposes, and must be cleared before Christmas.

Catalogues will be ready one week prior to the Sale, and may be had on the premises; at most of the Seedshops in London; at No. 43, Frith-street, Soho; and of the Auctioneers, Leytonstone, Essex.

SIX THOUSAND MOSS ROSES.

MR. JOHN KING begs to give notice that he is Instructed to Sell by Auction, on the Premises, Victoria Park, on the 19th November, 1844, at 12 o'clock precisely, by order of Mr. Carter, of Grove Street, Hackney, about 6000 MOSS ROSES, Fruit Trees, a large quantity of Flower Plants, Cucumber Boxes and Lights, Tools, Seeds, Hedges, &c. To be Viewed till the Sale. Catalogues had on the Premises; Three Colts, Grove Street; of Mr. Clark, Seedsman, Bishopsgate Street; and of the Auctioneer, Hackney Road.

TO MARKET GARDENERS, GENTLEMEN'S GARDENERS, AND OTHERS.

TO BE SOLD, a Bargain, within one hour's drive of Covent Garden Market, THE LEASE OF AN EIGHT-ROOMED HOUSE, EXCELLENT OUTBUILDINGS, AND FOUR ACRES OF CAPITAL MARKET-GARDEN GROUND, covered with the choicest Fruit Trees in full bearing. Also, from 3000 to 6000 feet of Glass, that has been erected within the last four years, and heated by hot water. Likewise the Stock and Crops, which consists of upwards of 400 Fruiting Pine plants, nearly two succession ditto, several thousand Strawberry plants in pots for forcing, upwards of a Thousand Chillies, several thousand empty pots, tools, leaded cisterns, with every other requisite for carrying on a most profitable Trade. There are 36 years of the Lease unexpired; Rent, 50l. per annum. For further particulars apply, personally or by letter, to J. D., Mrs. Lowe's, Grocer, Bishopsgate; Middleton.

FARM.—Wanted to Purchase, a FARM of 200l. to 400l. a year rental, it must be south of the river Thames.—Address, by letter, stating size, situation, rent, and price, to E., *Gardeners' Chronicle* Office, 7, Upper Wellington-street, Covent-garden, London.

FOR SALE, an INDIAN BULL, COW, and CALF, and the Cow, which is only thirty-six inches high, again forward in calf.—Apply to Mr. Gulley, Langford Budville, Wellington, Somerset.

to ascertain the best mode of its equal distribution over the soil, he next caused it to be mixed with water to the consistence of cream. This he had passed through a fine riddle; a fresh quantity of water was mixed with the refuse, and in this manner the whole of the guano was separated from the bones, feathers, skins, and grit. A given weight of the guano thus prepared was mixed with a given number of bushels of dry mould of good tilth, or both mixed together, and when the mass was made it was just dry enough to pass through a screen or iron riddle, and to admit of being sown immediately before or after the prepared soil. In mixing up the guano with water, he used a few pounds of powdered gypsum as a fixer, according to the common phrase, and he urged the importance of such an addition, whether the guano was applied as he used it, or in its original state. He was satisfied that, when he considered the influence of the long continued dry weather during the early part of the season, he would have had little or no crop on his dry soil, but for the invigorating and powerful influence of the guano; and he had this year a better green and corn crop than he had ever had before.—Mr. Fraser, of Reelig, kindly stated that he had been in the habit of applying three cwt. of guano per acre, sowed with the crop, and had found it succeed admirably. In his opinion and experience the best way for Turnips was to sow the guano broadcast (after the land is clean and in order for drilling), plough, harrow well in, and drill up—the whole guano will be then in the raised drills, but intimately mixed with the soil, so as to furnish food in the best manner to the young plant, without burning the seed. As to white crops, he thought that either the whole or part of what is given per acre should be sown broadcast, and harrowed in, when the seed sown and harrowed in, so that the whole should be mixed as before with the soil. When a part is reserved it should be sown in spring, when the plant (Wheat) begins to look sickly, when the guano will start it afresh. A friend from London says, that it has been recommended, when sowing guano with white crops, to add from ¼ to ½ cwt. of nitrate of soda, which brings away the plant finely.

Witham.—At the late meeting of this Agricultural Society the President read an account of the following experiment with manure:—Much has been said respecting the management of farm-yard manure, some contending that rain or water injures the quality of such manure, and renders it worthless. Others believe that such manure cannot be made without a considerable portion of water, as dry muck will mould, and lose all its fertilising qualities. The following experiment was made this last summer, 1844:—On the 15th of November, 1843, 10 Scots were put loose in stalls 12 feet square, fed with Bean meal, cut hay, malt coombs, and oil-cake. Each bullock foddered or littered with one truss of good wheat straw per day, 30 lb. per truss, carefully weighed; cleaned out once a month; no urine escaped, all was absorbed by the daily large quantity of straw foddered. On the 13th of January, 1844, five stalls were cleaned out, and the manure weighed the same day, carefully laid by itself, and covered nine inches thick with earth—no evaporation escaped; stirred over three times and watered each time, as the manure was disposed to mould very much. On the 4th of April weighed again, and carted upon the land for Oats, not very rotten; the carts were filled exactly 2 tons weight, and laid upon one quarter of an acre. On the same day, 13th of January, the other five stalls were cleaned out, and laid upon dry ground, all exposed to the weather, from the 13th of January to the 4th of April, weighed and managed exactly as the other five stalls, stirred on the same days, watered when stirred; what drained from it was thrown upon the heap of manure. Exactly 3 tons laid upon the same quantity of land. The whole threshed directly out of the field, 24th August. One quarter of an acre of Oats produced, from the manure closely covered up, 18 bushels 1 peck, weighed 38 lbs. per bushel. Straw 5 cwt. 1 qr. 18 lbs. One quarter of an acre, not covered up, produced 17 bushels 1 peck; weighed 39 lbs. per bushel. Straw 5 cwt. 1 qr. 6 lbs. In tabular form they will stand thus:—

	qrs.	bsh.
Covered manure, produce	9	1
Not covered	9	5
In favour of covered manure	0	4

	cwt.	qrs.	lbs.
Produce of straw, per acre, covered	21	3	10
Ditto not covered	21	1	16
In favour of covered manure	0	2	0

On the same day, one quarter of an acre was manured with 1 cwt. of guano, and produced 19 bushels 37½ lbs. per bushel. Straw 2 cwt. 2 lbs. Oats, guano-manured, equal to Quite 4 bush. per acre; straw 2 cwt. 2 qrs. per acre. The guano-manured exceeded 3 bush. of Oats per acre more than the covered muck.—N.B. Guano was sown on Wheat, Barley, Oats, and Carraway, upon another farm, a different soil, subsoil clay; no benefit was observed. The drought continued a long time.

The following paper was then read on *Sowing Wheat.*—August, 1843, one quarter of an acre of a very gravelly soil—in a hot summer producing but little—was, after Peas, ploughed four times in the same day with six horses, 15 inches deep; dibbled with Wheat in October, and produced at the rate of 6 bushels 3 pecks per acre more than the land by the side of it, ploughed in the usual way for Wheat 5 inches deep. Straw 3 cwt. per acre more than the adjoining land of the same measure and same soil. This same field is subject to Wire-grass in the autumn; in a few weeks it is thickly coated. One acre was hoed and burnt, costing 10s. per acre. One acre by the side of it ploughed with wheat quarter. All dibbled, no visible difference throughout the year either in produce or in cleanliness of the land during the summer of this autumn, 1844. One acre in the same field was folded 14 nights with 200 sheep, fed in the day-time on stubbles—no oil-cake or Corn. The other part of the field all manured, 10 tons of good muck per acre. The folded Wheat succeeded the manured Wheat 2 bushels 3 pecks per acre, and the straw 3½ cwt. per acre. The folded Wheat 1 lb. 4 ds. per bushel the lightest.

Experiment upon Horse-keeping.—June 24, 1841.—Two cart-horses in good condition were kept [illegible] the stable, seven days, without going [illegible] upon green Tares and Corn.—[illegible] days 12 cwt. 1 qr. 9 lb. of excellent [illegible] the top of the growth. [illegible] dry weather, no waste.

	cwt.	qrs.	lbs.
Also one peck of Oats per day per horse	1	1	12
3 bushels 3 pecks wheat straw	20	0	4
Also chaff	1	2	0
Corn and chaff	1	3	12
Tares	18	1	9
Two horses consumed in one week	14	0	19
One horse consumed in weight in 7 days	7	0	9

That is, 113 lbs. per day for one horse. Drank 6 gallons of water per horse per day. Two horses littered for 7 days, one truss of Wheat straw per day, 36 lbs. per truss.

	cwt.	qrs.	lbs.
From 252 lbs. of straw and the above food and water.—Weight of manure in its raw state at the end of the week	12	2	3
Monday, 5th of August.—Weighed the muck made from the green Tares after lying in a dry stable six weeks, stirred over four times, four pails of water (that is, 16 gallons) thrown upon it, as the dry muck required it every time to prevent its moulding. It was not very rotten; it was removed with a fork, no shovel used: weighed this day	5	1	10

N.B.—The stable was a sound old brick floor, with a gutter in it; a 10-gallon copper was placed at the fall of the gutter, and cemented carefully. No urine could escape. Only 21 quarts of urine in the seven days drained into the reservoir. *Second Experiment on Horse-keeping—with dry food.*—Monday, the 7th July, 1841.—Two cart-horses (not the same as before mentioned, but of the same size and condition) were kept in the same stable upon dry food, and not removed for seven days.

	cwt.	qrs.	lbs.
3 cwt. of excellent Clover hay consumed in the 7 days	3	0	7
1 peck of Oats per day per horse	1	1	0
Also chaff	0	2	4
Two horses consumed in one week	4	3	11
One horse consumed in weight in 7 days	2	1	19

That is, 39 lbs. per day for one horse upon dry food. Drank 12 gallons of water per day per horse.

	cwt.	qrs.	lbs.
Weight of manure in its raw state, from 252 lbs of straw, and food and water	10	1	2
The same, after being kept in the stable 6 weeks, stirred over 4 times, 4 pails of water each time (great difficulty in preventing its getting mouldy): it weighed	6	0	2
Decrease in weight	4	1	0
Only 13 quarts of urine drained from the dry food. Observe, manure made from green food, when in a proper state to be carted upon the land	5	1	10
Difference in weight in favour of green food	1	0	10

Notwithstanding this increase of weight in the green food, it is presumed the manure made from the dry food is of the most value.

The President then said, Mr. W. Hutley had put into his hands the following paper relative to experiments with Wheat drilled on the same description of land:—

Account of the Produce from different quantities of Wheat, drilled upon equal quantities of land.

No. 1. Drilled at the rate of 4 pecks per acre, rows 12 inches apart.

	qrs.	b.	pk.	pt.
Produce—Wheat, best	3	3	1	2
Seconds and tail	0	1	1	5
Total	3	4	2	7

Straw 12 cwt. 13 lb.

No. 2. Drilled at the rate of 6 pecks per acre, rows 6 inches apart.

Wheat, best	3	5	3	0
Seconds and tail	0	1	1	2½
Total	3	7	0	2½

Straw 15 cwt. 13 lb.

No. 3. Drilled at the rate of 9 pecks per acre, rows 6 inches apart.

Wheat, best	3	6	1	5
Seconds and tail	0	1	3	3
Total	4	0	0	8

Straw 18 cwt. 3 qr. 27 lb.

N.B.—No. 1 was about a week later in sowing than the other two pieces.

The President said, Professor Johnston told him that the other day he was in Hampshire, and there he found thin sowing answered very well.—Mr. H. Dixon said, Mr. R. Dixon had tested Lord Western's recommendation of 9-inch drilling against his own, which was six inches. He sowed at least two bushels and a half an acre, generally three; and there were 71 acres of land which in 12 years had grown 272 acres of Wheat, the average of the crops for those 12 years being pretty well 5½ qrs. per acre. This was from thick sowing. He was also a thick sower of Beans; he put on six or seven bushels of beans per acre; his average for the last 12 years was eight quarters (!) of Beans per acre.—The President asked if Mr. Wm. Hutley could give them an idea of the expense of burning and draining his land. The land was forked after the plough, and he saw there were 20 men to two ploughs, which must have been a considerable expense.—Mr. Hutley said, when he took his farm he thought no land was more out of condition; it was extremely poor, and was overrun with Thistles, Docks, and everything that can be pretended to good farming ought to try to eradicate. The first thing he set about was to take the water off it, which had cost him rather more than 2000*l.* on 160 acres, as he had made rather more than 1000 rods of drainage through it. At the time he took the land there were a vast number of Pollard-trees on it, and being fully convinced these were an injury to the farmer, and an impediment to good cultivation, he cut them down and drew them home. He then set about the tillage of the land with spirit. He forked 25 acres of it, ploughing five inches and forking ten, and keeping the subsoil at the top; that cost him 10*s.* an acre to plough, because the horses going upon the soft soil could not get over so much land; and the forking cost him 4*l.* 4*d.* an acre. He had 13 acres of the land so bad, and so soft in some places, that the cattle could hardly go upon it. After he had drained it, it cost 5*l.* or 6*l.* an acre to plough; then 4*l.* for burning; and he had now got as good a crop of Turnips on it as at any other part. The whole expense of bringing the land into this state will run 12*l.* to 15*l.* an acre; and with the year's rent for the 160 acres, it had cost him, without anything for stock, except horses, 2600*l.* He thought it was the duty of the landlord to take a tenant that was competent to employ labour and improve the soil. The next thing was to give them a lease and stimulate them to lay out their money. He had seen a vast deal of mismanagement, and a good deal of good management, but he never saw a man that could farm that had not got a lease, for he never saw him disposed to try. He would say to the landlords, "You cannot grow timber and corn too." They had a discussion on this subject at the Farmers' Club twelve months ago, and the conclusion they came to was that they should endeavour to get rid of the timber by offering the landlord 2*s.* an acre extra rent; he was sure it would be worth it; and he was sure if the landlord laid out that money in land, in the course of ten years it would produce more than all his timber was worth. Let them grow their timber where it ought to be grown—in woods. Looking around that neighbourhood they would find invariably that when individuals were without leases, and had timber on the estates, they had little in their pockets and nothing in their cupboards.—Mr. J. Beadel, in the course of his remarks on the state of Agriculture in Ireland, said, the system of cropping as he observed it would rather surprise them—they began with Potatoes; then they took Wheat; after Wheat they took four or five successions of Oats; and then they laid the land down to "rest," as they called it, but during the time land was thus at rest, he had seen upon it weeds, Docks, &c., taller and bigger round them he was himself. He walked over one field of this sort with the farmer, and he said to him, "What do you call this?" "Oh," said he, "that is at rest." "Rest! we should not call it rest in England, for we consider it draws the land as much to grow weeds as to grow corn."—This, it would appear, is an exaggerated picture of the most cultivated districts in Ireland.

Darlington.—The Members of this Club held their Monthly Meeting on Monday last, at the Offices of Mr. Thos. Dixon, Land Agent, their Secretary; the subject under discussion being The best Method of preserving Turnips through the Winter, and whether it is desirable to draw them from the Land, both as regards the preservation of the Turnips and keeping the Land in condition. The chairman introduced the subject, and during the course of the discussion he read an able communication on the subject from the pen of Mr. Davidson, a well-known correspondent of the Club. The members present were unanimous in opinion that in every case where Turnips are stored either in houses, in camps, or otherwise, in considerable quantities, it is desirable to pay attention to the manner in which the Turnips are prepared for storing. The top and roots ought to be taken off, together with as much dirt as possible, in order that the Turnips be stored clean; at the same time being careful in cutting off the tops and tails not to injure or wound the bulb or Turnip, as by that means, if wounded, its juices are exhausted and it is more liable to decay. With regard to storing or preserving the Globe or common White Turnip, it was only considered expedient so far as to have a regular supply always on hand, to serve the cattle in case of severe frost or wet weather, and on that account it becomes necessary to have three or four weeks' provision laid up beforehand, else it is generally found that White Turnips answer best and feed to most advantage when fresh drawn from the land; besides, when stored they do not generally keep well for any length of time, and in no case should they be stored later than the middle of December. With regard to Swedes and other hardy and late winter Turnips, the members were of opinion that it was in numerous cases advantageous to draw them from the land and store them, both as regards preserving the Turnips and keeping the land in condition and free from exhaustion. Swedish Turnips are of a hardy nature, and when healthy stand the winter frost well; but in very early spring, when vegetation takes place, both the Turnip and the land begin immediately to suffer, the bulb of the Turnip begins to turn into

woody fibre, and the roots begin to draw upon and exhaust the land without benefiting the Turnip; therefore, under these circumstances, it was considered desirable to take advantage of a fine dry season, not later than the commencement of February, and draw from the land and store, as far as practicable, all the later and hardy kind of Turnips for spring use. Where parties have not the advantage of sufficient Turnip houses and sheds for storing their Turnips, it was considered a good plan to pile them up between ranges of sackbags or bundles placed about four or five feet apart, and filled with straw. The Turnips then filled in to the height of four or five feet, and then thatched or covered over with straw in like way they keep pretty well. Upon dry land, where it may not be convenient in all cases to have the spring Turnips drawn from the land previous to vegetation taking place, a cheap method of putting a partial stop to vegetation was named by one of the members, which was as follows: —Go over the rows and pull all the Turnips nearly up by the roots, and then leave them in their former position; by this means vegetation is delayed, and yet the Turnip keeps pretty fresh. Another point of very considerable importance was also touched upon, viz., the carting Turnips off the land; it was considered that too much care could not be taken to have this done when the land was in a proper state, as in many instances, where the Turnips are carted off whilst the land is in a very wet state, there is no calculating the injury done to the land. The subject fixed for discussion at the November meeting is, The proper Time for Ploughing and preparing Land for Beans and other Crops.

Wrentham.—At the last monthly meeting, the subject before the Club was, The most eligible System of working Horses on a Farm, whether by yearly In-door Servants, or by Week-men. The peculiar province of a team-man was allowed to be one of much importance on a farm, and the present discussion was therefore not solely on the working of horses, but on the qualifications indispensable for such a post. On the score of economy the difference between hired servants and week-men was believed to be inconsiderable, although slightly in favour of the former. The question was therefore considered more as one of expediency, which could only be determined by reference to peculiarity of situation, or other local circumstances. Frequent changes being at all times undesirable, the advocates for week-men as horse-drivers were of opinion that when married men living contiguously were employed in that capacity, their services were likely to be more permanent, and consequently the interest in promoting their employers' welfare, being that of securing their own continuance, was greater. Yearly servants, on the contrary, were not usually to be depended upon beyond the expiration of their period of service; and as these men generally obtain an increased rate of wages, it is desirable on this head that the preference should be given to married men. On the other hand, it was believed that horses received better treatment when attended to by hired servants and single men, and it was also considered questionable whether the practice of entirely employing week-men, and particularly married men for this purpose, did not induce earlier or imprudent marriages, under the idea of obtaining better places, thus operating not unfrequently to the injury of a parish. In remote situations, in-door servants are decidedly to be preferred as a matter of convenience. It was also urged that the system of keeping hired servants tended materially in the end to their becoming better workmen generally, and more practically acquainted with the different husbandry operations on a farm. As no rule could, however, be laid down applicable in all cases, the following resolution was subsequently adopted:—"That where a surplus of labourers exist, and cottages are conveniently situated, the advantage appears in favour of employing week-men for the purpose of working horses on a farm, but under other circumstances yearly servants are to be preferred; although a mixture of both appears in some measure desirable, as tending to the better instruction of young servants, and to their ultimately becoming more generally useful labourers."

Miscellaneous.

On Fattening Sheep in Winter.—The subject proposed for February was, On the best manner of fattening Beasts and Sheep in the Winter Season. *Resolution.*—It is the opinion of the Members present, that the best method of fattening bullocks in the winter season is by giving them that description of food, which will deteriorate most by keeping; consequently common Turnips should be given first, then Swedes, and Red-root last. In all cases, the root to be cut into troughs, care being taken that they have the food regularly, and not too much by them at a time. With any cake food it is desirable to give good hay, with oil cake and Pea or Bean meal mixed together with a sufficient quantity of cut hay, in order that the corn may be consumed, without waste. The proportion of corn and cake given must depend on the size of the bullocks, the quantity of food in hand, and the time most desirable to get them to market. Bullocks tied up in a shed are considered to consume less food and to fat quicker than if allowed to range over a yard. Boiled linseed is also strongly recommended. In fattening sheep on roots, it is advisable to cut the same into troughs, and consume the food where it grows on mixed soil and light lands; by this method they may be confined in a fold, and made to go over the land in a regular manner and deposit the dung equally. Hay of good quality should be given sheep at all times during the winter season; and where quick fattening is required it is the opinion of this Meeting, that a pint of Linseed, each per day should be given mixed with cut chaff to the members present not having been in the habit of giving sheep oil-cake or linseed, do not feel confident to decide if either would be more advantageous than cost. *Keith Bennett, of the Liverpool Agricultural Society's Journal.*

Adulteration of Guano.—Four vessels recently sailed from Liverpool for guano stations ballasted with gypsum or plaster of Paris. This substance is intended for admixture with guano, and will enable the parties in charge to bring home a nice looking, light-coloured article, realising a large gain on the transaction. The guano is delivered upon the quays as it comes from the ships at Liverpool, and from the adulteration of guano alone a large gain is made. The rate of admixture, we are informed, is about 10 cwt. of gypsum to about 5 cwt. of Peruvian guano, from which an excellent-looking article, called African guano, is manufactured.—*Liverpool Paper.*

Guano.—We understand, by warrant from the Right Hon. the Lords Commissioners of Her Majesty's Treasury, dated the 17th ult., that guano imported from Ichaboe, or other places on the west coast of Africa, in British ships, and sold for the first time, is directed to be passed free of the auction duty of one-half per cent., hitherto charged on the sale of that article.—*Liverpool Courier.*

Notices to Correspondents.

Analysis of Guano.—*Dr. Nevington.*—See Paper by Dr. Ure in the last Number of the English Agricultural Society's Journal.

Bone Dust.—*Ullswater.*—It is not necessary that it should be literally dust, but it should be finer than half inch material: that which you describe, if spread on your Grass land, will act slowly, but for a long time.

Carcasses.—*Essex.*—See answer to a similar question in last *Gazette*. The flesh should be chopped up, and mixed and covered with vegetable earth, and the bones should be sold at the mill where you buy your bone dust.

Clay-burning.—*To Readers.*—Can any one describe the process of burning clay for ballast, as conducted on the Great Western Railway?

Depth of Sowing.—*W. C.*—We do not know Smith's hand-dibble. Wheat, Oats, and Barley, should be sown 1½ to 3 inches deep. With reference to the Grasses, see an Article by Mr. Stirling, published in this Paper not long ago. Mangold Wurzel seed should be dibbled not more than half an inch deep in rows 2 feet or more apart, and at intervals of 12 inches in the rows.

Fifth Paper.—*A Caledonian.*—Thank you. The letter by Mr. Grant has already appeared in our columns.

Gas Water, &c.—*W. B. G.*—It has been applied with useful result at the rate of 400 gallons per acre; but it must be remembered that it varies much in quality. Gas lime may be applied at the rate of 2 or 3 cart-loads per acre. It should be made into a compost with any vegetable refuse, and must be turned frequently before being spread. When thus exposed to the air it gradually becomes converted into gypsum. You cannot do better with surplus liquid manure than saturate mould with it, and then carry it to the field.

Liquid Manure.—*A Mid-Lothian Farmer* recommends to the attention of agricultural chemists the preparation of a soluble compound manure which, by the addition of water, might be converted into a liquid top-dressing for Grass lands. The sulphate of iron (green vitriol), is, perhaps, the cheapest fixer of ammonia we have.

Mr. Warnes' System of Feeding.—*A. O.*—It is adapted for dairy cows.

Salt.—*Subscriber.*—If you are inland, apply it to Grass land in wet weather in April, and to young Oats about the same time, at the rate of 1 cwt. per acre.

Saw-dust.—*W. P. P.*—There are three ways of using it:—you may soak it with liquid manure, and if you turn it frequently, it will probably, partially rot, and may then be applied to the land: or you may burn it and use the ashes; or you may apply it direct to the land, and perhaps this, on clay land, may be a useful manure. Of the last, however, we cannot speak from experience.

Sea Buckthorn.—*N. S. H.*—Thanks. Your communication has been anticipated.

Spent Bark, &c.—*Subscriber.*—We have applied it with benefit, first soaked with liquid manure, at the rate of about 10 cubic yards per acre. The compost of bark, soot, &c., which you propose, will in all probability be beneficial. Gypsum as it is sold, is just the mineral as it occurs in nature, reduced to a powder.

Swift's Works.—*J. F. S.*—It will have found in last Paper that he was anticipated.

Warnes' Pudding.—*A. Z.*—You must manufacture it at home. See Paper on "Flax-seed as Food," in the last Number of the *Gazette*.

Wheat.—*A. B.*—The young plant is folded over generally in April. On loose soils it is said to be beneficial. The quantity of land for a given number of sheep of course varies with the luxurriance of the Wheat plant. We shall, probably, have a word or two to say on this subject before spring.

Yearling Sheep.—*Constant Reader.*—They will fat readily enough on Linseed and hay. They will need water.

Miscellaneous.—*J. D.*—There are practical difficulties in the way, but we will consider the subject.

Markets.

POTATOES.—Southwark-Waterside, Nov. 11.

The prevailing east winds have prevented arrivals from the southern districts, but there have been several arrivals from the Channel Islands and Devonshire; yet the demand for the small stock of Kegs was not so good as was anticipated, and although 60s. was asked for the best kinds, this price may be considered nominal.

	s.	s.		s.	s.
York Regs			Kent and Essex, Whites		
Perth	55	60	— Kidneys	60	70
Middles			Middles		
Early Devons	40	45	Rivers	40	45
Late Devons	40	45	Whites	50	
Cornwall			Kidneys	60	
Jersey Blues	50		Middles		
— Whites	45	50	Rivers	70	120

WOOL.—Leaden, Friday, Nov. 13.

Only a small Market attended this week, and as we had a full supply the demand is slack, but prices are somewhat the same. [illegible]

HOPS, Friday, Nov. 13.

The Market is in a quiet state, and will remain so until the duty question is finally settled, which is now daily expected.

HAY.—Per Load of 36 Trusses.

Smithfield, Nov. 11.

	s.	s.		s.	s.
New Hay	70	80	Inferior Hay	60	70
Clover	90	100	Straw	30	36

Jones Coombs, Edmonton.

Whitechapel, Nov. 11.

	s.	s.		s.	s.
New Hay	70	80	Inferior Hay	60	70
Superior Clover	90	100	Inferior Clover	80	90
New Clover	100	110	Straw	30	36

Joshua Mann, Hay Salesman.

Whitechapel, Nov. 15.

	s.	s.		s.	s.
New Hay	70	80	Inferior Hay	60	70
Superior Clover	90	100	Inferior Clover	80	90
New Clover	100	110	Straw	30	36

Joshua Mann, Hay Salesman.

Mark-Lane, Monday, Nov. 11.

There was a large supply of Wheat from Essex, Kent, and Suffolk, than we have received for several weeks, and the condition of the samples was much lowered by the damp weather, which made it rather difficult to effect a decline of 1s. per quarter on the best, as well as on other qualities. Foreign was in fair demand, but the Malt trade was dull. It was held checked the sale. Fine Malting Barley sold on about the same terms, but secondary and inferior qualities were 1s. lower. Oats, both White and Grey, are in better request, at 2d. to 3d. per quarter.

There is more doing in Beans at 1s. to 2s. advance.

	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk, White	50	60	Red	48	56
— Linc'shire and Yorkshire			White	—	—
Oats, Lincolnshire and Yorkshire	21	25	Potato	23	27
— Northumberland and Scotch	23	26	Potato	24	28
— Irish	21	24	Potato	23	26
Malt, pale, ship	50	52			
— Marlboro' and Essex	54	56			
Rye	32	34			
Beans, Mazagan, old and new	30	32	Tick	27	30
— Horsebeans	32	34	Winds	—	—
Peas, White	34	36	Grey	31	34

Arrivals in the River this week.

	Flour.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
English	3402 Sks.	— Brls.	3429 Qrs.	1200 Qrs.	— Qrs.	1436 Qrs.	807 Qrs.
Irish	10 "	— "	— "	— "	— "	— "	— "
Foreign	— "	— "	— "	— "	— "	— "	— "

Friday, Nov. 15.

The supplies of Corn and Flour during the week have been small, and the business transacted both on Wednesday and today was to a limited extent only. In Wheat, both English and Foreign, we observe no alteration. The very finest qualities of Barley maintain our quotations, but all other descriptions are a slow hearing sale. Beans, Peas, and Oats nothing fully as dear, the Market being badly supplied with all articles.

	Wheat.	Barley.	Oats.	Beans.	Peas.	Flour.
English	1000	300	200	200	200	2700 Sks
Irish	850	400	200	200	200	
Foreign	1300	2700				

		Wheat.	Barley.	Oats.	Beans.	Peas.
Oct.	5	57 6	32 6	23 6	32 6	34 6
—	12	57 6	32 6	23 6	32 6	34 6
—	19	57 6	32 6	23 6	32 6	34 6
—	26	57 6	32 6	23 6	32 6	34 6
Nov.	2	57 6	32 6	23 6	32 6	34 6
—	9	57 6	32 6	23 6	32 6	34 6
6 weeks' Aggregate		57 6	32 6	23 6	32 6	34 6

Duties on Foreign Grain [illegible]

SEEDS, Nov. 11.

Canary	per qr.	Linseed, Calcutta, Foreign, p. ton	77s to 80s	
Carraway	per cwt.	Mustard, White, p. bush.	10s	14s
Clover, Red, English		Superfine	12	16
— Foreign		Brown	12	16
— White, English		Hempseed, English, per last	32l	36l
— Foreign		Rape Cake, per ton	—	—
Coriander	per bush.	Linseed	—	—
Hempseed	per last	Tares, New, winter, p. bush.	5	6
Linseed	per qr.	Foreign	—	—
— Baltic	per last	Trefoil	—	—
— Cakes, Eng. per 1000		Turnip (very variable in quality).		

COVENT GARDEN, Nov. 16.—The supply of fruits and vegetables throughout the week has been good; but in consequence of the late heavy rains, trade has become somewhat dull. The prices of Pines and Grapes remain unaltered. A few Spanish Melons are offered, and occasionally one or two of English growth are to be seen. Dessert Pears are good and plentiful, the best being Marie Louise, Chaumontel, Glout Morceau, Passe Colmar, and Beurré Diel. Apples for tarts, of good quality, are also plentiful, and have not varied in price since our last report. Oranges are beginning to make their appearance, and the supply of other foreign fruit is good. Of Plums some of the late Imperatrice may still be met with, and Damsons, although very scarce, are still offered. A few Barberries are left, which are selling at 4d. per half-sieve. Walnuts bring from 12s. to 16s. per bushel; other Nuts are tolerably plentiful. Vegetables are for the most part sufficient for the demand. Asparagus, however, is becoming somewhat scarce, as it was last week. Cauliflowers are well supplied, and Cabbages, Savoys, and Brussels Sprouts are abundant. Celery of excellent quality is offered at about 8d. per bunch. A considerable quantity of foreign Horse Radish is in the market, and we also observed some fine American Shallots. Mushrooms have not altered in price since last week. Salads and other Sundries in sufficient for the demand. Among Cut Flowers we noticed Cypripedium insigne, and C. venustum, Azalea indica alba, Cyclamen persicum, Begonia rosaflora, Amaryllis, Chrysanthemums, Roses, Stocks, and Mignonette. Violets.

Pine Apple, per lb.	2s to 7s 6d	Filberts, per 100 lbs.	40s to 60s
Grapes, per lb.	1s to 4s	Chestnuts, per bush.	1s to 2s
— Spanish, per lb.	1s to 2s	— Roasting, per bush.	2s to 3s
— Portugal, per lb.	1s to 1s 6d	Walnuts, per bushel	12s to 16s
Melons, each	1s to 2s	Cobnuts, per bushel	12s to 16s
Plums, per half sieve	6d to 1s	Medlars, per dozen	1s to 2s
— Imperatrice, per pottle	6d to 1s	Services, per dozen	1s to 2s
Damsons, per half sieve	6d to 1s	Bullaces, per half sieve	6d to 1s
Apples, Dessert, per bushel	Americans 24s to 30s	Sloes, per half sieve	6d to 1s
— Kitchen, per do.	2s to 4s	Nuts, per bushel	10s to 14s
Pears, Dessert, per dozen	2s to 3s	Barcelona, per do.	12s to 16s
— Kitchen, per bushel	2s to 3s	Brazil, per do.	16s to 20s
Quinces, per half sieve	1s to 2s	Filberts, per do.	12s to 16s
Medlars, per bushel	2s to 3s	Cobnuts, per do.	12s to 16s

Cabbages, per dozen	1s to 2s	Onions, per bushel	2s to 3s
Cauliflowers, per dozen	2s to 4s	— Salads, per bundle	2d to 4d
Broccoli, per bundle	2d to 4d	Parsley, per bushel	2s to 3s
Brussels Sprouts, per lb.	2d to 3d	— Roots, per bunch	2d to 3d
Sorrel, per half sieve	6d to 1s	Tarragon, per bundle	2d to 3d
Artichokes, per dozen	2s to 3s	Capsicums, per 100	1s to 2s
— Jerusalem, per bushel	2s to 3s	Cucumbers, each	2d to 6d
Potatoes, per bushel	2s to 3s	Radishes, per dozen bunches	2d to 3d
— cwt.	5s to 6s	Celery, per bundle	1s to 2s
— Kidneys, per bushel	3s to 4s	Herbs, per bunch	2d to 3d
Parsnips, per dozen	1s to 2s	Chervil, per pottle	6d to 1s
Red Beets, per dozen	1s to 2s	Chamomile, per pottle	6d to 1s
Carrots, per dozen bunches	2s to 3s	Fennel, per pottle	6d to 1s
Scorzonera, per bundle	1s to 2s	Watercress, per bundle	2d to 3d
Horse Radish, per bundle	4d to 6d	Mint, per bundle	2d to 3d
Celery, per bundle	1s to 2s	Tarragon, per pottle	6d to 1s
Lettuces, per score	1s to 2s	Thyme, per pottle	6d to 1s
Endive, per score	1s to 2s	Lavender, per pottle	6d to 1s
Garlic, per lb.	6d to 1s	Marjoram, per pottle	6d to 1s
Shallots, per lb.	6d to 1s	Sage, per pottle	6d to 1s
Leeks, per bundle	2d to 3d	Rosemary, per pottle	6d to 1s
Mushrooms, per pottle	1s to 2s	Basil, per pottle	6d to 1s
Cresses, per punnet	2d to 3d	Hyssop, per pottle	6d to 1s
Chilies, per 100	1s to 2s		

SMITHFIELD, Monday, Nov. 11.—For some of the best breeds, more money, &c. [illegible]

Friday, Nov. 15.

We have received but few Beasts for this week, and in with difficulty obtained for the best kinds, fully equal to the previous Monday's Horses. Inferior qualities are heavy of sale from 2s 6d to 3s 6d per 8lbs. The supply of Sheep is rather short, and the trade somewhat better than last Friday; but we cannot discover any improvement on Monday's quotation. Downs, &c. 4s 6d to 4s 8d. Best Long-woolds 4s 4d to 4s 6d. Veal trade heavy trade at from 4s 2d to 4s 4d. Veal trade is comparatively heavy, and is considered an extravagation for the best qualities. Pork trade is very heavy, and it must be very good quality to make 4s 4d.

Beasts, 7824. Sheep, 31,140. Calves, 180. Pigs, 290.

nervures scarcely visible; halters long and capitate; length four and a half lines; breadth nine. Female larger and darker; head very small and oval, scarcely the breadth of the thorax; eyes small, lateral and remote; ocelli similar to the male; thorax large and full; colour distinct; abdomen large, broader than the thorax, emarginated at the base, the apex trigonate, with two little nipples; wings very ample, fuscous; the costal nervure and stigma darker, as in the male; halters black; antennæ the longest; anterior thighs enlarged; posterior scarcely; the legs are similar to those of the male; length six lines, breadth 13 (fig. 3).



The female lays her eggs in the earth, and in the dung of horses and cows in May; they do not hatch until August; it may therefore be presumed that they are feeding at least seven months, viz., until the following spring. During May the flowers in the fields and meadows around London swarm with the Bibio hortulanus, and about the same period the fruit-trees in our gardens, and even the streets of the metropolis, are frequently visited by multitudes of the large and sombre-coloured Bibio Marci, whose flight is heavy and very peculiar in the males, the body hanging down, the long hind legs being stretched out like a heron. The larvæ seem to require a great deal of moisture, for they soon die if taken from the soil they inhabit.

Bouché says the best remedy against these larvæ is hand-picking, which is not attended with any difficulty, for the localities they inhabit are readily discovered in the spring, by the fine earth which is turned up where they live in society. He cleared his Ranunculus-beds of them eventually, by changing the earth in the autumn, and bringing in fresh which was free from the larvæ, and thus annual renewal of the earth seems to be a sensible and easy remedy.—*Auricula.*

Rural Correspondence.

Pruning Timber-trees.—Without any previous conversation on the subject, I went to ask the opinion of an old timber merchant of Sussex, the question was put to him of how he would prune an oak? His answer was, "Not at all—only upon an ash puts forth a useless shoot till it begin to ripen its wood, when it." In further observations, he went on to say, that you might keep a clean stem whilst the tree was young, so that you did not interfere with his tops, but not afterwards. If you pruned, you hindered his growth, and made his timber *dotted* (unsound, or filled with rotten knots). This person resides in one of the well-wooded parts of Sussex, and has had ample means of observing the growth of the commodity he deals in. It may be observed of the coppice Oak of Sussex, that in the copsing state it is very much overgrown by under-wood (Hazel, Ash and large Oak), and so pushed up with long and slender stems, which speedily acquire strength, when freed of that incumbrance by periodical cuttings, and, if allowed fair play, soon overtops, and eventually overshadows and destroys the underwood. In this way the best carpenter's timber is produced; that is, long and straight stems. In the periodical cuttings above spoken of, a straggling low branch on a sapling is sometimes struck off by the forest-maker, but no other pruning is practised. The same is done with the tillars or tellows (young Oak of hedges and hedge-rows; but here larger and shorter stems are produced by the free and unincumbered growth of the branches, and the result is the best knly timber, of which much is cut into plank before it is sent off. Very little Fir is grown in Sussex for economical purposes, except in a narrow strip of country in the central parts of the county. Here the trees seem to do best when left to themselves, only having their stems cleared of branches as they die off in the shadow of the overgrowing tops, so that the wounds may close in before the knots become rotten. It may be mentioned incidentally that, not of late, but it is almost within the memory of man, the lop and top of a broke of timber in the west of Sussex has been known to sell for more than the timber itself.—*P. P.* [We particularly commend this statement to the consideration of timber-pruners. Like all the statements of our excellent correspondent, it is full of good sense.]

Pruning Timber-trees.—In reply to "C. C. L. D." of the Wicklow mountains, who, if I understand rightly, objects and demurs to Mr. Billington's opinion, I will maintain that that is not the case. Mr. B. has never by anything of the which I have read, induced me to change or modify any opinion I previously held. It may be quite true that I hold some opinions in common with Mr. B., but these were not certainly formed by his writings. Again, "C. C. L. D." misapprehends me when he says, "I desire no better authority than Mr. Billington." It is true I used that expression, but it referred merely to Mr. B. as a reporter of the real state and management of the Nerquis plantations, and nothing more. I considered him a competent, honest, and experienced reporter, and such was the ground of my confidence in the accuracy of his testimony. As the Nerquis Plantations appear to have been visited by gentlemen from various parts of the kingdom, I would invite such as choose, to make their opinions known through the medium of the *Chronicle*.—*Quercus.*

Cyclamens.—If these are now in bloom, with liquid guano they will furnish splendid heads of flowers. I have some under the above regimen which are flourishing amazingly, many of the flowers measuring three inches across and nine inches in circumference, and these to be had not in single blooms.—*G. F. W.*

Hyacinths.—In cultivating these, prepare the four following soils in equal proportions, viz., loam, peat, rotten manure, and leaf mould; let them be well incorporated together. Procure deep pots, and place some broken potsherds over the hole, on which put some rough peat broken in pieces; fill the pots with the compost to within three inches of the rim, and put the bulbs on a little sand; then completely cover it over with the same, which will keep the bulb clean and in a uniform state as regards moisture, filling up the pot with the compost. Water it with a fine-rosed watering-pot. Let them stand till they get pretty dry, then plunge the pots over in cinder-ashes or sawdust anywhere under cover for a month; at the expiration of that time they will begin to push through; they may then be exposed to the light and air, and as they advance in growth water them with guano, which will cause strong flower-stems to be thrown up, and add greatly to their brilliancy of colour. After flowering they may be planted out in the open ground, in an airy situation, and the leaves allowed to die off gradually; then taken up and kept in a cool dry place. Treated in this way, they will flower every year.—*Flora.*

Destruction of Red-Spider, Thrip, &c.—"Delta," at p. 749, mentions the circumstance of a Paper having been read before the Horticultural Society of London, Aug. 2, 1837, respecting Laurel-leaves being used, when bruised, for destroying these pests. As a practical man I can speak from experience on this subject. Being in the habit of growing Melons and Cucumbers rather extensively for some years, of course I have been troubled with these insects as well as my brother gardeners, and this year rather more than usual. The method that I have adopted for many years for killing the red-spider, thrip, and green-fly, is as follows:—When the plants appear attacked with these insects, I get a quantity of Laurel bruised, and put it into the frame or frames, as it may be, about 3 o'clock P.M. It should be dispersed all over the frame, but by no means allowed to touch the leaves of the plants—for, if you do, it is sure to affect them very materially; then shut down the lights as closely as you possibly can; and should the sun be very fervent at the time, I always throw a single mat over the frame, in order to prevent the leaves of the plants from being burnt. The heat to which I allow the frame to rise is from 90° to 100°; never allow it to rise above that point, or you will be sure to lose plants, crop, and all. The length of time that I allow this heat to remain in the frame is two hours only; this time may perhaps appear short, but such is the fact. About 6 o'clock the mat is taken off, and a little more air is admitted to the plants. On the next morning, the Laurel is all taken out, and the plants are well syringed with warm water, and of course shaded during the day. I am certain that, by the evening of the second day, there is not the slightest appearance of thrip or spider. If "Delta" will try this plan, he may be sure of success.—*Devoniensis.*

Glout Morceau Pear.—"R. T." in his description of this Pear, (p. 716), suggests that the meaning of the word "Glout" may be explained by the synonym "Goulu," which he says "was recently observed in the Catalogue of M. Henrard, of Liége." "Pois Goulus," according to Chambaud, "signifies Sugar-peas, Honey-peas. The Pear in question may be accordingly termed a sugared or honied morsel." Now the only signification of Pois Goulus in the Dictionary of the Academy is, "Peas of which the shell or husk is eaten, because it is tender, and has not that small hard interior membrane which is found in other husks." If, therefore, Glout is to be considered the same as Goulu, may not the Pear in question have been so named from the extreme fineness of the skin, which may be eaten more easily than the skin of most Pears? The Dictionary of the Academy gives no other signification to the word "Goulu" than "Gluttonous," and it is, I apprehend, applied in that sense to the above-named Peas, as the eating shells and all has doubtless rather a greedy appearance.—*Guickenot.*

Botanical Lectures, &c.—In Hogarth's Works, published in 1808, by Longman and Co., and edited by Nichols and Steevens, I observe the following notice in a note at p. 348, vol. I., under the date 1762:—"That Dr. Mascll, Curate of Kew, Twickenham, &c. preached, for several years, the Botanical Lectures at Shoreditch Church." Did you ever hear of this lecture, or can you inform me whether it is still delivered? If a sum of money has been left for such a purpose, and it has been diverted to another, perhaps it might be possible to recover it, and use it according to the donor's intention. Such a lecture would now be very gratifying to many, though want of encouragement no doubt was the cause of its dying away. Can you likewise inform me if the Boyle Lectures are still delivered, and in what place? A competent hand these likewise might be made very interesting and acceptable.—*T. G. H.*

Cabul Melons.—I quite agree with Mr. Fleming with regard to the Hoosainee and Cabul Melons. I observed at the time at which Mr. Cuthill's advertisement appeared in the *Chronicle*, that he took the Hoosainee to be the Cabul, or rather the Trentham Hoosainee to be that variety. With respect to the Trentham Hoosainee, of which Mr. Fleming is proud, I have little to say; but this I well know, if as he says it is a free bearer and exquisite in flavour, it is the first hybrid that ever was of any use. I wish to be properly understood: if it is a good hybrid Melon it is one of the first that ever was really good. We too often find Persian Melons hybrids in this country, and that to the utter ruin of sorts. The kinds that Mr. Fleming chose for his parent plants are both good when well grown; still, strange as it may appear, they seldom or ever produce good hybrids, however careful one may be in performing the operation of hybridising: this I have proved. I have known many gardeners to have produced what they call their hybrids; and what are they? Any thing but good. I am fully convinced that the flavour of a Melon depends much on the cultivation, or the cultivator, if he is in possession of good and true sorts. I have known seeds to be given to two gardeners out of the same packet, of the true Ispahan Melon, sent to me direct from the city of Ispahan in Persia, from which I believe it takes its name: the produce of one was very similar to that of the Vegetable Marrow; and the produce of the other was fine Melons from 6 to 8 lbs. in weight, and of a most excellent flavour. This cannot always be said of hybrids, but quite the reverse; they are more like the former, Vegetable Marrow, however good the treatment may have been. I have grown the Hoosainee, (but not Mr. Fleming's Hoosainee) the original one: it is a good bearer, and as hardy as most of the Persian sorts, excepting the Germek. I have grown a hybrid between the Ispahan and the Green Hoosainee, which turned out to be very little better than one of the old useless kinds. I may mention that I have also grown the Cabul Melon in question for the last five years, seeds of which were sent to me by a friend in India: it is a very delicious Melon, thickly netted, and possessing a sweet melting flesh. Last season I grew 18 good fruit, the produce of a first crop, in a 3-light box, and 19 of a second crop; thus making in all 37 good Melons from 6 plants. This Melon has one great advantage over many others, viz., the good property of keeping for a length of time after being cut: I have known it to keep good for 5 or 6 weeks. On the 19th November last year I sent the last fruit to table.—*W. M. Donald, King's Road, Chelsea.*

Almonds.—It is not generally known that the Almond (*Amygdalus communis*) ripens in this country, and in favourable summers, such as our last, produces a large crop of well-ripened fruit, which makes a very nice addition to the dessert during winter. They should be gathered in November, stript of their outer shells, and laid out to dry for about three weeks, or placed on shelves in the fruit-room; afterwards let them be kept in very dry sand, and used as they are wanted. They must not be left in a damp place, as they speedily lose their aromatic flavour, and decay in our moist climate.—*J. R.*

Fuchsias.—Perhaps it may not be generally known that at this season, when Fuchsias have done flowering, if the strong shoots are divested of their lateral branches and tops, and packed in powdered charcoal, or perfectly dry earth in boxes, and placed out of the reach of frost in a cool place, they will retain their vitality until next April, when they may be cut into lengths of about a foot long, and planted with a dibble; insert them into the ground so as to leave about three inches of the cutting above the surface in any place where they are wanted to flower next summer. If kept tolerably moist they will be found to make good flowering plants with little trouble, and to any extent that may be required, the sorts that I have tried are Globosa, Globosa major, gracilis, virgata, and conica; they were packed in powdered charcoal on the 27th of October, and planted on the 6th of April. They flowered very well.—*A. C.*

The Mealy-Bug.—I wish you would call attention to Herreman's lotion for destroying the Mealy-bug, which is such a pest in our stoves. His printed paper does not do him justice, for it conveys an idea that the small-sized bottle will not be sufficient to effect near as much as it can really do. The only objection I had to make was the high price of the lotion, which would prevent its being used as freely as might be wished. He has since sent me a modified preparation, concerning which my gardener writes me word that he finds it equally effectual and less likely to injure the foliage; and that, I believe, Mr. Hereman will be able to sell at a lower price. I found the first lotion very effectual and harmless to the leaves in general, but in some instances hurting them very much, if not washed off speedily; but it proved quite harmless if washed off soon after the application.—*W. Herbert, Manchester.* [We should like to hear the experience of our correspondent's who have used this substance. This statement in its favour, by the Dean of Manchester, is very important; for certainly, if there is one thing more troublesome than another in glass-houses, it is this Mealy-bug. We must, however, beg those who may favour us with communications, to authenticate them by their signatures.]

Medlars.—As this is the proper time to gather the above, I would advise their being kept in the following manner, which will effectually prevent them from acquiring that dry rotten state, or tart disagreeable flavour to which they are so liable:—Select a day day for the purpose, and see that none are bruised; have them placed singly on open shelves in a cool place, and look them over once a week, and the moment one is found decaying (not ripening), remove it, as one will taint the whole. They are much affected by a minute Fungus, which spreads in an incredibly short time, and destroys an immense number. By attending to these directions, this fruit will be eaten in perfection, which is seldom the case in this country.—*J. R.*

Brewing.—If the brewing of beer comes within your limits, I should be glad to be informed whether or not boiling the wort is necessary, either for making the liquor more palatable, more wholesome, or less liable to become stale or flat, or rapid in its progress. I am told that boiling it not necessary for any one of these, and that some persons make the very finest quality of ale without ever boiling it.—*Ignoramus.* [It is the general practice to boil the wort with the hops, and opinion says that the more it is boiled the better the beer will keep. But some correspondents may, perhaps, be able to furnish a better answer to this inquiry. How is Preston Pans ale made? The very best that can be bought.]

To preserve Yellowhall Pears.—Take half a peck of Pears, pare them, and, leaving the eyes and stalks on, put them into a pan with as much boiling water as will cover them; add a pint of Damson syrup; let them boil until they are tender, then put them into jars. Take the liquor in which they were boiled, and add to it one-third of sugar, and boil and pour it over them. Repeat this on the second day, and on the third do the same, putting in the other two-thirds of sugar. Let it boil until it is perfectly clear, and pour it hot upon the fruit; when cold, put brandied paper over them, and tie closely. Two pounds and a half of sugar is the quantity for half a peck of fruit. The above is a copy of a receipt I had given to me some years ago. I found the Pears liable to ferment in consequence of (as I supposed) the fruit not having been boiled in the syrup. I consequently stewed them in a third part of the sugar, reboiled the syrup, adding a little more sugar, and finished them as above directed on the third day. In this way they keep well. A little bruised ginger boiled or stewed with them is an improvement, and gives them the flavour of Indian preserves.—*A. W.*

Peas.—In consequence of an advertisement or recommendation in the *Chronicle*, I purchased a quart of Cormack's British Queen Peas. I imagined before that I had very good kinds, but find this very superior in every respect to any Pea I have yet grown. It is a great bearer, excellent in flavour, of a large size, and the straw is not of an inconvenient height. It is decidedly the best Pea I know, and I think that others who try it will agree with me.—*W. D. F.*

Bees.—The following is an account of a common straw-hive, taken by me on the 5th October, 1844. The weight of the hive with the comb, immediately after the bees were destroyed, was 58lbs. avoirdupois. I reckon the hive and combs to weigh 20 lbs., thus leaving the great weight of 50 lbs. for honey. This, I imagine, is an extraordinary quantity to be gathered by a swarm of the present year. It was swarmed in the latter end of June. —*A Subscriber, Devon.*

Morphology.—The numerous supporters of the somewhat astonishing doctrine of Morphology, which from time to time appear in the *Gardeners' Chronicle*, have caused the matter to be noticed by novices like myself; and whether the originators of this—to me—wild doctrine are correct or not, is of little consequence to persons of my humble pretensions. But if Morphology is to be received by your readers on the grounds set forth by T. Moore, at pages 685 and 686 of the *Chronicle*, I for one cannot subscribe to it. Our author says, "It may be remarked, too, that several of the Achimenes, and *A. pedunculata*, especially, should be regarded as plants of a very suspicious character by the opponents of this doctrine; for in several cases during the past season, it has been observed that this *A. pedunculata* has produced scarcely any flowers, but in their usual position abundance of little scaly bulbs have been protruded; here, what should have been flowers have been developed as bulbs." In a specimen of the old Cyrilla pulchella now before me, which is a near relative to Achimenes, there are whorls of flowers, and between the bases of the underside of the flower-stalk and the leaves, there are whorls of scaly bulbs, which is evidence sufficient that the said bulbs do not protrude themselves where the flowers should be situated, but the proper place for them is so near that the flowers, scaly bulbs, and leaves, mutually touch each other; therefore the supporters of the doctrine of Morphology should be careful not to do so by hasty observation, as in this case; for in those very plants which our author states "should be regarded as plants of a suspicious character by the opponents of this doctrine," are seen distinct situations for both leaf, scaly bulb, and flower.—*Gardeners' Weekly.* [You are right. The scaly bulbs formed on the branches of inflorescence of the Achimenes are reproductive buds, assuming the form of bulbs; and though it may be argued that since leaf-buds and flower-buds are formed on the same plan, therefore the scaly bodies of an Achimenes being altered leaf-buds are equivalent to flowers, yet such a line of argument is not a good one, for the purpose of convincing persons unable to comprehend the principles of Morphology; which principles are true and irrefragable.]

Dogs' Scent for Game.—There is a notion that dogs lose their scent, or smell for game birds, during the time of incubation; that, however, I consider to be wrong. I think it is more likely that the birds lose, or rather do not emit, scent or smell during the time in question, and hence the notion. I mentioned this to a gentleman well acquainted with dogs and game, and he told me the following in favour of what I have advanced. He was once aware of a partridge's nest that was "hard set upon" near where a party of Gipsies had fixed their abode; although they had three dogs with them, yet the wary bird led off her brood three days afterwards. There must be some truth in what I have stated, otherwise the smell from the bird on the nest would have led the prowling dogs upon her. If my views on this subject are correct, it shows a wise provision of Nature to protect birds from harm during incubation; for if it was not so, they must often fall a prey to canine animals. It may be asked, How does it happen that birds do not emit smell while sitting on eggs? That may be owing to the habit or condition of birds being changed; or during the time of incubation they lose in a great measure, although not of self-preservation.—*T. W. Wilson.*

Vines on Open Walls.—After reading Mr. Harris's book upon the Cultivation of Vines on Open Walls, I adopted the plan which he recommends, and have now a considerable quantity of Grapes which are at last getting as well coloured as if grown under glass, to the surprise of every one who sees them or tastes them. I am living in latitude 52° 54'. The wall is a little east of south; it faces the sun at 11 A.M. The Grapes have been quite ripe about a fortnight; some of the bunches sooner.—*C. A. A., Lloyd.*

Small Birds.—Being an imitator and admirer of Mr. Waterton, my garden has for the last six years been a rendezvous for all the birds in my neighbourhood; and although often remonstrated with by my gardener, I stood firm for some time. I was first shaken by seeing four bullfinches strip, in early spring, nearly every bud from a Greengage tree: I could not be mistaken, as I tried to persuade myself that they were only hunting for eggs of insects, aphis, &c.; but the stripped trees and the strewn buds would, I think, have satisfied Mr. Waterton himself. My soil being cold, my Apples and Pears have remained on (the late soils) till now; having many small trees of new sorts with three or four fruits on, I was sorry to find that nearly every one of them had been attacked by birds. I believe the blackbirds have some of the blame to bear; but the principal performer is the little blue tomtit, already outlawed by reason of his attacks on the Pees. I did not find Mr. Knight's traps very successful. Can any one advise me as to the most successful mode of extirpating this garden enemy?—*Dodman.*

The Kingfisher's Nest.—Of the various materials and modes adopted by birds in the construction of their nests, those of the kingfisher are perhaps the least understood. The bird is found everywhere throughout Europe, and its brilliant plumage strongly contrasts with the little show made by most of the feathered tribe in this country. What early writers tell us of the kingfisher is so mixed up with the fabulous and ridiculous, that little reliance can be placed upon their accounts. Pliny says—"Their nests are wonderful—it is not discovered of what they are formed; some think of prickly back-bones, since they live upon fish." Bewick mentions that he had a kingfisher's nest with six eggs, "which resembled that of a chaffinch; it was made entirely of fish-bones, cemented together with a brown glutinous substance." He also relates Dr. Heysham's account of a boy finding a kingfisher's eggs in a hole "half a yard in length; at the end of it the eggs, which were six in number, were placed upon the bare mould, there being not the slightest appearance of a nest." My own knowledge of the kingfisher's nest is somewhat different from the above. I have found them in holes; but the eggs were not on the bare earth, but placed on a bed of very fine particles of fish-bones, not cemented together, but loose, and just hollowed out a little in order to receive the eggs. Part of one of those nests is now before me, which is very friable. It contained six eggs—the usual number of this interesting bird. The eggs are of a very delicate white, and are much like polished marble. It may be interesting to know how the bird procures these small fragments of fish-bones, to form its nest. They are evidently the pellets which these birds disgorge after eating fish, in the same way that owls and other birds bring up the fur and feathers of their prey in small balls; those of the Kingfisher have often been found in places which they frequent, of an oval shape about the size of a small Acorn. It is probable, however, that the small fragments are only those disgorged during the time of incubation. This corresponds with the boy's story already noticed, as well as with the statement of a writer in the "Museum of Animated Nature," who observes that the "kingfisher rejects the indigestible parts of its food, a circle of these *rejectaria* surrounds the eggs, and after the young are hatched is greatly increased; and hence has arisen the supposition that of pellets of fish-bones the nest is composed. This might induce the idea that after all that had been said of the kingfisher's "wonderful nest," it consisted merely of a few ejected pellets surrounding the eggs, which were placed on the bare ground. This however, as already mentioned, is not the case: for the cavity or nest is as nicely lined with fine particles of bones, as the nests of other birds are with softer materials. The ordure of the brood may cause the bony fragments to adhere together; and so may have given rise to the old notion that the nest of the kingfisher was composed of bones cemented together. Although this bird pastes for its nest some place seldom disturbed, except by the patient angler, I have found the kingfisher's nest in a gravel pit a quarter of a mile from a brook, in the act of digging or boring a hole for its nest, which is usually three or four feet in length. Bewick seems to credit the less that frequently the hole which leads to the nest is under water, but those who are acquainted with the habits of the kingfisher know, that though it darts into the water after its prey, it never enters the water like other water-birds. Perhaps the best way to ascertain if birds line the nest with bones before incubation, is to examine a nest when the bird begins to lay.—*J. Wighton.*

Moving Fruit-trees.—Mr. Van Houtte, of Ghent, in his Catalogue, just published, observes that as regards Peaches, it is particularly to be recommended that they should not be moved till after the sap is completely out of the leaves and at rest; otherwise, much injury may arise. This does not appear to be consistent with the directions given in this country, to plant wall-fruit as soon in the autumn as the leaves begin to turn yellow. He also, like others, recommends the gathering Pears as soon as the stalk easily separates from the branch; and adds, that if the fruit is left on till the leaves change colour, the quality of the fruit is much impaired. What is the experience of your correspondents as to this?—*Dodman.*

Beurre Diel Pear.—In notices to Correspondents, p. 702, it is stated that a specimen of Beurre Diel Pear measured 14½ inches in girth, and weighed 18½ ounces. I beg to say that I have gathered eight Pears of the same variety, each measuring 13 inches in circumference, and weighing 16 ounces; they were from a young tree 6 feet in height, and which measured at the height of 1 foot from the ground, 11 inches in girth.—*D. Murray, Gr. to W. M. Reeves, Esq., Cork.* [Correct.]

Pear-trees Improved by using Dressing with Sand.—I find sand from the north coast of Cornwall to be the best dressing for Quince Stocks, on which I graft all the best kinds of Pears; the sand is composed of from 90 to 95 per cent. of lime, from the shells of fish. I have 150 sorts of Pears grafted on Quinces—most of them are twice grafted, in order to insure their growing strong—they are in full bearing. Some years ago I accidentally got a cargo of Dutch sand, which was disposed of in the Pear garden, and from that I found sand to improve the trees much. I followed up the idea, and got a cargo from Hugh, in Cornwall, which is nearly all shell, and from that time my Pears are very fine, and more juicy than formerly.—*Alex. Penlay.*

Strawberries.—I should object to "M. A. S.'s" tiles, (see p. 701) as well as the Editor's plan of paving, as they obstruct the escape of effluvia from the ground, which I consider necessary for the growth of the plant and perfection of the fruit. Detached pieces of stone, tile, or slate, placed under the fruit, are not subject to this objection. If "M. A. S." chooses to tile so compactly, let him spread over the tiles some guano, which will not only feed the leaves of the plants, but give a peculiar perfume, if not flavour, to the fruit.—*J. M. Goodiffe.*

Bokhara Clover.—"B. D. Grey's" (see p. 702) seems disappointed in this only partially blossoming; it is a biennial, and of course does not flower until the second year; it grows 3 or 4 feet high during the first year, and considerably higher the second. In favourable situations it is said to attain the height of 11 or 12 feet; it should be cut for fodder, when about 2½ feet in height; it is of very rapid growth, and may the second year be cut monthly; it is very branchy. I sowed some in July, and it grew the same year by Michaelmas, nearly to 2 feet in height. I then left the neighbourhood; but have heard that it grew up like trees in the next year. I should sow it in drills.—*J. M. Goodiffe, Greenard.*

Bee-flowers.—If "B. D. Grey" wishes to provide for his bees, I would recommend Borrach (Buck or Brank) Wheat; they are so very fond of the blossom that he will not only feed his own bees, but those of his neighbours for miles round. I had 2 acres of it once (not sown till the first week of July, to ascertain how late it might be sown with a chance of a crop), and every blossom was scarcely ever without its attendant bee, though I had none of my own. Successions of it might be sown for the bees from April till the end of July; mine blossomed within a month after it was sown; but it cannot stand frost; it is its only enemy, but an invincible one. For a seed-crop it should not therefore be ventured on later than the end of June. Some crops I hazarded later were destroyed by night frosts.—*J. M. Goodiffe.* [It is not fond of clay land.]

The Pinaile Grossbeak.—The description of this bird's nest, p. 670, is very entertaining, as accounts from Natural History must ever be to those who are not eye-witnesses of the facts stated. I have before me, as I write two wasps' nests, one of the size of a hen's egg, built on a comb in a hive which the bees deserted; the other is a pensile nest, as large nearly as a human head, being 18 inches in circumference either way. It was built at the extremity of a branch of a Larch, the builders ingeniously taking into the web the smaller twigs, as a support to the structure. Both nests are formed of numerous lamina of the same material—a very thin papyrus, as it may be most justly called, of a greyish colour, and rather glossy. The cells in the combs of both are open at top, others are carefully capped. In the former are seen young wasps perfectly formed, but motionless. Should these not resuscitate in spring, and be cut open as from the chimney-piece of our sitting-room, where their habitations are now a handsome ornament as well as a great curiosity, all will be safe.—*E. G.*

Flower-beds.—I have a geometric garden, which I purpose to fill next year with beds of hardy plants; but I do not wish to have it gay before such plants bloom in the open air, and shall be much obliged to any of your correspondents who will give me a hint on the subject. I am provided with Geraniums, Cockscombs, &c., to fill up when the beds are required for Pelargoniums, &c.—*E. M. W., Chertsey.*

Weather in the North.—Let a singular circumstance, that whilst we have been hearing of heavy falls of rain in the southern and midland counties of England, no rain at all has fallen here since the commencement of this month; dry easterly winds, resembling the weather of March, have prevailed, the temperature ranging from 38° the minimum generally 40° Fahrenheit, by night, to 48°, the maximum by day. The Dahlias continue still

in flower in the gardens, and other half-hardy plants remain blooming in the open ground.—*Gardener's Mag. Lancaster.*

The Grey Wagtail.—This bird has found its way here again this autumn. I saw the species in the village as early as Sept. 11; but we had not the pleasure of its visit until the 9th of this month, on the morning of which day I heard the well-remembered tapping at the window as much frequented last year. It did not, however, remain (as I am inclined to believe) for any considerable time in much better condition than when it arrived last autumn. I now see him in company with another of his kind; but only one appears at the window, and that much seldomer than before.—*S. Stratford.*

Boiling for drying Fruits for Dessert.—Pare the pears and leave the apples on; cover them with water, and either boil in a brass pan, or stew in earthenware, until they are tender; then lay them upon old dishes, and put them in a slow oven 24 h. or more, turning them gently, that all parts may dry equally; when done put them in paper bags, and hang them in a dry place, or keep them in tin canisters or boxes. Reduce the water in which the fruit is boiled, and by constantly using this for the succeeding operation, a syrup is obtained, which gives a gloss to the fruit, as if sugar had been used. I never use sugar for them.—*A.*

White Beet.—Is the White Beet or the Chard, the true Mangel Root of Switzerland and Germany, the leaves of which are so much used in the place of Spinach? What was distributed as "White Beet" by the Horticultural Society? All I can perceive, produce leaves so fine as that which is grown in Switzerland. This may possibly be owing to the leaves not growing so luxuriantly as that cultivated abroad. I observed some of these from 3 to 4 feet in length.—Liquid manure being very plentifully applied.—*Dodman.*

Lettuce-leaved Spinach.—I may observe, that the Spinach, the seed of which was distributed by the Horticultural Society, under the name of Lettuce-leaved, proved excellent, tender, and high flavoured, and stood last winter well, though the leaves appeared far more tender and succulent than the common winter sort. I found transplanting a portion of the plants, when too thick or too forward, a good plan, and produced a good late crop for the spring, just before the first sowing crop came into use.—*Dodman.*

Whitney's Composition.—A friend had several boxes made in the shape of a small garden light box, some 3 feet and some 2 feet 6 inches square, about 6 or 8 inches at the back, and 4 inches in the front; these I covered with thin paper, and varnished it over with Whitney's preparation. They have answered admirably for cuttings, and my gardener finds them an admirable and economical substitute for hand-glasses; any old packing-case cut into two diagonals, makes a pair of useful frames. The muslin I found too thin, as I could not apply sufficient of the mixture to exclude the rain.—*Dodman.*

Societies.

MICROSCOPICAL SOCIETY.

Nov. 1.—T. Bell, Esq., in the Chair. A Paper was read by Mr. Busk, on the Echinococcus, a form of Cystic Entozoa. After giving a slight sketch of the history of researches on the Entozoa, the author proceeded to describe the Echinococcus. This Entozoon is developed in a nutritious cyst, which is found in the liver, lungs, and other viscera of human beings, and other classes of the Mammalia. The cyst in which the Echinococcus is contained has its internal parietes covered with rounded granular masses. On examining these masses, they are found to consist of a number of globular bodies, seated on a common receptacle, of a branched form, and covered with a delicate membrane. The globular bodies are the Echinococci. Each is attached to a pedicel, and the whole are united to a common trunk. When separated from the trunk, they appear like polygastric animalcules. Each globular body contains several transparent cells, like the stomachs of Polygastria. The head, or jaws, consisting of a row of hooked tentacles, is retracted within the cavity of the body; but during decomposition, this apparatus becomes exserted, thus having led to the different characters given to this animal. The Paper was illustrated by drawings and diagrams. The President announced that arrangements had been made for facilitating the use, by the Members of the Society, of the splendid microscopes of the Society. The rooms were open every Wednesday from 10 to 4, and members would be allowed the use of the microscopes under the superintendence of Mr. Leonard. It was also announced that the second Part of the first Volume of the Transactions of the Society was ready for distribution to the Members who were not in arrear with their subscriptions.

SOCIETY OF ARTS.

Nov. 6.—T. Gowen Barwell, Esq., in the Chair. Silver Medals and Premiums were awarded to Messrs. Goodwin, Porter, Mr. Major, Mr. Bush, and Mr. Hunt. Eagles and Dr. Cronin were elected members.

Nov. 13.—R. Kewaigne, Esq., in the Chair. A Paper on British and Foreign Honeys by Mr. Milton,* was read by the Secretary. Various specimens of honey from Athens, Mingrelia, Portugal, Narbonne, and different parts of England and Scotland, were placed on the table; also the produce of bees kept in glass hives by gentlemen in the Temple and the Regent's Park; a single comb, in particular, in worthy of notice, as having been taken from a newly-invented hive, so constructed as to afford bees in the disposition of their work, which, however, in the present instance, is not perfect, for some of the cells instead of being regular are irregular hexagons. The author of the Paper, however, was not without doubts of ultimate success. A detailed account is given of the structure of the honey-bee, of the mechanism employed in the construction of the comb, of the flowers best suited to produce honey of the finest flavour, of the best seasons of the year for taking the honey, of its medicinal qualities for various diseases, of the quality of honey produced in different parts of England under different circumstances of management, of the encouragement given to cottagers to keep bees by a gentleman in the vicinity of the Westmoreland lakes, and, lastly, of the great profit to be derived from bee-keeping.

THE FOLLOWING IS A LIST OF THE SAMPLES OF HONEY EXHIBITED ON THIS OCCASION:—

English Honey.—1. Oxfordshire Honey, weight 22 lbs.; 2. Regent's-park Honey, weight 16 lbs., collected by the bees of S. Hodgson, Esq. (the glass was put on the 27th May, 1843, and taken off the July 31st); 3. Regent's-park Honey, weight 14 lbs., was filled by a swarm from the above, 4. In a Honey-Maida-hill, weighs 20 lbs., was collected by the bees of C. F. Monkhouse, Esq. (glass put on the 2d of June, 1843, taken off July 20th); 5. Honey from Hackney, bees belonging to A. Smart, Esq., weight 14 lbs., June and July, filled by the bees in 38 days; 6. Honey from Mill hill, Hendon, bees belonging to the Rev. B. Nicols, weight 21 lbs. (the straw hive from which this cap was taken now weighs 40 lbs; 7. Honey from Fulham, worked by the bees in a flower-pot; 8. Honey from a Baxter hive, worked by bees at Chertsey; a comb of Honey, worked in a frame by bees belonging to the Rev. J. E. Gray, of Wembly-park, near Harrow; the bar-and-frame hive was invented by W. A. Munn, Esq., and constructed to direct the bees in their building of comb, and do without a guide-comb; Honey from Northumberland is slightly flavoured with Heath; Honey from Saffron Walden, Essex, equal to any; English Heath Honey, from East Hampstead, near Bagshot; Comb Honey in the plate, from Scotland; Comb Honey in the plate, from Fulham.

Foreign Honey.—1. Minorca Honey, small jar, just as imported; 2. Minorca, opened for the purpose of tasting; 3. Narbonne Honey; 3*. Normandy Honey; 4. Italian Honey; 5. Portugal Honey, imported in jars, very similar to those from Athens; 6. Honey from Hymettus, in antique jars, one specimen; Cuba Honey is imported in large quantities, sells at a very low price, and serves to keep all the inferior qualities of Honey at a low remunerating price; Jamaica Honey set firm—Jamaica Honey not set, has been imported to England 10 months; Seville Honey, rather of the Jessamine flavour; Portugal Honey, flavour of the Wild Raspberry; Honey from Devonshire—it partakes of the flavour of the Portugal Laurel, which is much cultivated in that part where the Honey came from; in all there were 26 various specimens.

The Second Paper was on the Grenier Mobile, or revolving granary, the invention of M. Vallery, a French Engineer, by Thos. Birmingham. The object of this machine, a model of which was placed before the meeting, is to prevent fermentation and decomposition, which so frequently take place in Corn stored in the ordinary granary, as also to get rid of those troublesome and destructive insects, the weevil, mite, curculis, and moth. The revolving granary consists of a large wooden cylinder, the size of which is regulated by the quantity of Corn to be stored; the interior is lined with wire gauze for the admission of air, and has eight radial compartments for storing the Corn; the axis on which the granary revolves is hollow, and acts as a ventilating tube by means of a fan working at one end; one end of the cylinder is furnished with a circular rack, into which works a pinion attached to a handle, by which motion is given to the machine. Neither mildew nor rust can be formed; the weevils and other insects are destroyed, the Corn is sifted and kept free from dust and dirt, all damage from rats and other vermin is prevented. It undergoes no injury, as in being turned over by the shovel the quality of the grain is found to be materially improved, even if gathered under unfavourable circumstances of the weather. It has been successfully introduced into different parts of France.

Reviews.

Agricultural Chemistry. By G. Cox. London, 1844. 12mo.

The object of this little book is to enable practical men to establish or refute the opinions of others more, in other words, to make chemists of farmers, and teach them how to analyse soils and plants. Farmers have no time to perform chemical analyses, and even if they had, their analyses would be of very little use to them; for without much practice it is impossible to perform minute chemical inquiries, so as to obtain trustworthy results. The book is rather carelessly written, containing a number of strange statements and questionable facts, which we fear are more likely to mislead than to instruct. It is published as a companion to a portable laboratory, or test-chest, sold by the author.

Miscellaneous.

Dignity of Labour.—I have faith in labour, and I see the goodness of God in placing us in a world where labour alone can keep us alive. I would not change, if I could, our subjection to physical laws, our exposure to hunger and cold, and the necessity of constant conflict with the material world. I would not, if I could, so temper the elements that they should forbear into us only grateful sensations, that the earth should mate vegetation so exuberant as to anticipate every want, and the minerals so ductile as to offer no resistance to our strength or skill. Such a world would make a contemptible race. Man owes his growth, his energy, chiefly to that stirring of the will, that conflict with difficulty which we call effort. Easy, pleasant work does not make robust minds, does not give men such a consciousness of their powers, does not train to endurance, to perseverance, to steady force of will—that force without which all other acquisitions avail nothing.—*Channing.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Succession occupants in their own plants, are often at a loss to know how dry or how moist a house should be when either stocks recommended by Gardeners or in Calendars, and the reasons can hardly be explained without the use of a hygrometer. In general terms we would keep all plant-houses dry in winter; but this only means the opposite of our summer treatment, and not total dryness, for no plant-house, except, perhaps, [illegible] plants, could be quite dry for any length of time without [illegible] through their frosty weather, when strong [illegible] the plants in this house will be much benefited by a gleam of sunshine early in the day; but during this month this is seldom done. And for the next six weeks more [illegible] water at the roots than at any other season. Those valuable Chrysanthemums, Justicias, Vincas, and other [illegible] now in bloom for the purpose of decorating rooms and conservatories, will find Cuphea Melvilla a good addition to them, the scarlet flowers it throws at any time between May and Christmas, according to the time at which it is pruned; a succession of large specimens, pruned closely and trained like Kennedyas or handsome pyramids.—*E. H.*

II.—FLOWER GARDEN AND SHRUBBERIES.

Out-door Operations.

The subject of the winter decoration of the flower-garden was carefully discussed in this Paper on page 707, 1843, that it is unnecessary for us to do more at this time than refer the reader to it, where he will find lists of plants, and every necessary information. An arrangement of this kind gives a garden a highly interesting appearance through the dull months of winter, and the only objection that can be urged against it is, that where beds are cultivated they cannot be managed so conveniently as if the beds were unoccupied. This, however, might be obviated by growing both the shrubs and bulbs in pots; but it is very questionable whether the latter would be so well grown as if planted in the open soil. Keep the ground as neat and clean as possible; and roll the walks and Grass as frequently as the weather will admit of your doing so.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Auriculas will still require well looking after; all dead or yellow leaves must be gently shpped off, taking care not to wound the stem; the top soil must be frequently moved, and if there should be any appearance of bad drainage, the soil must be carefully turned out, keeping the ball entire, and more broken pot added. During rainy weather the lights of the frame must be kept on, but tilted behind, and a free circulation of air amongst the pots must be insured by raising the frame a few inches from the ground. Should any decayed leaves be thrown up, pull off the pots as soon as found, as they happen to be heart bounds. It is well to tilt the stages regularly. *Tulips.*—This is certainly rather an awkward time for bulbs, and especially those which were at all diseased when planted. Beds ought to be well rounded in the middle, to allow the free escape of all superfluous moisture, and the dressing most likely to be lately had an ample of. *Carnations.*—We know of a few extra fine seedlings, which will, we think, not prove "genus of the first water" Several have been exhibited, and in addition showing (which we think to be the best way of proving the merits of a seedling flower), they have been such varieties as Ely's Jolly Dragoon, Hunter's Patriarch, Ely's Lady Ely, &c., and this too when the old flowers were in a fine state. The results have surprised many of our friends, being completely out of season, for however cautious we ought to be in giving an opinion on flowers only once seen, still, from the splendid blooms which have come under our notice we are led to judge favourably of them. Carnations to name will require shifting into small pots, should the plants not be well established by the end of the month. Keep the plants up as well as you can, and if the leaves become spotted, the diseased parts should be carefully removed, and the plants replaced away from the general mass of foliage. *Pinks.*—Pinks that have made long straggling shoots may now be cut close, leaving a joint to lay the ground, and hoops should be placed over the choicest beds, that protection may be given in the event of sudden frosty weather, as they are apt to decay after excessive rain. *Polyanthuses.*—Proceed

IV.—FLORISTS' FLOWERS.

Pinetums.—Fine weather has made the work of potting of Pines so simple and free from risk, that till I recollect that many still grow them Pines with the least attention to the necessary materials alone, I fancy that all that is necessary to be said about Pines for the next few months might be put into a very few lines, and thus the almost unavoidable repetition that has to be made in this part of the Calendar is prevented. The Pines in houses heated by pipes or flues can easily be kept in that state of moderate growth which is found to answer all the best from dull winter, with all its suffering from the effects of the present damp and cloudy weather; as during the day a slight addition to the heat can be made, so as to allow air to be given to a sufficient amount, and during cold nights, when the means of heating them dying not leave, it will be necessary to keep the heat up a little higher in mild weather, in order to be prepared for any sudden depression of the external temperature, and to be enabled to give air daily for a short time at the top lights. This will prevent the plants from drawing and keep the atmosphere sweet. Be careful not to give much water, which is injurious to the roots at this season.

Peaches.—Vines in pots or boxes started in the beginning of October should now be swelling fast. The temperature be 55° to 60° by night, and 5° to 10° by day, with fire-heat, and from 60° to 65° with sun-heat. Syringe twice a day. Vineries which are expected to produce ripe fruit by the end of April, should be closed now, and it is convenient to have no fire to heat, and the air taken in through the border of the house; it will be the most genial means of exciting the buds. Keep temperature of from 50° to 55° when the weather is mild, and some degrees lower when the weather is cold.

Pines.—Get the late house put into the same state of temperature as the others. Where it happens that fruit trees have been placed in the pine pit that was forced last season, and the trees in the ground-house are in good condition, it will be well to exchange the order of succession, so as to give them the most genial warmth that can be made as soon as possible. Pot suckers in small size, and start them in pots and bark now, and if they can have a slight bottom-heat the Suns will swell more freely and uniformly. Let the temperature at night be about 60°, with sun-heat, when such is necessary, as will be sufficient. Syringe often, to hasten the swelling of the buds.—*E. F.*

V. HARDY FRUIT AND KITCHEN-GARDEN.

Grafting.—Few things are more interesting than this visitation, to those who delight to see their trees healthy, and producing good fruit in time. At this season for planting, or preparing for it, considerable attention should be given to the pruning of hardy as well as tender trees in all cases where the situation is not the most favourable. In addition to examining the trees of kinds suited to different localities, so often given in answer to correspondents, the planter should take the trouble of ascertaining what sorts have been in circumstances similar to his own. Canker owes its origin chiefly to three sources:—Planting too deep—the result of which is, that the roots are supplied with more moisture than is necessary, and the heat and sunlight of the plant are not sufficient to give ripeness and firmness of texture to the young wood; or from the roots getting into an unfavourable soil—that furnishes the trees with vitiated juices; or from the climate of the situation being too cold, or the season too dry and sunless to permit the healthy action of the plant. Some young trees that I planted very carefully on hillocks suffered considerably last season,

[illegible] Nov. 14, 1844, to the Observation Garden, Greenwich.

Day of Month	Barometer	Thermometer	Wind	Rain
Fri. 8	29.77	49.3	S.E.	—
Sat. 9	29.77	49.5	W.	—
Sun. 10	29.77	44.5	W.	.31
Mon. 11	29.77	48.5	W.	.16
Tues. 12	29.77	45.0	S.W.	.50
Wed. 13	29.77	47.5	S.W.	.22
Thur. 14	29.77	48.0	S.W.	.12
Fri. 15	29.77	48.0	S.W.	.12
Sat. 16	29.77	48.0	S.W.	.12

Now, Mild; fine throughout; dense overcast with rain.
Tues. Mild; fine throughout; dense overcast with rain.
Wed. Mild; fine throughout; dense overcast with rain.
Thur. Mild; fine throughout; clear all fine at night.
Fri. Mild; fine throughout; dense overcast with rain.
Sat. Mild; fine throughout; clear all fine at night.
Sun. Mild; fine throughout; dense overcast with rain.
Mon. Mild; fine throughout; clear all fine at night.
Tues. Mild; fine throughout; dense overcast with rain.
Wed. Mild; fine throughout; clear all fine at night.
Thur. Mild; fine throughout; dense overcast with rain.
Fri. Mild; fine throughout; clear all fine at night.
Sat. Mild; fine throughout; dense overcast with rain.
Sun. Mild; fine throughout; clear all fine at night.
Mon. Mild; fine throughout; dense overcast with rain.
Tues. Mild; fine throughout; clear all fine at night

STEPHENSON Law CO. 81, Bucklersbury, London, and 17, New Park-street, Southwark, Manufacturers and Constructors of the Improved CONICAL and PORTABLE SYPHON or IMPERIAL BOILERS, respectfully solicit the attention of intending Horticulturists to their much approved method of applying the Flue system to Pinery, Peach-house, &c., by which atmospheric heat, as well as bottom heat, is secured at any required degree without the aid of flues, &c. &c. We have also to state that the Boilers supplied by us to our friends they are now making with the Improved Syphon, by which the cost is reduced [illegible] are now known, scarcely require attendance, and to those who have not seen them in operation, we beg to say that they may be forwarded as well to the Country as to London, and that we have [illegible] Gentlemen throughout the kingdom, and [illegible] to refer to them for the [illegible] that we have erected in their Gardens, Conservatories, &c. We beg to inform the Trade that we have commenced business in New Park-street, Southwark, for the construction of Horticultural Buildings, in which we hope to merit the [illegible] we have been favoured with by the Nobility and Gentry, and that the same may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Greenhouses, Hothouses, Pits, and Garden Frames, Wire Work, &c. &c.

The Agricultural Gazette.

SATURDAY, NOVEMBER 16, 1844.

THE present is the season during which most of our Farmers' Clubs Annual Reports are published. When they are well-compiled, new publications are more useful. The hard-earned, and often dear-bought experience of practical men is well worth attention and study; the resolutions of Farmers' Clubs on the various topics of Agricultural interest which have been discussed by them during the year, certainly deserve publication at the end of it.

It should, however, be remembered by those who have the charge of these compilations, that opinions on points of farm management, however fairly deducible from well-established facts, are rarely of extensive accuracy. This will appear to any one in the habit of attending Farmers' Club Meetings, from the acknowledged agricultural skill and success of many who differ widely in their views on some of the simplest matters connected with their business. The same effects will not follow the operation of the same cause, unless it encounter similar circumstances; and the causes which the farmer puts in action are influenced so much by soil and climate, both of which are notoriously variable in this country, that the great variety of opinion to be met with on the practical details of farming is not to be wondered at. All this we think should be considered by those who undertake the preparation of these Annual Reports, because it appears to us likely to influence a method of greatly increasing their value.

In another column of this day's Paper, we have referred to the necessity of combining with accounts of agricultural practice, statements of the circumstances under which it occurs. The propriety of so doing is indeed sufficiently obvious from what has been already said; and the suggestion applies with no less pertinency to the publication of opinions as expressed in the resolutions of Farmers' Clubs—opinions of which agricultural practice is just the embodiment. In reading a Report of a Farmers' Club, packed to which there was such a statement—one descriptive of the climate, soil, and general agricultural character of the district to which it referred—any person would be able to judge of the applicability to his own case, of the opinions therein expressed, and he would hazard no loss by attempts to act upon them, under adverse circumstances.

Doubtless, the primary object of Farmers' Clubs is, with each, the agricultural improvement of its own locality; and with this object in view, in their Annual Reports, and they are calculated to effect it, their present isolation is a necessary consequence of unexplained differences of opinion—differences which would be satisfactorily accounted for by the circumstantial appendix we are recommending.

Next to the publication, for the benefit of second and third year's farming, of what is found to be profitable practice in the best cultivated districts, it should be the object of Farmers' Clubs to exhibit the details of high management in the scientific man. Unquestionable Agriculture is capable of great improvement by the application of it to scientific principles, which cannot be done by people ignorant of farming; and it needs but little consideration to see that these accounts of soil, climate, and other circumstances affecting the practice of farmers, will render the differences of opinion existing among them instructive instead of puzzling or perhaps disgusting, as they might otherwise be.

These remarks, which we hope will receive the notice of SECRETARIES OF FARMERS' CLUBS, are introductory to a request which we have now to make to them, and perhaps our readers will kindly assist us in pushing their attention to it. It is our desire to be as far as possible the organ of these Societies, and to publish the facts, opinions, and views advanced by them. We should feel greatly obliged to their Secretaries if they would forward to us information on the following points:—The name and locality of the Society, its object, its times of meeting, and the subjects, if they have been fixed upon, for discussion during the ensuing year, and a report of discussions during the past year. If to such information statements were added of the climate, elevation, soil, and general agricultural character of the several districts, we should be enabled to obtain that clear and to appreciate the opinions indicated by the mass of information which would be accumulated.

Such an attempt to centralise the numerous but unconnected efforts which are now making in the cause of agricultural improvement, if it were successful, would probably be useful.

ANOMALIES OF AGRICULTURE.—CHAP. II.

(Continued from page 738.)

THAT he who will have most dealings, and be brought most into contact with Nature, should of all men be taught most about her, would seem an axiom; and he who is not ambitious of the character of "a powerful demonstrator of undisputed facts," might be well content to leave it as it stands, and not waste his own or his readers' time by enforcing or attempting to illustrate what seems self-evident. But in this motley crowd of life we daily find that what is Truism to one man is Paradox to another. And though the generality of our readers might at once admit the proposition, the fact is, that those whom we are most anxious to reach, and who are, if they only knew it, the most deeply interested in the matter, are *not readers at all;* and we are thus placed in the same category with the sign-post which in giving minute "directions for passing the ford" concluded with an "N. B.—Them as can't read had better go round by the bridge." Here is our difficulty; here is the leading and glaring "anomaly" indeed, of the "most ancient of the arts;" that the artists—seven tenths of them—do not read at all; and do not only believe, negatively, that no reading in the world could teach them one iota about their trade which they do not know already; but do also hold, positively, that there is some latent, poisonous, and pernicious quality about books, in its nature detrimental to the character of a "practical farmer." Nobody that has ever studied the phenomena of *mere* practical knowledge can wonder much at this. It is a fact universal and notorious in all the arts: the self-taught believes in no discoveries but his own: you cannot make him understand that the facts to be found in books are the concentrated and digested records of the experience of other men—as clever, as practical, as knowing as himself. The mere fact of its being *a book*—printed in harmless words instead of being deep-engraved in the damage to his pocket of failures and errors that he might have been warned against by the most ordinary instruction—is enough to make him turn an ear deaf as the deaf adder. He has heard his father or his grandfather say that *book-farming don't do;* he has never *learnt how to learn;* and want of early exercise leaves the mental muscles unused and rigid. He does not understand that Education does for the mind pretty much what Tanning does for leather; it renders it tractable and susceptible of impressions, prevents clumsiness and induration, prolongs and increases utility, and defers decay. Therefore is theirs the heavier task, and the more manfully to be undertaken and zealously carried out, who would fain see the *science* of Agriculture flourish in their own generation, and shed its irresistible and ameliorating influence upon cotemporary practice. The "gigantic strides" that this art, in common with every other, has already made, since Science has in some degree been allowed to take the helm, "small as they may be, compared with what might be done,"* afford ample earnest to warm the hope, even of the sanguine.

Few of the fables of Antiquity are more elegant in conception, more true in philosophy, than that which represents Minerva to have sprung from the brain of Jupiter, full-armed and full-grown. The Arts, it will be remembered, were presided over by Mercury, as ordinarily begotten a young cattle as ever Fancy pictured. Noted in youth for nothing but incorrigible mischief, he at last grows into a position of subordinate service, and made to fetch and carry, and there it ends. But the Goddess of Wisdom and Science, the offspring of a higher and nobler species of generation, "full of grace and manly beauty, perfect form, and perfect emotion," is ever sprightly and immature, passes on the same from century to century, ever improving, ever young, ever improved. To Science one day is as a thousand years; analytical truth revealing itself before her eye, soon assumes the form and proportion of synthetical truth. She collects inductively, the scattered and detached *facts* furnished in the rough by the practice and experience of thousands; she arranges and classifies them into "distinct and successful series," forming, numerically and productively one from the other; and the theorist assumes the clear and symmetrical outline of a living creation of lofty texture, tangible by reason, and palpable to faith. Be the subject-matter what it may, the result is in every human heart the same. Be it Navigation upon the sea, or Agriculture upon the land; be it the mind-

* Baron Stanley's speech at the recent meeting of the Liverpool Agricultural Association.

ing of an army of the effects of the progress of a force; or the mind prepared by a comprehensive and scientific knowledge of its task will ever bear the intensely vivid conviction that all opposing the practice of such a Science is "fighting against God." A short knowledge of results, of which the [illegible] and plausible quarter had unassisted, founded on the latest experiments and ingenious reasonings, [illegible] deep seen in our own day, a more memorable evidence of this, than in the delivery of Mr. Pusey's lectures, two years ago, before the Royal Agricultural College, of the first occasion on which the [illegible] of chemistry, in the physiology of assimilation and nutrition, and the causes of animal heat, were made matter of full and applied information to the Agriculturist, a sensation was [illegible] the whispered exclamation of [illegible] and intelligent farmers, just behind us (the [illegible] on hearing their own hard-earned facts brought home to them face to face, from a source so new to [illegible]. A man, who on awaking in the morning should find a mushroom sprung up on his floor, would not stare at it with more inexplicable amazement than they did on the lights of Modern Professor who stood before them. The same and worthy of all commendation. On the one hand were the stout yeomen of England, [illegible] every description of soil: the pastures of Northampton and Leicester, the chalky downs of Buckinghamshire and Kent, the new and the old red sandstone of Warwickshire and Hereford, the clays of Oxfordshire, and the shaly hills of the Gloucestershire Cotswolds, and a dozen other different soils had there each their stanch representative. On the other hand, supported and surrounded by a band of Nature's own, as well as of Society's Aristocracy, stood the young and learned chemist—the student of a minister-science—modestly conscious of the possession of knowledge which required but connexion to be valued, application to be proved. "What in the wide world can he tell us about hitting beans?" was the unveiled expression of many an incredulous face, the burthen of many a side-whisper. "It would be presumptuous," said the lecturer, "in any scientific man, however exalted his rank in science, to undertake to instruct an [illegible] village such as this, or to recommend alterations in the practice of an art, which he has learnt in the closet and not in the field. But it may be permitted, even to the most humble cultivator of science, to examine the practice which you yourselves have perfected, and to point out the laws of nature upon which that practice depends." And as the youthful philosopher proceeded to lay bare, in the clearest and most intelligible language, the recent discoveries in physiology, which he had himself the proud task of translating into our own language, the look of distrust and the smile of incredulity vanished: the vital and obvious interest of the subject at once arrested every eye and every tongue. If there was a heart there—and many there were—that beat with enthusiasm in the cause of Science, that was indeed a moment of pure and disinterested gratification. From auditors as unexpected as they were beyond suspicion for [illegible] scientific fidelity, he announced and explained their own most treasured maxims of economical and successful feeding," deduced and eliminated as the natural and necessary results of ascertained chemical causes. True it was, that many of the important results there advertised, were well known to many present as matter of the most advanced and skilful practice of the farmyard. But why was it that the more conscious they were of the practical truth of his deductions, the more the hearers were riveted, and the lecturer applauded? Because he showed them, with the fact which they did know, the why and the wherefore which they did *not* know; because he exhibited as a patent and apparent result tangible to reason and to argument, that which was before wrapped in the mystery of a mere arbitrary and isolated *fact;* thereby opening a vista of future application of the same principles to analogous cases. With [illegible] it was heard stated as a sure and incontestable result of chemical principles that warmth and shelter were a quantitative equivalent for a certain and considerable portion of food: and why? for a reason as simple as it is beautiful: that the bodily heat of animals is the result of combustion—not material, but actual, proceeding in the lungs without intermission during life, and derived from its universal cause, the union of oxygen with carbon; the former obtained from the atmosphere by the act of breathing; the latter supplied by the food through the organs of digestion to the blood, and brought into contact with the atmospheric air in the lungs: that a manifest consequence, the greater the amount of food consumed in just proportion to the defence of the animal against external cold, the greater the resulting demand upon the provender for the purposes of nutrition.

It would be [illegible] our purpose to advert even to a tithe of the facts brought to light or explained, in the course of these invaluable lectures; but we cannot forbear to refer to one more as illustrating the applicability of experimental Science, even to the most ordinary and familiar economy of the farmyard. It had been frequently observed, and is so to this day by dairy-farmers, that the cheese made from the milk of cattle "soiled up" there out of [illegible] quality, to that from the same animals when pastured; whilst the milk, cream, and butter, are greater in quantity, and equal in quality. Now Chemistry explains to us that the production of *caseine* (the principle of cheese) is favoured, and indeed only perfectly performed when the animal is in motion; that in fact its peculiar quality depends upon the exhaustion

* On the Application of Physiology to the Breeding and Rearing of Cattle.

by exciting of a certain portion of the animal economy which is a state of perfection would all contribute to the lacteal secretion. [illegible] during the very week in which we write, a query is addressed to the Editor of a contemporary Agricultural Paper, asking for an explanation of the observed deterioration of the cheese from stall-fed cattle. A very slight acquaintance with organic Chemistry would have rendered, as indeed it has long ago done, this otherwise inexplicable phenomenon; and have at once decided the dairy-farmer, whose object was the manufacture of cheese, upon the adoption of a different system of treatment of the animal to that pursued for the purpose of milk and butter.

We have adverted to these cases, not for their own sakes, or facts, because we conceive them to be familiar to most of our readers, but merely as instances in proof of the successful application of some of the most recent and important discoveries of modern Science to the art of the Agriculturist. It will be our future object to point out, in more technical detail, the particular sciences applicable to each department of the farm, with the more especial purpose of exhibiting those [illegible] of culture which have kept in a state of [illegible] and empiricism the first, unfortunately and [illegible] of human arts; believing, as we do, that its grateful susceptibility of the highest energies, has been overlooked only from its being, under the Wisest Dispensation, not entirely inaccessible to the lowest development of human intellect.—*C. W.*

CULTIVATION OF WHEAT ON THE SAME LAND IN SUCCESSIVE YEARS.

(Continued from p. 704.)

Having detailed the general results of the experiment, I beg to offer the following remarks upon some points in it, which seem to me to require a little elucidation.

I consider the success of this experiment to be in a great measure owing to the use of *soluble* silica and magnesia, because, although there is an abundance of silica in the soil, my first crop showed very miserable results, the earth being ill-fed and poor, and the straw soft and discoloured, although this year 1842 was, in this district, very favourable for Wheat, the month of August being singularly fine and warm; but when I combined the nitrate of soda with the sulphate of magnesia, as in experiment No. 3 in 1843, but still more when I combined it with the silicate of soda, as in No. 3 of that year, the straw became strong, firm, and bright as need be desired, and this is very much as both these salts are combined with nitrate of soda, common salt, and gypsum. I have not only good and bright straw, but also an abundant crop of Wheat, [illegible]

With respect to ploughing early it may be as well to state that the land had not been tilled for many years; and although in a dilapidated state, showed a deficiency of lime on analysis. The soil is a strong loam, on a brick clay, probably in which there is little or no lime, although the stony clays which form the subsoil for a great part of the district abound in it, containing from 20 to 30 per cent. of carbonate of lime. I had always believed that lime was used in great excess in this neighbourhood, and [illegible] that its good qualities were overrated inasmuch as it does not enter into the composition of the plant, except in very minute proportions; but last winter I saw a paper (by Mr. Briggs, of Thrunton) on the possibility of growing Wheat on the same land year after year, in which the utility of lime in preventing mildew was incidentally touched upon. I also saw Liebig's Lecture, explaining the action of quick-lime in liberating potash from the clay, and then I considered it very important to ascertain the proper quantity to be applied. The quantity required to decompose the phosphate of iron was not great; and, assuming Liebig's theory of the action in liberating the potash to be true, it seemed to me that in excessive dressings would permanently impoverish the land soon, supposing that the crop required 400 lbs. of potash, and an enormous dressing was applied, say 1600 lbs., what became of the 1200 lbs. which did not enter into the composition of the plant? Would it lie dormant in the land for ever? Would it be washed down the drains by the first heavy shower? Perhaps the above calculation will also afford a reason for its beneficial action in the experiment just detailed; it will, by supposition, be remembered, that 400 lbs. potash which may be liberated from the clay by lapse of time, [illegible] that by any means that only the quantity of potash required by the crop was washed down the drains, and [illegible] permanently exhausted. I believe that the [illegible] necessary. This opinion is [illegible] neighbourhood, which [illegible] opinion is prevalent that the more lime [illegible] better it is for the land, and where it is [illegible] ten or twelve tons to the acre at [illegible]

I have stated above, that the [illegible] to a small portion of the field [illegible] drought in April. The season [illegible] a good thing may be [illegible] improper time; for, although it produced a [illegible] effect, as the plant immediately [illegible] there was but little moisture in the land [illegible] thoroughly, and thus enable the plants [illegible] until the rain came, about the end of June, when [illegible] Wheat had been in flower some time; but the [illegible] was then so great that all the plants there [illegible] stalks (from the roots), which were in flower when the Wheat was cut; and it was then found that they had not only impoverished the plants, but had prevented the grain from ripening. This was the case not only in the [illegible] field, but in several fields also, where the chemical manure was applied, and the sowing in of the [illegible] to [illegible] every [illegible]

When the field was mown, it was thought desirable to cover one part of it with [illegible] and the other with [illegible] between the [illegible] the latter stimulating effect [illegible] more rapidly [illegible] Peruvian guano [illegible] the [illegible] which [illegible] the Wheat was just shooting [illegible] [illegible] application the experiment [illegible] which [illegible] application [illegible] [illegible] the [illegible] which [illegible] the object of the experiment. It is true, no bad effects followed the application, similar to those produced by the misapplication of the chemical manure in dry weather; yet, if soluble salts, like the latter, did not find sufficient moisture in the ground when applied in April, there is reason to suppose that the former would not do so when applied in May.

I regret the failure of the experiment without any manure, as I think the result would have shown satisfactorily that the land is so far from being impoverished by this system of cropping, that it is improving every year. I think, however, that this is shown by the produce of the land manured with guano alone. In the first year's experiment, the produce from guano alone was 27 bushels per acre; and both straw and Wheat were very indifferent in quality. This year, the produce from guano alone is 42½ bushels; and although neither straw nor Wheat are so good as upon the adjoining lands, they are both very much better than they were in 1842.

It will be observed, that the result from the unsubsoiled portion is very good; and, if nothing more were said about it, people would be led to conclude that there was no advantage in subsoiling. But this, in my opinion, would be a great mistake; for, to say nothing of the advantage which the unsubsoiled portion would derive from the drainage which it received from the subsoiling on each side of it, I found, when the field was ploughed up this autumn, that, whilst the unsubsoiled portion was stiff and heavy, the subsoiled part was comparatively friable and loose, like a garden, and will, I expect, show its superiority in the succeeding crops.

It must be borne in mind, in reading these experiments, that we have here one of the most unfavourable climates in the kingdom for growing Wheat, from the excessive quantity of rain that falls,—three times more rain falling annually in the north of Lancashire than at York; and this, no doubt, is very prejudicial to the success of such a series of experiments as I have been detailing.

It has been objected to these experiments, that, allowing all to have been done which is here detailed, it leads to no important conclusion; for, although it may be practicable to grow Wheat every year, in a small field like the one experimented on, it is not so on a large scale. But the objectors should remember, that there is not the seed of a single weed sowed with the manure; and, therefore, if the land is thoroughly cleaned, and kept so, by hoeing the crop in the spring, it will require very little labour to fit it for another. But I shall be better able to speak on this head next harvest, having sowed Wheat on an Oat stubble, with one ploughing. It is said there are no weeds in Chinese husbandry! and is they can eradicate them completely, so may we, if we adopt the same methods, and follow them up as perseveringly.

Again, admitting that it is not practicable to grow Wheat on the same land every year on a large scale, yet, if we can double the crop in those years in which we do grow it, by the application of chemical manures (and the same manures are applicable to all cereal crops), will not that be a conclusion worth arriving at? That it is possible to do so is, I think sufficiently shown by the results which I have obtained. What, then, may we expect when these experiments are infinitely multiplied and varied, under the superintendence of skilful and experienced men, who will devote their whole time and attention to the subject? Will raising the average produce from 25 to 50 bushels per acre be the utmost limit to which improvement can be carried? I believe not.

In conclusion, I would urge on all owners and occupiers of land, the importance of devoting a few acres to agricultural experiments. I think there can be no doubt that, if these are carefully and [illegible] made, and followed up for [illegible] years, that we shall have ample [illegible] for our guidance. The Chamberlains [illegible] shall be so far from needing [illegible] we shall be [illegible] [illegible] [illegible]

SELECTIONS OF EAST LOTHIAN HUSBANDRY.

Continuation of Turnip culture and system of agricultural improvement in East Lothian, extracted from the Introduction of Turnip husbandry, which was, it appears, partially introduced about the year 1760. The extent of rental now paid in the county is stated: But from the effects of judicious drainage on the soil, and the employment of additional manures, its present production, formerly considered to be surpassed by any other district in the kingdom, is greatly increased, and with a degree of economy, scarcely to be surpassed by any other district in the kingdom.

There are several variations both of the Swedish and common Turnip in general cultivation of the former species, the purple top kind is almost entirely and chiefly grown; and of the latter the Dale's, Big bill, Green-top Yellow, White Globe, &c. are the kinds generally cultivated.

As the greater portion of the soil is naturally unsuited to Turnips, much labour and attention are necessarily bestowed on the preparation of the land. The first ploughing is given immediately after the labours of the harvest, and the Wheat-stubble, Beans, and Potatoes, are concluded in which state the land remains until the spring. Corn crops have been sown, and the Potatoes planted, when it receives a second furrow, sometimes in a contrary direction to the previous one, but more frequently along the ridges resembling the former furrows. It is then repeatedly harrowed, rolled, and grubbed in various directions for the purpose of pulverising the soil, and of dragging to the surface, and disengaging from the intermediate clods of earth, the roots of Couch-grass and other weeds, which are carefully gathered into heaps and carted off to the most convenient corner of the field, or elsewhere as subsequently formed into a compost with quicklime. A third ploughing is then bestowed in a direction traversing the last one, and the other operations of harrowing, rolling, grubbing and weed-gathering are repeated, as before. The land is generally ploughed once more, and the subsidiary operations again repeated, after which it is in most cases in a suitable condition for being formed into drills; but as the great objects aimed at in preparing land for Turnips are the minute pulverisation of the soil, and the thorough eradication of weeds, these different operations must be persevered in till these purposes are attained. During this preparatory tillage much attention is necessarily paid to the state of the surface. Should it happen, as it not uncommonly does, in a drought, the furrows closely follow the plough in order to catch the land in a particular state between wet and dry, when it readily crumbles down. The roller is applied in succession to the harrow, for the double purpose of further reducing the clods and of preventing the evaporation of the moisture in the soil. This is a part of the process particularly attended to. Another point regarded as equally important is, that the land should never be ploughed or otherwise worked while in a wet state, unless under peculiar circumstances. As already intimated, [illegible] interposed in preparing the land in many cases for Turnips in wet weather, while in drought, when the moisture is so effectually worked out of the soil before it can be brought to the requisite degree of pulverisation, that small seeds, as those of the Turnip, cannot possibly germinate in such an unfavourable bed, till it is raised by copious rains. With the view of surmounting the difficulty experienced in reducing strong adhesive clay soils to a suitable consistency, even when the land is ploughed for that crop a thorough autumn tillage, the drills being formed and the dung carried in the usual manner, by which state it remains until the proper period for sowing the seed arrives, when the soil is usually found to be in a friable pulverised state from exposure to the winter's frosts. Several farmers, however, consider it a fitting that the crust of mouldering stiff clay land in autumn is beneficial, since much moisture is sometimes lost by the pulverising of the yard, and pointed that from the land lying in loose ridges, the succeeding Wheat crop [illegible] Beans crop must be [illegible] ridges.

[illegible] formed in the manner described in the case of Beans, the [illegible] which have remained [illegible] is formed by the operation of the plough [illegible] one direction, and [illegible] manner as in sowing [illegible] the seed is covered from the [illegible] until the manure is ploughed [illegible] visable, previous to the [illegible] 25 to 27 inches in the [illegible]

The [illegible] Swedish Turnips [illegible] Turnips [illegible] Swedish Turnips [illegible] Turnips [illegible] Swedish Turnips [illegible] Turnips

removing them. The following method is adopted at Studleigh, a place famous for growing Carrots of fine quality. The operator sits astride of the row, grasping each tightly as near the crown as possible, and holding the knife in the same hand, he then takes the body of the Carrot in the other hand, with the knuckle held downward; the Carrot is then sharply turned over the back of the hand with a little practice, the green part, which separates neatly from the root, leaving a mark cut on only. The Carrots are stated to keep better than when the green is left on, and the operation is performed in about half the time.—*Dibbler.*

Dibbling.—Many years ago a description was given in the *Farmers' Journal* of a method of dibbling Wheat, practised in Sussex (I think). The dibble consisted of an iron cone of 3 inches in length, jointed into a wooden handle with a T-head, and of such length that a man could use it without stooping. The workman walked backwards, having a dibble in each hand, making a double row of holes in each furrow-slice, and being followed by children, who dropped two grains in each hole. The weekly rent at that time, stated to be effective, a considerable saving of seed was made, and the treading of the crop and children was thought an advantage. A simple implement of this kind is much more likely to answer the purpose, than the one described by Mr. W. Bartlett, which would be very likely to choak, if the land were moist, and would require a very level surface to work to advantage. I have used an implement like Mr. Bartlett's, for planting Mangold Wurzel, but I very much prefer the drill.—*Lusor.*

Rotation of Cropping.—Notwithstanding all that has been said on the necessity of changing the kind of plant grown on the same soil, as essential to good husbandry, yet there are some soils which seem to contain an inexhaustible supply of the pabulum required for the successful culture of one species. I am well acquainted with a small garden, which has been planted with Potatoes for the last 55 years, and has always borne good crops, and those of very prime quality. The crop just raised is after the rate of about 7 tons per acre, chiefly of Kidneys and China Oranges, neither of which varieties are great bearers, as compared with many others, and in quality they are equal to any I have ever tasted. I saw the produce of one plant of a few varieties, of which I am sure several of the tubers would weigh 1lbs. each. The soil is a marly loam, resting on the mountain-limestone. Of course, it has been liberally manured, from time to time, and has been once or twice trenched with lime, and occasionally trenched, as was the case last year. But what quality of certain soils to produce good crops of the same kind of plant, many years in succession, seems not to be at present known. It is not known that much of the alluvial district of Somersetshire, which is capable of bearing good crops of Wheat year after year, with undiminished fertility, I have been informed, by good authority, that 25 successive crops of Wheat have been taken from the same field, near Exeter, none of which were less than 30 bushels per acre, and some considerably more.—*Lusor.*

Grass Land.—I occupy some meadows in Hertfordshire that would well lay; they produce a coarse Grass. The middle management for years past has been to mow twice a year, watered afterwards with cattle and sheep. I have found an addition of any dung ever having been put upon them. My land of late has been somewhat improved by superficial subsoil-draining, and I intend in this and the succeeding year to drain the whole afresh with pipes, and also roll, rolling with a heavy roller to fill up the pits and holes made by a succession of years by the feet of the cattle; but though the tile-draining may, two or three years hence, begin to tell, what do you recommend in the way of surface-draining? Every dent of a sheep's foot becomes a dish, which the first shower of rain fills with water, and it thus remains a little pond. I keep no bulls; the herd is continued in the usual manner, and calves are substituted in the shape of young and stable-feeding from a dairy; the aftermath is fed off by the stock of my neighbours, who drive the cattle to bull. Cooking-shipping. I have deservedly puzzled by my reading the above question and part of your Paper, and by the practical advice which it bears. It does not suit me to break up pasture lands (in which are ornamental timber trees) of my freehold estate to plant or keep stock. I wish some of your correspondents (who are to hand, and give us some observations on) the question there are many in my situation who would be equally well supply, though I hope the following letter may be a bit to deal with. The land was drained, and planted my Grass growing till very late, under the obligation till August, and the principal part of my crop was produced of third-heads the more appetising, as it is said time to mow, and, I fear, in many cases to cold, is there any chance of gradually extirpating this weed without breaking up the pasture? The nature of the root is known, and, after all, the plan of pulling it up displeases. Vitriol is where easily applied, and sowing fresh seed, be of any use?—*Rockbeare.*

Acorns for Pigs.—Some care is necessary to preserve when pigs feed upon them, for otherwise they will be subject to a distemper; to prevent which, the best way is to moisten with Peas or Beans with water, and sprinkle over some antimony pounded and sifted, or a little powdered brimstone; if this be repeated two or three times a week, for one or two weeks, it will effectually preserve them from the disorder; or if the Acorns be collected and prepared in the following manner:—Dig a hole in the ground, in this let the Acorns be put, well moistened with water, in which a handful or two of common salt has been dissolved: in a few days they will begin to heat and ferment; preserve them therefore attentively, and when they have made a shoot about two inches long, take them out of the hole and spread them to dry on a barn floor, and in a day or two they will be fit to give the pigs. This matter must, however, be attended to, for if the Acorns they must not have their many glutinous coats twisted a dangerous accumulation of heat; consequently the same must be watched, and if they appear to heat they must be spread abroad again. Acorns, when ripe, will keep for a long time in a dry place, if they are not suffered to heat.—*Delta.*

Dibbling Wheat.—It is objected to dibbling Wheat, that labourers are not to be trusted in evenly dropping the seed. Perhaps the object might be better obtained by sowing the seed in drills, and thinning it out in the spring, when the weaker plants might be drawn. But I must insist that dibbling or drilling at 9 inches is neither scientific nor good husbandry: the rows should be at least from 18 to 24 inches asunder. I am firmly persuaded that at about that distance the produce both of Corn and straw will exceed in weight Corn sown at any other distance; it has also the advantage of giving a fallow, and will in the stirring of the intervals give much employment, at a time of the year when the poor are much out of work. How much better than factory work for poor children!—*J. M. Geodesse.*

Guano.—Is it (as some suppose) the dung of birds or a fossil earth? Its being found in such immense quantities in different parts of the world, renders it almost impossible to believe that it is the former. It appears by a late No. of the *Times*, that the number of vessels now waiting to be loaded will bring to this country more than 100,000 tons; add to this the same quantity now on the different provinces of Peru, according to the accounts given by Pentagh and Prescott, and the immense quantity in those two last work, under the article of Guano, where it appears that considerable doubt exists as to its origin, and disposed to believe that naturalists are incontestably correct that it is a fossil earth. Time for answer.—*Z.*

Farmers' Clubs.—At the last Caledonian meeting of this Society, an interesting discussion ensued on the question appointed for the evening—namely, What are the best Modes of Applying Guano as a Manure to the different kinds of Crops reared in the County of Inverness? The experiments on this subject has not been of more than that of two years, but it has been quite satisfactory and encouraging so far as it has gone. Mr. Sutherland defended thereby muck and farm-yard manure system, as opposed to the introduction of foreign compounds and manures; but this afforded an opportunity to several gentlemen to show that guano is not meant to supersede the old mode of dressing, but to supplement it where a deficiency of farm-yard manure is not to be had, or where it cannot be easily carried; and that guano can be obtained and applied as a supplement to the dung-hill at the time of the expense of the home-made article. Mr. Mackintosh stated, that but for guano the potato-crop at all of it right till this season; Mr. Rhind, Dalcross, said he had never seen a finer crop of potatoes where it had been tried, although the quantity; and several other gentlemen testified to the fact that these effects did not immediately terminate for one season, but continued for the second year's crop. Mr. Sutherland, however, on the scourging nature of the crop, even after it has been laid down, still in the quantity of its elements which they may [illegible] Mr. Rhind stated that although he [illegible] for the [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible] made to our readers for their experiments upon CROCUSES during the past season, have been replied from some valuable correspondents, especially Mr. Grey, of Dilston, and the Rev. Mr. Bates. These we shall publish before long; but we again take the liberty of mentioning the subject, and repeating our earnest request that details of experiments may be forwarded to us. We are sure that their value will be much increased, if, instead of being published independently of each other, they are brought into one point of view; for so they are most likely to be productive of public benefit.

At this is a good time of the year for sowing [illegible], and as we believe that a larger quantity than usual has been saved this season, we shall extract at length from our Paris friend his fifth chapter, entitled "*Mode de Propagation.*"

"Tulips may be increased in two different ways—by seed and by offsets. It is ascertained by experience, that any given variety of Tulip will not reproduce itself by its seeds; but, on the contrary, many will be originated, differing wholly from each other, thus giving amateurs an opportunity of raising new and improved sorts, which they term Breeders.

"To accomplish this with a greater degree of certainty, they increase their chances of success by only sowing seed of first-rate varieties, and especially those the bottom of whose petals is of unsullied purity; as I find that Breeders thus originated sooner develop their proper colours than those which are the produce of inferior sorts.

"When the ripeness of the Tulip seed, where the flower has bloomed in a full exposure, is indicated by the opening of the capsule, it is cut off a few inches below the head, and placed in a very dry situation, in order to insure its perfect maturity. This being accomplished, the seeds are taken out, and should be sown about the middle of October in a bed of well-prepared earth, which has been passed through a coarse sieve, and covered about the eighth of an inch in depth with soil of a fine and light texture, which will allow the free vegetation of the seeds, without incrusting or becoming hard. The beds must be protected from sharp frosts by covering them with leaves, or with mats, and likewise kept perfectly free from weeds. If these necessary precautions are attended to, the Tulips will come up towards the end of February. From the size of a small pea, in the first year, the roots will increase considerably during the two following seasons; and each time when the leaves fade, I spread over my seedlings about an inch in thickness of similarly prepared soil to that with which the seed was covered, being satisfied that from the loss of time, and the greater extent of land they will occupy, by taking them up in the second year, and replanting them in the usual plan, to allow them to remain till they have made their third growth. I do not like my seeds with that time, and in a few days after they attain their full size much sooner when treated in this manner; especially if mild has been mixed with the lime-rubbish which has been subjected with good stable manure, or vegetable soil.

"When they are taken in the course of [illegible] they [illegible] on their first blooming, which will probably be in the fifth year. [illegible] these roots, they appear [illegible] the greatness of the [illegible] which the seed was planted, and the [illegible] soil. Others, however, not in [illegible] also gratifying, on the account [illegible] which were at first confused and indiscernible, will attain their proper character, and realize all the perfection of which they are susceptible.

Here we see at once [illegible] that we like to have [illegible] or become variegated in the course [illegible] these roots were [illegible] lives in hope that, although uncertain, it may come [illegible] now of the [illegible] [illegible] saving [illegible] shows the flower always in the [illegible] fantastic, with its numerous [illegible] and [illegible] certainly defy a bad break or strain in [illegible] florists say true, no matter [illegible] [illegible] fully of an inferior degree of quality to the old [illegible] [illegible] changed its colour from the self or breeder stock, [illegible] [illegible] produce [illegible] [illegible] get a flower broken from the same breeder as their neighbour, but while he is succeeding in obtaining good and well-marked blooms, they may never be [illegible] flower is fit to be seen; and, in fact, it will bear no comparison with the other. Getting the strains of good breaks is the grand secret in Tulip growing. Thus we have Brulante éclatante, and Beteral's Brulante éclatante, the last immeasurably superior to the former; also Ponceau tres Blanc, and Dutch Ponceau tres blanc, the latter a finer strain than the other. Again: Sir Sidney Smith, a feathered bizarre, is called Magnum Bonum, when from a clean break; and many others might be adduced to illustrate our position. We have seen and grown French Tulips, said to be very fine sorts, but really we must have grown them many years (if they do alter for the better) before they would have reached our standard of a fine flower.

In continuation, "From their first flowering, all those with bad shaped cups are discarded, also those with indented petals, or that are tinged with yellow; and a weak bending stem is considered a serious defect.

"After the petals have fallen, the heads or capsules are cut off in order to strengthen the roots, which otherwise would be uselessly weakened by ripening their seeds."

"The side bulbs always reproduce flowers identical with those from which they derived their origin. Their period of blooming varies according to their size; it occasionally happens in the first year, and sometimes it will take six or seven years' growth before they flower. During the month of August, the bed must be prepared for their reception, and in September they must be planted from two to three or four inches apart, according to their size. Should their planting be deferred till November, it is very possible that many of the smaller ones will shrivel up and perish. When they are put into the ground or taken up, the same system is followed as in the main collection, so that all mistakes may be avoided, and by that means the amateur will be able to replace any bulbs which by accident or otherwise he may have lost in his choice or best beds."—*W.*

These directions, which are purely practical, and divested by the author of all theory, nevertheless, like all good cultivation, are entirely conformable to the laws of Vegetable Physiology. The same mode of management applies to all bulbs which naturally inhabit countries considerably warmer than our own; and, if it were applied to them with the skill and patience of a Tulip-grower, would have prevented the loss of many fine things, obtained at great cost, and of surpassing beauty, such, for instance, as the whole race of Calochortus.

TRAINING FOREST-TREES.

I OBSERVE in the *Chronicle* of Sept. 28, a successful refutation of what Dr. Thackeray does not recommend or practise respecting the training of forest trees. Mr. Billington states him to entertain the notion that "divesting a tree of its side-branches increases the weight or bulk of the timber in the trunk." Dr. Thackeray's system is not to divest the tree of its side-branches. That was the old plan, which lopped off all the side-branches, leaving a little tufty head, which was thereby encouraged to diverge into several branches of equal thickness; on the contrary, he selects a single stem in the leader, and gradually takes off such large branches as may interfere with and rival it. Mr. Billington next states that in a former [illegible] to him "shown, beyond a doubt, that Larches with undivided healthy branches [illegible] in girth equalled or even exceeded [illegible] having divested leaves and only a few [illegible] [illegible] Mr. Billington [illegible] [illegible] must be [illegible] [illegible] [illegible]

natural advantages. Now, if the circumstance of being situated partly on the northern brow, and partly on the summit of a bleak hill-side, where the soil consists of from 2½ to 3 inches of black bog or peat, or natural advantages, except the [illegible] possess such advantages in an ordinary degree; perhaps the unhealthy and unthriving plantations which join them in many parts are to be regarded as a further proof of the natural advantages which they possess. If their vigour of growth be now chiefly owing to the training which they have had, I confess I see no other rational way of accounting for it. There being no plantations anywhere near Dr. T.'s managed after the method advocated by Mr. B., I cannot speak to its relative merits in a comparative point of view; yet, from what is known of its tendencies, I feel warranted in saying, that if it had been adopted at Nerquis, the results would not have been quite so satisfactory.

Notwithstanding Mr. B.'s "protest against the pruning advocates," he agrees with them in first principles; and, indeed, most of his arguments go to support their views. Both parties seem to think that trees are supported chiefly from the atmosphere, through the agency of the leaves and branches, and that the vigour and growth of a tree is in proportion to the number of its side branches, and amount of its foliage. That foliage is essential to the healthy exercise of the vegetable functions, there cannot be a doubt, and care should be taken to preserve as much of it as is consistent with the purposes of artificial training; but it is opposed to all experience to maintain that the increase of timber in the trunk is best promoted by having a tree loaded with side-branches, or, as Mr. B. seems to think preferable, studded with spurs. One of the arguments used by Mr. B. in advocating such doctrines is, "that if you cut down a tree having numerous branches on one side, it will be seen that the concentric annual rings are much wider on the side having the numerous branches than on the other." Supposing such to be the case, it by no means follows that the side having the branches contains the greatest quantity of useful timber; for in such cases the apparent increase of timber is just the effect of the interruption of the continuity of the vegetable circulation, caused by the side-branches, and proves just effectually the error of Mr. B.'s system; for be it observed, that what he would have us cut off for good timber is just the ends of the branches, their twisted knots forming, as it were, knots, or distinct masses of wood within the body of the trunk, and rendering it useless for many purposes of carpentry. I think, then, there can be no advantage in any enlargement of the concentric annual layers, when produced by such means as I have described; and I feel pretty confident that those who have had most experience in converting timber will bear me out when I say that, in nine cases out of ten, that side of the tree on which there are most branches will be found to contain most good timber. In the artificial culture of wood the mere increase of timber is not the end in view. Fitness for use is quite compatible with great rapidity of growth; indeed, everybody knows that rapid growth produces coarseness of texture, and *vice versâ*. Therefore, in judging of the merits of a particular method of training young plantations, by an inspection of results, our opinions must not be founded altogether on the actual quantity of timber in the trees; while keeping in view vigour of growth, we must be satisfied that the means employed have been such as to produce that form of trunk which will, when it reaches maturity, yield the greatest return in the shape of clean sound timber of first texture.

The method of pruning by the fore-shortening of the lateral branches cannot, with any degree of propriety, be applied to the more valuable kinds of hard wood; for, in wood of this description, the natural tendency of fore-shortening is to give to the branch or limb so treated the character and disposition of the parent stem, and consequently a capacity for forming what is termed heart-wood; and it is well known that the twisting of the fibres produced by the side-branches is much greater in the case of trees containing heart-wood than in the case of those that have not reached to such an advanced stage of growth. Another circumstance worthy of notice is, that the twisting of the fibres, so injurious to the texture of the timber, begins where the branch originated, and not at its extremity. How improper, then, to follow a method of cultivation by encouraging branches intended to be eventually taken close to the trunk, and how necessary to remove these noxious shoots at an early stage of their growth!

The main object in pruning and training is to give a proper direction to its growth; and as the great object of the useful timber is contained in the body of the tree, we ought to endeavour to produce as great a length of trunk, in proportion to the branched top, as the habits of the tree will admit of. In short, to give to the tree that form which is most conducive to utility. That this may be effected by a judicious method of training, the results at Nerquis, [illegible] Mr. B.'s report would induce a person to suppose; but I would mention, and can use terms not in the slightest degree [illegible] but I would mention, and can use terms not in the slightest degree, that there is not the slightest appearance of anything having been overdone, and there is good reason to believe that the whole operations have been conducted with much caution, much care, and perhaps some niggardly-minded persons might be inclined to say with *too little cost*. It has sometimes occurred to me that this very great nicety of method which characterises every department of the management at Nerquis gives rise to the opinion which we sometimes hear expressed by [illegible] as have been accustomed to [illegible] overdone.

[illegible] one other [illegible] report which [illegible] Mr. B. appears to imagine that the trees at Nerquis have suffered [illegible] the want of proper thinning. To form [illegible] to the extent to which this operation [illegible] and, no reason must be had to the [illegible]. Although the woods [illegible] ainy their [illegible] others in the [illegible] yet [illegible] who has had [illegible] vation or [illegible] whose experience [illegible] to the rearing of timber on [illegible] valleys they appear to be [illegible] hardy trees who have experienced [illegible] the autumnal winds, where [illegible] plantations much exposed, [illegible] at Nerquis have been thinned [illegible] than their exposed situation seems to warrant. My own opinion is, that Dr. T. has nothing to regret on this head.

Mr. B. refers to a plantation belonging to W. O. Gore, Esq., M.P., in which it seems there is a noble Larch girthing at 4 feet from the ground 61 inches. We are told it was planted about 40 years ago, that it has had no pruning, but never was crowded." To meet this fact, which Mr. B. holds to be quite sufficient to show what might be accomplished by "proper management" — in a plantation at Craiglelo, near Ruthin, planted by Dr. T., and pruned according to the system practised at Nerquis, there are several such noble Larches; and although planted only 38 years ago, some of them girth at 4 feet from the ground 65 inches, and are from 65 to 70 feet in height. How justly might I too say, "This shows what may be done by proper management!"—*T. S. G., Flintshire.*

DISEASES OF PLANTS.—No. VI.

[Fungi.]

The subject of Galls belongs to Entomology, and a great variety have been figured in this Paper and traced home to their actual causes. It is mentioned here also because the forms, in many instances, have so close a resemblance to Fungi, and have been referred to them even by good botanists on a hasty and superficial inspection. For here, as in other branches of the creation, we observe somewhat of that wonderful analogy by which, in each distinct class or even division of natural productions, the same or extremely similar forms are repeated though accompanied by an organisation totally different; and it is this amongst other circumstances which makes it so absolutely necessary to examine into the intimate structure of the works of the creation, before venturing to pronounce upon their proper place in the system. In the case of Galls it is but a superficial examination which can possibly deceive, for even where the little grub which produced them has vanished, the total absence of all parts of fructification will at once decide the point. If, for instance, the cup-shaped Gall, which is so common on Oak leaves, be the object in question, any one who has once examined the hymenium of a Peziza, and observed the fructifying cells arranged vertically like the pile of velvet, with their row of eight mostly elliptic sporidia, cannot for a moment be deceived. One of the most puzzling Galls I have ever seen was sent by Mr. Macleay, from Cuba, on the leaf of some plant of the natural order Ochnaceæ, and has been figured in the "Transactions of the Linnean Society." In this case there is not merely an extraordinary development of the external cellular tissue, but the Gall is formed within the substance of the leaf, and after a time bursts through the cuticle and presents a little ovate body with a crenate border, and within this an operculum which is perforated [illegible] apparently [illegible] tool in the centre. [illegible] very close [illegible] [illegible] [illegible]

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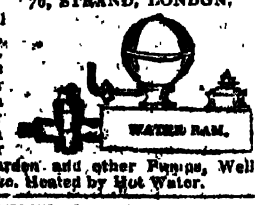
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SUBSCRIPTIONS

FOR THE

NATIONAL TESTIMONIAL

TO

MR. ROWLAND HILL,

AUTHOR OF THE PENNY POSTAGE,

WILL CLOSE ON THE 30TH OF NOVEMBER.

Of all the sources of income stated in the recently published Quarterly Returns of the Public Revenue, none exhibit *so large* a proportionate increase as the *Post Office*. On the year's net Revenue, the Customs have increased at the rate of about 10 per cent., the Excise 1¼ per cent., the Property Tax 2 per cent., while the *Post Office Revenue*, under its present nominal rate of a penny, has increased above 12½ per cent., and the increase on the quarter has been even as much as 25 per cent.

These cheering results show that (though the *plan of Penny Postage* is yet but *imperfectly tried*) the *complete restoration* of the Post Office Revenue to its amount before the Penny Postage was adopted is not an event far distant, if it be fully and honestly carried out; and the *City of London Mercantile Committee on Postage* desire to impress these satisfactory results most emphatically upon the Public, in announcing the *approaching close* of the National Testimonial to Mr. Rowland Hill. *All* parties are unanimous upon the great *moral* and *commercial* advantages of the *Penny Postage*. Its expediency as a *financial* step has been the *sole* ground of question; but now, even this *can scarcely be doubted*; for, let it be remembered, that the Old Postage Revenue had been absolutely *stationary* for twenty years,—retrogressive, in fact, if we consider the increase of population, education, and commerce during the period. The change which Penny Postage has effected, is to make the *Post Office Revenue* the *most buoyant* source of National Income, bidding fair to become more profitable than it has ever been. The Committee, therefore, call upon the Public to reward, with suitable gratitude, the Author of this great and triumphant measure.

The Committee have the satisfaction to announce that the Subscriptions, headed by the chiefs of political parties and of commercial wealth, already reach 10,000*l.*; but 16,000*l.* cannot be held to be a sufficient *national* reward for such *national* services. The Committee therefore urge upon the *nation at least to double* this sum. If every letter-writer, for only a single week, would pay a twopenny instead of a penny rate for his letters, the amount, and more, would be raised. In proportion as the public show their gratitude to Mr. Hill, so they strengthen the chances for the complete adoption of his plan, *now but partially carried out*. Its perfection will bring greatly-increased convenience to themselves, and increased advantage to the Post Office Revenue.

Never have the services of any *Public Benefactor* been *requited* as Mr. Hill's have been. Quitting a *permanent* situation *for a temporary* public engagement, to carry out his plan, Mr. Hill's services, whilst his plan was yet not carried out, were dispensed with, and he received the following acknowledgments of his merits, and—*nothing more*:—

"I gladly avail myself," writes the present Chancellor of the Exchequer, "of the opportunity of expressing my sense of the satisfactory manner in which, during my tenure of office, you have discharged the several duties which have been from time to time committed to you." "I entertain," writes Sir Robert Peel (who has also subscribed 10*l.* to the Testimonial), "a due sense of the motives by which your conduct, in respect to Post-Office arrangements, has been actuated, and of the zeal and fidelity with which you have discharged the duties committed to you."—Mr. Trevelyan, on behalf of the Lords of the Treasury, writes thus:—"I am also commanded by their Lordships to take this opportunity of stating, that they consider it due to you, on the termination of your engagement with the Government, to express to you the approbation with which they have regarded your zealous exertions in the execution of the duties which have been intrusted to you; and how materially the efficiency of the Post Office arrangements has been promoted by the care and intelligence evinced by you in the consideration of the various important questions which have been referred to you."

Under these circumstances the Committee call upon the *Public* to come forward with due generosity, and reward Mr. Hill themselves, as the *unrequited Inventor* of the *great measure of Penny Postage*—a measure which has opened the blessings of free correspondence to the Teacher of Religion, the Man of Science and Literature, the Merchant and Trader, and the *whole British Family*, especially the *poorest* and most *defenceless* portion of it;—a measure which is the *greatest boon* conferred in modern times on *all the social interests* of the *civilised world*; for Penny Postage is spreading its influence throughout Europe and reaching even Russia. The Committee rely on the gratitude of their countrymen, and feel sure that this, their last appeal, will not be made in vain.

(Signed) GEO. LARPENT, Chairman.

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THE GARDENERS' CHRONICLE
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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 47.—1844.] SATURDAY, NOVEMBER 23. [Price 6d.

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ROYAL BOTANIC SOCIETY, Regent's Park.—The days appointed for the EXHIBITIONS of PLANTS, FLOWERS, &c., in the Gardens of this Society, for 1845, are the following:—

Wednesday, May 7th;
Wednesday, June 4th;
Wednesday, July 2d;

A PROMENADE will take place on each of the other Wednesdays in the same months. J. De C. Sowerby, Sec.

WEST KENT GARDENERS' ASSOCIATION FOR MUTUAL INSTRUCTION.—The Provisional Committee of the above Institution beg to inform their Friends, and Gardeners generally, that a Meeting to adopt Rules, elect Office-bearers, receive Subscriptions, and make such arrangements as are necessary for the proper management of the Society, will be held at the Rooms of Mr. Gilbert, Montpelier Row, Blackheath, on Wednesday, Nov. 27th, at 7 P.M., to which all persons interested in such Associations are most respectfully invited. W. P. Ayres, Secretary *pro tem.*

Blackheath, Nov. 21, 1844.

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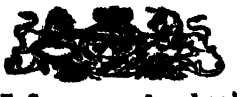
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Great Yarmouth Nursery, Nov. 21.

UNDER THE PATRONAGE OF HER MAJESTY.



J. G. WAITE, Seedsman, &c., 1 and 4 Eyre-street Hill, Hatton Garden, London, embraces the present opportunity of returning his best thanks for the very liberal support he has hitherto received, and to assure his friends that no exertion shall be wanting on his part to merit a continuance of their favours.

J. G. W. most respectfully informs the public that Seeds of every description (with the exception of Carrot) are unusually fine this season, and he will offer them at very low prices.

Waite's Queen of Dwarf Peas, per quart . . . 7s. 6d.
A splendid new variety, growing only 1 foot high, producing a larger pod than any of the same habit, the seed is quite distinct from all others, and larger than any Dwarf Pea in cultivation. It has been grown at the Royal Gardens at Frogmore, and approved of as a new variety, and also at Her Majesty's table, for its superior flavour.
Cuthill's Black Spine Cucumber, per packet of 100 seeds 5s. 6d.
Waite's Race Horse, do., 32 inches long, Black Spine, and wonderful bearer . . per packet of 20 seeds 5s. 6d.
True Beechwood Melon . . . of 25 do. 2s. 6d.
Pimelia spectabilis, new . . . of 5 do. 2s. 6d.

J. G. W.'s unrivalled [illegible] of Seeds will be ready at the end of the [illegible] and sent on application at 1 and 4, Eyre-street Hill, 1844.

[illegible] GREAT YARMOUTH NURSERY.

Youell [illegible] opportunity to [illegible] only at their [illegible] of them appear on the [illegible] Chronicle; and they [illegible] purchasers at whom they [illegible] been substituted by [illegible] "true variety."

Great Yarmouth [illegible] 1844.

F. GODFREY [illegible] of DWARF ROSES, [illegible] varieties of the Hybrid China, [illegible] &c., is offering them at the following [illegible]:—

100 Strong [illegible]	25s.
50 do.	15s.
24 do.	8s.

Guildford, Nov. 16, 1844.

NAPOLEONA IMPERIALIS.—A few Plants of this beautiful Shrub, lately described by Dr. Lindley, in the "Botanical Register," may be purchased, price Five Guineas each, by application to Messrs. Thos. Grimes and Co., the Secretaries to the Royal Agricultural Society of England, corner of Half Moon-street, Piccadilly, London.

THE TRUE FASTOLFF RASPBERRY.—In last week's *Gardeners' Chronicle* are two Advertisements issued by certain parties, offering for sale what they term "the Fastolff Raspberry." Upon referring to these Advertisements it will be found that one states it to have originated in the garden of Mr. Jary, of Burlingham, and the other in that of Mr. Lucas, of Filby; thus placing the correctness of their statements in a very questionable point of view. Mr. Rivers states that the fruit upon which Dr. Lindley pronounced his opinion was gathered in what he terms "the Filby garden." Youell and Co. beg to say that this assertion is utterly void of truth, and they regret Mr. Rivers should have lent his name to the publication of such.

As to the true origin of this valuable variety, Y. & Co. beg to say that they fully believe it originated in the garden of the late Rev. G. Lucas, of Little Ormesby Hall, in this county, and who was a most intimate and highly-valued friend of theirs (not the Rev. G. Lucas, of Filby), and where they had ample opportunities of making themselves thoroughly conversant with the variety they are sending out as the "True Fastolff Raspberry;" and since that period they have bestowed every care and attention in purchasing every cane of this Raspberry, and marking the same during the fruiting season, which is the only time when this variety is to be detected from several kinds grown in this locality, and called the "Filby Raspberry," "Seedling," &c. Y. and Co., at a cost of between 300l. and 400l., brought before the public the "True Fastolff Raspberry;" the demand it met with, the distinguished patronage it enjoys, and the many marks of approbation they have received for thus bringing into public notice a most valuable fruit, which would, until now, have remained in obscurity, and gratified the wishes of certain parties, and thus deprived the horticultural world (*pro tempore*) of so great an addition to their collection of fruits. Youell and Co. having purchased all the available stock of this Raspberry, knowing such to be correct, and rejecting many grown in this neighbourhood, which may, perchance, be palmed upon the public as the True Fastolff, &c., they again caution their friends that they cannot be held accountable for its answering the merits ascribed to it by them, unless purchased at the Great Yarmouth Nursery, or of their Agents, a list of whom appear on the advertising sheet of this day's *Gardeners' Chronicle*.

Great Yarmouth Nursery, Nov. 21, 1844.

KNAP-HILL NURSERY, NEAR BAGSHOT, SURREY.

HOSEA WATERER (Brother and Successor to the late Michael Waterer), respectfully begs to announce that the American Plants this year are remarkably well furnished with bloom; and with the other articles which are generally required for forcing, he has this season to offer very fine plants of the hardy Scarlet Rhododendrons. This Nursery has long been celebrated as containing the finest Collection of American Plants in the kingdom; independent of this, H. W. is a most extensive grower of Hardy Ornamental Trees and Shrubs, Roses, Forest and Fruit Trees; this may be inferred from the fact, that the Nursery extends over near 100 acres of land. The Knap-Hill Nursery is 2½ miles from the Woking station of the South Western Railway.

All letters intended for this Nursery must be addressed Knap-Hill, near Bagshot, Surrey.—Nov. 23, 1844.

PLANTING SEASON.

R. WHITE and Co. have to offer the following at very moderate rates, viz.:—PINUS MENZIESII, INSIGNIS, SPECTABILIS, GRANDIS, PONDEROSA, HARTWEGII, DOUGLASSII, DEODORA, 1 to 2 feet; EXCELSA, and many other rare sorts. Also strong Quickset, Beech, Birch, Oak, Maple, Spruce, Larch, and all kinds of forest-trees, Rhododendrons fine at 60s. per 100; A collection of Roses, comprising upwards of 700 of the most distinct and beautiful kinds, which have been carefully selected. In the Fruit Department there is a fine collection of Maiden and Trained Trees of Peach, Apricot, Nectarine, Pears, Apples, Cherries, &c., which includes all the fine kinds of Pears now in cultivation. Of Ornamental Shrubs, there is a fine healthy stock of all the finest kinds, and from the light nature of the soil in which they are grown, trees from this Nursery will be found to thrive remarkably well after transplanting. Geraniums, finest kinds, comprising—Beds of Ornament, Beauties, Lord Ebrington, Circassian, and good kinds, 24s. per doz. Hoosainee Melon, true, 2s. 6d. per packet, 6 seeds.

NEW AND SPLENDID RHODODENDRONS.

RHODODENDRON WILLIAMSONII. — This magnificent variety was forwarded for the opinion of Dr. Lindley and also of Mr. Glenny. Dr. Lindley (see *Gardeners' Chronicle* for May, 1844)—"*G. B. S.*—Your seedling makes a handsome and showy variety for the garden; the heads of the flowers are large, compact, rich in colour, and the foliage is very handsome." Mr. Glenny (see *Gardeners' Gazette* for May, 1844—"*G. B. S.*—If hardy, a very great acquisition. Also very large, bright rose, well spotted, and if bloomed in the open ground, a valuable addition to our hardy plants, for the foliage is as perfect as the flower."

RHODODENDRON INVICTUM.—A very detailing deep rosy crimson, very dark spots, a most distinct and superb variety, and blooms later than most of the hybrids, and quite hardy. The above two splendid hardy Rhododendrons now offered to the public were raised by Mr. Williamson, the Curator of the Birkhead Botanic Garden, where INVICTUM has bloomed for several years, and has drawn the admiration of all who have seen it. Price for the two, 42s.

Apply to F. Glenny, Nursery and Seedsman, Bluefield; W. and A. Gilbert, Market Drayton; or Messrs. Warner and Warner, 29, Cornhill, London, where paintings of the above may be seen.

[illegible] Pudsey, Yorkshire, Nov. 29

[illegible] BOOKS which have never before been offered to the public, and which are the most desirable ever put to bloom yet [illegible]

FLOWERS, Hilperton, Wilts, begs to call the attention of the admirers of this lovely tribe. He is well prepared to offer the above to a [illegible] At one trial will prove their superior strain [illegible] descriptive list post-free to any part of the kingdom.

W. has paid much attention to the growing of [illegible] for many years and feels proud to say [illegible] as, during blooming season, they be seen the selection from extensive beds for the past nine years' [illegible] which are models of Nature's best work.

Ranunculus Seed, in packets, 5s each.

GERANIUMS AT VERY LOW PRICES.

WM E RENDLE, having a large stock of the following sorts of GERANIUMS, is enabled to offer them at very low rates

*** A dozen will be forwarded on receipt of a Post-office order, including hamper, package, and carriage free to the Exeter terminus of the Great Western Railway

Black.]—10s per dozen, including package carriage, &c.—Lady Williams, Fascination, Thunderer Oberon, Favourite, Prince of Waterloo, Jessie, Count D Orsay, Lord Ebrington, Constellation, Leyinia, Cornish Gem, Attila, Duke of Cornwall, Eleanor, and Modesty.

Rose, &c.—12s per dozen, including package, carriage, &c.—Evelina, Gipsey, Witch, Hamlet, Cynthia, Aurora, Cronje, Lady Cotton Shrubland, Countess of Mount Edgcumbe, Full Midnight, Morning Star of the West, Portia, Jupiter, Lilt, guardsman, King John, Sultan, and Princess Royal (Lyne)

Scarlet.]—12s per dozen, including package, carriage, &c.—Camellia, Louis XV, Vice Admiral, Enchantress, Glory of the West, Ivanhoe, Pizzi, Queen of the Fairies, Grand Monarch, Alexander, Wildfire, Mabel, Prince Albert, Nymph, Bridegroom, and Rival.

All the plants are strong, healthy, and well established, and will be sent on receipt of the money, or free list of order

Station Road, Pudsey, Tuesday, Nov. 26, 1844

PLANTING SEASON.

W. ROUMIEU AND SON, Nurserymen, Contract Planters, & Landscape Gardeners, Southampton, beg respectfully to notify that their Nursery Stock is this season unusually fine, and from the extent of their grounds they are enabled to supply Forest Trees to any amount, and at the lowest prices. Specimen trees of Evergreens (if ordered in quantity) per [illegible] Oak, "Dormant," 10s per [illegible]

[illegible]	English	1	2	3 ft
[illegible]	Turkey	1	2	5 ft.
[illegible]	Spruce	1	2	6 ft
[illegible]	Larch	1	2	3 ft
[illegible]	Scotch	1	2	4 ft
[illegible]	Pinaster	1	2	2 ft
[illegible]	Pea Pine	1	2	3 ft

[illegible] Chesnut, 1yr., 15s } per
[illegible] Plane, 1 yr., 2s 2d } 1000.
[illegible] 2 yrs., 3s 6d

[illegible] for Shade or exposure to the sea, [illegible] per 1000.

Oak, the true "Durmast" of the New Forest (Quercus sessili flora), producing timber of the largest dimensions, and decidedly the most valuable species of the English Oak, 1 yr., [illegible] 2 yrs., 15s per 1000.

TRANSPLANTED.

Plants [illegible] of the various sizes may be had on application

[illegible]	Oak, "Dormant," 10s			
[illegible]	English	1	2	3 ft
[illegible]	Turkey	1	2	5 ft.
[illegible]	Spruce	1	2	6 ft
[illegible]	Larch	1	2	3 ft
[illegible]	Scotch	1	3	4 ft
[illegible]	Pinaster	1	2	2 ft
[illegible]	Pea Pine	1	2	3 ft

If [illegible] only one sort is ordered, a deduction from these prices will be made.

Prices per thousand for Transplanted

Rhododendron ponticum, 2 to 3 inches, 25s; 3 to 6 do. per 1000

Ditto, 2 to 3 inches, 40s to 50s per 1000; 4 to 6 inches, 60s to 80s. per 1000; 1 foot, 20s per 100

Hollands aquifolia, 40s per 1000. Cuttings are remarkably fond of the fruit of this plant, which is also a handsome flowering Evergreen.

Common Laburnum, 10s to 15s per 1000

Common Willow, 4 to 6 per 1000. (Best for Underwood)

[illegible] 50s per 1000 Broom, 10s per 1000.

[illegible] Quicks, transplanted, 4s per 100 Excellent forest embankment [illegible] Limerick, 5s per 100

[illegible] WILKINSON

A [illegible] Ornamental Trees of large growth, [illegible] for park, adapted for immediate effect

[illegible] Trees, well rooted 5s to 7½s per 100

[illegible] Cuttings of the Lucrative Poplar, 10s per 1000

	s.	d.		s.	d.
Admiral	2	0	Antilla	2	6
Amphion Minervæ	2	0	Atlanta	2	6
Clementine Rattray	2	0	Aurora	2	6
Duval	2	0	Dorset	2	6
Mr. Hurst	2	0	Grimshawii	2	6
Miss Plumstead	2	0	Dutchess of [illegible]	2	6
Duchesse de Nemours	2	0	Dunsany	2	6
Duchess of Sutherland	2	0	Gloire de Rathmore	2	6
Earl Talbot	2	0	" Penn	2	6
Fulgens	2	0	" Quilliamiana	2	6
Julie Dupont	2	0	Lilacea grandiflora	2	6
Le Reine (strong plants)	2	0	Madame Nerard	1	6
Lady Alice Peel	2	0	Médicis Aubin	1	6
Lady Penrhyn	2	0	Napoléon de Jeanne d'Arc	2	6
Lucie	2	0	René Joseph	2	6
Madame Lefèvre	2	0	Sigwitz	2	6
Melanie Corne	2	0	Tricolor jaune	2	6
Miss Elliot	2	0	Variété de Bollwiller	1	6
Princess de Galles	2	0	Wilhelmine de la Malmaison (strong plants)	2	6
Symmons Bacon	2	0	Splendens	2	6
Talleyrand Gentissimo	2	0	Thaliait	2	6
Vivens (Lafitte's)	2	0			
William Jesse	2	0			

Cloth of Gold (Galbertii) strong plants, 7s 6d.

Choice Roses selected from various classes —Dwarf Stand sorts, 12s per dozen; fine superior kinds, 18s; Standards, 18s per dozen; do., medium sorts, 30s.

A descriptive Catalogue sent on application Plants gratis, to remunerate for distant carriage —Wedenham, Nov 23, 1844

THE FILBY, or FASTOLFF RASPBERRY.—At the request of some gentlemen living in the neighbourhood of Yarmouth, T RIVERS begs to submit the history of this highly excellent Raspberry to the public. In the year 1814 Colonel Lucas, of Filby, a place lying between Mautich and Yarmouth, discovered a Raspberry plant growing under an old Laurel hedge in his garden. His attention was drawn to it, and he soon found it to be a superior and delicious variety, so that in a short time every other sort was ejected from his garden, and this alone cultivated. It was not however, till 1819 that he allowed his gardener to part with it who then gave canes to his neighbours, and by this means it got to be cultivated in Ormsby, Ormesby, and, in fact, in all the neighbourhood, under the name of the FILBY RASPBERRY, to the exclusion of all other sorts. It has latterly often been called the Ormsby Raspberry, from the Market Gardeners growing it in that parish. In Ormsby is an old castle in ruins, that formerly belonged to the Fastolff family: the latter name was given to the variety by Young and Co., when they first began to sell the canes. The fruit above which Dr Lindley pronounced his opinion was obtained for the Filby garden, now the property of the Rev. Charles Girdlestone, his heirs, and families the publication of the above facts, and has also published this Garden r to supply the genuine canes after this date to T. RIVERS only

Canes two years old, 4ds., per 100, or 6s. per score, carriage paid to London; Ostrich, for package, for small parcels, 6d., for large do., 9d. to 12s. 6d. Orders to any amount can be executed. Price lists gratis will be given on application

Sawbridgeworth, Herts, Nov. 26, 1844.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 23, 1844

MEETINGS FOR THE TWO FOLLOWING WEEKS

SATURDAY,	Nov. 23	Royal Botanic	4 P M
Tuesday,	Nov. 26	Medical	8 P M
Wednesday,	Nov. 27	Society of Arts	8 P M
Friday,	Nov. 29	Botanical	8 P M
Monday,	Dec. 2	Entomological	8 P M
Tuesday,	Dec. 3	Horticultural	2 P M
		Linnæan	8 P M

WHEN we, a few weeks since, invited the attention of our readers to some supposed cases of the TRANSMUTATION OF OATS, we were not aware that so many such instances were on record Thanks, however, to our correspondents, we have now before us several statements as to one kind of plant changing to another, so that the history seems more than ever to be worth following up. Not that we anticipate a confirmation of these stories, for they do appear most incredible, and contrary to the usual order of things, yet, as we have before observed, some very recent and most astounding instances of change, quite as great as that of Oats into Rye, have occurred, concerning which there cannot be a doubt, and therefore there is no knowing what more may be behind

Mr Darwin, who agrees with us that so curious a subject is well worth investigation, "even if it should prove to be only a history of error," points out a passage in Dr. J. Anderson's "Recreations," &c (vol. ii. p. 306) for the year 1800, where he remarks on an extract from a Dutch journal, in which it is said, that a countryman sowed Oats and cut them green three times, and that "in the ensuing spring only a few stalks not cut, any fresh shoots, and these were good Rye." Dr. Anderson attempts to explain this by supposing that seeds of both grains were in the ground, and that the Rye, from being the hardier plant, alone survived the winter; and he concludes by exclaiming, "What a bonfire it would make if all the books which record such experiments were burnt, at once!" But Dr. Anderson knew nothing of the modern facts above alluded to.

Another correspondent finds the following in the "Million of Facts," by Sir Richard Phillips, p. 153: "Barley in rainy seasons or years degenerates into Oats; and Oats in dry seasons change into Barley. These facts, noticed by Pliny, Galen, and Matthiolus, have been confirmed by the experiments of naturalists, &c. &c."

Of all these statements, however, which have been made from time to time, the most remarkable are those of "a Dr. Wiesenborn," which were published by the late Mr. Loudon in the "Magazine of Natural History," and which, while they astonished the gardening world, must have excited considerable

[illegible] made with more [illegible] garden, a bed of 12 feet square was [illegible] and pulverised, and sown about the middle of March, 1836, with picked Oats. The blade sprung not [illegible] tolerably well, and was thin, as the seed had suffered from frost in the preceding autumn. It was cut, for the first time, when part of it had already begun to form a shoot The second mowing took place in autumn. This year, the second of the experiment, the bed is covered with healthy Rye-stalks, though fewer in number than the Oat plants, which stood on the bed last year"

The other case is that of a Lieut-Col de Schauroth, who five years previously had found this experiment succeed seven times, and that in every case Rye had sprung from Oats, when the latter, during the first season, had been prevented forming stalks Col. de Schauroth had been averse to publish his observations, from his dislike to controversy, but as he was fully satisfied about the truth of the phænomenon, "he asked me," says Dr Wiesenborn, "to repeat the experiment, I delayed doing so till I could have an opportunity of sowing Oats on ground which had neither yielded a crop of Rye, nor had been manured with litter for a long time previously Three years ago, however, I ploughed up a paddock in which there had been nothing grown but Grass for the last 15 or 20 years It was planted with Potatoes for two years, and the third spring, sown with Oats and Lucerne, which were fed off by sheep, so that none of the Oat-plants could run to ear. During the severe spring of the present year, the greater part of the Oats were destroyed, but when the Lucerne had attained a sufficient size to be fed by sheep, it was found intermixed with a great many healthy Rye plants, just in ear It appears unnecessary that the Oats should be sown about midsummer day; and it is very natural that the Rye-plants should be fewer than those of the Oats, because all summer Corn is, in a great measure, destroyed during winter"

These statements were made in 1837. In the following year Dr Wiesenborn again brought the subject before the public, in the second volume of the "Magazine of Natural History" "With reference," he says, "to the transformation of Oats into Rye, this remarkable phenomenon has not only been verified by new experiments, but we have caused beds to be sown with Oats, in order that we may be able to convince disbelievers, by producing Rye stalks which have sprung from the crown that still shows the withered leaves of the Oat plant of the previous year. I repeat that this transformation does take place, if Oats are sown very late (about midsummer-day), and cut twice as green fodder before shooting into ear; the consequence of which is, that a considerable number of Oat plants do not die in the course of the winter, but are changed in the following spring into Rye, forming stalks which cannot be known from those of the finest winter Rye We must expect that this fact will be considered by many as a mere assertion, and there are others who are still in doubt about it, the latter, however, own that they either have not made the experiment, or have sown their Oats too early, and, therefore had cut them oftener than twice, in order to prevent their running to ear, whereby the plant loses the power of surviving the winter, and of being transformed into Rye I cannot notice such adversaries as reject the result without having put it to the test of experiment, or who rest their opposition on experiments that have not been conducted in the right manner. *I set any one sow Oats during the latter half of June, and the transformation in question will certainly take place!* The time of sowing the Oats did not formerly appear of paramount importance, nor was it believed that it could make any difference whether the Oats were cut more than twice; in consequence of which a few experiments have failed. Now, however, we must conclude, that if the transformation occasionally takes place with Oats that have been sown too early, that is merely an accident depending on a peculiar state of the weather, or other accidental circumstances; whereas the result is quite certain if the Oats are sown towards the end of June. If the soil is too dry about that time, one of the reporters on the subject, to the Agri. Soc of Coburg (Lieut. Donauer), concludes from an experiment he made in 1837, that one watering, so as to enable the Oats to germinate, may be recommended; although if this be done repeatedly, the high temperature of the season will cause the plants to grow so luxuriantly that it becomes necessary to cut them three times when about 1½ foot high, to prevent their forming their ear, whereby the object would be wholly or partially lost. If, however, among those who doubt this fact, there be found people who pity us because we print more to actual amusement than to science, we should almost feel inclined to pity them, whose self sufficiency has prevented them from thoroughly investigating an [illegible] phenomenon which was [illegible] Nor can we commend the discriminat[illegible] are unable to discover in the [illegible] both the preceding year's dry stubble, and [illegible] the Oats, and the fresh stalks and leaves of [illegible] which later form in May upon the crown [illegible] plant, and produce fine winter Rye. The Society must credit to itself for perseverance, in having struggled against the opinion of the public for several years, in order to establish a fact which no physiologist would believe, because people are always apt to confound the laws of Nature with those of their systems."

Such is the state of the case, as far as is at present known. We cannot conclude our relation of these strange stories better than in the words of Dr. Wiesenborn himself. "It is not," he says, "with a view of engaging anybody to believe the alleged transformation, that I call the attention of the English reader to the above observations, but merely from a wish to relate a curious phænomenon whose frequent recurrence can hardly be doubted, on account of the mass and respectability of the evidence now before the public, and the cause of which, for the same reason, it appears not altogether irrational to inquire into, by repeating the same experiment in various localities."

We wish we could persuade a few gardeners to bear these statements in mind, and to make the trial next year, when midsummer arrives It is a question much more likely to be answered satisfactorily in a garden than in a farm.

ON PRUNING FRUIT TREES.

As the pruning season is at hand, I beg to offer a few remarks on Pear pruning, more especially the new Flemish kinds, as also a brief account of their general management as pursued by me for the last eight or ten years.

It is notorious to all who are in any way conversant in gardening affairs, that by the old method of close spurring, the trees on walls became gradually clothed with their advance to age; this barrenness proceeding from the centre of the tree to the extremities, until at last some three or four hundred feet of walling would be occupied for the sake of a few dozens of Pears, hanging at the extremities of the shoots.

Now the loss of walling, which is itself is no trifle, was not all in this case. The tree had to undergo a thorough revision every year, at stated periods, not with any hope of inducing the tree to become in any way more prolific, but to keep up the decent appearance of the wall

The habits of the Pear being duly considered, and the circumstance of such limited powers of leaf, with unlimited powers of root, being taken into consideration, who could wonder at such results? A wall of trees treated in this way, if it could be placed on the ground in a horizontal position (with the trees attached), would be no bad representation of a coppice in miniature; and, indeed, the principal points of management bear no small resemblance. To excite the woody principle is the same result in both cases; but change the case with regard to the Hazel coppice, let the trees grow up free from the pruning knife, and consequently suffer the elaborating powers to reach or overtake the absorbing ones, and the result will be Nuts, instead of grate-wood or faggot-ties.

In the case of wall Pear-trees, an objection of a serious appearance seems to stand in the way: I mean the exclusion of light by suffering the tree to remain unpruned There is, however, no real difficulty in the affair, as I have proved by experience. The root must be limited—the power of making shoots placed under control It is well known that the absorbing powers of the Fig are so great in our humid climate, that all good cultivators take care to limit its roots, without which, it is in vain to expect success; and the leaf by this process being much reduced in size, the exclusion of light is by no means so great. Now the tender Flemish Pears are in precisely the same predicament as the Fig, if left uncontrolled at the root the elaboration of the tree, and fructifying sap is ever in arrears

In stating my practice I will begin with the young trees from grafts. I make it a rule to transplant them annually, if possible commencing with the young plant in the autumn succeeding the grafting season My object is to exchange tap roots for fibrous ones, and consequently prepare them for a system of complete root-control, the roughly ripened and short-jointed wood here the object to be obtained; and the next and important object with me is to prepare mounds of brick or stone on which to place them in their final destination.

The subsoil must of course be free from any lodgement of water, and if not naturally so, I of course introduce drainage The soil I use, and which seems to be the best adapted, as coupled with my shallow border system, is a strong and rather clayey loam from old pastures, which, if the pasture abound in soil, may be dug, turf, soil and all, about six inches in depth.

My platforms are about six feet square, and the fresh dug loam is roughly chopped, and tumbled in without farther ceremony; no manure or vegetable matter of any kind is mixed with it, and, indeed, it would be quite superfluous in my instance. The surface of my platforms, before I introduce the soil, is about nine inches below the general level, and the soil when filled in is one foot in depth, and consequently elevated three inches

[illegal] ... [illegal] ... [illegal] ... [

...ing, and the ...ing, and the ...ing, and the

…in this communication I have sent… which were cut from a flow… plants belonging to Mr. Kingsmill, …Mountington. One is Vesta, and the other … The first, as will be seen, is a flower-producing … leaf; the second a leaf growing out of a flower. … also in Mr. K.'s houses, amongst several pro… of this kind, an unexpanded bloom, having small leaves in the place of sepals. This, I am told, may be considered extraordinary; but when it is observed that Mr. K. is enabled to continue the propagation of them throughout the winter by perpetuating a supply of the pigment essential to the production of carbonic acid, and consequently vigorous growth, with his ability of supplying the only agent upon which the development of the highest organs of plants mainly depends, namely, solar light; and as the power of this gradually becomes less at this time of the year, it is not very surprising that the plant, instead of coming at once to form the higher, and producing perhaps the lower organs, should exhibit traces of its former existence, of course where the influence of heat and light are considered, as in the case this is more likely to happen.—*W. Sherwood.*

Tile-draining.—My tank is made of wood, and covered with the tiles, similar to those used for roofing, and only reversed, as the inside is over the tiles as placed about 6 inches of sand, in which pots are plunged. I find that the tiles give out too much moisture and cause small plants to dislike it. I would not recommend the plan which I have used, although a heat-pipe to heat a tank, as proposed by one of your correspondents. The disadvantage is that in order to be kept up to a high temperature it requires a good deal of fuel, and to keep the temperature at 90°. Mr. Spencer, in Gardeners' Chronicle, states that attention to the furnace in 24 hours is sufficient; but with a moderate fire will not do. In the part of the pit [illegible] I have tried it, but things; but I should like a flow system, which should be put on the tiles to form a good drainage, and then about a foot [illegible] within the pit, and [illegible] fuel and [illegible] which I [illegible] Cumberland. The pit is [illegible] which [illegible] much moisture [illegible] the tank. The well-established and old plants will look well this autumn, for which the propagating [illegible] intended, evidently are not doing well.—*Gardener and Steward of the Redbreast.*—I had [illegible] of testing, in the most [illegible] the accuracy and fertility of the [illegible] known to how dire an ex… that [illegible] will go. Frequent as is the [illegible] hardly less so is it in the [illegible] of indeed members, although not [illegible] in weight, are scarcely [illegible] under the influence of the "green-[illegible]" the [illegible], I was in the garden, [illegible] a number of [illegible] with my favourite [illegible], which, although [illegible] have [illegible] succeeded in your columns) in a wild state, and in perfect liberty to roam [illegible] this little bird, to which we and my family a constant guest, sleeping in Marensecourt Park by night, and dropping in to breakfast at the mornings. I was [illegible] on the [illegible], holding a blackbeetle [illegible] in the middle, between my finger and [illegible], [illegible] to my pet coming for it as usual. [illegible] above the apex of my nose. He [illegible] for the [illegible], he quickly took his accustomed [illegible]. He was [illegible] with the worm, [illegible], from a neighbouring tree, [illegible] suddenly darted across, [illegible], hurled my… [illegible] and to his [illegible] dropped in… [illegible] feathers were [illegible] for [illegible] his [illegible] I [illegible] which Dante would have called [illegible] moment, that [illegible] this [illegible] [illegible] [illegible]

...ing, and a view to ...
...ly by weight of the ...
...ation of new ...
...introduction, ...
...collection; but there ...
...the Yellow, which ...
...ave yellow; and the Queen of the Bypass, ...
...distinct and fine flowers well worthy ...
...Among the older varieties not noticed ...
...kind of Diderot, Henry IV., Anna, ...
...variety and those which approach the white ...
...Gibraltar, especially, and we have ...
...finely developed, and the plants having ...
...Madame Louise and Duchesse de ...
...were conspicuous from their compact and lofty form ...
...Reeves, and among the orange and scarlet, ...
...with the latter, approaching the high-coloured, there are ...
...some large and fine flowers; Incomparable is a very fine ...
...Lady Jane, Imogene, and Desdemona are desirable va...
...rieties, and Arbutus, bright orange and crimson, is a very ...
...handsome flower; Isolier and Fidelia, though rather ...
...small, are distinct and desirable, being of a rosy red, and ...
...blooming freely. To this class of colours should be ...
...added Lady Jane and Count d'Eu, being both excellent ...
...sorts for a collection; Louis-Philippe proves a decided ...
...acquisition to the lilac or purple class, and the flowers ...
...are very superior to those of last season; Marshal de ...
...Cregut, though small, is a very desirable variety—it ...
...blossoms most abundantly, and undergoes changes in its ...
...progress to the perfect bloom, which are very pleasing; ...
...General Laborde is another fine compact flower, worthy ...
...attention. Those we have noticed were various conspicuous for their fine colour and freedom in blooming; but the whole collection is well worthy attention. The Camellias are looking remarkably well, and promise an abundance of bloom.

T. A. Phillips's, Esq., Thornfield.—There is in the Pine-stove at this place a Sierra Leone Pine-apple, which measures 19½ inches in circumference, and 11½ inches in length. This variety is said to attain here the same weight as the Montserrat and Jamaica. I presume that it will not weigh less than 8 or 9 lbs. It is planted out into the bed. This fine fruit is in my opinion much superior to one of a New Providence which I saw cut, and which weighed 11 lbs. 8 oz.; and I trust that those who have doubted the possibility of accomplishing such a result will not lose the opportunity of seeing it. Although large and well formed Pine-apples are often produced at Thornfield, yet this is not the result of wide planting; on the contrary, the plants are crowded even to excess. In a pit 23 feet in length and 7 feet in width, there are now growing 60 plants, from which Mr. Hamilton says that he will, in all probability, cut a second crop next year of 250 lbs. of fruit.—*R. H.*

Miscellaneous.

Borax in Bread—One of the means employed to give bread made of bad meal a good appearance, is borax. According to Duvills, the bakers use about 4 oz. of borax to 100 lbs. of flour. To detect the borax in the bread, a considerable quantity should be extracted with water, the filtered extract clarified by boiling with albumen, and strained; upon this concentrated sulphuric acid is added while stirring, and it is then placed aside. If borax is present, crystals of boracic acid separate, which are now readily detected by their well-known reactions.—*Chemical Gazette.*

Chinese Ice-houses.—The ice-houses around Ningpo, and especially on the banks of the river between that city and Chinhae, are beyond calculation. They are built above the ground, and generally upon a platform of earth raised so as to be above the level of the surrounding fields. Upon such a mound a bamboo frame is thrown, which is wall and closely thatched with paddy straw. The ice is collected in tanks or ponds, which the proprietors of the ice-houses take care to keep duly filled with water during the winter season. When the ice is of sufficient thickness they collect it; and, as it is brought in, each layer is covered with dry straw, and in this manner the ice is preserved during the whole summer. Each house has its own drain, to draw off the water formed by the melting of the ice. The article is not used in Ningpo for domestic consumption, but solely as an article of luxury, such drinks as wine of the month of cooling the beverage. ... [illegible] ... like ... more ... to enter ... rise ... two or three ... this may ...

...ble month for forcing ... will be later than they were last ... for this, hardy plants, such as Lilacs, ... backward than usual. We have ... for flowers, and in this cloudy weather much ... watering and syringing is necessary. It is a dangerous ... practice to force hard wood after the end of December; for with ... heat is high enough for any useful purpose until that ... *D. B.*

—NEW FLOWER GARDEN AND GREENHOUSE PLANTS.

Gardeners' Chronicle.

I have been frequently upbraided during the autumn for not having mentioned some new plants which are likely to prove useful for flower-garden purposes; the opinion of country gardeners appearing to be that, because I occupy a post near town, I must of necessity see something among new plants which may do for bedding out. Verbenas abound, I imagine, will make an exceedingly fine bed, provided it can be depended to flower liberally; and as it seeds freely, there will be no difficulty in procuring plants. The plants should be planted out about the time of turning out, as it is from that period I should think it generally blooms. Pentas carnea is a pretty plant, which much is expected by some cultivators; but being from tropical Africa, it is very doubtful whether it will make a good bedding object in very warm and favourable situations. It is very readily propagated by cuttings. Eschscholtzia macrophylla, being yellow, will be useful, either for a large bed, or planted down for a small one; it will require a rather poor soil to make it flower profusely. Alona ericoides, a plant which will probably be better known as the new shrubby Nolana with double flowers, will make a fine bed, but of its culture I can say nothing at present. The dwarf Phloxes, of which we have now so nice a collection, will be much in demand next season; but the plants in which I place the greatest confidence for a new feature in the flower garden, are Mr. Girling's Petunias, and others which have been noticed during the season in this Paper; some of them are exceedingly beautiful.—*W. P. A.*

IV.—PINERIES, VINERIES, &c.

Fire-holes.—The roots of Vines cannot be allowed to stop growing for want of heat, without receiving injury. It appears that they cannot remain stationary, but must be either advancing in growth or decaying. Sufficient bottom heat should be maintained to keep them slowly advancing through; but the ... from 55° to 65° will be found to maintain the fruiting ... plants. If they be kept in steadily maintained, and ... roots kept rather dry than moist, they will be kept in a healthy state through the winter, which is a great desideratum ... growing.

Examine, in starting Vines by means of fermenting matter, ... within the house. A considerable proportion of leaves should ... mixed with the dung, to prevent the steam from the latter ... discolouring the rafters and shanking; or if the vapour is ... likely to be too strong, a thin covering of old mats will prevent ... injurious effects. Should the weather continue mild it ... will be necessary to open the ventilators, so that the temperature ... may not exceed 55° for the first eight or ten days. When some ... can be seen round the stems of the Vines by where the bedding ... will communicate, and keep the house moist, in order to prevent ... the stems from being dried up by the heat from the flues. In ... using manure to force Vines with fire-heat it is unnecessary to give ... air till the buds are ready to expand their first leaves. Syringing ... must be resorted to whenever the ... in red. ... If the roots are outside of the house, and there is the ... of one inside at command, ... sufficient to keep up the ... of which will be very evident ... the Vines inside.

Peach-house.—It is not uncommon to see many of the buds of healthy trees drop off in a dry withered state, just after the ... has commenced. I will not say the border ... too ... dry is the sole cause of this, but I believe it is often the cause. ... If the lights have remained on the house during the autumn, ... look to the state of the border, and give it a sufficient watering. ... Keep the shoots moist by the frequent use of the syringe; it ... will rarely be necessary to give air during sunshine at this ... season, till the blossoms are nearly expanding. Lay the outside ... border ... covered with litter.

Vines, Peaches, and Figs in Pots.—These should be plunged in old tan or leaves, either in an open shed or in some warm ... situation. Old leaves are ... for ... protecting the roots of plants in pots from frost. Set them ... ... or three inches above the rim of the pots, and covered over with litter or ... [illegible]

V.—EARLY FRUIT AND KITCHEN GARDEN.

Pruning and Training.—These operations in ... favourable weather ... [illegible] ... the trees were suitably ... [illegible] ... until the spring of winter shall have ... [illegible] ... of tardant trees should be cut in pretty ... [illegible] ... the leading shoots considerably short- ... [illegible] ... rather than quantity is aimed at; Gooseberries ... [illegible] ... in a similar manner, if the profusion of wood ... [illegible] ... ving the fruit produced chiefly on the young ... [illegible] ... the small spurs on wood of two or three years' ... Apples and Pears against walls should have their ... [illegible] ... kept as near the wall as possible, not only ... the height of the wall, and prevent the unsightliness ... long, rampant, overgrown shoots, but also the ... of ... sized, well-coloured fruit. Attention to this ... ... production of healthy trees when grown ... will furnish a good lesson on this subject. In the case of ... some of our best sorts of Pears, which have a tendency to form a ... blossom-buds at the end of short spurs of the previous year's ... growth, care should be taken to shorten in the young shoots, ... and, if long enough, to fasten them close to the wall. Peaches ... may be pruned much the same as Pears, only the best fruit is ... usually produced on wood of two or three years' growth, ... and ... to a little ... every season. ... Those ... [illegible] ... very apt ... to ... shoots too short, ... [illegible] ... Trees, especially ... young ones, ... [illegible] ... by the summer, and ... made to ... [illegible] ... Comparatively few ... will be ... [illegible] ... alternately with a shoot ... [illegible] ... the shoot; or if the ... [illegible] ... [illegible] ... [illegible]

native vegetation may be recorded as a later period in the spring. Where thin tiles had been placed on part of the border near the wall, for the radishes to rank, and keeping the border moist, they may be removed, the trowel then from being broken by frost or the performing various necessary operations; or if not considered too valuable, and if the draining was very defective, they might be bedded in clay, &c., to throw the water off the border. In extreme cases advantage might be taken of the very useful plan advised for Vine borders in the forcing department of the Calendar a fortnight ago

Shallots, Garlic, &c.—I generally find that these thrive best when planted about this season. The ground should be well trenched, and a place chosen where none of the Onion tribe had been grown for some time. Many failures arise from planting them too deep. They should merely be fixed on the surface, and then sprinkled over with a mixture of soot, lime, and ashes. The smaller variety is most prized by cooks generally; the large sort is easier grown and produces more abundantly, but its flavour is not reckoned so fine.

Peas and Beans.—Make a first sowing of Prince Albert Pea, and Mazagan Bean, and sow them or other approved sorts again about the beginning or middle of next month. Those sown now will be useful if the weather should be favourable and though they be cut down by frost it will only be the loss of the seed. Sow upon the breast of well-drained ridges, so that the young plants may be defended from east and north winds. Cover the seeds with chopped furze, Barley chaff or sharp sand, as a protection from mice.—*R.*

VII.—COTTAGERS' GARDENS

For those who are desirous of forming new plantations of Gooseberries and Currants, which should be done every six or seven years, young plants being found to produce more handsome fruit and also more plentifully than old ones, I would recommend from among the many varieties now cultivated, the following; viz., Yellow Sulphur, good and very early, but does not last long. Red Champagne, Taylor's Bright Venus, Pitmaston Green Gage, Red Warrington, Woodward's Whitesmith, Melling's Crown Bob, Harrow's Roaring Lion, and for preserving, the small Rough Red Of Currants, the Black Naples, Red and White Dutch and Knight's Large Red. In light soils, as soon as the present rainy weather shall have cleared off, and the ground become somewhat dry, the above may be planted with greater advantage than in spring. In preparing the ground let it be trenched to the depth of about two feet, thoroughly mixing with the surface spit a liberal allowance of manure or rich compost. About 5 feet square may be considered a proper distance at which the plants should stand in the rows. The pruning of Gooseberry and Currant bushes may now be proceeded with. Let the centre of the bushes be kept free and open, cutting clean off any strong shoots that rise from that part. Cut out all branches that cross one another, leaving the leading shoots about 10 inches apart, and tending at a kind inclining to the open space. All lateral twigs not required to form branches should be spurred in to a few buds. Black Currants require no pruning except thinning out the branches a little, when the bushes have become large and thick of wood. Plants in pots, &c. should not be watered in winter until they are quite dry, and then all the soil in the pots should be thoroughly wetted. If the pots are well drained, the soil will only retain a certain quantity of water, and if that quantity is not sufficient, a portion of the soil at the bottom—where the roots generally cling—will become too dry. The plants then linger for a time, and ultimately perish for want of sufficient moisture, and yet the soil may appear wet enough on the surface. All plants require this treatment during winter, whether evergreens or deciduous, whose roots require only to be stored in damp sand or light earth, when these are stored in a dry material they sometimes suffer too much.—*J. McH.*

State of the Weather near London for the week ending Nov 21, 1844, as observed at the Horticultural Garden, Chiswick

Nov	Barometer At 9	Max	Min	Thermometer Max	Min	Mean	Wind	Rain
Frid.	15	29.678	29.630	50	45	47.0	S.W.	—
Sat.	16	29.287	29.191	49	42	45	S.W.	—
Sun.	17	29.288	29.230	49	46	47.0	S.W.	—
Mon.	18	29.215	29.142	52	41	46.5	S.W.	—
Tues.	19	29.177	29.143	55	41	48.0	S.W.	—
Wed.	20	W. 2.4	29.11	56	40	48.0	S.W.	—
Thurs.	21	29.304	29.241	49	40	44.5	S.W.	02

Nov. 15. Generally cloudy; overcast and dull; slight rain at night.
— 16. Hazy and very mild; rather cold; the moon remarkably bright at night.
— 17. Hazy; uniformly overcast; hazy.
— 18. Uniformly overcast and mild; hazy; very mild at night.
— 19. Overcast; hazy; densely overcast.
— 20. Hazy, fine; very dark; clear at night; slight rain at night.
— 21. Foggy; fine in forenoon; afterwards very dense fog.

Mean temperature of the week 6 deg. above the average.

State of the Weather at Chiswick during the last 20 years, for the corresponding week ending Nov. 23, 1844.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest quantity of Rain	Prevailing Winds
Sun.	47.5	33.4	41.0	6	0.41 in.	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1
Mon.	48.3	32.3	40.3	8	0.24	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1
Tues.	48.4	32.5	40.4	6	0.23	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1
Wed.	48.2	31.8	40.0	10	0.28	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1
Thurs.	48.2	32.0	40.1	11	0.5	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1
Fri.	48.1	32.2	40.2	11	0.46	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1
Sat.	48.0	32.2	40.1	11	0.41	S. 2, S.W. 3, W. 1, N.W. 2, N. 2, E. 2, S.E. 1, Var. 1

The highest temperature during the above period was on the 7th 1834—the lowest was on the 26th 1840—the greatest fall of rain on the 27th 1841—the greatest number of days on which rain fell was 11 in 1841.

Middleton Correspondents

Rick Mysteries by our Cambridge Contributor.—Many of the Readers advertised last week having been since added to, we repeat the list of those which may still be had. Any subscribers who will forward to our publisher Post-office stamps equivalent to as many Numbers as are required, shall have them sent:—

1841.—3, 6, 9, 13, 14, 16, 20 17, 18, 21, 22, 23, 24, 25, 27, 28, 29 30, 31, 33, 34

1842.—4, 5, 8, 11, 15, 20, 23, 42, 50 51, 52, 53.

1843.—5, 10 11 12 13 14, 15 16 17, 18, 20, 21, 22, 24, 25 26, 27, 28 29 30, 31, 32 33, 34, 36, 37, 38 40, 41, 43, 45, 48, 49 51

1844.—All the Numbers for the present year; but parties are requested to complete their sets forthwith.

American Blight.—*R. Pye.*—Camphorated naphtha will completely destroy the pest if applied with perseverance.

Books.—*M. N.*—The most useful system of Botany for Gardeners is, beyond all comparison, the Natural. Begin with Lindley's "School Botany," or Francis's "Favourites of the Flower-Garden," noticed by us at p. 30.——*A Visitor.*—Mills on the Cucumber.——*An Amateur.*—Sweet's "Greenhouse and Hothouse Cultivator."——*J. A. F.*—If you will favour Mr Curtis, of Boyle, Middlesex with your address, he will answer your inquiries.——*A. S.*—It is customary.

Boronia pinnata.—*George Matthews.*—Place your plant in an airy situation, and syringe it once a week with nitre dissolved in water, at the rate of 1 oz. to a gallon: if this does not destroy the mildew, dust the plant slightly over with flowers of sulphur.

Calceolarias.—*F. N.*—Standish's Eclipse, and Standished, Harper's Bridesmaid, and Landtaker; Green's Prince Albert, Sulphurea Superba, Miss Antrobus improved, Zebrina, Alba speciosa maxima, Royal Standard, Mary, and Widmer's Prince of Wales.

Cherries.—*Dodman.*—Several of Bottner's Cherries have fruited in this country; one is entirely yellow; another a Black heart, a very abundant bearer; and his October Morello is smaller, but much later than the common Morello. The Black heart, Kentish, and Black Eagle, are sorts likely to succeed in your soil. Others may be tried when you improve it.

Cineraria.—*F. N.*—Beauty of Wortham, Black Knight, Captivation, Red Rover, Regina Victoria, and Henderson's No. 7.

Decayed Leaves.—*W. K.*—Tree leaves from plantations where the ground is full of Dandelion, Ragwort, Chickweed, and other troublesome weeds, will, of course, swarm with their seeds; and although the steam may be now getting hot, such seeds will not be destroyed. You had better add gas water to the heap; this will produce a violent heat, kill the weeds, rot the leaves, and improve their quality as manure.

Falling Leaves.—*Hibernicus.*—A couple of people were to collect the falling leaves, and let them lie in water till entirely decayed, the liquid would be beneficial for watering plants with; more especially if there damp water that the leaves are left in.

Fish Ponds.—*E. W. M.* enquires whether Poplar leaves can affect Fish Ponds injuriously. His keeper complains of the loss he sustains in the stews at this season, and thinks the Poplar leaves which fall in most be the cause of the mischief. Will any learned Ichthyophilus enlighten him?

Fruit Trees.—*Dodman.*—Your trees will not produce well flavoured fruit on cold, wet, clayey soil, whilst they remain planted in the usual way on the natural level. In a similar case, however, great improvement has resulted from the ground being formed into beds raised considerably by soil from large intermediate trenches. The beds may be about 15 feet in breadth, and the width of the trenches 5 feet.

Fuzzes.—*Lancastriensis.*—"J. D." was an anonymous correspondent, and we have no means of communicating with him.

Gamboquia Hookeri.—*A.*—The brown spots on the leaves of your plant are caused by damp. The only way to prevent this is to give your greenhouse plenty of air in sunny days, and a little fire-heat at nights, in cloudy weather.

Gennaria Zebrina.—*A Constant Reader.*—This plant sometimes drops its flowers without any apparent cause, but it would appear that yours requires more heat and more moisture to bring the flowers to perfection. The plants which you received in bloom from your friend had doubtless got a check on being removed.

Gooseberries.—*A Young Beginner.*—The following are some of the best early and late varieties.—Red Champagne (Keen's), Seedling Warrington, Red Warrington, Leigh's Rifleman, Melling's Crown Bob, Red Turkey, Rough Red, Yellow Champagne, Early Sulphur Rumbullion, Glenton Green, Pitmaston Green Gage Massey's Heart of Oak, Woodward's Whitesmith, Taylor's Bright Venus, Early Green Henry, Rob Roy, Knight's Large Red. Currant, is a preferable variety.

Heating.—*Inquirens.*—It is not possible to make the air inside a propagating house as suitable for cuttings when they are first taken off as the inside of a bell glass or hand light. The soil or sand in which cuttings are placed, will not receive as much water from setting the pots on an inch of sawdust, placed on slate over a tank, as they will from being plunged up to the rim in the same situation. Of all materials for this purpose, sawdust is the worst.——*A Disciple.*—Blue clay will not make water tanks tight, except in a very imperfect manner, and if you attempt to heat such tanks, you will, among other evils, find your boiler choked up presently with mud. At p. 394 of this year, you will find a receipt for a cement which it is said will not rot cotton. Your correspondent asks, if anybody in Ireland has adopted the tank mode of heating?

Herbaceous Plants.—*An Old Subscriber.*—The following flower in April and May, viz.—Anemone palmata yellow, height 4 inches; Cheiranthus ochroleucus yellow, 6 inches; Helleborus purpurascens, purple 9 inches; Arabis grandiflora, white 6 inches; Alyssum saxatile, yellow, 6 inches; Iberis sempervirens, white 6 inches; Silene pendula grandiflorum purple, 9 inches; Epimedium grandiflorum light pink, 4 inches; Primula cava, white, 8 inches; Phlox nivalis, white, 3 inches; Primula grandiflora, purple 1 foot.

Hybridising.—*J. H.*—The anthers are the male part of the Fuchsia, and the stigma the female. Fuchsias are not unisexual, except in the instance of Fl. cylindrica.

Insects.—*J. S. A.*—You should have fastened the cork in with a wafer or sealing wax to prevent its crushing the animal, which is a Podura but the species we cannot name. *R.*——*J. L.*—Your Wheat is infested with the Polydesmus complanatus. We must refer you to the *Gardeners' Chronicle*, vol. i. p. 198 and the "Royal Agricultural Journal," vol. v. p. 380, where you will find all that is known concerning its economy, &c. *R.*

Ivy (Hedera Helix Arborescens).—*A Correspondent.*—Stopping at every joint is practised only whilst the plant is young, in order to make it bushy, and when an abundance of stems are thus produced—the flowers being terminal—stopping, of course, must be discontinued for some time previously to the period when it is desirable to have the plant in flower.

Lithography.—*J. Ansell.*—Your flowers are very curious. They are buds trying to bloom, or if you like it better, in a state of change into flowers. In this case the whole structure of the flower is broken up, and the *external scales of the flower are changed into anthers*—an extremely unusual occurrence.

Names of Pears.—*Apis.*—No. 5 St Germain, 6 Chaumontel; 7, 8, Passe Colmar; 9, Beurré de la Motte.——*J. H. Haycroft.*—1 Passe Colmar, 2, Colmar Meurens; 3, Easter Beurré.——*R. A.*—Hollandsbury.——*Mary Ann.*—No. 2 Gilbert Moreau, 4, 7, Bergamot Musqué, 8 Brewing Pear; 5 Beurré Ranee; 9, Alfriston; the other large Apple is the Blenheim Pippin.——*J. P. E.*—9, Hollandsbury; 2, Beauty of Kent, 3, White Russet; 4, Yorkshire Greening, 5, Cat's Head Beauties 6, Sloup Leadington; 8, Holland Pippin, 9, Herefordshire Pearmain; 10, De Neige; 11, Dutchelow's Seedling; 12, King of the Pippins, Mr Rogers's Russet; 15, Court Pendu Plat; 16, Yorkshire Beauty; 18, Stone Pippin; 19, Nelson Codlin, Forelock of Devonshire; 20, Northern Greening; 24 Court of Wick; 27, Marmalade, 28, Old Nonpareil; 29, Drayman's Russet; 31, Pavement Pear; 34, Spanish Bon Chretien; 37 Chaumontel; 38, Dredale's St Germain; 39, Trumpington, 21, 29, 37, are correct.——*E. B.*—Norfolk Pearmain.——*J. W.*—1, Dumelow's Seedling; 2, Ribston Pippin; 3, 26, Lamb Abbey Pearmain; 10, Waltham Cross Seedling; 12, 13, Kentish Bill basket; 14, De Neige; 17, London Pippin; 18, Easton Russet; 17, Hawthornden; 19, Dumelow's Seedling; 21 Bedfordshire Foundling; 22, Blenheim Pippin; 23, Scarlet Nonpareil; 27, Blenheim Pippin; 30, Alfriston; 31, Winter's Lord Nelson; 32 Autumn Pears.——1 Beurré de Capiaumont; 2, Beurré Bosc.——*E. A. B.*—1, Autumn Pearmain; 2, Knutsford Fillbasket; 4, 11 Blenheim Pippin; 5, Lamb Abbey Pearmain; 6, Norfolk Beaufin 10; London Pippin; 13, Royal Russet, 15, Yellow Ingestrie 17, Nonpareil; 19, Hawthornden; 21, Easter Pippin; 22, Cornish Aromatic 1, Swan's Egg; 3, Gloat Morceau; 9, Beurré de Capiaumont; 4, Maiden Blush; 5, Bourré Rance; 6, Black Worcester; 7, Crassane.——*E. V.*—Your Apple is not the Old Golden Pippin; it is the Reinette Dorée. The other's the Golden Noble.

Names of Plants.—*Elsie.*—A female Yam, and hardly different from *Dioscorea sativa*.——*J. S.*—Some Malvaceous allied to *M. pilosa*.——*Vestal and J. H. H.*—Plants out of flower cannot be named.——*Constantia.*—1, Carlina acaulis; 2, Veronica agrestis; 3, Juncus pentiandrus.——*W. Hardie.*—1, Unknown to us; 2, Epidendrum cochleatum; 3, Oncidium Lanceanum; 4, Epidendrum (?).

Pears for Walls.—*Q. S.*—For a south aspect, Beurré Marie Louise, Jargonelle, Bacon's Incomparable, and Beurré d'Aremberg, the latter for stewing. For east or west aspects, Grand Morceau, Passe Colmar, Winter Nelis, Knight's Monarch, Comparable, Beurré Bosc, Beurré Diel, and Glou Morceau.

Pelargoniums.—*K.*—In shallow pans, in frames, which are kept in small pots during winter. It is much better to shake the greater part of the soil from their roots, than to pot them with the old ball entire.

Primula.—*T. W.*—Your seedling Primula is very pretty, but it possesses no peculiar merit to make it desirable for general cultivation; it is one of those pale-coloured sorts that every summer of seedlings is sure to have.

Rhododendrons.—*W. S.*—If you place your common Rhododendrons, which were only worked last August, on a hotbed in next March, you will be very likely to force them, and particularly if the stocks on which they are worked (which were not well established) be potted. Your best plan will be to place them in a moderately warm greenhouse, and allow them to start gently, for if you do not do this all the forced growth obtained by heat during March will be the ruin of the after health of the plants. Syringing and sprinkling should manure, or excite them to premature growth, as I propose, since you intend finally to plant them in the open air.

Vines.—*A Constant Reader, and A Beginner.*—It is impossible to have good Grapes unless their roots have proper space for strength and air. They are under the same circumstances when they are planted to a great depth. Border where the Vines in pots and yet clayey loam 2 feet deep, and in the room prepare a heap of this stuff must be made use of, and a compost for the outside borders thoroughly mixed with it, and then rubbish with it, so as to loosen it thoroughly, and bring the roots to the very surface. It is necessary to add lime, and not to grow Grapes without it. Your Vines in pots must be kept in the driest place possible during winter, with just enough water to prevent the wood from shrivelling

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The Agricultural Gazette.

SATURDAY, NOVEMBER 23, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS

Wednesday, Nov. 27—Agricultural Society of England
Thursday, " 28—Agricultural High Sheriff of Ireland
Wednesday, Dec. 4—Agricultural Society of England
Thursday, " 5—Agricultural High Sheriff of Ireland

PATRIOTIC CLUBS.

Nov 28—Chelsea | Nov 29—Ravel ist
Nov 30—Framlingham | Isle of Thanet

Our readers are doubtless well acquainted with the theory propounded of late years by Professor Liebig, to account for THE PHENOMENA OF ANIMAL NUTRITION. A number of facts occurring, not only in the natural history of our own species, but also in the every-day experience of the stock farmer, which till then had been very imperfectly understood, have been satisfactorily explained by it. The process of fattening, in particular, in dependence on the circumstances in which the animal is placed, and on the sort of food given to it, has thus been illustrated by a consideration of the absolute composition of that food—for a knowledge of which we are indebted to the processes of chemical analysis—and by a consideration of the influence of warmth and comfort on the sources of waste within the animal frame.

Setting aside their mineral ingredients, Professor Liebig arranges the proximate elements of all sorts of food in two classes—the one containing gluten, albumen, casein, legumin, which are in fact different names for the same substances, according to the source whence it is derived, and which are, moreover, all identical with animal fibrine, the basis of muscle or flesh—and the other consisting of sugar, starch, &c., substances containing much carbon but no nitrogen, the element which is characteristic of the first mentioned series. After digestion, it is believed that all gluten, albumen, &c., in the food simply pass from the vegetable structure, where they existed, into that of the animal, without any chemical change taking place on them—that, in fact, so far as this class of substances is concerned, nutrition is not a *chemical* process at all. With reference to the second class of substances, again, it is believed that they are simply fuel for the preservation of animal heat, to be burnt in the lungs, and the circumstances—artificial warmth, &c.—which render but a small quantity of fuel, *requisite* for this purpose, being precisely those which render the combustion in the lungs of only a small quantity of fuel *possible*, that any surplus material, of this class, which under such circumstances may occasionally occur, undergoes in the body a chemical change with combination with certain elements always to be found there, and assumes the form of fat. Excepting the results of some lately published experiments in France, the hitherto recorded facts bearing on this subject, which have been examined, prove in this manner a very satisfactory explanation to be indeed applicable. Playfair showed, in his able lectures before the Highland Agricultural Society

The second part of Liebig's theory—that which relates to the formation of fat—has been objected to, we believe, from the first by Mr. Dumas and other French chemists; and the results of experiments we have just alluded to, which are published in the last number of the Annales de Chimie et de Physique, are also so much opposed to it, and so important in many respects, that we hasten to place them before our readers.

It is asserted by the French chemists that nutrition not only with reference to the formation of flesh, but in respect to the fat also, consists simply in the shifting to their positions in the animal frame of elements already perfectly formed in the vegetable—that is the fibrine of the animal exists as gluten or legumen, &c. in the vegetable, as animal fat is obtained from the fatty matter occurring in most vegetable substances. They altogether deny the formation of fat out of the surplus sugar, starch, &c., which we have already referred to as fuel for the lungs; and their denial is founded on facts similar to the following:—

With the view of determining between the rival theories, M Boussingault subjected two milch cows to three different descriptions of diet in as many successive fortnights, or in periods of about that duration. They weighed at the commencement of the first experiment, 1262 lbs. and 1280 lbs respectively They were then put on a diet of Mangold Wurzel alone for 17 days, during which they ate 2321 lbs and 2477 lbs. of this root, and yielded 26 and 27 gallons of milk respectively The following is the composition of the milk —

	1st Cow	2d Cow
Cheese	3 67	3 81
Sugar of milk	5 49	5 74
Butter	4 86	3 44
Alkaline chlorides	0 43	0 46
Phosphates	0 28	0 26
Water	87 73	86 23
	100	100

The excrements of these cows during this period weighed 574 lbs, containing 91 lbs. of dry matter, and 3 3 lbs. of fatty matter The cows, towards the end of the experiment, daily lost weight, and became much emaciated, they weighed at the end of 17 days 1175 lbs and 1188 lbs respectively Mangold Wurzel, M Boussingault had by previous analysis found to contain $\frac{1}{1000}$ part of fat, and 0021 of nitrogen, 00046 of phosphoric acid The following, then is a tabulated statement of this experiment.—

	lbs	Fatty matter lbs	Cheese, albumen &c lbs
Two cows have given—milk	460	17 20	17 2
" " dry excrement	91	3 3	undetermined
Fat matter in the products		0 93	
Mangold Wurzel consumed	4798	4 8	
Fat unaccounted for		10 49	

Weight of cows at commencement 2512 lbs
" " termination 2301 "
Loss of weight during the period 179 lbs

Supposing, as we are bound to believe, that the quantity of the starch, sugar, and other carbonaceous elements in the roots, were present in quantity abundantly sufficient to supply the respiratory organs with fuel, then the fair inference from this experiment is that the cows, not finding in their food a sufficiency of fat to supply the butter of their milk, &c, and being *possessed of no power to convert starch, sugar, &c., into fat*, were forced to draw upon that already deposited in their own tissues—hence their loss of weight The animals, M Boussingault informs us, were so emaciated that he was forced to put them for three or four days on their original food, hay, before he could venture to proceed further with the experiment

At length he placed them and kept them for fourteen days upon a diet of aftermath hay, and of this experiment we shall at once tabulate the results, without making any preliminary statement The aftermath was found, by analysis, to contain 3 5 per cent. of fatty matter, 0012 of nitrogen, and .0031 of phosphoric acid The quality of the milk from the two cows during this experiment was as follows:—

	1st Cow	2d Cow
Cheese	3 65	3 65
Sugar of milk	5 45	5 94
Butter	5.92	4 30
Alkaline chlorides	0 45	0.53
Phosphates	0 27	0 29
Water	86 27	87.30
	100	100

The following are the results of the fortnight's experiment on the hay diet:—

	lbs.	Fatty Matter lbs	Cheese, &c lbs
The two Cows gave—milk	261	10 34	11 66
" " dry excrements	107	1 12	
Fat matter in the products		11 46	
Potatoes consumed	2367	0 73	
Fat matter unaccounted for		8 73	

Weight of Cows at commencement 2350 lbs
" " " termination 2288 "
Loss of weight during the period 72 lbs.

Here, again, where the fatty matter supplied in the food exceeds that required for the milk, &c., it is deposited in the tissues of the animal, and we accordingly find that the cows have almost regained their original weight.

The following is a tabulated account of the third experiment, which lasted 14 days, during which the cows were fed only on Potatoes.

From three analyses of the Potato, M. Boussingault concluded that it contained 002 of fatty matter, 0037 of nitrogen, and 00109 of phosphoric acid.

The quality of the milk during this period was as follows:—

	1st Cow	2d Cow.
Cheese	4 87	5 00
Sugar of milk	3 09	4 00
Butter	3 97	4 62
Alkaline chlorides	0 55	0 55
Phosphates	0 27	0 27
Water	87 75	85 57
	100	100

	lbs.	Fatty Matter lbs	Cheese, &c, lbs
The two Cows gave—milk	261	10 34	11 66
" " dry excrements	107.	1 12	
Fat matter in the products		11 46	
Potatoes consumed	2367	0 73	
Fat matter unaccounted for		8 73	

Weight of Cows at commencement 2350 lbs
" " " termination 2288 "
Loss of weight during the period 72 lbs.

Here, as in the first experiment, we have a loss of weight which can only be accounted for on the principle there stated, that the cows were forced by lack of fat in the food, to draw upon the stores in their own tissues, at the expense of their weight. These results are apparently opposed to that part of Professor Liebig's theory, which endows animals with the ability to form their fat out of any excess of the carbonaceous elements of their food

As M Boussingault says:—"These experiments evidently show that Mangold Wurzel, as Potatoes given alone are insufficient for the proper nourishment of milch cows even though they be given abundantly, one might almost say *ad libitum*, since very often the cows left portion in their mangers

"A diet may be insufficient for several reasons:—1, If the food does not contain such a quantity of nitrogenised matter as may serve to replace the matters equally nitrogenised, which are constantly wasting from the body; 2, if it does not contain the carbon necessary to replace that which is burnt in the act of respiration, or carried off in the secretions; 3 if it be not sufficiently charged with the salts, particularly the phosphates, necessary, moreover to the economy these same matters which are continually expelled, and 4, it appears from our experiments that food will be insufficient, if it be not rich enough in fatty matters, to supply those which are carried off in the milk and other secretions."

Referring to his experiments, he adds, "The facts I have collated will doubtless receive many explanations, but that which appears to be the most natural, consists in admitting that the food of herbivorous animals ought always to contain a certain quantity of substances analogous to fat, destined to assist in the production of the fatty tissues, and bile which contains fat in considerable quantities If notwithstanding the insufficiency of their diet in this respect, cows should continue to give the same milk, &c., as they yielded under a complete alimentary *régime*, it is because they elaborate these secretions at the expense of their own fat. Possibly, for a limited time, cows may continue, under such circumstances, to give the same number of gallons of milk, the quantity will not diminish sufficiently, but each day also, as I have proved, they will lose 4 or 5 lbs of their own weight; and if we persist in administering an *incomplete* diet, however *abundantly* it may be supplied, they will ultimately become so emaciated as to endanger life"

ON THE FARMER'S DUNGHILL.

I AM not about to offer a solution of the most difficult problem in agriculture, but only to state a fact in proof of the great importance of having a practical answer to the practical question—How must I make a dunghill? I have attempted to estimate the quantity of carbonate of ammonia which escapes into the air during the fermentative process of converting farm yard manure into a suitable compost for land. The value of the manure lies chiefly in the nitrogenous substances which are retained in it, and it is deteriorated in proportion to their escape. The quantity lost may be estimated by the following experiment:—If a slip of glass, about 3 inches by 1, be moistened with 2 or 3 drops of hydrochloric acid (spirits of salt or muriatic acid) spread uniformly over 2 inches of its surface, and then be held in the vapour arising out of a dunghill, its acid surface being downward, it will be found that in the minute a portion of carbonate of ammonia, amounting to $\frac{1}{1000}$ of a grain, has been fixed by the acid, and converted into a hydrochlorate of ammonia. Upon evaporation over the flame of a candle, the feathery crystals of the salt will be immediately recognised under the microscope.

Now, every 2 inches of the surface of the dunghill offering an escape to an equal quantity of ammonia, it follows that every square yard of surface loses every minute at least 8-5ths of a grain of this carbonate, and every day about 2 ounces. If the hot fermentative process be continued for a month, each square yard will, at

[illegible] the use of this valuable [illegible] will not be taken too [illegible] it in [illegible] the dunghill, during the [illegible] position, to [illegible] evolve at once [illegible] square [illegible] that upon the [illegible] there will be a loss of [illegible] commercially, a [illegible] of what would suffice [illegible] with every pound [illegible] evaporated, a loss of 60 lbs. of [illegible] *Agricultural Chemistry*, page [illegible] the accuracy of the Professor's [illegible] account between Corn and manure, [illegible] and I will give any one all the Wheat I grow if I will [illegible] grow all that I lose. At all events, the [illegible] of getting our volatile friend into "a fix" is most [illegible], and for this *purpose* we may use with advantage both gypsum and sulphuric acid. On making the dunghill in the *first* instance, and when subsequently turning it over to *accelerate* fermentation and decomposition, it will be advisable to strew a thin layer of gypsum after every rise of 2 feet of manure. And ultimately we may pour on the top as many pounds of sulphuric acid, diluted each with a bucket of water, as there are single horse-loads in the dunghill. I can state, as the result of experiment, that this application of dilute acid [illegible] effectually checks the evolution of vapour and the escape of ammonia, and consequently, at a very small cost, it improves the agricultural value of the manure, and therefore tends to secure what Liebig holds out as the reward of good farming—"the best possible crop every year."—*J. B. Neade, Stone, Aylesbury.*

THE RELATIVE POSITION OF AGRICULTURE.

Everything connected with Agriculture seems anomalous. Agriculture and Manufactures, Trade and Commerce, are really bosom friends. Still they appear to be sworn enemies—a gulf of non-communication yawns between them; they are like a chain in two parts, wanting a connecting link to render it available. The connecting-link in the disunited chain must be "Capitalised Companies for the Improvement of Agriculture."

Agriculture and manufactures are not antagonistic interests, but the reverse. They are as essential to each other as the limbs to the body—[illegible] of the one must be sympathised in the other. Agricultural production is the [illegible] of [illegible]. [illegible] is food which [illegible] incomprehensibly [illegible] to us, and [illegible] for a day, is the misery of [illegible] The [illegible] of [illegible] bringing in Returns [illegible] The precious metals or credit [illegible] the [illegible] between them. It is a well-established [illegible] that there is in trade, manufactures, and commerce, a superabundance of capital, whilst in agriculture it is sadly deficient. Ask an improving landlord or [illegible], why their various improvements are so [illegible] and temporarily checked—they will say, not [illegible] for [illegible] sufficient command of money to [illegible] talented and spirited agriculturists [illegible] and restricted by the want of that capital [illegible] abounds as scarcely to [illegible] consequence forced into rash [illegible] of interest to loans to foreign nations, with whom we may be to-morrow at war, and who now injure us in trade, &c.

In agriculture there are few or no bills of exchange, or other means by which an honest and industrious man may trade on the capital of his wealthier neighbour. In trade, commerce, or manufactures, the abundance of capital permits all the advantages of an extended credit. In agriculture but few such facilities exist. It is the want of capital that causes so much fat [illegible] but of agriculture, labour. A good farmer will readily admit, that every item of labour pays a profit, and that the more labour he employs the greater is his advantage. But [illegible] Where is the money to [illegible] Who's to find it? Tis [illegible] long mouths, at [illegible] to be returned to him.

[illegible] very best of capital when employed, but we [illegible] it with money payments, nor [illegible] without money payments, by means of [illegible] and [illegible] the industrious [illegible] to [illegible] but inconsistently enough, pay [illegible] pence of [illegible] to restrict [illegible] on his non-employment [illegible] I mention these matters as strong [illegible] necessity of applying the [illegible] to the improvement of agriculture. A man [illegible] of ground, has a stake in the [illegible] and poverty all [illegible] employment and comfort [illegible]

Self-interest [illegible] question, but the [illegible] general welfare [illegible] to those counties—Lincolnshire [illegible] and Essex a pig or a cow, [illegible] being [illegible] As a natural consequence, [illegible] education; and their [illegible] of those without either cow, pig or land; [illegible] half-a-crown or seven or eight shillings per week. The comparative criminal records of these districts would be instructive. The condition of the cottager is the true [illegible] a true index to the character and position of his employer. Want of employment, under any circumstances, is injurious to the community at large. Too much thinking, and too little muscular action, is prejudicial to the working classes, and positively dangerous. Non-employed individuals [illegible] but, as they produce no food, they [illegible] of the industrious—this is an [illegible] one, felt but not seen.

Let us inquire why [illegible] to every foreign loan or [illegible] scheme—why [illegible] give strength to foreign [illegible] and to weaken our own. We [illegible] in [illegible] and [illegible] for every object [illegible] in [illegible] to [illegible] the [illegible] to be because we do not [illegible] in our limited [illegible] to [illegible] [illegible] to improve the [illegible] [illegible] [illegible] [illegible] It is because we have no [illegible] and [illegible] channel for the profitable investment of surplus capital in agriculture [illegible]

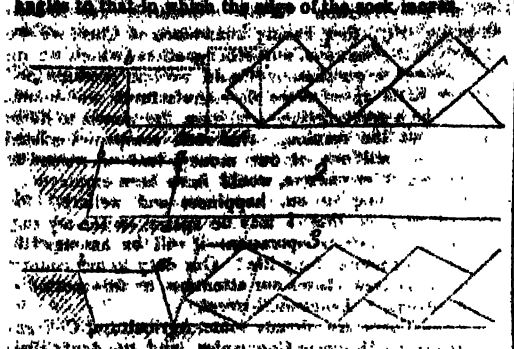
Ignorance and want of combination are at the root of the evil. Everything in this way is left to individual enterprise. As well might a single shareholder attempt constructing his portion of a railway, with all its complicated accompaniments! Imagine him attempting such an object, himself without experience, and unaided by all the various aggregation of talent necessary for the details of such an operation. The idea is absurd; and yet the scarcely less complicated operation of landed improvement is, up to this hour, left in the position I have described.

Ask a capitalist, why he does not invest his money in land or agriculture? He will look sternly grave, and quote a hundred instances where individuals have ruined themselves by such a course. So now he rushes into some foreign loan or project, to the great injury of his own countrymen, fearful of the "law's delay" in conveyance with all its multifarious objections, *pro* and *con*, most likely alarmed by the rumoured fate of some friend who, having at last got his estate, knows nothing about the management of it, and after struggling with incompetent tenants or designing ones—new leases, valuations, tormenting applications for repairs to the old dilapidated buildings, appeals for returns of rent, and a hundred other vexations, finds his rental reduced to 2½ per cent or less, sells at a loss, and retires from the contest in despair. His example is quoted, and his mishap magnified to a hundred other capitalists, who ever after, from father to son, shun the dangers of meddling with so disastrous an affair as landed investment.

As to agricultural improvements, why if a man has the courage to attempt it, he will at the outset encounter a host of doubts, prejudices, and obstructions—a hundred conflicting opinions as to the width, depth, distance, and materials of his drains will present themselves. Should he by good fortune settle this matter rightly, he is astounded with multifarious suggestions on subsoiling and courses of cropping, quantities and distances of seed, and state of crops for harvesting. As to artificial manures, a very host of nitrates and sulphates beset him in front and rear, with soot, salt, and guanos on every side. He turns pale at the perspective of lime and chalk. Undecided and bewildered by their contending claims, he is coolly told that a perfect knowledge of agricultural chemistry, geology, entomology, and botany, can alone enable him to decide correctly. Having pondered upon the respective merits of short horns, long horns, and no horns; Downs, Leicesters, Cheviots, Kents, and Cotswolders; and whether corn, cake, Carrots, or Colewoits, are most fattening—he hurries away to inspect a thousand complicated implements of agriculture, which it would require a life of mechanical education and skill effectually to appreciate and discriminate. In despair he gives up the contest, loses his money or dies, leaving no authorised version of the knowledge he has acquired, but bequeathing to the venturous few the same course of toil, trouble, doubt, and disappointment; but had he succeeded, his motives would be misrepresented, his facts disbelieved, and his character blackened by those who consider that agricultural ignorance is bliss, and that improvement opens the eyes of the landlord, to the injury of the tenant. Now all this might be easily obviated and prevented by a well conducted company, having practical directors, with proper engineers and officers. Do away with the law of mortmain as regards such companies. Let them purchase waste or poor lands—drain, clear, trench, crop, and let them. Let there be five companies, and their shares quoted at the stock exchange the same as railway companies. Their success would depend upon their abilities and results; and a man disposed to invest his money in agricultural improvement could, without any personal trouble, buy or sell his shares, or breathe them, without more [illegible] of gain them attends any other investment.

The importance of such [illegible] to the [illegible] community; all other [illegible] however [illegible] I consider secondary and [illegible] to our daily bread. [illegible] Let our city [illegible] and [illegible] agricultural [illegible] consume [illegible] and [illegible] Let them consider their [illegible] as they really are. [illegible] and [illegible] daily papers lists of Land Improvement Companies for every county in England, Wales, and Ireland, quoted on the Stock Exchange! How pleasant to read and compare the [illegible] and success of a hundred such companies, [illegible] of [illegible] [illegible] [illegible] [illegible]

right angles. On looking at fig. 1 and 2, representing sections of ploughed land, it will be seen, upon what the greatest surface will be exposed when the work is most regular. The smallest proportion of which a sod can be cut and turned in a right manner, we need, therefore, not at present enquire into; in order to insure this, the plane in which the coulter of the plough moves must, of course, be at right angles to that in which the edge of the sock moves.



I may state, moreover, without quoting the mathematical proof of it, that the greatest surface will be exposed when the turf lies at an angle of 45°, as in fig. 1 above, and that the turf will lie in this position only when its depth is to its breadth as about 7 to 10.—*M. S.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Culture of Potatoes.—The quantity of this valuable esculent grown in East Lothian is not very considerable, their culture being chiefly confined to the vicinity of the towns and villages where they are planted by a few farmers for sale, and by tradesmen and labourers. Potatoes are not cultivated to any extent as food for cattle; in the majority of instances they are planted merely to supply the farmer's own house; each hind also receives as part of his annual wages Potato-land equal to from 1200 to 1500 yards along a drill, or 5 bulls (2½ qrs.) of Potatoes in lieu of the ground.

Potatoes are generally taken after a crop of Oats, but they are also occasionally planted upon land newly broken up from *leas*, although this is an obvious violation of the principles of alternate cropping. The preparation of the land for Potatoes being in much respects similar to that requisite for Turnips, described in my last Paper, it is unnecessary to occupy much space in noticing the preparatory culture of this crop. The East Lothian farmers do not pretend to extraordinary skill in growing Potatoes, but they are all perfectly aware that the more effectually the soil is reduced and deprived of root-weeds, and the nearer it is brought to a state deemed sufficiently pulverised for Turnips, so much the more certain will be the prospect of an abundant crop. As in the case of preparing the land for Turnips, repeated ploughings, harrowings, rolling, and grubbings, are given to that intended for Potatoes; but the nature of the soil, and its condition in respect of weeds, form the only guide for determining how frequently these operations are to be performed. It is of great importance, and particularly so in droughty seasons, to get the soil as finely pulverised before planting the sets as possible, as it is well known that cloddy drills, however well rolled after being formed, considerably aggravate the evil effects of drought, besides diminishing the beneficial influence of moisture.

The usual period of planting is from the middle of April to the middle of May. When the ground is sufficiently prepared, and the proper time arrived, the drills are formed, precisely in the same manner as in the case of Beans and Turnips, but with this difference, that for Potatoes the drills are made about 3 inches farther asunder than for either of these crops. The manure chiefly employed is dung or compost, it is invariably carted out in the field during the previous winter, or early in the month, and in general ever to commence its fermentation, a week or so before being applied to the land. While the drills are being formed by the plough, the manure is carted from the heaps and equally distributed along the hollows of the drills. The sets are then placed at the proper distance—from 8 to 12 inches—apart upon the manure, and are immediately covered by the drills being split with a light coulter.

[illegible] with a view of destroying the seeds of weeds, and this practice is sometimes followed [illegible] but in most cases, where the soil is in a tolerably [illegible] the cutting of [illegible] they are planted and the [illegible] with [illegible] is also extensively employed [illegible] with the best [illegible] after being [illegible] of Grass-seed [illegible] appear [illegible] being performed [illegible] above the [illegible] have [illegible] Altogether, [illegible] hand-[illegible] Potatoes [illegible] the [illegible] by the [illegible] Potatoes [illegible] the [illegible] within [illegible] [illegible] [illegible]

good crop in their neighbourhood. The present sample is an average one, and was only kept by the bailiff of Mr. Shoreham's for his own guidance, and not for purposes of exhibition. There is a quantity of Wheat lately arrived from the colony, and more is expected. I will procure a sample, and forward a small quantity at Chiswick.—*Edward Sherwood.* [The ears are of average length, and exceedingly well filled; the grain—it is white Wheat—is of good sample.]

Sea Buckthorn.—The "Old Subscriber" is informed that the botanical name for Sea Buckthorn, or common Sallow Thorn, is Hippophaë Rhamnoides; he will find it mentioned in Loudon's Encyclopædia of Botany; or, Systematic Arrangement of British Plants, with some account of the uses, &c. &c. The soil may not be as it ought to be, if the plant does not take an interest in such matters, in the opinion of "A. D. B." will add that it is found on the sea-shore, in sand; at Lindisy Coast, Lincolnshire; Hunstanton, Deal, and Folkstone, Kent; Isle of Sheppy, Kent; and Sheringham Cliffs, Norfolk; between Whitby and Scarb, Yorkshire. It is very easily propagated by suckers or layers, or even by seeds. Rabbits do not disturb it; it grows to 8 or 12 feet high, and forms a handsome shrub, or even shelter to other shrubs that will grow in sandy soil by the sea-side. There have been several editions of "Withering's Botany;"—the last should be asked for.—*M. D. P.*

Guano.—I have had for many months guano and common salt in separate bags, standing a little distance from each other in my barn. The other day I had occasion to use some salt, and on breaking the lumps they smelled almost as strongly of the guano as the guano itself. How is this to be accounted for? The salt has evidently drawn to itself, and imbibed and retained the volatile matter of the guano; and this, I suppose, must render the salt more beneficial for agricultural purposes. —*Ultimator.*

A Few Hints.—1st. One of your correspondents has said that flukes in rotten sheep are only found in the liver, but I have seen them come from the uterus, with the lamb or yeaning. 2d. *Draining.*—Our country is capable of being improved more by drainage than by any other means; manuring is but a secondary article, compared with draining, and I calculate that there is in our part of the country enough draining required as would employ about the agricultural labourers for half-a-dozen years at least; and draining land, excepting the carriage of the material, is a landlord's business, and not a tenant's. It appears possible to double the value of some districts by draining, about which probably those neglected, undrained districts, amount to half the land in this kingdom. Another important part of the farmer's business, intimately connected with draining, is deep cultivation of the soil, as compared with the poor shallow cultivation now generally practised. Many farmers—cultivators of the soil—dare not plough up the least quantity of clay, or even marl; they have been taught that it is injurious, by their ignorant forefathers, and idle team-men are interested thus to plough shallow, to save their horses the harder labour. But I maintain that deep cultivation is what we want on all good land; and deeper cultivation, with good drainage, on all inferior clay-land. 3d. Mr. Morton, in his remarks "On the Culture of the Land for Wheat," (see p. 74), has hit the mark in every point; his remarks on this subject are exactly parallel with my own experience. I see in the *Gazette*, for March 2, 1844, Mr. Morton is comparing notes with Professor Low upon the farmer's invested capital; now, as the former of these gentlemen makes his estimate at 12*l.* per acre of the land occupied, and the latter gentleman's estimate is 6*l.* per acre occupied, I think if a third came in between, at 9*l.* or 10*l.* per acre occupied, he would be nearer the truth than either. But, after all, it may be set down as a well known fact, that too many of us farmers are sadly short of capital; and how and where shall we have it? is a very puzzling question. 4th. *Lime.* —The price here is about 10*s.* or 12*s.* per ton, and, at some of the cheapest works or lime-pits, 8*s.* It is common with us to use 3 or 4 tons per acre in lining of fallows, more in late years; and the best way to use it is to get it well mixed with the soil in the shortest time possible—in a fine dry state, both in the land and the lime.—*A Leicestershire Farmer.*

Hybridising.—As Horticulture and Agriculture are united in the *Chronicle*, I know of no better place to bring forward the subject of hybridising or crossing, as I conceive this is far better understood by the horticulturist than by those engaged in agriculture. I believe there are limits to the productive powers of the earth, but there is no limit to what may be done with the vegetables upon it, so as to assimilate the powers of the soil, more as it were to the use of man. Nearly all the varieties of Wheat, Barley, Oats, &c., are, I believe, accidental varieties. The real staple food for man is left, as it were, to chance, while luxury and elegance can produce almost any tint of colour, or description of taste they want. The greatest pains are taken by the gardener and florist to produce artificially new varieties of vegetables and flowers, and experience proves that this may be done to a great extent, and that species may be moulded almost to the will of the practised hybridiser. If, for instance, we had a variety of Wheat that would ripen two or three weeks earlier in the south of England than those we now possess, we might have an excellent crop of Turnips on the dry lands after it, and our stiff soils succeeded with the Cabbage tribe. Again, if a variety of Wheat could be found to grow and ripen at a higher elevation than any we now possess, it would take, in many places, the place of Oats, and the people in the north might have their Wheaten loaf, instead of Oatcakes and "Bannocks of Barley meal." I trust, therefore, experienced hybridisers, whether horticulturists or agriculturists, will join in this good work, which I think is rather too much neglected by our agricultural Societies, and the result will be to render service and duration to our country's happiness, by meeting the wants of our commerce and population. These remarks were suggested to my mind by hearing a landowner, at a meeting of many intelligent farmers, remark that the powers of the earth was limited like our own, and therefore it was of no importance greater things of it than we had already seen, and what he wanted to know was, how to make [illegible] like ridiculed theorists and German philosophers, unworthy of any confidence; and in all things now carried on.—*T. A. F.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Wednesday, the 6th of November. Present—[illegible], Esq., in the chair; F. Buller, Esq., [illegible], Esq.; H. Gibbs, Esq.; H. T. Baskerfield Green, Esq.; W. Fisher Hobbs, Esq.; Prof. Sewell; W. Shew, Esq.; J. Villiers Shelley, Esq.; and J. Towers, Esq.

The following new Members were elected:—
Turnston, John, Market-Weston Hall, Bealing, Norfolk
Morgan, William, Brampton Park, Huntingdon
Butler, Captain, Bowling Green, Faringdon, Berks
Hems, John, Seaa-Regard, Jersey
Drury, John George, St. George's-street, Canterbury
Perceval, Hon. and Rev. Charles George, Calverton, Stony-Stratford
Davy, Robert, Ringwood, Hants
Robinson, George, Wolverhampton
Humphreys, John, Evan Hall, Oswestry, Salop
Manning, C. I., Cranford Bridge, Middlesex
Hann, Lockington St. Lawrence, 60, King William-st., City
Price, Walter R., the Rise, Kentchurch, Herefordshire
Garnier, R. N., Drayton Lodge, Norwich
Wingfield, John, Onslow, Salop
Hill, Clement Delves, Sandford Hall, Salop
Harper, George, Belvidere, Whitchurch, Salop
Bick, Michael, Park Hall, Bromsgrove, Worcestershire
Swan, William Robert, Wallsend, Newcastle on Tyne
Bate, Robert, the Square, Bridgewater
Paddon, Joseph, Tarcham, Hants
Hannay, Rev. James, Ashley, Stockbridge, Hants
Wynne, John Lloyd, Jun., Cord Coch, Abergeley, Denbighsh.
Brentnall, Benjamin Tildon, Hemel Hempsted, Herts.

The names of 18 Candidates for election at the next Meeting were then read.

LECTURES.—Communications were received from the Duke of Richmond and Mr. Pusey, M.P., announcing the progress of the arrangements for Lectures to be delivered before the members at their ensuing Christmas meeting in the second week of December, when the rooms of the Society would be thrown open in the evening as formerly for their accommodation, and the General Meeting held as usual on the Saturday of the same week.

BELGIAN CARROTS AND WHEAT.—Mr. Mechi of Leadenhall-street, favoured the Council with samples of the Belgian Carrot grown on his property in Essex, accompanied with the following communication in reference to their cultivation and that of the Wheat, of which he had sent specimens for their inspection on a former occasion:—

"4 Leadenhall street, London, Nov. 16, 1844

"I send a few Carrots of my Tiptree growth. They are the produce of a black sandy field (9 acres) forked 12 inches under the plough, and dressed with dried night soil (which, however, I consider much inferior to guano, so far as I have compared them). They were several times hoed with a deep Bean-hoe. I consider the removal of their lateral fibres obliges the tap-root to go down in search of moisture and food the same remark applies to Swedes. If the season been an ordinary one, I should have had an enormous crop of Carrots, but they struggled hard with fourteen weeks' drought, and only then came to one half or three quarters of a crop. We filled up the blanks with Swedes. Still they will afford useful food. Forty acres of my Wheat (specimens of which I sent you) averaged over 4 quarters per acre, weighing 64 to 66 lbs per bushel; (one field produced 5 quarters 1 bushel). The two fields of March-sown Wheat failed, owing to the drought (so many ears being unripe) producing only 2 quarters per acre of middling quality. (Signed) "J. J. MECHI"

The Council ordered their thanks to be returned to Mr. Mechi for the favour of this inspection and communication; and, on the motion of Mr. SHELLEY, it was resolved, that inquiry should be made of Mr. Mechi, whether the four Belgian Carrots he had sent to the Council were fair specimens of the average crop of the nine acre field referred to in his communication; and also the amount of land and seed Wheat, and of how much land grown.

SOCKET DRAIN-PIPES.—Mr. Henry Dixon, of Witham, in Essex, favoured the Society with specimens of the socket drain-pipes made by him, for the use of his own land; and which, he informed the Council, were particularly applicable to [illegible] soils; and, from their construction, could not fail to be safe. He had found that it was not necessary to make [illegible] and supposed, to have the pipes made [illegible] their sides. The pipes in question might be made of any length, the most convenient ones having been found by Mr. Dixon to be from 15 to 18 inches, and the cost of the socketing, as effected by the Ford's Patent Machine, which he employed, from 2*s.* 6*d.* to 3*s.* 6*d.* per thousand. Mr. Dixon enclosed with the pipes a detailed evidence of the facility with which the roots of trees will occupy drains, if carelessly placed: it consisted of a cylindric mass of fibres from the roots of a Willow-tree, growing about 5 or 6 feet from a drain, which had been put down only 12 months; the pipe from which the mass collection was taken, was a 4-inch socketed one.

Thanks having been ordered to Mr. Dixon for the favour of these specimens and the communication which accompanied them, Mr. Frances Horne fully corroborated the statement then transmitted in times by Mr. Dixon, whom he well knew as a landowner to a considerable extent in his own neighbourhood, and as a disinterested promoter of agricultural improvement. An interesting discussion then ensued, in which Mr. Blount, Mr. SHAWLEY, and Mr. DEAN favoured the Council with the results of their own experience in reference to the accumulation of large masses of water, suddenly formed under peculiar local circumstances of surface in the case of unusual rains, and also in that of springs issuing in considerable volumes from the sides of hills.

Mr. Shaw presented copies of his Translation of Tiner's Rational Principles of Agriculture, and the Farmers' Almanack for the ensuing year; and Professor Low, of Edinburgh, his valuable Lectures on Property and the Economy of Estates. The following presents and communications have also been received:—

The Health of Towns' Commission: Seventh Report of their First Report.
Mr. R. N. Bacon: Prize Report on the Agriculture of Norfolk.
Mr. H. Stephens: Book of the Farm. Parts 20 and 21.
Professor Buckland: Address to the Hampshire Southampton and Arundel Fine Art Committee.
Mr. Dolland: Description of an Instrument invented by him, for the self-registering of atmospheric changes for any period, as indicated by the Barometer, Thermometer, Hygrometer, Mountain-barometer, Rain-gauge, Wind-gauge and Illuminator, and transferred mechanically, every half-hour, to the self-recording cylinder of the Electrotype.
Mr. Munn: Description of his Bar-and-Frame Bee-hive, invented by him; and abstract of Wildman's Guide to the Management of Bees.
Geological Society: Proceedings, Vol. IV., No. 96.
Statistical Society: Journal for September, 1844.
Royal Asiatic Society's Journal: No. XV., Part I.
Agricultural and Commercial Society of Guiana: Laws and Regulations.
Royal Society of Lille: Memoirs and Programme of Prizes.
Royal Society of Lyons: Annals of Proceedings.
Highland Society: Quarterly Journal for October.
Farmer's Magazine for October and November.
Veterinarian, for September, October, and November.
Western Agriculturist, No. II.
Jamaica Agricultural Society: Proceedings.
Canadian Agricultural Journal, Nos. VIII. and X.
American Agriculturist, No X.
Albany Cultivator, No. IX.
Dr. Whitlaw: New York Farmer & Mechanic, No. II.
Mr. M'Nab: North British Cultivator.
Mr. B. Love: Chapter on Working People.
Messrs. Rouke and Varty: Mr. Newnham's Pamphlet.
Mr. Skilling: Farmer's Ready Reckoner.
Mr. Saunders: Paul Pry's Letters to his Countrymen (on improving the condition of the Irish Cottager).
Professor Tilley: Inaugural Lecture on Chemistry in Queen's College, Birmingham.
Mr. Westwood Baker: Prizes of Rutland Ploughing Meeting.
Mr. Lilley: Agricultural Tour in Ireland.
Sir John Tylden: on the Conversion of old Hop-bines into Manure.
Messrs. Herring and Co.: Analyses of Guano.
Mr. Morant on the Quality of Common Salt, as a Manure.
Mr. Evans and Mr. Gee: on the Re-publication in Welsh of the Cottage-Tracts on Gardening and Cottage Economy, in the Society's Journal.
Mr. Babington: on the Botanical Designation of Italian Rye-grass.
Mr. Frere and Mr. Testy: on the Mustard-plant.
Rev. Jos. Nodder: on the Distribution of the Society's Journal among Farmers' Clubs.
Mr. Saul: on an Improved Turnip and Potato Machine.
Mr. Bowden: Sample of Mac Kibbin's Improved Roofing Felt.
Mr. Sheppard: on Guano and Gypsum.
Mr. Rea: on Dutch Butter.
Mr. Towers: on Results of Dibbling.
Mr. Wills: on Allotments.
Mr. Waldron: on Drainage of Land.
Mr. Stevenson: on bruising Oats; and on the Subterranean Telegraph.
Mr. White: on Unemployed Labour, and Spade Husbandry.

The Council then adjourned for a fortnight, to the 4th of December.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

AT a late weekly Meeting of the Council a communication was read from the Trustees of the Agricultural Fund of the Irish Reproductive Loan Fund, London, stating that they had agreed to place the sum of 2000*l.* in the hands of the Council, to be annually applied to the purposes of Agricultural Education, either in the provinces of Munster or Connaught. The Secretary stated that the premiums, to the amount of 123*l.* together with 67*l.* in medals, which had been awarded at the late Cattle Show in Dublin, had been paid off, and vouchers received for the same. From 60 to the amount of 40*l.* and upwards still remain unpaid, subject to proof of qualification by the claimants. The whole expenses of the Cattle Show had been also discharged, and a full statement of proceedings would be laid before the Society at the next half-yearly meeting, which was fixed to take place on Friday, the 29th of November, to receive the Report of the Council. The premium sheet for the next

Annual Cattle Show, to be held at Ballinasloe, for the year 1845, was also referred to a sub-committee, to peruse and revise the same, previous to having it submitted to the general meeting for approval. The Secretary also stated that the 2d edition of the Society's Transactions and Report for 1843, together with the maps and diagrams, could be had by members on application, on forwarding tenpence in post-office stamps to cover the amount of postage. It was most desirable that this work, which contained so much useful and valuable information on thorough-draining and reclaiming waste land, &c., should be circulated as extensively as possible, and arrangements had been made for the purpose with the Society's publishers, Messrs. Curry, of Dublin; Longman, of London; and Fraser, of Edinburgh—to distribute them to members at moderate and cheapest terms, where they are not subscribers on application. It also appeared, on reference to the Society's accounts, that there was a great accession of new members during the present year, no fewer than 450 additional subscribers having joined the Society at and previous to the late Cattle Show, several hundreds of whom had joined in order to qualify their local Societies for the premiums they offer. There were, however, considerable arrears of subscriptions still outstanding, and the Secretary was directed forthwith to remind those parties, as well as those subscribers to the local Societies at the Castle Show, to pay up their arrears, that the next Show a full statement of the accounts should be laid before the Society at the next General Meeting.

Reviews.

The Report of the Agriculture of Norfolk, to which the Prize was awarded by the Royal Agricultural Society of England. By Richard Noverre Bacon. Ridgways London.

Next to the possession of accuracy and completeness, we may safely assert that the value of a District Agricultural Report depends upon the fullness of detail in which it describes climate, soil, &c.—those circumstances upon which, as well as upon agricultural skill, the character of farming depends*. This is sufficiently obvious; for the usefulness of a publication depends not merely on the quantity and accuracy of its contents, but upon the reader's ability to avail himself of the information it contains; the system of agriculture it describes may be admirably suited for the district, but if the circumstances under which it occurs be not fully stated, there is no evidence from which the reader may judge whether it be suited to those in which he is placed.

The Norfolk system of agriculture is certainly one which might be safely adopted over large districts in this country, but even here our remarks are true. A report of Norfolk farming would lose much of its usefulness and interest if no such detail of the geographical position, the climate and soils of the county, of the relation existing there between landlord and tenant, of the wealth of its farmers, were given—such an account as should help to explain the high estimation in which it is properly held. Mr Bacon enters into great detail on most of these points, indeed, the minuteness with which he gives the statistics of the district is tedious to the general reader. We shall extract some statements from his work, showing the condition of the county now, as compared with what it was half a century ago —

"The progress of production can be very fairly indicated by a reference to the comparative quantities of Wheat sold in Norwich Corn Market —

	Wheat No of coombs sold
1803	50,444
10	55,831
11	61,112
[illegible]	54 800
[illegible]	174,176
40	207 274
[illegible]	201,740
43	240 620
[illegible]	241,644

Outgoings of a Light land Farm in Norfolk, 1700 as compared [illegible]

1700				1800			Increase
	£	s	d	£	s	d	
Rent per acre	0	8	0	Rent per acre	0	16	0	nearly 100 per c
Tithe	0	1	0	Tithe	0	4	0	above 250 per ct
Labour	[illegible]			Labour	1	5	6	nearly 150 per ct
Rates	0	1	0	Rates	0	4	10	nearly 475 per ct
Direct taxes	0	0	4	Direct taxes	0	1	1½	470 per ct
Farming stock	2	0	0	Farming stock	3	11	6	80 per ct
Int on capital	0	4	4½	Int on capital	0	7	6	66 per ct.
					3	11	4½	
					1	15	11½	
					5	7	5	

Over large portions of the county this increased production was owing to the practice of claying or marling, which has greatly improved the light soils.

Mr. Coke, when he inherited his patrimony, exhibited no knowledge how great benefit was to be attained through the application of clay and marl to the surface soil, and its effects were so momentous that his example was immediately followed throughout the western part of Norfolk, and in some parts of the east. The consequence has been that no county, and certainly no district, exhibits to a greater extent the proof of this application, to be seen in the number of clay and marl pits which abound in every farm."

In the fen districts, where an immense improvement had arisen from this practice—

"The most general system of claying now adopted is, first to cut the land in ridges from fifteen to eighteen yards apart; the men then dig the holes in a straight line along the ridges; they get from eight to nine in a chain of twenty-four yards, the depth of the clay from the surface varies from five to nine feet; when it lies nearest the surface, about one and a quarter chalder of solid clay are raised from each of these holes, which costs about 6½d., including the spreading upon the land; but where it lies nine feet, as it frequently does in many parts of the fen, the ridges are made much nearer, for at that depth so much clay cannot be obtained as when it lies shorter, and the cost is about 10½d. to a 1½ per hair. Clay is not universally found, sometimes sand and gravel are found in the [illegible] usually mixed with strong blue gault, which [illegible] the west way. The rotation of crops adopted very rarely where the land has not been clayed; [illegible] enough and burn, and sow Colseed, which is fed off with sheep. In the spring it is sown with Oats [illegible] this crop is cleared off the land is manured and [illegible] Wheat. If it then laid down with [illegible] years. The third summer it is again [illegible] and so before. After claying, the plan [illegible] bone-dust or yard-manure for Colseed, which is fed off and Wheat sown; the next year Clover again succeeded by Wheat; this fallow or lay down to Grass for two or three years."

But doubtless much of the present fertility of the land is owing to the good yearly management of its tenants, as well as the adoption of permanent improvements—to the adoption of a good rotation of crops, and good husbandry generally, and to the consumption on the land by large numbers of sheep and cattle, not only of the green crop grown on it, but of large quantities of oil-cake. Upwards of 10,000 tons of this material are imported annually into the county; besides this, immense quantities of bone-dust, guano, nitrate of soda, &c., are used. One person alone sells 20,000 tons of the first annually; another sells nearly 3000 tons annually of the last, and of guano he last year sold 750 tons. It is by these means that the farmers of Norfolk have obtained for their county such a high position among the well-cultivated districts of the country.

Mr Bacon describes in detail the different branches of farming, as conducted in Norfolk, there are in his work chapters on Rotation of Cropping, General Culture, including accounts of the various crops, Manures, Marshes, Meadows, and Pastures Breeds of Cattle Sheep, &c, Feeding Horses, Implements, &c There is not room for extracts here, and we have no wish, by giving many, to keep our readers from, the work itself, but we cannot conclude without citing one passage, expressive of an opinion to the working out of which, under Mr Coke's patronage, we must attribute the eminence in agriculture which Norfolk has unquestionably attained among the counties of this country —

"'A large expenditure of money,' says a tenant occupier and an estate agent, 'is necessary to successful farming, and a tenant should always look for a guarantee in proportion to the outlay. An occupier who expects to hold his land but for a year, or to hold it only on such conditions as may terminate his tenure at the year's end, should expend so much only as he may hope to reimburse himself by a year's crop, for all expended beyond that might be thrown away, but such an expenditure plainly could not permanently improve the soil—so of three years, seven years, or any other short term The farmer, how rich soever he may be, will proportion his expenditure to his interest in the land, but let a tenant have a long and equitable lease, let him feel assured that he has a life-interest in a farm, and he will cast his whole lot with it, then if he be rich and skilful, he will cultivate it to the highest point to which the constantly improving state of agricultural science can direct him. Such is the importance to the whole nation of the tenant's guarantee.'"

On Landed Property, and the Economy of Estates, comprehending the Relation of Landlord and Tenant, and the Principles and Forms of Leases, Farm-Buildings, Enclosures Drains Embankments, Roads and other Rural Works—Minerals—and Woods. By David Low, Esq, F R S.E., Professor of Agriculture in the University of Edinburgh, &c. &c. Longman, Brown, Green, and Longmans.

We have the pleasure to announce the publication of this important work by Professor Low. It is one of the most valuable contributions to our Agricultural Literature which we have had an opportunity of noticing. We shall not fail, as soon as possible, to give our readers a particular account of its contents.

The Farmer's Almanac and Calendar for 1845. By the Rev. Thomas Dyer, and William Shaw, Esq. James Ridgway, Piccadilly, London.

It, indeed, is one of those publications which promises a great deal, but it misses the expectations which are not satisfied by an examination of the contents. Besides a good agricultural calendar, containing a deal of matter very useful and instructive to the farmer, has been gathered together in this volume [illegible] is a very interesting and readable addition to it. It certainly continues to be the best Almanac for the farmer that has appeared.

Miscellaneous.

Linseed as Food.—The only apparatus required is a Linseed-crusher, an iron copper, a hand-cup, a stirrer, one or two half-hogsheads, two or three pails, and a wooden rammer. These will cost about 12*l*. Large coppers are found inconvenient for stirring when compounds are made with the meal of Peas, Beans, &c. The [illegible] in use contain from 30 to 40 gallons. Upon large farms it will be desirable to have two—[illegible] than the other. The stirrer is an iron-ribbed spoon, fastened to a shaft of wood 4 feet long, and [illegible] less than the handle of a pick. The rammer is 3 feet long, about 5 inches square at the bottom, and 2½ at the top; through which a pin 14 inches long is placed for the convenience of being used with both hands; mine is nothing more than one end of a broken axle of a cart, with a stick thrust through the inch-pin hole. I commenced winter-grazing this year upon white Turnips grown after Flax, the tops of which, being [illegible] with Linseed-meal, were given to my bullocks according to [illegible] Upon every six pails of [illegible] I sprinkled [illegible] Linseed-meal in [illegible] while another [illegible] the Chaffins, the meetings being formed, a [illegible] placed close to the copper, and a bushel [illegible] Turnip-tops and straw put in; 2 or 3 [illegible] then poured upon it, and [illegible] mixed with a fork. Another bushel of the [illegible] chaff, &c. is next added, and 2 or 3 cups of [illegible] oil boiled, all of which [illegible] expeditiously mixed [illegible] together with the fork and rammed [illegible] pressed down as firmly as the nature of [illegible] will allow, with the latter instrument, which [illegible] the first layer. Another bushel of the Potentrew, chaffings, is thrown into the tub, the meetings, [illegible] before, and so on till the copper is emptied. The contents of the tub are lastly [illegible] over with a trowel, covered down, and in two or three hours the straw having absorbed the meetings, will also [illegible] Turnip-tops, have become partially cooked. This compound is then usually given to the cattle, but sometimes is allowed to remain till cold. The bullocks, however, prefer it warm, but whether hot or cold, they devour it with avidity. The cost for Linseed, according to the above rate of feeding, is 2*s*. 3*d*. per week. It will be seen that the real fattening properties of the above compound centre in the Linseed; and that, in order to produce a greater or less effect, it is only necessary to [illegible] this quantity of that important ingredient. [illegible], that Wheat, Oat, and Barley-straw, or Bean-chaff, may be used either with or without Turnip-tops, according to circumstances; nothing more being required than a [illegible] matter to act as a vehicle for conveying the Linseed to the stomach of the animal, and for receiving the [illegible] the mouth [illegible] mastication. Unfortunately for the [illegible] and few really practical agriculturists are disposed to [illegible] their own [illegible] published [illegible] opinion, however, the extract from the letter of a gentleman [illegible] whose enlarged and philanthropic views [illegible] long been acquainted, and who will rejoice [illegible] the complete validation of his own experience should in any way be [illegible] the [illegible] to his country —"My Flax-crop was pronounced by the Belgian agent, at Ipswich, to be as fine as any he had ever seen It was nearly 4 feet high, very thick in the ground, and perfectly free from weeds. The expenses for harvesting my crop were under 40*s*. per acre. I have laid 10 acres in [illegible] and 3 For the want of water I was not [illegible] to steep any; and shall not now make the attempt till the spring. My experiments with compound last year were satisfactory. I am now feeding 44 horses and colts with straw and hay compound My plan is, to 8 bushels of cut hay, and 8 bushels of Wheat chaff, are added 28 lbs. of crushed Linseed boiled in 10 pails of water I give the horses this quantity at night in the yard In addition, they have one pint of Pea meal per day, and one hundred weight of straw per week. The boiling Linseed is poured upon the chaff, and both are thoroughly mixed together. I intend giving my young stock 1½ lb. of Linseed-meal with a bushel of chaff daily; my cows the same."—*James Barker, Stour Hall, Romsey, near Harwich* A bushel of good Linseed at 5*s*. 6*d*., weighing 48 lbs is properly formed into compound with three or four times the weight of Peas, or any ordinary Wheat-meal, and a little more than double the weight of the whole in water, will cost about 24*l*. 8*s*. per ton.—*John Warner, on the Feeding Question*

How to Know Guano.—The farmer should never purchase guano, except its composition be guaranteed by the analysis of a competent chemist. He should go to no more than a half-pound sample of fifty land pounds than he buys, and if his crop should disappoint reasonable expectation, he should cause the samples to be analyzed and should the result not correspond with the analysis exhibited at the sale, he is fairly entitled to damages for the loss of his labour, rent, crop, &c. The necessity of following this advice will appear on considering the delusive, if not utterly false, analyses under which cargoes of guano have been too often sold. In a recent case which came under my cognisance, in consequence of having been employed professionally to analyse the identical cargo, I found the guano to be nearly rotten and after [illegible] containing altogether only 2½ per cent. of ammonia, ½ per cent of nitrate of ammonia, nearly 9 of sea-salt, 24 of water, and 46½ of earthy phosphates Now, this identical cargo of many hundred tons, fetched a high price at [illegible] sale, under the exhibition of the following analysis:—

Urate of ammonia, ammoniacal salts, and decayed animal matter	17 4
Phosphate of lime, phosphate of magnesia, and oxalate of lime	48 1
Fixed alkaline salts	10.8
Earthy and stony matter	1 4
Moisture	22.3
	100 0

The purchasers, I was told by the brokers, bought it

* See our last week's Leading Article.

readily, under a conviction that the guano contained 17·4 of ammonia, though the proportion of ammonia is not stated. By the following approximate analysis much guano has been sold:—Sand, earth, 35; lithic acid, &c., 15; carbonate and phosphate, 14; organic matter, 36=100. A gentleman informs that no sample of guano ever manufactured yet came of an amount of ammonia—a very valuable one, by-the-by—at present the state of combination in which the ammonia exists. It may contain at the moment 5 per cent. of the carbonate, but much guano-meat have been acted upon powerfully by humidity and will, therefore, contain little or no uric acid. In the very elaborate examination of guano by T. Oelkenher, apothecary at Innsbruck published at the request member of Buchner's "Repertorium of Pharmacy," we find, that if a glass rod dipped into aqua fortis acid be held over guano, strong fumes are developed; and the solution of guano has an alkaline reaction with litmus paper. These phenomena evidently indicate the presence of carbonate of ammonia, and of course a partially decomposed guano. *Ice* pound Chincha, and Bolivian guano *have* an acid reaction, proceeding from the predominance of phosphoric acid. Farmers frequently judge of the goodness of guano by the strength of the ammoniacal odour, but in this judgment they may egregiously err, for the *ammoniacal* guano has no smell of *ammonia* whatever; and it behoves to give out that smell only when it is more or less decomposed and wasted.—*Dr. Ure, in Pharmaceutical Journal.*

Notices to Correspondents.

RURAL CHEMISTRY.—By L. Reilly, Esq. F.R.S., Experimental Chemist to the Horticultural Society of London, Honorary Member of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution may be had [illegible] sellers, price 6s 6d.—"[illegible] Remarks on Chalking," shall appear next week. Many thanks to [illegible]

AVERAGES, &c.—*Gazette*.—We have by an estimate of the hay crop, and value of aftermath on several farms. The [illegible] stand thus:—

Crop 25 cwt.—Aftermath 14c		Crop [illegible] cwt.—Aftermath 12s	
" 30 " " 8s		" 30 " " 10s	
" 20 " " 16s.		" 15 " " 8s	

And so on.—The following is the estimated division of the gross produce in various districts among the three classes—Landlord, for Rent and Taxes; Farmer, for Interest, Profit, Labourers, &c.; Wages; and Expenses of Cultivation:—

Per Acre.

Crops Produced	Rent, &c.	Profit.	Labour	Gross [illegible]	Rent, &c.	Profit	Labour
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24s	12s	19s 6d
20	2	10	18	30	24	14	11 0
25	2	10	13	37	24	20	6 0
30	2	10	18	45	24	17	12 0
35	2	10	18	52	24	16	12 0
40	2	10	18	60	24	14	25 0
45	2	10	18	67	24	15	20 10

If [illegible] distinct [illegible] owing to some of the distinct [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] being good but about [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

SLATE FLOWER, SILKWORM, AND DIPLOMEY

THE following Articles, manufactured in Slate for Horticultural purposes, may be seen at Messrs. Norton's Cottage, upon application to the gardener (Mr. Hodges, adjoining the Nursery):

Tank Covers,	Bases for Balconies, Verandahs
Cisterns,	Orange Tubs, Flower Stands, &c.
Shelves,	
Garden Edging,	

EDWARD JONES will be happy to [illegible] PERSONALLY or by POST.

MEALY BUG, THRIPS, &c. [illegible] Directions will effectually extirpate these pests; and in all quantities at 1s. and upwards each. [illegible] Address, with a remittance, [illegible] and MANNEL, Nurseryman, [illegible] Hurstbourne Priors, Hants, [illegible] of whom may be had, Cuttings of the choicest Melons, at 1s. per dozen.

[illegible] DRAWN.

E. L. BROWN'S [illegible] EXTRACT, for the [illegible] MEALY BUG, White and Brown Scale, [illegible] all other insects injurious to Trees and Plants in Hothouses, Greenhouses, &c. Orders punctually attended to, on receipt of a Post-office order for the amount. Manufactured and sold only by E. L. BROWN, Chemist, Leyton, Essex. Bottles, 1s. 6d., Half-pints, 2s., Pints, 3s., and Quarts, 5s., [illegible] for use. The above article [illegible] following [illegible] Mr. Fraser, Nurseryman, Ley Bridge-road, Leyton; Mr. John Lyle, Gardener to E. Barclay, Esq., Leyton; Mr. Lyndell, Gardener to W. T. Copeland, Esq., Bow, Middlesex, Essex.

HOT-WATER APPARATUS FOR HEATING HOTHOUSES, CONSERVATORIES, CHURCHES, AND OTHER BUILDINGS, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, [illegible]

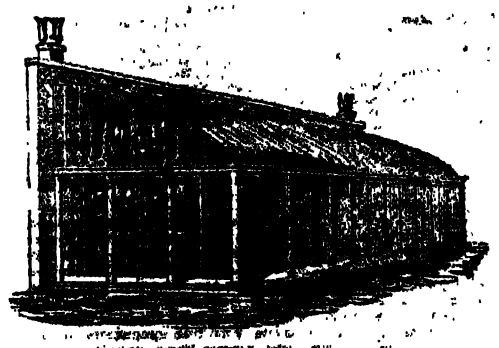
D. and E. Bailey having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very economical in its daily results, and have combined durability in the Apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory lately erected at Chiswick.

D. and E. Bailey also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 179, Holborn, where they have the opportunity of exhibiting, arranged on [illegible] an extremely complete and convenient kitchen [illegible] range, adapted for the continued supply of [illegible] water, and an arrangement of the oven more complete than has [illegible] been brought before the public.

D. and E. Bailey were also [illegible] to introduce [illegible] curvilinear houses to horticulturists, but can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. Bailey have prepared a quantity of the Galvanic Plant Protector, which are now ready for immediate delivery; they beg to introduce to public notice a new Tension Pipe, for Orchidaceous or [illegible] Houses, [illegible] economically, as at interval [illegible] may be used with [illegible] Manufactory.

CUTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., &c., No. 2, WIMBLEY-STREET, OXFORD-STREET, LONDON, and 26, CORNWALL ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most approved principles, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with the [illegible] Improved BOILERS. After 15 years' experience, and having [illegible] upwards of 2000 Apparatus [illegible] above-mentioned purposes, and by various improvements [illegible] at the same time, C. and H. can with confidence [illegible] the adoption of Angular Apparatus upon the most economical [illegible]

Materials sent to any [illegible] who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, Best Wire for Strained Fencing, Ornamental [illegible] Garden Chairs, &c., &c., and every description of [illegible] for AGRICULTURAL and HORTICULTURAL Purposes.

Show Rooms [illegible] Factory, 3, Wimsley-street, Oxford-street, where [illegible] of the above can be seen.

STEPHENSON, [illegible] 61, Gracechurch-street, London, and [illegible] Street, Southwark, Inventors and Manufacturers of [illegible] COMMON and DOUBLE CYLINDRICAL [illegible] respectfully solicit the attention of scientific Horticulturists to their newly-improved methods of applying the [illegible] principle, to Forcing Houses, &c., by which extraordinary [illegible] with economical heat is secured to any required degree [illegible] the [illegible] pipes or flues. S. & Co. have [illegible] the support of numerous friends they [illegible] Copper; by which [illegible] as well as Copper, by which [illegible] are now as well [illegible] to those who have [illegible] be forwarded as well as [illegible] they may be seen in [illegible] Nurseries throughout the Kingdom.

S. & Co. beg to inform the Trade that at their Manufactory, No. 3, New Park-st., every article required for the [illegible] Horticultural Buildings, as well as for heating [illegible] may be obtained upon the most advantageous terms.

Conservatories, &c. of iron or wood, erected upon the most ornamental designs. Decorating, Painting, Glass, and Garden Fences, Wire Work, &c. &c.

GUANO for SALE, in Bags of 1 cwt. each, just [illegible] landed, with a procession of cargoes to follow, direct from [illegible] experience has unquestionably proved [illegible] first obtained, [illegible] and Mr. Skinner, [illegible] Peruvian Government. The only [illegible] to produce the results [illegible] for using that [illegible] are [illegible] which purchase will be given a warranted [illegible] of quality, and also a copy of the recently published Pamphlet [illegible] Practical Instructions for using Guano as a [illegible] by Practical Gentlemen.

Large quantity will be [illegible] from the ship at [illegible] promised; samples [illegible] and 26, Billiter-street, [illegible] at Stirling, additional [illegible] at Stirling, additional [illegible] street, Edinburgh, where [illegible]

LIQUID MANURE.

ENGLAND INDEBTED [illegible] THE, Attention of the [illegible] manufacturers of this [illegible] LIQUID MANURE, [illegible] with which many [illegible] prepared, by the use of [illegible] PUMP, is made at present for the purpose, [illegible] Breweries, Distilleries, and large Farmers; also Cisterns for Distillers, Brewers, Soap-boilers, and Tanners, [illegible] and sold [illegible] Pumps kept for hire; for Conveyancing and Malt Steepings heated by Hot Water, for Horticultural and many variety of manufacturing purposes.

The Pumps supplied on advantageous terms, by HAWKSLEY PUMP, Engineer, &c., 53, Dorset-street, Fleet-street, London.

IMPORTANT TO AGRICULTURISTS, &c.

ANALYSES of SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. MITCHELL and FIELD (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil, in which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and purity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 54, Hawley-road, Kentish Town.

TANNER'S VITREOUS CLOTH, a SUBSTITUTE for GLASS for HORTICULTURAL PURPOSES.—The above recommends itself to the notice of Florists and Horticulturists, as producing effects superior to Glass, at a less expense. The support the Proprietor has received from very many highly respectable Florists encourages him to consider that his labours have not been misapplied in bringing before the public an article so generally required. Price of cloth, 7-8ths of a yard wide, thin, 2s. 6d. per yard.; stout, 3s. 1 yard wide, 3s. 6d. Price of Fluid (for renewing the cloth after lengthened service), 4s. 6d and 2s. 6d. per bottle. Manufactured only by N. W. TANNER, Chemist, Exeter; and Sold by Messrs. Butler and Muckley, Covent-garden, London; Mr. Cunningham, Paradise-street, Liverpool; Messrs. Lucombe and Pince, Exeter Nursery.

AGRICULTURAL DRAINING. — THE DERBY LEVEL.—The attention of persons Draining their land is directed to this efficient but simple Instrument, presumed to be all that can be required for the purpose, and its price such as to place it within the reach of all. To be had of the Maker,

J. DAVIS, Optician, Derby.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S



ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and OBTAINED the PRIZE for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONLY ONE PENNY PER SQUARE FOOT.

Samples, with directions for laying on, and testimonials as to its merits, sent free to any part of the town or country.—Patent Felt Works, Lamb's Building, Bunhill-row, London.

IMPROVED ROOFING FELT.

M'KIBBIN'S PATENT ROOFING FELT

Is particularly applicable as a Substitute for Slate, Zinc, Tiles, Thatch, and other Articles used for Roofing, from its Economy, Durability, and Lightness. It is quite impervious to wet and damp, resists the heat of the sun, and is a non-conductor of heat or cold. Besides the economy in repairs, the timber where it is used may be so light as to save its whole expense. It requires no other coating, and by attention to printed directions may be applied by a common labourer. It is free from breakage and contraction, does not [illegible] and requires neither painting nor coating. It is now in very general use for Roofing Houses, Verandahs, Sheds, Workshops, Aviaries, Railway Stations, Schhouses, &c. &c., and for protecting Plants, covering Garden Frames, Corn, and [illegible] Sheep-folds; and is [illegible] Portable Houses, Tarpaulin, and portable Rafts.

This [illegible] Slate, [illegible] than the common [illegible] other material, [illegible] and being [illegible] [illegible] and [illegible] perfect [illegible]

H. C. Bowman, Esq., Agent [illegible] Bunting Pitt.

It is with much pleasure [illegible] the materials [illegible] may do the superiority of your [illegible] with which I am [illegible] the greater cheapness [illegible] I have heard in its favour, and from the [illegible] extensively in Agricultural purposes [illegible] By lectures when on the [illegible]

(Signed) JOHN [illegible], M.D., Senior Lecturer on Chymistry, &c., [illegible] Agriculture and Rural Economy [illegible]

Sold in sheets 32 inches by 20, at 2s. each (being less than 1d. per square of 100 feet).

Apply to H. C. BOWMAN,

Agent to the Manufacturers,

No. 16, East India Chambers, Leadenhall-street, London.

WHITNEY'S PATENT CLOTH for COVERING GREEN-HOUSES, CUCUMBER or MELON PITS, &c. This Cloth is made expressly for the purpose of applying Whitney's Composition upon, and is much more durable than any other material; when coated it is beautifully white and transparent. The perfect [illegible] of Whitney's Composition for all Horticultural purposes [illegible] be more fully established than [illegible] that on the 1st of April last, a Black Hamburgh Vine was [illegible] a house, the [illegible] trained into a house covered with Cloth, and coated with Composition. On the 1st of Sept. [illegible] the Grapes, 16½ ounces, the fruit was [illegible] pronounced to be excellent. A [illegible] by the Editor of the Gardeners' Chronicle [illegible] very luxuriantly, the foliage [illegible] exceedingly well. As a winter protection [illegible]

The [illegible] DESCRIPTION can be obtained of Messrs. Butler & Muckley, Covent-Garden Market; Hurst & M'Laird, [illegible] Warner, Cornhill; Barclay & Sons, [illegible] and Hannay & Co., Oxford street; [illegible] Bailey, Wolverhampton.

BURBIDGE AND HARRIS'S COOKING APPARATUS, combining [illegible] This Cooking Apparatus is believed to [illegible] advantages than any yet submitted to the public, both economy in the [illegible] of material and workmanship; in fact, the laws of [illegible] are applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus; and B. and H. can safely recommend it from experience, as unquestionably superior to anything of the kind hitherto made. [illegible] may be forwarded, upon application, detailing particulars and prices, to 130, Fleet street.

LEA AND PERRINS'S WORCESTERSHIRE SAUCE Prepared from the Recipe of a Nobleman in the County.

"*Great Western Steam-Ship, June 6, 1844.*—The cabin of the Great Western has been regularly supplied with LEA & PERRINS'S Worcestershire Sauce, which is adapted for every variety of dish, from turtle to beef, from salmon to steaks, to all of which it gives a famous relish. I have great pleasure in recommending this excellent Sauce to Captains and Passengers, for its capital flavour, and as the best accompaniment of its kind for a voyage. (Signed) JAMES HANNAM."

"One of the most piquant [illegible] and luxurious and epicurean ages is [illegible] Worcestershire Sauce, adapted to fish, flesh, fowl, and [illegible] zest far superior to the long-established favourites; [illegible] wholesome kind of less cost."—*Naval and Military Gazette*, April [illegible], 1844.

Sold Wholesale by the Proprietors, Messrs. LEA and PERRINS, Worcester; Messrs. BARCLAY and SON, Farringdon-street; and the principal Oil and Italian Warehousemen in London; and Retail by the usual venders of Sauces.

IMPORTANT to the [illegible] WORLD.—By far the most influential of all the causes that contribute to personal adornment is the Hair. Its frequent, [illegible] and improvement, proportionally occupies the attention of our fashionable circles, and any [illegible] which will [illegible] desirable results will be [illegible] an immediate [illegible] The following [illegible] from the [illegible] a gentleman [illegible] Bridlington, will be read with the [illegible] interest:—

"A lady, a [illegible] of mine, has found great benefit from the use of your Balm. About six months ago her hair nearly all fell off. I recommended her to [illegible] which she did. In the course of [illegible] ceased to fall off. Before she had [illegible] to grow very profusely, and she has now a very [illegible] head of hair. "I am, gentlemen, yours respectfully,

"WM. SMITH.

"Chemist and Druggist, Market-place, Bridlington.

"To Messrs. C. and A. Oldridge.—March 18, 1844."

C. and A. OLDRIDGE'S BALM of COLUMBIA causes the Hair to curl beautifully, frees it from scurf, and [illegible] falling off, and a few bottles generally restore it [illegible] prevents grayness. 3s. 6d., 6s., and 10s. [illegible] prices are genuine.

OLDRIDGE'S [illegible], 7, Wellington [illegible] from the Strand.

HORIZONTAL WATCHES, SAVORY and MOORE, [illegible] opposite the Bank. Price, in silver cases, three and a half guineas each; or in gold cases, six guineas each. These Watches are accurate and durable, the horizontal escapement, being peculiarly suited to combine those important requisites. They are jewelled in four holes, and continue going whilst being wound. A twelvemonth's warranty given with each.

PATENT ELECTRO-PLATED AND GILT ARTICLES in every variety, at the Manufactory of the Patentees, ELKINGTON and Co., [illegible], Regent-street, corner of Jermyn-street; also [illegible] Moorgate-street. The Patent Electro processes being extensively carried under their licence, the Patentees beg to state [illegible] confine their own manufacture to goods of a superior and guaranteed quality only, which invariably bear their mark, Elkington and Co. [illegible] Old articles replated and gilt.

ELECTRO-PLATING AND GILDING.—OLD PLATED GOODS RESTORED and made equal to new by Messrs. ELKINGTON and Co.'s Patent Process. The process being carried on in London only by Messrs. Elkington and Co., it is particularly requested that all goods may be forwarded direct to their Establishment, 22, Regent-street (corner of Jermyn-street), or 45, Moorgate-street, City. New goods Plated upon White Metal in great variety. Books of Prices and Drawings sent to all parts of the Kingdom and abroad free.

REAL SHEFFIELD PLATED DISH COVERS, at prices hitherto unattempted. THOMAS WEST, 18, Ludgate-street, London, having received a large supply direct from the manufactory at Sheffield, offers the best Meat Dish Covers, as follow.—Cottage Pattern—1 Cover of 10 inches, 2l. 12s.; 1 do. of 12 inches, 2l. 8s.; 2 do. of 14 inches, 4l. 8s.; the set of 4, complete, 11l. 12s. ONLY. Double Bone Pattern—1 Cover of 10 inches, 4l. 16s.; 1 do. of 12 inches, 3l. 19s.; 2 do. of 14 inches, 3l. 4s.; the set of 4, complete, 14l. ONLY. In noticing the prices of the above goods, T. W. ventures to assert they are superior to many advertised at a much higher price. Best Wrought Silver Spoons and Forks as usual, Fiddle Pattern, 7s. 3d. per oz. Queen's Pattern, 8s. 3d. per oz. Superior Watches and Fine Gold Jewellery. Illustration [illegible] in London. Weekly Handbook, 16 Engravings, and full of useful information, is just published, and may be had gratis, and post free, on application to T. West, Silversmith, 18, Ludgate-street, London.

OBTAINABLE FOR NOTHING. — The Nervous are respectfully invited to send to Rev. Dr. WILLIS MOSELEY, 9, Clarendon-street, Somerstown, London, for the small Pamphlet just published, on the most successful treatment of Nervous or Mind Complaints, by which he cures these Diseases as certainly as water quenches fire, which Pamphlet he will return, if a stamp is inclosed, free of charge.

NATIONAL ASSURANCE
TO 82, PALL MALL.
ACTUARY—PETER GRAY, Esq.
SIR GEORGE LEWIS, Bart., Chairman of Directors.
The Annual Meeting of Proprietors will be held on Wednesday, the 26th November next, when the Report for the year ending 31st August will be forwarded to Members, and Copies of the Report and Balance Sheet will be delivered to Subscribers, on application to the Secretary, at the Office. The following Bankers receive Subscriptions:—
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LECTURES on Surgery in the Royal College of Surgeons, by Sir Charles Bell, K.H., F.R.S.; on the Convex Glass after the Removal of the Crystalline Lens for Operating in Cataract—Aphonia—Affections of the Larynx consequent—Medical Evidence—Dislocations which require its Performance—Considerations of the Question, as to whether both Eyes should be Operated on at the same time—Patient cured in Paris, &c., &c., all against this position.
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Westminster Medical Society—Medical Society of London.
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Great Yarmouth Nursery, Nov. 30, 1844.

TO MELON GROWERS.

FISH'S EARLY CANTALOUPE and HARDY GREEN-FLESH MELONS. The above are recommended to all Melon-growers, as, independent of the good quality of the Fruit, they are so hardy as to require comparatively little attention; a fact of considerable importance where fuel is expensive, and fermenting material a scarce commodity. Both sorts were awarded Certificates of Merit at Regent-street, London; the Cantaloupe on the 7th of May, described as "good early fruit;" and the Green-fleshed on the 4th of June, described as "capital green Melon, highly fragrant, and weighing nearly 5 lbs." The Cantaloupe grows from 4 to 6 lbs. in weight. Fruit was exhibited in July at Chiswick, weighing 4 lbs. 14 oz., and the fifth crop is maturing in November, from the same plants cut from in May. Specimens of the Green-fleshed, from the same plants cut from in June, were exhibited at Regent-street, on the 1st Oct., weighing 3 lbs. each. These have been grown on dung beds, as described in the *Chronicle* of the 7th May and 1st October.

YOUELL and Co. having purchased of Mr. Fish the entire stock of Seed of the above most desirable Melons, for the first time offer it to growers, being fully confident of its realising all the merits ascribed to it. Sealed packets, containing three seeds of each, 6s., sent per post, free.

Great Yarmouth Nursery, Nov. 30, 1844.

THE FILBY, or FASTOLFF RASPBERRY.—At the request of some gentlemen living in the neighbourhood of Yarmouth, T. RIVERS begs to submit the history of this really excellent Raspberry to the public. In the year 1814 Colonel Lucas, of Filby, a place lying between Norwich and Yarmouth, discovered a Raspberry plant growing under an old Laurel hedge in his garden. His attention was drawn to it, and he soon found it to be a superior and delicious variety, so that in a short time every other sort was ejected from his garden, and this alone cultivated. It was not, however, till 1824 that he allowed his gardener to part with it, who then gave canes to his neighbours, and by this means it got to be cultivated in Calstor, Ormsby, and, in fact, in all the neighbourhood, under the name of the FILBY RASPBERRY, to the exclusion of all other sorts. It has latterly often been called the Calstor Raspberry, from the Market Gardeners growing it in that parish. In Caistor is an old castle in ruins, that formerly belonged to the Fastolff family: the latter name was given to the variety by YOUELL and Co., when they first began to sell the canes. The fruit upon which Dr. LINDLEY pronounced his opinion was gathered in the Filby garden, now the property of the Rev. G. LUCAS, who authorises and permits the publication of the above facts; and has also permitted his Gardener to supply the Canes after this date to T. RIVERS only.

Canes are sold at 30s. per 100, or 6s. per score, carriage paid to London. Charge for package, for small parcels, 6d., for large do., 1s. to 1s. 6d. Orders to any amount can be executed. The Trade price will be given on application.

Sawbridgeworth, Herts, Nov. 30, 1844.

JOHN BELL begs to inform the Public he has a Large Stock of Strong VINES in pots, 2 and 3 years old, from Eyes, at the following prices:—

Strong 2 year old Plants in Pots		5s. 6d.
,, 3 ,, ,, ,,		7 6
Very Strong Fruiting ,, ,,		10 6

FASTOLFF RASPBERRY.

J. BELL begs to correct the statement in the *Gardeners' Chronicle* two weeks since, respecting the above Raspberry having been originated in W. Jary, Esq.'s garden, at Burlingham. It was first discovered in Col. Lucas's garden at Filby, as stated by Mr. Rivers, and the first canes of it given to Mr. Perfect, gardener to W. Jary, Esq., by Mr. Reynolds, the then gardener at Filby.

J. B. begs to assure his numerous friends, whom he has supplied with Canes of the above Raspberry, that they may rely on their being the True Fastolff, and that no spurious sort is known about this part of the country, as stated in the Misses. Youell's Advertisement last week.

Horticultural Establishment, Brasenose-seed Warehouse, 3, Exchange-street, Norwich.

IMPORTANT TO PLANTERS.
ILEX OR EVERGREEN OAK.

W. E. RENDLE has a large Stock of this most valuable hardy tree, and can supply fine two-year old Seedlings, from seed-pans, at 20s. per 1000, package and carriage free to the Exeter terminus of the Great Western Railway.

Union Road Nurseries, Plymouth, Nov. 30, 1844.

SUCCULENTS FOR SALE.

WILLIAM MASTERS, of the Exotic Nursery, Canterbury, is instructed to sell, in one lot, by private contract, a very Excellent Collection of SUCCULENTS, the property of a gentleman who is about to discontinue their culture. To a person wishing to possess a collection of these interesting productions, this collection offers many points of attraction. The plants are healthy; the number of species considerable, and the price moderate.

For particulars inquire of Mr. MASTERS, Exotic Nursery, Canterbury.

LYNE'S GERANIUMS.—See the FLORISTS' JOURNAL FOR NOVEMBER 1844.

Coloured Engravings of PRINCESS ALICE and WHITE PERFECTION, which, with CONFIDENCE and REDWORTH, are now sending out at 21s. each.

WM. E. RENDLE, Union-road Nursery, Plymouth, Nov. 30.

PLANTING SEASON.

W. ROGERS AND SON, NURSERYMEN, CONTRACTORS, PLANTERS, & LANDSCAPE GARDENERS, Southampton, beg respectfully to notify that their Nursery Stock is this season unusually fine, and from the extent of their grounds they are enabled to execute orders to any amount, and at the lowest price; delivered free of carriage (if ordered in quantity) per railway to London, or by steam-vessels coastwise.

SEEDLING.

Ash, 1 yr., 1s. 6d. } per
,, 2 yrs., 2s. 6d. } 1000.
Beech, 1 yr., 2s. } per
Birch, 1 yr., 2s. } 1000.
Spanish Chesnut, 1yr., 10s. } per
Pinaster, 1 yr., 2s. 6d. } 1000.
2 yrs., 3s. 6d.

Sea Pine (Pinus maritima), excellent for nurses or exposure to the sandy sea-shores of Scotland or Ireland, 1 yr., 2s., 2 yrs., 7s. 6d. per 1000.

Oak, the true "Durmast" of the New Forest (Quercus sessiliflora), producing timber of the largest dimensions, and decidedly the most valuable species of the English Oak, 1 yr., 7s. 6d., 2 yrs. 10s., 3 yrs. 15s. per 1000.

If 100,000 of any one sort is ordered, a deduction from these prices will be made.

TRANSPLANTED.

Prices and samples of the various sizes may be had on application.

Alder	1	2	ft.	Oak, "Durmast," English	1	2	3 ft.
Beech	1	2	4 ft.				
Birch	1	2	4 ft.	Turkey	1	2	5 ft.
Ash	1	2	5 ft.	Spruce	1	2	6 ft.
Spanish Chesnut	1	2	6 ft.	Larch	1	2	3 ft.
Elm	1	2	5 ft.	Scotch	1	2	4 ft.
Poplar, Blk. Canada	2	4	6 ft.	Pinaster	1	2	3 ft.
				Sea-Pine	1	2	4 ft.

PLANTS FOR COVER OR UNDERWOOD.

Rhododendron ponticum, 1 to 2 inches, 20s. to 30s. per 1000.
Ditto, 2 to 4 inches, 40s. to 50s. per 1000; 4 to 6 inches, 60s. to 80s. per 1000; 1 foot, 20s. per 100.
Mahonia aquifolia, 40s. per 1000. Game are remarkably fond of the fruit of this plant, which is also a handsome flowering Evergreen.
Common Laurel, 20s. to 40s. per 1000.
Comewell Willow, 40s. per 1000. (Best for Underwood.)
Furze, 10s. per 1000. Broom, 10s. per 1000.
Elder, common black, 8s. per 100. Excellent for sea embankments. Tamarisk, 8s. per 100.

MISCELLANEOUS.

A great Stock of Forest and Ornamental Trees of large growth, from 6 to 10 feet, adapted for immediate effect.
Single Camellias, from pots, well rooted, 50s. to 75s. per 100.
Rose stocks, 8s. per 100, from cuttings of the Bourbon De Lisle, on which all kinds take freely by buds and grafts, and may be grown in the smallest sized pots.
Double Furze, 25s. per 100. Forms a beautiful flowering hedge.
Double Red Thorn; Double White do.; Single new crimson, 30s. per 100. Sea Pine, from pots, 40s. per 100.
Ribes sanguineum, 12s. 6d. per 100. Kalmia latifolia, 40s. per 100.
Printed Catalogues and Prices of their general stock may be had. Gardeners of experience and ability recommended.

CHEAP AND GOOD PELARGONIUMS.

W. MILLER has several thousands of good Plants of the very best PELARGONIUMS, selected from those exhibited by the most successful raisers:—as, Foster, Garth, Beck, Lyne, Gaines, Wilson, Thurtell, Catleugh, and others; and can be well recommended as good additions to small or large collections, and will be sold, at low prices, by the dozen. A select list may be had on application.

W. M. has also a few more sets of those splendid new seedling Pelargoniums raised by G. M. Hoyle, Esq., Guernsey; also some packets of Mr. Hoyle's choice Seed—5s., 7s.; 10s., 12s.—Providence Nursery, Ramsgate.

NURSERY LARCH.

COWAN AND CO., NURSERYMEN, Glasgow, have on hand a large quantity of well grown transplanted LARCH, 2 and 3 feet high, which they will sell at a low price, as they must be removed this season. All sorts of Forest-trees, seedling and transplanted, grown extensively, and offered at very moderate prices.

NURSERY STOCK.

RICHARD MITTON, NURSERYMAN, Pontefract, being about to clear off five Acres of Nursery Stock, consisting of Forest and Fruit-trees, Evergreen and Flowering Shrubs, &c., begs to offer the same at unusually low prices. Particulars may be had on application.—Pontefract, Nov. 29.

J. B. SMITH, having purchased the rare and valuable STOCK-IN-TRADE of the executors of his late father, begs leave to inform the Nobility, Gentry, and Amateurs, that he intends carrying on the Business as hitherto, and shall be glad to be favoured by their kind commands, which shall ever meet his best attention. A choice collection of Rhododendrons, Azalea Indicas, Hardy Azaleas and Ghent Azaleas, Camellias, Roses, Pelargoniums, Liliums, &c., including the most novel and approved varieties; a priced list of which may be had on application. A liberal discount for cash. A remittance or reference from unknown correspondents is solicited.

Norbiton Nursery, Kingston, Surrey, Nov. 30.

CONIFERÆ.—The Subscribers have this season to offer the following:—

		£.	s.	d.
Pinus	austriaca, 6 in. seedlings, in pots, each			2½
,,	altissima, 3 in., ornamental, in pots, each			7 6
,,	austriaca, 1 year seedling, per 1000		15	0
,,	,, 6 in. seedling, in pots, each		0	4
,,	,, 1 foot seedling, in pots, each		1	0
,,	Banksiana, 2 in., ungrafted, in pots, each		5	0
,,	brutia, 1 year seedling, in pots each		2	6
,,	calabrica, 1 year seedling, in pots, each		2	6
,,	,, 1 year seedling, per 100		75	0
,,	canariensis, 2 to 2½ ft., seedling, in pots, each		10	6
,,	,, 12 to 18 in., grafted, in pots, each		3	6
,,	,, 12 in., grafted, in pots, each		5	0
,,	cembra, 1 year, seedling, per 1000		70	0
,,	,, 2 year, transplanted, per 1000	£5	0	0
,,	,, 3 year, transplanted, per 1000	£7	10	0
,,	,, sibirica, 2 to 3 in., in pots, each		2	6
,,	cembroni, 2 to 3 in., grafted, in pots, each		15	0
,,	excelsa, 1 year, seedling, per doz.		6	0
,,	,, 4 to 6 in., bedded, per doz.		12	0
,,	,, 3 to 4 in., seedling, in pots, each		1	0
,,	,, 6 to 9 in., seedling, in pots, each		1	6
,,	,, 2 ft., seedling, in pots, each		15	0
,,	,, 1 to 1½ ft., grafted, in pots, each		3	6
,,	filifolia, 4 to 6 in., seedling, in pots, each		3	6
,,	Gerardiana, 1 year, seedling, in pots, each		2	6
,,	,, 4 to 6 in., in pots, each		7	6
,,	halepensis, 1 year seedling, in pots, per doz.		4	0
,,	,, 6 to 8 inches, in pots, each		0	9
,,	Hamiltoni, 1 year seedling, in pots, each		2	6
,,	Hartwegi, 2 years' seedling, in pots, each		3	0
,,	insignis, 4 to 6 in., grafted, in pots, each		5	0
,,	,, 12 to 15 in., grafted, in pots, each		7	6
,,	Lambertiana, 4 to 6 in., in pots, each		10	6
,,	,, 1 to 1½ ft., in pots, each		21	0
,,	longifolia, 15 in., seedling, in pots, each		10	6
,,	Laricio, 1 year seedling, per 1000		10	0
,,	,, 2 years transplanted, per 1000		30	0
,,	maritima (true), 1 year seedling, in pots, each		0	3
,,	,, 1 year, grafted, in pots, each		1	6
,,	montana, 4 to 6 in., seedling, in pots, each		0	4
,,	Montezumæ, 2 to 3 in., seedling, in pots, each		21	0
,,	oocarpa, 1½ ft., seedling, in pots, each		15	0
,,	palustris, 1 in., seedling, in pots, each		3	6
,,	,, 3 in., seedling, in pots, each		7	6
,,	patula, 9 to 12 in., seedling, in pots, each		7	6
,,	,, 2 to 2½ ft., seedling, in pots, each		10	6
,,	Pinaster, 1 year seedling, per 1000		7	6
,,	,, 1 year transplanted, per 1000		15	0
,,	,, (maritime of France), 1 year seedling, per 1000		7	6
,,	,, ,, ,, 2 years seedling, per 1000		10	0
,,	,, ,, ,, 1 year transplanted, per 1000		15	0
,,	,, 6 to 12 in., seedling, in pots, each		0	4
,,	Pinea, 12 to 15 in., in pots, each		1	0
,,	Pseudo-strobus, 4 in., in pots, each		15	0
,,	Pumilio, 1 year seedling, per 1000		15	0
,,	,, 1 year, transplanted, per 1000		30	0
,,	pyrenaica, 1 in., in pots, each		2	6
,,	resinosa, 1 year seedling, in pots, per doz.		4	0
,,	,, 1 to 2 in., each		0	6
,,	regia, 2 ft., in pots, each		5	0
,,	serotina, 1 year seedling, in pots, per doz.		4	0
,,	,, 2 ft. seedling, in pots, each		5	0
,,	sinensis, 2 ft., grafted, in pots, each		15	0
,,	Strobus, 1 year seedling, per 1000		7	6
,,	,, 2 year transplanted, per 1000		30	0
,,	,, 3 year transplanted, per 1000		40	0
,,	sylvestris (from native Scotch forests), 1 year seedling, per 1000		1	0
,,	,, 2 years seedling, per 1000		1	0
,,	,, transplanted from 1 year seedling, per 1000		5	0
,,	,, transplanted from 2 year seedling, per 1000		7	0
,,	,, haguensis (from Continental forests), 1 year seedling, per 1000		1	3
,,	,, ,, 2 years seedling, per 1000		2	6
,,	,, Argentea, 1 year seedling, in pots, each		2	6
,,	Tæda, 9 to 12 in., in pots, each		10	0
,,	tenuifolia, 6 to 9 in., in pots, each		7	6
,,	variabilis, 1 year seedling, in pots, each.		1	0
,,	spec. from China, 6 in., in pots, each		7	6
,,	,, from Guatemala, 4 in. seedling, in pots, each.		7	6
,,	,, from S. America, 4 to 6 in., in pots, each		5	0
Abies	alba, 3 years transplanted, per 1000		50	0
,,	,, 1 ft., in pots, each		1	0
,,	cærulea, 6 in., in pots, each		3	6
,,	Clanbrazilliana, 1 ft., in pots, each		2	6
,,	Douglasi, 1½ ft., in pots, each		20	0
,,	excelsa, 1 year seedling, per 1000		1	0
,,	,, 2 years seedling, per 1000		4	0
,,	,, 3 years seedling, per 1000		5	0
,,	,, 1 year transplanted, per 1000		7	0
,,	,, 2 years transplanted, per 1000		10	0
,,	,, 3 years transplanted, per 1000		15	0
,,	Menziesi, 1 to 2 in., cutting, in pots, each		1	6
,,	Morinda, 1 year seedling, per doz.		6	0
,,	,, 3 to 4 in., in pots, each		1	0
,,	,, 4 to 6 in., in pots, each		1	6
,,	,, 1 ft., in pots, each		3	6
,,	,, 1½ to 2 ft., in pots each		7	6
,,	nigra, 1 year seedling, per 1000		40	0
,,	,, 2 year transplanted, per 1000		75	0
,,	,, 3 years transplanted, per 1000	£5	0	0
,,	,, 1 ft., in pots, each		1	0
Picea	amabilis, 2 to 3 in., grafted, each		10	6
,,	balsamea, 1 year seedling, per 1000		5	0
,,	,, 1 year transplanted, per 1000		20	0
,,	canadensis, 2 years transplanted, per 100		40	0
,,	,, 2½ to 3 ft., each		1	0
,,	cephalonica, 6 in. seedling in pots, each		2	0
,,	,, 3 years transplanted, per 100		60	0
,,	Fraseri, 6 in. seedling, in pots, each		1	6
,,	nobilis, 2 in. grafted, in pots, each		3	6
,,	,, 4 in. grafted, in pots, each		10	6
,,	Nordmanniana, 2 to 3 in. grafted, in pots, each		20	0
,,	pectinata, 1 year seedling, per 1000		5	0
,,	,, 2 years seedling, per 1000		7	6
,,	,, 1 year transplanted, per 1000		15	0
,,	,, 2 years transplanted, per 1000		25	0
,,	Pichta, 2 in. seedling, in pots, each		2	6
,,	Pindrow, 2 to 3 in. seedling, in pots, each		21	0
,,	Pinsapo, 2 to 4 in. in pots, each		2	0
,,	,, 6 in., in pots, each		3	6
,,	,, 3 years transplanted, per 100		50	0
,,	spectabilis, 1 in., in pots, each		2	6
,,	,, 2 to 3 in., in pots, each		3	6
Cedrus	Deodara, 6 to 9 in., in pots, each		5	0
,,	,, 9 to 12 in., in pots, each		7	6
,,	,, 4 to 5 ft., in pots, each		25	0
,,	,, 5 to 6 ft., in pots, each		30	0
,,	,, 6 in. grafted, in pots, each		3	6
,,	Libani, 2 to 3 in., grafted, in pots, each		3	6
,,	,, 6 in., grafted, in pots, each		9	0
,,	,, 9 in., grafted, in pots, each		1	0
,,	,, 18 in., grafted, in pots, each		2	0
,,	Africanum, small		10	0
Larix	americana, 2 to 3 in. seeds, in pots, each		2	6
,,	europæa, 1 year seedling, per 1000		1	0

CONIFERÆ—continued.

		£.	s.	d.
Larix	europæa, 2 years seedling, per 1000		4	0
,,	,, 1 year transplanted, per 1000	5s. to	7	6
,,	,, 2 years transplanted, per 1000	8s. to	11	0
,,	,, 3 years transplanted, per 1000		15	0
,,	,, (from Tyrolese seed) 2 years seedling, per 1000		5	0
,,	macrocarpa, 4 to 6 in., in pots, each		3	0
,,	nigrita, 1 year, in pots, each		0	4
,,	virginiana, 3 to 5 in., in pots, each		2	0
,,	rubra, 2 ft., in pots, each		5	0
Cupressus	australis, 3 to 5 in., cuttings in pots		3	0
,,	cupensis, 1 in., cuttings in pots, each		2	6
,,	lusitanica, 1½ foot, seedling, in pots, each		3	6
,,	nepalensis, 4 in., seedling, in pots each		3	0
,,	occidentalis 2 to 3 in. cuttings, in pots, each		3	6
,,	pendula, 1 year, seedling, per dozen		2	6
,,	sempervirens, 9 in., each		1	0
,,	,, 1 to 1½ foot, each		1	0
,,	,, fol. aurois variegatis, 4 in., each		3	6
,,	,, horizontalis, 1 year, per 100		3	6
,,	,, 6 to 9 in., in pots, each		0	9
,,	,, stricta, 1 year seedling, per 100		3	6
,,	thujoides, 1 to 2 in. cuttings in pots, per dozen		3	0
,,	,, 15 in., seedling, each		2	0
,,	thurifera, 4 in., cuttings in pots, each		5	0
,,	torulosa, 1 year seedling, per dozen, in pots		4	0
,,	,, 4 to 6 in., 1 year seedling, in pots, each		0	9
,,	,, 12 to 15 in., 1 year seedling in pots, each		1	0
,,	Tournefortia, 1 year seedling, per 100		7	6
,,	,, 6 to 12 in., in pots, each		0	6
,,	,, 2 to 3 feet, in pots, each		1	0
Juniperus	Bedfordensis, 2 to 3 in. in pots		3	6
,,	communis, 1 year seedling, per 1000		7	6
,,	,, 2 years seedling, per 1000		10	0
,,	excelsa, 1 to 2 in., in pots, each		1	0
,,	,, 12 to 15 in., in pots, each		7	6
,,	Gossamthamea, 1 to 2 in., in pots, each		2	6
,,	Lycia, 1 year seedling, in pots, each		1	6
,,	,, 4 in., 1 year seedling, in pots, each		3	6
,,	phœnicea, 1 year seedling, in pots, each		1	0
,,	,, 6 in., 1 year seedling, in pots, each		3	6
,,	pendula, 4 to 6 in., grafted, in pots, each		10	6
,,	Sabina, 1 to 2 in., grafted, in pots, each		0	4
,,	,, 9 to 12 in., grafted, in pots, each		2	6
,,	sibirica, 2 to 3 in., grafted, in pots, each		1	0
,,	suecica, 1 to 3 in., cuttings, in pots, per doz.		3	0
,,	,, 2 to 4 in., cuttings, in pots, per doz.		4	0
,,	,, 1 ft., in pots, each		0	9
,,	tamariscifolia, 6 to 9 in., in pots, each		5	0
,,	virginiana, 3 to 4 in., seedling, each		0	4
,,	,, 9 in., seedling, each		1	0
Thuja	articulata, 1 year seedling, in pots, each		0	9
,,	,, 6 in., seedling, in pots, each		2	6
,,	falcata, 1 ft., each		1	6
,,	occidentalis, 4 in., 1 year bedded, per 100		5	0
,,	,, 9 in., each		0	4
,,	orientalis, 1 year, seedling, per 100		5	0
,,	,, 2 year bedded		10	0
,,	orientalis, 6 to 9 in., in pots, each,		0	6
,,	,, 9 to 12 in., in pots each		1	0
,,	pendula, 3 to 4 in., in pots, each		7	6
,,	,, 6 to 9 in., in pots, each		10	6
,,	tatarica, 6 to 9 in., in pots, each		1	0
,,	,, 1 ft., in pots, each		2	6
,,	Warreana, 1 ft., in pots, each		2	6
Taxodium	distichum, 1½ ft., in pots, each		0	9
Taxus	baccata, fol. argentea, 2 in., in pots each		7	6
,,	canadensis, 4 to 6 in., in pots, each		1	0
,,	hibernica, 6 to 12 in., in pots, each		1	0
,,	,, 1½ to 2 ft., in pots, each		2	0
,,	,, 3 ft., in pots, each		3	6
Araucaria	imbricata, 4 to 6 in., in pots, each		3	6
,,	brasiliensis, 1 ft., in pots, each		7	6
,,	,, 2 to 3 in., in pots, each		10	6
,,	,, 5 to 6 feet, in pots, each	£4	0	0
,,	Cunninghami, 3 in., seedling, in pots, each		10	6
,,	,, 8 to 10 feet	£35	0	0
Bella	jaculifolia, 1½ ft., in pots, each		5	0

PETER LAWSON AND SON,
Seedsmen and Nurserymen to the Highland and Agricultural Society of Scotland.
AGENTS.—Messrs. W. and J. NOBLE, Seedsmen, 152, Fleet-street, London.
Edinburgh, Nov., 1844.

TULIP SEED, &c.

HENRY GROOM, CLAPHAM RISE, near London (removed from Walworth), BY APPOINTMENT FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, having observed in the Leading Article of the *Gardeners' Chronicle* of Nov. 16, a notice of raising TULIPS from Seed, he begs to state that he has saved a large supply of Seed this season, which can be had in packets at 5*s.* each. He also begs to offer the following articles:—

		£.	s.	d.
100	TULIPS, in 50 fine sorts, with names	5	0	0
	Superfine mixtures, 21*s.* per 100.			
100	RANUNCULUSES, in 100 superfine sorts, with names	2	10	0
	Superfine mixtures, 10*s.* 6*d.* to 21*s.* per 100.			
100	ANEMONES, in 100 superfine sorts, with names	2	10	0
	Superfine mixtures, 10*s.* 6*d.* per 100.			
25	AURICULAS, in 25 superfine sorts, with names	3	3	0
25	pair of CARNATIONS, in 25 do. do.	2	10	0
25	pair of PICOTEES in 25 do. do.	2	10	0

LILIUM LANCIFOLIUM ALBUM, good bulbs, 2*s.* 6*d.* each.
,, ,, PUNCTATUM ,, 7*s.* 6*d.* ,,
,, SPECIOSUM, true ,, 52*s.* 6*d.* ,,
Foreign orders executed.

KNAP HILL AND BAGSHOT NURSERIES.

NOTICE.—The Business of these Nurseries, since the death of the late Michael Waterer, carried on in the name of H. and J. WATERER, is by mutual agreement divided. The KNAP HILL NURSERY will in future be carried on by HOSEA WATERER, and that at BAGSHOT by JOHN WATERER. It will, therefore, be of importance, to prevent confusion, that correspondents be particular in the address, and direct letters intended for the Knap Hill Nursery, to HOSEA WATERER, Knap Hill, near Bagshot: and those for the Bagshot Nursery, to JOHN WATERER, Nurseryman, Bagshot, Surrey.—November 30.

SHILLING'S EARLY GROTTO PEA.

THE above PEA possesses advantages over every other for autumn sowing, being quite hardy, very prolific, and much larger than any other early Pea. See *Gardeners' Chronicle*, 25th of last May. "Mr. Shilling has sent us specimens of his new Early Grotto Pea, which were gathered on the 20th inst. He states that these were produced from seed sown in the open ground on the 25th of last November. Judging from the specimens sent, this is a fine, large, good-looking Pea, and will, no doubt, be found to be a very useful early variety."

To the Market Gardener they will be found invaluable. Price 1*s.* 6*d.* per quart, 12*s.* per peck.

SHILLING'S QUEEN CABBAGE, which gave such general satisfaction last year, as the best early variety grown. Having saved a considerable quantity of seed this summer, it is offered on the following advantageous terms:—1*s.* 6*d.* per oz., 20*s.* p. lb.

Agents—Messrs. Field and Child, 119, Lower Thames-street; Messrs. J. and W. Noble, 152, Fleet street; Mr. J. Keynes, 4, Great Russell-street, Covent Garden; Messrs. Hurst and Mr. Mullen, 6, Leadenhall-street, London.

Northamptonshire Nursery, Odiham, Hants.

ADDRESS TO THE PLANTERS OF ENGLAND.

TRUE HIGHLAND PINE-TREE.

MY LORDS, LADIES, AND GENTLEMEN,—The time has come, when all those who have waste lands at their disposal should plant them. Of this I am fully persuaded, and I beg you will allow me to explain on what grounds this opinion is founded. England, generally, is a thickly-wooded country, yet, strange though it may appear, it has not been planted with any view to meet its most urgent wants. If the poor farmer require an outhouse built for his cattle, he cannot have it because there is no dead-wood in the neighbourhood: he builds it therefore of wicker, or of any other rubbish he can lay hold of. Instead of having plenty of firewood on all hands to fence young hedges, planted like other things on the common surface of the ground, military-like fortifications have been raised to divide fields, occupying as much good land as is contained in three of the largest counties of Britain: it is on those banks ineffectual attempts have been made to grow hedges. After the 1st of March, when the Royal Agricultural Society's prize on fences shall have been awarded, a great proportion of the hedges throughout England will be reconstructed by planting them on the plain surface; and the question will then arise, "Where is the wood to protect them in their young state to come from?" Turning to the railways which are now being formed in every county in England, another and greater question arises as to the supply of wood which will be required in *their* construction. Go up, I am told, to the Lebanons of our island—those immense forests in the north of Scotland—and there hew down as many trees as will be required. From those, however, I find we must expect but a limited supply. Like the famous Mount of old, they are already overrun with the axe, and a continuance of the present rate of demand for a few years more will reduce the trees upon them to a mere remnant. It is not the original numbers required for sleepers which will effect this change, but it is the incessant demand, *ad infinitum*, for timber to replace that which is already laid down, or may be for the future laid down in additional lines. Look at it how we may, the state of our country at the present crisis proves that our immense and almost measureless tracts of what is generally called waste land were not created to be a scene merely of unproductive solitude. The rains with which they are refreshed, and the fostering sunshine that rests upon them, might have taught us that Providence had designed them to contribute in some way or other to the wants of man; and though Nature has been unable to lead us to comprehend her lesson, so simply brought before us, necessity has at length compelled us to look to those districts where only a sufficient quantity of timber can be raised to meet our increasing wants. Now, then, is the time to plant: wherever there is a waste piece of ground, moor, or mountain, let it be forthwith invested with trees, for every year, for many years to come, will unquestionably bring with it an additional demand for timber. Thus far on the necessity of planting. Allow me next to bring under notice the sort of tree I would recommend to be planted, which is the chief aim of this Address. That tree is the TRUE HIGHLAND PINE, for introducing which I had the honour, along with my brother, of receiving the Highland Society's prize. It is admirably fitted, in every respect, to take possession of all the uplands throughout England. It will grow freely on all soils suitable for the common Pine; its wood is very durable; and for railway sleepers it is unrivalled. Brindley, the celebrated engineer, considered its durability equal to that of the Oak; and Dr. Smith states, in the *Transactions of the Highland Society of Scotland*, that he has seen some of it taken down after it had been 300 years in the roof of an old castle, as fresh and full of resin, as newly imported timber from Memel, and that it was actually worked up into new furniture. "Such," says Loudon, "is the durability of this wood, that while the bog timber of the Birch is often found reduced to a pulp, and the Oak cracks into splinters as it dries, the heart of this Pine remains fresh, embalmed in its own turpentine."

MY LORDS, LADIES, AND GENTLEMEN,—Allow me to add a word or two on the merits of this tree as a landscape ornament. In this respect it rivals, if not excels, the Cedar of Lebanon. It has, at any rate, a much better ramification than the Cedar; for, as Sir Walter Scott observes, it assumes in a great measure the bold and contorted figure of the Oak. In illustrating the Seats of Norfolk (and the remark is applicable to all England), it frequently occurred to me that advantage had not been taken of prominent situations by investing them with grand evergreen trees; for so soon as November comes, our parks lose almost all that weight of grandeur for which they are so celebrated in summer-time. Their solemnity ceases with the fall of the leaf; but were they ornamented with this Pine, its broad umbrageous canopy remaining green during winter, the change consequent upon the approach of winter would be much less observed, and our country residences would at all times be surrounded with the dignified accompaniments so consistent with their character.

The importance of this subject will, I doubt not, be accepted as an apology for my thus venturing to express my opinions so plainly on matters of English practice. My suggestion as to the improvement of park and pleasure-ground scenery by introducing the Pine in question is offered with the greatest deference, being fully persuaded that in matters of this description England has been always distinguished for its refined taste. I am ready to dispose of the Highland Pines at the following prices:—

Single Plants, strong and well rooted	6*d.* each.
Strong Plants, 18 to 20 inches high	1*s.* per 100.
Strong Plants, 15 to 18 inches	30*s.* p. 1000.
Smaller-sized Plants for exposed situations	10*s.* to 20*s.* p. 1000.

I have the honour to be, My Lords, Ladies, and Gentlemen,
Your most humble Servant,
JAMES GRIGOR, NURSERYMAN, Norwich.

TO THE CULTIVATORS OF ROSES.

R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk, begs to offer the following choice PERPETUAL ROSES. Good dwarf plants, own roots, suitable for pot culture or transplanting into the open borders.

Aricie	2*s.*	6*d.*	
Aubernon	2	6	
Augustin Mouchelet	2	6	
Clementine Berlage	2	6	
,, Duval	1	6	
Dr. Marx	2	6	
Duc d'Aumale	2	6	
Duchesse de Nemours	3	0	
Duchess of Sutherland	2	6	
Earl Talbot	2	6	
Fulgorie	1	6	
Jules Depont	2	6	
La Reine (strong plants)	7	6	
Lady Alice Peel	5	0	
Lady Fordwich	1	6	
Lane	2	6	
Madame Laffay	2	0	
Madame Cosna	2	6	
Madame Elliot	2	6	
Reine de Galles	2	6	
Rubens Rosea	2	6	
Reine de la Guillotiere	2	6	
Rivers (Laffay's)	2	6	
William Jesse	2	6	

BOURBON.

Acidalie	1*s.*	6*d.*	
Alfred	2	6	
Anne Boleze	2	6	
Armosa	1	6	
Caresse	2	6	
Crimson Globe	2	6	
Dumont de Courset	2	6	
Dubourg	1	6	
Gloire de Rosamene	1	6	
,, de Paris	2	6	
,, Guillotiere	2	6	
Lisdat grandiflora	2	6	
Madame Noirard	1	6	
Madame Ashe	2	6	
Mantuan de Jeanne d'Arc	2	6	
Paul Joseph	2	6	
Phœnix	2	6	
Proserpine	2	6	
Queen of Bourbon	1	6	
Souvenir de la Malmaison (strong plants)	7	6	
Splendens	2	6	
Theiffait	2	6	

Cloth of Gold (Noisette), strong plants, 7*s.* 6*d.*

Choice Roses selected from various classes:—Dwarf Standards, 12*s.* per dozen; do., superior kinds, 18*s.*; Standards, 18*s.* per dozen; do., most superior, 24*s.*

A descriptive Catalogue sent on application. Plants guilty to compensate for distant carriage.—Bungay, Nov. 30.

LANDSCAPE GARDENING AND GARDEN ARCHITECTURE.

MR. GLENDINNING, since his residence near the Metropolis, has had the honour to be consulted by a number of Noblemen and Gentlemen in the improvement of their Parks and Gardens, and in the construction and heating of Horticultural Buildings in the most ECONOMICAL as well as effectual manner. He has now made such arrangements as will enable him to devote his particular attention to these important subjects; and Noblemen and Gentlemen desirous of consulting him, are respectfully requested to address him at Chiswick Nursery, near London.

WANTED, 500 YEWS, 6 inches high; 250 BUCKTHORNS, 1 foot high; 50 Small DECIDUOUS CYPRESS. Prices to be sent to Mr. MATTHEWS, 5, Upper Wellington-street, Covent Garden, London.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 30, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Dec. 2.	Entomological	8 P.M.
TUESDAY,	Dec. 3	Horticultural	2 P.M.
		Linnean	8 P.M.
WEDNESDAY	Dec. 4	Society of Arts	8 P.M.
FRIDAY,	Dec. 6	Botanical	8 P.M.
WEDNESDAY	Dec. 11	Microscopical	8 P.M.
SATURDAY,	Dec. 14	Royal Botanic	4 P.M.

WE proceed to redeem our promise of offering remarks upon the EXPERIMENTS made by our correspondents with POTATOES during the past season; and we commence with one of singular interest and importance by Mr. GREY, of Dilston, the full particulars of which will be found in another column.

It is well known that whatever care may be bestowed in taking up a Potato crop in the autumn, some tubers will remain in the ground; and it has been observed that the plants from such tubers are extremely vigorous when they make their appearance in the succeeding spring. Potato-growers are also aware of the existence of a prolific variety called the Onion Potato, which is always allowed to remain in the ground during winter. These, or some such facts, have led to the suspicion that it would be better to set Potatoes in the autumn than in the spring, and that this sort of plant is hardier than is generally supposed.

Mr. Grey, of Dilston, in the experiment now published, has put this question to the test; and, considering the care and skill with which the trial was made, we must regard it as conclusive under exactly the same circumstances. It will be seen that autumn-planted crops gave a return of 111 loads per acre, while the spring-planted produced but 86 loads, although, with the exception of the season of planting, all other circumstances were equal.

The circumstances under which so enormous a difference was obtained, without the expenditure of one shilling more in the cost, are deserving most careful investigation. It appears that the main features in Mr. Grey's operation were—1. That the Potatoes were replanted as soon as they were taken up; 2. That a moderate quantity of but slightly-fermented dung was employed; and, 3. That the sets were well covered in by deep ploughing. Of these the two last are, we imagine, the most important; and they are probably indispensable to success.

Whether or not the Potato is reset as soon as taken up, or at a later period in the autumn, is perhaps unimportant; and therefore we should be inclined to attach little weight to the supposed difficulty of getting land ready so early as to take an autumn crop of Potatoes directly after harvest. If they cannot be planted, like Mr. Grey's, by the 20th October, they might, we conceive, be in the ground without risk a month or five weeks later, in well-drained land, without any difference in the result. Our reason for entertaining this opinion is, that the Potato undergoes no change during the autumn or winter—it is only when the spring returns that mischief is done to the Potato seed by sprouting and heating; and it can hardly make a difference in the result whether the Potatoes to be planted are buried in drills in the soil of a field, or in heaps of earth in any other place. We would, therefore, advise the experiment to be tried even now, if the weather remains mild enough, by those who have land in proper order, provided it is light and thoroughly drained. It would, however, be better now to plant whole Potatoes rather than sets.

The two last precautions adopted by Mr. Grey may be considered together. Potatoes cannot bear frost: the objection to autumn planting is the supposed difficulty of preserving them from it with certainty. By a slight addition of loose dung, and burying them to a sufficient depth, Mr. Grey was able to keep off the frost of 1843-4; and therefore he succeeded. But it remains to be determined whether the same precautions will be sufficient in another winter. We do not know what was the lowest degree of temperature near Newcastle last winter, but we find that near London the thermometer never sunk lower than 14°, and that frost did not penetrate the ground there deeper than 2 or 3 inches. From so slight an amount of cold the means employed by Mr. Grey would be amply sufficient to guard the Potatoes. But would they be equally effectual in harder winters?

The difficulty of answering this question with confidence arises out of the insufficiency of our information concerning the temperature of the soil. Observations on the temperature of the air are endless; on that of the earth very few. Indeed, we cannot lay our hands upon any in which confidence can be placed, except those of Mr. Ferguson, of Raith, and such as have been recorded in the Garden of the Horticultural Society. It appears from the former observations, that at one foot below the surface the thermometer stood as follows:—1816, Jan., 33°, Feb., 33°.7, Dec., 35°.7; 1817, Jan., 35°.6, Feb., 37°, Dec., 35°.9. (See "Theory of Horticulture," p. 95). It is therefore to be inferred that a covering of soil to the depth of a foot would have proved sufficient in all these months. Moreover, loose soil conducts heat worse than hard soil, and the loss of heat would be still further diminished by long litter used with it, so that Mr. Grey's method would probably afford ample protection in such seasons as that of 1816 and 1817. We should, indeed, be inclined to think that it would afford protection in any English winter; for at a foot below the surface, in solid ground, experience shows that the temperature in winter is about a degree or a degree and a half above the *mean* temperature of the atmosphere. It is true that, according to the testimony of various persons, a much greater degree of cold is experienced in the soil. It was, for instance, stated that during the hard frost of 1837-8, the ground was frozen to the depth of 28 inches at Claremont, and at Liverpool to the depth of 18 inches; but it is to be remarked that in the former of these places the thermometer in the air is said to have fallen to 14° *below* zero, while in the latter it was not less than 9° *above* zero. There is, however, great reason to suppose, either that there was some error in those observations, or that the state of the earth was modified by unexplained local causes. For in the very carefully conducted experiments in the Garden of the Horticultural Society, the solid ground at one foot below the surface was never actually frozen (although the thermometer fell to 4½° *below* zero), the lowest range of a thermometer buried one foot below the surface having been 33°; and it was found by digging, that the frost had only penetrated the loose soil of the Kitchen Garden 9 inches; a hard loam footpath 10 inches; the soil of a mossy lawn 5 inches.

What experience we have then, leads us inevitably to the conclusion that autumn planting, with the precautions taken by Mr. Grey, will not only succeed in mild winters, but probably also in our hardest. And this conjecture is rendered the more plausible by the well known fact, that plants, even when frozen, are but little injured if they thaw slowly, and in the dark, which is precisely what must happen to the buried Potato. We would, therefore, have Potato-growers bestir themselves and attend to this matter; for we presume they can have no objection to change their 15*s.* for a guinea, which was about what happened in Mr. Grey's very important experiment.

AMONG the smaller class of contrivances which the fondness for house-gardening has called into existence, nothing is better in its way than Mr. BECK'S SLATE POT, made by jointing together small slabs of slate into the capacity of a common garden-pot. To be sure, they are at first somewhat expensive, but, like many other expensive things, they are really much cheaper than what costs less money; for they cannot be worn out, and can scarcely be broken; besides which, they are much better suited for sitting-rooms than common garden-pots, whose porous material renders it difficult to keep them moist without being wet. Some of the finest Roses and Pelargoniums that appeared at the London Shows last year were grown in this kind of vessel, and every one who saw them must admit that they were unsurpassed. Slate pots possess, moreover, the convenience of being square, so that they can be easily packed into any given space, and of being heavy, which prevents their being easily upset.

In short, they are a prodigious improvement upon the garden-pot, both as regards appearance and utility, and we heartily recommend them to the favourable consideration of the public, who will not think the worse of them when they know that their fabrication gives winter employment to some very worthy and deserving workmen.

To this we would add a word of commendation in favour of MR. HUNT'S NEW HYACINTH POT, made in ornamented China, and in the form of the common Hyacinth-glass. It has a neat contrivance for fixing the wires required to steady the flowering spike and leaves of the Hyacinth, and presents the advantage of keeping the young roots of this bulb in the dark. To this we may add, that they are better-looking than the Hyacinth-glasses in common use.

ON PRUNING FOREST-TREES.

WITHOUT entering into the controversy between Dr. Thackeray and Mr. Billington, on their different systems of pruning forest-trees, I beg to give what, according to my limited experience, I conceive to be the best system of pruning trees which are designed for timber.

The object aimed at is to produce the greatest quantity of timber, of the best quality, in the shortest time. If the object were simply to produce the greatest quantity, without having regard to its quality, there is no doubt that this would be best accomplished by judicious thinning, and in other respects leaving the trees entirely to nature. For it is generally agreed that the office of the leaves of a tree is to elaborate the crude sap which rises from the root, and form it into *cambium*, or proper juices, which descend and form every year a layer of alburnum or soft wood between the bark and the wood of the previous year, down to the root, which alburnum hardens into timber; and the longer the tree stands the harder it becomes, from the pressure of the successive annual layers. This being the case, it is easy to understand that a tree loses an organ of nutrition in every leaf that it is deprived of. But it is required that the timber should be of good quality, as well as great in quantity; and this treatment would not answer for that purpose; because the best timber is produced in the bole, and by leaving a tree to Nature, the branches, where they had room to grow, would increase at the expense of the bole, which would then most probably become forked at a short distance from the ground. The object of pruning, therefore, is to obtain a tall, straight, and thick bole in as short a time as possible.

Now, if the growth of trees be carried on in accordance with the principles above alluded to, and the leaves perform the important functions attributed to them, I conceive that in order to obtain the desired end, two objects ought chiefly to be kept in view, viz., to increase, as much as a tree is capable, the amount of its foliage, and to decrease, as much as possible, the amount of wood in the side-branches. If both these objects could be accomplished at the same time, and in the same tree, the foliage having little or no wood in the side-branches to support, the timber in the bole would rapidly increase. But since this is impossible, as these two objects are incompatible with each other, and cannot be both fully attained, the best mode of pruning is that which can most nearly unite the accomplishment of both these objects, and make the one yield to the other in the proper proportion.



The following method is the best with which I am acquainted for effecting this; and, so far as I can judge from the little experience of it that I have had, I can confidently recommend it as likely to prove successful, if properly followed up.

Commence pruning when the trees are young; and, beginning at the top of a tree, cut off all the leaders but the strongest and best ones, at the second or third bud from their base; then cut off the first side-shoots below these, at the fourth or fifth bud from the main stem, the next at the sixth and seventh, and so on, downwards, in regular gradation to the bottom; so that the tree may assume a conical shape, each side-branch projecting a little further from the main stem than the one immediately above it. I do not mean that these directions should in every case be followed exactly; I merely give the principle, as nearly as I can. By this mode the lateral branches of the tree, instead of becoming large and projecting far from the stem, with perhaps only a few leaves at their extremities, will be kept of a moderate length; and small branches bearing leaves will be greatly multiplied, so that the tree will be well clothed with foliage nearly from the top to the ground, and a quick upright growth will be produced. This pruning should be repeated every year, or oftener, if required; and it may be done at any season of the year, as the branches to be cut off will always be small, and therefore small wounds will be made; and time would be lost by delay, although the best season is the early part of summer, soon after the trees have completed the growth of their spring-shoots.

As the tree rises, the lower branches should be suffered gradually to extend, which they will be able to do, if the branches above them are not permitted to overhang their extremities, and the conical shape will thus be preserved, and its appearance will be somewhat like that of the figure. This system of pruning is intended for deciduous trees; but it may be partially applied to evergreens with advantage. It is well adapted to exposed situations, as the leading shoots grow stronger and are better able to bear the exposure, and the closeness of the foliage and small branches assists in protecting the stem from the chilling and drying influences of wind and weather. The tree should receive no other kind of pruning than the above, if it were not required that the timber should, as far as possible, be uninjured by knots. But on this consideration only it will be necessary, when the tree attains the height of about 12 or 15 feet, to commence pruning away gradually the lower branches, by cutting off one tier only every year, smooth and close to the stem, leaving no snags, but taking care not to carry this process too far—not denuding the stem for more than about half the height of the tree. When trees are intended for shelter or a screen, the lower branches ought not, of course, to

be cut off. This method of pruning is not adapted to trees intended for ornament, particularly single trees, where beauty is desired; for Nature, when left to herself, is usually most picturesque. But it may, however, with advantage be modified for ornamental trees, according to the taste and intention of the grower. A fine tall tree, with a straight stem and full of foliage, is, in many situations, a beautiful object, and denotes care and culture, and when required may be rendered useful. Whenever the trees touch each other, thinning is required; and as this is of great importance, it should on no account be neglected.—*A. Thompson, Whitehaven.*

PINE-APPLES AT KNOWSLEY.

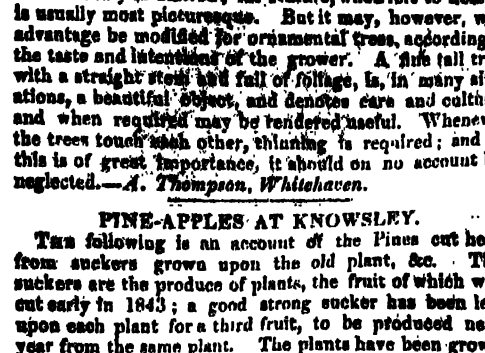
The following is an account of the Pines cut here from suckers grown upon the old plant, &c. The suckers are the produce of plants, the fruit of which was cut early in 1843; a good strong sucker has been left upon each plant for a third fruit, to be produced next year from the same plant. The plants have been grown in pots, plunged in a common pit filled with leaves and tan. The twins are produced by allowing two suckers to remain upon the old plant to fruit in one pot:—

1844 When cut.	What kind.	Weight. lbs.	oz.	How Grown.	Remarks.
August 23d	Montserrat	4	10	Sucker.	All grown in pots, and plunged in tan and leaves in a state of fermentation.
Sept. 21st	Ditto	5	12	Ditto	
,, 22d	Jamaica	5	2	Ditto	A Twin Fruit.
,, 26th	Montserrat	5	14	Ditto	
October 2d	Ditto	5	10	Ditto	
,, 2d	Jamaica	5	12	Ditto	
,, 2d	Montserrat	4	15	Plant.	Sucker left on this Plant.
,, 4th	Ditto	5	0	Sucker.	
,, 5th	Ditto	5	0	Ditto	
,, 6th	Ditto	5	3	Ditto	
,, 7th	Ditto	4	13	Ditto	
,, 16th	Jamaica	4	12	Ditto	A Twin of Sept. 22
,, 19th	Montserrat	4	12	Plant.	Sucker left on this Plant.
,, 20th	Ditto	4	13	Sucker.	
,, 22d	Ditto	5	8	Ditto	This Sucker very high above the pot.
,, 24th	Ditto	5	0	Ditto	
,, 24th	Ditto	5	11	Ditto	
,, 24th	Ditto	5	11	Plant.	No Sucker allowed to grow on this Plant.
Nov. 2d	Ditto	4	15	Sucker.	
,, 6th	Ditto	5	0	Ditto	
,, 13th	Ditto	4	11	Ditto	
,, 13th	Ditto	4	11	Ditto	
,, 16th	Ditto	4	9	Ditto	
,, 17th	Ditto	5	4	Ditto	A Twin Fruit.
Total	No. of lbs.	123	0		

—*John Jennings.*

ENTOMOLOGY.

Diseases of the Larch.—This handsome tree, as well as the other Coniferæ, is subject to the attacks of various insects; and, amongst others, to a species of Coccus, I believe; but its economy requires to be more rigidly investigated before the genus can be accurately determined. From the number of communications I received in the early part of the year regarding these insects, I am induced to enter upon their history, imperfect as my materials may be; and I trust that it will lead to the study of these curious animals, and to a more perfect knowledge of their economy the ensuing spring, when I doubt not they will make their appearance, as I never searched for them unsuccessfully.



Towards the end of last April, the Larch-trees, as they burst into leaf, were infested with a disease somewhat resembling the American blight, occasioned by a little black soft animal (fig. 7a—the underside highly magnified), the apex being more or less covered with a short white cottony substance. These creatures, which are exceedingly like the various species of Coccus, or rather of Aspidiotus, when the scale is removed from them, are somewhat orbicular or oval, and less larger than a pin's head; they have six very small legs, and a short stout proboscis, from which proceeds a long flexible setiform tube of exceeding fineness, which was inserted into the scales of the bud; the apex of the abdomen was slightly conical, and exhibited several segments, and others were less visible in the region of the trunk; they were either seated upon the buds where the leaves are produced, or behind them; and close to this animal were clusters of minute eggs (fig. 2), amounting to 30 or 40 in each (fig. 3, several magnified); they are attached by a long, excessively fine thread, proceeding from one end (fig. 4), and are of a yellowish colour; but often completely powdered over with a fine lilac bloom. At the same time, scattered over the leaves were minute black specks, scarcely visible to the naked eye (fig. 5), but which, under a lens, proved to be black insects, which I suspected at the time were bred from the eggs; and this opinion was strengthened by the fact, that as their numbers increased, the clusters of eggs became emptied of their contents. They moved about freely at first, but when they had fixed upon a leaf, their fine rostrum was at once inserted into it, and from that time they appeared to rest in a dormant state; some were not unfrequently lying on their backs—others, small as they were, had cast their skins, which were either adhering to their tails, or stuck to the leaf at a short distance off. Under a microscope, these black atoms exhibit a very different appearance to their female parent, if such the Coccus be; they are elliptical, and have large black heads, with two short stout antennæ; the two basal joints are large, the remainder tapering; the thoracic segments are distinctly visible, and furnished with six short legs; there are four rows of minute tubercles down the back, and the lateral margins are likewise tuberculated (fig. 6).

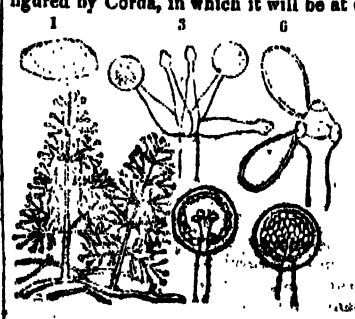
In the beginning of June I observed these young animals had spread themselves over the leaves of the Larch-trees, and were beginning to be clothed with a cottony substance. Here my observations were interrupted, for I returned to London, and the twigs I took with me did not remain fresh long enough to throw any more light upon their economy.

These animals seem to form a connecting link between the Scale insects (Coccus and Aspidiotus), and the genus Eriosoma, which unites them to the Aphides or Plant-lice. What I take to be the female agrees very well in structure with the Cocci; but it is destitute of a scale, and the eggs are deposited, not beneath the mother, being too large to occupy such a position, but on one side of her, and most curiously attached by a pedicel to each; and here another question arises: Are these fleshy females the authors or the produce of the adjacent eggs? for it is possible the female eggs might have been laid the previous autumn, and that the inmates had hatched and assumed their present form before the minute black ones made their appearance; but this is merely a conjecture. The young, if I be correct, are not like the generality of Cocci, having no setiform tails, still they are not very different in form from the Coccus (Trechocorys) Adonidum, and it is possible they may be the Adelges laricis of Vallot, but I think not. Most of these doubts would be set at rest by detecting the adult males, which are probably winged.

With regard to the best means of freeing the Larch-trees from these and similar insects, I fear it will be impossible to suggest any that could be applied until the foliage has fallen; for whilst the leaves remain, the same difficulties would present themselves as in the bristly Pines, where scrubbing and painting the branches cannot be resorted to, as in fruit-trees, &c. Such, however, is not the case with the Larch after it is deprived of its foliage, when any application may be tried, should it be found expedient; and perhaps none is more simple or better than brushing on a good coating of lime or clay, or both mixed, which would render the trees less unsightly. Such a process, if persevered in, would certainly destroy the delicate eggs we have described, wherever the brush reached them, and the coating, when it dried, would prevent any of the young broods from piercing the buds; it would, however, be a tiresome mode if well performed, and not feasible in an extensive plantation. —*Ruricola.*

DISEASES OF PLANTS.—No. VII.

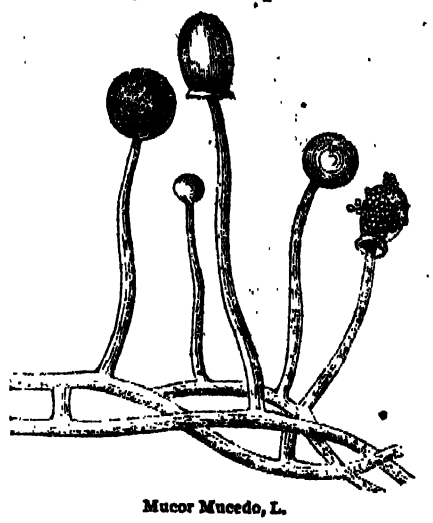
It was remarked in a former Number, that there are two great divisions of Fungi, distinguished by the mode in which the reproductive organs are developed. In the one they are external; in the other contained in little sacs. There is, however, a small group, which though at first sight related to the second class, inasmuch as the fructification is, according to the letter, internal, are really more nearly related to the former. The fact is, that the reproductive bodies are truly spores, though produced within a sac, the vesicle which surrounds them being of the nature of a veil, and indeed a mere continuation of the outer membrane of the matrix. The structure is beautifully illustrated by a very pretty species of mould figured by Corda, in which it will be at once seen that so soon as the vesicle is removed, there is nothing to distinguish it from the sporiferous moulds; and a strong proof of this is afforded by the fact that in more than one instance the early and mature plant have been assigned to different genera, and where this has not been the case, much doubt has existed as to the real structure of the fruit, because the outer vesicle is extremely fugacious, and the spores remain for a long time attached to the internal vesicle.



Acrostalagmus cinnabarinus. 1. A patch, the natural size. 2. Plants very highly magnified. 3. A portion of the fructification still more magnified. 4, 5. Spores plunged in gelatinous heads. 6. A point of a branch with two spores remaining upon it.

Another curious point is, that as in the Mushrooms, the same spicule has been observed to produce a succession of spores, so in the plant now figured, one spore as soon as it is ripe falls off, and makes room for another, the whole being retained within the globular sac till its rupture.

To this group belong a portion of the Fungi known under the name of moulds. That which occurs so frequently on bread affords a familiar example. They are produced with extreme rapidity, and when they establish themselves on a tender juicy matrix, are very destructive. The most common, perhaps, is Mucor mucedo, which abounds on fruit and substances containing fecula or sugar. The spores are at first internal; but the outer vesicle soon bursts, leaving a little frill at the base, and after the spores are washed off, a clavate columella is seen, on which they were at first generated.



Mucor Mucedo, L.

Considered as the causes of disease, the Mucors and allied genera are destructive to fruits, or very succulent parts only, as they require abundant nutriment. They may, indeed, sometimes be seen forming juicy masses upon the wood of shrubs which have been cut off after a hard winter; and though in such cases new shoots are not sent up so vigorously as usual, this may arise not from any evil influence of the mould, but from the loss of the sap which should have nourished the shoots. It is, however, to fruits principally that they are injurious, and any slight wound from insects or cracks arising from a too copious supply of water after a few dry days, affords a matrix of which they soon avail themselves. Mr. Hassall has made some interesting observations on the decay of fruit, in consequence of the growth of moulds, but attention will be pointed to these when we come to that group to which more especially they belong. The species now under consideration seldom appears except where there has been some previous injury exposing the soft cellular substance, though they spread like wildfire as soon as they are once established, as may often be seen in autumn in large Gourds and Cucumbers, which are subject to the attack of a species so minute, that the heads are scarcely visible except under a lens. They afford very pretty objects for a microscope of small magnifying power; indeed, few are more beautiful than the branched mould, which so often destroys woodland Mushrooms; and the purple-fruited species, which sometimes grows on Pears, is scarcely less splendid than a plume studded with amethysts.—*M. J. B.*

Home Correspondence.

Botanical Lecture at Shoreditch Church.—This lecture, of which inquiry is made by your correspondent "T.G.H.," was established in consequence of a fund being left for the purpose by Thomas Fairchild, a distinguished market-gardener of the last century. He was one of the few cultivators of the soil, living during his period, that combined science with practice. He made experiments on the circulation of the sap, which appeared in the "Philosophical Transactions" for 1724, and was the author of the "City Gardener," published in 1722, as well as of various communications to be found in the works of Dr. Bradley. He died in 1729, at Hoxton, where he cultivated a vineyard, almost the latest on record, and bequeathed money to trustees for insuring the delivery of a lecture on Whit-Tuesday annually, in the church of St. Leonard's, Shoreditch. The subject must be either "The wonderful Works of God in the Creation;" or "The Certainty of the Resurrection of the Dead proved by the certain changes of the animal and vegetable parts of the Creation." It is well known as the Fairchild Lecture, but whether it continues to be delivered, as it undoubtedly ought, I cannot say.—*G. W. Johnson.*

The Strawberry.—The following is the result of a few observations on this plant, in the different stages of its growth, from which I hope to be able to prove that an easily-understood method of cultivation may be successfully adopted. If you examine a Strawberry-plant, or runner, in October, it will be found to have produced several straight and succulent roots springing from a bulb-like hard but succulent stem, and several leaves, more or less in number in proportion to the vigour of the plant. In the axil of each of these leaves a bud is formed, and it is the general opinion of gardeners that the fruit is produced directly from these buds. This is, I think, an error; for I have always found that the blossoms are produced from the crown of the offset or runner, and I have seldom found any strong, healthy blooms on these crowns after the first year of bearing. The runner is generally considered to be a perfect plant, that will, if placed under favourable circumstances, very

seldom fail to produce fruit in perfection the following year. In the months of March and April following, if the same plant is again examined, the buds that were observed in the axil of each leaf will be found to have produced a few leaves, and blossoms will be perceived at the crown of the runner; during the time that it is perfecting its fruit, the buds before mentioned will in one part be formed into runners whose sarmentum will have removed them to a distance, whilst the other part of them will be formed into offsets, which are closely attached to the parent stem. It is of importance to observe, that at the same time the offsets are producing leaves, that roots are also formed which strike into the soil, and those that are nearest the surface will be observed to produce longer roots than those that are a little elevated above the soil, but they are distinctly visible in all. The crown of the original plant will, during this time, be considerably elongated, and the roots proceeding from it will be found to have become ligneous and fibrous, and of a deep brown colour. From this, the original crown, as before stated, I have reason to believe no fruit worth notice is afterwards produced. Having now brought the examination down to September or October in the year following that in which the first runner was examined, we have next to look into the state of the plant in the following year. The runners, having taken root at a distance, will require no particular notice, as they will be in the same state that the single runner was at the same period in the preceding year, when we commenced our observations; but we shall find the offsets under very different circumstances. Each offset has become a perfect plant, with leaves and roots, and is qualified to produce fruit; which it would no doubt do, were it not prevented by want of space in which it might develope itself. I have counted 36 offsets upon one Strawberry-plant, at this period of its growth; now, it cannot fail to be observed that each of these offsets and runners will, after this time, annually produce its runners and offsets, until the bed becomes a dense mass of unproductive plants from the want of space, and from being deprived of sun and air, so necessary for forming and elaborating the sap for the production of fruit.—*W. Darke*, 335, *Coventry-road, Birmingham.*

Bees.—In consequence of reading Mr. Pettigrew's Articles on Bees. I was induced to make a large hive, 20 inches in diameter and 13 inches in depth, on the 13th of May last. I placed a good first swarm in this hive, and on the 26th of the same month I put a second swarm into one of Mr. Golding's hives. Both swarms worked well until September, when I removed the bees from both hives and took the honey. The large hive, from which I was led to expect so much, yielded me 10 lbs. of honey, and the small one, from which I expected but little, gave me 12 lbs. What might have been the result had I waited until another season I cannot tell; but I am disposed to think that Mr. Pettigrew's hives are much too large for a locality like this, where the honey-gathering season is of short duration. So much time is necessarily spent in furnishing these hives with combs, that but little is left for storing them with honey.—*Thomas Buckland, Reigate.*

Covering for Frames.—About a month or two ago I prepared the coverings of some frames with the varnish described by "Devoniensis" at p. 301, 1843, and again at p. 392, 1844. I gave them two coats, allowing the first coat to get quite dry before the second was put on—(it did not dry so quickly as I anticipated); after the coverings were finished they were very transparent and almost colourless, and they remained so until a few days ago, when I perceived that they had become quite yellow; they were not in use, but were hung up in a dry airy place; others which were varnished a few days before, and which are in use, remain as transparent and colourless as when first done. Can you tell me what is the probable cause of this change, and whether there is any way of restoring them to their original state?—*Y. Y. Y.* [Perhaps "Devoniensis" will be so good as answer this.]

Potter's Guano.—I have this year tried Potter's guano, which I have found to be quite equal to the character which it receives. I used it for annuals, at the rate of 6 oz. to the square yard; the flowers were itself larger, and remained longer in beauty than any I have seen this season. The annuals were sown on a border where Gooseberry trees had grown for several years; it had not had any manure given it for two years. I have also used Potter's guano for Onions, at the same rate, and the result was quite equal to that from old horse manure, but not better. For flowers I consider it far superior to any manure I have tried.—*C. J. Perry, Handsworth.*

Planting Fruit-trees.—This spring I limed three newly-planted standard Apple-trees, having previously cut away, close in, two-thirds of the shoots, applying Forsyth's plaster to the wounds in a careless way. The dry spring has much damaged new-planted trees; these three Apple-trees have, however, made splendid shoots. The stems have grown very much, and the bark the most smooth, clean, and shining that can be conceived. They had one washing only. The other trees similarly treated but not limed are very inferior in appearance, although standing with them. I applied turpentine to one which was covered with the white blight, brought from the nursery. It killed the blight where it went, but burned the tree, or something like it. Would a weak solution answer?—*M. U.* [No. Spirits of tar are the best remedy for American blight.]

Jets d'Eau.—There are few things in gardens that give more pleasure to the eye than a diversity in the play of water, more especially on a hot sultry day, when it contributes to cool the air, as well as enliven the prospect. Whatever be the direction of the jet, the discharge of water is always the same, provided that the ajutage and the altitude of the reservoir be the same. This is a necessary consequence of the equal pressure of fluids in all directions. Water spouting from a small ajutage has sufficient velocity to carry it to the same height as the water in the reservoir, but it never attains entirely this height, being prevented by various concurring causes:—1st, Friction in the tubes; 2d, Friction against the circumference of the aperture; 3d, The resistance of the air; its weight obstructs the rising column. Thus the Emperor Fountain, lately erected at Chatsworth, with a fall of 381 feet, only raises a jet 267 feet in height. The above causes account for the loss; as all are aware if a pipe were laid to a corresponding height, the column of water would then rise to the height of the place from whence it was supplied. In order to make large jets rise higher than small ones, the conduit-pipe must be large enough to furnish a sufficient quantity of water to supply them. History informs us that the ancients were far before us in this delightful ornament. Greek cities were adorned by them; in Corinth there were several; in Rome, Frontenus was employed in erecting fountains; Pompeii had many, some of which remain to this day. The Fountain of Trevi, and the Pauline Fountain at San Pietro, in Montono, are immense piles of architecture. Italy has employed all her talent in designs for this purpose, and Paris has many—we may call it the City of Fountains; but London, although well supplied with water, is almost destitute of this ornament. However, I am glad to perceive a growing taste for them in the nobility and gentry, for decorating their flower-gardens, &c., as well as in the Government, for placing them in the public parts of the metropolis. I need scarcely remark that it would add much to the cleanliness of this vast city if one was erected at the corner of every street, where there is space. I hail the present day as one of great improvement in this particular. Mr. Roe, in the Strand, has turned his attention to the subject, and I trust he will meet with encouragement. He has also improved the Hydraulic Ram, by which he can raise water from a fall of 10 feet to the height of 300 feet, without labour. The following are a few of the largest fountains in Europe:—

The Emperor, at Chatsworth, height of jet	267 feet
Wilhemmshe Fountain in Hesse Cassel	190
Fountain St. Cloud	180
Peterhoff, Russia	120
The Old Chatsworth	94
Versailles	90

Jointing Earthenware Pipes.—I see by the *Chronicle*, that many of your correspondents are inquiring for a mode of cementing earthen pipes for conducting hot water. I have never used any such myself, but if some of them would try the following, if it has not already been tried, probably it might answer their purpose; in which case I trust they will make known the result to the public. I have seen it used by potters, where pots have cracked in the kiln, and afterwards have found them to be quite sound and useful. Take one pint of sweet milk, nearly two pints of buttermilk, mix the milks, and put them on a slow fire till they turn into curds; then strain them and save the curds. Previously get some good roche lime, pound it fine, and sift it through a fine sieve. Mix the lime with the curd well, until it is tough, and then lute the joints well with it; the pipes should be dry when the cement is applied. It will be sufficiently hard in a few hours, and will not, I think, be affected by hot water. More cement than can be used in half-an-hour ought not to be mixed at a time, as it will get so hard as to be unfit for use. It may be coloured, if necessary, with a little Spanish brown.—*J. Lyons.*

Fuchsias.—Observing in a late *Chronicle* the statement of "A. C." respecting the keeping of strong shoots of Fuchsias among powdered charcoal through the winter, has induced me to mention the following plan, which I tried last year with success. On the 20th of Nov., when I cut down the Fuchsias in the shrubberies, I selected the strongest shoots, and making them into cuttings, planted them into the open border, in rows about 1 foot apart. The plants stood about 3 inches apart in the row, and were covered over with fresh leaves to keep out the frost. The leaves were removed in the month of March; and at that time the buds on the Fuchsias were breaking. I took up one or two of the plants, which I found had made fibres about 2 inches in length. I put in 900 cuttings in this same way, and out of the 900 about 800 struck roots and flowered well through the summer. Another plan is to tie them up into bunches, and placing them below a Laurel bush, for the purpose of keeping them from frost, to make them into cuttings in spring, and plant them then; but they flower much earlier when put in in November. About the place where I reside, there are some thousands of Fuchsias in the shrubberies. When I cut them down last year, I dug into the ground some of the branches, which struck root next spring, and set up young shoots. They grow here as freely as Willows.—*W. C., Forfarshire.*

Fish-ponds.—In answer to "E. W. M." (p. 784,) respecting these, I beg to quote the opinion of Salter—a good angler, and a person who seems to have studied the nature of fishes. He says, "It is improper to plant trees close to a fish-pond, because when the leaves fall they rot, and make the water unclean, and consequently injurious to the fish." These remarks apply more particularly to stews or small ponds; on the other hand, if the ponds are large, and have a good stream running through them, the trees, I conceive, would be beneficial, on account of insects dropping from them into the water, and serving as food for the fish.—*A Reader.*

Morphology.—The recommendation of "A Gardeners' Wife" to be careful, is one which will apply to every person, at all times, and under all circumstances;—for instance, too much care and study can hardly be bestowed, before forming an opinion which is adverse to the plain truths of Morphology. It is true that opposition, like the fiery furnace, will serve to refine it, and separate its dross; but it is not so apparent that those who condemn, without giving it a candid and unprejudiced examination, are altogether blameless. When this lady can spare time from her domestic engagements, to give this subject such a consideration, I have no doubt that her opposition to it will cease; and, intimately connected as she is with the profession of gardening, perhaps no study, apart from her own peculiar province, would present an equally engaging field for the exercise of her mental faculties. With respect to the Achimenes, she will then, perhaps, distinguish between expressions which respectively relate to proximate and ultimate results. I may mention, that in as far as I have meddled with this subject, I have sought rather to excite inquiry, than to make converts; and I am happy to find that this object has been realised.—*T. Moore.*

The Golden Pippin.—From several statements in the *Chronicle*, it would appear that an opinion generally prevails, that the Golden Pippin cannot now be successfully grown in this country. This arose, I believe, from a speculative opinion of the celebrated Mr. Knight, that this variety was in the last stage of decay. It has likewise been stated that "repeated attempts have not been wanting by planters to substitute these old fruits as orchard-trees again, but all have hitherto proved unsuccessful." I have known the Golden Pippin for these 40 years, and can safely aver that I have seen as few symptoms of decay about it, as about any other fine variety of the Apple whatever, when under proper treatment. The first Golden Pippins which I remember to have seen, were growing in Castlestead's garden, Dalkeith Park, then celebrated for its Golden Pippins and May Duke Cherries; the trees were trained against a stone wall which was 10 feet in height, and each tree covered a space of 30 feet in length. I can well remember the excellency of the fruit, but I have no recollection of any appearance of decay or canker about the trees; the soil was light, about 2 feet in depth, and the subsoil was a bed of gravel. About 22 years ago, an old Golden Pippin tree was blown down in the cottage garden, Nonsuch Park. I was directed by my employer to endeavour to obtain a few grafts of it, as he was desirous that so good an Apple should be preserved in the neighbourhood. I went and found that the stem was, indeed, in the last stage of decay; the top had already been cut into faggots, and was piled on the wood-stack, to the top of which I had to scramble. It was with great difficulty that a few grafts could be got, the young wood not being above half an inch in length; the scions were grafted on Crab stocks, and did well. The young trees were, after two years' growth, all given away, except one, which was planted in an open, unsheltered situation, in a very stiff soil; the subsoil was a strong clay. The ground had, however, previously been well drained, and has, ever since the tree was planted, been under a course of vegetable culture. How those trees which were given away may have succeeded I do not know, but the one which was retained has done exceedingly well. It is now a fine healthy spreading tree, with not the least symptom of canker about it, freely producing fruit, which is sound, and without blemish, of a rich yellow colour, with an abundance of spots or freckles of a russet tinge. That this is the true old or original Golden Pippin, I have little doubt; the tree from which the scions were taken, to judge from the size of the trunk, must at least have been 60 years of age, and I believe that the varieties of the Golden Pippin which we now possess have been obtained at a period subsequent to 80 years ago. Now, if a scion taken from a tree in the last stage of decay can, by grafting it upon a proper stock, and growing it in a suitable soil, be so invigorated that it increases yearly in size, health, and luxuriance, producing fine crops during the greater part of 22 years, may we not reasonably suppose, that under the same circumstances it may be continued to a much longer period, and that it may be renewed and continued indefinitely? I have seen the Downton Pippin in such a state of disease and canker that it was taken up and thrown away as worthless, and after lying about for a week, when replanted in a different soil and situation, it has become healthy, divested itself of all appearance of canker, and produced an abundance of fruit. The Old Nonpareil, too, I have known to be so much diseased, that out of a bushel of fruit scarcely six Apples have been worth preserving for dessert; but by trenching and renewing the soil, and properly pruning the tree, it has so far recovered, that latterly, and this year more particularly, it has borne as fine fruit as I have ever seen. Again, Apple trees, apparently in the last stage of decay, have by being grafted with sorts that are coarser feeders, having stronger organs of digestion, had their enfeebled stems overlaid with new and healthy wood, the bark has become clean, and all appearance of disease has vanished. But when we take into consideration the way in which orchards have generally been managed, the too frequent neglect of judicious pruning, and the consequent exhausting crops with no return of restorative nutriment to the soil, with occasional ungenial seasons, we need not wonder that Moss, Lichens, canker, and other debilitating causes soon render the Golden Pippin and other

fine varieties of the Apple unsuitable and unprofitable as orchard Apples. From these facts, may we not safely conclude, that the decay of the Golden Pippin in our orchards proceeds from other causes rather than from the variety being in the last stage of decay?—*James Falconer, Chesham.*

The Tom-tit.—If we succeeded, as "Dodman" (p. 766) wishes, in exterminating this, which he terms "a garden enemy," because it eats one or two choice Pears, which were not protected by a gauze bag, or some other simple contrivance, I fear we would be clearing a way for whole legions of real enemies, that would not only destroy a little fruit, but the tree itself! for, what bird works with more assiduity in the destruction of insects and larvæ of every description, and at all seasons, than the tom-tit? Only watch him peeping into every crevice, and multiply the thousands of destructive insects which he in one day destroys by the thousands they would have generated to ravage our gardens during the next season! and I think it will make "Dodman," or any other lover of birds and gardens, think twice before they killed one tom-tit; and lead him to preserve the tit-mouse as one of his best friends. Fond as I am of birds, I can say little in defence of the bullfinch, knowing something of his operations upon Plum, Cherry, and Gooseberry trees; but viewing, as I do, nature as a great chain in which the most minute creatures form a link, the destruction of one family would cause a confusion, all having a special duty to perform; and, I doubt not, that assigned to the bullfinch is a most important one. Should "Dodman" not consider the soul-enlivening music of the blackbird in our groves, sufficient to repay him for the little fruit they destroy, then must the rural walks of his neighbourhood lose their greatest charm, the sweetest and most delightful of nature's harmony.—*A Lover of Birds, The Aviaries, Cheltenham.*

The Blue Tom-tit.—Your correspondent "Dodman" may very easily rid himself of the presence of this destructive ravager among the fruit gardens, by a little artifice. He will require about three double trap-cages, such as are sold by bird-fanciers and wire-workers. In the lower part of each cage, place a Blue Tit as a call-bird, and bait the upper part with bruised hemp-seed, and a morsel of suet, or a meal-worm, pinned down on the moveable perch, which is supported by the elasticity of the spring-wire which forms part of the machinery of the cage. In less than a week, nearly every depredator may be secured.—*William Kidd, New Road, Hammersmith.*

Covering for Frames.—Seeing several complaints in the *Chronicle* about Whitney's composition for covering frames rotting the cotton, I beg to mention that I glazed some covers of hot-beds here this spring, with a composition of my own, which I found to answer the purpose quite well, and to admit light nearly equal to glass. After having stretched the cotton (very open coarse cotton) on the frames by means of small sprigs or tacks, I put on the composition with a soft clean painter's brush, giving two coats, one as soon as the other was dry. The mixture consists of ¾ of linseed oil boiled a little, ¼ spirit of turpentine put in and stirred well, and a little white rosin ground and boiled in the oil. I should suppose a little bees'-wax might also be of service; the worst of this composition is, that dust sometimes attaches itself on the outside of the covers or sashes when they are damp; however, a rub with a wet sponge cleans this off; the cotton is quite sound as yet, and does not admit one drop of water.—*A. W. Mushfoll.*

Dry-Rot in Timber.—No recipe for the prevention and cure of dry-rot having as yet appeared in the *Chronicle*, although a request for communications on this subject was made some months ago, I beg to refer to Sir Samuel Bentham's "Naval Papers," No. 6, p. 18, where he states—"I have known the impregnation of wood with sulphate of iron used as a preservative against and cure for dry-rot, as in the instance of the Negro-house mentioned in my Minute of the 13th Sept. last; and which impregnation I have understood to be very efficacious in that and some other instances." The timber of that Negro-house (in Jamaica) had been so prepared at the recommendation of Dr. George Fordyce; and I myself, about half a century ago, under the instructions of that gentleman, applied a solution of sulphate of iron to the frame of a window where dry-rot was making rapid progress, but which was effectually stopped by this application. He directed me to scoop out as much of the already-decayed wood as could be done without materially disfiguring the outer casing or paint, then to make a saturated solution—I put it up in a can of sulphate of iron in boiling water, and then directed to inject it with some little force into every part of the frame infected. After this, dry-rot made no further progress in the frame, or neighbouring wood-work. I may mention, too, that a large Oak beam, in a cellar at Wandsworth, was attacked by dry-rot, which was prevented from spreading by the same means.—*M. H.*

Acorus Calamus (or Sweet Flag).—This highly fragrant plant may be cultivated in abundance on rivers, ponds, or lakes. I have it growing in the river Lark, which bounds the Botanic Garden in this customer way; and although swans, ducks, and a variety of water-fowl frequent the stream, not a leaf is injured, while aquatics are totally destroyed. I am informed that ducks will feed on the Nymphæas, but that swans reject them; can anybody confirm this?—*N. S. H., Bury St. Edmunds.*

Cucumber Frames.—I understand that there is an ingenious ironmonger in the country who grows Melons and Cucumbers to perfection, by building a common brick-pit, with a false iron bottom, supporting the earth for the plants. Underneath this bottom he throws in, through a trap-door, the dung fresh from the stable, keeping up what heat he pleases. He scrapes out the spent dung from another trap-door. To me this an excellent plan to keep the dung out of sight in ordinary frames; and will it not preserve the heat more perfectly from its being guarded from the wet?—*Hortensis.* No doubt. A similar plan has been adopted.]

Wilmot's new Black Hamburgh Grape.—I hope that I shall not be thought presuming to doubt both your [not ours] and Mr. Mearns's opinion, that the Grapes lately exhibited at one of the Horticultural Society's meetings, as Wilmot's new Black Hamburgh, and described to be all indented as if beaten with a hammer, has any peculiarity different from well-grown Grapes of the common variety. Between 10 and 12 years ago, I paid a visit to the garden of a distinguished florist and Grape-grower at Norwich, and was much struck at seeing all his Black Hamburghs exactly resembling the description you gave of Wilmot's. Indeed I have often remarked a black Hamburgh under my own care, which was inarched on a stronger-growing Vine than itself (the Black Portugal I believe) produce fruit of the same description, while the parent Vine had its fruit perfectly round.—*J. M.* [Wilmot's is *not* Black Hamburgh, as we long since stated in a Leading Article.]

Gathering Pears.—I quite agree with the paragraph (p. 766), relative to "the moving of Peach-trees;" and in reply to the question asked by "Dodman," whether by the gathering of Pears at the time when the leaves change colour, the quality of the fruit be not impaired, I would say, that so far as I have had experience of their culture—and I have been a Pear-grower for the last 25 years, having 40 trees of different kinds trained against walls, some of which extend more than 40 feet—I have found it best to gather the fruit by the 10th or 12th of October. Perhaps in this cold and almost northern county, that time may be best for any aspect, either south, east, or west, to gather them, and quite late enough, the fruit then generally leaving the branch easily. I think the fruit can hardly acquire any additional valuable flavour from hanging on the trees longer, and the leaves at that time are almost a full green colour.—*Francis Darby, Colebrook Dale, Shropshire.*

Mealy-Bug.—Hereman's lotion destroys the Mealy-bug without injuring the foliage, if speedily washed off; but it is dear to buy, and dear to use. 1st. Because the contents of a 5*s.* bottle costs but 6*d.*, and will do but a few plants. 2d. Each insect or little coterie has to be touched with a camel-hair brush dipped in the lotion, and its use cannot be safely trusted to a boy. I think a boy at 1*s.* a day would, in two days, with a sponge and soap and water, destroy more bugs than a man in one day, at 5*s.* a day, with a 5*s.* bottle of lotion. 1*s.* 6*d.* a bottle for what is now charged 5*s.* would be ample, unless sent by post.—*Flora.*

Mignonette.—Possibly it may not be known to some, that Mignonette preserved in a house during winter, and turned out into the open ground in spring, will flower as freely as fresh plants, and at least a month earlier. I had, in boxes and pots, a few plants which flowered in the autumn of 1843, in a window having a northern aspect; they were turned out last spring, and are now in good condition.—*Paddy.* [Mignonette in its warm native country is a perennial, or rather an under shrub.]

Destroying Wasps and Bees.—In reply to Professor Henslow's queries respecting destroying wasps' nests, I beg to state that I lately dug out two nests about a week after they had a dose of turpentine, and found death and corruption begun in both. In a former Paper I advised the nests to be dug out and destroyed, but now I think, with Professor Henslow, that that operation may be dispensed with, provided the entrances to the nest are well closed, to keep in the fumes from the spirit. There is little doubt but that bees might be destroyed with turpentine, as mentioned by Professor Henslow, but not so quickly as by sulphur; waving the popular notion of pain or cruelty by the latter, still, where sudden death is intended, it is the best. By the former, the bees would meet a lingering death, and many would struggle and die in the cells, and must be picked out. The smell from both is bad, but perhaps that from turpentine lasts the longest. Smoke from sulphur is blamed for discolouring the cells; but the small quantity used can hardly affect them: they are rendered dark by the heat and traffic of the bees. Lately I observed such honeycombs in the shops in London, and was a little surprised to see so many bees squeezed amongst them, which showed the operation of killing the bees had been badly performed.—*J. Wighton.*

Calceolarias.—About this time of the year, what a miserable appearance do the generality of old plants possess, particularly if compared with the luxuriant foliage of seedlings! I therefore hope that the following remarks upon the treatment of Calceolarias after the blooming season may be acceptable to the cultivator of this favourite flower. If the old plants are to be saved, they must not be allowed to exhaust themselves by blooming too long; as soon as the flowers are past their best they should be cut off a few inches above the leaves, and the plants should be at once placed in a shady situation where the soil in the pots must not be allowed to become too dry. They should be examined occasionally and carefully, to see that ants are not establishing themselves in the pots, and for the purpose of removing all decayed leaves. Here they should remain until frost or snow makes it desirable to remove them into frames or into the greenhouse, where they should be watered very sparingly and with judgment, for if the soil becomes sodden the plants will soon damp off. About the turn of the year they will begin to move, and then is the time to break them up and to plant all the healthy pieces into small pots. These should be placed in a gentle bottom-heat, and care must be taken to keep the surface of the soil in the pots clear of Moss. The plants will soon begin to grow, and in a short time with the advancing season they will indicate, from their increasing size, the pots into which they require to be moved. I would recommend any one who possesses very favourite sorts to keep a small plant of each, and not to allow them to flower if he wishes to keep the bloom on his specimens to the last, or to obtain seed from them. Whilst upon the subject, I may mention my regret at the miserable prizes offered by the Horticultural Society for specimens of this favourite flower—for a dozen plants in 12s the first prize is 3*l.* 10*s.* I quite expect that they will disappear under this frigid treatment. No longer a grower or raiser of Calceolarias myself, I see with regret the fine old varieties of blotches and selfs giving way to spots and letters of the alphabet. The latter are very valuable as varieties, but if grown to the exclusion of the former it is to be regretted.—*Veritas.*

Gardeners' Benevolent Institution.—This Institution is objected to by some persons on the ground that its benefits are mostly restricted to the vicinity of London. The objectors say that a candidate living in a remote part of the country, however deserving he may be, has almost as much chance of becoming a pope as a pensioner; and, that there is some real or supposed difficulty in the way, is proved by the fact that applications for votes are very rarely received from destitute gardeners in the provinces. I have now before me letters from three applicants, all residing within a few miles of London, and I cannot at present call to mind more than two former candidates from a distant part of the country—one from Torquay, and the other from Carlisle; the last of whom has been twice in a minority. I mention this fact in order to draw to it the attention of the managers of the Institution, as I have reason to believe that the impression I allude to prevents some gardeners from supporting this useful Institution.—*J. B. Whiting.*

Walnuts.—I beg to call the attention of the public to the advantages of planting these ornamental and productive trees, the wood being very valuable. With regard to culture, sow the nuts in beds, which should be kept free from weeds, and at the end of three years plant finally 160 trees to the acre. Walnuts will grow in the poorest soil, and mixed with forest trees form good belts, &c. In the 10th year they will begin to bear, and taking the average produce per tree at only 1 bushel, the value of which is 10*s.*, they will give 80*l.* per annum for the acre; deduct 6*d.* per bushel for picking, and 2*l.* a-year rent for the land, and it will leave 54*l.* of clear profit. The expense of planting, first cost of seed, and every expense included, will be about 20*l.* per acre.—*Juglans.*

Miscellaneous.—*Mr. Charlton* observes, in reference to the destruction of small birds, that the Tom-tit, although much persecuted by gardeners, seldom does much mischief in a garden. On the contrary, he states that it effectually cleared his Pear-trees from brown scale without at all injuring the buds. He further remarks that blackbirds and thrushes are exceedingly useful for destroying insects; he says that he is a friend to small birds, which he considers to be of great service in a garden.

Societies.

LINNEAN SOCIETY.

Tuesday, Nov. 19th.—Robert Brown, Esq., in the chair. A collection of dried plants was presented through Mr. Joseph Janson. This collection was formed in Van Diemen's Land by Messrs. Milligan, Gunn, and Firlie, and presented by J. E. Bicheno, formerly Secretary of the Society, and now Colonial Secretary at Van Diemen's Land.—A Report was presented by Mr. Aaron Price, on the Timber-trees of Norfolk Island, accompanied with 20 specimens of woods. Some of these had a beautiful appearance, and were evidently well adapted for the various purposes to which wood is applied.—A stuffed specimen of the Iguana tuberculata, (Cuv.), from the Island of Grenada, in the West Indies, was presented by Mr. Alcard, F.L.S.—A collection of 300 specimens of dried plants, from the Tyrol, were presented by the Ferdinandean Society of Innsprück.—A Paper was read from Mr. Griffiths, on the Development of the Ovulum in a species of Osyris, in which he found that, like that of Santalum album, there was no cell or body in the sac of the embryo independent of the pollen tube. A second Paper was also read on the Development of the Ovulum in two species of Aviennia; the elongation of the sac is remarkable, and seems to be confined to those plants which have the same peculiar form of the free central placenta. The fecundation of the sac, in this instance, takes place only gelatinously. In this genus also, a protrusion of the reticulate end of the embryo, independent of the process of germination, took place. The observations made on the ovules of these plants were not such as to lead to the conclusion of the penetration of the pollen-tube, but were in favour of an influence being exerted by this agency.—Mr. T. S. Ralph exhibited a new species of the Linnæan genus Brachus, from Bombay, which was found inhabiting the seed of a leguminous plant.

CHISWICK SHOWS.

Morningside Practical Gardeners' Society, Nov. 5.—This was the last meeting for the season. The Prizes were awarded as follows:—*Chrysanthemums*: 1, Mr. J. Dowsett, gr., Cannon.

Bank, for Adventurer, Lauidum, Magnet, Mirabile, Queen, and Marquis; 3, Mr. T. Turner, for Globe. *Leeks*: Mr. J. Gourlay, jr., Bruntsfield House, for Musselburgh Flag. *Coleworts Greens*: Mr. T. Ovens, jr., Grange Bank. *Red Beet*: Mr. T. Ovens. *Carrots*: Mr. J. Downie, for Altringham. *Broccoli*: Mr. D. Swanie, jr., Ormsby Lodge, for Gillespie's Early. *Endive*: Mr. W. Ewen. *Celery*: Mr. J. Gourlay, for Sang's Eat-stemmed White. *Brussels Sprouts*: Mr. J. Downie. *Pears*: Mr. J. Douglas, for Citron des Carmes and Gansel's Bergamot. *Apples*: Mr. J. Douglas, for Ribstone Pippin, Golden Reinette, and Blenheim Pippin. AMATEURS'.—*Savoys and Leeks*: Mr. J. Steel, for Cape Savoy and Scotch Flag Leek. The Prize offered by Messrs. Dickson and Sons for the best *Red and White Celery* was won by Mr. Gourlay, with Sang's Eat-stemmed and Manchester Red. The Prize by the same for the *best Six Onions* was gained by Mr. J. Douglas with the Strasburgh. As a proof of the flourishing state of this Society, there were sent for competition 121 articles.

Hampshire Horticultural Society, Nov. 14.—This was the 20th Anniversary Meeting of this Society. The display of Chrysanthemums was good, particularly the Warden's and Mr. Ralfe's. The stove and greenhouse plants were but few. The fruit was fine, particularly Pears. Mr. Chandler, of Vauxhall, exhibited two trays of Chrysanthemum blooms, of superior quality. The Prizes were awarded as follows:—*Class* 1.—12 *Chrysanthemums*, in pots, four to the cast, S. G. Medal, Mr. Ralfe, for Queap, Reine de Prussi, Coronet, David, Achmet Bey, Mirabile, Repetens, Elitvina, Minerva, Duke de Cornegliano, De Crequi, and Madame Pompadour; 12 ditto, in pots, four to the cast, S. G. Medal, Rev. the Warden, for Mirabile, Formosum, Vesta, Duke de Cornegliano, Theresa, Madame Pompadour, De Crequi, Memnon, Minerva, Superb, Clustered Yellow, Campestroni, and Exquisite; 3 ditto, in pots, eight to the cast, Mr. Ralfe, for Incomparable, Princess Maria, Vesta, Memnon, Roseum, Gui Laborde, Duchesse de Montebello, Horatio, Horace, Princesse de Lamballe, Isoller, and Marie; 4 ditto, in pots, eight to the cast, the Warden, for Columbus, Duchesse de Montebello, Irene, Solon, Princesse de Lamballe, Orion, Coronet, Fleschier, Incomparable, Louis-Philippe, Marshal Augaine, and Bijou; 4 ditto, in pots, 16 to the cast, Mr. Wm. Barnes, for Mirabile, Formosum, Vesta, Duke de Cornegliano, Theresa, Madame Pompadour, Exquisite, Campestroni, Superb, Clustered Yellow, Minerva, De Crequi, Memnon, Princess Maria, Coronet, Grandee, Princesse de Lamballe, Marie, Grand Napoleon, Changeable Yellow, Queen, Incomparable, Beauty, Triumphant, and Adventurer.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

SALVIA PRUNELLOIDES. Prunella-like Sage. (*Hardy Perennial*). Labiatæ. Diandria Monogynia.—Of the many Salvias described in botanical works, there is decidedly a preponderance of species with flowers of a cerulean tint. Some of these now hold a deservedly eminent station amongst the summer-garden decorations, and we are glad to be enabled to give pre-minence to another, which, although it has been known in nurseries since 1840, is rarely seen beyond their precincts. The comparative obscurity in which it has been fated to continue, may perhaps be traced to the introduction about the same time of the more showy Salvia patens, the magnitude and superior loveliness of the flowers of that species having completely engrossed the attention of cultivators in the desire so universally manifested to possess it, to the almost entire exclusion of all less-favoured competitors. In its habit of growth S. prunelloides is unexceptionable. The stems are produced closely, without appearing crowded, and rarely grow more than a few inches high, when planted in a border. The foliage is of that happy medium size, which has neither the coarseness of some of the larger-growing species, nor yet the scantiness of many of the smaller kinds. The plant spreads by means of underground stems, which develope shoots with great rapidity, that soon acquire a flower-bearing maturity; and though the blossoms, individually, are rather minute, yet, when a number of flower-stems (rarely more than 8 or 10 inches long) are borne in close proximity, they produce an effect decidedly ornamental. For some time it was a matter of doubt whether it would endure the severity of our climate without protection during winter. We are, however, enabled to state its perfect hardiness, plants having stood without the slightest protection for three successive winters, in the nursery of Mr. Bunney, at Stratford. It ought to be planted in a well-drained and airy situation; and, unless the soil is tolerably nutritive, the flowers will be much inferior in size. A hardy plant, with bright-blue flowers, to contrast with Verbenas, &c., in the parterre, must be useful. We believe the merit of raising and flowering the first plants in this country, is due to Mr. Moyes, of Durdham Down Nursery, Bristol, who received roots from Mexico. Humboldt and Bonpland met with it on the volcanic mountain of Jorullo, where it grows in rocky situations: it has also been found in New Spain, by Mocino and Lesse, and in various parts of Mexico, by different individuals.—*Paxton's Magazine of Botany.*

ABUTILON VITIFOLIUM. Vine-leaved Abutilon. (*Greenhouse Shrub*). Malvaceæ. Monadelphia polyandria.—This fine Malvaceous plant is a native of Chili, whence it appears to have been introduced about the year 1836, by Captain Cottingham of Dublin. It was noticed in this work in July 1840, when it was stated that it had proved quite hardy in Ireland, having stood in a south border, without protection for three years. Under such circumstances it must be a noble looking shrub, for it is said to maintain a stature of 6 feet, and to become one mass of blossom. With us in England it does not, however, prove fit for the open ground. It may be grown in a large pot or tub, but where it can be planted out in a conservatory bed it will succeed much better. The soil most suitable is heath-mould mixed with silver sand. Being a greenhouse plant, air should be given at all times when the weather is favourable, and it must be exposed as much to the light as possible. It is propagated from cuttings in the usual way. The worst of the plant is, that it occupies a great deal of room, and therefore can only be grown in large houses, and it is, like all its family, a favourite resort of red-spider. When, however, the first is of no consequence, and the second can be kept down, it is well worth growing; for we have few plants whose flowers form such broad gay masses.—*Botanical Register.*

THUNBERGIA ERECTA. Erect Thunbergia. (*Climbing Evergreen.*) Acanthaceæ. Didynamia Angiospermia.—Charming as most of the Thunbergias are, the superiority of this species must at once be admitted by every beholder; for the beautiful variety of tint exhibited in its large blossoms fully entitles it to the first rank in the genus. It was discovered by Mr. Whitfield in the interior of Sierra Leone, who, as we learn from the "Botanical Magazine," at considerable danger and risk succeeded in securing specimens, which he brought safely to England, to the gardens of the Earl of Derby, at Knowsley Hall, near Prescot, Lancashire, from whence it has already been dispersed throughout many parts of the country, and now exists in most extensive nursery establishments in the kingdom. When supplied with a very warm and humid atmosphere and planted in a large pot, it grows very exuberantly, and will soon extend its shoots to many feet in length. But if kept in an airy, cool place, it loses its rambling climbing habit, and assumes more of the character of an ordinary erect-growing shrub, and is less profuse of its flowers. In the nursery of Mr. Knight, King's-road, Chelsea, a fine specimen was placed over a tank in a propagating house, and was, doubtless, greatly assisted by the degree of bottom-heat with which it was favoured, in forming the numerous flowers which appeared all along the shoots. No doubt a close pit or frame in which a little heat can be kept up, in conjunction with a suitably moist air, will be the very best place for exciting it to the desired freedom of growth. A rich soil, a well-drained and roomy pot, together with copious waterings during active growth, are also conditions by which success is greatly influenced. And to ward off the pestiferous attacks of the red-spider, which determinedly infest all this tribe of plants when-ever attention loiters, the syringe should be frequently brought into requisition, applying the water well to the under surface of the leaves. Cuttings take root with the most perfect readiness, and by their removal confer an immense advantage on young plants, particularly when large specimens are wanted; for an increased number of shoots will be produced, and what is lost in time by retarding the blooming of the plant, will be gained in ultimate effect. The bright golden eye in the centre of the flower, surrounded by a field of blue and violet, being the most striking feature of the species, has been very aptly chosen as the foundation of the distinguishing specific term.—*Paxton's Magazine of Botany.*

Garden Memoranda.

The Dublin Botanic Garden, Nov. 1844.—The following is an abstract of the Second Annual Report on the state of this Garden to the Botanical Committee and Members of the Royal Dublin Society, by the curator, Mr. Moore:—The incongruity, he says, which has so long existed between the plant-houses here and the Garden generally, is now being done away with, and owing to the able manner in which the efforts made last year have been carried into effect, one wing of a new range of conservatories has been erected, on the newest and most approved principle, being commodious, handsome, and in keeping with the exterior of the Garden; and there is every certainty of a much larger portion being immediately built, Government having generously voted a sum for that purpose. It is also stated, that the increasing interest taken by the public in this establishment shows that they duly appreciate the improvements going forward; this is manifest from the greater number of donations of seeds from friends, both at home and abroad, and also by the prevailing classes who visit the Garden. It may be here mentioned that, owing to the great facilities now afforded for the transmission of seeds, &c., in small parcels, through the Post-office, instances have occurred this season of seeds being collected from plants growing at Meerut, and other parts of the East Indies, sent home by the overland mail, sown and vegetated in the hothouses within nine weeks from the time they were collected. The new house has been recently filled with plants, which show to good advantage, affording, at the same time, the means for visitors to examine such of them as they may desire, with ease; which is of great importance in a public garden. The whole of the arrangements of hardy exotic plants are being removed, re-arranged, and condensed, in order to make room for the British plants, which now occupy a site assigned for new buildings. In the Arboretum, many of the trees which have been recently added, natives of the Mexican and Himalayan mountains, as well as of other parts of the world, are now beginning to establish themselves, and prove their suitableness for the climate of Ireland, particularly the Coniferous or Pine family, which have of late years become such great *desiderata* among planters. The experience of two winters enables Mr. Moore, with a considerable degree of certainty, to state, that the following species, natives of Mexico, will prove sufficiently hardy for most parts of Ireland, viz., Pinus Montezumæ, Pinus Teocote, Pinus Apulcensis, Pinus Hartwegii, Pinus patula, and Pinus macrophylla. The Pinus Russelliana and Abies religiosa (two beautiful species, also natives of Mexico), were cut up considerably with frost, although slightly protected; still it is expected that they will prove nearly hardy when once well established, particularly in the southern counties; and should this be the case, the latter will be a most interesting addition, being one of the most beautiful of the tribe, attaining to a great size on the Mexican mountains, at an elevation of from 7000 to 9000 feet. Some of the fine species from the N. W. coast of America are offering to do well, such as Pinus ponderosa, Pinus Sabini, Pinus Coulteri, Abies nobilis, and Abies amabilis; but those which appear of greatest importance are some of the Himalayan species, Abies deodara, Pinus excelsa, and Abies morinda, which are both ornamental and very valuable trees. The experiments which have been made at this place with artificial manures have been mostly with a view of following up those of last year, which were as extensively made as means permitted, and the result proved, beyond the slightest doubt, that the mixtures called Murray's Fertilizers, and guano, produced the desired effect for one season at least; but that part of the experiment, not the least interesting, remained to be proved, whether a subsequent crop would be benefited by those stimulating substances, or whether the whole of the fertilising powers were spent on the first crop. With a view of endeavouring to prove this, the ground which was experimented on last season with a Potato crop was sown down with Wheat after the Potatoes were dug, which showed very little differences as the crop progressed towards maturity, though that sown on the portions where the fertilising mixtures were, vegetated sooner, and continued stronger through the winter than that on the stable manure, but the latter appeared to overtake and even surpass it as the summer advanced. The portions of Grass-land which were top-dressed with the fertilisers on the previous year, showed very little difference from the adjoining parts, which got no manure of any kind. The inference, therefore, to be drawn from these experiments is, that most, if not all the fertilising effects are given off during the year the substances are supplied to the soil; but there are so many things to be considered along with the manner in which matters act on soil, that isolated, imperfect experiments prove little or nothing. In conclusion, it is added that, if the important improvements now projected are carried out, this establishment will be worthy of the country, and highly creditable to the Royal Dublin Society, as well as to every person connected with it.

Miscellaneous.

New Zealand.—The specimens of New Zealand woods which are now being exhibited at the Company's offices in Broad-street, City, are of an entirely novel and beautiful description. Several articles of decorative furniture have been made by M. Levrin, the importer, to show the great superiority of those woods over all others hitherto used by the cabinet-maker of this country. When they become more generally known, we have no doubt they will be used for drawing-room furniture, as we understand the New Zealand Company intend to import their woods on a large scale, and which must become the source of great advantage to the colony.—*The Times.*

China.—We are happy to state that Mr. Fortune's mission for the Horticultural Society proceeds very favourably. His last letters are dated, Shanghae, June; and it appears that the objects of his mission are likely to be entirely fulfilled. He had collected many very fine things, some Azaleas, and Moutans, several handsome shrubs, and a beautiful, hardy, evergreen tree, supposed to be Cryptomeria japonica. The Chinese were obliging and accessible, and he had *actually been present in the Green-Tea country about Ningpo in the midst of the gathering season.* Mr. Fortune had received the greatest assistance from Her Majesty's Consuls, Capt. Balfour at Shanghae, Mr. Thom at Ningpo, and Mr. Lay at Canton. He had also received valuable aid from Lieut. Shadwell and Dr. Maxwell, and from Dr. Lockhart and Mr. Medhurst, of the Missionary Society.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

STAPHODEA campanulata, and Clerodendron splendens, two plants from a very hot climate on the west coast of Africa, near the equator—where, also, Napoleona imperialis is found—form a striking example of how we may be deceived in our treatment of stove plants of whose habits we know only that they are from such and such a country: the former we treat as a stove plant, yet it is so hardy that it will grow just as well in the open air from the end of May to the latter part of September, and then it may be wintered in the conservatory if kept rather dry; the Clerodendron splendens prefers a cool, shady part of the stove, and is better fitted for an intermediate house, but it will grow freely in a good conservatory if not allowed much light, which is disagreeable to it when growing. There can be little doubt but that many other stove plants will prove sufficiently hardy to do in the conservatory, and this is the best time to begin the experiment. Look out duplicates, and place them by themselves, to be kept dryer through the winter than the rest of the collection; they should also be placed in the coolest end of the house.

Conservatory.—The earliest of the Chrysanthemums will now be nearly over, and when they are turned out the best way is not to cut them down, as is generally done, but to store them in light dry soil, under a west wall, turned out of the pots; the tops being left on will keep the suckers more backward, and also shelter them in some degree: the less the suckers grow before March the better plants they will make next year. Spring-forced Camellias now in bloom should be guarded against currents of cold air and damp. Cineraries, which are great ornaments for this house in winter, are thirsty plants, and good subjects on which to try experiments with some of the new fertilisers mixed in the water given them, they are also liable to the attacks of insects, and unless they are looked after they will soon establish these among other plants. The fine large varieties of the Chinese Primrose, although they grow well near the glass, do best in shaded places where the sun cannot reach them; two parts rough leaf-mould, and one of very old cow-dung, with a little sand, is the best compost for them, and in this they like plenty of moisture. Besides the double white and double pink, which are very showy at this season, there are some of all shades, from pure white to very dark purple, some with fringed edges, which look gay; but florists are discarding this class for smooth entire edged ones, of good substance, size, and colour; and probably the pin-eyed ones will not be thought much of now that they are become florists' flowers.

Pits.—Half-hardy plants stored away in winter in pits and temporary structures, are likely to have a severe trial before the winter is over. Prepare against severe weather with additional coverings. Keep such plants as dry as they can bear, and expose them on every favourable day.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-Door Department.

As the leaves are now all in a great measure off the trees, the pruning of common shrubs may be proceeded with, and the borders put in order for the season. I have previously spoken against digging; and as the ground must be cleared of leaves, it is best, where they are not wanted for other purposes, to draw them into ridges in the back part of the shrubbery, and there to let them lay and rot, to be distributed over the ground about this time twelve months. It is not a bad plan to fill holes intended for American or other choice plants with wet leaves, and to place the ball level with the surface of the ground: as the leaves decay the plant will sink to its proper level, and grow admirably.

Pits and Frames.—Look sharply to the protection of these structures, as the frost in November is a pretty good earnest of a severe winter. Keep the plants as dry as possible; and if the atmosphere is damp, it is not a bad plan to dry it a little, by placing a pan or two of burning charcoal in the pits, at the same time giving plenty of air. This should be done on a dry day.—*W. P. A.*

III.—FLORISTS' FLOWERS.

Polyanthuses.—Are throwing up a great number of autumnal blooms this season. The variety called Hutton's Lord Rancliff, a remarkably hardy as well as a pretty sort, appears more disposed to bloom late than older varieties. I have noticed that on beds where the plants have all been divided at the same period, and the roots healthy and doing well, that two-thirds of this sort flower, whilst not one in ten of such varieties as Cadwallader's Invincible, Tantarara, Alexander, Fletcher's Desdemona, Read's Telegraph, Martin's Prince William Henry (red), &c. &c., which are much older, throw up a bloom. These last mentioned sorts must have their autumnal blooms removed, but the other (Lord Rancliff) is so luxuriant, and so extremely robust, that it appears to make not the slightest difference, as I have had them blooming profusely till Christmas, and also have had flowers at the proper season able to compete with the best of my neighbour's. *Auriculas.*—Must continue to have every attention; water very sparingly, and remove all dead leaves. When opportunity offers, procure a supply of willow dust, which is a most excellent ingredient in Auricula compost. *Tulips.*—The recurrence of fine weather will give opportunities for all Tulips to be planted, as they are now suffering much if

kept out of the ground; for frost around the tubers is good. *Carnations*—Must be occasionally watered, but at this time sparingly; remove decayed leaves, or those which are affected with the "black spot," and be particular that dirt or other extraneous matter is removed from the axils of the leaves. We hear that the finished blooms exhibited lately, many of which were raised young at the Coppice Show, near Nottingham, on the 6th of August last, has been sold to a Florist of Staffordshire. Fifty dollars were taken at 10s. 6d. per pair; we trust that the flower has been sold "with all its engagements," since the considerable disappointment would be lessened.

Pinks.—The beds must be kept free from weeds, and should frost occur they must be looked over, and the plants pressed down, or fastened, as they are apt to be raised out of the ground, especially if planted late.—*J. M.-M.*

IV.—PINERIES, VINERIES, &c.

Pineries.—There has been such a variety of methods recommended (each as the best) for the cultivation of the Pine-apple, that it has become rather a difficult task to decide which really has the best claim to that title. For my own part, I neither know I have become a convert to what is called "Hamilton's system;" and for the following reasons: first, because the treatment is remarkably simple; and second, because a greater weight of fruit may be obtained in a given space, and at a much less expense, than by any other method known to me would pit system required, which is in itself a great recommendation to amateurs who may take a fancy to Pine growing. I do not know Mr. Hamilton, nor have I ever seen his Treatise, but I know that one of the most successful exhibitors of Pines at Chiswick has grown them on this plan for years, and wherever I have seen the same plan in operation, I have been struck with the excellence of the fruit, and the comparative small size of the plants. This may seem a departure from the objects of a Calendar; but as beginners in Pine-growing, as in other things, are often puzzled to know which method to adopt, a disinterested opinion on a mode of culture of which all have heard, but of which few have had an opportunity of judging for themselves, may not be out of place here.

Vineries.—In regulating the temperature of Vineries recently shut up, regard must be had to the external atmosphere. In mild weather the day temperature may be 65° by fire-heat, and if the sun raises the thermometer 10° or 15°, so much the better, as the fire need not then be made till late in the evening, if needed at all. It is not necessary to maintain a heat of 50° on cold nights; during frost or cold winds, 45° by night will be sufficient till the buds begin to swell. The late house should be kept at 45° or 50° by night, while the fruit lasts. It is better to keep the lights closed during the day in close, hazy weather, in order to keep the damp out of the house.

Peach-houses.—The directions given for the temperature of the Vineries this week, will apply equally well to the Peach-house started last week. It is not uncommon to see air admitted whenever the sun shines on a house just commenced forcing. This is unnecessary, as, if the trees are frequently sprinkled with the syringe at this season, a day's sunshine is more beneficial in exciting the buds than a week's firing without sunshine.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Peach-trees.—If the present frost should be likely to continue, those who had, that the leaves of their Peach-trees are still in a green adhesive state had better protect the trees slightly by straw-ropes netting or hanging Fern, &c. among the branches, as a sudden check to the growing system after such mild weather would be more prejudicial now than after the trees had got accustomed to variations of temperature.—*D.*

Radishes, Small Salading, Asparagus, Lettuce, Cauliflower, &c. will be quite safe where they are in pits or frames, as there is little difficulty in keeping them from frost in such circumstances. Although we do not yet expect much severe weather, no time should be lost in securing plenty of Radish, Cauliflower of the June and July sowing, &c. to be protected with straw or reed covers in rat pits, &c. I may here repeat my method of making these covers:—Take three slips of wood, from 2 to 3 inches broad, and from one half to three quarters of an inch thick, according to the intended length and width of the cover; cut two pieces for the sides of the cover, at the distance of from 2 to 3 feet apart, and the third one in the middle between them; cut pieces of wood of similar thickness across the two ends, and in the intervening space use lighter wood at the distances of from 1 foot to 14 foot apart; then the frame of wood thus formed, and fill it neatly with reeds or straw to the thickness of the three longitudinal pieces; then nail slips of wood, opposite to those on the other side; and the ends of the straw, and the cover is fit either for turf pits or glass frames. Using lighter wood for the cross pieces in the middle, is for the purpose of causing less strain to be placed on the twine that pieces when meeting the covers, and also for rendering them lighter. I prefer Wheat-straw to reeds, as being less expensive and not so liable to break when exposed to frost and wet alternately, but the straw ought to be drawn before the crop is threshed, and all the dark cut off, otherwise it will be broken by the flail or machine, and the ears will not only act as a sponge for retaining moisture, but will offer an inducement to birds to pick your covers to pieces. Such covers are not quite so effectual in excluding rain, as painted canvas, glazed cover, &c.; but they are a valuable protection from frost, where inexpensive straw is to be had, and afford a means of employment to labourers in unfavourable weather.—*Sea Kale and Rhubarb.*—We have had a good supply of the former from the beginning of the month, by adding fermenting materials as previously recommended. The most economical method of growing the latter, is to sow every year, and take up and force it in a similar manner. Those who depend on beds out of doors for a first supply, must examine the state of their respective beds, to see that it is not getting overheated; nothing is better than tree leaves alone. Those who desire a tolerably early supply with little trouble, should cover their beds with any litter they can procure, so as to prevent the escape of the heat now existing in the soil.—*Roulins.*—Clear and attend to Mushroom-beds in succession; your asparagus-frames. Protect the roots of globe Artichokes for the winter; earth up Celery when dry, and dig, trench, or ridge all vacant ground.—*R. W.*

VI.—COTTAGE GARDENING.

In case of severe frosts there will be the convenience of a frame for keeping half-hardy plants in over winter, had better place round it some dry Fern, Furze, or straw litter, recommended to be collected many days ago, for the purpose of excluding frost. Cover the glass with a dry mat, and shaking some fine, a little hay or straw over, secure with another mat. When the frame is undisturbed for a morning, let the under mat that may be added into some place where it will be kept dry. Half-hardy annuals, Pelargoniums, and such like plants, may be effectually protected during severe frosts. Keep the soil in the pots as dry as the health of the plants will admit of; and in watering, take care to scatter the water as possible. No shelter is given to the open when it can be done with safety. A dampish atmosphere stops the attacks of frost, and in dry days, when not too cold, removes them altogether. If some of the hardier varieties of Fuchsia, as Riccartonii, gracilis, &c., permitted to winter in the open ground, have their stems protected by a few inches of the Fern, and their stools covered with leaf-mould, litter, or some such material, they will survive the winter in good condition, and flower considerably earlier next year than if they had been left without any protection. Artichokes will require to have a small quantity of leaves or litter placed round their stems. Seeding of any unwanted early, should now be covered. The weather during still favourable, advantage should be taken of it for forwarding any operations that could not be attended to last month, such as the digging and trenching of vacant ground, which

[illegible] be completed as soon as possible, laying it up rough, in order that it may profit by the winter frosts. Continue to prune fruit-trees, and forward every operation of the season as much as possible.—*M.*

[illegible] state of the Weather near London for the week ending Nov. 23, 1844, as observed at the Horticultural Gardens, Chiswick.

Day	Date	Day of Month	Max.	Min.	Mean	Max.	Min.	Mean	Rain
Fri.	22	17	30.360	30.185	30.272	51	37	44.0	0.000
Sat.	23	18	30.146	30.000	30.073	55	37	46.0	0.000
Sun.	24	19	30.031	29.947	29.989	54	37	45.5	0.000
Mon.	25	20	29.918	29.808	29.863	54	37	45.5	0.000
Tues.	26	21	29.797	29.709	29.753	55	38	46.5	0.000
Wed.	27	22	29.844	29.747	29.795	55	38	46.5	0.000
Thurs.	28	23	30.110	30.000	30.055	55	39	47.0	0.000

Mean temperature considerably above that of last week.

Fri. 22. Dry; cloudy and fine; mostly overcast at night.

Sat. 23. Overcast; cloudy and fine; slight frost.

Sun. 24. Clear and frosty; fine, sharp frost at night.

Mon. 25. Dreary; foggy; fine; clear and frosty.

Tues. 26. Foggy; hazy and cloudy throughout.

Wed. 27. Mean temperature of the week 4 deg. below the average.

Thurs. 28. Dry; hazy; foggy; clear and frosty.

Table of the Weather at Chiswick during the last Thirteen, for the ensuing Week ending Dec. 7, 1844.

Day of Dec.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 1	50.5	39.8	44.9	7	0.22 in.	1	1	2	2	2	4	4	4
Mon. 2	46.1	36.8	41.4	10	0.51	1	1	1	2	3	3	4	4
Tues. 3	45.0	39.7	42.3	8	0.17	—	1	2	2	6	6	—	—
Wed. 4	47.5	38.8	43.2	8	0.14	2	1	—	1	6	3	1	—
Thur. 5	46.8	37.1	42.0	9	1.18	—	1	—	1	11	6	5	4
Fri. 6	46.0	39.8	41.7	12	0.80	1	1	—	1	5	7	5	—
Sat. 7	47.4	38.5	43.0	10	0.52	1	1	1	1	4	6	5	1

The highest temperature during the above period occurred on the 8th, 1827 and 7th, 1838—therm. 59°; and the lowest on the 3d, 1840—therm. 23°.

Notices to Correspondents.

BACK NUMBERS OF THE GARDENERS' CHRONICLE.—Many of the Numbers advertised last week having been since sold, we repeat the list of those which may still be had. Any subscriber who will forward to our publisher Post-office stamps equivalent to as many Numbers as are required, shall have them sent:—

1841:—1, 6, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 51.

1842:—4, 5, 8, 11, 18, 30, 38, 42, 50, 51, 52.

1843:—9, 10, 11, 12, 13, 14, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, 41, 42, 43, 48, 50.

1844:—All the Numbers for the present year; but parties are requested to complete their sets forthwith.

The Reprint of MR. PAXTON'S COTTAGERS' CALENDAR is now ready, price 3*d.* each Copy. An Index has been added to this present Edition. Parties wishing to have copies for distribution among their tenantry can have them at the rate of 25 for 5*s.*

APRICOTS.—*Querist.*—In summers like the past, the Breda ripened on a standard becomes exceedingly rich.‡

AZALEAS.—*An Inquirer.*—The following are good and distinct varieties:—viz., Indica alba, Danieliana, Addisonii, Floribunda, Gladstonesii, Jacksonii, Lateritia, Phœnicea coccinea, P. superba, Pulchra, Rosea, Splendens, and Fulgens.‡

BOOKS.—*Peckham.*—The Botanical Register, Botanical Magazine, Taylor's Annals of Natural History, Hooker's London Journal of Botany. All these are monthly periodicals devoted either wholly or partially to Botany.

CHRYSANTHEMUMS.—*J. M. S.*—These plants are very subject to sports, and it is thus that some of the kinds have been obtained. No one is able to account for such things, any more than they can tell why domestic animals are of all sorts of colours.

DISEASES.—*Priory Queen.*—Your Pelargoniums and Camellias are either too cold or too damp, and in all probability both. The spot is no doubt produced by this cause, and certainly not by insects. Either enable the plants to digest the excess of water, by giving them plenty of warmth, light, and air, or render their digestion unnecessary by withholding excessive moisture. Perhaps the drainage is bad; perhaps the ventilation of their house; *possibly both.*

FRUIT-ROOM.—*Clericus Hibernicus.*—You will find full information upon this subject in some Leading Articles at pp. 611 and 663, 1841, to which we would beg to refer you. We cannot recommend you to line the walls with Wheat-straw, because it will get mouldy, and injure the fruit. The mould of straw will inoculate the fruit itself. Beneath the slate roof, straw would be unobjectionable, because the house would probably be ventilated there, and so be kept quite dry, when mould would not be able to grow. Otherwise we see nothing to object to in your plan. The great points are to exclude light and to maintain a low even temperature, without frost.

FRUIT-TREES.—*An Amateur.*—Add to your list of Peaches the Grosse Mignonne and Bellegarde. For the late yellow Nectarine, substitute the Peterborough; add the Royal Apricot. The late Admirable is the best late Peach, when it ripens; but if your climate is not sufficiently favourable for this variety, the Bellegarde will afford the latest good supply.‡

GREENHOUSE PLANTS.—*G. H. S.*—No tender plants will live in a glass house, without artificial heat, unless the winter is mild, or they are half-hardy, as is the case with such shrubs as Acacia armata and alata, Aloysia citriodora, Azalea sinensis, Camellias, Orange-trees, Coronilla glauca, Correa speciosa, Daphne odorata, Fabiana imbricata, Hydrangeas, Fuchsias, and the hardier sorts of Cape Heath.‡

HEATING.—*An Amateur.*—Your two pits, with a surface of 40 square feet each, being intended for forcing Cucumbers, and propagating flowers, must be so heated as that much or little moisture may be fully at command. You will therefore require a boiler of the smallest description, and tanks that will allow the escape of vapour directly from the surface of the hot water, but capable of being scattered powderingly over, when moisture is not required. These tanks should be placed almost close to the walls, and below the support of the soil. A clear space of 2 inches [illegible] the sides like pits will be necessary for the communication of heat from the tanks to the space above the soil. The fuel will probably average less than ½ per week.

HUMMING-BIRDS.—*Louisa.*—*Enquirer.*—We have been informed that this is composed of camphorated spirits of wine, [illegible] with bitter aloes; but we cannot vouch for the fact.

HYBRIDISING.—*Delaware.*—Remove the pollen-cases as directed in Samuel's letter, page [illegible], a very small quantity will answer the purpose. The best means of heating a small greenhouse is by a small boiler, and a few 2-inch iron pipes. All other [illegible] are unsatisfactory. If you [illegible] to Arnott, *if you can*, as Stephenson's [illegible] will be useful.

INSECTS.—*A. T.*—The small specklings on the back of your Oak leaves are Oak-aphides, which are fatal to [illegible] vol. xxiii.—*R. S.*—Much will depend upon the greatest attention and perseverance in applying the remedies mentioned in your case. The habits of the American Blight were given in the *Gardeners' Chron.* p. 119, which will enable you to apply their destruction.—*R. W.*—Please to send direct to Mr. Curtis, 4 Glasshouse Yard, Goswell-street, as many as you can of the Gardeners' Chronicle, carefully packed inside by a piece of cork, and be will advise you. Those you sent were annihilated by pressure. Do they destroy the foliage only?—*R.*

PACKING.—*W. D.*—Pigeons' manure is excessively powerful, [illegible] quality; but it will burn [illegible] and thoroughly mixed with [illegible] will much improve it. If the soil [illegible] very adhesive, you will do the border [illegible] of mixing with it inch bones, charcoal lumps, and [illegible] old mortar, than by manure alone. Soils for vines should be very loose and very well drained.—*A Subscriber at Ulm* mixed with soapy water is a very good liquid manure, but it should never be applied during winter. The [illegible] season [illegible] which manure of this sort [illegible] it is thrown on the manure heap, the [illegible] strength in quality, provided you [illegible] it.

NAMES OF PLANTS.—*F. N.*—Specimens [illegible] Worthless—certainly not [illegible] Master Beurré; 5, [illegible] Nipple (of some); [illegible] Ingram.—*Ingram.*—[illegible] Hasdn's Imperiale; [illegible] and 3, Beurré Diel; 9, [illegible] Winter Nelis; [illegible] Fondante du Canada; 8, Franklin [illegible] Pippin; 9, Scottish Pitmaston; 11, Beauty of Kent; 12, Great Morceau.‡

PEACHES.—*Querist.*—The double blossomed Peach does produce fruit occasionally; and I am [illegible] other varieties with double flowers—the Plum for example; although in such all the stamens may depart from their normal condition.‡

PEARS.—*Querist.*—The Williams's Bon Chrétien will not ripen its fruit as a dwarf standard in this climate; nor will the Brasseur, d'Aremberg, or Colmar, succeed on a north wall.‡

PELARGONIUMS.—*A Country Curate.*—The best place to grow them in is a good greenhouse, the next best a good pit: but it must be capable of being thoroughly ventilated, and not be damp. It does not matter how it is glazed. The lops should not be puttied, but latticed well. Again, as to allow plenty of air to get in and out. The aspect does not signify. You cannot grow Geraniums well unless you keep your pit or house free from excessive damp: and if that is likely to trouble you, it will be *indispensable*. In the first instance, to drain your ground thoroughly.—*J. H.* says, that in the course of a tour he has lately made in Germany, he observed the beds of Scarlet Pelargoniums were a compact mass of the most brilliant flowers, and the growth of the plants had evidently been controlled; and he asks for information as to the mode in which this is accomplished, as the Pelargoniums in England run to growth and leaf, with here and there a straggling spike of bloom. His observations were made during the months of August and September. Dry soil, a dry atmosphere, and a hot sun are the causes of the condition of the German Pelargoniums. Our garden ground is often much too rich and moist for them.

PROTECTION.—*W. C.*—You cannot have anything better than branches of the Spruce Fir as a protection against moderate frost for scarlet Geraniums in an open bed, or for tender climbing Roses, not growing on their own bottoms. The [illegible] equine covering pulled to pieces, or made thin the upper branches. For [illegible] this material answers well, provided there is enough of it. The branches should be packed over the plants in the form of a cone.

TRANSPLANTING.—*Countryman.*—The present is the best of all seasons for transplanting all kinds of hardy plants, let your advisers say what they like. Draw your border well, plant your Yuccas a little above the soil, steady them by some means, so that they cannot be blown about by wind, and remove them at once. That is what we have done, and should do again.

TUSSAC GRASS.—*B.*—We should sow the seed of this plant immediately, in damp peaty soil, in a greenhouse. It had better be sown *thickly*, and [illegible] encouraged to become strong before being planted out. If it is sown as thick as hay-seeds are, then it would be desirable to separate the plants which grow, and place them in separate pots, still keeping them [illegible] in a good greenhouse or well ventilated pit. It grows naturally in the peat bogs of the Falklands.

VINERIES.—*Susan.*—Plants do not do well on the back walls of Vineries. You may, however, try Camellias, the Cape Plumbago, and Scarlet Geraniums; and if you pull a brick out here and there near the roof, so as to form a nest for its seeds, you may get Mignonette in beauteous bush and to flower all the winter. Any light loose soil will do for Cacti; old mortar rubbish is a favourite of theirs. It rarely happens that plants can be named unless very common, if they are not in flower. Yours is apparently some Cape Mesbine; if you use it hot and plenty of light, without much water, it will bloom no doubt.

VINES.—*S. S.*—Royal Muscadine will ripen earlier than the Black Hamburgh and others you mention.‡

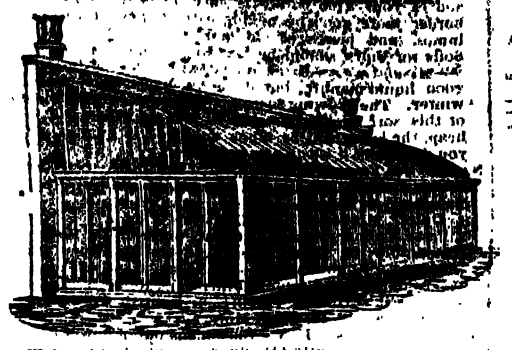
MISCELLANEOUS.—*J. A.*—We have no idea what ails your Yucca, which always flowers so late as to be cut with frost—unless the roots have got into a sunken soil in which case laying its roots dry would cure the evil. It is, no doubt, a local affection, the nature of which can hardly be judged of without actual inspection. In all probability the evil lies at the roots.—*M. B. G.*—We are sorry to be unable to assist you. An advertisement offers the only means we can suggest of obtaining the information you are in search of.—*A Reader.*—It is not common for a standard Magnolia to be in full blossom in the open ground at this season.‡—*A Subscriber.*—Thompson's Il Arcedo was published in 1812, and sold by Carpenter & Son, Bond-st.—*T. G. S. W.*—Edensor is situated at the gates of Chatsworth Park.—*A. Z.*—Most certainly raise your Vine roots, which are buried nearly 3 feet deep in clayey loam, as near the surface of the border as you dare. The Vines will do no good while the roots are so completely removed from the influence of heat and air.—*A Subscriber.*—Stephanotis floribundus cannot be expected to thrive in a cold pit, it is a stove plant; and should be kept during winter in a temperature of about 60°. Cut down the withering stems of your Erythrina Crista-galli, and by gradually withholding water allow the root to dry off. Place it where it will be free from frost, and keep it dry through the winter.—*Verax* &c.—The best and ultimately the cheapest fence for keeping rabbits out of a flower-garden is a wire one. It should be about 6 feet in height.

A dangerous enemy to [illegible] is the business of adventurers. The roots of Gentiana pneumonanthe may be readily, and divided in spring.—*W. D.*—The fruit of [illegible] is scarce at all [illegible]

The Scottish Thistle is only the common prickly variety of Cirsium arvense.‡—*W.*—Of the three specimens of plants which you sent, the [illegible] is the best. The [illegible] does not [illegible] plants more tender [illegible] one from another.‡—*R. H. R.*—The watering of your Camellias, which are growing in a low temperature, [illegible] freely three times a week, is the cause of their leaves turning yellow, and of the flower-buds dropping off. See that the pots are properly drained, water carefully, and place the plants in a temperature of about 50°, and they will possibly recover.‡—*A Novice.*—A good description of pit for growing Cucumbers, Melons, &c. is, when fermenting material is employed for heating, is the Rochford, a plan of which is given at p. 692, vol. 1843; but if hot water is used, a plan given at p. 803 of the present year may be consulted with advantage.‡

* As usual, many communications have been received too late, and others are unavoidably detained till the requisite inquiries can be made.

COTTAM AND HALLIDAY, ENGINEERS, FOUNDERS, &c., &c., No. [illegible] STREET, LONDON, and at [illegible]



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with Cottam's PATENT or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

CONICAL BOILERS.—The Boilers invented by JOHN ROGERS, Esq., are made of several sizes, and may be obtained of JOHN SHERWIN, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware-road; Rollisson's, Tooting; Pontey's, Plymouth; The Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's-park.

The Agricultural Gazette.

SATURDAY, NOVEMBER 30, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, Dec. 4—Agricultural Society of England.
THURSDAY, Dec. 5—Agricultural Soc. of Ireland.
WEDNESDAY, Dec. 11—Agricultural Society of England.
THURSDAY, Dec. 12—Agricultural Soc. of Ireland.

As we informed a correspondent a few weeks ago, the general result of Mr. CAMPBELL'S PROCESS AND MATERIAL FOR STEEPING SEED, so far as we know it, has been unfavourable. The attention of our readers was called to this subject in an early Number of the *Gazette*, and there appears no necessity for qualifying or retracting any remarks that were then made. The season has been peculiar, and so severe upon all our crops, especially upon those sown in spring, that the results from such sources must, in great measure, be considered consequences of the weather—of Nature's rather than of the farmer's treatment. In spite, therefore, of the failure of this year's trials, we persist in recommending the subject as a fair one for experiment.

Though very probably original with Mr. Campbell, his process is by no means new, as indeed several correspondents have pointed out to us; and the practice which has been generally prevalent of steeping seed Wheat in urine or stale urine, may be considered evidence of this, for, though it be professedly for another purpose, it is doubtless beneficial also as impregnating the seed with fertilising material. This and the *à priori* probability that seed admits of being benefited in this way, combine to render the subject worthy of continued investigation.

Of course, no practical man believes that these steeps are to take the place of manures—they will always be necessary—all that we can suppose them capable of effecting is to give the plant a vigorous start in life; and, considering the numerous foes by which the *young* plant is surrounded, this is by no means unimportant.

The experiments we made on the subject this summer have utterly failed, variable circumstances at seed-time, and more especially the subsequent unequal and extreme ravages of game, have combined to render their results worthless. Their results have only been obtained within the last few weeks; and, had we not previously promised it, we should not now publish them—as, if taken unqualified, they are only calculated to mislead.

One thing must first be specified in Mr. Campbell's system of steeping seeds—we shall have a word or two to say about *it* presently—is in no way responsible for the following detail. It is not in the mere art of steeping seed; it is in the choice of the material to be used that the merit of the process lies. All manner of evil consequences may arise from want of judgment in this; but so long as none of them are attributable to the particular mixture put forth by Mr. Campbell, he, of course, cannot be considered responsible for them. We have no wish to bring up this gentleman's corn-steep, as, indeed, the only evidence we have of its composition—an analysis published in our columns some weeks ago—is by no means evidence in its favour; we only wish that where blame is due it should not be laid upon the wrong shoulders.

It may be remembered that we proposed steeping seed Wheat in eight different salts, viz., silicate, sulphate, nitrate, and phosphate of soda (*a*, *b*, *c*, and *d*, respectively), nitrate of potash (*e*), muriate, nitrate, and sulphate of ammonia (*f*, *g*, and *h*, respectively). This was done early in March; and after steeping in sufficiently strong solutions for about 50 hours, the several parcels were taken out, and on that and the following days they were sown (hoed in) at the rate of two bushels per acre, on plots of land each equal to a quarter of an acre, with intervening strips of half the size between each. When the process was commenced, it promised, as we thought, a continuance of fine weather, but the Corn had not been a day in the water before it began to snow, and the seed was thus put in the land under most unfavourable circumstances. In the course of three or four weeks, it became evident that lots *a* and *h* had been killed by the process; fresh parcels of Wheat were therefore steeped in silicate of soda and sulphate of ammonia, only for a shorter time than before, and the plots were re-sown, and they very soon exhibited a better appearance than any of the rest, and were evidently better also at harvest-time; but, owing to the irregularity just stated, they are of course excluded from the comparison which we have now to make.

In May, the whole field had a fair and blooming appearance, as we then stated to a correspondent, who mourned over the failure of similar experiments which *he* then had in progress; but rabbits and hares were at work, and all the upper part of the field was soon eaten off nearly bare.

It thus soon became evident that no dependence could be placed on results calculated from the *whole* of the field—that in fact the only parts of the plots which could be taken as at all representing the probable effect of the process were those at the lower end of the field, which would be cut off by a line across it, about 15 yards from the bottom. The plots were thus reduced from fourths and eighths, to pieces 1-20th and 1-40th of an acre. Notwithstanding the smallness of these patches, there is a singular uniformity in the amount of their produce. The following is a Tabular account of the quantity of grain threshed from each plot. It may be mentioned that the yield of straw appeared pretty uniform over the whole; there certainly was no such variety as to indicate the difference in the produce of grain.

Reference to steep.	Weight of grain in lbs.	Extent of plot in perches.	Weight of grain per acre in lbs.	Bushels per acre.
*	68	4	2720	42
b	65	8	1300	20
*	68	4	2720	42
a	74	8	1480	23
*	71	4	2840	44½
d	101	8	2020	31
*	70	4	2800	43¾
c	90	8	1740	27
*	69	4	2760	43
f	108	8	2120	33
*	76	4	3040	47
g	127	8	2540	39½
*	92	4	3280	51

* These are the unsteeped parcels.

From this it appears that the ammoniacal salts and the phosphate of soda are the best, or rather, to be in accordance with the figures, we should say, the least injurious of the steeps. These results certainly could not have been anticipated; it is difficult to account for them. The seed may have been steeped too long, and its vegetative powers may thus have become injured. Be this as it may, we shall not be deterred from repeating the experiment this year; but instead of trying each salt by itself, we shall use only two steeps—the one recommended by Professor Johnston, as published lately in the *Gazette*, and the other, sold by Mr. Campbell.

The experience of that gentleman this year, though probably better than our own, has certainly, if one may judge from his published circular, not been very favourable. The following are among the most encouraging testimonies he has received:—

"One is sown in Oxfordshire.—The soil, originally moorish, on a retentive bottom, having been for upwards of half a century under superior management, has now the appearance of a blackish loam, of moderate depth and consistency, with an admixture of old red sandstone chips and flints. Nine ridges, containing 2,3 Imperial acres, were sown with eight bushels of Barley, subjected to Campbell's Steep. Cost of the Steep 8*d*. Crop 10 quarters, weighing 52½ lbs. per bushel; and 1¼ quarter, weighing 50½ lbs. per bushel. Nine ridges contiguous to the former, containing 2.30 Imperial acres, were sown with 10 bushels of Barley, manured with 2 cwt. guano at 9*s*. Crop, 10¾ quarters, weighing 53¼ lbs. per bushel; and 1½ quarter, weighing 50½ lbs. per bushel. Sown in the last week of April; reaped 16th September.

COMPARATIVE RESULT PER IMPERIAL ACRE.

Campbell's Steep.						
Seed, 3.4 bushels at 8*d*.	£0	2	0			
Steep	0	0	8			
	£1	2	3			
Produce, 4.92 qrs. at 27*s*.	6	2	11	Return	£5	10	8
Guano.						
Seed, 4.2 bushels, at 3*s*. 6*d*.	£0	15	1			
Manure, 1.8 cwt. at 9*s*.	0	15	6			
	£1	10	7			
Produce, 5.14 quarters at 27*s*.	6	19	11	Return	5	9	4
Diff. in favour of Campbell's Steep per acre,					£0	1	4

—*James Sime, Land. Surveyor, Murrayguie.*

Before we can admit the accuracy of this balance of the accounts, we must know if any of the guano that was applied remained in the land, as it is very probable some did, after harvest. If so, no credit is here given for it.

The following is a very decided statement in favour of the steep—though we rarely like to attach much value to mere estimates or "guesses."

—— "with the Salt-steep the crop was good, upon bad land, at a guess *four times more than where nothing was used*. There was a saving of a bushel of seed per acre. It was sown in a field where salt, guano, nitrate of soda, and nothing had been applied. All ripened equally, and were cut together. . ."—*James Hunter, Auchterarder House.*

Besides these, a variety of communications are published, most of them indifferent; some absolutely conclusive against the *system*; and, as we said before, if these are the best testimonies Mr. Campbell can produce, we fear general experience this year is against him.

The season, however, has been exceedingly unfavourable, and we hope some of our readers will join us in giving the process another year's trial.

AN EXPERIMENT ON POTATOES.

By JOHN GREY, Esq., of DILSTON.

ALTHOUGH the instances of failures in the Potato crop in this district are fewer, and to much less extent this year, than in many former seasons, a detail of an experiment which I have now proved, showing the comparative produce of autumn and spring-planted Potatoes, both of which were very full crops on the ground, may throw some light on the subject, and at all events shew that the fear of the plants being destroyed by frosts in the winter, on tolerably dry land—and no one should plant Potatoes on any other—is groundless.

Immediately after the harvest in 1843, I had a piece of Oat stubble turned up with three horses in a plough, as deep as the soil would admit of. The land was a damp loam, on a retentive subsoil, that had been thoroughdrained the previous year; it was then ploughed across, and made up into drill-rows of the width of 30 inches. About the 20th October, when the Potatoes of that year were taken up, it was planted, partly with small Potatoes whole, and partly with large ones cut in two, having had a moderate quantity of dung, but slightly fermented, applied to it; the drill-rows were then ploughed up pretty deep, so as to give the plants a good cover. In the latter end of April, 1844, a harrow was run along the rows, to break the crust and admit the air, as well as to give an opportunity of picking off any couch or roots that might be turned up. Very soon after this operation, the shoots of the young crop appeared in great vigour, to the surprise of some of my good neighbours, who thought that I was adopting a very heterodox practice. The land underwent the usual course of hand-hoeing and scuffling, until the time came when, the tops being tolerably large, it was necessary that the rows should be earthed up. Before doing so, I had 1 cwt. per acre of guano sown broadcast over them, which the plough immediately following, turned up against the plants. I did this on the ground that the tubers which are thrown out laterally from the stem require more support to bring them to perfection, than they can derive from the manure which is placed in the hollow centre of the drills. The crop went on with a promising appearance throughout, but did not exhibit any unusual bulk of tops. On each side of this plot, a piece of ground was worked and planted with Potatoes in the end of April, in rows of the same width, and receiving in every respect the same treatment, except that the dung having lain longer in a heap, and become more compressed, must have been applied in rather a larger proportion. The plants in this case consisted entirely of large Potatoes cut in two; and the same application of guano was given to them as to the others. In these plots no failure occurred; the ground was well covered, and the tops were more luxuriant than in the autumn-planted plots, so that it seemed very doubtful which of the two would in the end be the most productive. The tops of the autumn-planted ones fell, indicating ripeness, a fortnight before the others, and were taken up in the beginning of October. The produce of each plot were carefully taken up with the graip, or three-pronged fork, and put into sacks, so that no mixture could take place, and afterwards a row in the middle of each plot, so as to come to a

correct average; the stalks were then weighed, and the result was as follows:—

The autumn planting with cut Potatoes yields at the rate of [illegible] pounds per square rod.
Ditto with large Potatoes, cut in two [illegible] 29.
Spring planting with cut Potatoes [illegible] 30.

The kind of Potatoes on which this experiment was tried, is that known in these parts by the name of Hunt's-west. The quality is good in all the plots, but the autumn-planted, if anything, rather more mealy.

I am repeating the experiment this year, and have planted, a fortnight ago, some whole Potatoes, and some cut in two; but in the former, I have this time kept out the very small ones, and planted only those of a medium size, whole; for it seemed to me last year that those of them had been planted of too small a size, which caused them to put out too many shoots, and with inadequate vigour. Another experiment may, perhaps, vary the comparative produce, and tend to establish the point of preference between autumn and spring-planting. As no failure took place in any of these plots, we have no right to presume, from this experiment, that autumn-planting will prove an antidote to that growing calamity; but as far as my observation goes, I am strongly inclined to think that it affords a security against it, and that the principal causes of failure are to be traced to injury sustained by the seed, from being improperly kept through the winter, and its vegetative power being frequently exhausted by shoots that have been made before planting in the spring, as well as by the planting being deferred till the ground, under the process of working, has been too much deprived of its moisture. Against these causes of failure the autumn-planting is a security: and if the result of future experiments should bear out that which I have now detailed, the advantage of planting in autumn will, I think, be fully established. It has been stated as an objection to autumn-planting, that time is not allowed for cleaning the land sufficiently, so as to make it fit for sowing to Grass with the ensuing Corn crop; but I should call it bad farming to have land so foul after one crop of Corn, as to present that difficulty. Besides which, as autumn-planted Potatoes are generally ready to be taken up in the beginning of October, a considerable time is available for preparing the land, either for receiving winter Wheat, or spring Corn. Independent of which, it is possible so to arrange it as to have the Potato crop succeeded in the following year by one of Swedish, or other Turnips; and thus affording the fullest opportunity of sowing the land to Grass in the best possible condition.—*John Grey, Dilston House, Oct. 24, 1844.* [See a Leading Article in another part of this Paper.]

THE PLOUGH.

(*Continued from page 797.*)

Before drawing the inference as to the proper form of the mould-board from what we have thus shown to be the proper position of the turf, I may as well first say, that the amount of surface exposed depends wholly on the relation between the dimensions of the furrow-slice, and not in the least upon its actual dimensions. The surface exposed will be a maximum, if the sods be cut rectangular, and if the proportion between their depth and breadth be that of about 7 to 10; and if these two conditions be observed, then the amount of surface exposed will be constant, it will not vary, however the actual depth or the actual breadth of the sod be altered. The same surface is exposed in a double as in a single roof, the span and the slope being in either case the same.

There is one other point regarding the proper mode of ploughing, still to mention. It is not always the object of the farmer to expose the greatest surface of ground that he can to the action of the air. His aim is sometimes merely to sever, and that in a very shallow way, manure or other matter laid on the surface of the land. This will, of course, be most perfectly effected, the flatter that the sods are made to lie the shallower, and the wider they are cut. And here it may be well to say a word or two regarding the economy of having your implement to do exactly what you want done, though it should be at the expense of additional force.

In ordinary farm work there is every possible variety, arising from the various nature of weather and of soil; and, possibly, economy would advise the farmer to have two or more mould-boards, of forms varying so as to suit two or more cases in which the difference is extreme, these mould-boards being all attachable to the same framework; but it must always be borne in mind that nothing is so economical as simplicity, and that there cannot in Great Britain be circumstances so different as to justify the Berkshire farmer in retaining his clumsy implement, with its clumsier appendages of [illegible] &c., or the Kentish farmers in retaining their cumbrous thing form of the turf-wrest plough, while all over the varying climates and soils of Scotland there is but one form of plough used, or at least ploughs varying nothing in principle, and but little in details. All this is necessary to be true; and yet the truth of the general proposition, that economy tries to get its work well done, though it be at additional expense, is undeniable; and I shall have immediate occasion to apply it. It will not do to have mould-boards varying in form so as to save every little difference of circumstance; and this is the less necessary, because, as we have seen, the position of the sod is dependent, not so much on the form of the mould-board on its own form—the relation between its breadth and its depth—and thus the farmer can get his manure covered perfectly well by a thin covering of earth, whatever be the form of his plough. Notwithstanding this, the circumstance of the position of the sod being dependent on the form of the sod, and not on that of the mould-board, is not to induce us to leave the furrow-slice to find its own position. We must have such implement such that the sod will not merely fall on the mould-board into its ultimate position, but that it will be pushed into its proper place. This is more necessary in ploughing lea land, where, by a mould-board of a given form, the upper edge of the sod may be pressed in so as entirely to bury the grassy surface. It is also well in [illegible] because, if the land be in a proper state for [illegible] it will tend to break the sod, and so facilitate the [illegible] action of the harrow, &c.

We have thus seen that the best mode of ploughing for general purposes is when the furrow-slice is cut [illegible] regularly, and of such dimensions that it shall be at an angle of 45°. It is a question which, perhaps, chiefly affects the draught of the plough, but certainly also, in some measure, its performance, that the turf shall be cut perfectly by the coulter and share, that there may be no tearing when it is moved by the mould-board; and it is also a point affecting the draught as much as the performance of the implement, that there be no lateral thrust tending to push the turf bodily aside. This will only increase the draught of the plough, and tend to spoil its work. The form of the implement, then, so far as the nature of its work is considered, must be this:—The coulter and sock must be so far before the mould-board, and their position with regard to each other must be such that the sod be cut of a rectangular form, and that it be perfectly cut before the moving part of the implement come to act upon it. The mould-board should be such that the line where it touches the ground may be a straight line, corresponding in direction and position with the corner about which the turf turns, and that the commencement of its curved surface may be a straight horizontal line, where it joins on to the share, while its termination is a straight line hanging over on the other side of the perpendicular, at an angle of 45°. The curve between these two lines must be as uniform as possible, in order that the turf may be twisted gradually, not abruptly. The length of the mould-board must be such, that the angle its surface forms with the turf as it passes over it, may be such, that when the implement is working on a loose soil, that soil may slide over its surface and be laid aside rather than be pushed before it. The mould-board and the plough generally should be fitted for an extreme case, and then it will be sure to be fitted for all ordinary cases, though it may then work under a disadvantage. The angle, then, which the surface of the mould-board makes with a line at right angles with that in which the implement moves, must never be less than the angle of repose of soil on iron.* It is evident that a great number of curves may be drawn, each possessing all the properties which are here required of a mould-board, that it may work well; we now have to consider what is to guide us in choosing from among these the one which works easiest.—*M. S.*

* The angle of repose of one substance on another, is the angle at which the surface of the latter is inclined when the former just ceases to slide over it.

REMARKS ON CHALKING.

Having read your remarks on the subject in a late *Gazette*, and asking, as you do, for further particulars on this subject, allow me to offer a few observations on the mode adopted in this neighbourhood, where it has been carried on to a very considerable extent for many years past, and with the most beneficial effects, on the strong clayey loams as well as all other descriptions of "sour red land" in this vicinity. The plan for raising the chalk is the same here as is practised in Hertfordshire; there is, however, a very material difference in the cost, a much larger quantity being here spread per acre for a much less sum than is given in your account; and this, in my opinion, is to be attributed to our having no "middleman" between the farmer and workmen: generally, one of the best labourers is selected as foreman, who shares with the others in the work, but with the understanding that his wages are to be 1*s.* per week above the others; in many cases, also, he takes the job himself, employing the rest on his own responsibility. Our method, also, of sinking pits is precisely the same as mentioned by you; but now comes the difference: here it is paid for by the acre, and at so many bushels per pole, which being never less than 18, makes 2880 bushels per acre, and the price from 35*s.* to 40*s.*, generally 38*s.*, including the filling in of pits, &c. The buckets in common use contain 1½ bushels each, and the chalk is wheeled away at once into heaps, making about 1920 to the acre; if, then, these heaps are at the beginning placed in two lines, at right angles, and at a distance of about 8 feet in one direction, and 5 feet in the other, they will have the appearance of the annexed diagram on the ground. A very simple plan of ascertaining that the full quantity is deposited on the ground is [illegible] thus obtained, as by a very casual observation before spreading, it will be seen whether the heaps are kept in their proper rows, and at regular distance. The advantages of chalking are now so fully appreciated by all farmers in this neighbourhood, that but few, if any, having lands of the description above mentioned, but what are availing themselves of it where it can be procured, and it is generally to be met with at a depth of from 7 to 10 feet: in cases, however, where it cannot be [illegible] obtained, many go to the nearest chalk pits and employ their horses in frosty weather and at other times when convenient. As regards the [illegible] of the chalk, this is beyond me; there is, however, a somewhat significant term in use amongst the workmen, that the more "soapy" the chalk, the better it is, being more speedily pulverised by the frost, and it is generally found to be more "soapy" the greater the depth. The fields most commonly selected for chalking are old fields in course for Wheat, and sometimes Wheat stubble, in preparation for the ensuing crop. In addition to the great good effected on the land, another weighty reason is in the employment it affords to the numerous unemployed poor who are to be found in most parishes at this season of the year; and as an inducement to their exertion, several of the large landowners in this county have most handsomely contributed, for several successive years, in some cases one-third, and in a few instances one-half, of the cost per acre.—*F. M. C., Savenake Forest, Marlborough.*

[Can you forward us a specimen of your best chalk?—Ed. with notice.]

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Rotations of Crops.—The general adoption of alternate husbandry has been already mentioned as one of the peculiar features of East Lothian Agriculture; although, generally speaking, every farmer in this county is prevented by express covenants in his lease from growing, upon the same piece of land, two white or exhausting crops in succession, without an intervening green or restorative one, yet none of them is restricted to any specified rotation of cropping. The choice of a judicious course being mainly regulated and determined by the quality of the soil and the local circumstances of particular farms, is very properly left to the judgment and discretion of the tenant himself. The proprietor, therefore, lays down no special rotation of crops or system of cultivation for the guidance or observance of the farmer; the only period during which he interferes with the mode of management—provided two white or corn crops are not taken in succession—is the last four or five years of the lease. No obligatory covenants, however, are requisite to enforce the observance of alternate husbandry in East Lothian, except perhaps towards the close of a lease whose renewal is not expected or desired. The farmers follow certain courses of cropping suited to the soil and circumstances of their respective farms, from a conviction that it is advantageous for themselves to do so; that is, from a regard to their own interest.

Although a rotation of some kind or other is generally adhered to on every farm, yet particular circumstances frequently render slight deviations from the regular course expedient. Some farmers, for instance, often take Potatoes after Grass, and Turnips after Potatoes—both evident violations of the principles of alternate husbandry. Sometimes, also, when a Grass field, in consequence of a failure of the Clover or some other cause, does not afford or promise a good pasturing, it is ploughed up for Oats after the first year, although, according to the rotation pursued, the field may properly require to lie two years in Grass. To rectify this deviation, and to equalise as far as possible the quantities of the different crops annually grown on the farm, some one of the other Grass fields included in the same course is allowed to remain in pasture a year longer than the usual period. Slight deviations of this kind are of general occurrence in the best managed farms.

Upon the strong clay soils, of which the greater part of the county consists, the rotation pursued and the crops cultivated are nearly similar. The following is the most general course of cropping throughout the county on adhesive soils:—

1st year	Fallow, dunged.
2d "	Wheat, with Clover and Rye-grass seeds
3d "	Grass for Hay, soiling, or pasture
4th "	Oats
5th "	Beans, dunged
6th "	Wheat.

After which the fallow is repeated and the rotation recommences again.

As remarked in my last paper, the extension of furrow-draining, by rendering the soil more easily pulverised and cleared of root-weeds, has obviated to a great extent the necessity for resorting to a bare fallow, even upon stiff, adhesive clays. Swedish Turnips are now, therefore, not unfrequently substituted, and begin the rotation, instead of fallow. The above course, which has been found peculiarly adapted to the soil of the greater part of this county, is sometimes modified and extended by allowing the land to remain two years in Grass instead of one. The Grass, in the latter case, is either cut for hay or soiling the first year, and depastured the second, or it is depastured both years. When the crop happens to be good, it is generally mown the first year, partly for hay, and partly for soiling the working horses in the stables, and the fattening cattle in yards, as previously adverted to.

Upon the light and medium descriptions of land, suited to Turnip husbanding, the following rotation is that usually followed:—1st year, Turnips; 2nd, Barley, Oats, or spring Wheat; 3d, Grass, generally depastured; 4th, Pasture; 5th, Oats. Upon this kind of land the Turnips, or a certain portion of them, are eaten on the ground by sheep. The Grass break is also frequently extended to three years, as this quality of land is not calculated to undergo as close and severe cropping as that of a stiffer and more adhesive character. I may here observe, that upon very strong retentive clays it is considered injudicious and inappropriate to allow the land to remain in Grass for a longer period than one year, or two at the farthest. The foregoing rotations are those in general practice throughout the low and middle parts of the county. In the upland district Wheat is but rarely grown, and bare fallows are never resorted to. Turnips invariably begin the rotation, followed with Barley or Oats, and several years of Grass. I should observe that as the nature and texture of the soil of large farms are often very different,

two rotations are not unfrequently pursued on the same farm, each adapted to the particular soils. Upon the dry, loamy, and fertile district of Dunbar, the following course of cropping, somewhat different from the rotations already enumerated, is that usually adopted, viz.:—1. Turnips, dunged, and generally eaten off; 2. Wheat, with Clover and Rye-grass seeds; 3. Grass, fed off with cattle or sheep; 4. Oats (usually the red Potato variety); 5. Beans, drilled and horse-hoed. Instead of Oats, Wheat is often taken the fourth year, which confines the rotation to four crops.

The following interesting and valuable observations in reference to this rotation of crops, and to illustrate husbandry in general, are extracted from the "Statistical Account of the parish of Dunbar," written by the Rev. J. Jafrey, its present minister, who is a zealous practical agriculturist, and published in the "New Statistical Account of Scotland":—"This course (speaking of the above), peculiar to the parish, has been called the Dunbar system; but objections have been made to it. Wheat, every second year, it is said, exhausts the soil; the answer is, that the food of plants in the soil may be exhausted by one crop, while the soil itself cannot be exhausted. Where there is a command of manure there is no system which will so richly repay the labours of the husbandman. It was adopted here for many years on one of the best farms, without any diminution of either quantity or quality; and in order to ascertain whether soil is injured by frequent crops of Wheat, the glebe of Dunbar was properly dressed, either with sea-weed, street-dung, or soot, and cropped with Wheat for five successive years. The result was an extra crop every year, and the land left in a condition that it may produce a crop or two of any kind without additional manure. The least crop in the succession was on the third year 10½ bolls (5¼ quarters) per acre; it promised to be the greatest, but it was lodged flat as the surface soon after it came into ear. All the other crops were above 12 bolls (6 quarters) per acre. One season, exactly suited to the soil, there were 8¼ quarters per acre; and the last of the five years there were 7 quarters per acre. It was ascertained that on each of three of these years there were more than 300 stones of straw per acre. The soil is a sandy loam. There is another field in the parish which has produced Oats four successive years with increasing produce and fertility. Hence it seems to follow that land, properly cultivated and manured, may produce abundantly the same kind of crop in regular succession. If the food of plants is exhausted in exact proportion to the weight of crop produced, it is worthy of investigation, whether the advantage of changing the kind of crop arises not from one kind giving off food for another, but solely from the different modes of cultivation which different kinds of crop admit of at different seasons."—*T. Sullivan.*

ON MINERAL AND INORGANIC MANURES.

No. XXIX.

By Professor Charles Sprengel.

(Continued from page 730.)

d. Turf-Ashes.—The long sward of barren meadows or other waste land is cut off in thin slices, which being divided into smaller pieces, and placed against each other, are left to dry, then placed in heaps, lighted, and the obtained ashes are then strewed about, ploughed under, and the soil thus further prepared.

A soil manured with turf-ashes will always yield better crops than one manured with peat-ashes, which is caused partly by the great amount of ashes brought on the same area of land, and partly by containing a greater amount of manuring mineral substances. They are also preferable on account of always containing potash, combined at times with carbonic acid. Turf-ashes, however, like wood and peat ashes, have not always the same value. This is determined both by the nature of the sward and the quality of the earth which it covers. Grass often consists of Mosses and a felt of roots belonging to bad, barren plants; and if the earth adhering to these is also bad, the ashes which will result from the burning of such turf will have but slight manuring powers, as they will then merely contain the less powerful mineral manures—lime, potash, common salt, phosphate of lime, gypsum, &c. In this case, quantity may somewhat supply quality, the turf being cut a little thicker, for the sake of obtaining more ashes, which, however, will at times be impracticable, the stratum of humus below the Grass being very thin. For the sake of knowing before-hand what result the manuring with turf-ashes will yield, and to see what advantage may arise from burning our turf, it is very advisable to subject the ashes of the turf to a previous chemical analysis. The following are some of the results of my analyses of turf-ashes.

1. Ashes of turf 1 inch thick, which were derived from a moor covered mostly with Reed-rushes. 100,000 parts consisted of—

97,574	parts	of silica and quartz sand
0,065	,,	alumina
1,200	,,	oxide and protoxide of iron
0,520	,,	oxide of manganese
0,360	,,	gypsum
0,203	,,	magnesia, partly combined with silica, partly with phosphoric acid
0,039	,,	potash combined with sulphuric acid and silica
0,040	,,	soda combined with silica
0,099	,,	phosphate of lime and a little phosphate of iron
0,030	,,	common salt

100,000 parts.

This analysis proves that these ashes will not produce any fertilizing effect, even if 20,000 lbs. were to be used on the Magdeburg acre of land, because by this quantity the soil would merely receive 20 lbs. potash, 4 lbs. common salt, 102 lbs. sulphuric acid, 37 lbs. phosphoric acid, 54 lbs. magnesia, 161 lbs. lime, 100 lbs. alumina, and 16,715 lbs. silica; so that the burning of the sward, soil, whence the ashes are derived, could only have a beneficial result if conjointly a manure of wood-ashes, or such mineral substances (marl) were to be added, as are rich in phosphoric acid, magnesia, potash, common salt, and lime.

2. Ashes of a turf one inch thick, derived from a good soil rich in humus, which were overgrown with Reeds, Rushes, much Moss, and a little peat. 100,000 parts consisted of—

97,434	parts	of silica and quartz sand
0,065	,,	alumina
1,200	,,	oxide and protoxide of iron
0,520	,,	oxide of manganese
0,360	,,	gypsum
0,203	,,	magnesia partly combined with silica
0,039	,,	potash combined with sulphuric acid and silica
0,040	,,	soda combined with silica
0,099	,,	phosphate of lime and a little phosphate of iron
0,030	,,	common salt

100,000 parts.

If 100,000 lbs. of these ashes be placed on one acre of land (which will be the case if the Grass burnt be one inch thick), the soil will receive thereby 360 lbs. gypsum, 203 lbs. magnesia, 39 lbs. sulphate of potash, 40 lbs. soda, 99 lbs. phosphate of lime, 30 lbs. common salt, &c. From this it is seen, that if these ashes are to be beneficial, the soil must, in addition, be manured with lime, bone-dust (phosphate of lime), common salt, and potash, all which are to be found in wood-ashes, or good kinds of marl.

In England, the land off which the turf has been burnt is mostly as well manured with lime, which, certainly, in cases where the Grass-ashes are so deficient in lime, as those last mentioned, will be very beneficial, as the lime will decompose the carbonic humus and the organic remains of the soil, and thus procure more vegetable food for the plants.

3. Ashes of a turf 1½ inch thick, of a sandy loam, rich in humus, which was overgrown with Reeds, Moss, white Clover, and some good Grasses and herbs. 100,000 lbs. consisted of—

93,071	parts	of silica and quartz sand
1,352	,,	alumina
1,728	,,	oxide and protoxide of iron
0,320	,,	oxide of manganese
0,619	,,	lime
0,327	,,	magnesia
0,380	,,	potash combined with sulphuric acid
0,079	,,	common salt
1,706	,,	sulphuric acid combined with potash and lime
0,448	,,	phosphoric acid combined with lime and magnesia

100,000 parts.

These latter ashes are evidently preferable to the two former, as they contain more potash, phosphoric and sulphuric acid, common salt, and magnesia; and as they are also not deficient in lime, it is to be supposed that if only 50,000 lbs. were used per acre, they would act beneficially. But as they do not (like the preceding sorts), possess either caustic lime or its carbonate, a simultaneous manure of burnt lime would be very beneficial.

Turf-ashes, however, do not manure only by means of the substances they contain, but also by one which is formed in them, and this is ammonia, which is generated by the protoxides of the ashes being converted into peroxide at the expense of the water. I have dilated on this process under the head of Burnt Clay, to which I refer the reader. It is obvious that the more protoxide of iron there is in the ashes the more ammonia will be formed. It is also well to be attended to during the burning of turf, that all the protoxide of iron be converted into an oxide, which will be best effected if the turf be burnt in small heaps, slowly and at a very gentle heat, hindering them from bursting into flames. And that the ammonia thus formed may not escape, but, on the contrary, be fixed by the humic acid of the soil, the ashes, after having been spread, should be ploughed under as soon as possible, but very shallow, as the access of the nitrogen of the air is indispensable for the forming of ammonia. The formation also of caustic lime in the process of burning turf will act as a safeguard on the carbonic humus and the organic matters in the soil, kill the vermin, and be useful in many other respects, as I have shown in my work on Cultivation.

Home Correspondence.

Cotswold Farming.—The system of cropping upon the Cotswolds was, some years back, Wheat upon two or three years' lands, which was generally breast-ploughed and burnt; then, Oats, and Turnips, which had all the manure which was made upon the farm; the rest of the land was left in a sort of fallow, for without any manure the Turnips were very bad; the whole was in a manner folded in winter, and then laid down with Clover and Rye-grass, in either Barley or Oats. I am sorry to say many farmers still follow this course, though all now drill ashes, and most of them bones with the ashes, on the land which has no manure for Turnips. The more enlightened farmers in our district have discontinued sowing Oats after Wheat, and keep some of their land in a five years' course, and some still in a six years' course, by putting Vetches or Peas after the Wheat crop. In writing upon Cotswold farming, I must be impartial, and acknowledge that there is very little clean farming. I will allow that our land is very natural for Grass, and it is very difficult to keep it clean of couch Grass. This evil is never more visible than in the Wheat crop, and many farmers actually justify it, upon the principle that it ameliorates the land; and, if you attempt to clean the land for Wheat, you make it so light that the crop is destroyed by the rise-worm, forgetting that this evil is soon remedied by Crosskill's clod-crusher, or any heavy roller. The effect of breast-ploughing and burning in this neighbourhood is almost magical, not only on the Wheat crop, but in the after crops. It is the fashion to write against it, and many landlords are discontinuing it upon their estates. It appears to me the principle upon which it acts here is entirely misunderstood; Mr. Minchin has written some good things upon it in "Baxter's Agriculture;" but he has evidently mistaken the principle here, for he says it does not answer so well upon sands. Now, the down lands are the dead earthy lands I spoke of in my last letter, upon which paring and burning answers remarkably well, and this soil is almost entirely composed of sand. I believe Mr. Minchin is right as regards most countries; but not as regards our hills. It is generally believed the gypsum of the Ash is the cause of its fertility; I think otherwise. A few years ago I accidentally met Dr. Buckland and Dr. Daubeny, upon a coach going to Oxford: I was not acquainted with them, but knowing who they were, we talked much of farming. I told Dr. Daubeny paring and burning did wonders upon our land, and asked him how it acted; after some pause, he seemed to think the gypsum acted beneficially; I own I was not satisfied. Some time after I attempted to analyse some of this earthy land, expecting—why, I know not—to find a good deal of alkali in the soil; but, to my astonishment, found *none*. From information subsequently given by Dr. Daubeny, it struck me, that connected with this was the principle of the good effects of paring and burning. Our oolite stone will not effervesce with acids, yet, the acid being thrown off by the action of fire, it makes excellent lime; so the burning throws off the acid from the soil, and though it destroys some vegetable matter, it endows it with alkaline properties, without which the remaining vegetable matter in the soil could not be decomposed (?) I believe this is the reason why burning answers so well here; and, if I am right, burning would be injurious where there already exists sufficient alkali in the soil to decompose the vegetable matter.—*T. Beale Browne, Salperton.*

Hedges.—It is too often the case that we see hedges long neglected assuming such a height and breadth, that they are neither useful nor ornamental; and many being allowed to get too high, grow open at the bottom, and thus decay and die. Except for particular purposes, farm-hedges should not be allowed to get to the height they frequently are allowed to grow to; for in our north country, where we have such heavy snow-storms, that block up roads, they shelter so much drifted snow, that the hedges, by being too high, are bent down, and often broken and much damaged; whereas, if they had been kept lower, they would have been closer and more compact, and would generally escape unhurt by the snow; likewise they are more ornamental, and it is much easier to get them pruned. In a late Number of the *Chronicle*, one of your correspondents condemns the existence of hedges on farms altogether. No doubt he may be right to some extent, where the inclosures are small, and detrimental to a free circulation of air for drying the corn in harvest; but this is not the case where the fields are of considerable extent—say from 10 to 20 acres, or more. Hedges are often of much service in a tempest, or on exposed situations, as they give shelter to cattle, &c., when they would otherwise be unable to stand out to graze; besides, they add very much to the beauty of a farm or district. But to the subject of improving Thornhedges. Where they are got too open and straggling, I would advise, not that they should be cut in at the side-branches, almost to the main stem of the plant, as is sometimes done; but to give it the radical cure at once, by cutting the hedge completely to within 10 or 12 inches of the ground, trimming off all the side-branches close to the stem, leaving nothing but the bare stumps. This should be done in the winter season; when this is done, dress the hedge-border on both sides, if in need of it, and it will be got quite easily at to clear it of weeds; by the month of May, the plants will push a great number of fine young shoots through the bark of the old stems; and by the end of autumn the hedge will average 2 or 3 feet high or more, assuming the appearance of a young Thorn-hedge of 3 or 4 years' standing. In the autumn, give it a prune on both sides, to take off the straggling side-shoots, and give it a tapering shape to the top, making the top of an equal height: thus you will have a better hedge than ever it was before in the course of three or four years. Of course, where the hedge is not protected by a stone built dyke, it will require protection by palings for two or three years, as cattle would crop the young shoots, and otherwise damage it.—*A. W., Mirefield, Yorkshire.*

Campbell's Steeps.—I some time since promised to give you the results of some experiments with steeps. Last spring my self tried Campbell's 6, with spring Wheat, which was a failure; attributable, as I then thought, to the continued drought. On Oats he was more successful; they came up evenly, retained a good

colour throughout their growth, and have yielded comparatively well. The experiment on Wheat has been resumed under my own eye, and running strictly with the printed directions, accompanying them. Part of a field was sown early in October with Wheat so prepared, which has to a great extent germinated on the ground; the seed for another portion of the same field was at the same time, and after the prepared one had dried (by mistake) with lime; this all grew, as did that of another portion dried with ashes. Mr. Campbell might say that the steep was too strong (though his own directions were followed), certain it is that the lime, by throwing off the ammonia, of which it is principally composed, had neutralised its effects on the second portion; but why should the part treated with gypsum vegetate better than the first? I have tried a variety of steeps, but find nothing to answer so well as the undiluted urine from the manure tank. This appeared at first by its powerful stimulant, and to test it, I soaked 40 grains of Wheat (in August) for 50 hours, which were sown at the same time and place with 20 others unprepared. The steeped seed came up some days before the other, soon outstripped it in growth, and has in every respect taken the lead since; I have, in consequence, soaked all my seed Wheat, excepting that prepared with Campbell's steep, to be similarly pickled, and nothing can surpass its present appearance. Whatever the ultimate effects may be, there can be no doubt of its proving at least equally efficacious as the common saline preparation in guarding smut, while it certainly promotes the early growth of the plant, causing it to tiller exceedingly well.

Useless Animals.—The number of these kept in this country is immense, and the sums paid for their maintenance absolutely incredible. I wish to call the attention of the public to this evil, which I believe to be a sin of the first magnitude, and an abuse of the trust conferred upon us by an all-bountiful Creator, as the food consumed by them is so much indirectly taken from the poor, by very much enhancing the price of the remaining portion of the provision of the people. Let every one who keeps a useless animal reflect that he is wasting the resources of the country, and with a teeming population bordering on starvation, the money thus spent on pampered animals would cause employment, fill the mouths of thousands, greatly improve the land, ameliorate the condition of human beings, and benefit the nation.—*S.*

Drilling Wheat.—It is surprising to see with what alacrity the farmers of our village have taken up the dibbling system, there is not a single allotment where Wheat is not dibbled; men, women, and children, have been hard at work for the last month. The great fault is, too little room—four inches between the rows, and four inches apart in the rows, seven, eight, and nine grains in each hole. This is the distance, I believe, in every case but one, I saw a labourer dibbling the other day, which was the same distance in the row, but eight inches between the drills. I tried to convince him that two grains were enough all the holes. He replied he should not like to have a piece set with four or five in a hole, but I hope in time to see this prejudice removed. I plant, myself, with Mr. Campbell's machine, at 6 inches distance, and I think another advantage is, that two crops in succession may be obtained off the same piece of ground, by planting between the rows of the previous year.—*Sandford.*

Correspondence.

Some time ago, I read an article in your last Number, signed "J. Dodson," complaining of the wet state of his meadows, and of the weed which he calls Reed-heads, a plant which I do not know, by that name, but suppose it to be a species of Common or Flag, whatever the plant may be, of the more difficult to eradicate. I could not suggest a better remedy than he himself proposes, namely, thoroughly tile-draining, severely scarifying, and sowing with fresh clean seeds of the proper permanent pasture grasses. To carry off the surface-waters (which he recommends to be done, instead of bush-drains, open and quite clear), would be kept clear will, I have no doubt, with the aid of the tile-drains below, effect a very great improvement in the appearance of his meadows.—*Rev. T. Cockburn.*

Agricultural Literature.—An Extract from "The Gentleman Farmer, &c." published by Oliver and Boyd, Edinburgh, in 1806. [illegible] that the chemistry, as applicable to agriculture, is not the [illegible] the present day only [illegible] the former it is not necessary that a gentleman [illegible] chemist. There are [illegible] principles relative to agriculture [illegible] ought to be ignorant of. [illegible] cessary shall be here stated; beginning with [illegible] attraction and repulsion, which [illegible] the science of agriculture [illegible] Page 319—After [illegible] is laid down above, [illegible] between the smallest [illegible] in agriculture, which [illegible] stone of the fabric [illegible] is, the more water it will hold [illegible] the weather a century ago [illegible] Oats that grew in a warm [illegible] 10 days earlier than Oats that grew in cold [illegible]

Semper ego auditor tantum.

Prodigious Potatoes.—Mr. Worthington, farmer, Hinkin, has dug up several large Potatoes, varying in weight from 4½ to 5 lbs. each. In this neighbourhood they are not only large, but rise well where they have not failed in coming up; and it appears to me that where they have failed, it is owing to the state of the ground, the manure being too dry, and to the state of the atmosphere at the time of planting, and not so much to the Potatoes as is supposed; and as a proof of this I took home a heap of Potatoes, which had been heated and thrown away as worthless, and planted all of them in June in the garden, with manure, and almost the whole came up and produced a fair crop; and the whole of the last season [illegible] were [illegible] of the [illegible]

Societies.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

Council Meeting, Thursday, November 7, 1844.—The following is a portion of a letter received from the Marquis of Downshire:—"The intention of establishing in London a Chemistry College, has suggested to me that it might be very beneficial to the farming interest in Ireland, if the Society would elect one or more experienced chemists in the chief towns in Ireland, not with salaries, but merely appointing one or more in each town, and arranging with them a scale of charges, for analysing manures, earths, minerals, or what not, to be hung up in the shop, to be referred to on the application of the persons requiring information. Such a system would gradually bring chemistry and the necessity of more accuracy in the management of the soil, and of the suitable crops to be grown on it, into notice, and pave the way for an Irish College of Chemists, after experience has been had of that which is about to be tried in London.—The report of the sub-committee for preparing the list of premiums for the cattle-show at Ballinasloe, next year, was then submitted to the council, which suggested many important alterations from the premium-sheet of the present year, and, among the rest, that all local competition should be abolished; and that all the different breeds of stock, both males and females, should compete in separate classes; that the premiums for South Down sheep and for swine should be increased considerably; that the sum usually allocated for agricultural improvements should be increased to 100*l.*, and the prizes for butter and wool be continued, and for poultry also increased; that the sum of money usually allocated for extra stock be increased to 40*l.*; and that premiums be given for frieze, home-made linen, stockings, &c., to be confined exclusively to the class of working farmers and their families who are the objects of the Society's bounty in the local Societies, and holding under 25 acres of land in their possession. On the motion of Mr. Lyle, the premium-sheet was referred back again to the sub-committee, with instructions to the secretary to have it printed as it then stood, and circulated amongst different members of the council, to ascertain their views upon the various portions of it, previous to the next general meeting of the Society on the 29th instant.

FLAX IMPROVEMENT SOCIETY OF IRELAND.

THE fourth annual meeting of this Society took place in Belfast on Friday, the 8th inst. The competition was very extensive—there having been no less than 132 entries of Flax; and the meeting was well attended. Amongst the machinery, a very superior machine for rolling Flax, previous to scutching, was exhibited by Messrs. Mac Adam, Curell, and Co., of the Soho Foundry, which attracted general attention. This machine is entirely of cast iron, and consists of a series of fluted rollers, of different sizes. It contains all the various improvements hitherto made in Flax rollers, and differs from them all in several particulars. The Flax passes but once through the machine, and is perfectly rolled. The rollers are so contrived that the Flax, in passing through them, receives a peculiar motion towards the end of the process, which has the effect of completely loosening the woody part. They are also so made that the fibre of the Flax cannot receive any injury; and by a new arrangement of the pressing levers the entire strain is taken off the machine the moment the Flax passes through. This rolling machine is driven by about half a horse-power, and can be attached to water-wheels, horse-machinery, or even driven by men. The following certificate has been forwarded from the Messrs. Herdmans, proprietors of the Sion Flax-mills, at Strabane:—

Sion Mills, Strabane, 7th Nov., 1844.

SIRS—After a month's trial of your bruising machine, we consider it the most perfect we have yet seen, both as to quality and number of the work done. It is easily driven and takes up very little space. We are able to bruise with it two tons of Flax straw per day; but we think the machine capable of bruising more.—Your obedient servants.

Messrs. Mac Adam, Curell, & Co.

The Marquis of Downshire, one of the Vice-Presidents of the Society, being called on the platform, addressed Mr. Mac Adam, and read the Report, from which we extract the following:—"The [illegible] grown in Ireland in [illegible] this year [illegible] hogsheads, of seven bushels each, [illegible] in 1843 were 37,000 [illegible] Other [illegible] cultivated crops [illegible] in 1843 were [illegible] Supposing [illegible] average production of 6 cwt. of [illegible] produce of Irish Flax, last year, [illegible] this year 30,000 tons. [illegible] 1844. The quantity of Flax grown in Ireland in 1841, the first year of the Society's existence, was about 22,000 tons; this year (1844) it is computed at 45,000 tons. There has thus been [illegible] during these three years, of 15,000 tons. [illegible] 8*l.* per ton, would amount to 675,000*l.* The improvements in quality, during this period, so [illegible] to all the processes of Flax, cannot have been [illegible] than the increase in quantity. [illegible] 100*l.* per ton, or one-fourth of the quantity grown. This would be 100,000*l.* more, which, added to the 675,000*l.* formerly given for the increase in quantity, makes, in all, 775,000*l.* [illegible] new channel would formerly have been paid, in bulk, to foreigners, but is now circulated among the farmers and labourers of Ireland. In consequence of the care now bestowed both on the growth and preparation of Irish Flax, its character is advancing; and your committee are now credibly informed that the yarns spun from Irish Flax are considered by manufacturers, as affording a better and more durable material for their fabrics than those spun from the generality of foreign Flax.

Saving of Flax-seed.—Your committee have been instrumental in bringing prominently before the farmers the great utility of Flax seed as food for all kinds of live stock. A prejudice has formerly prevailed against saving the seed, from an idea that it would injure the quality of the fibre. Almost everywhere through the country, this season, a large portion of the crop of seed has been saved; and the Flax does not seem to have deteriorated, when the operation was performed with care. Your committee have reason to believe that fully one-fifth of the Flax grown in Ireland, this season, has been rippled. The seed thus obtained for feeding, or has been sold for the oil-mills; and the total value of the above-named quantity, reckoning it at 3*l.* 10*s.* per acre, cannot be estimated at less than 60,000*l.* to 70,000*l.* Several large landed proprietors have, at great cost, erected scutch-mills on their estates, for the benefit of their tenantry, containing the most approved machinery.

The Factor System.—It has ever been the desire of your committee to introduce and foster the trade of purchasing Flax on the foot, as they conceive that this would at once obviate the objections to the results of managing the crop in districts of Ireland like the adjoining counties, where the agricultural population is fully employed. The gentlemen who engaged in this new branch of business, last year, from taking too much in hand, were unable to realise any profit, as much of the flax was greatly injured by their inability to have the different processes, on so large a quantity of Flax, managed by their infant establishments. This season, however, those who have purchased Flax on the foot have expressed themselves well satisfied with the result of their enterprise, and the statements for the prizes, which your committee offered to these gentlemen, can testify that such is the case. Mr. Galbraith's establishment at Lifford, has been of the most essential service, not only in giving profitable employment to members of persons in that neighbourhood, but in holding out such an example to the surrounding farmers in the neatness and care with which the Flax is handled, and the consequently vast improvement in the quality of the fibre, when ready for the market.

In the course of the evening of this day's proceedings Mr. J. Campbell made the following remarks on the Irish Flax trade:—"Now, many years ago, in the summer days, and winter evenings, the enlivening sound of the spinning-heel gladdened the hearts of the peasantry of this country, and continued to flourish. The enterprising Englishman saw that this simple operation could be more economically done upon a large scale, and by machinery. It were needless to inquire whether it would be better to have the trade as it was, or as it is now conducted. One thing, however, remains certain, that if this country did not keep pace with the improvement, and adopt spinning by machinery, it would soon lose it altogether, and possibly the other branches of the linen trade along with it. It was then that energetic, public-spirited and patriotic individuals, the Marquis of Castlewellan, and the Mulhollands of Belfast, determined to avail themselves of the improvements, and to put them for their own and their country's benefit. They commenced, and had carried on, all that day, that new branch of trade, in a manner creditable, as he hoped it had been profitable to themselves, and highly beneficial to the province of Ulster. Their example had been followed by others, and there were many numbers of concerns of this description in the north of Ireland, employing, as near as he could compute, 1,200,000*l.* paid, requiring besides, about half a million of floating capital, distributing 20,000*l.* per week, employing upwards of 12,000 men, women, and children, and indirectly, in vastly greater numbers, using 90,000 tons of coal yearly, which would employ about 30 sailing and 300 steamers to carry them. In England and Scotland, [illegible] was still of greater importance [illegible] Society, using about 400 tons [illegible] per week, [illegible] earth from 12,000*l.* to 15,000*l.*, or 15,500 tons per week, [illegible] at least 675,000*l.* [illegible] from the Meridian [illegible] having [illegible] him [illegible]

FARMERS' CLUBS.

[illegible] Farmers' Club [illegible] of this club [illegible] to receive the Report of the deputation [illegible] the Meeting [illegible] Mr. Edward Davis, late Croydon [illegible] Mr. Davis [illegible] a paper [illegible] subject of [illegible] Mr. Dickson read the [illegible] Spring Park Farm, consists of about 200 acres. The most striking feature [illegible] in draining the land was the care that had been taken [illegible] by grubbing hedgerows, &c., to lay the land open to the influence of the sun and air. The soil of this farm consists of black sand and beech gravel, with a subsoil of white sand and gravel. The moor-pan formerly consisted of exceedingly hard conglomerate masses of gravel and [illegible] sand, some of which were so large as to require six horses to draw them off the field. They are very similar to what is called

pudding-stone, and the soil is, evidently, from its appearance, a very inferior one, requiring pressure to consolidate it. Previous to Mr. Davis's occupation, a field termed Starve Acre, from its unproductive quality, could scarcely grow anything; but, under his management it has become the best on the farm, and has produced with thin sowing, no less than 5 qrs. of Wheat per acre. The whole of this apparently intractable land has been subsoiled, and a very large portion drained, by Mr. Davis, who, although his lease has only five years to run, will not drain a further portion, than 4 feet, deep, the labour alone costing him 9d. per rod. So convinced is Mr. Davis of the value of draining, that he believes even this expense will be fully repaid to him. His practice is to lay the land in ridges, varying from 18 to 24 feet in width. The seed having been got in, he generally runs Smith, of Deanston's, subsoil plough down each furrow, between the ridges, even through the drained land. With reference to the system of thin sowing, the deputation had an opportunity of seeing the stubbles that were still remaining unbroken. The growth of the stubble roots were remarkable, and were found to have tillered to from eight to ten stalks each. The next criterion for judging presented to the deputation was Mr. Davis's stack-yard, consisting of five large stacks of Wheat, two of Oats, two of Buck Wheat, one of Pulse, and three of Hay. Besides these stacks, there was a barn full of Pulse and another of Wheat and Barley. The appearance of the crops was excellent. The straw was exceedingly strong, and the ear was very fine. The Pulse crops were remarkably well podded. The Wheat was the Essex rough chaff, which Mr. D. had been told would not be grown on the system of thin sowing, as it had been said that thin sowing produced mildew, a disease to which this sort was particularly liable. Mr. D. states, however, that mildew is a disease that he has scarcely ever been troubled with. As the members may not all be aware of Mr. D.'s rotation, it is as follows:—

1st Year.	Rye	For green meat, and feeding off with sheep in April, May, June, and July, and followed by
"	Tares	
"	Mangold Wurzel	With a liberal dressing of farm-yard dung.
"	Swedes	
"	Cabbages	
"	Turnips	
2nd Year.	Oats or Barley, sown with Clover	
3rd Year.	Clover twice mown for Hay	
4th Year.	Beans or Peas	The Beans, save Turnips, drilled between the rows, which come into feed in September and October.
5th Year.	Wheat	

The quantities and periods at which he sows are the following:—

Rye	4 bushel	In August and September
Tares	1½	In August
Mangold Wurzel	6lbs.	In April
Swedes	1 quart	In May
Turnips	1	In July
Cabbages	1 every 2 feet,	In June
Oats	7 pecks	In Jan. Feb. and March
Barley	4	In Jan. Feb. March, and April
Wheat	2	In September and Oct.
Peas	2	In Dec. Jan. and Feb.
Beans	2	In September and Oct.

Mr. Davis's Rye and Tares for green feeding are sown in rows at 9 inches apart, all his white Corn at 10½ or 12 inches, his pulse at 27 inches, as are also his root crops, and Cabbages, on the ridge. The growing Tares, winter Beans, Wheat, Rye, and winter Barley, also Cabbages and Turnips, had a very healthy and flourishing appearance. The general appearance of the winter Barley and Rye, for spring feed, which is now a few inches above the ground, would lead a person passing by to the conclusion that the usual quantity of seed had been sown, till on examination he would find that it consisted of separate vigorous plants, which had each tillered out some seven or eight stems. Mr. D.'s general system of growing Turnips is that of planting double rows of Turnips and Cabbages alternately—a plan which has this advantage, that however untoward may be the weather, the sheep always find food in the Cabbages, which, although they draw the ground more than Swedes, yet produce a much larger weight of food per acre. These Swedes and Cabbages, considering the soil and the season, were exceedingly good. The number of stock upon this farm was 14 cows, 1 bull, 200 pigs, about 30 colts and breed mares, 200 fatting Bullocks on green crops and oil-cake, and 200 ewes in flock. Mr. Davis uses the Kentish turn-rest plough, Smith's subsoil plough, and Finlayson's harrow. He has discarded the old dished wheels of his waggons and carts, and substituted for them others, nearly straight, for their lighter draughts. He prefers the flail to the threshing machine. His cart-horses were all of the heavy Cleveland carriage breed, about 16 hands high, clean legged, with strong bone, and of great activity. Mr. H. has selected them from the Ivy Lane horse bazaar, which are sold off in London at the end of the season. They cost him from 12l. to 20l. each. At Bolderton Farm, the deputation had the opportunity of seeing Mr. Davis's Swedes drilled, and a Kentish plough at work in an adjoining field, ploughing to the depth of 12 inches. This farm, though of nearly similar soil, in other respects is of better quality than that of Spring Park, but, being let to speculating tenants, it had had four tenants within seven years. The crops appeared to have been equally successful here as at Spring Park. Selsdon Farm, however, offered the best criterion of Mr. Davis's mode of cultivation. Eleven years ago it was offered at 10s. per acre, tithe-free, and no one would hire it, only 8s. having been offered for it. It then consisted of a thin soil of about five inches on the chalk, comprising 136 acres of arable land, with 120 of poor park land. It never had had more than three stands for stacks in its stack yard; there are now 14 stands in this yard, which were last year filled, besides the barns. Mr. Davis has turned up six inches of pure chalk, which has all become disintegrated and mixed with the soil by the plough. He has been enabled to apply this system of cultivation to it, entirely dispensing with fallows. Upward of 50 fields, in which, under the old system, nothing would have thought of trying to grow. Turnips, Swedes, are to be seen on the Selsdon crop of Cabbages and Swedes, and the whole of the farm bears decided evidence of the great success of Mr. Davis's management, who states that he had of last year's growth 14 large stacks, and the barns full of corn, three stacks of Linseed and root crops for the fattening of 200 lamb sheep and 100 ewes with their lambs, besides 12 oxen. Ealing Farm, which has been under Mr. Davis's management for only nine months, presents no point worthy of particular observation, beyond those that have been mentioned with reference to the other farms, except the decided superiority of the last year's Wheat and straw, now cut, and threshed, as compared with those upon Mr. Davis's other farms. The leading features of Mr. Davis's system are deep ploughing, early and thin sowing, and frequent cultivation between the drills; which system, as applied by him to the farms above named, appears to have been most eminently successful. The following resolution was unanimously agreed to:—"That in the opinion of this meeting it is highly desirable, in a national point of view, that Mr. Hewitt Davis's system of drilling and cultivation, as expounded in his pamphlet, and reported upon this evening, by the deputation from this Club appointed to inquire into it, should receive the serious attention of agriculturists, and should be tried as generally as possible by way of experiment."—*Maidstone Gazette.*

Stapponey.—The following are extracts from a Paper on Keeping Farm Accounts, read by Mr. Amery at the late meeting of this Society:—"An accurate system of accounts affords the only safe index by which you can ascertain the value of new and improved modes of farming. It appears to me that only two accounts are necessary, namely, a day-book or journal, and a ledger, which may be kept in different parts of the same book; but in order to have the advantage of double entry, I very strongly recommend a cash account also. The first thing to be done in commencing any system of accounts is to take as accurate a valuation as possible of all produce on the farm, live stock, implements, fallows, seeds, &c.; and Michaelmas, when harvest is ended, is, in many respects, the most convenient period to do this. This valuation represents the capital at that time actually employed in the farm, and the amount thereof should be the first entry in the ledger to the debit of the farm, and the first entry in the cash account to the credit of cash, as due from the farm. All subsequent entries will be made from the journal or day-book as they occur, the farm being debited with all items of expenditure, labour, purchase of stock, implements, repairs, rent, taxes, interest on capital at 5 per cent., &c. &c., for which the cash account would have a corresponding credit, and being in like manner credited with all sales of produce and stock, and the value of produce consumed on the farm, except the keep of horses which are required to cultivate the farm, for which also the cash account would have a corresponding debit. At the end of every year, say from Michaelmas to Michaelmas, the ledger and cash account must be cast up and balanced; and, if they are kept correctly, the result of both will appear to be the same. Then, in order to ascertain the actual profit of the year, a fresh valuation must be taken, at the times' price, similar in all respects to that at the commencement of the year, taking care to deduct a per centage for the wear and tear of implements from their former estimated value, perhaps 15 per cent., and the difference between the amount of this last valuation so taken and the sum standing to the debit of the farm as due from it, shows the real amount of profit or loss for the year. This closes the amount of the last valuation, and will form the first entry of a new account for a succeeding year; the journal, ledger, and cash account will be then worked precisely as before."

Miscellaneous.

On the Analysis of Soils.—The following directions for selecting specimens of soil, or subsoil for analyses, are extracted from a paper issued from the Museum of Economic Geology, in the department of Her Majesty's Woods and Forests:—"Soils being generally the ultimate decomposed portions of subjacent mineral substances, whether hard rocks of various kinds, or clays, gravels, marls, &c., mingled either naturally or artificially with vegetable and animal matter, it becomes very desirable in collecting specimens of them that they should be accompanied by those of the hard rocks, clays, marls, gravels, &c., upon which they rest, and selecting galls for analysis from which to obtain their average specimens taken from the immediate soil, or subjacent hard rock, clay, gravel, &c. Specimens of the latter should be obtained, as near as possible beneath that spot whence the soil may have been selected, for it sometimes happens that the soil of a field varies in places from resting upon different kinds of materials. The soil above hard rocks is not unfrequently separated from them by broken angular fragments, the last decomposed portions of such hard rocks; specimens, therefore, of subsoil and subjacent mineral substances, should, in such cases, be taken from the solid hard rocks beneath, and not from these fragments, which have commonly suffered from much decomposition, to exhibit the real chemical composition of the rocks themselves. The quantity of soil taken as a specimen should weigh about a pound, which should be tied up in a canvas bag, and labelled. With respect to specimens of subsoils, if of marl, sand, or clay, particular weights about a pound should be tied up in a parchment bag labelled to correspond with the respective soils above them. If the subjacent rocks be hard, a piece also weighing about a pound, and fresh broken from the body of the rock as nearly as possible beneath the spot whence any specimen of soil may have been selected, should be wrapped in strong brown paper, labelled to correspond with the soil above it." The substances usually found in soils, are silica, alumina, carbonate of lime, carbonate of magnesia, phosphate of lime, phosphate of magnesia, phosphate of alumina, peroxide of iron, peroxide of iron, oxide of manganese, chloride of sodium, salts of potash and soda, and organic matter. Some of these are often absent, and the determination of others may sometimes be deemed superfluous; nevertheless it is our wish to make the process sufficiently complete to meet all ordinary cases. 1. The first step in the process is, properly to dry the specimen to be analysed over a water bath, at 212° Fahr.; a higher temperature than this should not be used, as it might cause the decomposition of some of the organic matter. The dried specimen is to be pulverized, sifted through a moderate wire sieve, and put into a stoppered bottle. 2. Five hundred grains of the dried specimen are to be spread out on a sheet of writing-paper, and exposed to the air for 12 hours; then weighed, and the increase of weight, if any, noted. The absorption of moisture from the air, if it take place to the extent of eleven or eight grains in the above quantity, may be considered a favourable indication. 3. One hundred grains of the dried specimen are to be introduced into a previously counterpoised bottle, containing hydrochloric acid, with the usual precautions; and when action has ceased, the amount of loss determined, which will be the carbonic acid resulting from the decomposition of the carbonates. 4. Two hundred grains of the dry specimen are to be put into a platinum crucible, and exposed to a red heat, being occasionally stirred, until on cooling it assumes a reddish appearance throughout. It is again to be weighed, and divided into two equal parts. 5. One of these parts is to be introduced into a counterpoised bottle, containing hydrochloric acid, and the disengaged carbonic acid estimated as before. If the quantity of carbonic acid thus deduced be less than that obtained before calcination, the difference must be added to the weight of the calcined product under operation, and this deducted from the weight before calcination, will indicate the amount of organic matter. 6. The other half of the residue left after calcination is now to be boiled in a flask with about an ounce of hydrochloric acid. By this means all the ingredients, excepting the silica and part of the alumina, will be dissolved, some of them being decomposed. The insoluble part is to be separated by filtration, washed well to remove acid, and dried. The solution, together with the washings of the insoluble powder is to be diluted to, and put aside for subsequent examination. This powder is to be finely powdered, and mixed with four times its weight of dried carbonate of soda. The mixture is then to be heated in a platinum crucible until it runs into a glass. The crucible and its contents being placed whilst warm in a *Wedgewood* dish containing distilled water, about an ounce of hydrochloric acid is to be added, and heat applied. More acid and water may be added, if necessary, until nothing more is dissolved. This being done, the solution and insoluble part are to be evaporated to dryness, in order to aggregate the silica held in suspension; and care must be taken during this operation that no hard lumps be left in the solution, as the silica sometimes forms a coating over such particles through which the acid will not get. The residue, after the evaporation, is to be heated with water mixed with about half an ounce of hydrochloric acid; the solution is to be filtered, and the insoluble part washed. The latter is the silica, which must be carefully burned to redness, and weighed when cool. The solution from which the silica has been separated, is to have a solution of ammonia added, which will throw down the alumina. This must be treated as the silica and weighed. 7. The solution *c* is still to be examined. For this purpose, add ammonia in excess, and dilute with strong acetic acid in considerable excess; and boil the mixture: phosphate of peroxide of iron, and phosphate of alumina, if present, will be precipitated, and will remain undissolved. Collect and weigh this precipitate, and label the solution *c*. Treat the precipitate with solution of caustic potash, which will dissolve the phosphate of alumina, and leave the phosphate of iron; separate, wash, dry, and weigh the latter. Add ammonia to the potash solution to throw down the phosphate of alumina, which in like manner to be collected and weighed. It must not be inferred that the phosphates of iron and alumina thus obtained, existed as such in the soil. The phosphoric acid may have been present in part in combination with lime or magnesia, while the iron may have been in the state of peroxide; and the alumina undissolved by but on dissolving the precipitate in the hydrochloric acid, the phosphate of lime or magnesia would be decomposed, and phosphates of iron and alumina formed. As this decomposition would always take place under the circumstances indicated, it next becomes a question, whether the equivalent proportions of peroxide of iron and alumina, or of phosphoric acid, existed in excess. To determine this point, divide the solution *c* into two parts; to one add a few drops of solution of perchloride of iron, which, if any soluble phosphates still remain undecomposed, will occasion a precipitate of phosphate of iron, in which case

it may be concluded that the whole of the iron originally in the solution has been obtained in the state of phosphate of iron. Continue the addition of perchloride of iron as long as a precipitate is formed, and treat this precipitate the same as that first obtained from solution *A*. If, on the other hand, no precipitate be formed from the perchloride of iron, it will be necessary to try whether there be more iron or alumina in the solution. In this case, add to the other half of the solution *c* liquid ammonia, so as to render it slightly alkaline; then add hydrosulphate of ammonia, which will throw down peroxide of iron, oxide of manganese, and alumina, if present. Collect and wash this precipitate, and label the solution *d*; dissolve the precipitate in hydrochloric acid, and boil the solution; add caustic potash in excess, which will throw down peroxide of iron, oxide of manganese, and alumina, but will again dissolve the last. The oxides of iron and manganese being removed from the solution, and ammonia added, the alumina will be precipitated. These precipitates are to be washed, dried, heated to redness, and weighed. 8. The quantity of manganese contained in soils is usually so small as to render its separation from the iron unnecessary. Its presence may be indicated by the black colour which the iron precipitate assumes on being exposed to the air, or by the smell of chlorine which is afforded on adding a few drops of hydrochloric acid to the precipitate. If thought desirable to separate these two oxides, let them be dissolved in hydrochloric acid, and precipitated carbonate of lime added, which will throw down the oxide of iron. Separate the precipitate; add oxalate of ammonia to the solution previously neutralised by ammonia, to remove lime, and then precipitate the manganese with caustic soda. Collect, dry, and weigh this, which is oxide of manganese. 9. The solution *d* may still contain lime, magnesia, and salts of potash and soda. Boil this solution to drive off any sulphuretted hydrogen it may contain, add oxalate of ammonia as long as a precipitate of oxalate of lime is formed. Collect, dry, and weigh this precipitate, and label the solution *e*. If the precipitate be dried at 212° it will contain one atom of water. 10. Add hydrochloric acid to solution *e*; evaporate it to dryness, and heat it to a dull red heat. Redissolve it in a little water; add some red oxide of mercury; evaporate again to dryness, heat it to redness, and treat the residue with water. Pure magnesia, if present, will remain, which weigh. 11. The chlorides of potassium and sodium have yet to be determined as well as the sulphate of lime. Boil 200 grains of the dry specimen in 10 ounces of distilled water; filter the solution, and wash the insoluble part, divide the solution into two equal parts; to one add nitric acid and then chloride of barium as long as any precipitate occurs; collect, wash, and dry this precipitate, which will be sulphate of baryta, obtained from the decomposition of the sulphate of lime. To the other half of the solution add nitric acid, and then nitrate of silver, as long as any precipitate occurs, which treat as in the former case. This will be chloride of silver, obtained from the decomposition of the chlorides of potassium and sodium.—*Pharmaceutical Journal.*

Steeping Seed.—The object in the present communication is merely to press a *veto* on steeping Turnip-seed previous to sowing; and I think the very numerous and repeated experiments I have made, and with uniformly decided results, will operate as a salutary caution against steeping Turnip-seeds in chemical solutions. My first experiments were made on the 21st June, and after white Stone Turnip had been steeped for 55½ hours in solutions of carbonate of ammonia, muriate of ammonia, phosphate of ammonia, and silicate of potash, with water simply, by way of comparison, it may suffice to say, that while the entire number of the seeds steeped in water germinated, and grew very well, not one of any of the rest germinated, with the solitary exception of three or four of those steeped in silicate of potash. Other chemical solutions were tried, and the period of steeping varied, but they proved uniformly fatal to the germination and growth of Turnip-seed. This seems of importance, as Mr. Campbell's steep, which contains sulphate and muriate of ammonia, has been recommended for Turnip-seed, as well as Wheat, Barley, and Oats. From my experiments, I deem much discrimination is essential in reference to chemical solutions, as steeps for various seeds. I have Blue Moreen Barley, which has tillered into 25 stems from seeds steeped in a particular chemical solution; and Mummy Wheat, which displays 16 stems, by being similarly treated. On the other hand, Kidney Beans, after being steeped 48 hours in a solution of phosphate of ammonia, entirely perished. Flax-seed was steeped for 28 hours in water, phosphate of ammonia, and sulphate of ammonia, germinated and advanced in growth, with little difference being perceptible. White Mustard and Portugal Onion were steeped for 28 hours in water, sulphate of ammonia, and phosphate of ammonia, and both Carrot and Onion seemed essentially invigorated and benefited by the solution of sulphate of ammonia.—*J. Morgan, in the Mark Lane Express.*

Notices to Correspondents.

Thanks to *Mr. Beaw* for his letter, which is too late for this Number.

ALLOTMENTS.—*Anon.*—See Number of the "Labourer's Friend" for August, September, October, and November, 1847.

ARTIFICIAL RAIN-MAKERS.—*Sesinus.*—Can any one inform us of the success of this instrument? Is there more than one kind of it?

BOOKS.—*Mr. Sproule* has applied to his bookseller for the name of the publisher of "Warren's Suggestions for Fattening, &c.," but it is not known. Will "A Constant Reader" kindly inform him?

BURNETT'S MATERIAL FOR PRESERVING WOOD, &c.—*Anon.*—This is the chloride of zinc.

COMPOST.—*T. E. L.*—Your compost is made up of materials the mixture of which will be advantageous. Charcoal-dust is a very useful element in all composts of materials whose decomposition produces ammonia.

DIBBLING.—*Querist.*—Eight inches by four are good intervals; two seeds in each hole.

FATTENING CATTLE.—*A. W.*—As you wish to consume all your Turnips on the land by sheep, you may profitably consume your straw by cattle in the yard upon straw and oil cake, 4 lbs. each daily, or try Mr. Warren's compound. How many head with 80 Turnips will it require to consume the straw of 90 acres of average bulk, between December 1st and May 1st?—This depends, of course, altogether upon the weather. If it be wet, 30 head of cattle would do it.

FOOT-ROT.—*J. M.*—The existence of foot-rot may be ascertained by the heat of the foot and the lameness of the sheep. The foot should be cut away sufficiently at the lower part to admit the escape of any matter that may be confined, and the diseased part should be touched, by means of a feather, with muriatic hydrochloric acid, which may be repeated if any fungus flesh grows on the part; if otherwise, the sore may be dressed daily with a powder composed of equal parts of sulphate of copper, alum, fine charcoal, and armenian bole. A dry lair is essential, and dirt and moisture highly prejudicial.—*W. C. S.*

FURROW-DRAINING.—*A. W.*—In 3-feet drains, to be filled with stones covered with straw, and no tiles used, fill to within 20 inches of the surface.

GRASS LAND.—*Subscriber.*—In last Paper we stated all we know of methods of extirpating Moss, viz, that caustic lime has been known to kill it. We must also say that we know cases in which it has failed to do so.

GURNEYISM.—*R. R.*—The influence of the light strawey covering which Mr. Gurney lays upon his pastures, appears, from published facts, to be singularly efficient in causing a rapid growth of Grass. We should be glad if any of our Cornwall subscribers would describe the subject to us. Your Grass will probably be somewhat earlier if you manure the land well.

LIME, &c.—*Querist.*—Apply it in autumn. The best way is to take it at once from the kiln, and divide it into heaps from the cart over the field, then cover up with a thickish coat of earth, and let it slake.

LINSEED.—*Querist.*—It must be crushed or ground some way or other; if you have not a suitable machine, and will not buy one, you must send the seed to the mill.

LIQUID MANURE. *Querist.*—If applied directly. Apply it on the young crop; the best way, however, is to carry it to the land in the farmyard manure.

LUCERNE.—*Delta.*—Your 10 rods of land, if they are statute measure, will require scarcely 1 lb. of seed. Sow in rows 12 inches apart, on deeply and well-tilled soil, in the month of April. We know only one kind. Cut it only once the first year—it will be ready about August. It will arrive at its full growth about the third year. You will need to manure it occasionally, and hoe and dig between the rows to keep the land clean.

MANURE.—*Querist.*—You had better mix the manure with earth in the field, not before carrying it thither.

POTATO SEED.—*A Farmer.*—Squeeze the ripe Potato Apples in water, strain all through a cloth, and dry the seed before the fire, and keep it in a dry place. In February, if you have the convenience of a hot-bed or hot-house, let it be sown thinly in flower-pots of rich light earth and covered very lightly; in a month or six weeks, or as soon as the young plants are an inch high, they are to be raised carefully and planted singly in small pots, and placed in a frame where they will have a very little warmth, and where they must have plenty of air and water as required until the middle of May, when they may be turned out of the pots into the open ground without breaking the ball. By this treatment the Potatoes will be so large the first year as to enable you to judge of their merits. If you cannot command artificial warmth, sow the seed in shallow drills of light rich earth, early in April, and transplant the young plants into rich earth in June, raise the Potatoes at the usual time, and treat them afterwards in the usual way: they will "prove themselves" the second year. —*Dublin Farmers' Gazette.*

POTATOES.—*Somersetshire Vicar.*—Your specimen appears similar to that figured in a Leader on the Horticultural side some weeks ago.

REARING CALVES.—*A. W.*—Give them an abundance of the milk of the cow, and give the latter such food as will tend to increase it, particularly its nitrogenised portion, *caseine*. Mangold Wurzel is one of the best roots for this purpose, and if sufficient milk cannot be obtained for the calf, Peas, made into a sort of broth, is, I believe, the best substitute. Moderate exercise is desirable both for the cow and the calf, which, however, should not be afforded, if the latter is intended for the butcher. *W. C. S.*

SEA INUNDATION.—*H. H.* is informed that I asked what would most readily restore fertility to Grass-land inundated by the sea. I also asked if it had ever been ascertained when any given quantity of salt ceases to be beneficial and becomes detrimental to vegetation, instancing the well-known fact that a thick dressing of salt on a gravel walk at the beginning of summer destroys the weeds for that season, but unless renewed every year tends to the increase of them. I also asked what would be likely to render mud taken out of a tide river useful as manure, with a view to counteract the superabundance of salt contained in it. Exposure to sun and air, in all cases of mud, is, I believe, very necessary to make it useful as manure, either in top-dressing or otherwise; but what would soonest assist the operation of the elements?—*H. D. P.*

SUBSOIL.—*Querist.*—It is better to divide your ground, and let your flock into successive portions, at successive periods. Sheep should not be put to ram till the second year.

*** As usual many communications have been received too late.

Markets.

SMITHFIELD, Monday, Nov. 22.—*Per stone of 8 lbs.*

	s. d.	s. d.		s. d.	s. d.
Best Beasts, Herefords, &c.	4 6	4 8	Best Down & Half-bred	5 0	5 2
Best Short Horns	4 10	4 8	Best Long Wools	4 10	5 0
2nd and inferior Beasts	4 0	4 4	Second and inferior Sheep	3 8	4 6
Calves	4 0	4 8	Pigs	3 8	4 4

Beasts, 2,600; Sheep, 27,600; Calves, 200; Pigs, 400.

Our supply of Beasts is again rather limited, which, owing to the favourable change in the weather, has caused a brisk demand, at an advance of 2d per stone on the prices of Monday last. Sheep are in good average supply, and the demand is steady, at last week's prices. Calves are in short supply, and sell readily at 4s to 4s 8d per stone. Pigs are in good supply, and sell slowly at 3s 8d to 4s per stone.

FRIDAY, Nov. 26.

We have rather more Beasts in than the best qualities will clear off this day, the inferior ones only supplied, although Monday's quotations are not realised. The second-rate Beasts, which constitutes very great portion of the supply and make a little less money. Short Horns, &c. as quoted. Short Horned Scots to-day and second quality 4s to 4s 6d. Deep supply of Sheep, but the demand is adequate. The best Downs, &c. are making 5s per stone, and Longwools 4s 10d to 5s 2d. Mutton is dull, and rather lower than on Monday, but the dead market having been pretty well cleared since Monday, we have a chance of getting all sold soon, at the under quotations. Veal trade is good; a very choice Calf is worth very nearly 5s per stone. Pork trade is steady.

Beasts, 2,600; Sheep, 27,600; Calves, 200; Pigs, 400.

Hay, Straw, Potatoes, Corn, Seeds, Wool, Smithfield.

POTATOES.—SOUTHWARK WAREHOUSES, Nov. 25.

Although the part which the supplies have been liberal from most of the shipping districts, and in consequence of the precarious character of the supply, there has been a ready demand for the best samples, but the second rate samples went off heavily.

York Reds	70s to 75s		Kent and Essex Whites	60s to 65s	
Perth	55	60	— Kidneys	55	60
Yorkshire	60	65	Wisbeach Kidneys	60	65
Early Devons	60	—	— Blues	50	55
Late Devons	—	—	— Whites	55	60
Cornwall	50	—	Guernsey Blues	50	55
Jersey Blues	55	—	— Whites	45	50
— Whites	40	45	Prince Regents	55	60

HOPS, FRIDAY, Nov. 26.

This Day Sennight's obtainable terms at quite as much money.

PATTENDEN & SMITH, Hop-Factors.

MARK LANE, MONDAY, Nov. 29.

We find a moderate supply of Wheat from Essex, Kent, and Suffolk; the condition of which for the most part continues indifferent; best qualities being scarce are saleable at fully the rates of this day se'nnight; anything below is difficult to dispose of; there is very little demand for Foreign, where the following are late quotations. Fine Malting Barley is wanted, but other of the terms of last week; inferior continues neglected, with the exception of Foreign for grinding, which is in request. White bedding Peas are fully as dear; Maple dull. Grey is lower. Tick Beans are unaltered, but New are 1s. cheaper. Oats maintain the prices of Monday last.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex and Kentish	White	40	50	Red	40	46
—— Norfolk, Lincolnshire, and Yorkshire	——	—	—	White	—	—
Barley, Malting and distilling	Chevalier	31	36	Grind.	28	30
Oats, Lincolnshire and Yorkshire	Polands	23	25	Feed	19	22
—— Northumberland and Scotch	Feed	20	23	Potato	24	25
Irish	Feed	20	21	Beans	30	34
Malt, pale, ship	Pale	56	60			
—— Hertford and Essex	——	52	56			
Rye		32	36			
Beans, Mazagan, old and new		30	to 32	Tick	32	36
—— Pigeon, Heligoland		—	—	Harrow	32	36
Peas, White		32	36	Grey	31	34

ARRIVALS IN LONDON FROM SEPTEMBER 1ST.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	9001 Sks.	Bls. 13857	11107	6739	691	7	1603	1615
Irish	—	—	—	—	—	—	—	—
Foreign	10	1882	4622	—	2083	—	143	—

FRIDAY, Nov. 26.

THE arrivals of English Wheat since Monday last's have been good, and such as were offered on the Market this day sold heavy sale at declining prices; business in Foreign has been very limited, but we observe no alteration in the value. The best samples of malting and also grinding descriptions of Barley are taken off on late terms, but secondary qualities of the former must be written 1s. cheaper. Beans and Grey Peas are unaltered; good breakers are inquired after, and the turn dearer. There is little doing in Oats, but Monday's prices are fully supported.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	7000	—	—	6000 Sks
Irish	—	—	470	—
Foreign	480	6750	140	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Oct. 30 per Quarter	50s 2d	34s 0d	20s 8d	38s 0d	36s 9d	39s 0d
— 16	49 9	33 7	20 11	37 8	36 3	38 8
Nov. 9	49 9	33 7	21 2	37 3	36 8	38 1
— 6	49 5	33 6	21 6	36 6	37 11	38 7
— 13	49 3	33 6	21 7	36 4	38 4	38 7
— 20	49 1	33 6	21 8	36 3	38 6	38 9
6 weeks' Aggreg. Aver.	49 1	33 6	21 6	36 8	37 4	38 11
Duties on Foreign Grain	20 0	7 0	5 0	7 0	7 0	7 0

SEEDS, Nov. 26.

Canary	per qr		Mustard, White	per bush.	10s	14s
Carraway	per cwt.	44	48	Brown, Eltham	per bush.	12	16
Clover, Red, English	—	70	80	Scotch	—	12	16
— Foreign	—	60	70	Rape	—	28	30
— White, English	—	70	80	Linseed, English	—	32	34
— Foreign	—	60	70	Foreign	—	30	32
Coriander	per cwt.	12	14	Tares, Winter	per bush.	6	7
Hempseed	per bush.	36	38	Trefoil	—	6	7
Linseed	per qr	—	—	Turnip, Swedish	per lb.	—	—
— Baltic	—	370	380				
— Cakes, Eng. per 1000	10	0	0				

HAY.—*Per Load of 36 Trusses.*

SMITHFIELD, Nov. 25.

Prime old Meadow	New	90s	to 95s	Clover	105s to 120s
Hay	100s to 110s	Inferior Ditto		80	90
Prices of Hay declining.				John Cobbett, Salesman.	

CLERKENWELL, Nov. 25.

Superior Mead. Hay	100s to 110s	Superfine Clover	105s to 115s		
Inferior	85	90	Inferior	97	103
New Hay	—	—	New Clover	—	—
			Straw	34s	to 36s

Joseph Baker, Hay Salesman.

WHITECHAPEL, Nov. 25.

Fine Old Hay	105s to 115s	Old Clover	110s	120s	
New Hay	90	100	New Clover	105	115
			Straw	32s	to 36s

COVENT GARDEN, Nov. 30.—The supply of both Fruit and Vegetables has been well kept up during the week, but the market continues so be dull, as is generally the case about this time of the year. Of Fruit, Pine-apples are plentiful and good in quality. Hothouse Grapes are some what dearer than they were last week, and Portugals are also rather on the rise. Among Apples, the best dessert varieties at present in the market are, the Newtown Pippin, Blenheim Orange, and Wellington; and among Pears, the principal sorts for table are the Fulle Colmar, Old Colmar, Ne plus Meuris, Winter Nelis, and Chaumontelle. Melons are very scarce, and Cucumbers are nearly over for a season, as are also Quinces; but Medlars still continue plentiful. Oranges are becoming very plentiful, and Nuts of all sorts are pretty abundant. Vegetables have, generally speaking, not altered in price since our last report. Cauliflowers are, however, somewhat dearer; and Broccoli is slightly advanced in price. Turnips and Carrots are good and sufficient to meet the demand. Brussels Sprouts are likewise excellent in quality, as are also Savoys, Leeks, and Onions. Celery, Endive, and other salading are pretty plentiful. Cut Flowers chiefly consist of Euphorbia splendens, Poinsettia pulcherrima, Rondeletia speciosa, Pentas carnea, Bignonia venusta, Jasminum revolutum, Gaillia pinifolia, Heathe, Camellias, Cineraries, Chrysanthemums, Double Primulas, Heliotropes, Tulips, Roman, Narcissus, Neapolitan, Violets, and Roses.

FRUIT.

Pine Apple, per lb.	up to 5s 0d	Barberries, per half-sv.	2s 0d
Grapes, Hothouse, per lb.	2s 0d to 6s 0d	Cranberries, per dozen	1s 0d to 1s 6d
— Spanish, per lb.	10s 0d to 12s 0d	— per 100	8s to 12s
— Excepts, per lb.	1s 6d to 2s 0d	— Bilberries, per quart, barrels	2s 0d
Melons, each	1s 0d to 2s 0d	— per 100	8s to 10s
Apples, Dessert, per bushel	4s 0d to 6s 0d	Almonds, per peck	2s 0d
— Kitchen, do.	2s 0d to 3s 0d	Cob Nuts, per 100 lbs.	100s to 120s
Quinces, per half-sieve	2s 0d to 3s 0d	Walnuts, per bushel	6s 0d
Medlars, per bushel	3s 0d to 4s 0d	— Barcelona, do.	—
Filberts, per 100 lbs.	60s to 70s	— Spanish, do.	—
Chestnuts, per peck	1s 0d to 2s 0d	— Sweet, per bushel	6s 0d
Walnuts, per bushel	4s 0d to 6s 0d	— Hampshire, do.	—
— Spanish, per lb.	1s 0d to 1s 6d	— Kentish, do.	—

VEGETABLES.

Cabbages, per dozen	2d to 4s 0d	Onions, per bunch	2d to 3d
Cauliflowers, per dozen	2s 0d to 4s 0d	— Spanish, per dozen	2s 0d to 3s 0d
Broccoli, per bundle	2d to 3d	Shallots, per lb.	2d to 3d
Brussels Sprouts, half-sv.	1s 0d to 2s 0d	Garlic, per bundle	2d to 3d
Carrots, per bunch	2d to 3d	Capsicums, per 100	2s to 3s
— per load	20s 0d to 30s 0d	Cucumbers, per dozen	1s to 2s
Turnips, per bunch	2d to 3d	Rhubarb, per dozen	2d to 3d
Leeks, per bundle	2d to 3d	Lettuce, per score	1s 0d to 2s 0d
Scorzonera, per bundle	2d to 3d	Celery, White, per bunch	2d to 3d
Salsafy, per bundle	2d to 3d	— Red, per bunch	2d to 3d
Potatoes, per ton	80s to 90s	Endive, per score	1s to 1s 6d
— per bushel	1s 6d to 2s 0d	Mushrooms, per pottle	10d to 1s 0d
— Kidney, per bushel	6s 0d to 8s 0d	Small Salads, per punnet	3d to 6d
Turnips, per doz. bch.	2s 0d to 3s 0d	Watercress, per 12 sm. bun	3d to 6d
Carrots, per doz. bchs.	4s to 6s	Parsley, per doz. bunches	1s to 2s
Basil, per bunch	2d to 3d	— Roots, per bundle	1s to 2s
Horse Radish, per bundle	1s 0d to 1s 6d	Tarragon, Green, per bunch	2d to 3d
Savory, per bunch	1d to 2d	Green Mint, per bunch	2d to 3d
Spinach, per sieve	1s 0d to 2s 0d	Marjoram, per bunch	2d to 3d
Scorzonera, per bundle	1s to 1s 6d	Chervil, per punnet	3d to 6d
Salsafy, per bundle	1s to 1s 6d	Cuttle, per lot	1s to 2s
Leeks, per doz.	1s 0d to 2s 0d		
Garlic, per lb.	6d to 8d		

UNDER THE PATRONAGE OF HER MAJESTY.

J. G. WAITE, SEEDSMAN, &c., 1 and 4, Eyre-street Hill, Hatton Garden, London, embraces the present opportunity of returning his best thanks for the very liberal support he has hitherto received, and to assure his friends that no exertion shall be wanting on his part to merit a continuance of their favours.

J. G. W. most respectfully informs the public that Seeds of every description (with the exception of Carrots) are remarkably fine this season, and he will offer them at very low prices.

Waite's Queen of Dwarf Peas, per quart	7s. 6d.
A splendid new variety, growing only 3 feet high, producing a larger pod than any of the same habit; the seed is quite distinct from all others, and larger than any Dwarf Pea in cultivation. It has been grown at the Royal Gardens at Frogmore, and approved of as a fine new variety, and also at Her Majesty's tables for its superior flavour.	
Cuthill's Black Spine Cucumber, per packet of 100 seeds	5s. 0d.
Waite's Race Horse, do., 22 inches long, Black Spine, and wonderfully handsome, per packet of 20 seeds	5s. 0d.
True Beughwood Melon, of 25 do.	2s. 6d.
Pimelia spectabilis, new, of 5 do.	2s. 6d.
Calceolaria, from all the new spotted varieties, per packet	2s. 6d.
Anagallis Grandi do.	1s. 6d.
Pot roots of Dahlias of the finest varieties, including The Queen's Standard of Perfection, per doz.	10s. 6d.
Ranunculus, 100 roots in 100 fine sorts, with names, per 100	12s. 6d.

J. G. W.'s unrivalled-priced Catalogues of Seeds will be ready shortly, and can be had on application at 1 and 4, Eyre-street Hill.—November 30.

DUTCH HYACINTHS, for forcing, Single and Double at 4s. per dozen; also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones & Ranunculuses; priced Catalogues of which will be forwarded per post, from AMEDEE CORBETT'S Italian and Foreign Warehouse, 13, Pall Mall.

Double Italian Tuberoses expected beyond of next month.

KNAP-HILL NURSERY, NEAR BAGSHOT, SURREY.

HOSEA WATERER (Brother and Successor to the late MICHAEL WATERER), respectfully begs to announce that the American Plants this year are remarkably well furnished with bloom; and with the other articles which are generally required for forcing, he has this season to offer very fine plants of the hardy Scarlet Rhododendrons. This Nursery has long been celebrated as containing the finest Collection of American Plants in the kingdom; independent of this, H. W. is a most extensive grower of Hardy Ornamental Trees and Shrubs, Roses, Forest and Fruit Trees; this may be inferred from the fact, that the Nursery extends over near 100 acres of land. The Knap-Hill Nursery is 24 miles from the Woking station of the South Western Railway.

All letters intended for this Nursery must be addressed Knap-Hill, near Bagshot, Surrey.—Nov. 30.

THOMAS JACKSON, of the Priory Farm, Chadwall, near Liverpool, Nurseryman, Florist, Forest Nursery, Seedsman, and others, that he has received a fine quantity of the Incomparable Hardy Green CUCUMBER, which was Advertised in the *Gardeners' Chronicle* of 23d March last. T. J. can refer any person to a respectable Nurseryman in this neighbourhood, as to quality and being genuine.—Price 2s. per Seed.—Nov. 30.

EDWARD BECK informs the Public that in consequence of the greatly increased demand for his SLATE TUBS, he is enabled to reduce the price of the following sizes about 10 per cent. He regrets the too frequent delay which has occurred in the execution of Orders. This he hopes to avoid in future by keeping a supply on hand.

Present Prices for Cash or Post-office order:—

14 inches	11s. 6d.	20 inches	22s. 6d.
15 inches	12 6	22 inches	25 0
16 inches	16 0	24 inches	32 0
18 inches	18 0		

Slate Works, Isleworth, Middlesex.

WHITNEY'S PATENT CLOTH for COVERING GRAPE-HOUSES, CUCUMBER or MELON PITS, &c. This Cloth is made expressly for the purpose of applying Whitney's Composition upon, and is much more durable than any other material when coated by it, beautifully white and transparent. The perfect success of Whitney's Composition for all Horticultural purposes cannot be more fully established than by stating, that, on the 16th of April last, a Black Hamburgh Vine was set in a border, the stem introduced into a house covered with Calico, and coated with Composition. On the 1st of Sept. a bunch of Grapes was cut weighing 10½ ounces, the fruit was finely coloured, and the flavour pronounced to be excellent. A sample was sent up to the Editor of the *Gardeners' Chronicle* for his inspection. The vine grew very luxuriantly, the foliage very fine, and the wood ripened exceedingly well. As a winter protection it is infinitely warmer than glass.

The PATENT CLOTH and COMPOSITION can be obtained of Messrs. Butler & Muckley, Covent Garden Market; Hurst & M'Mullen, Leadenhall Street; Warner & Warner, Cornhill; Barclay & Sons, Farringdon Street; and Hannay & Co., Oxford Street.—Wholesale and Shipping Agent, Mr. Bailey, Wolverhampton.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

LAVENDER HILL NURSERY, WANDSWORTH ROAD.

UNRESERVED SALE OF EXTENSIVE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. RAMPLIN, to sell by Public Auction on the premises, Lavender-Hill Nursery, Wandsworth-road, near London, on Monday, Dec. 2d, and following days, at 11 o'clock on each day, the whole of the EXTENSIVE and VALUABLE NURSERY STOCK, comprising a large quantity of the finest Hardy Evergreens of all sizes (which have not particularly well out of this severe); Fruit and Forest Trees, Shrubs and American Plants; Hardy Herbaceous Plants; large and small Camellias; a very capital collection of Ferns, some of which are of extreme rarity; Garden Frames and Lights; Shop Fixtures and general Fittings of a Seed Shop and Counting House; Stock of Seeds of the present Harvest; Garden Implements, a useful Horse, Carts, Barrows, &c.; several thousand yards of Box Edging; about 200 Pollard Willows with their top and tops; Evergreen and other Hedges; also some growing Crops, as Mangold Wurzel and Turnips; together with many useful articles.

The whole will be sold without the least reserve, the premises having been disposed of for other purposes, and must be cleared before Christmas.

Catalogues will be ready one week prior to the Sale, and may be had on the premises; at most of the Seedsmen in London; at No. 45, Frith-street, Soho; and of the Auctioneers, Leytonstone, Essex.

FERNS.—The Collection of FERNS (in the approaching Sale of the Stock at the Lavender Hill Nursery) will be sold on the FOURTH DAY, viz., Thursday, December 5th, at 12 o'clock. Catalogues of this part can be had separately, on application.—Lavender Hill Nursery, Wandsworth-road.

PROTHEROE AND MORRIS.

TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed to submit to public competition, on the Premises, Wandsworth Lane, and Camberwell Nurseries, on Monday, December 16th, 1844, and following days, at 11 o'clock, by order of the Sheriff of Surrey, Without Reserve, the whole of the Choice Collection of GREENHOUSE PLANTS, consisting of fine Double Camellias, well furnished with bloom, Azalea Indica, Double Blood Erica in fine varieties; also the whole of the NURSERY STOCK. Further Particulars will be given in future advertisements. Catalogues may be had, one week prior to the Sale, on the Premises; of the principal Seedsmen; of Mr. J. C. Holmes, Solicitor, 108, Pangbourn Street, London; and of the Auctioneers, Leytonstone.

TO NURSERYMEN, SEEDSMEN, and OTHERS.

TO BE DISPOSED OF, A Most Desirable NURSERY, with the remainder of the Lease, about 9 years, situated 10 miles from the Metropolis, joining the Kensington Road, and within two minutes' walk of a railway station. The Nursery comprises from two to three acres of ground, well stocked with Evergreens, Shrubs, Fruit Trees, &c., also Greenhouse and Framing, with other Buildings convenient for the trade; with a Good Business in the centre of one of the best market towns in England. For further particulars, application to be made to Mr. Bruzzow, Seedsman, Knightsbridge; or Mr. Charlwood, Seedsman, Covent Garden; if by letter, post paid.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

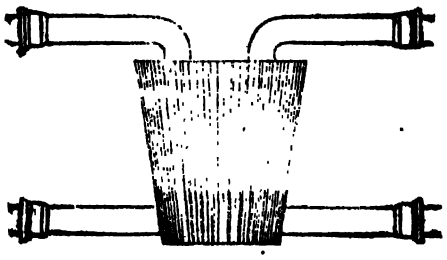
D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

BURBIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



BURBIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURBIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.	Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in. ft.	s.	s. d.	s. d.	s. d.		
10 1 5	20	7 0	6 2	6	30 feet.	12 to 20
Ribbed Boiler.						
10 2 2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12 2 15	30	12 0	7 6	3 6	80 to 125 feet.	40 to 65
14 3 10	35	17 5	8 6	4 6	150 to 250 feet.	65 to 100
18 5 5	42	25 0	9 6	5 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24 6 15	50	35 0	9 6	7 6	500 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions will be generally relied on as a near approximation to what is correct.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 49, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much-approved method of applying the flank system to Plant, Propagating Houses, &c. by which atmospheric heat is as well as bottom heat is secured to any required degree without the aid of pipes or flues. S. & Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory, 49, New Park-st., every article requisite for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

GUANO for SALE, in Bags of 1 cwt. each, just landed, with a succession of cargoes to arrive.—Successive years' experience has unquestionably proved that Genuine Guano is the simplest, cheapest, and best Manure within the reach of the Agriculturist. The only reasonable anxiety which now remains is to procure the Guano unadulterated, and to obtain such practical directions for using the treasure as shall fully develope its productive powers. To secure to buyers these indispensable requisites, with every purchase will be given a warranted chemical analysis of quality, and also a copy of the recently published Pamphlet, containing practical directions for using Guano as a Manure, illustrated by Agricultural Results in Detail.

Large parcels will be delivered direct from the ship or waterside premises; smaller quantities may be had at the warehouses, 24 and 25, Mincing-lane, or delivered within any reasonable distance at a trifling additional cost. Apply to JAMES CLARK, 24, Billiter-street, Fenchurch-street, London.

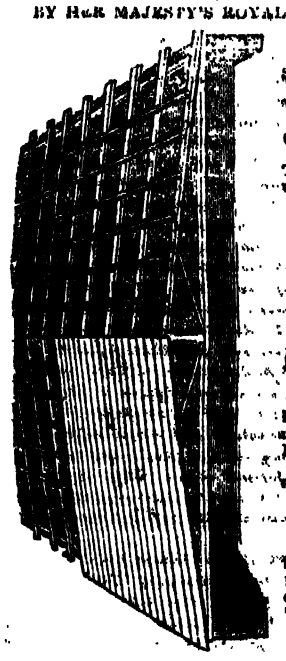
GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTHONY GIBBS AND SONS, LONDON; WM. & MYERS AND CO., LIVERPOOL; And by their Agents, COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGGS, & CO., LIVERPOOL and BRISTOL.
47, Lime-street, Nov. 20, 1844.

IMPORTANT TO AGRICULTURISTS, &c.

ANALYSIS OF SOILS, MANURES, and all AGRICULTURAL PRODUCTS, are conducted by Messrs. MITCHELL and FRASER (late Mr. Mitchell), Analytical Chemists, with the view of ascertaining whether the Soil, to which it is proposed to grow any particular crop, contains all that is necessary to produce a luxuriant vegetation; also to estimate the relative value and parity of Manures, and the comparative worth of Farm Produce in general. Gentlemen instructed in Agricultural Chemistry. The course will comprehend the Elements of Analysis.—No. 5a, Hawley-street, Mornington Town.

DRAINING OF LAND.—THE WORKMAN'S LEVEL, invented by Mr. BAILEY DENTON, is made and sold, as approved by him, by Messrs. JONES, Opticians, 30, Lower Holborn, London, price 30s.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



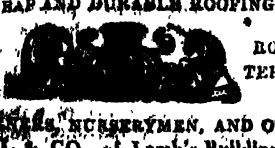
PATENT ASPHALTE ROOFING, saving half the Timber usually consumed.
Weight, 2½ lbs. per square of 100 feet.
Cost, 2s. 4d. per square of 100 feet.
The above Material has been used and approved of by the NOBILITY, GENTRY, and AGRICULTURISTS generally, as a ROOFING & COVERING to SIDES of FARM BUILDINGS.
Its advantages are LIGHTNESS, DURABILITY & ECONOMY.
Being a non-conductor, it is a PROTECTIVE MATERIAL TO PLANTS, and is now in use at the ROYAL HORTICULTURAL GARDENS, Chiswick.
It can be had of any Agent in London, Paris, or Brussels, and of the Inventor, at the Works, Millbank-street, Westminster.
THOMAS J. CROGGON, 6, Tilney-court, Fenchurch-st., London.

DR. HALLETT'S DRY SOLUBLE FERTILIZERS are, considering their power, the cheapest Manures in use, for they are entirely composed of the Phosphates and other Salts of Ammonia, and other acknowledged powerful fertilizers. They are fairly before the Public as tried things (see No. 33 of the *Gardeners' Chronicle*, &c.). 4 cwt. of either has been found equal to nearly 20 tons of ordinary horse-manure. They are applicable to all sorts of field and garden crops. No. 1 for heavy top growth, as Oats, Hops, &c. No. 2 is for all roots, and a sure preventive of the Fly in Turnips. Price of each, 10d. per ton, or 1½d. per cwt.

DR. HALLETT'S CONCENTRATED LIQUID FERTILIZER is extensively used by Gardeners for improving the size and flavour of fruits and vegetables, and the colours, and perfecting the seed of flowers. Sold in quarts at 1s. 6d., and in bottles, six times the size, at 7s. 6d. Each quart requires 32 gallons of water, to reduce it for use.

Agents for the above: London—Pettergill, Thames-street; Mr. G. Fisher, the Factory, Broadwall, Blackfriars; Messrs. Warner & Warner, 25, Cornhill; Hurst & M'Mullen, 6, Leadenhall-street; Winsland, Poultry; Page & Co., St. Peter's Alley, Cornhill; Pollard and Son, Norwich. Norfolk—Mr. W. Hovell, Yeldford. Leicester—Mr. Ellis and Co. Gloucestershire—Mr. Bostock, Fairford. Devonshire—Mr. Howard, Plymouth. Wolverhampton—Mr. King, Dudley. Glasgow—Mr. D. T. Jackson, Hartshorne, Sandyford, Stockton, and Newcastle—Page & Co. Dublin—Green & Co. Further respectable Agents wanted.

CHEAP AND DURABLE ROOFING.



BYFIELD'S ROYAL LETTERS PATENT.

TO GARDENERS, NURSERYMEN, AND OTHERS.

J. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and pronounced the Prize for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONLY ONE PENNY PER SQUARE FOOT.

Samples, with directions for laying on, and testimonials as to its merits, sent free to any part of the town or country.—Patent Felt Works, Lamb's Building, Bunhill-row, London.

NEW WORKS FOR THE SEASON.

In small 8vo, price 1s.

PUNCH'S SNAPDRAGON FOR CHRISTMAS.
With four Steel Engravings, by Leech.

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PUNCH'S COMPLETE LETTER WRITER.
By Douglas Jerrold. Illustrated by Kenny Meadows.
London: Published at the Punch Office, 194, Strand, and Sold by all Booksellers.

Just published, price One Shilling,

SUGGESTIONS TOWARDS AN INQUIRY into the PRESENT CONDITION of the LABOURING POPULATION of SUFFOLK. By the Rev. J. S. Henslow, M.A., Rector of Hitcham, and Professor of Botany in the University of Cambridge.

"Much food is in the tillage of the poor: but there is that is destroyed for want of judgment."—Prov. xiii. 23.

Also, by the same Author,

LETTERS to the FARMERS of SUFFOLK. Price 2s. And SERMONS on IMPROVED ATTENTION to the SACRAMENTS. Price 1s.

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In 4to, with large Chart, and Steel-plate, Coloured Maps of England, Wales, and Scotland, price 4l. 4s.; or without Maps, 3s.

JUST PUBLISHED,

AN ESSAY on the Latest Improvement on the Culture of Wheat Sowing, Drilling, &c.; also of, Barley, Beans, Peas, Seeds, &c., (and for Gardeners' and Nurserymen's purposes invaluable, as the land is cleared at much less expense from weeds, &c., being a great saving in seed and producing greater crops, by adopting the new principle, and which is suitable to all soils. And a small model, with full instructions to make the same, at the cost of 14s. to 15s. Gypsum for land, and for staying the ammonia, &c., in dung hills, Stables, Cow-sheds, &c. &c. &c., supplied genuine, in any quantity, from the principal works in the United Kingdom, to suit the buyer's convenience, effected in 12 hours, will be forwarded, postage free, on receiving 1s. by letters prepaid, addressed to J. Woolhouse, 3, Pepper-street, City of Chester.

HEATING BUILDINGS BY HOT WATER.

Now ready, Second Edition, greatly enlarged, with numerous woodcuts, &c., 8vo, price 10s. 6d. cloth,

A PRACTICAL TREATISE on WARMING BUILDINGS by HOT WATER; on Ventilation, and the various Methods of Distributing Artificial Heat, and their Effects on Animal and Vegetable Physiology. To which are added an Inquiry into the Laws of Radiant and Conducted Heat, the Chemical Constitution of Coal, and the Combustion of Smoke. By CHARLES HOOD, F.R.S., F.R.A.S., &c.

Whittaker and Co., Ave Maria-lane, London.

JUST PUBLISHED.

I.

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Meeting of the Provincial Association at Derby.

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Medical Protection Assembly.—Chemical Society.

Royal Medical and Chirurgical Society.

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No. 49.—1844.] SATURDAY, DECEMBER 7. [Price 6d.

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Finest Imported DUTCH HYACINTHS, 6s., 12s. and 18s. per doz.; for Particulars of which, together with the Extensive and Select Collection of CARNATIONS, PICOTEES, and PINKS, see their Advertisement of Nov. 9.

Great Yarmouth Nursery, Dec. 7, 1844.

THE FILBY, or FASTOLFF RASPBERRY — At the request of some gentlemen living in the neighbourhood of Yarmouth, T. RIVERS begs to submit the history of this really excellent Raspberry to the public. In the year 1814 Colonel Lucas, of Filby, a place lying between Norwich and Yarmouth, discovered a Raspberry plant growing under an old Laurel hedge in his garden. His attention was drawn to it, and he soon found it to be a superior and delicious variety, so that in a short time every other sort was ejected from his garden, and this alone cultivated. It was not, however, till 1826 that he allowed his gardener to part with it, who then gave canes to his neighbours, and by this means it got to be cultivated in Caistor, Ormsby, and, in fact, in all the neighbourhood, under the name of the Filby Raspberry, to the exclusion of all other sorts. It has latterly often been called the Caistor Raspberry, from the Market Gardeners growing it in that parish. In Caistor is an old castle in ruins, that formerly belonged to the Fastolff family the latter name was given to the variety by Youell and Co., when they first began to sell the canes. The fruit upon which Dr Lindley pronounced his opinion was gathered in the Filby garden, now the property of the Rev. G. Lucas, who authorises and permits the publication of the above facts; and has also permitted his Gardener to supply the Canes after this date to T. RIVERS only.

Canes are sold at 30s. per 100, or 6s. per score, carriage paid to London. Charge for package, for small parcels, 2s., for large do., 1s. to 4s. 6d. Orders to any amount can be executed. The Trade price will be given on application.

Sawbridgeworth, Herts, Dec. 7, 1844.

DUTCH HYACINTHS for forcing, Single and Double at 4s. per dozen; also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, Ranunculuses; priced Catalogues of which will be forwarded per Post, on application to Messrs. Lamarie Cormerais Italian and Foreign Warehouse, 12, Pall Mall.

Double Italian Tuberose roots expected the end of this month.

THUNBERGIA GRANDIFLORA.—Plants of this new and beautiful Climber, with rich purple with a golden eye, 5s. and 7s. 6d. each. Also strong Bushy Plants of Superb Seedling Cinerarias, well budded and forward for flowering, containing every shade of dark and light blue tints, furnishing to the Greenhouse, Conservatory, or Drawing-room, an ornamental and splendid continuance of elegant bloom throughout the winter months, 6s., 9s., and 12s. per dozen.

Packets of the best mixed seed of do.		s.	d.
Do. that large Antirrhin Brownii		2	6

Application, including Post-office order or stamps, will be carefully executed.—Direct to Michael Banner, Senior, Cambridge Nursery, Cambridge.

TO MELON GROWERS.

FISH'S MANCHESTER CANTALOUPE and HARDY GREEN-FLESHED MELONS. The above are recommended to all Melon-growers, as independent of the good quality of the Fruit, they are so easy to require comparatively little attention, a fact of considerable importance where fuel is expensive, and fermenting material a scarce commodity. Both sorts were awarded Certificates of Merit at Regent-street, London; the Cantaloupe on the 7th of May, described as "good early fruit," and the Green-fleshed on the 4th of June, described as "capital green Melon, high flavoured, and weighing nearly 5 lbs." The Cantaloupe grows from 4 to 6 lbs. in weight. Fruit was exhibited in July at Chiswick, weighing 4 lbs. 14 oz., and the fifth crop is maturing in November, from the same plants cut from in May. Specimens of the Green-fleshed, from the same plants cut from in June, were exhibited at Regent-street, on the 1st Oct., weighing 3 lbs. each. These have been grown on slung beds, as described in the *Chronicle* of the 7th May and 1st October.

Youell and Co. having purchased of Mr. Fish the entire stock of Seed of the above most desirable Melons, for the first time offer it to growers, being fully confident of its realising all the merits ascribed to it. Sealed packets, containing three seeds of each, 6s., sent per post, free.

Great Yarmouth Nursery, Dec. 7, 1844.

CEDRUS DEODARA, PINUS, HYBRID RHODODENDRONS, &c.

CEDRUS DEODARA,	2½ feet	.	.	each—3s.	6d.
Ditto	2	,,	.	5	0
Ditto	2½ to 3	,,	.	7	6
Ditto	3½ to 4	,,	.	15	0
Ditto	5	,,	.	30	0
Ditto	6	,,	.	42	0
PINUS EXCELSA	3 to 3½	,,	.	10	6
Ditto	4	,,	.	15	0
Ditto	4½	,,	.	21	0
Ditto	5 to 5½	,,	.	21	0
RHODODENDRONS, Hybrids between ARBOREA and CATAWBIENSE,	1 foot	.	per doz.	30	0
Ditto	1½	,,	,,	36	0
Ditto	2, 2½, and 3	,,	per 100—	£17	10
Bushy and Strong			per doz.—	6s	0
RHODODENDRONS, Hybrid, between ARBOREA and CAUCASICUM, Bushy,			per doz.—	42	0
Ditto	2 feet		each—	10	6
Ditto Campanulatum			per doz.—	42	0
Ditto Ditto	2 feet, Bushy		each.—	12	6
Ditto Ditto	3	,,	,,	21	0
Ditto Hybrid between Arborea and Campanulatum			per doz.	24s. to 36	0
Ditto Barbatum			each—	42	0
Ditto Caucasicum,	per doz.,	18s.,	24s.,	30s., & 36	0

FRANCIS AND JAMES DICKSON, Nurserymen, Chester, have much pleasure in submitting the above List of VALUABLE EVERGREENS, &c., of which they at present possess a considerable stock of exceedingly healthy and well grown plants. *** Orders will command every attention.

Newton and Upton Nurseries, Dec. 7.

TO THE CULTIVATORS OF ROSES.

R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk, begs to offer the following Select ROSES, which he can with confidence recommend, as possessing superior quality. A purchaser selecting 12 different kinds from this list, R. B. B. will be happy to supply at 20s. The plants are strong and healthy, and varying in height of stem from 1½ feet to 3 feet.

Agnes Sorel	Aurelie Lamare	Les Cases
Donna Sol	Bracis	Idalize
Duchess of Kent	Buffoon	Jambart
Duchesse d'Orleans	Crivelle	Julie
Emerance	Duc de Trevisé	La Splendeur
Illustre Beauté	Epic	Nelly
La Ville de Londres	Fleur d'Amour	Nosquet
Mrs. Rivers	Gil-blas	Niaird, No. 2
Nicplate	Gloria mundi	Charles Louis
Petite Beauté	Gustave Deshayes	De Candolle
Semillasse	Lee Anderson	Fulgens
Theodora	Lucide Duringartier	George the Fourth
La Ville de Bruxelles	Madame Duchatry	Ecclatante (Moss)
Volumineuse	Reine ne me Surpasse	Princess Royal
Agloe Dessert	Triomphe de Lagrange	Prolifere
Agnodor		Pompone
Antonine d'Ormoise		

Also strong Plants of Climbing Roses (Evergreens), at 6s. per dozen. These Roses will make shoots upwards of 6 feet long in one season, and are very suitable to cover unsightly fences, walls, stems of trees, &c.

Descriptive Catalogues forwarded upon prepaid application Plants gratis, to compensate for distant carriage.

Hedenham, Dec 7.

CHEAP AND GOOD PELARGONIUMS.

W. MILLER has several thousands of good Plants of the very best PELARGONIUMS, selected from those exhibited by the most successful raisers—as, Foster, Garth, Beck, Lyne, Gaines, Wilson, Thurtell, Catleugh, and others, that can be well recommended as good additions to small or large collections, and will be sold, at low prices, by the dozen. A select List may be had on application.

W. M. has also a few more sets of those splendid new seedling Pelargoniums raised by G. M. Hoyle, Esq., Guernsey, also some packets of Mr Hoyle's choice Seed—3s., 7s., 10s., 12s.—Providence Nursery, Ramsgate.

IMPORTANT TO PLANTERS.
ILEX OR EVERGREEN OAK.

W. E. RENDLE has a large Stock of this most valuable hardy tree, and can supply fine two-year old Seedlings, from seed-pans, at 20s. per 1000, package and carriage free to the Exeter terminus of the Great Western Railway.

Union Road Nurseries, Plymouth, Dec. 7, 1844.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LANE—ANGLIA CHAMBERS, BEDFORD-STREET, Strand, near Temple Bar, SHREWSBURY, 25th March, 1845.

The Council of the Royal Agricultural Society of England, having the Counties of Anglesey, Carnarvon, Merioneth, Montgomery, Denbigh, Flint, Chester, Salop, and Stafford. The Prizes are open to general competition. Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for Implements must be returned, filled up, to the Secretary, at Shrewsbury, on or before the 1st day of July, and all other Certificates by the 15th day of July; the Council having decided that in no case whatever any Certificate to be received after those dates respectively.

PRIZES FOR IMPROVED FARM BUILDINGS, OR OFFICES.—1845.

Short-horns.—Class 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 20*l.*; to the owner of the second-best do. do., 10*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In case of the Cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 15*l.*—5. To the owner of the best Yearling Heifer, 10*l.*—6. To the owner of the best Bull-calf, not exceeding one year old, 10*l.*

Herefords.—Class 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 20*l.*; to the owner of the second-best do. do., 10*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In the case of the Cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 15*l.*—5. To the owner of the best Yearling Heifer, 10*l.*—6. To the owner of the best Bull-calf, not exceeding one year old, 10*l.*

Devons.—Class 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 20*l.*; to the owner of the second-best do. do., 10*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In the case of the Cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 15*l.*—5. To the owner of the best Yearling Heifer, 10*l.*—6. To the owner of the best Bull-calf, not exceeding one year old, 10*l.*

Cattle of any Breed (not qualified to compete in the foregoing classes).—Class 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 20*l.*; to the owner of the second-best ditto, 10*l.*—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 15*l.*—3. To the owner of the best Cow in milk or in calf, 15*l.* (In the case of the cow being in calf, and not in milk, the prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 10*l.*—5. To the owner of the best Yearling Heifer, 10*l.*

HORSES.

Class 1. To the owner of the best Stallion for Agricultural Purposes, of any age, 30*l.*; to the owner of the second-best do. do., 15*l.*—2. To the owner of the best three years old do., 15*l.*—3. To the owner of the best two years old do., 15*l.*—4. To the owner of the best two years old do., 15*l.*—5. To the owner of the best Mare and Foal for Agricultural Purposes, 20*l.*; to the owner of the second-best do., 10*l.*—6. To the owner of the best two years old Filly, 10*l.*—7. To the owner of the best Thorough-bred Stallion, which shall have served mares at a price not exceeding 3 guineas (and with a groom's fee of not more than 5*s.*) in the season of 1845, 30*l.*

SHEEP.

Prizes for Improving the Breed of Sheep.—1845.

Lincolns.—Class 1. To the owner of the best Shearling Ram, 20*l.*; to the owner of the second-best do., 10*l.*—2. To the owner of the best Ram of any other age, 20*l.*; to the owner of the second-best do., 10*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do., 5*l.*

Leicesters.—Class 1. To the owner of the best Shearling Ram, 20*l.*; to the owner of the second-best do., 10*l.*—2. To the owner of the best Ram of any other age, 20*l.*; to the owner of the second-best do., 10*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do., 5*l.*

Southdown Sheep.—Class 1. To the owner of the best Shearling Ram, 20*l.*; to the owner of the second-best do., 10*l.*—2. To the owner of the best Ram of any other age, 20*l.*; to the owner of the second-best do., 10*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do., 5*l.*

Long Woolled Sheep. (Not qualified to compete as Leicesters.)—Class 1. To the owner of the best Shearling Ram, 20*l.*; to the owner of the second-best do., 10*l.*—2. To the owner of the best Ram of any other age, 20*l.*; to the owner of the second-best do., 10*l.*—3. To the owner of the best pen of five Shearling Ewes, 10*l.*; to the owner of the second-best do. do., 5*l.*

Sheep best adapted to a Mountain District.—Class 1. To the owner of the best Ram of any age, 15*l.*; to the owner of the second-best do., 10*l.*; to the owner of the third-best do., 5*l.*—2. To the owner of the best pen of Ewes of any age, 10*l.*; to the owner of the second-best do., 5*l.*

PIGS.

Class 1. To the owner of the best Boar of a large breed, 10*l.*; to the owner of the second-best do. do., 5*l.*—2. To the owner of the best Boar of a small breed, 10*l.*; to the owner of the second-best do. do., 5*l.*—3. To the owner of the best breeding-Sow of a large breed, 10*l.*—4. To the owner of the best breeding-Sow, of a small breed, 10*l.*—5. To the owner of the best pen of three breeding Sow-pigs, of the same litter, above four and under ten months old, 10*l.*

AGRICULTURAL IMPLEMENTS.

A sum not exceeding 20*l.*

Cheese.—To the exhibitor of the best coll. of Cheese (of any kind) made within the district, 10*l.* To the exhibitor of the second-best do., 5*l.*

Extra Stock, Roots, and Seeds.—For Extra Stock, of any kind not shown for by the foregoing Prizes, and for Roots, Seeds, &c., Prizes may be awarded at the discretion of, by the Committee and Judges, upon sums not exceeding in the whole 50*l.*

Any New Implement.—For the invention of any new Agricultural Implement, such sum as the Council may think proper to award.

Seed Wheat, Barley, and Oats.—I. Twenty Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of White Wheat, of the harvest of 1844, and grown by himself.

II. Fifteen Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of Red Wheat of the harvest of 1844, and grown by himself.

III. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of spring Wheat, of the harvest of 1844, and grown by himself.

IV. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of Barley for malting, of the harvest of 1844, and grown by himself.

V. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 14 bushels of Oats, of the harvest of 1844, and grown by himself.

Competitors are requested to bring with their Wheat, Barley, or Oats, specimens, fairly taken, of the sample in the ear, with the whole of the Straw, in a sheaf not less than one foot in diameter, and with the roots attached.

[12 bushels of the Wheat, Barley, or Oats will be required by the Director for Reference, and one of the remaining bushels of each variety will be exhibited, as a sample to the public, the other being kept for examination with the growing crops next year. At the General Meeting in December likely the Prizes will be awarded.]

The two best Samples of [illegible] Barley, or Oats, without [illegible] of the cases, between the [illegible] shall be selected by the [illegible] Shrewsbury; and will be [illegible] Council (the winter Wheats in the autumn of 1845, and the spring Wheat not earlier than the 1st of March, 1846), by four farmers, who will make their report [illegible] the Prizes will be awarded, provided there be [illegible] of the samples. 10*l.* will be given [illegible] to each exhibitor whose [illegible] for the Barley or Oats.

*** No variety which has [illegible] previous Show shall be qualified to compete in the same [illegible]

ESSAYS AND REPORTS ON VARIOUS [illegible]

1. *Farming of Nottinghamshire.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of Nottinghamshire. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Nottinghamshire since the Report of Mr. Robert Lowe in the year 1798; and especially to point out what further improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

2. *Farming of Cornwall.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Cornwall. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Cornwall since the Report of Mr. J. H. Worgan, in the year 1811; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

3. *Farming of Kent.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Kent. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Kent since the Report of Mr. John Boys, in 1805; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated, or by taking new land into cultivation.

4. *Heath Land.*—Twenty sovereigns, or a piece of plate of that value, will be given for an account of the best method of reclaiming heath-land. Competitors will be required to describe methods which have been successfully adopted in the reclaiming of heath-land, reference being had especially to the following points:—1. The mode of breaking up, whether by paring and burning, or by simple ploughing. 2. The application of lime. 3. The course of cropping. 4. The conversion of heath-land into pasture, where either the steepness of the land, or its elevation above the sea, does not allow the culture of corn.

5. *One-Horse Carts.*—Ten Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on the advantages of One-horse Carts. Competitors will be required to point out the saving in horse-labour, and other advantages which undoubtedly arise from substituting 1-horse carts for waggons.

6. *Catch-Meadows.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on Catch-Meadows. Competitors will be required to describe the best and cheapest method of forming water-meadows on the sides of natural slopes, as practised in Somersetshire and Devonshire; the mode of managing them, and of applying their produce; the increase of value thereby given to unproductive hill-sides; and to state how far this mode of improvement might be applied to the mountainous districts of Wales and the North of England.

7. *Fences.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the best Essay on Fences. Competitors will be required to describe the best and neatest methods of maintaining hedges, whether for arable or for grazing ground; and to point out how far the present fences in various parts of England are injurious to the farmer, whether by their size, their excess in number, or the over-abundance of timber which they contain.

8. *Fattening Cattle.*—Ten Sovereigns, or a Piece of Plate of that value, will be given for an account of the best method of fattening cattle; as to the places in which they are kept, large or small yards or stalls, as well as the food, roots, hay, &c. on which they are fed during the time of fatting.

9. *Tile-yards.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the cheapest and best method of establishing a Tile-yard. Competitors will be required to attend to the following points:—1. Mode of working the clay, according to its quality. 2. Machine for making the tiles. 3. Sheds for drying the tiles. 4. Construction of the kiln. 5. Cost of forming the establishment. 6. Cost of the tiles when ready for sale.

10. *Curing Butter.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best description of the Dutch method of salting butter; pointing out the causes of its superiority to other salted butters.

11. *Experiment in Agriculture.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for an account of the best Experiment in Agriculture.

These Essays must be sent to the Secretary, at 12, Hanover-square, London, on or before March 1st, 1845.

Twenty Sovereigns, or a Piece of Plate of that value, offered by the Right Hon. Lord Kenyon, will be given at the Annual Country Meeting of the Royal Agricultural Society, to be held at Shrewsbury in 1844, for the best account of the Use of Gorse for the Food of Cattle, Horses, or Sheep, founded on actual experiment. Competitors will be required to state the following points: 1. The quality of land on which the Gorse is grown. 2. The age of the plant when cut. 3. The mode and expense of cutting. 4. The mode and expense of preparing for food. 5. The mode of feeding with Gorse, and the quantity of other food given therewith.

Essays competing for this Prize must be sent to the Secretary, at 12, Hanover-square, on or before March, 1845.

1. *Rules of Competition for Prize Essays.*—1. All information contained in Prize Essays shall be derived from experience of observation, and not on simple references to books, or other sources. 2. Drawings, specimens, or models, throwing light on the subject to which the Essay shall relate, shall accompany all Essays competing for Prizes. 3. All competitors shall address their Essays, post paid, to the Secretary, at 12, Hanover-square, London, on or before the day on which the Essay, shall be received. 4. The Prizes shall be awarded by a Committee of Judges, to be appointed by the Council for the time being, shall have power to call for such information as they may think necessary for determining the Essays to which the Prizes shall be awarded, and shall declare the name of the successful candidate, or the motto prefixed to his Essay, at the General Meeting of the Society, at which the Prizes shall be awarded. 5. The Committee of the Journal of the Society shall have power to open the motto paper of such Essays, not receiving the Prizes, which they think likely to be useful to the Society, although not obtaining the Prize, and to publish such Essays, as well as the Essay to which the Prize shall be awarded. 6. The copyright of all Essays receiving prizes, shall belong to the Society, who shall have the power to publish the whole or any part of such Essays;

[illegible] always will be returned [illegible] application of the [illegible] Society does not make. [illegible] responsible for their loss. The Society are not bound to award a prize unless in the opinion of the Council of the Society there be merit in the Essays or Experiments the successful claim to be accurately detailed. 9. The Imperial weights and measures only are those by which calculations are to be made. 10. No prize shall be given for any Essay which has been already in print. 11. Prizes may be claimed in money or plate, at the option of the successful candidate. 12. All Essays must be addressed to the Secretary, at the house of the Society.

[By Order of the Council,] JAMES HUDSON, Secretary.

ADDRESS TO THE PLANTERS OF ENGLAND.

TRUE HIGHLAND PINE-TREE.—

MY LORDS, LADIES, AND GENTLEMEN.—The time has [illegible] when all those who [illegible] should plant them. Of this I am fully convinced, and I hope you will allow me to explain on what grounds this opinion is founded. England, generally, is a thickly-wooded country, yet, strange though it may appear, it has not been planted with any view to meet its most urgent wants. If the poor farmer requires an outhouse built for his cattle, he cannot have it because there is no deal-wood in the neighbourhood: he builds it therefore of whins, or of any other rubbish he can lay hold of. Instead of having plenty of fir-wood on all hands to fence young hedges, planted like other things on the common surface of the ground, military-like fortifications have been raised to divide fields, occupying as much good land as is contained in three of the largest counties of Britain: it is on those banks ineffectual attempts have been made to grow hedges. After the 1st of March, when the Royal Agricultural Society's Prizes on fences shall have been awarded, a great proportion of the hedges throughout England will be reconstructed by planting them on the plain surface; and the question will then arise, 'Where is the wood to protect them in their young state to come from?' Turning to the railways which are now being formed in every county in England, another most pressing question arises as to the supply of wood which will be required in their construction. Go up, I am told, to the Highlands of our Island, those immense forests in the north of Scotland—and there how often as many trees will be required.... From these, however, I find we must expect but a limited supply. Like the famous Macedonian, they are already overrun with the axe, and a continuance of the present rate of felling for a few years more will reduce the trees upon them to a mere remnant. If, in fact, the original numbers required for sleepers which will effect this change, besides the incessant demand for timber for purposes that which is already laid down, or may be for the future laid down in additional lines.... So it is, let us see we may, the state of our colonies at the present crisis proves this. Our immense and almost measureless tracts of what is generally called waste land were not created to be a sterile waste merely of unproductive solitude. The rains with which they are refreshed, and the fostering sunshine that rests upon them, might have taught us that Providence had designed them to contribute in some way or other to the wants of man; and though Nature has been unable to lead us to comprehend her lesson, so simply brought before us, necessity has at length compelled us to look to those districts where only a sufficient quantity of timber can be raised to meet our increasing wants. Now, then, is the time to plant; wherever there is a waste piece of ground, moor, or mountain, let it be forthwith invested with trees. For every year, for many years to come, will unquestionably bring with it an additional demand for timber. Thus far on the necessity of planting. Allow me next to bring under notice the sort of tree I would recommend to be planted, which is the chief aim of this Address. That tree is the TRUE HIGHLAND PINE, for introducing which, I had the honour, along with my brother, of receiving the Highland Society's prize. It is admirably fitted, in every respect, to take possession of all the uplands throughout England. It will grow freely on all soils suitable for the common Pine; its wood is very durable; and for railway sleepers it is unrivalled. Brindley, the celebrated engineer, considered its durability equal to that of the Oak; and Dr. Smith states, in the *Transactions of the Highland Society of Scotland*, that he has seen some of it taken down after it had been 300 years in the roof of an old castle, as fresh and full of resin, as newly imported timber from Memel, and that it was actually worked up into new furniture. "Such," says Loudon, "is the durability of this wood, that while the hog timber of the Birch is often found reduced to a pulp, and the Oak cracks into splinters as it dries, the heart of this Pine remains fresh, embalmed in its own turpentine."

MY LORDS, LADIES, AND GENTLEMEN,—Allow me to add a word or two on the merits of this tree as a landscape ornament. In this respect it rivals, if not excels, the Cedar of Lebanon. It has, at any rate, a much better ramification than the Cedar, for, as Sir Walter Scott observes, it assumes in a great measure the bold and contorted figure of the Oak. In illustrating the Seats of Norfolk (and the remark is applicable to all England), it frequently occurred to me that advantage had not been taken of prominent situations by investing them with grand evergreen trees; for so soon as November comes, our parks lose almost all that weight of grandeur for which they are so celebrated in summer-time. Their solemnity ceases with the fall of the leaf; but were they ornamented with this Pine, its broad umbrageous canopy remaining green during winter, the change consequent upon the approach of winter would be much less observed, and our country residences would at all times be surrounded with the dignified accompaniments so consistent with their character.

The importance of this subject will, I doubt not, be accepted as an apology for my thus venturing to express my opinions so plainly on matters of English practice. My suggestion as to the improvement of park and pleasure-ground scenery by introducing the Pine in question is offered with the greatest deference, being fully persuaded that in matters of this description England has been always distinguished for its refined taste. I am ready to dispose of the Highland Pines in the following prices:—

Single Plants, strong and well rooted	6*d.* each.
Strong Plants, 12 to 20 inches high	5*l.* per 100.
Strong Plants, 18 to 18 inches	30*s.* p. 1000.
Small ditto Plants for extensive plantations 10*s.* to	20*s.* p. 1000.

I have the honour to be, My Lords, Ladies, and Gentlemen,

Your most humble Servant,

JAMES GREGOR, Nurseryman, Norwich.

WATERPROOF PATENT CLOTH for COVERING GREEN HOUSES, CUCUMBER or MELON PITS, &c. This Cloth is made expressly for the purpose of applying [illegible] upon, and to which more durable than [illegible] when coated with Dammill's Composition for [illegible] the perfect success of which for many years [illegible] purpose cannot be more fully established than [illegible] the 1st of April last a Black Hamburgh Vine [illegible] Esq., the stem introduced into a house covered [illegible] coated with Composition. On the 1st of Sept. [illegible] a bunch of grapes was cut weighing 16*l.* ounces, the fruit was [illegible] and the flavour pronounced to be excellent. A [illegible] sent again to the Editor of the *Gardeners' Chronicle* [illegible]. The vine grew very luxuriantly, the foliage very fine, and the wood ripened remarkably well. As a winter protection it is infinitely cheaper than glass.

The PATENT CRYSTALLINE COMPOSITION can be obtained of Messrs. Sutton & Middleton, Covent Garden Market; Hunt & Middleton, Goodramgate, York; Wright & Webster, Cornhill; Barclay & Sons, Farringdon Street; and Stanley & Co., Oxford Street. [illegible] Agents, Mr. Bailey, Wolverhampton.

FIRST-RATE PANSIES.—To be Sold, a Bargain, a first-rate Stock of PANSIES, comprising all the best Flowers in cultivation, including some valuable Seedlings not in other hands, together with all Seedlings retained, and three show-boxes of four different sizes; the entire Stock of a most successful Amateur declining their further cultivation. The Pansies are all in small pots, and the Seedlings pricked out in Boxes. For further particulars apply to Mr. W. CHARE, Seedsman, 21, Bishopsgate-street Within, who has on Sale, Cuthill's Unique-thus, 2s. per packet; Cuthill's true Black Spine Cucumber, 2s.; true Cabul Melon, 2s. 6d.; Hoosainee, 2s.; fine mixed Gloxinias, 2s.; Calceolaria, 1s.; Cineraria, 1s.; Tropæolum tricolorum, 2s.; Tropæolum brachyceras, 2s.; warranted Pansy, 2s. 6d.; Joseph Cox, Esq.'s superb Picotee Seed, 5s. May be had on receipt of a Post-office Order.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 7, 1844

MEETINGS FOR THE TWO FOLLOWING WEEKS

Wednesday, Dec 11	Microscopical	7	8 P.M.
Wednesday, Dec 11	Society of Arts	8	8 P.M.
Saturday, Dec 14	Royal Botanic	1	4 P.M.
Tuesday, Dec 17	Linnean	8	8 P.M.

THE probable importance of AUTUMN-PLANTING THE POTATO has been confirmed by an experiment which we had overlooked when speaking of Mr GREY'S. We find that Mr. TROTTER, a gentleman well known in the neighbourhood of Stockton, has been trying the comparative effects of autumn and spring planting on strong clay land, cropped with Beans the previous year. The field was ploughed in November, with a view to its lying in that state through the winter. Mr. Trotter had on former occasions attempted to grow Potatoes on this land; but, from the very strong nature of the soil, it often yielded him little more than the seed he planted This led him to try the effect of planting a piece of ground in the autumn; and accordingly, about a quarter of an acre was re-ploughed about the end of November, manured with stable-yard dung, and planted in the usual way with Yorkshire Red Potatoes, no protection whatever being given them during the winter; a portion of the sets was cut, and another portion planted whole. The plants from the cut sets were much the strongest, and kept a head of the others until the whole of the ground was nearly covered Indeed, Mr. Trotter says that the plants from the cut sets were so much stronger than those from the whole Potatoes, that they could be distinguished with ease at a good distance.

A ridge of land close by the side of that planted in autumn was prepared and planted in spring, and manured in the same way. It is scarcely possible to imagine the difference that existed between the autumn and spring-planted crops. When our informant, Mr G. Watson, gardener at Norton Vicarage, saw them, which was in the second week of October, those which had been planted in autumn were still strong, healthy, and green; while the haulm of those planted in spring was brown, and much withered.

When the crop was taken up, the quarter of an acre planted in autumn yielded 80 bushels of Potatoes; while those planted in spring produced little more than the seed. Mr. Trotter is, we understand, of opinion that on the land planted in autumn there was four times as many Potatoes as on that planted in spring, and that the former were larger and better in quality; and this gentleman has arrived at the conclusion, that for stiff clayey soils it is of the greatest importance to plant in autumn. He was, at the date of our correspondent's letter (Nov. 23), preparing to plant for next year.

At the time of harvesting there was little or no difference between the produce of the cut and uncut sets The Potatoes planted in autumn were only protected by the regular covering of soil; and Mr. Watson finds, upon reference to his journal of the weather, which he keeps in his employer's garden, that the thermometer stood at 16° on the 5th of February, and at 15° on the 6th; this being the greatest amount of frost experienced about Stockton-on-Tees last winter.

Although this experiment was not conducted with the minute exactness characteristic of Mr. Grey's, yet it is valuable as affording additional evidence as to the apparent importance of autumn planting. It also possesses some points of interest of its own.

In the first place, it shows that heavy land is as well suited to autumn planting as light land. We do not mean to say that clay suits Potatoes as well as sandy loam; but that, if heavy land is to be cropped with this plant at all, autumn is the more advantageous season to do it in. It is true that 320 bushels an acre, which was Mr. Trotter's crop, is no great amount of produce; but it is to be borne in mind that the spring-planted crop yielded almost nothing.

Another, and very important fact, elicited by this communication is, that it confirms the correctness of the opinion we last week ventured to express, that it is immaterial at what time before winter the Potato crop is got into the ground. Mr. Trotter's were planted on heavy clay, at the end of November; and, however, uncertain by another season how far this plan can be followed safely; for we have ourselves planted, at the time when these remarks are published, a piece of heavy land, to which no stable manure whatever has been applied.

The last fact that Mr. Trotter's experiment seems to have elicited is, that Potato sets are better than whole tubers. For this we were not prepared; because we should have thought that in heavy land the Potato would have had a better chance of standing the winter when protected by its natural skin, than if cut into pieces. It would, however, appear that even on clay land, in autumn, sets are better than whole Potatoes, as has been so generally found to be the case in the spring, and as was shown by Mr. Grey's experiment on light land.

We wish that those who have the means would now try the experiment of planting Potato sets through every week from the 1st of December till the winter finally sets in. The question would thus be set finally at rest; and we think a more important question can hardly occupy the attention of the cultivators of the soil

Since the above was in type another correspondent has favoured us with his experience of planting Potatoes in the autumn, near Birmingham It appears that in this case the crop was very satisfactory, but no details or comparative statements are given. One thing, however, was observed which deserves mention "The Potatoes, growing at 20 inches deep, and obliged to be got up with the drawing-spade, were so large that some weighed (many) 4 lbs within a few ounces, they decreased in size as they grew nearer the surface, and those at the top, only sufficiently large for the pigs, &c, were very few in proportion"

AN amateur at Nottingham (Mr Thomas Gibson) has been the grower of the heaviest GOOSEBERRY ever recorded as having been exhibited. But it appears that some people are endeavouring to deprive him of the credit he deserves, and publicly assert that heavier berries have been raised. They do not, however, favour us with either the name of the grower, the weight of the fruit they refer to nor the time or place where it was exhibited For ourselves, we have no idea of allowing even a Gooseberry grower to be talked out of his rights, and therefore we have taken some pains to ascertain what the facts are, by searching the records of Gooseberry growing for the last 27 years

The result of this investigation we here produce, with the name, colour, weight, grower's name, and place of exhibition in each case, except for 1829, of which we have no record, and, if we are not mistaken, no lists were published in that year. It will now be found that from 1817 to 1825 no fruit reached 30 dwts; and so also from 1825 to 1830, all were below that standard, until Teazer, a yellow berry, (all the other 26 being reds) reached 32 dwts Nobody again produced a fruit of 30 dwts till 1838; but it will be seen that from 1840 to 1844, for five consecutive years, the heaviest berries have in all cases been above 31 dwts, and the last, that grown by our friend Mr. Gibson, reached the extraordinary weight of 35 dwts 12 grains. It was exhibited at the Carnation Show of the Nottingham Floral and Horticultural Society of the present year, and we are informed that the members of that Society intend presenting Mr Gibson with a piece of plate, as the grower of "The Champion Berry of England."

A return of the heaviest GOOSEBERRIES that have been publicly exhibited between the years 1817 and 1844, both inclusive —

Year	Variety		Wght	Grower's Name	Where Exhibited
			dwts grs		
1817	Highwayman	(red)	26 1	R Speechly	Peterborough
1818	Yaxley Hero	"	24 14	R Speechly	Peterborough
1819	Top Sawyer	"	6 17	1 Capper	Wybunbury, Cheshire
1820	Huntsman	"	25 18	J Bratherton	Cheetham Hill, Manchester
1821	Huntsman	"	25 6	J Bratherton	Antwich, Cheshire
1822	Rough Robin	"	26 1	W Heath	Weston, Notts
1823	Foxhunter	"	25 9	J Bratherton	Nantwich
1824	Roaring Lion	"	28 5	M Hall	Fluemere
1825	Roaring Lion	"	31 16	J Bratherton	Nantwich
1826	Huntsman	"	26 6	W Askew	Huntingdon
1827	Roaring Lion	"	27 7	1 Warrie	Disley
1828	Roaring Lion	"	29 0	J Williams	Nantwich
1829					
1830	Teazer	(Yellow)	32 12	G. Prophet	Stockport
1831	Roaring Lion	(red)	27 6	W. Davies	Oswestry
1832	Roaring Lion Heavy Wonder	(red) (red)	27 14	G Webster J. Wallis	Huyton Nottingham
1833	Wonderful	(red)	27 17	R. Moon	Ormskirk
1834	Wonderful	"	27 6	W. Saunders	Edgely
1835	Wonderful	"	29 0	R. Purdon	Wilmslow
1836	Companion	"	28 0	Stubbs	Sandon, Staff.
1837	Companion	"	28 0	Barker	Hanley, Staff.
1838	Wonderful	"	30 16	W. Chatham	Huntingdon
1839	London	"	27	[illegible]	Chester
1840	London	"	28	[illegible]	Ormskirk
1841	Wonderful	"	29 4	[illegible]	Weston Point
1842	London	"	31 [illegible]	[illegible]	Flatts Heath
1843	London	"	30 [illegible]	[illegible]	Devonshire
1844	Lisbon	"	35 [illegible]	Gibson	Nottingham

HINTS ON RENOVATING OLD AND LONG NEGLECTED COPPICES.

THE chief object to be attained in improving old neglected coppices is, of course, that the ground should be uniformly covered with stools or stems, as even in size and strength as possible, so as to produce a regular and even crop of wood; this applies more particularly to coppices in Hop districts, where the production of Hop-poles is the primary consideration.

About five years ago I undertook the management, among others, of a large coppice, consisting principally of Alder, Ash, and Red Withy. The stools were of [illegible] of them measuring 3 ft from the ground to the [illegible] had been so long neglected, that the wood [illegible] stools had killed the lesser and weaker ones by overtopping them. The coppice had evidently been originally planted alternately with Alder, Ash, and Withy, but the [illegible] had nearly overpowered their weaker neighbours, the Withy, and appropriated to themselves the whole [illegible] and at the time I took it in hand, there was evidently a struggling for the mastery between the Alder and Ash, and from the weakened appearance of many of the Ash-stools, I have no doubt but that the former (the least deserving) would eventually have been left the sole occupier. I commenced by levering all that I could possibly get from the Ash, and from the few Withy-stems which were found here and there, rejecting the Alder, unless there was no other sort in the vicinity, and in many places I planted very strong plants of Withy, about 6 ft. high, which I trust will ultimately supersede the Alder. The strong high stems of Alder I caused to be lowered a foot, thereby weakening them for a time; but they soon rallied, and progressed at such a rapid rate, that it was evident they would very soon have outstriped the Withy layers and plants, and have regained their former position. In going over the coppice the second season after cutting, I found the Withy layers doing remarkably well, I then had two or three of the large leading shoots of both Ash and Alder taken from the old stools, thus producing a greater uniformity of growth, and giving the weaker-growing sorts a chance of competing with their more powerful neighbours.

In forming coppices I should certainly abstain from planting fast and slow-growing sorts indiscriminately. In many situations the Ash and Alder might be planted together with success; but the latter is of little use except for burning into charcoal for the powder-mill. The Ash will flourish in both wet and dry soils, and when properly managed will produce a vast quantity of marketable produce, and if we take into consideration their rapid growth and the durability of the converted wood, I think we may safely pronounce it to be the most profitable sort we can plant for underwood. The Water Withy (Salix aquatica), will oftentimes successfully compete with the Ash, and even the Alder in growth, if planted in moist situations; but the wood is little, if at all, superior to the Alder for durability. The Red Withy (Salix rubra), is a slow grower, but amply repays any trouble and expense incurred in bringing it to maturity. —*Quercus II.*

ROSE GARDEN.—No. XXI.

(*Continued from page 792.*)

IT must be observed, that directions in horticulture must depend more or less upon the state of the weather. The climate in England is so changeable as to make it impossible to mark, with anything like precision, the most advantageous time for out-of-door operations; and a hard frost succeeding fine weather, which has induced the operator to commence his work, will delay if not defeat his hopes, without a remedy, even where great care has been bestowed to secure success

In grafting, the question seems to be how forward the tree is to be permitted to advance before the scions are inserted. It would seem to be difficult to hit the nice point between putting in the scions before the tree has sap enough to effect a junction and prevent them from suffering, and inserting them so late as to cause a material check in the action of the tree. But the fact is, that the sap is on the rise long before any great exhibition of its effect appears, and if a shoot of the wild Rose be deprived of its head in November, the rise of the sap may be seen in March, by the swelling of the stock before the side shoots, or rather their precursors, the buds, appear to feel it. Stocks which have carried the same heads through the winter show the rise of the sap by the swelling and starting of the buds upon them, while others which have been decapitated in spring, and appear comparatively at rest, will be found, on examination, to be in the same state. The main stem is better to graft upon than the shoots, first, because it makes a handsome tree, secondly, because the bark of the shoot not being so thick as that of the stem, is more likely to get dry and hard: thirdly, because dormant and almost imperceptible buds on the shoots, frequently break out in the clay absorb the sap, and injure the scion, whereas in the stem the bud that appears may be cleft through, and the scion put in its place, perhaps also the vessels in the stem are larger, and the plant required to come in contact can be made to do so with greater facility; and lastly, the sap, rising in a grafted stock, is spread over a larger surface (and the effect of it consequently diminished) when shoots are used, than when the stem is cleft for that purpose. The united circumference of three shoots, or even two if they are vigorous, being more than that of the stem. The difference in labour is also greatly in favour of using the stem, which will receive three or four scions, requiring but one operation in cementing and claying, whereas the use of the shoot involves three times the attention.

From the 1st of March until the stocks get so forward

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LANE.—ANNUAL COUNTY MEETING, 1846, to be held at SHREWSBURY, in the North Wales District, comprising the Counties of Anglesey, Carnarvon, Merioneth, Montgomery, Denbigh, Flint, Chester, Salop, and Stafford. The Prizes are open to general competition. Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for Entitlements must be returned, filled up, to the Secretary, on or before the 1st of May, and all other Certificates by the 1st of June, the Council having decided that in no case whatever shall any Certificate be received after those dates respectively.

PRIZES FOR THE BREED OF CATTLE.—1846

Short-horns.—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 30*l*.; to the owner of the second best do. do. 15*l*.—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l*.—3. To the owner of the best Cow in milk or in calf, 15*l*. (In case of the Cow being in calf and not in milk, the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in calf Heifer, not exceeding three years old, 15*l*.—5. To the owner of the best Yearling Heifer, 10*l*.—6. To the owner of the best Bull calf, not exceeding one year old, 10*l*.

Herefords.—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 30*l*.; to the owner of the second best do. do., 15*l*.—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l*.—3. To the owner of the best Cow in milk or in calf, 15*l*. (In case of the cow being in calf, and not in milk the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 10*l*.—5. To the owner of the best Yearling Heifer, 10*l*.—6. To the owner of the best Bull calf, not exceeding one year old, 10*l*.

Devons.—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 30*l*.; to the owner of the second best do. do., 15*l*.—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 20*l*.—3. To the owner of the best Cow in milk or in calf, 15*l*. (In the case of the Cow being in calf, and not in milk, the Prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in-calf Heifer, not exceeding three years old, 10*l*.—5. To the owner of the best Yearling Heifer, 10*l*.—6. To the owner of the best Bull calf, not exceeding one year old, 10*l*.

Cattle of any Breed (not qualified to compete in the foregoing classes).—CLASS 1. To the owner of the best Bull calved previously to the 1st of January, 1843, 20*l*.; to the owner of the second best ditto, 10*l*.—2. To the owner of the best Bull calved since the 1st of January, 1843, and more than one year old, 15*l*.—3. To the owner of the best Cow in milk or in calf, 15*l*. (In the case of the cow being in calf, and not in milk, the prize will not be given until she is certified to have produced a calf.)—4. To the owner of the best in calf Heifer not exceeding three years old, 10*l*.—5. To the owner of the best Yearling Heifer, 10*l*.

HORSES

CLASS 1. To the owner of the best Stallion for Agricultural Purposes, of any age, 30*l*.; to the owner of the second best do. do., 15*l*.—2. To the owner of the best three years old do., 15*l*.—3. To the owner of the best two years old do., 15*l*.—4. To the owner of the best Mare and Foal for Agricultural Purposes, 20*l*.; to the owner of the second best do. 10*l*.—5. To the owner of the best two years old Filly 10*l*.—6. To the owner of the best Thorough bred Stallion, which shall have served mares at a price not exceeding 3 guineas (and with a groom a fee of not more than 6*s*.) in the season of 1845, 30*l*.

SHEEP

PRIZES FOR IMPROVING THE BREED OF SHEEP.—1846

Leicesters.—CLASS 1. To the owner of the best Shearling Ram, 20*l*.; to the owner of the second best do. 15*l*.—2. To the owner of the best Ram of any other age, 20*l*.; to the owner of the second best do., 15*l*.—3. To the owner of the best pen of five Shearling Ewes, 10*l*.; to the owner of the second best do., 5*l*.

Long Woolled Sheep (Not qualified to compete as Leicesters).—CLASS 1. To the owner of the best Shearling Ram, 10*l*.; to the owner of the second best do., 15*l*.—2. To the owner of the best Ram of any other age, 10*l*.; to the owner of the second best do., 15*l*.—3. To the owner of the best pen of five Shearling Ewes, 10*l*., to the owner of the second best do. 5*l*.

Sheep best adapted to a Mountain District.—CLASS 1. To the owner of the best Ram of any age, 15*l*.; to the owner of the second best do., 10*l*., to the owner of the third best do., 5*l*.—2. To the owner of the best pen of Ewes of any age, 10*l*.; to the owner of the second best do., 5*l*.

PIGS

CLASS 1. To the owner of the best Boar of a large breed, 10*l*.; to the owner of the second best do. do., 5*l*.—2. To the owner of the best Boar of a small breed, 10*l*.; to the owner of the second best do., 5*l*.—3. To the owner of the best breeding Sow of a large breed, 10*l*.—4. To the owner of the best breeding Sow, of a small breed, 10*l*.—5. To the owner of the best pen of three breeding Sow pigs of the same litter, above four and under ten months old, 10*l*.

AGRICULTURAL IMPLEMENTS.

A sum not exceeding 50*l*.

Cheese.—To the exhibitor of the best sort of Cheese (of any kind) made within the district, 10*l*. To the exhibitor of the second best do., 5*l*.

Extra Stock, Roots, and Seeds.—For Extra Stock of any kind not shown for any of the previous Prizes, and for Roots Seeds, &c., Prizes may be awarded, if recommended, by the Committee and Judges, to an amount not exceeding in the whole 50*l*.

Any New Implement.—For the invention of any new Agricultural Implement, such sum as the Council may think proper to award.

Steel Wheat, Barley, and Oats.—Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 12 bushels of Wheat of the harvest of 1845, and grown by himself.

II. Fifteen Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 12 bushels of spring Wheat, of the harvest of 1845, and grown by himself.

III. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 12 bushels of Barley for malting, of the harvest of 1845, and grown by himself.

IV. Ten Sovereigns, or a Piece of Plate of that value, will be given to the exhibitor at the Meeting at Shrewsbury of the best 12 bushels of Oats, of the harvest of 1845, and grown by himself.

Competitors are requested to send with their Wheat, Barley, or Oats, specimens, fairly taken, of the ears in the sack, with the whole of the straw, to a length not less than one foot in diameter, and with the roots attached.

The bushels of the Wheat, Barley, or Oats, will be sealed up by the Director or Secretary, and one of the remaining bushels of each variety will be exhibited, as a sample to the public, the other being kept for comparison with the produce of the next year. At the General Meeting in December, 1846, the Prizes will be awarded.]

The two best samples of each of those classes of Wheat, Barley, or Oats, without reference to the district in which grown, in all of the cases, between the Counties of Hereford and Montgomery, will be selected by the Judges appointed for the Meeting at Shrewsbury; and will be sown, under the direction of the Council (the winter Wheats in the autumn of 1845, and the spring Wheat not earlier than the 1st of March, 1846), by four farmers, who will make their report, upon which the Prizes will be awarded, provided there be such difference between the samples [*illegible*] will be given to the [*illegible*] necessary to each exhibitor whose [*illegible*] for the Barley or Oats.

*** No variety which has been exhibited for [*illegible*] previous Show shall be qualified to compete in the same [*illegible*].

ESSAYS AND REPORTS ON VARIOUS SUBJECTS.

1. *Farming of Nottinghamshire.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Nottingham. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Nottinghamshire since the Report of Mr. Robert Lowe in the year 1798; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated or by taking new land into cultivation.

2. *Farming of Cornwall.*—Fifty Sovereigns, or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Cornwall. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Cornwall since the Report of Mr. C. S. Worgan, in the year 1811; and especially to point out what farther improvements ought to be effected, either by better farming on land already cultivated or by taking new land into cultivation.

3. *Farming of Kent.*—Fifty Sovereigns or a Piece of Plate of that value, will be given for the best Report on the Farming of the County of Kent. Competitors will be expected to describe the different varieties of soil which prevail in the county, the ordinary modes of farming and courses of cropping adopted accordingly in its various districts, and to state how far any peculiar practices in its husbandry are or are not justified by peculiarities of soil or climate. They will also be expected to state what improvements have been made in the farming of Kent since the Report of Mr. John Boys, in 1796; and especially to point out what farther improvements ought to be effected either by better farming on land already cultivated, or by taking new land into cultivation.

4. *Heath Land.*—Twenty sovereigns, or a piece of plate of that value will be given for an accurate account of the best method of reclaiming heath-land. Competitors will be required to describe methods which have been successfully adopted in the reclaiming of heath land, reference being had especially to the following points.—1. The mode of breaking up, whether by paring and burning, or by simple ploughing. 2. The application of lime. 3. The course of cropping. 4. The conversion of heath-land into pasture, where either the steepness of the land, or its elevation above the sea, does not allow the culture of corn.

5. *Odd Horse Carts.*—Ten Sovereigns or a Piece of Plate of that value will be given for the best Essay on the advantages of One horse Carts. Competitors will be required to point out the saving in horse labour, and other advantages which are doubtedly arise from substituting 1 horse carts for waggons.

6. *Catch Meadows.*—Twenty Sovereigns, or a Piece of Plate of that value will be given for the best Essay on Catch Meadows. Competitors will be required to describe the best and cheapest method of forming water meadows on the sides of natural slopes as practised in Somersetshire and Devonshire; the mode of managing them and of applying their produce; the increase of value thereby given to unproductive hill-sides; and to state how far this mode of improvement might be applied to the mountainous districts of Wales and the North of England.

7. *Fences.*—Twenty Sovereigns or a Piece of Plate of that value, will be given for the best Essay on Fences. Competitors will be required to describe the best and neatest methods of maintaining hedges whether for arable or for grazing ground; and to point out how far the present fences in various parts of England are injurious to the farmer, whether by their size, their excess in number, or the over abundance of timber which they contain.

8. *Fattening Cattle.*—Ten Sovereigns, or a Piece of Plate of that value will be given for an account of the best method of fattening cattle; as to the places in which they are kept, large or small yards or stalls, as well as the food, roots, hay, &c. on which they are fed during the time of fattening.

9. *Tile-yards.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for the cheapest and best method of establishing a Tile-yard. Competitors will be required to attend to the following points.—1. Mode of working the clay, ascertaining its quality. 2. Machine for making the tiles. 3. Sheds for drying the tiles. 4. Construction of the kiln. 5. Cost of forming the establishment. 6. Cost of the tiles when ready for sale.

10. *Curing Butter.*—Fifty Sovereigns, or a Piece of Plate of that value will be given for the best description of the Dutch method of salting butter, pointing out the causes of its superiority to other salted butters.

11. *Experiment in Agriculture.*—Twenty Sovereigns, or a Piece of Plate of that value, will be given for an account of the best Experiment in Agriculture.

These Essays must be sent to the Secretary, at 12, Hanover square, London, on or before March 1st, 1846.

Twenty Sovereigns or a Piece of Plate of that value, offered by the Right Hon. Lord Kenyon, will be given at the Annual Country Meeting of the Royal Agricultural Society, to be held at Shrewsbury in 1846, for the best Augment of the Use of Gorse for the Food of Cattle, Horses, or Sheep, founded on actual experiment. Competitors will be required to state the following points.—1. The quality of land on which the Gorse is grown. 2. The age of the plant when cut. 3. The mode and expense of cutting. 4. The mode and expense of preparing for food. 5. The method of feeding with Gorse, and the quantity of other food given therewith.

Essays competing for this Prize must be sent to the Secretary, at 12, Hanover-square, on or before May 1, 1846.

Rules of Competition for Prize Essays.—1. All information contained in the Essays shall be founded on experiments or observation, and not on simple reference to books, or other sources. 2. Drawings, specimens, or models (drawn or framed, executed to a scale), shall accompany whatever Essay may require it. 3. All competitors shall [*illegible*] their Essays, and [*illegible*] to cover, on which only their motto, and the subject of the Essay, and the number of that subject to the Prize to which they severally, shall be written. 4. The President of the Society, [*illegible*] for the time being, shall open the cover on which the motto corresponding the Essay to which the Prize has been awarded is written, and shall declare the name of the [*illegible*]. 5. The Transactions of the Journal of the Society shall be the property of the Society, which shall have the power to publish the whole or any part of such Essays; and the other Essays will be returned on the application of the writers, but the Society do not make themselves responsible for their loss. 6. The Society are not bound to award a prize unless they consider one of the Essays deserving of it. 7. In all reports of experiments the expenses shall be accurately detailed. 8. The imperial weights and measures only are those by which calculations are to be made. 10. No prize shall be given for any Essay which has been already in print. 11. Prizes may be taken in money or plate, at the option of the successful candidate. 12. All Essays must be addressed to the Secretary, at the house of the Society.

(By Order of the Council.) JAMES HUDSON, Secretary.

ADDRESS TO THE PLANTERS OF ENGLAND.

TRUE HIGHLAND PINE-TREE.

MY LORDS, LADIES, AND GENTLEMEN.—The time has been when all those who have waste land at their disposal should plant them. Of this I am fully persuaded, and I beg you will allow me to explain on what principles this is founded. England, generally, is a thickly-wooded country, yet, strange though it may appear, it has not been planted with any view to meet its most urgent wants. If the poor farmer require an outhouse built for his cattle, he cannot have it because there is no dead-wood in the neighbourhood; he builds it therefore of straw, or of any other rubbish he can lay hold of. Instead of having plenty of fir wood on all hands to fence young hedges, planted like other things on the common surface of the ground, military-like fortifications have been raised to divide fields occupying as much good land as is contained in three of the largest cheshire of Britain. It is on these banks ineffectual attempts have been made to grow hedges. After the 1st of March, when the Royal Agricultural Society's Prize on fences shall have been awarded, a great proportion of the hedges throughout England will be reconstructed by planting them on the plain surface; and the question will then arise, "Where is the wood to protect them in their young state to come from?" Turning to the railways which are now being formed in every county in England, another and greater question arises as to the supply of wood which will be required in their construction. Go up, I am told, to the Lebanons of our island—those immense forests in the north of Scotland—and there how down as many trees as will be required. From those, however, I find we must expect but a limited supply. Like the famous Mount Seguid, they are already overrun with the axe, and a continuance of the present rate of cutting for a few years more will reduce the trees upon them to a mere remnant. It is not the original numbers required for sleepers which will effect this change, but it is the incessant demand, *ad infinitum*, for timber to replace that which is already laid down, or may be for the future laid down in additional lines. Look at it how we may, the state of our country at the present even prov a state not immense and almost uncultivated tracts of what is generally called waste land were not created to be a scene merely of unproductive solitude. The rains with which trees are refreshed and the fostering sunshine that rests upon them, might have taught us that Providence had designed them to contribute in some way or other to the wants of man; and though Nature has been unable to lead us to comprehend her lessons, so simply brought before us, necessity has at length compelled us to look to those districts where only a sufficient quantity of timber can be raised to meet our increasing wants. Now, then, is the time to plant wherever there is a waste piece of ground, moor, or mountain, let it be forthwith invested with trees, for every year, for many years to come, will unquestionably bring with it an additional demand for timber. Thus far on the necessity of planting. Allow me next to bring under notice the sort of tree I would recommend to be planted, which is the chief aim of this Address. That tree is the TRUE HIGHLAND PINE, for introducing which, I had the honour, along with my brother, of receiving the Highland Society's prize. It is admirably fitted, in every respect, to take possession of all the uplands throughout England. It will grow freely on all soils suitable for the common Pine; its wood is very durable; and for railway sleepers it is unrivalled. Brindley, the celebrated engineer, considered its durability equal to that of the Oak, and Dr Smith states, in the *Transactions of the Highland Society of Scotland*, that he has seen some of it taken down after it had been 250 years in the roof of an old castle, as fresh and full of resin, as newly imported timber from Memel, and that it will actually worked up into new furniture. "Such," says Loudon, "is the durability of this wood, that while the hog timber of the Birch is often found reduced to a pulp, and the Oak cracks into splinters as it dries, the heart of this Pine remains fresh, embalmed in its own turpentine."

MY LORDS, LADIES, AND GENTLEMEN.—Allow me to add a word or two on the merits of this tree as a landscape ornament. In this respect it rivals, if not excels, the Cedar of Lebanon. It has, at any rate, a much better ramification than the Cedar, for, as Sir Walter Scott observes, it assumes in a great measure the bold and contorted figure of the Oak. In illustrating the Seats of Norfolk (and the remark is applicable to all England), it frequently occurred to me that advantage had not been taken of prominent situations by investing them with grand evergreen trees, for no soon as November comes, our parks lose almost all that weight of grandeur for which they are so celebrated in summer time. Their solemnity ceases with the fall of the leaf; but were they ornamented with this Pine, its broad umbrageous canopy remaining green during winter, the change consequent upon the approach of winter would be much less observed, and our country residences would at all times be surrounded with the dignified accompaniments so consistent with their character.

The importance of this subject will, I doubt not, be accepted as an apology for my thus venturing to express my opinions so plainly on matters of English practice. My suggestion as to the improvement of park and pleasure-ground scenery by introducing the Pine in question is offered with the greatest deference, being fully persuaded that in matters of this description England has been always distinguished for its refined taste. I am ready to dispose of the Highland Pines at the following prices:—

Single Plants, strong and well rooted	6*d* each.
Strong Plants, 18 to 20 inches high	5*s* per 100
Strong Plants, 15 to 18 inches	40*s* p 1000.
Transplanted Plants for exposed situations 10*s*. to 30*s*. p 1000.	

I have the honour to be, My Lords, Ladies, and Gentlemen,

Your most humble Servant,

JAMES GRIGOR, NURSERYMAN, Norwich.

WILLMENT'S PATENT CLOTH for COVERING GARDEN HOUSES, CUCUMBER or MELON PITS, &c. This Cloth is made expressly for the purpose of applying Willment's Composition upon, and is much more durable than any other Material when coated. It is beautifully white and transparent. The perfect success of Willment's Composition for the above-named purposes cannot be more fully established than by the fact, that on the 1st of April last, a Black Hamburgh Vine in a Greenhouse, the glass [illegible] into a house not exceeding 8 feet square, was cut weighing 48*l*. ounces, the fruit was perfectly ripened, and the flavour pronounced to be excellent. A complete description was sent up in the Editor of the *Gardeners' Chronicle* last September. The open summer very luxuriantly, the foliage every fine, and the wood ripened exceedingly well. As a winter protection it is infinitely superior to mats.

The PATENT UNFERMENTED COMPOSITION can be obtained of Messrs. Bailey & Sheasby, Covent Garden Market; Hurst & M'Mullen, Leadenhall Street; Wargent & Warner, Cornhill; Barclay & Sons, Farringdon Street; and Chaunay & Co., Oxford Street.—Wholesale and Shipping Agents, Messrs. Bailey, Wolverhampton.

FIRST-RATE BUSINESS.—To be Sold, a Bargain, a first-rate Stock of PENDENT, comprising all the most forward as cultivators, including some valuable Seedlings not in other hands, together with all Seedlings worth a placement, and allow house of four different sizes; the entire Stock of a most successful Amateur declining their further cultivation. The Pendents are all in small pots, and the Seedlings pricked out in boxes. For further particulars apply to Mr. W. CLARK, Seedsman, 70, Bishopsgate-street Within, who has on Sale, Cuthill's Lasting Stock, 3s. per paper; Cuthill's true Black Spine Cucumber, 2s.; true Cabul Melon, 2s. 6d.; Roccalnea, 2s.; fine mixed Gloxinias, 1s.; Calceolaria, 1s.; Cinerarie, 1s.; Tropeolum tricolorum, 2s.; Tropeolum brachyceras, 2s.; warranted Pansy, 2s. 6d.; Joseph Cox, Esq.'s superb Ricotee Seed, 2s. May be had for Remittance of a Post-office Order.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 7, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY Dec. 11	Meteorological	8 P.M.
WEDNESDAY Dec. 11	Society of Arts	8 P.M.
SATURDAY, Dec. 14	Royal Botanic	4 P.M.
TUESDAY, Dec. 17	Linnean	8 P.M.

THE probable importance of AUTUMN-PLANTING THE POTATO has been confirmed by an experiment which we had overlooked when speaking of Mr. GREY'S. We find that Mr. TROTTER, a gentleman well known in the neighbourhood of Stockton, has been trying the comparative effects of autumn and spring planting on strong clay land, cropped with Beans the previous year. The field was ploughed in November, with a view to its lying in that state through the winter. Mr. Trotter had on former occasions attempted to grow Potatoes on this land; but, from the very strong nature of the soil, it often yielded him little more than the seed he planted. This led him to try the effect of planting a piece of ground in the autumn; and accordingly, about a quarter of an acre was re-ploughed about the end of November, manured with stable-yard dung, and planted in the usual way with Yorkshire Red Potatoes, no protection whatever being given them during the winter; a portion of the sets was cut, and another portion planted whole. The plants from the cut sets were much the strongest, and kept a-head of the others until the whole of the ground was nearly covered. Indeed, Mr. Trotter says that the plants from the cut sets were so much stronger than those from the whole Potatoes, that they could be distinguished with ease at a good distance.

A ridge of land close by the side of that planted in autumn was prepared and planted in spring, and manured in the same way. It is scarcely possible to imagine the difference that existed between the autumn and spring-planted crops. When our informant, Mr. G. Watson, gardener at Norton Vicarage, saw them, which was in the second week of October, those which had been planted in autumn were still strong, healthy, and green; while the haulm of those planted in spring was brown, and much withered.

When the crop was taken up, the quarter of an acre planted in autumn yielded 60 bushels of Potatoes; while those planted in spring produced little more than the seed. Mr. Trotter is, we understand, of opinion that on the land planted in autumn there was four times as many Potatoes as on that planted in spring, and that the former were larger and better in quality; and this gentleman has arrived at the conclusion, that for stiff clayey soils it is of the greatest importance to plant in autumn. He was, at the date of our correspondent's letter (Nov. 25), preparing to plant for next year.

At the time of harvesting there was little or no difference between the produce of the cut and uncut sets. The Potatoes planted in autumn were only protected by the regular covering of soil; and Mr. Watson finds, upon reference to his journal of the weather, which he keeps in his employer's garden, that the thermometer stood at 16° on the 5th of February, and at 15° on the 6th; this being the greatest amount of frost experienced about Stockton-on-Tees last winter.

Although this experiment was not conducted with the minute exactness characteristic of Mr. Grey's, yet it is valuable as affording additional evidence as to the apparent advantages of autumn planting. It also possesses some points of interest of its own.

In the first place, it shows that heavy land is as well suited to autumn planting as light land. We do not mean to say that clay suits Potatoes as well as sandy loam; but that, if heavy land is to be cropped with this plant at all, autumn is the more advantageous season to do it in. It is true that 320 bushels an acre, which was Mr. Trotter's crop, is no great amount of produce; but it is to be borne in mind that the spring-planted crop yielded almost nothing.

Another, and very important, fact, elicited by this communication is, that it confirms the correctness of the opinion we last week ventured to express, that it is immaterial at what time before winter the Potato crop is got into the ground. Mr. Trotter [illegible] planted on [illegible] clay, at the end of November. We shall, however, ascertain by another season how far this point can be followed safely; for we have ourselves planted, at the time when these remarks are published, a piece of heavy land, to which no stable manure whatever has been applied.

The last fact that Mr. Trotter's experiment seems to have elicited is, that Potato sets are better than whole tubers. For this we were not prepared; because we should have thought that in heavy land the Potato would have had a better chance of standing the winter when protected by its natural skin, than if cut into pieces. It would, however, appear that even on clay land, in autumn, sets are better than whole Potatoes, as has been so generally found to be the case in the spring, and as was shown by Mr. Grey's experiment on light land.

We wish that those who have the means would now try the experiment of planting Potato sets through every week from the 1st of December till the winter finally sets in. The question would thus be set finally at rest; and we think a more important question can hardly occupy the attention of the cultivators of the soil.

Since the above was in type another correspondent has favoured us with his experience of planting Potatoes in the autumn, near Birmingham. It appears that in this case the crop was very satisfactory; but no details or comparative statements are given. One thing, however, was observed which deserves mention. "The Potatoes, growing at 20 inches deep, and obliged to be got up with the draining-spade, were so large that some weighed (many) 4 lbs. within a few ounces; they decreased in size as they grew nearer the surface, and those at the top, only sufficiently large for the pigs, &c., were very few in proportion."

AN amateur at Nottingham (Mr. Thomas Gibson) has been the grower of the heaviest GOOSEBERRY ever recorded as having been exhibited. But it appears that some people are endeavouring to deprive him of the credit he deserves, and publicly assert that heavier berries have been raised. They do not, however, favour us with either the name of the grower, the weight of the fruit they refer to, nor the time or place where it was exhibited. For ourselves, we have no idea of allowing even a Gooseberry grower to be talked out of his rights; and therefore we have taken some pains to ascertain what the facts are, by searching the records of Gooseberry-growing for the *last* 27 years.

The result of this investigation we here produce, with the name, colour, weight, grower's name, and place of exhibition in each case, except for 1829, of which we have no record; and, if we are not mistaken, no lists were published in that year. It will now be found that from 1817 to 1825 no fruit reached 30 dwts.; and so also from 1825 to 1830, all were below that standard, until Teazer, a yellow berry, (all the other 26 being reds) reached 32 dwts. Nobody again produced a fruit of 30 dwts. till 1838; but it will be seen that from 1840 to 1844, for five consecutive years, the heaviest berries have in all cases been above 31 dwts., and the last, that grown by our friend Mr. Gibson, reached the extraordinary weight of 35 dwts. 12 grains. It was exhibited at the Carnation Show of the Nottingham Floral and Horticultural Society of the present year, and we are informed that the members of that Society intend presenting Mr. Gibson with a piece of plate, as the grower of "The Champion Berry of England."

A return of the heaviest GOOSEBERRIES that have been publicly exhibited between the years 1817 and 1844, both inclusive:—

Year	Variety.	Wght.	Grower's Name.	Where Exhibited.
		dwts. gr.		
1817	Highwayman (red)	26 17	R. Speechly	Peterborough
1818	Yaxley Hero "	24 14	R. Speechly	Peterborough
1819	Top Sawyer "	6 17	T. Capper	Wybunbury, Cheshire
1820	Huntsman "	25 18	J. Bratherton	Cheetham Hill, Manchester
1821	Huntsman "	25 6	J. Bratherton	Nantwich, Cheshire
1822	Rough Robin "	26 1	W. Heath	Weston, Notts.
1823	Foxhunter "	25 2	J. Bratherton	Nantwich
1824	Roaring Lion "	26 5	M. Hall	Ellesmere
1825	Roaring Lion "	25 16	J. Bratherton	Nantwich
1826	Huntsman "	24 6	W. Askew	Huntingdon
1827	Roaring Lion "	27 7	J. Warris	Dilley
1828	Roaring Lion "	29 0	J. Williams	Nantwich
1829				
1830	Teazer (yellow)	32 12	G. Prophet	Stockport
1831	Roaring Lion (red)	27 6	W. Davies	Oswestry
	Roaring Lion "			
1832	Teazer (yellow)	27 [illegible]	G. Webster	Huyton
	Ist (red)		J. Wallis	Nottingham
1833	Wonderful (red)	27 17	R. Moon	Ormskirk
1834	Wonderful "	27 6	W. Saunders	Edgely
1835	Wonderful "	26 8	R. Burdon	Woodstock
1836	Competition "	28 [illegible]	[illegible]	Gnosall, Staff.
1837	Competition "	28 [illegible]	[illegible]	Madeley, Staff.
1838	Wonderful "	29 [illegible]	[illegible]	Huntingdon
1839	London "	27 [illegible]	[illegible]	Chester
1840	London "	27 [illegible]	[illegible]	Ormskirk
1841	Wonderful "	29 [illegible]	[illegible]	Weston Point
1842	London "	29 [illegible]	[illegible]	Thatto Heath
1843	London "	29 [illegible]	[illegible]	Daresbury
1844	London "	27 [illegible]	[illegible]	Nottingham

HINTS ON RENOVATING OLD AND LONG NEGLECTED COPPICES.

THE chief object to be attained in improving old neglected coppices is, of course, that the ground should be uniformly covered with stools or stems, as even in size and strength as possible, so as to produce a regular and even crop of wood; this applies more particularly to coppices in Hop districts, where the production of Hop-poles is the primary consideration.

About five years ago I undertook the management, among others, of a large coppice, consisting principally of Alder, Ash, and Red Withy. The stools were of large size, many of them measuring 3 ft. from the ground to the [illegible] and had been so long neglected, that the wood [illegible] had killed the lesser and weaker ones [illegible]. The coppice had evidently been [illegible] alternately with Alder, Ash, and Withy, but the [illegible] had nearly overpowered their weaker neighbours, the Withy, and appropriated to themselves the whole [illegible], and at the time I took it in hand, there was evidently a struggling for the mastery between the Alder and Ash, and from the weakened appearance of many of the Ash-stools, I have no doubt but that the former (the least deserving) would eventually have been left the sole occupier. I was induced by layering all that I could possibly get from the Ash, and from the few Withy-stems which were found here and there, rejecting the Alder, unless there was no other sort in the vicinity, and in many places I planted very strong plants of Withy, about 6 ft. high, which I trust will ultimately supersede the Alder. The strong high stems of Alder I caused to be lowered a foot, thereby weakening them for a time; but they soon rallied, and progressed at such a rapid rate, that it was evident they would very soon have outstriped the Withy layers and plants, and have regained their former position. In going over the coppice the second season after cutting, I found the Withy layers doing remarkably well; I then had two or three of the large leading shoots of both Ash and Alder taken from the old stools, thus producing a greater uniformity of growth, and giving the weaker-growing sorts a chance of competing with their more powerful neighbours.

In forming coppices I should certainly abstain from planting fast and slow-growing sorts indiscriminately. In many situations the Ash and Alder might be planted together with success; but the latter is of little use except for burning into charcoal for the powder-mill. The Ash will flourish in both wet and dry soils, and when properly managed will produce a vast quantity of marketable produce; and if we take into consideration their rapid growth and the durability of the converted wood, I think we may safely pronounce it to be the most profitable sort we can plant for underwood. The Water Withy (Salix aquatica), will oftentimes successfully compete with the Ash, and even the Alder in growth, if planted in moist situations; but the wood is little, if at all, superior to the Alder for durability. The Red Withy (Salix rubra), is a slow grower, but amply repays any trouble and expense incurred in bringing it to maturity. —*Quercus II.*

ROSE GARDEN.—No. XXI.

(*Continued from page 732.*)

IT must be observed, that directions in horticulture must depend more or less upon the state of the weather. The climate in England is so changeable as to make it impossible to mark, with anything like precision, the most advantageous time for out-of-door operations; and a hard frost succeeding fine weather, which has induced the operator to commence his work, will delay if not defeat his hopes, without a remedy, even where great care has been bestowed to secure success.

In grafting, the question seems to be how forward the tree is to be permitted to advance before the scions are inserted. It would seem to be difficult to hit the nice point between putting in the scions before the tree has sap enough to effect a junction and prevent them from suffering, and inserting them so late as to cause a material check in the action of the tree. But the fact is, that the sap is on the rise long before any great exhibition of its effect appears, and if a shoot of the wild Rose be deprived of its head in November, the rise of the sap may be seen in March, by the swelling of the stock before the side shoots, or rather their precursors, the buds, appear to feel it. Stocks which have carried the same heads through the winter show the rise of the sap by the swelling and starting of the buds upon them, while others which have been decapitated in spring, and appear comparatively at rest, will be found, on examination, to be in the same state. The main stem is better to graft upon than the shoots; first, because it makes a handsome tree; secondly, because the bark of the shoot not being so thick as that of the stem, is more likely to get dry and hard: thirdly, because dormant and almost imperceptible buds on the shoots, frequently break out in the clay, absorb the sap, and injure the scion; whereas in the stem the bud that appears may be cleft through, and the scion put in its place; perhaps also the vessels in the stem are larger, and the plant required to come in contact can be made to do so with greater facility; and lastly, the sap, rising in a grafted stock, is spread over a larger surface (and the effect of it consequently diminished) when shoots are used, than when the stem is cleft for that purpose. The united circumference of three shoots, or even two if they are vigorous, being more than that of the stem. The difference in labour is also greatly in favour of using the stem which will receive three or four scions, requiring but one operation in cementing and tying, whereas the use of the shoot involves three times the attention.

From the 1st of March until the stocks get so forward

as to be injured materially by taking off their heads, the stem of the wild Rose may be successfully grafted, provided the wound be carefully kept from the air; and although (when grafted early in the season) the scion will remain in the stock for months without bursting, as long as the bark and buds remain plump no fear need be entertained. The junction between the scion and stock is so slow that the growth of the buds appears quite imperceptible, but where once a single well expanded leaf is found upon the bud, the scion incorporates with the stem, and the tree, being then in a natural state, vegetates with vigour.

Those who object to use clay may defend their graft with the mixture, swathing the head of the stock and scion in Moss, which must be occasionally wetted with a watering-pot. The success of this method is not quite equal to claying, which moistens the head of the stock, softens the bark, and by facilitating the passage of the sap to the base of the scion, effects a speedy junction. Moss is, however, admirably adapted to preserve scions in vigour until they are connected with the tree; and such buds as are hidden in it will frequently break out with vigour, while that part of the scion which is exposed to the air dies off entirely. To enable the operator to keep his scions moist, it is necessary that all wild buds beneath the ligature be so confined as to render them unable to receive or use the sap which rises in the stock; and if the last bandage be carefully and closely twisted round the stocks and scion, it will admit of the passage of moisture to the bark of such scion, while at the same time it prevents the swelling of the buds of the subject. When an overplus of any valuable sort of scions remain, they may be advantageously used by cutting down the shoots of any stools of Roses about the garden, near to the ground, and cleft-grafting them in the same manner as the wild stock. Their vicinity to the ground, which renders them so little liable to be blown about and injured by the wind, will do away with the necessity of claying, a common sailor's knot being slipped over the heads of each, and tied in front; the mixture No. 3 is applied to the graft, which (as only one scion is entered in a shoot, and but one bud left to break) can be done with the greatest facility, and the shoot produced may be laid down the same season, and be cut off from the stool a perfect and independent plant, upon its own bottom, the same autumn; while the operator is enabled to avail himself of the assistance of a handglass, if required, to advance his layers. Two or three buds of the new shoot should be left upon each graft of the stock for flowering in the ensuing spring.

The inserted scions are greatly helped, until supplied with nourishment from the stock, by the moisture of the clay; if therefore the lowest bud be only a quarter of an inch above the head of the stock, it will remain alive though concealed in the clay, and lie dormant (having no power of breaking out before that time), till the midsummer shoot, when, if the clay be removed, it will grow rapidly. This is a desirable method of finding vent for excess of sap at midsummer, as well as of limiting the demand upon trees in the spring. If this mode be adopted, the clay should be removed and the ligature loosened, when the spring shoot is over; the mixture being then applied in the same manner as to other wounds, the point of the bud only being left free. If there be not vigour enough in the tree to start the bud during the autumn, it will lie dormant, and break out with increased strength the next spring. In many cases, however, the spring shoots alone will increase the size of the scions and head of the stock so much, that it may be necessary to loosen the bandage, which may be done during the month of June, when the tree is usually in a state of comparative rest, between the spring and midsummer shoots. The most favourable time for removing the clay is after rain, when, having become soft, there will be less risk of injuring the scions. If the stem be large and but one scion take, a quantity of dead wood at the head of the stock will be the result; the whole of this must either at this period, or eventually, be cut away and the place defended with the mixture, or the operation of grafting must (as to the Rose) be abandoned.

OPERATIONS IN DIFFERENT MONTHS.

January.—Procure wild stocks, if delayed before.

February.—Wild stocks may still be planted with advantage, but the season is getting forward; cut and put by some scions for grafting; beat up clay for that purpose, and attend to the buds in the wild stocks.

March.—This is the last month to plant wild stocks; prune all trees which were grafted last or budded the year before, and restake those that have got blown about; graft fresh stocks; pinch off wild buds where not wanted, and from those trees which have been budded 18 months cut off the remaining parts of the old stock and that part of the budded shoot which is beyond the bud inserted—the first to the base of the shoot, the second close to the bud; they are then expected nearly to heal over the same year: cover them with cement for that purpose.

April.—Attend to cleft grafts by keeping down the buds below them, eradicating suckers, and cutting off the heads of failing grafts to bud upon in autumn; attend to the shoots budded upon last year; nip off the point of the sap-bud where required, and put on guards; kill snails and caterpillars this month, and whensoever afterwards they can be found; leave some flower-pots inverted to catch slugs in, which will infallibly harbour them; stop newly-starting buds when they have formed three or four eyes, that a head may be formed at once.

May.—Attend to the buds and suckers of wild stocks, and tie the new shoots to the guards, where necessary, without delay.

June, as in May.

July.—If the season be early, bud at the end of this month.

August.—Bud all this month, and if any buds start, they may be treated as pushing eyes; but, under such circumstances, the whole of the shoots upon the same tree must be shortened, or the curtailing of one shoot would be a mere transfer of its sap to another, to the great detriment, if not eventual death of the inserted bud; attend to ligatures.

September.—Continue to watch all newly inserted buds, and for the first fortnight replace any that fail; loosen the ligatures if necessary, but not without, except to examine where there may be reason to think they require it.

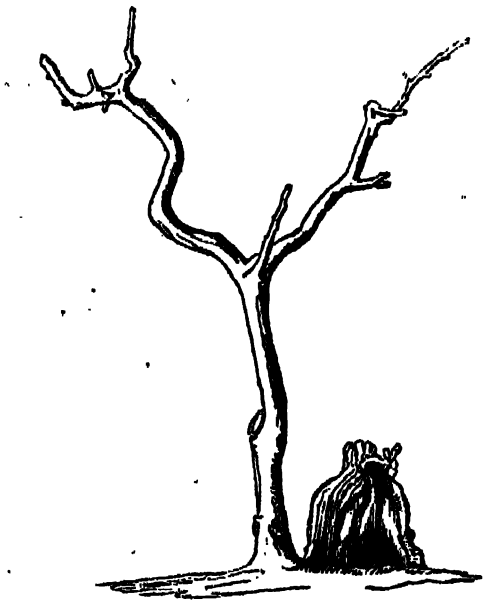
October.—Transplant in the last week; cutting off the ends of the wild branches, as directed.

November.—Take up any trees (carefully examining their roots) it may be desirable to remove, and replant them immediately; procure fresh wild stocks to plant, and set them out in line, or if delayed, lay them by the heels.

December.—The same as last month.

THE ORIGINAL RIBSTONE PIPPIN APPLE-TREE.

The accompanying is a representation of what remains of this renowned tree, with a few observations on its present condition.



The Original Ribstone Pippin Apple-tree.
April 20, 1844.

A small portion of the old trunk, as represented in the above engraving, still exists, and stands about 9 inches from the ground; and out of this, about 4 inches below the surface, springs a branch, which with proper care may yet become a tree. It is about 4 feet in height, and appears to be of about 10 years' growth. It stands in an exposed part of the park, and is merely fenced round with Scotch fencing. The soil in which it grows is of a tolerably free, open texture, on a sandy and gravelly subsoil.

When the tree first came under my care (scarcely two years ago) it was nearly devoured with the woolly aphis and canker, and almost overgrown with Nettles. I had the inclosed area (which is about 6 yards in diameter) thoroughly cleaned, part of the earth removed, a quantity of fresh earth brought in, and some of the roots raised into the fresh soil. I have not been able to accomplish the extirpation of the aphis. I believe their stronghold is in the old stool under the ground; for in spite of all I could do, they still continue to make their appearance on the young branches. I have much satisfaction in observing that the young branches indicate a decided improvement in health and vigour, having now a good broad foliage, and showing no signs of canker. The roots are pushing freely into the fresh earth, and many young roots have sprung from the base of the principal branch or sucker. By encouraging these young roots, keeping them near the surface, and otherwise nursing the shoot, I have no doubt that the old tree may be revived, and as there are already several incipient blossom-buds on the heretofore sickly branches, probably the year 1846 may be remarkable for the reproduction of fruit on the original Ribstone Pippin.

I am informed that the old tree was broken down in the year 1815, after which only one large branch remained, which was supported by stakes in a horisontal position, as shown in the engraving figured below. In this state it bore fruit for many years, and while in this position many layers were taken from it. It lingered until 1835, when it died, and was removed and burnt. The remainder of the trunk, excepting the small portion which now stands, was removed in 1839, and is carefully preserved by Joseph Dent, Esq., the present proprietor of Ribstone.

Although I have hitherto spoken of the old Ribstone Pippin-tree as the original, yet I am of opinion that it had been grafted; and if so, of course it is not the original. My suspicions on this point were first raised by the appearance of a sucker which is growing in the garden at Ribstone, and which was taken from the old tree sixteen or eighteen years ago. This tree has not yet borne fruit: it has thriven badly, being greatly affected by canker: it is now in a more healthy state, and forming many blossom-buds. I could not reconcile the habit of this tree with that of the true Ribstone Pippin, and consequently took considerable pains to ascertain if any and what measures had been taken to prove whether the old tree had been grafted or not. In pursuit of this object various and contradictory was the evidence that I met with. The strongest evidence that I obtained of its being a grafted tree, was from a person whose voluntary testimony I have no reason to doubt, and who positively asserts that he took a root-sucker from the old Ribstone Pippin-tree, and planted it against a wall, where it remained until it bore fruit, which proved to be a bad Crab. The sucker was then destroyed. On the other side, Mr. Thompson, of the Horticultural Society's Garden at Chiswick, informs me that there is growing in that garden a tree which was raised from a sucker that was taken from the original tree at Ribstone with a piece of the old root attached, eighteen years ago, and that this tree has borne fruit identical with the true Ribstone Pippin. However contradictory these accounts may appear, they may nevertheless be both correct; if the old tree has been grafted (admitting this) we must suppose that the tree in the Chiswick Gardens has been raised from an underground branch, which branches frequently put out roots at their bases, and that the old tree has been grafted very low, having the earth about its stem considerably raised; or it may have sprung from the roots of some of the layers, of which there were many before that time.

It is much to be regretted that this point has not been settled beyond dispute, as it ought to have been long ago. This neglect is scarcely to be accounted for, unless we suppose it to be consequent on the many changes which have taken place, or, if it has been proved, the unwillingness to publish the fact. It therefore remains enveloped in mystery, and will probably rest so (unless some of the existing suckers prove the old tree to have been grafted) until a root-sucker is raised from the old stool, which I think is practicable, and which I purposed attempting had I remained at Ribstone.—*James Craig, late Gardener at Ribstone Park.*



Home Correspondence.

Tank-heating.—I have observed, on two or three occasions, that an opinion has been expressed in the *Chronicle* unfavourable to the use of pottery for the construction of tanks and gutters as channels for hot water. On one occasion there was a specific objection, viz., the alleged impossibility of avoiding leakage. I am inclined to think that such objections must have resulted from imperfection in the materials from which the pottery was prepared, in the arrangement of it when made, or in the material used in connecting and cementing the parts together. My houses and pits, of which plans and particulars are given at p. 428, 1844, are heated exclusively by gutters of pottery and tanks of the same mate-

rial, the latter having a brick foundation; they answer entirely to the satisfaction of my gardener and myself. They have now been in constant use for full 12 months, without any alteration, and we discover no leakage in any part. I apprehend that the atmosphere of the houses is somewhat more moist than in those in which iron is employed. The luxuriance and beauty of the foliage and flowers, particularly of Roses in pots, during the whole of last winter, was remarkable. The plants expressed their enjoyment very unequivocally. The Pine plants in the pits have afforded similar evidence of enjoyment throughout the season, bearing a fine dark-green foliage, without a tinted leaf to be seen. My experience, therefore, induces me strongly to recommend the article, as by far the most economical and congenial to healthy vegetation.—*Chas. Lawrence, Cirencester.* [Upon receiving this letter we applied to our kind correspondent for information as to the cement with which the pipes are jointed; it having been found near London impracticable to prevent the joints of pipes set in cement from cracking and leaking. The following is his obliging reply:]—I should suppose that the pottery you have used and mine may be very different in quality and construction. Earthen pipes, such as I have seen, are very porous, and not above half an inch in thickness; whereas, my gutters are made of very tough clay, well ground, and are from 1½ inch thick and upwards; the surface is very smooth and compact for such an article. The man who set my work informs me that the lime used in making the cement in which they were set is "Haberworth lime." Of the name I know nothing; but I believe the article is prepared from burning a sort of pebble found near the sea instead of the ordinary limestone. At all events I understand this to be a lime well known, and commonly employed in works under water; it is said to set better under water than above. The lime I used was obtained from Gloucester. While the work was in hand, I thought the man extremely careless in not grinding the cement in a pug-mill or something of the sort, as I observed indications after the trowel of considerable particles of grit, which I thought would be a source of leakage; but he was so confident as to his material, that I was obliged to let him take his own course, merely telling him I did not believe the work would hold water, and that I would not pay him till it did. The result was a considerable leakage in particular places; he put these to rights, and then, at my desire, put a thin coat of Roman cement over the whole of the interior. (?) The houses were set to work in November, 1843, and have gone on to this time without any leakage. Whether this be due to the Roman cement, or the cement by which the work was first put together, I cannot say. At the points, where I have moveable tops to steam the house, I cannot perceive any disturbance whatever of the internal coating of Roman cement, which would, of course, have cracked with any expansion or contraction of the gutters. I should, however, put my faith rather in the original cement, if I were to go to work again, taking care to have it thoroughly reduced by grinding. My expectation is that my work will stand for ever, barring change accidents, against which it is pretty effectually protected. Any one can see my apparatus who is disposed to take the trouble of a jaunt by the Great Western.—*Charles Lawrence.*

The Bignonia Venusta.—In reply to Mr. Beaton, I beg to give my mode of prolonging the blooming of this useful plant. The situation in which it most delights is a bark-bed, where the roots can run at liberty among the tan. The plant here was first potted in a 16-sized pot, and then placed in a corner of a bark-bed, where Pines are grown; it has occupied that place now for 10 years, and although the bark-bed is regularly turned every year, yet the disturbing of the roots does not injure the plant; the roots being found to run along by the wall that forms one side of the pit, and the end, the heat of the tan preventing them from progressing towards the centre. The plant is trained upright until it reaches the top-lights; it is then trained along the house, which is 35 feet in length and 8 feet in width, till it reaches the other end, covering the pathway at the back of the bark-bed. Towards the end of December, I cut the plant in to 6 or 10 feet, when it remains dormant through the winter, without a leaf upon it, although occupying a warm situation in a fruiting Pine-stove. In the beginning of March, young shoots in abundance break from the apparently dead wood; a sufficient number of these are selected to be trained along the house, and these again produce laterals, about a foot or 2 feet in length; and at the end of each, a cluster of blossom-buds is formed. On the production of those lateral shoots depends the free blooming of the plant, to encourage which, a damp atmosphere is kept by pouring water over the pathways, and by frequently syringing the plant. All superfluous shoots are stopped; and it is necessary to pay a good deal of attention to this, for an over-abundance of shoots would soon be produced that would form a complete thicket. The plant here commences flowering about the beginning of September; it is now in full flower from one end of the house to the other, and has an exceedingly gay appearance.—*James Brown, Gardener to Lord Southampton, Whittlebury Lodge.*

The Golden Pippin.—I am glad to return to this favourite fruit again, because I consider it not unimportant to its disposal or value to be "Gentlefolkish" would have us. Mr. Knight preferred the Gurnish Gillyflower to all other Apples; I prefer the Golden Pippin, and so do many others; on this account its degeneracy is surely worth investigating. I am willing to defer largely to so great an authority as Mr. Knight, but with such proofs as are now received, his doctrine may at least be considered questionable, if not entirely fallacious. It is all very well to talk about originating similar or better kinds; but with the hundred and one attempts to accomplish this, what is the result? Who in our time has succeeded in producing an Apple equal to the Golden Pippin? I am inclined to think it wiser to bear the ills we have, and see whether it is possible to retain this valuable Apple during, at least, our time. That it grows vigorously and produces fine crops of fruit, at Hewel in Worcestershire, is beyond all doubt; the selfsame kind of Apple also, under the eye of Mr. Falconer, has for 20 years done the same thing, and in neither of these instances has the least sign of constitutional debility shown itself. Mr. Knight, in a paper read before the Horticultural Society of London, May 3d, 1831, hinted at the probability of retarding the deterioration of valuable varieties of fruits. If, without Divine intervention, a man could stop the sun in his course for one hour, why not for a thousand? Mr. Falconer has at least shown that he has successfully done it with the Golden Pippin; so has Mr. Markham, and I dare say many others; and with such authority I leave the subject for the present. —*R. G.*

Birch Coppices.—I have planted Birch rather extensively, and in various soils, but more for cover than from any hope of its ever growing into anything better than bavin wood. I cut generally six or seven years after planting, and I invariably find that a great number of the stools die in consequence. I have cut the tree partly through and layered it, and I generally find the same effect produced. If some of your correspondents will have the kindness to point out the cause, they will confer a favour upon—*Romseyonienstis.*

Hybrid Melons.—In answer to "Querist" (p. 782,) I beg to state that I am well acquainted with the Melon called Pitt's Improved Egyptian Greenfleshed; but in my opinion it is wrong named: instead of being called the Improved Egyptian Greenfleshed, it should be named the Unimproved, or the Egyptian Greenfleshed Melon Ruined. The true old Egyptian Greenfleshed, when well grown, is far better than this is in flavour, but not in size; but of what use is size without flavour? Pitt's improved might certainly be useful for decorating the dessert table, but it must not be tasted, or it will at once be condemned. About four years ago six plants of this hybrid Melon were given to me by a friend. I planted them in a three-light box, two plants under each light, where they grew rapidly, producing fruit almost at each joint; they set, swelled, and ripened a fair crop of fruit much larger than those of the old Egyptian Greenfleshed Melons. Some of them weighed as much as 4 and 5 lbs., although my frames were far too narrow for the rambling growth of the plant. I sent one into the house for dessert, which was used, and the remainder were sent as presents, as they ripened, to the different branches of the family. To my great disappointment, however, not one single fruit was approved of by any one who tasted them. My own opinion is, that this hybrid is tasteless; the flesh is neither green nor white. Some gardener may perhaps say that I did not give it a fair trial or good treatment; but such is not the case; for in the same season in which I grew this hybrid I grew 18 lights of a good Persian variety on the same Melon ground, and with the same treatment, the same soil, &c.: the latter produced a heavy crop of fruit, of a most excellent flavour, and highly approved of by all who tasted them. It could not, therefore, be in cultivation that this hybrid lost its flavour. Last season I was determined to give it another trial. I grew six plants in a three-light box, two plants under each light as before; and in this instance I had an opportunity of giving it another fair trial, as the frames (newly made) were 7 feet in breadth, 2½ feet in depth in the back, and 2 feet in depth in front. This I considered ample space for the rambling habits of the Melon. They grew with rapidity, bearing fruit much larger than before. I sent one to table, which was not approved of; others were sent as presents, as they ripened; but none of them gave satisfaction. All other true sorts which were grown on the same ground, and with the same treatment, gave great satisfaction; therefore I consider this quite sufficient to convince any person that this hybrid, as well as many others, is quite useless.—*Wm. M'Donald, King's Road, Chelsea.*—[This is but an unprofitable dispute. No doubt many hybrid Melons are worthless; but how can we say that they are all bad when, for anything we know to the contrary, half the best sorts in cultivation are cross-bred? No doubt bad crosses will produce bad Melons, and good crosses good ones. Would a cross between the sweet Melon of Ispahan and the Beechwood be worthless? We suspect that it would be very much the contrary.]

Colour of Leaves affected by Soil.—Most manures seem to deepen the green of the leaf. But there are some Picotees and Carnations that generally have a sickly hue, and however well and carefully they may be layered, they are apt to rot, very often not until the following year, when they are in bloom; they will then die suddenly. Piping seems the only sure way of propagating them. It is said that salt and nitrate of soda have the effect of hardening plants. Would it answer to apply them in this instance, and if so, in what manner? Humphreys's Compound is said to harden. Nitrate of soda must be applied in much smaller quantities than Humphreys's Compound, but how much may be safely given I do not know; perhaps a teaspoonful to a gallon of water.—*G.*

Potatoes.—I observe, with some surprise, your remarks on Mr. Grey's experiments on the planting of Potatoes in autumn. You appear to think it quite necessary that the sets should be covered so deep that they cannot be reached by the frost; this is a very unnecessary precaution. Provided Potatoes are in dry soil, and completely covered by it, they will not be injured by the most severe frost—that is, supposing they are allowed to remain in the soil until they are completely thawed again. Hundreds of Potatoes are left in the ground all the winter, many of them not more than an inch deep, and yet, when they are turned up in the spring, they are as sound as if they had been kept in a cellar. If you doubt this, it is easy to test its truth, by covering up Potatoes now in the soil of a dry garden, to the depth of an inch or two, taking care that the light is thoroughly excluded, and take them up in the spring, when the frosts are over, and you will see that what I have stated is correct. On reading the article again, I observe you suggest the probability of Potatoes bearing frost when covered. As you solicit information about Potatoes, I beg to say that I have saved sets from the Lemon Kidneys grown in my own garden for the last dozen years, and they neither curl nor rot, which I attribute to their being left on the ground exposed to the sun until they become quite green, which appears to give so much excitability to them as not only to prevent rotting, but also to make the crop earlier the succeeding year.—*T. G.* [Since our correspondent's *experience* tells him that Potatoes are not affected by frost, if in the dark, we can only express our satisfaction at finding it agree with our qualified *expectations*. We should be sorry, however, to risk a crop buried but an inch deep in any land that we know of.]

Collecting Leaves.—In the Calendar of Operations for last week "W. P. A." recommends leaves to be drawn into ridges in the back part of the shrubberies, and there to lay and rot, if they are not wanted for other purposes. This I look at as being a very disorderly plan. Where do we see the shrubberies so thick as to hide those leaves for the twelvemonth round from the eye of our employers? If my master were to pass by leaves behind his shrubberies without noticing them, I should begin to think that, in the course of another year, he would also pass them by in front of the shrubberies without notice. It is well known that leaves, when rotted in a proper place, and dug into the ground before planting shrubs, are of very great assistance to the shrubs; but to scatter them on the surface of the ground is of no use; the spring months would dry them to a powder, and they would, comparatively speaking, be driven like chaff before the wind. I regard the advice of putting them in a fresh state into holes intended for American plants, as more likely to mislead than to advance any inexperienced person. What would have been the result of plants put in in such a way, after a summer like the past? Water would have been of no use in a hole filled with leaves at the bottom. And, in the case of snow with strong wind coming soon after the plants were planted, I should expect to see their roots turned up to the weather, particularly if they were large plants. Until such time as "W. P. A." can prove the good resulting from such a practice, the advice can be of no use to any one, except to those who wish to try it as an experiment.—*M. D.* [We insert this letter at the express request of the writer; but in doing so, we must add, that we entirely disagree with some of his opinions.]

The Peregrine Falcon.—I have a living specimen of this noble bird of prey, which came into my possession about six days ago; he is quite docile; takes *food* from the fingers; and apparently might be trained to fly at other birds with very little trouble. He was taken on the 27th of *last* month, in the neighbourhood of Wormwood Scrubs, by a London bird-catcher. He is a male in two years' plumage; and I can only add, that all I have read concerning the habits of this noted bird is verified in this one, as far as I have had the means of judging.—*John Milton.*

Wilmot's Black Hamburgh Grape.—With reference to this Grape I am enabled, from my experience at Welbeck, to state that it is not, as Mr. Mearns suspects, identical with the Welbeck Black Tripoli. Judging from appearance I for a long time after it was exhibited at Chiswick considered it the Tripoli, but on tasting it I was soon convinced of my error. Wilmot's Black Hamburgh, in point of flavour, is inferior to the common Hamburgh, while the Welbeck Black Tripoli is infinitely superior to that variety. Wilmot's Black Hamburgh is a very desirable variety, and worthy of a place in every late Vinery in the country, as it keeps better than most varieties; but the Welbeck Black Tripoli has no equal among black Grapes that I am aware of. This variety is not known in the London trade.—*W. P. Ayres, Brooklands, Blackheath Park.*

Shanking of Grapes.—At p. 749, an "Amateur" complains that his Vines grew the first year with great vigour, and in the second year produced a considerable quantity of fruit, most of which shanked off. I am not surprised at this. I am confident that the late venerable President of the Horticultural Society would not have sanctioned the cropping of the Vines in the second year after planting, when he approved of the plan for the borders. Surely the considerable quantity of fruit which was left on those Vines to ripen, would demand more secreted matter for their maturation than the leaves were able to store up in the system of the plants, under the most favourable influences that possibly could be. An "Amateur" observes further, that in the previous summer many of the largest Vine-leaves damped off and fell, having rotted near the base of the footstalks. To this I should say, that the larger the leaf, the greater the surface exposed to light and heat; consequently, it would perspire more than a leaf of less size, and part

with a greater quantity of light than the roots could transmit to it, on account of the leaves being in a warmer medium than the roots. See Mr. Lindley's "Theory of Horticulture," pages 50 and 95. But the disease originates from more causes than one, viz.:—The principal cause is the roots of Vines being in a medium much colder than that of the leaves and branches, produced either by an excess of water in the soil occupied by the roots, which prevents its being heated by solar influence until this water is evaporated—the effect of which is to lower the amount of warmth in the soil; or from the border being shaded, by plants or otherwise. From the plants not being preserved in a sufficiently healthy state to decompose, or assimilate, the whole of the aqueous matter taken up by the roots, to mature their wood perfectly, and to be able to store up in the interior of the plants a sufficient amount of secreted matter to be able to meet the demand of the quantity of fruit left on them to ripen. Over excitement. By this is meant a too high night temperature; and also a high temperature in dull weather, when the leaves are unable to perform their functions in the absence of solar light, at the same time being exposed to a too high degree of fire-heat; and at no time does this treatment act more deleteriously than when Grapes are undergoing the ripening process. One of the first gardeners in England says, that notwithstanding the many conjectures and conflicting opinions respecting shanking, its undoubted cause is at the roots, originating from a cold or retentive soil, or from imperfect drainage, or from the Vines having been planted too deep. To one or other of the above faults, every case of shanking I have experienced was attributable. I have a large house having a thoroughly drained and shallow border, in which there is no shanking; while Vines planted in an old border, and having their roots deep, are shanked at the extremities of the branches. The whole of the Vines are exposed to the same temperature, and the same internal treatment.—*G. G. Watson, Vicarage, Norton.*

Gardeners' Benevolent Society.—I am afraid the remarks of Mr. Whiting, relative to this Society, are too true; and there is another item in the management which appears to be wrong, and one which I know is doing the Society considerable injury. I allude to the extravagant charge of *fifteen shillings* each for the Annual Dinner, a sum considerably higher than the majority of gardeners can afford for one night's entertainment. Last January I had engaged to meet several friends at the dinner, *five* of which would have joined the Society, but when the price of the Tickets was announced, they declined the invitation. I wrote to the Chairman (Mr. Noble), stating the fact, and giving my reasons for not attending, and solicited him to read the letter to the company, but he declined to do so. A few days afterwards I received a note from him stating that he did not conceive my letter related to the meeting, and that "he did not see how a dinner, with an unlimited quantity of wine, could be got up for less than 15s." An unlimited quantity of wine! What, in the name of conscience, do gardeners want with an unlimited quantity of wine? If wine-bibbers like to drink their half-dozen bottles, let them pay for it; but do not tax the man who would be satisfied with one pint, because his neighbour likes to drink ten pints. A member of the Committee told me if the dinner-tickets were lower, gentlemen would not attend, and therefore the Society would lose their donations. This may be all very true, but I do not believe it. Am I to suppose a gentleman disposed to contribute to the funds of the Society would absent himself from the dinner, merely because the price was not such as to exclude gardeners? No: that benevolent spirit which prompts them to contribute towards the support of the poor and indigent of our class would forbid that they should refuse to meet the hale and hearty for so noble a purpose. *If*, however, the Committee think otherwise, let them *provide two tables*, one for the patrons, and the other for the patronised; but, at any rate, let the "poor gardener" have a chance of dining without expending the whole of his week's earnings. I throw these hints out for the consideration of the Committee, believing that they are more likely to be influenced by a public notice than by any private recommendation.—*William P. Ayres, Brooklands.*

[Why have a dinner at all? It would be much wiser in those who can afford to throw away their money upon a bad tavern dinner to give this money to the charity. Nothing can possibly be more absurd than the English practice of persuading people to pay a guinea for a dinner, in order to obtain another guinea for the charity after dinner.]

Brewing.—I cannot agree with "Sandleford-stone," that good beer can be made without boiling the wort; it may answer for present use, but it is far from being wholesome or clear. In order to make good pale ale beer, take one barrel and a quarter of liquid (summer) bushels of malt; steep the Hops in boiling water for three hours, then throw it into the boiler with the whole of the wort, and boil gently for two hours (with the cover on, or it will waste and lose its strength); then take it off the fire, and put it into coolers; when cold enough add yeast; in 16 or 18 hours afterwards turn it into casks, and keep filling them up well for a few days. I often brewed the above quantity three times a week during summer, and occasionally omitted boiling it properly, and consequently I had it thick and poor.—*A Farmer's Daughter.*

Hints for Nurserymen.—I wish to call the attention of nurserymen to the following suggestion, because I think that some plan resembling that which I am now about to propose might, if adopted, be profitable alike to both buyer and seller. What I would recommend then is, that some of our nurserymen would now and then publish a short list of ornamental plants, with prices, subjoining an enticing little P.S. to this effect,—that all purchasers (say) to the amount of 21s., selecting their plants from the above list, and paying ready money for the same, should be entitled, as a bonus, to additional plants to the value of —— to be selected either from the same, or from a second list of plants, which might likely consist of such articles only as the owner had a superfluity of.—*Sorew.*

Chrysanthemums.—The cause of these flowering so late in the season is owing to their growth not being accelerated early enough. Let firm cuttings be put in, in October or November; this will cause the plants to develop flower-buds a month earlier in the succeeding autumn. Put cuttings singly into small pots, and keep them in these until March; then shift them into pots, larger and larger as they advance in growth. Place them in a moderate hotbed, and keep them growing in the frame until May; when about 1 foot high, stop them, which will cause every bud to push. Retain five or six shoots, and rub all the others off as they appear. Place them on a sunny border, about a foot apart every way, and never allow them to want water in the hot weather. Keep on shifting, using loam and dung, until they are in 24-sized pots. When they begin to show flower-buds, stimulate them by using guano or other liquid manure, which will make them produce flowers early. This is of great consequence, if they are wanted to bloom out of doors. To have them in perfection, when in flower, remove them to an airy greenhouse, as no plant suffers so much from confinement, where they speedily lose the leaves, and run up to naked, unsightly stems, destitute of foliage. By attending to these directions, fine dwarf-plants will be produced, clothed with rich dark-green leaves and large flowers.—*J. R.*

Chrysanthemums.—With respect to "C. P.'s" Chrysanthemums (p. 752). I think he will find that his border is too rich for such varieties. All the light kinds are obtained by getting rid of colour, to which the plants, when grown too luxuriantly, have a tendency to return.—*Corylus.*

Miscellaneous.—*Caledonia*, in reference to the paragraph by "J. R.," p. 765, observes that the Almond (Amygdalus communis) bears profusely, and ripens its fruit at the distance of 700 miles north from London. The Mulberry, too, he says, matures good crops of fine fruit at the same distance from the metropolis.

Societies.

HORTICULTURAL SOCIETY.

Dec. 3.—R. W. Barchard, Esq. in the Chair. At this Meeting, among Plants, perhaps the greatest novelty was a small specimen of a stove plant from Messrs. Henderson, of Pine-apple-place, named Hesemasandra aurantiaca, but appearing to be an Aphelandra of some sort, with most beautiful orange and yellow blossoms. It was said to have been received from the Continent about two years ago, from Mr. Makoy; this was probably the first time of its flowering in this country. If, as is probable, it can be grown to the same size, and brought to the same state of perfection to which A. cristata often is, it will prove an exceedingly valuable addition to our autumn-flowering stove plants. A large Silver Medal was awarded for it.—From Mr. Plant, gr. to J. H. Schroder, Esq., was a handsome plant of the old Phaius grandifolius, in fine bloom; also Zygopetalum rostratum, Brassia Wrayæ, and a good plant of Dendrobium Pierardii. A Banksian Medal was awarded for the two last-named plants.—Messrs Veitch and Son, of Exeter, sent two new sorts of Tropæolum; one, a yellow flowering variety, was not named; the other, a scarlet, was named Lobbianum, in honour of their collector, Mr. Lobb, who sent it from Peru; it had on it one fully-expanded bloom, of a very brilliant scarlet, and, judging from its numerous flower-buds, it has every appearance of being a free bloomer. A Banksian Medal was awarded for it.—From Mr. Gaines, of Battersea, was a plant of Cynoglossum cœlestinum, and two seedling Corræas, one with rose-coloured blossoms, the other with pale-green flowers.—From Mrs. Wray, of Oakfield, was a cut specimen of the scarce Epidendrum rhizophorum, a species resembling E. elongatum, and remarkable for its gay bright orange blossoms.—Mr. Stanley, gr. to H. Berens, Esq., sent a good specimen of the old Cymbidium sinense, which, being very fragrant, is exceedingly suitable for placing in sitting-rooms.—From Mr. Tant, gr. to E. Johnston, Esq., was a box containing 14 beautiful cut blooms of Chrysanthemums.—Mr. Hamp, gr. to J. Thorne, Esq., sent a cut specimen of Habrothamnus elegans, or purpureus, with pale violet blossoms.—Of Fruit, there were two Pine-apples from Mr. Sheeres, gr. at Bohun Lodge, East Barnet; one, an Enville, weighed 6 lbs., and measured 18½ inches in circumference, and 1 foot in length; the number of pips in height was 10. The other was a Queen, weighing 4 lbs. 1oz., and measuring 16 inches in circumference and 8½ inches in length; the number of pips in height was 9. These were both handsome fruit.—G. Crawshay, Esq., of Colney Hatch, showed fine bunches of Black Hamburgh Grapes in excellent condition, the berries being quite plump, with a firm juicy flesh. They had been grown, as has been formerly mentioned, without the aid of fire-heat, except about this time of the year, when slight fires are put on through the day, solely for the purpose of drying up damp, which it is well known would soon destroy ripe Grapes at this season. Air is, however, given both at back and front of the house while the fire is in operation, and when the house is shut up at night the fire is withdrawn. Mr. Crawshay stated that he has now 400 bunches in a variety of the ordinary size, in equally good condition with those exhibited.—From J. Moorman, Esq., was a collection of Pears, consisting of fine specimens of Marie Louise, in excellent condition; Beurré d'Aremberg; Yan Mons Leon Le Clerc, a Flemish variety of modern introduction; and Beurré Diel, the latter very fine.—Good specimens of Apples and Pears were also shown by Mr. Errington, gr. to Sir P. G. Egerton, Bart., M.P.—Mr. Cockburn, gr. to the Earl of Mansfield, Kenwood, sent fine large roots of Oxalis Deppei. This, although not equal to the Potato, is a very useful variety of vegetable, ranking with Jerusalem Artichokes, Scorzonera, and such like plants. Notwithstanding the unfavourable season we have had for tap-roots, such as this is, those exhibited were excellent specimens, and showed to what perfection the root may be brought when properly cultivated.—Among miscellaneous objects were two Slate Pots, from Mr. Beck, of Isleworth, who has in this instance improved these excellent contrivances, by putting a rim similar to that of the common garden-pot, round the top, by which they not only look neater, but may be lifted with much greater ease.—From the garden of the Society was a collection of Chrysanthemums which, although well-grown plants, were not in fine bloom, owing to their having been placed in the conservatory too early; and not having been sufficiently exposed to light there, the plants grew rapidly after they were introduced into the house, became drawn, and were consequently unable to fully expand their flowers. Four of the plants exhibited, had been watered with Potter's concentrated liquid guano, which was given to them at three different times, viz. on the 1st of August, on the 27th of the same month, and on the 10th of September: it was applied to them in the water with which they were watered, at the rate of 4 table-spoonfuls to 3 gallons of water. Other four plants in the same group were watered with guano-water at the period above mentioned; the liquid was mixed at the rate of 2 oz. of guano to 3 gallons of water; and, finally, seven other plants received manure-water once a week, from the 1st of August until the middle of October. In other respects, the whole received exactly the same treatment as regards soil, &c.; they all grew very much alike; indeed, so little difference existed among the plants in general, that it was almost impossible to have said which was the best among them.—Of fruit from the gardens there were, among Apples, Tower of Glammis—a sound keeping, excellent kitchen Apple; Padley's Pippin, resembling the Golden Harvey, very hardy and exceedingly useful for all purposes of the table; Beachamwell; Dutch Mignonne; Reinette du Canada; and Pomme Royale: the latter being a sort of Russet, is a good keeper.—Among Pears were Broom Park, a hardy variety, raised by Mr. Knight, which has proved to be good when grown as a standard; Passe Colmar; Glout Morceau; Beurré d'Aremberg; Knight's Monarch, which maintains its good character; and Winter Nelis, a variety which should have a place in every collection, on account of its excellence. Many Pears, generally good, are not always so in all seasons, but this variety is invariably excellent. Fluctuations of the season do not affect its quality, which is a consideration worth attention by Pear-growers.

LINNEAN SOCIETY.

Dec. 3.—Edward Forster, Esq., in the Chair. A species of Triton caught at Putney was exhibited.—Mr. Hogg presented to the museum a new form of a Chenopodiaceous plant.—A Paper was read from Mr. Main, A.L.S., on Vegetable Physiology, in which the author endeavoured to state his own views in opposition to those generally received by vegetable physiologists. He maintained that there was no proof of the ordinarily received notion of the descent of the sap; that the tissues were nourished by, but not formed or developed out of the elements of the sap; that the tissues of the tree were infinitely extensible, and formed by a vital process out of the cambium, which he called the indusium or vital membrane, and which was the only true source of all vegetable tissue. The cambium is not formed by the leaves, or any other agent, but by itself. The true function of the leaves is to draw up the sap into the tree, which they effect by the transpiration of the fluid part of the sap through their tissues.

ENTOMOLOGICAL SOCIETY.

Dec. 2.—Geo. Newport, Esq., President, in the chair.—Mr. Des Vignes exhibited a specimen of the Coccinella lineata, of Fabricius, now known as a variety of C. ocellata, which was taken in Great Britain.—Mr. Pelerin exhibited the larvæ, supposed to be of a species of Hepialus, from New Zealand, from which protruded a fungus 5 or 6 inches in length.—Mr. Bond also exhibited a specimen of the larva of the Drinker Moth, which was covered with a plant of fungoid character, and closely resembling the Muscardine, which attacks the Silk-worm.—Mr. Weaver exhibited the cases of the Forrectaria ubiciplacella, which were of a horny consistence, and in form resembled the shell of a dentalium.—Mr. Westerman exhibited a new species of Carabus, from Guinea.—Mr. Westwood also exhibited drawings of two new species of the same genus.—Mr. Evans exhibited a collection of insects from New Holland, consisting principally of Hymenoptera and Neuroptera.—Mr. Milton brought down to the Society some larvæ, which he had taken from the nest of a pheasant, and which belonged to a species of Tipula. The larvæ were alive when the bird was opened; and, on being counted, numbered 252. Mr. Spence pointed out the importance of this fact, as the larvæ of the species of Tipula were very destructive

to the roots of various plants.—Mr. Saunders exhibited a Dragon-fly, which had been caught at sea, at the mouth of Africa, 600 miles from land. The question of the possibility of the insect flying so far from land was raised by the President, Messrs. Bennett, Saunders, Farrell, and the conclusion arrived at was, that this insect had driven from the shore by the winds.—Mr. Saunders stated he had also seen Dragon-flies at sea, above 100 miles from land.—Mr. Waterhouse exhibited two rare insects from the collection of the British Museum; the one a Grasshopper (Mastigocera? gazifer), from Sumatra, remarkable for the length of its proboscis; the other a species of Mutilla, belonging to the genus Corynis, remarkable for its grey plumage and the form of its wings, and forming a link between the two great families of Lepidoptera.—Drawings were exhibited from Captain Boys, of India, of a species of Cimex, with its larva, which was covered with spines. It was found on the leaves of the Cocoanut gratissimum. A species of Coleoptera, approaching the form of Ips, was exhibited also from Captain Boys.—A paper was read from W. Stephenson, Esq., Surgeon, on the Entomology of New Zealand. The Coleoptera are exceedingly abundant, and their larvæ assist much in the destruction of the hard wood of the numerous forest trees. No Buprestidæ had been observed. The larva of a Hepialus was found exceedingly destructive in gardens. An account was given of a formidable insect, allied to Gryllus, which lived chiefly in decayed trees, and was carnivorous, and which inflicted severe wounds upon those who interfered with it.

COUNTRY SHOWS.

Norfolk and Norwich Horticultural Society, Nov. 27.—This was the annual Show, which was better attended than we remember to have seen it upon any former occasion. The Chrysanthemums were very creditable, and presented many beautiful varieties, including Grand Napoleon, Vesta, Empress, Defiance, Unique, Queen, and several others. Mr. Bell exhibited the following:—*Chrysanthemums, 32 varieties:* Maréchal de Crequi, sanguineum, Ibotata, Malvina, mirabile, Bijou, insigne, Louis-Philippe, Marie Antoinette, Conquerur, Madame Pompadour, Theresa, Luxurie, Hero, Unique, Vesta, sulphurea, Incurved Pink, Mamado, Casimir Perrier, Ivanhoe, Empress, Adventurer, Defiance, Grand Napoleon, Phillis, Colonel Combes, perspicuum, Marchioness de Montebello, Achmet Bey, Surprise, and Phidias. *Ericas:* Linnæoides, hyemalis, cafra, arbuscula, and pyramidalis. *Miscellaneous Plants:* Epacris grandiflora, Ardisia crenulata, Geneira longiflora, Leschenaultia formosa, Cactus truncatus, Cypripedium insigne, and Ipomopsis picta. MEMBERS' FLOWERS—*Chrysanthemums, best* 24: Rev. J. Burroughes—Marshal Maison, Beauty, Vesta, Golden Lotus, pulcherrimum, Empress, Defiance, Tasselled Yellow, Princess Marie, Chancellor, formosum, Marie, Duke, Cluster Yellow, Minerva, Malvina, sulphureum, Luxurie, perspicuum, Tasselled Lilac, lucidum, elegans, and Starry Purple. *Best* 18: Mr. Short, gr. to H. N. Burroughes, Esq.—Luxurie, Campestroni, Chancellor, Peter, Duke, Minerva, Achmet Bey, Beauty, formosum, Duc de Calineau, Memnon, Tasselled Yellow, Louis-Philippe, Marshal Maison, Two-coloured Incurved, Defiance, Hero, and Cluster Yellow. *Best* 12: Rev. J. Burroughes—Duchess de Montebello, Vesta, Duke, Tasselled Yellow, pulcherrimum, Cluster Yellow, Defiance, Fischier, Golden Lotus, Marie, formosum, and Sultana. *Primula sinensis, best collection*: Mr. Spence, gr. to Sir W. B. Proctor, Bart. *Ureschera zebrina, collection of*: Mr. Emms. *Lemon tree, &c., to fruit*: Mr. Emms. *Combretum purpureum*: Colonel Petre. FRUITS.—*Grapes*: 1, Muscat, W. Gale, gr. to H. N. Burroughes, Esq., M.P.; 2, Hamburgh, Mr. Rippingale, gr. to G. Morse, Esq.; 3, Muscat, Rev. G. Lucas. *Extra*, Hamburgh, Mr. Aldborough, gr. to Mrs. Kett. *Grapes, out door*: 1, Muscadine, Mr. Spence; 2, Mr. Colman. *Plums*: Imperatrice, Mr. Short, gr. to J. Stracey, Esq. *White Currants*: Mr. Short. *Red Currants*: Mr. Short. *Cranberries*: Mr. Short. *Apples*: Golden Harvey, Mr. Short. *Pears, dessert*: 1, Marie Louise, Mr. J. Cann; 2, Crassane, Mr. Warner, gr. to W. Robinson, Esq.; 3, Black Worcester, Mr. J. Wighton, gr. to Lord Stafford. *Medlars*: Nottingham, Mr. Gale. *Pears, baking*: 1, Uvedale St. Germain, Rev. G. Lucas; 2, Catillac, Mr. Short. *Walnuts, this shelled*: Mr. Scarlett. VEGETABLES.—*Celery*: 1, Crawshay's Solid Red, C. K. Tompson, Esq.; 2, White, Mr. Short. *Carrots*: Altringham, Mr. Gale. *Parsnips*. Hollow Crown, Mr. Gale. *Lettuces*: 1, Brown Cos, Mr. Jacobs, gr. to Mrs. Scott; 2, Texter Cabbage, J. Elwon, Esq. *Peas*: Shilling's Early Grotto, Rev. J. Burroughes. *Potatoes*: Cambridge Kidney, H. S. Patteson, Esq. *Red Cabbage*: Colonel Petre. *Sea-kale*: Mr. Short. *Horse Radish*: Mr. J. Potter. *Broccoli*: White Cape, Mr. Short.—*Norwich Mercury.*

Reviews.

Sowerby's Supplement to English Botany. Second Series.

We wish to call the attention of the readers of the *Gardeners' Chronicle* to this very beautiful work, which is now publishing at intervals of two months, as it seems highly probable that many of them, who take an interest in botanical pursuits,—and what possessor of a garden ought not to do so?—are ignorant of its existence. Of the present series six Numbers have now been published, each containing *four* plates of new or recently discovered native plants, executed in the very highest style of art, and also most accurate in the delineation of the several parts requisite for scientific study. Each plate is accompanied by one, two, or more pages of letter-press, giving the generic and specific characters, synonyms, and a detailed description of the plant; together with, when requisite, observations on its peculiarities, and critical remarks concerning it. The literary part of the work is in all cases prepared by some botanist of note who has turned his attention to that part of the subject to which the respective plants belong, and his initials are appended to each article.

From the large number of copies of the original English Botany, which have been sold, it is manifest that very many persons must possess that work who have not as yet rendered it complete by obtaining the Supplement; for if such had not been the case it would now have to be stated that the sale of that Supplement is so small (considerably under 500 copies) as not to pay its expenses, even when (as in this case) the artist, engraver, colourer, publisher, and proprietor, are the same person. We trust that the study of botany will [illegible] work which does so much credit to the country to fall to the ground for want of support, and would also recommend it to the ladies as an elegant appendage to the greenhouse and drawing-room. It should be remembered that no country possesses a collection of figures of its native plants, making even nearly the same approach to perfection as is done for Britain by the English Botany and its Supplement. The Supplement was advertised in the early Numbers of this Journal for 1844.—*C. C, B.*

A History of British Crustacea. By Thomas Bell, F.R.S., &c. Part I. Van Voorst.

THIS is the first part of another work of the series on British Zoology, published by Mr. Van Voorst. We had feared that the interest in natural history was too little to allow of the publication of any works in this series upon the invertebrate animals of Great Britain. We are, however, glad to find that Mr. Van Voorst is disposed to extend his design to the whole animal kingdom. The present work embraces the Crustacea, by Professor Bell, whose knowledge of this subject is well known to naturalists, and will be a guarantee for the successful issue of the work. The description of each species is accompanied with a wood engraving, and an account is given of its habits, uses, and other interesting information. In the present Part also, there are several vignettes, the subjects of which are selected with much good taste. We hope these works will meet with such encouragement as will induce the publisher to give the remainder of the British Fauna in the same manner, as we believe one great reason why zoology is not pursued with equal interest to its sister science, botany, is the want of works giving accurate descriptions of our native animals. In the point of "getting up" the work promises to be worthy the series of which it forms a part.

The Naturalists' Pocket Almanac (Van Voorst), is a poor affair, and unworthy its publisher. The idea of it is good; the execution bad. The plan of the book is to combine with a common Almanac monthly notices, Zoological and Botanical, to which the observer may add memoranda of his own upon interleaved paper. If these notes were copious and well selected, they would be interesting and useful; but their value depends essentially upon their copiousness. A few petty details are productive of no advantage to the reader. In the trifle before us they are meagre in the extreme. For example, the writer has not a word to say about the plants that flower in March, April, and June—the three months of the year most interesting to the accurate observer; and in May the most important fact that he announces is that the Lily of the Valley is in flower. Near the end is a meagre list of the periods at which a few common plants have been observed to flower for *four* years; but the list is far too short, and not all contrasted with the remarks of other observers elsewhere. In short, the Almanac seems intended for the special information of those who live in Epping Forest or its neighbourhood. The Entomological information is more copious and useful, as far as it goes; but it has the great fault of admitting a nomenclature so unusual in this country, that our best Entomologists are sometimes puzzled to know what the insects are to which the names belong. Almanacs are for popular purposes, and, to have any sort of utility, must be written in common language. Neither can we compliment the author upon his accuracy. There is no such Secretary of the Horticultural Society as Dr. Anderson; there is no such English plant as Whitehorn.

Miscellaneous.

Shanghae Trefoil (Medicago denticulata).—A fine broad-leaved variety of this plant was found by Mr. Fortune to be much used by the Chinese in the winter months as a vegetable. Afterwards they manure the rice-grounds with it—indeed it is often sown expressly for that purpose. It is, however, hardly to be expected that it should answer that purpose in England. We understand that the Horticultural Society have received a few seeds of the variety.

Defence of Speculation.—One would think that in thinking there were something wicked or else unwise; everybody feels or fancies a necessity of disclaiming it. "I am not given to speculation"—"I am no friend to theories." Speculation—theory—what is it but thinking? Can a man disclaim speculation—can he disclaim theory, without disclaiming thought? If they do not mean thought, they mean nothing; for unless it be a little more thought than ordinary, theory, speculation, mean nothing.—*Benthamiana.*

New Zealand.—We have just heard of a valuable case of plants received by a gentleman in this settlement, by the Theresa, which were packed in wet Moss without any soil at the roots, and soldered in tin. This mode of packing answers remarkably well, as every tree appears to be alive and healthy. Fruit trees may be thus obtained from England at considerably less cost than we have been accustomed to pay for them from the surrounding Colonies, besides the advantage of inquiring the best descriptions.—*Nelson Examiner, April* 27, 1844.——A Meeting of the Agricultural and Horticultural Society was held, C. E. Drewe, Esq., the Provincial Judge, in the Chair. It was moved by Mr. F. D. Bell, seconded by Mr. J. S. Tytler—That the cordial thanks of the Society be presented to James Robert Gowen, Esq., for the interest he has manifested in its proceedings, and for his kind exertions in procuring donations of plants and seeds for this settlement. The following gentlemen were elected officers for the ensuing year:—Patron, J. R. Gowen, Esq. At Nelson; President, W. Fox, Esq.; Vice-President, G. Duppa, Esq.; Treasurer, A. MacDonald, Esq.; Committee, Messrs. J. S. Tytler, Kerr, Redwood, Dillon, Elliott, Cautley, Domett, Mackhanie, A. Saunders, Brewer, Bell; Secretary, Mr. Cautley.——*July* 4.——I have paid every attention in my power to your recommendations. Trotter, the gardener, has ample employment in private gardens; he told me to-day, that he had seven days' work to perform in six working days in the week. My garden has progressed very much lately. We had nearly 100 fine ripe Peaches, and are now eating some tolerable Grapes. I believe I have four hives of Bees, but some have been deserted. I think the bees an excellent occasion for laying up a store for the winter, as there are flowers all the winter; but they swarm too often, sometimes four or five times in a season.—*Col. Wakefield.* (*Private Letter, July* 5, 1844.)

Botanic Garden, Calcutta.—Dr. Wallich has been directed to carry out all the changes in this establishment advocated by Mr. Griffith, who has quitted his charge of the garden and returned to Malacca; but I regret to say, that little has been done since Dr. W.'s return. Indeed, the last time I was in the garden all the new ground arranged by Mr. Griffith was overrun with weeds! The Agricultural Society of Calcutta has determined to attempt the introduction of all the valuable fruits of all tropical countries, for dispersion in India, and Sir L. Peel gives a prize gratuitously for fruit and flower exhibitions.

The Black Indigo.—We learn, by a letter from Mr. Griffith, that this substance, mentioned at p. 879, 1843, is procured from some species of Diospyrus, a plant of the order of Ebonies, and known for the blackness and hardness of the wood, and acerbity and astringency of the immature fruit. Mr. A. Robertson is said to be engaged on an analysis of the fruit, and in the meantime agrees that, in consequence of the general character for astringency of the family, it is probable that the black dye is not in itself a black dye. This is likewise suggested by the published analysis of the dye stuffs, in which iron was found. This species of Diospyrus Mr. Griffith suspects to be unpublished.

Florists' Flowers.—We understand that the North Country growers intend holding several Exhibitions at Mr. Wood's, of the Coppice, near Nottingham, during the coming summer, which are to be open to the growers of the United Kingdom, and of which advertisements will appear early in January next. The first will be of Tulips and Pansies; the former of which will be exhibited in stands of 6s or 12s; and the latter in stands of 12s or 24s. There will also be prizes for the best pans of Breeder Tulips. The second Show will consist of Carnations and Picotees, and from the impetus given to the cultivation of these beautiful flowers (by the Exhibition of last season), in the immediate neighbourhood of Nottingham, a spirited competition is expected.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

THE highest night temperature in the stove for this month should not exceed 60°, which may be maintained as long as the weather keeps open; should the weather, however, suddenly change to hard frost, do not strive to keep up this temperature by strong fires; 50° is high enough in very severe weather, and strong fires will be needed even to keep up that heat, so that in many cases water must be sprinkled over the paths, pipes, &c., to prevent the highly-dried air from injuring the plants. Strong stove climbers that do not blossom freely should now be root-pruned by cutting off some of their largest roots near the surface, or if they are to be taken up next spring and tried in boxes, this is a good time to begin to prepare them, not however, by cutting their roots, but by tracing one half of them to their extremities, and then placing them near the surface with some light compost thrown in amongst them; by the end of January these roots will have formed a fresh set of young fibres, and then the other half of the roots may be served after the same manner, but leaving the plant in the same place till later in the spring; this is a safe mode of treating plants that are to be removed from the borders of any of the houses, or for checking their luxuriance.

Conservatory.—Euphorbia jacquiniflora is an excellent conservatory plant while it is in blossom, but at other times it must have the stove treatment. Last season, about this time, I pruned some large plants of it, to see if by a little forcing in spring I could get them to flower early this winter, but the experiment failed in some measure; as soon as these plants began growing in spring, they also flowered on the young growth, but not satisfactorily, and now they are not more forward than others that flowered last Christmas, and that were pruned in January; these are now just beginning to flower, and by the middle of the month will be fully out. In another season or two this treatment, with the same plants, will bring them into blossom by the first week in December, and thus one of the best winter-flowering plants we possess may be had for the rooms or the conservatory for four months. The older the plants are, if they are kept in health, the earlier they can be brought into blossom, as they do not grow so freely; to get plants in this state, pieces of the oldest roots should be made into cuttings at potting-time, as Mr. Threlkeld has shown in a former Number.

Greenhouse, Pits, &c.—Such a season as this proves how useful temporary structures are for protecting greenhouse plants late in the autumn; the general plan is to cram all the pits and houses on the first appearance of frost in October, whereas almost all the plants of this division might yet be partially in the open air, and be much benefited by the treatment. For some families of plants—Pelargoniums, for instance—that are worked much out of season, contrivances of this sort are particularly useful. To have fine specimens of Pelargoniums in blossom in August and September, October is the best time to cut down the plants, and from that time till after Christmas they should be as much exposed in the open air as rain and frost will permit them; they will only be coming into leaf again, and after two months' protection in the greenhouse, &c. they may again be turned out into temporary pits to keep them back, and as the warm weather comes they may be placed under a north wall, &c.—*D. B.*

II.—FLORISTS' FLOWERS.

The Florist may now take breath. His Tulips are all safely in the ground and in a growing state, and comparatively speaking out of harm's way. He may now occasionally "overhaul" his collection by looking through his beds, when his favourite flowers will engage him with all their beauties to his fervent (poetical), we need not enlarge on his feelings, for those only who

have experienced them can appreciate how pleasurable they are The Carnation-grower's great care must now be to prepare his compost for next season (for most assuredly it will be a busy one) His turf must be turned often, very often, during the next three months, carefully picking out of it the Florist's plagues "the wire worm." The turf soil also must be shaken up and sweetened, and a proper quantity of thoroughly decomposed stable manure must be made sure of, let whatever other crop will, go without If he means to have large and fine flowers, he must not be too fastidious about manure, but it must be well rotten. Picotees are not so apt to become fat or as we call it, "ran," as Carnations, and they will, consequently bear a richer compost. Still, where Carnations and Picotees are grown for exhibition, one hundred pots might easily be cultivated at "high pressure," in order to win some of the prizes, which will be "thick as Blitherries" in the country next season, for those deservedly popular flowers *Pinks*—We have heard of many new sorts of these scented favourites both from north and south. We are told that Simmonds's Coronation, dark lace, and Burgess' Miss Jessop, black and white, are splendid flowers; the former having won several Cups in succession at Sheffield, till Bradshaw's Greenside carried off the palm this season Still we know that the Sheffield judgment and that of London are as yet as wide apart as the Antipodes Queen of Roses is not now to be obtained for "love or money" Headly's Duke of Northumberland is a 'clipper," and we are persuaded will become a general favourite, and the florist who has not yet got it had better make inquiry These, as well as Carnations and Picotees must be attended to now regularly The attention they want is comparatively trifling, but that little must not be neglected For other florists' flowers consult the Calendars of the last four weeks—*T F W*

IV.—PINERIES, VINERIES, &c.

Pineries—The weather of the last fortnight, having been dry, has been much in favour of Pines grown in pits heated by dung linings—not protected Have plenty of leaves and litter always in readiness to renew these linings, as one heavy shower will destroy the heat in those which have been long unturned The best plan is to make a rule of turning a portion of the linings every week On fine days dew the plants in the fruiting and succession pits heated by fire, with the syringe The atmosphere of dung pits will probably be sufficiently moist from the steam of the dung

Vineries—If the Vines started three weeks back are beginning to swell their buds be more careful to keep the temperature uniform—about 55 by night and 60 by day, must be maintained, allowing the house to rise to 70 with sun heat Long shoots should be bent down, so as to place the lowest buds uppermost, to cause them to break first, after which the rod may be gradually restored to its proper position You cannot keep too moist an atmosphere from this time till the Vines are in blossom Keep the soil of the outside borders at a temperature of about 70°, by covering it with leaves and litter as far as the roots extend Examine the inside borders occasionally and if dry, let them have a good soaking with liquid manure

Peach houses—Whenever you perceive the buds to be advancing, pay the strictest attention to the state of the atmosphere Give air when the sun raises the thermometer to 60°, and sprinkle the trees three times a day till nearly in bloom

Plants in Pits, now in bloom, should be assisted in setting by means of a camel hair brush Keep a temperature of 55 by night, and 65° by day If they are plunged, the bottom heat should not exceed 70°.

Strawberries—If Strawberries are required early a few may now be brought into a cool Vinery or a pit, the decayed leaves being first trimmed off, and a little of the top soil removed, and replaced with some fresh rich loam Wherever they are placed they should have gentle treatment at first, and all should be admitted freely every fine day—*G J*

V.—HARDY FRUIT AND KITCHEN GARDEN

Root pruning of Fruit trees now, in connection with Top pruning in Summer—In cases where several branches of a tree have become so luxuriant as to prevent a fair distribution of sap, or where altogether the growth has been so rampant as to prevent the formation of blossom buds, the cutting of the stronger roots, so as to check the too luxuriant branches, or the general pruning of the roots in cases of too vigorous though uniform growth, will be attended with advantage, inasmuch as vigorous growth and productive fruitfulness are severally effected by means directly the opposite of each other Though root pruning is now frequently referred to as something new it must be 15 or 16 years ago since I saw it resorted to by the late Mr Beattie, at Keene gardens, and I did not seem to think then that there was anything in it remarkable for novelty The practice frequently recommended, of cutting the roots every year or so, and then surrounding them with a trench of rich manure—though, I doubt not, attended with good results—possesses this anomalous feature, that the system owns the whole of its success to a perpetual doing and undoing; producing fertility by rendering the tree deficient in nourishment at one time, and supplying it with too much at another When trees are deficient in fertility from over luxuriance, the taking of the roots nearer the surface, giving no manure, but as mulching and attending to early and judicious summer pruning, we should prefer to a yearly mutilation of the roots unless in circumstances where it was desirable to have as many fruit bearing trees upon as small a space of land as possible Where the roots of Apples, Pears, &c are within from 9 to 18 inches of the surface, the trees may soon be deprived of extra luxuriance by judicious summer pruning, merely preserving as many leaves on the shoots as will insure a healthy action between the roots and the branches, and as few as will shade those buds at the base of the shoots and on small short spurs, that can only be reinforced fruitful by a free exposure to light and air In extreme cases, such as an old fine looking Pear-tree, that have become barren in the centre for want of feeding of the roots, and the supplying the tree with young wood, as previously recommended in the Calendar or as usually advised by Mr. Errington, would double it be attended with good results; but with trees of moderate age and equality of growth it will seldom be necessary unless in the case of trees of peculiar habit. Did I want anything to convince me of the utility of judicious shortening and thinning out the shoots (of Pear trees for example) in summer, it would be the sight of the fertile, healthy appearance of the Pear trees on the walls at the Horticultural Gardens, where, without having recourse either to root-pruning, or an annual laying in of young wood, the branches are studded all over with fruit buds close up to the stem

Celery—The present dry weather should be embraced for giving this useful vegetable its final earthing up. As we grow our crops chiefly in beds, and as our soil is apt to rust the Celery, I do not put on a great thickness of earth, but I think the beds up with tree leaves and any loose litter, putting them together when dry, and as lightly as possible, to keep them from forcing. The surface soon gets raked over, so as to entrude the most of the rain, and the frost is kept out and the Celery blanched by the same operation.—*R F*.

VI.—ARBORICULTURE.

Old Woods—As the weather still continues favourable for all operations of the season, every opportunity should be embraced for forwarding them.

Coppice—Now that the leaves have fallen, attend to the clearing of ditches, drains, and water courses; remove hedges, and plash the hedges where it is necessary, and forward all other work whenever the weather is favourable.

Young Plantations.—The planting of new ones, and carrying good fallowes in recently planted ones, should be prosecuted with as expeditiously as possible, when the weather is mild and the ground dry. It is best to keep the different sorts of oreat trees in masses or groups by themselves as much as possible, but this must be regulated according to the soil, situation &c Plant the kinds intended for permanent wood by themselves, intermixed with other suitable kinds as nurses, to be headed off, and kept low as undergrowth.

Nursery Work—The work to be done in this department, pointed out in previous Calendars, may still be proceeded with whenever the weather is favourable.—*W B*.

VII.—COTTAGERS' GARDENS.

This being about the best time for procuring a few Roses for the cottage garden, I would recommend those who are desirous of collecting a small group of good sorts to get the following which are mostly Perpetuals, or which flower from June until late in autumn, when frost puts an end to their beauty; viz., Bourbon, Acidalie, Bouquet de Flore, Duchess of Sutherland, P; Madame Laffay, P, Aubernon, Fulgare, P., Duc d'Athenle, Damask, Bernard, Crimson perpetual, Prince Charles, Boisgère, Goubault, Miss Sauvage, Comte de Paris, Triomphe de Luxembourg, Sylvain, Lady Fordwich, P; Lamarque, P, and Jeanne Desprez, P The above are all good, and are not expensive to buy Those marked P are well adapted for covering walls, or for training up pillars, &c. If planted in a bed they had better be placed in the centre, or wherever it is wished that the bed should be highest. China, Tea, and Noisette Roses, should be kept in pots until spring Other kinds may be planted with advantage about this season, when the weather is dry and not frosty The pruning of the Vine and other fruit-trees may now be proceeded with In pruning the Vine, cut out a portion of the old wood, especially where such can be replaced by well ripened shoots of last season All the young shoots should be more or less shortened according to their strength and maturity It is of no use to leave soft, unripe, or weak wood If left so thick as that the whole of the wall would be covered with foliage, the rays of the sun would be thereby prevented from heating the wall, and thus the latter would afford little assistance in ripening the crop It is, therefore, advisable to train thinly for by so doing the bunches will be larger and better ripened than could be obtained from crowded wood.—*J McH*

State of the Weather near London for the week ending Dec 5, 1844, as observed at the Horticultural Garden, Chiswick

Nov		Moon's Age	Barometer Max	Barometer Min	Barometer Mean	Thermometer Max	Thermometer Min	Thermometer Mean	Wind	Rain
Frid	29	19	30 138	29 978	30 058	46	37	41	S	—
Sat	30	20	30 116	30 011	30 063	48	34	41 0	N E	—
Sun	1	21	30 184	30 083	30 133	48	37	42 5	N E	—
Mon	2	22	30 261	30 200	30 230	47	37	42	N E	—
Tues	3	23	30 077	29 913	29 995	49	33	41 0	N E	—
Wed	4	24	30 284	30 178	30 231	49	32	41 0	N E	—
Thurs	5	25	30 111	30 009	30 060	55	46	50 5	N E	—
Average			30 161	30 059	30 110	49	36	43 1		—

Nov 29 Easterly Rare 1 ugly dense by cloud
— 30—Overcast bleak and cold cloudy slight frost
Dec 1—Overcast cloudy and cold dense by overcast
— 2 Overcast and cold thr gh out frosty at night
— 3—Densely overcast and cold
— 4—Cloudy and cold very fr st at night
— 5—Severe frost continuing throughout, set in after a week of constant N E wind

Mean temperature of the week 8 deg below the average

State of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Dec 14 1844

Dec		Average Highest Temp	Average Lowest Temp	Mean Temp	Number of hot Years in which Rain fell	Greatest Quantity of Rain	Prevailing Winds							
							M		A		M		E	
Sun	8	48 2	34 4	39 3	10	0 Min	1	1	2	—	2	5	1	1
Mon	9	47 1	33 3	40 2	9	0 26	2	2	1	1	1	3	0	1
Tues	10	46 0	36 0	41 0	6	0 20	—	3	2	1	2	1	1	2
Wed	11	46 0	34 8	40 4	7	0 08	—	1	1	—	5	4	4	—
Thur	12	46 0	37 5	39 1	7	0 9	1	—	—	—	4	6	5	1
Fri	13	47 8	35 4	41 1	6	0 16	1	—	—	—	1	4	—	1
Sat	14	46 0	33 8	39 9	9	0 19	3	2	—	—	2	5	4	1

The highest temperature during the above period occurred on the 14th, 1844, and the lowest on the 14th, 1840 therm 18

Notices to Correspondents.

AMERICAN BLIGHT—*M C L*—Your tree is devoured by this insect Wash it all over in the spring, as soon as the blight appears, with spirits of tar, applied with a stiff brush After a few weeks more will appear; repeat the application A little perseverance will soon rid you of this pest, which in the long run would kill your trees

APPLES—*Malum*—The following table and dessert Apples will probably be found suitable for walls in Cornwall, at a considerable elevation above the level of the sea, viz Court Pendu Plat, Dutch Mignonne, Herefordshire Pearmain, Adams's Pearmain, Reinette du Canada, Ribston Pippin, Summer Pippin, Dumelow's Seedling Blenheim Pippin, Bedfordshire Foundling, Mère de Menage The Early Harvest may be planted a an early sort against a north wall, but this situation is more proper for kitchen fruit ‖

BEES—*Aquarius*—We are endeavouring to organise an Apiarian department of our Paper, in which all matters relating to Bees shall be sufficiently treated of You shall have an answer to your inquiry next week

BOOKS—*Georgie*—"The Modern Gardener," by T. Price It may be purchased for 1s 6d——*T Austin*—We are not booksellers You must apply to the publishers

CARNATIONS—*Rose in Usbe*—Potter a liquid guano has been tried on Carnations in the spring, when in a growing state with great success After the layers have become established in their blowing pots is the proper time to apply it; we should decidedly object to manure in *any shape* being mixed with the soil in which the layers are wintered ‖—*B*

CHICORY—*D T*—When used in coffee it is not deleterious, quite the contrary; it certainly imparts, when used in moderation a fine flavour.

CUCUMBER PITS—*C H*—We have given so many directions already for all sorts of structures of this kind, that we can find little to add By all means let your sashes be of wood If you have iron bars you will never be able to use them. Certainly use the flank system, and hot water gutters, not oil or pipes, for bottom-heating

DISEASE—*A*—The production on leaves of Hardenbergia consists of a mass of elongated cells perpendicular to the plane of the leaf It is accompanied by a very minute Acarus, to which probably it owes its origin There is also an obscure mould on the surface of the little patches If produced by the Acarus, which is most likely, it is very probable that it may extend to neighbouring plants, but if the little mould be the cause, this is not likely to be the case. *M. S. B.*

GOOSEBERRIES—*Carolus*—The varieties of Gooseberries can be obtained generally correct from the Lancashire growers. Amongst several hundred varieties which were obtained from various authorities by the Horticultural Society, there was great confusion as regards synonyms and false sorts them selves, as in any other class of fruits.‖

INSECTS—*Querist*—Our advice would not be so serviceable to you as a perusal of the article on the Wireworm, in the last Number of the Royal Agricultural Journal.—*A Subscriber*.—It is, no doubt, nearly related to the red spider and akin to the Aphides. The best remedies you will find enumerated with many curious histories in vol. i, p. 184, and following, of the Journal.——*A Beginner*.—The worms you sent must be from the decomposing parts of the plants, but it is still wood-lice [illegible] your seedling Auriculas.

LAUREL, LEAVES OF—*E. V*—We presume that dilute prussic acid would answer the same purpose as Laurel leaves in destroying the fruit spider; but there is a difficulty in knowing what the degree of solution should be, and an objection in the expense. Laurel leaves cost nothing, and are very easily applied. We shall be anxious to hear the result of your experiment Your explanation of the supposed fact, if it be a fact, is doubtless correct. We would, however, suggest that the soil of Spain is much warmer in winter than that of England.

MILDEW.—*C. W.*, and *Abrahamy*.—It is by no means uncommon for Chrysanthemums, &c., to be attacked with mildew at this season, The best way to prevent it is to syringe the plants well with nitre dissolved in water at the rate of 1 oz to a gallon This should be done as soon as the mildew makes its appearance. ‖

NAMES OF FRUITS—*S. R P. Shilton*.—1, Probably Minchal Crab, 5, Bedfordshire Foundling; 6, Hollandbury; 9, Lobb's Pearmain; 11, Hall Door; 12, Hughes's Golden Pippin; 16, Beurré Diel, 17, now past its season, but very probably the Gravenstein, 18, Cordwall is the Rymer, 19, Eve Apple (of some), not the Red Margaret; 20, Pike's Pearmain is King of the Pippins, 23, probably Keswick Codlin; 26, Dutch Mignonne; 27, Dumelow's Seedling; 28, 29, Beurré de Capiaumont; 33, Franklin's Golden Pippin, 34, Glout Morceau; 37, Bargelona Pearmain, 7, 30, 31, 32, correct Of the Seedlings, No 4 is the best, and seems worthy of further trial; 18 deserves further notice ‖—*W D F*—The Pear cultivated in your neighbourhood under the name of Forme de Marie Louise, is the Marie Louise, the other is the Black Aubas ‖——*B, D, Grays*—A fine specimen of the Bishop's Thumb ‖——*M L*—1, White Doyenné; 2, Brown Beurré; 3, decayed. 4, Stagg's Nonpareil, 6, Hollandbury, 8, Gloria Mundi, 7, Downton; 9, Beauty of Kent, 10, 11, Famagusta; 12, Golden Noble ‖—*Subscriber*

NAMES OF PLANTS—*C. M'I*—Epiphyllum violaceum. 2, Zygopetalum crinitum, 3, Maxillaria picta 3, M. punctata. 4, Bifrenaria racemosa, 5, Oncidium sanguineum, a small variety We do not recognise the shrub——*A Subscriber*.—Some kind of Eugenia, and a stove plant——*I*—The plant is *probably* Lælia flava; but we will not speak positively without seeing its flowers We never fix values on plants.——*Anon*—Polypodium vulgare, and some Commelina, perhaps Angustifolia——*H B*—Perna coccinea

NURSERY GROUND AUCTION DUTY.—*F V A*—The products of a nursery ground sold, as stated, are not, we think, liable to auction duty—*W*.

PEARS—*I. B*—1 or Perry the Barland, Holmore, Oldfield, Huffcap, and Taunton Squash, are amongst the most approved varieties ‖——*W*—If you can send a specimen of the Pear called in your neighbourhood the "Slippery," it will be attended to ‖

PEAR TREES—*W*—In planting, it would have been better if the holes which were filled with good soil had not been dug so deep as to penetrate the stiff clay The roots have been, in consequence, led into the very substance which has doubtless occasioned canker in the shoots The sorts, Swan's Egg, and Autumn Bergamot, are, however, more liable to canker, when old than many others All you can do is to supply the roots with fresh rich compost, and graft with Marie Louise, Knight's Monarch, or Althorp Crassane ‖

PELARGONIUMS—*An Anxious Inquirer* keeps her Pelargoniums too wet at this time of the year They should have water very seldom

PLANTING FOREST TREES—*R F*—In preparing ground on the side of a hill for planting where the soil is composed in many places of 8 inches in depth of good earth on a bed of chalk, and strong earth mixed with flints only trench the ground to the depth of the good soil, mixing a small quantity of the chalk or stronger earth from the bottom with it during the operation The best trees for such a bleak situation as the side of a high hill in Dorsetshire, are Evergreen Oaks, Weymouth and Cluster Pines, Silver and Spruce Firs, Scarlet and other Thorns, common and other Maples, Catalpa, Yew, Chichester Elm, and common and Manna Ash ¶

POTATOES—*I G*—What it is in soil that determines the quality of Potatoes is unascertained Opinion seems to turn in favour of saline manure, or guano, and against farm yard dung, unless very fresh and strawy Some lands never bring Potatoes of good quality

SOIL—*A South of the Soil*—The sap of trees rises from the soil till it reaches the leaves, then, under the influence of light, it is very much changed, a great deal of the watery part flies off; the remainder is converted into organisable matter, which is returned downwards, and lodged among the tissue, where it becomes wood, or is employed in the formation of new leaves and flowers, or is stored up in the form of starch, sugar, resin, and other secretions A small part is perhaps given off by the roots, under particular circumstances; but this is probably a deranged function

SULPHATE OF AMMONIA—*G*—The person who sold you this salt for nitrate of ammonia was either a cheat or a blockhead. It may be used with advantage for Potatoes But is it, after all, sulphate of ammonia? A dealer who blunders one way may blunder in another We never heard of its being applied to florists flowers, the danger will be in its making them too rank It would be a great convenience if you would be so obliging as write *on one side only* of your paper. We can find no such statement about guano on 26th Oct as you refer to.

THE SEA—*A J*—This may be propagated freely by suckers or by seeds, the latter should be gathered in October, when the fruit is dead ripe, mixed with sand, and turned over two or three times in the course of the winter, and, if sown in February, they will probably come up in May ‡

TRANSMUTATION OF CORN—We observe in a French Journal that Mr Thomas Biggs has shown in Cork specimens of Wheat from each side of which perfect Oats have grown These specimens are said to have grown on the estate of Shippool, belonging to Captain Herrick Could any of our Irish friends inform us whether this story is true, and if it is, procure us a sight of these ears of corn? We should be infinitely obliged, and would return them carefully. If they were addressed to Dr Lindley, 21, Regent street, unpaid, they would be promptly attended to.

MISCELLANEOUS—*E O L*—Your Carnation from Naples is the common Dianthus plumarius. We apprehend that in this case no change has taken place, but that your friend has been deceived by the Neapolitan who sold him his roots.——*Querist*—Early sorts of Potatoes are best adapted for late planting The Beurré de Capiaumont is in perfection in October. It is a great bearer, but has not so rich a flavour as many others of the same season Oaks are best grown from the Acorn, without having been transplanted ‡——*E M W*—The Cotoneaster microphylla may be grafted with success on the common Hawthorn If grafted, it should be done in the spring, but if budded, the operation should be performed after midsummer ¶——*R. J. H*—The Royal George and Noblesse are suitable Peaches for forcing in pots If the wood of your Vines is well ripened, it is not necessary to cover the branches with hay ropes after the Vines are turned out of the house ‡——*A Lady*.—Blanket is a vegetable.‡——*Abridged*.—The vols. for 1843 and 1844 are the third and fourth.——*R S, &c*.—The manure of applying nitrate of tar for the purpose of killing American blight on wall trees, is to embalm the trees from the wall, and with a pin make a hole, of any made of matting, to point over every part of the tree affected, taking care to rub the material well into all crannies and cracks.‡——*A New Reader*.—Oil paint is too expensive for you, calich, which may be bought for about 8d. a pail, done over with limed oil, is better than the old plan of whitening paper with the same material for the purpose of excluding light, as the latter is very liable to be torn. Calich, prepared with the composition above described, has been found to answer as well. With regard to Mexican Aloe Hedges, it is one of the most valuable extant.‡

*** As usual, many communications have been received to-day and others are unavoidably deferred for the present from the pressure of matter.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—Dr. Lyon Playfair, C.B., Consulting Chemist to the Society, having kindly undertaken to deliver Two Lectures before the Members on the question of their country Journal Meeting, all Members will have the privilege of two additional tickets, to be obtained at the Office of the Society.

By Order of the Council,

12, Hanover-square, Dec. 4. JAMES HUDSON, Sec.

BURRIDGE AND HIS COOKING APPARATUS, combining Steaming, Roasting, Boiling, &c.—This Cooking Apparatus is believed to possess greater general advantages than any yet submitted to the public, both as regards strength of material and workmanship; in that, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus; and B. and H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. A Prospectus can be forwarded, upon application, detailing particulars and prices, to 139, Fleet street.

The Agricultural Gazette.

SATURDAY, DECEMBER 7, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Dec. 11—Agricultural Society of England.
— — Smithfield Club Exhibition.
THURSDAY, Dec. 12—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, Dec. 18—Agricultural Society of England.
THURSDAY, Dec. 19—Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

Dec. 10—Abergavenny.
Dec. 12—Richmondshire.
Grove Ferry.
Dec. 20—Wrentham.
Hicks Ferry.
Dec. 21—Rayleigh.
Dec. 21—Windsomb.

We have as yet received but few communications on the subject of our late remarks on FARMERS' CLUBS. We should feel exceedingly obliged if any of our readers living near the place of meeting of any such Society, would be kind enough to inquire of the Secretary if he has noticed our request, that information might be forwarded to our office of its name and place—of the days of its meetings for the ensuing year—of the subjects to be discussed on those days, if they have been determined on—of the subjects discussed during the past year, and of the resolutions arrived at on those subjects.

Of course, if any Society has determined on refusing the publication of these matters, we can have nothing further to say; only we are anxious that our request should at least be brought under the notice of all, and it can then be dealt with as may be thought proper. We believe, with many, that an attempt to centralise and connect or compare the now disjointed *dicta* of Farmers' Clubs would be beneficial. See page 769.

AMONG the many questions of interest which have been partially discussed at the agricultural meetings of the present year, is THE POLICY OF BREAKING UP INFERIOR PASTURE-LANDS.

The chief argument urged by the advocates of the proposal is, that such a change would give much additional employment at a time when it is much needed. With such a claim upon our notice, the question is certainly entitled to the fullest investigation. We are the more anxious, however, to enter into the merits of the case, because, up to the present period, the tenant farmer has universally been jealously restricted from adopting the system in *any* degree, or under any circumstances. Now, we are no friends to restrictions upon the good farmer, who is "up to the age," and who, endeavouring to get as much as he can from the soil, *gives* to it in the same proportion that he *takes* from it; at the same time, however, it must be conceded, that with the tenant-at-will they are, in some degree, *necessary* evils. The restriction alluded to, therefore, though in many cases it may be essential, in others is decidedly injurious; for, whether or not arable land be superior to pasture in creating profit and labour, there are unquestionably cases—many, too—in which lands that will not produce a *natural* crop, should be made to produce an *artificial* one.

The restriction we allude to is so universal, that the tenant farmer in but few cases ventures to question its propriety; and, indeed—so soon doth use breed habit, and habit mould the mind—many of our landowners also are convinced that it is *essential* to their interests, and ought, in all cases, to be preserved inviolate. No matter what the soil may be, whether it grows bad Grass or good, the tenant who should venture to suggest that he could pay his rent better, if allowed to cultivate and improve the whole of his naturally poor soils, instead of allowing one portion to remain in its originally unproductive condition, would often be looked upon with an eye of suspicion, and sometimes even be considered an agricultural pirate, whose design was to plunder the soil at the expense of its owner. A restriction like this, then, so general as to be applied to every description of soil, and under every sort of circumstance—a rule which ought to have so many exceptions, but which has been generally carried out with so few—cannot but have operated against the interests of agriculture. We therefore hail with pleasure the movement which has called for investigation into the principle upon which this restriction is founded; for whatever may be the merits of the practice proposed, it will doubtless be able to show sufficient to convince many that there are cases where that which they have hitherto denounced may be advantageously adopted by both landowner and occupier.

Upon these grounds—*i. e.*, in the hope of modifying a restriction which, when carried out without due discrimination, seriously retards the progress of agricultural improvements—we hold, that the general merits of the proposed system are worthy of special investigation.

To this inquiry we now proceed. In estimating the merits of any system of husbandry, it is essential to ascertain:—1st. The amount of *profit* arising from it—*i. e.* the balance left in the hands of the cultivator after the expenses of cultivation have been paid; 2d. The gross amount or value of the produce raised from the soil—*i. e.* its quantity and value without reference to its cost; 3d. The amount of employment it has given—*i. e.* the *proportion* of the expenses of cultivation absorbed in cost of labour—the gross sum which it has invested in employment. On the first blush of the question, it may appear that the *first* is the only important consideration, as upon the profits of cultivation depend the landowner's rent and the interest of the farmer's skill and capital. No matter, therefore, according to this view, what may be the *quantity* produced, or what may be the expense of labour; so long as the balance is sufficient, the system is a good one. It is true that the *profit* of cultivation, whether it arises from a large gross produce, or a small cost of production, is the first matter to be considered—upon this both the owner and cultivator depend—and if there were no other interests vested in the soil, it would justly engage our whole attention. The time, however, has gone by when a man can say that he has an *exclusive* right in landed property. He has the first claim upon it, because his capital is sunk in it; and, similarly, the tenant, according to his proportion of capital; but no further. Property has, it is acknowledged, its duties as well as its rights. "No man," said a late and lamented nobleman, "has a right to do wrong with his own." So in the cultivation of land we must not consider any system worthy of our acceptation, solely because it is a profitable one to the cultivator, and through him to the owner. Though the owner have the main interest in the soil, the country at large has also a claim upon it. If the owner have capital buried in it, the country affords that capital the protection of the law, secures it against all foreign or domestic interference, and in fact gives it a *convertible* and *actual* value. Capital would be useless lumber were it not that the wants of an industrious population afford a ready exchange for its produce. And, lastly, the soil is one portion of what constitutes "England," and it is incumbent upon each *part* of any body, to act so as to aid and benefit the *whole*. It cannot, however, require argument to show that *English soil* ought to minister as far as possible to the wants of *Englishmen*, or that a *duty* devolves on property, which cannot be shaken off or commuted—a duty to produce as *much* as possible for the benefit of those whose demand confers a value upon what would otherwise be valueless, and by whose constitutional union the proceeds are secured to their owner. Allowing, therefore, that the country has some right in the soil, and that its claim for as full a supply as possible of the necessaries of life is a valid one, it will be evident that the second question must be answered satisfactorily—and the quantity of produce as well as the net profit arising from any system of management, must be taken into consideration in estimating its value.

The next question—that of labour—depends on the grounds urged in the above case. If a country has a claim in the soil, every individual has also an interest in it. Individuals constitute a nation, and in its interests they have individually a share. "This, however," it will be said, "does not prevent us from producing *cheaply*. If we give you *quantity*, we do our duty to the country at large and to individuals; after that we surely have a right to make as good a balance for ourselves as possible." Undoubtedly; but before we balance our accounts we should pay all our liabilities; and one of these is to provide labour for the labourer: he has a right to demand this on the clearest grounds. If the nation has an *acquired* claim upon property from the fact of the benefits it has conferred on that property, the labourer has a stronger *natural* one, the title to which is patent to every well-informed conscience. This claim—the right to labour—is his inheritance,—it is, in fact, his *capital*, a profitable field for the investment of which he may rightly claim as his due. When, therefore, the rich man invests *his* capital in the soil, he does it with the knowledge that there is a mortgage upon it, and it is his duty in the first instance to satisfy the original creditor.* No system of cultivation, therefore, can be a good one, which neglects to provide employment for the labourer, but which obtains its profits from the interest which is due to him.†

But it is not merely on moral and equitable grounds that we are bound to look at the labour required by a method of cultivation before we can estimate its value—on *national grounds* the amount of employment *we* can give is of the utmost importance; the exigencies of a vast and increasing population can only be supplied by allowing the healthy and the able labourer to invest the only capital of which he is possessed—his physical energy. Of what avail will be the produce of a *great quantity* of food if we do not provide an *equal quantity* of employment to enable the labourer to obtain that food? For these reasons, therefore, we maintain that the merits of any system of cultivation depend not merely on *the profit to the cultivator and the quantity of food* which it produces, but also on *the quantity of employment it provides for the labourer.*

We shall next week test the merits of the arable and pasture system by these principles.—*H.*

* We need not here rest our case merely on moral grounds; the poor man has a legal right to maintenance by the land, as the rich will soon find who, by refusing him permission to work for it, makes him a pauper.

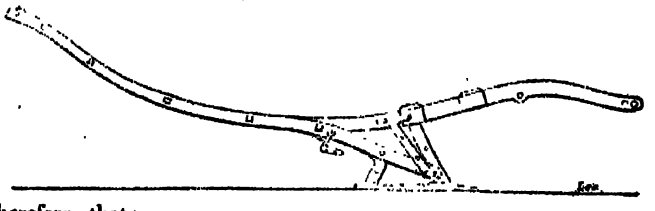
† See Professor Henslow's admirable letters on this subject, in the Suffolk papers of last month.

THE PLOUGH.

(*Continued from page* 802.)

THE frame-work of the plough must be regulated by the work to be done, so far as strength to sustain the tear and wear and the shocks of the roughest work is considered; but its dimensions, the length of the beam and the length of the stilts or handles, as they only affect or regulate the power which the man or the horse has over the implement, need not vary with the work to be performed. These are wholly independent of the consistence of the land to be ploughed, or of the form of the furrow-slice, which both vary, and their dimension may therefore be fixed; and amidst the immense variety of forms of the plough, it is satisfactory to know that this point, one so much affecting the appearance of the implement, need not vary. The length of the beam in some degree affects the power of the horse over the implement. If it be long, the straightness of the furrow evidently will be less affected by any oscillating deviations of the horse from the straight path, and the motion of the implement will be more regular. This, however, is as well insured by lengthening the draught-chain as by lengthening the beam. The longer the handles of the plough, and the shorter the beam in proportion, the more power will the man have over his implement. There are, however, limits to both of these points, which convenience in the length of the implement impose. Very excellent dimensions are those of the Scotch ploughs of Clarke and Fergusson, plough-makers of Stirlingshire (see woodcut). The length of the beam is in these ploughs 3 feet, and that of the handles is 5½ feet; that of the whole plough is 10½ feet, which leaves 21 inches for that part of the frame-work to which the body of the plough is attached.

The following is a sketch of the mere frame-work of their plough, on a scale of 1-36th:—

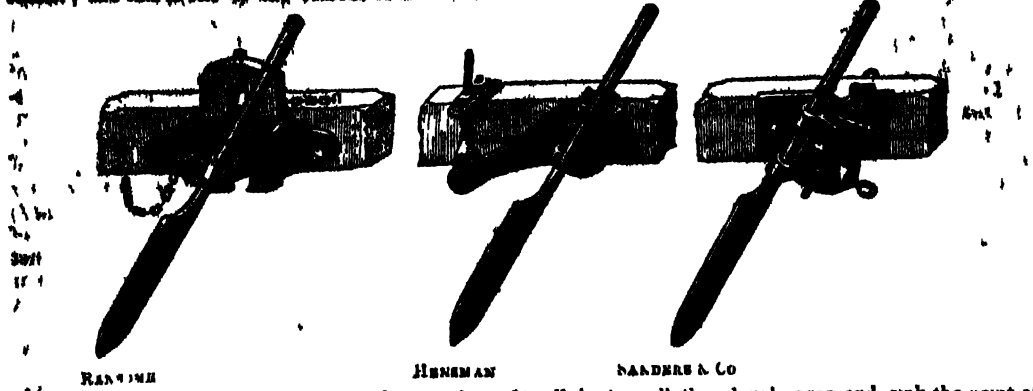


[Frame-work of Clarke's Plough. Scale 1-36th.]

The cutting parts of the plough are the share, which cuts horizontally the bottom of the slice, and the coulter, which cuts it vertically from the fast land, of which it forms part. It is evident that these should cut it perfectly. There should be no tearing when the mould-board begins to work. Any tearing must require an otherwise unnecessary exertion of power, and will increase the draught. In some districts an invention has been tried which does away altogether with the attachment of the coulter to the beam of the plough, and provides in its place a projecting edge, standing up from the sock on the vertical plane of the side of the plough, but inclining backwards towards the plough, at a considerable angle. This, of course, insured the perfect cutting of the sod; but it was found in practice that it encountered more obstruction, and was more liable to bend, or, if made of cast-metal, to break, than the common arrangement for the purpose: it was, therefore, abandoned. The relative position of the share and the coulter must, as we have already said, be such that they may cut a square-cornered sod. With regard to their actual position in the plough, it is obvious that the more inclined they are to their work, the more easily will it be accomplished. The cut will be more gradual—less abrupt. They should, therefore, be as much inclined to their work as is consistent with a convenient form of the plough.

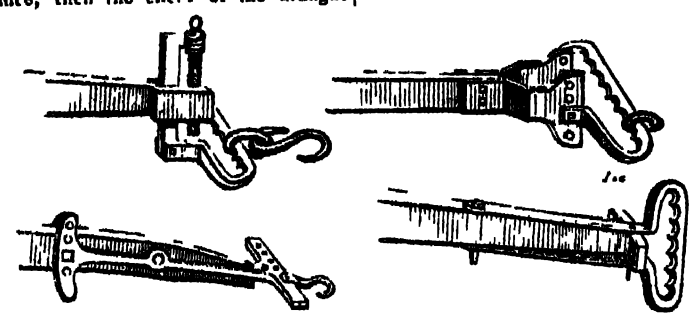
Now, it is evident that, though it may be necessary, when altering the dimensions of your furrow-slice, making the plough go deeper or shallower, or when going from one description of soil to another, as from a clayey to a strong soil, to alter the position of the share or of the coulter; yet there can, under no circumstances, be any necessity for an alteration in the form of those parts of the plough. Here, then, is another part of the

plough which may be employed. We shall find that of all the parts of the plough, the mould board alone will require to vary with the work to be done. There should, however, be a means of altering the position of the coulter, and this is one of the reasons of the failure of that which, as I have said, has been tried instead of it. Besides the common excellent method of effecting this by means of wedges, the subjoined are figures of three methods of doing this, adopted by various agricultural implement-makers in England:—



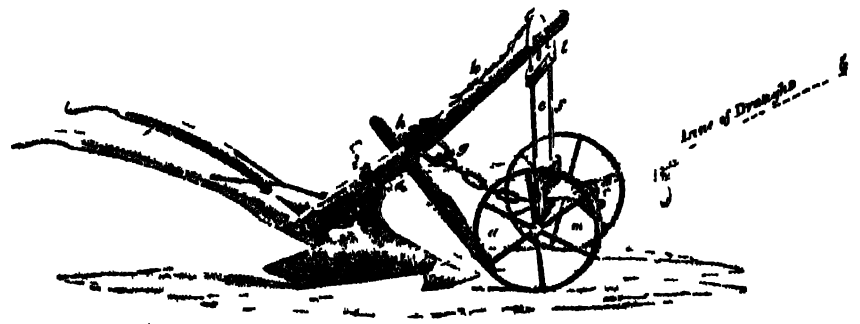
RANSOME HENSMAN SANDERS & CO

There are other means of regulating the position of the plough, according to the nature of its work, which should, perhaps, have been mentioned when the frame work of the plough was described. It is evident that the line drawn from the horses' shoulders, through the point of attachment of the draught-chains to the plough, must, if lengthened, pass through the centre of the resistance met with by the plough at work. Should it be otherwise—should the line so lengthened strike the mould-board at a point higher, for instance, than the centre of resistance, then the effect of the draught will be to pull the plough over, and sink the point of the share, till the implement, by increasing the depth of the land ploughed, has raised the centre of resistance higher up the mould board. Should it strike the mould board to the right or left of this centre, then the plough in the same manner, in order that this centre may be brought into the line of draught, will be forced to take a greater or less width of land. This is the way in which the means act which are adopted for altering the dimensions of the furrow-slice.



The bridle of the plough admits of the attachment of the draught chain to the plough being shifted to the right or left; and so it enables the ploughman to increase or diminish the width of his furrow, and the bridle, by means of a screw or otherwise (see annexed figures), may be elevated or depressed, and so the depth of the furrow may be increased or diminished. There is another and very simple way of altering the depth to which the plough runs, and this is by changing the position of the back band. It has been before seen that by the action of this part of the harness a portion of the draught is thrown on the back of the horse, and only a portion of it remains on its shoulders. By shifting the back band nearer to the plough, we increase the ascent of the line of draught and of course tend to raise the point of the plough, make it work shallower, and by placing it nearer the shoulders of the animal, the plough is allowed to go deeper.

From what has been said it is evident that the object of the beam of the plough is merely to furnish a rigid attachment of the draught chain to the implement. The centre of resistance on the surface of the mould-board is a given point—so also is the attachment of the draught chain to the hames at the horse's shoulder—the straight line between these is the line of draught, and the beam of the plough must be extended in front at such a height and to such a length as may be necessary to afford an attachment of the draught chains, in this line, to a rigid part of the implement above ground and out of the way of the coulter. This beam may be made, if such be the will of the farmer as high and complicated an affair as he pleases, provided only some rigid part of it be found in the line of draught before alluded to as a place of attachment for the draught chains. Of course the simplest form of beam, which will answer this purpose, is the best. All this is well illustrated in the subjoined figure, for which we have again to acknowledge the kind loan of Mr. Allen Ransome.



Any remarks on wheel or swing ploughs should be made here, but the subject is, as I believe, comparatively of little importance. The wheel was, doubtless added by those who thought it an improvement, and it probably compensated for their unskilfulness in its management, making, in fact, the implement manageable by boys instead of men. And this is a fair and influential consideration in favour of the wheel, but it is not likely to induce its adoption in districts where the swing plough is already in use, and where the skill necessary for its management already exists.—*M. S.*

EXPERIMENTS ON NUTRITION.

I do not venture to express an opinion on the rival theories of eminent chemists, on the question, *for instance*, Is the fat of animals derived from the ready-formed constituents of their food, or from fat previously existing in such food? I only hope that they will very soon lay their heads together and tell us, from repeated experiments what really is the fact, and whether fat already formed does actually exist in the food in the large proportion which the French chemists assert. The experiments of Boussingault, given in this Journal, Nov 23, are certainly of the kind calculated to bear strongly on the point, and it is, indeed, such as those that we should rejoice to see performed and repeated in every possible way, by the chemist of the Royal Agricultural Society of England, with the assistance of one or more practical feeders, and under the auspices of the Council of our National Society. Which intelligent member would begrudge one or two hundred pounds so expended? We could readily suggest a mode by which this amount could be saved or obtained, if the present income of the Society should not be sufficient. But, with regard to the experiments in question, though we hail them as important additions to our magazine of facts, and agree with one of the inferences drawn by the experimenter that Mangold Wurzel and Potatoes alone are an insufficient diet for milch cows—which, by the bye, we should have anticipated—and also that a diet may be insufficient from the absence or deficiency of either of the three constituents mentioned by Boussingault (provided his facts are correct), yet we are constrained to observe, that his experiments fail to establish what they are intended to prove. We find that both cows are taken from a hay diet, and put entirely on Mangold Wurzel, a diet not only entirely different from that to which the digestive organs of the cows had previously been accustomed, but one consisting of 90 per cent of water, and deficient in woody fibre, which is essential for the proper performance of the digestive functions, and more particularly required to give firmness to the stercal, in order to fit it for ruminution. Such a diet, we hesitate not to assert, is calculated to derange the digestive organs, and interrupt the proper performance of their functions; and when this is the case, we may look in vain for the results which would otherwise occur. That this was the case the result proved, for the cows, we are told, were greatly emaciated—a result, putting chemistry out of the question, which no one can feel surprised at. And as this debilitated state was gradually induced, the digestive organs must have been gradually weakened, and must have failed in extracting the same amount of nourishment as before. The experimenter appears to have regarded animals as mere machines, and to have looked to chemistry alone, forgetting altogether that there was such a science as physiology in existence. Suppose that, in order to test the nutritious qualities of grain, we were to keep a horse entirely on Beans, what would be the result? Why, the animal would soon become emaciated and diseased, or if Oatmeal alone constituted the food, purging and debility would quickly supervene. Even if Oats alone were given whole, in which case the husk would, to a certain extent, counteract the laxative qualities of the meal, the horse would still lose flesh though an unlimited quantity of grain were afforded. To these facts the chemist will, perhaps, reply, "Oh! they only show that these different articles of food are deficient in some constituent necessary for the support of the animal." This may be true to a certain extent, but to a certain extent alone; for it is by no means sufficient that the food should contain the elements required for nourishing the body, but they must also be arranged in that peculiar manner and proportion which the structure and economy of the animal requires. If this were not the case, the excrements of the body would be proper for food, seeing that they contain the necessary elements of nutrition. The natural pasturage of the field either in its crude or prepared state, appears to be almost the only food that can be taken by animals with advantage, unmixed with any other diet. But then we must bear in mind that it consists of a variety of plants, and it is not only chemically sufficient for nutrition, but it contains that amount of woody fibre essential for the function of digestion, though not entering into the system itself. Thus herbivorous animals, having very capacious digestive organs, require their food to be of a bulky form, and of such a consistence that it will stay long enough in the body for the elements of nutrition to be properly extracted from it. Now it appears to us that M. Boussingault would have accomplished the purpose he sought to obtain by his experiment—*i. e.* the discovery of truth—far better if he had, instead of confining his cows entirely to roots, given a certain amount, or as much as they pleased to eat, of hay or good sweet straw at the same time. The health of the cows would thus have been preserved, and as the quantity of dry food could have been readily ascertained, its analysis being known, not only would the facts sought for by M. Boussingault have been discovered, but the relative value of Mangold Wurzel as food for milch cows would have been ascertained, which assuredly has not been done by the experiments referred to. We must, as we have before observed, leave the conflicting theories, as to whether the fat of animals is derived from any other elements than the fatty matters already formed in vegetables, to Messrs. Boussingault, Dumas, Liebig, and Playfair, simply observing that we shall not at all be surprised to find that the truth will be found to lie somewhere between the two conflicting opinions. One fact, however, we must mention, and it is somewhat opposed to the theories of the two former chemists. We are all acquainted with the fattening qualities of Barleymeal, particularly for pigs; we know that it is greatly superior to Oatmeal, and, indeed, any other food. Now if we turn to the analytical tables of Mr. Johnston we find that Oats contain 5·6 per cent. of fatty matter, whilst Barley only possesses 2·5 per cent. Now this certainly militates strongly against the opinions of the French chemists; and although we are at once ready to concede that the fatty matter in the vegetable becomes fatty matter in the animal, yet we are disposed to ask, Whence can the superior fattening properties of Barley be derived, unless it be the starch, gum, and sugar, of which there are 10 per cent. more in Barley than in Oats; the former having 60 per cent. and the latter only 50 per cent? With these observations we leave the subject for the present, observing in conclusion, that we do hope that under the direction and by the assistance of the Royal Agricultural Society of England, a number of experiments will be instituted in order to decide the many difficult questions relating to the feeding and fattening of animals, and the nutritive qualities of various articles of food. Private experiments entail more trouble and expense than private individuals are able to devote to the subject, and when they are published they do not appear with the sanction of authority.—*H. C. Spooner, Southampton.*

TREATMENT OF FARM HORSES AND LIVE STOCK.

Ask a farmer if he prefers for his own use a clean dry bed to a wet and rotten dung-heap? Ask him if cleanliness in place and person, with proper ventilation, is not conducive to his health? Ask him if his food, nicely cooked and prepared, is not more agreeable to him than if raw and dirty? Ask him if he likes cool residence in summer and a warm one in winter? He will say, certainly, and laugh at you in the bargain, and yet he will not consider, that what is good and agreeable

for himself, is quite as much so for his cattle. What would farmers say, if, after a hard day's work, they were obliged to walk ten miles for a supper, and the same next morning for breakfast—losing six hours' rest, and adding 20 per cent. to their labour? and yet this is how they treat their horses daily. It seems too ridiculous to be reiterated. I object entirely to turning horses out to have pasture at all; in our midland and southern districts, the waste of food and manure is enormous. If a horse is turned out 30 days on an acre, it is equal to 30 horses one day, or 40 horses half a day. Imagine what they must destroy—their weight crushes and injures an amazing quantity of food. It may be said, "Oh, the blades rise again next morning." Yes, but with this constant treading do they grow as fast and as luxuriant as if allowed to remain undisturbed and erect?—a foot-path or rabbit-run in a Grass-field will convince you. Then, where the droppings are, the food is lost; supposing the droppings and urine to cover and taint four square yards per day, that is 130 per month, or 3 per cent. per month. It is, in fact, 36*l.* lost in every 100*l.* per annum. The only excuse for depasturing is the imperfect state of the farm-yard, which allows the best part of the manure to be wasted.

Again, as to manure, there it lies in hot sunshine and bleaching winds, till it almost becomes its original straw-colour, losing its ammonia and other gases; and what, perhaps, is of more consequence than all, deprived of the benefits of fermentation which it would receive in a well-arranged tank. Supposing a horse's liquid and solid manure to be 1 cwt. per day, or 18 tons per annum, we lose one-third that quantity. In fact, it is not too much to say, that in the amount of labour the horse performs, his keep and manure, we can, by manger-feeding on my principle, save 30*l.* or 40*l.* out of every 100*l.* This is enormous!

Well may our great manufacturers, who consider a difference of 1 per cent. a good profit, exclaim against the want of calculation and management in farmers. Sincere friend as I am to the agriculturists, I admit, with shame, they deserve the censure bestowed on them in this respect. I call upon them to make at once honourable amends, by adopting my plan, and so save their money and their reputation. The idea of a man having 40 horses, costing him 1500*l.* per annum, and refusing to save 400*l.* or 500*l.* per annum in their keep, manure, and labour, is absurd; it is paying preposterously for the maintenance of prejudice or obstinacy, and yet, I am afraid there are some who will do so rather than act on my suggestions. There are other inconveniences and dangers attending depasturing horses—frequent kicks and accidents, loss of time in catching them, broken knees in driving home, and injury to constitution by sudden atmospheric changes. Besides, no horses fed entirely on green food can undergo the labour of those manger-fed on mixed food. Green food does not afford sufficient material for muscle and bone. It is too washy. I object *in toto* to permanent pasture, as a positive individual and national loss. Clovers are useful—but you cannot thoroughly hoe and clean the land when they are sown with a Corn-crop. Lucerne (and Sainfoin) is my favourite, and you can grow it anywhere* if you keep it clean, supply it amply with lime and its constituent parts, drain very deep (not less than 5 or 6 feet), and protect it from frost in the winter by a strong coating of manure, with a dust of guano in summer. Tares on heavy land, and Rye on light land, are both profitable; and plenty of Potatoes, Swedes, Carrots, &c., which can be grown on any land, however heavy, boggy, sandy, or gravelly, if thoroughly drained, properly manured, and deeply cultivated. By these means you may keep more than twice as much stock as by permanent Grass.

Were we to treat our bullocks and our sheep as we do ourselves and our riding-horses—keep them clean, warm, dry, and well fed—we should strangely increase the quantity and quality of our animal food.

Let us imagine ourselves standing or lying day and night for months in the moisture and effluvia of our own accumulated excrements, uncleaned and ill fed; it won't bear thinking of, and yet this is how most farmers treat their cattle: their food is presented to them in large unmanageable masses, with abundance of dirt (a corrector of acid it is called) uncooked and unprepared. We need not wonder at having to stab our bullocks to let out the accumulation of windy flatulence, or forcing strange-looking machines down their throats to remove solid lumps of unmasticated roots; we need not wonder at foot-rot, fevered feet, or other complaints. I will lay it down as an indisputable fact, as proved by our greatest breeders of animals, that we must apply to them the same treatment as we would to ourselves, if we wish to render them profitable. It is high time we amended our absurdities in this respect, or we shall have Spain, Portugal, and other warm and genial climes stocking us with what we ought to produce ourselves. Let us keep them warm in winter and cool in summer—free from tormenting flies. In fact, I shall never consider we are perfect till we can keep up a given warmth in winter—whilst we have in summer cool and shaded paved yards.
—*I. J., Meabi, 4, Leadenhall-street.*

(*To be continued.*)

ON MINERAL AND INORGANIC MANURES.

No. XXX.

By Professor Charles Sprengel.

(*Continued from page* 803.)

e. Ashes of Corn-stubbles.—If fields on which grain has been grown be ploughed shallow, and then harrowed, the stubbles, roots of weeds, &c., are brought to the surface; they are then raked together, and burnt in heaps, and the ashes strewed about. These ashes do not possess any particular value, as may be seen from analyses of straw, previously stated; their quantity also is so inconsiderable, that they are not worth attention. In the south, where they want less straw, the stubbles are left several feet high, and afterwards burnt on the spot. In this case the advantage is derived from the heating of the soil, and the destruction of vermin, as the value of these ashes as a manure is very trifling; 100 lbs. straw yield, at an average, only 4 lbs. of ashes, the half of which (as we have seen before) consists of silica.

f. Ashes of Brown Coal.—Pure brown coal yields ashes, which, according to all experience, are but poor manure. The reason is, that they consist merely of silica, alumina, and oxides of iron, and that most soils contain of these substances as much as crops ever require. As the ashes of pure brown coal contain neither potash, soda, chlorine, nor lime, magnesia, sulphuric and phosphoric acid, this may serve us as a proof that the fertilising properties of inorganic substances chiefly depend on the just-named seven substances. At times, however, brown coals contain sulphuret of iron, and whenever this is the case, they will yield ashes, which (if applied in proper quantity) are a very superior manure; because the sulphuret of iron will soon be changed into sulphate of iron, which, as we shall see presently, acts like gypsum. How many pounds are to be used per acre, experience only or chemical analysis can tell, as this depends upon their quantity of sulphate of iron, which varies. In Belgium, and other countries, 1000 lbs. to 1200 lbs. are strewed on one acre, which would indicate that it cannot contain much of the last, as 50 lbs. to 60 lbs. of that substance are an abundant manure for one acre of land. It is possible, however, that these ashes contain, besides sulphate already formed, also a considerable amount of sulphuret of iron, which would improve the soil for several years, as the changing of the latter substance into the sulphate takes place gradually. In the above countries, ashes of brown coal are used for manuring Rape, Clover, &c., the results being always most satisfactory.

g. Ashes of Coal.—Although the ashes of coal consist generally only of silica, alumina, and oxide of iron, still some are found which contain a little carbonate of lime, sulphate of potash, gypsum, and sulphate of iron. In the latter case, they are always a powerful manure; whilst, if merely composed of the three former substances, they are quite valueless, unless the protoxide of iron were to form ammonia, which, however, is yet to be ascertained by experiment. In the duchy of Luxembourg and on the Rhine, ashes of coal are used, with the very best result, for the rearing of Flax, Peas, Clovers, Beans, and Rape; they bear 1000 to 1200 lbs. on the acre, whence it may appear that these ashes contain gypsum or sulphate of iron. Both the ashes of coal and brown coal will also yield a superior manure for meadows, if they contain these salts. In Belgium, the ashes of coal and brown coal are often mixed with pig manure, and the compound is strewed over Clover, &c., which, as a matter of course, succeeds admirably. By using considerable quantities of coal, or brown coal ashes, though they contain neither sulphuret nor sulphate of iron, stiff clayey soils may be improved physically in a considerable degree: they are thereby loosened. It is still more important, that by a great amount of ashes, which contain much of these salts, the deep-rooted weeds may be destroyed, if the ashes be ploughed under to the depth of 16 or 18 inches. After the use of coal, or brown coal ashes, containing sulphate of iron, many sorts of vermin, especially snails, will disappear.

* Some regard, however, must be had to climate; I suppose our northern districts and hills are hardly mild enough for such productions.

Home Correspondence.

Tottenham Garden Allotment Society.—I send you a copy of the second half-yearly Report of the Committee of this Society, to deal with as you may think proper. In a late Number of your Paper is an article on the Allotment system, by "E. G. H.," referring more particularly to the Bill of the Honourable William Cowper, laid before Parliament towards the close of the last session, copies of which are now on sale at Hansard's, Great Turnstile, at 2*d.* each. I mention this circumstance, imagining that many who read your Paper may be anxious to procure a copy. "E. G. H.," after several common-place, ill-natured observations, such as "hoping the Bill may remain on the table of the House for ever"—"subject not adapted for legislation"—"proposition, if carried, will strike a death-blow at the system"—"labourers have their full share of mother-wit and suspicion"—"whatever we propose for bettering their condition must, on its very outface, display the absence of self-interested motives, or the labourers will attempt to defeat us"—then gives his own not very charitable interpretation of the Bill: "Now it appears to me, that this Bill of Mr. Cowper's, on the face of it, provides a very fertile source of such suspicion, for it proposes to enact, that any surplus arising after the discharge of all expenses shall be paid over to the overseer, in aid of the poor-rates," and refers to sec. 25, for proof of his assertion. Now "E. G. H." ought to have known, that it proposes that the field-garden wardens shall have power to take land belonging to any parish, or to the churchwardens and overseer, or guardians of the poor, or to the poor of each such parish (sec. 9), *the rent* of which land when let to the labouring poor (the Bill provides) shall, after payment of expenses, be paid over to the overseers, in aid of the poor-rates; and if there should at any time be a surplus from the other sources of rent specified in the Bill, which is not probable, the same also is to go in aid of the poor-rates. Now, if such surplus rents are not to be paid over to the overseers, to whom does "E. G. H." think they ought to be paid? or would he have the land let to a few poor persons free of rent, to the prejudice of the many? Then "E. G. H." has an illiberal fling at committees and committees, sub-committees, treasurers, secretaries, and collectors in general, just as if Mr. Cowper's Bill proposed to have one or all of these officials. Mr. Cowper's Bill does not provide for the services of either the one or the other of them. And now for "E. G. H.'s" grand panacea:—"The best method of getting the system into general action, is to leave it as free and unfettered as possible; let it spring from the spontaneous desire on the part of the owners of property, whether lay or clerical, to benefit their poorer neighbours according to their own knowledge of their wants and the best means of applying it, without the interference of rate-payers or any officials whatever." Now, let me ask, does Mr. Cowper's Bill interfere with that freedom? Mr. Cowper's Bill is an enabling measure, and not compulsory in any case, leaving to the majority of landowners and occupiers, in each parish or place, the power of adopting the measure or not as they may think proper; and when adopted, the landowners and occupiers rated above 10*l.* a-year to the poor are to choose two of the wardens; and the owners and occupiers of houses rated below 10*l.* a-year are to choose the other two, the resident minister being ex-officio the fifth warden, than which a more equitable mode of appointment it is impossible to imagine. At last we do get a bit of common sense, and "E. G. H." shall have the full benefit of it:—"The best method for insuring good cultivation, is affixing a rent which, *primâ facie*, may appear rather a high one, but which (when it is borne in mind that allotments are small, and all good land, generally near to the occupier's residence; and that there is no averaging of good and bad land, of long and short distances, for expense of cultivation; and that, as is well known, under the spade, land will throw out an enormously increased produce) will only appear to be a fair remuneration for expenses incurred, and accommodation afforded, while it tends to insure active exertion in their cultivation." So far so good; but alas! our differences are not all over. "E. G. H." would give none of the advantages of the system to any but persons of known good character and conduct; I, on the contrary, would not exclude any, good or bad; and the Society formed in this parish act on that principle, and with the best results, as the following *illustration* will show:—A gentleman at the head of the Temperance movement in this parish, and who is also a member of the Garden Allotment Society, at the last half-yearly meeting of the Society in the gardens said, he had tried every method to induce a certain person (naming him) to give up his drunken habits, but in vain; he had not seen him lately—indeed, for several months he had lost sight of him altogether. I observed—"Do you see that man carrying a watering-pot?" at the same time pointing towards him. "Oh yes," said he; "that is the man." I replied, "That man is earlier and later, and more constantly at work on his allotment than any tenant we have; and I have never once seen him, since he has been here, the worse for liquor." The gentleman, reflecting for a moment, exclaimed, "Yes, yes, that is the true cure; it is clear the man wanted employment for his leisure hours;" and then, in his usual good-natured manner, smilingly added, "Henceforth let us work together: I will continue to give them good advice, and do you find them pleasureable and profitable employment, and a great moral improvement is sure to follow." Before I conclude I will just remind "E. G. H." that he might have given Mr. Cowper credit for important matters which his Bill contains, besides those referred to, viz., that of enabling trustees and others who have or who may hereafter let land in small allotments to the labouring poor, to recover the rent and also regain the possession of the land by a summary process, instead of by the round-about expensive way in which either could now be obtained, especially since the passing of Lord Brougham's non-imprisonment Bill for small sums. In illustration, I will just state shortly a case, in which I was some time since engaged as surveyor, to show what allotment tenants may do, if disposed to set their landlords at defiance. A close of land of eleven acres was, some years since, divided into 88 gardens, the rent 1*s.* per pole, or 8*l.* per acre; three acres of this land were lately required for the site of a church, for which 500*l.* per acre was to have been paid; the owner was about to give the usual notice to the tenants to quit their gardens; they combined and resisted; their claims for compensation were so enormously high that it became necessary to abandon the treaty, nor could the Archbishop of York nor the church-building Commissioners assist us, and to this day have the tenants retained the possession of the land. To oust them would cost nearly the fee-simple of the close, as 88 actions of ejectment would have to be brought, with the certainty of the landlord's having to pay the costs on both sides, on account of the poverty of the tenants, and hence the unwillingness of many landowners to let their land in garden allotments. This evil Mr. Cowper's Bill will remedy, by providing a summary process in both cases to meet the evils complained of. I have now had twenty years' experience extensively in the management of allotment gardens, and, notwithstanding the difficulties which I have had to encounter, I have found the good preponderate so much over the evil, that I have never for a moment regretted the money and time I have spent in assisting my excellent neighbours to extend the system. In this parish we have now more than 130

gardens, under the management partly of trustees and partly a committee, consisting of some of the wealthiest and most worthy of our parishioners, headed by the Rev. the Vicar, and the amount of good that has resulted from the adoption of the system no language can adequately describe.—*J. D., Twickenham, Nov.* 18. The following are extracts from the Report referred to:—"Your committee have not been unmindful of events connected with the allotment system that have taken place in and out of Parliament since the formation of this Society, confirming as they do in the fullest manner that which your committee never doubted, viz., that larger allotments than the labourer and his family can cultivate, without trespassing upon his paid labour, was an evil, and ought to be discouraged; and hence, in no case, ought any allotment to exceed one-fourth part of an acre. But your committee cannot agree with the declaration of a noble earl, lately published in the *Economist Journal*, that the allotment system, by giving partial employment to surplus labour at home, prevents emigration to the manufacturing districts, and therefore ought to be discouraged; because it is against reason and humanity that emigration should be forced upon the labouring poor whilst beneficial employment can be obtained at home, and only requires the assistance which an allotment garden will furnish to make them contented and happy."—"Your committee have seen with great pleasure a bill prepared by the Hon. Wm. Cowper and Wm. Miles, Esq., M.P., intituled 'A Bill to promote the letting of Field Gardens to the Labouring Poor,' the provisions of which appear admirably calculated to secure the object contemplated, viz., an extension of the garden allotment system upon just principles; to promote which your committee trust they shall have your approval, and the approbation of all the parishioners, to petitions proposed to be presented to both houses of Parliament in the next session, which the hon. secretary will prepare in favour of this Bill, under the superintendence of your committee."—*Jas. Dean, Hon. Sec.*

Irrigation.—Having read many of your articles on draining, and perceiving that great progress has been made and is still making in this process, I have been led to think it a pity that the opposite operation of irrigation could not receive some attention. It has occurred to me that these very drains might be turned to account in an attempt at introducing irrigation. I am no agriculturist, and have therefore to inquire if there is not sufficient water drawn off the field by these channels, which, if allowed to accumulate in a subterranean tank, might again, by simple and inexpensive machinery, be redistributed to the land during the droughts of summer. You could have the underground reservoir of any size; but, as I have already hinted, I fear the water collected during winter will be insufficient to counteract, to any great extent, the bad effects of dry weather.—*Anonymous.* [Probably, less water, under the same circumstances, runs off a field after being drained than before it was drained. The tendency of the operation is to cause all water that falls on it to pass *through* it, instead of running away *over* it. Drainage tends in various ways to the pulverisation of the soil, and thus makes it more retentive of moisture: well-drained land is rarely injured by drought; undrained land in dry weather cracks, and lets the dry air and heat into the very heart of the soil. Well-pulverised land, though of course, under the influence of heat, has the same tendency to contract and crack; but, the soil being loose, no cracks can appear; and thus the drought, acting only on the surface, is less injurious.]

Clover Dodder.—Absence from home having prevented me from reading some of the Numbers of the *Agricultural Gazette* until now, the Leader concerning Clover Dodder (p. 625) has only just met my eye. In it I find a statement that the seed of this destructive weed was probably introduced from Cabul with seed of Trefoil; and, as this observation is likely to mislead the readers of the *Gazette*, I think it right to state that the Dodder obtained from Cabul is a totally different species, the structure of its flowers being very different from that now destroying Clover in England. From rather extensive inquiries, I have every reason to believe that the Clover Dodder (*Cuscuta trifolii*, Bab.) is imported from the continent of Europe with the seed of Clover; but I have not been able to get such exact information as to prove it. I wish that the farmer would note down the day on which he buys his Clover-seed, and the name of the wholesale dealer from whom it is obtained; also its British or Foreign origin; and, in the latter case, learn, if he can, the country from which it is imported. When the Dodder occurs in the field, we shall know to what country to look for its origin, and may guard against it in future. In the spring I asked for similar information, but have obtained none. The Cabul Dodder is the *Cuscuta approximata* (Bab.), and both it and C. trifolii are quite different from the C. europæa, C. epithymum, and the Flax Dodder, C. epilinum.—*Charles C. Babington, St. John's College, Cambridge, Nov.* 30.

Linseed.—Seeing several communications on this subject in your Paper for the last five or six weeks, and not finding it anywhere stated that the Linseed can be ground by a common miller without any other than the usual stones employed by millers, if the miller adds an equal quantity of bran to the Linseed, I beg to apprise your readers of this fact, as some parties may be deterred from using this useful compound, by the supposition that they require a mill on purpose to crush the Linseed. I have fatted three bullocks on compound made of Beans and Linseed ground with bran at the mill, and found it answer very well, and the bullocks eat it with avidity; the proportions I used were three measures of Bean-meal to two of the Linseed-meal and bran when mixed, with water sufficient to make it into the consistence of stiff dough. I am now trying the compound made of Barley-straw chaff and cut Beet-leaves in the way mentioned by your correspondent in last Saturday's Paper, with my ponies and cows, and hope to send you the result of this kind of feeding with such stock. If it answers, it will tend to increase the manure heap, as the leaves of Turnips and Beet are very often left to rot in the fields, which is not the best way of making the most of them as a manure. If you think this worthy of insertion I shall have much pleasure in sending you it.—*T. E. W.*

Pigs.—I have a sow which had eight pigs; six of these I penned up by themselves in half of a cowshed to fatten, and they are doing very well. Two sow-pigs I kept with the mother for the purpose of breeding from: besides having a small piece of the cowhouse to themselves, they had a small square piece in the open air in front. As this open part was very damp, I tried to make asphalte of boiled tar and gravel, but the tar not having been boiled long enough remained soft, and over it some litter was spread. Having been away from home I was vexed to learn that one of my little sows had died in my absence, and on the morning after my arrival home I heard the other had been ailing some days—in fact the butcher put it out of its troubles before the day was over. Upon being opened the livers of both were found much inflamed, and the meat soon began to turn green. I ought to say that from the great rain we have had lately, the outside space of litter, tar, &c., was quite in a swamp, though their house was dry. Will you be so good as to tell me how to account for their deaths? Could it be the damp, or had the tar anything to do with it? as I purposed flooring a pig-stye with asphalte. I should say my brother tells me that he has lately lost three pigs of inflammation of the liver, and that his styes are dry; mine have been fed on oatmeal and wash. What is the best medicine for them?—*Northwood.* [We believe the disease in your pigs is to be attributed to the swampy place they were allowed to remain in. The tar could have had nothing to do with the matter. We do not think you have any reason to fear using asphalte for the floor of your pigstye, if properly prepared and allowed to get firm before it is made use of. With regard to a remedy for the disease of the liver, the following will be most likely to prove effectual:—Protochloride of mercury, 2 grains; powdered opium, 2 grains for a porker, and double the dose for a large pig. To be mixed in thick gruel and given once a day.—*W. C. S.*

Waste and Destruction of Fences.—Although a tenant from year to year is not bound to put premises in repair, he is not, on the other hand, at liberty to do anything which amounts to waste, or to a breach of the rules of good husbandry; he is not, therefore, entitled to cut and sell hedge-rows, or at least not without making up the hedges and fences according to the course of good husbandry. If there be a quickset fence of Whitethorn, if the tenant stub it up or suffer it to be destroyed, this is destruction; but cutting up quicksets is not waste, if it preserves the spring.—So decided in Gage v. Smith.—*A. Quiet Observer.*

Irrigation.—In this neighbourhood the usual method of irrigating meadows is to stop up every drain and to flood the land with water. Would it not be better to let every drain be open, so that the water might, as rapidly as possible, percolate through the soil? [Certainly]. Here also it is customary to let it remain on for some days; would it not be the best to allow it to remain on only for a short time, say 24 hours, and then let it get well drained before another application?—*A Leicestershire Farmer.* [The proper period depends upon the weather and time of the year].

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover-square, on Wednesday last, the 4th of December; present—His Grace the Duke of Richmond, President, in the chair; the Rt. Hon. Earl Spencer, Hon. Capt. Spencer; T. R. Barker, Esq.; S. Bennett, Esq.; J. F. Burke, Esq.; Col. Challoner; F. C. Cherry, Esq.; H. Gibbs, Esq.; B. T. B. Gibbs, Esq.; W. F. Hobbs, Esq.; W. H. Hyett, Esq.; J. Kinder, Esq.; H. Price, Esq.; P. Pusey, Esq., M.P.; F. Pym, Esq.; J. A. Ransome, Esq.; Prof. Sewell; W. Shaw, Esq., and J. V. Shelley, Esq.

The following new Members were elected:—

Alexander, Caledon, Rothamsted Park, St. Alban's, Herts.
Mathews, Richard, Esgir, Machynlleth, Aberystwith, S. W.
Buck, Lawrence, Pantlludw, Machynlleth, Aberystwith, S. W.
Whitcombe, John, Hay-Ugborough, Totnes, Devon.
Jolliffe, Colonel John Twyford, Ammerdown Park, Bath.
Donaldson, Thomas, Longlands, Eltham, Kent.
Lee, James, Noah's, 1, Little Charlotte-street, Blackfriars-road.
Bailey, Samuel, Westham, Kent.
Cox, Thomas, Parkfields, Derby.
Fountain, Henry, Lowfield, Burton, Linc.
Westcote, John Baker, Coate, Martock, Somerset.
Paine, Joseph, Ruthin, Denbighshire.
Lewis, Lieut. Richard, 3d Life Guards.
Underwood, Walter, Oakley, Bedford.
Harding, T. Goldie, Monkleigh, Torrington, Devon.
Turner, John Beresford, Brockmanton, Leominster, Hereford.
Rumney, George Hepple, Derwent Villa, Newcastle-on-Tyne.
Le Blanc, Arthur, Maresfield, Uckfield, Sussex.
Norris, John, Highandcot House, High Wycombe, Bucks.

The names of 15 candidates for election at the next meeting were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, read the Report of the Committee on the state of the funds of the Society at the end of the month last ended; from which it appeared, that the invested capital amounted to 7700*l.*, and the current cash balance in the hands of the bankers to 391*l.* He also laid before the Council the balance-sheet of the Southampton meeting, showing in detail the various items of receipt and expenditure connected with that account, the total amount of receipts (including the subscription from Southampton) being 4929*l.* 5*s.* 10*d.*, and the total payments 5786*l.* 5*s.* 2*d.*, leaving an excess of the payments over the receipts, on that occasion, of 856*l.* 19*s.* 4*d.* chargeable on the funds of the Society, in addition to the sum of 1358*l.* as the amount of Prizes only, awarded by the Society at that meeting.

Local Collectors.—The Council resolved, on the motion of Mr. Pym, seconded by Mr. Gibbs, that it was desirable that paid collectors should be appointed in counties or districts; and that the details of the system should be referred to a committee consisting of Mr. Pym, Mr. Shaw, Mr. Gibbs, and the Members of the Finance Committee; three of whom should form a quorum, with a request from the Council that in their report they would state the rate of remuneration recommended by them to be paid to the proposed collectors.

Lectures.—Mr. Pusey reported to the Council the arrangements already made for the delivery of lectures before the members at their ensuing Christmas meeting by Dr. Playfair, the consulting-chemist of the Society; when it was resolved that the lectures should take place on Wednesday, the 11th, and Thursday the 12th inst., at 9 o'clock in the evening; and that Professor Sewell, Mr. Gibbs, and Mr. Shaw, should be requested to act as a committee for engaging a suitable theatre for the delivery of the lectures, and the exhibition of the chemical experiments with which they were to be illustrated.

General Meeting.—The President announced his intention of directing a Special Council to be summoned for Saturday the 14th instant, at ten o'clock in the forenoon, for the purpose of taking into final consideration the Report of the Council to the General Meeting to be held at one o'clock on that day.

Lists of Members, Models, &c.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Shaw, it was resolved that a list of the Members of the Society should be printed in a cheap form, and appended to the first half volume of the Journal for 1845, to appear about midsummer in that year. On the motion of Mr. Fisher Hobbs, it was resolved, that an Inventory, with an Index, should be prepared, of all Implements, Models, &c. in possession of the Society. On the motion of Mr. Fisher Hobbs, seconded by Earl Spencer, it was resolved, that a catalogue of the books in the Library should be made by a professional person to be engaged for that purpose, under the direction of the House Committee.

Judges of Stock.—On the motion of Mr. Fisher Hobbs, it was also resolved, that in future the Judges of Stock shall be appointed by the Council, from a list of nominations made by the members at large at a general meeting, and on the report of a committee to whom such list shall have been referred. On the motion of the Hon. Captain Spencer, seconded by Mr. Bennett, it was resolved, that, in the appointment of Judges of Stock, those names only shall be given to the Stewards of the yard determined by the Council for each breed; that in case one or more of those named shall not appear, a supplementary list of Judges shall also be given to the Stewards, who shall from such list fill up the vacancy.

Exhibition of Stock.—On the motion of the Hon. Captain Spencer, it was resolved, that after the awards of the Judges of cattle shall have been delivered to the Director of the yard by the several Stewards, such Members of the Council (not being exhibitors) whose duties for the Society prevent them from seeing the cattle when the public are admitted, who shall be named by the Council the month prior to the meeting, shall be admitted to view the cattle from 5 o'clock till 7 of the Wednesday, (provided the awards shall have been delivered;) but that the awards shall not be declared before the usual time, namely, after the Council dinner.—Mr. Bennett gave notice that he should move, at the next monthly Council, that herdsmen and shepherds, not being exhibitors themselves, or relatives of exhibitors, should be allowed to be in attendance on their stock, but on no account to remain in the show-yard when the Judges enter.

Trial of Implements.—Mr. Shaw having withdrawn his motion on Trials of Implements, distinct from those made at the time of the Annual Country Meeting, Mr. Shelley laid before the Council the joint report of Mr. Miles and himself, as Stewards of the Implement Department, on the communications of Mr. Clayton, Mr. Cousins, and Mr. Smart; and letters were received from Mr. Barnes and Mr. Graburn, on the trials respectively referred to them of Cultivators and Hand Corn Mills.

The Council having appointed the standing committee for the ensuing year, and agreed to the preliminary draft of Regulations for the Shrewsbury Meeting, submitted to them by Mr. Brandreth Gibbs, postponed the consideration of Mr. Gordon's offer of a Prize, and the communication from the British Association on the Analysis of Ashes of Plants, till the next Monthly Meeting. Communications were received from Mr. Jerdan, Secretary of the Border Agricultural Society; Mr. Mechi, Mrs. Welford, Mr. Dean, Mr. Evans, Mr. Moffat, Rev. S. Lysons, and Mr. Garnett.

The Council then adjourned to Wednesday next, the 11th of December.

FARMERS' CLUBS.

Chepstow.—[The following is an abridgment of a Report on the Farms competing in Monmouthshire for a Premium offered by John Buckle, Esq.] We wish to convince landlords that in no way can they do more towards improving their estates than by giving premiums for good cultivation. A tenant, occupying 200 or 300 acres of land, would be sure to lay out many times the value of the prize in preparing his farm for exhibition, with the hopes of obtaining such an honorary testimonial of agricultural skill; and, at the same time, this expense would benefit the candidate himself, inasmuch as good cultivation, provided the outlay be judicious, is always more profitable than slovenly farming. We would also wish to draw the attention of both landlords and tenants to the mutual advantages of leases, though we are decidedly of opinion that the only eligible form of lease must be founded on a corn-rent, and then it should be of such duration as would enable a good farmer to improve his farm to the utmost. No tenant, without a lease, can feel secure in investing capital in the permanent improvement of his farm. To commence with the cropping:—The quantity of Swedes and Turnips was more than one-fourth of the arable land on all the farms we visited, except two; and in these exceptions very little less than one-fourth was planted with these roots. In the case of the successful candidate, the proportion was much larger; he had nearly half his arable land under Swedes and Turnips. We found the general plan was to sow one-year-old Clover with Wheat at one ploughing. We saw some fallows, but the quantity was comparatively small. Where the Clover has been sown on foul land, which should never be the case, the only remedy is to fallow for Wheat. Part of the Turnip land is generally sown with Wheat; and the quantity of land under Barley was, in consequence, small. We found the Swedes and Turnips for the year very good, without exception, though of course superior on some farms to others; but we noticed a much greater difference in the cultivation than the weight of crop. We were sorry to see some good Swedes and Turnips that we could not consider clean, many acres not properly horse or hand-hoed, and nearly all those broadcast were far too thick; and we wish to lay particular stress upon the necessity of remedying this defect, as, on the four-field system, the only chance of cleaning the land is when under a root crop. We have this year seen land intended for Swedes made as clean as a garden by means of the Uley cultivator, first using the broad shares to pare off all the stubble; then the grubbers, till all the weeds were brought to the surface; and, lastly, all the rubbish was gathered together with a horse-rake, and carted into a heap to rot. The average proportion of land in Clover and Grass-seeds is about one-fourth, part of which is sown with the Wheat after a root crop. We were surprised and delighted to see many fields with a capital plant of Clover; and, in other instances, we had the mortification to witness a complete failure, which is to be attributed to the dryness of the spring and summer. We think that, by some alteration in the rotation, the quantity of Clover might be lessened, and the extent of root crops augmented, without reducing the proportion of Corn; thus avoiding so frequent a repetition of Clover. We do not at all mean to lay down an arbitrary course, to be followed for years without any deviation. In fact, we have known this done, and the plan materially altered in a few years. Still, we would suggest, on the light lands of this district, something like the following rotation:—

List of Crops for 200 acres of arable land.

First Year.			Second Year.		
5 acres	tankard Turnips				
10 „	Mangold Wurzel				
10 „	Carrots	30 acres Wheat			
2 „	Potatoes				
3 „	Cabbages				
20 „	Swedes				
15 „	Turnips, after vetches		35 „		Barley, seeded.
65 „	green crops, all after Wheat.				
65 „	Wheat		65 „		roots, &c.
35 „	Barley		35 „		Clover.
35 „	Clover		35 „		ley Wheat.
200 acres.			200 acres.		

Without pursuing this course any further, it will be evident to every farmer that the crops may be varied so as not to repeat Clover, Swedes, and Turnips, so often as in the usual rotation. As regards the implements, with some few exceptions which we intend to mention, we only observed those in general use: viz., ploughs, old-fashioned drags, harrows, rollers, horse-hoes for Turnips, &c. Some of the land we noticed was too stony for scufflers or cultivators to be used profitably; but we saw much land where one of Lord Ducie's implements would be most valuable. Wherever the Uley cultivator can be used, the manner in which it will pare off the foul surface and bring all the couch-roots to the face of the ground is far superior to ploughing the weeds in. We observed that admirable implement for reducing rough land for Barley, Turnips, &c., Crosskill's clod-crusher, at Mr. John Dowle's, of Claypit; a horse gripping-plough, a hand ditto, and a mole-plough, at Mr. Thos. Perkins's of Matherne. We also noticed one of Finlayson's harrows, and a horse-hoe of simple construction, for hoeing Turnips when drilled on the flat; the latter was made to fix on to a part of light cart-wheels, and consisted of three shares, to take three rows at a time. The width between the shares could be altered, and narrower shares might be substituted, to fit it for hoeing Wheat. This hoe was made by a country blacksmith, at a very moderate price. These two last implements we saw at the house of Mr. B. Matthews, of Ifton Hill, who was not a candidate for Mr. Buckle's cup. The carts and waggons we saw were all of the heavier description, which certainly require to be replaced by others of a less cumbersome character; but, whenever this takes place, we are aware that the change must be gradual. The largest quantity of stock was rather less than two sheep to an acre, and one head of cattle to every five acres, taking the whole farm for both. On one farm we saw three sheep to each acre of arable land; but the proportion of meadow and pasture to the arable was as three to four, which reduces their number to our standard. In every instance the number of cart-horses was greater than we considered requisite, in all cases exceeding one pair to every 50 acres of arable land, which we should say was quite sufficient. The breed of horses for farm purposes in this district is generally bad. We found great cause to complain of the management of some of the hedges and headlands. In many places a belt of two or three feet wide was left uncultivated round the fields, full of Couch, Nettles, and other weeds. In but one instance did we perceive any attention paid to the land adjoining the fences, to prevent the weeds from seeding over the farm. We should like to see every inch of ground kept clean round the hedges, and all the weeds in them cut out two or three times in the course of the summer, to prevent them ripening their seeds. Many farmers may complain of the expense of this, but it would pay enormous interest in the saving of future labour. We recollect once seeing a fallow for Wheat which was very clean except a few roots of knotted Couch, all of which laid on the surface and were ploughed in. For 6*d.* an acre they might all have been picked off; and surely by its not being done a much larger expense was incurred in cleaning the land for Turnips. We sincerely wish the management of farm-yard manure were better attended to. We did not see a single tank to collect the drainings of the yards, stables, pigsties, &c. In some places the liquid manure escaped into the road and ditches: in others it was led into the nearest field, and when there, suffered to soak into the ground, only benefiting a very small spot; and, worst of all, some of the yards and buildings were allowed to drain into the pool where all the horses and cattle were taken to drink. The ammonia and other salts contained in this liquid are strong stimulants, and therefore liable to cause violent inflammatory disorders. We observed that lime is not used at all as a manure on the light lands we inspected, but we think a moderate quantity, applied once in a rotation, would pay well for the outlay. Chemical analysis teaches us that lime is contained in both the straw and grain of Wheat; in short, that there is only one plant yet discovered in which no trace of lime can be detected. We recommend all those who are opposed to the use of lime, to read some of the many scientific and practical articles on the subject that have been published lately in the agricultural periodicals, and can be obtained at our library by every member. The only complete set of farm buildings we met with was on the farm of Mr. Thos. Dowle, of Ifton (who for the cultivation of his Turnip land deserves unqualified praise), and they only require tanks to be everything a farmer could wish. The drains are all laid in readiness, and the tanks are to be added shortly. The buildings are mostly new, but not being quite completed, we consider they would be seen to much better advantage another year. The roofs are all covered with reed (combed straw) under the tiles, which keeps the buildings warmer in winter and cooler in summer than tiles alone. In giving our decision, we have no hesitation in awarding the prize to Mr. Thomas Perkins, of Matherne. He has a great breadth of his arable land under Swedes and Turnips, all clean, and the rest of his arable land in a better state of cultivation than the other competitors, though we think there is still room for improvement; and we wish all who read this paper to observe that we cannot consider a farm to be well cultivated because the tillage of some of the fields is good, but expect them to be all clean and in a high state of cultivation. It is in the management of his Grass land that Mr. Perkins so much excels, he having been at great expense in cleaning his fields from bushes, and laying down some miles of drains; besides which, he has cleared away all the banks formed by cleaning out the ditches. The soil he procures in this manner he mixes with farmyard manure or lime, and annually dresses a considerable portion of his Grass land. We will merely hint that we should like to see some cattle soiled all the year, with every particle of their manure preserved and taken out upon the land; and we think that any gentleman who wished to encourage improvement in farming, could not do better than to offer a premium for the largest number of cattle kept in houses and yards all the year round. R. W. Purchas, Hon. Sec. Mon. Farm. Club, and Arthur Hall, Hon. Sec. Chep. Farm. Club—*Judges.*

Debenham.—The fifth Annual Meeting of this Club was held on Friday last (Nov. 22, 1844), at the Cherry-tree Inn, in Debenham. Much interest was excited by the display of fruit and vegetables for the Cottagers' Prizes. Upwards of 200 different productions were exhibited by about 50 cottagers; market or working gardeners, persons whose rent exceeded 6*l.* per annum were excluded. The Prizes were awarded as follows:—

Three Silver Tea-spoons, given by the Rev. James and the Hon. Mrs. Hodingfeld, for the best cultivated Cottage-garden or Allotment in Debenham, were awarded to Robert List, on account of the great variety of his crops, proper rotation, and the extreme cleanliness of his allotment; this is the second prize of spoons obtained by List. *Best Dessert Apples*, 3*s.* to T. Smith, of Debenham; second do., 2*s.* to J. Jacobs, Debenham. *Best Kitchen Apples*, 3*s.* to W. Tydeman, Debenham; second do., 2*s.* to A. Brown, Debenham. *Best Dessert Pears*, 3*s.* to W. Rumsey, Debenham. *Best Baking Pears*, 3*s.* to J. Pallant, Debenham; second do., 2*s.* to J. Barrick, Debenham. *Best 12 Carrots*, 3*s.* to R. Aldous, Debenham; second do., 2*s.* to R. List, Debenham. *Best 12 Parsnips*, 3*s.* to R. Aldous, Debenham; second do., 2*s.* to J. Moyse, Winston. *Best* ½ peck of *Onions*, 3*s.* to R. Moore, Thorndon; second do., 2*s.* 6*d.* to R. Aldous, Debenham; third do., 2*s.* to J. Marjoram, Debenham. *Best* ½ peck of *Potato Onions*, 2*s.* 6*d.* to R. List, Debenham; second do., 1*s.* 6*d.* to W. Smith, Debenham. *Best 3 Savoy Cabbages*, 3*s.* to D. Blomfield, Little Stonham; second do., 2*s.* to R. List, Debenham. *Best Brussels Sprouts*, 2*s.* to G. Clarke, Earl Soham. *Best 6 Roots of Celery*, 3*s.* to D. Blomfield, Little Stonham; second do., 2*s.* to J. West, Stonham Aspal. *Best 3 Pumpkins*, 3*s.* to G. Skipping, Debenham; second do., 2*s.* to A. Read, Thorndon. *Best* ½ peck of *Early Potatoes*, 5*s.* to D. Blomfield, Little Stonham; second do., 4*s.* to J. Moyse, Winston; third do., 3*s.* to J. Keeble, Debenham; fourth do., 2*s.* 6*d.* to J. Wade, Debenham. *Best* ½ peck of *Late Potatoes*, 5*s.* to H. Sawyer, Debenham; second do., 4*s.* to R. List, Debenham; third do., 3*s.* to A. Read, Thorndon; fourth do., 2*s.* 6*d.* to R. Aldous, Debenham. *Best* ½ peck of *Kidney Potatoes*, 4*s.* to D. Blomfield, Little Stonham; second do., 2*s.* 6*d.* to R. List, Debenham. *Best* ½ peck of *Red Potatoes*, 4*s.* to R. List, Debenham; second do., 2*s.* 6*d.* to G. Smith, Debenham. EXTRA PRIZES: *Red Potatoes*, 2*s.* to J. Taylor, Debenham. *Onions*, 2*s.* 6*d.* to W. Smith, Debenham. *Late Potatoes*, 2*s.* 6*d.* to R. Aldous, Debenham. *Early Potatoes*, 2*s.* 6*d.* to R. List, Debenham. *Red Cabbages*, 2*s.* 6*d.* to J. West, Stonham Aspal.—*W. G., Hon. Sec.*

Reviews.

On Landed Property and the Economy of Estates: comprehending the relation of Landlord and Tenant, and the Principles and Forms of Leases, Farm Buildings, Enclosures, Drains, Embankments, Roads, and other Rural Works, Minerals, and Woods. By David Low, Esq., F.R.S.E., Professor of Agriculture in the University of Edinburgh, &c. Longman & Co.

THE last chapters of this valuable work are devoted to the explanation and illustration of practical details. Those connected with the erection of farm buildings, with drainage, roadmaking, plantations, &c., are all fully entered into, and admirably illustrated by woodcuts. These chapters render the volume especially useful to landlords, agents, and all who are engaged in the permanent improvement of estates.

But it is to the first chapters of Professor Low's work that we wish particularly to direct the attention of the reader. They contain an excellent exposition of the importance of the lease as an instrument of good or evil. The permanency which it gives to the tenants' interest in his farm is of course as injurious to the estate and community when it binds to the practice of bad farming, as it is beneficial to all parties when it is framed so as to insure the introduction and establishment of good husbandry. Much of the slowness of agricultural improvement is justly attributed to the want of confidence on the part of the farmer which is inseparable from the tenant-at-will system, which prevails in England to so large an extent:—

"To what are we to attribute this tardiness to adopt what is new and useful in an art which it would seem to be the interest of every one to improve to the uttermost? A part at least of the effect must be ascribed to the conditions under which the capital of the farm as compared with that invested in other branches of industry, can be employed. The manufacturer of cotton, of wool, of iron, has the assurance that the machine which he constructs and improves for the purposes of his trade is his own, and that the more perfect he can render it, the more profitable will the use of it become to him. The farmer who lays out capital on the great machine on which his all depends, the earth which he tills, has often no such assurance. It is the property of another, who in the end will profit by all the improvements which the skill of a temporary possessor can make upon it. The manufacturer receives, directly, the profits of his stock in trade; the farmer must share those profits with another, who undergoes no part of the labour and risk; his industry is fettered by conditions imposed upon no other class of traders; and the inconveniences of obtaining returns for a present expenditure more slowly than in any other profession, are frequently aggravated by the uncertainty whether he will ever have the power of recovering the capital advanced."

The following are the conditions required to establish fitting relations between the owners and occupiers of land:—

"1st, Security of possession; 2*d*, Equitable rents; 3d, Suitable conditions with respect to the methods of culture and general management; and 4th, an adequate provision by the landlord for the fixed capital invested in buildings, enclosures, and other necessary appendages of the farm."

On the second of these subjects Professor Low says:—

"The actual profit to be derived by the farmer should in every case bear a ratio to the capital employed by him. The lowest calculation that can be fairly made is 15 per cent. on the capital employed, out of which the farmer must support himself and bear the risks of his trade. The farmer, therefore, who takes land should calculate, in the first place, the fixed capital which he must advance. Allowing 15 per cent. for interest, the profits of stock, his own maintenance, and the risks of his trade, the remainder of the produce is left for expenses and the landlord's rent."

After remarks in which the difficulty of finding employment for capital, and the limited number of farms at any time in the market, are alluded to, in order to show that the tendency of rents is always to rise above the just level, the author observes:—

"It is difficult for a proprietor of land to take a perfectly impartial view of the value of that which he has so great an interest in rendering available as a source of income; but it should never be forgotten that every tenant must have such a profit as will enable him to maintain himself and cultivate his land, and insure him

against the contingencies of his trade. To take away the tenant's profit is to produce the inroad of trenching upon his capital, and to trench upon his capital is to lessen or cut off the source from which the landlord's rent must be derived."

The following passages just express the simple truth: they are worthy of serious attention:—

"It is common to hear of reductions of rent, as 10, 15, or 20 per cent. made by proprietors at their audit days, and announced in newspapers and otherwise as acts of great liberality. But bounties in this form are nearly useless to the tenant. The necessity, where it exists of making little abatements of this kind, should lead us to the conclusion that an estate is under bad management. The rent at which land is let should be such that no temporary bounties of this kind can be needed. The tenant who takes land, and the landlord who lets it, should so adjust the rent that the tenant shall be able to bear the pressure of deficient crops, or of low prices arising from favourable ones; and no prudent man ought to contract for a rent which will not allow him to meet that contingency of his trade which arises from a fluctuation in the amount and price of his commodities."

"*The landlord who would secure a prosperous tenantry, and improve his estate, must not trust to his percentage of bounty on an audit-day, but must place his tenants in the condition which will enable them to fulfil the obligations under which they engage in virtue of a fair and well considered covenant.*"

Besides these general remarks Professor Low enters in another chapter into that practical detail on the subject of "the lease" on which his long experience in these matters renders his statements worthy of our entire confidence, and his opinions worthy of much deference. The following is his opinion on the subject of rent:—

"Of rents of land, the most satisfactory, it is conceived, is a fixed payment in money. To rents payable in grain, or in money determined by the prices of grain, there is this objection, that the tenant may be required to pay the highest rent when he is least able to do so; that is when prices rise from deficient crops. In such a case if a tenant has not a good capital to support him, he may be injured in a single year beyond recovery. It thus becomes necessary for the tenant's security, to fix a maximum beyond which the rent shall not rise But if it be necessary, for the tenant's security, to fix a maximum beyond which the rent shall not rise, it is equally necessary, for the landlord's security, to fix a minimum below which it shall not fall. In every transaction of this kind, therefore, there are two points to be determined, a maximum of rent and a minimum, and there is just as much difficulty and chance of error in fixing these two points as extremes as in fixing one point as a medium; or, in other words, as in fixing a certain rent in money"

We have not space to refer at present to the other subjects which the author broaches connected with the lease, but we shall very often have occasion to refer our readers to this work, which is not more distinguished by the sound and impartial views it takes of relations between landlord and tenant, than by the fullness of practical detail into which its experienced author enters, on the several sections of the general management of estates which the former has to superintend.

This work is especially one for the perusal and guidance of landowners and land agents, and we are very sure that amongst such it will be extensively read

Miscellaneous.

Chepstow Farmers' Club.—It is proposed to present Mr. Arthur Hall, Hon. Sec. to the Chepstow Farmers' Club, with a token of gratitude for the important services he has rendered to that Society, and as a mark of the esteem and admiration in which his talents and courteous conduct are held by its members; to which all parties desirous of testifying their approbation are respectfully solicited to subscribe.—Subscriptions will be received by Messrs. Bromage, Snead, and Snead, until the 20th December next.—*Monmouthshire Beacon.*

Mangold Wurzel.—A French newspaper tells the following story of the introduction of this root into cultivation in Flanders. When Napoleon was endeavouring to protect himself against the inconveniences felt from the impossibility of obtaining Colonial produce, in consequence of the activity of the English cruisers, an order was given that measures should be taken to induce the Flemings to grow Beet, for sugar-making The Prefect of the department of Jemappes accordingly invited all the farmers of his district to set about the cultivation of the root, and distributed seed among them. The Flemish farmers hit upon its management immediately, and the first season gave them a large crop. But when the roots were ready nobody knew what to do with them, so the farmers resolved to cart them to the Prefecture. And accordingly, one fine morning, the Prefect was surprised by the arrival of heavy carts, bringing him some hundred thousand kilogrammes of Beet. Having no means of taking it in, for the buildings in which it was to be manufactured had not been thought of, he had no resource but to pay for the crop, and get the country people to cart it away again. This led them to consider whether cattle could not be fed upon it—and the result we all know.

Rolling Wheat.—Rolling Wheat on all soils is universally considered most beneficial, particularly after the frosts have rendered the land frothy. It gives a solidity to the soil, makes the Wheat straw more staple, and has been generally found to render the crop more productive. Carrying out the system of proof adopted in all cases where it can be obtained, the following experiment is corroborated by several trials, and by having one portion unrolled of every field on one farm. It was always performed, not when the land was quite dry, but when it was sufficiently so to work the roll with scrapers. When the soil was quite dry it has not succeeded; perhaps from the want of adhesion of the particles of soil without moisture:—

		£	s.	d.
1838—Rolled		7	2	3
Not rolled		7	0	0
		0	2	3
1838—Rolled		6	2	1
Not rolled		6	1	0
		0	1	1

Besides one hundred weight of straw in addition.—*Bacon's Agriculture of Norfolk*

* C stands for coomb, which in Norfolk means a sack of 4 bushels.

Notices to Correspondents.

Rural Chemistry.—By E. Solly, Esq., F R S, Experimental Chemist to the Horticultural Society of London, Honorary Member of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, may be had of all booksellers, price 4s. 6d

Benhaft's Patent Hames.—Inon says he finds the price in London is 8l a pair, "but they are not recommended." Particulars can be learnt of Messrs Brace and Box, of Wall sall, Staffordshire.

Dibbling Machine.—*Spectator*—The implement you name is not suited for allotments and such small plots. No implement worked by horses would be suitable there Dr Yelloly's fork is highly praised

Disease in Pigs.—*M B*—There must be something radically wrong either in the locality of the pigstye or the mode of feeding in the former sufficiently warm and comfortable, and free from dampness? If not, correct these matters Do you give your pigs many roots of a watery nature? If so, make an alteration in the diet We can do no more than throw out these suggestions. The disease appears to be hydatids on the liver, &c *W C S*

Fence.—*Constat*—Let the ditch be on the upper side of the hedge—For every ton of hay or straw taken into the yards to cattle, how many tons of dung should come out? and for every 20 tons of roots in addition, how much additional dung? Perhaps our readers will help us. Last year we consumed in yard and house about 1500 tons of roots and 240 tons of straw; and we probably carried out to the field 2400 tons of manure, composed of ⅓ of farm yard dung and ⅔ of earth

How must I Grind Flax seed?—*M F S J*—See "Home Correspondence" of this day.

Irrigation.—*C B*—The best work on the subject, containing practical details, is "The Practical Irrigator and Drainer," by G. Stephens We must, till next week, refer you to it

Moss.—*Icarius*—Try harrowing it in various directions with a heavy many-tined harrow. You may tear out most of it in this way —— Apply 16 to 20 bushels of bone dust to the acre now

Mr Beaun, *of Stone, Aylesbury*, would oblige me much by informing me what he means by a "thin layer of gypsum?" Whether the heap should be more than a foot in height? Whether the gypsum should be strewed on the top of the second layer, as well as the sulphuric acid? Whether, if these two substances be used, there is any advantage in covering the mix over with earth? (the only method I have hitherto used in preventing the escape of ammonia) Whether he removes his manure to the compost immediately from the stalls, or allows it to be trodden about the yard till half decomposed? Whether he means by a single horse cart load, one filled with the raw litter, or with half decomposed? At what he estimates the cost of the gypsum and sulphuric acid, for say ten cart-loads of manure? *B C*

Spring Wheat.—*T H*—We have sown it so late as the first week in April, with good result. It all depends on the season, had we done so this season we should have failed

Thorn Hedge.—*Bathi altidus*—By the word "removal" we understand you to mean the shifting it to another place Cut it down to within a foot of the ground, and remove the plants individually to their new position, which should be dug over for the purpose, and manured with farm yard dung The roots should be injured as little as possible, and they should be taken up with as much earth as will cling to them

Treatment of Milch Cows.—*An Old Farmer*—If you refer to the case of your own cow, we can only say that it is of a singular and peculiar kind, but as this periodical falling appears to be natural to the animal, we cannot suggest a remedy further than advising you to try some experiments with regard to her feeding Food of the most nutritious kind should be given at the period when her milk falls off, or previous to it Try oil cake *W C S*

Winchcombe Farmers' Club.—*J F Pearcy*—Many thanks for your paper and information. We hope that many other Clubs will follow your example

*** At usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Dec 2—Per stone of 8 lbs.

Best Scots to Herefords, &c.	4s	0	to	4s	4		
Best Short Horns	3	10		4	0		
Second quality Beasts	3	2		3	8		
Calves	3	4		4	4		
Best Downs & Half breds	4s	0	to	4s	6		
Best Long wools	3	10		4	2		
Ewes and second quality	3	4		3	8		
Pigs	3	8		4	4		

Beasts 4130 Sheep, 27,760; Calves, 108 Pigs, 490

There are a few more Beasts to day, but all are in request at fully last week's prices The very best Scots, &c have in some instances exceeded our quotations and some of the best Short Horns have made 4s 2d The weather being favourable almost everything is readily disposed of There is an small increase in the number of Sheep, but no improvement in the quality The supply Good Sheep are not very plentiful and command a ready sale with prices having an upward tendency The best old Downs more nearly 4s 6d, and a few of the most sizeable Long wools nearly 4s 4d Short woolled sheep in the trade for second rate qualities, but they do not make any alteration in many Veal trade is dull at a small reduction from Friday's quotations nearly everything makes 4s to 4s 6d Pork trade is very heavy

Farmers, Dec 6.

We have a large increase in the supply of Beasts Woollens a few Dutch, and several Irish Heifers several Scots, Runts, and a large quantity of Cows but the best qualities do not appear to be very plentiful for which Monday's prices are maintained, nearly, best Scots, &c. 4s to 4s 4d, best Short Horns 4s 2d to 4s In second rate, however, the proportion being large, we anticipate that of about 2d per stone, a reduction from 4s 6d to 4s 4d The supply of Sheep is rather plentiful for the time of year; trade is not quite so good by 2s per score, few make them 4s to 4s 4d, the latter being an extreme price Lambs 4s 8d to 5s and Lambs, 5s to 5s 8d. The Veal trade is brisk as many as on Monday's quotations, yet not quite so good as last Friday, owing to the sizeable heads of the choicest qualities caused some to be left Pork trade continues very heavy; we cannot quote also Foreign at more than 4s 4d; many very good ones are sold much under

Beasts, 1,080; Sheep, 6300; Calves, 128; Pigs, 270

Per West Smithfield.

HOPS, Friday, Dec. 6

The Hop Market remains in the same state as last week, the demand through Kent has been fair (it is season of the year) to greatest, and fine Hops in pockets are very scarce

Farrington & Shaw, Hop-Factors.

WOOL.—British, Friday, Dec 6

Lincoln holds rather more demand for English Wool since our last, a good deal has changed hands; but we cannot quote any improvement in price, except in some particularly Wools, on some parts of which an advance has been obtained.

James Pusey, Wool Broker.

COVENT GARDEN, Dec. 7.—There has been scarcely any change in the Market during this week. The supplies have been moderately plentiful, and the prices have differed but little. Pine-apples continue to be sufficient for the demand; among them are some fine specimens of Black Jamaica; Queens are rather inferior both in size and quality. Good bunches Grapes are scarce; but foreign sorts are tolerably abundant. Apples of good quality are sufficient for the demand; Pears are also pretty plentiful. Among the latter we noticed good samples of Glout Morceau, Winter Nelis, Beurré Diel, and Passe Colmar. A few fine specimens of Marie Louise have also been in the Market during the week Melons are now over for the season, and Cucumbers are very scarce Oranges are plentiful; Nuts of all kinds are scarcer. Of Vegetables the supplies of most articles are quite sufficient for the demand Cauliflowers are scarce, and Broccoli is not quite so plentiful Savoys, Brussels Sprouts and other Winter Greens are abundant. Carrots and Turnips are also good, and sufficient for the demand. Seakale is small quantities has been brought during the week; it is offered at from 1s. 6d. to 2s. 6d per punnet Small quantities of Asparagus have likewise been offered at from 4s. to 12s. per bundle. Leeks of good quality may be obtained at last week's prices. Radish and other kinds of Salading are generally excellent. Celery, both white and red, is abundant and good. Among Cut Flowers we noticed Cypripedium insigne, Bignonia venusta, Lucuila gratissima, Poinsettia pulcherrima, Cuphea platycentra, Penta-carara, Camellias, Epacrises, Heaths, Helletropes, Cineraias, Amaryllises, Azaleas, Narcissus, Chrysanthemums, Tulips, and Roses.

FRUITS

Pine Apple, per lb	2s to 7s	Oranges, per doz	1s to 1s 6d
Grapes, Hothouse, per lb	2s to 4s	— per 100	8s to 12s
— Spanish, per lb	10d to 1s	— bitter, per 100	12s
— Portugal per lb	1s to 2s	Lemons, per dozen	1s to 2s
Apples, Dessert, per bush	2s to 6s	— per 100	6s to 14s
— Kitchen, 2s 6d to 4s 6d		Almonds, per peck	6s
Pears Dessert, per bushel	2s to 6s	Spanish Nuts, per lb	2s 6d
Quinces, per half sieve	2s to 3s	Cob Nuts, per 100 lbs	10s to 12s
Medlars, per bushel	2s	Nuts, Black sort	2s6
Filberts, per 100 lbs	20s to 24s	— French	12s
Chestnuts, per peck	1s to 2s	— Spanish	2s
Walnuts, per bushel	1s to 2s	— Barcelona	2s
— — shelled	12s to 14s		

VEGETABLES

Cabbages, per dozen	6d to 1s 2d	Garlic, per lb	4d to 6d
Cauliflowers, per doz	2s to 4s	Onions, per bushel	3s to 4s
Broccoli per bundle	6d to 1s	— large per bushel	2s to 2s 6d
Brussels Sprouts, half sieve	1s6d to 2s	— Spanish, per doz	1s 6d to 4s
Scarcel per half sieve	6d to 1s	Shallots, per lb	6d to 8d
— Jerusal, per half sieve	1s to 1s6d	Tomatoes, per half-doz	2s to 3s
Potatoes, per ton	80s to 70s	Capsicums, per 100	4s to 6s
— cwt	2s 6d to 3s	Radishes, per doz	6d to 1s
— bushel	1s6d to 2s 6d	Lettuce, per score	6d to 1s 6d
— Kidney per bush	3s to 4s	Celery, White, per bunch	6d to 1s6d
Turnips, per doz bun	1s 6d to 2s 6d	— Red, per bunch	1s to 2s
Red Beet, per doz	1s 6d to 2s	Endive per score	1s to 1s 6d
Carrots, per doz bun	2s to 3s	Mushrooms, per pottle	10d to 1s 6d
Basil, per bunch	2d to 3d	Small Salads, per punnet	2d to 3d
Seakale, per punnet	1s 6d to 2s 6d	Water cress, per 12 bun	2d to 3d
Asparagus, per bundle	4s to 12s	Parsley, per doz bunches	2s to 3s
Horse Radish, per bundle	1s 6d to 2s	— per bundle	6d
Savoys, per bunch	2d to 3d	Tarragon Green per bunch	2d to 3d
Spinach, per sieve	1s6d to 2s	Green Mint, per bunch	2d to3d
Sorrel per bunch	1s to 1s 2d	Marjoram, per bunch	2d to 3d
Parsley per bunch	1s to 1s 2d	Chervil, per punnet	2d to 3d
Leeks, per doz	1s to 1s 6d	Chilis per 100	1s to 2s

POTATOES.—Southwark Waterside, Dec 2

The supply to this Market continues to be equal to the demand The weather being fine for the season the Irish Markets are fully supplied with vegetables Notwithstanding there was a considerable business done at the Wharfs side during the past week, and the following prices were fully maintained

York Reds	80s to 70s	Kent and Essex Whites	80s to 85s
Perth	80 90	— Kidneys	55 60
Yorkshire	— —	Wisbeach Kidneys	— 60
Early Devons	65 —	— Blues	— —
Late Devons	— —	— Whites	50 55
Cornwall	65 —	Guernsey Blues	50 55
Jersey Blues	50 55	— Whites	— 50
— Whites	50 —	Prince Regents	55 65

MARK LANE, Monday, Dec. 9.

We had a fair supply of Wheat at our Market this morning, which met with a tolerably free sale at our last week's prices, the condition has also improved; there was some inquiry for Foreign Wheat in retail. Canada Flour is dull at from 28s to 29s per barrel A good supply of Barley, which is 1s cheaper for all descriptions White Peas are unaltered in value; Maple and Grey are 1s lower. Beans, both old and new, have declined 1s per quarter Oats are a very dull sale, but prices are fully maintained

BRITISH, PER IMPERIAL QUARTER

	s	s		s	s
Wheat, Essex Kent and Suffolk White	40	50	Red	42	48
—— Norfolk, Lincolnshire and Yorkshire	—	—	White	—	—
Barley Malting and distilling Suffolk and Chevalier	34	35	Grind	27	28
Oats, Lincolnshire and Yorkshire Potatoes	20	21	Feed	19	22
—— Northumberland and Scotch Feed	22	23	Potato	21	23
—— Irish Feed	18	22	Potat	20	24
Malt, pale, ship	54	60			
—— Home trade Essex	52	56			
Rye	28	32			
Beans, Mazagan old and new	30	to 35	Tick	31	36
—— Horse, Heligoland	33	to 41	Winds	—	—
Peas White	34	to 37	Maple	35	36
			Grey	31	33

ARRIVALS IN THE RIVER LAST WEEK.									
	Flour		Wht	Barl	Malt	Oats	Rye	Bns	Peas
English	5[illegible] sks	— Bels	10045	2237	6081	454	—	1110	1170
Irish	—	—	—	—	—	200	—	—	—
Foreign	—	70	970	18677	—	4949	—	1112	90

Friday, Dec 6

The arrivals of English Wheat have been moderate, and the trade is exceedingly dull at Monday's prices; foreign is inquired after but business is very slow. Fine Barley is rather more in demand, but secondary sorts are very unsaleable. Beans and Peas remain as on Monday. Oats are a dull sale at our late quotations

ARRIVALS THIS WEEK	Wheat	Barley	Oats	Flour
English	4950	9660	2040	4710 sks
Irish	—	—	16070	—
Foreign	1120	13360	6800	—

IMPERIAL AVERAGES

		Wheat	Barley	Oats	Rye.	Beans	Peas.
Oct	26 per Quarter	46s 0d	34s 0d	20s 1d	32s 2d	37s 0d	34s 2d
Nov	2	46 0	34 7	21 6	32 8	36 8	33 1
—	9	45 8	36 1	21 6	34 6	37 11	34 7
—	16	46 4	35 6	21 9	34 2	38 4	35 7
—	23	45 10	35 8	21 8	33 0	38 6	36 9
—	30	45 4	34 1	21 8	33 2	38 6	35 11
6 weeks' Aggreg Aver.		45 11	35 5	21 5	34 3	37 9	35 3
Duties on Foreign Grain		39 9	5 6	4 0	5 6	5 6	7 6

SEEDS, Nov 29

Canary	per qr	38s to 38s	Linseed Calcutta, Foreign, per ton	21s to 21s 10
Carraway	per cwt	44 48	Mustard, White per bush	12s 16
Clover, Red, English	— —	—	— Brown	— 12 16
— — Foreign	— —	—	— Scotch	— 12 16
— White, English	— —	—	Rapeseed, English, per last	20l 20l
— — Foreign	— —	—	Rape Cakes per ton	— —
Coriander	12	18	Turnip	— —
Hempseed	per last	36 40	Tares, New winter per bush.	5 6
Linseed	per qr	—	— Foreign	— —
— English	—	—	Trefoil per cwt	— —
— Calcutta, Sup.	per 1000	12l 10	13l Turnip (two variable for quotation)	

Kingsmill and Lay

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 8

Prime old Meadow Hay	110s to 115s	New Hay —s to —s	Clover	100s to 120s
Hay	105s to 110s	Inferior Hay 90	100	Straw	35 38

James Cocoon, Salesman.

Cumberland Market, Dec. 5.

Superior Meadow Hay	120s to 125s	Superior Clover	115s to 125s	
Inferior	95 100	Inferior	100 105	Straw 34s to 36
New Hay	—s —	New Clover	— —	

James Bacon, Hay Salesman.

Whitechapel, Dec. 6

Fine Old Hay	120s to 125s	Old Clover	120s 125s	
New Hay	95 100	New Clover	105 115	Straw 32s to 37s
		Inferior — —		

PLANTING SEASON.

W. ROGERS AND SON, NURSERYMEN, CONTRACTORS, PLANTERS, & LANDSCAPE GARDENERS, Southampton, beg respectfully to notify that their Nursery Stock in this season unusually fine, and from the extent of their grounds they are enabled to execute orders to any amount, and at the lowest prices; delivered free of carriage (if ordered in quantity) per railway to London, or by steam-vessels coastwise.

SEEDLING.

Ash, 1 yr., 1s. 6d.	per 1000.	Spanish Chesnut, 1 yr., 10s.	per 1000.
,, 2 yrs., 2s. 6d.		Pinaster, 1 yr., 2s. 6d.	
Beech, 1 yr., 2s.		2 yrs., 3s. 6d.	
Birch, 1 yr., 2s.			

Sea Pine (Pinus maritima), excellent for nurseries exposure to the sandy sea-shores of Scotland or Ireland, 1 yr., 5s., 2 yrs., 7s. 6d. per 1000.

Oak, the true "Durmast" of the New Forest (Quercus sessiliflora), producing timber of the largest dimensions, and decidedly the most valuable species of the English Oak, 1 yr., 7s. 6d., 2 yrs. 10s., 3 yrs. 15s. per 1000.

If 100,000 of any one sort is ordered, a deduction from these prices will be made.

TRANSPLANTED.

Prices and samples of the various sizes may be had on application.

Alder	1	2 ft.	Oak, "Durmast," En-				
Beech	1	2	4 ft.	glish	1	2	3 ft.
Birch	1	2	4 ft.	Turkey	1	2	5 ft.
Ash	1	2	5 ft.	Spruce	1	2	6 ft.
Spanish Chesnut	1	2	6 ft.	Larch	1	2	3 ft.
Elm	1	2	3 ft.	Scotch	1	2	4 ft.
Poplar, Blk. Canada	2	4	6 ft.	Pinaster	1	2	ft.
				Sea Pine	1	2	ft.

PLANTS FOR COVER OR UNDERWOOD.

Rhododendron ponticum, 1 to 2 inches, 20s. to 30s. per 1000. Ditto, 2 to 4 inches, 40s. to 50s. per 1000; 4 to 6 inches, 50s. to 60s. per 1000; 1 foot, 20s. per 100.

Mahonia aquifolia, 40s. per 1000. Game are remarkably fond of the fruit of this plant, which is also a handsome flowering Evergreen.

Common Laurel, 20s. to 40s. per 1000.

Come-well Willow, 40s. per 1000. (Best for Underwood.)

Furze, 10s. per 1000. Broom, 10s. per 1000.

Elder, common black, 2s. per 100. Excellent for sea embankments. Tamarisk 6s. per 100.

MISCELLANEOUS.

A great Stock of Forest and Ornamental Trees of large growth, from 6 to 10 feet, adapted for immediate effect.

Single Camellias, from pots, well rooted, 50s. to 75s. per 100.

Rose stocks, 6s. per 100, from cuttings of the Bourbon De Lisle, on which all kinds take freely by buds and grafts, and may be grown in the smallest sized pots.

Double Furze, 25s. per 100. Forms a beautiful flowering hedge.

Double Red Thorn; Double White do.; Single new crimson, 50s. per 100. Sea Pine, from pots, 40s. per 100.

Ribes sanguineum, 12s. 6d. per 100. Kalmia latifolia, 40s. per 100.

Printed Catalogues and Prices of their general stock may be had. Gardeners of experience and ability recommended.

TO GENTLEMEN, NURSERYMEN, SEEDSMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed to Sell by Auction, on the Premises, Windmill Lane, and Camberwell Nurseries, on Monday, December 16th, 1844, and following days, at 11 o'clock, by order of the Sheriff of Surrey, without Reserve, the whole of the choice GREENHOUSE PLANTS, consisting of Fine Double and Single Camellias, well furnished with bloom buds; Erica in fine varieties; Epacris, Azaleas indica, Chorizema cordata, Tropæolum; choice Geraniums, Petunias, Fuchsias, &c.; also the remaining Nursery stock; consisting of choice Pines, Cupressus Juniperus, Vines, &c.: Iris in pots, Evergreen Oaks, Double Blossom Furze, Garrya elliptica; choice Standard and Dwarf Roses; American Plants, including Ghent and other Azaleas; hardy Scarlet Rhododendrons; Magnolias, Kalmias, Hardy Heaths, &c. One and Two-light Boxes, Hand Glasses, Four Tram Carriages complete, Garden Pots, Utensils in Trade, &c.—May be viewed prior to the Sale. Catalogues may be had of Mr. C. T. Holmes, Solicitor, 163, Fenchurch-street; of the principal Seedsmen; and of the Auctioneers, Leytonstone.

TO MARKET-GARDENERS and Others.—GROVE-STREET, HACKNEY.

MR. WARREN respectfully announces that he will SELL, on TUESDAY, Dec. 10, at Twelve, on the Premises, held by Mr. John Mander (who is quitting them in consequence of their being required by Her Majesty's Commissioners of Woods, Forests, &c., for the Victoria Park), FORTY BOXES and LIGHTS, 200 boxes of healthy Cauliflower plants, seven large beds of red and 20 of early York Cabbage plants; one acre of Red Cabbages, 60 rods of Horseradish; a large quantity of Onion, Cauliflower, White Cors, Colewort, Scalkale, white and red Turnip Radish, long Scarlet Radish, Celery, Curled Endive, and Parsley seeds of the very best quality. Radford's early and Giant Rhubarb, Scalkale, and Asparagus plants, a Waggon and Market Cart, two Horses, Harness, 100 Loads of excellent Spit Dung, Barrows, Ladders, Tools, Watering-pots, and a variety of useful effects.

May be viewed and catalogues obtained, five days prior to the sale, on the premises; of Messrs. BATT and BAILEY, Seedsmen, 412, Strand; Messrs. FLANAGAN and SON, Seedsmen, opposite the Mansion House; at the Rainbow and Unicorn Taverns, Covent-garden, and of the Auctioneer, Isleworth.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very moderate in cost, very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

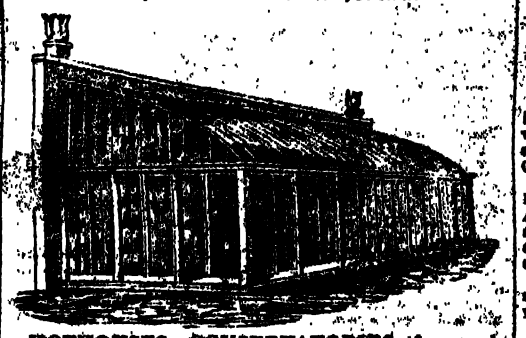
D. and E. BAILEY also undertake to repair all descriptions of Horticultural Buildings and Boilers, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient Kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce Lapageria curving near houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. Bailey have prepared a quantity of their Vegetable Plant Protectors, which are now ready for immediate delivery; they beg to intimate to gentlemen, builders, &c. that for Orchidaceous or other Houses, where economy is constantly sought after, the least possible expense in constructing, or of materials required, and which may be seen at their Manufactory.

LIGHT'S IMPROVED BYACINTH POT and SUPPORT, from 1s. 6d. each. Also largest stock in London of Patent and other Garden-pots and Stands, from 15s. to 150s. per dozen, in Wedgewood's and other wares, for Drawing-rooms, &c.—90, Queen's-row, Pimlico.

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HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined; which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for Heating Hothouses, Conservatories, and Greenhouses, Churches, Public or Private Buildings, &c., with COTTAM'S PATENT BOOSTER'S BOILERS. After 15 years' experience, and having made, during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Fineries, Propagating Houses, &c. by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues. S. & Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New Park-st., every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;

And by their Agents,

COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.

47, Lime-street, Dec. 7, 1844.

DR. HALLETT'S DRY SOLUBLE FERTILIZERS are, considering their power, the cheapest Manures in use, for they are entirely composed of the Phosphates and other Salts of Ammonia, and other acknowledged powerful fertilisers. They are fairly before the Public as tried things (see No. 33 of the *Gardeners' Chronicle*, &c.). 5 cwt. of either has been found equal to nearly 30 tons of ordinary horse-manure. They are applicable to all sorts of field and garden crops. No. 1 for heavy top growth, as Corn, Hops, &c. No. 2 is for all roots, and a sure preventive of the Fly in Turnips. Price of each, 10*l.* per ton, or 12*s.* per cwt.

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Agents for the above. London—Mr. Fothergill, Thames-street; Mr. G. Hallett, the Factory, Broadwall, Blackfriars; Messrs. Warner & Warner, 28, Cornhill; Hurst & M'Mullen, 6, Leadenhall-street; Whittanby, Poultry; Pace & Co., St. Peter's Alley. Norfolk—Bullard and Watts, Norwich. Suffolk—Mr. W. Revens, Yoxford. Leicester—Mott and Co. Gloucestershire—Mr. Batterton, Fairford. Devonshire—Mr. Seward, Plymouth. Wilts—Mr. G. King, Devizes. Glasgow—Mr. D. T. Jackson. Hartlepool, Sunderland, Stockton, and Newcastle—Pace & Co. Dumfries—Green and Co. Further respectable Agents wanted.

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BY HER MAJESTY'S ROYAL LETTERS PATENT

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F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and obtained the Prize for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to which reference can be made. The Felt is impervious to rain, water, and frost, and a non-conductor of heat and sound. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONE PENNY PER SQUARE FOOT.

Samples, with testimonials of its merits, sent free to any part of the town or country.—Patent Felt Works, Lamb's Buildings, Bunhill-row London.

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The course embraces the Classics, Mathematics, Mechanics, Physics, Chemistry, Botany, Mineralogy, Geology, Land Surveying, Brewing, the French Language, Practical Agriculture, and Lectures on the Breeds, Management, and Diseases of Cattle.

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A Separate Class will be formed of those pupils who are not sufficiently advanced to attend the lectures, the charge for which will be Sixteen Guineas the half-year.

The Introductory Lectures of the several Professors will be public, of which due notice will be given.

Prospectuses in detail are ready, and applications for admission to be addressed to "The Head Master, Agricultural Training School, Hoddesdon, Herts," of whom every information may be obtained.

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THE Attention of the Agricultural Interest, at this momentous crisis, is requested to the great importance of LIQUID MANURE, and the ease with which it may be appropriated, by the use of FOWLER'S PUMPS, made expressly for the purpose, either portable or fixed; Garden, Ship, and Barge Pumps; also those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold liquor. Pumps kept for hire, for Excavations and Wells. Buildings heated by Hot Water, for Horticulture, and every variety of manufacturing purposes.

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Is particularly applicable as a Substitute for Slate, Zinc, Tiles, Thatch, and other articles used for Roofing, from its Economy, Durability, and Lightness. It is quite impervious to wet and damp, resists the heat of the sun, and is a non-conductor of heat or cold. Besides the economy in repairs, the timber where it is used may be so light as to save its whole expense. It requires no other coping, and by attention to printed directions may be applied by a common labourer. It is free from breakage and contraction, like zinc, and requires neither painting nor coating. It is now in very general use for Roofing Houses, Verandahs, Sheds, Workshops, Rodewalks, Railway Stations, Icehouses, &c. &c., and for protecting Plants, covering Garden Frames, Cots, and Hay Ricks, the top and sides of Sheep folds; and to Emigrants it provides a cheap, warm, durable, and portable Roof.

This Improved Roofing Felt is much more durable than the common Felt, made in lengths, not being subject, like it or other materials in continuous lengths, to be stripped by storm; and being fastened down at the overlaps only, the wet cannot percolate through the nail-holes.

TESTIMONIAL.

London, Nov. 1, 1844.

H. C. BOWDEN, Esq., Agent for M'KIBBIN'S Roofing Felt.

It is with much pleasure I add my humble testimony to the superiority of your Felt over any other preparation of the kind with which I am acquainted. This Testimony I give with the greater cheerfulness from the many reports I have heard in its favour, and from the likelihood of its being used extensively in Agricultural purposes. I shall not fail to notice it in my Lectures which on the subject.

(Signed) JOHN ROBINSON, M.B., Senior Lecturer on Chemistry, &c., as applied to Agriculture and Rural Economy in this Kingdom.

Sold in Sheets 32 inches by 20, at 5*d.* each (being less than 9*s.* 6*d.* per square of 100 feet).

Apply to H. C. BOWDEN,

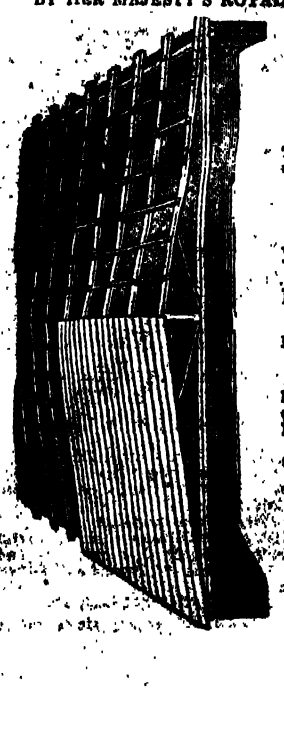
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AGRICULTURAL DRAINING.—THE DERBY LEVEL.—The attention of persons Draining their land is directed to this efficient but simple Instrument, presumed to be all that can be required for the purpose, and its price such as to place it within the reach of all. To be had of the Maker,

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PATENT ASPHALTE ROOFING, Saving half the Timber usually consumed.

Weight, 24 lbs. per square of 100 feet.

Cost, 8*s.* 4*d.* per square of 100 feet.

The above Material has been used and approved of by the NOBILITY, GENTRY, and AGRICULTURISTS generally, as a ROOFING & COVERING to SIDES of FARM BUILDINGS.

Its advantages are LIGHTNESS, DURABILITY & ECONOMY.

Being a non-conductor, it has been proved an efficient PROTECTIVE MATERIAL TO PLANTS, and is now in use at the ROYAL HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.

It can be had of any length, 32 inches wide, at 1*d.* per foot, super. A discount to the Trade.

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GLENNY'S GARDEN ALMANAC, Illustrated with Engravings. The most numerous yet published for the Management of an Amateur's Garden; Lists of the best Fruit, Flowers, and Plants for Small Gardens, which only grow but few. The only List of Nurserymen, &c. &c.

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SUGGESTIONS TOWARDS AN INQUIRY into the PRESENT CONDITION of the LABOURING POPULATION of SUFFOLK. By the Rev. J. S. Henslow, M.A., Rector of Hitcham, and Professor of Botany in the University of Cambridge.

"Much food is in the tillage of the poor: but there is that is destroyed for want of judgment."—Prov. xiii. 23.

Also, by the same Author,

LETTERS to the FARMERS of SUFFOLK. Price 2s. And SERMONS on IMPROVED ATTENTION to the SACRAMENTS. Price 1s.

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The First Part will be published on the First of January.

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Post 8vo. price 9s. boards; 10s. 6d., in a new kind of cloth, Silver Gilt, for Presents.

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CHRISTMAS FESTIVITIES. By J. Poole, Esq., Author of "Paul Pry," &c. Post 8vo, cloth, with a Portrait of the Author, price 10s. 6d.

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On Thursday, Dec. 12th, will be published, by Mr. Wm. Smith, 113, Fleet-street,

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On the 1st of February will be published,

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The Railway Chronicle

Of Saturday last, November 30, contains,

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REPORTS OF MEETINGS—London and Birmingham, with the Resolutions of the London and Birmingham and Grand Junction Boards—Dutton and Sandbach—Leasing of Sheffield and Manchester by the Midland—Rents and Selby Transfer to York and North Midland—The Yale.

PROJECTED LINES—Aberdeen—Great Valley—Eastern Union Extension—Witham and Braintree—London and Norwich Direct—Ryston and Peterborough—Torquay and Newton Abbott—Launceston and Plymouth—Irish Great Western—Waterford and Kilkenny.

VALUE OF SHARES—Returns from London, Liverpool, Manchester, Leeds, York, Hull, with comments on the respective Markets, and latest Prices.

PARIS MONEY LETTER, with Observations for the Week.

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RAILWAY LITERATURE—Mr. Gale on Legislation.

MISCELLANEA—Index List of Parliamentary Notices, with references also to the Gazettes in which they are to be found—Atmospheric Railway—Prevention of Incrustation—Civil Engineers' Prizes and Premiums.

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Hard Bible Words made [illegible]

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Societies.—The Geographical: Ascent of the Kuran, by Lieut. Selby; E. N.

Fine Arts.—Death of Sir Augustus Wall Callcott, R. A.—Analysis of Gothick Architecture

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The Medical Times,

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The Structure and Functions of the Brain, with New Views on the Nature, Causes, and Treatment of Mental Diseases. By Pinel, Physician to the two National Mad Asylums of France, &c. Translated, with Illustrative Notes, by Dr. Costello

Report on [illegible] Cases by E. Reay, M.D.

On Aura Epileptica and other Disorders of Sensitive Brain-Tracts, by T. Wilkinson King, F.R.C.S.E.

A Conjecture on the Nature of Electricity, by G. D. Bermott, Esq.

Clinical Lectures on some Important Points of Surgery, by Sir B. C. Brodie, Bart.:—Lecture 16.—On States of the System rendering Operation Dangerous.

Pathology of Expectoration, by S. Wright, M.D.

On the Proximate Cause of Tubercle, and the Treatment of Pulmonary Phthisis, by J. H. Towill, Esq.

Magic, Mesmerism, Hypnotism, &c. &c., Historically and Physiologically considered, by J. Braid, M.R.C.S.E., Manchester.

On the Influence of the Sudden Traumatic or Toxical Lesion of the Spinal Marrow on the Kidneys and Bladder, by E. H. Desportes, M.D., M.A.M., &c.

HOSPITAL REPORTS:—King's College Hospital—St. Bartholomew's Hospital—St. Thomas's Hospital.

REVIEWS:—Mr. Taylor's Manual of Medical Jurisprudence—Dr. Guy's Principles of Forensic Medicine—German Translations of Dwight's Papers on Saliva—On the Use of the Blow-Pipe in the Examination of Minerals, &c., by Professor Plattner, translated by Dr. Muspratt.

TRANSACTIONS OF LEARNED SOCIETIES:—Ethnological Society—Royal Medical and Chirurgical Society.

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LEADER:—The New Medical Association.

State of Professional Feeling.

PROGRESS OF FRENCH MEDICAL SCIENCE:—Dr. Laugier's New Mode of Dressing Wounds—Professor Velpeau on the Treatment of Erysipelas—M. Lassaigne on the Composition of Urine in Albuminuria—Case of Artificial Anus, by Professor Blandin—Transactions of the Parisian Medical Society, Nov. 14th—Case of Poisoning, by a very feeble dose of Hydrochlorate of Morphia, by Dr. Danyau—On the Changes in the Proportion of the Fibrine of the Blood during Disease, by Professors Andral and Gavarret—Academy of Sciences; Sitting of the 28th Nov.—Description of an Insect which Attacks the Olives in the South of France, causing them to Fall ere Maturity; by M. Mareville—M. Valenciennes' Researches on the Structure of Cartilages—Academy of Medicine; Sitting of the 26th Nov.—On Fractures of the Neck of the Femur, by Dr. Gimelle—Fibrous Tumour, presented by Professor Roux.

PROGRESS OF GERMAN MEDICAL SCIENCE:—Radix Quassiæ as a Remedy against Amenorrhœa—Action of Tincture of Galls on the Salts of Oxide of Mercury—Preparation of the Unguent. Potass. Hydriod.—Oleum Phosphureto-Camphoratum Rubrum—Presence of Free Muriatic Acid in some Animals' Secretions—The Poisonous Action of Arsenious Acid Heightened by Nitrate of Potash—On the Preparation of a Pure Carbonate from the Common Salt of Potash—On the Preparation of Lead-Plaister—Preparation of Pure Antimony.

Progress of English, American, and Italian Medical Science.

Inflation of the Lungs of New Born Infants, by A. W. Close.

Gossip of the Week.

Metropolitan Mortality Table.

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THE HORTICULTURAL MAGAZINE.—Mr. Houlston, 164, Strand, will publish, on the 1st of Jan., 1845, Price One Shilling, Part I. of the "HORTICULTURAL MAGAZINE," a New Periodical on Flowers and Gardening.

Contents:—Cultivation of Hardy Lilies—Planting Forest-trees—Ornamental Timber—Application of Manures—Landscape Gardening—Management of Grape Vines—Planting Shrubs—Grafting—Hybridising—Horticultural Buildings—Description of New Flowers—Wonders of the Vegetable Kingdom—Designs for Rock Gardens—Irrigating Lands—Select Fuchsias—Hardy Annuals—Reviews—Practical Gardening, and Management of Hothouses, Greenhouses, and Frames—Horticultural Notes, &c.

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Printed by William Spanswick, of No. 6, York-place, Stoke Newington, and Frederick Mahony Evans, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their Office in Lombard-street, in the precinct of Whitefriars, in the City of London; and published by them at the Office, No. 4, Charles-street, in the parish of St. Paul's Covent-Garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, December 7, 1844.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 50.—1844.] SATURDAY, DECEMBER 14. [Price 6*d*.

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NOTICE IS HEREBY GIVEN, that in future the MEETINGS of the GARDENERS' BENEVOLENT INSTITUTION will be held at the LONDON COFFEE-HOUSE, Ludgate-hill.—By order, Edw. B. Cutler, Secretary, 97, Farringdon Street.

GARDENERS' BENEVOLENT INSTITUTION.—A GENERAL MEETING of the Subscribers to this Charity will be held at the LONDON COFFEE HOUSE, Ludgate-hill, on the 22d Jan. next, for the purpose of receiving the Accounts of the Institution for the past year, and Electing Officers for the ensuing year; after which an ELECTION will take place from among the following persons, whose Testimonials, &c. have been examined and approved of by the Committee, viz.:—

JOHN BLAYLOCK,	aged	72.	3d Application.
ROBERT CRACKNELL,	,,	72.	2d ,, do.
GEORGE MARTIN	,,	61.	2d ,, do.
JOHN ADAMSON	,,	67.	1st do.
WILLIAM EDWARDS	,,	60.	1st do.
THOMAS FARMER	,,	63.	1st do.
BARNEY FARRELLY	,,	67.	1st do.
JOHN FISHER	,,	69.	1st do.
JOHN GARNELL	,,	77.	1st do.
CHARLES GIBBONS	,,	58.	1st do.
CHARLES GRAY	,,	69.	1st do.
JAMES STEDMAN	,,	75.	1st do.
ANN SUTTLE	,,	67.	1st do.
RICHARD STOYLES	,,	77.	1st do.

No person will be allowed to vote whose Subscription for 1844 is unpaid on the day of Election.

Edward B. Cutler, Secretary, 97, Farringdon-street.

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Ditto three years ditto, 7*s*. 6*d*. each.

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All letters intended for this Nursery must be addressed Knap-Hill, near Bagshot, Surrey.— Dec. 14.

TO THE CULTIVATORS OF ROSES.

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Nicolate	Gurin's Gift	Charles Louis
Petite Renaté	Gurin's Desdanes	De Candolle
Semillasse	Leo the Tenth	Fulgens
Theodora	Lionel Dumourtier	George the Fourth
La Ville de Bruxelles	Madame Dubarry	Eclatante (Moss)
Volumineuse	Reine me Surpasse	Princess Royal
Agathe Dusart	Triomphe de La gueule	Prolifero
Agnodier		Pompour
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Hedenham, Dec. 14.

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Canes are sold at 20*s*. per 100, or 5*s*. per score, carriage paid to London. Charge, for package, for small parcels, 6*d*., for large do., 1*s*. to 2*s*. 6*d*. Orders to any amount can be executed. The Trade price will be given on application.

Sawbridgeworth, Herts, Dec. 14, 1844.

NURSERY LARCH.

COWAN and Co., Nurserymen, Glasgow, have on hand a large quantity of well grown transplanted LARCH, 2 and 3 feet high, which they will sell at a low price, as they must be removed this season. All sorts of Forest-trees, seedling and transplanted, grown extensively, and offered at very moderate prices.

EDWARD BECK informs the Public that in consequence of the greatly increased demand for his SLATE TUBS, he is enabled to reduce the price of the following sizes about 15 per cent. He regrets the too frequent delay which has occurred in the execution of orders. This he hopes to avoid in future by keeping a supply on hand.

Present Prices for Cash or Post-office order:—

14 inches	11*s*. 6*d*.	28 inches	22*s*. 6*d*.
15 inches	12 6	29 inches	24 0
16 inches	16 6	30 inches	28 0
18 inches	20 6		

Slate Works, Isleworth, Middlesex.

WANTED, 1,000 or 2,000 TWO-YEAR OLD SEEDLING HOLLY PLANTS, deliverable in Liverpool. Apply, with price, Box 613, Post-office, Liverpool.

THE TRUE FASTOLFF RASPBERRY.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, HIS GRACE THE DUKE OF MARLBOROUGH, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c.; as well as by the HORTICULTURAL SOCIETY OF LONDON.

YOUELL AND CO. beg to announce they are able to supply fine canes of the above truly excellent variety, unequalled for the size of its fruit and richness of flavour; prices as follow:—

Packages containing	100	Canes,	£2	0 0
Ditto	50	,,	1	1 0
Ditto	25	,,	0	12 0

For particulars of this above, see Y. & Co.'s Advertisement of Nov. 9th.

YOUELL AND CO. take the present opportunity to state that the above unequalled RASPBERRY is to be obtained only at their Nursery or of their Agents (for the list of whom see their Advertisement of last week); and they recommend their friends to be cautious of whom they purchase, as another Raspberry, under the above title, has been substituted by certain parties as the "true variety." They also publicly deny the truth of Mr. Rivers' statement, "that the fruit upon which Dr. Lindley pronounced his opinion was gathered in what he terms the 'Filby Garden.'"

Also FISH'S EARLY CANTALOUPE HARDY GREEN-FLESHED MELON; for Particulars of which see their Advertisement of last week.

Great Yarmouth Nursery, Dec. 14, 1844.

ROSES, HARDY HERBACEOUS PLANTS, AND HOLLYHOCKS.

WM. JACKSON and Co. beg to offer Collections of the above from their select Stock on the following very reasonable terms:—

100	Dwarf Roses in 50 named sorts; for		20*s*.
100	do. do.	100 do., fine sorts,	35*s*.
100	do. do.	100 do., very fine sorts,	50*s*.
20	Beautiful Scotch Roses, with names,		10*s*.
25	Standard Roses, including the fine Moss and Hybrid Perpetuals,		40*s*.
50	Do.	do. do.	do. 75*s*.
100	Showy Herbaceous Plants		for 25*s*.
100	Do.	100 do., fine sorts,	35*s*.
50	Very fine showy do.	do., in 50 do.,	20*s*., including several new and beautiful species and varieties.

100 Fine named Hollyhocks for 35*s*.

The above are well grown, the Dwarf Roses on their own roots, and from the same stock as those which gave such general satisfaction last season. Plants given to compensate for long carriage. Catalogues will be forwarded on receipt of two postage stamps.

A remittance or reference respectfully solicited from unknown correspondents.—Cross Lanes Nursery, Bedale, Yorks., Dec. 14.

CALCEOLARIAS.

S. STAFFORD, Nurseryman, Seedsman, and Florist, Hyde, near Manchester, begs to observe that his List of Seedling and other CALCEOLARIAS is now ready, and may be had on application. For description of Seedlings see *Gardeners' Chronicle*, July 6th, signed "S. S."; *Gardeners' Gazette*, July 20th and 27th; "Hudson's Cabinet" for September, page 227. Camellias, Fuchsias, and other Greenhouse Plants; Forest and Fruit-trees, Shrubs, &c.; of which Lists may be had.

CORNISH KIDNEY POTATOES.—THE EARLIEST OF ALL EARLY POTATOES. *It is* remarkable that this valuable sort should be so little known and cultivated in England. It is grown to some extent in the West of Cornwall, AND HAS BEEN PRODUCED IN THE OPEN GROUND DURING THE LAST TEN YEARS, FROM 1ST TO 15TH OF APRIL, (on an average.)

Upwards of three hundred acres are annually grown in the neighbourhood of Penzance; and thousands of baskets are sent, by steamers, to supply the London and Bristol Markets.

The growers obtain them so early, that they are enabled to procure an excellent second crop on the same land.

It is a most valuable sort, and should be grown in every garden where early vegetables are required.

Sold in Boxes, at 5*s*., and 7*s*. each, package and carriage free to London or Bristol, which will be forwarded on receiving a Post-office order, on application to WILLIAM E. RENDLE.

Union-road Nursery, Plymouth, December 14th, 1844.

WHITNEY'S PATENT CLOTH for COVERING GREEN-HOUSES, CUCUMBER or MELON PITS, &c. This Cloth is made expressly for the purpose of applying Whitney's Composition upon, and is much more durable than any other material: when coated it is beautifully white and transparent. The perfect success of Whitney's Composition for all Horticultural purposes cannot be more fully established than by stating, that on the 1st of April last, a Black Hamburgh Vine was set in a border, the stem introduced into a house covered with Calico, and coated with Composition. On the 1st of September a bunch of Grapes was cut weighing 16½ ounces; the fruit was finely coloured, and the flavour pronounced to be excellent. A sample was sent up to the Editor of the *Gardeners' Chronicle* for his inspection. The tree grew very luxuriantly, the foliage very fine, and the wood ripened exceedingly well. As a winter protection it is infinitely warmer than glass.

The PATENT CLOTH and COMPOSITION can be obtained of Messrs. Butler & Buckley, Covent Garden Market; Hurst & M'Mullen, Leadenhall Street; Warner & Warner, Cornhill; Barclay & Sons, Farringdon Street; and Hannay & Co., Oxford street. — Wholesale and Shipping Agent, Mr. Bailey, Wolverhampton.

THOMAS JACKSON, of the Priory Farm, Childwall, near Liverpool, begs to inform Nursery, Seedsmen, and others, that he has saved a fine quantity of the Incomparable Hardy Green COLEWORT, which was Advertised in the *Chronicle* of 23d March last. T. J. can refer any person to a respectable Nurseryman in this neighbourhood, as to quality and being genuine. Price 2s. per lb.—Dec. 14.

EXHIBITIONS AT THE GARDEN OF THE Horticultural Society of London,

FOR THE YEAR 1845.

THE DAYS OF EXHIBITION will be the three following Saturdays, viz.: May 24, June 21, July 12.

EXHIBITORS.—All Persons, whether Fellows of the Society or not, will be at liberty to send subjects for exhibition.

FLOWER-STANDS.—Exhibitors of Cut Flowers must SUPPLY THEIR OWN BOXES OR STANDS. No box or stand should exceed eight inches in height at the back, or 18 inches in depth from front to back. The lids of all boxes MUST either be loose or made to unhinge.

MEDALS AND REWARDS.—The Society distributes the following Medals and Rewards,—namely,

	value.— £	s.	d.
C. The Certificate	0	10	0
SB. Silver Banksian Medal	1	0	0
SK. Silver Knightian Do.	1	5	0
LS. Large Silver Do.	1	15	0
SG. Large Silver Gilt Do.	4	0	0
GB. Gold Banksian Do.	7	0	0
GK. Gold Knightian Do.	10	0	0
LG. Large Gold Do.	20	0	0

Exhibitors to whom any of these shall be awarded can exchange them one for another, or may receive their value in money, or in plate. *If within one month after the third Exhibition of the year* no intimation shall have been received from an Exhibitor of the manner in which he desires his Medals to be disposed of, all the Medals due to him may be prepared and *transmitted to him through the usual public conveyances, without further notice.* In case an Exhibitor shall receive a First Prize in any one letter, he shall not be entitled to receive any other Medal in the same letter, except in *K K*, *M M*, and *N N*.

IT IS, HOWEVER, TO BE PARTICULARLY OBSERVED that if any Exhibitor shall obtain the award of a Medal, and it shall be afterwards ascertained that he has gained it by exhibiting plants not *bond fide* his own property, or that of his master, such award shall be cancelled, in favour of the Exhibitor next below him, whose Medal shall in like manner be transferred to the person immediately following him in the award, and so on.

SUBJECTS OF EXHIBITION.—These will be divided into Classes, as explained further on. No articles not of Horticultural produce will be allowed to be placed upon the tables. Exhibitors will do well to make themselves acquainted with the arrangements described in the following List, as they will in ALL CASES BE REQUIRED TO SIGN A PRINTED FORM OF DECLARATION TO BE FURNISHED TO THEM IN THE GARDEN, stating under what letter their plants are to be shown; and they are particularly requested to TAKE NOTICE, that if errors in the awards of the Judges should occur, in consequence of mistakes on the part of Exhibitors in filling up such Declarations, the Society cannot undertake to rectify the errors afterwards.

Names fairly written are to be attached by Exhibitors to all Florists' Flowers; and the Judges are restrained from awarding any Medal to such Exhibitions, whatever their merit may be, if this regulation is not complied with. By Florists' Flowers are meant not only flowers usually so named, but also Fuchsias, Pelargoniums, Roses, and Calceolarias. It is also hoped that all other subjects of Exhibition will be neatly and legibly labelled with their names.

(*Corrected List of Medals, &c.*)

CLASS I.—FLOWERS; for which Nurserymen and Private Growers exhibit independently of each other.

A. Pelargoniums; in collections of 12 new and first-rate varieties, cultivated with superior skill, in pots of 24 to a cast. GB—SG—LS.

B. Pelargoniums; in collections of 12 varieties, in pots of 24 to a cast. GB—SG—LS.

C. Pelargoniums; in collections of six varieties, in pots of 8 to a cast. LS—SK—SB.

D. Roses, in pots; Amateurs to show in collections of 12, Nurserymen in collections of 25, distinct vars. GB—SG—LS.

N.B. It is the wish of the Society, in a future season, to require Roses to be shown exclusively in pots, and not to allow cut specimens to be exhibited at all.

E. Roses in pots; single specimens displaying superior cultivation. SK—SB—C.

F. Moss Roses, in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety; in 12 varieties. SK—SB—C.

G. Other Roses, exhibited as in the last letter, and in 50 varieties. LS—SK—SB.

N.B. No one who exhibits in this letter can also compete in the following.

H. Other Roses, exhibited as in the letter F, and in 25 varieties. SK—SB—C.

N.B. Higher Medals than those here offered for Roses cannot be given by the Judges. And if Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.

I. Cape Heaths; in collections of 20 entirely distinct varieties. GK—SG—LS.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion.

K. Cape Heaths; in collections of 12 entirely distinct varieties. GB—SG—LS.

L. Cape Heaths; in collections of 6 entirely distinct varieties. SG—LS—SK.

N.B. No person will be allowed to show in more than one of the classes *I*, *K*, and *L*.

M. Cape Heaths; single specimens displaying very superior cultivation. LS—SK—SB.

N. Calceolarias, in sizes; in pots of 24 to the cast. LS—SK—SB.

O. Carnations, in pans of 24 distinct varieties. LS—SK—SB.

P. Picotees, in pans of 24 distinct varieties. LS—SK—SB.

Q. Pinks, in pans of 24 distinct varieties. SK—SB.

R. Ranunculuses, excluding Turbans; in stands of 12 distinct varieties for Private Growers, and 24 for Nurserymen. LS—SK—SB.

CLASS II.—FLOWERS; for which all persons are admitted to equal competition.

S. Stove or Greenhouse Plants; in collections of 40 plants. LG—GK—GB.

N.B. Calceolarias, Fuchsias, Orchidaceæ, and Pelargoniums to be excluded from *S*, *T*, *V*, and *W*.

T. Stove or Greenhouse Plants; in collections of 20 plants. GK—GB—SG.

N.B. Exhibitors cannot show in more than one of the classes *S*, *T*, *V*, and *W*.

V. Stove or Greenhouse Plants; in collections of 12 plants. GB—SG—LS.

W. Stove or Greenhouse Plants; in collections of 6 distinct species. SG—LS—SK.

X. Greenhouse Azaleas; in 12 distinct varieties. GB—SG—LS.

Y. Greenhouse Azaleas; in 6 distinct varieties. SG—LS—SK.

N.B. No one can show in both classes of Azaleas.

Z. Stove or Greenhouse Climbers; in collections of 6 species. SG—SK—SB.

AA. Exotic Orchidaceæ; in collections of not fewer than 20 species. LG—GK—GB.

N.B. Exhibitors cannot show in more than one of the classes *AA*, *BB*, and *CC*.

BB. Exotic Orchidaceæ; in collections of 12 species. GK—GB—SG.

CC. Exotic Orchidaceæ; in collections of 6 species. GB—SG—LS.

DD. Scarlet Pelargoniums; in 6 distinct vars. LS—SK—SB.

EE. Pelargoniums; in 6 DISTINCT SPECIES. SG—LS—SK.

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden crossbreds.

FF. Achimenes; in collections of 6 species, grown in pans not less than a foot in diameter. LS—SK—SB.

GG. Distinct varieties of Tall Cacti in flower. GB—SG—LS.

N.B. The GB and SG Medals are not to be given if fewer than six varieties are exhibited.

HH. Fuchsias; in collections of 12 VERY DISTINCT varieties, of which one-half shall have a light calyx. LS—SK—SB.

II. Cinerarias; in pots, in collections of 12 distinct varieties. SK—SB—C.

KK. New or extremely rare ornamental Plants. SG—LS—SK.

NB. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Garden in a previous season.*

LL. Single specimens of very superior cultivation. SG—LS—SK.

MM. Miscellaneous subjects. SK—SB—C.

N.B. Exhibitors under *MM* will not be thereby *entitled* to a pass-ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets are altogether excluded from exhibition.

NN. Seedling Florists' Flowers. SK—SB—C.

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. Pelargoniums are to be shown in pots, and not in a cut state. No person will be allowed to exhibit more than 6 seedlings at each meeting. Exhibitors under this head will not be thereby *entitled* to a pass-ticket. For seedling Pelargoniums exhibited the first year no higher prize shall be given than a Certificate, and this is to be awarded to flowers of decided merit. Seedling Pelargoniums of the second year must be shown in pots not smaller than 32s, and each exhibitor may produce six of them, but not a larger number.

IN ADDITION to any Medals assigned to the classes *I*, *S*, *T*, and *AA*, the SK, SB, and C are offered for the collections in those classes which shall be best named by the Exhibitor.

N.B. The Society's Officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy of the spelling, and the neatness of the writing.

CLASS III.—FRUIT; for which Market Gardeners, Fruiterers, or persons in the habit of regularly supplying the Market, and Private Growers, exhibit independently of each other.

N.B. All Fruit must be FULLY RIPE and WELL-COLOURED and PROPERLY NAMED by the Exhibitor as far as practicable; if the contrary it will be disqualified.

OO. Miscellaneous Collections of Fruit, consisting of at least three different kinds, Peaches and Nectarines being considered as only one kind. GK—GB—LS.

N.B.—Cucumbers, Tomatoes, Gourds, and similar Kitchen Garden produce, are excluded from this letter.

PP. Grapes. SG—LS—SK—SB.

QQ. Pine Apples. SG—LS—SK—SB.

RR. Peaches or Nectarines, in dishes of six specimens. SK—SB.

SS. Other kinds of Fruit. SK—SB—C.

JUDGES.—The Judges have the power of *increasing* or *diminishing* the number and value of the Silver Medals offered by the Society for particular objects, and also of *conferring* Silver Medals or Certificates in cases not contemplated in these regulations, if they think it necessary to do so.

The Judges are also required to bear in mind that the Society's Medals are offered less for new and curious objects than for fine specimens of Horticultural skill, the design of the Council in instituting these meetings being not so much to encourage the Collector as to reward the skilful Gardener. They are also not to make any award in cases where the objects exhibited do not appear worthy of a Medal; otherwise a bad single exhibition might obtain a prize, merely because there is no better exhibition of the same class to oppose it.

By order of the Exhibition Committee, JOHN LINDLEY,
Aug. 31, 1844. Vice Secretary.

*** Copies of these Regulations can be procured upon application at the Society's Office, 21, Regent-street.

In 8vo, boards, with very numerous woodcuts, price 10s. 6d.,

LINDLEY'S ELEMENTS OF BOTANY:

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II. SYSTEMATICAL BOTANY:—1, Linnæan Sexual System; 2, Analytical Method; 3, Natural System; 4, Natural System of De Candolle (*the Part illustrated with Numerous Figures of the details of the more important Natural Orders*); 5, the Alliances of Plants; 6, Sketch of a New Distribution of the Vegetable Kingdom.

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D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

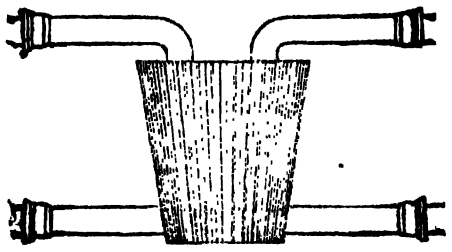
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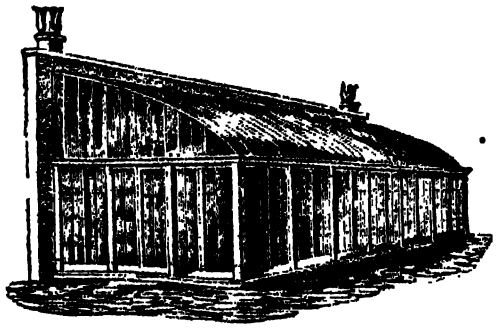
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Plain Boiler.			Patent Door and Frames.	Fire-bars & Dead Plate.	Flue Door.	Damper.	Will heat of Pipe.	Forcing Pit, Length by feet.
in.	ft	s.	s.	d.	s. d.	s. d.		
10	1	5	20	7 6	6 2	6	30 feet.	12 to 20
Ribbed Boiler.								
10	2	2	20	10 6	7 6	2 6	50 to 70 ft. 4 in.	Under 25 to 40
12	2	15	30	12 6	7 6	3 6	80 to 125 feet.	40 to 65
14	3	10	35	17 5	8 6	4 6	150 to 250 feet.	65 to 100
18	5	5	42	25 0	8 6	5 6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 50ft.
24	8	15	50	35 0	8 6	7 6	600 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL ROAD, LAMBETH.



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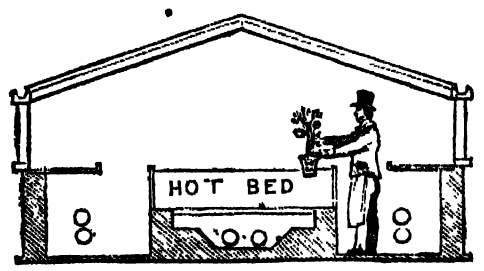
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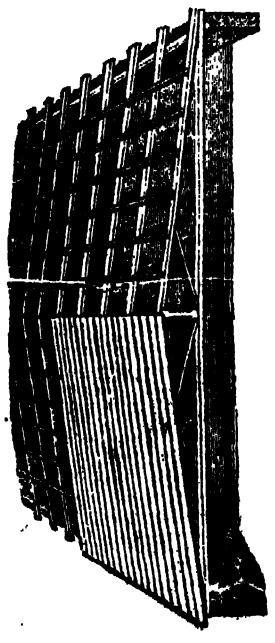
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1 and 4, Eyre-street-hill, Hatton Garden, December 14.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 14, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

SATURDAY, Dec. 14	Royal Botanic	4 P.M.
TUESDAY, Dec. 17	Linnean	8 P.M.
WEDNESDAY Dec. 18	Society of Arts	8 P.M.

WHEN, at p. 795, we adverted to the difficulty of obtaining information as to the TEMPERATURE OF SOIL, we had overlooked the very able paper on this subject by Mr. Parkes, Consulting Engineer to the Royal Agricultural Society. If the reader will turn to the volume of that Society's Transactions for 1844, he will see that we are not alone in our regret at finding so little precise evidence upon one of the most interesting and important points to which the cultivator, whether philosophical or merely practical, can turn his attention.

The highly interesting experiments recorded by Mr. Parkes in the paper alluded to, do not touch upon the depth to which frost penetrates the soil, for his observations were made in the summer, and had reference to other questions; but every farmer and gardener in this country ought to learn them by heart. We have, however, been favoured by this gentleman with some unpublished observations bearing directly upon the frost and Potato question, and with his permission we are able to make them public:—

"It may not be uninteresting," writes Mr. Parkes, "to know that I preserved Potatoes in the ground, perfectly, through the excessively hard winter of 1829-30, in France. In that season the Seine carried down ice on the 9th Nov., but it melted again; the ice began to pack up against the various bridges between Paris and Rouen about the 1st Dec., and the river was finally sealed over at Paris on the 9th of Dec. Winter did not break up until the 9th of March, the ice then being from 18 to 20 inches in thickness opposite my house at Puteaux, near Neuilly, four miles from Paris. A long pit, 4 feet deep, was dug in a dry sandy part of the garden, and filled with Potatoes to within 2 feet of the surface, being covered with the same soil quite flat; no straw was used. The bury was opened in the early part of March, and the whole of the Potatoes were discovered to be quite sound; the frost had not even penetrated to the upper layer, and very little sprouting had taken place. During three weeks of this period, I never observed the thermometer hanging in the garden to rise higher than 16½° *below* zero, even during the daytime, with a cloudless sky and brilliant sun. No rain, and but little snow fell during this severe winter, and that little rapidly wasted by evaporation. The hygrometrically dry condition of the atmosphere was evidenced by the rapid drying of linen hung out of doors quite wet; in a minute or two, the clothes were frozen solid, and quickly afterwards they were limber and dry. A large Plane-tree was split open in the same garden during this frost. I discovered, on examining it, that a decayed part of the heart had admitted water, which became a core of ice, about a yard in length, and this burst the tree by its expansion with a loud explosive report—a well-known phenomenon in cold climates, but which I had not before experienced. I also preserved Carrots for the horses, and salads throughout this winter, by lining or walling the inside of a pit, first with stable-dung (a common plan in France), then clean straw against it, and intermixing tolerably dry sand with the vegetables throughout the mass. The Carrots were perfect, and the outer leaves of the Lettuces, Celery, &c. only were affected. No disagreeable flavour was imparted by the dung.

"It may be added, that the severity of this winter was considered by the Parisians to be equal to the *Moscow* winter, 1812. Fires were lighted in the streets for the poor houseless wretches, and many were frozen to death."

These facts testify to the very extreme and long-continued frost that is necessary to bring down the temperature of dry soil to the freezing point at 2 feet deep. In fact, Mr. Parkes's garden was not frozen to that depth during the whole of that rigorous season.

It may be interesting to add, that since the frost of the present year set in, the following has been the actual temperature of the soil in the Garden of the Horticultural Society:—

A Return of the Temperature of the Air and Earth in the Garden of the Horticultural Society.

1844.	Air.			Earth.	
	Min.	Max.	Mean.	One foot deep.	Two feet deep.
Dec. 4	22	40	31	40	43
,, 5	14	35	24½	38	43
,, 6	14	30	22	37	42
,, 7	20	34	27	37	41
,, 8	26	32	29	36	41
,, 9	28	32	30	36	40
,, 10	28	32	30	36	40
,, 11	22	30	26	36	39

From this it appears that in five days after the frost set in this year, the thermometer had fallen within 4° of freezing, at one foot below the surface of the soil; that the cooling down was a slower process than might have been supposed, and not coincident with the air-cold; for it was 3 days after the greatest amount of air-cold was felt before the lowest temperature at a foot below the surface was attained.

Should the coming winter prove a severe one, we trust that some of our friends will make similar observations on this point, or at least ascertain to what depth their soil is frozen. For ourselves, we shall certainly recur to the subject at no very distant period.

Next week we shall resume the experiments on Potato-growing.

WHEN we see a plant which will endure the highest temperature given to stove plants, without being incommoded, and that for many seasons in succession, we naturally conclude that it is not of the class from which SUBJECTS fit for CONSERVATORY CULTURE might be expected. Taking this presumptive evidence, and reasoning, in the absence of direct experiments, we probably exclude many fine plants that would otherwise excite great interest, and give a more exotic cast to our conservatories.

A proof of this may be adduced in the case of Calliandra Houstoni, a plant lately noticed in our Calendar of Operations under the name of Acacia kermesina, for its graceful habit, and fine foliage, and for its flowering in winter. It has been in our stoves for upwards of 50 years, under different names, but was never suspected of being anything else than a stove plant. More recently, however, some one gave it the popular name last quoted, when a place was assigned for it in the conservatory, where, we are told, it has proved to be sufficiently hardy to stand all the year round. In fact in the Camellia-house of Messrs. Pince and Co., of Exeter, it was removed because it threatened to smother the Camellias. Since we are certain that not more than one plant passes under this name, the fact of its being so hardy becomes more generally interesting, for there can scarcely be a more graceful or more suitable plant for covering the bottom of a pilaster in the conservatory—a situation often in want of some such ornament when strong-growing climbers have become naked at the bottom, as they often do after a few years.

In some instances the more hardy stove climbers are now planted out into the conservatory after they have been grown in vineries or other forcing-houses, or in stoves, till they are long enough to reach the top of the house at once, which is kept sufficiently close to afford them the necessary temperature. Many of this class must necessarily be left naked at bottom, where the air of the house is too cold for their young shoots, and thus, a space is left for choice woody plants that are not climbers, among which the subject of these remarks may take a leading place.

At present, when climbers get naked at the bottom, the practice is either to cover the parts with long shoots from the top of the house, or to plant slender-growing climbers round them; but a better way would be to select fine plants, not exceeding ten or twelve feet in a rich border, or that might be easily kept to the required height by pruning; such plants being remarkable for some peculiar feature, such as a graceful mode of growth, fine foliage, conspicuous or sweet-scented flowers, &c. A situation of this kind would suit Luculia gratissima, particularly if it happened to be near the doors or source of ventilation. This beautiful shrub, so lovely at this dull season, although a strong-growing plant, is a delicate feeder, and a strong climber planted behind it may be said to assist its growth rather than impede it, by appropriating to itself the more gross parts of the soil in the border. If the climber, however, is of the very fibrous-rooted kind, like the Ash, few plants can compete with it for nourishment; whereas, such climbers as Ipomœa Horsfalliæ, Combretum purpureum, Beaumontia grandiflora, and most of the Passion-flowers, Hardenbergias, Zichyas, &c., form their roots differently, and are suitable for this kind of furnishing when they become naked below.

Plants for such a purpose ought to be well established, and of considerable size, before they are finally planted out, and all plants, whether climbers or otherwise, that have been first reared in the stove or in heat, ought to be thus treated, otherwise it is found in practice that many of them make little progress for the first season or two. Another cause which operates against the free progress of some climbers is, that for the sake of convenience they are increased from cuttings of the flowering shoots, which are more or less stunted, and the young plants for a time retain that character, until forced by good feeding or strong heat to assume their native freedom; and even after that is effected, if they are afterwards much confined in small pots, they become again stunted; then the best remedy is to cut them down to the surface of the ground, and force them in a hotbed to make a fresh growth. Beaumontia grandiflora, and some of the stove Bignonias, are the first to suffer from either cause; yet when they are young and vigorous they grow from ten to twenty feet in length in one season, and some Bignonias even much more. The former should be about two or three years old, and from 15 to 20 feet in length, before it is planted in the conservatory, where it flowers freely for two or three months, in terminal heads of large, white trumpet-shaped fragrant flowers.—*D. B.*

NATURE AND ART.

IN Nature all plants seem to enjoy a soundness of constitution which bids defiance to disease—no failure of crops or falling off of bloom prematurely; age after age views these inhabitants of mountain and plain luxuriating in wonted vigour, and rarely dying out before a progeny to continue the species has been insured. They may be browsed on by wild beasts, and have their seeds gathered by birds for food; yet they are still found flourishing in their natural habitats, peering forth in humble beauty from the sod, or flaunting with gorgeous festoons in the fitful zephyr. Such are plants, and so would they continue, if left to Nature; but man desires their service and company; their flowers please his eye, and their produce gratifies his palate; and as he cannot at all times afford to travel "from Indus to the Pole," to admire and collect them, he has attempted to domicile his favourites with himself, and with wondrous success. Plants have thus been nursed, fed, petted and fondled, until they have fairly outgrown and excelled the humility of their origin; nor, indeed, would the parent of some of these prodigies be known in its offspring if placed beside it, so little family likeness is there between them. Like spoiled children in general, however, these pets are capricious and delicate, and if returned to their pristine condition, would seldom outlive the change; they have been so habituated to artificial training and luxurious habits, that, thrown on their own resources, they would either pine away or again relapse into savage nature, and become as plain and commonplace as they originally were. Even with all the care and kindness that their guardians can employ, these nurslings frequently get sickly and diseased, falling into consumption, cancer, gangrene, and various incurable maladies, disappointing the hopes of their unfortunate possessors, decimating their ranks, or sweeping them almost entirely away.

Without, however, proceeding farther cacophonically, let us inquire how far Nature and Art seem compatible in the growth of plants, and to what extent we can effect improvements in them for our own purpose, without impairing that constitutional vigour which in their wild state they appear to possess.

The first idea which strikes one on inquiry into this subject, is the latent capabilities of plants in relation to our own wants; and as this principle lies at the foundation of all horticultural improvement, I may, perhaps, be permitted to enlarge a little on the topic. A leading and prominent feature in the mind of man is curiosity, or, as phrenologists term it, wonder. This gives him a desire after, and keen relish for variety, novelty, and change; it is the first faculty which becomes apparent in the restless gaze of the infant, and in the rambles of the child. One new object after another engages its attention incessantly, and handfuls of wild-flowers are successively deserted for the possession of a new assortment. Nature in her extensive domains offers a vast field for the indulgence of this appetite; the mountain and valley, the forest and glade, the sea-shore and inland seclusion, have all been ransacked to furnish objects for its gratification; for the adult acknowledges its sway equally with the tiny collector of roadside beauties. Nature, however, has limits, while the passion for novelty knows no bounds; and thus, at first sight, there seems an incongruity or want of harmony between them; but in reality this is not the case. Plants possess latent capabilities, as I have stated, and man has powers, by the exercise of which these are ascertained and brought out. What are all our florist flowers in Nature, or our fruits without cultivation, compared to the progeny which has been elicited from them! The Tulip might command a passing gaze from the traveller, or the sour Crab-apple a single trial of its unpalatable austerity, but with their occult properties, partially unfolded, the one offers a display, varied and gorgeous in the extreme, to the eye of the beholder; and the other affords a profusion of the most delicious fruit which Pomona can present at her banquet. Thus it is that the vegetable world and man are linked together in the most explicit and intimate union. Plants possess powers of variation and improvement, which in Nature would exist, and continue in abeyance, but for man to call forth and embody them;

and them, on the other hand, has been endowed with propagation, formation, and discharge within such time as to ascertain these dormant capabilities, and work them out to suit his own ends. Must here, it remains, let me remark, that horticulture presents one of the most cogent proofs of a creative Intelligence that natural theology can offer for consideration. Of what use would these hidden powers of plants have been if man, or some such being, had not been present with them, to embody their latent forms? or of what use would have been these adaptations in man merely to operate on plants which doggedly disappointed all his expectations of change? But there is no such discrepancy in creation: the constitutions of man and of plants harmonize with an exactitude so nice, that no species of reasoning can invalidate the inference of their mutual adaptation; and if this is so, it speaks of a creative Power which has planned and completed the beautiful arrangement. He that would sneer, therefore, at the cultivator of plants, knows not his own mental organisation, nor its harmony with the vegetable world; he arraigns the Author of both in a scoff at his neighbour's foible.

Each plant in Nature has its own soil and climate, where the parent, in its old age, will be succeeded by its seedling offspring, and continue thus to thrive as a species without interruption for unlimited years. When we bring a plant under cultivation, we endeavour to place it, as far as possible, under the same circumstances, provided our object be merely its conservation. The nearer we can bring these circumstances to those of Nature, the better will our plant thrive with us; but, in some cases, this is impossible, as when we attempt to cultivate an Alpine plant on grounds near the sea level. The Potato may here be given as an instance; it grows in its wild state on the high lands of Peru, and, of course, under a much lower atmospheric pressure than in any situation in which we are in the habit of cultivating it in Britain. This may be one of the causes of the sickliness of that succulent, now so much complained of; and I imagine that this opinion may, to some extent, be borne out by observation, for the plant is, in general, much less liable to failure in the hilly districts than it is in the low grounds, and on this account seed-Potatoes are generally procured, on account of their vigour, from the former situations. One thing, however, from experience in the cultivation of this root, is clear, that for many years after its introduction, there was no sickliness or death in its ranks—every paring with an eye was sure to sprout forth. The plant must, from the first, have been declining in vigour, although that did not become obvious until frequent mortality gave evidence of the fact: another cause besides—a difference in atmospheric pressure—tended to produce this evil; while the plant was in full vigour with us, we continued to propagate from the same root, not considering that any individual plant must necessarily get old and feeble, and we had not recourse to the only natural process of reproduction by seed, till that feebleness of constitution could only give us a sickly offspring, by which, of course, the evil has not been remedied. We should again have recourse to the plant in its native wilds, import seeds or roots from Peru, renew them occasionally by seedlings from healthy plants, and there will be no danger of losing this valuable succedaneum for bread.* That which gave us a stock of flourishing Potatoes for many years after their first introduction, will, there is little doubt, do so again by a repetition of the same means; if the soil is at fault, chemical analysis can tell us where.

As reproduction by seed is the *only* natural mode of increase with plants, we cannot expect to possess them for any length of time in luxuriance by other modes of increase, however suitable our soil and climate may be for their growth. Of whatever longevity an individual plant may be possessed, old age will at last creep on it with all its feebleness, and although we may protract the period of its natural existence, by transferring a bud or scion to a youthful stock, or give it fresh roots in the soil, it is still a portion of the same individual, and will at last die. Hence it is that many of our fine Pears and Apples are giving way to this imperative law of dissolution, and sinking under their load of years. Here Art fails to preserve for us that which she has reared, and we must go again to Nature for a fresh progeny.

There are several modes by which plants may be varied, or, as I have termed it, by which their latent capabilities may be educed. The mere retarding the growth of Oats, for instance, is said to be sufficient for its transmutation into Rye; and it may be that other annual Grasses and plants may have changes effected in them by a similar process: that subject, however, is yet new, and demands extensive investigation. By excessive nourishment, and repeated sowings of the seeds of plants that bud, we often effect changes of a remarkable nature: many of our finer fruits and florists' flowers have been thus obtained; but the very means employed to effect these changes seem often to impair the vitality of the products, so that it requires constant care, skill, and attention, to preserve the fragile beings in life and health which we have thus given birth to. The fact is that while artificial means seem necessary to effect a change on vegetable forms, Nature is only assiduous in preserving her own, and denies that perpetuity to the results of art, which she vouchsafes to her own uncultivated offspring; so that were the horticulturist to cease from his labours, Nature would again assert her supremacy, and return to that class of forms originally ordained to her trust. In all instances where the highly-bred varieties is had recourse to, in order to effect a change in form or colour, whether in fruits or flowers, this result, stability more or less takes place; and although we remove from the system after obtaining the desired improvement in any plant, still our purpose is not gained; it always retrogrades back and makes approaches to its original type, or continues as liable to disease as heretofore. This evil is often committed where there is no necessity for its occurrence; in the usual routine of nursery business, plants are overstimulated in order to procure an adequate supply of saleable specimens of any new variety, and their future vitality and strength of constitution are thus impaired, so that they often give way under agencies which would not affect them seriously if more considerately treated. How many fine Dahlias, Pansies, and other plants are thus lost, after they, with great trouble, have been procured! From the same excessive competition amongst salesmen, many of our hardy forest-trees are murdered in their infancy. Larches, for example, are reared in nurseries, in a hotbed, comparatively speaking, to their final destination; they are sown thickly in a good soil, suffered to draw each other up to so many saleable inches of growth, reared from any sort of seed that may be conveniently or cheaply come by, without regard to a healthy parentage, and sent out for planting on sterile wastes and bleak slopes of hills, where they are expected to grow and become valuable timber without further trouble. The fact, however, speaks for itself at last, in rotten hearts and unsaleable timber; the soft, spongy heads derived from quick rearing in the nursery, and often perpetuated by close planting and untimely thinning out in the young plantations, decay ere many years, and pumped timber, as it is termed, is the natural result.

By far the most important and extensively applicable mode by which we can vary plants is hybridisation; and here Nature and Art are often compatible in perpetuating fertile varieties which have been in this manner once obtained. It is not at all necessary to enter into the *modus operandi* of this process—every cultivator of plants knows enough of it, and deems it one of the most delightful and interesting of his occupations in the garden. Congeners have been brought from various and far distant climes, and mated with each other in the hothouse and garden, so that their progeny are now, like the Israelites of old, like the very sand on the sea-shore in number. Considering how readily crosses are often effected, it is wonderful how comparatively seldom they appear in nature. There are causes in operation which tend to prevent this. In the first place, plants are more readily fertilised by their own pollen than by that of another; and in the vegetable world there is no superfœtation. In the second place, insects have generally their own particular species of plants, whose flowers they frequent to the exclusion of others. These wild crosses are occasionally, however, evident, as in the Cacti and Aloes, and hence the botanical difficulty of properly defining a species. In crossing, if one desires a healthy sound-constitutioned offspring, the purest plants should be kept as nearly as possible in their natural condition, neither over stimulated nor under-fed, unless it is intended to combine high-feeding and hybridising, which is frequently done, but at the risk of a shorter lived progeny. —*Vidimus.*

* The Peruvian Potato yields much less increase by ... and the stem and seed may, in consequence, ... vitality and vigour. I have grown a Peruvian ... successive years, without a single tuber of ... has merely tripled its size.

ON THE PRESERVATION OF SNOW AS A SUBSTITUTE FOR ICE.

We have no ice-house here: much building has been going forward, and the ice-house was therefore unavoidably delayed till other more important structures should be completed. The following statements with reference to snow as a substitute for ice, will I think show that an ice-house is not essential, nor indeed necessary. Such houses are costly in the first instance, and nothing is more common than disappointments in the preservation of ice.

There is but little water here, and this chiefly running water, which does not very readily freeze. It would have been impossible for us to have filled an ice-house this season or last. The frosts in both years have seldom been of long enough duration, even where water is favourable and in sufficient quantity. Last year I was in hopes of getting some ice, as I had done the former year (about 48 cart-loads; this was preserved till about the beginning of October in a heap on the surface of the ground). Towards the end of January then, last year, we had a heavy fall of snow, and having hitherto had no chance of getting ice, my employer suggested a trial to be made with snow. Accordingly I looked out a place (to be afterwards described), and carted 170 loads in a heap, partly under, and partly above ground, and thatched it over with straw, &c. This stood all the demands upon it, which were considerable, up to February in the present year, when we had another deep snow. The heap was uncovered to be renewed, and it was found there were about 30 cart-loads remaining. To this 196 loads were added. It is deposited in a sort of hole, in a grove of oaks, which, however, do not by any means fully shade it from the sun. The hole is of an oval form, about 50 yards long, by about 18 yards wide at the top, and falls in every way gradually to the centre, which is about 4 feet deep below the level of the surrounding ground. This bottom is a thickly stratified rock, the fissures of which in all probability permit the escape of the dissolving water. In order to make quite sure of this, a drain was cut after the snow was lodged last year. This was easily done, as one side is clear on a rapid declivity. This is the state in which I found the hole; no hoppers, straw, or anything of the kind was left in the bottom. It is difficult to think what such an excavation could have been made for. I conceive the snow to be in the best possible state for collecting and carting when thawing, and quite soft. In this state I commenced with it last year, and this, in the following manner:—All hands proceed to roll snow-balls, and the ground in the direction of the hole being a gentle declivity on smooth Grass in the park, a man can continue to roll a ball till it is above two cart-loads. I have found it prudent to roll a great deal more up to one than I supposed I should need, thereby making ample allowance for a rapid thaw. In the balls it of course keeps much longer. It is compressed by its own weight in rolling. In the soft state described, it is also much easier filled into the carts; and, what is of more consequence, it is in the best state possible for treading in the heap, which it is impossible to overdo. Eight or ten men are stationed at the heap, treading and beating it as brought in. As soon as a sufficient quantity is deposited in the bottom of the hole to render it safe, the horses and carts are driven in at one side over the snow. This is continued to almost the close of the carting. It is so hard, that the horses' feet and cart-wheels make scarcely any impression upon it. They are thus of the most essential service in giving it solidity. It is carried up at first without regard to form, in order to prolong the practicability of driving the horses over it; but eventually it is marked out in a circular form, not unlike the top of a corn-rick, and the sides without such circle thrown on the top, which is about 14 feet above the level of the ground; thus making it 22 feet thick in the centre. It is then covered all over with short Wheat-straw, such as is not fit for thatch, then another covering over this with Fern, found in the Park; finally, a third covering of thatch. These different coverings and thatch are about a yard thick. The hauling this year occupied 6 horses with four carts, and about 17 men, two days; throwing up into form, hauling, and putting on covering, &c., about another half day. This, I feel persuaded, does not exceed the time and cost of filling an ordinary ice-house. I think, too, that the thatch might be dispensed with, which would abridge the labour, and save the most valuable part of the material used. Fern is found near the spot, and this, or short straw alone, of sufficient thickness, I have little or no doubt would answer the purpose. If I am right in this supposition, there is no question with me that the annual expense of collecting and storing ice is, in most cases, much greater than that now described. It will be obvious, that in taking out supplies the heap has by far the advantage; a cart-load may be got in ten minutes. Houses very generally have double and treble doors, and the intervening passages are filled with straw, all which has to be more or less displaced at every time ice is wanted; and when within the house, its atmosphere is unwholesome, and even dangerous, as a correspondent of the *Gardeners' Chronicle* in 1841, p. 797, truly states.

Local circumstances will of course, in some cases, affect the comparative advantages that I have stated snow to possess; as, for instance, where there is a large surface of still water, and the ice-house near to such water, and ice can always be obtained from it, all is well; but were I to have the water, I should be very content without the house. I should then lay in a supply of either ice or snow, just which might come first. Ice, however, has to be pounded small; there is not this labour with snow, and the rolling of the latter takes less time certainly than getting ice off the water, and pounding it; and I think it can more generally and certainly be obtained. Those situated like myself can be in no hesitation. I trust I need not insist that snow answers every purpose quite as well as ice when taken out of the heap, it cannot be distinguished from pounded ice.—*J. W., Salop.*

ACORNS AND THEIR USE.

A PARAGRAPH has appeared in the Papers, giving an account of a great demand for Acorns in Sussex, and great curiosity is expressed at the use that is to be made of them. Without diving into this mystery, the readers of the *Chronicle* will perhaps be satisfied with reflecting that, except when Acorns are very plentiful, which happened to be the case this year, the use that is to be made of them cannot be of any importance to the growers of Oak; plentiful Acorn years are not very common, the severity of our springs often destroying the very early blossoms of the Oak. In general, however, there are Acorns enough to carry on the great purposes of Providence, the continuance of the species of tree which produces the Acorn, and the supply of food for the animals that feed upon them—some useful, others most positively so—though it would be rash to say that any animal in the creation is not useful; among the former may be reckoned sheep, pigs, and deer; squirrels and mice can hardly be defended on the score of utility, as far as we know of their modes of life, though they eat Acorns also.

In all seasons, however, the Oak in general produces Acorns sufficient to carry on one of the great purposes of their creation, as before mentioned—the propagation of this species of tree; and it is of this part of the subject I am going now to treat.

Nobody who has attempted to raise Oak plants in plantations near a rabbit cover, can fail to have observed how soon the plants are attacked by them, and hares are very ready to assist. The observer of any young plantation may also have seen how much sooner a new planted tree is attacked than a young tree grown up from seed naturally sown, or from a stock from a coppice.

to all animals preferred a dry, withered plant to one of a juicy, fresh one, as no doubt they do. Where high wiregrass covered the ground with small branches of timber, particularly the Ash, the observer may notice that Hares and rabbits do not bark their branches till after they have dain a few days, and have become withered and unfit for food.

This circumstance led me to reflect that it would be a more certain way of raising Oak plants—and it is probable the case with seeds of other trees—if the ground intended to be planted were to be prepared and sown with Acorns, instead of planting the trees accordingly, almost ten years ago, I prepared a few acres of land, in the immediate neighbourhood of a fox-cover full of rabbits, which harassed, in spite of their enemies, the foxes, and sowed it with Acorns, without any fence whatever to keep off the rabbits. The Acorns were sown in drills, far apart, with a view to clean the ground from weeds as the Oak plants came up, and also for the facility of transplanting the Oaks, if required. The Oaks came up in plenty, but not very regularly, some not appearing for nearly two years; which was all against the experiment, and evidently occasioned by some of the Acorns having been sown too deep—a great error in seed-sowing: however, with this disadvantage, the seedlings fairly beat the rabbits, and even afforded protection to a colony of hares, that took refuge in the cover of the young Oaks. Besides the casualties among the seedlings, above 500 were annually transplanted as single trees into vacancies in an old wood; and, in spite of hares and rabbits, many succeeded, though outstripped in size and height by those left in the seed-bed. This plantation was examined this year, and the result was as above described, many of the trees varying from the height of 10 to 12 feet.

The plantation was regularly thinned out a few years ago, and before long will require another thinning; part of it had been cultivated, and on that part the trees grow least well. As to the time of sowing the Acorns, I should recommend following Nature, that is, sowing the Acorns when they drop ripe from the tree; they then soon vegetate, after which mice will not touch them, for they appear most fond of them when dry; pheasants are then, also, apt to scratch them up, for Acorns have many enemies to contend with, even before they grow into trees, but will beat them all, if man gives them fair play afterwards, in thinning, and judicious, moderate pruning. —*M. D. P.*

ENTOMOLOGY.

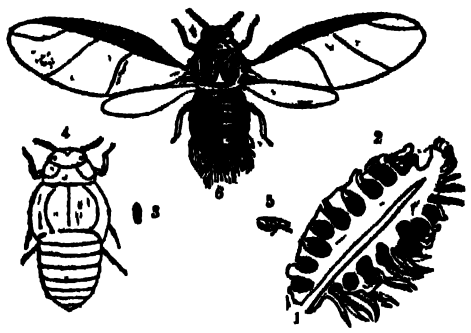
THE SPRUCE-CONE GALL APHIS.—(*Sacchiphantes Abietis.*)—The economy of an insect, probably nearly related to the present one, was discussed in my last Essay, and I shall now give a detailed account of the animals which cause the curious pseudo-cones, so much resembling the genuine fruit of the Spruce, upon which they are formed, that even naturalists have been deceived, and mistaken them for a modification of the cones.

In the third vol. of this Paper, p. 630, will be found a good figure of a sprig of the Spruce Fir, exhibiting these galls, and one which I divided longitudinally showed the structure represented at fig. 1, exposing eight cells on one side and nine on the other; but there were probably 50 cells altogether, as they were packed all round the circumference in about 12 rows; the woody stalk passed through the centre unaffected, but the bark was greatly thickened by the secretions injected by the female insect when the eggs were deposited, and forming oval cells exceedingly



smooth inside, and opening with a transverse suture or mouth, which is closed until the embryo brood has been fed, perfected, and changed to their pupa state; the upper lip projects, the under one is lobed in the centre, and supported by the leaf, which is very short, and forced back as this lip recedes from the upper one, to allow the insects to issue forth.

In the beginning of last August some of the Spruce Fir galls were sent to me from Lanark, which produced winged and wingless specimens in multitudes, the latter being the pupæ. The galls were produced towards the tops of the twigs, but there were younger and smaller excrescences formed above them, which were solid when cut through, and these, of course, kept up a succession of broods. Towards the end of the same month I found two spikes of the galls on a Spruce Fir; they were beautifully formed, of a charming green colour, and looked like Pine-apples in miniature: on pulling off the scales I found the flesh-coloured larvæ powdered over; they were similar to the pupæ (fig. 4), and it is I think clear that these were the offspring of eggs deposited early in the year; they were imbedded as usual in somewhat imperfectly-formed cells (fig. 2), the partitions appearing like a reticulous membrane. The pupæ are of a lead colour, being covered with a kind of powder or bloom; the head is broad and rounded, with a small black eye on each side, and a very minute black ocellus on each side of the antennæ; the prothorax is not much broader than the head, and the alitrunk is the broadest part of the animal; the sides are convex, margined, and slightly green, from the incipient wings shining through; the antennæ and legs are short and coherent: the former are filiform and five-jointed, the latter are tapering and simple. When these Pupæ are sufficiently developed, they fix themselves by their feet and crawl out of their skins, which are of a yellowish-white colour, and remain sticking to the leaves, as soon as they have cast off their coats, they become considerably shorter and of a greenish colour; the crumpled and contracted wings are spread out like little bright green pinions. One of the pupæ which I saw preparing to change, having attached itself, waved about a little for some time to contract itself and determine all the fluids to its thorax. I then perceived a small white margin to the tail, which was the loose skin that shortly formed a wrinkle down the back; this was followed by a crack along the thorax, which, widening, soon extended to the head, and became by degrees sufficiently enlarged to allow the head to emerge, sliding out so gradually that it was scarcely possible to detect any motion; yet shortly after, the first pair of legs was liberated and hung down, and so of the other two pairs successively; but they were not used, as I expected, to assist it in crawling out; and when the tail alone remained enveloped in the skin, the animal raised and depressed itself alternately, with unusual force, employing its legs a little, whilst the antennæ were set at liberty and vibrating; and this seemed to be the most difficult part of the operation, for I observed two of them walking about with the exuviæ still adhering to their tails. Immediately after its birth it appeared very weak on its legs, but soon walked off to a vertical position, where it remained nearly quiet, the wings expanding and becoming paler, until in twenty minutes they were completely developed, and I think that the entire change did not occupy more than forty minutes.



The perfect insect (fig. 5, natural size; 6, magnified and flying), is of a dull yellowish or ochreous green; the eyes are black, remote, and granulated, and close to each on the crown is a bright ocellus; the antennæ and legs are transparent green, the former are short and five-jointed, the latter have biarticulate tarsi and very minute claws; the rostrum is somewhat short and rests between the anterior coxæ; the wings are greenish-white, the superior having a portion of the costa very bright green; the costal nervure the strongest, the others are very indistinct; the first forms an oval apical cell, the second is oblique, as well as the third, but this is curved at its origin. The head and thorax become blackish as they get older and rubbed, and the wings after death fade to a pale browniah tint, and the costal nervures become rosy. Most of those which hatched under my glass bell were males, but a few had more acuminated tails, and these, I suspected, might be females, but I had no further evidence.

As there are excellent characters for distinguishing this group from Eriosoma, especially in the neuration of the wings, which are strikingly different, I shall propose the generic term of *Sacchiphantes*, or sack makers, for them, and I think it exceedingly probable that the Larch species will associate with this group. Linnæus named our insect Chermes Pini Abietis, and De Geer described it as the Aphis gallarum Abietis.—*Ruricola.*

ROSE GARDEN.—No. XXII.

(*Continued from page* 812.)

THE following brief List may perhaps prove acceptable to those who desire to collect some of the varieties most desirable to possess; no attempt has been made, however, to classify them, with the exception of defining in a *slight* degree the purposes for which they are most adapted.

CLIMBERS OR STANDARDS.

Lamarque.—Flower large and brilliant white, always expands well, and every bud formed comes to maturity; very fragrant, very free in the flower, which keeps and blows well in water when cut; the foliage is good, the growth rapid, but it requires much sun and some management in pruning; is rather delicate in some soils and aspects, but is the most perfect of all Roses for beauty, fragrance, colour, and freedom of flowering combined, where it does succeed; and it flowers twice, remaining each time long in beauty, the flowers being frequently much above 12 inches in circumference.

Madame Desprez.—A most hardy climber, fragrant; free in flower, fine in foliage, vigorous in growth; it stands at the head of the red climbers, as Lamarque of whites, but although the flowers are neither so fragrant nor so well expanded as the Lamarque, the wood is more hardy and foliage more rich.

Fortune Desprez.—Colour of the flower flesh-yellow; habit like Lamarque, and like it, somewhat tender in winter or rather in the spring, at the rise of the sap; not so fine however in the flower, and the petals fall off when this flower is cut for bouquets; its chief value lying in its singularity.

Rupa.—Rapid in growth, free in flower, fragrant in smell, the best adapted for arbours and lattice-work, and may be trained and cut with perfect facility.

Brennus odorata alba.—Desirable to cover a wall as an evergreen; but the flower does not expand: this Rose differs from the Maria Léonidas, in being more vigorous and yielding buds with perfect eyes more freely; its growth is rapid, its branches tortuous, appearance wild.

Princesse Nassau, Princesse Helene, Félicité Perpetuelle.—For wild growths, to stand singly, &c., some of which train well.

Brennus.—Colour splendid, size large, shape perfect, scent very fine, vigorous in growth, requires much wood to be left in pruning, very healthy, and perhaps the handsomest Rose of that character known.

Fulgens.—Colour brilliant, growth strong, moves well, but grows so fast it should not be left long in one place, if to be transplanted.

Félicité Perpetuelle.—Profuse in flower, healthy, vigorous, fast in growth, and hardy.

Lilac Noisette.—Very free, and continually in flower.

Bougainville Noisette.—Flower free, but small; not so vigorous as many others.

Common Noisette.—Seen everywhere; but the colour is clear, and habit of growth desirable.

Bouton Nankin.—Buds nankeen coloured; singular in appearance.

Bilhard, Conque de Venus, Blairii, Bourcault Amadis, Dr. Roake, Perpetuelle de Newby, Belle Elvire, Princesse Helene, Princesse Nassau, Ariel.—Colour intensely bright, wood healthy, growth free.

STANDARDS AND DWARFS.

Brennus, Mordaunt de Launay, Aimée Vibert, Conque de Venus,—Flower in bunches freely, colour delicate, growth free.

Queen of Bourbons, Queen of Belgians.—Beautiful colour.

Archduke Charles.—Colour dark and uncommon, foliage particularly rich, leaf large.

Napoleon Bourbon.—Continues late in flower.

Attelaine de Bourbon.—Colour bright, and flowers produced twice.

L'isle de Bourbon.—Colour bright; flowers once only.

Bourbon Nankin, Dr. Bilhard, Noisette Bougainville.—Free in flower, colour rosy lilac.

Noisette Fellenberg.—Colour bright, growth free.

Belle Auguste, Vivaricus, Charles Auguste, Madame Hardy.—Vigorous in growth, colour brilliant white.

Enchantress.—Formal in shape, very double, no scent, healthy grower.

Josephine Antoinette.—Formal in growth, perpetual, scent fine.

Bourbon Faustine, Noisette Paeoniflora, Ariel, Autumnus Perpetual, Madame Lafay, Père Bernard, La Biche, Euphrosyne, Noisette de Luxemburg.

Smith's Yellow Noisette.—Splendid yellow, opens badly; when cut for nosegays the buds should be opened with the fingers or the breath; scent fine.—*A. H. B.*

NOTES ON AMERICAN PLANTS.

[FROM PERSONAL OBSERVATION.]

(*Continued from page* 276).

Gerardia quercifolia.—I was much pleased when, for the first time, I saw this noble species in flower, and imagined that I had discovered a new plant; but on consulting my American Flora I was soon undeceived. Of all the herbaceous plants with which I am acquainted, there are few, if any, that surpass this in beauty. It grows about three feet high, branching out about 18 inches or two feet horizontally all up the stem, and loaded with flowers as large as those of a Gloxinia, and of nearly the same shape, the colour being of a brilliant yellow. This beautiful plant, although not grown in England, is common in many places in the States. I found strong plants growing in light sandy loam, and near the edges of woods, exactly in such places as we often find the common Foxglove growing with us. Some of your readers having correspondents in America, might easily procure seeds or roots, and try their skill in flowering it: if they succeed they will not begrudge the trouble.

Gerardia flava.—This may be called the yellow Foxglove of America—a most beautiful plant. The flowers in size and colour are nearly the same as the preceding, but growing with a single stem about three feet high, with a densely covered spike of bright-yellow flowers as large as the common Foxglove. It grows in situations similar to G. quercifolia. The best time to procure plants would be in the month of June, before they begin to throw up their flower-stems, and plenty of seed may be obtained in the autumn, as they seed freely. I am surprised that these two beautiful plants are not as yet found in our collections, and should be glad to hear of some one being successful in their cultivation. I also met with two or three annual species, which were very handsome, with finely-divided foliage and small purple flowers, exactly resembling Boronia pinnata, when viewed at a little distance; they would make beautiful pot-plants for autumn sowing.

Liatris.—This is a beautiful genus, containing species well worthy the attention of all plant-growers. The spikes are of various forms and heights, some of the kinds are nearly as graceful as Humea elegans, and all produce the most inimitable brilliant purple flowers; nothing can be more beautiful; their bulbous roots are

frequently imported to this country, but I have never seen or heard of their being successfully cultivated. They are all natives of the Southern States, and their time of flowering is October and November. Now, it appears to me that if they were grown in pots on the one-shift system, with two or three bulbs in each pot, and treated like hardy greenhouse plants, or like Chrysanthemums, they would succeed well; they would come into flower at the same time as Chrysanthemums, and form a fine contrast with them. It is of no use to treat them as hardy plants (as I have seen done), as, even after the long hot summers of the Southern States, they do not flower till October; the *bulbs* are in fine order for taking up just when the plant is in full flower, so that autumn is the time to give orders for them; and I have no doubt, if well managed, they will make a valuable addition to our winter flowers.

Asclepias tuberosa.—This beautiful plant is well worth general cultivation; it grows in dry sandy and rocky soil, rooting deep into the ground; it should be planted in a warm sunny aspect, and should never be disturbed afterwards. When I lived in Devonshire, I had a plant of it growing in sandy peat, which a few years after planting produced annually from 40 to 50 flower stems, terminating in heads of the most dazzling scarlet; it continued a long time in flower.

Asclepias quadrifolia.—This is the next best of the genus that I met with; I found it invariably growing in shady woods. The flowers grow in heads about the size of Hoya carnosa; they are of a delicate white colour, and the plant is altogether of a most graceful habit, and well deserving a place in any collection.

Lilium superbum, canadense, and philadelphicum, are all very beautiful plants, and well worthy of a place in every garden. L. superbum grows in most meadows, where I found it of the height of six feet, with 50 or 60 fully expanded flowers on a single stem. L. canadense delights in open, dry situations; it is more highly coloured than the last; it grows from 2 to 3 feet in height. L. philadelphicum I invariably found growing in dry shady woods, not in masses like the two former species, but in solitary stems, thinly scattered here and there through the woods; it is the most brilliant in colour of all the American Lilies, and grows from 1 to 3 feet high. To cultivators of exotic Liliums the above are well deserving attention, and I make no doubt but that they would succeed well in this country. I would recommend them not to be disturbed for years after they are planted, and I always found the bulbs from 12 to 18 inches deep in the ground.

Houstonia cærulea.—I met with nearly half an acre of this in full flower on the banks of the Schuylkill River, growing on a poor sandy soil. The sight was so beautiful that I shall never forget it; I notice it here because I am fully persuaded that it would make a most excellent greenhouse annual; it seems too delicate to be treated as a perennial. Abundance of seed might easily be procured.

Convallaria racemosa.—This may be called the American Queen of the Meadows; it is very showy, and grows in damp situations like Spiræa ulmaria, but in larger masses. I once noticed a large mass of it in the middle of a Grass field; it had a very fine appearance contrasted with the dark-green Grass surrounding it.

Cnicus odoratus.—This is a delightfully fragrant dwarf Thistle, growing about a foot high, with large purple flowers; it is well worth growing on account of its sweetness, and I should think would be an excellent bee flower; if I rightly remember it is a biennial.—*H. Read, Noble Thorp.*

THE ANTIQUITIES OF GARDENING.

No. II.—Extracts from Sir Thomas Hanmer's Manuscript on Gardening.—1660, 1670. *(Continued.)*

"*Tulips.* I have found by experience that the best Tulips do not prosper in a great spatious garden, where cold winds have power on them, nor in borders among bushes or other shading plants, but thrive best by themselves, in some warm well-sheltered ground from the spring easterly winds; yet they delight in a sweet air, and not to be too closely pent up.

"It is impossible to say which are absolutely the best Tulips, there being such variety of most beautiful ones of several colours, well sorted together; some with great bold panaches or stripings, others with weaker smaller marks; some of deep colours, others of pale only; and some with white, others without. Amongst the most knowing florists, some fancy one sort, some another, yet they ever agree in these things, so necessary to make up a good Tulip,—that the flower bee of a good form, that is, neither too great and flapping, nor too small and starved; that it open well, and therefore the figure must not be very raised, neither must the petals be too sharp-pointed; that the stamyns be large and of a purple colour, not greenish nor yellow; that the white be a clean pure white, from the first opening of the flower, and not turn white from yellow at the first, as many do that are esteemed reasonable good flowers; that the other colours be thick and rich, shewing like an enamel, distinct from each other, and not confounded; that the blew bottom bee spent away in all or most of the petals; and lastly, that the stalk be not weake, which makes the flower to hang down the head, but strong and of a competent length. These are the chief qualities of Tulips which now come to my mind.

"Now, how to raise good Tulips of your own (which is the great secret) I shall here disclose. If you go to buy them of others you will soon empty your purse, for a good new Tulip will cost at least 30*s.* or 40*s.*, though the world is full of them, and within these few years has been worth 4*l.* or 5*l.* in London, and 10*l.* or 20*l.* in Paris; and some have paid much more in France.

"The way therefore to have the best perfected striped or party-coloured Tulips, and variety of such, is by sowing the seed of Tulips; but all seed will not produce good *ones*: no, not the seed of the best striped sorts themselves, which many will not believe; but experience hath given assurance of the contrary, and the reason is not altogether hid from us. In the fine curious striped sorts nature hath spent its stock and vigour to bring them to that delicacy, and there is little virtue left to come to the seed of such, and therefore such seed often produces plain yellowes and reds; and you shall see that your neat striped ones have either no seed or that which is but light and small. But the good hopeful seed is that which is yielded by strong vigourous Tulips, which are all of a colour; yet, every single coloured which affords strong seed will not produce good Tulips, such as the ordinary red, yellow, or white; but the single coloured from which you choose your seed must be either oranges, gridelines, or other shadowed colours, which wee cannot well tell what name to give to their colours, and their bottoms within must be either a fine celestial blew or sapphire coloured, either pale or deepe, or greenish. Those with blacke bottoms, or faint yellow, or none at all, are worth nothing for this purpose. The seed of those colours now spoken of must be chosen ripe, weighty, dry, and full, in July or August, as it is ready; the stalks full withered, and the seed case opening and rattling. Having gathered your seed when it is full ripe, and before it falls it blows away, sow it in very good sifted mold, in boxes or earthen pans, in September or October. In the spring they will come up like young Onyons. They must be taken out of the hot sun into some shady place as soon as these young leaves begin to wither, and then sift a very little fresh earth on them, and so let them stand abroad all winter. The next spring they will come up with small leaves, like such as they will ever after have. The second autumn take them up, sifting the earth, that you leave no root behind, and in September or October set them in fresh fine sifted earth again, and soe take them up yearly at the same time or thereabouts, and replant them again in October, in new fresh earth, and soe by this ordering they will bear flowers the fifth or sixth year. They never have more than one leaf till they bear flowers. When they bear, choose out the hopeful colours, and plant their roots by themselves. Having stood two or three years in a place, these single colours will become finely (panacheed, or) striped flowers. Those with blew bottoms will stripe white; those with greene bottoms with yellow. Few stripe perfectly in each leaf the first year, but when they do there is none or very little of the blew bottom to be seen. Commonly, the saddest dusky est colours, when they stripe, turn of a lighter colour, and soe, on the contrary, the paler reds turn deeper crimsons or purples; and the older the root is the more perfect the flower will be, if the soil and ordering be the best."

Home Correspondence.

The Ribstone Pippin.—In consequence of the statement concerning the original Ribstone Pippin-tree (p. 812), I wish to inform you that, at the particular request of the late Mr. Sabine, I examined the tree, which had no appearance of having been grafted, and sent to the Horticultural Society suckers from it; from which suckers the tree raised at the Chiswick Garden 18 years was obtained. No doubt was entertained by Mr. Sabine, after the receipt of the suckers, of their identity with the fruit-bearing portion of the tree. I also transmitted to him the account given to me by Lady Goodriche of the raising that tree from the seed of an Apple imported from Normandy, together with a sister seedling of inferior merit, which was then, and probably is still, on the Ribstone premises. The broken down stem was severed from the stump, and carried away by a violent gale of wind, after the head had rested a few years on the ground. —*W. Herbert, Deancry, Manchester.*

Gardeners' Benevolent Institution.—Observing in the two last Numbers of the *Chronicle* some strictures on the management of this Institution, and feeling an interest in that Society, believing it to be calculated to do much good, I beg to submit to the writers of those strictures the following remarks:—The fault that Mr. Whiting finds is, that there are more pensioners elected from the vicinity of London than from more distant parts of the country. But a little consideration will show that this is a necessary and unavoidable result; for the majority of the subscribers residing in or near London, it follows that they must recommend and vote for those of whom they know something, or whose personal appeals to their benevolence render their destitution more apparent. Again, London is the centre from whence gardeners go to fill the different situations in the country, and to which they return when out of place, or overtaken by misfortunes or old age; consequently the mass of destitution amongst gardeners lies near the metropolis. Further, those recommended from the more distant parts of the country are so by only one or two individuals, and those often non-subscribers—perhaps applying for a pension for an old servant who has lived with them till unfit for work; thus throwing a burden off themselves upon a Society to which they have never contributed. The committee have only a limited number of pensions to bestow, and whether they are bestowed upon individuals residing in Cornwall, Cumberland, or London, can make little difference, provided the persons are equally deserving and equally destitute: the same amount of human misery is alleviated. Besides, the committee have no control as to who shall or shall not be elected—they have simply their own vote to give. If there is any fault to be found it is with gardeners themselves, who do not join a Society established for their benefit; they have been applied to by letter to the number of 2000, and if only one-tenth of that number had responded to the call, the elections would have been in a great measure in their own hands. Further, any gardener who has subscribed for five years, upon producing the necessary recommendations, becomes a pensioner without election; so that they have everything wholly in their own power if they would only join the Society. Mr. W. P. Ayres points out another error in the management, viz., the price of the dinner-tickets; but this has, in reality, nothing to do with the Society. The dinner is a thing by itself, which may or may not take place, as thought most desirable. I believe that several members of the committee, if they only consulted their own inclination, would be averse to a dinner; but there are others who think differently, and who urge, that as other Societies acquire funds from the contributions of those who are gratified by being solicited to attend (and who otherwise would not join the Society), the committee would not be doing their duty did they not avail themselves of this source of increasing the funds of the Society. A dinner being agreed upon, stewards are appointed, and the arrangements are left in their hands. If Mr. A. has dined at the London Tavern, he must have found that an unlimited quantity of wine could not be allowed for even 15*s.*; each person will be allowed one bottle only. It is the lighting, professionals, and et ceteras, necessary to a public dinner, that becomes expensive; and if gentlemen are invited, they must have some enjoyment.* That these dinners are very absurd things I allow; yet they seem necessary, for some persons, without that stimulus to excite their benevolence, would not ever join a charitable institution devoted to their class. —*A Subscriber.*

Manure for Spinach.—On one occasion I had some Spinach sown in autumn on a very poor spot, without any manure having been applied. When it should have been fit for table in the spring, its leaves were all yellow, except the young budding ones; it was miserably poor, and was condemned to be pulled up and thrown away. It was, however, allowed to remain; the ground was well forked up and broken. It was raked and hoed, and then well watered; the soil was raked over daily. I then had a liquid compost prepared of several buckets of blood from the slaughterhouse, salt well stirred in, some wood-ashes and charcoal—filling the tub with water. This stood till my Spinach was making healthy growth; then, stirring up the mixture, and straining the thin part, it was poured to the roots—water was freely given before and after the application; the effect was wonderful. I had plants pulled up daily for use; the eradication effectually stirred up the soil where the fork could not be used. I tried by increasing degrees what forcing Spinach would bear in this way; morning, noon, and afternoon this liquid was applied, first and last resorting to the watering-pan; and every time the rich mess had been robbed, the butt was refilled with water and stirred, and once a week a bucket of fresh blood was added. Such was the growth of the Spinach, that numbers came to see it and my Bath Cos Lettuces, which were similarly nursed; the Spinach-leaves were larger than any dinner-plate. They were more like Rhubarb than Spinach, and of a fine Myrtle-green. My Melons and Cucumbers shared the same food, and with full success.—*A. W.*

Cropping of Fruit-tree Borders.—Shallow planting is now considered to be one of the most essential points by which we can obtain successful cultivation; but some gardeners, after bestowing the greatest care to plant their trees properly, have recourse to the injurious practice of cropping the ground over their roots; thus at once setting defiance to the effort made to keep them near the surface. I am aware that want of sufficient space for the culture of vegetables compels some gardeners to do this, but I imagine that the majority of them have it in their power to keep up a sufficient supply of culinary vegetables without having recourse to cropping the borders on which, at least, Peach and Apricot-trees are growing; their roots are destroyed by the operation of digging to the depth of a spade, and cropping exhausts the soil and forces them to descend still further, in order to obtain a sufficient supply of food. It is much more profitable to keep the ground over the roots mulched with rotten dung in winter and summer; this answers two purposes—it encourages the roots to approach the surface, and retains plenty of moisture during the summer season. A good watering occasionally, when the trees are in active growth, is, however, of great service, if the season is very dry. By this treatment many of the evils to which fruit-trees are subjected will be overcome. I may mention that the best crop of forced Grapes I have seen for some years has been produced by these same means.—*J. W.*

Brewing.—"A Farmer's Daughter" would much oblige a constant reader of the *Chronicle* if she would state how many pounds of Hops she uses to 6 bushels of Malt, and whether she puts into the boiler the decoction of the Hops only, or Hops and all.

Destruction of Small Birds.—Although it must be acknowledged that sparrows do much good by destroying hosts of caterpillars, grubs, &c., I think it remains a matter of considerable doubt whether the good thus conferred upon the gardener is not counterbalanced by the injury they inflict upon the buds of Currant and Gooseberry trees. Just now my trees are suffering much from these little busybodies, the buds being excavated to an alarming extent. I have tried every method I can think of, but cannot keep them away. If any of your correspondents will suggest a plan by which this may be effected, they will greatly oblige—*The Laird o' Cockpen.*

* If the stewards could calculate upon twice the number attending, they could reduce the price of the tickets probably one-third.

Pruning Forest Trees.—I observe that Mr. Billington and some of your other correspondents are at issue, as to whether the growth of timber proceeds from the ascending or the descending sap; and as this appears to me to be easily proved, I wonder that some one has not pointed out the method of doing this. Let the diameter of a young tree or branch in a state of vigorous growth be carefully noted the first week in May; then cut out a ring of bark, a quarter to half an inch broad, just above the measured part. On measuring this again in a month or two, it will be found, that whilst the diameter above the ring has increased very considerably, the increase is scarcely perceptible below: thus, in my opinion, proving Mr. Billington's assertion, that the increase is from the descending sap: for if, as physiologists tell us, the sap rises through the young wood, and descends between the bark and the wood, the circumcision of this ring would not prevent the ascent of the sap, although it would prevent its descent; and therefore, it appears to me that this ringing proves the truth of the physiological theory also. But here I must demur to going further with Mr. Billington. It may be true that timber grows best if all the branches are left on the tree—I am disposed to grant this, for the sake of the argument—but every one who uses timber knows that it is comparatively worthless when branched from top to bottom; the grain is twisted and distorted in all directions, and the timber is full of knots, which unfit it for any but the roughest and meanest purposes. "A. Thompson" (p. 795), as well as others, have shown very satisfactorily, that the value of a tree does not entirely depend upon the number of cubical feet contained in it, but in its suitableness for all useful purposes.—*Clitheroe, Dec.* 3.

Shanking of Grapes.—The theory which "An Amateur" has advanced as an explanation of one of the causes of the shanking of Grapes, is the same as was promulgated some 10 years back by Mr. J. D. Parks, of the Dartford Nursery, I think either in the Horticultural Society's "Transactions" or in the "Gardeners' Magazine;" and is sufficiently answered by the fact that many good growers of the Grape syringe their Vines early in a morning, and give no air until the moisture is dissipated, without being troubled with shanked bunches, or berries—to say nothing of a majority of the bunches, in most vineries, being under the shade of the leaves, and therefore beyond the influence of the sun's rays. It is premature to find fault with the tank-system of heating, unless we have better evidence than that advanced by your correspondent. In a majority of cases, when the cause of shanking does not originate in the border, I believe it may be attributed to the admission of cold currents of air on the young and tender bunch, careless handling when thinning, and other external injuries. Over-cropping is probably the most prolific source of bad fruit; and it is surprising that gardeners should persist in imposing upon the good-nature of their plants in forcing them to produce 20 lbs. of worthless fruit, when they might perhaps take 15 lbs. of first-rate quality. Clement Hoare's rule for cropping Vines is a good one, though perhaps under the mark; yet, if it was more acted upon, we should certainly both see and hear less of bad Grapes.—*W. P. Ayres, Brooklands.*

Ice.—Having no ice-house here, we last year made a large heap of ice above ground, and thatched it 18 inches thick. It has kept well until this time. This year we are adopting the same plan, with the difference of thoroughly watering the heap as we proceed. Is not the plan a bad one? and instead of causing the heap to become a solid body, will it not have the very contrary effect?—*J. Greenshields.* [No. But we see no advantage in watering it. It should be pounded fine.]

Advantage to Gardeners of a Knowledge of Vegetable Physiology.—Every gardener in this age of science, who aspires to anything like eminence in his profession, should know something of Vegetable Physiology. He ought, at least, to be so far acquainted with its true principles, as to be able to conduct his operations with some degree of certainty. Many will say "I am generally successful in my undertakings, without knowing anything of physiology, and I am acquainted with many good gardeners who scarcely know the meaning of the word." This may be the case; but is it not far more business-like, more systematic, and more advantageous in every way, to be able to calculate pretty correctly the result of an operation, than to be working in the dark? But admitting that the gardener can conduct his operations without a knowledge of the various organs of plants and their functions, it is surely preferable to understand the beautiful economy of the vegetable fabric, to comprehend how the crude fluid is absorbed by the roots, and conveyed through the intricate ramifications of tubes spread out to the action of the atmosphere, in the leaves, and to watch it returning a nutritious fluid for the nourishment of the several parts of the plant. Surely it must induce us to take a greater interest in plants, to watch the many beautiful contrivances of nature which insure the reproduction of each species, to behold the exquisite adaptation of each individual to its assigned place on the surface of the globe, whether beneath the sun of the tropics, the regions of perpetual snow, or the more genial climate of the temperate zone, or the many varieties of situation which each climate affords. In each and all, we behold subjects peculiarly adapted to their several situations, and each offering abundance of matter for our study and contemplation, and from which we may derive much that is useful and instructive. Linnæus, when instructing his pupils, is recorded to have merely placed his hand upon the turf on which they were standing, and to have pointed out to them the many specimens growing in that little space worthy of their attention. In fact, almost every spot offers something capable of arresting our attention.

> "Not a plant, a leaf, a flower, but contains
> A folio volume. We may read, and read,
> And read again, and still find something new—
> Something to please, something to instruct
> E'en in the noisome weed."

In no branch of gardening, perhaps, is a knowledge of physiology more requisite, or more certain of directing our operations with success than in propagation. It is to the operator what a knowledge of navigation is to the mariner in steering his vessel through a dangerous sea. A person unacquainted with either may perform their work in both instances correctly; but there is a want of confidence, and the results, be they what they may, are but the offspring of mere chance. In looking over the rising generation of plants, intended by their possessors for the next year's decoration of their flower-gardens, while in the cutting-pots, how many are the instances in which failure is certain! or, at best, a poor sickly plant will be the result, arising solely from a want of determination in the selection of the cutting. And this discrimination can best be exercised by a knowledge of the structure of the part selected for the cutting; whether it contains those tissues from which roots are to be formed in sufficient abundance, or which part is most calculated to repay us by the production of a vigorous and healthy plant. That this can, in a great measure, be calculated upon from the appearance of the branch selected, admits of no question. The gardener, surrounded as he is by the many beautiful processes in the great laboratory of nature, must, before he can enter fully into the spirit of the thing, be a scientific man; and I trust to see the day (although much must co-operate to bring about such a state of things) when a knowledge of the sciences which most directly bear upon his profession, will be looked upon as an indispensable qualification in him. But I would not be misunderstood: the mere scientific man can never be a good gardener. Science can only be looked upon as an assistant. A man may be a good gardener (and undoubtedly there are many), who knows nothing of the scientific portion of his business. A long and careful practice, with a keen and perceptive observation may, in a great measure, dispense with science; but it is bad policy to occupy a long series of years in obtaining a knowledge which might be gained in a far shorter period; and by the aid of science this can be effected. It is by practice alone that many of the operations of the garden can be thoroughly carried out with success; but by science we understand the general principles of everything pertaining to gardening, and by it we can direct our operations with a confidence which, in the absence of such a knowledge, is mere hazard. Let the young gardener, however, always bear in mind that nothing will compensate for want of practice and observation; blend these with science, and success is certain. —*Walter Wakefield.*

Liquid Manure applied to Carnations.—I mixed Peruvian Guano with rain-water at the rate of half an ounce to a gallon, with which the pots were watered once a week. Another quantity of pots was watered with Potter's liquid guano, mixed, if anything, a little weaker than he directs. All did well. I never had such healthy plants, nor so fine a bloom; nor had I ever so few run flowers. I think manure can hardly be the cause of running, for I potted some Rose-flakes, which were always apt to run, in a mixture chiefly composed of rotten dung and soot which had been exposed to the weather for a year; they grew well, and bloomed clean and fine, as also did some purple flakes in the same mixture. Pinks in pots, in an eastern aspect, watered always once, and often twice a day with a mixture of old manure and soot with rain-water, laced remarkably well; whilst others, planted in a bed of extra rich compost, under a south wall, the autumn previous, did not lace so well, although they grew luxuriantly. Perhaps the regular moisture affected the lacing as much as the manure.—*G.*

Humphreys's Compound.—This agreed very well with Polyanthuses and Pinks in pots, and next to that superphosphate of lime, made by burning bones, and steeping them in sulphuric acid and water, seemed to produce the most visible effect in a short time, the plants being top-dressed with it.—*G.*

Passiflora quadrangularis.—This plant is generally cultivated for the sake of its beautiful flowers and climbing habit, but it may also be made to produce large and excellent fruit. The treatment required to fruit the plant is, however, somewhat different from that usually employed to make it flower only. It may be grown in the stove, or better, perhaps, in an intermediate house between the stove and greenhouse. It is necessary to the perfect cultivation of the plant, that it should grow in a border in the inside of the house, rather than in pots, however large. If no other situation presents itself, a border may be made beneath the path, taking care to leave a space of 3 or 4 inches between the surface of the soil and the stones, so that there may be a free access of air, and that water may spread equally over the surface of the soil and moisten it thoroughly. Whatever may be the situation of the plant, particular attention must be directed to the drainage, which must be as efficient as possible. As the plant may have to remain some years in one situation, five or six barrowfuls, or even more, of good soil, composed of three-fourths good loam and the rest leaf-mould, should be prepared in a very rough state. A spare rafter, or any such place near the glass, will do exceedingly well for the plants to be attached to. If young when turned out, the plants should not be allowed to bear flowers or fruit the first year. One, or at most two branches should be allowed to grow, and after they have extended 10 or 15 feet, they should be stopped and should not be allowed to put forth any laterals. During winter no water should be given unless the plants droop. Some time in February the branches must be well cut back; and if it is necessary to leave any length of stem between the ground and the glass, all the buds, excepting three or four at the top of each branch, must be rubbed off. The number of branches allowed to grow in the second year must be determined by the strength of the plant; from two to six being the usual number. Advantage should be taken of the first flowers that open to fertilise the stigma, for fructification will not always take place naturally. From one to three fruit are sufficient on each branch; if a greater number are allowed to remain they will be small and of little value. The fruit-bearing branches may be stopped at the distance of 5 or 6 feet above the fruit. Some cultivators, however, do not stop the branches at all, but I consider it better to stop them, but in either case no laterals must be allowed to grow on any part of the plant; for no fine fruit can possibly be obtained if the plants are allowed in any way to run wild. Treated in this way, *P. quadrangularis* will frequently produce fruit 4 lbs. in weight; and though not ranking as a first-class fruit, it makes a rather novel as well as a useful addition to the dessert, at which its pulp is eaten with sugar and wine. None of the other species of Passiflora bear so large fruit as quadrangularis; of others, edulis and laurifolia are amongst the best. Unlike quadrangularis the branches of these smaller-fruited species must not be stopped, and they will continue to flower and fruit for several months in a stove. The fruit is eaten with the same ingredients as the larger kind, and has a flavour agreeable to most palates. It is necessary to be particularly careful in selecting good varieties, for there are several spurious kinds in cultivation. The best way is to get plants from old ones which are known to bear good fruit.—*J. W. Jones, Royal Botanical Garden, Kew.*

Honeycomb Labyrinth.—A honeycomb labyrinth was discovered a few weeks ago in the upper part of an antique side-wall of Nateby Hall, near Garstang, the residence of J. Stuart, Esq. At what period this insect labyrinth had been established, is unknown. The longest winding passage in it was about 6 feet in length, the widest part was about 18 inches across, and the highest part was about 20 inches in height. The entrance was from the centre to the outside of the roof, which is high, and concealed from view by branches of lofty trees. The discovery was made by a person in an upper room, who from time to time hearing a noise, communicated the circumstance, and an aperture was made in the wall of the room. In a short time the hive was discovered, and the whole of the bees destroyed; their labyrinth was minutely examined, cut down, and removed by making a number of apertures in the wall. The weight of the honey and the comb was 110 lbs. It appears that they had first commenced to build in the centre, as about two feet of the honey and the comb in that part was black; in other parts it was excellent. It is stated by some writers that there are bees which produce black honey, but from this it would appear that it is age that turns it black.—*M. Saul, Fort Green Cottage.*

Contrast between English and Irish Weather.—I have just learned from Mr. Boylan, gardener to the Earl of Kenmare, Killarney, that many of the Rhododendrons are now in full flower, and he has also a Yucca gloriosa with seven flower-stems, also in full blossom. In this neighbourhood we have still in bloom Dahlias, Leonotis Leonurus, and many varieties of annual flowers, as well as Apple-trees and Narcissus. This contrasts strangely with the account of the weather on your side of the Channel, as recorded in the *Chronicle* of the 7th inst.—*John Haycroft, jun., Victoria Nursery, Cork, Dec.* 9.

Birch Coppice.—If "Romseyoniensis" had stated at what time of the year he cuts over his Birch stools, perhaps the cause of their dying might have been explained to his satisfaction. In the mean time, however, I would advise him, if it has not hitherto been his practice, to defer cutting the produce from the Birch stools, or the cutting off young plants or trees, to form stools, till the buds are fully expanded, or rather broken into leaf. This, I have no doubt, will prove a cure for his failures. Will "Romseyoniensis," after he has tried this plan, favour the readers of the *Chronicle* with the result?—*W. Billington.*

Bees.—When I recommended bee-keepers to use large hives, I did not wish them to believe that, by putting a small swarm into a large hive, a greater quantity of honey would be obtained at the end of the first season, but simply that the bees would, during the second and following seasons, gather more honey, hatch more brood, and send out larger colonies, &c. Surely England is more able than Wales to send out large colonies to other countries. My brother informs me that, in 1842, he realised from his apiary, consisting of 7 stocks, 19*l.* 10*s.*; in 1843, from 8 stocks, 20*l.*; and in 1844, from 11 stocks, 20*l.* If any apiarian has made more of his bees during the last three years than the above sums, I shall be obliged by his informing me how he manages them. Mr. Wighton's possessing a bit of worker's comb, containing young drones, does not disprove the assertion that bees' eggs are transmutable. I have long ago seen drones bred in workers' cells. When there are no drone-cells in a hive the bees generally hatch a few drones in workers' cells, about the time in which the first swarm leaves the hive. These drones are bred for the purpose of impregnating the young queens. Bees will not breed drones when the bees have a timely impregnated queen, no drone's cells, and plenty of room. The transmutability of bees' eggs has already been so well proved in the

Chronicle, that it is a misspending of time to say anything further on the subject.—*S. Pettigrew.*

Baskets round Flower-borders.—As the Article (p. 622) descriptive of the noble gardens at Hewell appears to have been written by a person of some taste in gardening matters, I am rather surprised that when he was condemning the "wicker-work" which gives the appearance of "huge baskets of evergreens and flowers" to the beds on the lawn at that place, he did not advise its removal from the garden altogether, instead of recommending its use for beds of scarlet Pelargoniums and other plants. If it is wrong to use the wicker-work as it is at present employed, on what principle would "R. G." justify its use on the same lawn for beds of flowers? In my opinion wicker-work, or indeed fancy edgings of any kind, are altogether out of place when surrounding flower-beds; and though we see such things in many places where one would expect to find an exemplification of better taste, yet they are not the more to be tolerated on that account. In the garden of a noble Countess not many miles from the place where this is written, the flower-beds are edged with cable rope nailed on strong stakes about 18 inches high; and to render such an arrangement more enduringly objectionable, the rope is regularly every spring dressed over with tar. At Blenheim, and if I remember right, at Chatsworth, some of the flower-beds are edged with dwarfed oak trees, which is most assuredly a singular fancy—to make the monarch of the woods an edging for flower-beds! Now, although fashion—which may be in gardening matters designated the whim or caprice of individuals—may sanction such things, there cannot be two opinions about their being in direct opposition to good taste, though not so much so, edgings of wicker-work. If basket-work must be admitted into garden scenery at all, let it be as pens for wild fowl, and not as peaceful habitations for the cultivation of plants.—*Argus, Newmarket.* [It would not be very difficult to answer these objections, in which we need hardly say that we do not concur.]

Miscellaneous.—*Mr. Thomas Fullam*, of Sutton, inquires what the difference is between Mr. Dale's system of growing Pine-apples and that of Mr. Hamilton; and whether that of the latter is different from the way in which Pines produce fruit in their natural state? He remarks that the Pine in its native country produces suckers which bear fruit in succession until they become so crowded that they break down in large masses of a cartload at a time. Finally, he states that the best flavoured fruit from plants in a wild state, is produced from those growing in sand.

Reviews.

The Gardeners' Almanack, for the Year 1845. By G. W. Johnson, Esq.

THIS is what it calls itself, and something more. It is exactly what such a publication should be—full, accurate, and novel. Ninety-six pages of very closely printed matter are crowded with information of all sorts, upon subjects of horticultural interest, besides which there is the usual information contained in a pocket-book. In short, we can recommend it to anybody who wants a Garden Almanack, as the best of its kind.

Some extracts from it will give the reader an idea of the author's mode of treating his subjects:—

"*The Allotment System.*—Many years since, the present writer advocated, to the best of his ability, this best of all aids to the labourer, and he is glad that this improvement in our social system has at length so far progressed, as to have attracted the attention of the legislature, to whose judgment a Bill, regulating and promoting parochial allotments, will be submitted by the Hon. W. Cowper. We implore every member of that legislature to give it his support, and we give our testimony in concurrence with the evidence produced before the late Committee of the House of Commons, that an allotment of land to every cottage is the most efficient mode of improving the condition of the labouring classes. Indeed, it requires no evidence to sustain its merits, for all experience testifies that a man, with the occasional help of his wife, can, during his over-hours, cultivate a quarter of an acre—and that this space will nearly supply with Potatoes and other vegetables, throughout the year, the parents and four children. This is a fact beyond the reach of dispute. Then, we ask, what argument can prevail against such a space being the least allotted to every cottage? We have heard it said that if men grow Wheat and Barley, it will prevent detection should they steal their master's:—to which we reply, that supposing it does prevent the detection of one theft, yet by giving a good supply to every cottage, you save hundreds from the temptation to thieving. Again, we have heard it said that the labourer who toils in his garden, expends the strength which should be husbanded for his master's service:—to which cold-blooded dictate of a heart worthy of the slave-owner we reply, that all experience demonstrates that those labourers who devote their leisure to their own gardens, are invariably the best characters and the best workmen in a parish. But, suppose that the error was truth, and that the man who dug in his own garden could not labour quite so vigorously on his hirer's land—yet, if that garden kept him from the poor's rate, the farmer would be more than a gainer still; and it is a truth, to which we have ample testimony, that allotments of land do keep the labourers from requiring parochial relief. We have no space to go into detail, but we implore every legislator, every country gentleman, to act up to the spirit of the 31st Elizabeth, cap. 7, which prohibited a cottage being built unless four acres of land were appended to it. Let every cottager have no less than his rood of land—and we ask it, because the language of the committee we have noticed we know to be the language of truth, when it says, 'The garden allotment system is a powerful means of bettering the condition of the poor; nor are its benefits obtained at the expense of any other class, nor accompanied by any corresponding disadvantage.'"

"*Steeping Seeds.*—The most ill-founded idea that has been suggested by the minds of those who have been labouring to improve the arts of cultivation during the past year (1844), is that by steeping seeds in certain solutions, the vigour and fecundity of the plants to which they give birth might be promoted. A certain degree of heat, oxygen gas, and water, are all the requisites for germination; and until this process has commenced, no liquid but water, at common temperatures, will pass through the integuments of a seed. So soon as germination has commenced, this power to exclude foreign fluids ceases, but the organs starting into activity—the radicle and the plumule—are so delicate that the weakest saline solutions are too acrid and offensive for them. So utterly incapable are the infant roots of imbibing such solutions, that at first they are absolutely dependent themselves for their very existence upon the seed-leaves, and if these are removed the plant either makes no farther advance, or altogether perishes. Many years since we tried various menstrua to facilitate the germination of seeds, but, with the exception of those which promoted the decomposition of water, and the consequent more abundant evolution of oxygen, we found none of any efficiency. As to keeping the seeds in saline solutions until they germinated, we never, certainly, carried our experiments so far as that, and we shall be most astonished if any other effect than injury or death to the plant is the consequence. Such has been the result in the Horticultural Society's Gardens, where the seeds of Lupinus Hartwegii were made to germinate in a weak solution of phosphate of ammonia."

Before we dismiss Mr. Johnson's useful book, we must not forget to correct an error into which he has fallen, in attributing (p. 44), some very curious experiments on the power possessed by muriate of lime of retaining moisture, to Dr. Lindley. They were really made by Mr. Edward Solly, in the course of his examination of various facts brought under the notice of the Chemical Committee of the Horticultural Society.

The Garden Almanac. By G. Glenny. Westley. TRASH!

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

GAYLUSSACIA PSEUDOVACCINIUM. Bilberry-like Gaylussacwort. (*Hardy Greenhouse Shrub.*) Vaccinaceæ. Decandria Monogynia.—The genus Gaylussacia, so named after M. Gay Lussac, the eminent French chemist and philosopher, differs from Vaccinium in the same way as Arctostaphylos from Arbutus—it has but a single seed in each cell. The species are chiefly found in Brazil, where they are common, Peru, and the North of India, and among them are several which, as this species shows, would be worth introducing to cultivation. G. pseudovaccinium is stated to be a native of sandy, open plains in Brazil. Auguste de St. Hilaire says that he found it on the coast from the city of Caravellos in the province of Porto Seguro as far as the island of St. Catharine, and that it forms a shrub from 1 foot to 2½ feet high. At least it is to be presumed that this is the plant he means, although he describes the corolla as somewhat narrow, and the ovary as five-celled, with one-seeded cells; for the flowers are much too globular, and M. de St. Hilaire adds that the fruit of his plant has 10 ribs when dry, in consequence of its containing 10 seeds; whence it is evident that his account of the ovary is erroneous. It is a hardy and very pretty greenhouse shrub, which should be grown in a mixture of sandy peat and leaf-mould, and treated in the same way as Cape Heaths. It may be increased either by seeds or by layers. Seeds should be sown in pans filled with sandy peat about February, and covered with a bell-glass. The layering should be effected before the plant commences its fresh growth.—*Botanical Register.*

TETRATHECA HIRSUTA. Hairy Tetrathe[illegible] (*Greenhouse Shrub*). Tremandraceæ. Octo-Decandria Monogynia.—Where the name has been published which this pretty plant bears in our gardens I have failed to ascertain. It is certainly no other than Tetrathecа hirsuta, and by no means a Tremandra, if, as seems clear, the essential character of that genus consists in its anthers not terminating in a tube nor opening by a pore at the point. Messrs. Rollissons received it from Baron Hugel in the summer of 1843, and flowered it last March. It is a very nice greenhouse plant, gay with purple starry blossoms. It grows freely in a compost of peat loam and sand in equal proportions, and if a few potsherds are mixed with it so much the better. In summer plenty of air and water should be given, and shade in sunny weather. In winter the plant should be placed in some airy part of the house, where it will be secure from damp. Fire-heat should not be applied, except to keep off frost. It may be propagated by cuttings in the usual way.—*Bot. Reg.*

Garden Memoranda.

Horticultural Society's Garden, Turnham-Green.—The Chrysanthemums here have been a failure this season, probably in consequence of their having been put into the conservatory too early and placed too far from the glass there. The cuttings were struck about the end of March, in a cold frame, and were potted off and regularly shifted from 60s into 32s, 24s, 16s, and ultimately into 8s. The soil employed was a mixture of loam, peat, and well decayed cow-dung in nearly equal proportions. After receiving the last shift, which was about the beginning of August, the plants grew very rapidly, and soon formed handsome bushes. They were watered with manure water once a week from the beginning of August until the middle of October, when they were removed from the open air into the conservatory and placed along the side of the pathway. Here they continued growing instead of immediately setting for bloom, and small ill-formed flowers, showing the centres in many cases, was the result. Had the plants been weakly we should have attributed the cause of failure to late stopping, which is an error into which many fall; but this is not the case, for the plants exhibit good cultivation as regards vigorous growth, having a multitude of strong stems covered with healthy dark-green foliage to the very root. Want of sufficient air and light, which Chrysanthemums in particular require, and without which they cannot be expected to succeed, seems to be at the root of the evil, to which cloudy wet weather occurring when the plants were placed in the house after a hot dry summer, has doubtless contributed. In the conservatory a plant of Bonaparteа juncea, now called Littæa geminiflora, has been in bloom for at least three months. The flower-stem is upwards of 15 feet in height. It commenced producing its dull yellow blossoms about 3 feet above the plant, and is now in full bloom beyond the middle of the stem, the flowering gradually progressing upwards. The two flower-spikes on Lælia superbiens in the large stove, are already 3 feet in length, and promise to flower well. The Aristolochia gigas, trained along the roof of this house, has since the 26th of October, produced 163 fully expanded flowers, besides many others which have not opened. It proves to be a valuable stove climber, the only demerit connected with it being its bad smell, which, however, when it is trained on the roof of a stove is hardly perceptible. In this house was also in bloom a new Gesnera, having flowers somewhat resembling those of Achimenes picta, or pedunculata. It was sent by Mr. Hartweg, who found it in the woods near Bogota. In one of the pits belonging to the hardy department was a seed-pan containing young plants of the Tussac-grass, which has vegetated freely in a peaty soil, in a greenhouse temperature. Near this was a small plant of Cryptomeria japonica, from Mr. Fortune, who sent it from Shanghae. This is said to be a tree like a Cypress, of great beauty, and attaining a height of between 40 and 50 feet; and if it prove to be hardy, as it is expected to be, it will form a valuable addition to Conifers. In the orchard department preparations are now in progress for renewing the worn-out trees on the Peach wall. The Pears which grew by the side of the walk in front of the border are being taken up; the best of them are already planted in a row along the east side of the kitchen garden. Although it is upwards of 20 years since these trees were first planted, yet, being on Quince stocks, they removed with an abundance of fibres. The border is being trenched for the reception of the young Peach-trees, and a quantity of North Hyde loam has been procured for the purpose of mixing with the soil in which the trees are to be planted.

Stackpole Court, near Pembroke.—Phormium tenax is grown on rather a large scale here, and to what may be considered near perfection, its foliage averaging, over the whole plantation, from 6 to 7 feet in height. A great annual weight could be procured if a ready mode of converting it could be hit upon; and we should feel obliged if any of the numerous correspondents of the *Gardeners' Chronicle* would furnish some information on the subject.—*Dec. 9.*

Miscellaneous.

New Uses of India-rubber.—About three years ago its chief and almost only use was in the manufacture of Macintosh's waterproof cloth, the fabrication of some surgical apparatus in which elasticity and pliability were the objects desired, the rubbing out of black-lead pencil-marks from paper, and a few other minute and unimportant applications. Now, however, this substance is employed in some highly important branches of our manufactures, and has become a valuable agent in the arts and sciences—showing what an extensive field the rapid advance of science may open up for the appliance of materials hitherto considered as next to useless. From its peculiar elasticity, its impermeability to air and water, its being soluble only in naphtha, and from its great durability, it has been successfully employed in the fabrication of various cloths, besides that of Macintosh; for air-cushions, safety-belts and jackets; ligaments and bandages for gloves, stockings, braces, and other articles of dress; for boots, stoppers for bottles, and numerous other purposes. With these appliances most of our readers may be familiar; but few may know, or might expect, that it would be employed as a pavement for stables, lobbies, public halls, and the like; that it is now being used in the construction of life-boats; and that it is also proposed to use it extensively in the fitting up of our men-of-war. The Elastic Pavement Company have lately erected machinery for the preparation of the material for these important purposes, and can produce it, it seems, at a price sufficiently moderate to admit of its general adoption. As a pavement for stables, the caoutchouc preparation is said to be unequalled, preventing the lodging of stale matters, and their consequent noxious exhalations; requiring little litter, and preserving the knees and other parts of the horse from injuries which are apt to be received in stone-paved stables. By a little precaution, the ammonia, which now exhales to the injury of the horses' health, may be collected and sold as a manure, at from 2*l.* to 3*l.* per horse per annum. The stables of the Commissioners of Woolwich dockyard have been paved with this material for upwards of two years, and are allowed to be superior in point of cleanliness, freedom from smell, and healthiness, to what they were previous to the laying down of the elastic pavement. It has also been laid down in the Admiralty courtyard, and the carriage entrance court to Windsor Castle, where it has given much satisfaction. "With respect to its application to marine purposes," says the *Railway Gazette*, "a life-boat is now being constructed on the Company's premises (34 feet length of keel, and 12 breadth of beam), which, with the exception of the keel and some iron braces, will be entirely formed of

India-rubber and cork planking. She will weigh but one ton and a half, an ordinary life-boat weighing three tons; and it is the opinion of all naval men and engineers who have seen her, that it will be almost impossible to sink her under ordinary circumstances, and that, when driven on a rock by the action of the waves, she will rebound like a ball, without fracture. It is also proposed to use the caoutchouc preparation for an inner lining between the guns in war-vessels, to prevent the effects of splinters'; for hammock-nettings and bulwarks, to save the crew from canister, grape, &c.; and for other useful though less obvious purposes." Such are the numerous purposes to which human ingenuity can apply a single, and to all appearance an insignificant substance —the exuded sap of a tree; showing that science not only supplies our more obvious wants, but creates others, and calls into use hitherto neglected materials to supply them. Nothing in nature is useless; if we cannot now see its value, let us rest assured that the time will come for its profitable application.—*Chambers's New Edinburgh Journal.*

Allotments.—Among other instances of great success in carrying out this system, may be named the village of Pytchley, in Northamptonshire. In that parish are 56 allotments, and their crops have been "superb," to use the words of a correspondent. One man had 7½ bushels of clean Wheat off his half rood, and a large crop of Potatoes off the other half rood. Many others were scarcely inferior. *Pergite queri!*

The Chocolate Tree and its Uses.—What is generally called Cocoa is merely the berries of Theobroma Cacao, pounded and drank either with water or milk, or with both. Chocolate is a compound drink, and is manufactured chiefly from the kernels of this plant, whose natural habitat would seem to be Guayaquil, in South America, though it flourishes in great perfection in the West Indies. It grows also spontaneously and luxuriantly on the banks of the Magdalena. Mr. Schomburgk, in his recent expedition into the interior of British Guiana, found the country abounding in Cocoa, "which the Indians were most anxious to secure, as the pulpy arillus surrounding the seed has an agreeable vinous taste. Singular to say, however, they appeared perfectly ignorant of the qualities of the seed, which possesses the most delightful aroma. Mr. Schomburgk states, they evinced the greatest astonishment when they beheld him and Mr. Goodall collecting these seeds and using them as Chocolate, which was the most delicious they had ever tasted." The height of the Cocoa shrub is generally from eighteen to twenty feet; the leaf is between four and six inches long, and its breadth three or four, very smooth, and terminating in a point like that of the Orange tree, but differing from it in colour; of a dull green, without gloss, and not so thickly set upon the branches. The blossom is first white, then reddish, and contains the rudiments of the kernels or berries. When fully developed, the pericarp, or seed-vessel is a pod, which grows not only from the branches, but the stem of the tree, and is from six to seven inches in length, and shaped like a Cucumber. Its colour is green when growing, like that of the leaf; but when ripe, is yellow, smooth, clear, and thin. When arrived at its full growth, and before it is ripe, it is gathered and eaten like any other fruit, the taste being subacid. Chocolate, so called, and so prized both in the Spanish Continent and in the West Indies, never reaches Great Britain except as a contraband article, being, like nearly all colonial manufactured articles, prohibited by the Custom-house laws. What is generally drank under that name is simply the Cocoa boiled in milk, gruel, or even water, and is as much like the Spanish or West India Chocolate as vinegar is to Burgundy. It is, without any exception, of all domestic drinks the most alimentary; and the Spaniards esteem it so necessary to the health and support of the body, that it is considered the severest punishment to withhold it, even from criminals; nay, to be unable to procure Chocolate, is deemed the greatest misfortune in life! Yet, notwithstanding this estimation in which it is held, the quantity made in the neighbourhood of Carthagena is insufficient for the demands of the population, and is so highly priced that none is exported but as presents! The signs by which good Chocolate or Cocoa is known are these:—It should dissolve entirely in water, and be without sediment; it should be oily, and yet melt in the mouth; and if genuine and carefully prepared, should deposit no grits or grounds. That made in the West Indies and in some parts of Cuba is dark; but that manufactured in Jamaica is of a bright brick colour, owing to the greater quantity of arnatto which is used in the preparation, and which, I think, gives it a richer and a more agreeable flavour. In an economical point of view, Chocolate is a very important article of diet, as it may be literally termed meat and drink; and were our half-starved artisans, over-wrought factory children, and rickety millinery girls, induced to drink it instead of the innutritious and unwholesome beverage called Tea, its nutritive qualities would soon develop themselves in their improved looks and more robust constitution. The price, too, is in its favour, Cocoa being 10*d.* per pound; while the cheapest black Tea, such as even the Chinese beggar would despise, drank by milliners, washerwomen, and the poorer class in the Metropolis, is 4*s.* a lb., or 310 per cent. dearer, while it is decidedly injurious to health. The heads of the naval and military medical departments in England have been so impressed with the wholesomeness and superior nutriment of Cocoa, that they have judiciously directed that it shall be served out twice or thrice a week to regiments of the line, and to the seamen on board Her Majesty's ships, and this wise regulation has evinced its salutary effects in the improved health and condition of the men. Indeed, this has been most satisfactorily established in Jamaica among the troops; and a remarkable fact corroborating this statement is, that by returns to the Horse Guards, it is shown that only one death took place at Newcastle Barracks, in that island, out of a force of 700 men, for the quarter ending Sept. 30, 1842; and the same may be asserted of other regiments in the West Indies, and of the seamen in Her Majesty's ships on the coast. But the excellent qualities of Chocolate were known not only to the Mexicans and Peruvians, from whom, as a matter of course, the Spaniards acquired a knowledge of its properties; but European nations also acknowledged its virtues. The Portuguese, French, Germans, and Dutch, considered it an exceedingly valuable article of diet, and Hoffman looked upon it both as a food and a medicine. In his monograph, entitled "Potus Chocolate," he recommends it in all diseases of general weakness, macies, low spirits, and in hypochondriacal complaints, and what since his time have been termed nervous diseases. As one example of the good effects of Cocoa, he adduces the case of Cardinal Richelieu, who was cured of cremacausis, or a general wasting away of the body, by drinking chocolate. Liebig and other chemists have demonstrated beyond question that no part of an organ which possesses motion and life is destitute of nitrogen:—"All parts of the animal body which have a decided shape, which form parts of organs, contain nitrogen;" and the chief ingredients of the blood contain 17 per cent. of nitrogen, and no part of an organ less than 17 per cent. It follows, therefore that nitrogen is that principle of the body which, being in the greatest quantity, and pervading all tissues, is that most frequently wasted, and most frequently in need of renewal. This must be admitted. It follows, then, that those substances which possess this principle in the greatest quantity in a given bulk, are those which must be best calculated to renew that which has been lost or wasted by the operations of the body. Now caffeine (the principle of Coffee), and theobromine (the principle of Theobroma Cacao), are the most highly nitrogenised products in nature, as the following analysis will show:—Caffeine according to Pfaff and Liebig contains—

Carbon	49·77	Nitrogen	28·75
Hydrogen	5·33	Oxygen	16·12

Theobromine, according to Woskresensky, contains—

Carbon	47·27	Nitrogen	35·39
Hydrogen	4·54	Oxygen	12·80

—*Dr. Binns, in Symmonds' Colonial Mag. (abridged).*

Upon the Degeneration of Brussels Sprouts.—The degeneration of this plant has been much discussed. It remains unchanged in the soil of Brussels, and also in the environs of Louvain, but at Malines, which is at equal distances from these two towns, and where every possible care is paid to the cultivation of vegetables, yet, after the first generation, it loses its peculiar character. It does not, however, appear that any particular soil, or special precautions, are necessary for its cultivation, for these sprouts grow in Brussels and its environs, in all kinds of soils and situations. According to M. Van Mons, its degeneration had been very sudden at Malines. "The plants which I sent there," says he, "and which were produced from true seed, made shoots exactly like those which are seen at Brussels; but the seed which was obtained from it produced plants which made shoots, not in little compact heads, but open, with long drooping leaves; so that after the third generation, it entirely lost its primitive character. The same phenomena of degeneracy have also been observed in Germany, where, at different times, they have tried to cultivate Brussels sprouts. At my request," continues M. Van Mons, "they sent me some seed, gathered from the degenerated plants. I sowed it by itself and as the plants grew, I observed that they showed the same character of degeneracy that they did at Malines. I allowed them to seed, which I carefully gathered. The second time of sowing they came nearer their original character, but the heads were still not very compact, and did not shoot a second time, as the true sort does. At the third generation, the plants had regained all the merits of their original character." These experiments, and their results, certainly deserve our attention; but as we have said before, the influence of the pollen extends to such great distances, that the re-establishment of the sprout might be attributed to fertilisation by the pollen of sprouts growing in the neighbourhood. Besides, it is easy to explain the degeneracy of a plant, if external influences become unfavourable to it; but that a plant once degenerated may regain its original characters by mere local influences, would require more than one experiment to prove.—*Journal d'Horticulture de Bruxelles.*

On the Advantage of the Use of Carbonate of Soda in the Preparation of Coffee (by Professor Pleischl).—It is a fact well known in Prague, that the water of the wells in that town is better adapted for use in making coffee than the river water; comparative analyses of the water indicate that this depends on the carbonate of soda contained in the former. Pleischl found this opinion corroborated by the fact, that a small quantity of the salt added to Coffee improves its flavour, and advises consequently the addition of 43 grains of the pure carbonate to each pound of roasted Coffee, as an improvement to the flavour and also to the therapeutic effect of this beverage, as it neutralises the acid contained in the infusion. —*Pharmaceutical Journal.*

New Zealand Coal.—Some interesting specimens of coal have been recently brought over from New Zealand. The coal traverses, in seams, the seagirt rocks of the island, and the specimens that have come to hand are nodules of a moderate size, composed of carbonate of baryta, coal, and sulphuret of iron. The coal itself is exceedingly black, clean, and glistening, is easily frangible and appears to be little, if anywise, inferior in quality to the best Wallsend or Lumbton Main samples in the London market, and far superior to the Burdwan coal of India. The proportion of coal to baryta and sulphuret of iron, in the above samples, is as 13 to 20.—*Daily Papers.*

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Where practicable, plant-houses ought to be covered with mats or some other covering in severe weather, particularly the stove. The steady high temperature maintained in Cucumber-pits could not be effected without thick coverings; slight skeleton frames made to fit the glass sashes, and covered with some waterproof material, are most convenient, and in the long run the cheapest. Where mats are used they should be sewn together, for the convenience of being rolled off and on easily. All stove plants, except a few Orchidaceæ and some bulbs, &c., should now and for the next six weeks be quite at rest, and in that state 55° is high enough for them in cold weather. No more water should be given at the roots than what will keep their leaves from flagging, but the atmosphere ought to be kept more or less moist. A high dry atmosphere is much more prejudicial to stove plants than any cold they can suffer in a temperature above 45°.

Conservatory.—About 45° is the best temperature for this house in cold weather; not but that the generality of half-hardy plants will outlive the winter if the frost is kept from them, but 40° is high enough for a conservatory not attached to sitting-rooms, and only used for the purpose of wintering large specimens without plants in blossom. A few good stove plants and a forcing-pit are essentials to a good conservatory in winter. See that the fire place, flues, and pipes act properly, as we often hear of accidents arising from such sources. Where the heating apparatus is barely sufficient to keep up the required temperature, accidents are more likely to follow. Sometimes plants are injured at this time by being placed over where the pipes pass under the pavement, &c.; in such cases an empty pot placed under them would lessen the risk of the roots being dried too much. Another source of great injury to plants in the borders is their roots getting in contact with the walls which divide the beds from the hot-water pipes where they are so arranged. Keeping these parts well moistened prevents part of the injury, but in cases of this sort the beds or borders ought to be protected by a few inches of some non-conducting material, as dry sawdust or pounded charcoal, cased with a brick-on-edge wall between it and the soil. This arrangement ought never to be omitted where the pipes run under the paths, &c.—*D. B.*

II.—FLOWER-GARDEN AND SHRUBBERIES.

Out-door Department.

This has been a very favourable season for the blooming of out-door Chrysanthemums, and I do not recollect to have ever before seen them in such fine condition, or to so much advantage. For the autumn decoration of the flower-gardens, especially in country places, they are certainly deserving of more attention than has hitherto been bestowed upon them; and for that reason I have, through the kindness of the Messrs. Chandler, who favoured me with specimens of their newest flowers, made an arrangement (represented by the figures below), in which some of the finest kinds in cultivation are grouped according to their complementary, or rather contrasting colours. The figures may be considered either to represent separate groups, or single plants in a large bed. Whichever arrangement is adopted, it is necessary that the plants should not exceed 18 inches in height, and for that reason they ought to be layered in July in the reserve garden, and be removed to their flowering quarters in October:—

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45

1 Isolier	16 Aristides	32 Marie
2 Golden Lotus,	17 Vesta	33 Compactum
flowered	18 Julius Cæsar	34 Comte d'Eu
3 Imogene	19 Park's small Yel-	35 Elegans
4 Casimir Perrier	low	36 Duc de Cornegli-
5 Gouvion St. Cyr	20 General Lamoricière	ano
6 Horatio	21 Horatio	37 Phidias
7 Madame Pompa-	22 Connector	38 Distance
dour	23 Louis-Philippe	39 De Crequi
8 Demarce	24 Marshal Soult	40 Annie Jane
9 Surprise	25 Campestrom	41 Queen of Yel-
10 Grand Napoleon	26 Empress	lows
11 Lac dum	27 David	42 Leontine
12 Incomparab'e	28 Julius Cæsar	43 Arago
13 Celestial	29 Minerva	44 Formosum
14 Sappho	30 Queen of Gipsies	45 Flechier
15 Rigou	31 Phidias	

The preceding arrangement would, I am certain, produce a fine effect in the autumn, and would amply compensate the culturist for any care he might bestow upon the preparation of the plants.—*W. P. A.*

III.—FLORISTS' FLOWERS

Should the weather continue fine, much can be done amongst Florists' Flowers; still there are always full employment even in unpropitious weather like the present. We last week stated that Carnation compost or loam, as the case may be, should be frequently turned; when the outside of the heap is frozen it may be removed, so that a fresher layer of soil may be exposed to the action of the frost; and should the hard weather continue, this in like manner may be removed, and each successive crust taken away till the whole heap has been frozen. This has a highly beneficial effect on the soil, and is the means of destroying the eggs and larvæ of many injurious insects. Leaden Carnation pegs may now be straightened, cleansed by washing, and put by till the next layering season; fresh ones may also be procured. Carnation sticks should be repainted, and, in fact, all such matters must be attended to. As for layers in pots, the less they are meddled with during severe frost the better; where they have been potted off early, and are well established, they will endure severe cold without injury, and may have all the air possible; on the other hand, if they have only been put in during November, the frames must be kept rather close, only giving air during the middle of the day. *Auriculas.*—When healthy will bear frost with impunity. The frame-lights may be tilted during the middle of the day. We have known the soil in Auricula pots to be frozen as hard as marble without any apparent injurious effect on the plants. *Ranunculuses.*—May occasionally be looked over, taking care to keep them in a moderately dry place; if not previously done, the roots may be cleaned and made ready for planting. The beds will be benefited by being turned during the frosty weather, but as Ranunculuses do better on beds of a close texture, it will be as well not to remove the soil after the end of the month; merely throw it up in ridges of about 3 or 4 inches, it will thus be exposed to the action of the weather, and may remain so till planting time, when all that need be done will be to rake the beds level, previous to putting the roots in the ground. *Pansies* —Are kept by many in pots during winter; when well established they will bear a great degree of frost. It would be advisable, however, where the collection is of importance, to hoop the beds, over which mats may be thrown.—*J. F. W.*

IV.—PINERIES, VINERIES, &c.

Pineries.—During the continuance of severe frost, the temperature of the fruiting-pit must not exceed 60° by night. The other *Pines* may also be kept a few degrees lower than in mild weather without injury, if not with benefit. The fires necessary to maintain a high temperature during severe frost, are always more or less injurious to the plants, as a corresponding degree of moisture cannot be artificially maintained. Examine frequently, the plants near the pipes or flues, and supply water to any that may require it.

Vineries.—The best time to start Vines for an early crop has often been discussed, and some attempts have been made to have ripe Grapes in March, by beginning to force in September or October. This, however, is not often done, November being the time when most gardeners begin to force their first houses. From my own experience, I am led to believe there is no difficulty in getting Grapes early in March, even from Vines having their roots outside the house; and I will shortly give my reasons for so thinking, and my mode of practice. Vines to be started between this time and Christmas should now have their roots covered with leaves and stable litter, so as to create a gentle heat in the border, in order to put the roots in advance of the branches. Continue to keep the night temperature of the vinery started in November at 50°, if the buds have not begun to swell generally, and sprinkle frequently the Vines and the floor of the house. Vines now breaking keep between 50° and 55° by night, and 60° by day.

Peach-house.—Continue to keep the night temperature at 50°, with a day temperature of 55°, allowing a rise of 10° or 15° with sun-heat. As soon as the blossoms begin to expand, let a small portion of air be left on during the whole day, making up the deficiency of temperature by fire-heat, if necessary. This is requisite to give strength to the blossoms. Sprinkle the trees frequently, until they are in bloom, after which only sprinkle the floor and paths until the fruit is set.

Cherry-house.—This house may now be shut up, and kept at a temperature of 45° with fire-heat. Cherry-trees are easily excited; great caution should therefore be used not to keep them too warm. Giving air is not necessary, except during sunshine, until the buds begin to expand, when it must be admitted at all favourable opportunities. Plunge trees in pots in slightly-fermenting material.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

The latter end of last week, and the commencement of the present, would witness abundance of protecting operations. Fortunate were those who had everything in readiness for the work, for, though we had a warning of keen north-easterly winds for some time, yet 12 or 16 degrees of frost has of late been so uncommon in the beginning of December, that many of us are too apt to procrastinate, and say "It is time enough yet." All the more tender vegetables, such as Cauliflower, Lettuce, &c., previously secured, will now be found of great service during the winter. The possession of rooms, or sheds, with thick walls, and lathed and plastered so as to be cool in summer, and warm in winter, or access to cellars, or underground rooms, will be of great advantage, as then a supply may be maintained with comparatively little trouble, during either severe weather in winter, or for a month or two of dry scorching weather in summer. The north side of a wall, with material to keep out the wet, and leaves or straw, to keep out the frost, may also be used with advantage. The passages of an old-fashioned ice-house, to which access is requisite several days in the week, may also be used as a substitute for cellars, &c. I tasted some Cauliflowers the other day, crisp, and fine-flavoured, that had been so kept for more than two months. *Store-house.*—Secure Potatoes from frost; examine Onions, removing every one that has the smallest speck; keep a supply of Turnips, Celery, Jerusalem Artichokes, Horse-radish, &c., in case the frost should be apt to continue. *Fruit-room.*—Keep the temperature as regular as possible, ranging from 35° to 45°; if allowed to rise higher, the fruit will ripen too fast; and if the fruit is frosted, the flavour will be apt to be injured, besides being liable to rot, if it should be thawed suddenly. When it is desirable to render any sort fit for table, it may easily be done by exposing it to a higher temperature, and thus accelerating the saccharine fermentation. *Forwarding.*—Keep up a supply of herbs, such as Tarragon, Mint, &c., by placing roots either in pots or in Asparagus-frames at work. The same thing may be done with Parsley, Chervil, &c., if you are likely to be short. Fill pots or boxes with Rhubarb, Sea-kale, Chicory, &c., to be placed in the Mushroom-house, or in any corner where you can have heat and darkness at command. Those who have commenced Cucumbers, or have some in a bearing state, will find considerable attention necessary, where there is nothing but fermenting material to depend on.

Routine.—Wheel dung upon vacant ground; remove old decayed borders, and drive good fresh loam to form new ones. Mulch all fresh-planted fruit-trees; protect the tops of those the wood of which is not properly ripened, with Fir-branches, Fern, &c. Clean old shreds not too much wasted for use, by boiling them, and cut plenty of fresh ones. Deprive nails that have been used, of the adhesive mortar, &c., by heating them red hot in an iron vessel; and to prevent them from rusting, immerse them in oil before they cool. Anoint all trees and bushes that are pruned with a mixture of equal parts of cow-dung, clay, soot, and lime, made to the consistence of paint, with strong soapsuds, urine, or the rich drainings of the dung-hill; and if you prune at all in such weather; let the wounds be immediately daubed up with a thick composition of the same.—*R. F.*

VI.—ARBORICULTURE.

Old Woods.—As the weather has set in frosty, continue to fell trees, and clear them away. Cut hedges, and forward any other work which can be done in frosty weather.

Coppice.—The cutting of poles and other produce might be forwarded, where there is much to do in that way; but February, March, and April is the best season for such work.

Young Plantations.—Where there is much thinning to be done, such weather as we now have is excellent for cutting out Larches, &c.; but such plants as are required to spring up again, for underwood, to be headed off, should be left till the spring months.

Hedge-rows.—Planting and cutting these may be proceeded with.

Nursery Work.—Little can be done now in this department while the frost lasts. Secure the plants from hares and rabbits, if previously omitted, and shelter tender plants from the severity of the weather.—*W. B.*

VII.—COTTAGERS' GARDENS.

Pelargoniums that were cut down, dibbeted, and repotted in fresh soil early in autumn, should now, if they have been well treated, be handsome plants, and should be carefully protected from frost. In weather like the present, these, as well as other plants, should be drawn back from the window, or set down on the floor of the room. Water very sparingly while the frost continues, and even in mild weather no more water ought to be given to plants in windows in winter than just enough to keep *all* the soil in the pots sufficiently moist to maintain the plants in a healthy state. Cauliflower-plants, if any, growing under a south wall, will be greatly benefited by straw, Spruce Fir-branches, or some other material being laid over them, partly with a view to keep off the severe frost, and partly for the purpose of preventing the plants from being suddenly thawed by sun-heat in the middle of the day. To plant that is at all tender will almost being subjected alternately to hard frost at night and moderately high temperature during the day, which is generally the case with plants that are unprotected in such a situation. Now that the ground is hard frozen, and nothing for the cottager to do in the way of digging, I shall feel greatly obliged to any one who will send an article to the *Gardeners' Chronicle* on the best method of protecting the tender plants in cottagers' gardens, against the severity of the weather.—*T. Hall.*

Abstract of the Weather near London during the week ending December 7th, 1844, as observed at the Horticultural Gardens, Chiswick.

Day of Month	Day of Week	Barometer		Thermometer				Rain in inches
		Max.	Min.	Max.	Min.	Mean	Dew point	
1	Sun.	29.816	29.606	50	34	42	38	
2	Mon.	29.806	29.564	54	30	42	38	
3	Tues.	29.772	29.676	52	32	42	38	
4	Wed.	29.719	29.597	52	32	42	38	
5	Thurs.	29.704	29.605	52	32	42	38	
6	Fri.	29.668	29.547	52	32	42	38	
7	Sat.	29.664	29.580	52	32	42	38	
Average		29.718	29.657	51.7	31.6	41.7	38	

Sun—Cloudy; frosty and foggy; clear; fine; severe frost at night.
Mon—Cloudy; frosty and foggy; overcast; cold; brisk N.E. wind; cloudy and frosty.
Tues—Cloudy; frosty; overcast; cold; brisk N.E. wind; cloudy and frosty.
Wed—Cloudy; frosty; overcast; dark and cold; gloomy; frosty; overcast.
Thurs—Cloudy; frosty; overcast; dusky haze; clear; hard frosty.
Fri—Cloudy; frosty; overcast; rather boisterous at night.
Sat—Cloudy; frosty; overcast; cold; rain at night.

The temperature of the week 15 deg. below the average.

Statement of the Weather at Chiswick during the last 18 years, for the ensuing Week ending Dec. 21, 1844.

Day of Month	Day of Week	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp	No. of Years in which it Rained.	Greatest quantity of Rain.	Prevailing Winds.							
							N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun.	15	46.2	35.6	41.0	8	0.35 in.	1	2	—	3	6	4	2	—
Mon.	16	46.6	35.6	40.7	12	0.45	—	2	1	2	3	3	5	4
Tues.	17	46.6	35.2	40.9	10	0.37	2	1	—	2	2	6	3	1
Wed.	18	45.8	35.3	40.6	5	0.80	2	6	—	1	2	3	5	—
Thur.	19	45.5	37.0	41.2	6	0.88	1	3	1	1	3	6	3	—
Fri.	20	45.2	35.5	40.3	7	0.70	—	4	—	2	3	7	1	1
Sat.	21	46.0	36.2	40.6	5	0.80	—	3	1	2	2	6	2	2

The highest temperature during the above period occurred on the 17th 1833—therm. 57°; and the lowest on the 18th, 1841—therm. 16°.

Notices to Correspondents.

The Reprint of Mr. PAXTON'S COTTAGERS' CALENDAR is now ready, price 3*d.* each Copy. An Index has been added to this present Edition. Parties wishing to have copies for distribution among their tenantry can have them at the rate of 2*s* for 5*s*.

Apples.—*G.*—The Waltham Abbey Seedling is a good kitchen Apple, requiring very little sugar. You will probably find it, when cooked, much superior to the very sweet Apples you mention.‖

Asphalte.—*G. R.*—This substance has not been used in the gardens of the Horticultural Society for the roofs of buildings. It has only been employed for small boxes to guard plants in the open air from cold, and to cover borders for experimental purposes; for this it answers very well. We are unacquainted with the other. Your commission shall be attended to.

Books.—*A. B.*—"Glendinning on the Pine-apple," and "Hamilton on the Pine-apple." Both should be in the hands of all gardeners.

Camellias.—*Amateur.*—Certainly Camellias will grow against a brick wall with an east aspect, in a border of fresh sandy loam, leaf-mould, and peat, 3 feet broad and 1 foot deep, with 9 inches of broken bricks and gravel below, upon a dry bottom, if you cover them during winter with sashes and mats when necessary, although you are in a rather cool and moist climate. Plant them 6 feet apart; if they like the soil, they will soon meet. It will be as well, however, to enrich your soil with a good dressing of manure. Experiments show that guano and urine furnish a most efficient liquid manure for these plants. Keep their stems pretty close to the wall, but suffer the branches to grow bushy. The mat covering will not be important, unless the weather is very severe, and not even then, if your sashes are tight, and the border thoroughly drained. As to Mangoes, they most certainly will not bear the treatment of the Peach. It is folly to think of it.

Carnations.—*G.*—The "black spot" on the leaves of Carnations is infectious, propagating itself in the same manner as *rust* in corn, or mildew on plants. If you will submit them to a powerful microscope you will find that they are composed of innumerable small *fungi*. We should imagine that the spots on the leaves of Polyanthuses (though we have never submitted them to the same test) are of a similar nature.—*W.*

Celery.—*An Inquirer* solicits information from some of the successful competitors at the Uxbridge Show as to their manner of managing to obtain such fine heads.

Covering for Frames.—*J. G. Reading.*—The following is the mode of preparing the composition described by "Devoniensis," at pp. 301, 1843; and 302, 1844, viz., "Three pints of old pale linseed oil, 1 ounce of sugar of lead, and 4 ounces of white resin. The sugar of lead must be ground with a small quantity of the oil and added to the remainder, incorporated with the resin by means of gentle heat. The composition is to be laid on by a brush, after the calico is nailed to the frames. One coat annually is sufficient. It dries in a short time when exposed to the air; and excludes as little light and heat as anything except glass, and does not become mildewed."

French Beans.—*An Old Subscriber.*—The Early Dwarf Dutch Haricot is one of the very best for forcing.‖

Game.—*J. M.*—We are sorry to hear that your plantations are destroyed by hares and rabbits; and we are still more sorry to be unable to help you to a remedy. Shoot, snare, trap, and poison, we should say, if you dare; but as we presume you have no taste for transportation, we do not advise you to practise such devices. The truth is, that until the Game-laws are wholly repealed, poor people must submit to have their property destroyed for the gratification of the rich.

Gold Fish.—*W. Ellis.*—The trout is a fish of prey, and consequently would devour small Gold-fish. The best time to put Gold-fish (that have been kept in a glass globe in the house) into a pond will be the spring, say the end of April, or beginning of May, and not in the autumn. The Strawberries can be had of all nurserymen.

Heaths.—*W. T. O.*—The following varieties, if treated in the usual way, will flower between the months of November and May, viz., Verticillata, Mammosa, M. pallida, Hyemalis, Willmorcana, Vesecitii, Grandiflora, Arbuscula, Umbellata, Lamberti, L. rosea, Versaia, discolor, Acuminata, Perspicua fabre, P. alba, Pyramidalis, transparens, and Regerminans. In the case of the plants exhibiting a disposition to bloom early in summer, the strongest of the shoots should be stopped, which will make the plants flower more profusely in autumn and winter. Heaths are not fond of manure. The finest of flower-pots vary in different parts of the country; a No. 16 near London measures 11½ inches in diameter at top and 10 inches in depth.‡

Hints.—*C. N.*—We should not have thought it possible that your house would be too damp. If it is so, you may diminish the porosity of your tiles by a coat of Roman cement. That would be the cheapest plan, and effectual.——*A. B. J.* says that in "Loudon's Encyclopædia of Gardening," p. 890, in a paragraph respecting the tempering of brick flues with "linseed putty," he inquires, what is meant by "lime putty," and how it is made.

Hoeing.—*A. B.*—You are not too much for the wisest of young shelves, but that is a point of little consequence, and merely depends upon the fancy or objects of the owner, who constructs a greenhouse. It is of far more importance to construct a double shelves of wooden rails. By all means, if you can, construct plate shelves. The pipes may be placed between the rails and the shelves, but that is not of much consequence if you keep them, the latter. Double walls keep the plants over solid walls of brick-rubbish chamber, and much drier and warmer. Nine inches are enough for the side shelves. Determine the size of the panes of glass by the size of your house.

Hyacinths.—*M.*—The leaves of your plants have probably been punctured earlier in the year by the Thrips or some other insect, but the species cannot be determined, as there are no specimens to be found upon them.—*R.*

Ivy.—*Philo-Rosa.*—This plant does not derive much nourishment from the roots by which it is attached to walls; by no means enough to render the branches independent of the roots in the earth. If you want to cut a window through a mass of it, you must do so by carefully putting it aside—not by cutting through the main branches.

Lesson in Nature.—*A. W. B.*—Your treatment has been judicious. These plants do not require stove temperature, nor do they like it. Full details of their management would occupy more space than we can afford them at this late period of the year. As soon as the next Volume commences we shall give *full practical directions for* the management of all such things.

Manures.—*Mansilow.*—Certainly, if you have no tank to hold the chamber-ley, pour it upon your beds; that is better than letting it run to waste. But it is a bad way of applying it. Cannot you get an old wine hogshead or something of that sort, and when it smells throw in some sulphate of iron? You may depend upon it this sort of manure, well managed, is among the best, if not the best of all.

Mistletoe.—*W. H.*—The Mistletoe is found in this country upon the Lime, Maple, Apple, Oak, Willow, and Poplar. In Germany it grows in great quantities upon the common Pine. It may be cultivated by making an incision in the bark of the tree on which it is to grow, and inserting a berry or two; then tying a little damp Moss over the part. The operation may be performed in April or May; the berries like to be kept rather moist until they begin to grow.‡

Names of Fruits.—*T. H. T.*—1, Beurré Diel; 2, Crassane; 3, Glout Morceau; 4, Chaumontel; 5, Passe Colmar; 6, Beurré Dalu; 7, Marie Louise; 8, Brown Beurré; 9, Chaptal; 11, Easter Beurré; 12, Bishop's Thumb; 13, Blenheim Pippin.‖——*Mickle.*—Nos. 1 to 6 inclusive, correct; 7, Scarlet Nonpareil; 10, London Pippin; 11, Royal Russet; 12, Northern Greening.‖——*A Subscriber.*—Your Pear is not the Van Mons Léon le Clerc.‖

Names of Plants.—*D. N., Cork.*—Maxillaria picta.——*M. R. L.*—Acacia lophantha.——*Alpha.*—1. Vicia lutea; 2. Anemone ranunculoides; 3. Chamædeon procumbens; 4. Campanula; 5. Trifolium elegans; 7. Smilacina bifolia; 8. Erigeron acris; 9. Myosotis arvensis; 10. Trifolium incarnatum.‖——*R.*—Apparently Oncidium Sutoni.

Pines.—*Reformer.*—Your questions should be addressed to the nearest bookseller. Such inquiries as you have made cannot be answered without subjecting the answer to advertisement duty.

Root-pruning.—*An Old Subscriber.*—If the roots of young trees can be properly spread out it is not necessary to prune them, in planting, if they are sound; and all that is unsound should of course be cut clean off.‖

Roses.—*S. Warnford.*—The following are handsome, and are suitable for being planted out singly on a lawn, viz.:—Lamarque, Madame Desprez, Brennus, Félicité Perpétuelle, Blairii, Billiard, Amadis, and De Lisle.‡

Stables.—*Rigata.*—We will give you an answer next week. It is certainly desirable that a loft or chamber of some kind should be constructed over a stable.

Strawberries.—*John.*—Some kinds of Strawberries originally obtained from North America, and varieties subsequently raised from them, are so hardy that out most severe winters do not materially injure them. But the Chili Strawberry is rather tender, a characteristic which the numerous cross-bred varieties from it more or less inherit. Myatt's British Queen, and some other new kinds, though not perhaps directly cross-bred, yet appear to have something of the Chili in their constitution, and therefore you will do well in covering those you planted in August with litter, or leaves, or with a mixture of both.‖

Timber.—*Clithero.*—The plan of barking trees while standing, and leaving them till another year before felling them, has long been practised, but it seems out of favour. Boucherie's mode of injecting trees is only applicable to them when freshly cut or growing. His mode of proceeding has been described at p. 911 of the Volume for 1843.

Transmutation of Corn.—We learn from a correspondent that the statement in an Irish newspaper about Oats having been found growing on an ear of Wheat originated in error.

Transparent Coverings.—*X. E. L.*—The turpentine should not be boiled with the oil, but stirred into it when taken off the fire. The oil is raw linseed-oil.‡

Window Flowers.—*J. H. G.*—All common greenhouse plants, with the exception of Heaths and shrubs of that description, will grow in windows, provided they are properly managed. The easiest to grow are what gardeners call soft-wooded, such as Geraniums, Fuchsias, and Aloysias; or herbaceous plants, like Chinese Primroses; or succulents, among which Echeverias and some of the Crassulas, especially *C. coccinea* and *versicolor* are the best; or, finally, the common bulbs and corms called in the shops Dutch roots. The difficulties to contend with in a sitting-room are darkness and dryness of the air; the former interferes with blooming, the latter with growing. The former is only to be remedied by turning the whole window-garden out of doors for a few weeks every year; the latter by the use of bell-glasses, at night, or similar contrivances. The common errors to avoid are insufficient drainage, a most important point; watering with cold water, and allowing water to stand in the pans that receive the pots. In the early part of next year we shall furnish a series of articles on these matters, till when we must solicit your patience. For outside creepers, take Honeysuckles, Glycine sinensis, White Jasmine, and the Sweet Virgin's Bower.

Miscellaneous.—*F. M.*—Triptilion spinosum is a pretty plant enough, but very hard to grow. We doubt whether it can be had in the trade. It may be kept in a cold frame, but it requires a very abundant ventilation, and is best in a greenhouse.——*A. W. B.*—Caffre Corn is the grain of Sorghum saccharatum and some other species. It is too tender for cultivation in this country. The Hottentots are very fond of sucking the sugary straw. The common Passion-flower often ripens its fruit near London. We never heard of its seedlings being better than the parent, and should doubt it. Your information delights us.——*J. C. S. B.*—Neither you nor any one else can raise Rhododendrons true from seed, unless you take the precaution of *setting* them when in flower. If you sell them all but the ponticum nobody can complain.——*A. H. G.*—You can have all the Numbers for this year, price 1*s*.——*Tamarisk.*—The arrangement of plants in a garden, according to their botanical system, is possible; but incompatible with ornamental effect. For this reason it is not found in gardens. At the Horticultural Society's Garden the plants are usually labelled with their names and native countries.

R. E.'s is alive and well; he is not the personage to be alarmed by silly and ignorant people; but he has been too much engaged to find leisure for us. With the turn of the year his contributions will be resumed. Your question pondering queries is very difficult to answer, for it involves some of the most obscure phenomena of vegetation. It is probable that we shall touch upon it in a few weeks. As to the other matter, it is, we fear, irremediable.——*D. P.*—Cabul being a large city several varieties of Melon are sent from there, which are all termed Cabul Melons. The name is not applied to any particular sort, consequently both your green-fleshed and scarlet-fleshed varieties may be equally Cabul Melons.‡——Received, *T. T.*

* * As usual, many communications have been received too late, and others are unavoidably detained till the requisite inquiries can be made.

DRAINING OF LAND.—THE WORKMAN'S LEVEL, invented by Mr. BAILEY DENTON, is made and sold, as approved by him, by Messrs. Jones, Opticians, 30, Lower Holborn, London, price 30s.

The Agricultural Gazette.

SATURDAY, DECEMBER 14, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, Dec. 18—Agricultural Society of England.
Thursday, Dec. 19—Agricultural Imp. Soc. of Ireland.
Thursday, Dec. 26—Agricultural Imp. Soc. of Ireland.

FARMERS' CLUBS.

Dec. 16—Richmondshire.
" 17—Ormskirk.
" 18—Wrentham.
" 19—Bucks Ferry.
" 21—Wimborne.
" 21—Girdler.
Dec. 23—West Hereford.
" 24—Petsford.
" 24—Wenlock.
" 26—Yoxford.
" 26—Framlingham.
" 27—Rayleigh.

We refer our readers to the Report, in another column, of the SMITHFIELD CLUB SHOW OF FAT CATTLE, &c., which has taken place during the past week. We shall have a few remarks to make next week upon the relative and actual importance of that branch of farming which this Society takes under its patronage. In the mean time, we have only to observe that the animals shown were in no respect inferior to those exhibited last year; and, what is of importance to the exhibitors, the weather has been such, that the butchers have not been afraid to give full prices for what has been sold.

LET us now apply to the systems under discussion—those of PERMANENT PASTURE and ARABLE CULTURE—the tests, the accuracy of which we last week justified. How do pasture lands fulfil the required conditions? Do they yield much profit to the occupier? Are they largely productive of food for man? Do they give much employment to the labourer? The very *best* pasture lands—lands naturally fertile, and upon which Grass is a natural crop, and is, therefore, produced in abundance—answer the first and second questions satisfactorily. They afford a good profit to the owner and occupier, and produce a fair amount of food, in the shape of beef and mutton, for the public. The third condition, however, is totally neglected; they provide scarcely any labour. The labourer's share is, in fact, absorbed by the owner, and that without gain to *him*. For instance, upon soil of this sort the rent is never less than half the gross produce. The same soil under the plough pays only one-fourth its gross produce; though ordinarily the *amount* of rent is the same in each case. If labour were employed in the former case, as in the latter, rent would necessarily suffer a reduction. It is obvious, therefore, that the former system yields too little produce, as the rent is the same in amount, in both cases, and that its produce is divided between the *owner and occupier only*, instead of admitting the labourer to a share. To admit him to a share without diminishing that of the owner and farmer, a system must be adopted which produces *more*. Whether this can be done or not, however, he is entitled to his proportion, and in this system it is forgotten.

If we apply the same test to the medium and inferior Grass lands—in fact, to three-fourths of the pastures of the country, the demerits of the system are fully developed. The profit upon them in the shape of rent is small, and the interest to the occupier, except in the shape of convenience or accommodation, is in most cases insignificant; in many it is on the wrong side of the book. The gross produce of such land, in the shape of flesh, is on the same scale as the profit—*i.e.* of course, it does not supply. Indeed, there is a great proportion of our inferior pastures which will not *feed* anything. Upon these young stock *exist*, and the progress of age is in some degree attended by growth; the stock, therefore, in time acquires an increased marketable value. In amount, however, this is trifling, and would be were it not that such lands are but *parts* of a farm, and are in some cases let for convenience, and make part of a better bargain) afford a rent very much less than they now pay.

On these soils, however, the labourer is entirely forgotten. Producing so small an amount of food for the country—*little* for the owner, and *less* for the occupier—there is *nothing* for the workman. For the amount of employment on this Grass is not worth naming. On each point, then, in which it is essential that a system of management should excel, this fails. A method which affords little for anybody, and nothing for some who ought to receive advantage from it, cannot be acceptable to any interest, or worthy of being practised by any enlightened cultivator.

The question is, however, now, How would the arable system answer in these cases?

To plough out these soils, say many spirited and intelligent advocates of the arable system, would do all that we require; would protect the two interests which, under the other system, suffer most—the country and the labourer—without injury to the interest of the owner and cultivator.

Investigation bears out this statement. Even on the good pastures, to which we in the first instance referred, the arable system would produce to the labourer at least a quadruple supply of *employment*, and to the country a doubled amount of *produce*. For two excellent artificial green crops, and two grain crops, would undoubtedly be twice the value of four crops of Grass to be depastured. *The profit*, therefore, would surely not be diminished, as there would be one-half of the produce to pay the labourer and other expenses, and still as much left for rent and profit as was produced altogether under the pasture system. This is evidenced by the fact already noted, that a similar rent for land under the plough and under pasture, is at least calculated at respectively one-fourth, and half the produce. It is clear, therefore, that the produce is in one case double what it is in the other, and that one half of it is paid away in the *extra labour*, &c., and still the rent and profit is as great upon the arable as upon the Grass land.

If these advantages accrue in adopting the system upon even *good pasture land*, how much more strongly must they be felt upon the ordinary and inferior soils, where, in many cases, sterility is the natural condition? To such poor or unimproved soils rich herbage is not natural: they will not, therefore, voluntarily produce it. But by cultivation, tillage, and manure, they may be made to produce artificial crops, however inferior their natural one was, and consequently they will, under such a system, afford in a higher degree than when under Grass, all the essentials we require—viz. *profit*, *produce*, and *labour*. In illustration of this, on a moderate estimate we may, on that half of the Grass which on the alternate system would be under Turnips and Clover seeds, keep quite as much stock as the whole in bad Grass would keep. The country would suffer no loss of *mutton* from the change. We should, in addition, have the other half in corn, and this would be so much clear *gain to the country*, and would be equal in value to at least three times the former produce of the whole in Grass.

The gain to the labourer, and the profit to the farmer, &c., are also evident. With the same permanent burthens (rent, taxes, &c.) to bear, and a produce quadrupled, there is (taking the value of the old pasture for these burthens) three times the whole produce if under Grass, to pay the interest of capital with, to employ the labourer, and to spend in manures and in other matters requiring the capital and industry of the country.

Upon these grounds, then, it will be evident that the conditions which we consider essential, in order that a system of cultivation may be beneficial to *all the interests* vested in the soil, are more fully answered by the arable than the pasture method. We have no hesitation in affirming, therefore, the truth of the position which has been publicly propounded, that the interests of the community require that the change from the pasture to the arable method of cultivation should be extensively adopted on the medium and inferior lands of the country. We say medium and inferior lands, because they are far the greater proportion of the pasture lands of England; and it is on them that the greatest and most striking benefit would arise from the change of system. Moreover, the best Grass lands are principally held in small quantities, and along with other qualities of land; they are, therefore, matters of great convenience to the farmer, allowing him to keep more cattle in his yards during winter, to consume his straw and improve the quality of the manure, as he can feed them off in summer on this good Grass land. Although, therefore, by ploughing out such land we might obtain a greater annual produce, and perhaps more profit, yet, paying as they do a fair interest and affording accommodation in so many instances, it can scarcely be expected that these lands will be ploughed out solely because they do not afford labour. Nor indeed can we wish for the change while the medium and poor Grass lands exist in such quantity, and promise so much more beneficial results. In *them* the change is from *nothingness*, both as regards *occupier's profit*, *gross produce*, and *labour*, to a fair proportion of each. And from being a burthen (for such we maintain they are to many farmers who taking them in their farms, are not aware what they pay for them, and are almost as ignorant of what they get from them) they become a source of wealth to the country, and a means of ministering comfort to our fellow beings.

The case, indeed, is simply this:—We can grow good crops, by artificial means, in soils which of themselves will grow little. Are we to compel these soils to be useful or not? We can in fact, increase the value of the crop tenfold, and at the same time quadruple the amount of employment, and consequently the amount of payment to the labourer. The question, therefore, is—Is it good policy to do this at a time when both are objects of the greatest national importance?

As it may undoubtedly be urged that the increase of produce and employment, to the extent we have claimed, from the conversion of pasture into arable land, is an assumption, we shall in a future Paper prove that facts support our assertions.—*H.*

INCLOSURES FROM THE FRITH OF TAY.

"What is the best mode of bringing mud from the sea into cultivation?" In answer to this query I beg to say that the remarks I intend to make will have reference solely to the river Tay, and of course may not be applicable in all cases, as which depends upon the nature of the river, its currents, &c., and the geological formation through which it flows; so that the alluvial deposit of one river may differ from that of another.

The subject may be divided into three divisions, and a few remarks on each made.

1st. The method of gaining land from the river.

2d. The method of protecting it when gained.

3d. The mode of cultivating it.

1st. As to the method of gaining land from the river. The process usually followed with the most advantage is to run out at intervals double rows of stakes, driven five or six feet into the ground, leaving their tops three or four feet above it, two or three feet apart from each other, then firmly filling the space between with twigs, branches of trees, or tops of hedges, calculated to catch the particles of mud but to allow the water to pass through. A sediment thus takes place between the rows, and gradually increases, and ultimately forms a firm productive surface; care must be taken to prevent all ditches or running streams from passing through it, as they would prevent it from mudding up. Sometimes a row of loose stones is laid between the current and the deposit, or between high and low water mark, which will similarly catch mud and sand, and while forming new land will, by narrowing the channel, give greater impetus to the stream, and help to deepen its bed; but lately, since the dredging or deepening of the bed of the Tay, proprietors have availed themselves of the sand and gravel excavated from the bottom of the river in forming fine sloping beaches, thereby saving the expense of loose stones. Sir John Richardson, of Pitfour, in particular, has now a fine hard sloping beach of about two miles in extent, along the extremity of about 100 acres in process of mudding up.

2d. As to the method of protecting it when gained. This is done by raising a large earthen mound parallel to the shore. The two sides of such a mound are generally formed on different slopes; that towards the land is always the most abrupt, but can never be secure if more than at an angle of 45°; that towards the water varies from 45° to 25°; of course the greater the slope the better, but as a general rule it should never be less than two feet to every foot in height—the power of the bank to resist the weight of the water, as well as to break its force when in motion, being inversely as its steepness. Some of the banks are formed with a stone wall half their height next the water, with a long slope, and then a mound of earth at the back and over it; but the earth alone is the most general mode, and seems better adapted than the other. Mr. Stephens says, "An embankment was thrown round the small island of Mugdrum in the river Tay, to protect the land from being overflowed by the tide, but it was made so steep that the first spring tides levelled the greater part of it to the ground; a second attempt was made, with the additional expense of a stone wall facing the water, which shared the same fate with the former bank. Since these failures, a third embankment has been erected, with nothing but the natural soil of the land, and the whole covered with thin turf: the length of the present slope next the sea is five times the perpendicular height of the bank, and the inner slope three times; the water meeting no resistance rolls down the long slope without doing any injury." Sluices or tunnels of boards, with a valve opening outwards on their exterior extremity, are introduced here and there through the bank dyke, to carry off the water within; when the flow water from without approaches, it shuts the valve, which remains in this state till the tide recedes, when the height of the water within being greater than that without, it presses open the valve and escapes.

3d. As to the mode of cultivating it. This does not seem to be a very difficult process, as the soil, if not taken in too soon, is comparatively dry, and naturally a very fertile one. In 1826, about 80 acres were taken in on the estate of Pitfour. The first year it was trenched to the depth of 18 inches, the surface or the undecayed vegetable matter thrown into the bottom of the trench, then sown to Oats, next Potatoes, then Wheat, and, with the exception of occasionally Clover, Oats, and Beans, has been Potatoes and Wheat, alternately, ever since; in fact, this, generally speaking, is the mode of cropping followed, Potatoes and Wheat being held as staple articles. On a neighbouring estate, about 60 acres were taken in two years ago: after allowing it to dry so as to carry the horses, it was ploughed, then levelled with a levelling box, and Oats sown the first year, then planted with Potatoes, the crop of which averaged somewhere about 20 tons per Scotch acre. Perthshire has for a long time grown large quantities of Potatoes for the London market, and these alluvial or haugh lands, as they are locally termed, are first-rate Potato-growing soils. The average rent of such soils may be from 4*l.* to 5*l.* per acre, or an equivalent in grain.—*A Strathearn Farmer.*

THE PLOUGH.

(*Continued from p. 816.*)

We have now to consider the second question we proposed—What form of the plough will effect its par-

pass with the least exertion of power? It is only the mould-board which is here referred to—the cutting parts of the plough, to the action of which much, perhaps most, of its draught is owing, have been already considered. I am persuaded that the theoretical consideration of this question is of little utility. I believe that the form of mould-board of least resistance will be sufficiently nearly pointed out by experiment. The question is, however, an interesting one, and that perhaps chiefly on account of its great complexity. It appears that in ordinary cases, and more especially in ploughing turf, the friction of the sod upon the mould-board is due to the action of two causes. One of these is the weight of the sod, and the other is its resistance to being bent—its elasticity. Let us divide the mould-board of the plough into two parts:—first, the front part, which is employed in raising the turf from the horizontal to the vertical position; and secondly, the hinder portion, which is employed in pressing the turf from the vertical to its ultimate position. A little consideration will show that in the former of these portions both of the above causes act, while in the latter only one of them acts. In the former, both the weight of the sod on the mould-board, and the resistance it offers to being twisted, concur in pressing on the mould-board, and thereby producing friction; in the latter the sod, so far from lying on the mould-board, tends to fall away from it; its elasticity alone remains to produce friction. It is evident that the twist of a sod will be most easily effected if done gradually. If the elasticity of a turf were all that was to be overcome, this would be more easily effected by laying hold of it at a distance of four feet from where it was attached to the fast land, than if it were held and forcibly bent at a distance of only two feet from the same spot: obviously, if the elasticity of the turf only were to be overcome, the longer the mould-board the more easily it would act. If we now look at the influence of the mere weight of the sod in producing friction, and thus adding to the draught of the plough, we shall find that the shorter the mould-board the more easily it would act; for the longer the mould-board, the greater would be the weight of turf lying on it, and, consequently, the greater the friction due to that weight. The inference from the results at which we have thus arrived is, that the hinder part of the plough, on which only the elasticity of the turf acts, should be as long as is consistant with convenience, and that the length of the front part of the mould-board should be such that the sum of the two portions of the friction on it—the one due to the weight, and the other to the elasticity of the turf—may be a minimum. With reference to the front part of the mould-board it thus appears that the proper dimension lies somewhere between the shortness, which is in accordance with the one view, and the length, which is in accordance with the other; in which, each kind of force being taken into consideration, the sum of the forces required to overcome each is a minimum. It is the length of the front part of the mould-board that forms the great difficulty of the question; for consideration must be kept alive to the fact, that as it varies, one of the above portions of friction increases and the other diminishes, and this too at very different rates.

For all practical purposes, however, we need not perplex ourselves thus; for in nine cases out of ten the sod has no elasticity whatever; and I believe in almost—perhaps in all—cases, when it has elasticity, the limit before alluded to, which is put to the shortening of the mould-board by the angle of repose of soil on iron, will insure to the mould-board a length greater than what would be given to it on a review of the influences respectively of the weight and of the elasticity of the sod—the one anxious to shorten and the other to lengthen it.

Were there no other matter for consideration, this would at once determine the question of the form of the mould-board of least resistance; for we have only to ascertain the length of the mould-board, such that the angle which its surface makes with a vertical plane across the direction of the plough's motion may always be more than the angle of repose of soil on iron, and then the surface of uniform curvature of this length, which commences with a horizontal line where it joins the share, and terminates with a straight line hanging over beyond the perpendicular at an angle of 45° will be the surface of least resistance, which will answer all those conditions required of a good mould-board.—*M. S.*

THE ISLAND OF LEWIS.

At a late meeting of the Glasgow Philosophical Society, Mr. Smith, late of Deaston, gave the following details of a visit to that island:—Lewis is the most northerly of the western group of Scottish islands, and though generally spoken of as a distinct island, is nevertheless connected with Harris by a narrow neck of land, from which circumstance they are sometimes called the long island. The rocks are of the primitive or granitic formation; and the surface of the country has altogether a very peculiar aspect. It appears that the peat moss has begun to be formed immediately upon the granite rock; for when you get to the bottom you find at once a rough gravel, mixed with small quantities of clay, and hardly such a thing as a distinct alluvial deposit. The whole surface is covered with bog, from 2 to 10 feet, and in some places 20 feet in depth; although the general depth may be stated at about 4 feet. Upon the surface of this bog nothing grows but Bent Grass and stunted Heath: it has a very dreary aspect. Not a tree is to be seen; and in the after part of the year, when the Bent becomes decayed, the appearance is peculiarly black and desolate indeed. The most remarkable thing connected with the island, however, is this—that the slightest improvement does not appear to have gone on for a very long period. The inhabitants still use the ancient distaff, although it is 100 years since it has been supplanted in this country by the Dutch wheel. The advantages which the best machinery of the day possess over the distaff, are as 1000 to 1; yet, by means of the distaff, these people manage to manufacture their cloth, which, under the circumstances, is very comfortable. Their cultivation of the soil is as primitive as their manufacture of cloth. The holdings are very small, the island has been for 50 or 60 years in the possession of proprietors who had no money to improve, or with which to encourage the people; and to this, in a great degree, their present primitive state is to be attributed. Their possessions extend only to a few acres each; and the people are congregated in villages or little towns, instead of being dispersed in farms over the face of the country, as is the case elsewhere. They have, therefore, their little portions of land around for cultivation, and a right to grazings in the neighbourhood. In regard to their houses, they do not live in dwellings such as are seen in the mainland, for they are more like huts than anything else. The walls are from 6 to 8 feet thick, composed of bog in the centre, and faced with stone inside and out. There is sometimes only one apartment, but generally two, and under the same roof the people live and keep their cattle. There is, however, a fall of 18 inches from the apartment in which the family live to the adjoining one in which the cattle are kept. This may seem to some to be rather a queer arrangement; but the people themselves consider that there are points in it which contribute to their comfort. The room in which the cattle are kept is the entrance one, and as the air passes through it, it comes into the adjoining portion of the house, appropriated to the family, in a warm state. Where ponies are kept, an outer hall or shed, beyond the cattle apartment, is reared for their accommodation. Some of the better houses have a division wall, which separates the cow-house from the family apartment; but generally this is not the case. Most people would think it strange to live along with their cattle; but the people of Lewis have different notions on the subject, and when shut up in the long winter nights, they consider it comfortable to have the beasts in the next apartment, to hear them, and see their motions, and occasionally to supply them with food. One peculiarity in the building of their houses is, that the roof is within the wall, instead of projecting beyond it; and in this way something like a series of terraces sometimes extend over half a town. One use of them is, that when the children become troublesome, or the mother is more than usually busy, the children are disposed of on these terraces or high places, and it is quite amusing to see the little whitterets looking down over the wall at what is going on below. The parents, however, do all this in the most kindly manner. They have done all they can to cultivate their little possessions in the best manner. Their cultivated portions are those from which the peat has been cut away; they then come to the gravel, and gather soil from one part to add to another. Two-thirds are taken from one part and added to another third, and thus a soil is formed; but in winter a complete pool is formed between these ridges of soil. They have done nothing in the way of draining; they have never attempted to penetrate the hard subsoil, which is often steeped in water. They have no system of winter ploughing, but just move the land immediately before planting the Potato crop or sowing the seed; and the only preparation they make is that of sometimes pulling the weeds in the summer season. Mr. Smith then described some of the implements in use among this primitive people. He exhibited the "crass-croom," or hand and foot plough. It is an instrument with a sole about 15 or 18 inches in length, thick behind and sharp in front, which latter, being the part which first penetrates the soil, is shod with iron. It is pushed forward by means of a long handle fixed into it, and also by a pin attached to the heel of the sole or sock, for the foot of the labourer. A more unlikely implement to have the name of a plough it is scarcely possible to conceive. The people lay the land over in furrows, by successive movements of hand and foot, but of course the line is not drawn in a continuous form. When two of the neighbours have a pony each, they occasionally use another kind of plough, with only one stilt, the beam of which rests on the ground. Mr. Smith exhibited this implement also, which appears to be scarcely a step in advance of the other. The great difficulty in providing their implements is the scarcity of timber, of which none grows in the island, and they have consequently to send to the mainland for it. As a proof of its value, the shaft or handle of the "crass-croom" (which is a piece of wood about the size of a broomstick) costs 3s. 6d. From the scantiness of the soil, they do not, of course, produce heavy crops. Good produce of Potatoes, Barley—or rather Bear or Bigg, for the new kinds of Barley are unknown to them,—and Oats, however, are sometimes obtained, and they manage to produce these results by the skill with which they prepare the manure. It is efficacious, in the first instance, in the raising of Potatoes, and afterwards it produces a fine Barley crop. When the Barley is ripe, they do not cut it as elsewhere, but pull it up by the roots, and tie the whole up in sheafs. When it is "won," and ready for the stack, the straw is then cut from the sheaves below the band, which has this advantage, that it enables them to stow away the grain in small bulk—a matter of no small moment in a country exposed to so much wind and rain. After the grain itself has been thus preserved, they take the straw which has been cut from it, and place it on the roofs of their houses. They lay it loose on, just as the farmers here spread it over the tops of stack, and then tie it down with ropes spun from the Heath. In this position it is exposed to the smoke of their peat fires. The fire is placed in the middle of the room, and there are no vents; but instead of this, a number of holes are ranged all around the top of the side wall. When the smoke ascends, therefore, and a portion of it is forced back, it escapes by means of these holes. A great deal of it, however, makes its way up through the straw on the roof, and when approaching one of these little towns, its appearance is to nothing more like than that presented by the smoke rising from a cluster of heated grain-stacks. This straw becomes very valuable, from the great condensation of ammonia and other products which takes place in it. The people of Lewis plant their Potatoes without any manure whatever; but when the plant has got up to the length of 2 or 3 inches, a general unroofing of the houses takes place, and the straw which has been preparing there all the season is thrown upon the drills; it is rarely covered up, excepting in windy weather, when a slight sprinkling is put upon it to prevent its being blown away. Well, this manure gets into the soil immediately, and the Potatoes forthwith come up with the greatest luxuriance. Indeed, if guano were to be scattered on the soil, the effects would not be more rapid or complete than those produced by this prepared straw. This certainly evinces great ingenuity on the part of these people, who from the difficulties of their position, are driven to it as the only means of preparing manure. The people of Lewis, however, have also the manure produced from their cows, and their care of it evinces a degree of intelligence superior to that of farmers of much higher pretensions, for they keep it constantly covered up, and all join in the opinion that if it was exposed it would lose, to a great extent, its efficacy. When the manure, therefore, is taken out of the house for one crop, they immediately commence to accumulate for the next, and thus they keep adding to its bulk, till it is needed for the Potatoes or Barley. It may seem strange that the people should live in the next apartment to so much decaying matter; but the people feel no inconvenience from it. At the time, however, the manure is taken out, fever often prevails amongst the people, which is only attributable to this cause. Some of our best agriculturists are about to follow this plan of keeping the manure constantly covered up; I do not say that they should live in the same house with it, but it is of great moment that the manure should be constantly under cover. In Lewis they certainly follow a strict rotation of cropping. They have first Potatoes, then Barley or Bigg, then Oats—constituting a three years' shift. According to this rotation they had grown their crops for 100 years, and one might naturally suppose that the lands would be worn out by it; but this is not the case, for they had generally fair crops, and last year it was an extraordinary one. The Potatoes were good; and as to the Barley, though dark in the straw, it presented in a marked manner that golden appearance which indicated a healthy yield. On the whole, there is no doubt that if these people were properly directed in the best modes of cultivation, they would, with their habits of industry, make rapid progress. Happy days, it is believed, are yet awaiting them, for they have now got a gentleman connected with them who devotes his money to work out the improvement of their country, and otherwise promote their welfare. On their shores there are millions of tons of shell-sand, which is so nicely pulverised that it can be at once applied to the soil. It would, no doubt, be much improved were it calcined or burned, and mixed; but even taking it in its native state, great advantage will be derived from its application to the ground. There is no lime or coal, but the want of the former would be made up by this shell-sand, if they could only get easily at it. It lies amongst the perpendicular rocks around the island; and as there are no roads, the difficulty of procuring and transporting it is very great. When the roads are made, however, means will be taken by which the inhabitants will avail themselves of these deposits, and they will form a material element in fertilising the soil. So much for the agriculture of Lewis. As to their manufactures, they make their own dishes or vessels from the clay found amongst the granite gravel. They fashion the vessel merely with the finger and thumb; and the strength and thinness with which they are made, prove the quality of their clay. They turn over the neck of mouth, and by putting a cord, or rather a leather thong, round it, they are enabled to carry them from place to place, containing water or milk; and they also stand the heat requisite to boil their contents when placed on the fire. They also make their creels, for carrying out their manure, and for other uses; and the audience will be surprised to hear they are made of the stem of the Dock. So much is this plant prized amongst them, that when it grows between the possessions of two farmers, the Docks are carefully divided between them. There is not a Willow in the island; and the Dock, therefore, is very much prized for its usefulness. Another mode of the people of Lewis is that of feeding their cows on sea-ware. It is just the dulse tangle, which is often seen sold on the streets of Glasgow; and it is no unusual thing, when a woman goes out to milk the cows, to take some of this dulse or tangle, which the animal consumes with great satisfaction when the process of milking is in progress. The cows often seek it for themselves on the seaside, especially in seasons when Grass is scarce. There are some seasons, indeed, when they almost entirely live upon it. At one time a large revenue was drawn from sea-weed from converting it into kelp; but from the various changes it has fallen in value from about 20*l.* to 2*l.* 10*s.* per ton. It does not, therefore, now pay for the

manufacture of kelp, and it is therefore better to apply it to the soil. Forty tons of sea-ware are equal to one ton of kelp, and twenty tons of this sea-ware is quite enough to dung an acre; this is 25*s.* for manuring an acre, and doubtless this sea-ware will come more and more into general use for the purposes of cultivation. The lecturer then exhibited a large bag in use in Lewis, which was made of the stem of the Bent Grass, and spun in the long winter nights; they are used for keeping the corn in, and carrying such portions of it to market as they are able to spare for sale. There is a distillery on the island, which takes up all the surplus of the Barley crop. After giving a few geological details, Mr. S. stated that the population extended to 12,000 souls, and there were 270,000 acres of land, which, if improved as it might be, would maintain twice the number of people in more comfort than they were at present.—*Abridged from the Scottish Guardian.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Live Stock.—East Lothian being essentially a Corn-growing county, grazing is carried on only as subservient to tillage, and the rearing and management of live stock is therefore regarded as an object of secondary consideration by most of the farmers. Cattle and sheep are fed to a considerable extent, but comparatively few of the former are reared in the county, the greater number of them being purchased annually at Falkirk Tryst, Allhallow Fair (held in Edinburgh), and other markets; only a very few farmers keep more milch cows than are sufficient to furnish a regular supply of dairy produce for their families. Each hind or servant having a house, has also a cow supported for him throughout the year on the farm in which he works. No oxen are employed in farm labour, every description of work at which beasts are employed, being performed by horses. The attention of the intelligent agriculturists of this county not having necessarily been so much directed towards the rearing and improvement of cattle, as in other districts where these animals form a more important branch of farm management, the stock farming of East Lothian does not exhibit much deserving of commendation. There are, however, several exceptions to this, as many fine specimens of the short-horned breed are reared in different parts of the county; a circumstance confirmed by the fact that many of the prizes awarded at the Highland Society's Show in Edinburgh were carried off by East Lothian farmers.

The method of feeding usually practised is to allow the cattle, in lots of five or six, or more, according to their age and size, perfect freedom in open courts or yards provided with sheds, to which they may retire for shelter in inclement weather. Each yard has along one or more of its sides a range of shallow troughs formed of wood or flag-stones, about 3 feet high, from which the cattle eat their Turnips or other food. Oil-cake and Bean-meal are used to a considerable extent as auxiliary to Turnips in fattening off cattle in spring. As has been already observed, many farmers let the greater portion of their Turnip crop to cattle-dealers, either at a certain price per acre or at an agreed rate—now 4*s.* to 5*s.* a week, for each beast.

Permanent and extensive flocks of sheep are almost confined to the Lammermoor district—the upland part of the county. The kinds kept there as being the best adapted to the situation, are the black-faced and Cheviot breeds. Improved Leicester sheep are common in the low parts, as are also the Cheviot. Crosses between the last named breeds are held to be better adapted to the soil and climate than pure sheep of either of those kinds. In the low district sheep are kept chiefly to consume a portion of the Turnip crop on the ground; black-faced hogs are most generally preferred for this purpose, as their mutton is most esteemed, and obtains the highest prices in the market. Turnips are also frequently sold to dealers to be eaten by sheep, either by the acre or at an agreed rate, generally 5½*d.* a week for each sheep. These are commonly purchased in autumn, and again sold off when ready for the butcher. A very considerable number of lambs are brought up for the supply of the Edinburgh market, and many are annually shipped for London.

The horses generally kept are of moderate size, combining much strength with activity, and partaking largely of the Clydesdale breed. These animals receive much attention, and are, generally speaking, maintained in good condition, *i. e.* equal, if not superior, to the work which they have to perform. A pair of stout horses are allowed to be capable of working 60 Scotch acres of land of an average quality. The following is the mode of feeding and managing farm horses generally adopted in the Lothians:—About the beginning of May they are turned out to graze at nights, but receive their usual allowance of Corn—three feeds of about 4½lbs. each, with a limited quantity of hay during the mid-day rest; very little hay is used by the farm horses, but what is given is always reserved till the period of hard work attendant on the preparation of the land for green crops. This management is continued until the Clover is ready for cutting, the horses are then kept in the stable during the night, and receive a limited allowance of cut Grass. When the Turnip seed is all sown, and the fallow land (if any) finally ploughed and worked, the horses are again turned afield, where they remain day and night until the carrying of the Corn-crop commences. Green Clover being then generally consumed. These are substituted during harvest, the horses being still kept out over night till the ploughing of the stubble, or of the land for autumn-sown Wheat begins; they then receive their full winter's feeding—about 14lbs. of Corn, with straw *ad libitum*; four bushels of Oats is the general allowance to a pair of horses in the week. Most farmers give a boiled mixture of Beans and Barley, two or more nights a-week; and instead of giving the Corn entire to horses, it is not uncommon to bruise or break it with an apparatus for the purpose, driven by the same power that propels the threshing machine. A few Swedish Turnips are given daily to each horse during the winter and spring months, which tends very much to their improvement. These are, no doubt, many little deviations in the practice of different farms, but the above is the general management of farm-horses adopted in this county, and indeed throughout the south of Scotland. There is, perhaps, too little attention paid to cleanliness in the stable; and it is a fact generally observed by strangers, that the harness of the farm-horses here is much inferior in appearance and quality at first, to that commonly met with in other parts of Scotland, and that much less pains are taken by the servants in keeping the harness belonging to their horses clean and in good order. This carelessness is supposed to arise in a great measure from the circumstance that those working with horses are, for the most part, married servants, who are generally found to possess less taste for neatness in this respect than younger and unmarried men. In spring and summer the time of working is nine hours a day, except at seed-time and other hurried occasions, and in winter from daylight to dusk, with an interval of an hour for dinner at 12 o'clock; but in many places it is usual to go six hours at one yoking during the short days of winter, and to lessen the quantity of Oats given to the horses; while in other parts the customary practice is to corn the horses and take dinner in the fields, to avoid the loss of time occasioned by going to and returning from the stables.—*T. Sullivan.*

Home Correspondence.

The Allotment System now appears to be caught at as the remedy and panacea to meet the distresses of the labouring poor. "Drain, drain your land and give employment," is now the cry. "Subsoil and turn chemist, to find out the food best adapted for your different soils, and you will enrich yourselves beyond belief;" for so says the enthusiast. Suppose this to be true—and I do not question but the man who has a knowledge of chemistry, and a purse, to drain and subsoil, may increase his crops marvellously—I ask who is to start these schemes? Why, the landlords to be sure; few tenants have the means. It is all very fine talking of the landlords laying the foundation of good crops on their tenants' lands by draining, and getting 5 per cent. for doing so. But many owners of property are as poor as the tillers of it; and others are unbelievers in these plans, or excuse themselves under various pleas. Some say, "Give the tenants leases, for they would spend their capital and give employment, and embark with zeal in the new system so generally recommended." And some there are that would do so; but as I take it, with the plurality even of these, there would be many things wanting to bring about the desired end; for education, as far as I can see, has not travelled very rapidly in the agricultural provinces; besides, how few tenants have capital, if it had. I am no friend to leases; 9-tenths of them are dropping in, with the farms little better, often worse, than they found them. And what is the allotment system to do? The answer is glibly given—"It will ameliorate the condition of the poor." There are many difficulties in practice connected with this new scheme. It often disgusts the man, striving to assist his labourers, to find in numbers, how many are unwilling to help themselves, and how many are careless of your consideration. Certainly, many are benefited by holding a piece of land, and comfort, health, enjoyment, and comparative wealth, bless many a family that cultivates it well; but how few are there of such! How many smile and say, "What new crotchet now has the squire got into his head?" How many do not pay, and say it does not answer! How many tell you, "How can I find strength (poorly fed) to work from six to six on my master's farm, and then set to work upon my own?" The wife has indoor work, and children to look after; but there are many men who think feelingly that digging and delving for a woman is bordering on slavery. Suppose a nobleman or gentleman kept 50 labourers, and to each he gave an allotment of land; to see that they observed all the rules laid down would occupy much of his or the bailiff's time, which possibly would be cheerfully given if the results would turn out beneficial to all parties. As the seasons are the same for all, and so are the preparations for planting, sowing, and in the end reaping, the one interest, I apprehend, would greatly interfere with the other; and for the landlord in the midst of his own harvest to be asked by his labourers for half and whole holidays to do their own work, appears to me likely to create unpleasantness. If [*if I*] a labourer can get work all the year round, my advice to them would be to stick to it, and that alone; for the goodness and benevolence of the old country gentleman still exists in our landed proprietors—they seldom turn adrift the man in short winter days, or when the sere and yellow leaf is come upon him. It is not with them to cheapen wages, and grind them down, and use them only for their own profits.—*L. L.* [These oft-repeated objections to the system are sufficiently refuted by history and fact. See the "Labourers' Friend" for August, September, October and November, 1843.]

Services of the Rook.—A strong prejudice is felt by many persons against rooks, on account of their destroying grain and Potatoes; and so far is this carried, that I know persons who offer a reward for every rook that is killed on their land; yet, so mistaken do I deem them, as to consider that no living creature is so serviceable to the farmer, except the live stock he keeps on his farm, as the rook. In the neighbourhood of my native place is a rookery belonging to Wm. Vavasour, Esq., of Weston, in Wharfedale, in which it is estimated there are 10,000 rooks; that 1 lb. of food per week is a very moderate allowance for each bird; and that 9-10ths of their food consists of worms, insects, and their larvæ. For, although they do considerable damage to the fields, for a few weeks in seed-time and a few weeks in harvest, particularly in backward seasons, yet a very large proportion of their food, even at these seasons, consists of insects and worms, which (if we except a few Acorns and Walnuts in autumn) form, at all other times, the whole of their subsistence. Here, then, if my data be correct, there is the enormous quantity of 468,000 lbs. or 209 tons of worms, insects, and their larvæ, destroyed by one single rookery; and to every one who knows how very, very destructive to vegetation are the larvæ of the tribes of insects (as well as worms) fed upon by rooks, some slight idea may be formed of the devastation which rooks are the means of preventing. I have understood that in Suffolk, and in some of the southern counties, the larvæ of the cockchafer are so exceedingly abundant that the crops of corn are almost destroyed by them, and that their ravages do not cease even when they have attained to a winged state. Various plans have been proposed to put a stop to their depredations, but I have little doubt that their abundance is to be attributed to the scarcity of rooks, as I have somewhere seen an account that rooks in those counties are not numerous, either from the trees being felled in which they nestled, or that they had been destroyed by the farmers. I am the more inclined to be of this opinion, because we have many rooks in this neighbourhood where the cockchafer is not known as a destructive insect, and I know that insects of that class, and their larvæ, are the favourite food of the rook. I will mention another proof of the utility of the rook, which occurred in this neighbourhood many years ago. A flight of locusts visited Craven, and they were so numerous as to create considerable alarm among the farmers of the district. They were soon, however, relieved from their anxiety, for the rooks flocked in from all quarters by thousands and tens of thousands, and devoured them so greedily that they were all destroyed in a very short time. It was stated in the newspapers, a year or two back, that there was such an enormous quantity of caterpillars upon Skiddaw, that they devoured all the vegetation on the mountain, and people were apprehensive they would attack the crops in the inclosed lands; but the rooks (which are fond of high ground in the summer) having discovered them, in a very short time put an end to their ravages.—*T. G., Clitheroe, Lancashire.*

Tusser's Husbandry.—Sir Joseph Banks left all his MSS. to the British Museum. I recollect at the time there was much discussion as to whether all his papers had found their way to that depository, especially a copy of "Tusser's Points in Husbandry," to which the indefatigable baronet had added many valuable notes, containing his personal observations. I think Sir H. Ellis was employed in preparing this for the press. In these times such a work would be very interesting. Can any one give any information on the matter?—*Dodman.*

Potato-seed.—In your Paper of the 23d inst. "A Farmer" wishes to know the best time to gather, preserve, and sow Potato-seed. I beg to say that the time of gathering is any time from that of the apple's being fully ripe to the present: gather them, and store them in tolerably dry soil, either whole or bruised; keep them in the ground from frost, and in March or April take and mix the soil in which they have been kept, and sow altogether and cover with light soil about a quarter of an inch deep.—*John Jackson.*

Malt Tax.—The consumption of malt for a century previous to 1830 remained nearly stationary, although the population had increased more than three-fold, but, in consequence of a repeal of beer duty in 1830, we find that the consumption of malt by public brewers was in that year only 2,649,471 qrs. of malt, but in 1840 was 4,082,367 qrs.; the government in 1840 increased the duty on malt and Hops 5 per cent., and we find that in 1843 the consumption of malt by brewers had fallen to 3,566,298 qrs., thus showing that with a duty of 20*s.* 8*d.* per qr. on 4,082,367 qrs. in 1840, the government received a revenue of 4,218,445*l.*; in 1843, on 3,566,298 qrs., at 21*s.* 8*d.*, 3,683,489*l.*; showing a loss of 354,956*l.* by the increase of duty; whereas the 5 per cent. ought to have increased the revenue by 204,110*l.*, supposing we had no increase of population from 1840 to 1843, and that the consumption had remained the same; whereas the former had increased by full 600,000 persons, and the latter had decreased by 354,956*l.* Again, we find that 5 years previous to the 5 per cent. duty being laid on Malt and Hops, the average number of acres cultivated for Hops was about 54,500; in the last 5 years 44,500; showing a decrease of 10,000 acres during the last 5 years as compared with 5 years previous; this, alone, is a serious injury to the labourers employed in producing Hops, and also a serious loss to the revenue, for during the 5 first years the average amount of revenue derived from Hops was about 345,000; during the last 5 years, with increased duty of 5 per cent., only 228,000*l.*; showing a loss of 117,000*l.* per annum by the increase of duty. Now, the object of taxes I imagine to be, to raise and increase the revenue, and not to decrease consumption, for this last might be effected by a positive and prohibitory law. The object, therefore, of the 5 per cent. duty is manifestly nullified; for we see, that as

the duty is raised, so the consumption, and therefore the revenue is decreased. Of course it is easy to see that any decrease in the consumption of an article would be the means of throwing out of employment those whose occupation is connected with it; and we now find our Union houses overflowing with persons seeking employment, who, by a total and immediate repeal of the Malt-tax, would be provided with work, and with one of the chief necessaries of life to those who are engaged in arduous and manual labour.—*A Tenant Farmer.*

Drainage and Irrigation.—In the last Number of your Paper, "A Leicestershire Farmer" observes—"It appears possible to double the value of some districts by draining alone." In the village in which I reside I see a specimen of improvement by draining. There are 18 acres of meadow and 20 of pasture. Before alterations were commenced, the meadow-land was considered of average quality—some parts very rough, and full of hassocks—[What are *they*?]—while the produce of the other parts was good, but never very large. In the winter, during wet weather, it was always flooded; the brook was small and circuitous in its course, and this, which caused it to overflow, hindered the water from rapidly subsiding. It was not drained deep, and consequently, during the winter, was always wet, and considered an admirable place to rot sheep. So much for it in its primitive state. In the autumn of 1841, the owner commenced his operations. The channel of the brook was altered, the whole of it was deep-drained—in some parts 5 or 6 feet deep; the surface made perfectly level, and carriers formed for irrigation. One brook takes its course down the middle, and another on its higher side; and it can be irrigated during the winter, and after heavy rains in the summer. The subsoil is a stiff, tenacious clay, and the neighbours thought the owner a great fool for expecting to find water in such a bottom; the owner's anticipations, however, proved correct. At the depth of from 4 to 6 feet, he found beds of sand and gravel, whence issued a spring, in many cases not very strong, but which rose to the surface when the intervening beds of clay prevented them from draining. 15 out of the 18 acres are inclosed in one meadow; the remaining three, which were a bog, being a paddock. The improvement of the meadow cost 17*l.* per acre. The owner was regardless of expense, and some things might have been done in a more economical way, but he thought the most substantial way would, in the end, be the cheapest. In 1842 much good was not expected, as a great portion of the turf had been moved, and a large part was not finished till late in the spring. During the winter of 1842 it was irrigated, and in March 1843 it was stocked with sheep; for the months of March, April, and May, it kept more than 100 sheep, a few beasts, and the ewes with couples. It was again irrigated and mown in the middle of July; again irrigated and mown in September, bearing larger crops than ever had been known in it before. It went through the same process in the winter of 1843, and, I think, this year was stocked in February, and kept a larger quantity of stock for three months. By the time the Grass was eaten off, the dry season had commenced, and it was not possible to irrigate it; and, therefore, there was no more in it than in other meadows; though, after it was mown, there was a good after-math. After the first heavy rains, it was irrigated and mown in October; a very good crop, though, unfortunately for the owner, it was very wet weather, and he sent all his stock, and had most of it consumed by them; and they were very willing to eat it after the dry summer. The pasture-land of which I spoke, was, before draining, of good average quality; but I think I speak within bounds when I say one-third was Rushes, and in winter it was so wet as to be impassable after rain by a pedestrian. It was drained in a manner similar to the meadow, and was found to be in a similar state. In this case the expense amounted to between 7*l.* and 8*l.* per acre. The whole had years ago been drained with tiles about 15 inches deep, and therefore this dry that it was impossible to get rid of the Rushes without ploughing. The Rushes gradually diminished, and last year, 1843, there was an immense crop of Grass; this spring it was stocked till after the dry season commenced, and it never grew till the rains in the autumn. There is, however, scarcely a Rush to be seen. I should conceive the whole expense has been about 600*l.*, and the owner has let his farm at 30*l.* a year more rent than he had before. The farm is only 100 acres in extent, and no other material alterations have been made, as the owner has only had it in his own occupation five years. The arable land has been improved by cleaning, and by having more manure applied, which manure was obtained by stall-feeding, and by cutting and steaming the food during winter; but I have allowed 5*l.* for that improvement. You will observe I do not speak positively—I am merely a looker-on; but any information asked for was always given me.—*A Leicestershire Yeoman.*

Mr. Smith, of Deanston.—I have a letter now before me, dated December, 1824, from my early friend and benefactor, James Smith, Esq., of Deanston, now of 13, Queen-square, Westminster. It tells me that he is draining the whole of the Deanston farm, which I knew to be nothing but a morass, where the greyhounds sunk to the second joint every step they took; and that in a very short period, by good management, with proper draining and subsoil-ploughing, it could be brought from a condemned farm, not worth more than 5*s.* per acre, to be now let at from 2*l.* 10*s.* to 3*l.* per acre is most astonishing. Mr. S. was at that time everybody's friend, rich and poor; his advice was courted by all; all differences that were likely to lead to anything serious were settled by Mr. Smith; and I believe the greatest loss that Deanston, and the neighbourhood ever had, was the leaving of this much esteemed gentleman. He was manager of all those extensive works at the early age of 22 at that period he showed great powers as an engineer, and he is now carrying out to the fullest extent, and in the most skilful way, his draining and subsoil ploughing all over Great Britain and Ireland; and through his great knowledge no man can be better qualified, for his heart and soul is in improving the land; and my earnest prayer is, that long before he closes his eyes, he will have the pleasure of seeing every acre in Great Britain and Ireland producing double to what it did when he first began upon the Deanston bog—misnamed a farm.—*James Cuthill, Florist, Denmark-hill, Camberwell, London.*

Lucerne.—Your advice to "Delta," as to the mode of cultivating Lucerne, page 808, is not good. Lucerne should be planted in well-trenched ground, in drills, 2 feet at least apart, and the plants should be 12 inches, at least, apart, in the rows. If "Delta" pursues this plan, putting in the seed not earlier than the last week in April, thinning them to the distance I have stated as soon as they get well out of their first leaves, he may cut the Lucerne at least twice in the first year. I think 30 inches between the rows, and 15 between the plants, a better distance; but that is mere opinion. At the distances I have named, I planted Lucerne on the 1st of last May, and although, from the extreme drought, it was for some weeks so entirely at the mercy of the fly, that I was near ploughing it in, yet when once it got good hold of the ground it grew so rapidly that we have cut it three times—the two last, heavy crops, some of the roots having by that time 70 distinct stems, and none less than 40. I find constantly many valuable hints in the *Chronicle*, and generally adopt them. Doubtless there are many who pursue the same course, and I have therefore thought it right to trouble you with this. Lucerne, properly grown on land to which it is adapted, is perhaps the most valuable of all crops for cattle-feeding, and everything should be done to promote its greater cultivation.—*Frederic Kelly*, 49, *Hunter-street.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

DR. PLAYFAIR'S FIRST LECTURE.

The first of the Annual Lectures of this Society was delivered in the Theatre of the Royal Institution, on Wednesday evening, the Duke of Richmond, President, in the chair. There was a large attendance of Members, and we observed present the Marquis of Northampton, Lord Spencer, the Marquis of Downshire, Lord Essex, Dr. Buckland, Dr. Daubeny, Dr. Falconer, Prof. E. Forbes, Dr. Day, P. Pusey, Esq., M.P., Sir O. Mosley, E. Chadwick, Esq., and other distinguished Members of the Society and men of science. The Lecturer commenced by pointing out the value of the principles of science, as a guide to the practical details of art. In the present lecture he should give an outline of those scientific principles which could alone safely guide the practical man in the new features of his art. In the second he should apply those principles. Experience was by some regarded as the only guide in practice; but there were many cases in which experience could suggest no alternative in practice, and here science stepped in to the aid of the practical man. The farmer in Virginia had found, by the experience of a hundred years, that his land would grow Wheat every year; but, when his land failed to do this, his experience suggested no alternative. In other parts of America the soil had afforded nutriment to alternate crops of Wheat and Tobacco; but at last the soil failed to grow either, and individual experience was of no value. The question for the Americans to consider in these cases was, Can we again make our land grow Wheat and Tobacco as it has done? and this could only be answered by science. The answer was, that these crops had exhausted the soil of ingredients necessary to their existence, and these ingredients must be again supplied. It was the same in certain counties or districts in England; the land failed to produce certain crops in a given time, and the season could only be ascertained by scientific inquiries. It would be vain for the farmer of light lands to suggest to the cultivator of a heavy land the expedients he had found of avail in restoring the fertility of his soil, and *vice versâ*. Such differences existed in every district, and the cause of these differences could only be ascertained by scientific inquiry. It was only by a combination of experience and science that the object of the pursuit of the farmer could be obtained, and for that object this Society had been instituted. Before proceeding to theory, he would make a statement of the constituents of the soil required by plants; these were:—Silica, alumina, lime, magnesia, iron, potassa, manganese, soda. These bases were combined with sulphuric acid, phosphoric acid, chlorine, fluorine, iodine, bromine, carbonic acid. These were the ingredients with which the soil was stored, and out of which the whole vegetable kingdom had been formed. These constituents existed at the creation of the world, and it was from these that the primitive forests and plants of the world had been created. What took place on a large scale in the field of the world, must also take place on the field of the farmer. It was from Nature we must learn the principles of farming. The constituents out of which plants were formed existed in the primitive rocks, from which every other strata was formed. These rocks consisted of granite; and granite was a compound of substances, known under the names of felspar, mica, quartz, and hornblende, (specimens of granite, and these constituents of it, were exhibited). Now, in these rocks all the substances that entered into the composition of plants existed. Chemists had not examined these rocks accurately. Phosphate of lime had not been supposed to be a constituent of granite, yet late researches, especially those of Dr. Daubeny on the rocks of Estremadura in Spain, proved that there was considerable quantities of phosphate of lime in these primitive rocks. Common salt, chloride of sodium, had not been found in these rocks, but it existed abundantly in the waters of the ocean. The carbonic acid needed by plants existed in the atmosphere, and also in the waters of the sea. The inquiries of Brande rendered it exceedingly probable that carbonic acid existed in much greater quantities in the air and in the seas of primitive states of our globe than at the present moment. The carbonic acid of the water must have played a most important part in the original economy of creation. It was only by its means that the alkalies and earths could have been dissolved out of the primitive rocks. When these constituents were dissolved, the great mass of the rocks over which the waters rolled would be easily disintegrated, and the particles of silica and alumina would then be deposited in another form. It was thus that the three principal constituents of our present soils were deposited. The silica being deposited formed the sandstone rocks, and gave the character to arenaceous soils; the alumina formed the clay beds and argillaceous soils; the carbonate of lime the limestone strata and calcareous soils. There had been a question as to how these latter rocks had been formed. The carbonate of lime (chalk) was an insoluble substance, and did not exist to any extent in the primitive rocks, but it was easily formed by the union of carbonic acid and lime. It was a property of carbonic acid that, when diffused in water, it would dissolve carbonate of lime; it was thus held in solution in the first water. If the carbonic acid was in any way separated from the water, then the carbonate of lime was deposited. Mr. Lyell had supposed that all the limestone beds were deposited from springs from under the surface of the earth, which, coming up charged with carbonic acid and carbonate of lime, the former escaped on coming in contact with the atmosphere, and the latter was deposited. But the limestone beds gave evidence of being deposited at the bottom of tranquil seas. They contained remains of animals, and before animals could live, there must be plants. Now, one of the principal constituents of the food of plants was carbonic acid, and he (Dr. Playfair) would suggest that it was the marine vegetation of those periods which, taking up the carbonic acid of the waters, caused the deposition of carbonate of lime. It was no argument against this view, that remains of plants were not found in limestone beds, as Dr. Lindley had proved that decaying vegetable tissue was quickly reduced to its elements before any deposit could be formed to seal its existance. The animals which existed at the time, afforded to the chalk its phosphates, and the analysis of chalk nodules proved that they contained this ingredient. It was not, however, the fact, as some geologists had supposed, that the limestone beds were formed entirely by animals. Some had asserted that chalk was composed entirely of infusoria, and it was from these and other animals that the chalk obtained its silica; but the chalk could not be composed entirely of infusoria, as their function indicated. One function of infusoria, hitherto unexplained, was the undoubted fact that they gave out oxygen. This was exactly the contrary of what other animals did. They only existed where the higher forms of animals or plants were decaying, and where they existed they indicated this fact. They were the scavengers of nature, and acted as purifiers, just the same as the fungi did on land. The fungi existed by means of decaying vegetable and animal matter, but they differed from infusoria in giving out carbonic acid. This was a curious fact, that the lowest animals performed the function of the highest plants, and that the lowest plants performed a function in common with the highest animals. But other means were taken to prepare the soil from primitive rocks, so that the secondary ones should become a fit theatre for terrestrial animals and plants to live upon. The rocks were thrown, by volcanic action, above the surface of the water, and then, by the action of the oxygen of the atmosphere, the carbonic acid, rain, and frost, they were decomposed, and their elements entered into combinations fitted to become the food of plants. The iron of these rocks underwent changes. Iron existed in nature in two forms, that of the protoxide, or one proportion of oxygen and one of iron; and that of the peroxide, with two proportions of iron and three of oxygen. The former was injurious to vegetation, and to animal life; the latter was beneficial and necessary. The protoxide could be converted into the peroxide by the absorption of oxygen from the air, whilst the peroxide was reduced to the protoxide by action of decomposing organic matter. This was an important practical fact. It went on, on a great scale in nature. The blue clays of the lias and coal-beds, where there was much organic matter, always contained the protoxide. The red sandstone contained the peroxide. A curious instance of the formation of the protoxide had been observed by Mr. Binney, of Manchester, in the coal-measures about that neighbourhood. Wherever shells were found open, where there is occasion to suppose the animal escaped, the rock in which it was embedded was red, indicating the presence of the red or peroxide of iron; but where the shells were closed, and the animal had gradually decomposed, it was blue, indicating the protoxide; which had been formed by the decomposing matter of the animals. In the red sandstones there was the peroxide; and one important fact regarding this substance was that it had a great affinity for ammonia, which it absorbed, and could be detected in all

red sandstones. The sandstones and the limestones were thus replete with matter ready-formed to be used as food for plants. Succeeding to the period of their formation was that of the great vegetable era in which the coal beds were formed. The effect of the decomposing vegetable matter on the peroxide of iron was remarkable, and worthy of attention. When the plants began to decay, they converted the peroxide into the protoxide, and when this latter was formed, it acted injuriously on vegetation and destroyed it. It was thus, he believed, that great beds were formed at the present day; the decaying plants converted the peroxide of iron into the protoxide, and when this ingredient was formed it destroyed the remaining living plants. The blue clays deposited underneath Peat-beds was a proof of the correctness of this view. The peroxide was, however, easily convertible into the protoxide by exposure to the oxygen of the atmosphere. It was by subsoil-ploughing that the farmer could render available his blue clays for the nutrition of plants. It was thus that Nature came with her great subsoil-plough, the ocean, and threw up on the shores the injurious protoxide in the form of a peroxide, as well as effected other important changes. Now the farmer might learn a great lesson from this way in which Nature acted in preparing the constituents of plants. The elements necessary for feeding plants of the present era were in the primitive rocks, but they underwent preparation before they were administered as food. If a child became rickety for the want of phosphate of lime in its food, no one would think of feeding it with crystals of Apatite phosphate of lime; or if a lady became bilious for want of soda in her system, what doctor would administer lumps of felspar? It was the same with plants: it is of no use to administer the constituents they require in a form they cannot digest. In the first place, the farmer must take care that he has food for his plants in the soil; and in the second place he must take care that they get at the food. Now, most soils contained many of the constituents required by plants in the rocks of which the earth was composed; but then these rocks required preparing; and how was this to be done? It was by *ploughing* and by *subsoil-ploughing*. Practice had suggested this, and science pronounced that it could not be dispensed with. By ploughing, the soil was reduced to powder, and the potash, the soda, and the lime had access to the carbonic acid and oxygen and water of the atmosphere, by which the important changes before referred to were produced. By ploughing, also, the soil became absorbent. It took into its very interior, where the roots of plants were seeking their food, the carbonic acid, the ammonia, and the water, which were the principal organic constituents of plants. In such a soil and with such agents did God grow the first forests of the world, and in such a manner must man act in order to grow the plants which he needs. The lecturer then went into calculations to show the enormous quantities of silicate of potash and soda contained in felspathic rocks, clay, slate, and loam, to show that where these rocks existed there could never be a deficiency of these agents. There was, however, a danger of ploughing up such soils too much; silicate of potash entered into the composition of the stems; it was phosphate of lime that entered into the seeds as well as the stems. Now, if the stems of plants were made to grow too luxuriously, by the aid of the silicate of potash, they would arrest the phosphate of lime going to the seed, and thus would do injury. The phosphate of lime existing in much smaller quantities in most soils, needed more frequently artificially renewing than the silicates. These were added in the form of guano, bone-dust, &c. In conclusion, he would add a few words on draining. When water was allowed to accumulate in a soil, it prevented the access of air, and thus prevented the action of the oxygen and carbonic acid on the ingredients of the soil. Water also dissolves up and carries off the most important constituents of a soil, and thus renders the land poor. Plants also require a certain temperature, and water, by its great absorption of heat during the process of vaporisation which was constantly going on, was a constant means of reducing the temperature of the soil. As a proof of the influence of the temperature of the soil on the development of plants, he pointed out that in low and heavy, and undrained districts, the harvest was always more backward than in high districts with a natural drainage, although the average temperature of the former districts was much higher. Whole counties in this country were badly drained; and he gave Cheshire as an illustration. This county was so badly drained, that it was said it was unfit for sheep to live in; he would only add, if it was unfit for sheep it certainly was unfit for man. This was an important consideration, that draining, which provided for a larger supply of food for man, also provided for the existence of man to consume the food. He illustrated the importance of drainage by relating a fact which had been communicated to him by Professor Liebig. Near Giessen is a prison from which dead bodies are supplied to the University for anatomical purposes. At one time it was very unhealthy, and a large number of deaths occurred, but the public authorities had lately had the district drained in which it was situated, and since that period the deaths in the place had been so few, that the University was now obliged to send to other places to supply its anatomical wants.

The Marquis of Downshire hoped that the Lecture which had just been delivered would be published, and proposed a vote of thanks to Dr. Playfair.—Lord Ebrington seconded the motion, and made some remarks on the geological view which the Lecturer had taken of the science of agriculture, and expressed the value of its importance.

The Chairman stated that the Lecture would be published in the Journal of the Society, and proposed a vote of thanks to the Governors of the Royal Institution for their kindness in allowing the use of their commodious theatre for the Lecture of the Society.

DR. PLAYFAIR'S SECOND LECTURE.

The Lecturer commenced by stating, that in his last Lecture he had endeavoured to demonstrate that the sequence of events from the first dawn of creation was calculated to elucidate the theory of the practice of agriculture. It was seen how carefully Nature had prepared her soils for cultivation, long before man had devoted himself to her service. He had showed how the ocean had acted as a great *plough* and *subsoil-plough*, and assimilated the noxious ingredients in the rocks, and made those which were fertile for the purposes of vegetation. How curiously she locked up in the soil those treasures of fertility, and the manner in which she presented the key to the industry of man, and showed him, by her own example, wisely reduced in energy from the past, when she herself had to clothe her own lands with vegetation, without man's aid. Still, though she reduced in intensity the causes formerly in operation, she preserved them in store for action, if that became necessary; and instances were seen in the operations of subsoil-ploughing and draining, in which she proved no niggard, when these causes were called into activity. We followed Nature also in those high and bleak regions of calcareous and cretaceous rocks, and then of the old red sandstone, in which she compensated for their elevation by an admirable system of drainage, either by causing numerous clefts or a porous nature of materials, so that the water might be quickly draughted away, and not by its evaporation render the soil cold; and, in this manner, how she pointed out to the farmer how best to improve the climate of his own district, how to increase as well as hasten the amount of vegetation, and the best way of making the capability of the soil available, and of obtaining the quickest return for the labour which was expended in its cultivation. In the present Lecture he should endeavour to apply the principles deduced from the observation of Nature, on a large scale, to the practice of the farmer, on a small one; and he believed that every one who neglected the study of these principles, would ever after have much reason to regret that he had not consulted the wishes and become acquainted with the elevated character of his great mistress. In the last Lecture, the importance of ploughing and draining had been insisted on; and this involved the explanation of fallow—the exposure of the constituents of the soil to the atmosphere. But although a soil is exhausted, for instance, of silicate of potash, so that Wheat would not grow, it did not follow necessarily that no other crop would grow, as there might still be plants that would grow with the remaining constituents of the soil. This subject was one of importance, as, if there were such crops, it would obviously present the necessity of a naked fallow. Professor Low, in his Agriculture, had recommended that soils be ploughed six or eight times; and this was a great waste of time and money, if nothing else could be grown in the interim. But in Scotland, in many parts of England, and in Jersey, such a system was now entirely dispensed with, and the theory of such a practice is easily understood by referring to what has recently been ascertained with respect to the composition of the mineral ingredients of plants. In the last Lecture a table was exhibited showing the principal mineral ingredients of plants, and although all plants contained these, they existed in very variable proportions, as the following table would show; and Liebig had even divided plants into classes, according to their mineral constituents:—

	Salts of Potash and Soda.	Salts of Lime and Magnesia.	Silica.
Silica Plants.			
Oat-straw, with seeds	34.00	4.00	62.00
Wheat-straw	22.00	7.20	61.05
Barley-straw, with seeds	19.00	25.70	55.03
Rye-straw	18.65	16.52	63.89
Lime Plants.			
Tobacco	24.34	67.44	8.30
Pea-straw	27.82	63.74	7.81
Potato-haulm	4.20	59.40	36.40
Meadow Clover	39.20	56.00	4.90
Forest Plants.			
Maize-straw	71.00	6.50	18.00
Turnips	81.60	18.40	—
Beetroot	88.00	12.00	—
Potatoes (tubers)	85.81	14.19	—
Helianthus tuberosus	84.82	15.70	—

This Table is only an approximation to the truth, and its classification inadmissible, as it was opposed to a beautiful law, pointed out by Liebig himself, and confirmed by the experiments of Will and Fresenius, which was that certain bases may replace each other, according to the law of equivalents. Thus, soda may be substituted for potash, and *vice versâ*; lime for magnesia, and so on; but it did not appear that an alkali could be substituted for an earth; still the Table was practically useful. The *rotation* of crops must depend on the character of the soil, and this would be seen by observing what kind of plants grew on the rocks mentioned in the last Lecture. On the granite rocks, the soil of which contained abundance of silicate of potash, the farmer grew mostly the silica plants, as Wheat, Barley, and Oats, after taking care to manure well with lime or bone-shells, to supply the absent calcareous matter and phosphates. It is seldom that such soils are devoted to pasture, or in other words, to the growth of lime plants. Clay, slate, and grauwacke are degraded granite, but deficient in lime and phosphates; for animals had not yet been formed, and their great characteristic was the possession of potash; and two potash plants, Oats, and Turnips, were most frequently cultivated on these soils, both of them requiring little of the phosphates and none of lime; on the sandstones, which were much richer in lime and phosphates, but still possessing potash, so that potash plants, and in addition, Wheat, Barley, and Clover, are grown on these soils. Above the sandstones we come to rocks abounding with animal and vegetable remains, and containing little potash; these rocks are not adapted for Wheat, Barley, Oats, or Turnips, and the lime-plants forming pastures are mostly grown. On the coal measures vegetation is poor, arising from the enormous exhaustion of the soil, produced by the plants forming the coal-beds; the clays, however, contained silicates and iron, and with care were cultivated so as to produce various crops. On the magnesian limestone plants were grown which required magnesia, and Potatoes, Wheat, and Barley flourished on these soils. After this we come to the new red sandstone, a soil composed of the detritus of former rocks, and capable of supporting potash, soda, and silica plants. The calcareous soils of the lias, the oolite, and the chalk yield lime-plants, Beans, Peas, Clover, and Barley. In examining the various kinds of rotations, it would be found that they were precisely such as were adapted to the soils in which they took place. Thus the Norfolk course begins with Turnips well manured, succeeded by a corn crop, followed by artificial Grasses, and concluded by another crop of corn; and this took place on most of the inferior clays of England. The manure yielded phosphates, but neither these nor the silica were taken up by the Turnips, and the soil thus became prepared for the growth of the corn, as the only thing of importance removed from the soil by the Turnips was the potash; and, what was important, potash uncombined with silica. If sheep upon the Turnips, they return to the soil the potash contained in the Turnips, and also of phosphates. After the second or corn crop has exhausted the soluble silicates and phosphates, a green crop is then grown, and this takes up the lime. By the time the lime is taken up by this crop, the action of the air upon the soil has liberated a further quantity of phosphates and silicates sufficient to grow for a fourth crop corn, which is often Barley, where lime is present, or Oats, or Wheat where it is deficient. Where there is magnesia present, as on the magnesian limestone, Potatoes may be substituted with advantage for the green crop, especially as their stems return to the soil the silicates. The curious rotation of the lower lias, consisting of Wheat, Beans, fallow, Oats, and Potatoes, would, in the same way be found adapted to the particular composition and characters of the soil on which it was practised. Enough had probably been said to show the farmer that rotation was not a means of *improving* the soil. The soil remained in the same state, as far as the plant was concerned, and the great advantage of it consisted in the fact that one crop could be grown whilst the soil was preparing for another. The theory of De Candolle, with regard to plants throwing out excrementitious matter injurious to themselves and beneficial to other plants, was now generally exploded, and many facts were entirely opposed to it. Thus, in Hungary, there was never a poisonous effect produced on the Wheat crops, although in some districts Wheat had been grown in succession for centuries. A like result to that of rotation is produced by many other processes on farms; take, for instance, burning and paring. By this process injurious organic matter is consumed. Plastic clays are quite changed in their character, not only by having all their constituents brought into contact with the oxygen of the atmosphere, and thus undergo change, but the clay itself acquires another character, it becomes absorbent, and takes up from the atmosphere ammonia, carbonic acid, and watery vapour, as well as afford more ready access to the nutritious substances which may be dissolved in water. But in this, you see nothing is destroyed, and the inorganic elements of the soil are only brought more fully into contact with the absorbing organs of the plants. Another process of the farm was what was called liming. When the chemist, in his laboratory, wished to dissolve up potash and silica from the soil he was examining, he used lime; and by this means he rendered soluble that which was insoluble before. Just what the chemist did in his laboratory by the use of lime, the farmer did in his fields; and this was the use of lime, that it rendered certain important ingredients of the soil more soluble than they were by nature. In this way, lime became a key by which the ingredients in the soil were unlocked; it did not in itself become an important ingredient in the soil. It may, however, happen that where we add lime, we may not only be using a means for unlocking the ingredients of the soil, but we may also be adding an important constituent of the soil. This was what made lime an important ingredient as a top-dressing where Clover and Grasses were to be grown. It would be seen, then, that lime was not used principally as a *manure*; it was seldom required as a manure, for a manure added to the composition of the soil; its principal use was as a solvent of other materials. Common salt was sometimes used as a manure, and Liebig supposed that it acted beneficially by combining with sulphate of lime, and a sulphate of soda was produced. If this was the case, it should act most beneficially on the cereals, and on the leguminous plants because they are the great generators of the constituents

of blood, gluten, albumen, and casein, and these are the parts of plants for which sulphur is absolutely necessary. He was not aware that this was the case. In connection with chloride of sodium he might say, that in a former part of the Lecture he had alluded to the fact, that soda might be substituted for potash in plants, and *vice versâ*, but this was no proof that potash could be substituted for soda in the system of the animal. Now it was found that soda was essential to the formation of healthy bile, and when animals were fed on potash plants in the centre of this island, or far away from the sea in continents, they sought with avidity soda in the form of common salt, for the purpose of adding this essential constituent to the elements out of which their secretions were formed. Another process which did not act in the way of direct manures was *irrigation*—the application of water to the soil. When fresh water was applied to the soil it was beneficial, but it was necessary, in order to insure its success, that the soil should be drained, as it was only fresh water was beneficial. Liebig accounted for this first by the oxygen contained in the water; when the oxygen came in contact with the soil it united with its constituents, and thus assisted in the process of disintegration. Another valuable property of the oxygen was that it united with the blue or protoxide of iron, and converted it into the peroxide; in the soils where this was contained, he had pointed out in the first Lecture the importance of this action. Again, other waters contained carbonic acid, and where this was the case in limestone districts, the water also held in solution carbonate of lime. Now the carbonic acid acted also on the constituents of the soil, and produced disintegration; and whilst this process went on, the carbonate of lime also, which it held in solution, was deposited on the soil as a manure. Stagnant waters, unless they contained uninjurious organic matters, were not beneficial to the soil, and when they became so they acted as true manures. He now came to the *true manures*. These matters supplied some substance that was destitute in the soil. The food animals got from plants consisted first of those secretions, containing large quantities of carbon, as sugar, starch, gum, &c., and those secretions which contained nitrogen. Now, although these secretions contained principally carbon, hydrogen, oxygen, and nitrogen, yet they required for their development inorganic matters. Thus Liebig had proved, that the carbonaceous secretions could not be developed in plants without the presence of small quantities of potash, phosphate of lime, &c. It was the same with the nitrogenised secretions. The forms of protein, albumen, fibrin, &c., required for their development phosphorus and sulphur, and these were obtained from the inorganic constituents of the soil. An important fact connected with the action of inorganic manures was, that none of these substances were destroyed in the system of adult animals—they were not destroyed as the carbonaceous and nitrogenous secretions, but were always again restored to the soil, in the form of excrementitious matter. It was thus that all animals, in their fæces and urine, returned to the soil those inorganic ingredients which they had taken up from the soil in their food. The Lecturer here went into a series of calculations, showing the necessity of using human excrement as manure. Where man ate Wheat, he threw off from his system those inorganic ingredients which were necessary to the growth of Wheat; where he ate Potatoes he furnished material for the growth of Potatoes. He proved these positions by reference to many well-conducted experiments on the composition of human excretions, from which it was found that they alone were capable, when properly preserved, of supplying all the exhaustion of the soil produced by the growth of food for man. These excretions varied in their composition, but it would be found they only varied according to the food which had been used. He urged upon all present the necessity of every means being used to make available this precious storehouse of inorganic matters for manuring, which not only existed in the right quantity as a food for plants, but also existed in the best form for the nutrition of the plants most needed by man. The value of the waste of these materials that was constantly going on was quite prodigious, and could only be estimated by those who looked upon the subject with a scientific eye. As some questions had been put to him since he had been in London, he would refer, before concluding his Lecture, to some remarks and experiments which had been made by M. Boussingault, the most distinguished agricultural chemist in France. This learned chemist had lately referred to some experiments of his own, with regard to feeding cattle. The French chemists had all along maintained that the fat of animals was only obtained from the fatty matter which they already took in with their food. On the other hand, the German chemists and himself maintained that the fat of animals arose from an imperfectly consumed form of the carbonaceous secretions, such as starch, sugar, and gum. A familiar instance of such a change took place in the burning of coal; when this substance was burned in the open air the whole of the carbon of the coal was consumed and carbonic acid was formed, but when coal was burned in closed vessels without access of oxygen, then a tarry matter was formed from the imperfect combustion. What took place in the coal took place in the starch, sugar, &c. Now, when animals have small lungs, these substances cannot be fully consumed by the want of oxygen, and an imperfect metamorphosis takes place—they are converted into oily matter, which is deposited in the form of fat. Dr. Lankester had pointed out this fact, in connection with a series of tables, drawn up by Mr. Hutchinson, of measurements and weights of human beings, in which it was found that in proportion to the circumference of the chest was the weight of the individual. He had, in previous Lectures before this Society, pointed out the fact that the broadest chested animals had the smallest lungs, and there could be little doubt that the smallness of the lungs taking up less oxygen in the human being accounted for the increased weight observed by Dr. Lankester. With regard to the experiment which M. Boussingault had criticised, and which he had characterised as having been performed "*avec une telle activité*," he could only say that he had stated at the time they were performed, they were to be taken only for what they were worth, from the short time in which they were performed, and as indications of experiments, with the same object in view. M. Boussingault had performed experiments to prove that he had been wrong in his conclusions, and he would allude to these experiments with that respect which was due to so distinguished a chemist. M. Boussingault, in order to prove that the fat of animals was not derived from the starch, sugar, &c., weighed animals before and after feeding with Mangold Wurzel and Potatoes (substances which contain very little fatty matter), and found that, instead of increasing in weight they diminished; and not only did they not diminish in weight in proportion to the less quantity of fatty matter they had been supposed to consume, but they diminished 100 lbs. in addition. Now, M. Boussingault had not considered the causes of this extra diminution of weight—a diminution so much greater than his theory required. But what were the real causes? Why, the cow had been fed on food which was unnatural to it; formerly it had been fed on hay, and other materials, which required the powers of its four stomachs to digest, but now it was given a food which it could not digest without bulk to assist the peristaltic action of its stomachs, and the consequence was, as every farmer knows, the animal was purged. Now, it was this purging that must have reduced its bulk, and not any want of the conversion of sugar and starch into fatty matter. These experiments of M. Boussingault did not prove that he was right, and they did not prove that he (Dr. P.) was wrong; at the best the experiments remained where he had placed his own at first, as among subjects that required further examination.

At the end of the Lecture, which occupied two hours in the delivery, P. Pusey, Esq., M.P., arose and said that Dr. Playfair had alluded to the debtor and creditor account of the farm, and he felt that the Society was deeply his debtor. He felt quite sure that the relation of science to practice, established in these Lectures, would be beneficial in causing more attention to the subject, and he had much pleasure in proposing a vote of thanks to Dr. Playfair. Earl Spencer seconded the motion. The first was an important Lecture, as embracing the scientific part of the question, and he considered this Lecture doubly important as applying that scientific part to practice. He particularly alluded to the portion of the Lecture with regard to manures, which he considered of great importance in establishing a relation between practice and science, which would lead to most beneficial results. Dr. Playfair had formerly given Lectures which had been productive of much practical benefit, and he was sure these would lead to the same result.

The Duke of Richmond put the motion, which was passed with acclamation. As President of the Society he felt indebted to Dr. Playfair for the ready manner in which he had responded to the hasty call of the Society, without throwing any difficulties in the way.

The Marquis of Downshire expressed himself as indebted to the Governors of the Royal Institution, for having afforded them the opportunity of hearing these Lectures in their theatre, and proposed a vote of thanks. The Earl of Essex seconded the motion.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

At the half-yearly meeting of this Society, held on Friday last, the half-yearly Report for the current year was read, from which we make the following extracts:—

"At the close of the year 1843 the number of members who had paid in their subscriptions amounted only to 500, whilst 945 have paid their subscriptions for the current year. This gratifying fact may be attributed in some measure to the rule which was adopted at the last general meeting, namely, requiring that to entitle a local farming Society to the premiums of the central Society the members of it shall contribute a certain proportion to the funds of the central Society. The propriety of this regulation was much questioned at the time, but its adoption has proved most beneficial, not only in the increase of members, but from the greater interest in the affairs of the Society which it has caused. Of the 100 local Societies at the commencement of this year, in connection with the central body, only 16 have failed to avail themselves of the provisions of the rule referred to; while in those which have so qualified, the competition for the different premiums has been much increased, and the prizes themselves claimed to a much greater amount than in previous years. The second source of increased revenue to the Society, during the present year, was its great annual Cattle Show, held in the city of Dublin on the 14th and 15th of August last, on which occasion upwards of 200 new members were also added, making a total of 450 new members in one year. The number of subscribers is still, however, very disproportionate to that of the landed proprietors of Ireland; yet your council deem it a source of gratulation to find such a steady and progressive increase to the Society, and they feel that the addition may be fairly considered the best possible proof of the favour with which the operations of the Society are now regarded by the public. When the council consider the many advantages to the country at large from the great Cattle Show in Dublin—the vast numbers which attended from all quarters on the occasion, and the success of the different entertainments incident to the Show, they have every reason to be satisfied with the result of the meeting. The number of entries to the show-yard was greater than on any former occasion, as appears by the following return, viz.:—

Short-horned bulls		46
Devon	do.	18
Long-horned	do.	4
Hereford	do.	4
Ayrshire	do.	4
Polled Angus	do.	5
West Highland and Kerry	do.	4
Extra stock.		10
	Total number of bulls	92
Cows and heifers, general competition		39
Ditto, local competition		132
Extra stock		16
		187
Fat stock		15
Horses, mares, colts and fillies		74
Extra stock		11
		85
Sheep		68
Swine		52
Total number of entries		499

The council have also observed with satisfaction that in most cases the prizes were carried away by animals bred and reared in this country, and therefore recommend that in future the distinction between local and general competition shall be abolished, and that all the premiums should be open to general competition. The advantage of this arrangement, they trust, will soon be felt in stimulating local breeders to increased exertion, and introducing animals into this country. The exhibition of implements was the largest and most varied that has yet appeared under the auspices of the Society—many most valuable and well-arranged lots having been sent from England and Scotland, while the different exhibitors in this country showed the greatest anxiety to forward the objects of the Society by contributing largely upon the occasion. The council, therefore, recommend that the premiums for implements at the next Show should be increased considerably, and classified like the other prizes. The exhibition of flax, wool, and butter, was not so extensive as might have been desired, but the council are so satisfied of the necessity of calling public attention to the improved manufacture of these several important articles, that they strongly recommend a continuation of the premiums for them at the Show for the ensuing year. Your council have also turned their attention, during the present year, in some measure to the distribution of practical and useful knowledge among the farming classes; and for this purpose have caused a second edition of the Society's Transactions to be published for circulation, and have appointed Messrs. Curry and Company, of Dublin, publishers to the Society for Ireland: Messrs. Longman and Company, of London, for England; and Messrs. Frazer and Company, of Edinburgh, for Scotland. This, the Society's first volume of Transactions, contains, exclusive of the ordinary proceedings of the Society, much useful and valuable information, particularly on the subject of thorough-draining and reclaiming waste land in Ireland, which they feel they can confidently recommend to the members of the Society and the public at large. The balance-sheet of the late Cattle Show, held in this city, was next laid before the meeting. The following is a correct account of the receipts and expenditure on that occasion:—

Balance Sheet of Cattle Show in Dublin.

Expenses.	£.	s.	d.
By amount of expenditure in Show-yard	288	11	9
Ditto Council Dinner, Rotunda	328	10	9
Ditto, Banquet Dinner, Theatre	435	19	11
Ditto Ball, Theatre Royal	493	9	0
By sundries, including Printing, Stationery, Advertisements, Staff-Assistants, &c.	331	8	7
Premiums awarded at Cattle Show	664	0	0
Medals ditto	67	1	10
Extra	0	0	0
	£3109	7	10
Receipts.			
To amount of receipts on foot of Show-yard	778	13	6
To ditto on foot of Council Dinner	327	12	0
To ditto on foot of Banquet Dinner	324	0	6
To ditto on foot of Ball	445	9	6
Local Fund	261	11	0
Premiums unpaid	55	0	0
Extra	0	1	0
	2987	6	6
Balance	312	1	4
	£3109	7	10

The secretary here stated, that although the amount of balance against the Society might appear large at first view, yet, in consequence of the demonstration made by them, there had been an addition of 450 new members, which was mainly attributable to the Society having made those demonstrations by which the expense had been incurred; and that, taking this fact into account, there would be altogether a balance of 16*l.* 7*s.* in favour of the Society. It was then resolved, "That the next Cattle Show be held at Ballinasloe, on Tuesday, the 30th of September next, and continue for three days." The Marquis of Downshire then rose to say that chemistry was making its way in England amongst the agriculturists, and he hoped to see it advancing equally in this country. He had, therefore, suggested to Mr. Bellen, the secretary to the Society, that one or more chemists should be solicited in each town in Ireland, who should be requested to name their price as to the analysis of earths, manures, &c., whenever they should be applied to by gentlemen or farmers on the subject. His attention had been first drawn to the subject by his having been applied to to become a subscriber to the new College of Chemistry

object to be established in London. He had felt great pleasure in contributing to so excellent an institution; and he could name several noblemen and gentlemen, among them the Duke of Wellington and Lord Dudley, who were to be found among its supporters. His present suggestion was merely thrown out as a preliminary step for a similar institution in this country, and he thought the proposal worthy of the serious consideration of the Society.

FLAX SOCIETY OF IRELAND.

At the Monthly Meeting of the Committee, the following letter was read from Mr. Northcote, written by order of the Right Honourable W. E. Gladstone, President of the Board of Trade:—"Whitehall, Nov. 16, 1844. Sir,—I am directed by Mr. W. E. Gladstone, to acknowledge the receipt of your communication, of the 12th instant; and to thank you for your information respecting the increased growth of Flax in Ireland. The quantity of foreign Flax imported, in the year ended the 5th January, 1844, was 1,437,150 cwts.; of which 1,422,992 cwts. were entered for consumption. The quantity imported, this year, up to the 10th October, was 1,129,173 cwts.; and the quantity entered for consumption, in the same period, was 1,129,536 cwts. I am, sir, your obedient servant, STAFFORD H. NORTHCOTE.—James Mac Adam, Esq."

SMITHFIELD CLUB.

THE EXHIBITION OF FAT CATTLE, for the Premiums offered by this Society, took place during the past week at the Horse Bazaar, Baker-street. The following is the award of the Judges:—

OXEN.

CLASS I.—*Oxen or Steers, of any Breed, under 5 years old, without restrictions as to feeding; yet the kind or kinds of food must be certified.*

To Mr. ROBERT SMITH, of Burley-on-the-Hill, near Oakham, Rutland, for a 3 years and 11½ months old improved Short-horn Steer, bred by himself, and fed on Oil-cake, Barley, and Bean-meal, vegetables, and Hay; travelled to the Show, by van, 20 miles, and by railway 100 miles—*Prize*, 20*l.*, and *Silver Medal* to the breeder.

To Mr. JOHN HUDSON, of Castle Acre, near Swaffham, Norfolk, for his 3 years and 10 months old Hereford Ox, bred by Mr. John Longmore, of Orlton, near Leominster, and fed on Grass, Hay, Swedes, Linseed-cake, and Mangold Wurzel. Travelled to the Show by van 100 miles—*Prize* 10*l.*

To Mr. T. L. MEIGE, of Cound Arbor, near Shrewsbury, Shropshire, for his 3 years and 11 months old Hereford Ox, bred by himself, and fed on Cake, Pea, and Barley-meal, boiled Barley, Grains, Grass, Hay, Turnips, and Mangold Wurzel. Travelled to the Show on foot 2 miles, by van 7 miles, by canal-boat 50 miles, by railway 100 miles—*Prize* 10*l.*

HIGHLY COMMENDED:

Mr. R. M. LAWSON, of Thorney Abbey, near Peterborough, Northamptonshire, for his 4 years and 6 months old Hereford Bullock, bred by Mr. John Turner, of Stoke, near Leominster, Herefordshire, and fed on Hay, Linseed-cake, Bean-meal, Carrots, and Swedish Turnips. Travelled to the Show by van 54 miles, and by railway 67 miles.

Mr. RICHARD MEIGE, of Cound, near Shrewsbury, Shropshire, for his 4 years old Hereford Ox, bred by Mr. T. L. Meige, of Cound, and fed on Oil-cake, Barley, and Pea-meal, boiled Barley, Grains, Grass, Hay, Turnips, and Mangold Wurzel. Travelled to the Show on foot 2 miles, by van 7 miles, by canal-boat 50 miles, and by railway 100 miles.

Mr. WILLIAM TRINDER, of Wantage, Berkshire, for his 3 years and 5 months old Hereford Steer, bred by Mr. William Hewer, of Northleach, Gloucestershire, and fed on Grass, Hay, Turnips, Mangold Wurzel, Carrots, Meal, and Oil-cake. Travelled to the Show on foot 2 miles, and by van 80 miles.

CLASS II.—*Oxen or Steers of any breed, under 6 years old, weight 90 stone and upwards, that shall not have had Cake, Corn, Meal, Seeds, Grains, or Distillers' Wash, during 12 months previous to the 1st of August*, 1844.

To Mr. JAMES BULT, of Kingston, near Taunton, Somerset, for his 4 years and 10 months old Short-horned Steer, bred by himself, and fed on Hay, Grass, Swedish Turnips 300 lbs. of Flax-seed, 5 bushels of Peas, 11 bushels of Barley, and 9 bushels of Beans. Travelled to the Show on foot 5 miles, and by railway 163 miles—*Prize* 30*l.* and *Silver Medal* to the Breeder.

To Sir JOHN HENRY PALMER, Bart., of Carlton, near Rockingham, Northampton, for his 4 years and 2 months old Durham Ox, bred by himself, and fed on Grass, Hay, Turnips, Carrots, Mangold Wurzel, Cabbage, 1545 lbs. of Oil-cake, and 435 lbs. of Bean-meal. Travelled to the Show by van 25 miles, and by railway 60 miles—*Prize* 10*l.*

CLASS III.—*Oxen or Steers, of any breed, under 5 years old, under 100 stone and above 70 stone weight, that shall not have had Cake, Corn, Meal, Seeds, Grains, or Distiller's Wash during 12 months previous to the 1st of August*, 1844.

To His Grace the DUKE OF BEDFORD, of Park Farm, near Woburn, Beds, for a 4 years old Hereford Ox, bred by his Grace, and fed on Grass, green Tares, Hay, Turnips, 500 lbs. of Linseed-meal, and 500 lbs. of Barley-meal. Travelled to the Show by van 42 miles—*Prize* 15*l.* and *Silver Medal* to the Breeder.

To Mr. H. CHAMBERLAIN, of Desford, near Leicester, for his 4 years and 10 months old Hereford Ox, bred by himself, and fed on Grass, Hay, Green Vetches, Turnips, 910 lbs. of Cake, and 695 lbs. of Pea-meal. Travelled to the Show on foot 10 miles, by railway 107 miles.—*Prize* 10*l.*

Highly commended.—The Right Hon. EARL SPENCER, of Althorp Park, near Northampton, for a 4 years and 5 months old Durham Ox, bred by his Lordship, and fed on Mangold Wurzel, Turnips, Cabbages, Hay, and 1452 lbs. of Cake. Travelled to the Show by van 10 miles, and by railway 60 miles.

CLASS IV.—*Oxen or Steers, of any breed not exceeding 4 years and 3 months old, and under 80 stone weight, that shall not have had Cake, Corn, Meal, Seeds, Grains, or Distiller's Wash, during 12 months previous to the 1st of August*, 1844.

To his Grace the DUKE OF BEDFORD, of Park Farm, near Woburn, for a 3 years and 9 months old Hereford Ox, bred by his Grace, and fed on Grass, Green Tares, Hay, Turnips, 500 lbs. of Barley-meal, and 500 lbs. of Linseed-meal. Travelled to the Show on foot three miles, by van 6 miles, and by railway 41 miles—*Prize* 10*l.*, and *Silver Medal* to the Breeder.

To Mr. JOHN MANNING, of Harpole, near Northampton, for a 3 years and 10 months old Hereford Ox, bred by Mr. James Williams, of Culmington, near Ludlow, and fed on Grass, Hay, 850 lbs. of Cake, and 4 bushels of Bean-meal. Travelled to the Show on foot 7 miles, and by railway 69½ miles—*Prize* 5*l.*

Highly commended.—The Right Hon. LORD SOUTHAMPTON, of Whittlebury, near Towcester, Northamptonshire, for a 3 years and 9 months old Hereford Ox, bred by Mr. F. Corton, of Hayton, near Ludlow, and fed on Corn, Hay, Chaff, Tares, Turnips, 1050 lbs. of Cake, 17 bushels of Oats, and 120 lbs. of Barley and Bean-meal. Travelled to the Show on foot 8 miles, and by railway 60 miles.

CLASS V.—*Oxen or Steers, of any breed, under 4 years and 6 months old, and under 80 stone weight, without restrictions as to feeding, yet the kind or kinds of food must be specified.*

To Mr. W. J. BAILEY, of Shenley House, Stoney Stratford, Bucks, for a 3 years and 8 months old Hereford Steer, bred by Mr. W. Wheeler, of Ivington Park, near Leominster, and fed on Grass, Hay, and Cake. Travelled to the Show on foot 8 miles, and by railway 50 miles—*Prize* 10*l.*, and *Silver Medal* to the Breeder.

COWS AND HEIFERS.

CLASS VI.—*Fattened Cows or Heifers under 5 years old. Freemartins and Spayed Heifers are not qualified.*

To Mr. HENRY BROWN, of Ashby-de-la-Zouch, Leicestershire, for a 4 years and 6 months old Durham Heifer, bred by himself, and fed on Oil-cake, Barley, Grass, Cabbage, Swedish Turnip, and Hay. Travelled to the Show by van 25 miles, and by railway 96 miles—*Prize* 20*l.* and *Silver Medal* to the Breeder, and *Gold Medal* as the best Beast in any of the Classes.

To the Right Hon. EARL SPENCER, of Wiseton, near Bawtry, Nottinghamshire, for a 4 years and 5 months old Short-horned Cow, bred by his Lordship, and fed on Hay, Turnips, Cabbages, Pea-meal, Barley-meal, and Oil-cake. Travelled to the Show by van 20 miles, and by railway, 172 miles—*Prize* 10*l.*

To Sir THOMAS WHICHCOTE, Bart., of Aswarby Park, near Folkingham, Lincolnshire, for a 4 years and 5 months old Durham Heifer, bred by himself, and fed on Linseed-cakes, Bean-meal, Oat-meal, Hay, and Vegetables. Travelled to the Show by van 38 miles, and by railway 107 miles—*Prize* 5*l.*

CLASS VII.—*Fattened Cows or Heifers, of 5 years old and upwards. Freemartins and Spayed Heifers are not qualified.*

To Mr. JOHN BEASLEY, of Chapel Brampton, near Northampton, for 5 years and 4 months old short-horned Cow, bred by himself, and fed on Grass, Turnips, Mangold Wurzel, Hay, Linseed-cake, and Oat-meal. Travelled to the Show by van 9 miles, and by railway 60 miles—*Prize* 20*l.* and *Silver Medal* to the Breeder.

To Mr. JOHN CARWARDINE, of Marsh, near Leominster, for a 5 years and 11 months old Hereford Cow, bred by the late Mr. John Morris, of Stratford Bury, near Leominster, and fed on Grass and Oil-cake. Travelled to the Show on foot 48 miles, and by railway 113 miles—has had 1 calf—*Prize* 5*l.*

CLASS VIII.—*Fattened Cows, of 5 years old and upwards, that shall have had at least 2 live Calves at separate births.*

To Mr. J. S. BURGESS, of Holme Pierrepont, near Nottingham, for a 7 years and 5 months old Short-horned Cow, bred by Mr. Burgess, of Cotsgrove Place, Nottingham, and fed on Cake, Beans, Vegetables, and Hay. Travelled to the Show by van 5 miles, and by railway 126 miles—has had 3 calves—*Prize* 15*l.* and *Silver Medal* to the Breeder.

To Major BROWN, of Welbourn, near Grantham, Lincolnshire, for a 13 years old Short-horned Cow, bred by himself, and fed on Linseed-cakes, Swedes, Turnips, Hay, Clover, and Lucerne. Travelled to the Show by van 40 miles, and by railway 100 miles—has had 6 calves—*Prize* 5*l.*

Highly commended.—Mr. WILLIAM FIRTH, of Kirkstall, near Leeds, for a 9 years and 8 months old Short-horned Cow, bred by Mr. William Henlock, of Great Ouseburn, York, and fed on Oat-straw, Turnips, Oil-cake, Hay, Grass, and Clover. Travelled to the Show by van 4 miles, and by railway 196 miles—has had 4 calves.

EXTRA STOCK.—CATTLE.

Highly commended.—His ROYAL HIGHNESS PRINCE ALBERT, of Windsor Castle, a 5 years and 6 months old Pure Angus Polled Ox, bred by Mr. Hugh Watson, of Keillor, Forfarshire, and fed on Oil-cake, Oats, Beans, Hay, Swedes, and green food. Travelled to the Show by van 24 miles. [This was an extraordinarily large animal.]

SHEEP.

CLASS IX.—*Long-woolled fat Wether Sheep, 1 year old, that have never had Cake, Corn, Meal, Seeds, or Pulse.*

To Mr. J. S. BURGESS, of Holme Pierrepont, Nottinghamshire, for a pen of three 20 months old Long-woolled Wethers, bred by himself—*Prize* 20*l.* and *Silver Medal* to the Breeder.

To Mr. THOMAS TWITCHELL, of Wellington, near St. Neots, Beds., for a pen of three 20 months old Leicester Wethers, bred by himself, from rams hired of Mr. Samuel Bennett, of Birkeslags Park, near Woburn, Beds.—*Prize* 5*l.*

CLASS X.—*Long-woolled fat Wether Sheep, 1 year old, under 8 stone weight, that have never had Cake, Corn, Meal, Seeds, or Pulse.*

To Mr. J. S. BURGESS, of Holme Pierrepont, Nottinghamshire, for a pen of three 20 months old Long-woolled Wethers, bred by himself—*Prize* 10*l.* and *Silver Medal* to the Breeder.

CLASS XI.—*Long-woolled fat Wether Sheep, 1 year old, without restrictions as to feeding.*

To his Grace the DUKE OF BEDFORD, of Oakley West Farm, Bedford, for a pen of three 20 months old New Leicester Wethers, bred by his Grace—*Prize* 20*l.* and *Silver Medal* to the Breeder, and *Gold Medal* as the best pen of Long-woolled Sheep in Classes IX., X., and XI.

To Mr. JOHN PAINTER, of Burley, near Oakham, Rutland, for a pen of three 21 months old New Leicester Wethers, bred by himself, from a ram hired of Mr. Thorpe, of Clifton, Nottinghamshire—*Prize* 5*l.*

CLASS XII.—*Long and Short-woolled cross-bred fat Wether Sheep, 1 year old, without restrictions as to feeding.*

To Mr. C. TOMSON, of Sundon, near Luton, Beds., for a pen of three 21 months old Southdown and Gloucester Cross Wethers, bred by himself—*Prize* 10*l.* and *Silver Medal* to the Breeder.

To Mr. W. BENNETT, of Lewsey Farm, near Dunstable, Bedfordshire, for a pen of three 21 months old Down and Leicester Cross Wethers, bred by himself—*Prize* 5*l.*

EXTRA STOCK.—LONG WOOLLED SHEEP.

To Mr. C. LARGE, of Broadwell, Oxfordshire, for a 56 months old New Oxfordshire Ewe, bred by himself—*Silver Medal.*

CLASS XIII.—*Short-woolled fat Wether Sheep, 1 year old, without restrictions as to feeding.*

To Mr. SAMUEL WEBB, of Babraham, near Cambridge, for a pen of three 20 months old Southdown Wethers, bred by Mr. J. Webb, of Babraham—*Prize* 20*l.* and *Silver Medal* to the Breeder.

To His Grace the DUKE OF RICHMOND, of Goodwood, near Chichester, Sussex, for a pen of three 20 months old Southdown Wethers, bred by His Grace—*Prize* 5*l.*

CLASS XIV.—*Short-woolled fat Wether Sheep, 1 year old, under 8 stone weight, without restrictions as to feeding.*

To Mr. HENRY UPTON, of Oving, near Chichester, Sussex, for a pen of three 20 months old Southdown Wethers, bred by Mr. A. Pinnix—*Prize* 10*l.* and *Silver Medal* to the Breeder, and *Gold Medal* as the best pen of Short-woolled Sheep in Classes XIII. and XIV.

CLASS XV.—*Short-woolled fat Wether Sheep, 2 years old, without restrictions as to feeding.*

To Mr. E. G. BARNARD, M.P., of Gosfield Hall, near Halstead, Essex, for a pen of three 32 months old South Down Wethers, bred by himself—*Prize* 20*l.* and *Silver Medal* to the Breeder.

EXTRA STOCK.—SHORT-WOOLLED SHEEP.

To Mr. T. HARRIS, of Hinton, near Abingdon, Berkshire, for a 21 months old South Down Sheep, bred by himself—*Silver Medal.*

PIGS.

CLASS XVI.—*Pigs, of any breed, above 13 and under 26 weeks old.*

To Mr. W. F. HOBBS, of Marks Hall, near Kelvedon, Essex, for a pen of three 25 weeks and 4 days old Improved Essex Pigs, bred by himself, and fed on Oats, Peas, Meal, Potatoes, Mangold Wurzel, and milk—*Prize* 10*l.*, and *Silver Medal* to the Breeder.

To His ROYAL HIGHNESS PRINCE ALBERT, of Windsor Castle, for a pen of three 25 weeks and 4 days old Suffolk and Bedfordshire Pigs, bred by His Royal Highness, and fed on Milk, Barley-meal, and Pea-meal—*Prize* 5*l.*

CLASS XVII.—*Pigs, of any breed, above 26 and under 52 weeks old.*

To Mr. J. BUCKLEY, of Normanton Hill, near Loughborough, Nottinghamshire, for a pen of three 27 weeks and 2 days old Neapolitan and Warwickshire Pigs, bred by himself, and fed on Barley-flour—*Prize* 10*l.*, and *Silver Medal* to the Breeder.

To the Right Hon. the EARL OF RADNOR, of Coleshill, near Farringdon, Berks, for a pen of three 44 weeks and 1 day old Coleshill Pigs, bred by his Lordship, and fed on whey, Barley-meal, and Potatoes—*Prize* 5*l.*

EXTRA STOCK.—PIGS.

To Mr. W. F. HOBBS, of Marks Hall, near Kelvedon, Essex, for a 25 weeks and 4 days old improved Essex

Pig, bred by himself, and fed on Oats, Peas, Meal, Potatoes, Mangold Wurzel, and Milk.—*Silver Medal.*

It will be observed that His Royal Highness Prince Albert exhibited several animals, amongst which were Pigs to which a Prize of 5*l.* was awarded, and an Ox of the Polled Angus breed, which attracted considerable attention.

Besides the Show of Fat Cattle, which *alone* was originally established by the Smithfield Club, there has grown up of late years an Exhibition, in the same place, of Agricultural Implements; manufacturers no doubt finding it profitable to take advantage in this manner of these annual assemblages of farmers. There was not many new implements exhibited: the following reference to some of the articles shown may interest some of our readers:—The stand of Messrs. *J. Gibbs & Co.*, seedsmen to the English Agricultural Society, was the first that met the eye on entering. We noticed there enormous specimens of long red and globe yellow Mangold Wurzel, and also of Kohl Rabi. There was also some series of specimens of Grasses and Wheat on the stand. Specimens of all these were also exhibited by Messrs. G. Gibbs and Co. At another stand specimens of Swedish Turnips, weighing about 20 lbs., were exhibited; and Mr. Skirving exhibited heavy specimens of his well-known variety. Among the implements we noticed two applications of the lever-power to Hand-threshing Machines—a mode of working them which was first introduced by Messrs. Ransome, of Ipswich. In one—that by Mr. Cambridge, of Devizes—the oscillatory motion of the lever was converted into the rotatory motion of the drum of the implement, by means of sun-and-planet toothed wheels; in the other—a heavy and bulky machine, exhibited by Lieut. Viburt, R.N.—the crank was employed for this purpose, and the action of three levers worked by three men was brought to bear upon it. One of the cleverest implements in the gallery was a Horse-rake, exhibited by Mr. Smith, of Stamford, in which all the action of Mr. Grant's excellent and well-known implement is obtained in a very simple manner. We must postpone a description of this implement till another opportunity. Nothing new was observed among Drilling-machines: implements of this class were exhibited by Messrs. Hornsby, of Grantham, Garrett and Exall, and Smyth, of Ipswich. A variety of Cake and Corn-crushers was exhibited by the two first-named manufacturers; those of the former being distinguished by their peculiar make—the working cylinders being covered with pinnacle instead of ridge-formed teeth. Among Turnip-cutters we noticed an ingenious implement by Mr. Wedlake, in which the working cylinder cut slices or finger-shaped pieces according to the position of the hopper, and the direction in which the handle was turned. Another, exhibited by Messrs. Wedlake and Thompson, consisted of a horizontal revolving circular disc, on which the cutters were placed, and through which the slices fell as they were necessarily cut off the lower surfaces of the bulbs placed in a box above it. We must not forget mentioning Smith's Field-garden Hand-dibble, exhibited by Messrs. Cottam and Hallen. It was referred to some weeks ago in this Paper by a correspondent, and, though we have no experience of it, appears likely to answer its purpose. Its cost is 35*s.*

Besides the few we have mentioned, the usual variety of agricultural implements was exhibited by their respective manufacturers; and notwithstanding the absence of implements from the factory of the Messrs. Ransome, at Ipswich, which generally sends out so many, there appeared to be both number and variety sufficient in the Exhibition to interest the crowds that inspected it.

An intimation was given by Earl Spencer that it was the intention of His Royal Highness Prince Albert to honour the Club with a visit, but the day had not yet been fixed. It was, however, generally supposed that this morning (Saturday) would be the most likely time.

FARMERS' CLUBS.

Stowupney.—The twelfth Monthly Meeting of this Farmers' Club was held on the 2d inst. Mr. Maughan, of Dudley, read the following Essay on the Expediency of Leases. First, As to the objections against leases:—"I find some brought together by an annotator on 'Tuke's Survey of the North Riding of Yorkshire.' He observes, it is the popular fashion of the times to rail at tenancy from year to year—to assert that a country so held must be devoid of improvement, the tenantry oppressed, and the landowners deprived of that share of rent which they ought to receive were their lands let on what they call a more durable tenure. He observes that the permanency of tenure under lease is held to be one of the greatest inducements to cultivation; but he contends that, with tenants from year to year, occupation is more durable than with the former—that the occupations of the latter are rarely changed, except for faults; and so far as leases prevent such changes, they are evils. He alleges that few estates let to yearly tenants can be pointed out where the same families have not remained on them for many generations. He contends that where leases are common, the greater part of the tenants are changed at their expiration, for, no mutual tie, either of friendship, honour, or attachment, existing between landlord and tenant, the former is bound only by interest to the latter, and the latter, presuming upon the certainty of his lease, gives probably some occasion of offence, which is not forgiven when it expires. It is contended, too, that in cases of tenancy from year to year, rents are not so frequently advanced as on estates where leases are granted, and that both for permanency of occupation and moderation of rent, tenancy from year to year is most in favour of the tenant, and that, for such moderation, the landlord has an ample return in the attachment and good offices of his tenantry. Another objection, on behalf of the tenant, made to leases is, that if a rent be reserved fluctuating with the price of produce, the rent bears hardest on the tenant when he is least able to discharge it. Another objection to leases made on behalf of landlords is, that leases fairly granted on fixed money rents—I mean fairly granted with reference to circumstances existing at the time of the contract—often become, by a change of circumstances, altogether one-sided, and in favour of the tenant; for if the prices of produce advance, the landlord cannot share in the benefit; but if, on the other hand, prices fall, he is obliged to reduce the tenant's rent, to keep him (as the phrase goes) on his legs. Secondly, As regards the arguments advanced in favour of leases. It is said that no prudent tenant farmer will venture his money in the improvement of his land without security; that is to say, not an absolute certainty that the money expended will be returned to him, but certainty in the opportunity of conducting and of carrying out, in a series of years, that course of operations on which, at the commencement, his calculations were founded, and whereby alone he could hope to redeem his expenditure with compensation for the time bestowed, the labour imparted, and the hazards incurred in the enterprise. Another argument in favour of leases is derived from experience of their benefit in many parts of the kingdom, where they have been judiciously adopted. In connection with this subject it has been, perhaps not unjustly said, that in almost every field in the country there is an unworked, or an imperfectly worked mine of agricultural wealth, but that it cannot be brought to light without an expenditure of money, which, once sunk in the soil, can only be recovered in the course of years; and it is asked, Can the farmer who has his farm from year to year only, with justice to himself and his family, enter freely upon this outlay? The ordinary confidence reposed in landlords, and in the agents of landlords, will not overcome those prudential considerations; the thought that his security is not real, alarms the worldly prudence of the tenant, and banishes all idea of improvement or outlay. This is a fact of which we may convince ourselves by the evidence of our own eyes, that under a system of tenancy from year to year, the lands of this kingdom generally are cultivated imperfectly. There is good and spirited management by yearly tenants here and there to be met with, but it is the exception, and not the rule. In examining the arguments of writers upon leases, I have nowhere found so much said, and so well said, in their behalf, as in an article written by Mr. Hannam, of North Deighton, in Yorkshire. As I doubt whether it be possible to add much to his conceptions upon this subject, or to improve upon his manner of expressing them, I shall, with this willing acknowledgment, borrow freely from Mr. Hannam's paper. After speaking of the disadvantages with which the tenant farmer often has to contend—fickle seasons, fluctuating markets, insolvent customers, and other evils—he proceeds to remark, that greater than all those is the disadvantage arising from the uncertainty of the tenant being allowed to continue unmolested in his occupation, after his money shall have been embarked in improvements requiring more than that average outlay which is necessary for ordinary and routine management. Mr. Hannam observes that upon the system of yearly tenancy there are other attendant evils; one is the facility which it affords to men without skill or capital to obtain farms; and another, the temptation it holds out to the needy man to make a temporary convenience of a farm. Hence, we continually see tenants with a capital of 500*l.* upon a farm requiring 1000*l.*; for as the occupier is a tenant from year to year, there is not generally that investigation into his qualifications which there ought to be, and which there undoubtedly would be were a lease for a long term of years about to be granted; and on his side the tenant is often impelled to take hold of an engagement, though not to his mind exactly, as a convenience, and until he meets with something that suits him better. The result, he observes, of these contracts may easily be defined. If the farm be out of order at first, the tenant who takes it as a convenience (*i. e.* on the determination to get all he can from it without much cost), soon finds that it will not bear robbery; but he finds out also that it will not do to expend money on it; he is therefore content to take what it gives, and to return to it nothing; and he robs it, or it robs him, till after a time there is no more left to rob. In the other case, the tenant finds himself on a farm with a supply of cash below the demand, his farm requiring improving, but "it must be done bit by bit, he must see how it answers," are his cogitations; and of course—as under this sort of management it grows worse—his land goes half stocked, his crops fail, and he finds himself in difficulties before he knows how to turn himself; the capital he had is melted, and that without making any reform in the condition of his farm; and in a short time he is left penniless and in the possession of a farm which after such a course of negligent management requires a capital double of what it ought to do. So much, then, for the evils of the system, which the advocates of leases would abolish! The advantages of the one they recommend may be stated to be the prevention of those very evils which the other produces. They would endeavour to raise up a class of men possessing capital to expend, and they would give them confidence to expend it. It is not, however, as Mr. Hannam remarks, to be asserted that all tenants holding from year to year are bad managers; on the contrary, there are many, very many, first-rate farmers who are tenants merely from year to year. But then, as tenants it may be said their lines have fallen in lucky places, or they would not risk the outlay generally necessary to superior management. And even in these cases we may rest assured that those tenants who do much without the security of leases would do more, much more, if they possessed such security. They are, consequently, not such good farmers as they would be were they secure, for a series of years, under the stipulations of a lease. It will perhaps be urged that the farmer will, under a lease for 15 or 20 years, be too much affected by a depression of prices, unless his contract be a very advantageous one; and that, under such circumstances, he will not be able to procure any relief from his landlord. Now, it is true the tenant will not be able to say "You must reduce the rent of *my* farm, or I must leave it." There is, however, no reason to assume that this demand will be made. A contract which has to be in force for a length of time would be considerately made; it would be based upon the prices of products for a number of years preceding the contract. But when the holder of a lease takes a farm, he values the gross products of the same in its present condition. If, therefore, he can make it produce one-fourth more than it did formerly, his lease insures him the benefit of it, and encourages him to continue his improvements; and when a depression of the market takes place, if his produce does not fetch so much as it did once, he finds he has more in quantity, so that the aggregate value shows still in his favour; but, should brisk markets come, he has both good prices and an increased quantity of produce. I deem it too obvious to require to be argued that the rent reserved ought not to be a fixed money payment, but should fluctuate with the fluctuations in the prices of produce—in most cases with those of grain. By this means, the landlord and tenant are alike protected. But some will say that if this arrangement does good to the tenant at one time it does evil to him at another; for, since high prices are not only caused by increased consumption, but also by decreased production, when the price of grain rises, owing to a deficient yield, or to a bad harvest, the farmer will have to pay an increased rent. This may, in the opinion of some, be a weighty objection. But it really is not a weighty objection, when the subject is duly examined; for, if all the circumstances producing fluctuations in prices are considered, it will be found that the tenant holding under a lease, at a corn or other produce rent, will have three points out of four in his favour. I particularly invite attention to what Mr. Hannam so well says upon this branch of the subject. Take the case of a corn rent for the purpose of illustration. Thus, First—if prices are low from a limited demand, he has a reduction in rent. Second—If prices are low from increased production, he has more grain, yet, at the same time, a reduced rent. Third—If, on the other hand, prices are high from an increased demand, he has a higher rent to pay, but then he has more money to pay it with. Fourth—It is only when the advance of price arises from decreased production that it operates against him. Then he has a higher rent without any advantage of market; for it is probable that the advance of the value of his grain is more than counterbalanced by the diminution of the quantity. But it should not be forgotten that this diminution in the quantity of his grain is not all loss to the farmer. His original rent is founded upon the presumption that his land will grow a certain quantity per acre; but this quantity is the average of a number of years, so that if in one year he falls short of the quantity, it is reasonable to suppose that in other years he exceeds it. When we consider, too, that he is, or ought to be, making improvements, it is fair to presume that he exceeds the estimated quantity upon which his rent was originally based, much more frequently, and more largely, than he falls short of it. Whilst, however, I am of opinion that the agriculture of England and Wales generally is retarded by the practice of withholding leases, or rather of not insisting upon their acceptance, I wish it to be understood that I do not for a moment recommend an indiscriminate granting of leases to occupiers of farms. The owners of small farms, for instance, will feel that they can seldom enter safely into contracts for a long term of years with the class of tenants who compete for small farms. Their narrow means, their want of capital, renders their covenant of little, if any value. And again, if upon many large estates the owners were suddenly to require and to insist upon a change involving a spirited and enlightened system of farming, and were even at the same time to hold out to their tenantry the security of leases, on corn or other produce rents, it would be utterly impossible, in numerous cases, to carry out the commendable objects of such landlords, with the bulk of the tenantry existing upon such estates. An immense proportion of the soil of England and Wales is occupied by men of inadequate capital; another large proportion is held by men devoid of energy and enterprise, who are so wedded to their antiquated ways, that they will hardly look over their own hedges to see what is being done by their more spirited neighbours. There cannot be any doubt that if it were the practice of an estate to insist upon the acceptance of leases, landlords or their agents would be constrained to sift the resources and circumstances of applicants much more closely than they do at present, when letting farms merely from year to year. The consideration weighs with the landlord or agent that the contract is but for a year, and that if the tenant does not go on pretty well he can be removed by a six months' notice; but we all know that such is the generosity and forbearance of English landlords, generally, that when once an indifferent tenant becomes seated in a farm, he is generally allowed to remain there; he is tolerated and borne with long after a proper

regard either to the landlord's interests or the public interests has suggested the reasonableness and the propriety of his being removed. I have lately availed myself of an opportunity of witnessing the effect of leases for 21 years, granted in a somewhat indiscriminate manner about 14 years ago to a tenantry occupying an estate of some extent in Cheshire. The Beeston Castle and Peckforton estates, of about 4000 acres, at the period referred to, belonged to the late Sir Thomas Mostyn, as tenant for life, with remainder to a party whose pecuniary embarrassments gave grounds for apprehension that he would, if he came into possession, bear hard upon his tenantry. Sir Thomas—than whom a better landlord, or kinder hearted man never lived—offered, under the powers he possessed, leases for twenty-one years to such of his tenants on those Cheshire estates as might choose to apply for them, and his agent might deem fit to be intrusted with them. Thirteen of the principal tenants on those estates asked for, and obtained, leases—the only test of fitness applied to the applicants being their having paid up their rents. The leases have been granted about 14 years. I went over the estate in September last with my relative and namesake, who has been familiar with every corner of the property for 30 years, and who settled the terms of the leases 14 years ago, which were very well and equitably arranged. The farms in question being dairy farms, the rents were made to fluctuate with the price of cheese. From the testimony of my relative, and that of some intelligent parties who accompanied us, and from my own recollections of the property, I can state, that only two individuals out of the whole number of 13 have made the least use of the security and advantages afforded them by their leases. As to 11 out of the 13, they and their land have remained alike, as it were, in *statu quo*; the idea of improvement never for one moment appears to have entered into their minds. Some of those men—the greatest part of them—had not the necessary means of effecting material improvements: they were needy men; some few were in better circumstances, and better results might have been expected. There were, however, two individuals, whom I may hope without offence to name, who had the good sense to set to work at once to put their land into condition. The name of those tenants are Mr. Bird, of Beeston Hall, and Mr. Jones, of Park Gate, a farm near Beeston Castle, both near Tarporley. Their process of improvement consisted in draining and in dressing heavily with bones. They drained extensively, and they manured with bones at an expense altogether of from 10*l.* to 12*l.* per acre. Mr. Bird's leasehold consists of two farms, one of about 330 acres, the other of about 84 acres. I heard Mr. Bird affirm that such was the change produced by management upon the farm of 84 acres (where he, when he was first married, was by his late father placed to live) on nearly the whole of which he expended 10*l.* per acre at the commencement of his term, that where his predecessor made about 25 or 30 cwt. of cheese per annum, he (Mr. Bird) made upwards of four tons, and maintained besides as much stock in horses and young cattle, unproductive of milk, as had been before maintained. Other portions of Mr. Bird's land, besides the 84 acres farm, have been much improved, and he has been repaid, and is being repaid, in a degree that is satisfactory to him, and to which his good management and industry entitle him. The case of Mr. Jones is scarcely less striking. His farm is about 200 acres. He adopted a course of treatment similar to that of Mr. Bird. It is known to all his neighbours, and I heard him admit it, that before he drained and boned, he kept only 25 cows. His land now maintains 46, and such of his lands as were in tillage before are in tillage still, and partake of the good management bestowed upon his Grass lands. I consider the case of those Cheshire estates very interesting, in connection with the subject of leases, and I give the names and addresses of Mr. Bird and Mr. Jones, that those who take any interest in the matter may, if they please, take occasion to see them and their farms. This case proves how important, in a national as well as individual point of view, would be the effect of granting leases to well-selected tenants, and how absolutely necessary it would be, under a system of leasing, to constrain the drones and the incapables to move on or out of the way. If individuals who advocate leases imagine that material advantage would ensue from the granting of leases to tenants *indiscriminately*, those individuals labour under great mistake. There must be a great disturbance of the present occupiers—a great severing of old connections, and a great uprooting of old attachments, if the system of leasing is to be suddenly attempted with a view to national and to individual benefit. Landlords cannot, with common prudence, demise their estates for a long term of years, and accept the covenants of parties who have nothing to lose, and who, if they had leases tomorrow, would not be able to turn them to the least advantage. In reference to the length of leases, I think where much improvement is to be made, our English term of 21 years, or the Scotch term of 19 years, very fair. If a farm, when leased, be in good condition, there is less necessity for extraordinary outlay, and consequently less necessity for the security of a lease which extraordinary outlay requires. In many cases, however, where outlay is to be made by the tenant, a lease for 7 years certain, and afterwards from year to year, and until a two years' notice to quit be given, would afford perfect security to the tenant, and would be conceded by the generality of landlords with less hesitation than a term of 19 or 21 years. I think, whatever the term may be, in the event of the death of the lessee, the lessor should, in addition to his ordinary powers of re-entry, for breach of covenant, have power to determine the tenancy before the expiration of the term by a two years' notice to quit. This period would afford time and opportunity to test the qualifications of the party introduced into the tenancy. If his management were good, public opinion, if the right feeling of an English gentleman were wanting in the landlord, would generally secure the tenant against unfair disturbance or molestation. I think such a power to determine farming leases as the one I have suggested ought to be reserved to lessors, and I think it is one with which English landlords may safely be entrusted. At all events, such a reservation of power to the landlord might be made perfectly unobjectionable, by a stipulation that, in the event of its being exercised, the tenant should be paid for all permanent improvements made with the acquiescence of the landlord or agent, of which he had not had time to reap the full benefit. As far as my experience of estate management and of farming leases goes, I should say that there is hardly any system of letting worse than that of leasing upon lives. I have had an intimate acquaintance with some extensive estates (particularly in South Wales) which had been demised for three lives at low rents, a consideration in money having been paid for the leases when granted. I first knew them at the period when the leases were beginning to drop in. The farming was in almost every case the very worst in the country, and although the rents were only one-fourth or one-third of the rack-rent value, most of the tenants had been reduced to beggary by their indolence and bad management. It seemed as if towards the expiration of their leases, when their leases hung upon one or two old lives, for instance—it seemed as if the uncertainty of their tenures had paralysed all their exertions. They would not improve, considering the time was near at hand when the lease must expire, and an advance in rent ensue. Another topic to which I will briefly advert, is that of the rate of interest to be charged on money invested by landlords in improvements on farms already let at fair and equitable rents. How often do we see gentlemen, in their desire for extended landed possessions, who, whilst they already have lands almost totally unimproved, imperfectly drained, imperfectly fenced, with bad roads and worse buildings—lands on which capital may be made sufficiently remunerative—how often do we see them borrowing money at four or five per cent. to pay for estates bought to pay two or three per cent. I submit, it is very obvious that, instead of indulging the passion referred to, it would be better for the interests of agriculture, and certainly, in a pecuniary point of view, much better for such purchasers and their families, were they to expend capital on such of their lands as allowed of permanent improvement, although that improvement might not be calculated to admit of the tenant bearing an increase of rent to a greater extent than five per cent. on the outlay. The tenant farmer, however, must obviously lay his account for a better rate of interest; for, in addition to the interest of his money expended in permanent improvements, he has his capital to redeem. If holding under a lease, it will depend upon the term remaining in such lease; if holding under a tenancy from year to year, it will depend upon the confidence he may have in the honour and fairness of his landlord how he ought to lay his calculations for redemption of outlay. In connection with our present subject it may be remarked, that where a tenant is highly rented, and somewhat crippled in his circumstances by the drain thereby occasioned, a landlord, instead of reducing the rent, may often, by a little judicious expenditure in promoting, or altogether executing, an improvement, sustain the rent, and confer a greater boon on the tenant than a reduction of rent would have conferred. It is always matter for the exercise of judgment and discretion, whether the landlord should charge any per centage at all upon an outlay made under such circumstances. I shall now bring my observations to a close, merely observing that it is impossible to travel through England and Wales, in any direction, without feeling a strong conviction that there must be some serious obstacles to the investment of capital in agriculture. The people at large are deeply affected by every measure which has a tendency to fetter the productive powers of the soil, and to depress one of the largest and most valuable classes in the country. It is clearly their interest that corn and other provisions shall be supplied in abundance; and, perhaps, the people of England and Wales may justly complain of the want of leases as one of the principal causes which check the improvement of their own territory."—On the conclusion of the Essay, it was proposed by Lord Lyttelton, and seconded by J. H. H. Foley, Esq., "That the thanks of this meeting be given to Mr. Maughan for his very valuable Essay." The motion was, by acclamation, carried. Both Lord Lyttelton and Mr. Foley, in speeches of considerable length, expressed their concurrence in the views on leasing embodied in Mr. Maughan's Lecture, and avowed their readiness to act upon them. After an animated conversation on the subject, the following resolution was carried: "That it is the opinion of this meeting that the present system of letting farms—large farms especially—to tenants to hold from year to year, begets, on the one hand, incaution in the landlords in the selection of tenants as regards their pecuniary resources and personal fitness; and on the other hand, affords mischievous facilities to men without calculation and competency for obtaining farms exceeding their skill and capital to manage, and begets in tenants generally holding from year to year an indisposition to hazard any outlay not required by ordinary and routine management; and that it is further the opinion of this meeting that the granting of farming leases for a term of 21 years, or thereabouts, on corn or other produce rents, to tenants carefully and judiciously selected, would tend, in an eminent degree, to elevate the pursuit of agriculture, and would incite to the general adoption of the best systems of husbandry."

Reviews.

The Industrial Resources of Ireland. By Robert Kane, M.D., &c. &c. Hodges and Smith, College Green, Dublin.

"In other countries it has been the most anxious care of Government, and of those entrusted with the superintendence of education, to ascertain the nature and amount of their means of promoting industry, and extending the employment of the people. It is thus that every year sees the continental nations making such giant strides in manufacturing activity. It is thus that the physical disadvantages, which had so long kept them back, are gradually being lessened in importance. If similar zeal and intelligence were manifested in developing the resources of this country, there would be no fear of the result. As circumstances, however, do not admit of this being done, the publication of even the short and imperfect sketch, which alone could be drawn up by an unaided individual, may be useful in awakening the attention of those practically engaged upon those subjects, and may lead to more extensive observation, and more detailed inquiry."

This extract from the Preface of this work is an exceedingly modest announcement of the Author's motive in its publication. This "short and imperfect sketch," as he terms it, of Ireland's resources will, we doubt not, be eminently useful in teaching her people how to exert and direct their industry profitably; and it will be the means not only of thus *creating* capital, but of indicating the many opportunities which exist in that country for its profitable *investment*.

Among the subjects of discussion in this volume are the following:—the circumstances of Ireland with regard to fuel—the water-power of Ireland—its manufacture of iron—the geological character of the country—its mines of copper, lead, &c.—its agricultural industry—its means of internal communication—the cost of labour in Ireland—its supposed want of capital—its want of industrial knowledge. It is only to the chapters referring to the Agriculture of this country that we shall direct the attention of our readers; and we can truly say that they will find in them much on the general bearings of the subject—many instances of what is now acknowledged to be the chief source of future improvements in practice, the skilful application of scientific truth—much information on the cultivation of particular plants—in short, much that will greatly interest those who may be neither personally nor specially interested in the great object of the Work.

It is our wish to convey an accurate idea of this portion of the volume—extending over about a hundred octavo pages of small print—and, in order to this, we cannot do better than transcribe the headings of the two chapters into which it is divided, and occasionally quote an illustrative passage from the pages to which they refer.

The following, then, are the subjects which have engaged the Author's attention:—"*The agricultural industry of Ireland—its importance as an occupation—relations of agriculture to manufactures—natural fertility of the soil of Ireland.*" On this last we quote the opinion of Arthur Young, who says of Limerick and Tipperary—"It is the richest soil I ever saw, and such as is applicable to every wish. It will fatten the largest bullock, and at the same time do equally well for sheep, for tillage, for Turnips, for Wheat, for Beans, and, in a word, for every crop and circumstance of profitable husbandry. You must examine into the soil before you can believe that a country, which has so beggarly an appearance, can be so rich and fertile."

We continue our Table of Contents. "*Distribution of the surface of the country—office of plants—correlative functions of the mineral, vegetable, and animal kingdoms—composition of plants—origin of the soil—connexion between the fertility of the soil and its composition—examples of fertile districts—nature of the soils of various parts of Ireland—composition of subsoils—organic elements of the soil—mechanical and physical office of the soil—of drainage; its importance to Irish agriculture—action of plants on the soil—of exhaustion—composition of the most important crops—of manures—composition and properties of the most important native manures—of lime and limestone; marl; sea sand; coral sand, its nature.*" Again we transcribe an interesting passage, descriptive of the extent and employment of these sources of manure, to which we have parallels in England in the extensive use made by farmers in Cornwall of the sea-sands accumulated on its northern coasts:—

"The shell banks of Lough Foyle form, when the tide is out, extensive flats, which are firm enough to be walked on without any inconvenience, and they are resorted to by numerous boats for loads of shells; and though this system has been pursued for more than a century, they exhibit no appearance of a failure in the supply. The shells hitherto examined are all of recent species; and it becomes a question whence they came. There are engaged in raising the shells

225 men for 26 weeks, at 10s.		£3285
50 boys	at 6s.	290
The cost of the labour alone is thus		£3575

There are annually employed about 94 boats, of tonnage from below 8 to 60 tons. The aggregate tonnage of 41 of the largest boats is 1306 tons. The total quan-

city of shells raised each summer is about 59,496 tons, which on the shore immediately opposite the bank sell for 1s. per ton; but at Derry and Strabane for 1s. 6d. to 2s. per ton. Altogether Captain Portlock considers the shell banks of Lough Foyle to be worth 5000*l.* per annum to the country. 'They are particularly useful in bringing bad lands into cultivation, and in ameliorating stiff wet clays, deficient in calcareous matter, being applied at the rate of from 30 to 60 barrels per acre. They are preferred to lime, as warming and brittleing the land."

"*Value of those sands dredged upon the north and south coasts—of gypsum; of sea-weed; of bones; farm-yard manure; its composition and relative power—importance of its preservation and suitable economy to practical agriculture. Of rotations—relation of Corn crops and green crops—amount of food produced by various systems of culture—influence of different cultures in the exhaustion or amelioration of the soil—size of farms in Ireland—principle of consolidation not as applicable to Agriculture as to manufactures—relation of the size of farms to the population—relative profit and employment afforded by large and small farms—average available farms for existing population.*" On these latter subjects we venture to quote a short passage from a lengthened argument, which requires, however, to be perused throughout thoroughly to appreciate it:—

"In his valuable work on Agriculture, Professor Low gives some estimates, from which it results that he considers a 500 acre farm to give an amount of occupation equivalent to the employment of 20 persons throughout the entire year. Now it has been already shown that the area of land available for cultivation is about 18,000,000 of acres, made up of:

Land actually cultivated	13,464,300 acres.
Land capable of cultivation . . .	4,500,000 ,,

Now if this be divided into 36,000 farms, of 500 acres, there will be given by their cultivation employment for 720,000 individuals; but as the actual agricultural population amounts to 5,406,743, the difference, or four millions and a half of human beings, will be thrown on the world without any means of subsistence."—"On the other hand, as the total number of existing agricultural families is 974,188, it results that from the available land there could be allocated to each a farm of 17 statute acres. That this quantity is sufficient to support a family, paying full rent, is a matter of which there is no doubt."

"*Secondary uses of food crops—manufacture of Potato-starch, sugar, and spirits—composition of different kinds of Potatoes—manufacture of Beet-root sugar; its economic circumstances—of fibre crops—cultivation of Flax and Hemp—composition of ligneous fibre—mode of culture and preparation of Flax—principles which it gives off in steeping—average crop of Flax—its value—uses of the Flax residue as food and as manure—Flax manufacture and linen trade—total value of Flax grown in Ireland—exertions of the Royal Dublin Society and Flax Improvement Society, and their results—employment given by the Flax and linen trade—tables of mill power and of exportation of Flax and linen—localization of this industry—favourable situations for it—culture and composition of Hemp—conclusion.*"

Our last extracts shall be on the cultivation of Flax—a crop which is becoming every year more extensively cultivated in this and the sister country:—"Mr. Crosthwaite, whose intimate acquaintance with all branches of this industry renders his authority highly valuable, considers that there are about 100,000 acres under Flax in Ireland, and that the produce is about 30,000 tons, of an average value of 50*l.* per ton. This is 6*s.* 3*d.* per stone, and should give about 12*l.* 10*s.* for the usual produce of the statute acre."—"The Flax, when it has grown to suitable maturity, according as the design is to allow it to ripen its seed or not, is pulled, and either immediately, or in the next spare season, according to the circumstances of the locality, it is subjected to the process termed rotting or watering. In the stem of the Flax there may be recognised three structures—the outer skin or epidermis, covering a close network of fibres which incloses the plant as in a sheath, and in the centre a stem of dense pithy material. The fibrous network is connected together by a glutinous matter which must be decomposed before the fibres can be separated from the stem, and it is to soften and rot this substance that the plant is steeped. If the steeping be continued too long, the fibre itself may rot, and be weakened and injured in quality; if the steeping be not continued long enough, the fibres are not thoroughly separated from each other, and the quality of the Flax is coarser than it might be."—"When the Flax is steeped, the water acquires a darker colour, a disagreeable odour, and, it is well known, becomes poisonous to fish. This arises from the solution of the glutinous material which had cemented together the pure fibres."—"The author of the Survey of Somersetshire (Mr. Billingsby) says: 'Having myself cultivated Flax on a large scale, and observing the almost instantaneous effect produced by the water in which the Flax was immersed, I was induced, some years ago, to apply it to some pasture land, by means of watering-carts similar to those used near London for watering the roads. The effect was astonishing, and advanced the land in value 10*s.* per acre.'"

This part of the subject is illustrated by analyses, executed by the author, of the Flax-plant, its ashes, the extract in the Flax-steep, &c. Professor Kane's work is one of national importance.

The British Farmer's Almanack and Diary of Agriculture and Gardening for 1848. Company of Stationers. London.

This is another well-compiled Farmer's Almanack. Its Agricultural Calendar has been written by a gentleman who, we happen to know, is thoroughly well qualified for the task.

Miscellaneous.

Practice of Irrigation.—The first operation on the intended meadow is, to free it thoroughly of water by draining. If springs exist, they should be cut off by drains of sufficient depth to reach the source of injury. But, in addition to this, the land, if the soil is clayey, or rests upon a tenacious subsoil, should be effectually furrow-drained, so as to afford a ready egress to the water underground. The land is then to be levelled and otherwise prepared. If it is already in old turf, it will be well to pare off the sward with the spade, and after having dug and prepared the ground, to replace the turf. In this manner the meadow will be ready for the reception of the water, as soon as it is formed. But should there be no turf upon the ground, or should this turf be filled with useless or innutritious plants, the land should be thoroughly worked, levelled, and otherwise prepared, and then sown with the suitable Grass-seeds. These Grass-seeds may be sown in autumn. We cannot, however, in this case, admit the water during the first winter. We must retain the land in pasture for the whole of the following winter and summer, so that the young plants may establish themselves in the soil. But in the second winter we may generally admit the water. The ground may be in part prepared by the plough, and we may even economise expenditure by taking a crop of some kind before we begin to level and otherwise form the meadow; but generally it is better to proceed at once with the formation of the meadow, and employ the spade in place of the plough for levelling and preparing the ground for the reception of the Grass-seeds in autumn. Along the higher side of the meadow is first to be formed the main conductor, to which the water is carried, and from which it is conveyed over the surface of the meadow. The earth taken out of this trench is to be employed in banking it, and filling up hollows in the surface of the ground. The size of the main conductor must be proportioned to that of the meadow, and the quantity of water to be conveyed. The next operation is, forming the main drain, at the lower part of the land to be flooded. It is of the same size as the main conductor, and the earth taken out of it is to be employed in banking or filling up hollows. The surface of the meadow, supposing it to be flat, is now to be formed into beds or panes, from 30 to 40 feet in width, extending from the main conductor to the main drain. These beds may be elevated about 12 inches at the centre; they are not curved like the ridges of a ploughed field, but form inclined planes from the centre to each side. At leaving the main conductor they may be 20 inches wide, gradually narrowing to nearly a point at their termination when they reach the surface. If stops of solid earth are left, these may be six inches either way, with their diagonal in the line of the feeder, and such of them as are not required may be afterwards removed. The earth taken out of these feeders is to be employed in making good their own banks, and in levelling inequalities of the surface. Corresponding with the feeders, and alternating with them, are to be formed the series of subordinate drains, communicating with the main drain. They are of the same dimensions as the feeders, with this distinction, that they are widest and deepest where they communicate with the main drain, and become gradually smaller to the upper part of the meadow, where they terminate. The surface of the meadow being formed, the Grass-seeds, where no turf has been reserved, are to be sown. The following admixture of Grasses will be found suitable:—1. Alopecurus pratensis—meadow fox-tail; 2. Phleum pratense—meadow cat's-tail; 3. Agrostis alba—marsh bent-grass; 4. Poa trivialis—rough-stalked meadow-grass; 5. Poa pratensis — smooth-stalked meadow-grass; 6. Festuca loliacea—spiked fescue-grass; 7. Festuca pratensis—meadow fescue. When the old turf has been replaced, the water, it has been said, may be admitted in the first winter; when Grass-seeds have been sown, the water cannot be admitted until the second winter, and sometimes even not until the third. The ground should be depastured with sheep during the first summer, to such a degree as to prevent the plants from putting forth their flowering stems and producing seeds. The next point to be considered is the management of the meadow when completed. At the beginning of October, we are to prepare for admitting the water. To this end the drains and feeders are to be cleaned out, and the banks where injured repaired. The main sluice is then to be withdrawn, when the conductors and feeders will be gradually filled. The next point is to adjust the water in the several feeders. To this end the workman is to observe that each feeder, beginning with the first in order, receives a due quantity of water. If not, he enlarges the mouth so as to allow the proper quantity to enter. He then adjusts the stops in the several feeders, so that the whole surface of the beds shall be covered equally about an inch deep with water. During this and the three following months—namely, November, December, and January, the ground is to be regularly flooded for 15 or 20 days at a time, with intermissions at each time of seven or eight days, during which the ground is to be laid perfectly dry. Further, when severe frost is threatened, the water is in like manner to be withdrawn, so as that it may not freeze upon the surface. During this, the principal periods of flooding, the meadow is to be inspected every three or four days, to see that no interruption from the breaking of banks, accumulation of weeds, or otherwise, is given to the flowing of the water. When the spring months arrive, and the Grasses begin to grow, the periods of flooding are to be shortened. In the month of February the water should never be allowed to flow above six or seven days at a time, and in severe frosts it should be withdrawn, so that no ice may be formed upon the meadow. The same management, shortening to five or six days the periods of flooding, may be continued till the middle of March, by which time the meadow will be ready for receiving any kind of stock. In this manner, an early supply of herbage is obtained, and after the stock has been removed, as by the beginning of May, the flooding may be resumed and continued till near the end of the month, so as to prepare the meadow for hay. But often this spring feeding is not resorted to. The irrigation is continued during the months of March, April, and until the middle of May, when it finally ceases. But during this period, the frequency and length of time of watering are gradually diminished from five or six days in March, to two or three in the latter period of flooding. Caution is required in flooding as the season advances; because, were the finer Grasses to be too long submerged at this period of their growth, they would be injured and destroyed. The actual periods of flooding differ with the state of the season and the nature of the soil. A practical rule adopted by irrigators is, never to continue to flood when a white scum is seen to form on the surface of the water, for this indicates that the putrefactive fermentation has commenced in the turf. By the middle of May, or rarely later, the flooding is to cease, and the land to be laid thoroughly dry. The Grasses will now grow with great luxuriance, and produce an abundant crop of hay. When the hay is removed, the aftermath is depastured, after which the same process of flooding recommences. Sometimes, after the hay is removed, the ground is again flooded; but, in this case, no sheep must be admitted on the flooded land, or, if admitted, they must be such sheep as are to be immediately killed; for this summer-flooding never fails to bring with it the disease of rot in its most destructive form. In place of the meadow being applied to the production of hay, it may be applied to the production of green forage for soiling. This is a more profitable mode of applying the watered meadow than for the production of a crop of hay. Three crops in this case may be taken, the meadow being flooded after each crop is removed.—*Professor Low, on Landed Property.*

Notices to Correspondents.

The letter, *J. C., Kent*, has been received: too late for publication this week.

Acorns as food for Pigs.—*T. D.*—See page 699.

A Leaking Tank.—*Bingo.*—The recommendation to put Oatmeal into such a tank was not ours; we cannot speak of the efficiency of such a plan, and should think it unsuited to your case.

Bacon.—To Readers.—*A.*—How can I prevent the formation of *rustiness* in bacon? Does it arise from improper curing, or improper *keeping?*

Books.—*Broadway.*—The works you want are published by the Society for the Diffusion of Useful Knowledge.

Bouggy Land.—*Atrickaey.*—Lime it at the rate of 100 bushels per acre; in spring you can apply ordinary farm manure.

Carrots.—*Subscriber.*—They can be given to milch cows, with advantage both to the health of the animal and the quantity and quality of the milk. We have given 100 lbs. weight a day to cows, along with the Wurzel.

Farm Accounts.—*J. M. M.*—There are some instructive chapters on this subject in Stephens's "Book of the Farm." The best principle of any system of accounts is of course that of double entry.

Gas Lime.—*Sheiravel.*—Your compost will be a powerful fertiliser. Turn the lime 3 or 4 times, at intervals of 8 or 10 days, before soaking it and the tan with urine. A waggon-load ought to dress an acre.

Guano.—*E. F. A.*—Apply guano and all other manures whose value depends in any measure on soluble ingredients, early in spring—say first week in April—in wet weather.

Price of Turnips, &c.—*Anon.*—Swedes, 1*l.* per ton; Mangold Wurzel, 15*s.* per ton; Carrots, 2*l.* per ton. These are prices which we have known given for large quantities; but of course they vary somewhat.

Sheep.—*J. E.*—We understand the sheep at Whitfield Farm do not receive any chaff as food. They are all fed in the yard under shelter, on Swedes and oil-cake.

Spring Wheat.—*J. M. F.*—It may be sown if the land be drained, on any suitable day through the winter. It is generally sown in February. The Belle Vue Talavera is a good variety.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Dec. 9.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	4s	0	to	4s	4	Best Downs & Half-breds	4s 0 to 4s 6
Best Short Horns	3	10		4	0	Best Long-wools	3 10 4 2
Second quality Beasts	3	6		3	8	Ewes and second quality	3 0 3 6
Calves	3	8		4	6	Pigs	3 4 4 4

Beasts, 4180; Sheep, 30,140; Calves, 90; Pigs, 418.

Our supply of Beasts to-day is very large, with a fair proportion of good quality. The importation of Irish Stock is becoming an important feature in the consignments to our Market; we have to-day about 600 direct from Ireland. Everything, in consequence of the supply, has received a check; yet, the weather being good, the best qualities find purchasers at about the same money; in some instances a few of the best Scots make nearly 4s 4d, and some choice Short Horns 4s 2d. Trade is very heavy [illegible] the middling sorts, and several remain unsold. Sheep [illegible] are rather more plentiful; the best qualities, however, are [illegible] very abundant, and fully support our late quotations. [illegible] as usual so near Christmas, inferior kinds are difficult to [illegible] of. Veal-trade is heavy, but the best qualities are making about the same price as of late. Pork-trade is heavy.

Friday, Dec. 13.

The supply of fresh Beasts up to-day is but moderate, the time of year considered. We have a few lots of very superior quality, but the trade is heavy amongst them. It still being some time to Christmas, the butchers are not very eager to buy. The prices are about the same as on Monday. There are a great many second-rate Beasts, and several left unsold. Veal-trade is considerably worse; it must be a very choice Calf to make 4s 4d. We have rather a large supply of Sheep for the time of year, and trade is very heavy; a great proportion are of middling quality, which are very unsaleable. The best Sheep are worth a trifle less than on Monday. Pork is lower, prices ranging from 3s 4d to 4s.

Beasts, 1396; Sheep, 4480; Calves, 147; Pigs, 270.

d, West Smithfield.

HOPS, Friday, Dec. 13.

We have again more demand for Hops at improved prices.

Farnham & Borough, Hop-Factors.

COVENT GARDEN, Dec. 14.—The supplies of most articles have been tolerably good, and, in consequence of the frosty weather, prices have been considerably on the rise. Trade is somewhat brisker. Among Fruit, Pine-apples continue to be sufficient for the demand; they consist chiefly of Queens and Black Jamaicas. A few Hothouse Grapes have been offered during the week, and foreign sorts are pretty plentiful. The supply of good Dessert Apples is equal to the demand, and Pears of good quality are also abundant. Chesnuts, as well as other nuts, are scarcer, and consequently dearer than they were last week. Oranges are consequently much dearer. Good samples of Seakale and Asparagus are offered; for the latter, however, there is little demand. Likewise slightly on the rise. Among vegetables, White and Purple Broccoli is good. Cauliflowers are good; but they are scarce, and Turnips and Carrots are considerably advanced in price. Leeks are likewise dearer, as are also Parsley and Celery; some specimens of the latter are very fine. A considerable quantity of Dutch Potatoes are in the market; they are said to be good in quality, and are selling at 3d. per lb. French Beans have been offered during the week at from 3s. to 4s. per 100. A few Tomatoes are still to be had; but they are becoming very scarce. Lettuce, Endive, and other salading, are tolerably plentiful, and pretty good for the season of the year. Among Cut Flowers we noticed Cypripedium insigne, Bignonia venusta, Luculia gratissima, Poinsettia pulcherrima, Gnidia pinifolia, Pentas carnea, Camellias, Epacrises, Heaths, Heliotropes, Cinerarias, Amaryllises, Azaleas, Narcissus, Chrysanthemums, Tulips, and Roses.

FRUITS.

Pine Apple, per lb., 2s to 7s	Oranges, per dozen, 1s to 2s
Grapes, Hothouse, p. lb., 2s to 4s	— per 100, 5s to 12s
— Spanish, per lb., 10d to 1s	— bitter, per 100, 12s to 16s
— Portugal, per lb., 1s to 2s	Lemons, per dozen, 1s to 2s
Apples, Dess., per bush., 2s to 3s	— per 100, 6s to 14s
— Kitchen, 2s to 4s	Almonds, per peck, 6s
Pears, Dess., per hf.-sv., 4s to 8s	Sweet Almonds, per lb., 2s 6d to 3s
Quinces, per half-sieve, 2s to 3s	Cob Nuts, per 100 lbs., 180s to 190s
Medlars, per bushel, 3s.	Nuts, Barcelona, 24s
Filberts, per 100 lbs., 140s to 150s	— Brasil, 16s
Chesnuts, per peck, 2s to 3s	— Spanish, 22s
Walnuts, per bushel, 2s to 3s	— Marcelona, 24s
— — shelled, 12s to 20s	— Cob, 16s

VEGETABLES.

Cabbages, per dozen, 6d to 1s 3d	Leeks, per doz., 2s to 3s 6d
— plants, per doz. bnch., 2s to 3s	Garlic, per lb., 6d to 6d
Cauliflowers, per doz., 3s to 10s	Onions, per bunch, 4d to 6d
Broccoli, per bundle, 1s 6d to 2s	— large, per bushel, 2s to 3s 6d
Brussels Sprouts, hf.-sv., 2s to 2s 6d	— Spanish, per doz., 1s 6d to 4s
Sorrel, per hf.-sieve, 1s 6d to 2s	Shallots, per lb., 6d to 8d
Do. — Jersual., p. hf.-sv., 1s to 1s 6d	Capsicums, per 100, 4s to 8s
Potatoes, per ton, 80s to 70s	Radishes, per doz., 4d to 1s
— — sort., 5s 6d to 6s	Lettuce, per score, 6d to 1s 6d
— — bushel, 1s 6d to 2s 6d	Celery, White, per bunch, 1s to 1s 6d
— — Kidney, per bsh., 2s to 3s	— Red, per bunch, 1s to 2s
Turnips, per doz. bch., 2s 6d to 4s	Endive, per score, 1s to 1s 6d
Red Beet, per doz., 1s to 2s	Mushrooms, per pottle, 1s to 2s
Carrots, per doz. bchs., 3s to 4s	Small Salads, per punnet, 2d to 3d
Basil, per bunch, 2d to 3d	Watercress, p. 12 sm. bun. 3d to 6d
Seakale, per punnet, 2s to 3s	Parsley, per doz. bunches, 3s to 4s
Asparagus, per bundle, 2s to 14s.	— Roots, per bundle, 6d
Horse Radish, per bundle, 1s 6d to 2s	Tarragon, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d	Mint, per bunch, 2d to 3d
Spinach, per sieve, 3s to 4s	Marjoram, per bunch, 2d to 3d
Scorzonera, per bunch, 1s to 1s 3d	Chervil, per punnet, 2d to 3d
Salsafy, per bunch, 1s to 1s 3d	Chilis, per 100, 1s to 2s

POTATOES.—SOUTHWARK WATERSIDE, Dec. 9.

The supply during the past week has been unusually limited, in consequence of the prevailing east winds. The best samples went off readily, and towards the close the weather set in very severe, with some appearance of its continuance, which increased the demand for the best samples.

York Reds	80s to 70s	Kent and Essex Whites	50s to 55s
Perth	65 60	— — Kidneys	50 55
Fifeshire	— —	Wisbeach Kidneys	— 60
Early Devons	— 65	— Blues	— —
Late Devons	— —	— Whites	— 55
Cornwall	— 65	Guernsey Blues	— 60
Jersey Blues	— 60	— Whites	— 50
— Whites	— 50	Prince Regents	— 60

MARK-LANE, MONDAY, Dec. 9.

The supply of Wheat from Essex this morning was moderate, that from Kent and Suffolk good, and the whole met a tolerable sale on fully as good terms as this day se'nnight; in Foreign the business transacted was to a very limited extent only. There was less Barley offering than of late; fine malting qualities were taken on rather better terms; grinding and distilling found more inquiry at our quotations. Beans and Grey Peas must be written 1s. lower; White are unaltered in value. The quantity of Oats on sale continues moderate, but although prices are fully supported, the demand is not active.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk White	40	50	Red	42	46
—— Norfolk, Lincolnshire, and Yorkshire	—	—	White	—	—
Barley, Malting and distilling 32s to 33s Chevalier	34	34	Grind.	27	29
Oats, Lincolnshire and Yorkshire	—	—	Fulands	20	23
—— Northumberland and Scotch	—	—	Feed	20	23
—— Irish	—	—	Feed	18	22
Malt, pale, chip	—	—		54	60
—— Hartford and Essex	—	—		52	55
Rye	—	—		29	32
Beans, Mazagan, old and new	29	to 35	Tick	30	36
—— Pigeon, Heligoland	33	to 41	Winds	—	—
Peas, White	34	to 37	Maple	33	—
			Harrow	31	37
			Longpod	—	—
			Grey	30	33

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Peas
English	3070 Sks.	2770	3013	2443	980	—	1205	1765
Irish	— Brls.	—	—	21	14567	—	—	—
Foreign	— „	1067 „	1103	11060	10446	—	680	—

FRIDAY, Dec. 13.

THE arrivals of Corn during the week have been very moderate, and the frost having closed the majority of the canals, and threatened to stop the navigation of the River, business generally has been very limited; we observe no alteration in the value of Wheat, but prices both for English and Foreign are fully maintained. Great difficulty is experienced in the disposal of the Barley left unsold from last day, but its value cannot be written lower. Beans and Grey Peas are unaltered, White continue inquired after. The quantity of Oats on sale is small, and meet a slightly improved demand about late quotations.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	3070	1060	10	4140 Sks
Irish	—	—	—	—
Foreign	—	2040	2700	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 2 per Quarter.	40s 6d	24s 7d	21s 8d	37s 3d	36s 9d	35s 1d
— 9 . . .	42 3	26 1	21 6	34 6	37 11	34 7
— 16 . . .	42 6	25 9	21 9	34 2	36 6	35 7
— 23 . . .	42 10	25 2	21 3	30 9	36 6	36 2
— 30 . . .	44 4	24 1	21 3	32 2	36 0	35 11
Dec. 6 . . .	43 0	24 9	21 10	31 2	37 5	36 4
6 weeks' Aggreg. Aver.	42 10	25 5	21 7	33 4	37 10	35 7
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Advertisements and Communications are to be addressed to the Editor, ... December 14, 1846.

THE GARDENERS' CHRONICLE
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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51.—1844.] SATURDAY, DECEMBER 21. [PRICE 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—A GENERAL MEETING of the Subscribers to this Charity will be held at the LONDON COFFEE HOUSE, Ludgate-hill, on the 23d Jan. next, for the purpose of receiving the Accounts of the Institution for the past year, and Electing Officers for the ensuing year; after which an ELECTION will take place from among the following persons, whose Testimonials, &c., have been examined and approved of by the Committee, viz.:—

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No person will be allowed to vote whose Subscription for 1844 is unpaid on the day of Election.

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J. G. WAITE, WHOLESALE SEEDSMAN, 1 & 4, Eyre-street Hill, Hatton Garden, London, returns his best thanks for the very liberal support he has hitherto received, and begs to call the attention of his friends and the public in general to the following reduced scale of prices of a small portion of his very extensive stock:

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Waite's Queen of Dwarf Peas . . . per quart.	0	7	6
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„ White Cape . . . . . „	28	0	0
Cauliflower, Early . . . . . „	28	0	0
„ Late . . . . . „	24	0	0
Cabbage, Hay's superfine Early Dwarf . . . „	6	12	0
„ Early York . . . . . „	5	12	0
„ Large ditto . . . . . „	5	12	0
„ East Ham . . . . . „	6	0	0
„ Sugarloaf . . . . . „	7	0	0
„ Imported Red Dutch . . . . . „	10	0	0
Cale, fine green curled . . . . . „	5	0	0
„ large Scotch . . . . . „	4	0	0
Celery, Red Giant . . . . . „	5	12	0
„ White ditto . . . . . „	5	12	0
„ Soup . . . . . „	4	0	0
Lettuce, White Cos . . . . . „	28	0	0
„ Drumhead Cabbage . . . . . „	28	0	0
„ Bath Cos ditto . . . . . „	23	0	0
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„ scarlet . . . . . „	11	4	0
„ new white . . . . . „	11	4	0
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„ Minor . . . . . „	10	0	0
Virginian Stock, red . . . . . „	8	8	0
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„ discoidalis . . . . . per gal.	1	1	0
Stock, scarlet, 10 week Stock . . . per cwt.	20	0	0
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ADDRESS TO THE PLANTERS OF ENGLAND.

TRUE HIGHLAND PINE-TREE.

MY LORDS, LADIES, AND GENTLEMEN,—The time has come when all those who have waste lands at their disposal should plant them. Of this I am fully persuaded, and I beg you will allow me to explain on what grounds this opinion is founded. England, generally, is a thickly-wooded country yet, strange though it may appear, it has not been planted with any view to meet its most urgent wants. If the poor farmer require an outhouse built for his cattle, he cannot have it because there is no deal-wood in the neighbourhood: he builds it therefore of whins, or of any other rubbish he can lay hold of. Instead of having plenty of fir-wood on all hands to fence young hedges, planted like other things on the common surface of the ground, military-like fortifications have been raised to divide fields, occupying as much good land as is contained in three of the largest counties of Britain: it is on those banks ineffectual attempts have been made to grow hedges. After the 1st of March, when the Royal Agricultural Society's Prize on fences shall have been awarded, a great proportion of the hedges throughout England will be reconstructed by planting them on the plain surface; and the question will then arise, "Where is the wood to protect them in their young state to come from?" Turning to the railways which are now being formed in every county in England, another and greater question arises as to the supply of wood which will be required in *their* construction. Go up, I am told, to the Lebanons of our island—those immense forests in the north of Scotland—and there hew down as many trees as will be required. From those, however, I find we must expect but a limited supply. Like the famous Mount of old, they are already overrun with the axe, and a continuance of the present rate of demand for a few years more will reduce the trees upon them to a mere remnant. It is not the original numbers required for sleepers which will effect this change, but it is the incessant demand, *ad infinitum*, for timber to replace that which is already laid down, or may be for the future laid down in additional lines. Look at it how we may, the state of our country at the present crisis prov s that our immense and almost measureless tracts of what is generally called waste land were not created to be a scene merely of unproductive solitude. The rains with which they are refreshed, and the fostering sunshine that rests upon them, might have taught us that Providence had designed them to contribute in some way or other to the wants of man; and though Nature has been unable to lead us to comprehend her lesson, so simply brought before us, necessity has at length compelled us to look to those districts where only a sufficient quantity of timber can be raised to meet our increasing wants. Now, then, is the time to plant: wherever there is a waste piece of ground, moor, or mountain, let it be forthwith invested with trees, for every year, for many years to come, will unquestionably bring with it an additional demand for timber. Thus far on the necessity of planting. Allow me next to bring under notice the sort of tree I would recommend to be planted, which is the chief aim of this Address. That tree is the TRUE HIGHLAND PINE, for introducing which, I had the honour, along with my brother, of receiving the Highland Society's prize. It is admirably fitted, in every respect, to take possession of all the uplands throughout England. It will grow freely on all soils suitable for the common Pine; its wood is very durable; and for railway sleepers it is unrivalled. Brindley, the celebrated engineer, considered its durability equal to that of the Oak; and Dr. Smith states, in the *Transactions of the Highland Society of Scotland*, that he has seen some of it taken down after it had been 300 years in the roof of an old castle, as fresh and full of resin, as newly imported timber from Memel, and that it was actually worked up into new furniture. "Such," says Loudon, "is the durability of this wood, that while the bog timber of the Birch is often found reduced to a pulp, and the Oak cracks into splinters as it dries, the heart of this Pine remains fresh, embalmed in its own turpentine."

MY LORDS, LADIES, AND GENTLEMEN,—Allow me to add a word or two on the merits of this tree as a landscape ornament. In this respect it rivals, if not excels, the Cedar of Lebanon. It has, at any rate, a much better ramification than the Cedar; for, as Sir Walter Scott observes, it assumes in a great measure the bold and contorted figure of the Oak. In illustrating the feats of Norfolk (and the remark is applicable to all England), it frequently occurred to me that advantage had not been taken of prominent situations by investing them with grand evergreen trees; for so soon as November comes, our parks lose almost all that weight of grandeur for which they are so celebrated in summer-time. Their solemnity ceases with the fall of the leaf; but were they ornamented with this Pine, its broad umbrageous canopy remaining green during winter, the change consequent upon the approach of winter would be much less observed, and our country residences would at all times be surrounded with the dignified accompaniments so consistent with their character.

The importance of this subject will, I doubt not, be accepted as an apology for my thus venturing to express my opinions so plainly on matters of English practice. My suggestion as to the improvement of park and pleasure-ground scenery by introducing the Pine in question is offered with the greatest deference, being fully persuaded that in matters of this description England has been always distinguished for its refined taste. I am ready to dispose of the Highland Pines at the following prices:—

Single Plants, strong and well rooted . . . 6d. each.
Strong Plants, 18 to 20 inches high . . . 5s. per 100.
Strong Plants, 15 to 18 inches . . . . 30s. p. 1000.
Smaller-sized Plants for exposed situations 10s. to 20s. p. 1000.

I have the honour to be, My Lords, Ladies, and Gentlemen, Your most humble Servant,
JAMES GRIGOR, NURSERYMAN, Norwich.

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F. FRASER, NURSERY and SEEDSMAN, Lea Bridge-road, Essex, in offering his friends and the public the above Pea begs to assure them it has no rival, its quality being so far superior to Knight's and all other Marrows as those surpass the commoner Peas. Its height is about 5 feet, a prodigious bearer, and continues in season much longer than the usual kinds. The stock on hand is very limited. Price 7s. 6d. per quart. A remittance expected to accompany orders from unknown correspondents.

WILLIAM MAY [illegible] very moderate scale [illegible] may be had.

200 Hardy Shrubs and Climbers, in 100 sorts, for 21s.;
200 do. do., in 100 sorts, for 42s.;
200 sorts showy Hardy [illegible], 21s.;
200 do. do., do., 42s.;
100 Roses in 50 good sorts, [illegible] sorts, 42s.; 50 do. do. [illegible] sorts, 30s.
100 select Double Hollyhocks, [illegible] named, for shows, 21s.;
100 Gooseberries, [illegible] do., in 100 fine [illegible], 21s.;
Seeds of Hollyhocks, [illegible] 2s. 6d.; 500 seeds, 5s. each.
Seeds of Pansies, from first named sorts of last season's growth, 1s. 6d. and 2s. 6d. each [1000s post free].
Forest and Fruit Trees, Greenhouse and Stove Plants, [illegible] Flowers, Garden Flower Seeds, &c., comprising every department of the leading novelties in present cultivation.

Hope Nursery, Bedale, Dec. 1844.

HUNT'S IMPROVED HYACINTH GLASS SUPPORT, from 1s. 6d. each. The largest Assortment of Patent and other Garden-pots and Stands, from 6d. to 150s. per dozen, in Wedgewood's and other warranted Drawing-rooms, &c.—29, Queen's-row, Pimlico.

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The growers obtain them so early, that they are enabled to procure an excellent second crop on the same land.

It is a most valuable sort, and should be grown in every garden where early vegetables are required.

Sold in Hampers, containing 7 and 14 gallons, at 5s. and 9s. each, package and carriage free to London or Bristol, which will be forwarded on receiving a Post-office order, on application to WILLIAM E. RENDLE, Union-road Nursery, Plymouth, December 21, 1844.

HERTFORD NURSERIES.

E. P. FRANCIS having received various Testimonials from Gentlemen, &c., as to the excellence and superiority of SNOW'S WINTER WHITE BROCOLI, advertised in the *Chronicle* last season, begs now to inform the Nobility, Gentry, and Public, that Supplies obtained of the Hertford Nurseries, Messrs. Notts, 152, Fenchurch-street, Messrs. Wrench, London-bridge, and Messrs. Hannay, Marylebone, House-street, at 2s. 6d. per oz.

E. P. F. begs further to recommend to those persons, who have not yet obtained it, SNOW'S HARDY MATCHLESS GREEN COS LETTUCE, which has been proved by several Gentlemen to be superior in flavour and sweetness to any other Lettuce known, very crisp, very hardy, requires no tying up, and is fit for use three weeks earlier than the common Green Cos; in sealed Packets, 1s. 6d. each.

E. P. F. has also received from *Mr. Snow* a few Packets of his HORTICULTURAL PRIZE CUCUMBER, each Packet containing 7 seeds, 2s. 6d. per Packet; also a small quantity of his very fine CHINESE PRIMROSE, of the white and purple kinds, and all saved from beautiful fringed varieties, in Packets, 2s. each.—Dec. 7, 1844.

WHITNEY'S PATENT CLOTH for COVERING GREEN-HOUSES, CUCUMBER, or MELON PITS, &c. This Cloth is strongly recommended for the purpose of applying Whitney's Composition upon, and is much more durable than any other material; when coated it is beautifully white and transparent. The perfect success of Whitney's Composition for all Horticultural purposes cannot be more fully established than by stating, that on the 1st of April last, a Black Hamburgh Vine was set in a border, the stem introduced into a house covered with Calico, and brushed with Composition. On the 1st of Sept. a bunch of Grapes was cut weighing 10½ ounces, the fruit was finely coloured, and the flavour pronounced to be excellent. A sample was sent up to the Editor of the *Gardeners' Chronicle* for his inspection. The tree grew very luxuriantly, the foliage very fine, and the wood ripened exceedingly well. As a winter protection it is infinitely warmer than glass.

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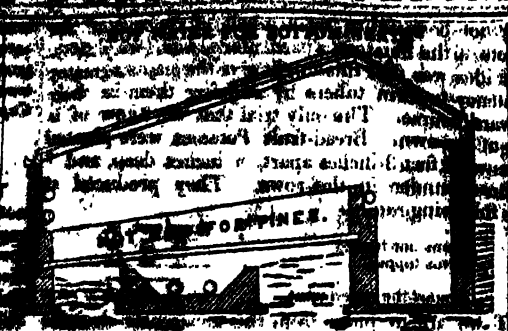
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Garden Edging — Flower Boxes, &c.

EDWARD BECK will be happy to [illegible] personally or by post.

TANNER'S VITREOUS COATED [illegible] TUTE for GLASS for HORTICULTURAL and other PURPOSES. The above recommends itself to the Horticultural Florist and Horticulturists, as producing effects superior to Glass at half the expense. The support the Proprietor has received from many highly respectable Florists encourages him to hope that his labours have not been misapplied in bringing before the public an article so generally required. Sizes of glass, 7-8ths of a yard wide, thin, 2s. 6d. per yard; stout, 3s.; 1 yard wide, 2s. 6d. Price of Fluid (for renewing the cloth after lengthened service), 4s. 6d. and 9s. 6d. per bottle. Manufactured only by N. W. TANNER, Chemist, Exeter, and Sold by Messrs. Butler and Muckley, Covent-garden, London; Mr. Cunningham, Paradise-street, Liverpool; Messrs. Lucombe and Pince, Exeter Nursery.

LAND TO LET.—Most desirable, and important opening to those now engaged in the Nursery Garden Business, or who have a knowledge of it. FROM TWENTY to NINE or more ACRES of LAND, where the soils are peculiarly suited for the purpose, and in a most eligible situation, close to the suburbs of Ipswich, may be hired at a moderate Rent, there being now no Nursery Grounds anywhere near Ipswich, except on a very limited scale. All the Land may be had at once, or it may be taken by degrees. The character and qualification of any proposed tenant would be strictly examined. If requested (probably) the assistance of some capital might be given; and also that of an industrious and prudent Partner, with Capital, as well as other advantages.—Apply to Mr. E. HARVEY, Tower Church Yard, Ipswich.



WEEKS AND DAY, ARCHITECTS, &c., Clock Place, Eim's Road, Chelsea, HORTICULTURAL [illegible] Hot-water Apparatus Manufacturers, invite the attention of Horticulturists to their improved Plan of Hot-water Heat, now becoming so universally adopted.

From the extensive Practice they have been honoured with for 20 years in designing and building CONSERVATORIES, GREENHOUSES, HOTHOUSES, PITS, &c. &c., and erecting their HOT WATER APPARATUS to every description of Buildings to which heat is applicable, J. WEEKS AND DAY have the greatest confidence in recommending their BOILERS as the most efficient of any yet invented, their largest being capable of heating a range of Forcing Houses 300 feet in length, with a comparatively small quantity of fuel, and only requiring attention once in 10 hours. To be seen in use at most of the London Nurseries, also at their Manufactory; and a variety of Horticultural Erections, Models, Plans, &c. &c.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

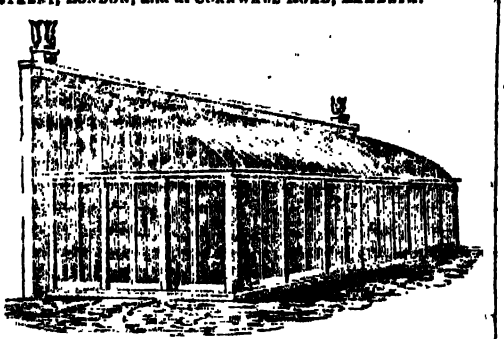
D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT OR ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle; that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c. &c., and every description of Implements for AGRICULTURAL and HORTICULTURAL PURPOSES.

[illegible] Stoves at their Manufactory, 9, Winsley-street, Oxford-street, where a large assortment of the above may be seen.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully call the attention of Horticulturists to their much approved method of applying the Tank system to Hothouses, Conservatories, &c., by which atmospheric heat is given at bottom, and is diffused to any required degree without the aid of pipes or flues. S. & Co. have also to state, that the system of numerous friends have now making their Boilers of iron as well as Copper, by which the cost is reduced. These Boilers, which are now in use, however, scarcely require description, hence those who have not seen them, upon inspection, prospectuses will be forwarded as well as reference of the highest authority, or they may be seen in front of the Nobility's seats and principal Nurseries throughout the kingdom.

S. & Co. beg to inform the Trade that at their Manufactory in New York, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c. of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field, and Garden Fences, Wire Work, &c. &c.

HEATING APPARATUS.—[illegible] to announce that, in addition to the many [illegible] for which Galvanized Iron is peculiarly [illegible] Tanks and Gutter for [illegible] Bottom-heat, Conservatories, &c. &c., P. has also to state that, having secured the [illegible] of parties of the greatest skill and [illegible] Plans and Estimates for Heating and Ventilating [illegible] Buildings, Public Edifices, [illegible] Factories, &c., accompanied by references to works. P. does not profess [illegible] any one particular form of Boiler as the best, to the exclusion of [illegible] but considers that [illegible] requires peculiar [illegible] and arrangements, and engages to work [illegible] Apparatus [illegible] Galvanized Iron, Sheet Copper, Cast Iron, Wrought Iron, &c. &c. [illegible] Manufactory, Bridge Wharf, Battersea, [illegible] to the Trade.

GUTTA PERCHA PERUVIA M.S. COLLEGIAN) [illegible] BY THEIR GREAT LONDON AGENTS, GIBBS, BRIGHT, & CO., LIVERPOOL AND BRISTOL, 47, LIME-STREET, LONDON, &c. &c.

[illegible] ENGLAND INDEPENDENT OF THE WORLD FOR COTTON.

THE Attention of the Agricultural Interest, at this momentous crisis, is directed to the great importance of LIQUID MANURE, and the best [illegible] which it may be appropriated, by the most [illegible] for the purpose, either portable or fixed. Garden Engine, and Barge Pumps; also those for Distillers, Brewers, Soap-boilers, and Tanners, for hot and cold [illegible] Barrows kept for hire, for Excavations and Wells. Portable Steam Engines of any Power, for Horticulture, and every [illegible]

The Trade supplied on advantageous terms by BENJAMIN FOWLER, Engineer, &c. &c., Derby Road, Bow Common, London.

IMPROVED ROOFING FELT.

McKIBBIE'S PATENT ROOFING [illegible] is particularly applicable as a Substitute for Slates, Tiles, Thatch, and other articles used for Roofing, from its Economy, Durability, and Lightness. It is quite impervious to wet and damp, resists the heat of the sun, and is a [illegible] conductor of heat or cold. Besides the economy in repairs, the timber where it is used may be so [illegible] as to save its whole expense. It requires no other coating, and by attention to printed directions may be applied by a common labourer. It is free from breakage and contraction, [illegible] and requires neither painting nor coating. It is now in very general use for Roofing Houses, Verandahs, Sheds, Workshops, Stables, Railway Stations, Icehouses, &c. &c., and for protecting Plants, covering Garden Frames, Corn, and Hay Ricks, the [illegible] sides of Sheep-folds; and to Engineers it [illegible] a cheap, warm, durable, and portable Roof [illegible]

This [illegible] Roofing is much more durable than the common Felt, made in [illegible] for the same purpose, like it or other [illegible] and being [illegible] it [illegible] cannot percolate through the nail holes. [illegible]

Sold in Sheets, 28 inches [illegible] 2s. 6d. per square of 100 [illegible] new [illegible] Apply to H. C. BOWRING, [illegible] No. 12, East India Chambers, Leadenhall-street, London.

CHEAP AND DURABLE ROOFING.



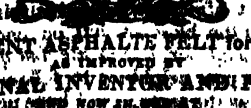
BY HER [illegible] ROYAL LETTERS PATENT

TO GARDENERS, NURSERYMEN, AND OTHERS.

F. M'NEILL & CO., of Lamb's Buildings, Bunhill-row, London, Manufacturers, and only Patentees of IMPROVED PATENT ASPHALTED FELT, for Roofing Houses, Sheds, Verandahs, &c., and for Protecting Plants, and Covering Garden Frames, beg to call the attention of Gardeners and others to their superior article, which has been exhibited at the Great Agricultural Shows of England, Scotland, and Ireland, and OBTAINED the PRIZE for being the best and cheapest article for roofing, &c. It has been tested in the gardens of several noblemen and gentlemen in the neighbourhood of London, and in different parts of the country, to whom reference can be made. The Felt is impervious to rain, snow, and frost, and a non-conductor of heat and cold. Its advantages are Lightness, Warmth, Durability, and Economy.—Price ONLY ONE PENNY PER SQUARE FOOT.

Samples, with directions for laying on, and testimonials as to its merits, sent free to any part of the country.—Patent Felt Works, Lamb's Building, Bunhill-row, London.

THE BEST AND MOST DURABLE ROOFING, FOR BUILDING AND GARDEN PURPOSES.



By Royal Letters Patent.

THE PATENT ASPHALTE FELT for ROOFING, as [illegible] PROVED BY

THE ORIGINAL INVENTOR AND PATENTEE,

THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT CHISWICK.

To be had only of [illegible] to

THOS. JOHN CROGGON, 2, INGRAM-COURT, FENCHURCH-STREET, LONDON.

The above Material has been used and approved of by the Nobility, Gentry, and Agriculturists generally, as a ROOFING and COVERING to SIDES of FARM BUILDINGS.

Its advantages are—The Felt is perfectly impervious to rain, snow, and frost, and being a non-conductor, it has been proved an efficient PROTECTIVE MATERIAL TO PLANTS.

The price of the Felt is ONLY ONE PENNY PER SQUARE FOOT, being much less than half the expense of Slates, Tiles, &c., and from its LIGHTNESS, WARMTH, and CHEAPNESS is particularly well suited for Hothouses, &c. A discount allowed to the Trade. THOS. JOHN CROGGON, 2, Ingram-court, Fenchurch-street, London.

Patent Asphalte Felt Works, Dec. 21, 1844.

THE FILBY RASPBERRY.—On or about July 7th, 1843, Mr Henry Youell came to the garden [illegible] requested me to give him some fruit of the above [illegible] send to Dr Lindley. Mr. H. Youell subsequently [illegible] over the Garden, and gathered several [illegible] dozen would be sufficient. He then consulted [illegible] best way of packing them, and I recommended [illegible] them in cotton wadding or wool [illegible] that he thought it would be the best suitable, [illegible]

Signed, Wheeler Gaze, [illegible]
Filby, Dec. 10, 1844. Filby, near Yarmouth, Norfolk.

LANDSCAPE GARDENING AND [illegible]

MR. GLENDINNING, after [illegible] Metropolis, has had the honour to be [illegible] number of Noblemen and Gentlemen [illegible] their Parks and Gardens, and [illegible] of Horticultural Buildings [illegible] effectual manner. He has many years' practical knowledge in these important subjects, and Noblemen and Gentlemen desirous of consulting him, are respectfully requested to address him at Chiswick Nursery, near Kensington.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 7, 1844.

MEETING FOR [illegible]
Parent, Bee a Scientist [illegible]

THE next point in Dutch culture, which the experiments before us were intended to elucidate, is the effect upon the crop of removing the blossoms As the reasons for this operation have been already given at p. 427 of the present Volume, we need not repeat them here. The results are all that we need occupy ourselves with.

Our own opinion was in favour of the operation; and upon the whole, we think that the new evidence before us confirms the correctness of our views. "Falcon" says, "I have no doubt, from experiment, that taking off blossoms, *at a proper time*, is an advantage It should, however, be so done, as not to give the plants an opportunity of throwing out fresh flowers, which will exhaust the tubers; the best time is just before the formation of seed vessels. If the flowers are taken off too soon, the plants may exert themselves to produce them before *the tubers are strong enough to consume the extra nourishment provided by the destruction of the blossoms.*" This is sound good sense, and [illegible] it may account for some statements adverse to the inferences drawn from [illegible] "Falcon."

A gentleman [illegible] the following result

[illegible]

This experiment, [illegible] at first sight seem to show that taking off the blossoms is actually prejudicial, for the greatest weight was obtained from Nos 1 and 5, in which the flowers were left on; but it is to be remembered that they were *outside rows*, and therefore must be left out of consideration. Of the inside rows, which alone can be justly compared with each other, the greatest [illegible] 2, in which the flowers were removed. That this conclusion is nullified by [illegible] which the crop was the same as when the flowers were left on; but we cannot receive such an instance, especially in an experiment conducted on so small a scale, as conclusive against the practice. More so is a statement by "F. H. S," who says, "I caused all my Potatoes to have the flowers removed—reserving, however, one row as a means of comparison, which was allowed to bloom. On lately taking up the whole, I had this single row, with one on either side of it, weighed and measured, and we were unable to perceive any difference, either in point of weight or quality, in the three rows thus compared. They were all of the same description, and planted at the same time."

In opposition to this is the following statement, by "J. W.," a correspondent near Romsey:—

"Having followed your recommendation, of taking off the flowers of the Potato when in blossom, I wish to add my testimony to the advantage derived from doing so, by assuring you that the crop of Potatoes far exceeded that of former years, both in size and quantity. I had the blossoms left on one row, and *the crop was very inferior, both in size and quantity.* I prevailed upon a poor neighbour to follow the plan, and the result was the same; and I hope next year to induce others to try it."

This is all the information we have received upon this point of Potato cultivation. It is much to be regretted that the experiments were not made upon a larger scale, and the results, in some instances, reported with more exactness. At present we see no reason to alter our expressed opinion, that pinching off the Potato flower is a considerable advantage. May we hope that some intelligent cultivators will put the question to rest another year, by trying the experiment comparatively on a larger scale, and furnishing us with the actual weights they may obtain?

'Connected with this subject is another that we pointed out as worth inquiry, namely: whether it may not be useful to top or [illegible] shoots of the Potato at a particular [illegible] The idea was that this might give the plant [illegible] sufficiency to form tubers by stopping them in [illegible] upward course The only trial that we know of is [illegible] own Bread-fruit Potatoes were [illegible] in rows 2 feet 3 inches apart, 6 inches deep, and [illegible] inches under in the rows. They produced as the following ratios:—

Stems not topped	12
Stems topped	17

[illegible] the experiment

If we are to judge from this apparently decisive result, the experiment is not worth repeating. But the following trial goes the other way.

Bread-fruit Potatoes were planted singly 2 feet by 2 inches apart each way Their produce was on this rate:—

	tons.	cwt	lb.
Stems topped	5	6	56
Stems not topped	4	1	0
In favour of the experiment	1	5	56

Now, from this we infer that when the Potato plant grows extremely vigorously, topping is a decided advantage, and the reverse when it grows slowly This year the Potatoes, on the land where the experiment was tried, suffered much from drought; were, by it, checked more than enough, and topping became prejudicial by adding to the mischief But where, from having a great deal of room to grow, the effect of the drought was hardly felt, and the haulm became very strong, topping produced the result that was looked for in the remarks made at p 293 If, then, in a dry year like this, it proved advantageous, under any circumstances, how much more may be expected from it in our ordinary rainy summers!

We therefore submit that the question is not determined adversely to our anticipations, but that the probability of Potato topping being a good system is so much increased as to render it worthy of more extended inquiry, whenever, and from whatever cause, the Potato haulm is very rank

By the kindness of a friend we have been supplied with information relative to the Heaviest Gooseberry of 1843 It weighed 25 pennyweights, was the "Roaring Lion," and was grown by Mr. Fardon, of Woodstock Therefore, our Nottingham friend, Mr T. Gibson, still retains the "championship" of Gooseberry growing

NEW METHOD OF GROWING THE MUSHROOM (*Agaricus campestris*).

PASSING over the various modes of forming or making the beds, which I consider to be of minor importance, I proceed to direct attention to the failures which afterward take place, and which so frequently disappoint previous expectations. The principal cause of these failures I attribute to the very imperfect methods of supplying water to the beds which are in action.

The principal requisites for the successful culture of the Mushroom are heat, light, air, and a damp atmosphere In the first place, with me, the dung is collected fresh from the stables, particularly from horses that are fed upon dry food, such as corn and hay. It is thrown into a shed to dry, a little before it is made into beds, my boxes are trellised at the bottom, which allows the heated air to penetrate through the mass of dung easily, a little hay or rough litter is spread over the bottom of the box, in order to prevent the dung from passing through the trellis work, and every two or three inches of dung that is added is beaten hard with a wooden mallet, until the layers reach within 1½ inch of the top of the box. As soon as the heat of the dung falls to a proper temperature, I insert large pieces of spawn into the bed at the distance of about eight inches square. I rarely make use of spawn less than 12 months old, and the less that it is broken I find that it produces the better crops.

In about a week or 10 days afterwards, I finish off the beds with green turf 1½ inch in thickness, making the beds in my boxes in all about 9 inches in depth. I beat down the turf very firmly with the back of a spade in finishing; afterwards I have no farther trouble, except in paying attention to the fire, and in admitting fresh air as it may be required. The house is heated by open tanks, which run through the centre of it, and which return again into the boiler, giving out a sufficient quantity of moisture for the necessary development and growth of the Mushroom. During night the Grassy turf becomes copiously beaded with moisture, and should the following day prove fine, I never omit giving admission of fresh air by the door-way. The temperature of the house ranges from 60° to 65° during the day, and at night it is frequently allowed to fall as low as [illegible]

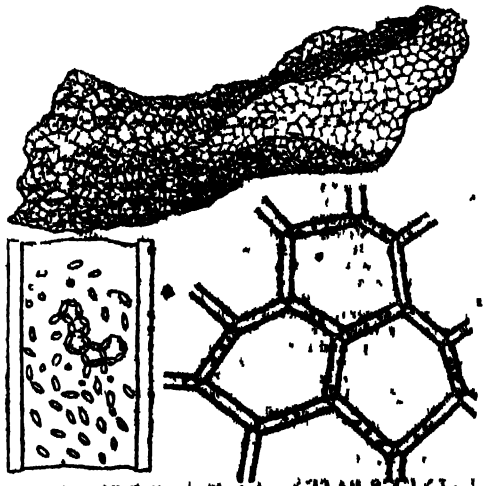
The great advantage of growing the Mushroom upon fresh Grassy turf is obvious to any one accustomed to its cultivation. I have been in the habit of growing it, and with great success, upon coal refuse for the last two years, and at present I have two boxes at work, one covered with coal-dust, the other with turf; the produce of these shows the relative advantages of the two methods, for although those from the coal-dust are large and of good flavour, they are decidedly inferior in both respects to those produced by the Grass-covered beds; indeed, such is the superiority of the latter, that if the Mushrooms [illegible] both beds were gathered and mixed indiscriminately, any one would, without difficulty, select those grown upon the turf from those raised on the beds [illegible] the small coal.—*John Hamilton, Gardener to Capt. Mitford.*

[illegible] OF PLANTS.—No. VIII.

[illegible] which form the subject of the present [illegible] with the fruit moulds (Mucor) in having the [illegible] organs contained within a vesicle, either [illegible] the joints of the stem or springing [illegible] of it. This vesicle, however, differs materially in being usually composed of a number of minute [illegible] which [illegible] to a [illegible] Above all, in the curious fact that a new individual is produced within it immersed in gelatine, which, when its envelope bursts, increases gradually till it attains the [illegible] of the parent plant. This is a mode of fructification analogous to that of the curious fresh-water Alga called Hydrodictyon, which resembles a netted purse, at first closed, but at length open at either end; the tubes, of which the meshes are composed, at first contain a mass of granules, which, in process of time, are, by some mysterious law, disposed in pentagons and become grafted to each other by their extremities, and then increasing gradually burst the general envelope, each joint of the original net thus giving rise to a new one.



Antennaria Robillardi.



1 Portion of full grown plant.
2 Portion of a joint in which the [illegible] to dispose themselves in pentagons, the [illegible] of the new plant.

But not only is the plant rapidly increased by this ready formed race of new individuals, but every portion of the thread easily vegetates, and even the little cells of which the wall of the fructifying cyst is composed are themselves also viviparous, and hence these parasites overrun with their black soot-like, or woolly masses, the leaves and shoots of such trees and shrubs as are subject to their attacks. In some species the threads form little more than a black velvety down, covering principally the young shoots, disfiguring and very materially injuring them; in others they produce a cloth-like felt, completely investing the whole plant, and in one case the threads are much elongated, and anastomose so as to form a black spongy mass. They exist in various parts of the world. In Scotland young Pines are very subject to be attacked by Antennaria pinophila. In Perthshire especially they have been observed to be much injured by it. In the South of Europe the arboreal Heaths and Cistuses are frequently covered in consequence with a dense black coat. One species, which is figured above, runs over the fronds of Ferns in Juan Fernandez; Mr. Gardner gathered a species investing trees in Brazil, and in the Antarctic Expedition Dr. Hooker observed one very general, on the species of Dracophyllum, especially D. *latifolium*, and the same species apparently has been gathered in the Swan River district of Australia, and in South America. All alike prove injurious, by clogging up the stomates and veiling the young shoots and leaves from the influence of light, which is so essential to the health of vegetables. In a specimen from Perthshire, sent by a gentleman of the name of Drummond to Sir W. J. Hooker, in 1840, and submitted to me, I find other parasites intermixed, but all of nearly the same colour and producing the same injury.

The dark olive-green coat, which is so common upon Orange-trees in Madeira, and which may be observed also on them and other plants in our conservatories, and on various trees, especially Plum and Lime, in the open air, must not be confounded with the Antennariæ, being of a very different construction, however similar in appearance. Of this we shall have to speak when we come to the Mucedines. The productions now before us do not, it would seem, like them, spring from any glutinous deposit on the leaves or stems, as is the case with the mould of Plum-leaves. At least, nothing

of this kind has been observed at present. Those who have an opportunity of observing the parasite on young Pines, from its first appearance, would do a service to science by recording their observations, without which it is impossible to suggest any remedy.

One or two allied genera occur in tropical countries, which have precisely the same habit, but they are not of sufficient importance to demand our attention here.—*M. J. B.*

BREWING.

Having observed several inquiries respecting brewing, the answers to which appear to me to be very far of the mark, and thinking that a mode which I have practised without a single failure for many years, and all through the summer, even in the hottest weather, may be usefully made known to those who are beginning, I am induced to send it; premising that the process is well known in Berkshire and no doubt in many other counties; and that, although I am well acquainted with the practice occasionally of the general method of brewing by cooling and working with yeast, using what I do not, I use the thermometer and saccharometer,—in the mode I am now about to recommend, I dispense with both those instruments, with the coolers, and with the working tubs, and the beer is made and casked all in one day; in short, this mode is commonly called "brewing red hot." But first, let me tell the "Farmer's Daughter," and all others, that two things are indispensable to the process; and the first is, that the copper, mash-tub, under-back, and casks, should all be as clean as a milk-pail or a wine decanter; and secondly, that it is useless to attempt brewing in any way, if the cellar is not of a tolerably even temperature, say from 45° to 60°; if it rises above the latter in summer, it is of no use to brew, for the beer will not keep.

I will suppose, then, that the brewer has three 18 gallon casks (for I am going upon a very small scale); send one to the best public brewer who may live conveniently near, to be filled with good clear beer of moderate strength; this will cost from 15*s.* to 18*s.* Get from a first-rate maltster, 3 bushels of best pale malt, ready ground, and 3 lbs. of the best Farnham Hops (and here I may say that, according to taste, the Hops for each bushel of malt may vary from half a pound to two pounds). Boil the water (soft, if you have it clean, but if not, rain water) and put it into the mash-tub; wait ten minutes, and put in the malt; mash it well in the usual way, cover it up, and let it remain four hours; before you draw it off, have in some vessel near, a copper-full or two of water, briskly boiling; draw off the first wort, and put it into the copper with the Hops, and set it boiling; then take a clean watering-pot, dip out the hot water that is handy, and water the grains in the mash-tub, keeping the mash-tub tap running till you have sufficient to fill up the copper; this draws the grains as effectually as three mashes, if well done, and it should be very gradually, and take half an hour at least; the copper must then be watched till it beats pure, as the brewers call it; half an hour and a half; rake out the fire, draw from the cask of beer one-third, and put it into one of the other barrels, and another third into the second—you need not be very nice about the exact quantity; thus, each cask will be one-third full. Then, I need hardly say, very carefully put the hot liquor, Hops and all, stirring it up, that the Hops may be equally divided, into the casks, and your brewing is done. You will, however, have kept back enough to fill the casks, as the liquor sinks in them from evaporation, and about two gallons in a large pitcher, to fill up for three weeks or a month, because the fermentation will be more like that of wine, than beer in the usual way, and is sometimes so slight, as to be hardly perceptible: you may tap it at the end of a month. When the first cask is empty, clean it well out; draw off three gallons of the second cask, and brew another bushel of malt, as before; and so on brewing a bushel at a time.

Now, the principle of this process is, that the old beer supplies the place of the yeast; some people run upon ground malt and the hot liquor into an empty cask, in which case it is longer in coming round, for want of fermentation, but is equally good. When brewed very strong, this sort of beer is apt to be rather heady; but I prescribe for the working-man, who wants no strong beer. Of course, the process must vary much, according to the size of the copper and other circumstances, to suit individual case, which one set of directions cannot embrace. If the copper is very small, there must be two or three mashes (the first two or three liquors only of the one mash which I recommend, and the grains watered with the watering-pot. In conclusion, this process suits the honest, hard-working peasant, who cannot afford the dawdling process of the small brewer, to brew his own beer.—*T., T. C. G., Oxford.*

THE ROSE-GARDEN.

(*List of Roses continued from page 837.*)

STANDARD AND DWARF.

Hybrid de Luxembourg, Chair's Pour Surprise, Triomphe d'Ange, Brown's Superb, Globe d'Or, Ville, Common Noisette, Scarlet Perpetual, Cloth, Comtesse Rouge, Holdist, Noisette pulchella, Lamarque, Reine des Surpasse, Reine d'Espagne, Rose de Rouelle.

Village Maid.—Growth formal, no scent, but delicate of slaty hue; singular.

Fringed Provins.—Growth as the Cabbage, but buds beautifully crested with moss.

Du Roi.—Well known to all.

Yellow China.—Long, oval, and singular in the bud; not always to be kept healthy.

Crimson elevate.—Scent fine, but much far from vigorous, and rather delicate.

Fallen Briar. Scarlet upon dull crimson.—A brilliant scarlet; this class, however, is, in many others, very uncertain in their growth, almost always requiring and from their natural habits of drying off early are amongst the most uncertain as to growing strong.

Hartisonii.—Colour bright yellow; appearance not commendable.

Bengale elegans.—Very old Rose, but profuse in flower, and vigorous.

Noisette Perlet. Celestial.—Delicate in colour, beautiful in shape, and by some held in the highest estimation; the wood is vigorous, and must be left very long in the shoot to insure flowers.

DWARFS—BEAUTIFUL BUT DELICATE.

To be worked on slight stems, those of a year's growth being preferable:—*Tea Hymène, Tea fraxinans, Tea gracilis, Tea viorata, Tea Hamon, Tayliani, Tea Lyonis, Tea Hardy, Tea Caroline, Rose de Siam, Tea Hardy.*

The six last new Roses, though in the writer's possession, have not been seen by him in flower, and he is not acquainted with their habits:—*Chromentella, La Reine, Charles Souchet, Comte de Rambuteau, Madame Souchet, Tea Devoniensis.*

The above List contains many Roses that have been but recently grown, as well as many that have been long cultivated. It has been the object of the writer to give the names of those which he admires most, without reference either to long standing or novelty; but amongst the large collections now made, there are very many desirable, though not here mentioned. The cultivator is recommended, therefore, to choose the periods of flowering, both in spring and autumn, to visit the best nurseries convenient to him, mark the trees he means to have (not merely ordering the plants to be sent), and be persuaded into buying none that he does not very much admire. By visiting several nurseries, he will be inclined to reject some Roses, which only rise in his estimation because a peculiarly favourable situation had given the plants unusual health and beauty, and choose others which had suffered in appearance from an opposite cause, but which he will find, on second examination, well worthy his best regard. He will get many hints he would not otherwise have obtained, and if he purchase with reference to real beauty only, whether of flower, foliage or growth, he will find his success satisfactory, and his outlay moderate. If novelty, uncombined with these advantages, form any part of his object, almost every nurseryman can, from time to time, add to his collection. He must not be disappointed if he find some of his Roses do not flower as well with him as elsewhere, very much depending upon the nature of the soil that supports them; he must, however, be careful as to one thing, which is, if his plants be placed on Grass, not to let the turf be put round them the first year, as it absorbs all the rain that falls, however much it may be, and starves the trees.

The advantages of free-growers are, that at almost every season they will afford buds fit for use, and many of them continue to bloom and look handsome till the end of autumn, and the number of shoots from a single bud are unlimited; thus forming a head the first season, and restoring the activity of the whole tree, in a short space of time. They are not, however, quite so easy to keep in order as the other sorts, and they are more apt, on first coming into leaf, to attract the aphides, that little terrible insect, the scourge of the Rose, and for which no adequate means of destruction is known; though destroying, by the hand, at the commencement of the season, is the most effectual means of keeping down. As it is not only incouvenient and tedious to make use of the fingers for the purpose, as well as difficult to remove the insects without crushing them upon the shoot, which invariably either retards or stops its growth, the readiest method is to brush them off with a common painter's brush, made of bristles, the hair of which viz. that part which is below the binding, is about an inch and a half long, and the same in circumference. Lay the shoot along the palm of the left hand, and pass the brush from the bottom of the infected part upwards, and with a very little practice you will be able to clear a plant of its tormentors, without injury either to the bloom or to the tenderest shoots to which the brush is applied, in a space of time which would at first appear impracticable.—*A. H. B.*

Home Correspondence.

Disease of the Larch.—Observing in the Chronicle (p. 796) some remarks by Mr. Barnhill, on the above subject, I would beg to inform him that in the month of March, 1841, I planted a number of Larches (Cathedral trees) which had been previously heeled in for a short time, and that many during their first year exhibited the symptoms he describes as produced by Rabbits, though none were to be seen on the same. These shoots were to be found on the lower branches of the Larch, depending from the side of the plantations. Observing the great destruction of the shoots, I shot one, and on examination discovered that it had been devouring these trees through little holes, which appeared to me to resemble very much the pinholes made by a pin. I have since many instances of the same kind. We have also a number of Larches in a plantation by themselves, which have not been touched.—*J. S.*

The Potato.—In the cultivation of the Potato, which has of late years become so prominently into notice, should not some reference be had to the elevation of the land on which the experiment is made? For instance, Stockton-on-Tees and Birmingham are situated very differently; the one is nearly on a level with the sea, the other 500 feet above it, I believe, and in the heart of England. Both these places have been quoted by you. I know that the difference of elevation of 50 or 60 feet does much to the human constitution.—*C. W.* [We attach no importance to this point, so far as the cultivation of the Potato is concerned.]

Liquid Guano.—Extract the guano, in the first instance, by steeping it in water. This will give liquid Mo. 1. Then add 1 per cent. of borax to the water in which it is steeped, and use the effect of that. If you attempt to manufacture, no one can be surprised.—*Timothy Puzzle, N. B.* You may use the borax at first, if you like.

Autumn planting Potatoes.—More than 20 years ago, I heard my labourers (in Ireland) talk of an old and general custom of their forefathers, of leaving the seed of the finest crop in the ground, and splitting with their spades the larger Potatoes when they were digging out the crop of the current year. It is a very common thing in Ireland to raise plants of Potatoes early till the ensuing spring, either from some unfortunate circumstance befalling the owner of them, or from their being so bad a crop as not to repay the trouble of digging. Now, personally speaking, these have more than a covering of four inches, and many of them not more than an inch, yet their suffering from frost has rather been the exception than the rule. In an agricultural survey of the county of Wexford, some years ago, it appeared there is a strip of land near the sea, in which they plant the White Kidney in the month of September, and supply the Dublin market with them in the month of May following. These are, however, treated with a double allowance of manure, and well covered—say with from four to six inches of the loose soil. In the county of Tipperary, 18 years ago, I planted Potatoes (whole ones, called Quarters), in September, and dug them in May, but the winter was very mild. I planted five or six years ago in Donegal, in the winter, Potato sets that had sprouted in the house (a warm room), preserving the sprouts on them, and began to dig them of very good size on the 18th June; the crop was a heavy one. In this country, where Potatoes occupy about one-third of the tillage lands, a furrow cannot be turned in spring without meeting with innumerable Potatoes, that have been all winter left in the ground, at a depth scarcely ever exceeding four inches, and very few of these are found injured by frost. I feel, therefore, assured that little danger is to be apprehended from frost in an autumnal planting, and especially where the seed is deeply buried, and this either in autumn or spring planting, the crop is more productive when deeply set. I would not, however, plant them deeper than six inches, lest, on the ground being dug, the frost acts more powerfully on wet, than on dry ground, yet I have no recollection of having found Potatoes suffer more in moist ground than in dry; but I do recollect, 20 years ago, at a time when a disease called the rot, prevailed very generally in the neighbourhood, and destroyed more than half of the Potatoes in the country, that I planted in the autumn some Potatoes in dry, and moist, might say wet ground; the sets in the former grounds all perished from the rot, while near half of those in the moist ground survived. I have frequently planted in the autumn and winter without suffering any by it, and I should never hesitate so to do. It is, no doubt, if possible, advisable to plant before the Potatoes are exhausted by growing out in the spring; but should this be unnecessarily delayed till late in the spring, I think improved seed might be obtained by burying the Potatoes intended for seed, three feet under the ground. We know that there are certain depths at which seeds will not germinate, and I believe Potatoes will not at three feet under the surface. To test this a few days ago, I mark a pit more than three feet deep, and put into it about 12 stone of Potatoes, and covered them with three feet of clay level with the rest of the ground, and have planted Cabbage over them. I propose planting Potatoes in the open field about Christmas, and in May I will open my pit, and plant one-half of the Potatoes that are in it; the remaining half I will leave till autumn, when I expect to take them out as good and as much as they are to-day. A difficulty in planting Potatoes in the autumn may be alleged in the former not having manure than for them; but this I hold is easily got over; the manure may be taken out of any time, and spread on the surface—the leaves of the plants will drive it in. Let large sets, from large Potatoes be planted, and the roots will want none of it. Hot dung, I believe, will come up even from [illegible].—*James, Mr. Goodlife, Gosport.* [Our readers must remember that this interesting communication relates to the mild climate of England.]

Propagation of Dendrobium, Pterodactylon, &c.—[illegible] Dendrobium and Pterodactylon during the [illegible] whether or not it destroys some insects, [illegible] time to [illegible]

Fly Hill.—[illegible] situation a [illegible] much [illegible] meal-bug; he has since succeeded in almost entirely extirpating these pests, by persevering in the use of the following mixture, and by (as long as was prudent) keeping the plants syringed with a weak solution of soft soap. The mixture was as follows:—2 lbs. of soft soap, 2 lbs. of flowers of sulphur, 1 lb. of roll tobacco, half a gill of oil of turpentine, and 2 oz of nux vomica (the latter in powder). The soft soap and sulphur should be mixed together with warm water, stirring them well together; the roll tobacco must be cut, untwisted, and boiled by itself for an hour and a half in a

saucepan, keeping the lid on, then strain it, and add the liquor to the sulphur and soft soap, next adding the nux vomica, and then the oil of turpentine. The whole when mixed together should make in all about five gallons. It should be applied with a painter's brush as soon as the leaves are off the Vines, and again just before the buds begin to break; after dressing the Vines with the above, some clay should be mixed with a portion of the mixture, to the consistency of good thick paint, and used for the purpose of stopping all cracks and holes about the Vines.—*W. Jones, Bulldinge, Surrey.*

Protection of Crops from Hares and Rabbits.—I would state, for the information of ——, that I, and one or two of my fellow-sufferers, did try and endeavour to keep down the trapping, shooting, &c., in a particular parish; although we thinned their numbers, to use a Yankee phrase, pretty considerably." Still I could see the old marks were not destroyed, for the next year the devastation was done, although not to the same disastrous extent as formerly. The case in point is as follows:—I had the ground trenched a very fine white turnip crop broke remarkably well, and for the first year would be sure to return undiminished; but this year was not to be a favourable one, for in the second winter of their trenching the enemy was at work, and most effectually did he do his work in many places the beautiful young shoots were browsed off, as though a whole herd of forest deer had been turned in; and, although many of the plants were from 5 to 6 feet in height the latter had been cut off 3 feet from the ground. To put a stop to such devastations, I adopted the following plan:—Having a decided objection to the smell of tar, I divided the whole piece of devastation with rope-yarn, fastening only all rubbish, such as Brambles, High Grass, &c., making a clear space for operating. I then had stumps fixed in the ground, at the distance of 12 feet apart, to which was affixed the yarn, in two lines, the lower one 6 inches from the ground, the upper about 16: there is no fear of either hares or rabbits jumping over (unless pursued), as they invariably crawl through or under any obstruction to their progress. To render the plan more effective, I occasionally applied the tar-brush, thereby causing a strong scent of tar constantly in the locality. By this plan I saved my crop, and now make it a standing rule never to have a copse unfurnished with the above preventive. I advised a neighbouring farmer to try the same plan with a piece of Carrots, and shut down in the very heart of the game preserves, and of which the rabbits particularly are so fond, as to deal with the like effect, assuring me at the time of fixing the drop, that he [illegible] rabbit [illegible] or top [illegible] to try this plan, feeling [illegible] at the same time [illegible] frequent applica- [illegible] tar [illegible]—*Thomas Gibbons, Bedlington, Durham.*

Sowing Seeds.—[illegible] seeds were steeped in a solution of [illegible] of ammonia, another portion in common water, and a third in a mixture of these, half and half. To [illegible] quantity of Pinks and Wallflowers were sown in the usual way. The seeds in solution of ammonia grew very quickly, and are now the largest plants of the [illegible] sowing. Those in nitrate did not vegetate, those in water languished, and those in the mixture flourished.—*W.*

Roses.—I beg to mention a mode of managing Standard Rose trees, different widely from the one formerly in vogue, and one which is very much admired here. I never prune or cut back the head of the tree, but merely thin out the very small wood, leaving all the strong and medium sized shoots to grow to their full extent. I have observed that in most varieties the medium-sized wood blooms the most freely, and treating in this way my trees are literally covered with flowers, resembling in their profusion and luxuriance the wild Dog Roses of the hedgerow. I do not understand this plan where Standard Roses are planted among beds of American plants, although, in my opinion, such is a most desirable situation for them; in such circumstances, however, the size of their heads would of course greatly depend on the nature and growth of the plants among which they were placed. When Standard Roses are planted singly on lawns or in avenues, nothing in my estimation can be more unsightly than the shapeless looking mop heads into which they are generally pruned, and which will not produce a fourteenth part of the bloom as when managed as above described. I remove the soil over the roots once in three years without disturbing the trees, and I replace the old soil by a little loam and manure, which I find very much invigorates the trees and renders them capable of bearing fine large heads, which almost conceal their naked stems.—*T. Shaw, Saltram, Crediton, Devonshire.*

Baskets rustic [illegible]—Some men are [illegible] with a peculiarly [illegible] skill, without [illegible] at the outset how it is [illegible] upon which their [illegible] depends. [illegible] is [illegible] from the [illegible] clearly upon what principle, in the [illegible] wicket-work, or, indeed, every [illegible] of any kind, are altogether out of place when surrounding flower-beds. I shall undertake, in reply, to give [illegible] rustic [illegible] and similar ornamental accompaniments are in perfect propriety—indeed demanded in such situations.—

The Late Frost.—The frost commenced with us on the night of the 5th, with some severity, as the annexed statements will show; our minimum appears higher than what is given as observed at Chiswick in the last *Chronicle*, 21° Fahr. being the lowest observed here on the night of the 6th; it may be as well to remark that the barometer has been high during the continuance of the frost, having during the greater part of the time been above 30 inches; and at 9 P.M. of the 7th it stood at 30·274; it began falling, however, on the 8th, and had its minimum on the 12th at 9 A.M., standing at 29·400. The wind during the whole of the [illegible] varied from [illegible] to E., and has [illegible] only [illegible] of [illegible] [illegible] Thermometer.

	Min.
[illegible]	[illegible]
[illegible]	31
[illegible]	30
[illegible]	31
[illegible]	30
[illegible]	31
[illegible]	30

beautiful racemes of golden flowers, which continue until the end of November. It might be remarked, the clusters were not quite their usual length; but it was quite a novelty to behold such a display at that season of the year. I observed that in the flowering offsets produced on vegetation by extreme devotion to cuttings.—*W. M. Stubbs, Crowley Park, Oxfordshire.*

Pine Growing at Tyninghame.—In reply to Mr. Fulham's inquiries (p. 834), I beg to mention that I have tried the same practice as that of Mr. Dale for upwards of a period of eight years, but I imagine that I have during that time made some important improvements on the system, the results of which have been published in periodicals at different times. I would further state to Mr. F.'s information, that I believe the most essential points of my present practice of cultivating the Queen apple are entirely my own; and in order to satisfy Mr. F. of this fact, I beg to refer him to pp. 97, 98, and 99, of my Treatise on the Pine, where he will find a system mentioned differing very materially from any other that has ever been published. If Mr. F. has read my book, he will perceive that I have established a practice whereby succession plants and succession houses are superfluous; previous to this, such a practice was possibly not even thought of. To conclude, I may mention that I have so studied the real habits of the Pine, that I have rendered superfluous the routine of shaking out, potting, and repotting, &c.; and even where the pot system and fermenting materials are in use, such practices are unnecessary, except in the case of an accident occurring.—*Joseph Hamilton.*

Notes on American Plants.—I have read with interest the Notes on American Plants, by Mr. Reid, and I quite agree with him respecting Gerardia quercifolia, but not altogether as to G. flava; it being only a biennial, it would be a bad time to take up plants of it in June to send to this country. I have sent plants of it from Canada in autumn, but they did not succeed. I imagine that seeds are the only means by which plants of it can be obtained in this country. Regarding Asclepias tuberosa—amongst the many thousands I have seen of it, none were of a dazzling scarlet, but were from a pale to a bright orange; and with respect to A. quadrifolia, from Mr. Reid's description of it I imagine that he must allude to variegata. Convallaria racemosa (*Smilacina*, Pursh.), I do not consider a showy plant, certainly not so much so as Convallaria (*Polygonatum*, Pursh.), multiflora, or latifolia; the latter I have seen in Virginia, on rich ground, 6 feet in height. Houstonia cærulea I have known many years as a greenhouse perennial. It requires to be frequently parted, and should be planted in small pots in a sandy soil, and when kept near the glass should be placed on a shelf in front of the greenhouse, as it is not a very showy plant. Of Liatris, the species are certainly not all natives of the southern States; the following were found in Canada, viz., pilosa, scariosa, and squarrosa. There are many beautiful plants in North America that I have not seen in cultivation in this country; among these I may mention two, viz. Bartonia tricuspis and Botrichia canescens, which is found in Canada; and Puccoon, of the gardens, which is also a very handsome plant.—*B.*

Vegetable Instinct.—It has been to me a frequent subject of thought and observation, in the animal kingdom, where to draw the line of separation between instinct and reason. The instances are so numerous in which they seem to mix with each other, and become so blended together in the same individual, that it seems next to impossible to assign to each a distinct character from the other. In the whole organic world—the animal and vegetable kingdoms—beginning at man and gradually descending the scale through all its gradations to the zoophytes which connect the two, and from thence to the lowest forms of vegetable life, the Lichens and Algæ, we find in each the power of adapting circumstances by which they are surrounded, so as to contribute to their benefit in a greater or lesser degree. Now this power, when possessed by man, naturalists have defined as reason; in animals instinct, and in vegetables, *adaptation*. But I imagine that, in many instances, vegetables will be found to exhibit the property in a degree not inferior to many animals. It would appear that this power does not decrease with the scale of animal life, as many of the lower animals possess it in a much greater degree than some far above them in the scale of organization. The sloth and tortoise are familiar instances of the one, while the ant, the bee, and a host of subjects in the insect world, may be selected as illustrations of the other. In the vegetable world we have many instances, which, if not instinct, deserves a higher title than mere adaptation of parts to existing circumstances. Physiologists say that the cause of plants tending in partially illuminated situations, directing themselves to any aperture admitting light, is owing to the organ or cause of the stem most distant, being, by its action, contracted in consequence of the greater evaporation of fluids thereby, while the nearer is relaxed, or forcing the extremity of the plant in the direction of the light. This may be correct. But if a plant in a growing state is placed in a totally dark place, in such a situation contrary to its natural growth, the young branches will invariably be found to erect themselves. Again, by what influence, except that of mental support (they only adopt it in the absence of any other), should direct climbing plants to cling to each other till by their united strength they raise themselves in the air? Look at others which do not twine, but support themselves by bending the leaf-stalks around any object with which they may come in contact. The Mimosa pudyas offer an illustration of this. If a shoot of the plant be directed where there is no support, no bend in the leaf-stalk will take place, simply because it would be useless. But if after it has grown to a considerable distance in this way, a support be placed near it, the shoot directly will exhibit the hooked leaf-stalk, which in all its forms, vegetable instinct, or adaptation of parts, or what term soever it may be called, is equally applicable. A familiar instance among the common plants is the Pea, which, in addition to the use of its tendrils, possesses, in the leaf-stalk, a power of adaptation, which, when the tendrils are wanting, or are prickly, while the rose-tree, for example, is without them, it performs the office of both. Another

was planted in a large flower-pot, a growing specimen of a marked variety of Portugal laurel, called Oratorius, in East Lothian; and alongside of it a branch of the common Portugal Laurel, for comparison. This Caledonian variety is distinguished by being of more elegant habit of growth, having thick pellucid leaves, of a fine dark green colour on the upper side. Outside of these were arranged specimens of the variety of shipping used in the Peru trade, and of the Scotch fir, the produce of Dr. Neill, Secretary, both imported from Mrs. Gould Nab, the Curator of the Society's Garden, upon the principle of economical old pickle-pots, carefully tarred, and not to be seen in fashionable ware. The ground was by-the-bye introduced amidst the laurels, behind which the Deptford Ring (erected some time since in the Chapel Alley Building of Scottish heiths) was also encountered, and regarding which the Secretary read observations of Rumphorius, among which the Banda, were preferred, the climate of Scotland not having proved sufficiently good for the Wintera, nor for the Bletchingdon Raspberry, sent by Mr. Buist from Philadelphia. The Secretary also read communications from Messrs. Gordon and Forbes, of Gosmore Park, South Wales, on the Culture of the Pine-apple, and on Growing Cuttings in Sawdust, the latter of very large sizes from Mr. J. Middleton, the Management of the Orange tribe at Dunesgate, where fourteen kinds are cultivated for their fruit; and from Mr. Martin, Bhet Mill, on the Utility of the Sweepings of a Deer-shed in making up Cucumber [illegible]. Mr. M'Intosh, of Catherine-street, Edinburgh, presented a couple of his transparent waterproof linen, pulled as a substitute for glass, which after having been exposed to the most inclement influences for many months past, seemed with little very perfect condition. At this meeting the Hon. Lord Murray was chosen Vice-President, Professor Balfour, J. Edmond, Esq., W. Crawford, Esq., agent, Kennedy, Esq., of the Council, Mr. Neale and G. A. Eason, Esqrs., of the Garden Committee. All the other office-bearers were re-elected. Several new members were enrolled.

LINNEAN SOCIETY.

Dec. 17.—R. Brown, Esq., in the chair. A paper was read from Mr. Hogg, containing criticisms on a recent work by M. Lavrent, of Lyon, on the Hydræ and Sponges of fresh waters. This work, which had been presented to the Society by the Author, was one of the most complete on the subject, and was illustrated by numerous coloured engravings of the various species of animals on which it treated. Mr. Hogg stated that the author's work had not escaped criticism, observations which he had found on the locomotive power of the animalcules contained within a siliceous shell, and which were published in the Transactions of the Microscopical Society. Mr. Hogg also stated that the author had not noticed the remarkable fact, discovered by Dr. Grant, and published in the Transactions of the Linnean Society, that the sponges ought rather to be considered plants than animals.—Dr. Lankester exhibited a specimen of a fungus, apparently the Agaricus murinus, over the external membrane of the pileus of which, a second pileus, with its gills uppermost, was developed. The second pileus was immediately over the stipes, but seemed to arise from an extension of the growth of the gills, carrying on with it through the external membrane of the first pileus the internal or gill-producing membrane. A specimen of the flowers, fruit, and inner bark of the Cinchona Pitayensis, or Lac.-bark tree, brought from Jamaica by Mr. Wilson, was presented by Sir W. J. Hooker. The leaves of this plant almost always fall off in drying, except they are gathered when young. Mr. Robert Brown presented five species of Isoetes, from Algeria, two of which were terrestrial, and the whole had been collected by Bory de St. Vincent.

SOCIETY OF ARTS.

Dec. 11.—A paper was read on the Hydraulic Ram, by Mr. Row. A model and diagram accompanying the communication exhibited the machine consisting of a rectangular body, at the end of which is the supply pipe from a reservoir of water, elevated above the level of the machine, and from a running stream. At the top of the body, at one end, is a circular puppet-valve opening inwards, which allows the water to enter the body of the machine, but which closes when the water attempts to escape by the same way. At the bottom of the body, at the same end, is a circular valve opening outwards, which allows the water to escape, but which closes when the water attempts to enter by the same way. The other end of the body of the ram is fitted with a cylinder, in which a piston works, and which is connected with the air-vessel. The action is as follows:—The water entering the body of the ram with a certain velocity, acquires a momentum sufficient to overcome the pressure of the column of water in the air-vessel, and to force open the valve at the bottom of the body, and escape by the waste pipe. The momentum of the water in the supply-pipe being thus destroyed, the pressure of the column of water in the air-vessel causes the valve at the bottom of the body to close, and forces the water contained in the body of the ram through the valve at the top into the air-vessel. The momentum of the water in the supply-pipe being destroyed, the water descends in the supply-pipe, and enters the body of the ram through the valve at the bottom, and the same action is repeated. The water entering the air-vessel compresses the air contained in it, and the elasticity of the air causes the water to rise in the ascending pipe. The valve at the top of the body of the ram is loaded with a weight, which can be increased or diminished at pleasure, so as to adjust the pressure of the water in the air-vessel to the height to which it is required to be raised. The valve at the bottom is loaded with a weight, which can be increased or diminished at pleasure, so as to adjust the velocity of the water in the supply-pipe to the greatest velocity with which it can escape by the waste pipe

small sowing of the Early Frame Pea may be made; they will come in a little earlier than those sown in spring. Mushrooms, and all kinds of fruit trees, may now be introduced.

With regard to the former, which produce their fruit entirely on the previous year's wood, the old shoots should be cut out close after the gathering of the strongest of the young ones tied up in their place, and pinching clean off by the root all the rest of the young shoots. After they are tied up to the stakes, shorten them to 6 feet in height. In exposed situations, I prefer tying Raspberries in bundles to the points of the stakes, and shortening the canes to a foot respectively when they have done bearing, which gives a neat appearance. These Gardeners, who possess a frame, for training a few choice plants, should keep a sharp look out for insects; for in winter, when nothing else is growing, they cannot readily put fumigation in force, and if they do once get destroyed. Keep a sharp look out for the green aphis on Peaches, and give air every fine day, when not too cold.

State of the Weather at Chiswick during the last 10 years, for the ensuing week, ending Dec. 25, 1844.

Dec.	Average Temperature.			Prevailing Winds.								
	Highest Temp.	Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 22	42.6	29.4	36.0	7	0.26 in.	1	0	0	1	1	2	1	1
Mon. 23	42.1	28.1	35.1	6	0.26	1	0	0	1	1	2	1	1
Tues. 24	42.1	29.1	35.6	6	0.26	1	0	0	1	1	2	1	1
Wed. 25	42.2	29.5	35.4	6	0.26	1	0	0	1	1	2	1	1
Thur. 26	42.3	29.7	36.0	6	0.26	1	0	0	1	1	2	1	1
Fri. 27	42.4	29.1	35.7	6	0.26	1	0	0	1	1	2	1	1
Sat. 28	42.2	29.2	35.7	6	0.26	1	0	0	1	1	2	1	1

The highest temperature during the past period occurred on the 26th, 1837—thermr. 59°; and the lowest on the 24th, 1840—thermr. 10°. The average temperature during that period is lower than that of any night throughout the year.

Notices to Correspondents.

Back Numbers of the Gardeners' Chronicle.—So many Back Numbers are now out of print, that we think it will save all parties trouble if we publish a list of those which may still be had. Any Subscriber who will forward to our publisher, Post-office stamps and wrapper, to the amount of as many Numbers as are required, shall have them sent free by post:—

1841.—1, 2, 6, 12, 13, 15, 16, 17, 18, 20, 22, 25, 26, 28, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

1842.—4, 6, 8, 11, 15, 20, 23, 24, 27, 28, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

1843.—2, 10, 11, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

Address.—To the Exhibition Committee not having stated the depth of the pots in which these plants are to be grown, we have no authority for doing so. It is, however, obvious that the word is to be taken in its common acceptation; this will be sufficient rule for you. We apprehend that a specimen without much lateral branches than deep, and a pot on the contrary is much deeper than broad. A vessel which shall be of equal breadth and depth, or nearly so, is neither a pot nor a pan. As to the sorts of Achimenes, you will see that a great many names of nurserymen are so ill advised as to establish varieties of A. grandiflora, as species, they will be disqualified. The species of Achimenes are, 1, rosea; 2, Cocciniea; 3, pedunculata; 4, longiflora; 5, multiflora; 6, hirsuta; and 7, picta. All can be easily had except multiflora, which is not much in cultivation, and is not required to make up the number.

Bees.—*T. J.*—Newman's book is published by Andot, 8, Rue de Paon, Paris.——*R. Mc.*—There is no book on Entomology at the present time. The best articles we have are those which appear in this Journal. Every week, and you will know as much as is practically useful.

Calceolaria.—*Constant Reader.*—Kinghorne, Duchess of Sutherland, and Professor Wilson; Standish's Gracilina, Celebration, and Magnificent; Green's Zebra, Queen of Wales, Green's Prince Albert, Green's Adonis (improved), Albo coccinea, Green's Rainbow, and Green's Friend of Wales, and Standish's.

Cinerarias.—*C. J. R.*—Your plants are subject to the attacks of the Green Fly, which is the *Aphis Rosæ*. Fumigation, No. 2, and Kerria Victorina.

Cuttings.—*Novitiate.*—Gardeners have known the branches of such plants as Clematis, but not the leading shoots, when they are beginning to shoot.

Cement.—*A Constant Reader.*—Boiled linseed oil and litharge. It is a very old material in some respects, though new to others. Its business consists in the filling of the refrigerating it out of a joint into which it has been introduced, and that apparatus cannot be used again, it requires to be taken to pieces. Its use consists in its application as a cement. But the same substance is demanded as one that will unite red-lead and oil and turpentine, by some looked upon as burning.

Raising trees.—*A Subscriber.*—Trees in old pits will be underwood in plantations, and in perhaps, favourable situations, such as those in which the wild Hazel grows naturally, on steep banks facing the sun.—A loamy soil, not too deep, is proper for them. They require pruning; but the mode must be varied according to the soil and situation. Your trees, 2½ feet high, ought to bear the second year after removal.

Forest trees.—*J. Dee.*—Leave the shoots to handle-sized; there is little fear of their blowing off at the stool. When branches grafted on large arms of fruit trees are blown off, the decay of each an excrescent is quite unlike anything that can occur to strong shoots from the stumps of forest trees.

Fruit trees.—*W. D.*—The following will probably succeed in the north of Scotland, if you keep their roots near the surface:—Apples, dessert—Colin, Early Red Margaret, Pitmaston Nonpareil, Wormsley Pippin, Blenheim Pippin, Hacker's Pearmain, Court of Wick, Golden Pomeroy, Pitmaston Pine-apple, Bradwick's Nonpareil, Scarlet Nonpareil, Stunner Pippin. For kitchen use—Dumelow's Seedling, Tower of Glamis, Hawick Castle, Threecornered Beefing, Hollow Crown Pippin, Lord Suffield, Russet, Waltham Abbey Seedling, Yorkshire Greening, Keswick Codlin, Peters—Russet, Gratioli (or Spring), Winter Nelis, Kitchen of Comlongan, Marquis of Lorne, Easter Beurré, Winter Beurré, Glout Morceau, Colmar, Crassane.

Grapes.—The cause of your Vines not swelling their fruit is the want of sufficient heat. If they are so, no manure is to do the mischief your correspondent complains of. Mildew is caused by a want of air, and by keeping the house too close at the time of ripening.

Gathering fruit.—The objects of pulling fruit when green are these:—1. Generally speaking, fruit will ripen better on the tree than when gathered; 2, good appearance; 3, large specimens of glass covering sometimes keep fruit jones; 4, increased light to the specimens of late being avoided. It is obvious that the two last objects are best attained by having the fruit ripened on the tree; and we do not think that the first will be disputed. Upon the point of taste, however, we have at present no direct proof. If you have small squares of sheet glass you have more exercise in the gardeners' labour than if you have large ones. At Chiswick the squares are nearly a foot long in the great Conservatory." We should, however, think that for general purposes 18 inches are enough.

Greenhouses.—*Anon.*—The use of hollow walls in greenhouses is partly to keep them warm, and partly to keep them dry. They also should be rather cheaper than solid walls. They have no other advantage. When a room has had the dry-rot, nothing is gained by flooring it with Oak—for dry-rot fungi will attack one kind of wood as readily as another; and as for Oak, just think of what happens to ships. If you can get the timber thoroughly soaked in sulphate of iron, or corrosive sublimate, or chloride of zinc, any of those substances will protect it; but it must be thoroughly impregnated.

Heating.—*Z.*—If you take the lids of troughs off, in a *greenhouse*, in winter, you will kill or spoil all your plants. A *greenhouse* should be kept dry in winter. Give greenhouse plants a moist atmosphere when they are about to grow, and in full growth, and at no other time.——*A Beginner.*—By all means use iron troughs with moveable lids. Use one row only of such troughs. It is plenty. Certainly, glass frames for guarding the Vine border are much better than anything else; and you will not want pipes.

Indian Cabinet.—*E. M.*—If you will refer to p. 796 you will find an answer to your question.

Insects.—*Z.*—We never heard of such an insect as Tentania aurata, and imagine it must be a misprint. We hope some one acquainted with the species will be able to give us its correct name, and the family to which it belongs. *R.*——*H. R. S.*—Thanks for the worms: they are, we believe, the Gordius argillaceus. *R.*——*W. S. S.*—The dirty gummy exudation on your Rhododendron leaves may be caused by insects, but we can find none on the specimens sent. If you can detect any, and will inclose them in a pill-box, we will tell you their name. *R.*

Manure.—*T. D.*—The must or marc of a cider-mill is of very small value. Throw it to the dunghill; it will be of a little use there, and there only.

Mistletoe.—A correspondent reminds us that we did not name the Whitethorn as one of the trees which this plant affects. We beg to supply the omission now. There is nothing which the Mistletoe prefers to Whitethorn, Apples, and Crabs.

Names of Fruits.—*C. H. W.*—1, Dumelow's Seedling; 2, Court of Wick; 3, 9, Rymer; 4, Dumelow's Seedling; 5, King of the Pippins; 7, Dutch Mignonne; 8, Beauty of Kent; 10, Fearn's Pippin; 11, Uvedale's St. Germain.‖——*A Constant Reader.*—1, Keswick Codlin; 2, Hollow-crowned Pippin; 4, Kentish Fill-basket; 5, London Pippin; 6, Pomme de Neige; 7, Crimson Queening; 8, Lucombe's Seedling; 9, Northern Greening; 10, Margil; 11, Stagg's Nonpareil; 12, Ross Nonpareil; 14, Syke House Russet; 15, Pearson's Plate.‖——*J. F.*—1, Blenheim Pippin; 2, Rhode Island Greening; 4, Glout Morceau; 2, Colmar; 4, Crassane.‖——*C. W. K.*—1, 8, 10, Pomme de Neige; 2, Ribston Pippin; 3, King of the Pippins; 4, Blenheim Pippin; 5, Gravenstein; 6, Braddick's Nonpareil; 9, Margil; 11, Scarlet Nonpareil; 12, Easter Pippin.‖——*J. M., Cheshire.*—1, Stagg's Nonpareil.‖——*W. G. H.*—Your Apple is the Newtown Pippin, and a fair specimen for this climate.‖——*M.*—Your Apple is the Turk's Cap.‖

Names of Plants.—*Constantine.*—1, Polypodium vulgare; 2, Ceterach officinarum; 3, Rumex sanguineus.§——*A. M.*—Ophiopogon spicatus; if you wish for correct names you should send good specimens. How is anybody to judge correctly of such a morsel as you sent before?——*G. W. H.*—Some species of Trichosanthes, a poisonous gourd; the species not determinable from such a bit as you have sent. The Fox Grape is Vitis vulpina, and derives its name from the foxiness of its ripe berries; some persons like the taste, we think it particularly disagreeable.——*S. W.*—Apparently the smooth variety of Rosa Carolina; certainly not *R. lucida.*——*N. Mitchell.*—Ceanothus azureus.——*A Constant Reader.*—The double dwarf Almond (Prunus japonica).——*K. C.*—Pitcairnia flammea, not staminea.——*B.*—Oncidium sanguineum.——*C. W. K.*—Eulophia macrostachya.

Natural Classifications.—*A Student.*—We have your paper in type: but neither we nor our printers can decipher some parts of it. Will you give us your address, and read the proof yourself?

Peas.—*W. Bartlett.*—The guide and stake boxes, 2½ feet by 2½ feet high, in an excellent situation for Peas. If the soil is good the roots will thrive very well beneath the paving bricks. Marie Louise and Gilott Morfeuil are the dwarfest varieties of plants.

Pelargoniums.—*J. M.*—Matilda, Lord Lyons, Sir R. Peel, Erectum, Pulchellum, and Duke of Cornwall.

Rainwater.—*A. E.*—Put cold spring pipes into the middle of the tank, and the evil of contaminating the water, and the greater the water the more the mischief. We should have said the same pipes, but under your circumstances, you could not have them in almost any other manner.

Roses.—*J. C.*—Under all the circumstances of your Tea Roses under a north wall, without protection, you may reckon upon losing many of them in winter. Instead of putting them in pots, you should have them planted out in a border, and if you protect them with a little litter in winter, they will do well. Choose the warmest and most sheltered place you can find. You are well advised not to prune them in autumn. Wait till spring, and then prune them moderately well. Do not prune now, but some time in February. Your Roses will be much benefited by the change.

Soil.—*Y. Y.*—Put down no soil upon your roots, but let them be perfectly well drained. Pack them in, when by keeping them close and cool they will be sufficiently established to bear a little exposure to the air, by degrees.

Stable.—*W.*—We think your stable will be warm enough, if properly constructed. The horses, because of the ammoniacal gases, will require to be kept clean. The cooling will then be of the same temperature as the stable. In the stable itself, the ammonia from the urine of the horses will be sufficiently counteracted by the ventilation. And here we have a question which we have long wished to put to Mr. Loudon, and his answer in this:—Why do not gardeners use the ammoniacal gases, to nourish crops upon the ground? Whether it be a fact or merely the thought of the moment, we have not yet seen it stated. Then, will produce a more equal temperature in the apartment. Some of what Gardeners, when the gases themselves upon the ceiling, when they are plastered. A stable or a chamber, which is immediately under a roof, will always be cold in winter, and hot in summer. The ventilation of a stable is best effected by a wooden flue, six or eight inches square over the head of each horse, rising above the roof, and terminating in a cowl, or in a cap, so as to prevent the possibility of down-current. To prove this, there must be more than sufficient ventilation to carry off the gases. Stables are generally too small, and such a place is much more easily found in a large than in a small stable. The comfort of the horse is much promoted by a loose box, with a comparatively small descent from head to heel, but with a considerable descent from side to side. Above all, let the floor of the stable be no lower than the surrounding earth, especially in damp situations.

The Rose Garden.—*A Subscriber.*—We have received from a gentleman who claims the authorship of this production, noticed at p. 815, a request for explaining the manner in which it was criticised. We had no idea that so estimable a naturalist as Mr. —— was concerned in writing it, and we have too much regard for his reputation to make matters worse by publishing his letter. Upon looking to the work in question we must say that we agree with the writer of the critique in the opinion that the execution of the correspondent exhibits little for the encouragement of the information it contains, by being limited to a certain number of roses," and he denies the truth of the whole compilation that the nomenclature of Rivers is "that followed by botanists in general." Mr. —— is not a botanist, and the instances to which the names belong in the first excuse is inadmissible; and with regard to the second, we think that all who write English Gardens will find the following synonymes useful. Arbuscula, Banksiæ, Tydeiæ, Chinensis, and Agrestis. They do not appear in the works of Curtis or Stephens, and have never come under our own observation.

Transplanting Mangel-wurzel.—*Ibid.*—The Cuscuta epithymum, or Lesser Dodder, is not in any way different from the common Thorn, except in its habit being more prostrate. There is no other species which attacks Furze.

Tarring nursery.—*Gower Gardening correspondent*, under date, Cork, Dec. 13, will see by our statement, last week, that the information had been previously published. Everybody is liable to such things; and no person knows the readers of Newspapers. There is no harm done after all.

Verbenas.—*J. I. R.*—Youell's Princess Royal, White; Gibbs's Boule de Feu, Scarlet; Beauty Perfection, Lilac; Mellendres Superior, purple; Cerise, Nil plus Ultra, rose; Ivery's purpurea perfecta, f.

Vines.—*A Subscriber, Chiswick.*—For a Peach house, and as a succession, Black Hamburgh, Royal Muscadine, Black Prince. The Victoria Vine is considered the same as the Black Hamburgh.——*Walter.*—The White Muscat of Alexandria has not been distinguished in point of flavour by any new introduction yet known. You may therefore plant one of it in your hothouse. White and Black Portugueze; Black Prince; Black Hamburgh; Black St. Peter's.——*W. G.*—Black Muscat of Alexandria, Black Damascus, White Nice, and Grizzly Frontignan, or, as these three ripen about the same time, if you omit the White, according to the dimensions of your house, you must plant another Vine to make up the number. Add to this one or two Sweetwaters previously determined on, &c. &c.

Vine-borders.—*M. C. D.*—Bodies buried in the earth do not putrefy, but they assist in feeding the plants and preventing the ground from becoming sour. Your borders are good as they are, and if they have a proper degree of moisture and slope, they are special as a means of retaining moisture in dry weather. Be sure to keep your border dry in winter, and do not allow the water from the roofs to run upon it. Your Vines will do well.

Weeds in Manure.—*A. W.*—The best way of destroying the seeds of weeds in manure is to put the latter in the tank, as you have done, with lime between each layer, as well as dung for fermentation, and consequently heat, and germination of the seeds; for in the absence of light the vegetation of these proceeds a certain stage and stops.

Miscellaneous.—*Lucius A.*—Your Grapes appear to be suffering from want of warmth, and perhaps, also, from the soil not being rich enough. Perhaps, too, they are overwatered at the roots. At present, we should think, and very strongly, that your Vines have been injured by the cold, but we cannot say whether this has been a little summer, but bringing, would not have prevented that. *A Subscriber, Dundalk.*—Hand over your seeds to Mr. Ivery, Covent Garden, and he will sow them in his cabin. If you cannot do that, put the bag in a desk box and insure its being kept in a cabin. If it is sent below, the seeds will be the worse for the voyage.——*Inquirer.*—Conveyances in parts of Cheshire, Bedfordshire, Hants, and all parts of what are called *inland counties*, are the most suitable for Jamaica.——*A Subscriber.*—A dilapidated soil for Pears is good, rather stiff. Would the surface of an old pasture, broken, and mixed with manure, which should be well mixed with the soil. Cucumbers will succeed in soil composed of turfy matter, like that under the surface soil of the pasture named, one-third well decayed manure, and about the same quantity of rotten dung. Collect leaves now, and lay them with a heap in the compost ground to rot. Your soil appears to be excellent for Vines. Give the mould from the bottom of the hole of your Vine-border, which are quite wide enough. Your plan of watering is good. Mr. —— is perfectly right in his way of watering. It is the consequence whether you pull the stake up with them or cut them down by the roots. Your Vines are evidently weak; but you have not stated the kind.——*A Constant Reader.*—Apply to the Secretary of the Horticultural Society, Regent's Park.——*Inquirer.*—Apply for the Orchideæ to Loddiges, Hackney.——*W. Coe.*—Use a camel-hair pencil, and with it brush the pollen out of the anthers, and apply it to the stigma.——*Ivy.*—Ivy is your natural aspirations.——*Gem.*—We prefer the first to the second.——*Constant Reader.*—Your letter does not contain sufficient evidence of the case to enable us to form an opinion. Your plan of watering your Vines is much better than that of syringing. Put a mat or two over the border, and let the rain run off. Your Vines are evidently weak; but you have not stated the kind

FARM WANTED, to contain from 50 to 100 Acres or thereabouts, of good land, well drained, with or without a residence. If within 10 miles of London and near a railroad station it would be preferred. Particulars to be addressed to A. B., Mr. Wood's, Old Bond Street.

The Agricultural Gazette.

SATURDAY, DECEMBER

[illegible]

[illegible] in what long practice has shown to be the surest and most effectual [illegible]

We do not wish here to draw any [illegible] between the vegetable and animal kingdoms, and [illegible] from it this great improvement in agricultural *plants* will [illegible] the probability of this we have already shown, but we may [illegible] that the same activity and energy to which the above valuable results are due, and which have doubtless been the means of [illegible] in breeds of animals, by the annual award of valuable premiums for the best animals of [illegible] may similarly be excited and maintained among those whose attention is directed to the improvements of vegetables. The comparative neglect with which the claims of *them* to the patronage of our national Agricultural Societies have been treated, cannot certainly be defended on the score of any alleged insignificance of the subject. Why, it is held to be axiomatic, that of the two branches of farming—the *production* of food, and its *conversion* into beef, mutton, &c.—the former is the *more important*;—that cultivation proper, to which we owe grain and other esculenta, food for man—as well as roots and forage, food for beasts—is greatly more important than that branch of farming which takes account merely of the breeding and feeding of live stock. One reason of the neglect to which we allude probably lies in the difficulty of fairly estimating the value of vegetable specimens; they depend so very much on their treatment, independently of any *specific* distinctions which they may possess, which alone, it is to be observed, should be the subject of reward. To this question we shall return at some future period; in the mean time, we take the opportunity of laying before our readers the following communication, from the late Sir F. A. Mackenzie, in the spirit of which we entirely agree: it was published in an early Number of the *Gardeners' Chronicle*, for 1842:—

"I am gratified to find that you advocate a cause which I have earnestly espoused for several years, though with but little success. I allude to the paying more attention by our English and Scotch national Agricultural Societies to that subject which is the foundation of all agricultural wealth—grain and roots—or, as many would term it, vegetable produce. I had the honour—no pleasure, as it has turned out a fruitless duty—to be named president of the root and seed committees for the Highland Society, in 1839-40; and in our report of 1839 I specially alluded to the absurdity of allowing so trifling a sum—only five pounds I think—for the discovery of new and superior kinds of grain or roots, whilst hundreds of pounds were voted as premiums for animals whose very existence and superiority depended entirely on the quality and quantity of the neglected roots and grain. Little attention was, however, paid to that report, and I determined that if again named president of that committee—which I was—that I would propose some names of authority to act with me, who might have more weight with our Society's committee of management than I found allowed to my own opinions. Accordingly, I got the names of my two friends, Col. Le Couteur and W. Gibbs, added to our committee, and they both very kindly attended our Aberdeen meeting, and cordially agreed with me in drawing up our report, which expressed more strongly than that of the former year our opinion of the absurdity of giving 20*l.* or 30*l.* as premium to one bull or other animal, whose blood and good qualities could not be spread over any great extent of country, whilst a more perfect or earlier kind of Wheat, Barley, or other grain, or a superior Turnip, Potato, or Carrot, was almost totally neglected; though, were its merits made known by a handsome premium, it would be introduced in a short time over the whole country, benefiting thousands of our agriculturists, and through them the nation. Can such be said of prize bulls, rams, boars, or stallions, except after the lapse of a great many years? And what has been the result of our report to the Highland Society? That a better premium was offered for a short-horned bull—100 guineas—than had ever been given before, whilst the despicable seeds and roots were left to their former paltry condition, and the premium cattle, as Le Couteur and others said to the wind, because they had not the good fortune to be approved of by committees. And, sir, who knew better than the sub-committee what were most valuable to the country, will not have the kindness to answer me? I say do not let the stupid cry as some Societies do, who shall be nameless, of the fashionable fashion of setting a high value on animals alone, would subside and the committees of the whole of our Societies, but the public attention attracted to their care would be directed to these neglected really of greater value, when I can assure you our vegetable kingdom. It is my intention this year to propose that both our Royal and Highland Societies shall devote at least as large a sum yearly in future to the discoveries of early Wheats and other improved kinds of grain, to superior Turnips, Potatoes, and other roots, as to animals; and I hope to the support of every well-wisher to our rich and prosperous [illegible]

AGRICULTURAL EXPERIMENT.

[illegible] the cultivation of artificial manures, that even the [illegible] which is now [illegible] has failed to benefit [illegible] according to the testimony of an intelligent [illegible] neighbourhood, who had tried it [illegible] several preceding seasons. I was deterred from prosecuting my experiments with them on a large scale, not only from the fear of loss to myself, but still more because it would not be a fair test of their value. But there are other questions interesting to the farmer the conduction of which does not depend upon the season. Two of these are, Which is the best mode of putting the seed into the ground, whether by drilling it or dibbling it, or sowing it broadcast? and if drilling be adopted as the best, which is the best interval between the rows? Perhaps it will be said that this is to call in question the most elementary principles of Agriculture; that the superiority of the drill over the broadcast system has been demonstrated long ago, and is acknowledged in practice wherever the cultivation of the soil is best understood. This was my own conviction, and it was principally with a view to convince those who still adhered to the contrary opinion, that I determined to give both systems a fair trial. Accordingly, in a field which was very evenly covered with an excellent crop, 4 perches of each were taken for the comparison, and the produce measured and weighed. I subjoin the results:—

	Straw per acre. trusses, lbs	Corn per acre. bshl. gals.	Weight of Bush. lbs.
Drilled Wheat	95 20	40	60
Broadcast do.	97 20	35	61

The spaces thus measured seemed, as far as the eye could discern, to be perfectly fair samples of the respective crops; but for the sake of greater accuracy two whole lands were taken for comparison; when these, however, were afterwards measured, they were found to be unequal; and I mention this, because the upper portion of the field having been more highly manured than the rest, over a space contained within parallel lines, that inequality gives an advantage to the broader land in the computation of the average. The produce was as follows:—

	Straw per acre. trus lbs	Corn per acre. bshls. gals.	Weight per bushel lbs.
Drilled Wheat [illegible]	90 12	34 1	62
[illegible]	91 12	33 6	
Drilled Wheat [illegible]	88 20	36 7	62
[illegible]	92 8	32 6	61
[illegible]	97 8	30 —	62
[illegible]	105 32	42 4	62

In the first of these instances a second stirring of the ground appeared to be beneficial; in the second the want

So, then, the less the ground was stirred the greater was the quantity of corn which it produced; a conclusion so contrary to reason and experience, that it can only be considered as an exception to ordinary rules, and referred to some unexplained cause; and it is [illegible] to be observed that the increased quantity of the broadcast corn was obtained at the expense of its quality. In the [illegible] field Wheat was [illegible], but it never came up, and the ground was ploughed up in the spring and [illegible] but it was too late, and the produce was only 25 bushels per acre. The grain was probably [illegible] by the dibbles; for the soil [illegible] the chalk constitutes [illegible] a most adhesive plaster, through which the [illegible] with difficulty percolates. [illegible] another experiment in another field [illegible] dibbled against broadcast Wheat; the best of two portions of the former selected for comparison yielding 6 bushels per acre less than the latter. In the other experiments which I have to mention, the results were [illegible] in accordance with the theory of good cultivation.

	Straw per acre. trus lbs	Corn per acre. bshls. gals.	Weight per bushel lbs.
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

How the quality of the corn is in favour of the drilled, but the quantity of straw is in favour of the broadcast; more, however, was sown in the latter case than in the former, 10 pecks instead of 9. It will be observed that the measurement on a large scale requires the calculation of the average by [illegible], but perhaps this is to be attributed to some variation in the soil; for ten other experiments in the same field, comprising altogether more than a quarter of an acre, which is generally considered sufficient for ensuring an average average of more than 38 bushels per acre, and when the field was sown, the drill was employed on three-fourths of the remainder, which on that account was [illegible] sown by hand. The results of the next experiment were still more paradoxical, and contradict one of the common maxims of good husbandry. It was tried on a field of very inferior quality, the situation being high, and the soil shallow: the quantity measured in each case, was 6 perches.

	Straw per acre. trus. lbs	Corn per acre. bshls. gals.	Weight per bushel lbs.
Wheat drilled and harrowed	66 —	25 —	62
" drilled and [illegible]	39 —	22 —	62
" drilled and handhoed	40 —	23 —	62
" drilled and [illegible]	[illegible]	23 —	62
" [illegible]	60 —	25 —	62

So, then, the less the ground was stirred the greater was the quantity of corn which it produced; a conclusion so contrary to reason and experience, that it can only be considered as an exception to ordinary rules, and referred to some unexplained cause; and it is [illegible] to be observed that the increased quantity of the broadcast corn was obtained at the expense of its quality. In the [illegible] field Wheat was [illegible], but it never came up, and the ground was ploughed up in the spring and [illegible] but it was too late, and the produce was only 25 bushels per acre. The grain was probably [illegible] by the dibbles; for the soil [illegible] the chalk constitutes [illegible] a most adhesive plaster, through which the [illegible] with difficulty percolates. [illegible] another experiment in another field [illegible] dibbled against broadcast Wheat; the best of two portions of the former selected for comparison yielding 6 bushels per acre less than the latter. In the other experiments which I have to mention, the results were in accordance with the theory of good cultivation.

	Straw per acre. trus lbs	Corn per acre. bshls. gals.	Weight per bushel lbs.
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Drilled Wheat [illegible]	90 12	34 1	62
[illegible]	91 12	33 6	
Drilled Wheat handhoed	88 20	36 7	62
[illegible]	92 8	32 6	61
[illegible]	97 8	30 —	62
[illegible]	105 32	42 4	62

In the first of these instances a second stirring of the ground appeared to be beneficial; in the second the want

[illegible] [illegible] [illegible] [

of it administered both the value and amount of the produce; for hand-hoeing is such an inefficient operation, except for the extirpation of weeds, that little advantage could be expected from it. Intimately connected with these trials is the further inquiry, with what intervals Wheat should be drilled?

	Straw.	Corn.	Weight.
At 6 in. apart 4 perches gave	32	157 4	62
At 9 " "	19½	64 4	61

Here the excess of quantity seems to have injured the quality; but in another field the same effect was produced by a different cause. Four intervals were tried, the produce was—

	Straw. per square yard.	Corn. per square yard.	Weight.
At 6 in. hoed twice but not rolled	28	146	62
At 7 in. hoed twice, rolled with 4 horses	27	146	62
At 8 in. hoed twice, rolled with 2 horses	28	146	62
At 9 in. hoed twice, rolled with 2 horses	28	146	62

The portion of ground on which these experiments were tried was taken for that purpose out of its natural course, having borne a crop of Wheat the year before last; in order, therefore, to bring it back into the usual series of crops, it was sown with Clover, which in the three closer intervals failed entirely, that in that of 9 inches was strong and covered the ground. Now, since where two crops grew together the second must rob the other of part of its nourishment, the inferiority in the latter case is no more than might be expected.

Another point which I wished to investigate was the practicability of supplying the defect of substance in grain by the addition of ailment to the growing plant, and so making the worst seed answer the same purpose as the best. Some bad Barley having come up sufficiently well, was manured with phosphate of potash, at the rate of 1 cwt. per acre.

	Straw. trusses. lbs.	Corn. Weight. lbs. gals. lbs.
6 perches of it gave	37 90	90 5 48
Good Barley without the phosphate	35 20	87 4 50

The seed being so very thin, the land that scattered it would hold many more grains, and this will account for the greater bulk of straw; notwithstanding which the corn was inferior both in quality and quantity, but not so much as might have been expected; and, perhaps, if some sulphate of ammonia had been added, the result might have been very different for where it was applied to that part of the field where good Barley was sown, the produce was increased by almost 7 bushels of corn per acre, and more than 7 trusses of straw. The remaining experiments having been made in garden ground, and consequently on a small scale, it will be sufficient in the end of calculating the average of each to give the weights actually weighed, and the quantities actually measured for the purpose of comparing the result to one another; this will be more accurate.

Two adjoining plots of ground being sown, one with tailing Wheat, unsaleable otherwise, with good Wheat, in the spring both were thickened into 4 parallelograms, and one in each row, containing a space of 36 square yards, was left without any manure except that the whole ground about two inches deep was covered in April with a solution of 2cwt. superphosphate of potash; the third par. with 1 lb. of the phosphate, and 1 lb. of sulphate of ammonia; and the fourth par. with 2 lbs. of sulphate of ammonia. All these contained 35 square yards. The produce was—

Tailing Wheat, worst that could be selected.	Weight of Straw.	Weight of Straw.	Quantity of Corn.
	lbs. oz.	lbs. oz.	gall. qr. pt.
1 Unmanured	11 8	19 8	1 2 0
2 Phosp. potash	18 0	25 8	2 0 1
3 Phosp. potash	15 9	27 4	2 1 0½
4 Sulph. ammonia	14 12	30 14	2 2 1
GOOD WHEAT.			
1 Unmanured	20 12	24 6	1 3 0
2 Phosp. potash	22 6	32 6	2 1 0
3 Phosp. potash	19 12	34 12	2 2 0
4 Sulph. ammon.	18 4	30 1	2 2 0½

It appears, then, that although the worst seeds are certainly less productive than the best, yet the difference is not so great as might be expected; and that upon soil which is capable of producing a crop, about to bolt ripe here, when the plant is fed by an excess of ammonia, there is no difference at all, at least none worth consideration. The value of this manure is again satisfactorily displayed, the crop being increased by it at the rate of about 50 per cent. I had expected more from the sulphate, but that turned out to be not a fair trial. It is impossible to guard against all sources of inaccuracy; and in this case, some rats had burrowed under those portions which were so manured; and when the corn was ripening 5 children were killed. The cunning creatures had gnawed the roots of several plants in order to bring them down, and then gnawed off the ears, and carried them to their nests. The quantity thus destroyed was considerable; but supposing both to have suffered in equal proportion, I must infer that the other manures cannot compensate for the inferiority of the bad seed, though it is doubtless by them to produce a great deal more than the good seed left without their assistance.—*L. Vernon Harcourt, West Dean House.*

(To be continued.)

GYPSUM AS MANURE.

Gypsum was not used in agriculture till the latter half of the last century. First, it met with much antagonism; now, however, it is considered everywhere as one of the most superior manures, and if we do not find it acting with equal power in all localities, we may say, that this is not to be ascribed to the gypsum, but to other causes not yet explained. It is true, of gypsum especially, as of many mineral substances generally, that small quantities only are required for improving vegetation, and if it be thought that this be caused by some sort of stimulus which it exercises over the plants, this is not the case, because it has been found by many experiments, that the plants really do feed on it. If it were merely a stimulus, it ought to be contended that it will improve the growth of all crops, but we see on the contrary, that it affects more chiefly which contain much albumen, gluten, and legumen, which is said to be supplied by the food for substances requiring sulphur for their chemical composition, which is imparted to the plants by the sulphuric acid of the gypsum. That it is really the sulphuric acid which is useful to the plants, we may learn from other sulphuric salts (for instance, sulphate of iron), when employed in small quantities, acting very beneficially on vegetation, as well as from the fact that gypsum will be useful even on calcareous soils.

There are several sorts of gypsum which may be used as manures: there is one of a crystalline granular character (alabaster); others fibrous, scaly, earthy, &c.; there is also one which contains no water, and therefore consists of 58 parts of sulphuric acid and 42 parts of lime. The earthy is mostly mixed with particles of marl, whilst the scaly contains an admixture of a little oxide of iron, bitumen, common salt, &c. The extraneous admixtures at times increase its value as a manure, at others they impair it, which is to be attended to in its selection and use.

Before gypsum is used it is mostly burnt, because it will be then easier converted into a fine powder. By the burning it loses nothing but the water of crystallisation, or the chemically bound water (21 per cent.). If burnt gypsum be left lying in the air, it will again attract from it as much water as it had previously lost, which becomes again chemically fixed. It is soluble in water: still, 450 lbs. of water will be required to dissolve 1 lb. of gypsum. The property of being pretty easily soluble in water, and so sinking with it in the subsoil, explains why the manure with gypsum is so often to be repeated; because, if at one time only 80 lbs. be used per acre, they ought to suffice longer than we find to be the case, as one crop will not absorb more than 7 or 8 lbs. of gypsum. It does not cause any decomposition in the soil, nor is it changed itself, except if the soil contains much free humic acid, or if it be strewed (as is now often done) over the fresh dung and ploughed in with it, in which case it will sustain a partial decomposition by the carbonate of ammonia, developed from the excrements, so much so, that sulphate of ammonia and carbonate of lime are formed; generally, therefore, it passes (solved in water) in an entire state into the plants. It is generally strewed over the growing young crops, and farmers like it well, if they are yet wet from dew, as it is believed that it will then act as a better stimulus upon the leaves. Still, experience has shown that it will produce the same effect if it is washed off the leaves by rain-water; nay, it has been found that it will, in most cases, improve the growth of Clover (which is mostly manured with it) best, if it be strewed over the field before winter, and harrowed in with the seed. This phenomenon is easily explained by the gypsum finding the sooner in the soil the water required for its solution; and it being now distributed over the whole furrow-slice, it can be easier received by the roots of the plants.

Generally, double the quantity of the Rye used for seed, is employed of gypsum, but there are also soils where only 33 lbs. per acre must be used at once, lest it should over-force Beans or Peas. On some soils gypsum will not act at all, which will be the case if they possess already a sufficient quantity of it. It will be most useful to light soils, as they lose the soonest by the rain-water that gypsum which has been conveyed to them by the dung; whilst clayey soils will retain it longer. At times, gypsum will not produce any effect, on account of the soil being deficient in one or more substances required for the growth of plants; for that such a simple substance as gypsum may act beneficially, the soil must possess all the other substances required for vegetation. There are many places where gypsum once greatly improved the growth of Clover, whilst its application is now without any result. The cause might be, that the soil below the furrow-slice, in which Clover reaches with its roots, does not possess enough of potash, phosphate of lime, &c. Because it is plain, like the Clover, requires these substances for its growth, and if only one is deficient, it is clear that the remaining fourteen will avail it nothing, even if they were abundant. It is not, therefore, that gypsum will produce the best effect on such soils where, chiefly before, that land has been used as the soil will draw received by the subsoil, but on account of its advantages, but on gypsum. The addition of gypsum will thus cause the subsoil to obtain by no other permanent improvement, and it depends yet on other circumstances of which I shall mention the most important. It will not beneficially act on wet, marshy years, as in this case the water will not only convey it to the plants, but also will favour the assimilation of sulphuric acid; the leaves will only decompose the sulphuric acid by the influence of the solar rays, whereby they exhale the oxygen and retain the sulphur for the formation of albumen, gluten, &c. That this process really takes place in leaves is to be seen by the gypsum acting very little in wet, dank weather, and that, being strewed over Clover growing in the shade it will avail it nothing at all. If manuring with gypsum is to be useful, the soil must always contain humus, even if it be only 2 or 3 per cent., as the humic acid has also to transfer other similar substances to the roots required for vegetation. If, however, it contains too much of free humic acid, it will decompose the gypsum, so much so, that humate of lime will be formed and the sulphuric acid will be set free, which may then act as a corrosive on the roots of the crop. On that account, soil very rich in humus must never be manured with too much gypsum, because though the sulphuric acid were to combine with another base, contained in the soil, it would still form therewith a salt easily soluble in water, by which the plants will receive too much sulphuric acid at once.—*From the German of Professor Sprengel.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Farm Servants.—In the following cursory remarks on the management and condition of the farm-servants in this county, I shall advert—1st, To the manner of hiring, 2d, To the amount of wages and mode of payment; and 3d, To their general character and condition. By far the greater part of the regular farm-labour is performed by married servants, usually called hinds. They are hired annually from the 26th May (Whitsunday, O.S.), to the same period of the following year; but there are numerous instances of servants remaining with one master throughout the currency of a lease. Indeed, comparatively few leave their places at the expiration of a single year. When a farmer is desirous of retaining any of his hinds in his service for another year after that which he is then serving, he must inform each of those whom he intends to keep of his wishes at a certain time before the Whitsunday on which their term expires. This day, which is called "speaking time," occurs in the beginning of February, and is general throughout the county. The servants to whom their masters do not "speak" at this period, infer that their services are no longer required, and look out immediately for other employers. Regular hiring-markets are held at Haddington and Dunbar, at which hinds are engaged for the year subsequent to the approaching Whitsunday. Certificates of "industry, sobriety, and fidelity," are generally required from servants before engaging them. The employer has to remove the hind's furniture, &c., from his former to his new abode. Single servants, boarded and lodged in the farmer's house, are hired by the half-year. The hinds are always paid in kind, or with the produce of the farm. The following are the quantities of grain, &c., which they receive, and the prices of each article computed according to its market value in February last:—

9 qrs. of Oats, per [illegible] value	29 10 0
2 do., 2 bushels of Barley	3 10 0
2 do., 2 do. of Beans	3 10 0
Cow's grass	5 0 0
In lieu of [illegible]	0 0 0
Potatoes, two yards long, a drill	2 0 0
Twenty-four [illegible]	2 0 0
Twenty-four [illegible]	0 0 0
Twenty-four [illegible]	0 0 0
Twenty-four [illegible]	0

whole of their wages in the necessaries of life; they have thus all the necessary articles of food continually at hand, and the quantity of corn and butter which those with moderate families are enabled to sell, provides for other demands. It is evident that the actual money value of a hind's wages cannot be accurately stated, as this must depend on the market prices of the articles in which he is paid; but it may be observed, that the seasons which are the worst for other labourers are usually the most favourable for hinds, because the additional corn, of which they can dispose, returns a better price. The numerous advantages arising to farmers and labourers from the general adoption of this mode of payment are clearly set forth in the following extract from Sinclair's "General View," &c.:—"Wherever labourers are paid in money, if they have the smallest inclination to be extravagant, they are furnished with the means. Having money among their hands, they do not scruple to gratify the present propensity, and live in expectation that pay-day will soon return. They are even laid under temptations to dissipation, though they may have no natural inclination to it; they must often, in procuring necessaries for themselves and their families, have occasion to meet their neighbours, with a little time to spare and a little money in their pockets: they must have a little conversation, that can be enjoyed to greatest advantage in the alehouse; and why may they not enjoy themselves with a little of the money for which they have toiled so hard? Thus love of society at first, and afterwards love of liquor, induces a habit which the prospect of distress and infamy cannot counteract, and which had probably never existed if the unfortunate beings had been paid for their work in the necessaries of life, instead of being subjected to the hazard with money to procure them. The cottage system, which found many advocates some time ago, was far inferior in every view of the matter, to the manner in which labourers in agriculture are accommodated here. Many of those who laboured to introduce the new cottage system, deserved all praise for the purity of their motives; every friend of humanity will honour them for the generous interest which they felt in behalf of the labouring poor; but if they had understood the condition of the hinds in this county, they would have found out a much better plan for accomplishing their object, than giving to every cottager land to produce his subsistence. A hind here receives as much corn as such a cottager might be expected to raise; his work for his employer is not interrupted, nor himself worn out by extra and excessive labour; he has no care upon his mind, no rent to pay, no bad seasons to dread; for whatever may be his master's crop, he is sure of his full share. If the labourer profit by this system, the employer and the public profit still more; the employer does not rely much who wastes half his strength at other work, nor rely on a servant who may sometimes disappoint him, by attending to other concerns. The public must gain in the increased quantity of human food produced, for without doubt an acre of land occupied by a cottager will not yield as much, at as little expense, as if it made part of a farm cultivated by a person with sufficient capital. Were all the farm servants over the kingdom paid in kind, it may be safely affirmed, from the experience of the places where this practice prevails, that the advantage would be great to themselves and to the public. The master might probably, in some cases, find it more convenient to give money, but he is far more than recompensed for any trifling disadvantage, attending that other mode, by the valuable moral habits which it is calculated to preserve. Every master who properly understands his interest will admit that he had better pay sober, honest, and industrious servants, than have those of a different description almost for nothing. From their being accustomed to pass little money through their hands, many of the farmers' servants in this county acquire such habits of saving, that they lay up a few pounds for old age, or to meet any contingency which may require more than their ordinary income."

The dwellings of the hinds are remarkably clean and comfortable; simple, but well-kept, and tastefully arranged furniture, with the invariable accompaniment of an eight-day clock, replenish the interior, whilst the climbing Honeysuckle, or delightful Rose-bush, adorns the exterior. The servants' houses are generally situated a short distance from the farm steading of which they form a part. Each hind is under the obligation of furnishing his master with an approved servant (either male or female) to work on the farm during the summer half-year, viz., from Whitsuntide to Martinmas; and should he not have a son or daughter sufficiently capable of filling this place, he must engage and maintain in his own house a sufficient *bondager* for the work—a designation which aptly expresses the onerous nature of the obligation. His wife is also required to reap 22 or more days in harvest, in payment of the house-rent.

Friendly Societies or Clubs are established by the farm servants in almost every parish, which have produced incalculable benefit to the labouring class. The affairs of these highly useful Societies are conducted by a committee annually chosen from among the members; the parish teacher generally acting as secretary and treasurer. Each Society possesses different *Funds*, as the *Cow's Fund*, *Funeral Fund*, *Sick Fund*, &c. By contributing a few pence monthly to the Cow's Fund, a member is entitled to receive from 9*l.* to 12*l.* from the Society on the natural or accidental death of his cow; provided the usual remedial measures have been resorted to for her recovery. In like manner, by paying a trifle into the Funeral Fund, on the demise of the contributor his friends or wife receive about 3*l.* to defray the funeral expenses; and an individual regularly subscribing to the Sick Fund is entitled to 10*s.* a-week for a limited period when disabled from working by indisposition.

It is remarkable that none of the landlords in Lothian, who contribute anything to the support or encouragement of these excellent rural Societies, the servants themselves endeavour to spare a few pence monthly in order to provide against the many contingencies to which their station in life subjects them. But it is evidently the interest as well as the duty of the landowners and tenants who compulsorily pay the poor-rates in Scotland to encourage Societies whose natural tendency is to keep the labourer above the necessity of applying for parochial aid.—*Sinclair.*

TREATMENT OF FARM-HORSES & LIVE-STOCK.

I will proceed to detail the feeding of our horses and the supposed treatment of our cattle and sheep. They are never turned out, nor do they receive any Grain but Oats, or Clover-hay—except a small portion during the interval between green-crops and root-crops. In summer they are fed in mangers on Wheat-straw chaff, cut one-eighth of an inch, and Tares, Lucerne, or green Rye, cut also into chaff the same size, adding ground Beans, Oats, or meal with Linseed. In winter, our Carrots, Swedes, and Mangold, will be well washed, passed through Gardner's Turnip-cutter, and again passed through a toothed cutter machine, so as to become what I call root-chaff; it will then be mixed with very fine Wheat, Bean, or Oat-straw chaff, and a little ground Beans, Barley, or Oatmeal, soaked Linseed, steamed Potatoes, and a little salt, varying the food as much as possible to stimulate their feeding. In fact, to sum up, we shall present their food in the form occupying the smallest possible compass and requiring the least mastication. Every half-hour saved in feeding is so much added to their rest—a most important ingredient in fattening. The dry chaff will prevent laxity and flatulence, producing also a sufficient and healthy excitation of the stomach, whilst it will afford to the gastric juices a ready access to every part of the mass of food. This mixture appears by its various constituents perfectly adapted to the formation of bone, muscle, fat, and flesh, all which are essential to the perfect development of a well-fatted animal. On this subject I annex, by permission, the very kind opinion of Mr. C. R. Bree.

Our horses have a plump muscularity and vigorous rotundity, proving what I said before, that their food contains every necessary element; they thrive wonderfully and cost but little—they get their breakfast, dinner, and supper, in perfect quiet. This is better than sending them for a ten-mile walk morning and evening, thus depriving them of six hours' rest; their skins are soft and their coats glossy—their general appearance exhibiting health, strength, and content. In this all visitors to my farm agree. Were it not for their daily labour, I have no doubt they would be excessively fat; therefore I am justified in anticipating a similar result for my bullocks and sheep. The least they plough is one acre per day, seven inches deep for each pair, and occasionally one and a half acres, particularly during harvest. One pair also trench or subsoil-plough one and a half acre per day during harvest, which is great work. I cannot now state exactly what number of horses we shall require permanently. I rent 45 acres adjoining my land, so that the total holding is 173 acres; we shall certainly require six at least on our principle of trench ploughing, and not resting the land. At present, owing to the great arrears of cultivation, and the various operations of subsoiling, stone-carting, &c., we have an additional four, and sharply they are worked too.

For very lean bullocks, the straw-chaff and green feed, or root-chaff, will be better than too rich a diet at first. As they freshen we shall give them richer food, and increase its quality by degrees, adding soaked Linseed, &c. Our horses and cattle will always have access to rock-salt. I apprehend in bullocks as in horses, a change from very poor to stimulating diet would be hazardous without a previous preparation by physic.

As I said in my former letters, there should be warmth, cleanliness, ventilation, and good grooming; bricked floors set in cement and well drained, appear well adapted for cattle generally. They should occasionally be washed down with sulphuric acid and water, or sprinkled with gypsum. This will convert the offensive ammonia into an efficient manure. All stables and cattle-rooms, should have their walls and ceilings lime-washed at least once a year—the mangers occasionally well scrubbed. A harness room in stables is indispensable.

My farm-yard will not look like one, for not much loose straw will be seen—a little straw-chaff may appear, here and there, to absorb the moisture and excrement from the cattle; but the solid part will be removed daily, or frequently, to the roofed tank, so as to go on the land, as rich as possible, fermented; but not rotted by rain, or evaporated by sunshine or wind. The rest of my straw, both Wheat, Bean, and Oat, will be converted as chaff into food for my stock and so go to the land in the shape of mutton, beef, or pasture for the following bond and straw for my barns. In conclusion, it will afford me very great pleasure to receive hints from so eminent a practical man on the subject of this letter.—*To J. Mechi, 4, Leadenhall-street, London, August, 1844.*

P.S.—Cost per week of keeping each farm-horse in high condition and full working order:—

Twenty-four bushels of Wheat-straw chaff, cut one-eighth of an inch, at 2*d.*	4 0
Twelve bushels of green Tares cut into chaff, at 2*d.*	2 0
Four and a half pecks of Beans, crushed into small pieces	2 3
Pollard	1 0
Cutting chaff	0 6
Straw for litter	0 0
	9 9

I value my Wheat-straw at 6*d.* per truss of 36 lbs. or 18*s.* per load of 36 trusses, which is the average price it could be sold for on the farm. My green tares I value at 1*s.* per rod, or 8*l.* per acre. Of course where Lucerne, Clover, or Rye are used, a due regard will be had to preserve the same relative cost. In winter a proportionate quantity of roots will be substituted for green food. I believe it is seldom accurately known what farm-horses do cost. I have asked the question frequently, and received for answer a shrug of the shoulders, or a shake of the head as to its worth "A great deal too much." A great fair farmer and clever valuer told me, the farm-horses ate up one-fourth the produce of the farm; that is, 25 acres out of every 100. My own calculation was 20 acres; but he is no doubt right on average lands.

A gentleman writes me, that cutting hay very fine caused irritation and griping amongst farm-horses, which he attributes to want of mastication; since he had it cut 1½ inch, no such injurious effect has been experienced. On our own farm, during several months' experience, our fine-cut food has caused no injury, probably owing to our using so a large proportion of straw chaff and little or no hay. I beg to refer to my fifth letter for other particulars of my cattle management. I think, generally speaking, a loose box, with just room for the animal to turn in, is better than stalls—although I have not practically compared the two—nor can I say from experience, whether the total absence of light is more injurious to the animal's health than any increase in its fattening. I should consider both light and air are necessary to health. Mr. Warnes's pamphlet (Longmans and Co.), contains useful information on fattening cattle. The Rev. J. C. Blair Warren, of Horkesley Hall, near Colchester, applies the close box system with judgment and advantage, and is in other respects a scientific practical farmer.

Extract of a Letter from Mr. C. R. Bree.—With regard to your question about the application of Wheat-straw chaff in the function of nutrition, I have much pleasure in offering you my opinion. Wheat-straw contains very little albumen—according to Playfair none. It therefore can be of no use in supplying the nitrogenous elements of muscle. But as you supply this in your green food, and more particularly in the Beans, its absence in the straw can be of little importance. It will, however, have the same effect when given as you do, as vegetables have often been eaten by human beings with meat. It will be useful in the following objects:—

1. In supplying the phosphate of lime to form the earthy part of bone.

2. It will assist in the formation of muscle by supplying the non-azotised portions of the structure.

3. It will supply carbon in abundance. If this carbon is not required for the restoration of waste, it will assist in forming a supply of carbonic acid in the performance of the function of respiration, and the supply of animal heat.

4. By this appropriation it will permit the excess of carbon, taken in with the other food to unite chemically with the elements of water, and thus be deposited in the system as fat. Straw, chemically speaking, differs from hay, in (*A.*) containing little or no albumen. *B.* In containing rather more organic matter. *C.* Hay leaves as much again of ashes after incineration.

I consider your union of straw with green food and Beans as sound in theory. Beans have *per se* too much albumen for animal food; by uniting straw with them you counteract the effects of this excess, and by adding green food, you supply saline matter, which is indispensable to the due performance of the function of nutrition. I think your plan judicious as well as scientific.

Home Correspondence.

Non-interference with Politics.—Before the close of the first year of your Paper, I find you departing from *your own* principle of *non-interference* with *politics*, and giving notice that in your next Number you shall test the merits of the arable and pasture system, on the principle of the labourer having a right to *employment*, as *his inheritance*. Surely this is a political question; and let me put one question to you on that subject:—Supposing the higher grades of society are determined to eat bread made of foreign Wheat, and drink beer and spirits made of foreign Barley, and that their horses shall eat foreign Oats, and their tables foreign beef, and their ships shall convey foreign provision—and let me tell you, *this is surely simply the case*—under what principle of right or justice can *you* expect the owner of the land to produce what nobody will buy, or, what amounts to the same thing, will not pay for cultivation? Why should the land-owner be obliged to produce Wheat, which he cannot sell but at a loss? And how is the labourer's right to be enforced on owners of the land, whose market is destroyed? Are they to be obliged to sell and mortgage to mill-owners, cotton-spinners, and other trade and craftsmen, all their inheritance, to pay for labour which does them no good, but makes them poorer still? Answer this question, if you please, and not argue pasture and arable on a wrong foundation, or principles that will not bear dividing (tested with truth).—*C. Kent, December 10.*

The criterion by which we have estimated the propriety of any system of cultivation is not *only* its capability of giving employment to the labourer—as our correspondent appears to think. Our words were as follow:—"We maintain that the merits of any system of cultivation depend not merely on *the profit to the cultivator and the quantity of food* which it produces, but also on *the quantity of employment it provides for the labourer.*"

These are the principles by which we propose and have endeavoured to test the systems of pasture and arable culture—their *profitableness*, and productiveness of food and *employment*—not one only, but all three. It will be observed that *only such* an additional employment of labourers as will be *profitable* to the farmer is insisted on as due from the farmer; surely it needs not many words to commend such a sentiment as that to the mind of any one. With reference to our correspondent's allegation, that in considering this subject we are breaking our own rule of non-interference with politics, we answer, by saying that the profits, the produce, and the expenses of cultivation are the very essence of *agricultural practice*.

[We have received a communication on this subject from "W. L." (we are unable to decipher the name or we would give it at length), which we hope will excuse our not publishing, as it is not our wish to enter on a discussion on the *moral* aspect of this question. Independently of any *duty* in the matter, we may safely rest our case on the *expediency* of the practice we have advocated; and to this, as regards the interest of landlord and tenant, we now invite the attention of correspondents; as, the more clearly this is exhibited, the more, it is presumable, will employment from this source be provided for agricultural labourers—a consideration which all must heartily desire, whatever difference of opinion may exist as to the modes in which it may be best effected.]

Experiments on Nutrition.—In reply to your question, in your postscript, I beg to say that an examination of the excrements of the cows, if not of their analysis as given by Boussingault, confirms me in the opinion that the unsuitableness of the food to the digestive organs had much to do with the subsequent emaciation of the cows, for I perceive that with the Mangold Wurzel there was only about 76 lbs. of dry excrement in 14 days, whilst with the Potatoes there was 187 lbs., and with the hay 339 lbs. Now it is a curious fact that the loss or gain of weight bears a very strict relation in an inverse ratio to the amount of dry excrement.

	Weight of Dry Excrement.	Loss of Weight by Cows.
On the Mangold Wurzel diet,	76 lbs.	149 lbs.
		Gain of Weight
On the Hay diet	339 lbs.	111 lbs.
		Loss of Weight
On the Potato diet	187 lbs.	78 lbs.

Now, though this relation is somewhat curious, and greatly supports my theory, yet I do not mean to insist that it altogether proves that the loss of weight is owing to the deficiency of dry nutriment, though it might be as much justified in so doing as the Duke himself is in asserting that the loss and gain of weight of the cows are owing to the deficiency of fat in the food. Now, if this theory is correct, may we not, on the other hand, on account of about three and a half times as much of fat, produce a pound of fat. We do not, on the other hand, on account of about three and a half times as much of fat, produce a pound of fat with 100 lbs. of hay, as with 100 lbs. of Mangold Wurzel in the 14 days; with the Mangold Wurzel diet, in the same period, it amounted to only 1½ lb., or half that quantity. Now, when we consider the importance of the phosphates in the animal economy, that they enter into the composition of flesh and bone, and also into the brain and nervous system, we cannot be surprised that great debility should arise from their absence in the food, or that this debility should be best remedied by giving food in which phosphates most largely abound, such as hay. The same observations may also probably apply to the other inorganic constituents, for we know that there must have been at least double the quantity taken with the hay than with the Mangold Wurzel. The superior feeding properties of [illegible] Wurzel have been fully proved, as in the experiments [illegible], by the careful and well-conducted experiments of Mr. Colman. The practical result corresponds in every way with the chemical analysis of the different roots. The cows became both in flesh and fat as we should anticipate; if we look to the [illegible] as the only source of the fat in the animal, it is impossible that fat ready formed in the food can be essential for the formation of that in the animal, since for the fat in the system [illegible] case, without destroying the animal, that the fat of the body is formed from the sugar, starch, and other unazotised constituents of the food consumed in respiration. [illegible] theory does better explains than the other the variations of the heifers and the food consumed in hot countries and in cold ones, both in man and animals, and its connexion to associate it with the fattening properties peculiar to sugar and starch.—*W. C. Spooner, Rothampton.*

[Our readers will have noticed that our correspondent's criticism of Boussingault's experiments (see p. 548) were founded precisely on that view of the subject on which Dr. Playfair himself last week (see p. 542) recorded his condemnatory notice of them.]

Gypsum.—If "W. C." will refer to my first short notice on the action of gypsum as a [illegible] manure, by which he will be able to ascertain the proper quantity of gypsum required for any given quantity of manure. It appears, from direct experiment, that 200 grains of pulverised gypsum will readily fix between 30 and 70 grains of carbonate of ammonia, but it appears that, as the result of calculation founded upon experiments, the average yield of manure which is sufficiently decomposed to be put upon land has been, during the [illegible] about [illegible] of carbonate of ammonia. It will therefore be seen that under the [illegible] mentioned, to add to every [illegible] pulverised gypsum will [illegible] of carbonate of ammonia. By [illegible] I mean by spreading to a [illegible] the quantities [illegible] per acre of gypsum [illegible] [illegible] (mixing). Let the dunghill be situated [illegible] made. Let, in the first instance, [illegible] manure [illegible] about the yard till half [illegible] deposited. Then mix them in three layers of gypsum, of which the [illegible] will [illegible] 1d. per yard of manure; mixing [illegible] 1 lb. of sulphuric acid for each [illegible] small cart-load in the heap will be less than 3d. per [illegible] load, so that the cost for 10 cart-loads, or 20 [illegible] yards, will be about 5s. The trade-price of the quantity of sulphate of ammonia, which will be furnished to the land by the gypsum and sulphuric acid in these 10 cart-loads, when entire decomposition and neutralisation has been effected, is about 1*l.* 7*s.* The covering of earth used by "W. C." tends but little to fix ammonia in any case, and will be quite unnecessary now.—*J. B. Reade.*

Hand Threshing Machine.—I have been trying a hand threshing machine, made by an ingenious mechanic in this island, but I find the labour required to work it is very great, as is the case with those I have seen in England. Will you favour me with your opinion as to the effect in lightening the labour of a windlass with rope and compound pulleys; the rope and pulleys mounted on shears 20 feet high over a sunk pit, what weight attached to these pulleys would equal the power of a man? If you think the power applicable, I have one or two plans for obtaining speed. I am now trying a very simple form of drilling machine, which will drop three or four grains of Wheat at stated intervals, as a substitute for dibbling. I have been at some difficulty in getting it put together, from the great stupidity of the people. My drilling-machine unships, and a small hay-tedding machine can be fixed to the same frame, and on removing this I affix my rake, and the frame also is made to carry a tub and drilled box for liquid manure; the shafts which belong to my large roller are removable, and are those I attach to this piece of all-work. It appears to me that this drill will be very useful both for Wheat and Turnips, and that the machine would be a great accommodation to farmers of small means, as the whole is of trifling expense, from its simplicity of construction.—*A Subscriber from the first—Jersey.*

Manure versus *Good Cultivation.*—I am convinced that it is much more important to attend to the latter than to the former of these two means of improvement; and that national, as well as individual wealth, may be more increased by the latter of the two; for I am convinced, that nothing like the full extent of the inherent powers of the soil is taken hold of by our generally too superficial method of cultivation. Good cultivation consists mainly in, 1st. Thorough-draining, which soon changes the nature and texture of the soil for the better, to double the depth that is ploughed. 2d. Deep cultivation with the plough, and not omitting subsoil-ploughing, if it be but four or six inches in depth; a little is better than none. And, 3d. Moving the soil, or fallowing well; giving unremitting diligence to move and pulverise the soil on every opportunity, but more especially in summer and in dry weather; taking care to have a good depth of soil at the finish.—*A Leicestershire Farmer.*

Sea Buckthorn, Rabbits, &c.—I am much obliged by the attention of "M. D. P." to my inquiry. What I was more particularly desirous of ascertaining was, whether the plant in question will grow equally well in inland districts; and whether it is available for any purpose as underwood. Withering states that cows refuse it, but that horses, sheep, and goats, eat it. He does not, however, notice that it is free from the attack of rabbits as "M. D. P." assures us it is. Can "M. D. P." or any other correspondent, furnish us with a list of plants which are not liable (especially when young or newly-planted) to injury from these troublesome pests; and are, at the same time, useful as underwood and cover? Do rabbits attack the Berberis aquifolium? I am told that they avoid even the wood Laurel: a list of useful plants, that are certainly safe from this destructive creature, would be acceptable to planters, as the effects of [illegible] operations are [illegible] temporary only; notwithstanding such [illegible] [illegible] hundreds of fine [illegible] plantations were last year entirely [illegible] to prevent the [illegible] of young plantation, [illegible]—*An Old Subscriber.*

Canterbury Corn Show.—[illegible] the [illegible] forwarding cut, had a very uniform appearance. [illegible] the rye, at the time [illegible] cut, [illegible] [illegible] result as that which you obtained when the crop was harvested. In some of the patches the steeped is only the finest of the unsteeped. Now, if the [illegible] first appearance when growing, surely [illegible] the ear must have indicated this great [illegible] to a considerable extent last season. When the [illegible] came [illegible] into ear, the steeped portion [illegible] superiority; but I was disappointed at harvest, [illegible] more so in the field, as the produce of one [illegible] with steeped seed yielded one bushel less than [illegible] with unsteeped seed. And this hap-

pened even while the former evidently yielded the greatest amount of straw, and counted the greater number of shoots—this in the case of Oats. In the case of Barley the superiority was not only apparent, but real, in favour of the steeped portion. In case of your former Number, I observed the description of a method for deterring thrushes from visiting any particular field, by strewing there [illegible] some particular substance offensive to [illegible]. Could you inform me what that substance is? [illegible] would [illegible] and very desirous of trying it. My [illegible] [illegible] from [illegible] much destroyed by a [illegible] [illegible] who himself has left this [illegible] for the purpose of [illegible] his [illegible] [illegible] [illegible]

P.M., his Grace the Duke of Richmond, K.G., President, in the chair. The following members were present:—The Marquis of Downshire, Earl Spencer, Col. Challoner, Dr. Hamel, Rev. James Linton, Sir Robert Price, Bart., Capt. Randolph, Professor Simonds, Mr. R. Smythies, Sir Harry Verney, Bart., and Messrs. S. Almack, W. Astbury, John Almack, D. Barclay, M.P., Thomas Raymond Barker, H. Blagrave, M. R. Bodman, John Beck, S. Wood Blake, John Partridge Bonsfield Barclay, Thomas Bennett, H. Wm. Bentinck, Captain Barclay, E. H. Baldock, R. W. Baker, G. Barnard, A. J. Brown, S. R. Colvile, M.P., Mathew Culmer, John Clover, George Cottam, Ap. W. Crowch, Robert Cobb, F. C. Cherry, Joseph Dance, Samuel Druce, R. Davey, James Dean, John Ellman, Thomas Ellman, R. Edgington, P. Fearnhead, Thomas Fowler, R. Fulcher, William Greaves, H. J. Gould, John Griffith, G. Griffin, W. H. Hyett, W. Hankin, W. Fisher Hobbs, W. Holbech, C. Wren Hoskyns, C. Hillyard, H. Holding, Thomas Jones, John Kinder, George Kilby, Fielder King, Thomas Knight, John Mantle, Edward Rickford, William Miles, M.P., Thomas Mount, Richard Milward, W. Marden, Charles North, H. Overman, A. Ogilvie, Henry Paget, Joseph Parker, C. W. H. Potter, H. Priest, J. Allen Ridgwood, R. A. Slaney, Thomas Stone, Alsiby H. Saville, William Stone, Richard Smith, J. Sealey, W. P. Salter, Hon. Villiers Shelley, M. H. Shuttleworth, William Shaw, E. Reynolds Solly, Samuel Solly, W. Sperling, H. Smith, J. Holt Stanway, J. H. Turner, C. J. Tower, Thomas Turner, John Thompson, W. Trinder, J. C. Thorpe, Thomas Umbers, John Wood, and J. A. Williams.

The Secretary, by direction of the President, read the Report of the Council to the General Meeting:—

REPORT.—The Council have again the satisfaction of reporting to the Members, at their present General Meeting, the effective state of the Society in every branch of its operations, and the continued influx of new members from all parts of the kingdom. The communications of practical results in farming, furnished by correspondents from the various localities of the country, and again disseminated among the Members by means of the Journal; the increasing extent and importance of the Annual Country Meetings, at which not only the agricultural community have the immediate advantages of personal communication and mutual interchange of experience on farming topics of common interest to all, but where from year to year specimens of the most approved breeds of cattle are in succession submitted to their notice, and the most important improvements made in the implements of husbandry submitted to their inspection, and their real value brought at once to the test of practical trial: form the leading points on which the Council have to congratulate the Members, as evidences of the great and advancement of the Society in the fulfilment of its various objects. In the application of science to the purposes of agriculture, as in all other arts, the Council are fully aware that the results will only be conclusive and satisfactory in proportion to the perfection of the particular science itself, whose principles are proposed for the regulation of agricultural practice. The laws of mechanics being simple and determinate, their application to the improvement of the principles on which the machines and implements of agriculture may be most economically effected, has been attended with results corresponding decisive in their character; but while the simple and well established principles of inorganic chemistry may with confidence be expected to serve as safe guides in leading us to a knowledge of the properties of every variety of soil, and the means of their required modification to particular objects, they can only throw light to be thrown upon agriculture by organic chemistry, a less perfect branch of the science, upon its principles received with greater diffidence, though it ultimately promises the most important results. The Council are convinced that the perfection of agriculture as a science, or farming as an art, is only to be attained by the establishment of scientific principles derived from practice, and their judicious application under the given circumstances and conditions of each particular case of climate, soil, or aspect. While, however, they deem this caution requisite in exposition of the practical objects and character of the Society, they witness with great satisfaction the rapid advances made by the distinguished chemists of the present day in that comparatively new and inviting branch of chemical philosophy connected with investigations into the laws of organic matter and the principles of vegetable life; and they have to congratulate the Society on the zeal with which their consulting chemist, Dr. Playfair, has entered this new and valuable field of scientific inquiry, and the kindness with which he has gratified and favored the members, on the occasion of their quarterly meeting, with two highly interesting lectures, elucidating the application of the most recent discoveries of chemical science to the practical operations of agriculture. The Council feel, that if any circumstance could enhance the obligations under which they are already placed by these lectures, they would be the readiness with which Dr. Playfair, at very short notice, and sometimes under personal inconvenience, prepared himself for their delivery, and the liberality with which the Royal Institution of Great Britain at once placed their theatre at the disposal of the Society for the occasion. The Society's recent country meeting at Southampton was most successful in every department of its arrangements, and fulfilled the most sanguine expectations of the Council. The extent of the show-yard, and the number of entries for exhibition on that occasion exceeded those of any previous meeting; and the trial of implements, so dependent on circumstances for failure or success, was conducted to the satisfaction of the stewards of the department and the exhibitors whose implements were submitted for trial, and proved an object of much attraction to the numerous spectators by whom it was witnessed. The success, in a financial point of view, of the meeting, was materially owing to the liberality placed at the disposal of the Council by the committee of the town and neighbourhood of Southampton in the contribution of £1000 to the funds of the Society for the purpose of meeting the expenses of the occasion. To the mayor, corporation, and authorities of the borough, the local committee, the commissioners of police, the proprietors of the trial ground, and the Southampton and Netley Railway Company, the Society, before leaving Southampton, conveyed by unanimous resolutions their most acknowledgments of the essential services which those parties, by their cordial and zealous co-operation, had respectively rendered to the Council in promoting the objects of the meeting. From the agricultural character of the district in which the next Annual Country Meeting of the Society at Shrewsbury is appointed to be held, the Council anticipate with confidence a result no less gratifying than that obtained at Southampton; and they have already taken the requisite steps in preparation for that meeting, and have also decided that the judges of stock shall be appointed from recommendations made by the members of the Society at large at the General Meeting in May.

The Finance Committee will lay before the meeting the balance-sheets of the accounts as examined and approved by the auditors on the part of the Society. Their chairman will also report to the members the large amount of arrears of subscription discharged during the past half year, as well as the mode proposed for facilitating the future collection of subscriptions. Since the last half-yearly meeting upwards of 300 new members have been elected, and the Society now consists of the following members:—Life Governors, 97; Annual Governors, 208; Annual Members, 6037; Life Members, 470; Honorary Members, 15; making a total of 6827 members on the list of the Society at the present time. The Council have unanimously requested Mr. Pusey to accept the office of a trustee of the Society, vacant by the death of the Duke of Grafton, and have elected Mr. Thomas Lockley Meire, of Cound Arbour, near Shrewsbury, a member of the Council, in the place of the late Mr. Edward Gough, of Gravel Hill, near Shrewsbury. The increasing importance attached by the members to the possession of the Society's Journal, has led the Journal Committee to continue its best consideration of the means by which the distribution of each publication may be effected with the greatest certainty, and least loss of time, among the members throughout the kingdom; and they trust that this desirable object will gradually become attained, as the addresses of members are more accurately known, and the most convenient modes of transmission to them more distinctly ascertained. For the convenience of members availing themselves of their privileges of attending the rooms of the Society, the Council have ordered a catalogue of the library, and an inventory of the implements, models, &c., to be prepared for their reference. Four years having elapsed since the date of the charter, and the bye-laws then framed agreeably with the new powers conferred upon the Society, the Council have been desirous of rendering the experience gained during this period available for the regulation of their proceedings; and they have accordingly made a complete revision of their former bye-laws, and enacted a code of bye-laws and regulations, not only embodying the tenor of such of their special resolutions as had a permanent operation, but rendering the whole more exactly in accordance with the provisions of the charter. A printed copy of these bye-laws was appended to the journal on its last publication, and thus brought under the immediate notice of the members.

The Council, in conclusion, beg to congratulate the members on the present sound and vigorous condition under which the Society is steadily advancing in the gradual fulfilment of its national objects; and, supported as it is by the continued accession of new members, they hope to extend annually its sphere of usefulness.—By order of the Council, (Signed) JAMES HUDSON, Sec.

On the motion of Mr. SAMUEL DRUCE, seconded by Mr. TOWER, this report was unanimously received and adopted. Mr. RAYMOND BARKER, chairman of the Finance Committee, then read to the meeting the following balance-sheets as audited on the previous day:—

I.—GENERAL STATEMENT OF ACCOUNT FROM 30th JUNE, 1843, TO 30th JUNE, 1844.—*Receipts.*

Balance in the hands of the bankers, Dec. 31, 1843	£2067 11 6
Balance in the hands of the secretary, 30th Jan. 1844	17 0 0
Half-year's dividends on stock	120 0 0
Annual subscriptions of governors not to show-yards	1 1 0
Annual subscriptions of members	1 1 0
Annual subscriptions of members not to show-yards	1 1 0
Annual subscriptions of members	1 1 0
Sale of Journal	1 1 0
Sale of cottage tracts	1 1 0
Sundry receipts during last year & bad debts recovered	1 1 0
Payments made to Society by Royal Agricultural College	1 1 0
Payments by C. C. Cotman, Esq.	1 1 0
Payments by Messrs. Bramah	1 1 0
Payments by Messrs. Clayton & Shuttleworth	1 1 0
Payments by Messrs. Ransomes	1 1 0
Payments by Messrs. Garrett	1 1 0
Payments by Messrs. Crosskill	1 1 0
Payments by Messrs. Hornsby	1 1 0
Payments by Messrs. Smith	1 1 0
Payments by Messrs. Wood	1 1 0
Payments by Messrs. Bentall	1 1 0
Payments by Messrs. Coleman	1 1 0
Payments by Messrs. Hall	1 1 0
Payments by Messrs. Morton	1 1 0
Payments by Messrs. Pain	1 1 0
Payments by Messrs. Ransome

spirit seems to have been infused into our Society, Sir H. Davy was invited to apply his chemical knowledge to the means of increasing the production of food. His views on this subject have not hitherto been surpassed in utility, although they are greatly undervalued by the disciples of foreign empirics. In the application of electricity to chemical analysis, Sir Humphrey took the lead, after his predecessor Ritter had through his national love of mysticism become bewildered in the mazes of Mesmerism. The prominent position which Sir Humphry attained in this path of science has been nobly maintained by his pupil Farady, who is looked up to by all nations as the first authority in electrolytic science. His idea that electrical attraction and chemical affinity are one and the same, first occurred to Sir Humphry, in consequence of his decomposition of the alkalies by electricity. The exceptions to this rule may admit of explanation, and do not militate against its general application. On this important subject much remains to be investigated. Mr. Solly hailed with great delight the prospect of a permanent connection between the Society and the Royal Institution, for the purpose of examining the nature and composition of the objects of agriculture; but, as a reason for caution against placing unlimited confidence in chemical analyses for the purpose of ascertaining the nutriment essentially required by plants, Mr. Solly mentioned the obvious difference in their nature, produced by difference of soil. This is particularly observable in Grasses, which are frequently refused by cattle when manured by their own dung; but the same cause does not render them distasteful to animals of a different species. In Norway the excrement of horses is greedily devoured by cows. Mr. Solly mentioned that some of the large and more profitable Grasses seem to prefer a great depth of loose soil, particularly of leaf-mould: therefore some of them flourish with the greatest luxuriance on the banks of hedges. This is particularly the case with the Holcus avenaceous, highly recommended by German writers of the last century. Mr. Solly exhibited some remarkable specimens of other indigenous Grasses obtained from hedge-banks in Hertfordshire—the Bromus giganteus and the Festuca elatior—the height of the former exceeded 8 feet, that of the latter was more than 6. This Grass has been particularly recommended for cultivation in the "Transactions of the Swedish Agricultural Society." Mr. Solly then seconded Mr. Miles's motion, which was carried unanimously.

Sir Harry Verney rose, to propose the thanks of the meeting to the Finance Committee and the Auditors of Accounts, on the part of the Society, for their great care of the financial interests of the Society; and the motion being seconded by Mr. Richard Milward, was carried unanimously.

Colonel Challoner returned thanks on the part of the Finance Committee, for the good opinion entertained of them and the auditors. He had the gratification to state, that the accounts were in a state of perfect regularity,—a circumstance of the greatest importance, for unless the financial department be regulated with the utmost precision, no Society could expect to prosper.

Mr. Knight, as one of the auditors, on the part of the Society, returned thanks to the meeting on behalf of himself and his colleague, Mr. Hampden Turner, who on the day previously had with him audited the accounts then laid on the table before the members. He had the satisfaction of bearing his testimony to the extreme accuracy of the accounts of the Society, which were kept in so excellent a state that it had become a most pleasing duty to audit them.

Sir Harry Verney suggested the desirableness of connecting the Society with the different local Societies throughout the kingdom, in the same manner as had been effected with great success by the Royal Agricultural Improvement Society of Ireland, where that Society was proving, not as in England, a boon to agriculture alone, but a national blessing in promoting a good understanding among all parties connected more or less with the cultivation of the soil within the range of its progress and influence.

The noble President would not fail to bring Sir Harry Verney's proposition before the Council on the earliest occasion; at the same time he thought that the movement, in reference to any alliance, such as that proposed, ought to originate with the local Societies themselves towards the Royal Agricultural Society as the central body, whose collected information they already received, and diffused with so much practical advantage throughout their respective districts.

The Marquis of Downshire bore testimony to the value of the local Societies in Ireland, and the united desire now manifested by the owners and occupiers in that part of the kingdom to go on cordially together hand in hand in the great work of agricultural improvement, to which they were invited and encouraged by the example set them in England and Scotland.

On the motion of Earl Spencer, seconded by Mr. Hillyard, a vote of thanks was carried by acclamation to the noble President.

The Duke of Richmond expressed himself grateful for the manner in which the meeting had received the proposition of his noble friend, Lord Spencer. He had at present done little, since he had again come into the office of their president, to deserve their thanks; but he confidently hoped that he should leave the Society in as flourishing a state as they had then the gratification of finding it. The Society had not only done great good already, but would do still more; and as long as it was supported by the tenants and practical farmers of the country, there could be no doubt of its continued prosperity and success. The noble duke then left the chair, and the meeting broke up.

The Meetings of the Council stand adjourned over the Christmas recess to the 5th of February.

SMITHFIELD CLUB SHOW.

We omitted mentioning in our report last week of this Exhibition, a model of farm-buildings, exhibited by Mr. Crosskill, of Beverley, his agricultural labours, to the merits of which, we understand, he has many testimonials.

Miscellaneous.

Fibrous Covering, or Gurneyism.—Fibrous covering requires to be applied in given quantities; if too much was laid on it would, like too large a dose of manure, destroy vegetation; and if too little, it would produce no very sensible action; this was a point of some importance, as an experiment would fail from either of these causes. He thought, judging from the result of experiment, that about 20 lbs. of long straw should be laid equally over a customary land-yard or rood of growing Grass, either in a lay-field or an after Grass. Previously to the next meeting, he hoped they would rake off the covering, and carefully notice the effect produced in the growth of the herbage, as compared to that in the other parts of the field; the nature and kind of Grass should also be carefully examined. Before he sat down it might be well for him to say that about seven weeks since he had covered half a field of Grass of three acres in this manner, and that about a fortnight ago when examined, the increase had been found to be at the rate of upwards of 5000 lbs. per acre over the other part of the field. At the same time the straw was raked off and laid in rows about 12 ft. apart on the field; 115 sheep were now put into the field, with a view to eat it down as quickly as possible. After they had been there about a week, they were succeeded by 26 bullocks to eat off the long Grass remaining, and which the sheep had left; the field was eaten as bare as possible. The same straw was now again thrown over the same portion of the field from which it had been raked; on inspection that morning he had found the action going on under it as powerfully as on the former occasion. He said he thought the sheep, on first raking off the straw, were not so fond of the Grass as they were of that uncovered: but after 24 hours' exposure to the sun and air, he thought they rather preferred it. He had upwards of 40 acres now under the operation, and in consequence of it, he had had Grass when his neighbours had none. He would consider it a personal favour if they would make some experiments on this subject before their next meeting.—*Mr. Gurney, at the June Meeting of the East Cornwall Experimental Club.*

Value of Guano.—Dr. Ure quotes African as varying in composition as follows:—

Moisture	from 21	to 36	per cent.
Ammonia	„ 5	10	„
Organic matter	„ 35	50	„
Phosphate of lime	„ 23	35	„
Phosphate of magnesia and ammonia	3	6	„
Alkaline salts	„ 1.5	5	„
Sand, &c.	„ 1	2	„

Now, the moisture is worth nothing, so that a sample giving 36 per cent. moisture, will contain but 64 solid guano, and that more or less damaged. Ammonia is the most valuable ingredient, and may be estimated (in comparison with other manures) at 6*d.* to 8*d.* per lb.; so that two samples, in other respects equal, one containing 10, the other only 5 per cent. of ammonia—the first will be worth 2*s.* 6*d.* per cwt., or 2*l.* 10*s.* per ton, more than the other. The ingredient next in value is the phosphate of lime, including that of magnesia, which are here in a much more readily soluble state than in bones; and taking bones to average half their weight of phosphate, may be valued at double the price of bone-dust, that is, taking bone-dust at 18*s.* per quarter of 3 cwt., the phosphates in guano may be valued at 12*s.* per cwt., or 1½*d.* per lb. But these phosphates do not decay; and hence the more the ammonia and organic matters are rotted away, the richer is the remainder in phosphates. For instance, if fresh guano contains 15 per cent. phosphates, and then loses 1-4th by decay, the whole 15 of phosphates remain in the 75 lbs. residue; and 100 of such residue will contain 20. So that decayed guano becomes richer in phosphates as it loses ammonia; the one going, in some degree, to compensate the loss of the other. The organic matters, free from ammonia and nitrogen, are the other elements in the worth of guano, and are the more valuable from their state of intimate composition with the ammonia and phosphates. In this state they may be worth 1*s.* (or more) per cwt. The alkaline salts are in such small quantity, that it may be better to simplify the calculation by omitting them. The value of guano may then be estimated according to its contents, in—1. Ammonia; 2. Phosphates; 3. Organic matter. For example, take two samples of African guano, No. 1 fine; No. 2 inferior; containing as follows, per 100lbs.:—

	No. 1.		No. 2.	
	lbs.	*s. d.*	lbs.	*s. d.*
Moisture (no value)	20		32	
Ammonia, at 6*d.*	8	4 0	5	2 6
Phosphates, 1½*d.*	25	3 1½	20	2 6
Organic matter 1*s.* per cwt.	40	8 4	23	6 8
		7 5½		6 6

Their proportionate values will be about as 7*s.* 6*d.* to 6*s.* 6*d.*: their actual prices depending, of course, on the state of the market, but still bearing the same proportions.—*J. Prideaux, in the Farmers' Journal.*

Drill.—The principle of thin drilling is admitted by every farmer who hoes his Turnips, and every gardener who pricks out his bed of seedling Cabbage-plants. The grain crops alone seem, by some prejudiced persons, to be considered capable of taking care of themselves, and are supposed to be safely allowed to carry on a vegetable agrarian war in their own ranks, during the earlier period of their growth, until two-thirds of them are killed outright, and the rest stunted or predisposed to disease, by their constitutions having been impaired in this desperate struggle for existence. If a farmer were to turn 20 sheep into a field of Turnips capable of fattening only 10, with a view to get the 10 best ones fatted, to the starving of the remainder, some of his relations would, if he were rich, immediately get him declared insane. But this is precisely the course taken with his Wheat-plants by the man who drills above a bushel per acre.—*Mark Lane Gazette.*

Notices to Correspondents.

Rural Chemistry.—Dr. E. Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Honorary Member of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution, may be had of all booksellers, price 4*s.* 6*d.*

Books.—*Mallins.*—"Johnston's Lectures on Agricultural Chemistry and Geology."

Cape of Good Hope.—*Broadway.*—We are unable to assist you.

Churn.—*Philla.*—The Sussex churn is a short barrel churn. It is made of block tin, which is not injurious to the butter.

Coltsfoot.—*Mallins.*—Your only remedy is perseverance in cutting off its flowers in spring, and its leaves in summer.

Decomposition of Manure.—*Subscriber.*—Lime will, perhaps, effect the decomposition of your compost within the time by turning it over once a fortnight, and shaking it all to fine pieces.

Dr. Yelloly's Forks.—*H.* would take it as a great favour if Mr. Dixon, Witham, would give us for our Paper such a description of Dr. Yelloly's forks as would enable him to have some made.

Farm-yard Litter.—*Tertius.*—Coach used as litter will not all perish; such a use of it would render the after application of the manure dangerous.

Fences.—*X. Z.*—Beech makes the best fences on the soil and in the situation you describe. The plants should be 1 foot apart in two rows 24 inches apart. Your questions about iron wire cannot be answered, except in the advertising columns.

Flax.—*J. H. Dickson.*—Your article has been received, but we are unable to give it immediate insertion.

Gas, Lime, &c.—*G. B. M.*—Pray excuse a postponement of answers to your questions till next week.

Guano.—*G. B.*—See *Miscellaneous* section.

Guanevism.—*Melksham.*—See *Miscellaneous* section of this day's Paper. That paragraph contains all we know on the subject. Can any of our Cornwall readers give us the details of this practice?

Horse Beans.—*Cymro.*—Utilize the *Berkshire* Horse-bean in any of the deep clay soils that will have. Its produce may be from 4 to 5 quarters per acre. It is not nearly so exhausting a crop as other pea crops. For Bean culture, see an early Number of this periodical.

Pages of the Gardeners' Chronicle.—We have received very many kind suggestions, some will be adopted at the beginning of the year; others cannot, for practical reasons.

Smithfield Market.—*A Subscriber.*—Your letter shall be inserted as soon as possible.

Sundries.—*Anon.*—You may safely buy your stock of bones now; but however much you may be disposed to have returns to be satisfied with the arrangement, from what we apprehend, declares against putting 2,000 bushels down in any one lot. Your Beans may be sown at the rate of from 2 to 3 bushels per acre; the first day's experience will tell you how many to make the folds; it of course depends almost entirely on the nature of the crop. The White Norfolk Turnip should be all eaten by this time; you should next have Rye-grass for February, then Swedes till April, and lastly Mangel Wurzel.

Sulphate of Magnesia.—*David.*—The use of this salt is one of the best means you have of getting this alkaline earth *into* plants. We cannot say, what effect it may have on Borrel. The suggestion to which you refer, was not ours.

Warne's Suggestions for Preventing Cattle.—*Constant Reader.*—Apologies are due both to you and Mr. Sproule for our misapprehension of your meaning. The pamphlet is published by Edwards and Hughes, Ave-Maria-lane.

*** As usual, many communications have been received too late.

Markets.

SMITHFIELD, Monday, Dec 18.—Per stone of 8 lbs.

Best Scots, Herefords, &c.	4*s.* 4	to 4*s.* 8	Best Downed & Hall-breds	4*s.* 8	to 5*s.* 0	
Best Short Horns	4 0	4 4	Best Long-wools	3 10	4 2	
Second quality Beasts	3 8	4 0	Ewes and second quality	3 0	3 8	
Calves	3 8	4 4	Pigs	3 0	4 0	

Beasts, 3713; Sheep, 26,970; Calves, 111; Pigs, 803.

To-day is our annual "Great Market," and one better supplied has not been known for many years. The scarcity of keep during the season, and the general fallingaway quality of the supply for several months past, had induced the belief that good fleet would have been scarce on this occasion: in consequence an expectation had been formed by those who made extra exertions to supply the anticipated deficiency, that there would meet with a fair remuneration for their skill and quality of capital; we are sorry to record a serious disappointment. A more splendid collection of cattle we do not remember ever winnessing. Our tabular statement refers to the prices obtained for general average quality. Anything approaching to the quality of Prize Cattle would, in some instances, make rather more, as meeting the fancy of the buyer to make a show; and in some instances very big Beasts were unselling, in consequence of the change of weather, and scarcely made 4*s.* 4*d.* A very large quantity was bought by country butchers, so that London is not so full of Meat as might be expected from the numbers exhibited, and opens a little better prospect for the future. During the early part of the day very little was sold; towards the close a little more briskness was observed, but still great numbers were turned out unsold—several of very good quality, but the greater part second rate. The supply of Sheep pens very large, and for the most part of good quality. The general trade is very heavy indeed; as with the Beasts, there were several of superior quality amongst the Sheep which made considerably more than stated in our Table; for instance, we noticed some particularly fine Downs, weighing about 30 stone of 8 lbs, which realised 8*l.* each. Some few lots of old Downs made nearly 5*s.* 6*d*; but 5*s.* 4*d* per 8 lbs is the more general price. A few lots of Long-wools also made 5*s.* 4*d.* Second quality were very unsaleable, and many of that description turned out. We had a good show of Veal, but trade heavy at our quotations. Pork-trade was very bad, which is usual at the break of a frost.

Friday, Dec. 20.

Our supplies of foreign Beasts is not very large to-day, but with those left over from Monday are quite enough for the demand. There is a difficulty to dispose of the very big Beasts, although the rather favourable change in the weather has caused a little briskness amongst the good selling qualities:—Monday's quotations are fully supported for this description. Some of the largest Oxen are losing money, even from what was bid on Monday, and we fear they will not all be sold. Trade is very bad amongst the Sheep; those that are not pretty good are scarcely saleable. Ewes make very little money. There has been a great glut of dead Meat since Monday, which makes the butchers very cautious about buying to-day. The best qualities are making about the same price as Monday. Veal-trade is very heavy; it must be a very good Calf to make 4*s.* 4*d* per 8 lbs. Second quality is very low, prices ranging from 3*s.* 8*d* to 4*s.* 0*d*. Pork-trade is still bad, at the same prices as on Monday.

Beasts, 1819; Sheep, 9180; Calves, 146; Pigs, 294.

Sl, West Smithfield.

HOPS, Friday, Dec. 20.

The Market continues firm, holders expecting better prices after Christmas (above): there has been some rather extensive sales of bags during the week. Pine Pockets are very scarce.

Pattenden & Smith, Hop-Factors.

WOOL.—British, Friday, Dec. 20.

The Market continues quite as active as we last reported it. The demand for some descriptions of sorted Wools has increased, consequently sales have been effected at improved rates. Manufacturers complain that the prices of goods are far from adequate to the advanced rates of the raw material.

James Perrin, Wool Broker.

POTATOES.—SOUTHWARK WATERSIDE, Dec. 16.

The contrary winds have continued through the past week, which has prevented the arrivals of Potatoes from all countries, consequently there are only a few small lots in the Market for sale, and they maintain fully the advanced prices, the particulars of which we annexed in our last report.

COVENT GARDEN, Dec. 21.—Notwithstanding the unsteady state of the weather the market has been tolerably well supplied with most articles during the week, but trade has not been brisk. Among fruit there has been little alteration since last week. Pine-apples are sufficient for the demand, and are offered at nearly the same prices as quoted in our last report. Grapes have not altered in price; good samples are worth about 2s. per pound. The best dessert Apples at present in market are the Blenheim Pippin, Ribston Pippin, and Court of Wick. Of Pears, the principal sorts for table are, at present, Nelis, Glout Morceau, and Passe Colmar. These are, however, not so good as they are in some seasons, being, comparatively speaking, gritty, and not well flavoured. All kinds of Nuts are scarce. Filberts are very dear. Good samples bringing from 140s. to 150s. per 100 lbs. Oranges are plentiful. Among vegetables scarcely any difference has taken place since our last report. Good samples of Seakale and Asparagus are offered at last week's prices. White Cowcoll is excellent, and the purple sort is also good. Cauliflowers are scarce. Turnips and Carrots of good quality are selling at the same prices as last week. Celery, although good has suffered a little from the effects of the frost. Tomatoes may still be had, but they are very scarce. Brussels Sprouts, Savoys, and other Winter Greens are good in quality, and the supply is equal to the demand. Our flowers chiefly consist of Cyclopedian Heaths and roseums, Epacrises, Gaultheas, Chorozemas, Amaryllises, Azaleas, Ixias, Narcissus, Chrysanthemums, Tulips, and Roses.

FRUIT.

Pine Apple, per lb.	2s to 7s	Oranges, per dozen	6d to 1s 6d
Grapes, Hothouse, per lb.	2s to 3s 6d	— per 100	2s to 10s
— Spanish, per lb.	1s6d to 1s	— Malta, per 100	12s
— Portugal, per lb.	1s to 2s	Lemons, per dozen	6d to 2s
Apples, Dess., per bush.	5s to 8s	— per 100	2s to 12s
— Kitchen	2s to 3s	Almonds, per peck	6s
Pears, Dess., per doz.	2s to 3s	Sweet Almonds, per lb.	2s 6d to 3s
Pomegranates, per doz.	2s to 3s	Cob Nuts, per 100 lbs.	140s to 160s
Quinces, per half-sieve	2s to 3s	Nuts, Barcelona	20s
Medlars, per bushel	5s	— Brazil	20s
Filberts, per 100 lbs.	140s to 160s	— Spanish	0 s
Chesnuts, per peck	2s to 2s	— Barcelona	22s
Walnuts, per bushel	5s to 8s	— Cob	10s
— — shelled	10s to 20s		

VEGETABLES.

Cabbages, per dozen	6d or 1s 6d	Leeks, per doz.	1s 6d to 2s
— plants, per doz. bush.	2s 6d to 3s	Garlic, per lb.	4d to 6d
Cauliflowers, per doz.	2s to 10s	Onions, per bunch	4d
Broccoli, per bundle	1s 6d to 2s	— large, per bushel	2s to 2s 6d
Brussels Sprouts, h. sv.	2s to 2s 6d	— Spanish, per doz.	1s to 4s
Sorrel, per h. sieve	1s 6d to 2s	Shallots, per lb.	6d to 8d
Jerusal. Artichok. p. bl. sv.	1s to 1s 6d	Capsicums, per 100	4s to 8s
Potatoes, per ton	80s to 100s	Lettuces, per score	6d to 1s 6d
— cwt.	4s to 5s 6d	Celery, Wilts, per bunch	1s to 1s 6d
— bushel	2s 3d to 3s	— Red, per bunch	1s 6d 2s
— Kidney, per bsh.	3s to 8s	Endive, per score	1s to 2s 6d
Turnips, per doz. bsh.	1s 6d to 2s	Mushrooms, per pottle	6d to 1s 6d
Red Beet, per doz.	1s to 2s	Small Salads, per punnet	2d to 3d
Carrots, per doz. bsh.	3s to 5s	Watercress, per doz. bun.	6d to 8d
Basil, per bunch	2d to 3d	Parsley, per doz. bunches	2s to 3s
Seakale, per punnet	2s to 3s	Thyme, per bunch	2d
Asparagus, per bundle	4s to 14s	Tarragon, per bunch	6d to 8d
Horse Radish, per bundle	1s 6d to 2s	Mint, per bunch	2d to 3d
Savory, per bunch	2d to 3d	Chervil, per bunch	2d to 3d
Spinach, per sieve	2s to 3s	Chervil, per punnet	2d
Scorzonera, per bunch	1s to 1s 6d	Chilies, per 100	1s to 2s
Salsafy, per bunch	1s to 1s 6d		

MARK-LANE, Monday, Dec. 16.

The supply of Wheat by land carriage coastwise this morning was moderate; both qualities and prices the same as on the terms of last week, but great difficulty was experienced in the disposal of secondary and inferior descriptions, of which some quantity remained unsold. Foreign very maintains its value, but the sale continues limited. We observe no alteration in the value of Barley, Malts, and Peas from this day se'nnight. The quantity of Oats is very small, and large arrivals expected. Dealers were averse from purchasing; but extreme prices were obtained from consumers and necessitous buyers.

BRITISH, PER IMPERIAL QUARTER.

	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk	46	50	Rye	32	34
—— Norfolk, Lincolnshire, and Yorkshire	—	—	Beans, White	—	—
Barley, Malting and distilling	30	36	Grind.	27	29
Oats, Lincolnshire and Yorkshire	20	22	Feed	19	21
—— Northumberland and Scotch	21	23	Potato	21	25
—— Irish	20	22	Potato	30	34
Malt, pale, ship	64	70			
—— Hertford and Essex	60	65			
Rye	30	32			
Beans, Mazagan, old and new	30	33	Tick	30	32
—— Pigeon, Heligoland	30	31	Winds	—	—
Peas, White	34	36	Boilers	33	36
			Harrow	31	37
			Longpod	—	—
			Grey	30	32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.	Wht.	Barl.	Malt.	Oats.	Rye.	Bns.	Pse.
English	6980 Sks.	— Bels.	4800	4300	3810	80	—	1044	1294
Irish	— „	— „	—	—	80	—	—	—	—
Foreign	— „	— „	4000	—	2780	—	—	837	—

FRIDAY, Dec. 20.

The arrivals of all Corn during the week have been small, and business, both on Wednesday and to-day, very limited. Great difficulty is experienced in realising the English Wheat left over from Monday; foreign is wanted by the millers, who are restrained by its comparatively high value from purchasing. Barley and Beans are unaltered, but the return of frost induces factors to hold their White Peas for an advance. The market continues very bare of Oats, and where sales are effected, a slight advance is obtained.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	1690	1650	50	6040 Sks
Irish	—	—	3160	—
Foreign	—	—	—	—

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	46s 5d	30s 1d	21s 6d	34s 9d	32s 11d	34s 7d
Nov. 9 per Quarter.	46 4	33 9	21 3	34 8	32 4	35 7
— 16	48 10	33 8	21 8	36 9	32 6	36 4
— 23	48 4	33 1	21 8	36 9	32 6	36 11
— 30	48 4	33 1	21 9	35 2	32 6	36 11
Dec. 6	48 0	34 9	21 10	31 2	32 5	36 4
— 13	46 1	34 5	21 11	32 0	32 9	36 1
6 weeks' Aggreg. Aver.	47 3	33 5	21 9	33 6	32 10	35 8
Duties on Foreign Grain	20 0	5 0	6 0	10 6	5 0	7 0

SEEDS, Dec. 20.

Canary - per qr	60s to 70s	Linseed Cakes, Foreign, per 1000	8l to 8l 10s
Carraway - per cwt	44 48	Mustard, White - p. bush.	10s 14s
Clover, Red, English - —	— —	— Superfine „	12 16
— — Foreign - —	— —	— Brown „	12 16
— White, English - —	— —	Rapeseed, English, per last	22l 23l
— — Foreign - —	— —	Rape-Cake - per ton	— —
Coriander - - -	12 16	Seinette - - -	— —
Hempseed - per last	36 38	Tares, New winter - p. bush.	5 6
Linseed - - per qr	— —	— Foreign - -	— —
— Baltic - - -	— —	Trefoil - - per cwt	— —
— Cakes, Eng. per 1000	12l 10 12l	Turnip (too wet for quotation).	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Dec. 19.

Prime old Meadow Hay	105s to 110s	New Hay	—s to —s	Clover	100s to 120s
		Inferior Hay	90 100	Straw	34 36

JOHN COOPER, Salesman.

CUMBERLAND MARKET, Dec. 19.

Superior Mead. Hay	105s to 112s	Superior Clover	112s to 118s		
Inferior -	90 95	Inferior „	98 105	Straw	30s to 32
New Hay -	— —	New Clover	— —		

JOSHUA RADER, Hay Salesman.

WHITECHAPEL, Dec. 20.

Fine Old Hay -	105s to 108s	Old Clover	—s 120s		
New Hay -	90 100	New Clover	105 120	Straw	32s to 34s
		„ Inferior	— —		

Supply large and trade dull at the above prices.

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The Lancet,

Of Saturday last, DECEMBER 14, contains:—

A COURSE of LECTURES on ORGANIC CHEMISTRY, delivered during the Winter Session, 1844, in the University of Glasgow, by JUSTUS LIEBIG.—Cyanogen and its Compounds continued—Metallic Cyanides—Paracyanogen.

FOREIGN DEPARTMENT:—Italy, Scientific Congress at Milan—Indian Corn a cause of Pellagra—Fibrin of the Blood in Inflammation—New Method for the Analysis of the Blood—Scurvy.

ORIGINAL PAPERS:—On the Theory of Menstruation. By G. F. Girdwood, Esq.—The late Cases of Poisoning by Prussic Acid. By H. Letheby, M.B.—A Substitute for Wood Engraving.—Facts and Observations Illustrative of the Nature and Treatment of the Diseases of Women, with Remarks on some Subjects connected with Midwifery. By G. Oakley Heming, M.D., F.L.S.—On the Treatment of Femoral Hernia. By J. Sebastian Wilkinson, Esq.—On the Labours of Graduated Doctors in the Country. By R. Hodgson, Esq.

BRITISH MEDICAL JOURNALS:—The Origin of Puerperal Fever—On the use of Nitric Acid as an Escharotic in certain Hæmorrhoidal Affections—A case of difficulty in recognising the Sex of an Infant—Cases of Fractured Skull.—Death from Impaction of a portion of Barley "Haw" under the Tongue.

CHEMISTRY, PHARMACY, AND MATERIA MEDICA:—Adulterations:—Scammony.

The New Medical Incorporation—The solid Trunk of the Profession without the Offsets and Parasites—The consent of the Society of Apothecaries of London to occupy a position in the Incorporation of the General Practitioners of England and Wales.

The Inconsistencies which the Government has manifested in forming the Plan for what, in the New Medical Bill, is called a "Council of Health"—The proper Objects of such an Institution—The Pest House in Bridge street, Blackfriars.

The desire of the General Practitioners of England to see the Legally Qualified Medical Men of Ireland and Scotland placed on a footing of professional equality with themselves.

REVIEWS:—Facts and Observations in Medicine and Surgery, having particular reference to Fractures and Dislocations, Gunshot Wounds, Calculus, Insanity, Epilepsy, Hydrocephalus, the Therapeutic application of Galvanism, and Fibrinous Diarrhœa. By John Grantham, F.R.C.S.

THE GOVERNMENT MEDICAL BILL:—Meetings of the Medical Profession.

HOSPITAL REPORTS:—Guy's Hospital—Cases furnished by the Clinical Report Society—Idiopathic Tetanus—Exhibition of Extract of Indian Hemp—Death.

MISCELLANEOUS LETTERS.

News of the Week, &c. &c.

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The Railway Chronicle

Of SATURDAY last, DECEMBER 14, contains,

SOUTH WESTERN EXTENSIONS—INCREASE in RETURNS—LIVERPOOL and MANCHESTER and GRAND JUNCTION AMALGAMATION — GOVERNMENT TAX — NEW FORM of BILL PROPOSED by BOARD OF TRADE—POLICY of ESTABLISHED RAILWAYS.

REPORTS OF MEETINGS—Liverpool and Manchester, with the Directors' Report—Grand Junction, with the Directors' Report—Lancaster and Preston Junction—London and South-Western, with the Directors' Report—Eastern Union, with the Director's and Engineers' Reports—Rickinder's Report on the Newry and Enniskillen Line.

PROJECTED LINES—Aberdeen—West Riding Junctions—Shrewsbury, Oswestry, Ruabon and Chester—Gloucester and Dean Forest—Wilts, Somerset and Weymouth.

VALUE OF SHARES—Returns from London, Liverpool, Manchester, Leeds, York, Hull, with Comments on the respective Markets, and latest Prices.

PARIS MARKET.

RAILWAY LITERATURE—Simm's Practical Tunnelling, as exemplified in the Bleckinsley and Saltwood Tunnels.

MISCELLANEOUS—Law Proceedings—Hardship of Signing Parliamentary Deeds—Birmingham and Gloucester—Opening of the Norwich and Leamington—Accident on Brickiayers' Arms Branch.

CALLS, CONTRACTS, LOANS, TRAFFIC TABLES, &c.

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LOANS.—TO FARMERS AND OTHERS.—The sum of 20,000*l.*, and several smaller amounts not less than 150*l.*, to be advanced upon Leasehold or Freehold Property, Reversions, Money in the Funds, Annuities, Life Interests and good Personal Security, or upon Assignment of Farm Stock.

Apply to Mr. MULLINS, St. Michael's Chambers, St. Michael's-alley, near the Royal Exchange, Cornhill, London; if personally, between the hours of 11 and 3 o'Clock. Letters pre-paid.

CONTENTS of the NUMBER for SATURDAY last, DECEMBER 14, OF

THE ATHENÆUM,

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four Large Quarto Pages, Price FOURPENCE, Or Stamped, to go free by post, 5d.

Reviews OF, WITH EXTRACTS FROM—

The Reformers before the Reformation, by E. de Bonnechose
Sketches of the Reformation, by the Rev. J. Hewels
Life and Rebellion of James Duke of Monmouth, by Geo. Roberts
The British Almanac
WITH SHORTER NOTICES OF—
Historical Parallel between the English and French Revolution, by M. le Comte Maxime de Choiseul Daillecourt
The Public and the Medical Profession
The Blind Man and his Guide
Night Voices and other Poems, by H. Spicer
Ballads and Lays from Scottish History, by N. Clyne, M.A.

Original Papers.—Miss Martineau on her Case by Mesmeric Treatment alone.—The Hydrostatic Telescope.—Geographical Progress of Civilisation, by T. Price.

Our Weekly Gossip.—Health of Towns Meeting.—Metropolitan Improvement Society.—Royal Academy Prize Distribution.—Thorwaldsen's Statues of Byron.—Norway Fine Art Exhibition.—Archæological Museum at Athens.—German Booksellers and American.

Societies.—GEOGRAPHICAL: (M. Schomburgh's Expedition).—INSTITUTE OF BRITISH ARCHITECTS: (Mr. Wilson on Decorations of Church at Assisi).—HORTICULTURAL.—LINNEAN.—BOTANICAL.—MICROSCOPICAL.—SOCIETY OF ARTS (Licut. Walter on Kamptschcan Life Boat).

Fine Arts.—Frescoes, Decorations, and Stuccoes of Churches and Palaces of Italy, by L. Grüner.—Prints in the British Museum.

Music and the Drama.—Musical Journeyings in Germany and Italy, by Hector Berlioz.—Music in Paris.—Musical Gossip of London.

Miscellanea.—Paris Academy of Sciences.—Society of Antiquaries.—British Enterprise.—Roman Antiquities.—Singular Discovery—Kingfisher's Nest.

Order The Athenæum of any Bookseller or Newsman.

Saturday, Jan. 4, 1845, will be published, pr. 6d., Stamped, No. 1 of THE UNITED GARDENERS' AND LAND STEWARDS' JOURNAL, the profits of which will be devoted to the Relief of Aged and Indigent Gardeners and Land Stewards, their Widows and Orphans. To be Edited by Mr. MARNOCK. All Donations, Subscriptions, and Communications to be addressed to the Editor, at the Royal Botanic Gardens, Regent's Park. The Journal will be printed by Messrs. Whittelly Brothers and Co., Peterborough-court, 135, Fleet-street, where Prospectuses may be obtained on application.

This day is published, price 2s.,

AGRICULTURE; its Practice with Profit, elucidated by a Contrast of Oriental and British Usages, in a Correspondence with the Royal Agricultural Society of England. By HENRY NEWNHAM.

In this Correspondence, the Employment of the Agricultural Poor is considered, with reference to an Asiatic principle of adjusting the Wages of Predial Labour. Second Edition, with Notes and Additions.

London: Published by ROAKE AND VARTY, 21, Strand.

On Thursday, Dec. 12th, will be published, by Mr. WM. SMITH, 113, Fleet-street,

A SYSTEM of CULTIVATING CUCUMBERS in MILLS'S IMPROVED PIT, so arranged as to be heated with hot water, by BURRIDGE and HEALY'S Boiler and Tanks. With a Descriptive Plate. It will be a Supplement to the Second Edition of Mr. MILLS'S Work on the Culture of Cucumbers and Melons.

On the 1st of February will be published,

A TREATISE on the IMPROVED CULTIVATION of PINE-APPLES. By G. MILLS. With Diagrams of a Hothouse and a Pit for that purpose; with Plan of Apparatus for Heating them with Hot Water on the Tank System.

ON SATURDAY, THE 4TH OF JANUARY, 1845,

Will be Published, Stamped for free transmission by post, price Sixpence (to be continued Weekly),

No. I. of

AN ORIGINAL JOURNAL

OF

FAMILY EVENTS, NATIONAL AND PRIVATE BIOGRAPHY, LIFE AND HEALTH, AND GENERAL NEWS.

TO BE CALLED THE

HISTORICAL REGISTER

UNDER THE SANCTION, AND WITH THE ASSISTANCE, OF VARIOUS

Government Departments.

THE importance to the welfare of society of the three great events of Human Life—

Birth, Marriage, and Death,

has led the Government to establish a Public Department for their Registration. In order to carry out the same views more extensively and usefully, **The Historical Register**, *under the sanction of the Registrar-General* and *various Public Departments*, will lay before the public, every Week, a comprehensive, accurate, and well-digested Register of such events, and all the interesting circumstances connected with them.

The Conductors of **The Historical Register** have the satisfaction of announcing, that, to accomplish this object, the most complete arrangements have been organised with the official Registrars of Births, Marriages, and Deaths, throughout England and Wales.

With BIRTH and MARRIAGE the associations are obviously many, important, and interesting; and it is only necessary here to state that **The Historical Register** will be a most extensive record of such events, and of all matters incidental to them which interest the Public.

With DEATH is associated one of the most important features of **The Historical Register**, viz.

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Of all persons, of any distinction whatever, their friends wish for some Biographical Memoir; of all eminent men, the nation requires a Biography: there is, however, at present, no publication which furnishes this information systematically,—which gratifies public curiosity at the time it is excited; and there are very few in which, at any time, are found accounts of more than a mere fraction of the interesting lives which should be recorded. This, therefore, is an entirely new field, which **The Historical Register** is about to occupy. It will give full and accurate

Biographies of all Public Characters, and shorter Memoirs of Private Persons of Worth and local mark.

Social, as distinguished from *Political* Life, has hitherto had no journal to record and discuss the numerous circumstances tending to its advancement or retarding its progress. **The Historical Register** will now supply this want.

Historical Events will be recorded briefly, clearly, and impartially; in such a manner that **The Historical Register** may be referred to hereafter for an accurate statement of the History of the Period.

The *Literature* of the day, so far as it relates to its special topics, will come within the scope of **The Historical Register**.

The HISTORY and PERSONAL CONSTITUTION of the

Civil Departments of Government

Are now about to be treated for the first time; a History of each Public Department will be drawn up from the earliest period, and the Appointment, Resignation, and Promotion of all Functionaries will be registered from time to time as they happen. These details, of an analogous nature to the contents of the "Army List," will be compiled, *by Authority*, from authentic information.

The general character of **The Historical Register** will be best understood by a brief enumeration of the subjects which it will comprehend:—

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Biography—General, National, and Private.
Social Condition and Domestic Life.
The Insertion of Abstracts of Wills and Administrations of Public Interest.
Judicial Proceedings relative to Divorce, Pedigree, &c.
The Operation of the Registration Acts.
Life and Fire Insurance.
Public Health; and the various circumstances in respect of Buildings, Drainage, Ventilation, Sepulture, Epidemics, Unwholesome Employments, &c. which affect it. Information will be obtained from official and other sources respecting all Public Works for the Improvement of Towns; the Proceedings of the Health of Towns Commission, and all Societies for improving the Physical Condition of the People. The Weekly Reports of Mortality in the Metropolis, and Quarterly Reports of Health throughout England and Wales, will be published, under the authority of the Registrar-General, in THE HISTORICAL REGISTER.

In addition to the above, its own peculiar topics, **The Historical Register** will be especially a

FAMILY NEWSPAPER,

In which an ample and impartial Chronicle, *free from political party bias*, will be given of all the important Events of the Week.

It may confidently be expected that **The Historical Register** will become the especial organ for the announcement and recording of Births, Marriages and Deaths, and the chief public source in which searches after them will be made; thus investing the Journal with great genealogical value for the protection of hereditary rights.

"It is the *Personal*," says a popular writer, "that interests mankind, that fires the imagination, and wins their hearts;" and we beg the reader to bear in mind that it is to the *Personal*, distinguished from the scandalous, that **The Historical Register** mainly devotes itself.

The Historical Register will consist of 16 folio pages, or 48 columns, stamped for free transmission by post.

The Historical Register will be *arranged in four parts, so that it may be read by four persons at one time*, in a form convenient for binding and preservation.

The Historical Register will be published *every Saturday*, in time for the morning mails.—Price SIXPENCE.

☞ The FIRST NUMBER of **The Historical Register** will appear on Saturday, the 4th of January, 1845.

(Only a very limited number of Advertisements will be admitted.)

*** Announcements of Births, Marriages, and Deaths will be inserted at a very moderate rate, and a copy of **The Historical Register** will *be forwarded, without charge, to the persons making the insertions*. The clerks of large parishes, with the sanction of the clergy, receive the notices of Marriages in the Established Church; and the various Registrars throughout the Kingdom, with the sanction of the Registrar-General, receive the notices of other Marriages, and the notices of Births and Deaths.

Office for Advertisements and Communications, 7, Catherine-street, Strand, London.

Printed by WILLIAM BRADBURY, of No. 6, York-place, Stoke Newington, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their Office in Lombard-st., in the precincts of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-Garden, in the said county. Whereat all Advertisements and Communications are to be addressed to the Editor.—Saturday, December 21, 1844.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 52.—1844.] SATURDAY, DECEMBER 28. [Price 6d.

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LANDSCAPE GARDENING AND GARDEN ARCHITECTURE.

MR. GLENDINNING, since his residence near the Metropolis, has had the honour to be consulted by a number of Noblemen and Gentlemen in the improvement of their Parks and Gardens, and in the construction and heating of Horticultural Buildings in the most economical as well as effectual manner. He has now made such arrangements as will enable him to devote his particular attention to these important subjects; and Noblemen and Gentlemen desirous of consulting him, are respectfully requested to address him at Chiswick Nursery, near London.

THE ARBORETUMS, QUEEN'S ELMS, BROMPTON, NEAR LONDON, AND EAST COWES PARK, ISLE OF WIGHT.

RAMSAY BROTHERS, Landscape Gardeners, Contractors for Planting, Earthwork, Road-making, Forming Ornamental Waters, and Improvers in general of Landed Property.

Plans and Estimates submitted, and works contracted for in any part of the kingdom.

Messrs. R. invite Noblemen and Gentlemen to an inspection of their choice stock of Ornamental Plants, which have been selected for the Lawn, the Parterre, and the Shrubbery, and now growing at Queen's-Elms, one mile from Hyde Park Corner.

WILLIAM MAY begs to offer the following at the very moderate prices below quoted, Catalogues of which may be had.

100 Hardy Shrubs and Ornamental Trees, in 50 sorts, for 42s.; 200 do. do., in 100 sorts, for 80s.

100 sorts showy Hardy Herbaceous Perennial Plants, for 42s.; 200 do. do. do., 80s.

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100 select Double Hollyhocks, for 42s.; 12 do., extra fine, named, for show, 20s.

100 Gooseberries, approved varieties, in 50 sorts, for 16s.; 100 do., in 100 fine sorts, for 20s.

Seeds of Hollyhocks, from double flowers, in packets, 200 seeds, 2s. 6d.; 500 seeds, 5s. each.

Seeds of Pansies, from finest named sorts of 1844, packets, 2s. 6d. and 5s. each (seeds post free).

Forest and Fruit Trees, Greenhouse and Stove Plants, Florists' Flowers, Garden Flower Seeds, &c., comprising in each department all the leading novelties in present cultivation.

Hope Nursery, Bedale, Dec. 1844.

PERFECTION IN PEAS.—FRASER'S SHANLEY MARROW.

F. FRASER, Nursery and Seedsman, Lea Bridge-road, Essex, in offering his friends and the public the above Pea begs to assure them it has no rival, its quality being as far superior to Knight's and all other Marrows as those surpass the commoner Peas. Its height is about 5 feet, a prodigious bearer, and continues in season much longer than the usual kinds. The stock on hand is very limited. Price 7s. 6d. per quart. A remittance expected to accompany orders from unknown correspondents.

CORNISH KIDNEY POTATOES.—THE EARLIEST OF ALL EARLY POTATOES.

It is remarkable that this valuable sort should be so little known and cultivated in England. It is grown to some extent in the West of Cornwall, AND HAS BEEN PRODUCED IN THE OPEN GROUND DURING THE LAST TEN YEARS, FROM THE 15TH TO 18TH OF APRIL, (on an average.)

Upwards of three hundred acres are annually grown in the neighbourhood of Penzance; and thousands of baskets are sent, by steamers, to supply the London and Bristol Markets.

The growers obtain them so early, that they are enabled to procure an excellent second crop on the same land.

It is a most valuable sort, and should be grown in every garden where early vegetables are required.

Sold in Hampers, containing 2 and 3 gallons, at 5s. and 7s. each, package and carriage free to London or Bristol, which will be forwarded on receiving a Post-office order, on application to WILLIAM E. RENDLE, Union-road Nursery, Plymouth. December 26, 1844.

THE TRUE FASTOLFF RASPBERRY.

GREAT YARMOUTH NURSERY. NORFOLK, 1844.

PATRONISED BY HER MOST GRACIOUS MAJESTY THE QUEEN, HIS GRACE THE DUKE OF RUTLAND, HIS GRACE THE DUKE OF MARLBOROUGH, THE EARL OF HARRINGTON, THE EARL OF LIVERPOOL, THE LORD BISHOP OF LONDON, LORD VISCOUNT LORTON, LORD SONDES, &c. &c., as well as by the HORTICULTURAL SOCIETY OF LONDON.

THE Fruit of the above RASPBERRY, upon which Dr. LINDLEY pronounced his opinion, was gathered by YOUELL and Co. in the garden of Mr. Edwonds, of Scratby, in this county, whose Raspberries are well known to be far superior to what is termed the "Filby Raspberry."

The statement in last week's Paper, made by a person by name of Crisp, that Mr. H. YOUELL had gathered fruit in what he terms the Filby Garden, may be correct; but in gathering fruit of the Raspberry, it was done solely with the view of comparing it with the fruit that was being submitted to Dr. Lindley; and found, as they have before stated, to be far inferior; and it was also done with a further view of satisfying themselves that the RASPBERRY they are offering to the public, and for which YOUELL and Co. have been awarded two Certificates of Merit, by the Horticultural Society of London, is the only genuine variety. The statement is thus far void of truth, and invented for the sole purpose of puffing off the variety sent out by the agent of the Filby Gardens.

YOUELL & Co. take the present opportunity of returning their sincere thanks for the distinguished, and perhaps unparalleled patronage they have received for introducing and widely spreading throughout the United Kingdom and Continent (at a cost of between 300*l.* and 400*l.*) a most valuable fruit, which would have remained in obscurity; and at the same time they are happy to state, the extensive demand it met with, and the satisfaction it has given, have fully realised all their anticipations.

In conclusion, YOUELL and Co. deeply regret they are called upon to animadvert upon the position that one of so sacred a calling as Mr. Lucas should have placed himself in, in this affair, by authorising and permitting to be published matters of which he was perfectly ignorant, and containing an assertion utterly void of truth, that the fruit upon which Dr. Lindley pronounced his opinion was gathered in the Filby Garden.

Fine Canes of the TRUE FASTOLFF RASPBERRY can be obtained only of YOUELL and Co., or their Agents, a list of whom appeared in the *Gardeners' Chronicle* of the 7th inst.

Great Yarmouth Nursery, Dec. 23, 1844.

T. AND C. LOCKHART, Florists and Seedsmen, 156, Cheapside, London, respectfully beg to inform the Nobility and Gentry, that their List of Flower and Vegetable Seeds for the present Season will be forwarded post free, on application, together with a complete List of the most showy hardy herbaceous plants, giving their respective heights and colours.

T. and C. L. take the present opportunity to request early orders for Ranunculus and Anemones, as their unique collection will be planted by the end of January; therefore they will not be able to execute any orders received after the 25th January.

TRUE WILLCOVE BROCOLI.

WILLIAM E. RENDLE has much pleasure in announcing, that he has been fortunate in procuring a good and well-selected parcel of the

TRUE WILLCOVE BROCOLI,

a sort held in high estimation in the West of England, and considered by all who know it to be the *earliest and most valuable Brocoli* for spring use. It can be highly recommended. In sealed packets, 1s. each.

W. E. R. can also recommend the following as very choice and superior sorts of Vegetables, and ought to be cultivated in every garden.

Superior Dark Crimson Beet
Dwarf, small-top Scarlet Beet
Chapple's Cream Brocoli
Early Cornish Cabbage
Large Paignton do.
Myatt's Superb Curled Parsley
Wood's Earliest Frame Radish
Hammond's fine new White Cape Brocoli
True Drumhead Lettuce

The above at 6*d.* per packet, or the whole set, including the "WILLCOVE" BROCOLI, will be sent free by Post, for a Post-office order, value 4*s.* All other kinds of Vegetable Seeds warranted new and genuine.

Union-road Nursery, Plymouth, Dec. 28.

UNRIVALLED YELLOW DARLIA, LANGLEY'S "DUKE OF YORK." Light primrose yellow round, cupped petals, great depth, well arranged, and perfectly circular; centre, full, compact, and well up; general form and habit of "President of the West;" height 4 ft.; strong plants early in May, 10*s.* 6*d.* Discount to the trade on not less than 12 plants.

C. LANGLEY can, with the greatest confidence, warrant the above SUPERB DAHLIA "FIRST RATE," and to give general satisfaction. It will be found a valuable acquisition to every one who grows for exhibition, as it will be sure to take its place in the best stands of 6 and 12 next season, being of the most exquisite form, and as *compact as any Dahlia in cultivation.*

It has been pronounced by Mr. Glenny "very delicate," and by Mr. Bragg (Slough), to be "the completest and most promising *Dahlia* of 1843. It obtained a Certificate at the great Metropolitan Show, Sept. 25th, 1844, as a first-class flower.

Barnsley, Sept. 10. First prize, also Dr. and Mrs. Lindley's Prize.
Bretton, " 12. Best specimen, Yellow.
Kirkheaton, " 13. First prize.

The above are the only places where it has been shown.

N.B. Orders will be executed from the present time, and sent in strict priority as received. Agents in London, Messrs. Huser and Magnulsen, 4, Langham-place; and Messrs. Watkins and Watkins, 24, Cornhill.

THE FILBY OR FASTOLFF RASPBERRY.

On or about July 18, 1843, Mr. HENRY YOUELL came to the garden at Filby, and requested me to give him some fruit of the above Raspberry, to send to Dr. Lindley. Mr. H. YOUELL and myself then looked over the Canes, and gathered some, he said that about two dozen would be sufficient. He then consulted me upon the best way of packing them, and I recommended him to pack them in cotton wadding or wool; to this he assented, observing that he thought it would be the best material.

Signed, WILLIAM CRISP, Gardener to Rev. C. Girdlestone.
Filby, Dec. 10, 1844. Filby, near Yarmouth, Norfolk.

SUPERB SEEDLING DAHLIA, "LORD DENMAN" (Naylli's). Colour dark claret part of the season, shaded petals, of fine texture, well arranged, good centre, round outline, an excellent flower to stand, and one of the best show flowers out, being the property of an amateur it has been shown only at Nottingham, gaining the 1st Prize.

Sent out in dry roots, 5*s.* each, by J. NAYLL, Linton, Nottingham.

EDWARD BECK informs the Public that in consequence of the greatly increased demand for his SLATE TUBS, he is enabled to reduce the price of the following sizes about 10 per cent. He regrets the too frequent delay which has occurred in the execution of orders. This he hopes to avoid in future by keeping a supply on hand.

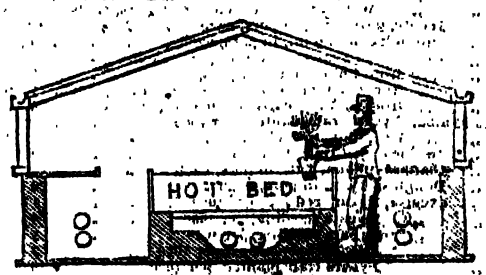
Present Prices for Cash or Post-office order.			
14 inches	11*s.* 0*d.*	30 inches	22*s.* 6*d.*
15 inches	12 0	32 inches	25 0
16 inches	16 0	34 inches	32 0
18 inches	19 0		

Slate Works, Isleworth, Middlesex.

WHITNEY'S PATENT CLOTH for COVERING GREEN-HOUSES, CUCUMBER, or MELON PITS, &c. This Cloth is made expressly for the purpose of applying Whitney's Composition upon, and is much more durable than any other material: when varnished it is beautifully white and transparent. The perfect success of Whitney's Composition for all Horticultural purposes cannot be more fully established than by stating, that on the 1st of April last, a Black Hamburgh Vine was set in a border, the stem introduced into a house covered with Calico, and coated with Composition. On the 21st of Sept. a bunch of Grapes was cut weighing 1½ pounds, the fruit was finely coloured, and the flavour pronounced to be excellent. A sample was sent up to the Editor of the *Gardeners' Chronicle* for his inspection. The vine grew very luxuriantly, the foliage very fine, and the wood ripened exceedingly well. As a winter protection it is infinitely warmer than glass.

The PATENT CLOTH and COMPOSITION can be obtained of Messrs. Butler & Muckley, Covent Garden Market; Hurst & M'Mullen, Leadenhall Street; Warner & Warner, Cornhill; Barclay & Sons, Farringdon Street; and Hannay & Co., Oxford street. — Wholesale and Shipping Agent, Mr. Bailey, Wolverhampton.

HOT WATER FOR BOTTOM-HEAT.



J. WEEKS AND DAY, Manufacturers, &c., Gloucester Place, King's Road, Chelsea, HORTICULTURAL BUILDERS, and Hot-water Apparatus Manufacturers, invite the attention of Horticulturists to their Improved Plan of Bottom-Heat, now becoming so universally adopted.

From the extensive Practice they have been honoured with for 20 years in designing and building CONSERVATORIES, GREENHOUSES, HOTHOUSES, PITS, &c. &c., and erecting their HOT-WATER APPARATUS to every description of Building to which heat is applicable, J. WEEKS and DAY have the greatest confidence in recommending their BOILERS as the most efficient of any yet invented, their largest being capable of heating a range of Forcing Houses 300 feet in length, with a comparatively small quantity of fuel, and only requiring attention once in 12 hours. To be seen in use at most of the London Nurseries, also at their Manufactory; and a variety of Horticultural Erections, Models, Plans, &c. &c.

STEPHENSON AMES, CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much approved method of applying the Tank system to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or ducts. S. A. Co. have also to state that the segment of numerous friends they are now making their Boilers of iron as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority, or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

J. & C. beg to inform the Trade that their Manufactory in New Park-st., every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms. Conservatories, &c. of iron or wood, erected upon the most fashionable designs. Balconies, Palisading, Field and Garden, Wire Work, &c. &c.

CONIFERÆ.—The Subscribers have this Season to offer the following:—

		s.	d.
Pinus	araucana, 6 in. seedling, in pots, each	25	0
,,	altissima, 3 in., engrafted, in pots, each	7	6
,,	austriaca, 1 year seedling, per 1000	15	0
,,	,, 6 in. seedling, in pots, each	0	4
,,	,, 1 foot seedling, in pots, each	1	0
,,	Banksiana, 3 in., engrafted, in pots, each	5	0
,,	brutia, 1 year seedling, in pots each	2	6
,,	calabrica, 1 year seedling, in pots, each	2	6
,,	,, 1 year seedling, per 100	75	0
,,	canariensis, 2 to 2½ ft., seedling, in pots, each	10	6
,,	,, 9 to 12 in., grafted, in pots, each	3	6
,,	,, 15 in., grafted, in pots, each	5	0
,,	cembra, 1 year, seedling, per 1000	70	0
,,	,, 2 year, transplanted, per 1000	£5	0
,,	,, 3 year, transplanted, per 1000	£7	10
,,	,, sibirica, 2 to 3 in., in pots, each	3	6
,,	contorta, 3 to 5 in., grafted, in pots, each	15	0
,,	excelsa, 1 year, seedling, per doz.	6	0
,,	,, 4 to 6 in., bedded, per doz.	12	0
,,	,, 3 to 4 in., seedling, in pots, each	1	0
,,	,, 6 to 8 in., seedling, in pots, each	1	6
,,	,, 2 ft., seedling, in pots, each	15	0
,,	,, 1 to 1½ ft., grafted, in pots, each	3	6
,,	filifolia, 4 to 6 in., seedling, in pots, each	3	6
,,	Gerardiana, 1 year, seedling, in pots, each	2	6
,,	,, 4 to 6 in., in pots, each	7	6
,,	halepensis, 1 year seedling, in pots, per doz.	4	0
,,	,, 6 to 8 inches, in pots, each	0	9
,,	Hamiltoni, 1 year seedling, in pots, each	2	6
,,	Hartwegi, 2 years' seedling, in pots, each	5	0
,,	insignis, 4 to 6 in., grafted, in pots, each	5	0
,,	,, 12 to 15 in., grafted in pots, each	7	6
,,	Lambertiana, 4 to 6 in., in pots, each	10	6
,,	,, 1 to 1½ ft., in pots, each	21	0
,,	longifolia, 15 in., seedling, in pots, each	10	6
,,	Laricio, 1 year seedling, per 1000	10	0
,,	,, 2 years transplanted, per 1000	30	0
,,	maritima (true), 1 year seedling, in pots, each	0	3
,,	,, 1 year, grafted, in pots, each	1	6
,,	montana, 4 to 6 in., seedling, in pots, each	0	4
,,	Montezuma, 2 to 3 in., seedling, in pots, each	21	0
,,	oocarpa, 1½ ft., seedling, in pots, each	15	0
,,	palustris, 1 in., seedling, in pots, each	3	6
,,	,, 2 in., seedling, in pots, each	7	6
,,	patula, 6 to 9 in , seedlings, in pots, each	2	6
,,	,, 12 in., seedlings, in pots, each	3	6
,,	,, 1½ ft , seedlings, in pots, each	5	0
,,	,, 2 ft., seedlings, in pots, each	7	6
,,	Pinaster, 1 year seedling, per 1000	7	6
,,	,, 1 year transplanted, per 1000	15	0
,,	,, (maritime of France), 1 year seedling, per 1000	7	6
,,	,, ,, ,, 2 years seedling, per 1000	10	0
,,	,, ,, ,, 1 year transplanted, per 1000	15	0
,,	,, 6 to 12 in., seedling, in pots, each	0	4
,,	Pinea, 12 to 15 in., in pots, each	1	0
,,	Pseudo-strobus, 4 in., in pots, each	15	0
,,	Pumilio, 1 year seedling, per 1000	15	0
,,	,, 1 year, transplanted, per 1000	30	0
,,	pyrenaica, 1 in., in pots, each	2	6
,,	resinosa, 1 year seedling, in pots, per doz.	4	0
,,	,, 1 to 2 in., each	0	6
,,	regia, 2 ft , in pots, each	5	0
,,	serotina, 1 year seedling, in pots, per doz.	4	0
,,	,, 3 ft. seedling, in pots, each	5	0
,,	sinensis, 3 ft , grafted, in pots, each	15	0
,,	Strobus, 1 year seedling, per 1000	7	6
,,	,, 2 year transplanted, per 1000	30	0
,,	,, 3 year transplanted, per 1000	40	0
,,	sylvestris (from native Scotch forests), 1 year seedling, per 1000	1	0
,,	,, 2 years seedling, per 1000	1	6
,,	,, transplanted from 1 year seedling, per 1000	6	0
,,	,, transplanted from 2 year seedling, per 1000	7	0
,,	,, haguenais (from Continental forests), 1 year seedling, per 1000	1	3
,,	,, ,, 2 years seedling, per 1000	2	6
,,	,, argentea, 1 year seedling, in pots, each	2	6
,,	Tecote, 9 to 12 in., in pots, each	10	6
,,	tenuifolia, 6 to 9 in., in pots, each	7	6
,,	variabilis, 1 year seedling, in pots, each.	1	0
,,	spec. from China, 6 in., in pots, each	7	6
,,	,, from Guatemala, 4 in. seedling, in pots, each.	7	6
,,	,, from S. America, 4 to 6 in., in pots, each	5	0
Abies	alba, 3 years transplanted, per 1000	30	0
,,	,, 1 ft., in pots, each	1	0
,,	cærulea, 6 in., in pots, each	3	6
,,	Clanbrassiliana, 1 ft., in pots, each	3	6
,,	Douglasi, 1½ ft., in pots, each	20	0
,,	excelsa, 1 year seedling, per 1000	1	6
,,	,, 2 years seedling, per 1000	4	0
,,	,, 3 years seedling, per 1000	5	0
,,	,, 1 year transplanted, per 1000	7	6
,,	,, 2 years transplanted, per 1000	10	0
,,	,, 3 years transplanted, per 1000	15	0
,,	Menziesi, 1 to 2 in., cutting, in pots, each	1	6
,,	Morinda, 1 year seedling, per doz.	6	0
,,	,, 3 to 4 in , in pots, each	1	0
,,	,, 4 to 6 in., in pots, each	1	6
,,	,, 1 ft., in pots, each	3	6
,,	,, 1½ to 2 ft., in pots each	7	6
,,	nigra, 1 year seedling, per 1000	40	0
,,	,, 1 year transplanted, per 1000	75	0
,,	,, 2 years transplanted, per 1000	£5	0
,,	,, 1 ft., in pots, each	1	0
Picea	amabilis, 2 to 3 in., grafted, each	10	6
,,	balsamea, 1 year seedling, per 1000	5	0
,,	,, 1 year transplanted, per 1000	20	0
,,	canadensis, 2 years transplanted, per 100	40	0
,,	,, 2½ to 3 ft., each	1	0
Picea	cephalonica, 4 in. seedling in pots, each	2	6
,,	cephalonica, 3 years transplanted, per 100	60	0
,,	Fraseri, 6 in. seedling, in pots, each	1	6
,,	nobilis, 2 in. grafted, in pots, each	3	6
,,	,, 4 in. grafted, in pots, each	10	6
,,	Nordmanniana, 2 to 3 in. grafted, in pots, each	20	0
,,	pectinata, 1 year seedling, per 1000	5	0
,,	,, 2 years seedling, per 1000	7	6
,,	,, 1 year transplanted, per 1000	15	0
,,	,, 2 years transplanted, per 1000	25	0
,,	Pichta, 2 in. seedling, in pots, each	2	6
,,	Pindrow, 2 to 3 in. seedling, in pots, each	21	0
,,	Pinsapo, 2 to 4 in. in pots, each	1	0
,,	,, 6 in., in pots, each	2	6
,,	,, 2 years transplanted, per 100	50	0
,,	spectabilis, 1 in., in pots, each	2	6
,,	,, 2 to 3 in., in pots, each	5	0
Cedrus	Deodara, 6 to 9 in., in pots, each	5	0
,,	,, 9 to 12 in., in pots, each	7	6
,,	,, 4 to 5 ft., in pots, each	25	0
,,	,, 5 to 6 ft., in pots, each	35	0
,,	,, 6 in. grafted, in pots, each	2	6
Libani,	2 to 3 in., grafted, in pots, each	0	6
,,	,, 6 in., grafted, in pots, each	0	9
,,	,, 9 in., grafted, in pots, each	1	0
,,	,, 14 in., grafted, in pots, each	2	0

CONIFERÆ—continued.

		s.	d.
Cedrus	Africanus, small	10	6
Larix	americana, 2 to 3 in. seeds, in pots, each	0	6
,,	europea, 1 year seedling, per 1000	1	6
,,	europea, 2 years seedling, per 1000	4	0
,,	,, 1 year transplanted, per 1000	5s. to	7 6
,,	,, 2 years transplanted, per 1000	8s to	10 0
,,	,, 3 years transplanted, per 1000		12 6
,,	,, (from Tyrolese seed) 2 years seedling, per 1000		5 0
,,	macrocarpa, 4 to 6 in., in pots, each		0 2
,,	nigrita, 1 year, in pots, each		0 4
,,	virginiana, 3 to 5 in., in pots, each		0 9
,,	rubra, 2 ft., in pots, each		1 6
Cupressus	australis, 3 to 5 in., cuttings in pots		1 0
,,	capensis, 1 in., cuttings in pots, each		1 6
,,	lusitanica, 1½ foot, seedling, in pots, each		2 6
,,	nepalensis, 4 in., seedling, in pots each		5 0
,,	occidentalis 2 to 3 in. cuttings, in pots, each		3 6
,,	pendula, 1 year, seedling, per dozen		3 6
,,	sempervirens, 9 in., each		0 4
,,	,, 1 to 1½ foot, each		1 0
,,	,, fol. aureis variegatis, 4 in., each		3 6
,,	,, horizontalis, 1 year, per 100		3 6
,,	,, ,, 6 to 9 in., in pots, each		0 9
,,	,, stricta, 1 year seedling, per 100		3 6
,,	thujoides, 1 to 2 in. cuttings in pots, per dozen		3 0
,,	,, 15 in., seedling, each		2 0
,,	thurifera, 4 in., cuttings in pots, each		5 0
,,	torulosa, 1 year seedling, per dozen, in pots		4 0
,,	,, 4 to 6 in., 1 year seedling, in pots, each		0 9
,,	,, 12 to 15 in., 1 year seedling in pots, each		1 6
,,	Tournefortii, 1 year seedling, per 100		7 6
,,	,, 6 to 12 in., in pots, each		0 6
,,	,, 2 to 3 feet, in pots, each		1 0
Juniperus	Bedfordensis, 2 to 3 in. in pots		3 6
,,	communis, 1 year seedling, per 1000		7 6
,,	,, 2 years seedling, per 1000		10 0
,,	excelsa, 1 to 2 in., in pots, each		1 0
,,	,, 12 to 15 in., in pots, each		7 6
,,	Gossamthames, 1 to 2 in., in pots, each		2 6
,,	Lycia, 1 year seedling, in pots, each		1 6
,,	,, 4 in., 1 year seedling, in pots, each		3 6
,,	phœnicea, 1 year seedling, in pots, each		1 0
,,	,, 6 in., 1 year seedling, in pots, each		3 6
,,	pendula, 4 to 6 in., grafted, in pots, each		10 6
,,	Sabina, 1 to 2 in., grafted, in pots, each		0 4
,,	,, 9 to 12 in., grafted, in pots, each		2 6
,,	sibirica, 2 to 3 in., grafted, in pots, each		1 0
,,	suecica, 1 to 3 in., cuttings, in pots, per doz.		3 0
,,	,, 2 to 4 in., cuttings, in pots, per doz.		4 0
,,	,, 1 ft., in pots, each		0 9
,,	tamariscifolia, 6 to 9 in., in pots, each		5 0
,,	virginiana, 3 to 4 in., seedling, each		0 4
,,	,, 9 in., seedling, each		1 0
Thuja	articulata, 1 year seedling, in pots, each		0 9
,,	,, 6 in., seedling, in pots, each		2 6
,,	falcata, 1 ft., each		1 6
,,	occidentalis, 4 in., 1 year bedded, per 100		5 0
,,	,, 9 in., each		0 4
,,	orientalis, 1 year, seedling, per 100		5 0
,,	,, 2 year bedded		10 0
,,	orientalis, 6 to 9 in., in pots, each,		0 6
,,	,, 9 to 12 in., in pots each		1 0
,,	pendula, 3 to 4 in., in pots, each		7 6
,,	,, 6 to 9 in., in pots, each		10 6
,,	tatarica, 6 to 9 in., in pots, each		1 0
,,	,, 1 ft., in pots, each		2 6
,,	Warreana, 1 ft., in pots, each		2 6
Taxodium	distichum, 1½ ft., in pots, each		0 9
Taxus	baccata, fol. argenteis, 2 in., in pots each		7 6
,,	canadensis, 4 to 6 in., in pots, each		1 0
,,	hibernica, 8 to 12 in., in pots, each		1 0
,,	,, 1½ to 2 ft., in pots, each		2 0
,,	,, 3 ft., in pots, each		3 6
Araucaria	imbricata, 4 to 6 in., in pots, each		3 6
,,	braziliensis, 1 ft., in pots, each		7 6
,,	,, 2 to 3 in., in pots, each		10 6
,,	,, 5 to 6 feet, in pots, each	£4	0 0
,,	Cunninghami, 3 in., seedling, in pots, each		10 6
,,	,, 8 to 10 feet	£35	0 0
Bella	jaculifolia, 1½ ft , in pots, each		5 0

PETER LAWSON AND SON,
Seedsmen and Nurserymen to the Highland and Agricultural Society of Scotland.
AGENTS.—Messrs. W. and J. NOBLE, Seedsmen, 152, Fleet-street, London.
Edinburgh, Nov , 1844.

TO BE DISPOSED OF, FIFTY FRUITING AND EIGHTY SUCCESSION QUEEN PINE PLANTS.
For Particulars, direct A. GREGORY, Gatton Park, Reigate, Surrey.

HOT-WATER APPARATUS FOR HEATING HORTICULTURAL BUILDINGS, DWELLING-HOUSES, CHURCHES, and MANUFACTORIES, upon improved principles, and at very moderate charges, erected by DANIEL and EDWARD BAILEY, 272, HOLBORN.

D. and E. BAILEY having devoted much time to the consideration of this subject, and had much experience in the erection of apparatus for the above-mentioned purposes, have, by improvements suggested in their practice, rendered their mode of heating not only very efficient, but very simple, and have combined durability in the apparatus with economy in the charge. They have erected apparatus in England, Scotland, and Ireland, for many noblemen and gentlemen, and have had the honour to be employed by the Horticultural Society of London, in executing the works of their splendid Conservatory, lately erected at Chiswick.

D. and E. BAILEY also construct in metal all descriptions of Horticultural Buildings and Sashes, and invite noblemen, gentlemen, and the public to an inspection of their various drawings and models, at 272, Holborn, where they have the opportunity of exhibiting, amongst other metal works, an extremely complete and convenient kitchen apparatus, or range, adapted for the continued supply of hot water, and an arrangement of the oven more complete than has hitherto been brought before the public.

D. and E. BAILEY were the first to introduce metallic curvilinear houses to horticulturists, and can refer to the Conservatory attached to the Pantheon as one of their works, besides many others in this country and on the Continent.

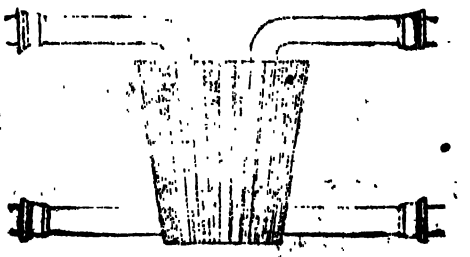
D. and E. BAILEY have prepared a quantity of the Galvanic Plant Protectors, which are now ready for immediate delivery; they beg to introduce to public notice a new Trough Pipe, for Orchidaceous or other Houses where vapour is constantly, or at intervals required, and which may be seen at their Manufactory.

DRAINING OF LAND.—THE WORKMAN'S LEVEL, invented by MR. BAILEY DENTON, is made and sold, as approved by him, by Messrs. JONES, Opticians, 30, Lower Holborn, London, price 30s.

CONICAL BOILERS.—The Boilers invented by JOHN ROGERS, Esq., are made of several sizes, and may be obtained of JOHN SHAWEN, Ironmonger, Sevenoaks, Kent.

They may be seen in operation at Messrs. Chandler's, Vauxhall; Loddiges', Hackney; Henderson's, Pine-apple-place, Edgware-road; Rollisson's, Tooting; Penny's, Plymouth; The Horticultural Society's Gardens, Chiswick; and in the Gardens of the Royal Botanical Society, Regent's-park.

BURSIDGE AND HEALY'S NEW BOILER and FURNACE for HORTICULTURAL PURPOSES.
Registered under 6 & 7 Vict., Cap. 65.
No. 130, FLEET STREET, LONDON.



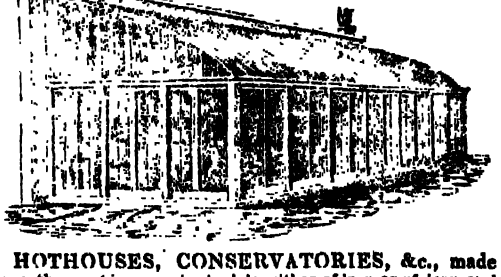
BURSIDGE and HEALY respectfully inform the Horticultural Public that they have constantly on hand an extensive assortment of their new Boiler and Furnace Doors. In very numerous cases where they have been fixed, they have the highest testimonials of their complete success: for the further assurance of those who may require this apparatus, BURSIDGE and HEALY refer them to the Horticultural Society's Gardens, Chiswick; also to Mr. GLENDINNING, Garden Architect, &c. &c., Chiswick Nursery, in the same neighbourhood, where the apparatus may be seen in successful operation, in connection with their new Tanks. The following are the present prices:—

Plain Boiler.			Patent Door and Frames, Fire-bars & Dead Plate.		Flue Door.		Damper.		Will heat of Pipe.	Forcing Pit, Length by feet.
in.	ft.	s.	s.	d.	s.	d.	s.	d.		
10	1	8	20		7	6	6	2	6	80 feet.	12 to 20
Ribbed Boiler.										
10	2	2	20		10	6	7	6	2	6	50 to 70 ft. 4 in.	Under 25 to 40
12	2	15	30		12	6	7	6	3	6	80 to 125 feet.	40 to 65
14	3	10	35		17	6	8	6	4	6	150 to 250 feet.	65 to 100
18	5	5	42		25	0	8	6	5	6	300 to 400 feet.	Warm a grapery 35ft. long, and a pit 30ft.
24	8	15	50		35	0	8	6	7	6	600 to 800 feet.	

If 3-inch pipe be used, one-third more. If 2-inch pipe, as much more.

The above quantities are rough estimates, which may be varied by enlarging or contracting the fire, or by regulating the fire door. It is possible to heat a much larger quantity of pipe with the boiler, but it would be done at great loss of fuel. The above proportions can be generally relied on as a near approximation to what is correct.

COTTAM AND HALLEN, ENGINEERS, IRON-FOUNDERS, &c., &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON, and at CORNWALL ROAD, LAMBETH.



HOTHOUSES, CONSERVATORIES, &c., made upon the most improved principle, either of iron or of iron and wood combined, which can be fixed complete in any part of the Kingdom, at very low prices.

HOT-WATER APPARATUS for heating Hothouses, Conservatories, and Greenhouses; Churches, Public or Private Buildings, &c., with COTTAM'S PATENT or ROGERS'S BOILERS. After 15 years' experience, and having fixed upwards of 2000 Apparatus for the above-mentioned purposes, and by various improvements which they have made during that time, C. and H. can with confidence undertake the erection of similar Apparatus upon the most extensive scale.

Materials may be had for those who wish to fix their own Apparatus.

THE TANK SYSTEM on an improved principle, that will heat the house at the same time, without pipes.

IRON HURDLES, best Wire for Strained Fencing, Ornamental Iron and Wire-work, Garden Chairs, &c., &c., and every description of Implement for AGRICULTURAL and HORTICULTURAL PURPOSES.

Show Rooms at their Manufactory, 2, Winsley-street, Oxford-street, where a large assortment of the above can be seen.

HOT-WATER HEATING APPARATUS.—J. PORTER begs to announce that, in addition to the many other and valuable purposes for which Galvanised Iron is peculiarly applicable, he is now manufacturing Tanks and Gutter for Vaporising, and Pipes for heating by top and bottom-heat, Hothouses, Pineries, Conservatories, &c. J. P. has also to state that, having secured the assistance of parties of the greatest skill and experience, he is prepared to furnish Plans and Estimates for Heating and Ventilating Horticultural Buildings, Public Edifices, Private Houses, Churches, Warehouses, Manufactories, &c., accompanied by references to executed works. J. P. does not profess to offer any one particular form of Boiler as the best, to the exclusion of every other, but adopts those which will insure the greatest share of efficacy and economy, in each particular case.—Grove Patent Galvanised Iron Roof and Fence Work, Southwark, second carriage turning to the right from Southwark Bridge.

GUANO (GENUINE PERUVIAN & BOLIVIAN) ON SALE, BY THE ONLY LEGAL IMPORTERS, ANTONY GIBBS AND SONS, LONDON; WM. J. MYERS AND CO., LIVERPOOL;
And by their Agents,
COTESWORTH, POWELL, AND PRYOR, LONDON; GIBBS, BRIGHT, & CO., LIVERPOOL and BRISTOL.
47, Lime-street. Dec. 21, 1844.

THE PATENT PORTABLE SUSPENSION STOVES are admirably adapted for Conservatories and Greenhouses—a pure air, combined with warmth, being as indispensable to the health of plants, as of Human Subjects. Nearly Four Thousand have been sold since the commencement of the present Season. Specimen Stoves are in operation daily, at GROSER and JOHN DEANE'S Opening to the Monument, 46, King William Street, London Bridge.

THE NOBILITY AND GENTRY desirous of increasing their collection of Stove, Greenhouse, Hardy, Herbaceous, and other Plants, Camellias, Roses, Geraniums, &c., are respectfully informed that Messrs. J. and H. Brown's Descriptive Priced Catalogue, for 1845, may be had per post on application.—Albion Nursery, Stoke Newington, London.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 28, 1844

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Friday,	Jan. 3	Botanical	8 P.M.
Monday,	Jan. 6	Entomological	8 P.M.
Wednesday	Jan. 8	Society of Arts	8 P.M.

Another point which Potato-growers have taken for experiment is the difference in produce where whole tubers and cut sets are employed. This is a question of no small importance, if we consider how considerable a saving of seed is effected in a bulky crop like the Potato, if we can only diminish the weight of the seed by one third.

A good many persons are in favour of using whole tubers, notwithstanding the waste of material. Our correspondent *Falcon*, says:—"I always plant WHOLE Potatoes which INSURES a tolerable crop in all seasons, preventing *dry rot* in *hot* weather, and *rottenness* in *wet*, which cut pieces are so liable to."——*A Leicestershire Farmer* says that after many years' experience he has discontinued planting cut sets and substituted whole tubers, selecting small ones, but not the smallest; he adds, that adopting this rule, he has had an excellent crop this year, and the tubers are *extraordinarily large*. They were a late sort, and planted on the 25th of April in rows 3 feet asunder, and 9 inches apart in the rows.——*Mr. White*, of Uxbridge, has, for some years past, found the advantage of setting the second size of the small Potatoes, such as are not fit for market, without cutting them (he gives the very smallest to the pigs). Having an insufficient supply of tubers of one very large sort, he was obliged to cut them in order to get enough for seed, and many failed in consequence; nevertheless, his crop brought him 18 or 19 tons per acre. While, however, many of the cut sets failed, none of those missed which were planted whole. With his letter Mr. White was so obliging as to send one of those Potatoes that yielded at the rate of 18 or 19 tons an acre; it weighed 1 lb. 14 oz., and was a large coarse sort, only fit for cattle; the eyes were very hollow, especially near the top of the tuber, where several ran into each other, forming deep indentations or fissures upwards of an inch in length.——A correspondent near *Birmingham* finds his cut sets a general failure; and another at Woodstock gives a decided preference to whole Potatoes; the poor people "having lost almost all their cut sets, while their whole Potatoes stood the long drought."

On the other hand, *F. N.* writes thus from Bidston, in Cheshire.

"At p. 267 a correspondent recommends 'the largest size Potatoes, uncut, for sets, planting them in rows one yard apart, the sets being two feet and a half from each other,' &c. This induced me to try the experiment, and up to June the large whole sets appeared to have such a decided advantage over those cut, that I mentioned it in a short article on the subject, which you introduced at page 416. I now give the result of the experiment. I gave twelve rows (*i. e.* six of each alternate cut and whole) a fair trial: the season being very dry, after their being ploughed up with a 'broad shoulder' as recommended, I had them watered with diluted liquid manure; the haulm of the whole sets grew very rank, and in accordance with your advice in a Leading Article, No. 26, page 427, I nipped the flowers off the twelve rows as they appeared, and at taking-up time was very much disappointed with the large whole set rows. Instead of having lots of large Potatoes I had lots of small ones, which were near the surface, about the size of marbles and little Apples, the haulm of which sets was very tuberous, presenting excrescences similar to small green kidney Potatoes with leaves growing from them; in short, where I got one measure from the whole sets, I got a measure and a half from the cut, off the same quantity of land; and taking into consideration that nearly one-third of the cut sets missed, I cannot but think that a field planted with good cut sets will produce a better and rounder crop than the largest whole sets ever seen."

Now, in noticing this matter we labour under the great disadvantage of having no precise statements to deal with. In all cases of experiment the result should be exactly given—not vaguely. It is not sufficient to say that one crop is *much* better, or finer than another. One desires to know *how* much. Weights and measures give results from which only one conclusion can be drawn. It is, however, clear that during the last summer opinion has in general become adverse to cut sets, and favourable to whole tubers; and this too was the general conclusion of the late Mr. Andrew Knight. We, however, have never yet seen reason to concur in this view, unless perhaps in very dry seasons like the last. Our opinion is formed upon very numerous and exact experiments in the Garden of the Horticultural Society, made some years ago, for the express purpose of testing the accuracy of Mr. Knight's theory; and as those experiments are probably but little known it may be as well to state their results in this place.

In the year 1832 five plots of ground of equal size, and as nearly as possible of equal quality, were selected for the growth of five different varieties. One half of each of these plots was planted with whole tubers and the other with sets containing but one eye each; the plants were one foot apart in the rows, and the rows themselves 18 inches apart. Upon taking up the crop it was found that the estimated results were as follows:—

	Tons.	cwt.	lbs.
Whole Tubers	113	2	72
Single Eyes	111	3	54

giving a difference in five acres of about two tons, which is hardly more than the difference between the weight of the tubers and sets originally planted.

At the time this experiment was prepared, it was thought advisable also to ascertain what difference in their rate of increase there really is between tubers and eyes, when each set or tuber has the power of growing undisturbed by its neighbours; so that the real productiveness of each could be ascertained with the greatest accuracy. In this case it was anticipated that the tubers, having full space to develope themselves, would certainly surpass the sets very materially in proportionate productiveness; but the result proved to be altogether the other way. A piece of ground was selected of quality as nearly uniform as possible; it was divided into four feet squares; and in the centre of each square was planted either a tuber, or a single eye, or a set containing three eyes, or the whole surface of a tuber pared off so as to leave the eyes safe but to remove the centre. In this experiment it was found that the rate of produce was in 13 cases out of 16, in favour of single eyes as compared with tubers; in 9 cases out of 16 in favour of single eyes as compared with sets containing three eyes; and in 10 cases in 16, in favour of single eyes as compared with parings; or, if we consider the results of the whole 16 experiments as belonging to one experiment, their proportions are expressed by the following figures.

Whole Tubers	338·38	or	2
Single Eyes	717·87	..	11
Taree Eyes	613·94	..	5
Parings	504·69	..	4

nearly.

And this conclusion corresponded with other experiments instituted with similar objects in view.

In the year 1834 a further trial was made with early Champion Potatoes, upon ground on which no Potatoes had been previously grown. No manure was employed, nor was the soil by any means in a fertile state for garden ground. The experiment was varied in four ways by planting at intervals of 30, 24, 18, 12, and 6 inches. We extract from the Society's Transactions the following tabulated return.

Distance between Rows.	Sets.	Weight planted	Weight taken up	Rate of Produce	Weight required per acre for seed	Weight produced per acre	Net return per acre, after deducting the weight originally planted
ft. in.		lb. oz	lb. oz.		lbs.	lbs	lbs tns cwt. lb.
2 6	Whole tubers	110 6	957 5	1: 7.54	6497	47,742	41,224 or 18 8 4
	Single eyes	80 0	748 0	1:10.39	1470	37,910	35,810 „ 15 19 82
2 0	Whole tubers	140 0	887 0	1: 5.95	7600	44,380	36,780 „ 15 8 48
	Single eyes	80 0	1116 0	1:10.	1764	55,800	53,852 „ *24 0 87
1 6	Whole tubers	220 4	1190 0	1: 4.88	11,624	59,500	47,860 „ *21 4 72
	Single eyes	41 4	1068 0	1:26.09	2955	53,400	51,178 „ *22 16 102
0 6	Whole tubers	645 0	1402 0	1: 2.18	30 064	70,100	37,636 „ 16 17 91
	Single eyes	100 0	980 0	1: 8.55	3008	42,000	37 854 „ 16 17 110

Crop small and bad.

Nothing could well be more conclusive than this in favour of good sets with single eyes. The first and the last trials being left out of consideration, because the distances were unsuitable to the variety under experiment, those marked * are the ones to which attention must be directed, and they show so great a difference against whole sets as to leave no room for doubting which is the better method under the circumstances. It showed too, what is of no small importance to poor people, that a better result was obtained by planting 1704 lbs. than by 7426 lbs., and that when the weight planted was increased to 32,065 lbs. per acre, a great loss was sustained instead of anything being gained.

We may add that further trials in 1836 confirm the accuracy of this conclusion, the *net* produce of Potatoes set in the 1st week in March having been 14 6 19, and even 17 10 96 against 13 11 23. It was only when the planting was delayed till April that tubers had something the advantage of sets.

There is one point, however, that still remains to clear up in this matter, and that is, whether small refuse Potatoes will not prove as advantageous as sets. Upon this we find no satisfactory evidence. By satisfactory, we mean no detailed experiments conducted with care, skilfully varied, and often repeated, the results being accurately ascertained by weighing when the crop is dry.

This, and some other matters, hereafter to be noticed, for which our correspondence furnishes us with data, we shall revert to on another occasion, before the time for planting Potatoes shall have arrived.

IVY.

In the two last Numbers some observations occur on the probability of Ivy living on walls when its connection with the ground is cut off by the destruction of the stem. The following facts may illustrate the matter, and perhaps save one of your correspondents the mortification of the loss of his evergreen.

Any visitor to Amberley Castle, in Sussex, may observe that the right-hand tower (looking toward the front of the ruins), flanking the gateway, is in better preservation than the left-hand one, particularly its battlements and upper third. These twin-towers are now destitute of Ivy, but about 35 years ago, the one above mentioned was completely clothed with it. The occupier of the Castle at that time found it necessary, in making a gangway in the moat round the foot of this tower, toward a new-made door-way in the castle wall, to cover up the stem of the Ivy with many feet of earth and rubbish. The consequence was the suffocation of its roots and the death of the plant within a few years. As the dead branches decayed and dropped off, the masonry became exposed, and the conservative influence of its former drapery was manifest, as before said, in the more perfect condition of the battlements, and of the general aspect of the tower above its fellow, which never had any Ivy at all. Many years of exposure has now made the difference less remarkable, but it is still very striking.

When ruined walls, by the dissolution of their materials and the free admission of rain-water, assimilate to fissured rocks or the common earth, Ivy will often (as I suppose the Winchester case may be), send in auxiliary roots, which would take the place of the parent stem, and it is not uncommon to see Ivy growing sparingly and stuntedly on old walls of much thickness, as other plants will do contrary to their usual habit. But a large old plant, which has always had its main rooting in the ground, will not bear to be severed from it.—*P. P.*

NOTES ON THE TULIPS OF THE MIDLAND COUNTIES.

Having heard that there were many fine seedling and other Tulips to be seen in the Midland Counties, I, during the past blooming season, visited some of the principal beds in Staffordshire, Lancashire, Derbyshire, Leicestershire, Yorkshire, and Nottinghamshire.

Having made various memoranda at the time, I intend to lay the results of my tour before the readers of the *Chronicle*, feeling sure that notices of fine flowers, as well as good seedlings, will prove acceptable.

My first point of inspection was Derby, famed amongst the northern growers as the place where Sherwood raised his batch of seedlings, from which some fine Roses have been originated. Here I saw Lady Colville (Sherwood's), a flamed flower, but by no means first-rate; also Mrs. Darwin, of the same grower, with a broken and indistinct flame; Lady Wilmot (Sherwood's), another variety, was in splendid condition, but unfortunately has a slightly tinged cup; the beautiful bright cherry flame, joined to the perfect feather of this flower, rendered it extremely attractive; and were it not for the before-mentioned defect, it would be an extremely popular variety. Lady Crewe, Mrs. Mundy, and Lady Middleton (all Sherwood's), were in a highly beautiful state. I had heard much for and against these flowers, but, in my opinion, they were the best feathered Roses I saw during the journey. I was informed that a person, who has obtained some notoriety in writing for a floricultural publication, in an article on the Tulip, some years ago, imputed some very unworthy motives to the Derby and Nottingham growers relative to these flowers. The Derby florists are very sore on the subject; for, as I understand them, the writer is convinced of his opinion being erroneous, but has not made the *amende honorable* in the work which contains his strictures.

The flowers were pointed out to me, and certainly no two feathered flowers are more distinct than the Ladies Crewe and Middleton. The feathering of the former is laid on lightly, with occasional breaks in the intensity of the pencilling, in the style of an old bizarre, known as the Yorkshire Trafalgar, the colour being of a bright cherry-red, and the tops of the petals slightly inclining inwards. On the contrary, Lady Middleton has a heavy plated feather, much darker than Lady Crewe; in fact, so much so, that when the flower is old, it has often been exhibited as a byblomen, in which state I saw several blooms. The petals also, when opening, rather throw back, like Count de Virginnes; it does not, however, retain this peculiarity, but assumes a perfectly globular form, and in fact has a fine cup. Some Triomphe Royales, growing in the next row, and which were in an unusually good state, were far inferior to this splendid variety; the best strain of which, I was informed, is remarkably steady. There was yet another Rose in great plenty dispersed through the various beds, of which there were a few excellent flowers, whilst there were many which were apparently worthless. I allude to Queen Boadicea, or Duchess of Newcastle; this is much larger than any other of Sherwood's varieties, but evidently is very uncertain. In the class of bizarres, I do not think that the Derby florists are above mediocrity. I saw, however, very superb blooms of Royal Sovereign, of which they have evidently a good strain, and which ap-

pears to be plentiful in the Midland Counties. This, with Magnum Bonum, Sultana (also one of Sherwood's seedlings, of rather inferior character), and Trafalgar, appear to be the principal varieties.

In flamed bizarres they are also deficient. Captain White, with its heavy breeder beam or flame; Potter's Albion, with a tinged cup (not the Albion of the metropolis), Dutch Catafalque, Earl St. Vincent, and Polyphemus, are amongst their best. The growers here appear to be quite alive to the importance of raising seedlings from fine sorts, with clean cups and perfect shapes, and great quantities, of all ages, are coming forward, some of which were blooming, the majority being byblomens, and decidedly the best of this class that I saw was a seedling named Sarah Anne; it was a perfectly feathered flower, with the colours beautifully distinct; Washingtons are also well-grown here, with Queen Charlotte and Suble Rex which last has a stained cup; Bienfait and Lilliard Violet are amongst their best feathered byblomens, and the Norwich Black Bagot was in very good character. After looking through the most noted collections, I walked to Chellaston, a village a few miles from Derby, where a large number of seedlings are grown. Here I saw but few old varieties, but this deficiency was made up by the quantity of really fine flowers, which have become rectified, or have assumed their proper character, by breaking into colour from the breeder. Unfortunately, hundreds have been sold in the self state, and dispersed over the country without name or number, which I fear will cause irremediable confusion. I was highly pleased with the collection, as all the flowers with foul or bad-shaped cups had been removed, leaving little to condemn, but much to admire. A flamed rose called Lady Stanley was extra fine, decidedly better than Strong's Duchess of Kent. Fanny Cerito, also a flamed rose, which was first broke into colour at Nottingham, is an acquisition to this scarce class. I saw fine flowers of every colour—superbly feathered and flamed byblomens, bizarres, and roses of every shade. Having purchased a few that took my fancy, I made the best of my way to Spondon, and from thence by train to Nottingham.

The collections here contain a greater quantity of London flowers than those at Derby, though one of the most successful exhibitors, who during the last twenty years has gained one hundred pounds worth of plate, has but few. In his beds I saw large quantities of old established favourites, at least sorts that are esteemed at Nottingham; for I must not attempt to conceal the fact that several of the varieties pointed out as his pan flowers, through the above-named series of years, would not have been tolerated amongst the metropolitan growers. The sorts were, Royal Sovereign, Magnum Bonum, and Victory—*Feathered Bizarres*. Captain White, Albion (Potter's), and Lord Milton—*Flamed Bizarres*. Lilliard, Norwich Black Bagot, and Pap Bienfait—*Feathered Byblomens*. Queen Charlotte, Sable Rex, and Violet Wallers—*Flamed Byblomens*. Lady Crewe, Triomphe Royal, and Lady Middleton—*Feathered Roses*, unique. Flambeau de la Duchesse, and Turner's Lord Hill—*Flamed Roses*.

These appear to be old standards, but I learn that several are repudiated, and will not now be countenanced, as the taste of the Nottingham florists is fast assimilating to that of the south-country growers. In my inspection of the various beds I recognised the following:—Polyphemus, which I have seldom seen in better condition; Titian, Leonatus Posthumus, Lavinia, Paul Potter, Agalia, Bijou des Amateurs, Strong's Duchess of Kent, Goldham's Earl of Liverpool, Manteau Ducal, Lucullus, &c. Of the varieties peculiar to the neighbourhood I particularly noticed Plantagenet, broken from the breeder this season—a fine, heavy-feathered bizarre, perfectly clean, and equal to Royal Sovereign; Pilot, a fine cupped-flamed bizarre, in the style of Captain White, without showing the breeder colour, neither does the flame break through at the top of the petals; Prince of Wales, an extra fine-feathered byblomen, was also in the same collection; Lady Middleton (before noticed) in first-rate character; Incomparable le Grand, a flamed byblomen, an exceedingly pretty flower of rather a rosy-purple; Rider's Julile—the beam of this flamed bizarre is not very distinct, still I admired its style. Here was pointed out to me La Belle Nannette; *certainly* a very pretty flower, but as *certainly* a Triomphe Royal, though possibly possessing a superior strain.

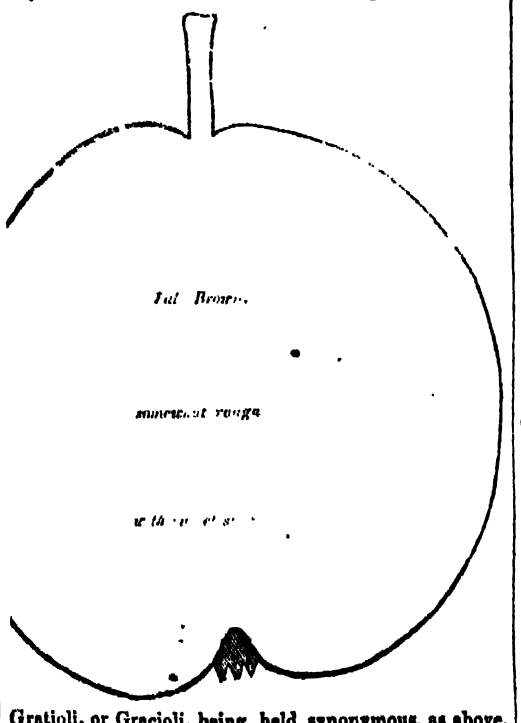
Arlette, a splendid feathered Rose; the breeder was raised, I learn, near Manchester. This was "a gem of the first-water," and though said to be tender it is a great acquisition. Rose Camellius, a pure and excellently marked flamed Rose, rather too long in the cup, and very much like Flambeau de la Duchesse. Sancta Sophia—feathered byblomen. This was broke from a breeder, raised by the same amateur who originated Arlette from seed, and most certainly was a noble flower; it was something in the way of Lawrence's Friend, though not quite so heavily feathered. This was the first that had been grown at Nottingham, and was indeed a fine variety. Lord Milton, of which I saw many strains, from the veriest rubbish to a really good flower, but the bad ones preponderate; still, as a flamed bizarre, it is a sort that will be grown. Magnum Bonum, or Sir Sidney Smith, appears to be very plentiful in the neighbourhood, and being steady, it is much thought of as a stage flower; still it bears no comparison with the blooms of Royal Sovereign and Victory, which came under my notice. Tricolors are not much cultivated; Strong's Flora, and Lawrence's Duke of Clarence, being the only two that I observed. In byblomens, Queen Charlotte is considered a first-rate flame; still it has a long cup; and in comparing it with the Derby Seedling, which had here broke in a flamed state, I most certainly think that Sarah Anne was the best of the two, the white being of great purity, and with a shorter and better cup. La Bien Aimée, a flower somewhat like Violet Alexander, was beautifully marked; it was also too long in the cup, but still is an acquisition. That delicate and singularly marked flower, Cenotaph, I saw in only one bed; it was well grown, and the violet beam up each petal was very distinct. One of the florists pointed out two London flowers—Osiris, and Duke of Devonshire—remarking what inferior sorts they were; but in the miserable specimens submitted to me, I could not recognise a trace of the features of these really two fine varieties.

Before concluding my remarks on the Nottingham Tulip beds, I may allude to a few of the breeders grown there, which are of extraordinarily fine properties, and apparently much sought after. I give their names as they were pointed out to me: *Bizarres*.—Rienzi, Comus, Invincible, Duke of Hamilton, Earl of Nottingham, and Joseph Strutt. *Byblomens*.—Lady Clifton, Madonna, Miss Longden, and Mrs. Sherwin. *Roses*.—Arlette, Amelia, Pauline, Lady Sale, Favourite, and Anastasia.—*W.*

THE JERSEY GRATIOLI.

(*Syn. Norris's Pear.*)

This is the name proposed for a most excellent variety of Pear, specimens of which were received for inspection and a name from H. W. Bucknall, Esq.; from one of which, of medium size, the accompanying representation has been made. The following communication was forwarded by Mr. Bucknall along with the fruit: "Oct. 12.—I herewith transmit you half-a-dozen Pears; I sent you the same variety about this period last year. [Noticed, *Gardeners' Chronicle*, vol. iii., p. 721.] You then said you believed it to be in cultivation in the neighbourhood of London. I have since taken great pains to ascertain the variety, without any effect; and the only tree I can learn to be in existence is one in my own neighbourhood. Are you still of opinion that you cannot determine the name of the fruit? If so, please to take particular notice of it. As a Pear cultivator, I do not hesitate to pronounce that, according to my own taste, it is the finest Pear in flavour, and in all its qualities, I ever met with. I trust these will reach you in perfection, which I think they will be in two days or so. The fruit I have chosen is of an average size; the tree is a fine old standard of 40 or 50 years, and a very free and constant bearer. I think it a great pity that the variety should not be promulgated, and I shall be very happy to be the means of extending its cultivation." Fully agreeing with the above remarks, it is presumed the notice here given will prove acceptable, although the origin of the variety cannot be satisfactorily traced; neither can the application of the name Gratioli be accounted for, as this name has been for centuries the acknowledged synonym of the Summer Bon Chrétien, a very different fruit from the one in question. The

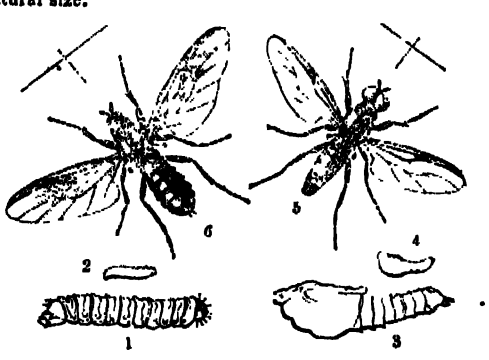


Gratioli, or Gracioli, being held synonymous, as above, by Duhamel, Dr. Diel, and many other French and German authors, was sufficient cause for demurring in naming the fruit in 1843, as alluded to in Mr. Bucknall's letter; and more especially as the name of Gratioli had only been heard indistinctly and casually applied to the present variety. But, according to Mr. Langelier, who is well acquainted with this fruit, it is cultivated in Jersey under the name of Gratioli. This being the case, it has been considered proper to designate it as the Jersey Gratioli, in order to prevent its being confused with the Summer Bon Chrétien, which of course it otherwise would. It is also called Norris's Pear, from having of late been extensively cultivated by Mr. Norris, one of the greatest fruit-growers in the neighbourhood of London. The fruit is regularly formed; the eye is in a very even depression, open, the segments of the calyx standing outright; flesh melting, like honey, exceedingly rich. It, however, continues but a short time in perfection, as is generally the case with early Pears. In its decay it does not become mealy or insipid, but still retains its honied nature. Its season is October. The tree grows vigorous, with erect, dark-brown shoots. The buds are rather obtuse and hoary. Leaves ovate-oblong, shortly acuminate.—*R. T.*

ENTOMOLOGY.

Dilophus febrilis.—(*The Fever-fly.*)—The economy of this insect is very similar to that of the Bibio marci, which was recently described in this Journal, and the perfect insects are nearly related. It was named *febrilis* by Linnæus, from its being frequently observed in the houses of persons suffering from intermittent fevers; and it certainly is a remarkable fact that, during the summer when the cholera visited England, these flies appeared in such multitudes, that even the lamp-posts were often covered with them, in the vicinity of London. If such occurrences be not altogether accidental, and merely extraordinary coincidences, the only solution I can give is, that the state of the atmosphere which superinduces certain diseases, is at the same time congenial to the metamorphoses of certain flies. During the last summer a genus of flies called Chlorops, whose larvæ are very injurious to the Wheat and Barley-crops, appeared in vast numbers, and one of the species in such swarms at the end of September in a house that had been visited by scarlet fever the preceding summer, that the ceilings were literally covered with these little flies; it was stated "that you could scarcely place your hand where they were not: small crowds of the house-fly also hung about the window-frames." In this instance the ceilings had been whitewashed, the glare of which had probably attracted the flies, and the windows being almost constantly open, they had free ingress. Such was the case in October, when I observed the same species of fly in multitudes in an unoccupied house; indeed, a cross-light, or even a mirror opposite to a window, will often attract insects, especially the Diptera, or two-winged flies, to a great extent.

About the end of July, 1841, I received a considerable number of the larvæ of Dilophus febrilis, that had been detected in a Vine-border amongst the horse-muck; they are a quarter of an inch long, shagreened, of a snuff colour, or ochreous brown; they are slightly convex, wrinkled, and destitute of feet; the head is much narrower than the body, very glossy, and of a chestnut colour; ten of the abdominal segments are wrinkled, with a spiracle on each side, excepting the second and third; the penultimate segment is rounded with four teeth, and the anal one has four similar teeth, with two large spiracles near the base: fig. 1, magnified—2, the natural size.



These larvæ changed to pupæ, in the earth, in the beginning of August; they were white with a yellowish tinge; the thoracic portion was very gibbous on the back; the short antennæ were visible through the skin, and the head was furnished with two short thick points, like many of the Papilionidæ, or White-Cabbage butterflies, &c.; the abdominal segments were slender, the edges somewhat projecting, the apical one was tuberculated, and the tip furnished with two acute teeth (fig. 3, magnified; 4, the natural size). On the 21st of the same month they produced perfect flies.

The *male* of D. febrilis is intensely black, shining, and hairy; the head is hemispherical and covered with large eyes, densely pubescent and of a reddish-brown colour, with three minute ocelli, forming an elevated triangle near the base. The mouth is furnished with a broad lip and two incurved palpi; the antennæ are very short, stout, cylindric, and composed of eleven perfoliate pubescent joints; the thorax is oval and gibbous, with two transverse rows of minute teeth before; the scutel is short and broad; the abdomen is rather narrower, and eight-jointed; the apex clavate; the wings are incumbent in repose, iridescent, perfectly transparent and white, excepting the costa, which is slightly tinged with brown; the costal nervures are piceous, the others are very faintly traced; a radial nervure, uniting with the costal one at the middle, forms a brown spot at the extremity; the halteres are terminated by a large compressed brown club; the legs are long; the anterior thighs are the thickest, and their tibiæ the shortest, the apex being surrounded by a toothed coronet; there are several short spines also on the outside; the tarsi are slender and five-jointed, terminated by claws and pulvilli (fig. 5). The *female* is very different: the head is much smaller; the eyes are small, oval, and not meeting on the crown; the abdomen is brownish, ovate, narrowed at the base, and the tip is furnished with two little styles; the wings are much longer and larger, entirely brown, the costa being

the darkest, with a stigmatic spot; all the nervures are pilcbous, and the anterior thighs are very much inflated (fig. 6; the cross lines show the natural sizes of the sexes). These insects, like the Bibios, fly heavily, with their hinder legs hanging down; and, after sunset, rest sluggishly on herbage and bushes. I have found them in abundance towards the end of May, as well as in August; from which it may be inferred that there are two broods in a year, or else a succession of them.

Towards the end of March, 1840, a considerable quantity of similar larvæ were found under a pot in a Grape-house, where a fungus had been growing; some of them were more than a quarter of an inch long; they had spines on the thoracic segments, and one on each side of the folds in the following. I am rather disposed, however, to think they were the larvæ of the B. marci at an earlier stage of growth. A correspondent also transmitted some larvæ last August, which were darker, equally long, but narrower in proportion, and he informed me they were found in a flower-pot containing a Pelargonium, which had been watered frequently with water saturated with sheep-droppings. The earth in the pot, as well as that in the Vine-border, was perforated by the larvæ in all directions, but the Pelargonium had not suffered in health. There can be little doubt, however, that they are prejudicial to the growth of plants, but their economy requires farther investigation before the extent of mischief can be ascertained. So little is known of such matters, that I believe figures of the larva and pupa of Dilophus, and its history, were never before published. —*Ruricola.*

ROSE GARDEN.

In the list of Roses inserted in the *Gardeners' Chronicle* on the 14th, one or two errors have crept in. Billiard, Conque de Venus, &c., to Ariel, colour intensely bright, &c. This, from colour bright, wood healthy, and growth free, was intended to apply to Billiard alone, though the latter qualities suit the others also. Again, Brennus was not intended to participate in the qualities and habits of Mordaunt de Launay, Aimée Vibert, and Conque de Venus. Free in flower, colour rosy lilac, applies to Noisette Bougainville only. Vigorous in growth, colour brilliant white, applies to Madame Hardy only. In the *Chronicle* of last week the observations following Celestial were intended to apply to the above, and not to the Cerise.—*A. H. B.*

Home Correspondence.

Lisianthus Russellianus.—As this beautiful stove-plant is seldom grown to anything like perfection, I beg to mention the mode of culture by which I have grown it to 2½ feet in height and 1½ in diameter. About the middle of January the seeds were sown in finely-sifted leaf-mould, and covered slightly over with white sand. The seed-pot was placed in a moderately warm situation, and little water was given until the month of March, when the pot was placed in a brisk bottom-heat, and watered more liberally. The seeds readily germinated, and by the month of May the plants were potted off. The soil used was a mixture of two parts peat and loam, one of three year old cow-dung, and one of leaf-mould, with a proportionable quantity of white sand. These were all well mixed together; the pots were plunged in a Melon-bed, where the bottom-heat was about 85°. During summer the plants were regularly shifted, as they filled the pots with roots, and the shoots were frequently pinched back to cause them to throw out laterals. The roots were kept very moist, and the plants were well watered over-head every night; frequent waterings of liquid manure were given, which were of much advantage to them. By the month of September they were nice bushy plants, about 8 ins. in height; they were then removed into the stove, where they were placed in a dry situation, and where they enjoyed plenty of light. During winter great care was taken not to allow any water to fall on their leaves, and when it was given to their roots it was never allowed to touch the stem, but was applied round the sides of the pot, no more being given than what was necessary to keep the plants from flagging. Pieces of glass were placed below the lower leaves, to prevent the latter from being injured by moisture arising from the mould in the pot, for no plant with which I am acquainted is more impatient of damp during winter than this is. As spring approached they began to grow, and were shifted into large pots; the shoots were all properly staked out at the same time, pinching back the strongest; the plants were again plunged in a hotbed as before; their roots, as formerly, were kept very moist, and liquid manure was used frequently. Under this treatment they did well, and by the beginning of July were covered with a profusion of bloom, which fully repaid my attention. If, after the plants have done blooming, the old roots are partially reduced, repotted in smaller pots, and treated as young plants, they will form handsome specimens in the third year.—*A. S., Edina.*

Naturalist's Pocket Almanack.—I fully concur in the opinion of "The Naturalist's Pocket Almanack, for 1845," expressed in the *Chronicle* for the last two weeks; I cannot conceive upon what principle the Editor introduces many of his new names for insects? The two, amongst several, to which I would particularly direct attention, are Stŏrŏpēs and Tĕphrosia. Now, every person at all acquainted with the nomenclature of insects must be aware that (in England, at least, *vide* Curtis, Stephens, Westwood's Classification, &c.) Steropus is the appellation of a group of predaceous beetles, and although the *u* has, unfortunately, been substituted for *e* by the founder of the genus (Megerle), yet I do not conceive that to be a sufficient reason for adopting it as a generic title in another order of insects. Again, the name is a bad one to have given to a butterfly; for, instead of being dark and one-eyed, as we might fancy the recipient of such a title should be, one species at least is a pretty chequered insect, having, in common with its congeners, a peculiar jerking flight, and might well have received an appellation after some more airy creature than a cyclops. Not so the beetle, which has a fine glossy black or dark-brown coat, and ever delights in dark holes, whence it only emerges to seek for prey. With respect to Tephrosia, although it is a happier name for the insects which the Editor of the "Naturalist's Almanack" arranges under it, than Steropes is, yet it must be remembered that Tephrosia has long been used by botanists to designate a genus of plants included in the Natural Order, Leguminosæ. If, then, the nomenclature of the various branches of Natural History is to be altered after this fashion, I would ask, How is the student ever to find the particular object for which he is searching? In fact, in one instance he would look for a butterfly and find a beetle described; and in the other he would seek for a moth, and the description would answer to a plant.—*Stura, Canterbury.*

Autumn Planting of Potatoes.—In addition to the evidence already before the public on the safety and propriety of autumnal planting with regard to the Potato, I may mention that the practice has been followed for two years, with beneficial results, by some of the farmers in Fifeshire. The plants have endured the winter, come up vigorously, and produced an excellent crop. Nor may the period of planting be confined solely to the autumn months; it is probable that any open weather during winter will be equally suitable for the operation, as the following example may testify:—On the 27th of January last, a portion of a field was planted by J. Williamson, Esq., of Clunie, Perthshire, with whole Potatoes, in a rather poor soil, in a hilly situation; the stem came up vigorously at the usual period, and the plants yielded, at the time of digging, an excellent crop of fine large tubers. Those, therefore, who have not tested the experiment of autumnal planting, may still, during any interval of fine weather, plant a portion of ground for a trial.—*Vidimus.*

Birch Coppice.—The chief cause of Birch-stools not shooting when their main stem or stems have been cut, may be traced to the neglect of properly cutting, or heading down the young trees in the second or third year after they have been planted. When the early heading of the young plants has been neglected, and the trees have attained to 10 or 12 years' growth, there must be always a good deal of uncertainty with respect to their shooting again. From experience I have found that, when the stems have been cut in spring, they have [illegible] fresh shoots. To my cost, I was first advised to try the contrary plan of [illegible] fore Christmas, in order to prevent the stems, as it was said, from being weakened by bleeding. I was first led to alter the time of cutting from noticing the vigorous shoots from a few Birch stems which had been accidentally cut nearly as late as May. After much thought the bleeding of the stems seems to me to be a favourable symptom, as indicating the liquefaction, and flux and reflux of the sap, which is absolutely necessary for the formation, or at least the bringing into operation, of fresh buds. I have noticed in the stems cut before Christmas, that no bleeding has taken place, and that the fibres of the wood were filled with a hard resinous deposit of concreted sap. Whether this theory be correct or not, I leave to be proved by the observation of others; yet, in favour of it, I am able to show several single overgrown Birch stems, which were cut as late as March last year, and which bled most profusely, but which have also sent forth an abundance of strong vigorous shoots, and promise to become as good stools as I could wish.—*A. Forester, Romney.*——I have also suffered from young Birch-trees dying on being cut down; and I have tried the effect of cutting them at different seasons of the year, with but partial success. I have also covered the top of the stem, when cut, with a small turf, as recommended by old woodsmen. This fact, however, I have noticed after repeated trials, viz., that if Birch is cut for the *first* time after planting, *before* the bark assumes the white appearance it takes a few years after planting, and which happens at earlier or later periods, according to the soil &c., it seldom suffers from the cutting. The same may be remarked of Coppice-stools. It would be very useful if planters would communicate the results of their experience on the subject of cutting Birch in general.—*F. Berks.*

Mildness of the Season in Ireland.—I have a Jargonelle Pear-tree which blossomed late in October, and from which I inclose a Pear that set from one of three blossoms: it increased in size, and was evidently still trying to come to perfection, when I cut it.—*J. B. Warren, Warren's Grove, County Cork.*

Liquid Manure.—I have tried, and seen tried, several articles under the above name, with varied success, and I have seen such fearful havoc to arise from their use that I have now given them up altogether, and have substituted a manure which is within everybody's reach, and which has benefited every plant to which I have applied it. My manure is soot, dissolved or rather mixed with rain-water, in the proportion of one tablespoonful of soot to a quart of water for plants in pots, but for Asparagus, Peas, &c., I use 6 quarts of soot to a hogshead of water. It must never be applied to plants in a state of rest. It succeeds admirably with bulbs. By its means, and without artificial heat of any kind, I have now (Dec. 4th) a Van Thol Tulip in flower on my table, and I hope to have Hyacinths in bloom by Christmas day or shortly after.—*X. X.*

To Clear Frames of Insects, &c.—I have no greenhouse, but I have put up two shelves (back and front) in a two-light frame. About the middle of October I had everything taken out of the frame, which was then well swept with a birch broom—every crevice in the wood was stopped with putty, and any holes in the bricks, with mortar. I then had sufficient quick-lime put into water to form a mixture, about as thick as batter; to that I added a quarter of a pound of powdered brimstone, and while hot had every part, shelves, both upper and under sides, supports, and all covered with the wash as thickly as it could be put on. When dry, this was repeated, and as yet I have scarcely seen an insect, although the pots stand so thickly that it would be difficult to place another among them. From the commencement of the present frost, I have uncovered but once a day, and that is about 11 in the forenoon. I always burn a rushlight, and the piece that remains in the water in the morning is dried. I then put it into a lanthorn, light it, place it in the bottom and middle of my frame, and then close up by putting mats next the glass so as to hang down all around, and over them a covering of asphalte. With this trifling care and protection, I have now (Dec. 10th) Pelargoniums, Cinerarias, Fuchsias, Cacti, Primulas, Roses, and various other tender plants, looking as well and healthy as I can desire. I forgot to state that the ground is well drained, and that I put one fourth of ashes in the bottom. I never water a plant in the frame, but take it out when it requires water, and afterwards restore it to its place. —*X. X.* [Very good.]

Lime Putty.—In answer to "A. B. J." I beg to state that lime-putty is lime ground up with raw linseed-oil, and made to the same consistency as that of common putty.—*Junius.*

Mode of Destroying Tomtits.—Take mutton-suet, and grate it with a large kitchen grater, such as cooks use; make balls of the grated suet, and put a ball of it into a fine net; hang this on trees in the garden, and Mr. Tom will soon invite all his relations and friends, and the net will soon want another charge. Grate suet again, as before; and to 1 oz. of suet add 1 scruple of fine powder of nux vomica; mix this well with the suet, and put it into the net, placing the latter in the same situation as before; Tom will soon give the signal to his companions again, but he will not repeat this many times. This plan will possibly answer better than "W. K.'s" cage. I may remark, in passing, that "W. K.'s" redbreast, of which he speaks so much, is as great a thief as can be in a garden, and deserves to be killed as well as Tom.—*Scrutator.*

Modern Flower-gardens.—If we want to gain a correct knowledge of any object, we must not only see it, but look attentively at it; and so also, if we would arrive at [illegible] of the principles of modern flower-correct notions of [illegible] gardening, we must exercise our understanding in regard to our object, and have a mental power of carrying the image of the object along with us, before anything like agreeable combinations can be produced. Now, I have observed that a square figure, divided into four triangles, and planted with plants of one height, but of two opposite colours, represents harmony and diversity; and when these are so arranged that the one side of the figure reflects the other, an agreeable effect is produced on the eye, indicating its healthy state, and at the same time illustrating the whole theory of colours. It is a principle of perspective, that a large figure is more imperfectly seen near a person than a small one, in consequence of the rays of light reflected from the large figure passing by the eye; and whether it is a square figure divided as above, or one differently arranged, so as it comes within the intersectional angle thus formed by the eye, the principle of planting in both cases will be the same.—*C.*

Onions.—I have this year an excellent crop of Onions, both in regard to weight and size; they were supplied with large quantities of manure out of the tanks in its original state. I should, however, mention that a good deal of pure water also runs into each of the tanks.—*Omega.*

Scorching Effects of the Sun.—If our hands or our faces are dipped either in cold or tepid water and exposed to the full sunshine till quite dry, they become stiff, and feel for a short time as if in a case of gum. Take a laundress's iron, or a poker made hot, dip a piece of linen in water or your hand, and take hold of the poker; do not remove the hand till either it or the linen is dry, and then if the hand do not exhibit an injured epidermis, I will believe that leaves may not be injured under similar inflictions. Again, it is admitted that leaves of plants are furnished with pores, similar to the breathing-pores of some insects, through which they receive the nourishment afforded by the atmosphere, and give off that which is superfluous, as we do by our lungs. In full sunshine they may be expiring or sweating; and I am inclined to believe that that man "burkes" his plants who would water them under such circumstances; for, these pores being shut up when wet, may have their expansive muscles injured by the sun and water, and thus the superfluous water or evaporating part, or perspiration, is checked; the system of the leaf receives a shock similar to that which the human frame would experience from being placed in a draught; colds, fevers, erysipelas follow from a sudden transition either to one extreme or the other, the body having an unnatural charge put upon it. The active presence of the rays of the sun makes a difference in the effect of the application of water. A large stone slab is laid outside of my drawing-room window, the aspect is

east, inclining to north; on this I have Fuchsias, &c., in pots; they are, in very warm weather, invariably watered as soon as the sun is fairly off them, and this is generally repeated once or twice afterwards during the day, and more healthy plants cannot be seen anywhere. The analogy between watering in the full sunshine, and a sunshiny shower, I imagine is widely different; because Cabbages, Beans, Lupines, and many flowers, which droop from the heat of the sun, hold up their heads before the shower—a sure indication of rapidly approaching rain. What can effect this but a susceptibility in the plants greater than that which the frame of man possesses, and a restringing of the flaccid muscles of the plants to open the mouths or pores for the grateful drops? The rays of the sun being broken by the glass of forcing-houses, a greater moisture does or should exist in the atmosphere of that climate than in the air; therefore, the application of water at any time of the day must cause a less shock to the plants than it would out of the house.—*A. W.*

Rats.—A few weeks ago a vast number of rats were driven into the Thames by the sudden damming up of a sewer. How very easily might London be cleared of these vermin by placing sluices in the sewers and drains, and once a month, on a given day, stop them all up for a certain number of hours, and then let the water, &c. off into the river! No rats could harbour and breed in them then. Again, if in the country, 1*d.* a head was given for every rat, they would soon be annihilated.—*D.*

On Budding the Vine.—About the first week in March I perform the operation, or as soon as I perceive the sap begin to rise. I cut from a Victoria Grape an eye about three inches in length, having attached as much wood as I could possibly get with it; at each end of the eye I cut off about a quarter of an inch of the upper bark, making the ends quite thin. I next measure off the exact length of the bud on the base of the Vine intended to be budded, and make a nick slanting upward at the upper part, and another slanting downward at the bottom. I then take the piece neatly out, so that the bud may fit nicely in, and by making the nick as stated above, each end of the bud is covered by the bark of the shoot. I bind the buds firmly round with matting, and clay it, taking care, however, that the clay does not cover the eye of the bud. I then tie it round with moss, and keep it constantly damp; and as the sap rises in the Vine the bud begins to swell. When the Vine commences to push out young shoots, take the top ones off, in order to throw a little more sap into the bud, and as you perceive it getting stronger, take off more young shoots, and so continue until you have taken off all the young shoots. Budding can only be performed where the long-rod system is practised, as in that case you have the power of confining the sap to the bud, which will grow vigorously. As soon as you perceive this, cut the Vine down to the bud. Budding has the advantage over grafting, by not leaving an unsightly appearance where the bud was inserted. A bud likewise grows more luxuriantly. I have seen a bud [illegible] a shoot fully 30 feet in length, with a beautiful bunch of Grapes at the base in the first season; whereas a friend of mine bought a plant and grew it for two years before he obtained fruit from it; and even then his Vine was not equal to the bud. I have budded many Vines in the same manner, and have always found them answer the end. I always allow the matting to remain on until about the month of September, when I take it off, and I have always found the bud perfectly united; and without minutely examining the plant the work is imperceptible. —*E. L. S.*

Rabbits.—When I lived at Seaton Sluice, my companions and I used to go at nights with a dark lantern on Hartly Links, and catch rabbits with sea ferrets, as we called them. We got large crabs (commonly called dog crabs) from off the rocks; we stuck a lighted candle about one inch long on the crab's back, and sent them into the holes, before which we placed a net. Before the crab got far into the hole, the rabbits came tappy lappy into the nets. In this way we caught numbers of them in a short time.—*J. P.*

Plants for Hybridising.—Among other plants I would recommend the trial of hybridising the Daphne Laureola, and the Mezereum, so as to obtain a Laureola with red or white flowers, and to clothe the Mezereum with green leaves. There is a white Buttercup, which if hybridised with other kinds of Ranunculus, may give us a race of entirely new flowers.—*D.*

Strawberries.—As it is of great importance, in growing Strawberries in the open air, to make them produce fine fruit as early as possible, without loss by frogs or slugs, &c., which loss is generally very great, the following plan may be found useful:—Fix on each side of the row of Strawberries, just before they come into blossom, feather-edged boards at an angle of 50° or 55°. This may be effected by nailing two narrow slips of wood to each board, and pushing them into the ground. The boards should be painted black. This plan makes two or three weeks' difference in the ripening of the fruit; but glass, or an oiled-paper frame, being placed on the top, makes a greater difference still, and prevents any of the fruit from being trod upon, or eaten by vermin. This plan, at first sight, may appear to be an expensive one, but it is not so; any old boards will answer the purpose. I have bought old feather-edged boards at ½*d.* per foot; and, as they are only used in summer, they last for many years. The expense is saved in the first year; for the wood, although painted on each side with a coat of invisible-green, costs only about 1¼*d.* the foot; while the increase of fruit in quantity, as well as in quality, quite compensates for the outlay. In conclusion I may observe, that watering with strong liquid manure two or three times in the month of February, and frequent waterings during bearing time with pond-water, are, I have found, very beneficial.—*G. L. Smartt, Enfield.*

Dry-rot in Timber.—I have had a great deal to do with this, and I have tried many remedies, but have found none to answer except the following, which I tried about four years ago. I took 3 lbs. of corrosive sublimate, and put it into a large glazed earthen pot; to this I put about 4 gallons of water, and when it was well dissolved I took a large painter's brush, and washed the timber and walls with the water, and no symptoms of rot have made their appearance since.—*Scrutator.*

Productive Variety of Apple.—The Rymer Apple, Caldwell, or Cordwall, as it appears to be called near Nottingham, proves a most productive and valuable sort. The following note accompanied a specimen of the fruit:—The tree will cover 100 yards; and 240 pecks have been gathered from one tree and sold for 14*l.* 15*s.* 8½*d.*—*S. R. P. Shilton, Nottingham.*

Pruning Forest Trees.—Much has been said of late in the *Chronicle* on thinning and pruning forest-trees; and much difference of opinion seems to exist on the subject. A good deal, nevertheless, of what has been written both for and against pruning is, in my opinion, calculated to mislead those who have not sufficient knowledge and experience to judge for themselves. "Prune not at all if you can help it," is a good maxim when properly understood and applied; but no practical man can deny that pruning is often necessary, and when it is so, must not be neglected. An unskilful pruner may overdo it, but abuse of a system is no argument against the utility of the operation. Mr. Thompson of Whitehaven, in his article (p. 795) makes some excellent remarks on the subject, in which I entirely concur; but the method he recommends, where plantations are extensive, would require too much labour and expense to be practicable. Admitting the fact, that the greater the quantity of foliage in a tree, the greater is the quantity of timber produced, it does not follow that the greatest quantity of valuable timber is produced: this, I am persuaded, can only be obtained by judicious thinning and pruning. The exact age at which to begin thinning and pruning a plantation must depend, in a great measure, upon the kind of tree, upon the situation, upon the closeness at which the trees are planted, and upon the rapidity of their growth. These things must be left to the judgment of the person having the management of them. The plantations of which I have now the charge afford good examples of the effects of thinning and pruning, and of the neglect of these two assistants of nature. These plantations are of different dates, the oldest being about 40 or 45 years of age, and the youngest about 20. For many years, according to what I have been told, the plantations were regarded, at any rate were treated, more as harbours for game than as [illegible] of profit. They were left [illegible] very much to nature. In course of time, however, it was discovered by the proprietor that he had run the risk of sacrificing all hopes of profit, without securing even permanent shelter for game. The trees were drawn up into an impenetrable mass, leaving the earth bare; the deciduous trees twisted themselves like whips through the branches of the Firs, originally intended as their nurses, in hope of catching a breath of air, or a gleam of light; and the Firs themselves grew indeed at top, but with all their lower branches rotting off. The mistake was happily discovered in time to save the later-planted woods; and for the last 10 years and more a judicious system of thinning and pruning has produced as fine a crop of trees (of young Oaks chiefly) as is rarely to be met with, forming a striking contrast to their elder brethren, who are still suffering from want of a timely and wholesome application of the knife. The method pursued here is as follows:—When a young plantation has arrived at such an age as no longer to require the Firs as nurses, the latter are thinned out, leaving them only scattered about in spots suited for them; the deciduous trees, which are chiefly Oak, are then moderately thinned wherever the branches are observed to interfere with one another, and, where it is required, a few of the under branches are cut off close to the stem, taking care, however, always to leave a sufficient proportion of top. The tops are carefully looked over in order to remove all shoots that are likely to rival the leader, and such branches are fore-shortened as appear likely to affect the proper balance of the top. In a few years the same operation is repeated, and so on until the trees are about 20 or 25 feet in height, when I consider pruning not only unnecessary but injurious, excepting in particular cases.—*G. S. H.*

Hereman's Vegetable Dilutium.—This destroys the mealy-bug, and may be used with safety for cleaning many plants, if Mr. Hereman's directions are strictly attended to. There are, however, some plants that, although the dilution is carefully administered to them, are apt to be injured by it. I have observed, in applying it for the destruction of mealy-bug on Mammillaria gracilis, that wherever the liquid touched the plant, that part of it perished; therefore, those who adopt this method of destroying insects should be cautious how they perform the operation.—*D.*

The Wren's Nest.—At p. 910 of last year's *Chronicle* I made some observations on the cock wren's nest, which have been again fully borne out this year: the same two birds have continued together as I have described, until their death, which happened yesterday morning (Dec. 14.) I found one of them dead on the ground, near the wall of the cottage where the nest was. This led me immediately to examine the nest, and there I also found the other (the cock) dead in the nest; no doubt their death was occasioned by hunger and cold, the frost being very severe here for the last fourteen days; indeed, surpassing any we have had for some years at this season. These, however, are not the only birds which have suffered from the severity of the weather. I have to-day (Dec. 15) met with the P. pelagica dead at this place, which is seven miles from the sea; it was 6 inches in length, and weighed 7½ pennyweights. This bird inhabits most seas. It is seldom seen even near the shore. It braves the utmost fury of the storms; it is sometimes seen skimming with incredible velocity along the hollows of the waves, and sometimes on the summits, and if seen hovering around the sterns of vessels is a sure presage to seamen of the approach of severe weather. —*M. Saul, Fort Green Cottage, Lancashire.*

Stephenson's Boiler.—I was induced to purchase one of Stephenson and Co.'s improved Conical Boilers last year, for the purpose of heating my Grapery, in which I keep, during the winter, my Pelargoniums and a few other plants. I used for fuel coals and cinders, but I soon found, that although the heat in the cast-iron pipes was quickly raised to the requisite temperature, the fire soon went out; in fact, it could not be left an hour without attendance. In consequence of this serious defect, I called upon the manufacturer, who assured me that if I changed the fuel, and used coke broken into small pieces, I might leave the fire for 12 hours without attendance. I stipulated for eight hours, and they agreed that if the fire did not continue burning unattended for that period, they should consider their boiler a failure. I have since adopted the coke, and certainly find it answer much better than the coals or cinders; still I do not consider that the fire can be safely left even now for more than two hours; and, notwithstanding my man has remained up very late during the present frost, some of my plants have suffered. Perhaps some of the readers of the *Chronicle* who may chance to have one of these boilers, will have the kindness to inform me what they think of them; and whether my want of success hitherto arises from defective management.—*Thomas Canning, Elsenham Vicarage, Bishops' Stortford, Herts.*

Destruction of small Birds.—I perceive in the *Chronicle* of last week, that the "Laird o' Cockpen" seems almost to condemn the poor sparrow, whose cause I have often advocated, on account of its mischievous acts in destroying the buds of his Gooseberry-bushes. I certainly admit that it is difficult to excuse the acts generally of this mischievous little fellow amongst the Gooseberry-bushes, Lettuce-beds, &c., and in tapping the young Peas on their first appearance above ground. It is true such depredations are very grievous; but let us closely pursue his actions during the spring and summer months amongst the various fruit-trees, and we shall find his services in thinning the ranks of numerous Caterpillars, so destructive to both blossom and fruit, as well as [illegible] in destroying various species of aphis, moths, butterflies, beetles, &c., to more than counterbalance the evils we have admitted. Bradley has calculated that a pair of sparrows having young to maintain, will destroy 3360 caterpillars in a week! And indeed, from my own general observation, I am of opinion that were it not for the sparrow and other birds destroying the caterpillars in seasons when bloom is scanty, little or no fruit would be the result. I think, however, the crimes of this little culprit may be a good deal prevented by frequently dusting the bushes well with quick-lime just after rain, that the dust may better adhere to the plant; and so with Peas, &c. I may here repeat what I have before stated in other publications, viz., never to destroy birds indiscriminately, but to notice their usefulness. Among the insectivorous birds I may mention the blue-cap, the fly-catcher, the spink, the thrush, the blackbird, the rook, &c.—*Joshua Major, Knosthorpe.*

Reviews.

Geology — Introductory, Descriptive, and Practical. By David Thomas Ansted, M.A., F.R.S. 2 vols. Van Voorst. 1844.

Geology, through the large accumulation of facts by later observers, has, within the last twenty years, assumed quite a new character. Its first cultivators had a large field before them, in which there existed only a few well-attested facts, and with these scanty materials did they build up the structure of their science. It is not to be wondered at that generalisations too large for their facts, and assumptions, that would not bear the rigid application of the principles of other sciences, occupied a prominent place in their speculations. Geology requires, perhaps, more knowledge of correlative sciences than any one we could name, and yet it was not uncommon to find that those who cultivated it were ignorant of the first principles of every department of science it embraced. Such was its position till very recently, when the vigorous minds and active hands of such men as Smith, Lyell, Phillips, Sedgwick, and others, came to its rescue, and geology and geologists are no longer a jest amongst the sister sciences. At the same time, we have a deep conviction that some of the most ardent cultivators of geology have much need to bring their minds in subjection to the admitted principles of the sciences of chemistry, botany, zoology, and comparative anatomy. The want of this knowledge is very evident in many of the works introductory to geology. We are glad, however, to find that Professor Ansted has been induced to publish these volumes, containing the subject-matter of his admirable lectures, and we have no hesitation in stating, after a careful examination of the work, that in regard to a knowledge of the relation of other sciences to geology, it is in advance of books hitherto written on the subject. The work is distinguished from others by its

being confined in the first place rather to the statement of the facts of geology, as at present known, than to the development of the causes which may have acted in producing the present relations of the facts stated; and in the second place, by the practical application of the principles of the science. Of the style and manner in which the subject is treated we give the following extract from the short introduction descriptive of the causes now in action affecting geological phenomena.

"Of the many constantly recurring phenomena, which owing to their perfect and undeviating regularity attract but little notice from the casual observer, there is none perhaps more remarkable than the quantity of solid matter held for a time in mechanical suspension in the water of rivers, and brought down to be deposited at the mouth of the stream, or spread over the bed of the ocean. The vast amount of mud thus conveyed by running water is occasionally seen in the extensive deltas, or tracts of swampy land, at the mouths of great rivers, such as the Rhine, the Po, the Nile, the Ganges, &c.; in each of which cases the river divides into so many channels before reaching the sea, that its actual character and apparent magnitude is completely lost.

"The origin of these vast deposits of rich alluvial soil must be sought for entirely in mud brought from the high lands or the plains through which the river passes, and held in suspension so long as the water is in rapid motion, but which sinks to the bottom when the current is checked. To obtain some notion of the actual quantity of solid matter thus continually brought down from the high land to the sea, an experiment was made some years ago by Mr. Leonard Horner,* on the water of the Rhine, the calculations founded on which possess considerable interest. Mr. Horner found that in the month of August, when the river was unusually low, one cubic foot of water taken fairly from near the middle of the river, near Bonn, supplied rather more than 21 grains of solid matter, and that in the month of November, when the water was turbid, about 35 grains of residuum were obtained. Now, taking the average of these two observations, and considering the Rhine at Bonn to be 1200 feet wide, to have a mean depth of 15 feet, and to run with a mean velocity of 2½ miles per hour, it appears that nearly 400 tons of solid matter would pass down the stream per hour; and that in the course of one year, between seven and eight thousand millions of tons would be carried along, the greater part of which must be deposited in Holland before reaching the sea, in consequence of the slow and meandering course of the river through that flat alluvial country. In the course of 2000 years, the Rhine may thus have brought down enough material to form a stratum one yard thick, extending over an area more than 36 miles square.

"But the delta of the Ganges far surpasses in magnitude that of any European river; and is, on the whole, perhaps, the most extensive and remarkable of all those at present forming of which we have any accurate data. The head of this gigantic delta commences at a distance of 220 miles in a direct line from the sea, and the base of it is 200 miles in length; the whole triangular space occupied, comprising upwards of 20,000 square miles, every part of which has been formed by deposition from the river and its tributaries.

"The quantity of mud and sand carried by the Ganges into the Bay of Bengal is, however, notwithstanding the vast deposit which previously takes place, still so great, that during the rainy season, when the stream is turbid, the sea does not recover its transparency even at a distance of 60 miles from the coast; and the quantity of mud held in mechanical suspension is so great, that a glass of water taken out of the river when at its height, is said to yield one part in four of mud. Calculating from the dimensions of the river and the rate of the current, Major Rennel has shown, that during the flood season the weight of the mud thus brought down daily and deposited either within the limits of the present delta, or at the mouths of the different branches, must be as much as 450 millions of tons—a quantity which is, perhaps, more readily understood by expressing it as equal to about 74 times the weight of the Great Pyramid of Egypt, supposing that to be a solid mass of granite."

The introductory remarks on the nature of fossils and their value in geology are very important. We would also point out the chapter on the fossils of the Palæozoic period to those geologists and botanists, who are so fond of the theory of a gradually more complicated development of animal and vegetable forms. From this chapter it will be seen that the theory which supposes the simplest animals and plants to have been first created rests on a mere assumption. The second volume is mostly taken up by the practical application of the principles of geology to civil engineering, architecture, and agriculture. We deem this not only the most novel feature of the work, but also the most important. If Professor Ansted does not possess that intimate knowledge of these branches of art, which is looked for in their professors, and which would render his opinions conclusive, he has at least opened up an important subject for inquiry, upon scientific principles. As an example, we give the following extract from the chapters on Agricultural Geology:—

"With regard to the relative value of different geological formations in agriculture, it will be evident, from what has just been stated, that no general rules can be laid down; and that, as it is rather the mineral and physical character than the geological age, the determination of which is important, the geologist can only bring his knowledge to bear in any given instance when he has informed himself of the actual structure of the district. In our own country, the older rocks are frequently barren, in consequence of the absence of limestone; but where that is present, and there is a due admixture of silica, argil, and limestone, as in some of the Silurian districts, and some parts of the old red sandstone, a strong and excellent soil is obtained. The old red sandstone, both in Herefordshire, and elsewhere, where its texture is good, is often exceedingly productive.

"The soil which covers the strata of the carboniferous or newer Palæozoic period is rarely of great value for agricultural purposes, owing to the preponderance of crystalline limestone in a condition which resists decomposition, and the almost uniform absence of argillaceous beds, except in the upper part, and associated with the coal measures. In these latter beds, however, the presence of argil does not tend to render the land productive, so that the whole series of these rocks is poor and valueless so far as the surface is concerned. Fortunately their mineral treasures beneath the surface far more than make up for this deficiency. The culm measures of Devonshire do not form an exception to the general agricultural condition of the upper carboniferous beds in other parts of the British Islands.

"The magnesian limestone, overlying the coal measures, and covered up by the beds of the new red sandstone, is not uniformly valuable for cultivation; but some of the districts where it preponderates are remarkable for being the best and richest grazing districts in the north. The magnesian limestone, if burnt, and used on the soil, is, however, extremely injurious, remaining for a long time in the same state, and seriously checking all kinds of vegetation.

"The new red sandstone, although not so thick as many of the older beds, covers a very large tract of England, and is remarkable almost everywhere for its great fertility. It consists of sandstones and sands, for the most part of loose texture, and alternating with innumerable beds of marl; and these are most abundant in the upper portion, which is not unfrequently characterised by a strong marly loam. Hence it arises that the latter, being the stiffest and most clayey bed, is usually employed as arable land; while the remaining portions are admirably adapted for pasture, and are celebrated in some parts of the country for the excellence of the hay grown upon them.

"The lias, with its associated marlstone, varies from a cold, wet, and extremely tenacious blue clay, to a strong and valuable clayey loam, and its value in an agricultural sense depends on the proportion of limestone and marl associated with it. In the upper part, where the sands of the inferior oolite rest upon it, they are sometimes turned in, and mixed with advantage; but there is always in such case a want of drainage, and the soil remains cold. The principal part of this formation is in old pasture, and forms the dairy districts of Somerset, Warwick, Leicester, &c.

"The oolites (including the wealden) consist of so many alternations of calcareous beds with sand and clay, that they offer almost every variety of soil, and are throughout capable of the highest cultivation. Where the limestone is too prominent (which is sometimes the case), the clays are generally at hand to correct the evil; and the clays, if sometimes too stiff and tenacious, require only a thorough system of drainage to furnish the best and richest crops of Wheat that can be grown in our island. The great oolite is, perhaps, the bed least readily turned into cultivation, and this arises from the small quantity of carbon it retains upon its surface. The wealden beds, also, are apt to form into hard pasty masses, into which the roots of vegetables penetrate with difficulty.

"The beds of the cretaceous group vary much in agricultural value: the lower beds, those of the lower greensand, are often exceedingly rich and capable of the highest cultivation, and the upper chalk forms extensive downs, which are well known for their short sweet herbage, supporting large flocks of sheep. The lower beds of chalk are without flint, and are often mixed with alumina, which converts them into a rich and valuable marl; while the soil at the junction of this marl with the upper greensand is a very productive loam, making an excellent corn land."

We think this work a valuable contribution, not only to the science of geology, but also to the practical arts to which its principles may be applied. It is written in a clear and pleasing style, and cannot fail to interest whilst it instructs. It is abundantly illustrated with woodcuts, and is a worthy companion, in point of getting up, to the many excellent volumes published by the house of Van Voorst.

* Edin. Phil. Journ. for 1826—2, p. 103.

NOTICES OF NEW PLANTS WHICH ARE EITHER USEFUL OR ORNAMENTAL.

ANEMONE OBTUSILOBA. Dr. Govan's Anemone. (*Hardy Perennial.*) Ranunculaceæ. Polyandria Polygynia.—This pretty Indian Alpine herbaceous plant has been already noticed, under the name of A. Govaniana, which is what Dr. Wallich called it. It escaped my observation that Professor Royle had determined that species to be the same as A. obtusiloba of Don, which name must take precedence. It is nearly allied to A. narcissiflora, which is, however, readily distinguished by its short flower-stalks and deeply divided leaves. The native situation of the species is stated by Dr. Royle to be the Choor mountain of the Himalayas, at elevations of from 10,000 to 12,000 feet, flowering in May. In cultivation it proves to be a hardy little Alpine plant, growing about six inches high, and well suited for pots, or a rockwork where the situation is rather shaded and damp. It is easily increased from seeds, which should be sown early in spring, in a soil composed of sandy peat and leafmould, and a small portion of loam; afterwards, when the young plants are large enough, they should be potted singly in very small pots, and kept in a cold frame, with the back turned to the sun during the summer. Afterwards they may be treated in the ordinary way, but they will not flower before the second season. *June* and *July* are the blowing months. It was raised from seeds received by the Horticultural Society from the Honourable Court of Directors of the East India Company.—*Botanical Register.*

SALVIA STRICTIFLORA. Erect-flowering Sage. (*Half hardy Greenhouse Shrub.*) Labiatæ. Diandria Monogynia.—The genus Salvia is well known to consist of a vast number of species, many of which are as remarkable for their beauty and bright colours, as others are uninteresting in their general figure, and void of brilliancy in the hue of their flowers. The latter characters are more particularly the faults of the strictly herbaceous species, whilst the larger number of the shrubby and suffruticose kinds range under the former class. The subdivision of the genus to which this handsome plant belongs (Longidora) is almost entirely composed of shrubby species, distinguished by the tube of the corolla being two or three times longer than the calyx, and the upper lip usually extending to a somewhat greater length than the lower; and it is in this section that the majority of the most choice and charming species are enrolled. Although yet so little known in the country, we learn from the "Botanical Magazine" that specimens of S. stricticflora were flowered in England so long back as December, 1834. The same authority states that it was discovered by Mr. Cruikshanks between Yazo and Obrajillo, in the valley of Canta, in Peru; and subsequently collected by Mr. Matthews, at Cuesta, at Hummarilango and Parcochuco, Peru, where the natives distinguish it by the title of Socconcha. Being a plant of rapid growth, liable to extend its soft wooded branches to a great length, and bearing its upright racemes of vermilion blossoms at their extremity, the propriety and utility of occasionally pinching off the ends of the growing shoots, to produce increased bushiness and quantity of bloom, is self-evident. And for the same reason it should never be planted in a gross strong earth of an adhesive or retentive nature, as this would augment the natural propensity to undue exuberance. Equal quantities of sandy loam and peat, with a loose stratum beneath to carry away superabundant moisture, will be most consonant with the habit of the species. It should be placed in an airy part of a greenhouse or frame to stand the winter. Propagation is easily managed by preparing cuttings of the young wood in the usual way, and placing them in a gentle bottom heat. The upward direction of the tubular flowers has suggested the specific name.—*Paxton's Magazine of Botany.*

Garden Memoranda.

Royal Botanic Garden, Edinburgh.—In the Heath-house at this place are some splendid specimens of this beautiful tribe, and among them was one of Hyemalis, which measured 8½ feet in height, from the top to the surface of the earth in the tub, and fully 9 feet in diameter. From a careful calculation, by enumerating the flowers on several individual spikes, and multiplying the whole, I am satisfied that there could not be fewer than 120,000 blossoms on the plant! The tub in which it was growing measured 4 feet in width, and 3½ feet in depth. When we consider the short time that this hybrid has been in the country (about six years), those who know anything about the culture of the Heath will have no hesitation in pronouncing it to be one of the finest specimens of horticultural skill that has ever been produced, and which will still retain for Mr. M'Nab the palm in Heath-growing.—*A. S. Yester, Dec.* 21.

Miscellaneous.

Scotch Chemical Association.—Our letters inform us that this Association is prospering, as it ought to be. Professor Johnston has been invited to lecture in several parts of the country, and the knowledge and taste for Agricultural Chemistry are evidently spreading among the sharp-witted Scotch farmers.

Central America.—The following are some of the productions of the State of Costa Rica, in Central America, viz.:—The Sugar, wild and white cane, and that of the class called Brota, which spread out, forms strong planks more than half a yard in width, and 5 or 6 yards in length; Coffee (which, being properly plucked and dried, is exactly similar to that of Mocha); three sorts of Cacao or Chocolate, Indigo, Vanilla; three sorts of Maize, seven kinds of French Beans, Peas, Beans, Rice, Wheat, Musk, and Water-Melons. In a word, innumerable medicinal plants, and all the Cereal, so that Botany would find amongst us a vast field in which to range with unspeakable advantage to humanity and society in general; three sorts of Plantains, three of Cotton, Tobacco of many kinds; Timber, for mills and other works, which require hard woods, such as Quapinol, the Lignum-vitæ, the Wild Medlar tree, and the Oak; for houses and joiners' work, mahogany of the most excellent quality; the Casique, the Cocoa-nut tree, the Rouron, and the Cristobal; the Beech-tree, three sorts of Cedar, the Curagra (which, from very recent observation, is considered the best substitute for Cedar), the Chesnut, the Espavey (also called the Espavel, or Aguegue), and the Laurel. For house-props, not liable to rot in the earth, the Chirraca, the Tubus, the Bayuilla, the Guachapelin (a very strong wood), the Quisbrahacha, the Black Wood, the Comenegro, which is exactly the same as the Iron-tree, so celebrated in the East Indies, and other countries; finally, dye-woods, such as are called Brazil and Nicaragua, found on the coasts of the Pacific and Caribbean; the San Juan, of a beautiful yellow; Poro, from which is extracted a very bright yellow cane-colour; and, above all, the wild Annona reticulata, which has the particular property of its wood being perfectly white, but when cut or split, in a few minutes turns to a clear and brilliant red colour, which can be extracted, and which is quite durable; Balsam cavuna, or canune, Copaiba, and Tolu, and Cativo; the gums Copey, Resin, Copal, Arabic, Quitirri, Guapinol (an excellent perfume), incense, Chirraca, and that of the Chesnut-tree, the fruit of which contains much oil, and has the property of becoming hard, and of which candles are made, very like yellow wax, burning with a good clear and steady light, without giving out much carbon; this seed and substance being worked and purified, makes candles as fine as those of white wax.

CALENDAR OF OPERATIONS

For the ensuing Week.

I.—HOTHOUSE, CONSERVATORIES, &c.

Orchidaceæ.—In reference to the shy blooming kinds, the most essential part of their management is to compel them to

flower gradually. Every day's delay after this will make the flowers smaller and less beautiful, and more susceptible of being destroyed by changes of temperature or moisture. As soon as the flowers are gathered, the plants should be removed to the open ground, and there remain until the end of November or the middle of February, when they should be potted for the last time. The atmosphere should not be allowed to get too dry, and the leaves must be syringed frequently, and the plants shaded from bright sunshine, while the material about the roots must not be allowed to get dry. Early in March, however, will be apt to grow at this stage, particularly in the first season; these must be kept in a cool temperature, 50° in the driest end of the house; 70° to 75° during the fine temperature for April. Every bud now will be encouraged, and the success of the plan depends in some measure upon the season of the year when the buds can be kept in this state. As soon as the roots have filled the pots they should be shifted into pots about two inches larger, and pieces of charcoal and bits of bone mixed with the soil. The plants will require to be plunged over the rim in tan, above hot-water tanks, and have required nothing to be done to them since, except sprinkling the foliage occasionally with the syringe or watering pot; the latter only in very hot weather. The plants have grown amazingly, throwing up leaves of a remarkable breadth and firmness of texture, while the lumps of earth are completely matted with fibres. Some of the plants are now in flower, while others appear as if they would grow for some time yet. I intend to have a pit treated in the same way next year, but will use the dust from the charcoal pits as a plunging material instead of tan. I have reason to think that charcoal dust used in this way acts in a beneficial manner on the plants, by impregnating the atmosphere with carbon. It is impossible to convey an adequate idea of the change produced in a few weeks on the foliage of a house of plants where this material had been used, every plant in the house, whether plunged, or placed on the shelves, assuming the most dark and healthy hue possible.

Borders.—The borders of the late Vines are showing no slightly look as soon as the frost will admit of any proper pruning on any top-dressing at this season, as the frost will be of more service to the border than manure. Top-dressing does more good in the growing season, as it flourishes the Vines and keeps the roots in a more uniform state of temperature and humidity. Let the roots of the Vines now forcing have every attention. The keeping of the roots warm is, perhaps, the most important point to be attended to, next to the avoidance of over-cropping.

Cool-houses.—The last few days have been very favourable to the Peach-trees now setting their fruit. Be careful to avoid too high a temperature at night, and take every opportunity of giving air till all the fruit is set, after which the temperature may be raised 5° or 6° by night and 7° or 7½° by day. Keep a very moist atmosphere, and thin out the young shoots, leaving always the top and bottom ones remaining on each of last year's shoots.

Cherry-house.—Be careful not to keep too high a temperature, particularly during this cold weather; 45° by night will be quite sufficient, until the buds are about expanding, when it may be raised to 50°. Air must be admitted during a portion of this day, to extinguish the bees after they are perceived to be crawling.

Stove-house.—Let a quantity of them be brought in, according to the demands likely to be made upon you. Place them on the shelf of a Peach-house or Vinery just beginning to be forced, as near the glass and ventilators as possible. It is better when practicable to force them in pits where the temperature can be regulated to suit them, as they require more air than either Vines or Peaches till the fruit is set.—*G. F.*

V.—HARDY FRUIT AND KITCHEN-GARDEN.

Pea and Bean.—As soon as the weather will permit, make another sowing of Prince Albert Pea and early Mazagan Bean on the brow of wide ridges, as previously recommended; and, lest the ground should afterwards be frozen hard so as to impede their germination, cut them off when above the soil, have ready a few dry furze or spruce branches in readiness to scatter along the ridges. As the Prince Albert, though the earliest, is by no means a great bearer, nor yet a fine-flavoured Pea, sow for succession greater breadths of the early Warwick, Frame, Bishop's Dwarf, and Shilling's early Grotto, and follow the Mazagan Beans with the best varieties of the Longpod and Windsor.

Asparagus, Sea-kale, Rhubarb, Chicory, &c.—Keep a regular supply of all these. Where a family is constantly resident, it is by no means best or better to commence forcing earlier than your stock will enable you to meet the demand, until they can be got from the open garden. *Forcing.*—Fresh beds of dung and leaves will require to be put in operation for Radishes, Horn Carrots, Potatoes, and early Cucumbers. Take care to make your beds large enough for the latter, if you wish to avoid trouble and annoyance afterwards. Of course, all these objects can be effected much easier in pits heated by hot water. *Mushrooms.*—These beds out of doors will require to be carefully covered with litter, and mats, &c. To those who are fond of this vegetable, (and in many families it is deemed as essential to good cookery as the Onion tribe,) I would urge the importance of appropriating a house or back shed to the purpose, to be heated by hot water. A good supply will thus be easily obtained, and a great deal of pleasure enjoyed in witnessing their growth. A bed completely covered is a beautiful sight at this season of the year. With respect to the method of cultivation, I do not think I can add much to what has been stated in former Calendars. There is an able Paper on the subject from Mr. Hankin in last *Chronicle*, but there is nothing new as the system of using turf instead of loam. I have no doubt it would answer admirably in such circumstances as Mr. Hankin describes. He places "light" as the second requisite for growing Mushrooms, while I think they are better, and more appreciated by cooks for their whiteness when produced in comparative darkness. *Roofing.*—See that Cauliflower, in all its stages, Lettuce, Endive, stored roots, fruit, &c. are secured from frost; do not waste time in attempting to trench and thus bury frozen ground, but rather forward in-door operations, such as making stakes, tallies, straw covers, wattling hurdles with spruce branches for the protection of Peas, Potatoes, &c. Prune and nail in the days after breakfast, everything except Peaches, Figs, Vines, and Raspberries; the doing of which had better be deferred six weeks longer; wheel dung, drive soil, turn composts, and exercise judgment and forethought in regulating your operations according to the state of the weather, and recollect that if you wish to see your men energetic, able, and willing to push through labour in any emergency, you must study their health and comfort, by providing suitable labour in unpropitious weather. *In Conclusion.*—To my young friends I would say, as a general maxim, you may take the advice of an Edinburgh nurseryman, and "now thick and keep friends with the cook," but do not attempt the latter object, by inducing him or her to connive at or conceal your deficiencies, or you may soon find that you have trusted to a bruised reed, but attain that object by securing to yourself the honourable position of comparative independence, by the faithful and diligent discharge of your duties—by keeping an abundant supply—and by rendering it imperative on the man who serves the horse, to keep a regular account of all the garden produce, a memorandum, the knowledge of the existence of which will save you from many petty causes of annoyance.—*R. F.*

State of the Weather near London for the week ending Dec. 28, 1844, as observed at the Horticultural Garden, Chiswick.

Dec.	Mean's Bar.	Thermometer. Max.	Min.	Max.	Min.	Mean.	Wind.	Rain.
Wed. 25	10	30.340	30.260	36	26	33 0	N.E.	—
Thur. 26	15	30.420	30.326	37.	30.	33.5	N.E.	—
Fri. 27	13	30.335	30.170	35	27	31.0	N.E.	—
Sat. 28	16	30.300	30.093	34	29	31.0	N.E.	—
Sun. 29	10	30.270	30.080	34	31	32.5	E.	—
Mon. 30	15	30.260	30.104	35	31	33 0	E.	—
Tues. 31	10	30.110	30.072	39	30	34.5	S.E.	—
Average		30.317	30.191	36.0	29.6	32.6		.60

Dec. 25—Overcast; clear, cold, and dry; cloudy; rather boisterous.
— 26—Cold and dry; overcast; cold with brisk wind.
— 27—Cold and dry, with brisk N.E. wind; overcast.
— 28—Cloudy; dry and frosty; uniformly overcast.
— 29—Dry cold haze; chiefly overcast.
— 30—Densely overcast throughout.
— 31—Foggy; hazy; thick fog at night.
Mean temperature of the week 7½ deg. below the average.

State of the Weather at Chiswick during the last 19 years, for the ensuing Week ending Jan. 4, 1845.

Dec.	Aver. Highest Temp.	Aver. Lowest Temp.	Mean Temp.	No. of Years by which it is Ruled.	Greatest quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sun. 29	41 8	27 1	30.2	7	0.15 in.	1	2	1	1	2	2	2	2
Mon. 30	43.5	30.2	42.3	7	0.18	1	2	2	2	—	5	5	1
Tues. 31	42 3	30.2	3.6	5	0.24	—	—	1	3	5	4	2	—
Wed. 1	43.0	30.7	36.9	7	0.70	2	1	1	3	2	4	1	3
Thurs. 2	41.7	30.0	35.8	7	0.21	1	1	2	—	2	3	2	5
Fri. 3	43.0	30.1	36.1	10	0.20	1	1	2	—	2	4	2	4
Sat. 4	42.2	30.2	36.2	9	0.35	2	2	2	1	1	4	2	2

The highest temperature during the above period occurred on the 31st, 1834—therm. 59°; and the lowest on the 4th, 1837, and 1st 1837—therm. 18°.

Notices to Correspondents.

The Reprint of Mr. PAXTON'S COTTAGERS' CALENDAR is now ready, price 4*d.* each Copy. An Index has been added to this present Edition. Parties wishing to have copies for distribution among their tenantry can have them at the rate of 2*s* for 1*s*.

Bees.—*Apiarius.*—Wooden hives ought to be made of good deal about 1 or 1¼ inch thick. The collateral hive is, perhaps the best, being three square boxes about 12 inches in depth, and 1 foot in width. The centre box should be stocked with a strong early swarm, and the hive should be placed in a sheltered situation, open to the south or south-east. If the hive is well defended from the weather, and shaded a little from the winter sun, it need not be removed to other quarters. The bees will survive the winter, provided they have plenty of store, say from 5 to 20lbs of honey, but as to quantity much depends on the weather. The Polish hive is of simple construction, and, at your request, I shall notice it in a future paper. As regards the "temperature most suitable for the breeding and storing compartments," I would mention that that of the first is of much importance. If hives were kept warm in spring by extra covering (and feeding if wanted), I think it would insure plenty of early brood, on which success depends. Much has been said concerning cooling the store departments in beehives, and various plans have been tried with but little success; for the bees always seal up the vent holes when they are most wanted. In hot weather shading, or a hole large enough to admit a common-sized cork open at the top of the hive is quite sufficient. If that precaution is taken the rest may be left to the bees themselves. However neat the appearance wooden hives may have over that of straw, still the latter have the advantage of resisting both heat and cold better, straw being a much worse conductor of heat than wood. If you choose straw hives on the Storyfing plan, let them be about 9 inches in depth, and 1 foot in diameter, and flat on the top, for the capes to rest upon. You might try the "Bar-hive," which is highly recommended by Dr. Bevan and Mr. Golding; but if you purchase fine novel hives, with various appendages, and, each, you must not expect "a return for a given outlay" equal to the Rev. W. C. Cotton's statement, viz., that "bee-boxes will pay what they cost in the first year, and leave some profit besides." Such profit cannot be had from bees in this country, nor yet in Wales or Scotland, where they can frequent the blooming Heather. *J. Wighton.*——*A Subscriber.*—In order to protect your hives from the attacks of mice, make the hole so small that they cannot get in; that is the only effectual way.

Camellias.—*T. A. N.*—Nothing bears the knife better. Prune them when they are breaking their leaf-buds in the spring.

Cucumbers.—*Melonia.*—Syon House, and Allen's Victory of Suffolk, are good kinds.‡

Foreign Fruits.—*Inquirer* asks if any one will give him some good method for packing exotic fruits and vegetables, such as the Guava, Custard Apple, &c., so that they will keep well during a voyage of two or three weeks. He asks whether they should be packed up when ripe, or in an unripe state?

Heating.—*G. N.*—Brick flues answer ill for bottom-heat, and are a nuisance; for there is no getting at them to clean them when choked with soot, as they soon will be. They will dry the soil as well as heat it. We should think it quite hopeless to expect to grow Orchidaceæ by such means. If your master will not use hot water for heating such a place as you describe, it would be better to advise him to go back to a bark-bed for his Orchidaceæ, and a wooden stage for his greenhouse plants. If any one, in your knowledge, "has done for hot water," as you say, he must be a very unskilful person, and quite unfit for an example.

Insects.—*A. T.* will find the information he requires in the history of the Earwig, given in vol. i. p. 580, of this Journal. *R.*——*An anxious Lady's* Scales are the Coccus Testudo. *R.*

Kidney Beans.—*A Young Beginner.*—They will do well enough where they are. If, however, you can get them nearer the light it will be better. We doubt whether the book you name will prove worth having. We shall know better in a month or two. Wait a little.

Manure.—*J. Moon.*—Parings of hoofs form a very durable and excellent manure; but it acts slowly. It will, we presume suit Orange trees. Sickly trees of that sort can only be recovered by repotting in very rich soil, cutting close in, and plunging in a good bottom-heat in the spring.——*S. E. Turnbull.*—We are not aware that any very extraordinary effect is producible by two parts of carbonate of soda and one of sulphate of soda. If you wish to try the experiment, use them at the rate of ½ lb. to a rod of ground.

Melons.—*Theta.*—The Sirdar Melon proved to be the same as the Cabul. I exhibited fruit of it at Chiswick, in June last; some of the fruit were excellent. If Theta will send his address to the office of this Paper, he can have seeds of it. *G. Fleming.*——*W. J. B.*—Cuthill's Early Cantaloup, and the Improved green fleshed, are two good early green and scarlet-fleshed varieties for immediate sowing.‡——*Melonia.*—Cuthill's Early Cantaloup.‡

Mistletoe.—*Mr. Oldham*, of Mansfield, is so obliging as to offer to give seeds of this plant to any one who will apply to him for them.

Names of Fruits.—*W. D. F.*—The Forme de Marie Louise has been fully ascertained to be the same as the Marie Louise, in the Garden of the Horticultural Society, and by fruit-growers in the neighbourhood of London. It varies according to situation; and even the fruit from adjoining trees will differ in appearance, quality, and period of maturity. If doubts are entertained of the identity of varieties, the best way is to graft on the same tree. ‖——*Chichester.*—Your Pear is the Old Colmar. ‖

Names of Plants.—*W. Todd.*—1, Jasminum gracile; 2, Hermannia incana; 3, Boronia alata.

New Garden.—*Clericus.*—The slope is too great for turf, in dry weather, if the land is apt to burn; if not it will not be too much. For a kitchen garden the slope is an advantage. Dig in the turf by all means. Plant as soon as you can. Cut your old spurs close in, and get some young bearing wood on your old trees.

Pine-Apples.—*A. B.*—You can maintain a steady bottom-heat for Pine-apples without tan, by hot-water gutters or pipes in a chamber, the latter extending underneath the whole bed. ‖

Sea-Kale.—*Subscriber.*—You *may* force it two years successively, but you should not do so unless it has made a very good autumn growth. Plant a new bed any time between November and February.

The Rose Garden.—*T. A. N.*—Yes.

Transplanting.—*C. F.*—Lose no time. Do what you have to do whenever the weather will allow you. December is better than January, January than February, and so on.

Miscellaneous.—*H. H. N.*—We are not aware of any instance of a Golden Pippin tree invariably bearing double fruit, and nothing else; if there be such a tree, we should be greatly surprised to find that scions from it failed to produce double Apples also. There is no accounting for the first case, and the second would be more unintelligible still. The first is, however, not without a parallel.——*Ficulus.*—An advertisement is the only course we are aware of.——*B.* will see the advertisement in this day's paper.——*Begonia.*—It is Hydrocotylifolia.——*W. S.*—We never saw the plan of pouring boiling water on Rose bushes tried, for the purpose of killing the larvæ of the green-fly. As has been long since stated, green-fly is readily destroyed on Roses by syringing with weak gas-water. There is no periodical, upon such subjects as you mention, which we should like to recommend. London's "d' Arboretum Britannicum" is very full of such information, as far as hardy plants are concerned.——*J. W. D.*—What sort of pepper do you mean? If you wish for information, you should be a little more explanatory.——*Inquirer.*—The Christmas Rose may be propagated by dividing the roots; but the plants should be well established before the operation takes place.‡——*A Subscriber* will find a receipt for killing the Mealy Bug in last week's Paper, p. 852.‡——*J. O.*—The Post-office order was received.——*X. Y. Z.*—Really we cannot answer such questions. Inquire at the coach-office.

VERY FEW CORRESPONDENTS NOW REMAIN WHOSE KIND COMMUNICATIONS ARE UNPUBLISHED. TO THOSE WHICH ARE STILL IN OUR HANDS WE PROMISE SPEEDY ATTENTION; FOR SUCH AS HAVE APPEARED WE OFFER HEARTY THANKS, AND WE CORDIALLY INVITE ALL TRUE LOVERS OF GARDENS TO CONTINUE WITH UNFLAGGING ZEAL THEIR CO-OPERATION IN THE PLEASANT TASK OF INTER-COMMUNICATION.

Erratum—We regret that an error was made by our Compositor in Mr. Waite's List of Seeds, inserted last Saturday. Nemophilia discoidalis, priced at 1*l.* 1*s. per gallon*, should be 1*l.* 1*s. per ounce.*

RAMS FOR RAISING WATER WITHOUT LABOUR, where a fall can be obtained. FOUNTAIN BASINS IN IRON, &c. 79, STRAND, LONDON.

J. F. BOE having purchased all the Patterns of Basins, Jets, &c. formerly belonging to W. Rowley, Fountain Maker to the Royal Family, is enabled to offer the above article in iron, which will stand the Frost and last for ages. A Ram and Fountain Jets fixed on the premises for inspection. Every kind of Garden and other Pumps, Well Engines, Baths, &c. Houses, &c. Heated by Hot Water.



The Agricultural Gazette.

SATURDAY, DECEMBER 28, 1844.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
Wednesday, Jan. 1—Highland and Agricultural Society.
Thursday, Jan. 2—Agricultural Imp. Soc. of Ireland.
Thursday, Jan. 9—Agricultural Imp. Soc. of Ireland.

In closing our first Volume, we take the opportunity of heartily thanking those who have contributed to its pages. It is on its practical Correspondents that an Agricultural Periodical must depend for its real value. Its Editor may certainly speak authoritatively when he treats of the *principles* of the art; but when he descends to any department of its *practice*, he can only state his personal experience, and the circumstances under which it was acquired, and then he only occupies the situation of one of his own correspondents. We say again—it is on the number and qualifications of *these* that the value of an Agricultural Journal must depend. That periodical is necessarily the most useful whose pages are filled with communications of the experience of its readers in all the various circumstances of soil, climate, &c., to be met with in the district where it circulates. We can say, without boast, that we have readers on all the varying soils, and in all the different climates to be met with in the three kingdoms, and if we could induce a greater number of them to state the agricultural experience of their respective neighbourhoods, the usefulness of the *Agricultural Gazette* would be much increased. For, as we said at the beginning of the year—*then* only shall we consider ourselves to have made much progress in the course of usefulness on which we have endeavoured to enter when our readers shall have been brought to consider themselves as the members of one large Farmers' Club for mutual instruction, ourselves occupying the place of the mouth and the ear through which they may communicate with each other.

The value we attach to reports of local agriculture when qualified by a full statement of the circumstances which justify it, makes us regard, with particular satisfaction, the sketches of East Lothian husbandry by Mr. Sullivan, the last of which series is this day published in our columns. If the *Agricultural Gazette* had done nothing more in its first year's existence than clear up the misconceptions which have existed as to the state of farmer and farming in that celebrated county, no one need have blushed for it. We venture to assert, that for quantity of valuable agricultural information, in so small a space, these "Sketches" are unequalled by any district report of farming hitherto published; and any one may see if we are wrong, by examining the volumes on the several counties, called forth by the premiums of the Board of Agriculture. We may also point, under this class to the "Geo-Agricultural Notes of South Gloucestershire," by "M. S.," as clearly bringing out the influence of Geology upon Agriculture—a point which of late years has been deemed of considerable importance. Among the other series of papers which we have this year published, we may refer to the articles on the "Application of Chemistry to Agriculture," on rational principles, by C. R. Bree, Esq., of Stowmarket; the papers on the "Flax Plant," by Mr. Sproule; and those on "Black Horseponds and Liquid Manure," by Mr. Gyde, of Painswick, to show that our columns have been by no means deficient in useful matter. Much attention, too, has been excited amongst our readers during the past year, to the waste of home manure in the ditches and horse-ponds of farm-yards, and to the loss in foreign manure by adulteration. This latter, in particular, was shown to be carried on to an extent before unconceived of.

We have already made arrangements for the appearance, during the ensuing year, of many important papers, amongst the subjects of which we may mention Drainage, the Economy of Cottages, the Economy of Farm-buildings, the Weeds of Agriculture, &c., and these will guarantee a continuance of the usefulness which the Paper has hitherto possessed. Nevertheless, we must continue to solicit our readers themselves to enter upon the great task of mutual instruction. Our columns are always open to *details of facts bearing upon Agricultural practice.*

Many benevolent persons who make the welfare of the agricultural labourer their care, appear, some 60 years ago, to have expected as great advantages from the dibbling of Wheat as is now justly expected from the allotment system.

The origin of the practice, in Norfolk, is well known. A poor labourer, in order to economise seed in sowing a small patch of Wheat on the plot of ground attached to his cottage, planted it with the dibble. The produce was so great as to attract the attention of the neighbouring farmers, by whom the experiment was repeated on a larger scale with such success as to lead to the extensive adoption of dibbling in the practice of that county. Great efforts were made to extend it to others, by philanthropists, in order to increase the amount of agricultural employment and human food—by the political economists, to render the labour of women and children a source of national wealth, in imitation of the system adopted in our factories at too dear a rate. These efforts, however, met with little success; they were opposed by the usual *visinertia*, and the usual objection of, "It may do *there* but it will not do *here*." The strong soils were considered too wet for dibbling; the dry soils as not possessing sufficient strength to enable the plant to tiller. Even in Norfolk the dibbling of Wheat appears soon to have reached its culminating point, for when Arthur Young made his report to the Board of Agriculture, early in this century, he described it as on the decline.

An objection to the practice, which we have recently heard urged against it, has probably some weight, namely, that it can only be well performed in the early part of the season; for as the weather becomes cold the droppers cannot feel the grains, and deposit too many in a hole. We know not whether a desire to increase the means of giving employment in agriculture, combined with the fine autumn we have enjoyed, to cause a more extensive adoption of dibbling this year than usual; but from our own observations in East Norfolk, we should estimate that full one-third of the Wheat crop in that district is put into the ground in that manner. The preparation of the ground is the same as for drilling. The dibbling is paid for by the acre, at the rate of 7*s.* to 8*s.* for dibbling and dropping. The lower price is, for broken ground, the higher for that put in on the whole "flag:" 1*s.* 6*d.* a-day for men, and 6*d.* a-day for women, is the current rate of wages in the district. The dibbler usually employs his own family for the dropping. Two droppers to each dibbler is the general proportion. The dibbles are of iron, about 4 feet long; the workman bending his back uses a dibble with each hand; he makes the holes about one inch deep, the distance between the holes being sometimes 4 inches each way, sometimes 4 inches in the rows, and the rows in pairs 3 to 4 inches asunder, with an interval of 6 inches between each pair.

On counting, in numerous fields, the spears issuing from the ground, we found that rarely less than four or five grains had been deposited in a hole, and not unfrequently more than 10. Even under the disadvantages of crowded plants which thus arise, the superior strength of the stubbles of dibbled over drilled crops is very obvious. There are in this district no broadcast stubbles with which to compare them. The saving of seed by the process thus conducted is not very great, 10 pecks an acre being the quantity usually drilled, and a little less, or when more precise information can be obtained, 8 pecks an acre, when dibbled. A large farmer, who dibbles none himself, from the difficulty of having the dropping well performed, declared to us, that if any method could be devised to insure the deposit of one or two grains in each hole, he had no doubt that this way of sowing Wheat would be superior to all others. Now, two grains to a hole, at the above distances, amount to no more than two pecks of seed to the acre; so that it is easy to calculate the saving which might be effected were even three pecks used, in order to provide for casualties. The difference between three pecks an acre dibbled and ten drilled amounts, on a farm of 400 acres, cultivated on the four course rotation, to 175 bushels. The difference between three bushels an acre sown broadcast and three pecks dibbled is 225 bushels. The saving in money, at 6*s.* the bushel, is 52*l.* 10*s.* in the one case, and 67*l.* 10*s.* in the other, or 2*s.* 7*d.* and 3*s.* 4*d.* an acre over the whole farm, 13 or 16 per cent. on a rental of 20*s.* This saving is independent of the increased produce to be obtained by dibbling, which, to put it in the least favourable point of view, more than compensates for the increased expense of the process over drilling and broadcast sowing.

The dibbling-machine invented by Mr. Newberry, of Hook Norton, Oxfordshire, appears to fulfil the conditions of thin and regular dropping, insisted upon as necessary to secure the superiority of this mode of sowing. The price of the implement is high, but on a farm of 400 acres the saving of seed pays for it in one season on the Wheat crop alone. This explains the great demand which we know to exist for the implement; and it may safely be predicted, that by its aid the dibbling system will make much more rapid progress in every part of England than in that in which it commenced, more than half a century ago. On dry soils, there can be no doubt that this is the best way of sowing Wheat. The inventor of the dibbling-machine uses it on clay. To Barley, Oats, and Tares, dibbling is as applicable as to Wheat; and for spring crops, there is less to be feared from it on stiff soils. Nothing contributed so much to promote the extension of drilling as the system of travelling drills owned by professional drillers, performing the work by the acre for those farmers who, by reason of the small size of their holdings, or their want of confidence in a new practice, were unwilling to purchase so expensive an implement. We would therefore suggest to landlords, Agricultural Societies, and others anxious to promote the diffusion of improvement, and to encourage the agricultural labourer, the propriety of purchasing, against the approaching spring, a few of these machines, to be placed in the hands of meritorious labourers, who shall dibble by the acre for the farmers, and pay for the machine by instalments. Care, however, must be taken, for obvious reasons, not to introduce too many into a district, while the practice is in its infancy.—*E. W.*

AGRICULTURAL EXPERIMENT.

(*Continued from page* 858.)

The only other experiments which I have to record at present, are some which were designed to test the advantage of steeping seed, both alone, and combined with the other advantages of being hoed, and of being watered with different proportions of the same solutions in which it was steeped. Four breadths of ground adjoining those last mentioned were sown with 20 rows of Wheat in each, and each was divided into four parts; in the first five rows, the seed was previously steeped for 24 hours, and nothing more was done; in the second, besides the steeping, the intervals were hoed; in the third, a solution of 8 oz. of the salt in which it was steeped was added on the 13th of April; and in the fourth, a solution of 4 oz. at the same time, in 9 gallons of water, but these two last portions received also additional hoeings; the third was hoed twice, the fourth three times. This perhaps complicates the experiments too much, and introduces some uncertainty into the results; however, it is necessary to state the facts: the dimensions of each portion were 36¼ square yards; the quantity of corn sown in each was a quarter of a pint:—

	Weight of Corn.		Weight of Straw.		Quantity of Corn.		
Nit. of potash.	lb.	oz.	lb.	oz.	gall.	qt.	pt.
1 not hoed	10	2	20	4	0	5	0¾
2 hoed once	11	6	21	8	1	2	0¼
3 twice, 8oz. sol.	13	5	23	8	1	3	0¾
4 thrice, 4 oz.	15	5	25	7	2	0	0¼
Mur. of ammon.							
1 not hoed	14	2	24	4	1	3	1¾
2 hoed once	15	2	25	4	2	0	0¼
3 twice	17	12	27	14	2	0	0¾
4 thrice	16	10	26	12	2	0	0¾
Phos. of potash.							
1	17	3	27	4	2	1	0¾
2	16	10	26	12	2	0	1¾
3	16	0	26	2	2	0	0¾
4	16	10	26	12	2	1	0¾
Sulph of soda.							
1	16	4	27	6	2	0	1¾
2	17	2	27	4	2	1	0¾
3	19	15	30	1	2	3	0
4	21	2	31	4	2	3	1

In order to explain the remarkable inferiority of that part on which the nitrate of potash was employed, it is necessary to observe that one end of that land was entirely overshadowed by a large Apple-tree, which deprived the corn of its food from light, and air, and earth; and therefore its produce cannot fairly be compared with the others; but its own sections, being all under the same circumstances, may be compared with one another; and the comparison shows that the hoeing was of use—probably as often as it was repeated, but how much, it is impossible to determine, on account of the solution with which 3 and 4 were watered. One thing, however, is clear, that the increase, which bore some proportion to the number of hoeings, was in no proportion to the quantity of solution which it received, but rather in an inverse ratio; and so, too, with respect to the sulphate of soda, which was much the most efficient of these manures, and in one instance gave a return equivalent to more than six quarters per acre; the same progression may be remarked, but not at all in conformity to the quantity of it used. The muriate of ammonia, indeed, seems to have observed a different law, and the ascending scale is more governed by the quantities of the manure, but still No 2 affords the same evidence of the beneficial effects of stirring the soil; the only exception is in the instance of the phosphate of potash, which is a most anomalous and inexplicable case; for it would seem, not only that hoeing was injurious to it, but that an addition of the same solution was equally injurious, and a further addition more injurious still: and yet, that the saturation of the seed with the salt was so beneficial as to raise the produce higher than any of the others. The only inference that I can draw from this is, that there was some local peculiarity in the composition of the soil, which modified the action of ordinary causes; and if this be so, the utility of a practice which has lately been much recommended, the practice of sending to a chemist for analysis a handful of soil selected for a sample, must appear to be extremely doubtful; the elements of vegetation

are scattered so unequally through the soil, that such investigations are encompassed with fallacies and uncertainty; and even if their combinations most favourable or adverse to fertility were certainly determined, which they are not, still the discovery of their existence in one patch of ground would be no guarantee of their presence a yard beyond it. I allude not so much to those palpable differences which may be observed by the eye, such as the alternations of sand and clay, which are not uncommon, but rather to those minute homœopathic doses of some of the rarer ingredients, which, it may be, are essential to fertility, and of which the quantity, and sometimes the existence, can only be detected by long and laborious research; and yet all this expense of time and money and toil would be useless (unless it could be repeated for every rood—I had almost said every rod—of land upon a farm), to prove that the facts so discovered were not confined to some trifling locality. Nor, if some prevailing deficiency were discovered, would it always be easy to apply a remedy; for the operations in the laboratory of nature materially vary from those which we employ, and the ingredients might not be combined, in any addition which could be made, exactly in the same proportion which is necessary for the production of the same effects. Nevertheless, although the farmer must not expect immediate assistance *from* this quarter, yet I am fully convinced that ultimately, by long perseverance and many analyses of the most fruitful soils, patiently and skilfully conducted, the chemist will arrive at some general truths, which will throw important light upon those principles of agriculture which are now involved in obscurity; and with a view to present benefit, if he can only show within what limits and in what forms lime and iron are essential to fertility, they being easily within the grasp of a rude analysis, the farmer will soon see his way more clearly into the causes of plenty or barrenness in his fields, and will be more ready to avail himself of the means within his reach to cure defects which are not beyond his comprehension, nor beyond the hope of remedy.—*L. Vernon Harcourt, West Dean House.*

SKETCHES OF EAST LOTHIAN HUSBANDRY.

Conclusion.—The reader who may have honoured these cursorily-written Sketches with a perusal, must have perceived that my object has not been to hold up the system of farming pursued in this locality as a model of judicious husbandry for general imitation, or as suitable for introduction into districts dissimilarly circumstanced. I have throughout, for the most part, contented myself with a simple statement of facts. This course I considered more satisfactory than that so frequently adopted by tourists, of publishing extraordinary and often extravagantly enormous statements of produce and profits, without at all entering into the details of the grand system of cultivation by which such startling results are represented to be realised. East Lothian is, no doubt, a highly-cultivated district, and occupied by respectable and enterprising farmers; but still the system of management adopted there is in many respects susceptible of great improvement. The statements of produce given in connection with the cultivation of the different crops may strike many of my readers as contrasting strangely with the ideas they had previously formed on the subject; but after diligent and repeated inquiries, as well as from personal observation, they will be found to be perfectly correct. On another occasion I hope to be able to place before the readers of this Journal a statement of the actual results obtained from individual farms on each of the several classes of soil into which the county is naturally divided; and in this paper I shall introduce a few general remarks on the system of management which I have hitherto so minutely described.

The soil and situation of any district properly exercise an important influence in determining the precise course of management which can be most profitably adopted, the former consideration, for the most part, determining the class of crops to be cultivated, and the latter the manner of their disposal. Wheat has been seen to be the staple crop of the East Lothian farmers, the strong tenacious soil there abounding being peculiarly suited to the Wheat plant; but by the more general adoption of the various improvements recently discovered, it is believed that not only might an increased produce be obtained but a greater diversity of cropping might also be introduced. Though naturally very fertile, the general character of the soil is a stiff, tenacious clay, in its present state difficult and disagreeable to labour; commonly requiring four or five ploughings, and an endless number of rollings, harrowings, grubbings, &c., even in favourable seasons, before it can be sufficiently pulverised and prepared for a Turnip crop; while in adverse seasons, such as that of last year, it is almost impossible to labour it to any degree of perfection. In its natural state it retains water like a sponge, and when once thoroughly saturated with it, requires a long time to become dry and ready for working. Hence draining and subsoil-ploughing are important primary operations before the resources of the soil can be fully developed; but although the former of them has been long practised to a greater or less extent, the great and essential importance of perfect drainage, and a thorough pulverisation of the soil, is not so generally appreciated or carried into operation as it is desirable that it should be, and hence a principal cause of the comparatively low produce frequently obtained, notwithstanding the superiority of the management in other respects.

In too many cases, the system of drainage effected by stone drains and open furrows is still the only method employed for the removal of superfluous moisture; nor is pulverisation carried deeper than the ordinary furrow-slice in ploughing. The system of parallel drainage is efficiently carried into operation in some cases; but even here erroneous ideas seem to prevail in reference to the means by which these effect the desired purpose. Wherever this system of draining is required, the action of the subsoil-plough is necessary to insure perfect dryness, it being no less necessary to provide the means for the water to enter the drains than to carry it off afterwards. The general prevalence of erroneous ideas on this subject can alone account for the trouble taken after drainage, even when it has been properly practised, to insure the open furrows of the field being directly over the drains, to facilitate thereby the water finding its way into them, as described in my paper on the subject in the *Gazette*, p. 395.

It is almost incredible that subsoil-ploughing has made so little progress among the East Lothian farmers, especially when it is considered that their soil, of all others, is that likely to benefit most from the operation. The use of the subsoil-plough may, indeed, be regarded as among the most important improvements which have recently been effected in British agriculture; for without it, as already observed, drainage is incomplete. When this circumstance is taken into consideration, it will not be regarded as surprising that the summer fallow should still be regarded so essential as a preparation for the Wheat crop—a process which, whatever may have been its advantages under former management, is now very properly regarded as unnecessary wherever the use of the drain and the subsoil-plough is properly understood.

The necessity of deep pulverisation to facilitate the escape of moisture contained in the soil into the drains has on former occasions been so forcibly brought before the readers of the *Gazette*, that it is scarcely necessary to enlarge on it here. An important result of the removal of superfluous moisture from the soil—the production of increased temperature in it—does not, however, seem to be generally understood.

The first and most obvious result produced by perfect drainage, by means of the frequent drain system and the action of the subsoil-plough, is the comparative facility with which the usual operations of husbandry can afterwards be performed at almost any season, and without any injury to the soil, unless while rain is actually falling, or immediately after. How often is the proper period for sowing unavoidably allowed to pass before the seed can be got deposited in the ground, owing to the unfavourable state of the soil! This is a circumstance with which the East Lothian farmers are familiar; and it is scarcely necessary to add, that it is almost invariably followed by a scanty crop; but even on wet soils, when, through the intervention of a favourable season, the seed-time may not be unnecessarily delayed beyond the proper period, how often may the crop afterwards be seen to languish and assume a sickly hue, in consequence of the saturated state of the soil on which it is produced! In dry seasons the value of perfect drainage is not so fully appreciated; nay, in such cases, it is too commonly supposed to aggravate the evils of drought; but the reverse of this is the fact. The evils of drought on the growing crop are greatly aggravated by the fissures thereby produced in tenacious soils, which still further contribute to facilitate the escape of whatever moisture may still remain in them; but it will be invariably observed that land saturated with moisture during the winter has the greatest tendency to suffer from this cause in the summer. Perfect drainage, therefore, instead of aggravating the evils of drought in the summer season, contribute more than anything else to alleviate them.

But one of the most important results of dryness in the soil is the increased degree of temperature thereby produced, the beneficial effects of which on vegetation, as contributing to increase of produce and early maturity, are sufficiently well known. As rain falls from the heavens it must either escape by subterranean channels or by evaporation. On certain geological formations, such channels are formed by nature, the substratum abounding in innumerable natural fissures, through which the water is carried off almost as quickly as it falls; and whatever may be the natural fertility of such soils, they are invariably distinguished by the comparatively early period at which the crops produced on them are ready for being harvested. Wherever such channels do not naturally exist, they must be formed by art before the productive powers of the soil can be fully developed. It should be constantly borne in mind that the smallest portion of water cannot escape from the soil by evaporation without the abstraction of heat. Every one must be familiar with this effect in the case of allowing the hand to become dry by evaporation after immersion in water, and the sensible degree of cold thereby produced; and, if alcohol or ether be substituted for water, the cold produced by evaporation will be much increased, in consequence of the rapidity with which these substances pass into vapour; indeed, so great is the degree of cold produced by the evaporation of ether that it may readily be made to convert water into ice in the warmest day in summer, the water in this case being merely placed in a thin glass tube, and the ether being made to fall on the outside in drops. Water evaporates more slowly than ether, and hence its effects in causing a diminution of temperature are not so apparent, the loss of heat being extended over a greater interval of time.

The maximum degree of heat in the soil is therefore produced when the greatest possible facility for the escape of the moisture contained in it has been secured. In a well drained field a day will, in most cases, be sufficient to carry off the water which may have fallen the preceding one in rain, leaving little to be carried off by evaporation; but in undrained tenacious clays, where evaporation is the only means of carrying off the moisture, the soil will often be completely saturated for weeks after heavy rains, and while it is in this state none of the ordinary operations of tillage can be performed on it, without imparting to it a degree of tenacity which it will require much subsequent labour to remove.

There are many of the details of East Lothian husbandry well worthy of imitation, and which might be advantageously introduced into other parts of the kingdom; but in the department of agriculture, now the subject of consideration, there is no question but the East Lothian farmers have much to learn, and considerable exertion to make before they are on a par with less highly favoured districts. If the subsoil-plough had been judiciously employed in conjunction with the drain, not only would the position of the furrows of the field, in relation to the drains, be a matter of perfect indifference, but open furrows would, in fact, be altogether unnecessary, the whole being in that case advantageously laid quite flat, without the intervention of ridges of any kind. The waste in cropping occasioned by open furrows, as well as the diversity in the quality of the produce thereby occasioned, are familiar to every farmer. Occasionally, it is true, a field so laid down may be seen in this district, but the practice is not general; nor, in fact, can it be so until more effectual means are extensively employed for drying the soil. Much of the soil of East Lothian was drained with tiles before the use of the subsoil-plough became generally known, and the drains then made being seldom more than 20 inches in depth, the use of that implement was afterwards inadmissible without destroying the drains; and hence a principal reason of so much of the surface of the county being now in an imperfectly drained state.

In conclusion, I may be allowed to state that if the Sketches of East Lothian Husbandry, which have now occupied so much of the space of this Paper, shall have had the effect of correcting misstatements, of removing erroneous impressions, or of contributing, in any degree, to the improvement of agriculture in less favoured districts, my object in their preparation will have been attained.—*T. Sullivan.*

ON GYPSUM AS MANURE.

It has been mentioned before, that gypsum is now strewed with great effect over the dung, and ploughed under with it; we may be assured, however, that this operation will especially succeed in dry localities and dry seasons; because, as the gypsum requires 450 parts of water for its solution, and the now formed sulphate of ammonia merely 4 parts of water, the plants will, in this case, be the surer supplied with the required sulphuric acid. It is advantageous, on the same ground, if gypsum (as it is done in some places) is mixed with the dung in the stables, or in the dunghill. He, however, who asserts that gypsum can only operate if previously decomposed by ammonia, is in error, because it manures well, even when the soil contains no ammoniacal salt which could decompose it; nay, we see that it acts powerfully, even if merely lying on the leaves, and solved in the water of dew.

It has been also often asserted that gypsum acts advantageously on vegetation only, because it constantly attracts water from the air, and thus supplies the soil with it. A trifling experiment, however, can convince us that this assertion is groundless. If a certain quantity of dry earth be mixed with a little powder of gypsum, and another be left by itself, we shall find by repeated weighings, that that portion which has been mixed with gypsum has not attracted any more water from the atmosphere than that which is unmixed. Fresh-burnt gypsum, it is true, attracts 21½ per cent. of water; but it does not give it up to the earth, but fixes it chemically.

If it is the case at times, that one coat of gypsum is more effective than another, it will be because it has been better burnt; it is especially important that it be not too much burnt, else it will become vitrefied, and soluble in water with difficulty. The few useful substances which it contains are of no consequence, because as only 80 to 90 lbs. of gypsum are used on the acre, the former cannot exercise any important effect on vegetation. It is, however, possible that gypsum, which contains much sulphuret of calcium, may be one of striking effect, as plants can then assimilate the sulphur and calcium without previous de-oxidisation. Some assert, also, to have found by experiment, that the sulphuret of calcium, which is formed by the influence of the carbon on gypsum, during the process of burning, improves vegetation to a considerable degree. It is natural that the fine dust of gypsum will dissolve easier in water than its coarser grains, as the former affords more points of contact to the fluid. It therefore is another instance of one sort of gypsum acting more powerfully than another; this may be caused by its different degree of pulverisation.

As it acts especially on the formation of leaves, the crops of Beans, Peas, and Vetches, which have been manured with much gypsum, will yield much straw, but little additional grain, as the former will grow on without producing any husks; for the sake of avoiding which, no more than 20 lbs. of gypsum ought to be used on some sorts of soil. Gypsum will avail most plants belonging to the families of the Leguminosæ and Coniferæ, which is easily explained by their containing many vegetable substances, into whose chemical composition sulphur enters to some amount. It is less useful to the Cerealia, and Buck-wheat does not derive any benefit from it at all; to Maize, on the other hand, it is very useful. It operates very quickly, because Clover, manured with gypsum, can be recognised even after eight days, by its

dark-green colour. Such Clover, however, must be given to cattle with some caution, as they become easily inflated thereby, which is, doubtless, caused by the great amount of sulphur the plants contain, as it is known that the gas, which mostly causes inflation, is sulphuretted hydrogen. If gypsum is strewed over the Clover, sown amongst Oats or Barley, immediately after the former has germinated, it will, at times, grow so luxuriantly as to choke the crop; the same will at times take place after the burning of turf, viz., if the ashes thereby obtained contain much gypsum. Once, after burning turf, planted Clover amongst Oats, which flowered the first year, and was 5 feet high.

It has been also found that the straw of Peas, Beans, or Vetches, which had been manured with gypsum, had given horses the colic; and it was believed to have been caused by the gypsum which had passed into the plants. Still, this may only have resulted from the crops (most luxuriant after that manure) not having been properly dried before being brought into the barns, and that the cholic was caused by the mould thus generated. It may be taken as a general truth that all crops, grown after gypsum, are more nutritious than usual, as sulphur is one of the essential components of the animal body.

Gypsum, applied in the usual quantities (80 to 100 lbs. per Magdeburg acre of land), acts merely for 3 to 4 years, the reasons of which have been stated above. It is never necessary to use large quantities, partly because gypsum is easily soluble in water, partly because the plants require but little sulphur for their perfect development. In some places Clover is manured after every crop; but then, every time but a very little is taken, which deserves to be imitated, especially in cases when the subsoil is very pervious, because then the gypsum solved in water would be quite lost for the crop, with the exception of Lucerne. There are yet some other mineral substances containing gypsum, which are used as manures, viz., the pan-stone and thorn-stone of salt works, which are obtained by the boiling and evaporation of the salt ley, and have long been known as superior manures.

a. The pan-stone consists, according to the chemical analysis to which I have subjected it, of 60 to 70 per cent. gypsum, at times 10 per cent. common salt, little chloride of potassium, sulphate of soda, oxide of iron, and magnesia. [Analysis will give very different results in different specimens.] Although, therefore, the pan-stone owes its manuring properties chiefly to gypsum, it is to be observed that the common salt also will exercise some influence. The other substances can avail the plants but little, and they are contained in it but in small quantities; and as, moreover, the quantity of pan-stone brought on a certain area is so trifling that it cannot be expected to exercise any great influence.

On some soils the manuring with pan-stone, like that with gypsum, will be quite useless, whilst on others it will be exceedingly beneficial. Similar effects always follow similar causes, and it is clear that pan-stone can produce no effect on soils which possess already a sufficient amount of gypsum and common salt, as the plants have previously satisfied their want of these two mineral substances. It is also to be considered, that the amount of pan-stone used (100 to 120 lb. per acre) conveys not sufficient common salt on the soil for producing any extraordinary result, as we shall see afterwards, that at least 110 lbs. common salt must come on an acre, if the result shall be favourable, and that area will obtain through 100 lbs. of pan-stone (assuming it to contain 10 per cent.) only 10 lbs. of common salt.

Pan-stone will prove itself useful to all plants to which gypsum is of some use, this being its chief manuring substance. It will especially advance the growth of Peas, Beans, Vetches, Lime, &c. Previous to its being used, it must be carefully pulverised, which will cause much trouble, if it be not done in a stamping-mill. It is generally strewed over the young Clover, or the young crops. If it contains (as is at times the case) much carbonate of lime, magnesia, &c., a greater quantity than that above stated is to be employed.

b. Thorn-stone is either beaten off the thorns which have been used for the refining of the salt ley, and around which it has formed a hard crust, or they are burnt, after which they are pulverised and used as a manure. It consists, as I have learnt from several experiments, mostly of gypsum, as it contains only 5 per cent. of carbonate of lime and magnesia, silica, iron, &c. If the thorns are burnt, they manure, as a matter of course, also by the ashes of the wood. It is used like gypsum, and will avail all leguminous plants, Clover, &c., in the same way as the former.—*From the German of Professor Sprengel.*

Home Correspondence.

The No-pasture System.—No one can be a greater advocate for abolishing permanent pasture than myself; and I am convinced, from experience, that milch cows and working horses are kept most advantageously by being soiled; but Mr. Mechi ought to tell us that he has found, experimentally, that young cattle and colts can be reared equally well by soiling as by pasturage, otherwise his system must be faulty. It appears to me, also, that there is an objection to his favourite Lucerne and Saintfoin, inasmuch as they interfere with rotation, and are almost as bad in this respect as permanent pasture. In other points they are certainly superior to the Clovers, as, when established, they make us more independent of the seasons, and afford a more frequent cut. On the failure of the Clovers, we have no alternative but Vetches. Mr. Mechi has, I think, said that he cuts all his green meat into short lengths. Does he do it by hand or horse-power? If the latter, with how many knives? I have broken a one-horse power machine by attempting it, owing to its clogging. Is there any good reason for a cow giving more milk when the hay she eats is cut into inch lengths, or when given uncut?—*W. C.* [We know of none, excepting that the process of digestion may be more effectual when the food is administered in a somewhat reduced state. There is not that reason for reducing the food of animals that chew the cud, that there is in the case of the horse, and others which do not.]

Failure of Oats.—I am a reader of your very valuable Paper, and have seen several articles which I approve of upon rotation of cropping, but have met in neither anything accounting for the deficiency of a crop of Oats in some parts of fields, whilst in other parts of the same field a good crop is produced. This failure is by some farmers called "blowing," that is, the Oats grow until the ear is about formed, when it begins to assume a stunted and withered appearance, and consequently comes to little use. It generally happens after ley; but when the ground has produced a crop of Potatoes or Turnips, and is properly cleaned, the Oats after are a good crop. Is it a deficiency in the soil, or is it a weed which robs it? I am inclined to think that it is the latter, as the spots are much overgrown with plantain, &c., and likewise the failure happening after ley. Would Beans answer in such parts after ley? Here we sow Beans after Turnips, along with Grass-seeds. Be so good as to state what is the cause of failure of Oats, and if Beans would grow after ley in such soil. Our soil here is, for the most part, a stiff loam.—*An Aberdonian.*

Experiments on Nutrition.—The experiments of Boussingault with his two cows fed on Mangold Wurzel alone, are somewhat akin to those made by his countryman, Macaire, on plants, some years ago, when the excretionary theory was propounded. In both cases the subjects experimented on were placed in such a state that disease was sure to be the consequence; in the one case the fatty matters found in the milk and the excrements of the cows were proved to be produced at the expense of the fat previously deposited in the animal tissues; so the much-talked-of brown matter found in the water in which Beans had grown (or rather had been soaked), would, there is good reason to believe, be found to be produced by the destruction of some portion of the tissues of the seed or plant. No experiment of this kind can be satisfactory unless it be so conducted that the subject experimented on shall be continued in a perfectly healthy condition. The experiments made by Earl Spencer, as detailed in the 2d vol. of the "Journal of the Royal Agricultural Society," were conducted on such a plan that the health of the animals was preserved. Barley when malted, will cause an animal to become sooner fat than when unmalted. Will the disciples of Messrs. Boussingault and Dumas inform us how this takes place?—*Inquirer.*

Gas-Water.—Having seen in your Paper lately an article recommending one of your correspondents to add gas-water to a heap of decayed leaves, &c., I intend to try the plan; but on going to the gas-works I found that there are two sorts of gas-water—one, a sort of brown oily substance, which distils from the gas, and from which, I believe, they make naphtha; and another, lime-water, which is used for purifying the gas. Now, would you be good enough to inform me which I should use, and what quantity for a heap of about six cubic yards, and oblige an—*Amateur.* [Two or three hundred gallons of the former, which is the *ammoniacal liquor*, should be applied per acre; if you intend to apply these 6 yards of leaves on an acre, soak them with that quantity.]

Guano versus Farmyard Dung.—At a time when so many conflicting opinions are afloat respecting the fertilising properties of guano and other manures, I think it but right that every one who has the opportunity and the will to try experiments in this way, should give to the public the result of such trials; and having no doubt but that the following particulars will be of interest to some of your readers, I with pleasure record them, with a further promise to report also the result of other trials now in progress. Last spring, to test the efficacy of guano as a manure for Potato crops, and also to try its relative merits with good farmyard dung, I dressed about an acre and a half with guano, at the rate of 6 cwt. per acre, at a cost of 3*l.* 18*s.* per acre; sowing it in the drill, and covering lightly with mould before planting the set. I also had drills opened and the dung laid in; the set being planted on the dung. In order to bring the expense of manuring per acre as near as possible to each other, I manured with dung accordingly, thereby giving what we here term a good dressing: the land is rather poor, inclining to a peat. Those sets planted on the guano showed a very marked superiority in their growth, even up to the very day of digging, when the result fully realised my most sanguine expectations, and justified me in my previous predilection for this new-fashioned fertiliser, by giving the following return*:—

No. 1.—Short row.. Dung 6 bsh. 6 galls.
No. 2.—Ditto .....Guano 3 bsh. 2½ galls.

Thus giving a difference of 1 bsh. 4½ galls. in favour of the guano; and this superiority was very general throughout the whole crop. I have witnessed its very powerful effect upon Grass land. In the beginning of August, having selected a very poor miserable piece of lawn or pleasure ground, I applied a dressing of guano, at the rate of 5 cwt. per acre, having previously mixed it with a quantity of leaf-mould; the effect was instantaneous, for in less than a fortnight, the plot assumed a darker hue, and rapidly recovered from that sterile appearance it had for two months previously borne; and at the time of cutting, which was less than seven weeks after the application, the Grass had grown to fully 7 inches in height, and of a most healthy appearance, while the ground (for it could not possibly be called Grass) adjoining had more the appearance of a gravel walk than otherwise; and at this period (December 1st), the selected spot appears to have undergone quite a change, still maintaining its verdure-like appearance. In order to be quite sure that the leaf-mould had not a great share in the improvement, I dressed another plot from the same heap, but the continued dry weather prevented its having any beneficial effect whatever; consequently I was quite satisfied that the astonishing effect was attributable entirely to the powerful agency of the guano. —*Quercus II.*

Feeding Cows.—I keep two cows tied up day and night in the cow-house, except on fine days, when they are turned out into the yard for two or three hours in the middle of the day. I give them as much meadow hay as they choose to eat, and each cow has one oil cake, about 3lb., divided into three portions, for morning, mid-day, and afternoon. I have plenty of Potatoes—200 bushels at the least—but no apparatus for steaming, no copper large enough to boil the Potatoes in, and firing is very dear. My question is, May I venture to give the cows the Potatoes in a raw state? and if so, in what quantity? I have made many inquiries among the neighbouring farmers, and have conflicting answers. Some say, the Potatoes will do the cows no harm—others that raw Potatoes will ruin the cows, make them poor, lousy, and the milk no better than mere water, with many other objections.—*Hatfield.* [The results of experiments on feeding with Potatoes, strange as it may appear, have as often been favourable to using them when raw as when boiled or steamed.]

Inclosure of Land from the Sea.—If the "Strathern Farmer" will refer to the *Agricultural Gazette* of Oct. 26, and the following Numbers, he will find inquiries made on the subject he is anxious to give information upon. In the case referred to he will see that the difficulty was to get rid of the superabundance of salt. It does not appear whether there was any great admixture of salt in the overflowings from the Tay—probably much less than in the case before inquired into, which related to a tide-river in the south of England. Having seen the Tay, I should suppose there was more fresh water in that noble river than in all the rivers that flow into the sea, in Sussex or Hampshire, at any time of the year, except, perhaps, in very wet winters, for during the dry months the quantity of fresh water, compared with what flows in by the tide, is very insignificant. After the tide is gone down, the water left in the pools is still so salt that common sea-weed flourishes in it. Of mud there is no deficiency, but, from the superabundance of salt in it, it is hardly fit for the purpose of manure by any process I know of. There is no doubt an alluvial deposit from the fresh water above the tide-way, brought down by heavy rains from the land above; but no land, fit for cultivation, can be gained from the river, as is described to be the case in the Tay. The directions as to the slope of the banks to the sea are very valuable. The sea has been excluded from about 30 acres, which in September last was very dry. It will be brought into cultivation whenever the best method of getting rid of the salt can be ascertained. Any information as to what will accomplish this will be thankfully received. The "Strathern Farmer" will perceive that I am enough of a Scotchman to answer his questions by asking another; but I conceive he is far more likely to know how to convert his reclaimed mud into corse land than I am.—*M. D. P.* ["M. D. P." shall soon have evidence on this subject from another quarter.]

Allotments.—Not long ago, a correspondent from Tottenham wrote in the *Agricultural Gazette* about the many difficulties in the practical working and letting of allotments, and especially as regards the trouble of getting them into one's own hands again out of those of bad tenants. I meant to have let some land for allotments this Christmas, but thy correspondent has alarmed me, and unless he can put me in the way of letting, so as to be safe, and so that they will require but little trouble, I must reluctantly decline. I think he says that he has managed allotments for 20 years; and if so, he surely by this time must have hit upon some well defined plan, and rules, and regulations, and agreements, by which the matter may be managed almost to a certainty. If he would furnish such to the world through thy Paper, it would doubtless be useful to others as well as to myself; or if he will not do that, perhaps he will communicate his plans and modes privately to me, through thy introduction. I hope to see something about it in next Number, or to hear from him this week, as the time is drawing so near when the labourers would like to begin, and I understand they are very anxious to do so.—*Robert Warner*, 8, *Crescent, Jewin-street, London.*

Hedgerow Timber.—I wish to call attention to the management of hedgerow timber, the early pruning of which is generally totally neglected; although from its unsheltered position it more especially needs judicious treatment. It is commonly left entirely to the discretion of such farm labourers as may chance to be, at intervals, engaged in making and repairing the hedges in which it stands. They, of course, seldom feel much in-

* I had not leisure to superintend the measuring of a larger quantity; but am quite satisfied, from my daily visits to the men, that the measured part bore a fair proportion to the whole.

terest on the subject, or can exercise much judgment respecting it. On many estates the timber is almost exclusively confined to the hedgerows, where it is very abundant, but has been suffered to grow up without the slightest attention to pruning. On every side trees of considerable magnitude may be seen spreading their limbs widely over the inclosures they surround, so low as, in many instances, scarcely to leave headroom for the plough teams; yet it is with difficulty that a tree can be found having a clear bole of sufficient length to be converted into plank for a barn floor, or even into materials for common field-gates. The total neglect of pruning hedgerow trees is a severe injury to the farmer. The massive heads of the trees reach almost to the surface of the soil, destroying that portion of the crop over which they immediately extend, and injuring the remainder by shutting out the light and air from them. It also leads to the wretched practice, wherever it is not strictly forbidden, of lopping off the lower limbs when of large size. This practice exists to a great extent; the limbs are commonly cut off at the distance of 2 or 3 feet from the bole, under the notion that the stumps will throw out young shoots, and thereby prevent their decay. This may be the case when trees are felled within a few years after having received such treatment; but if they remain standing for a longer period, some of these stumps must inevitably decay, and then they serve as channels to convey the falling rain into the bole, much to its injury. If landowners could be induced to give instructions that all young saplings standing in the hedgerows on their farms, should for the future be reared with clear stems of reasonable heights, and if these instructions were attended to at the periodical times of making the hedges, it would contribute equally to the advantage of themselves and their tenants; and at the same time put an end to this sad habit of lopping. Many timber merchants are altogether adverse to pruning. On my speaking of the subject to one of very extensive experience in the Wealds of Surrey and Sussex, he most emphatically said, that "it is better at once to cut down an Oak sapling, than to attempt to prune it; the Oak," he added, "will not bear pruning." Your correspondent, P. P., appears to have received a very similar reply from the Sussex timber merchant; he, however, ultimately qualified his opinion by admitting that you might keep a clear stem while the tree was young, so that you did not interfere with its top, thus assenting to nearly all that most advocates for moderate pruning would desire. It is doubtful whether much deference is due to the opinion of timber merchants on the subject. Their attention is almost exclusively directed to timber trees of mature growth; and they are too apt to attribute the defect discovered, in the conversion of timber, to the injurious effects of pruning, when, in truth, they should be referred either to the pernicious practice of lopping, to which allusion has before been made, or to the trees in which these defects appear, having been permitted to grow up so close together, that, for want of air, the lower limbs in time ceased to vegetate, and at length became rotten. It may be objected, that it would be folly to attempt to rear trees in hedgerows, with lofty stems; that, standing without shelter, they are naturally disposed to throw out a profusion of branches; and that, to oppose this tendency would be to combat against nature. It is not contended that we should aim at obtaining lofty stems; but that we should endeavour, by early pruning, to secure boles of such heights as may, according to situation, be reasonably hoped for, and be capable of forming valuable timber. Experience proves we need not despair of this.—*W. A.*

Potatoes.—I wish to reply to the notices which have recently appeared in the agricultural part of the *Chronicle*, casting doubts on the manuring properties of the Garnkirk fireclay for growing Potatoes. The experiment I reported was certainly made on a very limited scale, and, consequently, less satisfactory. For the accuracy of the details I communicated, however, I can vouch, on evidence that your correspondents will not question. [This was not in the least doubted; we only suggested the unreasonableness of inferring anything in agriculture from trials of such limited extent.] Mr. Sprot planted the Potatoes in presence of Archibald M'Neill, Esq., Director of Chancery, and others, who can attest the truth of what I stated as to the relative qualities of dung and clay used respectively. The produce of the four shaws was taken up in the presence of Capt. Marshall, of the Royal Terrace here, Mr. Sprot, of Garnkirk, Mr. Thomas Sprot, and myself. In answer to Mr. Goodiffe I may observe, that so far from the influence of the dung having extended to the shaws manured with fireclay, it was the shaw farthest off from the dung that gave the greatest return, the produce of which alone was more than both the dunged shaws put together. Suppose the figures 1, 2, 3, 4, to represent the position of the shaws, 1 and 2 being the fireclay, and 3 and 4 the dunged shaws; the shaw No. 1 was more productive than both Nos. 3 and 4. Yet I own the experiment was too limited. It will be put to the severest test next season; for not only Mr. Sprot, but his neighbour, Mr. Campbell, of Bedlay, and others, are to try it on a large scale, by growing, say three or four drills of Potatoes manured with clay, and three or four drills manured with dung alternately over the field. Let your readers have the kindness to await the issue, and till then suspend their judgment.—*N. Anderson, Maryfield, Edinburgh, Dec. 7.*

To get rid of Moss.—Fold your sheep on the parts overrun with it, and give them Turnips or Swedes, &c., to eat in troughs.—*J. B.*

Societies.

HIGHLAND AND AGRICULTURAL SOCIETY.

The first monthly meeting of this Society for the session was held on Wednesday last, under the presidency of Mr. Graham, of Balgowan.—Mr. Borthwick of Crookston commenced the business of the meeting by reading a report on the plantation made by the Duke of Richmond, on his estates in Aberdeenshire, during the last five years. The ground planted comprises the Binhill and adjoining moors, situated in the parishes of Cairnie and Huntly, and distant one mile from the town of Huntly. It extends 2¾ miles from east to west, and 2¼ miles from north to south, comprehending an area of 2258 imperial acres. The aspect of the ground is much diversified by irregular rocky hills. The surface is either rocky or occupied with very large earth-fast stones, which rendered it quite unfit for tillage, and had been pastured as a common by sheep and cattle belonging to small tenants and crofters. The soil is various. On the low grounds the soil is in some parts wet gravelly clay, retentive of water; in others of deep rich loam, damp, and even swampy; and at other parts it is of friable loam, on dry porous subsoil. On the high rocky grounds the soil is friable loam of good quality. On the braes along the base of the rising grounds it is deep and mellow. The vegetation consisted of benty Grass upon the wet retentive clay, green sward with long Heather upon the damp deep soil, and green sward and short open Heather upon the high rocky grounds. The land was surveyed, and a plan made in 1838, by Messrs. Beattie and Walker, land-surveyors in Aberdeen, and they also made out the specifications of the contract for fencing the grounds and planting them. The fence consists of a Galloway dyke of angular stones, built 3½ feet in height, at 6*d.* per yard, carriage included, at a cost of 464*l.* 4*s.* 3*d.* A number of open drains were made through the wettest parts of the ground, from 1 to 2 feet in depth, 12 inches wide at the bottom, and from 1½ to 3 feet wide at the top, at a cost in all of 225*l.* 15*s.* 7*d.* A road of 15 feet in width was made for the purpose of giving access to a moss from which the servants were in the habit of supplying themselves with peat fuel, and which cost 180*l.* The roads afterwards required for conveying away the thinnings of the woods, and the timber itself, will be made as occasions require. The grubbing of Whins and other plants cost 54*l.* 0*s.* 9*d.* The ground was subdivided into seven portions before being planted, and the trees which each division was to receive were specified in the contract. The first lot was planted with Scots Fir and Larch, 2 years' seedlings; the second lot with Spruce alone, 3 years' seedlings; the third lot with Scots Firs alone, 2 years' seedlings; the fourth lot with Larch alone, 2 years' seedlings; the fifth lot with hardwood, 4 years transplanted, consisting of Oak, Elm, Ash, Birch, and Beech, in equal quantities; the sixth lot with Larch alone, 2½ years transplanted; and the seventh lot with Scots Fir and Spruce, 2 years transplanted. The exact quantity of ground thus planted consisted of 2257 acres, 3 roods, 1 pole, with 6,387,017 trees. The contractors for planting the whole ground were Messrs. Lawson and Son, Edinburgh, Seedsmen to the Highland and Agricultural Society, and their contract price was 1956*l.* with obligation to uphold the plants for 4 years. The operation of planting commenced in March, 1836, was resumed in November, and finished entirely by the 20th of December of the same year, and the task was performed by from 50 to 80 men and boys. The cost of all the operations stands thus:—

	£	s.	d.
Estimate for planting	1956	0	0
Inclosing with a stone dyke	464	4	3
Making a road	180	0	0
Draining with open drains	225	15	7
Grubbing up bushes	54	0	9
Expenses of survey, &c.	76	12	11
	£2956	13	6

Giving an average cost of about 26*s.* per acre.

It seems that about 100,000 plants were required to fill up the blanks caused by ordinary failures during the four years in which the contractors were bound to uphold the plants; but as many of the plants had been placed in situations unsuited to their nature, though in accordance with the terms of the specifications, the blanks occasioned by their failure were filled up at an additional expense to the proprietor. For this purpose, 260,000 Larch, 340,000 Scots Fir, and 50,000 Spruces, were required. "It remains only to be added," concludes the report, "that during the past summer the plantations have made rapid progress, excepting in those portions of the ground where, from various causes, the plants have failed to some extent; and that the Binhill and moors adjoining it already begin to assume something of a clothed appearance." Mr. Borthwick remarked, that one might learn from the Paper which he had the honour to be appointed to read to the meeting, that although much attention had been paid to the drainage of the land, and to the prevention of the Grasses originally growing on some parts of it from choking the young plants, yet that a greater degree of precaution might have been advantageous. There are many instances of plantations being made, which have either failed, or, advancing in a feeble and languid state, have not made more progress at the end of ten or fifteen years than they would have done in four or five, had more time and pains been taken, before the act of planting, thoroughly to drain, cultivate, subdivide, and inclose the land. As appeared in the present case, considerable injury had been done to the young plants on the more fertile divisions of the land (where the hardwoods, the most extensive of them, were put), from being overlaid and killed by the Grasses. Mr. B. was of opinion that on such situations where the plough could be used, advantage arose from ploughing the land with a shallow furrow, and taking a crop of grain, for a season or two, so as to pulverise the surface, and remove the old established Grasses, the roots and stems of which, on land never before in tillage, or on old lea, formed a thick matting, which, as it were, thatched the ground, and thereby, unless in very wet seasons, prevented the rains from fully penetrating the soil. But by this preparatory process the humidity of the showers during the first season after young trees are planted reaches and invigorates their roots, which, soon striking into the subsoil, give them a firm hold of the ground. Where the land is so situated as that it cannot be ploughed, from steepness or otherwise, benefit might be derived from paring the land to some distance round the space where each plant is to be put.—The next Paper, on the Results of Comparative Experiments made by Mr. James Melvin, Bonnington, near Ratho, on Potatoes imported from different countries on the Continent, with the common varieties cultivated in this country, was read by Mr. Boyle, gr. of Shewalton. The foreign varieties consisted of two from Hamburg and one from Holland. They all had when planted an unpromising appearance, being small, even smaller than the out-riddlings in this country—green and watery when boiled—having a clear thin skin when washed, and showing a great many eyes. The soil in which they had grown had stained them with a brownish-black colour. Of the two varieties from Hamburg, one was white, the other pink; and that from Holland was white. They were planted in two fields, occupying in all fully a Scotch acre, in a manner precisely similar to the Potatoes of this country. The Hamburg Pink almost entirely rotted in the ground. The two white varieties manifested at first an unfavourable appearance, sending up puny shoots—every eye, however, sent up a shoot—and as most of the tubers had been planted whole, and the people, fearing to lose the crop, from their smallness, insisted on planting two together, and the number of shoots that came up crowding together, showed at once that the crop had been too closely planted. After the stems had risen about two feet they interlaced in the drills, and presented a surface of uniform levelness, and at length towered far above the common varieties in the same field. The Dutch White exhibited a white blossom, with a few seed-apples; the Hamburg White a beautiful purple and highly odorous blossom, but no seed-apples. The leaves of the Dutch sort had fallen, while those of the Hamburg remained vigorous and green when the crop was taken up. In regard to comparative produce, in one field, the Hamburg White yielded 12 tons per acre, while the common Dons gave only 6 tons, with 20 tons of farmyard dung and 3 cwt. of specific manure, of the value together of 7*l.* 7*s.* per acre. In the other field the Dutch White also yielded 12 tons, and the Dons 7 tons per acre, with 24 tons of farmyard dung, and 3 cwt. of specific manure, at a cost of 8*l.* 11*s.* per acre. The few Hamburg Whites which had been planted by accident among the Hamburg Pinks that rotted, having plenty of room to grow—about 4 yds. to each plant—their stems spread greatly about, and in taking up the crop, scattered as it was, each stem produced from 10 to 20 marketable Potatoes; others had as many large ones, with from 20 to 60 small; others had 90; and one had 102 Potatoes, from the size of a boy's marble to those of an ordinary-sized Potato. The Dutch White are the best to eat, but none of the foreign varieties are good for the table, being watery, though they seem well adapted for cattle, producing at least one-third more than either the Buffs or Dons. On another farm the Hamburg White gave from a sandy meadow 15¼ tons per acre; while the Dons only yielded 8¼ tons, and the Early-lates 9¼ tons. On a third farm from strong soil, but drained, the Hamburg White yielded 7 tons an acre more than the common sorts beside it.—Mr. Stephens then shortly described the Stone or Stubble-turnip, and exhibited some specimens sent to the Museum by Mr. Richard Makins, Shellacres, near Cornhill, in Northumberland. This Turnip possesses all the characters of the garden Stone-turnip, and may have acquired its larger size from having been cultivated in the fields. This Turnip may be raised with bone-dust or guano, like any other kind, and it may be sown as late as the 11th July, and yet afford a good-sized firm bulb by the beginning of the ensuing September, when they may be laid down on the stubble or lea for the use of the cattle or sheep. Mr. Stephens prefaced the description of the Stubble-turnip, with a few remarks on the utility of Rape for sheep early in autumn. It is raised like Turnips, and in order to avoid the inconvenience of ploughing in its strong stems when the consumption of Rape is delayed till late in autumn, he recommended portions of it to be sown at different times, so that each portion may always be in a young growing state, with slender stems, when the stock arrives to consume it. With the possession of Rape for sheep, and of Stubble-turnips for cattle, Mr. S. remarked that farmers themselves would be to blame should their stock want sufficient food early in autumn from the failure of the Grass, till the winter Turnips are led into the straw-yard.—Sir Charles Gordon, the Secretary, then intimated that he had received notice of the melancholy death of the celebrated M. Fellenberg, of Hofwyl, in Switzerland.

STURMINSTER AGRICULTURAL SOCIETY.

At the late Annual Meeting of this Society, at which Earl Grosvenor presided, the Rev. Mr. Huxtable, of Sutton Waldron, delivered an excellent speech, from which the following are extracts:—"Before I proceed to practical farming, I hope you will not object to my making an observation on the great question of emigra-

thing in reference to the labourers. I do not agree with those who consider emigration as the great panacea for the evils of the country, nor do I think, under present circumstances, that it is necessary to resort to this plan for the purpose of relieving us from what some term our redundant population. On the contrary, I am satisfied that, at present, in agricultural districts, we are far from having a surplus population, and that, instead of sending our labourers to a foreign land, away from their country and kindred—where there may be no dwellings for them, and where they would be without spiritual care, far from all churches, schools, and ministers of religion—we could profitably employ them in our own country. Why, my lord, I think, if the farms were cultivated as they ought to be, and if the necessary improvements were made, instead of sending our labourers out to Canada or other distant colonies, we should want to go abroad for labourers. And whilst this is true of our rural districts generally, it is emphatically true of Dorsetshire, where, in the Vale of Blackmoor, thousands of acres require draining, and where, on the hills, thousands of acres of down land might be profitably brought into cultivation. Let us consider the extent of labour that would be created in breaking up waste lands. Each fresh acre taken into cultivation would call, at least, for an outlay of 28*s.* a-year in labour; and although gentlemen may love to gallop over those beautiful downs without control, yet they should remember that there is in the valleys a loud cry for *labour*, and for *bread!* I do not object to the harmless and healthful recreations and sports of the country, but if we cannot employ our people in the valley, then! say, let us mount the hills. Is not, I ask, the demand for labour enough to move the sternest heart? What is it the destitute labourers ask from us? They do not come knocking at our doors, as idle mendicants, asking alms, but they ask for work. I have seen such men at the cross of my parish; and who can observe, in almost every parish, strong and yet peaceful men, standing at the cross-road, soliciting, not charity, but employment, saying, 'Here we are, sir, able in body and strong in nerve and arm; won't you give us work?' Who can see this, and not on his pillow revolve in his mind by what expedients this great power of our country, this noble race of fellows, more free from the taints of crime, more patient and enduring than perhaps any other class of their countrymen, may be turned to beneficial and practical uses? My own firm conviction is, that if we avail ourselves of improved arts of cultivation, remunerating labour may be found for all. First and foremost stands draining. I have executed many miles of drains 2½ feet deep, a perch apart, up and down the furrows, and I can truly state that, after the first season, the effect has been almost magical in the altered appearance of both soil and crops. No outlay, I am convinced, can produce so great a return. Why, then, do not gentlemen of capital employ their resources in this way? How contemptible, in comparison, those miserable 3 per cents. above par. The Kohl Rabi and some of the Wurzel shown this day in the yard, was grown on land which, before draining, was valued at 8*s.* an acre. Another means of employing our surplus population, as they are called, may be found in transplanting Mangold Wurzel, Swedes, and Kohl Rabi. The right practice is that the seed should be sown in a seed-bed, at the end of March or the beginning of April. As soon as the Vetches, Rape, Rye, or other winter crop is consumed, the land should be ploughed into ridges, and good dung laid in them, to be then covered over by splitting the ridges; after which the Wurzel, Swedes, or Rabi should be transplanted on them. This, I can tell you, is a certain means of obtaining a good crop, care being taken that the Wurzel be nearly as thick as one's middle finger. It is only the sickly plants which fail. The expense of this transplantation can never exceed 15*s.* an acre, even when, in drought like that of this year, it becomes necessary to make a puddle with liquid manure to receive each plant. On my hill farm, upon land which, when in down, was supposed not to be worth more than 2*s.* 6*d.* an acre, in the burning month of June, this year, whilst the chalk stones were quite hot, I succeeded in raising 12 acres of good Turnips, in utter defiance of the fly. The plan pursued was to mix the Turnip-seed with pig's manure, and then to dibble both together into holes made with a bean-setting stick. This, of course, employed many hands, but the cost was not more than 7*s.* per acre in labour; and I invite any one to inspect the crop, and then decide whether the employment of surplus labour be not remunerating. Generally, the plan of increasing the demand for labour is to grow more green crops, and more abundant ones. Last winter I subsoiled, 18 inches deep, a field previously well drained, and before horses could stand on it this spring, I sowed with artificial guano in drills made by hand, Belgian Carrot seed previously steeped in liquid manure; and in consequence of using this manual labour I have gathered a harvest of 20 tons of roots, and 11 tons of tops. Let me now, my lord, mention the success and particulars of a method, which I learned from the American translation of Burger's German work (and this will serve to illustrate the advantage of 'book farming,' when corrected by practice), of preserving the surplus leaves of our green crops as winter food for cattle. The plan I pursued was to dig a long and deep pit, say 12 feet long, 6 feet wide, and 7 feet deep, in some dry spot, or made dry by draining; then to put a bed of straw or Vetch haulm at the bottom; upon this a layer of leaves, Carrot or Mangold, was strewed a foot thick, and trampled firmly down by two or three men; then a layer of salt, at the rate of 4 lbs. of salt to every cwt. of leaves, distributed evenly; then another layer of leaves, and another of salt, until the pit was filled; then it was covered with bavins, straw, and earth, so as effectually to keep off the weather, and to be as far as possible air-tight. In a few days a violent fermentation came on and a great subsidence of the materials; the pit was re-opened and again filled as before. This morning I opened one of the pits, containing Carrot tops, to see, after three weeks' fermentation, in what state things were; the appearance was at first certainly most unpromising; it seemed to be a mass of greasy dung; but, not dismayed, I carried some to the cows and found they ate it eagerly. So I have covered up my pit again, feeling assured that when, in perhaps a month, the fermentation is over, I have a large bulk of valuable winter fodder for my milch cows. Practical men will see the value of this plan, when they bear in mind that on taking up their roots they have on their hands from 10 to 14 tons of roots per acre. But there is another mode of employing our rural population, more important perhaps than any other yet suggested. That is in the cultivation and after-management of the Flax crop, equally valuable for the fibre and the seed. Here, however, we are met with the general objection, that Flax is an exhausting crop, and its growth forbidden in gentlemen's leases. But this prejudice I believe to have no other foundation than the classical authority of a line in Virgil's first Georgic. I have the experienced authority of a gentleman at Gillingham, who has grown Flax for many years, and who declares that his best Wheat crop is after Flax! If we wish to estimate the value of a Flax crop, we must recollect the following facts (for which, as well as for all the information which I possess on this subject, I am indebted to that able gentleman, Mr. Warnes, jun., of Trimingham.) The importation of Flax (from Belgium chiefly) amounted to more than 5 millions a year—viz., a sum very nearly equal to the amount of poor-rates of all England, and the value of this fibre consists chiefly in the labour expended on it. Now, besides these 5 millions paid by England for foreign labour, 2 or 3 millions more are sent, annually, out of this country for linseed cake; and what stuff it is! I appeal to any gentleman who has examined it with a microscope, to bear witness of what incongruous and worthless materials it is, in a large measure, composed—of Mustard and refuse seeds, &c., &c. (And 'old rope,' by Mr. Farquharson, which elicited a loud laugh.) Whilst we are sending away all this money for fibre and seed, we might ourselves most advantageously be growing and manufacturing this admirable crop ourselves. In our farm houses and cottages four acres of Flax would employ from 10 to 12 hands, the whole winter months, in shelter and amidst their families. And as to the value of the seed, I have learned, by the use of 2 lbs. a day, grown on my own farm, properly ground, and diluted with boiling water poured over cut straw or chaff (consisting of straw and Turnip-tops), to feed my cows at 2½*d.* a day, and to obtain unusually rich cream for the breakfast table, and this without giving any hay. Indeed, so great a discovery do I consider this, that I mean utterly to discard in future the use of that fodder (hay), hitherto considered so indispensable for milch cows and a breeding flock. I have two cows which I call my experimental cows. I assure you that when I first had them they were miserable-looking animals; but now they have sleek coats and are in good condition, giving excellent milk. I shall be glad to show them to any gentleman who will be kind enough to pay me a visit." After other observations, the rev. gentleman said—"This, my lord, is but a most imperfect and rudimentary sketch of some of the methods whereby we can, by improved husbandry, employ our rural population to their great happiness and our own advantage. On another occasion, if we are allowed to meet another year together, I shall, I believe, be able to set forth other approved plans of engaging all our people; but I have already trespassed too long on your indulgence ('No, no'), and therefore, in conclusion, I can only lift my humble warning voice against any system which shall impress our labourers with the notion that we regard them as an incumbrance and a nuisance, instead of their being, as indeed they are, God's gift to us, and in the words of the Society's motto, which your lordship has so effectively set forth, 'Our country's dependence.'"—(The rev. gentleman then sat down amidst loud and long-continued applause.)

FARMERS' CLUBS.

Maidstone.—Sir E. Filmer spoke as follows on the allotment system here, at a late meeting of this Society:—It had been said that the worst master a poor man could have was himself, but he thought that had been fully disproved. He had 60 allotments, which had been worked for ten years, and for the last four years there had been only one defaulter; and that was the case of a poor widow, who had not her money ready at the time, but paid it within a week. To prove that the poor man was not a bad master to himself, he could give them a statement with which he had been furnished by one of his own labourers:—

Rent, 1 quarter of an acre		£0	7 6
Manure, 17*s.* 6*d.*; Garden Seeds, 1*s.* 6*d.*;			
Potatoes, 11*s.* 8*d.*		1	10 8
		1	18 2
The produce of this was as follows:—			
Potatoes, 4*l.* 1*s.* 6*d.*; Fruit, 10*s.*		4	11 8
Vegetables for own consumption		0	10 0
		5	1 8
From which deduct		1	18 2
There would be a clear profit of		£3	3 6

He went over the whole allotments afterwards, and found them much better farmed than they had been, and although he did not think the allotment system was a panacea, yet he thought it relieved the poor man from a great deal of anxiety, and taught him better his duty to himself and his master than anything else did.

Darlington.—At the November Monthly Meeting of this Club, the subject under discussion was, The proper Time for Ploughing, Preparing, and Manuring Land for Beans, and other Crops. A lengthened discussion took place, and the unanimous conclusions come to at the meeting were, that the best time for manuring, and giving the land the first ploughing is in autumn previous to the winter's frosts, after which the land should be ploughed once at least in the spring; the manure applied is best about half rotten, and the land should be ploughed deep, and kept thoroughly gripped, *i.e.* the water furrows well opened through the winter, so that no stagnant water may remain in the land. Drilling and dibbling Beans was recommended in all cases in preference to sowing broadcast, as by that means the land can be hoed and kept free from weeds whilst under crop; the Suffolk drill answers well on most soils, as does also ribbing and drilling with the barrow drill in many cases; but owing to the seed spreading more in the rows by this process, it makes the crop more difficult to hoe than when drilled with the Suffolk drill. From 18 to 20 inches was considered a good width betwixt the rows.

Dorchester.—At the annual meeting of this Society Mr. Sheridan said:—One of the objects of this and similar societies is to increase the produce of the soil; I have, with that view, made one or two experiments this year. I mixed 60 lbs. of bone-dust and 40 lbs. of sulphuric acid together, and added 400 gallons of water; the cost of this was about 10*s.* 8*d.*—4*s.* for the bone-dust, and 6*s.* 8*d.* for the sulphuric acid. The liquid was conveyed to the field in a barrel, and applied in small quantities over an acre of ground after the seed was sown; it was drilled fourteen inches apart, on ridges, with Skirving's Swede. The result has been, that I have a more abundant crop of Turnips than I have seen elsewhere in the neighbourhood, and this at an expense only of 10*s.* 8*d.* per acre; whilst the general practice amongst my neighbours, I believe, is to apply two quarters of bone-dust per acre, at a cost of 2*l.* 2*s.* I think it right to add that there is a great deal of trouble attending the application of this manure, and much caution is necessary in conveying the liquid to the field where it is to be used, as the sulphuric acid, unless sufficiently diluted, is very destructive both to wood and metal. Then again, I tried thin sowing on an acre of ground upon our hills, exposed to the S.W. wind: I sowed one bushel and a half of Marigold Wheat; the drills were ten inches apart. The result has been, where the tenant before only obtained 8½ bushels (!) from 3 bushels sown, I have reaped 11 sacks, the bushel weighing 61 lbs.

Holt.—The Exhibition (for a sweepstakes) of Swedish Turnips, grown by gentlemen in the neighbourhood of Holt, in Norfolk, took place at the Feathers Inn, on Saturday last, when the Prize was awarded to Mr. Walter Thurtell, jun., of Wighton, the six Turnips shown by him weighing upwards of 65 lbs. In growing these Turnips, various manures were used, and the highest garden culture applied, the particulars of which were detailed in a very clear and satisfactory manner by Mr. Thurtell. The other Turnips exhibited were from field culture, and weighed as follows:—

	lbs.		lbs.
By Mr. Bolding, Waborne	42½	Mr. Sheringham, Thornage	33½
Mr. Page, Barningham	41½	F. L. Astley, Esq., Burgh Hall	32
Mr. Sayers, Field Dalling	41½		
Mr. Burrell, Thornage-hall	30½	Mr. Thos. Norton, Holt	27½

Mr. Sayers also produced—

5 Carrots, weighing	16½ lbs.	2 Kohl Rabi	14 lbs.
4 roots Mangold Wurzel	81 ,,	2 Cabbages	26½ ,,

After the Show, the party, consisting of upwards of 20, spent a very pleasant evening together, when it was agreed to renew the sweepstakes for the ensuing year, and also to have another sweepstakes of 5*s.* each, to be laid out in plate, and presented to the member who should grow the greatest weight of Swedish Turnips upon a field, or part of a field, containing not less than three acres.—Mr. Sayers also offered a Prize of a Silver Pencil-case, value one sovereign, to the member who should grow in the ensuing year six plants of the Kohl Rabi of the greatest weight. Lord Hastings is a subscriber to both the above sweepstakes.

Staithwaite, Huddersfield.—At the Annual Meeting of the Earl of Dartmouth's Spade Husbandry Tenants, the prizes for Wheat were awarded to—John Sykes, who, although the land on which it was grown was an old stone quarry, had by his industry raised from a quarter of an acre, 745lbs., which was equal to 6 quarters and 2 bushels to the acre, at 60 lb. to the bushel; John Balmforth, whose produce had been 46 bushels to the acre, and C. Varley, whose produce averaged 40 bushels to the acre. On one plot of ground two crops had been raised this year; in the months of March and April Peas and Beans had been sown, which were cut in July, and produced about 30 tons to the acre of green food. Turnips were then sown, which were gathered in this day, and on calculation, will yield about 10 tons of bulb and 12 tons of top, and better Turnips need never be seen. John Balmforth read a statement of his proceedings in the various processes required by the land he had made his care. His conclusions were as follow:—

Expenditure, including labour, calculated at 2*s.* per day		£8	13 3
Total returns		35	16 9
Leaving a net profit (of about ⅛ of an acre of land!)		7	3 6

Miscellaneous.

Rowlandson on the Influence of Lime.—As the farmers of Britain and Ireland (he says in the *Journal*

of Agriculture) expend much above a million sterling yearly on lime, it must be of primary importance that the action of this manure be fully understood. He promises to point out an "unerring method" by which any ploughman may, for the merest trifle of expense, determine when lime is required by any soil! According to Mr. Rowlandson's view, "nine-tenths of the money expended on lime are an utter loss to the farmer." While occupying a large farm in Ireland he pared, burnt, and limed a portion of peat-soil, and from it raised splendid crops of Carrots, Potatoes, Turnips, &c. He pared and burnt a contiguous portion of the same peat, but gave it no lime, and the crops on it were an entire failure. He observed that the burnt but unlimed portion gave a deeper colour to rain-water than it had before burning, while, on the contrary, the heaviest rains were no more coloured on the limed part than on the most fertile loams. He next gives a familiar account of the experiments by which his views are established. He buys "two or three pennyworth of ammonia" (or hartshorn) from the druggist, takes a specimen of the barren pared and burnt, but not limed, peat soil, and another of the fertile limed peat, goes to the kitchen, procures from "the dame" two clean tall glasses, and with this "complete laboratory for the purpose," he begins by putting a portion of the barren in one glass and the fertile peat in the other, labels the glasses, covers each specimen for about a quarter of an inch with the hartshorn, and sits down to mark the result. The glass containing the unlimed specimen has its liquid soon coloured deep brown. He waits the limed specimen a little longer, but its liquid continues perfectly clear. He throws out the coloured liquid and its peat, cleans the glass, puts another portion of the same unlimed peat in it, fills up the glass with clear lime-water, goes to bed, sleeps soundly, "rises with the lark," goes to the glass with lime-water, shakes it up, and goes to his farm-work. After breakfast, he again visits this glass, tastes the contents, and finds that the water has lost its alkaline taste. He next takes oxalic acid, which he tells the ploughman is poison, dissolves a little in cold water, and pours some of the liquid from the lime-water glass into the solution. If the lime had been still dissolved in the water, the oxalic acid would have made it milky, and soon caused a white powder of oxalate of lime to fall; but all remains clear. Hence he infers that all the lime has been removed by the peat. For some time, he daily pours off the water, and adds fresh lime-water, till at length, on testing as above with oxalic acid, he observes a milky appearance, and from this infers that the peat can absorb no more lime. He now pours off the liquid from the peat, pours ammonia in its place, and lets it stand for some days, to see if the ammonia can be coloured by peat, after the peat has been saturated with lime; "but no such thing occurs." This experiment taught him to lime the other burnt lot: he did so, and had splendid crops of Mangold, Cabbage, &c. He supposes he has now fairly proved that the alkaline humates are poisonous to plants, and that lime fertilises soils, not by rendering inert vegetable matter soluble, but, on the contrary, by rendering the poisonous humic acid insoluble, in taking it from the alkali. Though his paper extends over 16 pages of the *Journal*, it is not all published, and we are not told what is his "unerring method" of determining when any soil requires lime. But as he ascribes the barrenness of soils which abound in vegetable matter "solely to the presence of free humid acid," and has already shown us how to detect this acid, we may suppose that his method is detailed in the above experiments. And as many farmers, if not many ploughmen, may wish to try his method, I shall give a brief plain sketch of the practical part of it, as I suppose he would give it himself. If the farmer wishes to discover whether one of his fields needs liming, he may take a few specimens from different parts of it, each from 2 to 4 oz. weight, put them, one at a time, moist as in the field, into a clear tall drinking glass (a quinine bottle, which may be had for 2*d.* or 3*d.* at the apothecary's, is better), cover the soil for about a quarter of an inch with common "spirit of hartshorn," and when it has stood a little, observe whether the liquid is coloured brown, and pour it off cautiously (withholding the soil) into another glass containing clear lime-water. If ammonia has taken any "humic acid" from the soil, the whole lime-water will now become turbid, and a dirty brown flaky precipitate gradually falls to the bottom. This, according to Mr. Rowlandson, gives clear evidence that the soil needs lime, and if the ammonia causes no brown turbidity in the lime-water, the soil does not need lime. I do not vouch for the uniform accuracy of this method; but as the trial is so easily made, and to reflecting farmers may lead to important inferences, I think many might try it, especially for cold, clayey, and peaty soils. To prepare the lime-water, take a large clean bottle, put in it a spoonful of slaked lime, fill the bottle nearly to the top with rain-water, agitate, fill up, cork, and set it aside for several hours to let the lime settle. It requires to be kept closely corked to exclude carbonic acid.—*P. Garden, Glenæ, in the Dumfries Herald.*

Management of Farm-yard Manure.—The best-constructed farm-yard and management of manure I ever saw is Mr. Spooner's, the lately elected M.P. for Birmingham. This gentleman has a farm of from 150 to 200 acres, situated near the city of Worcester, in the highest state of cultivation, on which he grows the most luxuriant crops, without having expended a shilling for manure for many years (with the exception of a trifling sum for those lately-introduced novelties, by way of experiment), but has sold much farm-yard manure to his neighbours, not knowing how to dispose of it on the farm. Although he does not possess an acre of watered meadow, he has generally hay for sale. The farm-yard is an oblong square, the back of the house occupying the south end; at the south-west corner is the piggery; the west side a cow-house, containing standing for upwards of 20 milking cows, which is kept full all the year round; in the summer they are fed on Tares, Lucerne, and Grass; in the winter a little hay is given them in the morning, Swedes or Mangold at noon, and as much bruised Gorse (Furze of one year's growth) as they will eat. They have hay in lieu of Gorse on Sundays, as it is necessary for the Gorse to be consumed on the day on which it is prepared; at the back are sheds for storing roots and the hay-stack yard. At the north-west corner the Gorse-mill is erected, communicating with a passage to the heads of the cattle, for the purpose of feeding. At the north end are the barns, with the rick-yard behind. On the east side are the stables and sheds, a road at the back, and an entrance adjoining. In the centre is the manure-pit, six or eight feet deep, covered by a roof, and surrounded by a dwarf wall, so as to prevent the possibility of any water getting into it. It is entered by an inclined plane, wide enough to back in a cart, opposite the approach to the yard. Into this pit the dung from the stables and cow-house is promiscuously thrown; in the middle of the side contiguous to the latter is a well and a pump, which receives the drainage therefrom and the stables, which is pumped up and spread over the manure by a shute. The surplus liquid that is not absorbed is drawn off by means of a drain under the barn into a receiving well in the stack-yard, where it is pumped up into the liquid manure-cart, and drawn out on the mowing-ground as soon as the Grass is cut, until such time as it is laid up again; in the spring it is otherwise disposed of on headlands and heaps of soil. Liquid and solid manure, prepared in the way above described, preserves all its nutritious qualities; the one is not diluted by water, and the other not suffered to deteriorate by over-heating, and is of treble the value of that made in the common manner.—*W. B.—Bell's Weekly Messenger.*

Rape for Winter Feeding.—What must the farmer resort to for winter feeding, now that the Turnips have utterly failed in many places? I answer, let him still try Rape Kale on his Turnip-field, without ploughing afresh. The ground may be harrowed and then sown; or the patches of ground where Turnips have failed may be sown with Rape-seed after a shower; or steep the seed and let it dry so that it may not clog in the sowing. If after early Potatoes, the following plan has been recommended:—As you lift your Potatoes, sow Rape-seed, 14 lbs. or 15 lbs. per acre, not later than the end of this month (Aug.). The price of the seed will not exceed 5*s.* per acre. If the season is favourable, you may lay on two and a half scores of sheep to 4 acres, about the middle or end of October. With the addition of the produce of half an acre of Turnips thrown among the Rape, you will have your sheep in first-rate condition for the spring market. In one similar instance, which came under my observation last season, the profit per score amounted to 9*l.* 10*s.*, not deducting the price of seed. The land will be in excellent order for the reception of spring Wheat, which will be found to yield better, and the quality of the grain will be much superior to that of winter Wheat, which is unsuited to early soil. Turnips have been recommended on early soils after Potatoes, but will not suit a cold situation. I would recommend farmers to sow Rye and Vetches upon their stubbles for spring feeding: they will find this a valuable assistant where the Turnips have failed. — *Correspondent of Shrewsbury Chronicle.*

The Management of Heavy Soils.—Farmers have often remarked, that lime does least good to cold, wet, clayey, and peaty soils, when spread on them in autumn; and that it can be profitably laid on them only in the early part of the season, when in their driest state. The reason of this is also plain: lime is dissolved more largely in very cold water than in warmer water. The rains of winter thus dissolve much of it, and carry it off. When Turnips have remained on clayey soils till spring, the crop has in part sheltered the soil from frost. It has been farther consolidated or bound by the winter rains, and the exclusion of air; and when in this wet state sheep are put on it, say in March, they soon reduce it to mortar: in this state it is ploughed, and rises in adhesive lumps resembling subsoil. The advanced period of the season demands that it be sown as soon as the harrows can break the top of the clods. The Oat-seed has thus a thin scraping of coarse soil about it; but at the depth of only 2 or 3 inches, the lumps of solid clay deny admission to the roots. This evil is much increased when the advanced period of the season has rendered it necessary to sow Barley instead of Oats. As this seed requires a looser soil and a finer tilth than Oats, it is not to be wondered at if it fail in such cases, especially where much drought follows the stage of germination. Only the strongest plants in the best positions come forward; stolling is prevented at the proper season; a thin yellow blade is all that can be seen in May and June: the Potato ground on the same soil affords a striking contrast. If July and August are moist, after-growths continue to rise, and a crop deficient in quantity and unequally ripened is the result. Too many evidences of this, both in Barley and Oats, were afforded by the crop, lately reaped after Turnips. If Turnips must be eaten by sheep on heavy soils, the fields ought to be cleared in time for their being all ploughed by Christmas. But I raise and store all my Turnips grown on heavy and medium soils, and give them to stock on the pasture fields, in the court, and in the byres, as good dung is literally given for the Turnips; this keeps the soil open in winter, and the dung is thus farther prepared for next crop. I find it most advantageous in this case not to plough up the dung till the approach of seed-time. On light soils it is highly advantageous to have the ploughing deferred, and, of course, the eating of crop as long as possible.—*P. Garden, Glenæ, in the Dumfries Herald.*

Notices to Correspondents.

*** Will the author of the letter on Smithfield be good enough to excuse our delaying its publication for another week?

After-Grass.—*A. L.*—If you have a witness who can prove the agreement as stated, although only a verbal one, you may recover the amount agreed on. *W.*

Burnet.—*L. W.*—It is to be sown just as Sainfoin, using about a bushel of seed per acre. You will not find it worth your while to cultivate it.

Drainage.—*W. F. G. F.*—If the lines you have drawn in your little plan are those of greatest descent on the field, they are precisely those which you should mark out for the drains. It will take about 1600 tiles, 18 inches long each, to drain an acre, at 20 feet apart. Cover the tiles with the turf reversed, and then fill in the rest any how.

Farm Accounts.—*G. B. M.*—Swinhorne's "Farmer's Account Book" is pretty well; but, like all of its class, it is imperfect. We shall return to this subject.

Gas Lime.—*G. B. M.*—This is imperfect hydro-sulphuret of lime. When exposed to air, it is gradually converted into sulphite, and ultimately into sulphate of lime or gypsum; three or four cwt. per acre is a plentiful application: 7*s.* 6*d.* a chaldron have been given for it.—*A Subscriber, Andover.*—It is useful as a manure, because, after long exposure to the air, it becomes sulphate of lime or gypsum, the fertilising properties of which everybody knows. You had better not mix it fresh. Three or four cwt. per acre spread now on the land, and ploughed under in spring, would be as effectual as a larger quantity; and this would be a better way of using it than the plan you propose of mixing it with bones.

Gorse.—*Nice.*—Can any one give us information respecting the Furze that has no thorns? It is sometimes called Irish Furze.

Murrain.—*Maillew.*—We cannot give advice for the diseases of cattle, unless the symptoms are described. The term "murrain" is used in various districts to designate different and distinct diseases.—*W. C. S.*

Sheep Farming, Manure, &c.—*E.*—Your object clearly is, that the tenant should buy as much of as valuable manure as the hay would produce were it consumed upon the land. If he knows the value of manure he will be able to do this for less than three-fourths of the value of the hay. One-half its value so spent would, we think, be quite a sufficient security for the fertility of the land. In the country, here, we should say that *the whole* of the value of the straw, if allowed to be sold, should be spent in manure; but near town, where this part of the corn crop is so much more valuable, and where rent, on this and other accounts, is so much higher, this, we presume, would hardly be a fair arrangement. Three-quarters of its value spent in manure would probably be more just.—If your farm of 150 acres, under a five-shift course of cropping, be in good cultivation, and capable of yielding, on an average, 22 tons of roots, 30 cwt. of Clover hay, and 25 cwt of straw, per acre; then, besides your cow and six fatting beasts, you ought to be able to keep a flock of 200 breeding ewes, which we may suppose to yean 220 lambs every spring; of which 50 may be sold fat by July, and 130 may be sold fat as shearlings in the month of May following, along with 20 old ewes, whose places may be supplied by 20 of the ewe-tegs; or, as we should then call them in this part of the country, *chilver tegs*, or *theaves*; the remaining number of the lambs go to balance the profit and loss account of disease and death. The following is our calculation:—The produce of the farm will be off 60 acres of grain crop, 30 acres of roots, 30 acres of one-year-old Clover, and 30 acres of two-year-old Clover. The first will yield 75 tons of straw, the second 660 tons of roots, the third 45 tons of hay and 30 acres of aftermath, and the fourth 30 acres of pasture. This last will keep 170 ewes, and so many of their lambs as remain, till the 1st of October. The aftermath is equal to the keep of the cow and six horses in Clover, and also of 30 ewes and lambs till the same period. We suppose, however, 50 lambs to be sold in July, so that on the 1st of October there will be 6 horses, 1 cow, 6 fatting beasts, 200 ewes and 150 tegs; to keep which till the 1st of May there are 660 tons of roots, 45 tons of hay, 73 tons of straw; and 15 tons of oilcake will need to be bought. This will be consumed as follows:—

	Hay.		Roots.		Oil-cake.	
	tons.	cwt.	tons.	cwt.	tons.	cwt.
6 horses will eat daily, besides Oats and straw, 5 lbs. of hay, 20 lbs. of roots; equal to	2	10	10	0	—	
1 cow, at 12 lbs. of hay and 40 lbs. of roots daily; equal to	1	0	2	6	—	
6 beasts at 5 lbs. of hay in their chaff, 60 lbs. of roots, and 6 lbs. of oilcake daily, till 20th Feb.; equal to	1	15	21	0	2	
200 ewes, at 2 lbs. of hay each, daily, and 12 lbs. of roots, till 1st Feb.; then 2 lbs. of hay and 30 lbs. of roots	33	10	360	0	—	
150 tegs, at ¼ lb. of hay chaff, daily, and 1 lb. of oilcake, and 20 lbs. of roots; equal to	6	5	250	0	12	18
	45	0	644	6	15	0

Supposing all this stock to be kept under shelter, 40 tons of straw may be needed for litter and food, leaving 25 for sale.

Turnip Machine.—*M. Soul.*—We have your drawing by us, and shall call attention to your machine, when, in the course of our articles on Agricultural Mechanics, we touch on this subject.

Wheat.—*G. B. M.*—Bellevue Talavera will probably suit you well.

Erratum.—For the word "feeding," in the 2d line from the top of the 2d col., at page 857, read "breeding."

Markets.

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 26.

Prime old Meadow		New Hay —s to —s	Clover	105s to 120s	
Hay	105s to 110s	Inferior Hay 90 100	Straw	34 36	
			Joseph Cocoma, Salesman.		

Cumberland Market, Dec. 26.

Superior Mead. Hay	105s to 112s	Superior Clover	105s to 112s		
Inferior "	90 96	Inferior "	90 100	Straw	30s to 32s
New Hay "	— —	New Clover	— —		
		Joshua Rabbs, Hay Salesman.			

Whitechapel, Dec. 27.

Fine Old Hay	100s to 110s	Old Clover	120s 132s		
New Hay	90 100	New Clover	105 115	Straw	27s to 34s
		Inferior	— —		

HOPS, Friday, Dec. 27.

We have had a good trade in Hops this week, and there is a steady demand for Pockets, which we think must soon go considerably higher in price.

Farnham, Bo[illegible], Mid-Kent

SMITHFIELD, MONDAY, Dec. 23.—Per stone of 8 lbs.

Beasts, Sheasters, &c.	4s	0 to 4s	6	Best Downs & Half-breds	4s	4	8
First Quality Mutton	3	10	4	0	Best Long-wools	3	8	4
Second quality Mutton	3	6	3	8	Downs and second quality	3	4	3
Calves	4	0	4	8	Pigs	3	4	3

Beasts, 1319; Sheep, 16,480; Calves, 194; Pigs, 290.

As it must be soon to Christmas day, scarcely any business is transacted in our Market to-day. Our supply of Beef is tolerably good, and as the best qualities maintain late rates; but there being no stock an abundance of buyers, reduction in price must be submitted to to effect sales to any amount. The trade amongst the Mutton is even slower than for the Beef. Lambs is very little indeed wanted, and a very great many remain unsold. Calves are but very few Calves here to day, which are sold dearer. Pork trade continues heavy.

FRIDAY, Dec. 27.

Again we have a kind of holiday Market; the large supply of the "Great Market" is not yet forgotten; indeed, since then the quantity has been large for the season. For what little business is done, both in Beef and Mutton, the prices continue the same as Monday, except in the second-rate qualities, which are a little lower. Veal is short, and consequently dearer; several good Calves have made fully and we think a little over 5s per 8 lbs. The second quality also finds a much more ready sale, at a proportionable rise in price. Pork trade continues steady.

Beasts, 633; Sheep, 8160; Calves, 54; Pigs, 227.

61, West Smithfield.

MARK-LANE, MONDAY, Dec. 23.

THERE was a fair supply of Wheat from the near counties this morning, which met a slow sale at last week's prices; business in Foreign continues limited, but its late value is fully supported. Barley, Beans, and Peas maintain our quotations. Oats are still very scarce, and where sales are effected, extreme rates are obtained.

BRITISH, PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, and Suffolk . . White	40	50	. Red .	44	48
—— Norfolk, Lincolnshire, and Yorkshire . —	—		White	—	—
Barley, Malting and distilling 32s to 33s Chevalier	34	35	Grind.	27	28
Oats, Lincolnshire and Yorkshire . . Polands	20	23	Feed	19	22
—— Northumberland and Scotch . . Feed	20	23	Potato	21	23
—— Irish . . . . Feed	18	21	Potato	20	24
Malt, pale, ship	54	60			
—— Maritord and Essex	55	64			
Rye	30	36			
Beans, Mazagan, old and new 29 to 35	Tick	30	36	Harrow	31	37
—— Pigeon, Heligoland . 35 to 41	Winds —	—		Longpod	—	—
Peas, White . . . . 34 to 37	Maple	31	33	Grey	30	32

ARRIVALS IN THE RIVER LAST WEEK.

	Flour.		Wht.	Barl.	Malt.	Oats.	Rye	Bns.	Peas
English .	3868 Sks.	— Brls.	5002	6128	3684	198	—	1831	1808
Irish .	—	„ — „	—	—	38	—	—	—	—
Foreign .	70	„ 30 „	1038	360	—	710	—	10	—

FRIDAY, Dec. 27

THE arrivals of Corn and Flour during the week have been very moderate, and the attendance at market this morning was small; we observe no alteration in the value of either English or Foreign Wheat; the only bonded transaction we have heard of is the sale of 2000 barrels of American Flour at 18s per barrel, and there was some inquiry for low Baltic Wheat. Barley, Beans, and Peas fully maintain the quotations of Monday. Being still without any arrivals of Irish Oats, factors are enabled to obtain a trifling advance.

ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English . .	2670	1200	1400	2260 Sks
Irish . .	—	—	—	—
Foreign . .	—	—	—	—

IMPERIAL AVERAGES.

		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov.	16 per Quarter.	46s 4d	35s 9d	21s 9d	30s 2d	36s 4d	35s 7d
—	23 . . .	45 10	35 2	21 8	30 2	36 6	36 2
—	30 . . .	45 4	34 1	21 8	29 2	36 0	35 11
Dec.	6 . . .	45 0	34 9	21 10	31 2	37 5	36 6
—	13 . . .	45 1	34 5	21 11	29 0	36 9	36 1
—	20 . . .	45 2	34 2	21 10	29 0	35 11	35 4
6 weeks' Aggreg. Aver.		45 6	34 11	21 9	29 1	37 6	35 11
Duties on Foreign Grain		20 0	4 0	6 0	15 6	5 6	7 6

SEEDS, Dec. 27.

Canary . . per qr	52s to 56s	Linseed Cakes, Foreign, p. ton	£7 to £7 10
Carraway . . per cwt	44	48	Mustard, White . p. bush.	10s	16
Clover, Red, English .	—	—	— Superfine „ .	12	16
— — Foreign .	—	—	— Brown „ .	12	16
— White, English .	—	—	Rapeseed, English, per last	£21	£24
— — Foreign .	—	—	Rape Cakes . per ton	—	—
Corlander . . .	12	16	Saintoin . . .	—	—
Hempseed . per last	35	38	Tares, Eng. winter p. bush.	5	6
Linseed . per qr	—	—	Foreign . . .	—	—
— Baltic . . .	—	—	Trefoil . . per cwt	—	—
— Cakes, Eng. per 1000	12£ 10	13£	Turnip (one variable for quotation).		

KINGSCOMB AND LAY.

COVENT GARDEN, DEC. 28.—The Market has been well supplied during the week with vegetables of almost every kind, and the quantity of fruit has also been sufficient to meet the demand. Among Pine Apples we noticed some handsome specimens, which are offered at nearly the same prices as are quoted in our last report. Grapes, which chiefly consist of foreign sorts, are also selling at last week's prices. Apples are plentiful, but the demand for them is not great. Among Pears, good samples of Glout Morceau and Winter Nelis, which are the principal dessert varieties in the market at present, are selling at about 8s. per half sieve. Nuts are scarce, and consequently realise high prices. Oranges, of good quality, are abundant, and Lemons are also sufficient for the demand. Of vegetables, there are plenty of most sorts; Cauliflowers are, however, scarce; and Broccoli, owing to the late frosty weather, is not so plentiful; but Cabbages, Brussels Sprouts, and Savoys are good in quality and abundantly supplied; Carrots, although somewhat inferior in quality, are plentiful; Turnips are very good, and sufficient for the demand. A considerable quantity of American Shallots are in the market, and being good in quality they meet with a tolerably ready sale. Rhubarb, Asparagus, and Sea-kale, are offered at last week's prices. Celery is plentiful and good. Endive, Lettuce, and other kinds of salading are pretty plentiful. Among cut flowers we noticed Euphorbia jacquiniflora, Bignonia venusta, Coronilla glauca, several species of Cape Heath, also Camellias, Cinerarias, Acacias, Amaryllises, Azaleas, Chrysanthemums, Tulips, and Roses.

FRUITS.

Pine Apple, per lb., 4s to 7s	Oranges, per dozen, 6d to 1s 6d
Grapes, Hothouse, p. lb., 2s to 5s	— per 100, 3s to 10s
— Spanish, per lb., 1s 6d to 1s	— bitter, per 100, 10s
— Portugal, per lb., 1s to 2s	Lemons, per dozen, 6d to 2s
Apples, Dess., per bush., 2s to 7s	— per 100, 2s to 12s
— Kitchen, 2s to 5s	Almonds, per peck, 2s
Pears, Dess., per hf.-sv., 4s to 8s	Sweet Almonds, per lb., 2s 6d to 3s
Pomegranates, per doz., 2s to 4s	Cob Nuts, per 100 lbs., 120s to 130s
Quinces, per half-sieve, 2s to 3s	Nuts, Barcelona, 24s
Medlars, per bushel, &c.	— Brazil, 14s to 20s
Filberts, per 100 lbs., 100s to 120s	— Spanish, 8cs
Chestnuts, per peck, 2s to 7s	— Barcelona, 24s
Walnuts, shelled, 12s to 20s	— Cob, 14s

VEGETABLES.

Cabbages, per dozen, 6d to 1s 6d	Salsafy, per bunch, 1s to 1s 3d
— plants, per doz. bnch., 1s to 2s	Leeks, per doz., 1s 6d to 2s
Cauliflowers, per doz., 2s to 10s	Garlic, per lb., 4d to 6d
Broccoli, per bundle, 1s 6d to 3s	Onions, per bunch, 4d
Brussels Sprouts, hf.-sv., 2s to 3s 6d	— large, per bushel, 2s to 3s 6d
French Beans, per 100, 2s to 4s	— Spanish, per doz., 1s to 4s
Sorrel, per hf.-sieve, 1s 6d to 2s	Shallots, per lb., 6d to 8d
Jerusal. Artichoke, p. hf.-sv., 1s to 1s 6d	Capsicums, per 100, 4s to 8s
Potatoes, per bus., 12s to 16s	Chilies, per score, 6d to 1s 6d
— cwt., 4s to 5s 6d	Celery, White, per bunch, 1s to 1s 6d
— basket, 2s 6d to 3s	— Red, per bunch, 1s to 2s
— Kidney, per bsh., 8s to 9s	Endive, per score, 1s to 2s 6d
Turnips, per doz. bchs., 1s 6d to 2s 6d	Mushrooms, per pottle, 6d to 1s 6d
Red Beet, per doz., 1s to 2s	Small Salads, per punnet, 6d to 9d
Carrots, per doz. bchs., 2s to 3s	Watercress, p. 12 sm. bun. 2d to 3d
Basil, per bunch, 2d to 3d	Parsley, per doz. bunches, 2s to 3s
Rhubarb, per bundle, 1s 6d to 2s 6d	— Roots, per bundle, 3d
Sea-kale, per punnet, 2s to 3s	Tarragon, per bunch, 6d
Asparagus, per bundle, 3s to 14s	Mint, per bunch, 6d
Sweet Herbs, per bundle, 1s 6d to 2s	Marjoram, per bunch, 3d to 4d
Horse Radish, per bundle, 2d to 3d	Chervil, per punnet, 3d to 6d
Garlic, per bundle, 2d to 3d	Chilis, per doz., 1s to 2s
Shallots, per lb., 6d to 8d	
Capsicums, per 100, 4s to 8s	

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Patent Asphalte Felt Works, Dec. 28

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MISS MARTINEAU'S STATEMENT

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